

COMMONWEALTH OF KENTUCKY
BEFORE THE KENTUCKY STATE BOARD ON
ELECTRIC GENERATION AND TRANSMISSION SITING

In the Matter of:

ELECTRONIC APPLICATION OF MYSO, LLC	)	
(MAYFIELD) FOR A CERTIFICATE OF	)	
CONSTRUCTION FOR AN APPROXIMATELY	)	
200 MEGAWATT MERCHANT SOLAR ELECTRIC	)	Case No. 2025-00395
GENERATING FACILITY IN GRAVES COUNTY,	)	
KENTUCKY PURSUANT TO KRS 278.700 AND	)	
807 KAR 5:110	)	

SUPPLEMENTAL RESPONSES TO FIRST REQUEST FOR INFORMATION

The applicant, MYSO, LLC (“Applicant” or “Mayfield”) herewith supplements its Response to Siting Board Staff’s First Request for Information, which was filed in the above-captioned case on March 27, 2026. Specifically, Applicant supplements its responses to the following:

- Response No. 83: Water/Wetland Delineation Report – Wilson Parcel;
- Response No. 84: Cultural Resources Assessment – Wilson Parcel; and
- Response No. 96: Protected Species Review – Wilson Parcel.

Respectfully submitted,

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MYSO, LLC
Supplemental Response to Siting Board Staff's First Request for Information
Case No. 2025-00395

Request No. 83:

Provide any environmental studies that have been completed for the project including Phase I Environmental Site Assessment for the Project.

Response:

Please find the Project's environmental studies attached separately due to file size limits.

Supplemental Response:

See attached.

Responding Witness: Bob Roy



Mayfield Solar Project – Wilson Parcel
Graves County, Kentucky

Water / Wetland Delineation Report

Submitted to:

MYSO, LLC

c/o: Mr. Bob Roy

515 N Flagler Drive, Suite 250

West Palm Beach, FL 33401

Submittal Date:

April 17, 2026



April 17, 2026

Mr. Bob Roy
MYSO, LLC
515 N Flagler Drive, Suite 250
West Palm Beach, FL 33401

**RE: Water / Wetland Delineation Report
Mayfield Solar Project – Wilson Parcel
BFW Project No: 23694**

Dear Mr. Roy:

Bacon Farmer Workman Engineering & Testing, Inc. (BFW) is pleased to submit our report documenting the findings of the Water/Wetland Delineation for the Mayfield Solar Project – Wilson Parcel. The study area consists of approximately 185 acres and is located north of East Baldree Road in northern Graves County, Kentucky.

The purpose of the delineation was to gather sufficient information to render an independent professional opinion about whether jurisdictional waters and wetlands exist within the study area. The wetland delineation was conducted according to the guidelines set forth by the *1987 Corps of Engineers Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)*.

The United States Army Corps of Engineers (USACE) is the regulating authority of Section 404 of the Clean Water Act (CWA). This regulating entity must make the final decision with regards to the extent and jurisdictional status of any water/wetland features on this site.

We appreciate the opportunity to serve you and look forward to future association with you on this and other projects. If you have questions concerning this report or require further clarification of the findings, please call our office at (502) 526-3613.

Sincerely,

A handwritten signature in black ink that reads "Christian Slone".

Christian Slone, FP-A, WPIT
Environmental Scientist

A handwritten signature in black ink that reads "Laura Darnell".

Laura Darnell, PWS
Wetland Scientist / Ecologist

Attachment: Water / Wetland Delineation Report

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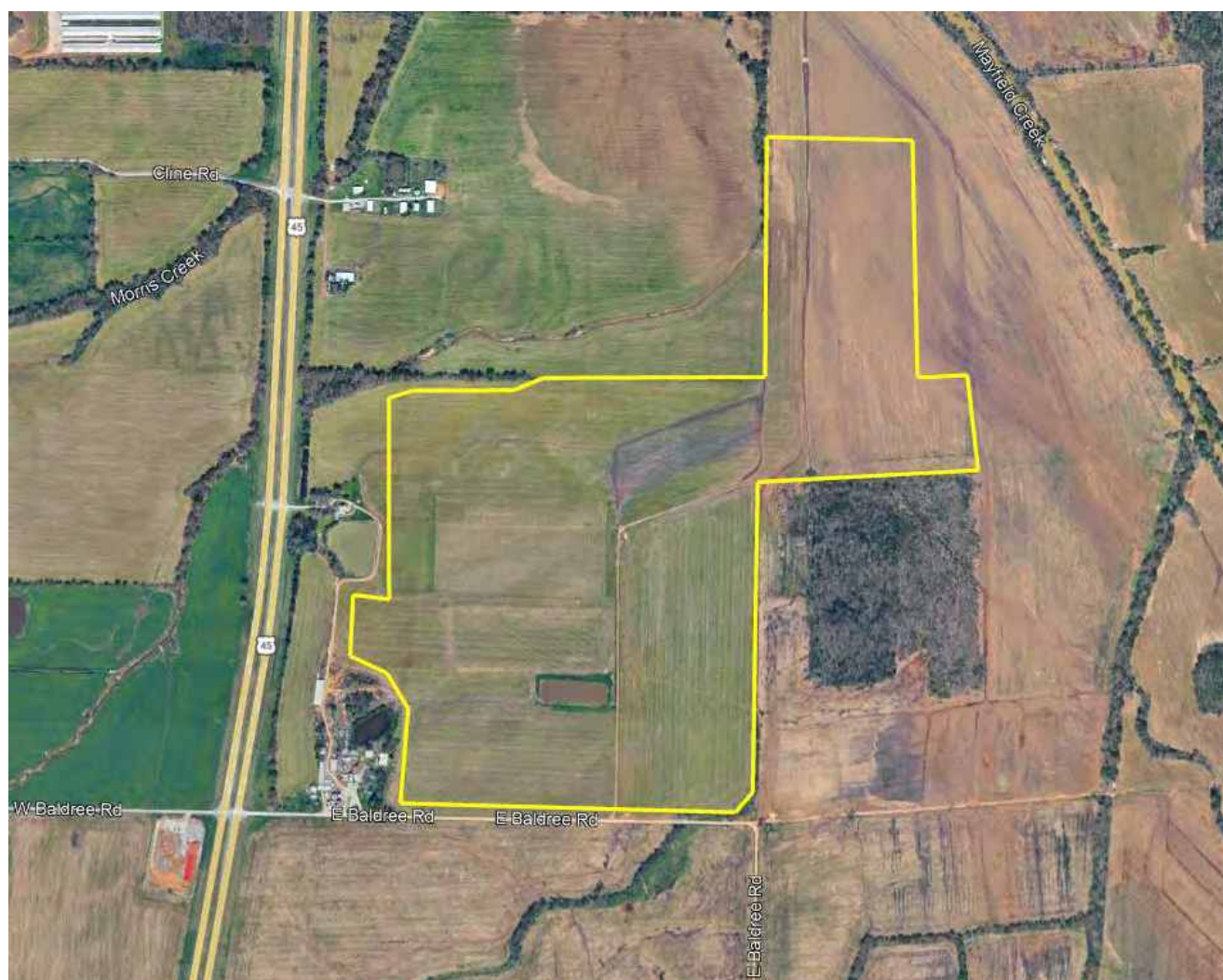
LIST OF ACRONYMS AND ABBREVIATIONS

APT	Antecedent Precipitation Tool
BFW	Bacon Farmer Workman Engineering & Testing, Inc.
CWA	Clean Water Act
DEM	Digital Elevation Model
EPA	Environmental Protection Agency
FAC	Facultative
FACW	Facultative Wetland
FACU	Facultative Upland
FEMA	Federal Emergency Management Agency
GPS	Global Positioning System
KDFWR	Kentucky Department of Fish and Wildlife Resources
KDOW	Kentucky Division of Water
MVIR	Mississippi Valley Interior Rivers
N/A	Not Applicable
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
NWP	Nationwide Permit
NWPL	National Wetland Plant List
OBL	Obligate Wetland
OHWM	Ordinary High Water Mark
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PRM	Permittee-Responsible Mitigation
PUB	Palustrine Unconsolidated Bottom (Pond)
RBP	Rapid Bioassessment Protocol
RPW	Relatively Permanent Water
SSURGO	Soil Survey Geographic Database
UPL	Obligate Upland
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USDA	United States Department of Agriculture
WQC	Water Quality Certification

ABSTRACT

Bacon Farmer Workman Engineering & Testing, Inc. (BFW) performed a water/wetland delineation for the Mayfield Solar Project – Wilson Parcel. The study area for this project consists of approximately 185 acres and is located north of East Baldree Road, approximately 0.15 mile east of U.S. Highway 45 in northern Graves County, Kentucky. The project coordinates are 36.9104, -88.6674 and the graphic below shows the site location. The delineation was performed to determine the extent of wetlands, ponds, and/or streams within the study area in preparation for future development activities.

Field personnel identified 2.982 acres of water/wetland features on site, including one perennial stream totaling 800 linear feet (0.055 acres), three intermittent streams totaling 1,655 linear feet (0.119 acres), one ditch totaling 95 linear feet (0.002 acres), three wetlands totaling 1.587 acres, and two ponds totaling 1.219 acres. Tentative jurisdictional determinations have been presented based on the most current regulations as of the publication date of this report. It should be noted that the extent and jurisdictional status of water/wetland features on this site are subject to approval by the USACE for final determination. Due to the rapidly changing regulatory environment, re-visiting the tentative jurisdictional determinations is recommended prior to submitting the delineation to regulatory agencies or other outside entities if significant time elapses after the delineation report is received.



1. INTRODUCTION

Bacon Farmer Workman Engineering & Testing, Inc. (BFW) performed a water/wetland delineation for the Mayfield Solar Project – Wilson Parcel located in Graves County, Kentucky (**Figures 1 and 2**). The field work was completed on January 13, 2026. Figures referenced in this text are included in **Appendix A**.

1.1 PURPOSE

The purpose of this study was to investigate the study area to document any areas which met the technical criteria for wetlands, assess other aquatic resources (e.g., streams, open water features), and classify these aquatic resources. This assessment will be the basis upon which regulated impacts to these resources will be determined for future project construction activities.

The water/wetland delineation was conducted according to the guidelines set forth by the 1987 Corps of Engineers Manual and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)*. The United States Army Corps of Engineers (USACE) is the regulating authority of Section 404 of the Clean Water Act (CWA). This regulating entity must make the final decision with regards to the extent, type, and jurisdictional status of any water/wetland features on this site.

Tentative jurisdictional determinations have been presented based on the most current regulations as of the publication date of this report. Due to the rapidly changing regulatory environment, re-visiting the tentative jurisdictional determinations is recommended prior to submitting the delineation to regulatory agencies or other outside entities if significant time elapses after the delineation report is received.

1.2 SITE DESCRIPTION

The study area for this report totals approximately 185 acres and is located north of East Baldree Road, approximately 0.15 mile east of U.S. Highway 45 in northern Graves County, Kentucky (**Figures 1 and 2**). The site coordinates are 36.9104, -88.6674. The study area contains primarily agricultural fields.

The field assessment documented 2.982 acres of water/wetland features on site, including one perennial stream totaling 800 linear feet (0.055 acres), three intermittent streams totaling 1,655 linear feet (0.119 acres), one ditch totaling 95 linear feet (0.002 acres), three wetlands totaling 1.587 acres, and two ponds totaling 1.219 acres. These features are depicted on **Figure 3**.

2. TECHNICAL DEFINITIONS

2.1 WETLANDS

Section 404 of the Clean Water Act defines Wetlands as:

“areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

The Environmental Protection Agency (EPA) and the USACE utilize the *1987 Corps of Engineers Wetlands Delineation Manual* and subsequent Regional Supplements to the manual to define wetlands for the CWA Section 404 permit program. Section 404 requires a permit from the USACE or authorized state for the discharge of dredged or fill material into the waters of the United States, including wetlands.

The *1987 Corps of Engineers Wetlands Delineation Manual* and Regional Supplements organize characteristics of a potential wetland into three (3) categories: soils, vegetation, and hydrology. The manual and supplements contain criteria for each category. With this approach, an area that meets all three (3) criteria is considered a wetland. These criteria are detailed below:

2.1.1 Hydrophytic Vegetation

Hydrophytic vegetation, due to morphological, physiological, and/or reproductive adaptation(s), has the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. Individual species have been assigned a wetland indicator status on the National Wetland Plant List provided by the USACE. Determinations of hydrophytic vegetation are based on the wetland indicator status of plant species within the sampling plot.

Table 2-1 – Vegetation Wetland Indicator Codes

Indicator Status	Probability of Occurrence in Wetlands
Obligate Wetland – OBL	> 99%
Facultative Wetland – FACW	67-99%
Facultative – FAC	34-66%
Facultative Upland – FACU	1-33%
Obligate Upland – UPL	< 1%

The relative abundance of plant species in the plots and their wetland indicator statuses are used to determine whether the plant community qualifies as hydrophytic under the Rapid Test, Dominance Test, and/or Prevalence Test.

2.1.2 Hydric Soils

Hydric soils are present if they have been classified as hydric or when they possess characteristics associated with anaerobic soil conditions. Hydric soils are those that are determined to be gleyed or have a low chroma matrix (2 or less) with redoximorphic features, or a matrix chroma of 1 with or without redoximorphic feature in the upper 12 inches. These designations are made utilizing Munsell Soil Color Charts.

2.1.3 Wetland Hydrology

Hydrology in wetlands occurs in areas inundated permanently or periodically at mean water depths less than 18.8 feet, or if the soil is saturated to the surface for five percent (5%) of the prevalent vegetation's growing season. Indicators of wetland hydrology could be present above or below the surface.

Primary indicators of hydrology [a minimum of one is required] include, but are not limited to:

- inundation
- saturation in the upper 12 inches
- oxidized rhizospheres
- watermarks on standing structures
- water-stained leaves
- sediment deposits

Secondary indicators of wetland hydrology [a minimum of two is required] include, but are not limited to:

- FAC neutral test
- a sparsely vegetated concave surface
- wetland drainage patterns
- crayfish burrows

2.2 STREAMS AND DRAINAGES

Stream classifications of perennial, intermittent, and ephemeral were applied based on definitions in publications created or endorsed by the Kentucky Energy and Environment Cabinet, Department for Environmental Protection (Kentucky Division of Water 2011 and Tetra Tech, Undated).

Perennial streams were characterized as having flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow.

Intermittent streams were characterized as having flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from precipitation is a supplemental source of water for stream flow.

Ephemeral streams were characterized as typically having flowing water only during rainfall events and for a short time afterward in a typical year. Ephemeral stream beds are located above the water table year-round, so groundwater is not a source of water for the stream. Runoff from precipitation is the primary source of water for stream flow.

Non-jurisdictional ditches were classified according to the definition presented by the EPA within the "Revised Definition of "Waters of the United States" issued on January 18, 2023. These features are defined as being ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water.

2.2.1 Ordinary High Water Mark (OHWM)

The jurisdictional extent of non-tidal waters typically extends to the Ordinary High Water Mark (OHWM). The OHWM was defined following USACE regulatory guidance (USACE 2005):

"The term ordinary high water mark means that 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."

2.3 STATE-DESIGNATED PRIORITY WATER RESOURCES

The Kentucky Division of Water (KDOW) has granted special status to some waters and waterbodies in Kentucky related to their goals for statewide water quality improvement. The KDOW requires Individual Water Quality Certification (WQC) when project activities occur within these designated waters.

KDOW special-status waters include:

- Waters and Waterbodies designated as designated Outstanding State Resource Waters, National Resource Waters, Cold Water Aquatic Habitat, Exceptional Waters, or identified as candidate Outstanding State Resource Waters or candidate Exceptional Waters
- Waters and Waterbodies classified as impaired for warm water or cold water aquatic habitat where the parameter or source is related to habitat
- Waters and Waterbodies classified as Full Support for warm water or cold water aquatic habitat
- Perpetually-protected mitigation sites (can include streams, ponds, and wetlands)

The presence of KDOW special-status waters and waterbodies was evaluated using the KDOW's online map service (KDOW 2026).

2.4 PRIOR-CONVERTED CROPLAND AND FARMED WETLAND DESIGNATIONS

Lands manipulated for agriculture can be interpreted based on government agency definitions of "farmed wetlands" and "prior converted cropland." "Farmed wetlands" are defined as wetlands which were both manipulated and cropped before December 23, 1985, but which continue to exhibit important wetland values. Specifically, farmed wetlands include cropped potholes, playas, and areas with 15 or more consecutive days (or 10 percent of the growing season, whichever is less) of inundation during the growing season.

"Prior converted cropland" is defined by the Soil Conservation Service (Section 512.15 of the National Food Security Act Manual, August 1988) as wetlands which were both manipulated (drained or otherwise physically altered to remove excess water from the land) and cropped before December 23, 1985, to the extent that they no longer exhibit important wetland values. Specifically, prior converted cropland is inundated for no more than 14 consecutive days during the growing season. Prior converted cropland generally does not include pothole or playa wetlands. In addition, wetlands that are seasonally flooded or ponded for 15 or more consecutive days during the growing season are not considered prior converted cropland.

In contrast to "farmed wetlands", "prior converted croplands" generally have been subject to such extensive and relatively permanent physical hydrological modifications and alteration of wetland vegetation that the resultant cropland (which now may not meet all three wetland criteria for vegetation, hydrology, and soils) constitutes the "normal circumstances" for purposes of Section 404 jurisdiction (USACE 1990).

Recent court cases in Kentucky have changed the rules that apply to "prior converted cropland" relative to USACE jurisdiction under Section 404 of the CWA. On May 10, 2023, the

U.S. Court of Appeals for the Sixth Circuit issued an order relating to the cases *Commonwealth of Kentucky v. EPA* (No. 23-5343) and *Kentucky Chamber of Commerce, et al. v. EPA* (No. 23-5345). While the stay was in effect, the agencies interpreted “waters of the United States” consistent with the pre-2015 regulatory regime in Kentucky, which classified “prior converted cropland” as one of the exclusions from the waters and wetlands under CWA jurisdiction. However, on September 23, 2024, the Sixth Circuit Court ended the stay, making the amended 2023 rule operative in Kentucky. The amended 2023 rule has added a provision that “Prior converted cropland loses its exclusion status if there is a “change in use” – meaning the area is no longer available for the production of an agricultural commodity.”

Based on joint agency guidance (USDA, USACE, and EPA, 2022), “areas that are intended to be modified or developed for purposes, including but not limited to, residential, commercial, or industrial use; mining; energy infrastructure; or other non-agricultural uses do not meet this standard of availability for commodity crop production.” Therefore, it appears that under the current regulatory regime, a “prior converted cropland” within the footprint of a proposed development project would *not* qualify for a exclusion from CWA jurisdiction.

Because it appears that “prior converted cropland” exclusions from CWA jurisdiction would not be applicable on this site, it does not appear that there would be any benefit to mapping the extent of “prior converted cropland” on this site. Therefore, no analysis for this classification has been performed at this time.

3. DELINEATION METHODS AND GENERAL SITE CHARACTERISTICS

3.1 WETLAND DELINEATION

The wetland delineation was conducted according to the guidelines set forth by the 1987 *Corps of Engineers Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)*. An initial in-house review of available maps was used to locate potential streams and wetland areas. Maps consulted included United States Geological Survey (USGS) topographic maps, aerial photography, county soil survey maps and hydric soils lists, National Hydrography Dataset (NHD) maps, National Wetlands Inventory (NWI) maps, Federal Emergency Management Agency (FEMA) floodplain maps, and Digital Elevation Model (DEM) maps. During the field assessment, the locations of water and wetland features were recorded in the field using Global Positioning System (GPS) equipment with sub-meter accuracy.

3.1.1 Soils

Soils were observed to determine if hydric soil characteristics were present. Soils were examined at shallow test pits excavated with a drain spade and were observed at a depth necessary to confirm hydric soil characteristics. Typical soil profile depths are usually within 12-18 inches below ground surface to allow for: (1) observation of an adequate portion of the soil profile to determine presence/absence of hydric soil characteristics; (2) observation of hydrology including depth to the water table and saturated soils; and (3) identification of disturbances (e.g., buried horizon, plow line). Where site conditions preclude observing soil profile depths at the typical 12-18 inches below ground surface or where observed hydric soil indicators are documented above or below 12-18 inches below ground surface, justification is provided. Soil color determinations were assigned using Munsell Soil Color Charts.

Mapped soils within the study area are depicted on **Figure 4**. Site soil characteristics were compared to those mapped and described in the *Soil Survey Geographic (SSURGO) Database for Graves County, Kentucky* (USDA 2022). Hydric soil characteristics were compared to those identified in the Atlantic and Gulf Coastal Plain (USACE 2010) and the most recent version of the Natural Resources Conservation Service (NRCS) publication *Field Indicators of Hydric Soils in the United States, Version 9.2* (USDA 2025). Hydric Soil Category ratings (USDA 2025) were also reviewed for soils in the study area. Results were recorded on wetland determination data forms (**Appendix B**). The main soil types within the study area are summarized in **Table 3-1** on the following page.

Table 3-1 – Site Soils Summary

Map Symbol	Soil Unit Name	Percent Hydric Component	Hydric Rating ¹	Hydric Criteria ^{1,2}
Cn	Collins silt loam, 0-2% slopes, occasionally flooded, very brief duration	0	Nonhydric	N/A
Fa	Falaya silt loam, 0-2% slopes, occasionally flooded, very brief duration	5	Predominantly Nonhydric	2
GrA	Grenada silt loam, 0-2% slopes	0	Nonhydric	N/A
GrB2	Grenada silt loam, 2-6% slopes, eroded	0	Nonhydric	N/A
Wa	Waverly silt loam, 0-2% slopes, occasionally flooded, brief	95	Predominantly Hydric	2

1 Hydric rating and criteria as assigned by the NRCS Hydric Soils List for Graves County, Kentucky

2 Based on definitions from the National Technical Committee for Hydric Soils. The criteria for hydric soils are represented by codes, for example, 2 or 3. Definitions for the codes are as follows:

1. All Histels except Folistels and Histosols except Folists; or
2. Map unit components in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, or Andic, Cumulic, Pachic, or Vitrandic subgroups that:
 - a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - b. Show evidence that the soil meets the definition of a hydric soil;
3. Map unit components that are frequently ponded for long duration or very long duration during the growing season that:
 - a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - b. Show evidence that the soil meets the definition of a hydric soil; or
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
 - a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - b. Show evidence that the soils meet the definition of a hydric soil.

None of the mapped soil units within the study area is classified as having the potential for a hydric soil classification based on documented ponding (Hydric Criteria Code #3) or flooding (Hydric Criteria Code #4). Therefore, although some of the property lies within the floodplain of nearby Mayfield Creek, the soil survey indicates that there are no mapped soil units within the project parcels that could qualify as hydric soils through an analysis of gage data or other surface water measurements. Any soils documented as hydric within the study area will require field indicators of hydric soils.

Soils were examined at several locations including eight data points which are depicted on **Figure 3** and recorded on the data forms included in **Appendix B**. Hydric soil indicators that were observed included Depleted Matrix (F3) and Redox Depressions (F8).

3.1.2 Vegetation

Wetland plant species nomenclature follows the National Wetland Plant List (USACE 2023). Identification was aided, when necessary, with field guides for the region. Vegetation was sampled in plots:

- 30-ft radius for tree stratum
- 30-ft radius for sapling and shrub stratum
- 30-ft radius for herb stratum
- 30-ft radius for woody vines

Vegetation was classified using the USACE 2022 National Wetland Plant list (NWPL). Unless otherwise stated, aerial coverage dominance was determined using the 50/20 rule. Under the 50/20 rule, any plant species that equals or exceeds 20% of the aerial coverage of the plot is a dominant plant. In addition, the cumulative total of all dominant plants (OBL, FACW, or FAC) must be equal to or greater than 50% of the aerial coverage of the plot. If no plant species equals or exceeds 20% of the cumulative total aerial coverage of the plot, then the dominant plants are the plants that when ranked in decreasing order of abundance and summed, immediately exceed 50% of the plots aerial coverage when added together.

The study area contains primarily agricultural fields which contained stubble of soybeans (*Glycine max*) and corn (*Zea mays*), along with some grass species. Common grass species included oatgrass (*Avena fatua*) and henbit deadnettle (*Lamium amplexicaule*). These species are listed as obligate upland (UPL) on the 2022 NWPL.

Common species in the wetlands included redtop panic grass (*Panicum rigidulum*), narrowleaf cattail (*Typha angustifolia*), barnyard grass (*Echinochloa crus-galli*), Johnson grass (*Sorghum halepense*), and giant goldenrod (*Solidago gigantea*). These species are listed as facultative upland (FACU), facultative wetland (FACW), and UPL on the 2022 NWPL.

3.1.3 Hydrology

Hydrology within the study area was evaluated using available mapped data and field indicators. Sources of hydrology for the study area included precipitation, surface runoff from adjacent properties, discharge from an offsite pond to the southwest, and stream flow through some intermittent streams. The study area generally slopes downward from the west to the northeast and is generally flat on the eastern portion of the site. Surface water in the study area collects in several drainages which typically lose their channel and develop into linear wetlands which gradually drain northward before connecting to Mayfield Creek.

The northeastern portion of the site is located within the FEMA 100-year floodplain (**Figure 5**). The National Wetlands Inventory (NWI) map (**Figure 6**) maps riverine features (intermittent streams, R4SBC) running northward across the central and eastern sections of the study area. These riverine features generally correspond to the delineated features Intermittent Stream A and Intermittent Stream B along with Wetland A. However, one section of the mapped riverine feature in the southern section of the site is no longer accurate because it appears that channel was shifted eastward and now runs northward along the property line, as shown on **Figure 3**.

The NWI map identified a freshwater pond (PUBx) at Pond B. The NWI map also depicts a palustrine forested wetland (PFO1A) in the northwestern section of the site and along the northern edge of the site. The mapped wetland areas were investigated during the delineation and did not meet wetland criteria. The area mapped with a PFO1A polygon in the northwest was documented with Data Point D which classified the area as an upland.

Wetland hydrology indicators were observed in wetlands and some transitional zones. These indicators were recorded on the data forms (**Appendix B**). Hydrology indicators observed included surface water (A1), algal mat or crust (A4), surface soil cracks (B6), sparsely vegetated concave surface (B8), drainage patterns (B10), saturation visible on aerial imagery (C9), and geomorphic position (D2).

The USACE Antecedent Precipitation Tool (USACE-ERDC 2025) was reviewed for the project location at the time of the field assessment to determine if recent precipitation for the area was within normal ranges. The tool rated January 13, 2026 as Drier Than Normal (7) and Wet Season. The Antecedent Precipitation Tool output for the date of the visit is included in **Appendix E** and depicts the 30-day rolling rainfall total in comparison to 30-year normal precipitation ranges. A table generated from APT precipitation data is also included. Precipitation recorded during the site visits and the previous seven days included 0.01 inches of rain on January 6, 0.36 inches on January 9, and 0.03 inches on January 11, 2026.

3.2 STREAM ASSESSMENT

Onsite streams were delineated based on the presence of indicators of an OHWM, following USACE regulatory guidance (USACE 2005) as defined in **Section 2.2.1** above. Streams and drainages were classified as perennial, intermittent, or ephemeral streams, or as non-jurisdictional ditches based on the definitions in **Section 2.2** above. Field documentation of the on-site streams included photographs and notes of the location, typical dimensions, flow characteristics, and substrate material of the streams. Representative photographs are included in **Appendix D**. The field assessment was supplemented by in-house investigation including review of maps including USGS topographic maps, NHD maps, NWI maps, and DEM maps. Stream lengths, channel location, limits, and flow regime were determined through a combination of field assessment and in-house mapping.

Rapid Bioassessment Protocol (RBP) low gradient field data sheets were completed for any perennial and intermittent streams within the study area. The RBP method used to assess habitat quality is based on key physical characteristics of the stream and surrounding land. Habitat is defined as the quality of in-stream and riparian habitat that influences the structure and function of the aquatic community in a stream. Habitat parameters evaluated are related to overall aquatic life and are a potential source of limitation to aquatic biota (Barbour, et al. 1999).

No formal RBP assessments were conducted for ephemeral streams because it appears that these features have been classified as non-jurisdictional, non-relatively permanent waters under the new delineation standards established following the recent *Sackett vs. EPA* Supreme Court ruling.

The stream determinations presented in this delineation are tentative, and the final determination of stream type, extent, quality, and jurisdiction will be decided by the USACE.

3.3 STATE-DESIGNATED WATER RESOURCES IN STUDY AREA

A list of types of state-designated special-status waters that trigger a requirement for an Individual WQC is presented above in **Section 2.3**. A review of the KDOW's online map database indicates that no special status waters are present within the study area (**Figure 7**).

The reach of Mayfield Creek located approximately 0.1 mile northeast of the study area (Mayfield Creek Mile 16.1 to Mile 35.75) qualifies as a special status water. The KDOW has classified this stream reach as impaired (Non-Support) for warm water aquatic habitat for the parameter Sedimentation/Siltation, and the parameter or source is related to habitat. The special status designation requires that if project activities occur within Mayfield Creek, an application for Individual WQC to the KDOW would be required.

4. WATERS / WETLANDS SUMMARY AND DESCRIPTIONS

The delineation documented a total of 2.982 acres of water/wetland features within the study area, including one perennial stream, three intermittent streams, one ditch, three wetlands, and two ponds (**Figure 3**). Please note that the extent and jurisdictional status of waters and wetlands presented in this report are tentative; the USACE is the regulating authority of Section 404 of the Clean Water Act and must make the final decision with regards to the extent and jurisdictional status of any water/wetland features on this site.

All associated wetland data forms for this delineation can be found in **Appendix B**. Stream data forms are included in **Appendix C**. Photographs of the study area, including the onsite waters and wetlands, can be found in **Appendix D**.

4.1 STREAMS AND DRAINAGES

The assessment documented one perennial stream, three intermittent streams, and one ditch within the study area. These features are depicted on **Figure 3** and summarized in **Table 4-1** below. A description of the streams are provided in this section, although the stream determinations are assigned pending final USACE verifications.

Under the recent interpretations of CWA jurisdiction established by the *Sackett vs. Environmental Protection Agency* Supreme Court decision, it appears that the CWA (and therefore USACE jurisdiction) applies only to waters with a relatively permanent flow (Waters of the United States), referenced as Relatively Permanent Waters (RPWs). The generally accepted standard for RPWs is “tributaries that have flowing or standing water year-round or continuously during certain times of year” (typically three months), noting that “relatively permanent waters do not include tributaries with flowing or standing water for only a short duration in direct response to precipitation” (USACE and EPA 2008 and 2023).

Perennial streams are typically interpreted as RPWs (jurisdictional), while ephemeral streams are typically interpreted as non-RPWs (non-jurisdictional). Intermittent streams may be interpreted as either RPWs or non-RPWs.

Table 4-1 – Streams Within the Study Area

Name	Length (feet)	Average Width (feet)	Acreage	Classification*	Status**
Perennial Stream A	800	3	0.055	R3UBH	Non-Jurisdictional
Perennial Stream Total	800	---	0.055	---	---
Jurisdictional Perennial Stream Total	0	---	0	---	---
Intermittent Stream A	335	3	0.023	R4SB5	Jurisdictional
Intermittent Stream B	245	4	0.022	R4SB5	Jurisdictional
Intermittent Stream C	1,075	3	0.074	R4SB5	Jurisdictional
Intermittent Stream Total	1,655	---	0.119	---	---
Jurisdictional Intermittent Stream Total	1,655	---	0.119		
Ditch A	95	1	0.002	N/A	Non-Jurisdictional
Ditch Total	95	---	0.002	---	---
Jurisdictional Ditch Total	0	---	0.000	---	---

*USFWS habitat classifications from Cowardin, 1979. R3 = Riverine Upper Perennial; R4 = Intermittent; SB5 = Stream Bottom, Mud; UBH = Unconsolidated Bottom, Permanently Flooded

**Jurisdictional/Isolated determination is provisional and final designations would be assigned by the U.S. Army Corps of Engineers during their project review.

4.1.1 Perennial Stream

Perennial Stream A measures 800 linear feet (0.055 acres) within the study area. It starts at an outlet from an offsite pond to the west and then flows eastward and through a culvert before emptying into Pond B. Perennial Stream A ranges from two to five feet wide at the OHWM with bank heights of six inches to two feet. The stream substrate is dominated by silt with some trash and garbage present. The stream contained flowing water from less than one inch to three inches deep during the field visits. Perennial Stream A is not depicted on the USGS or NHD maps for the area. A RBP assessment on Perennial Stream A generated a score of 51, which rates as Poor quality in the Mississippi Valley Interior River (MVIR) bioregion. It appears that there is no continuous surface connection between Pond B and downstream waters, so Perennial Stream A appears to be non-jurisdictional.

4.1.2 Intermittent Streams

Intermittent Stream A measures 335 linear feet (0.023 acres) within the study area. It enters the site on the southern boundary and then flows northwest for several hundred feet before emptying into Intermittent Stream B, which is part of a drainage that eventually empties into Mayfield Creek. Intermittent Stream A ranges from two to four feet wide at the OHWM with bank heights around six inches. The stream substrate is comprised of silt. The stream contained flowing water from less than one inch to three inches deep during the field visit. It is mapped as an intermittent stream by the USGS National Hydrographic Dataset (NHD). A RBP assessment on Intermittent Stream A generated a score of 51, which rates as Poor quality in the MVIR bioregion. This stream is expected to be classified as a RPW and jurisdictional.

Intermittent Stream B measures 245 linear feet (0.022 acres) within the study area. It starts below Pond A and then flows north for several hundred feet before losing its channel and converting to Wetland A, which connects offsite to Mayfield Creek. Intermittent Stream B ranges from two to five feet wide at the OHWM with bank heights of six inches to one foot.

The stream substrate is dominated by silt. The stream contained pooled water from one inch to a foot during the field visit. It is mapped as an intermittent stream by the USGS NHD. A RBP assessment on Intermittent Stream B generated a score of 67, which rates as Poor quality in the MVIR bioregion. This stream is expected to be classified as a RPW and jurisdictional.

Intermittent Stream C measures 1,075 linear feet (0.074 acres) within the study area. It starts below Pond B and then flows northward and through several culverts along a farm road before losing its channel and converting to Wetland B. Intermittent Stream C ranges from two to five feet wide at the OHWM with bank heights of six inches to two feet. The stream substrate is dominated by silt. The stream contained pooled water from depths of an inch to one foot during the field visit. It is not depicted on the USGS NHD. A RBP assessment on Intermittent Stream C generated a score of 64, which rates as Poor quality in the MVIR bioregion. This stream is expected to be classified as a RPW and jurisdictional.

4.2 WETLANDS

The field assessment documented three wetlands within the study area which are depicted on **Figure 3** and presented in **Table 4-2** below. A description of the wetlands are provided in this section, although the wetland determination is assigned pending final USACE verification.

Under the recent interpretations of CWA jurisdiction established by the *Sackett vs. Environmental Protection Agency* Supreme Court decision, the CWA extends only to wetlands that are “as a practical matter indistinguishable from Waters of the United States.” This requires the party asserting jurisdiction to establish “first, that the adjacent [body of water constitutes] . . . ‘Water[s] of the United States’ (i.e., a relatively permanent body of water connected to traditional interstate navigable waters); and second, that the wetland has a continuous surface connection with that water, making it difficult to determine where the ‘water’ ends, and the ‘wetland’ begins.”

Table 4-2 – Wetlands Within the Study Area

Name	Acreage	Classification*	Status**
Wetland A	0.826	PEM	Jurisdictional
Wetland B	0.736	PEM	Jurisdictional
Wetland C	0.025	PEM	Non-Jurisdictional
Wetland Total	1.587	---	---
Jurisdictional Wetland Total**	1.562	---	---

*USFWS habitat classifications from Cowardin, 1979. PEM = Palustrine Emergent

**Jurisdictional/Isolated determination is provisional and final designations would be assigned by the U.S. Army Corps of Engineers during their project review.

Wetland A measures 0.826 acre and is located in a generally flat swale which runs south to north in the eastern section of the site. Wetland A begins where Intermittent Stream B loses a defined channel. It appears to continue offsite to the north and eventually connect to Mayfield Creek. Therefore, it appears that Wetland A would be interpreted as jurisdictional.

Wetland B measures 0.736 acre and, similar to Wetland A, is located in a generally flat swale in the north and central sections of the site. It begins where Intermittent Stream C loses a defined channel. It appears that Wetland B connects to an unnamed tributary of Mayfield Creek just outside the northwestern boundary of the site. The USGS and NHD maps indicate

that the offsite tributary runs to the north and empties into Mayfield Creek. Based on this connection, it appears that Wetland B would be interpreted as jurisdictional.

Wetland C measures 0.025 acre and is located in a depression along a farm road. It does not have a defined outlet. Therefore, it appears that Wetland C would be interpreted as non-jurisdictional.

4.3 OPEN WATERS

The assessment documented two open water ponds within the study area. The ponds are depicted on **Figure 3** and summarized in **Table 4-3** below. Descriptions of the ponds are provided below, although the pond determinations are assigned pending final USACE verifications.

Table 4-3 – Open Waters Within the Study Area

Name	Acreage	Classification*	Status**
Pond A	0.064	PUB	Jurisdictional
Pond B	1.155	PUB	Non-Jurisdictional
Open Water Total	1.219	---	---
Jurisdictional Open Water Total**	0.064	---	---

**Jurisdictional/Isolated determination is provisional and final designations would be assigned by the U.S. Army Corps of Engineers during their project review.

**USFWS habitat classifications from Cowardin, 1979. PUB = Palustrine Unconsolidated Bottom

Pond A measures 0.064 acres and is located in a depression that appears to have been created through erosion from an offsite stream. Intermittent Stream B flows out of Pond A on the north side of the pond, and maps indicate that this drainage eventually connects to Mayfield Creek. Because Pond A has a continuous surface water connection to downstream waters via Intermittent Stream B, it appears that Pond A would be interpreted as jurisdictional.

Pond B measures 1.155 acres and is located in a basin which appears to have been created through excavation and the construction of a dam along its eastern side, likely for irrigation purposes. Perennial Stream A flows into the southwestern corner of Pond B. The pond contains an irrigation valve along its eastern shoreline that appears to provide water as needed for farm operations. Although Pond B has a pipe outlet that conveys flow to Intermittent Stream C, the outlet does not provide a continuous surface water connection to downstream waters. Based on the lack of a continuous surface connection, it appears that Pond B would be interpreted as non-jurisdictional.

5. DISCUSSION

The water/wetland delineation documented a total of 2.982 acres of water/wetland features within the study area, including one perennial stream, three intermittent streams, one ditch, three wetlands, and two ponds. Of these delineated features, the intermittent streams, two wetlands, and one pond are expected to be classified as being under the jurisdiction of the USACE.

Tentative jurisdictional determinations have been presented based on the most current regulations as of the publication date of this report. Due to the rapidly changing regulatory environment, re-visiting the tentative jurisdictional determinations is recommended prior to submitting the delineation to regulatory agencies or other outside entities if significant time elapses after the delineation report is received.

The USACE is the regulating authority of Section 404 of the CWA. Therefore, the USACE must make the final decision with regards to the type, extent, and jurisdictional status of any water/wetland features on this site. Section 404 of the CWA requires that all federal, state, public, and private entities obtain a permit from the USACE before placing dredged or fill materials into Waters of the United States.

Impacts to jurisdictional streams, wetlands, and open waters in Kentucky are regulated by the USACE and KDOW. Project impacts totaling over 0.5 acres of jurisdictional waters/wetlands require an application for an Individual Permit from the USACE. Project impacts of up to 0.5 acres of jurisdictional waters/wetlands may be able to be permitted under various Nationwide Permits (NWP) if the proposed project meets certain conditions.

Project impacts totaling over 0.5 acres of jurisdictional waters/wetlands or over 300 linear feet of perennial and intermittent stream require an application for an Individual WQC from the KDOW. Projects that have impacts under these thresholds may be able to be permitted under a general WQC provided that the project meets certain conditions. Projects that involve activities within the FEMA 100-year floodplain or activities within the floodplain of certain streams require an application for a floodplain permit from KDOW.

The USACE and KDOW typically require compensatory mitigation for projects with water/wetland impacts that exceed thresholds of 0.1 acres of wetlands and/or ponds, or 0.03 acres of stream. Required mitigation amounts for wetlands are generally calculated based on the acreage of the impact multiplied by a value ranging from 1 to 4, with an additional 1.2 temporal loss multiplier applied if mitigation credits are obtained from an in-lieu fee program or permittee-responsible mitigation (PRM) project. The rationale for the temporal loss ratio is because it requires several years for habitats funded by the in-lieu fee program or PRM project to be constructed and the streams and wetlands are not generating ecological benefits during that time. This project lies within the Jackson Purchase service area, which has a cost of \$109,000 per wetland credit from the Kentucky Department of Fish and Wildlife Resources (KDFWR) in-lieu fee program. Mitigation credits may also be available from an established mitigation bank, and these would not incur the temporal loss premium.

Required mitigation amounts for streams are generally calculated based on type of stream (perennial or intermittent), the stream quality (good/excellent, fair/average, or poor), and the geographic location of the project. Stream type and quality determinations are tentative and the USACE would issue the final determinations on the type and quality of the streams within the study area. Required mitigation amounts for streams are generally calculated based on the linear feet of the impact multiplied by a value for stream type/quality ranging from 0.5 to 3.0, with an additional 1.2 temporal loss multiplier applied if mitigation credits are obtained from an in-lieu fee program or PRM project. This project lies within the Jackson Purchase service area, which has a cost of \$645 per stream credit from the KDFWR in-lieu fee program.

Mitigation credits may also be available from an established mitigation bank and these would not incur the temporal loss premium.

Section 7 of the Endangered Species Act (ESA) requires consultation with the United States Fish & Wildlife Service (USFWS) for projects that receive a federal permit, federal funding, or federal oversight, and Section 10 of the ESA applies to many activities that may affect listed species and their habitats, even without a federal nexus. Consultation with the USFWS should be conducted once final design plans are completed and it is determined which activities have the potential to affect protected species. BFW is preparing a separate Protected Species Habitat Assessment report for the site to address these issues.

Consultation through the USACE or other federal agency and potentially the State Historic Preservation Office (SHPO) is required for projects that receive a federal permit, federal funding, or federal oversight in order to ensure that the project will not impact properties listed on or eligible for the National Register of Historic Places. This consultation may require surveys for archaeological or cultural-historic resources within the project area. BFW will submit a summary of cultural resource issues for this site under a separate cover.

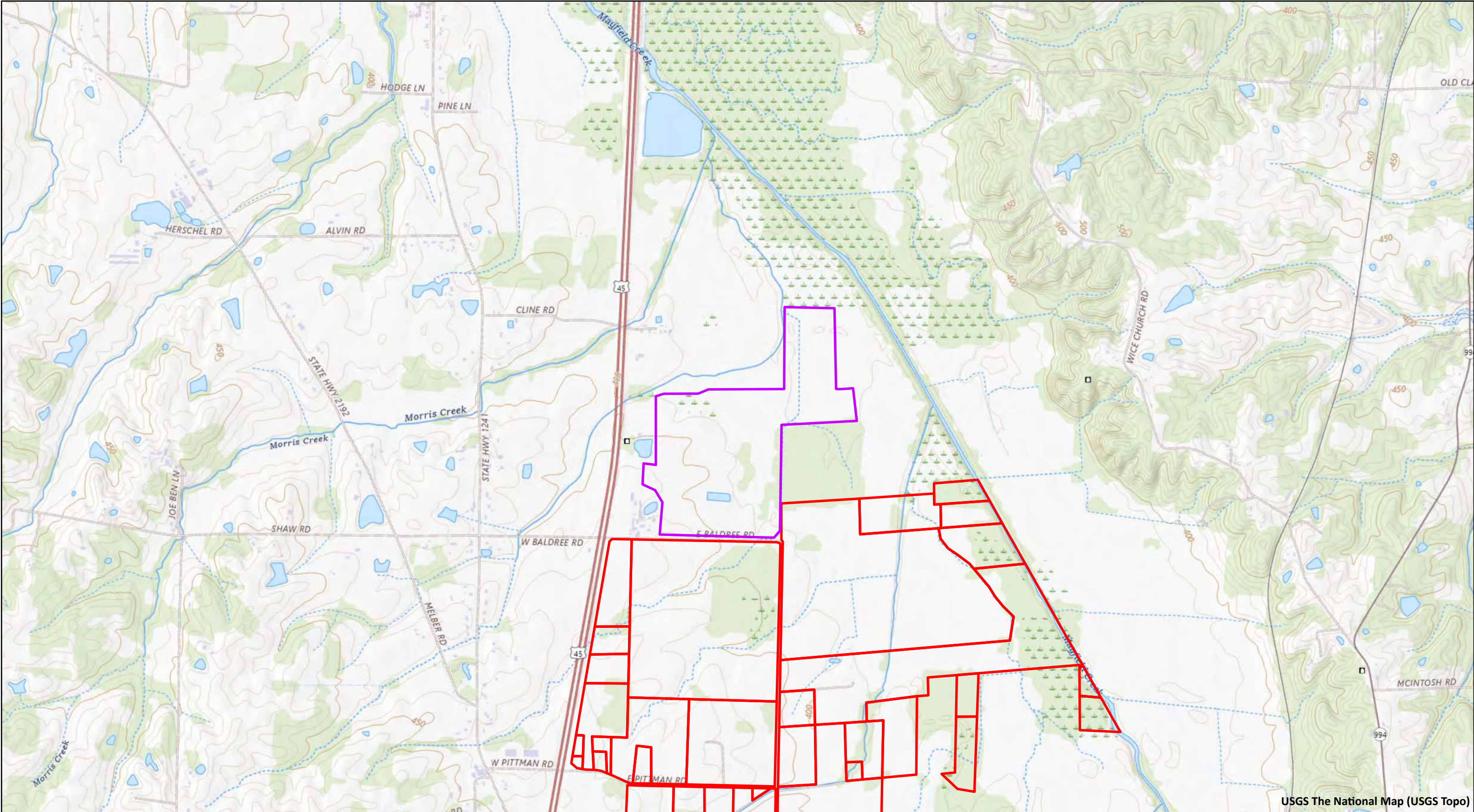
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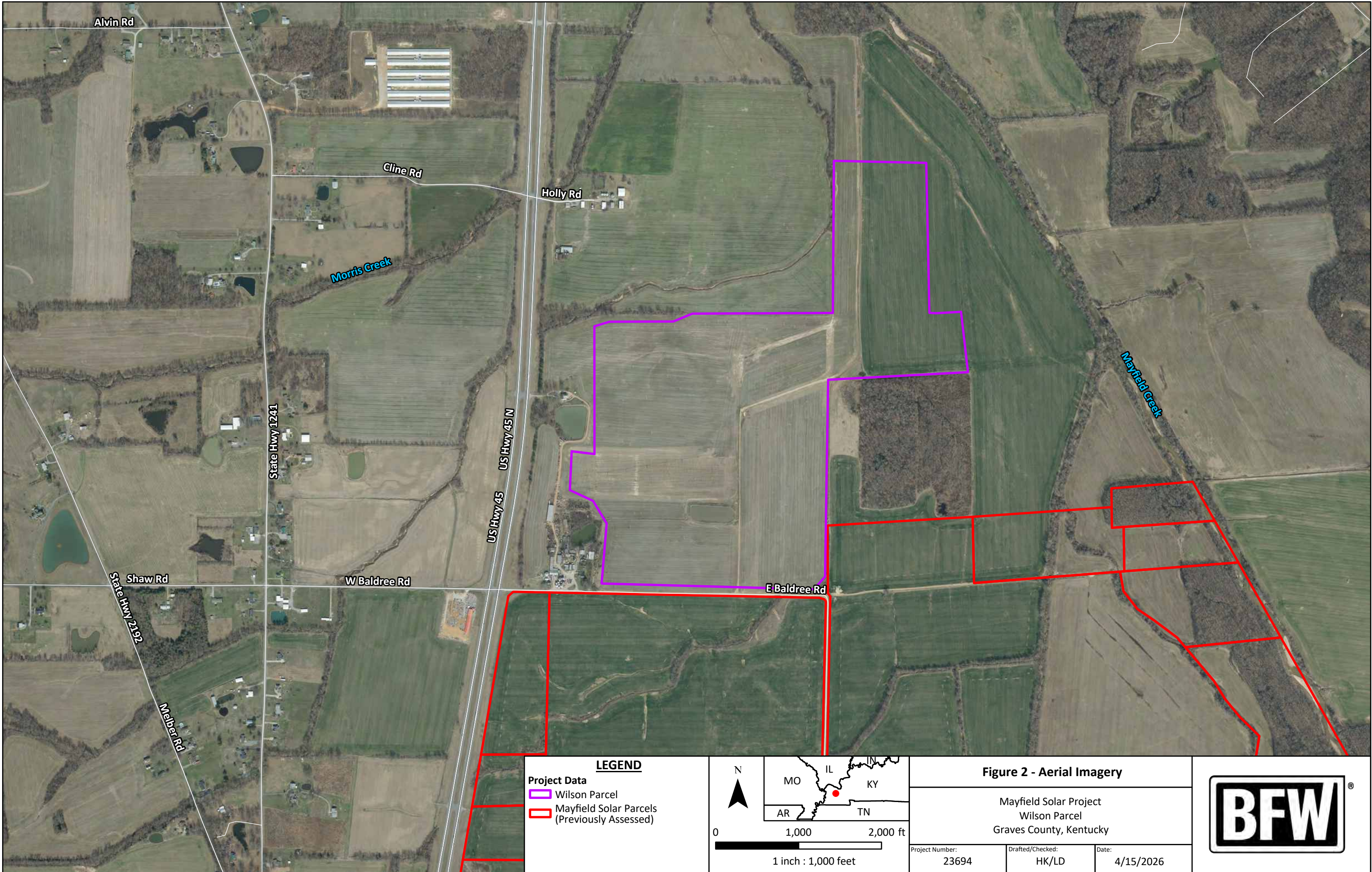
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Appendix A

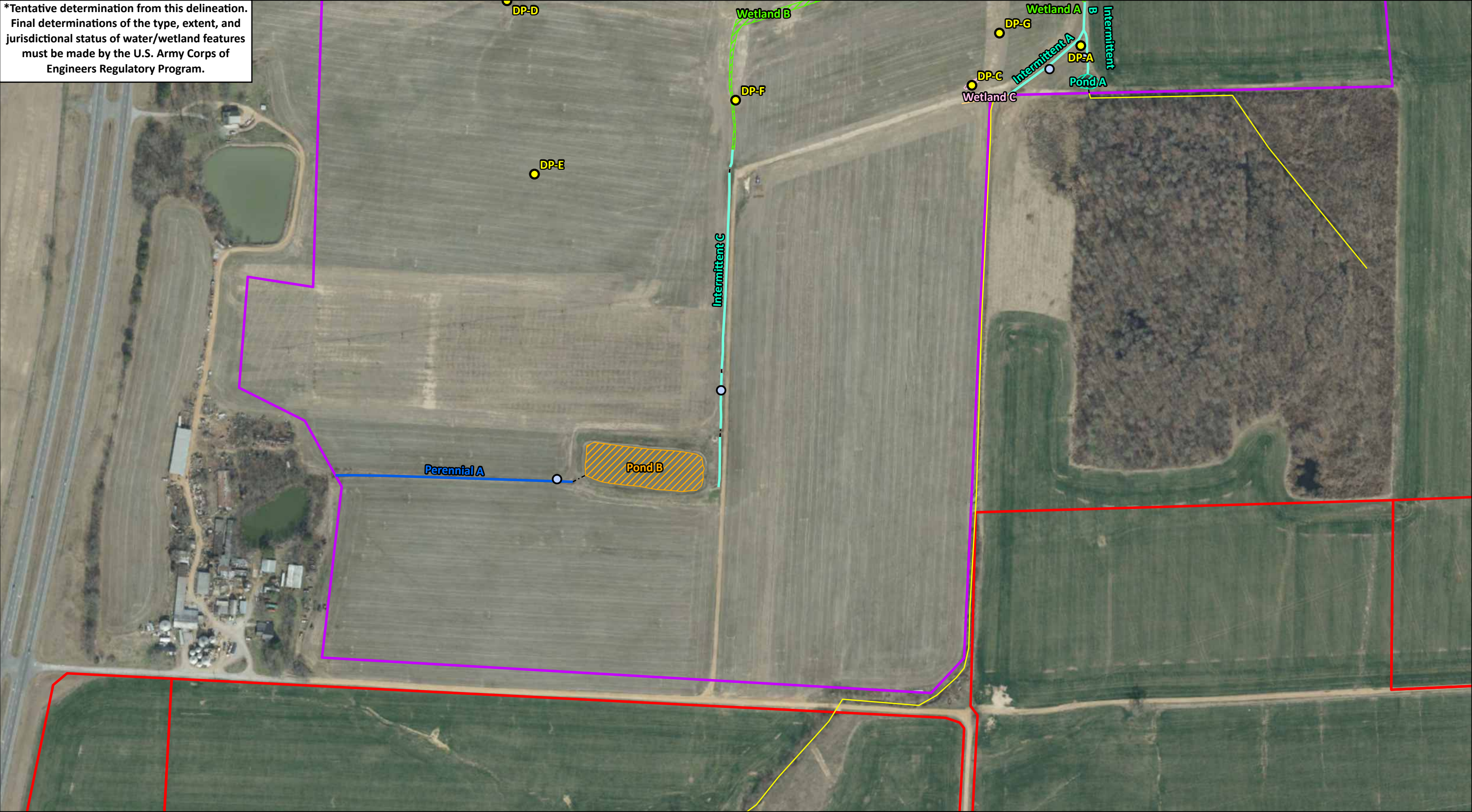
Figures



LEGEND Project Data - Wilson Parcel - Mayfield Solar Parcels (Previously Assessed)	N 0 2,000 4,000 ft 1 inch : 2,000 feet	Figure 1 - USGS Topographic Map				
		Mayfield Solar Project Wilson Parcel Graves County, Kentucky				
			Project Number: 23694	Drafted/Checked: HK/LD	Date: 4/15/2026	



*Tentative determination from this delineation. Final determinations of the type, extent, and jurisdictional status of water/wetland features must be made by the U.S. Army Corps of Engineers Regulatory Program.



Project Data
Wilson Parcel
Mayfield Solar Parcels (Previously Assessed)

Legend

Delineation Data

- Wetland Determination Points*
- Rapid Bioassessment Protocol (RBP) Point*
- Jurisdictional Pond*
- Non-Jurisdictional Pond*
- Jurisdictional Wetland*
- Non-Jurisdictional Wetland*

- Culvert
- Ditch
- Ephemeral Stream*
- Intermittent Stream*
- Perennial Stream*
- Assumed Offsite Connections

N

0 300 600 ft

1 inch : 300 feet

Figure 3 - Water/Wetland Map
Sheet 1 of 2

Mayfield Solar Project
Wilson Parcel
Graves County, Kentucky

Project Number: 23694

Drafted/Checked: HK/LD

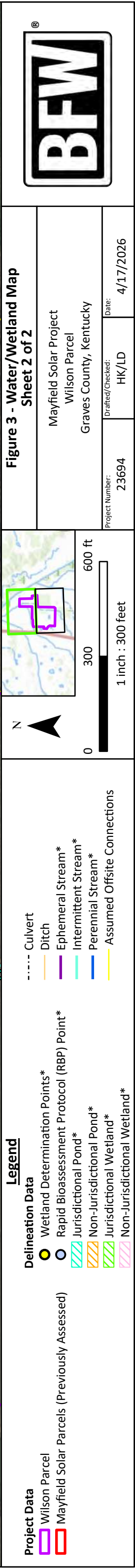
Date: 4/17/2026



This aerial map displays a wetland delineation project. A yellow line outlines a large area of interest. Within this area, several wetland features are identified and labeled:

- Wetland A:** A large area in the upper left, outlined in green with diagonal hatching.
- Wetland B:** A smaller area in the center, also outlined in green with diagonal hatching.
- Wetland C:** A small area in the lower right, outlined in green with diagonal hatching.
- Intermittent A:** A small area in the center, outlined in green with diagonal hatching.
- Intermittent B:** A small area in the center, outlined in green with diagonal hatching.
- Pond A:** A small pond in the center, outlined in green with diagonal hatching.

Various data points (DP-A through DP-H) are marked with yellow dots. DP-A, DP-B, DP-C, DP-D, DP-E, DP-F, DP-G, and DP-H are located within the delineated wetland areas. DP-I is located outside the delineated area in the lower right. A legend in the bottom left corner states: "Tentative determination from this delineation. Final determinations of the type, extent, and jurisdictional status of water/wetland features must be made by the U.S. Army Corps of Engineers Regulatory Program."



Web Soil Survey Data

CaA - Calloway Silt Loam, 0-2% Slopes

Cn - Collins Silt Loam, 0-2% Slopes, Occasionally Flooded

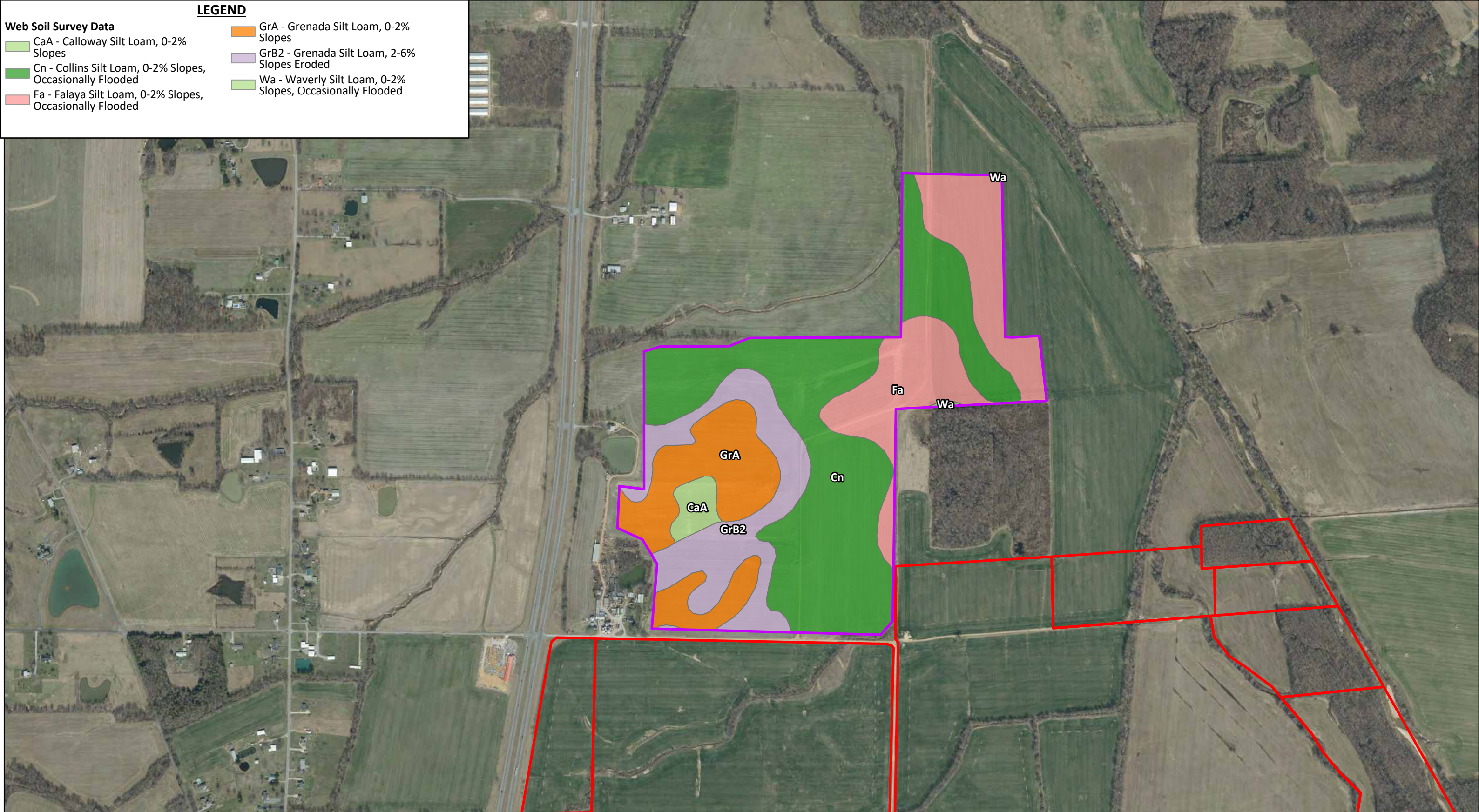
Fa - Falaya Silt Loam, 0-2% Slopes, Occasionally Flooded

GrA - Grenada Silt Loam, 0-2% Slopes

GrB2 - Grenada Silt Loam, 2-6% Slopes Eroded

Wa - Waverly Silt Loam, 0-2% Slopes, Occasionally Flooded

LEGEND



LEGEND
Project Data

Wilson Parcel

Mayfield Solar Parcels (Previously Assessed)

N

0 1,000 2,000 ft

1 inch : 1,000 feet

MO IL IN KY TN AR

Figure 4 - Soil Survey Map

Mayfield Solar Project

Wilson Parcel

Graves County, Kentucky

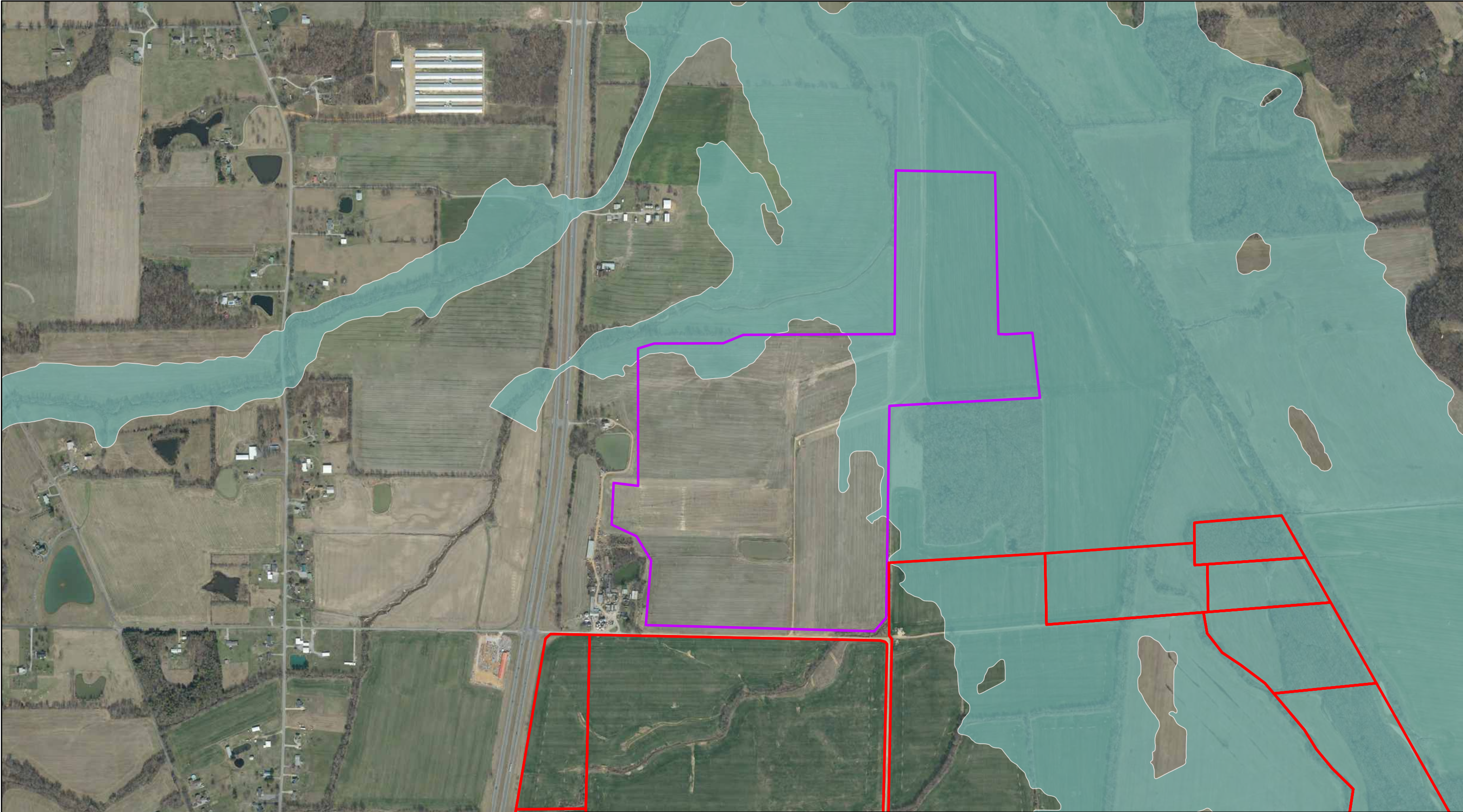
Project Number: 23694

Drafted/Checked: HK/LD

Date: 4/15/2026

BFW

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LEGEND

Project Data

- Wilson Parcel
- Mayfield Solar Parcels (Previously Assessed)

FEMA Flood Hazards Data

- Zone A (100-year flood)

N

0 1,000 2,000 ft

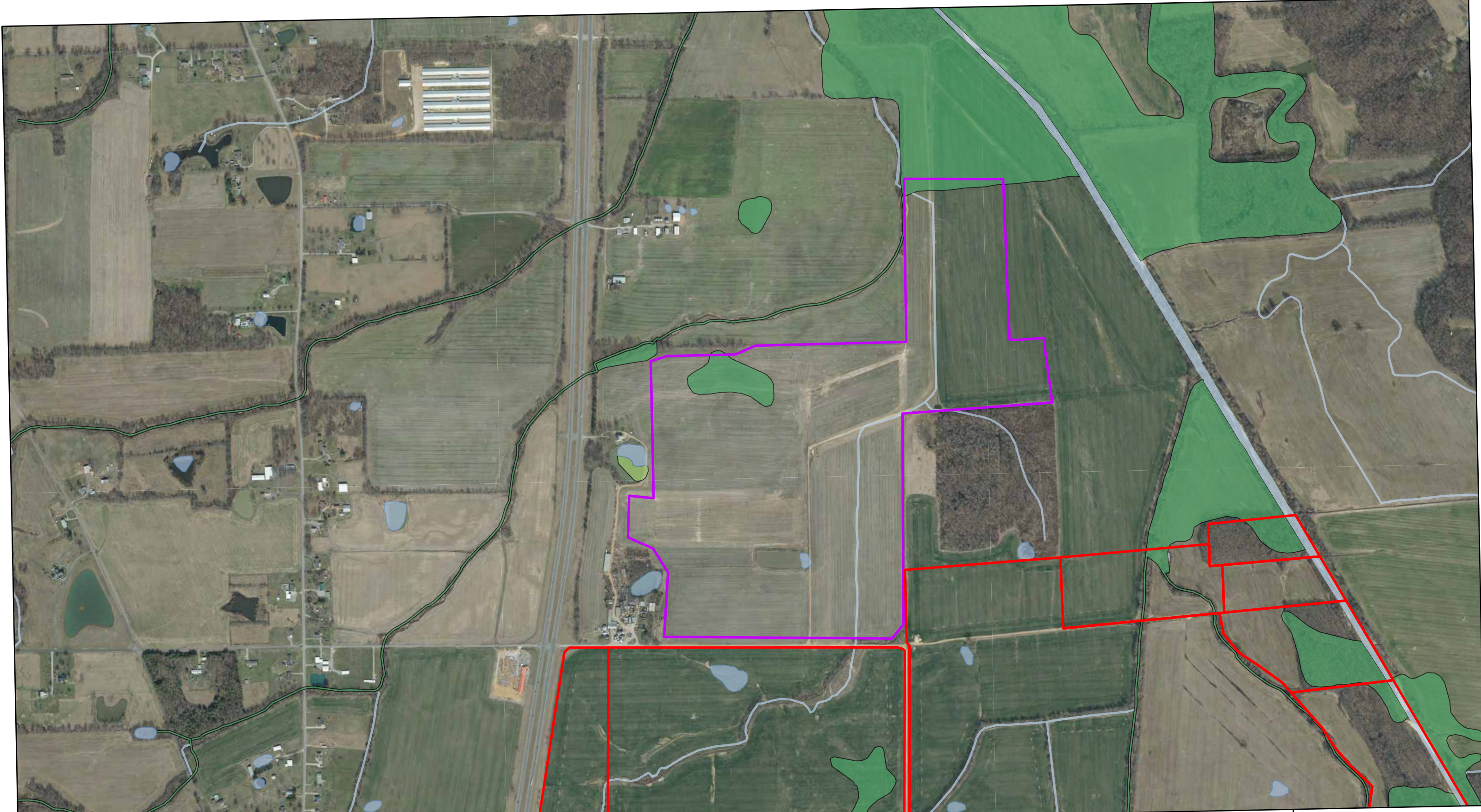
1 inch : 1,000 feet

Figure 5 - FEMA Flood Hazards Map

Mayfield Solar Project
Wilson Parcel
Graves County, Kentucky

Project Number: 23694	Drafted/Checked: HK/LD	Date: 4/15/2026
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Project Data

- Wilson Parcel
- Mayfield Solar Parcels (Previously Assessed)

LEGEND

National Wetland Inventory Data

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

N

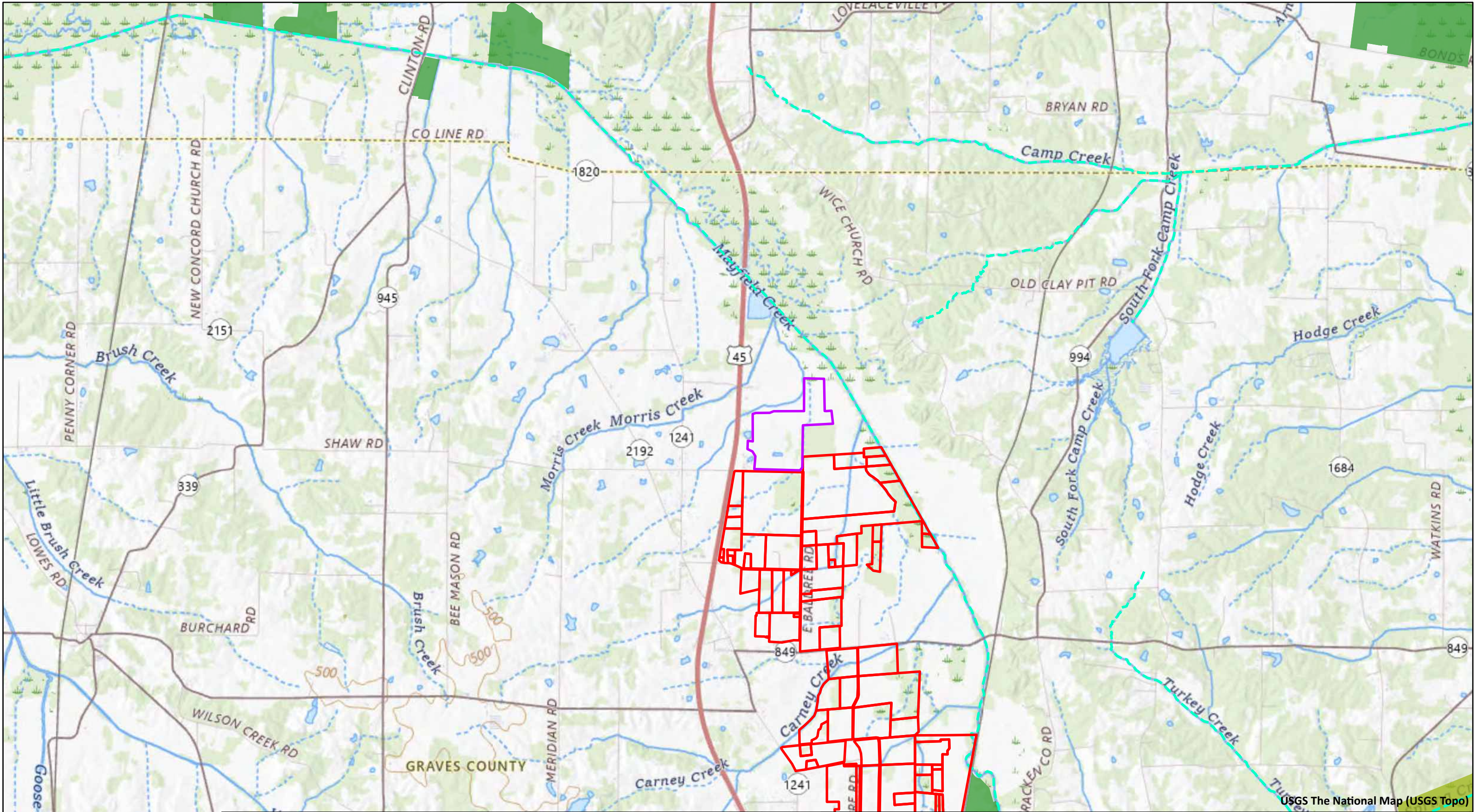
0 1,000 2,000 ft

1 inch : 1,000 feet

Figure 6 - National Wetland Inventory Map
Sheet 1 of 1

Mayfield Solar Project
Wilson Parcel
Graves County, Kentucky

Project Number: 23694	Drafted/Checked: HK/LD	Date: 4/15/2026
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USGS The National Map (USGS Topo)

Project Data Wilson Parcel Mayfield Solar Parcels (Previously Assessed)		LEGEND DOW Designated Areas Listed Impaired Stream Public-Owned or Managed Protected Lands Federal State		Figure 7 - Priority Waters Map Sheet 1 of 1	
				Mayfield Solar Project Wilson Parcel Graves County, Kentucky	
				Project Number: 23694	Drafted/Checked: HK/LD Date: 4/16/2026



Appendix B
Wetland Determination Data Forms

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: DP A

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>30</u></td> <td>x 1 = <u>30</u></td> </tr> <tr> <td>FACW species <u>55</u></td> <td>x 2 = <u>110</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>50</u></td> <td>x 5 = <u>250</u></td> </tr> <tr> <td>Column Totals: <u>145</u> (A)</td> <td><u>430</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.97</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>30</u>	x 1 = <u>30</u>	FACW species <u>55</u>	x 2 = <u>110</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>50</u>	x 5 = <u>250</u>	Column Totals: <u>145</u> (A)	<u>430</u> (B)	Prevalence Index = B/A = <u>2.97</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>30</u>	x 1 = <u>30</u>																			
FACW species <u>55</u>	x 2 = <u>110</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>50</u>	x 5 = <u>250</u>																			
Column Totals: <u>145</u> (A)	<u>430</u> (B)																			
Prevalence Index = B/A = <u>2.97</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Avena fatua</u>	<u>35</u>	<u>Yes</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. <u>Typha angustifolia</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Solidago gigantea</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
4. <u>Panicum rigidulum</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
5. <u>Glycine max</u>	<u>15</u>	<u>No</u>	<u>UPL</u>																	
6. <u>Echinochloa crus-galli</u>	<u>15</u>	<u>No</u>	<u>FACW</u>																	
7. <u>Cardamine hirsuta</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
8. <u>Sorghum halepense</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>73</u> 20% of total cover: <u>29</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

Definitions of Four Vegetation Strata:

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 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

SOIL

Sampling Point: DP A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 5/4	100					Loamy/Clayey	
6-12	10YR 5/3	80	10YR 6/2	15	D	M	Loamy/Clayey	
			10YR 6/1	5	D	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Thin Dark Surface (S9) (LRR S, T, U)	☐ 1 cm Muck (A9) (LRR O)
☐ Histic Epipedon (A2)	☐ Barrier Islands 1 cm Muck (S12)	☐ 2 cm Muck (A10) (LRR S)
☐ Black Histic (A3)	☐ (MLRA 153B, 153D)	☐ Coast Prairie Redox (A16) (MLRA 149A)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1) (LRR O)	☐ Reduced Vertic (F18)
☐ Stratified Layers (A5)	☐ Loamy Gleyed Matrix (F2)	☐ (outside MLRA 150A, 150B)
☐ Organic Bodies (A6) (LRR P, T, U)	☐ Depleted Matrix (F3)	☐ Piedmont Floodplain Soils (F19) (LRR P, T)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)	☐ Redox Dark Surface (F6)	☐ Anomalous Bright Floodplain Soils (F20)
☐ Muck Presence (A8) (LRR U)	☐ Depleted Dark Surface (F7)	☐ (MLRA 153B)
☐ 1 cm Muck (A9) (LRR P, T)	☐ Redox Depressions (F8)	☐ Red Parent Material (F21)
☐ Depleted Below Dark Surface (A11)	☐ Marl (F10) (LRR U)	☐ Very Shallow Dark Surface (F22)
☐ Thick Dark Surface (A12)	☐ Depleted Ochric (F11) (MLRA 151)	☐ (outside MLRA 138, 152A in FL, 154)
☐ Coast Prairie Redox (A16) (MLRA 150A)	☐ Iron-Manganese Masses (F12) (LRR O, P, T)	☐ Other (Explain in Remarks)
☐ Iron Monosulfide (A18)	☐ Umbric Surface (F13) (LRR P, T, U)	
☐ Sandy Mucky Mineral (S1) (LRR O, S)	☐ Delta Ochric (F17) (MLRA 151)	
☐ Sandy Gleyed Matrix (S4)	☐ Reduced Vertic (F18) (MLRA 150A, 150B)	
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 149A)	
☐ Stripped Matrix (S6)	☐ Anomalous Bright Floodplain Soils (F20)	
☐ Dark Surface (S7) (LRR P, S, T, U)	☐ (MLRA 149A, 153C, 153D)	
☐ Polyvalue Below Surface (S8)	☐ Very Shallow Dark Surface (F22)	
☐ (LRR S, T, U)	☐ (MLRA 138, 152A in FL, 154)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Mayfield Solar Project - Wilson Parcel City/County: Mayfield/Graves County Sampling Date: 1/13/26
Applicant/Owner: MYSO, LLC State: KY Sampling Point: DP B
Investigator(s): C.Slone, H.Kelly Section, Township, Range: _____
Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 36.9129105 Long: -88.664141 Datum: WGS84
Soil Map Unit Name: Fa - Falaya Silt Loam, 0-2% Slopes, Occasionally Flooded, very brief duration NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks:
Wetland B

Agricultural activities have significantly disturbed the plant community at this location.
The Antecedent Precipitation Tool rates this date as Wet Season, Drier Than Normal (7).

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>X</u> Surface Water (A1) _____ Aquatic Fauna (B13) _____ High Water Table (A2) _____ Marl Deposits (B15) (LRR U) _____ Saturation (A3) _____ Hydrogen Sulfide Odor (C1) _____ Water Marks (B1) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Sediment Deposits (B2) _____ Presence of Reduced Iron (C4) _____ Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Algal Mat or Crust (B4) _____ Thin Muck Surface (C7) _____ Iron Deposits (B5) _____ Other (Explain in Remarks) _____ Inundation Visible on Aerial Imagery (B7) _____ Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) <u>X</u> Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) <u>X</u> Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ FAC-Neutral Test (D5) _____ Sphagnum Moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>0.5</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: DP B

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>30</u></td> <td>x 5 = <u>150</u></td> </tr> <tr> <td>Column Totals: <u>30</u> (A)</td> <td><u>150</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>30</u>	x 5 = <u>150</u>	Column Totals: <u>30</u> (A)	<u>150</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>30</u>	x 5 = <u>150</u>																			
Column Totals: <u>30</u> (A)	<u>150</u> (B)																			
Prevalence Index = B/A = <u>5.00</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Glycine max</u>	<u>15</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Avena fatua</u>	<u>15</u>	<u>Yes</u>	<u>UPL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>15</u> 20% of total cover: <u>6</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.) Agricultural activities have significantly disturbed the plant community at this location.																				

Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0¹
X Problematic Hydrophytic Vegetation¹ (Explain)

Definitions of Four Vegetation Strata:

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 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

SOIL

Sampling Point: DP B**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 5/1	75	10YR 5/8	25	C	M	Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Histic Epipedon (A2)	☐ Barrier Islands 1 cm Muck (S12)
☐ Black Histic (A3)	☐ (MLRA 153B, 153D)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Stratified Layers (A5)	☐ Loamy Gleyed Matrix (F2)
☐ Organic Bodies (A6) (LRR P, T, U)	☒ Depleted Matrix (F3)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)	☐ Redox Dark Surface (F6)
☐ Muck Presence (A8) (LRR U)	☐ Depleted Dark Surface (F7)
☐ 1 cm Muck (A9) (LRR P, T)	☐ Redox Depressions (F8)
☐ Depleted Below Dark Surface (A11)	☐ Marl (F10) (LRR U)
☐ Thick Dark Surface (A12)	☐ Depleted Ochric (F11) (MLRA 151)
☐ Coast Prairie Redox (A16) (MLRA 150A)	☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Iron Monosulfide (A18)	☐ Umbric Surface (F13) (LRR P, T, U)
☐ Sandy Mucky Mineral (S1) (LRR O, S)	☐ Delta Ochric (F17) (MLRA 151)
☐ Sandy Gleyed Matrix (S4)	☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Stripped Matrix (S6)	☐ Anomalous Bright Floodplain Soils (F20)
☐ Dark Surface (S7) (LRR P, S, T, U)	☐ (MLRA 149A, 153C, 153D)
☐ Polyvalue Below Surface (S8)	☐ Very Shallow Dark Surface (F22)
☐ (LRR S, T, U)	☐ (MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Coast Prairie Redox (A16) (MLRA 149A)
☐ Reduced Vertic (F18)
☐ (outside MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (LRR P, T)
☐ Anomalous Bright Floodplain Soils (F20)
☐ (MLRA 153B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
☐ (outside MLRA 138, 152A in FL, 154)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Mayfield Solar Project - Wilson Parcel City/County: Mayfield/Graves County Sampling Date: 1/13/26
Applicant/Owner: MYSO, LLC State: KY Sampling Point: DP C
Investigator(s): C.Slone, H.Kelly Section, Township, Range: _____
Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 36.9116482 Long: -88.6644258 Datum: WGS84
Soil Map Unit Name: Fa - Falaya Silt Loam, 0-2% Slopes, Occasionally Flooded, very brief duration NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks:
Wetland C

Agricultural activities have significantly disturbed the plant community at this location.
The Antecedent Precipitation Tool rates this date as Wet Season, Drier Than Normal (7).

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> Aquatic Fauna (B13) <u> </u> High Water Table (A2) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Saturation (A3) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Water Marks (B1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Sediment Deposits (B2) <u> </u> Presence of Reduced Iron (C4) <u> </u> Drift Deposits (B3) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> X </u> Algal Mat or Crust (B4) <u> </u> Thin Muck Surface (C7) <u> </u> Iron Deposits (B5) <u> </u> Other (Explain in Remarks) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: DP C

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>35</u></td> <td>x 5 = <u>175</u></td> </tr> <tr> <td>Column Totals: <u>35</u> (A)</td> <td><u>175</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>35</u>	x 5 = <u>175</u>	Column Totals: <u>35</u> (A)	<u>175</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>35</u>	x 5 = <u>175</u>																			
Column Totals: <u>35</u> (A)	<u>175</u> (B)																			
Prevalence Index = B/A = <u>5.00</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Glycine max</u>	<u>15</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Avena fatua</u>	<u>20</u>	<u>Yes</u>	<u>UPL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ 35 = Total Cover																				
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.) Agricultural activities have significantly disturbed the plant community at this location.																				

Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0¹
X Problematic Hydrophytic Vegetation¹ (Explain)

Definitions of Four Vegetation Strata:

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 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

SOIL

Sampling Point: DP C**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 6/2	80	10YR 5/8	10	C	M	Loamy/Clayey	
			10YR 4/6	10	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Histic Epipedon (A2)	☐ Barrier Islands 1 cm Muck (S12)
☐ Black Histic (A3)	(MLRA 153B, 153D)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Stratified Layers (A5)	☐ Loamy Gleyed Matrix (F2)
☐ Organic Bodies (A6) (LRR P, T, U)	☒ Depleted Matrix (F3)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)	☐ Redox Dark Surface (F6)
☐ Muck Presence (A8) (LRR U)	☐ Depleted Dark Surface (F7)
☐ 1 cm Muck (A9) (LRR P, T)	☒ Redox Depressions (F8)
☐ Depleted Below Dark Surface (A11)	☐ Marl (F10) (LRR U)
☐ Thick Dark Surface (A12)	☐ Depleted Ochric (F11) (MLRA 151)
☐ Coast Prairie Redox (A16) (MLRA 150A)	☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Iron Monosulfide (A18)	☐ Umbric Surface (F13) (LRR P, T, U)
☐ Sandy Mucky Mineral (S1) (LRR O, S)	☐ Delta Ochric (F17) (MLRA 151)
☐ Sandy Gleyed Matrix (S4)	☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Stripped Matrix (S6)	☐ Anomalous Bright Floodplain Soils (F20)
☐ Dark Surface (S7) (LRR P, S, T, U)	(MLRA 149A, 153C, 153D)
☐ Polyvalue Below Surface (S8)	☐ Very Shallow Dark Surface (F22)
(LRR S, T, U)	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Coast Prairie Redox (A16) (MLRA 149A)
☐ Reduced Vertic (F18)
(outside MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (LRR P, T)
☐ Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Soil is compacted

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Mayfield Solar Project - Wilson Parcel</u>	City/County: <u>Mayfield/Graves County</u>	Sampling Date: <u>1/13/26</u>
Applicant/Owner: <u>MYSO, LLC</u>	State: <u>KY</u>	Sampling Point: <u>DP D</u>
Investigator(s): <u>C.Slone, H.Kelly</u> Section, Township, Range: _____		
Landform (hillside, terrace, etc.): <u>Terrace</u>	Local relief (concave, convex, none): <u>Concave</u>	Slope (%): <u>1</u>
Subregion (LRR or MLRA): <u>LRR P, MLRA 134</u>	Lat: <u>36.9122942</u>	Long: <u>-88.6697991</u> Datum: <u>PF01A</u>
Soil Map Unit Name: <u>Cn - Collins Silt Loam, 0-2% Slopes, Occasionally flooded, very brief duration</u> NWI classification: <u>PF01A</u>		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No <u>X</u> (If no, explain in Remarks.)		
Are Vegetation <u>X</u> , Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No <u>X</u>		
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)		

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Agricultural activities have significantly disturbed the plant community at this location. The Antecedent Precipitation Tool rates this date as Wet Season, Drier Than Normal (7).	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ 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 Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☒ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: DP D

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>80</u></td> <td>x 5 = <u>400</u></td> </tr> <tr> <td>Column Totals: <u>80</u> (A)</td> <td><u>400</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>80</u>	x 5 = <u>400</u>	Column Totals: <u>80</u> (A)	<u>400</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>80</u>	x 5 = <u>400</u>																			
Column Totals: <u>80</u> (A)	<u>400</u> (B)																			
Prevalence Index = B/A = <u>5.00</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30</u>)																				
1. <i>Avena fatua</i>	<u>70</u>	<u>Yes</u>	<u>UPL</u>																	
2. <i>Glycine max</i>	<u>10</u>	<u>No</u>	<u>UPL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>40</u> 20% of total cover: <u>16</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.) Agricultural activities have significantly disturbed the plant community at this location.																				

Hydrophytic Vegetation Present? Yes _____ No X

SOIL

Sampling Point: DP D**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 5/4	57	10YR 4/4	80	D	M	Loamy/Clayey	
			10YR 6/2	8	D	M		
			10YR 5/8	5	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Histic Epipedon (A2)	☐ Barrier Islands 1 cm Muck (S12)
☐ Black Histic (A3)	(MLRA 153B, 153D)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Stratified Layers (A5)	☐ Loamy Gleyed Matrix (F2)
☐ Organic Bodies (A6) (LRR P, T, U)	☐ Depleted Matrix (F3)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)	☐ Redox Dark Surface (F6)
☐ Muck Presence (A8) (LRR U)	☐ Depleted Dark Surface (F7)
☐ 1 cm Muck (A9) (LRR P, T)	☐ Redox Depressions (F8)
☐ Depleted Below Dark Surface (A11)	☐ Marl (F10) (LRR U)
☐ Thick Dark Surface (A12)	☐ Depleted Ochric (F11) (MLRA 151)
☐ Coast Prairie Redox (A16) (MLRA 150A)	☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Iron Monosulfide (A18)	☐ Umbric Surface (F13) (LRR P, T, U)
☐ Sandy Mucky Mineral (S1) (LRR O, S)	☐ Delta Ochric (F17) (MLRA 151)
☐ Sandy Gleyed Matrix (S4)	☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Stripped Matrix (S6)	☐ Anomalous Bright Floodplain Soils (F20)
☐ Dark Surface (S7) (LRR P, S, T, U)	(MLRA 149A, 153C, 153D)
☐ Polyvalue Below Surface (S8)	☐ Very Shallow Dark Surface (F22)
(LRR S, T, U)	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Coast Prairie Redox (A16) (MLRA 149A)
☐ Reduced Vertic (F18)
(outside MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (LRR P, T)
☐ Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Mayfield Solar Project - Wilson Parcel City/County: Mayfield/Graves County Sampling Date: 1/13/2026
Applicant/Owner: MYSO, LLC State: KY Sampling Point: DP E
Investigator(s): C.Slone, H.Kelly Section, Township, Range: _____
Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2
Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 36.9107026 Long: -88.6694208 Datum: WGS84
Soil Map Unit Name: GrA - Grenada Silt Loam, 0-2% Slopes NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Drier Than Normal (7).

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>_____</u> Surface Water (A1) <u>_____</u> Aquatic Fauna (B13) <u>_____</u> High Water Table (A2) <u>_____</u> Marl Deposits (B15) (LRR U) <u>_____</u> Saturation (A3) <u>_____</u> Hydrogen Sulfide Odor (C1) <u>_____</u> Water Marks (B1) <u>_____</u> Oxidized Rhizospheres on Living Roots (C3) <u>_____</u> Sediment Deposits (B2) <u>_____</u> Presence of Reduced Iron (C4) <u>_____</u> Drift Deposits (B3) <u>_____</u> Recent Iron Reduction in Tilled Soils (C6) <u>_____</u> Algal Mat or Crust (B4) <u>_____</u> Thin Muck Surface (C7) <u>_____</u> Iron Deposits (B5) <u>_____</u> Other (Explain in Remarks) <u>_____</u> Inundation Visible on Aerial Imagery (B7) <u>_____</u> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <u>_____</u> Surface Soil Cracks (B6) <u>_____</u> Sparsely Vegetated Concave Surface (B8) <u>_____</u> Drainage Patterns (B10) <u>_____</u> Moss Trim Lines (B16) <u>_____</u> Dry-Season Water Table (C2) <u>_____</u> Crayfish Burrows (C8) <u>_____</u> Saturation Visible on Aerial Imagery (C9) <u>_____</u> Geomorphic Position (D2) <u>_____</u> Shallow Aquitard (D3) <u>_____</u> FAC-Neutral Test (D5) <u>_____</u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: DP E

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>75</u></td> <td>x 5 = <u>375</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>375</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>75</u>	x 5 = <u>375</u>	Column Totals: <u>75</u> (A)	<u>375</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
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Prevalence Index = B/A = <u>5.00</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
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7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Glycine max</u>	<u>15</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Lamium amplexicaule</u>	<u>60</u>	<u>Yes</u>	<u>UPL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
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9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ 75 = Total Cover																				
50% of total cover: <u>38</u> 20% of total cover: <u>15</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
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50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0¹
 Problematic Hydrophytic Vegetation¹ (Explain)

Definitions of Four Vegetation Strata:

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 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: DP E**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 5/3	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Histic Epipedon (A2)	☐ Barrier Islands 1 cm Muck (S12)
☐ Black Histic (A3)	(MLRA 153B, 153D)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Stratified Layers (A5)	☐ Loamy Gleyed Matrix (F2)
☐ Organic Bodies (A6) (LRR P, T, U)	☐ Depleted Matrix (F3)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)	☐ Redox Dark Surface (F6)
☐ Muck Presence (A8) (LRR U)	☐ Depleted Dark Surface (F7)
☐ 1 cm Muck (A9) (LRR P, T)	☐ Redox Depressions (F8)
☐ Depleted Below Dark Surface (A11)	☐ Marl (F10) (LRR U)
☐ Thick Dark Surface (A12)	☐ Depleted Ochric (F11) (MLRA 151)
☐ Coast Prairie Redox (A16) (MLRA 150A)	☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Iron Monosulfide (A18)	☐ Umbric Surface (F13) (LRR P, T, U)
☐ Sandy Mucky Mineral (S1) (LRR O, S)	☐ Delta Ochric (F17) (MLRA 151)
☐ Sandy Gleyed Matrix (S4)	☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Stripped Matrix (S6)	☐ Anomalous Bright Floodplain Soils (F20)
☐ Dark Surface (S7) (LRR P, S, T, U)	(MLRA 149A, 153C, 153D)
☐ Polyvalue Below Surface (S8)	☐ Very Shallow Dark Surface (F22)
(LRR S, T, U)	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Coast Prairie Redox (A16) (MLRA 149A)
☐ Reduced Vertic (F18)
(outside MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (LRR P, T)
☐ Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Mayfield Solar Project - Wilson Parcel City/County: Mayfield/Graves County Sampling Date: 1/13/2026
Applicant/Owner: MYSO, LLC State: KY Sampling Point: DP F
Investigator(s): C.Slone, H.Kelly Section, Township, Range: _____
Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 36.9114426 Long: -88.6671356 Datum: WGS84
Soil Map Unit Name: Cn - Collins Silt Loam, 0-2% Slopes, Occasionally flooded, very brief duration NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	

Remarks:
Upland to Wetland B

The Antecedent Precipitation Tool rates this date as Wet Season, Drier Than Normal (7).

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>_____</u> Surface Water (A1) <u>_____</u> Aquatic Fauna (B13) <u>_____</u> High Water Table (A2) <u>_____</u> Marl Deposits (B15) (LRR U) <u>_____</u> Saturation (A3) <u>_____</u> Hydrogen Sulfide Odor (C1) <u>_____</u> Water Marks (B1) <u>_____</u> Oxidized Rhizospheres on Living Roots (C3) <u>_____</u> Sediment Deposits (B2) <u>_____</u> Presence of Reduced Iron (C4) <u>_____</u> Drift Deposits (B3) <u>_____</u> Recent Iron Reduction in Tilled Soils (C6) <u>_____</u> Algal Mat or Crust (B4) <u>_____</u> Thin Muck Surface (C7) <u>_____</u> Iron Deposits (B5) <u>_____</u> Other (Explain in Remarks) <u>_____</u> Inundation Visible on Aerial Imagery (B7) <u>_____</u> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <u>_____</u> Surface Soil Cracks (B6) <u>_____</u> Sparsely Vegetated Concave Surface (B8) <u>_____</u> Drainage Patterns (B10) <u>_____</u> Moss Trim Lines (B16) <u>_____</u> Dry-Season Water Table (C2) <u>_____</u> Crayfish Burrows (C8) <u>_____</u> Saturation Visible on Aerial Imagery (C9) <u>_____</u> Geomorphic Position (D2) <u>_____</u> Shallow Aquitard (D3) <u>_____</u> FAC-Neutral Test (D5) <u>_____</u> Sphagnum Moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

Sampling Point: DP F

Tree Stratum (Plot size: 30) <table><thead><tr><th></th><th>Absolute % Cover</th><th>Dominant Species?</th><th>Indicator Status</th></tr></thead><tbody><tr><td>1.</td><td></td><td></td><td></td></tr><tr><td>2.</td><td></td><td></td><td></td></tr><tr><td>3.</td><td></td><td></td><td></td></tr><tr><td>4.</td><td></td><td></td><td></td></tr><tr><td>5.</td><td></td><td></td><td></td></tr><tr><td>6.</td><td></td><td></td><td></td></tr><tr><td>7.</td><td></td><td></td><td></td></tr><tr><td>8.</td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td>=Total Cover</td><td></td></tr><tr><td colspan="2">50% of total cover:</td><td>20% of total cover:</td><td></td></tr></tbody></table> Sapling/Shrub Stratum (Plot size: 30) <table><tbody><tr><td>1.</td><td></td><td></td><td></td></tr><tr><td>2.</td><td></td><td></td><td></td></tr><tr><td>3.</td><td></td><td></td><td></td></tr><tr><td>4.</td><td></td><td></td><td></td></tr><tr><td>5.</td><td></td><td></td><td></td></tr><tr><td>6.</td><td></td><td></td><td></td></tr><tr><td>7.</td><td></td><td></td><td></td></tr><tr><td>8.</td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td>=Total Cover</td><td></td></tr><tr><td colspan="2">50% of total cover:</td><td>20% of total cover:</td><td></td></tr></tbody></table> Herb Stratum (Plot size: 30) <table><tbody><tr><td>1.</td><td>Glycine max</td><td>20</td><td>Yes</td><td>UPL</td></tr><tr><td>2.</td><td>Avena fatua</td><td>10</td><td>Yes</td><td>UPL</td></tr><tr><td>3.</td><td>Lamium amplexicaule</td><td>3</td><td>No</td><td>UPL</td></tr><tr><td>4.</td><td></td><td></td><td></td><td></td></tr><tr><td>5.</td><td></td><td></td><td></td><td></td></tr><tr><td>6.</td><td></td><td></td><td></td><td></td></tr><tr><td>7.</td><td></td><td></td><td></td><td></td></tr><tr><td>8.</td><td></td><td></td><td></td><td></td></tr><tr><td>9.</td><td></td><td></td><td></td><td></td></tr><tr><td>10.</td><td></td><td></td><td></td><td></td></tr><tr><td>11.</td><td></td><td></td><td></td><td></td></tr><tr><td>12.</td><td></td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td>33</td><td>=Total Cover</td><td></td></tr><tr><td colspan="2">50% of total cover:</td><td>17</td><td>20% of total cover:</td><td>7</td></tr></tbody></table> Woody Vine Stratum (Plot size: 30) <table><tbody><tr><td>1.</td><td></td><td></td><td></td><td></td></tr><tr><td>2.</td><td></td><td></td><td></td><td></td></tr><tr><td>3.</td><td></td><td></td><td></td><td></td></tr><tr><td>4.</td><td></td><td></td><td></td><td></td></tr><tr><td>5.</td><td></td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td>=Total Cover</td><td></td><td></td></tr><tr><td colspan="2">50% of total cover:</td><td>20% of total cover:</td><td></td><td></td></tr></tbody></table>						Absolute % Cover	Dominant Species?	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Lamium amplexicaule	3	No	UPL	4.					5.					6.					7.					8.					9.					10.					11.					12.							33	=Total Cover		50% of total cover:		17	20% of total cover:	7	1.					2.					3.					4.					5.							=Total Cover			50% of total cover:		20% of total cover:			Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) Total Number of Dominant Species Across All Strata: 2 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B) Prevalence Index worksheet: <table><thead><tr><th colspan="2">Total % Cover of:</th><th colspan="2">Multiply by:</th></tr></thead><tbody><tr><td>OBL species</td><td>0</td><td>x 1 =</td><td>0</td></tr><tr><td>FACW species</td><td>0</td><td>x 2 =</td><td>0</td></tr><tr><td>FAC species</td><td>0</td><td>x 3 =</td><td>0</td></tr><tr><td>FACU species</td><td>0</td><td>x 4 =</td><td>0</td></tr><tr><td>UPL species</td><td>33</td><td>x 5 =</td><td>165</td></tr><tr><td>Column Totals:</td><td>33 (A)</td><td></td><td>165 (B)</td></tr><tr><td colspan="2">Prevalence Index = B/A =</td><td colspan="2">5.00</td></tr></tbody></table> Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 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Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 6/2	87	10YR 5/8	6	C	M	Loamy/Clayey	
			10YR 5/4	7	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Histic Epipedon (A2)	☐ Barrier Islands 1 cm Muck (S12)
☐ Black Histic (A3)	(MLRA 153B, 153D)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Stratified Layers (A5)	☐ Loamy Gleyed Matrix (F2)
☐ Organic Bodies (A6) (LRR P, T, U)	☒ Depleted Matrix (F3)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)	☐ Redox Dark Surface (F6)
☐ Muck Presence (A8) (LRR U)	☐ Depleted Dark Surface (F7)
☐ 1 cm Muck (A9) (LRR P, T)	☐ Redox Depressions (F8)
☐ Depleted Below Dark Surface (A11)	☐ Marl (F10) (LRR U)
☐ Thick Dark Surface (A12)	☐ Depleted Ochric (F11) (MLRA 151)
☐ Coast Prairie Redox (A16) (MLRA 150A)	☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Iron Monosulfide (A18)	☐ Umbric Surface (F13) (LRR P, T, U)
☐ Sandy Mucky Mineral (S1) (LRR O, S)	☐ Delta Ochric (F17) (MLRA 151)
☐ Sandy Gleyed Matrix (S4)	☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Stripped Matrix (S6)	☐ Anomalous Bright Floodplain Soils (F20)
☐ Dark Surface (S7) (LRR P, S, T, U)	(MLRA 149A, 153C, 153D)
☐ Polyvalue Below Surface (S8)	☐ Very Shallow Dark Surface (F22)
(LRR S, T, U)	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Coast Prairie Redox (A16) (MLRA 149A)
☐ Reduced Vertic (F18)
(outside MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (LRR P, T)
☐ Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Mayfield Solar Project - Wilson Parcel City/County: Mayfield/Graves County Sampling Date: 1/13/2026
Applicant/Owner: MYSO, LLC State: KY Sampling Point: DP G
Investigator(s): C.Slone, H.Kelly Section, Township, Range: _____
Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 36.9121381 Long: -88.6641279 Datum: WGS84
Soil Map Unit Name: Fa - Falaya Silt Loam, 0-2% Slopes, Occasionally Flooded, very brief duration NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	

Remarks:

Agricultural activities have significantly disturbed the plant community at this location.
The Antecedent Precipitation Tool rates this date as Wet Season, Drier Than Normal (7).

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> Aquatic Fauna (B13) <u> </u> High Water Table (A2) <u> </u> Marl Deposits (B15) (LRR U) <u> </u> Saturation (A3) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Water Marks (B1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Sediment Deposits (B2) <u> </u> Presence of Reduced Iron (C4) <u> </u> Drift Deposits (B3) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Algal Mat or Crust (B4) <u> </u> Thin Muck Surface (C7) <u> </u> Iron Deposits (B5) <u> </u> Other (Explain in Remarks) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <u>X</u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> FAC-Neutral Test (D5) <u> </u> Sphagnum Moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: DP G

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>45</u></td> <td>x 5 = <u>225</u></td> </tr> <tr> <td>Column Totals: <u>45</u> (A)</td> <td><u>225</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>45</u>	x 5 = <u>225</u>	Column Totals: <u>45</u> (A)	<u>225</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>45</u>	x 5 = <u>225</u>																			
Column Totals: <u>45</u> (A)	<u>225</u> (B)																			
Prevalence Index = B/A = <u>5.00</u>																				
50% of total cover: _____		20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Avena fatua</u>	<u>25</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Glycine max</u>	<u>20</u>	<u>Yes</u>	<u>UPL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>23</u>		20% of total cover: <u>9</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below.) Agricultural activities have significantly disturbed the plant community at this location.				Hydrophytic Vegetation Present?																
				Yes <u> </u> No <u>X</u>																

SOIL

Sampling Point: DP G**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 5/3	90	10YR 3/6	5	C	M	Loamy/Clayey	
			10YR 5/8	5	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Histic Epipedon (A2)	☐ Barrier Islands 1 cm Muck (S12)
☐ Black Histic (A3)	(MLRA 153B, 153D)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Stratified Layers (A5)	☐ Loamy Gleyed Matrix (F2)
☐ Organic Bodies (A6) (LRR P, T, U)	☐ Depleted Matrix (F3)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)	☐ Redox Dark Surface (F6)
☐ Muck Presence (A8) (LRR U)	☐ Depleted Dark Surface (F7)
☐ 1 cm Muck (A9) (LRR P, T)	☐ Redox Depressions (F8)
☐ Depleted Below Dark Surface (A11)	☐ Marl (F10) (LRR U)
☐ Thick Dark Surface (A12)	☐ Depleted Ochric (F11) (MLRA 151)
☐ Coast Prairie Redox (A16) (MLRA 150A)	☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Iron Monosulfide (A18)	☐ Umbric Surface (F13) (LRR P, T, U)
☐ Sandy Mucky Mineral (S1) (LRR O, S)	☐ Delta Ochric (F17) (MLRA 151)
☐ Sandy Gleyed Matrix (S4)	☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Stripped Matrix (S6)	☐ Anomalous Bright Floodplain Soils (F20)
☐ Dark Surface (S7) (LRR P, S, T, U)	(MLRA 149A, 153C, 153D)
☐ Polyvalue Below Surface (S8)	☐ Very Shallow Dark Surface (F22)
(LRR S, T, U)	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Coast Prairie Redox (A16) (MLRA 149A)
☐ Reduced Vertic (F18)
(outside MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (LRR P, T)
☐ Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Mayfield Solar Project - Wilson Parcel</u>	City/County: <u>Mayfield/Graves County</u>	Sampling Date: <u>1/13/2026</u>
Applicant/Owner: <u>MYSO, LLC</u>	State: <u>KY</u>	Sampling Point: <u>DP H</u>
Investigator(s): <u>C.Slone, H.Kelly</u> Section, Township, Range: _____		
Landform (hillside, terrace, etc.): <u>Terrace</u>	Local relief (concave, convex, none): <u>None</u>	Slope (%): _____
Subregion (LRR or MLRA): <u>LRR P, MLRA 134</u>	Lat: <u>36.9149114</u>	Long: <u>-88.6615398</u> Datum: <u>WGS84</u>
Soil Map Unit Name: <u>Fa - Falaya Silt Loam, 0-2% Slopes, Occasionally Flooded, very brief duration</u> NWI classification: <u>N/A</u>		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No <u>X</u> (If no, explain in Remarks.)		
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No _____		
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)		

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: The Antecedent Precipitation Tool rates this date as Wet Season, Drier Than Normal (7).	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ 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 Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum Moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gage, monitoring well, aerial photos, previous inspections), if available:

 Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: DP H

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>68</u></td> <td>x 5 = <u>340</u></td> </tr> <tr> <td>Column Totals: <u>68</u> (A)</td> <td><u>340</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>68</u>	x 5 = <u>340</u>	Column Totals: <u>68</u> (A)	<u>340</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>68</u>	x 5 = <u>340</u>																			
Column Totals: <u>68</u> (A)	<u>340</u> (B)																			
Prevalence Index = B/A = <u>5.00</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30</u>)																				
1. <u>Zea mays</u>	<u>50</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Lamium amplexicaule</u>	<u>13</u>	<u>No</u>	<u>UPL</u>																	
3. <u>Avena fatua</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>34</u> 20% of total cover: <u>14</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below.)																				

Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0¹
 Problematic Hydrophytic Vegetation¹ (Explain)

Definitions of Four Vegetation Strata:

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 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: DP H**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 5/4	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Histic Epipedon (A2)	☐ Barrier Islands 1 cm Muck (S12)
☐ Black Histic (A3)	(MLRA 153B, 153D)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Stratified Layers (A5)	☐ Loamy Gleyed Matrix (F2)
☐ Organic Bodies (A6) (LRR P, T, U)	☐ Depleted Matrix (F3)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)	☐ Redox Dark Surface (F6)
☐ Muck Presence (A8) (LRR U)	☐ Depleted Dark Surface (F7)
☐ 1 cm Muck (A9) (LRR P, T)	☐ Redox Depressions (F8)
☐ Depleted Below Dark Surface (A11)	☐ Marl (F10) (LRR U)
☐ Thick Dark Surface (A12)	☐ Depleted Ochric (F11) (MLRA 151)
☐ Coast Prairie Redox (A16) (MLRA 150A)	☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Iron Monosulfide (A18)	☐ Umbric Surface (F13) (LRR P, T, U)
☐ Sandy Mucky Mineral (S1) (LRR O, S)	☐ Delta Ochric (F17) (MLRA 151)
☐ Sandy Gleyed Matrix (S4)	☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Stripped Matrix (S6)	☐ Anomalous Bright Floodplain Soils (F20)
☐ Dark Surface (S7) (LRR P, S, T, U)	(MLRA 149A, 153C, 153D)
☐ Polyvalue Below Surface (S8)	☐ Very Shallow Dark Surface (F22)
(LRR S, T, U)	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Coast Prairie Redox (A16) (MLRA 149A)
☐ Reduced Vertic (F18)
(outside MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (LRR P, T)
☐ Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Appendix C
Stream Assessment Forms

Low Gradient Bioassessment Stream Visit Sheet

Stream Name:		Intermittent Stream A		Location: Mayfield Solar Project - Wilson Parcel	
Lat: 36.911716		Long: -88.663831		Basin/Watershed: Mayfield Creek	
Date: 1/13/2026		County: Graves		USGS 7.5 Topo: Melber	
Type Sample: ☐ P-CHEM ☐ Macroinvertebrate ☐ Fish ☐ Bact.		Investigators: C. Slone			

WEATHER CONDITIONS:	Current	Past 24-Hours	Has there been rain in the last 7 days?
	☐ Heavy Rain ☐ Steady Rain ☐ Intermittent Showers ☒ Clear/Sunny/Overcast	☐ Heavy Rain ☐ Steady Rain ☐ Intermittent Showers ☒ Clear/Sunny/Overcast	☒ Yes ☐ No Appr. Air Temp: 40 °F _____ °C Inches of rainfall in the past 24 hrs: 0 in _____ _____ % Cloud Cover

P-Chem:	Temp (°F) _____	D.O. (mg/L) _____	% Saturation _____	pH (S.U.) _____	Conductivity (µS) _____	☐ Grab
----------------	-----------------	-------------------	--------------------	-----------------	-------------------------	-------------------------------

Instream Watershed Features (at time of Assessment):		Local Watershed Features:	
Stream Width EOW _____ ft Stream Width BF 2-4 _____ ft Stream Bottom Width _____ ft Avg. Bankfull Depth _____ ft Avg. H ₂ O Depth Riffle _____ in		Predominant Surrounding Land Use: ☐ Surface Mining ☐ Deep Mining ☐ Oil Wells ☐ Land Disposal ☐ Construction ☐ Commercial ☐ Industrial ☒ Row Crops ☐ Forest ☐ Pasture/Grazing ☐ Silviculture ☐ Urban Runoff/Storm Sewer	

Hydraulic Structures:		Stream Flow:		Stream Type:	
☐ Dams ☐ Island ☐ Other		☐ Bridge Abutments ☐ Waterfalls ☐ Culverts		☐ Perennial ☒ Intermittent ☐ Ephemeral ☐ Seep	

Riparian Vegetation:		Dom. Tree/Shrub Taxa:	
Dominate Type: ☐ Trees ☒ Grasses ☐ Shrubs ☐ Herbaceous Number of strata: _____		Canopy Cover: ☒ Fully Exposed (0-25%) ☐ Partially Exposed (25-50%) ☐ Partially Shaded (50-75%) ☐ Fully Shaded (75-100%)	

Substrate:		Rifle 25 _____ %		Run 65 _____ %		Pool 10 _____ %	
Silt/Clay (<0.06 mm / <0.002 in)		X		X		X	
Sand (0.06 - 2 mm / 0.002-0.08 in)							
Gravel (2 - 64 mm / 0.08 - 2.5 in)							
Cobble (64 - 256 mm / 2.5 - 10.1 in)							
Boulders (>256 mm / >10.1 in)							
Bedrock							

Habitat Parameter	Condition Category																											
	Optimal					Sub-optimal					Marginal					Poor												
1. Epifaunal Substrate / Available Cover	Greater than 50% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat & at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).					30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in form of new fall, but not yet prepared for colonization (may rate at high end of scale).					10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.												
Score	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

2. Pool Substrate / Characterization		Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.																	
Score	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐		
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
3. Pool Variability		Even mix of large shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large-deep, very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.																	
Score	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
4. Sediment Deposition		Little or no enlargement of islands or point bars and less than 20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.																	
Score	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
5. Channel Flow Status		Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.																	
Score	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
6. Channel Alteration		Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.																	
Score	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
7. Channel Sinuosity		The bends in the stream increase the stream length 3-4 times longer than if it was in a straight line. (Note - channel braiding is considered coastal plains and other normal low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream length 2-3 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1-2 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.																	
Score	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
8. Bank Stability (score each bank) Note: determine left or right side by facing downstream.		Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequently along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.																	
Score (LB)	8	Left Bank	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
			10	9	8	7	6	5	4	3	2	1	0									
Score (RB)	8	Right Bank	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
			10	9	8	7	6	5	4	3	2	1	0									

Vegetative Protection 9. (score each bank) Note: determine left or right side by facing downstream.		More than 90% of the streambank surfaces and immediate riparian zones covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
Score (LB)	4	Left Bank	☐ ☐ ☐ ☐ ☐	☐ ☒ ☐	☐ ☐ ☐
			10 9 8 7 6	5 4 3	2 1 0
Score (RB)	4	Right Bank	☐ ☐ ☐ ☐ ☐	☐ ☒ ☐	☐ ☐ ☐
			10 9 8 7 6	5 4 3	2 1 0
Riparian Vegetative Zone Width 10. (score each bank riparian zone) Note: determine left or right side by facing downstream.		Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.
Score (LB)	1	Left Bank	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐	☐ ☒ ☐
			10 9 8 7 6	5 4 3	2 1 0
Score (RB)	1	Right Bank	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐	☐ ☒ ☐
			10 9 8 7 6	5 4 3	2 1 0
TOTAL SCORE	51	Poor			

Low Gradient Bioassessment Stream Visit Sheet

Stream Name:		Intermittent Stream B		Location:		Mayfield Solar Project - Wilson Parcel	
				Basin/Watershed:		Mayfield Creek	
Lat:	36.91192	Long:	-88.66311	County:	Graves	USGS 7.5 Topo:	Melber
Date:	1/13/2026			Investigators:	C. Slone		
Type Sample:		☐ P-CHEM		☐ Macroinvertebrate		☐ Fish ☐ Bact.	
WEATHER CONDITIONS:		Current ☐ Heavy Rain ☐ Steady Rain ☐ Intermittent Showers ☒ Clear/Sunny/Overcast		Past 24-Hours ☐ Heavy Rain ☐ Steady Rain ☐ Intermittent Showers ☒ Clear/Sunny/Overcast		Has there been rain in the last 7 days? ☒ Yes ☐ No Appr. Air Temp: <u>40</u> °F <u> </u> °C Inches of rainfall in the past 24 hrs: <u> </u> in 0 % Cloud Cover	
P-Chem:		Temp (°F) <u> </u>		D.O. (mg/L) <u> </u>		% Saturation <u> </u>	
		pH (S.U.) <u> </u>		Conductivity (µS) <u> </u>		☐ Grab	
Instream Watershed Features (at time of Assessment):				Local Watershed Features:			
Stream Width EOW <u> </u> ft Stream Width BF <u>2-5</u> ft Stream Bottom Width <u> </u> ft Avg. Bankfull Depth <u> </u> ft Avg. H ₂ O Depth Riffle <u> </u> in				Predominant Surrounding Land Use: ☐ Surface Mining ☐ Construction ☒ Forest ☐ Deep Mining ☐ Commercial ☐ Pasture/Grazing ☐ Oil Wells ☐ Industrial ☐ Silviculture ☐ Land Disposal ☒ Row Crops ☐ Urban Runoff/Storm Sewer			
Hydraulic Structures:				Stream Flow:		Stream Type:	
☐ Dams ☐ Bridge Abutments ☐ Island ☐ Waterfalls ☐ Other ☐ Culverts				☐ Dry ☐ Pooled ☒ Low ☐ Normal ☐ High ☐ Very Rapid or Torrential		☐ Perennial ☒ Intermittent ☐ Ephemeral ☐ Seep	
Riparian Vegetation:				Dom. Tree/Shrub Taxa:		Canopy Cover:	
Dominate Type: ☐ Trees ☐ Shrubs ☒ Grasses ☐ Herbaceous Number of strata: <u> </u>				<u>Avena fatua</u> <u> </u> <u> </u>		☐ Fully Exposed (0-25%) ☐ Partially Exposed (25-50%) ☐ Partially Shaded (50-75%) ☒ Fully Shaded (75-100%)	
Channel Alterations:							
☐ Dredging ☒ Channelization (☒ Full ☐ Partial)							
Substrate:				☐ Est. ☒ P.C.			
				Riffle <u>15</u> %		Run <u>70</u> %	
				Pool <u>15</u> %			
Silt/Clay (<0.06 mm / <0.002 in)				X		X	
Sand (0.06 - 2 mm / 0.002-0.08 in)							
Gravel (2 - 64 mm / 0.08 - 2.5 in)							
Cobble (64 - 256 mm / 2.5 - 10.1 in)							
Boulders (>256 mm / >10.1 in)							
Bedrock							
Habitat Parameter		Condition Category					
		Optimal		Sub-optimal		Marginal	
		Poor					
1. Epifaunal Substrate / Available Cover		Greater than 50% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat & at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).		30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in form of new fall, but not yet prepared for colonization (may rate at high end of scale).		10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	
		Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.					
Score	2	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☒ ☐ ☐					
		20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0					

2. Pool Substrate / Characterization		Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.																	
Score	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐		
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
3. Pool Variability		Even mix of large shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large-deep, very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.																	
Score	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
4. Sediment Deposition		Little or no enlargement of islands or point bars and less than 20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.																	
Score	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
5. Channel Flow Status		Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.																	
Score	12	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
6. Channel Alteration		Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.																	
Score	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
7. Channel Sinuosity		The bends in the stream increase the stream length 3-4 times longer than if it was in a straight line. (Note - channel braiding is considered coastal plains and other normal low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream length 2-3 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1-2 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.																	
Score	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
8. Bank Stability (score each bank) Note: determine left or right side by facing downstream.		Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequently along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.																	
Score (LB)	6	Left Bank	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
			10	9	8	7	6	5	4	3	2	1	0									
Score (RB)	6	Right Bank	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
			10	9	8	7	6	5	4	3	2	1	0									

Vegetative Protection 9. (score each bank) Note: determine left or right side by facing downstream.		More than 90% of the streambank surfaces and immediate riparian zones covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
Score (LB)	7	Left Bank	☐ ☐ ☐ ☒ ☐	☐ ☐ ☐	☐ ☐ ☐
			10 9 8 7 6	5 4 3	2 1 0
Score (RB)	7	Right Bank	☐ ☐ ☐ ☒ ☐	☐ ☐ ☐	☐ ☐ ☐
			10 9 8 7 6	5 4 3	2 1 0
Riparian Vegetative Zone Width 10. (score each bank riparian zone) Note: determine left or right side by facing downstream.		Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.
Score (LB)	1	Left Bank	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐	☐ ☒ ☐
			10 9 8 7 6	5 4 3	2 1 0
Score (RB)	1	Right Bank	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐	☐ ☒ ☐
			10 9 8 7 6	5 4 3	2 1 0
TOTAL SCORE	67	Poor			

Low Gradient Bioassessment Stream Visit Sheet

Stream Name:		Intermittent Stream C		Location:		Mayfield Solar Project - Wilson Parcel	
				Basin/Watershed:		Mayfield Creek	
Lat:	36.90875	Long:	-88.66717	County:	Graves	USGS 7.5 Topo:	Melber
Date:	1/13/2026			Investigators:	C. Slone		
Type Sample:		☐ P-CHEM		☐ Macroinvertebrate		☐ Fish ☐ Bact.	
WEATHER CONDITIONS:		Current ☐ Heavy Rain ☐ Steady Rain ☐ Intermittent Showers ☒ Clear/Sunny/Overcast		Past 24-Hours ☐ Heavy Rain ☐ Steady Rain ☐ Intermittent Showers ☒ Clear/Sunny/Overcast		Has there been rain in the last 7 days? ☒ Yes ☐ No Appr. Air Temp: <u>40</u> °F <u> </u> °C Inches of rainfall in the past 24 hrs: <u>0</u> in 0 % Cloud Cover	
P-Chem:		Temp (°F) <u> </u>		D.O. (mg/L) <u> </u>		% Saturation <u> </u>	
		pH (S.U.) <u> </u>		Conductivity (µS) <u> </u>		☐ Grab	
Instream Watershed Features (at time of Assessment):				Local Watershed Features:			
Stream Width EOW <u> </u> ft Stream Width BF <u>2-5</u> ft Stream Bottom Width <u> </u> ft Avg. Bankfull Depth <u> </u> ft Avg. H ₂ O Depth Riffle <u> </u> in				Predominant Surrounding Land Use: ☐ Surface Mining ☐ Construction ☐ Forest ☐ Deep Mining ☐ Commercial ☐ Pasture/Grazing ☐ Oil Wells ☐ Industrial ☐ Silviculture ☐ Land Disposal ☒ Row Crops ☒ Urban Runoff/Storm Sewer			
Hydraulic Structures:				Stream Flow:		Stream Type:	
☐ Dams ☐ Bridge Abutments ☐ Island ☐ Waterfalls ☐ Other ☒ Culverts				☐ Dry ☐ Pooled ☒ Low ☐ Normal ☐ High ☐ Very Rapid or Torrential		☐ Perennial ☒ Intermittent ☐ Ephemeral ☐ Seep	
Riparian Vegetation:		Dom. Tree/Shrub Taxa:		Canopy Cover:		Channel Alterations:	
Dominate Type: ☐ Trees ☐ Shrubs ☒ Grasses ☒ Herbaceous Number of strata: <u> </u>		<u>Avena fatua</u> <u> </u> <u> </u>		☒ Fully Exposed (0-25%) ☐ Partially Exposed (25-50%) ☐ Partially Shaded (50-75%) ☐ Fully Shaded (75-100%)		☐ Dredging ☒ Channelization (☒ Full ☐ Partial)	
Substrate:		☐ Est. ☒ P.C.		Riffle <u>15</u> %		Run <u>75</u> %	
				Pool <u>10</u> %			
Silt/Clay(<0.06 mm / <0.002 in)				X		X	
Sand (0.06 - 2 mm / 0.002-0.08 in)							
Gravel (2 - 64 mm / 0.08 - 2.5 in)							
Cobble (64 - 256 mm / 2.5 - 10.1 in)							
Boulders (>256 mm / >10.1 in)							
Bedrock							
Habitat Parameter		Condition Category					
		Optimal		Sub-optimal		Marginal	
		Poor					
1. Epifaunal Substrate / Available Cover		Greater than 50% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat & at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).		30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in form of new fall, but not yet prepared for colonization (may rate at high end of scale).		10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	
		Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.					
Score	5	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☒ ☐ ☐ ☐ ☐ ☐					
		20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0					

2. Pool Substrate / Characterization		Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.																	
Score	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐		
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
3. Pool Variability		Even mix of large shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large-deep, very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.																	
Score	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
4. Sediment Deposition		Little or no enlargement of islands or point bars and less than 20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.																	
Score	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
5. Channel Flow Status		Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.																	
Score	12	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
6. Channel Alteration		Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.																	
Score	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
7. Channel Sinuosity		The bends in the stream increase the stream length 3-4 times longer than if it was in a straight line. (Note - channel braiding is considered coastal plains and other normal low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream length 2-3 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1-2 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.																	
Score	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
8. Bank Stability (score each bank) Note: determine left or right side by facing downstream.		Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequently along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.																	
Score (LB)	7	Left Bank	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
			10	9	8	7	6	5	4	3	2	1	0									
Score (RB)	8	Right Bank	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
			10	9	8	7	6	5	4	3	2	1	0									

Vegetative Protection 9. (score each bank) Note: determine left or right side by facing downstream.		More than 90% of the streambank surfaces and immediate riparian zones covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
Score (LB)	5	Left Bank	☐ ☐ ☐ ☐ ☐	☒ ☐ ☐	☐ ☐ ☐
			10 9 8 7 6	5 4 3	2 1 0
Score (RB)	6	Right Bank	☐ ☐ ☐ ☐ ☒	☐ ☐ ☐	☐ ☐ ☐
			10 9 8 7 6	5 4 3	2 1 0
Riparian Vegetative Zone Width 10. (score each bank riparian zone) Note: determine left or right side by facing downstream.		Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.
Score (LB)	1	Left Bank	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐	☐ ☒ ☐
			10 9 8 7 6	5 4 3	2 1 0
Score (RB)	1	Right Bank	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐	☐ ☒ ☐
			10 9 8 7 6	5 4 3	2 1 0
TOTAL SCORE	64	Poor			

Low Gradient Bioassessment Stream Visit Sheet

Stream Name:		Perennial Stream A		Location:		Mayfield Solar Project - Wilson Parcel	
				Basin/Watershed:		Mayfield Creek	
Lat:	36.90792	Long:	-88.66914	County:	Graves	USGS 7.5 Topo:	Melber
Date:	1/13/2026			Investigators:	C. Slone		
Type Sample:		☐ P-CHEM		☐ Macroinvertebrate		☐ Fish ☐ Bact.	
WEATHER CONDITIONS:		Current ☐ Heavy Rain ☐ Steady Rain ☐ Intermittent Showers ☒ Clear/Sunny/Overcast		Past 24-Hours ☐ Heavy Rain ☐ Steady Rain ☐ Intermittent Showers ☒ Clear/Sunny/Overcast		Has there been rain in the last 7 days? ☒ Yes ☐ No Appr. Air Temp: <u>40</u> °F <u> </u> °C Inches of rainfall in the past 24 hrs: <u>0</u> in 0 % Cloud Cover	
P-Chem:		Temp (°F) <u> </u>	D.O. (mg/L) <u> </u>	% Saturation <u> </u>	pH (S.U.) <u> </u>	Conductivity (µS) <u> </u>	☐ Grab
Instream Watershed Features (at time of Assessment):				Local Watershed Features:			
Stream Width EOW <u> </u> ft Stream Width BF <u>2-5</u> ft Stream Bottom Width <u> </u> ft Avg. Bankfull Depth <u> </u> ft Avg. H ₂ O Depth Riffle <u> </u> in				Predominant Surrounding Land Use: ☐ Surface Mining ☐ Construction ☐ Forest ☐ Deep Mining ☐ Commercial ☐ Pasture/Grazing ☐ Oil Wells ☐ Industrial ☐ Silviculture ☐ Land Disposal ☒ Row Crops ☒ Urban Runoff/Storm Sewer			
Hydraulic Structures:		Stream Flow:			Stream Type:		
☐ Dams ☐ Bridge Abutments ☐ Island ☐ Waterfalls ☐ Other ☒ Culverts		☐ Dry ☐ Pooled ☒ Low ☐ Normal ☐ High ☐ Very Rapid or Torrential			☒ Perennial ☐ Intermittent ☐ Ephemeral ☐ Seep		
Riparian Vegetation:		Dom. Tree/Shrub Taxa:		Canopy Cover:		Channel Alterations:	
Dominate Type: ☐ Trees ☐ Shrubs ☒ Grasses ☐ Herbaceous Number of strata: <u> </u>		<u>Lamium purpureum</u> <u>Setaria faberi</u>		☒ Fully Exposed (0-25%) ☐ Partially Exposed (25-50%) ☐ Partially Shaded (50-75%) ☐ Fully Shaded (75-100%)		☐ Dredging ☒ Channelization (☒ Full ☐ Partial)	
Substrate:		☐ Est. ☒ P.C.		Riffle <u>15</u> %		Run <u>80</u> %	
				Pool <u>5</u> %			
Silt/Clay (<0.06 mm / <0.002 in)				X		X	
Sand (0.06 - 2 mm / 0.002-0.08 in)							
Gravel (2 - 64 mm / 0.08 - 2.5 in)							
Cobble (64 - 256 mm / 2.5 - 10.1 in)							
Boulders (>256 mm / >10.1 in)							
Bedrock							
Habitat Parameter		Condition Category					
		Optimal		Sub-optimal		Marginal	
		Poor					
1. Epifaunal Substrate / Available Cover		Greater than 50% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat & at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).		30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in form of new fall, but not yet prepared for colonization (may rate at high end of scale).		10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	
		Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.					
Score	1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☒ ☐					
		20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0					

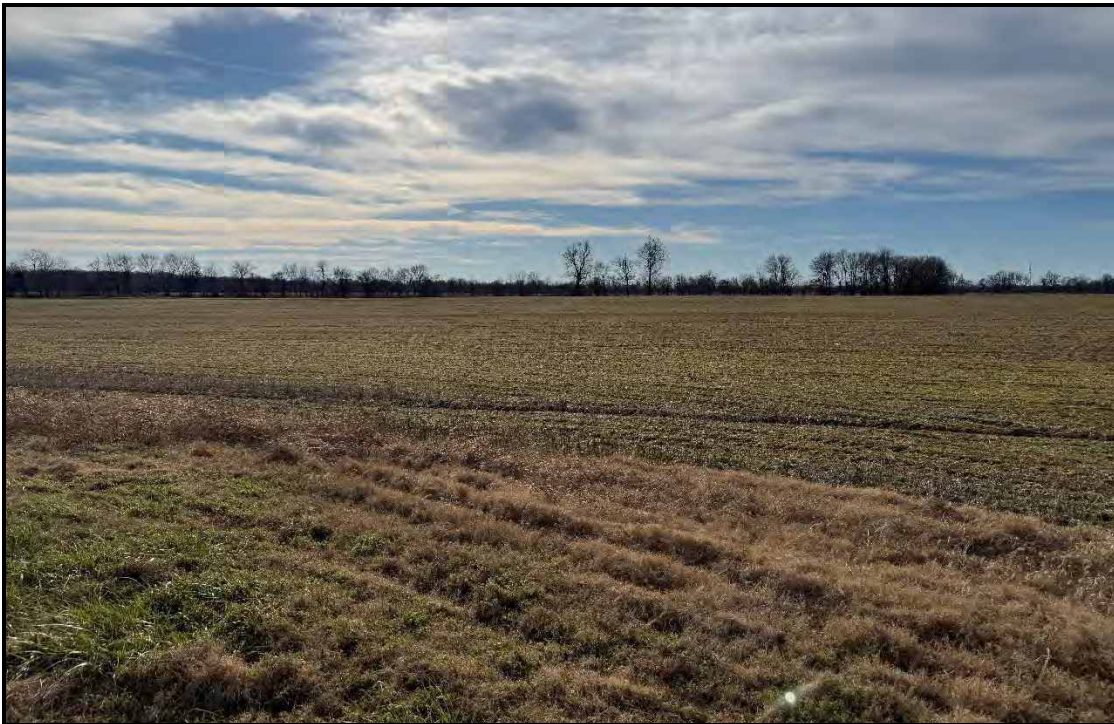
2. Pool Substrate / Characterization		Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
Score	3	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☒ ☐ ☐ ☐
		20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
3. Pool Variability		Even mix of large shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large-deep, very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.
Score	3	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☒ ☐ ☐ ☐
		20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition		Little or no enlargement of islands or point bars and less than 20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
Score	2	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☒ ☐ ☐
		20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5. Channel Flow Status		Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
Score	6	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☒	☐ ☐ ☐ ☐ ☐ ☐
		20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
6. Channel Alteration		Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
Score	4	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐ ☐
		20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7. Channel Sinuosity		The bends in the stream increase the stream length 3-4 times longer than if it was in a straight line. (Note - channel braiding is considered coastal plains and other normal low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream length 2-3 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1-2 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.
Score	3	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☒ ☐ ☐ ☐
		20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8. Bank Stability (score each bank) Note: determine left or right side by facing downstream.		Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequently along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
Score (LB)	7	Left Bank ☐ ☐	☐ ☒ ☐	☐ ☐ ☐	☐ ☐ ☐
		10 9	8 7 6	5 4 3	2 1 0
Score (RB)	8	Right Bank ☐ ☐	☒ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
		10 9	8 7 6	5 4 3	2 1 0

Vegetative Protection 9. (score each bank) Note: determine left or right side by facing downstream.		More than 90% of the streambank surfaces and immediate riparian zones covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
Score (LB)	6	Left Bank	☐ ☐ ☐ ☐ ☒	☐ ☐ ☐	☐ ☐ ☐
			10 9 8 7 6	5 4 3	2 1 0
Score (RB)	6	Right Bank	☐ ☐ ☐ ☐ ☒	☐ ☐ ☐	☐ ☐ ☐
			10 9 8 7 6	5 4 3	2 1 0
Riparian Vegetative Zone Width 10. (score each bank riparian zone) Note: determine left or right side by facing downstream.		Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.
Score (LB)	1	Left Bank	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐	☐ ☒ ☐
			10 9 8 7 6	5 4 3	2 1 0
Score (RB)	1	Right Bank	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐	☐ ☒ ☐
			10 9 8 7 6	5 4 3	2 1 0
TOTAL SCORE	51	Poor			

Appendix D
Site Photographs



Photograph 1: General view of agricultural fields on the site. January 13, 2026.



Photograph 2: View of some mowed field habitat along the southern edge of Pond B, facing south toward agricultural fields and East Baldree Road. January 13, 2026. January 13, 2026.



Photograph 3: View of Intermittent Stream A, facing northeast (downstream). January 13, 2026.



Photograph 4: View from the southern side of Pond A, facing north. Intermittent Stream B flows out of the pond in the background. January 13, 2026.



Photograph 5: View of Intermittent Stream C, facing north from north of Pond B. January 13, 2026.



Photograph 6: View of Perennial Stream A, facing west from west of Pond B. January 13, 2026.



Photograph 7: View of a ditch feature in the central part of the site, facing east from south of Wetland C toward an offsite woodlot. January 13, 2026.



Photograph 8: View of Wetland A, facing north from near the southern end of the wetland. January 13, 2026.



Photograph 9 View of Wetland B, facing north from the southwestern end of the wetland. January 13, 2026.



Photograph 10: View of the northern section of Wetland B. January 13, 2026.



Photograph 11: View of Wetland C, facing northeast from the southwest portion of the wetland. January 13, 2026.



Photograph 12: View of Pond A, facing east from the western side of the pond. January 13, 2026.



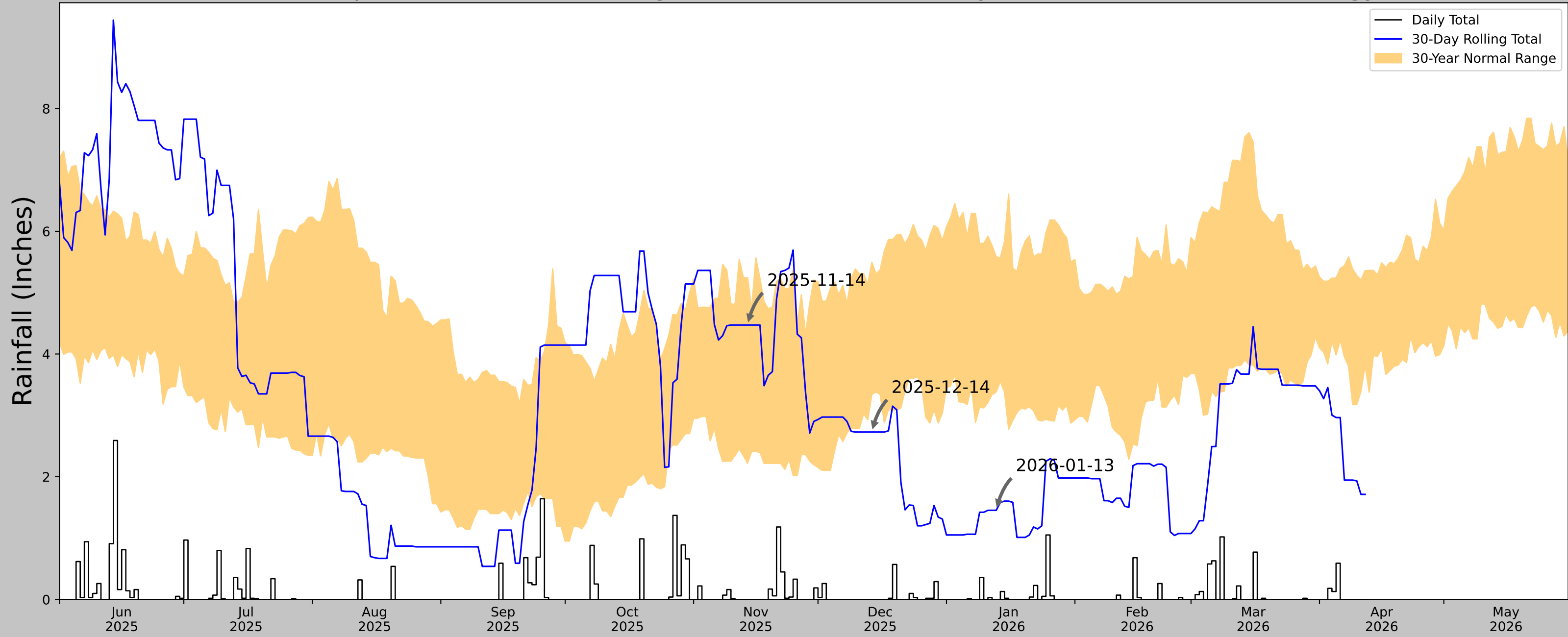
Photograph 13: View of Pond B, facing southwest from the northeastern end of the pond.
January 13, 2026.



Photograph 14: View of a section of Intermittent Stream C, facing north along the eastern edge of Pond B which is located behind the berm to the left. Irrigation piping is present.
January 13, 2026.

Appendix E
Precipitation Data

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.9104, -88.6674
Observation Date	2026-01-13
Elevation (ft)	386.149
Drought Index (PDSI)	Moderate drought
WebWIMP H ₂ O Balance	Wet Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2026-01-13	3.382284	5.583858	1.452756	Dry	1	3	3
2025-12-14	3.340158	5.495276	2.728347	Dry	1	2	2
2025-11-14	2.220079	5.245669	4.472441	Normal	2	1	2
Result							Drier than Normal - 7



US Army Corps
of Engineers



Figures and tables made by the
Antecedent Precipitation Tool
Version 3.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
MAYFIELD 2N	36.7881, -88.6631	490.157	8.453	104.008	4.683	10046	81
MAYFIELD RADIO WLLE	36.7581, -88.6406	379.921	2.418	110.236	1.355	85	0
MAYFIELD 2 S	36.7, -88.6333	360.892	6.307	129.265	3.653	9	9
WINGO 2.2 SE	36.6172, -88.7143	522.966	12.144	32.809	5.863	8	0
SEDALIA 5.1 SE	36.5885, -88.5418	522.966	15.341	32.809	7.407	361	0
SEDALIA 5.0 SE	36.5888, -88.5416	523.95	15.328	33.793	7.416	14	0
PADUCAH 8.5 WSW	37.009, -88.7685	439.961	16.336	50.196	8.171	2	0
FARMINGTON 5.6 S	36.5891, -88.5082	550.853	16.208	60.696	8.277	248	0
PADUCAH 4.5 SW	37.019, -88.683	403.871	15.992	86.286	8.576	467	0
LOVELACEVILLE	36.9692, -88.8314	370.079	15.591	120.078	8.888	2	0
PADUCAH 8.1 SE	37.002, -88.5182	407.152	16.809	83.005	8.959	28	0
WEST PADUCAH 3.1 SSW	37.0407, -88.7668	449.147	18.369	41.01	9.019	1	0
PADUCAH	37.0683, -88.7719	505.906	20.271	15.749	9.441	82	0

Table 1 - Recent Precipitation History
Merged Weather Station Data for Wilson Parcel
Graves County, Kentucky

Date	Precipitation (inches)
12/11/2025	0.00
12/12/2025	0.00
12/13/2025	0.00
12/14/2025	0.00
12/15/2025	0.00
12/16/2025	0.00
12/17/2025	0.00
12/18/2025	0.02
12/19/2025	0.57
12/20/2025	0.00
12/21/2025	0.00
12/22/2025	0.00
12/23/2025	0.10
12/24/2025	0.03
12/25/2025	0.00
12/26/2025	0.00
12/27/2025	0.02

Date	Precipitation (inches)
12/28/2025	0.02
12/29/2025	0.29
12/30/2025	0.00
12/31/2025	0.00
1/1/2026	0.00
1/2/2026	0.00
1/3/2026	0.00
1/4/2026	0.00
1/5/2026	0.00
1/6/2026	0.01
1/7/2026	0.00
1/8/2026	0.00
1/9/2026	0.36
1/10/2026	0.00
1/11/2026	0.03
1/12/2026	0.00
1/13/2026	0.00

Merged precipitation data generated by Antecedent Precipitation Tool, Version 3.0.
Weather data was from Farmington, Lovelaceville, Mayfield, Paducah, Sedalia,
West Paducah, and Wingo weather stations.
Gray shading indicates the date of the delineation.

MYSO, LLC
Supplemental Response to Siting Board Staff's First Request for Information
Case No. 2025-00395

Request No. 84:

Provide any historic or archeologic studies that have been planned or completed for the project site.

Response:

Please see attached.

Supplemental Response:

See attached.

Responding Witness: Bob Roy



Technical Memorandum

Cultural Resources Assessment

Confidential Information – Not for Public Disclosure

Mayfield Solar Wilson Parcel Project – MYSO, LLC – Graves County, Kentucky

Prepared for: Mr. Bob Roy
MYSO, LLC
515 N Flagler Drive, Ste 250
West Palm Beach, FL 33401

Prepared by: Bacon Farmer Workman Engineering & Testing, Inc.

Date: April 16, 2026

Introduction

Bacon Farmer Workman Engineering & Testing, Inc. (BFW) was contracted by MYSO, LLC (MYSO) to conduct a review of cultural resource conditions (i.e., architectural history and archaeological) within and adjacent to a proposed solar project area in Graves County, Kentucky. The proposed project would consist of the construction of an approximately 184.5-acre solar array with associated appurtenances to the east of U.S. Highway 45 (US 45), west of Mayfield Creek, north of East Baldree Road, and south of the US 45 crossing of Mayfield Creek (site centroid at 36.921460° North, -88.666800° West). The project area encompasses the Wilson Parcel. The project area consists mainly of agricultural fields with some scattered woodlots, fencerows, and a wooded stream corridor at Mayfield Creek. The topography of the project area is generally flat, with an average elevation of approximately 385 feet above mean sea level (AMSL) within the floodplain of Mayfield Creek and a gentle slope to approximately 400 feet AMSL toward US 45. **Figure 1 in Attachment A** depicts the project area.

This memorandum provides baseline documentation for MYSO's preparedness, particularly should the project become a formal undertaking for the purposes of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR 800 (Section 106). In the event that the project constitutes a federal and/or state undertaking, a further cultural resources study would need to be conducted in accordance with, but not limited to, Section 106 of NHPA, current (2017) *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports* issued by the Kentucky State Historic Preservation Office (KHC / State Historic Preservation Office [SHPO]), the National Register of Historic Places (NRHP), and the Advisory Council on Historic Preservation (ACHP).

BFW Archaeologist, Matt Mattes, RPA, and BFW Architectural Historian, Melinda Winchester, conducted the research reported herein and prepared this memorandum.

Study Area

The archaeological study area discussed in this assessment encompasses the proposed project area and a 2-kilometer buffer (approximately 1.2 miles). The archaeological study buffer is used to inform the archaeological sensitivity of the proposed project, and to account for direct and indirect effects of project activities on archaeological resources, as required by the KHC and Section 106 of the NHPA. Due to confidentiality conventions pertaining to archaeological remains, discussion of documented archaeological sites and associated mapping included in this memorandum addresses only sites that are recorded within the project area. For the purposes of the current historic architectural assessment, the study area consists only of the proposed project area.

Archaeological Resources Assessment

BFW received the results of a records search on March 4, 2026, that queried the Kentucky Office of State Archaeology (OSA) database of previously conducted archaeological investigations and documented archaeological sites (OSA project registration # FY26-13734). The records search radius (i.e., the archaeological study area) consisted of the project area and a 2-kilometer buffer (approximately 1.2 miles). The records search results indicated that four archaeological investigations have taken place within the search radius and none have overlapped the project area. The prior investigations are summarized in **Table 1** and depicted in **Figure 2** in **Attachment A**.

Table 1. Archaeological Investigations in the Study Area

Survey #	Year Completed	Description
575495	1976	An Archaeological Survey of the Proposed Realignment of US 45, Graves and McCracken Counties, Kentucky
579190	1992	Cultural Resource Survey of Mayfield Ditch, Ballard, Carlisle, McCracken, and Graves Counties, Kentucky
582059	2001	A Phase I Archaeological Reconnaissance of Five Cell Tower Sites in Calloway, Graves, and Marshall Counties, Kentucky
586317	2010	Archaeological Survey of Selected Tracts in Purchase Reginal Industrial Park and NRHP Evaluation of 15Gv37 in Graves County, Kentucky

The OSA database search results indicated that there are 11 previously documented archaeological sites within the search radius. Among the 11 sites, three are mapped within the Wilson Parcel and have either not been assessed for NRHP eligibility or are listed as inventory sites that do not presently meet eligibility criteria, likely due to their age or analytical constraints. The sites mapped within the project area are summarized in **Table 2** and depicted in **Figure 2** in **Attachment A**. It is noteworthy that the KHC’s current (2017) *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports* often require more stringent

practices for field research and reporting than were typically employed in the past. Accordingly, the previously documented sites within the project area are expected to require some degree of new investigation.

Table 2. Archaeological Sites within the Project Area

SITE #	SITE TYPE	NRHP Status
15Gv38	Historic Farm / Residence	Not Presently Eligible
15Gv41	Open Habitation without Mounds	Not Presently Eligible
15GV301	Other	Not Assessed

Numerous soil types are mapped throughout the project area, which generally consist of silt loams distributed from the ground surface to approximately 40 centimeters below ground surface (bgs) (approximately 1.4 feet bgs). These soils comprise the A horizon of the various mapped soil types and are considered on a regional basis to have the greatest potential to contain archaeological deposits. Underlying the A horizon soils, clayier sediments comprising B and C horizons extend several feet below the A horizon and typically present lower archaeological potential. Therefore, the project's likelihood for encountering archaeological deposits, particularly during ground disturbing activities, is greatest for activities that occur within approximately 40 centimeters of the ground surface. However, past impacts to the near-surface soil matrix (e.g., via agriculture or seasonal inundation) may influence archaeological sensitivity. Notably, agricultural plowing throughout the Wilson Parcel may have redeposited archaeological remains and relatively recent alluvial deposition within the floodplain and banks of Mayfield Creek may have deeply buried remains.

As a supplement to the soils analysis and review of OSA records, historic topographic maps and aerial images were analyzed. These lines of information inform the project's archaeological sensitivity by illustrating past developments that may have substantially altered the project area's landscape and soil matrix. Available topographic maps dating from 1936 to 2022 indicate that the project area has remained rural and sparsely developed throughout the reviewed timeframe, with the exception of US 45 west of the Wilson Parcel (USGS, 1936; 1951; 1956; 1982; 1986; 1993; 2010; 2013; 2016; 2019; 2022). US 45 was aligned further to the west of the Wilson Parcel until the mid-late 1970s. Sparsely distributed residences and agricultural structures were concentrated near the highway. Available aerial images also depict a rural and sparsely developed landscape, primarily consisting of farmland since the 1950s and US 45 (NETR, 1955; 1959; 1968; 1981; 1985; 1998; biannual 2004-2022).

It appears through map and imagery research that no structures that may constitute historic-age archaeological sites (for the purposes of the NRHP) are currently within the project area. While soil conditions throughout the project area may present archaeological potential, agricultural development is anticipated to have substantially impacted the potential for both historic and prehistoric archaeological remains to be present within the project area. Therefore, it is anticipated that the project area has low archaeological sensitivity. Nevertheless, the presence

of archaeological remains cannot be entirely discounted due to the lack of prior survey coverage within the project area, the presence of documented archaeological sites within and adjacent to the project area, and the potential for remains to be buried by recent alluvium. These cumulative factors warrant further review of the project area.

Historic Architectural Resources Assessment

BFW performed a search from the KHC Cultural Resource Portal Web Service to determine the number, nature, and location of previously documented historic architectural resources specifically within the project area (i.e., architectural history study area).

The search results indicated that there are no “coded properties” or previously identified historic architectural resources within the architectural history study area. Based on these findings, the proposed project will not directly impact any historic architectural resources. However, for the current assessment, only parcels directly associated with the project were reviewed.

Summary and Recommendations

The Mayfield Solar Wilson Parcel project area has three documented archaeological sites within its boundaries and OSA records indicate that no archaeological surveys have been conducted within the project area. In accordance with current KHC standards and regulations, it is anticipated that the project area and the previously documented sites would require new investigation should the proposed project become a formal undertaking pursuant to Section 106 of the NHPA. Regional soil mapping suggests there is low but notable sensitivity for buried resources, which is supported by the presence of documented sites within and near the project area. As a formal undertaking, the archaeological work would occur once the project scope is determined (typically at 60 percent design) and prior to construction. The design plans would need to delineate all proposed areas of direct impact, including temporary easements, staging, existing right-of-way, and new right-of-way (if applicable).

As part of KHC’s project registration requirements, the design plans would be used to develop an archaeological Area of Potential Effect (APE). The APE would define the parameters for a formal OSA records search of the APE and a 2-kilometer buffer, facilitate the development of an archaeological testing plan, and be used for the KHC’s consultation requirements with any stakeholding Native American Tribes under Section 106. The archaeological testing plan would entail systematic shovel testing and/or pedestrian survey (i.e., Phase I survey) within the archaeological APE. Mitigation steps may also be required if archaeological resources are encountered within the APE. Lastly, an Archaeological Resources Survey Report would be prepared for KHC’s review, commenting, and approval.

The proposed project area does not contain any previously documented historic architectural resources. Therefore, it is anticipated that the project would not directly impact any historic architectural resources. Similar to the steps for additional archaeological review should the project become a formal undertaking pursuant to Section 106, an architectural history APE would need to be established once the final project scope has been determined. The APE would include a 0.25-mile buffer from each parcel boundary to account for potential effects on the viewshed of any adjacent resources and would be used as part of KHC’s project registration and stakeholder consultation processes (e.g., with historical societies). The APE should also take

into consideration all areas subject to potential direct impacts from the proposed undertaking, including temporary easements, staging, existing right-of-way, and new right-of-way (if applicable). Other architectural history work would include field inspection, further archival research, possible mitigation steps if historic architectural resources are encountered in the APE, and preparation of an Architectural Resources Survey Report for KHC's review, commenting, and approval.

References

Kentucky Heritage Council (KHC). 2026. Graves and McCracken County Project Area Review. <https://kyshpo.maps.arcgis.com/apps/instant/basic/index.html>, accessed March 25, 2026.

Kentucky Office of State Archaeology (OSA). 2026. Project Registration Number FY26-13734. On file, Bacon Farmer Workman Engineering and Testing, Inc., March 4, 2026.

National Environmental Title Research (NETR). 2026. Historic Aerial Viewer: Vicinity of Boaz, Kentucky, 1955, 1959, 1968, 1981, 1985, 1998, biannual 2004-2022. <https://www.historicaerials.com/viewer>, accessed March 25, 2026.

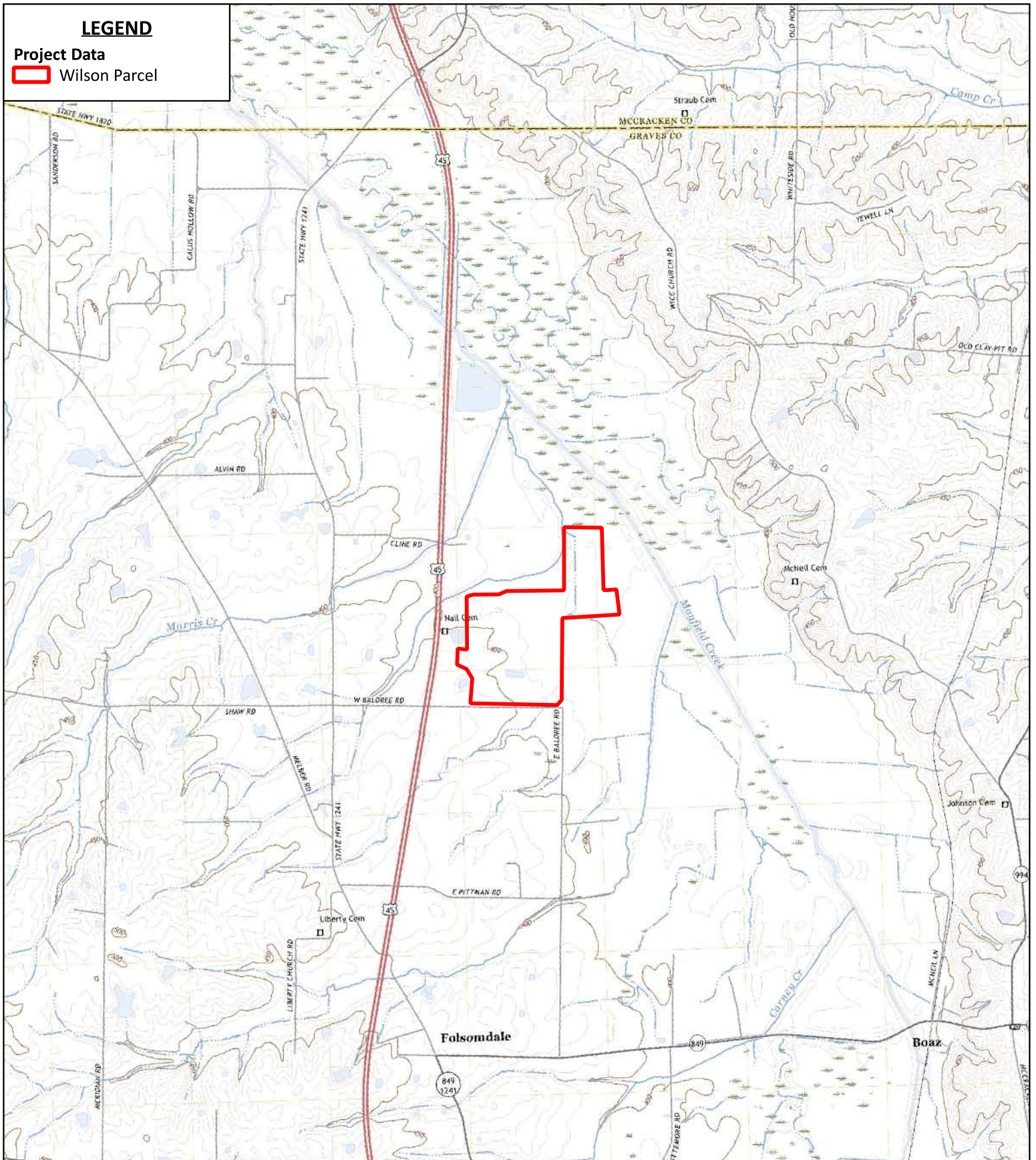
U.S. Geological Survey (USGS). 2026. Topoviewer: Melber, KY: 1936, 1951, 1982, 1993, 2010, 2013, 2016, 2019, 2022; Hickory, KY: 1951; Dyersburg, TN: 1956; Murray, KY: 1986. <https://ngmdb.usgs.gov/topoview/viewer>, accessed March 25, 2026.

Attachment A Maps

LEGEND

Project Data

Wilson Parcel



MO

IL

KY

AR

TN

0

3,000

6,000 ft

1 inch : 3000 feet

Figure 1 - USGS Topographic Map

Mayfield Solar Project
Wilson Property
Graves County, Kentucky

Project Number:
23694

Drafted/Checked:
HK/MM

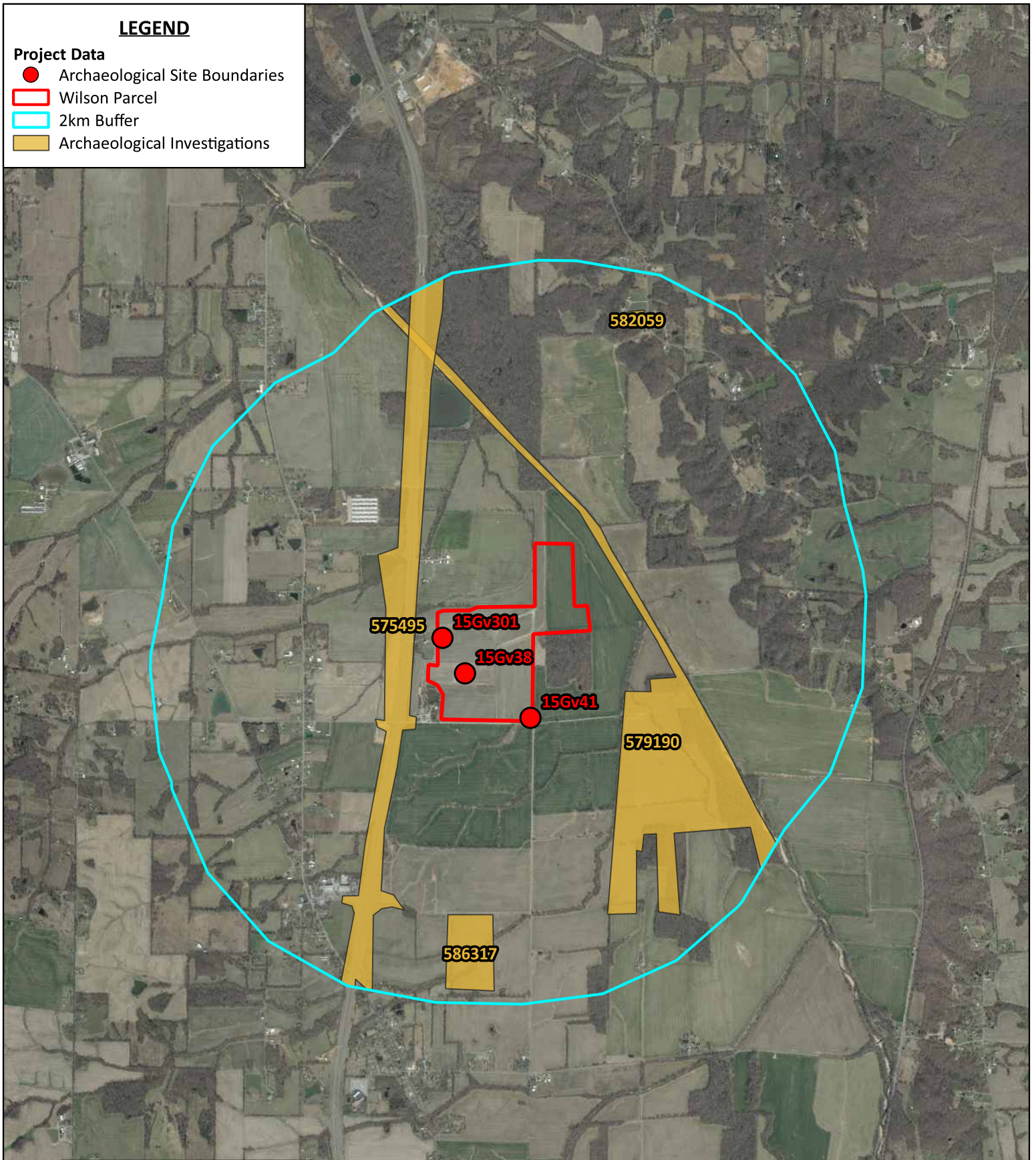
Date:
2026-04-16



LEGEND

Project Data

- Archaeological Site Boundaries
- ▭ Wilson Parcel
- ▭ 2km Buffer
- ▭ Archaeological Investigations



MO

IL

KY

AR

TN

0

3,000

6,000 ft

1 inch : 3000 feet

Figure 2 - Archaeological Study Area

Mayfield Solar Project
Wilson Property
Graves County, Kentucky

Project Number:
23694

Drafted/Checked:
HK/MM

Date:
2026-04-16



MYSO, LLC
Supplemental Response to Siting Board Staff's First Request for Information
Case No. 2025-00395

Request No. 96:

Provide a Wildlife Concerns Analysis for the project.

Original Response:

Please find the requested document attached separately due to file size limits.

Supplemental Response:

See attached.

Responding Witness: Bob Roy



Mayfield Solar Project – Wilson Parcel

Graves County, Kentucky

Protected Species Review

Submitted to:

MYSO, LLC

c/o: Mr. Bob Roy

515 N Flagler Drive, Suite 250

West Palm Beach, FL 33401

Submittal Date:

April 17, 2026



April 17, 2026

Mr. Bob Roy
MYSO, LLC
515 N Flagler Drive, Ste 250
West Palm Beach, FL 33401

**RE: Protected Species Review
Mayfield Solar Project – Wilson Parcel
BFW Project No: 23694**

Dear Mr. Roy:

Bacon Farmer Workman Engineering & Testing, Inc. (BFW) is pleased to submit our report documenting the findings of the Protected Species Review for the Mayfield Solar Project – Wilson Parcel. The study area consists of approximately 185 acres and is located north of East Baldree Road in northern Graves County, Kentucky. The purpose of the review was to evaluate and document whether suitable habitat is present for protected species with the potential to be present in the vicinity of the project.

The majority of the study area consists of agricultural fields which are frequently cultivated and sprayed for crop production. A small amount of edge areas support volunteer vegetation; however, these areas are separated from adjacent areas of natural habitat. Based on the site assessment, no suitable habitat is present within the study area for the majority of the federally-listed and state-listed species. The site habitats could support some temporary use by a few species such as foraging in crop fields by the whooping crane, but the site does not provide unique or high-quality habitat. The study area is located in close proximity to some areas which have been identified as having High or Medium Suitability for use by bald eagles. No suitable habitat for bald eagles is present within the study area, but some High or Medium Suitability habitat is located within a 660-foot buffer of the site boundary.

We appreciate the opportunity to serve you and look forward to future association with you on this and other projects. If you have questions concerning this report or require further clarification of the findings, please call our office at (502) 526-3613.

Sincerely,

A handwritten signature in black ink that reads "Christian Slone".

Christian Slone, FP-A, WPIT
Environmental Scientist

A handwritten signature in black ink that reads "Laura Darnell".

Laura Darnell, PWS
Wetland Scientist / Ecologist

Attachment: Protected Species Review Report

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Appendix B – Resource Agency Documentation

Appendix C – Site Photographs

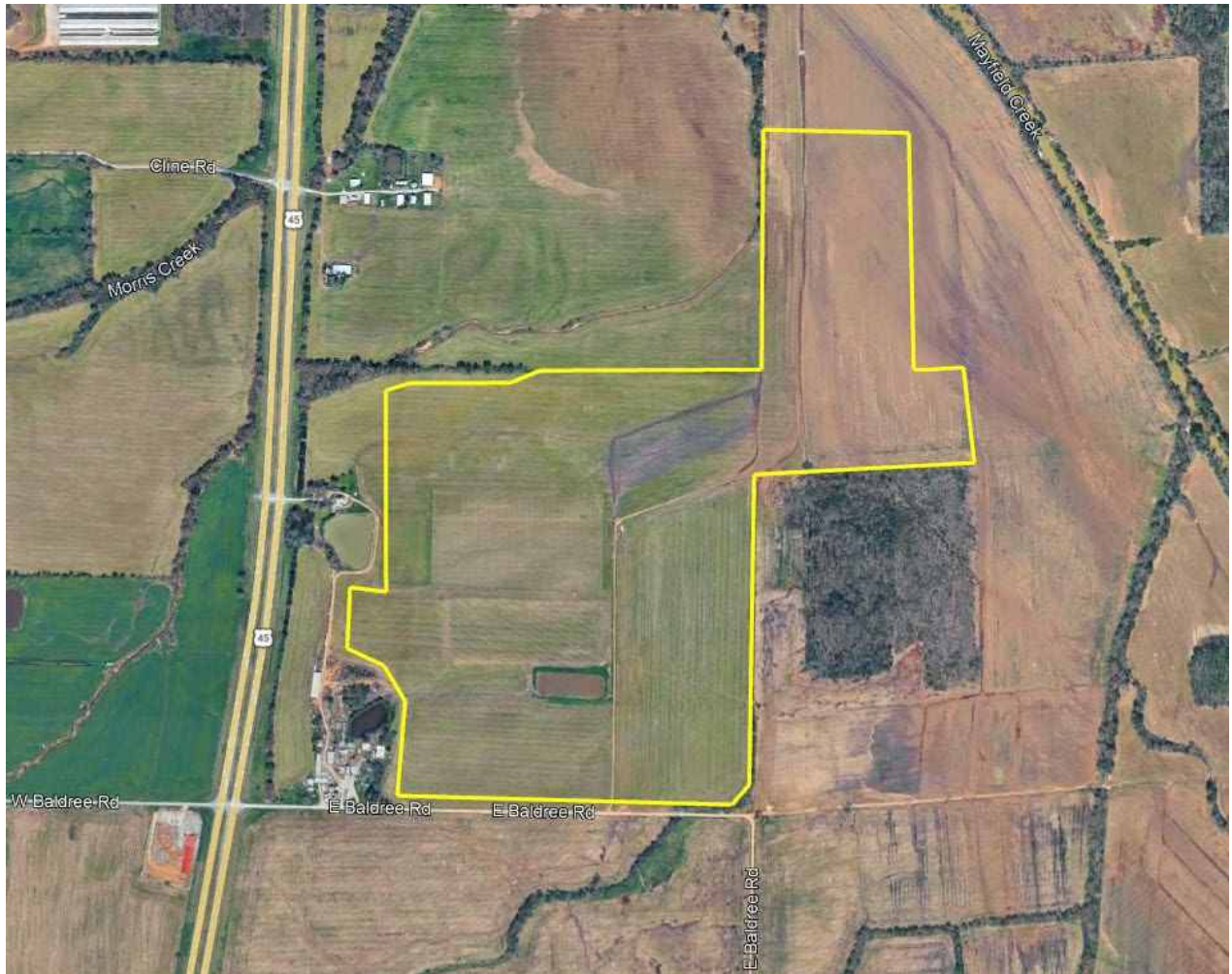
LIST OF ACRONYMS AND ABBREVIATIONS

BFW	Bacon Farmer Workman Engineering & Testing, Inc.
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practices
DBH	Diameter at Breast Height
DD	Data Deficient
ECOS	Environmental Conservation Online System
ESA	Endangered Species Act
EXPN	Experimental Population, Non-essential
KDFWR	Kentucky Department of Fish and Wildlife Resources
KDOW	Kentucky Division of Water
KFO	Kentucky Field Office
KGS	Kentucky Geological Society
KRS	Kentucky Revised Statutes
KSNPC	Kentucky State Nature Preserves Commission
MBTA	Migratory Bird Treaty Act
NRCS	Natural Resources Conservation Service
OKNP	Office of Kentucky Nature Preserves
PEM	Palustrine Emergent
PUB	Palustrine Unconsolidated Bottom
SGCN	Species of Greatest Conservation Need
SWAP	State Wildlife Action Plan
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1. INTRODUCTION

Bacon Farmer Workman Engineering & Testing, Inc. (BFW) performed a Protected Species Review for the Mayfield Solar Project- Wilson Parcel. The study area for this project consists of approximately 185 acres and is located north of East Baldree Road, approximately 0.15 mile east of U.S. Highway 45 in northern Graves County, Kentucky. The project coordinates are 36.9104, -88.6674 and the graphic below shows the site location. The field work was completed on January 13, 2026. Figures referred to in this text are included in **Appendix A** at the end of this report.

Exhibit 1. Project Vicinity Map



1.1 PURPOSE

The purpose of the assessment was to determine if habitats for protected species were present or potentially present within the study area. The species to be evaluated were identified using information available from the United States Fish & Wildlife Service (USFWS) as well as the Natural Heritage Program Database maintained by the Office of Kentucky Nature Preserves (OKNP) and the database maintained by the Kentucky Department of Fish and Wildlife Resources (KDFWR).

2. METHODOLOGY FOR ANALYSIS

2.1 DATABASE INQUIRIES

The protected listed species to be evaluated were identified using range data for listed species available from the USFWS. The “Action Area” that was reviewed for the project consisted of the study area boundary as shown in **Figure 1**. The species that were evaluated are listed in **Section 4.0** below.

Note that if consultation with the USFWS under Section 7 of the ESA is required, a detailed analysis of project development plans may find that the site assessment area or project Action Area need to be expanded to include adjacent land that could be affected by the project. Activities with potential offsite impacts to protected species could include blasting, pile driving, alterations to streamflow or water quality, habitat fragmentation, installation of barriers to wildlife movement, installation of new lighting, and/or construction noise.

An information request was submitted to the KDFWR environmental coordinator on February 29, 2024. Ms. Emily Lawson of the KDFWR replied on March 12, 2024 with a letter which is attached in **Appendix B**. A separate request for information was sent to the KDFWR’s avian biology specialist, Ms. Kate Slankard, on February 12, 2024 requesting information about bald eagle nesting habitat. Ms. Slankard sent information including habitat suitability mapping for bald eagles on February 14, 2024.

A query was also submitted to the Natural Heritage Program Database maintained for the State of Kentucky by the OKNP. This database includes records for both federally-listed species and state-listed species. The OKNP database inquiry was generated on February 29, 2024, and is included in **Appendix B**.

2.2 DOCUMENT REVIEW

Contextual maps, databases, and scientific publications were reviewed to gather vital background data on physical and biological characteristics of the site, protected species with historical ranges within the site vicinity, and descriptions of listed species and their habitats. These resources were utilized to define habitat characteristics that would be identifiable and aid in assessing potential habitat during the site visit. These resources are listed in **Section 7 (References)** of this report.

2.3 SITE VISITS

After reviewing the applicable documents, a site visit was conducted to characterize on-site habitats and determine if potential suitable habitat was available for the species identified by the in-house review. The site visit was conducted on January 13, 2026.

2.3.1 Eagle Nest Survey

BFW personnel performed a bald eagle nest survey for the Wilson Parcel as part of the protected species review. The survey consisted of an in-house review and ground-based survey work at the Wilson parcel in January 2026. The ground survey involved a visual search for eagle nests within the Wilson parcel or in wooded habitat on adjacent properties which was visible from within the parcel boundaries.

Some land within a 660-foot buffer around the Wilson parcel was previously reviewed with a ground based recon as part of an earlier phase of the Mayfield Solar Project in 2024. This included the southern part of a woodlot located southeast of the Wilson parcel.

3. SITE DESCRIPTION

The project site is located in the Mississippi Valley Loess Plains Level III ecoregion, and the Loess Plains Level IV ecoregion according to the Environmental Protection Agency's ecoregion mapping system (Woods et al. 2002). This area is typically composed of gently rolling uplands, broad bottomlands, and terraces. Most of the original vegetation has now been replaced by cropland. Extensive corn, soybean, wheat, hay, tobacco, livestock, and poultry farming occurs. Agricultural runoff has degraded surface water quality. High turbidity and siltation are common in the streams and rivers of this ecoregion and many streams have been channelized.

The surrounding properties consists primarily of agricultural fields, woodlands, and residential properties. Mayfield Creek borders the site to the west and US Highway 45 borders the site to the west.

3.1 TOPOGRAPHY

The topography of the study area is primarily flat within the northeastern portion and some gentle slopes along the southwestern portion. Surface elevations range from around 378 to 412 feet above mean sea level. See **Appendix A** for a United States Geologic Survey (USGS) 7.5-Minute topographic map of the site (**Figure 1**).

3.2 GEOLOGY AND SOILS

According to the available subsurface geologic mapping from the Kentucky Geological Survey, the site is underlain by Alluvium and Loess. The primary lithology of the site is sand, silt, and gravel.

Based on the Natural Resources Conservation Services (NRCS) Soil Survey, the predominant soils in the western, slightly higher part of the site are Grenada silt loam and Calloway silt loam. The predominant soil deposits on the eastern part of the site near Mayfield Creek include Collins silt loam, Waverly silt loam, and Falaya silt loam.

3.3 TERRESTRIAL HABITATS

Habitats within the study area are largely limited to maintained agricultural fields and no trees are present within the study area boundary. See **Appendix A** for a habitat map (**Figure 4**) and **Appendix C** for representative photographs of habitats.

Agricultural Crop Field: The agricultural fields were fallow at the time of the field visit and contained stubble of soybeans (*Glycine max*) and corn (*Zea mays*) along with some weedy volunteer species. Common volunteer species included oatgrass (*Avena fatua*) and henbit deadnettle (*Lamium amplexicaule*).

3.4 AQUATIC AND WETLAND HABITATS

The position of the site in relation to other streams is depicted in **Figure 3**. The site is located approximately 0.25 mile west of Mayfield Creek, which is a large perennial stream which flows in a northwestern direction in the vicinity of the site. Surface water in the study area generally flows north into tributaries to Mayfield Creek.

The water/wetland delineation mapped a total of one perennial stream, three intermittent streams, three wetlands, and two ponds within the 185-acre study area (BFW 2026). See **Appendix C** for representative photographs of the streams, wetlands, and ponds observed on the site.

Perennial Stream: One perennial stream is located in the western portion of the study area. It ranges from two to five feet wide at the Ordinary High Water Mark with bank heights of six inches to two feet. During the field visit, the stream contained low flow with several small pools. This perennial stream has a substrate dominated by silt.

Intermittent Streams: Three intermittent streams are scattered across the study area. These streams range from two to five feet wide at the Ordinary High Water Mark with bank heights of six inches to two feet. During the field visit, these streams contained pooled water or a small amount of flowing water. The intermittent streams have substrates dominated by silt.

Emergent Wetlands: The majority of the palustrine emergent (PEM) wetlands in the study area are located in low spots within agricultural fields. These wetlands are highly disturbed through agricultural activities and contain a few weedy grass species. Common plant species in the emergent wetland habitats included redtop panic-grass (*Panicum rigidulum*) and barnyard grass (*Echinochloa crus-galli*).

Open Water Ponds: The study area contains two open water ponds that contain palustrine unconsolidated bottom (PUB) habitat. These ponds are generally small features which have been created through excavation and/or the construction of a dam on their downstream side. One of the ponds drains via an intermittent stream which quickly transitions to an emergent wetland.

3.5 UNDERGROUND HABITATS AND MAN-MADE STRUCTURES

The potential for subterranean habitat such as caves and mines was investigated through a search of available geological data. The Kentucky Geologic Map Service website (KGS 2026) maps the entire area of Graves County as “non-karst potential.” No karst features such as sinkholes are mapped in the county. No springs are mapped within or in the vicinity of the site.

The Kentucky Mine Mapping Information System (KGS 2024b) was utilized to obtain shapefiles of mine portal locations and mined out areas. No mine portal records or mined out areas are mapped in Graves County or the surrounding area of Kentucky.

According to USFWS guidance (USFWS 2022), abandoned structures (e.g., barns, uninhabited houses) that are planned to be demolished may need to be assessed for bat use for projects where consultation is required under the ESA. No structures are present within the study area.

4. FINDINGS FOR FEDERALLY-PROTECTED SPECIES AND CRITICAL HABITAT

The site was reviewed to determine if habitats for protected species were present or had the potential to exist within the study area depicted on **Figure 1** in **Appendix A**. Note that if consultation with the USFWS under Section 7 of the ESA is required, a detailed analysis of project development plans may find that the site assessment area or project Action Area need to be expanded to include adjacent land that could be affected by the project. Activities with potential offsite impacts to protected species could include blasting, pile driving, alterations to streamflow or water quality, habitat fragmentation, installation of barriers to wildlife movement, installation of new lighting, and/or construction noise.

The protected species that were identified as having the potential to be present in the study area are summarized in **Table 4-1** and discussed in the sections below.

Table 4-1. Summary of Federally-Protected Species

Species	Federal Status	General Habitat Description	Supporting/Limiting Factors
Gray bat (<i>Myotis grisescens</i>)	Endangered	Roosting: Caves and mines Foraging: Stream corridors and waters	No caves or mines Streams and ponds present but lack wooded cover
Indiana bat (<i>Myotis sodalis</i>)	Endangered	Winter roosting: Caves and mines	No caves or mines No wooded habitat No man-made structures
Northern long-eared bat (<i>Myotis septentrionalis</i>)	Endangered	Summer roosting: Suitable trees, bridges, man-made structures	
Tricolored bat (<i>Perimyotis subflavus</i>)	Proposed Endangered	Foraging: Wooded habitat	
Whooping Crane (<i>Grus americana</i>)	Experimental Population, Non-Essential	Palustrine wetlands and agricultural fields	These habitats are present
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Protected by BGEPA and MBTA	Nests in large trees near large bodies of water	Small streams and ponds present
Migratory birds	Protected by MBTA	Various	No wooded habitat
Pink Mucket Pearlymussel (<i>Lampsilis abrupta</i>)	Endangered	Large rivers with mud and sand substrates	No suitable habitat present
Monarch butterfly (<i>Danaus plexippus</i>)	Proposed Threatened	Woodland, field, and suburban areas	Minimal uncultivated habitat present

BGEPA = Bald and Golden Eagle Protection Act; MBTA = Migratory Bird Treaty Act

4.1 DESIGNATED CRITICAL HABITATS

According to spatial data provided by the USFWS, there are no designated critical habitats for any of the listed species within the project area.

4.2 MAMMALS

4.2.1 Gray Bat (*Myotis grisescens*)

Habitat Description: With rare exceptions, gray bats live in caves year-round. During the winter, gray bats hibernate in deep, vertical caves. In the summer, they roost in caves which are scattered along rivers. These caves are in limestone karst areas of the southeastern United States. They do not use houses or barns. Gray bats have been documented to regularly migrate 10-271 miles between summer maternity sites and winter hibernacula. Gray bats can fly 12-35 miles during daily flights to feed within riparian and forested habitats. Foraging gray bats fly over open water of rivers, streams, lakes, or reservoirs that are bordered by wooded habitat. Although the species may travel up to 21 miles between prime feeding areas, most data support foraging locations between 2.5 miles from the maternity colonies. There is no designated critical habitat for this species.

Site Assessment Findings: The study area has no known caves or mines and therefore is assumed to have no gray bat roosting habitat. Although some streams and ponds are present within the study area, these features have no trees or other cover for foraging gray bats. Therefore, these features do not appear to be suitable for gray bat foraging habitat.

Impacts to water quality to streams within or downstream of the study area could have indirect effects on the gray bat because this could reduce or alter the populations of insects that are a food source for this bat. Implementation of Best Management Practices (BMPs) such as erosion and sediment control measures and maintaining vegetated buffers could minimize these potential impacts.

4.2.2 Indiana Bat (*Myotis sodalis*), Northern Long-eared Bat (*Myotis septentrionalis*), and Tricolored bat (*Perimyotis subflavus*)

Winter Habitat Description: Indiana bats, northern long-eared bats, and tricolored bats hibernate during winter in caves or, occasionally, in abandoned mines. For hibernation, they require cool, humid caves with stable temperatures, under 50°F but above freezing. Very few caves within the range of the species have conditions of temperature, humidity, and air currents that are suitable for hibernation. Where caves are sparse, tricolored bats are often found roosting in road-associated culverts where they exhibit shorter torpor bouts and forage during warm nights.

Summer Habitat Description: After hibernation, these bats migrate to their summer habitat in wooded areas where they usually roost under loose tree bark on dead or dying trees. During summer, males roost alone or in small groups, while females may roost in larger groups of up to 100 bats or more.

Suitable summer habitat consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded corridors may be dense or loose aggregates of trees with variable amounts of canopy closure. A potential roost tree for Indiana bats would include live trees and/or snags ≥ five (5) inches in diameter at breast height (DBH) that have exfoliating bark, cracks, crevices, and/or hollows. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Summer

habitat for the northern long-eared bat overlaps greatly with Indiana bat habitat and includes additional use of trees as small as three (3) inches DBH.

Indiana bats and northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges and bat houses (artificial roost structures); therefore, these structures should also be considered potential summer habitat.

The tricolored bat uses similar summer habitat as the Indiana and northern long-eared bats. These bats roost primarily among leaves of live or recently dead deciduous hardwood trees, but may also be found in Spanish moss, pine trees, and occasionally human structures. Tricolored bats are expected to be federally listed as Endangered in the near future; once tricolored bats are listed, additional evaluation will be needed to determine the presence or absence of this species.

Site Assessment Findings: Maps depicting point-based locations of known habitat for the Indiana bat and northern long-eared bat within Kentucky have been developed by the USFWS as of 2025 and the portions of these maps that include this project are depicted in **Figures 5 and 6**. “Known habitat” refers to suitable summer or winter habitat located within a determined distance of an occurrence record for a bat species (USFWS KFO 2016). The study area is not overlapped by a known habitat circle for either the Indiana bat or the northern long-eared bat; therefore, the site is considered to be in “Potential” habitat zones for both species. The KDFWR letter indicated that there was a record for the tricolored bat within one mile of the Mayfield Solar Project.

No caves or underground mines were identified during this assessment. Therefore, it does not appear that winter roosting habitat for these three bats is present within the study area. The study area does not contain any trees, wooded habitat, or man-made structures suitable for bat roosting. Therefore, no suitable roosting or foraging habitat for the Indiana bat, northern long-eared bat, and tricolored bat is present within the study area.

4.3 BIRDS

4.3.1 Whooping Crane (*Grus americana*)

Habitat Description: This large, long-legged, long-necked bird occurs in eastern and central North America. The only self-sustaining population of whooping cranes migrates from Canada across the Great Plains and down to the Texas coast. Critical habitat is designated along this flight corridor. Although this species is listed as Endangered under the ESA, the listing status for the population with a range overlapping the study area is designated as an experimental population that is non-essential (EXPN). The geographic range of the experimental population that contains Kentucky extends from northern Alabama and Georgia to central Tennessee, and north through Kentucky up into Indiana. The whooping crane is a migratory species in Kentucky.

Whooping cranes breed, migrate, over-winter, and forage in a variety of wetland and other habitats. They use coastal marshes and estuaries, inland marshes, lakes, ponds, wet meadows and rivers, and agricultural fields. This crane primarily prefers shallow, seasonally and semi permanently flooded palustrine wetlands for roosting and winter habitat includes salt marshes and tidal flats on the mainland and barrier islands, dominated by salt grass, saltwort, smooth cordgrass, glasswort, and sea ox-eye.

Site Assessment Findings: It appears that potential habitat for whooping crane is present in the project vicinity because palustrine wetland habitat and agricultural fields are present and could be used by the crane. However, the onsite habitats are relatively disturbed and the surrounding area likely provides similar stopover habitat for the whooping crane.

4.3.2 Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle was formerly listed under the ESA but was delisted due to successful recovery efforts for the species. However, bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) and Migratory Bird Treaty Act (MBTA).

Habitat Description: Bald eagles generally nest near coastlines, rivers, large lakes or streams that support an adequate food supply. They often nest in mature or old-growth trees; snags (dead trees); cliffs; rock promontories; or rarely on the ground; and with increasing frequency on human-made structures such as power poles and communication towers. In forested areas, bald eagles often select the tallest trees with limbs strong enough to support a nest that can weigh more than 1,000 pounds. Nest sites typically include at least one perch with a clear view of the water where the eagles usually forage.

Site Assessment Findings: No records of bald eagles were returned from the inquiries to the resource agencies. Biologists and academics at Eastern Kentucky University and the KDFWR have cooperatively developed a bald eagle nesting habitat suitability model for Kentucky (Castle et al. 2023). The model was developed through analyzing habitat characteristics at known bald eagle nest locations. Initial research into eagle activity at the project site included an inquiry to Ms. Kate Slankard, an avian biologist with the KDFWR. Ms. Slankard shared output from the bald eagle nesting habitat suitability model for land in the vicinity of the Mayfield Solar project. The KDFWR has indicated that this model is not binding from a regulatory standpoint but can inform biological survey work. The model output is depicted in relation to the project on **Figure 7**.

The model does not indicate suitable bald eagle habitat within the study area boundary except for a few blue spots which appear to be resolution errors. No trees are present in those locations. A woodlot located offsite to the southwest which is partly within a 660-foot buffer around the site is mapped as mostly Lower Suitability (blue) with a few areas of Medium (yellow) and Medium/High Suitability (orange) habitat. A wooded corridor along Mayfield Creek to the north is mapped as High Suitability (red) and has a small overlap with the 660-foot buffer around the parcel.

In the surrounding landscape, High to Medium Suitability habitat is present primarily along the forested corridor of Mayfield Creek where larger, contiguous wooded blocks are present. The largest mapped area of High Suitability occurs approximately 0.2 mile north of the site, where a large forest block, a 21-acre lake, and the Mayfield Creek corridor converge near U.S. Highway 45. Additionally, smaller areas of High Suitability are mapped along Mayfield Creek to the east and southeast of the study area.

BFW previously completed a bald eagle nest survey for the Mayfield Solar Project located south of the Wilson parcel in 2024. During that survey, some land within a 660-foot buffer around the Wilson parcel was reviewed with a ground based recon. This included the southern part of a woodlot located southeast of the Wilson parcel. No eagle nests were found by that search. During the field work for the Mayfield Solar

Project, some adult bald eagles were observed. The nearest observation was an adult individual who appeared to be temporarily using the area. This observation was approximately 0.81 miles southeast of the Wilson parcel. During the site assessment on January 13, 2026, no bald eagles or nests were observed within the Wilson parcel or in wooded habitat visible from within the study area.

4.3.3 Migratory Birds

The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the USFWS. The USFWS has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and the USFWS encourages implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Site Assessment Findings: No wooded habitat or individual trees are present that could provide nesting habitat for migratory birds.

4.4 CLAMS

4.4.1 Pink Mucket Pearlymussel (*Lampsilis abrupta*)

Habitat Description: The pink mucket historical range included Alabama, Arkansas, Illinois, Indiana, Kentucky, Louisiana, Missouri, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia. This mussel species prefers mud and sand pockets spaced among shallow riffles and shoals swept free of silt in major rivers and tributaries. This mussel buries itself in sand or gravel, with only the edge of its shell and its feeding siphons exposed. There is no designated critical habitat for this species.

Site Assessment Findings: The study area contains a perennial stream but due to the limited size of this stream and its separation from downstream waters, it does not appear to provide suitable habitat for this mussel. Impacts to water quality downstream of the study area could have indirect effects on the pink mucket. USFWS range maps for the pink mucket indicate that its range includes only the farthest downstream section of Mayfield Creek near the Mississippi River. The mapped range is approximately 20 miles west and downstream of the project. Due to the distance between the site and the mapped range, onsite activities are not expected to impact the pink mucket.

4.5 INSECTS

4.5.1 Monarch Butterfly (*Danaus plexippus*)

Habitat Description: The USFWS issued a proposed rule on December 12, 2024 to list the monarch butterfly as a Threatened species. Monarch butterflies have a migratory life cycle and the monarchs in this region overwinter in Mexico and spend other parts of the year migrating, foraging, and breeding in eastern North America. Monarchs use a variety of habitats that include mixed and coniferous woodlands, hedgerows, savanna, grassland, old fields, and suburban areas. They obtain nectar from a variety of flowers but require milkweed plants (*Asclepias* sp.) as a host plant to feed the larval (caterpillar) life stage.

Site Assessment Findings: The majority of the study area consists of agricultural fields which are frequently cultivated and sprayed for crop production. A small amount of edge areas support volunteer vegetation; however, these areas are separated from adjacent areas of natural habitat. Therefore, it does not appear that the site contains suitable habitat for the monarch butterfly.

5. STATE-LISTED SPECIES

The site was also reviewed to determine if state-listed species and their habitats had the potential to exist within the study area. State-listed species for Kentucky have been established through regulations such as KRS Chapter 146.610, which authorized the OKNP to develop and maintain lists of state threatened and endangered plants. However, the state-listed species do not have statutory protection and KRS Chapter 146.615 specifically states that “The lists promulgated under KRS 146.610 shall not serve to impede the development or use of public or private lands.” Natural resource agencies such as the USFWS could request project measures to minimize impacts to state-listed species on projects where they have jurisdiction, and concerns about impacts to state-listed species could potentially be raised in projects with public comment periods or opposition.

The state-listed species to be evaluated were identified through a review of the Natural Heritage Program Database maintained for the state of Kentucky by the OKNP. The OKNP recommends a two-mile buffer for new installation, maintenance, or removal of solar projects; therefore, this recommended buffer was utilized to generate the list of species with records overlapping the project area. The output letter is included in **Appendix B**.

Additional species records from the KDFWR database were provided by the KDFWR biologist in response to the project information request. The KDFWR response letter is attached in **Appendix B**. The KDFWR maintains the Kentucky State Wildlife Action Plan (SWAP) under a federal grant from the USFWS, and one component of the SWAP is the designation of some species as Species of Greatest Conservation Need (SGCN) in Kentucky. Species with SGCN status are indicated in **Table 5-1** below.

Some KDFWR records were returned for federally-listed species records within ten miles of the project. These included the Indiana bat, northern long-eared bat, tricolored bat, pink mucket, orangefoot pimpleback, sheepnose, fat pocketbook, rabbitsfoot, longsolid, and alligator snapping turtle). The Indiana bat, northern long-eared bat, tricolored bat, and pink mucket were discussed in **Section 4** above. The remaining species are located within or adjacent to major river systems with no records in Mayfield Creek; thus, these species were not included in **Table 5-1** below or discussed in this section.

5.1 HABITAT DESCRIPTIONS

The state-listed species that were included in the Kentucky Natural Heritage Program Database and KDFWR results are summarized in **Table 5-1** and discussed in **Section 5.2** below.

Table 5-1. Summary of State-Listed Species

Species	OKNP State Status	KDFWR Status	Habitat Description	Last OKNP Observation Year	Suitable Habitat in Study Area?
Amphibians					
Northern Crayfish Frog (<i>Lithobates areolatus circulosus</i>)	State Special Concern	DD	Grasslands, prairies, open woodlands, ponds, and wetlands.	N/A	No
Birds					
Barn Owl (<i>Tyto alba</i>)	State Special Concern	SGCN	Grasslands, farmlands, marshes, and woodland edges. Nests in tree cavities, barns, and	2004	No
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	State Special Concern	SGCN	Grasslands, shrublands, pastures.	1990	No
Sharp-Shinned Hawk (<i>Accipiter striatus</i>)	State Special Concern	SGCN	Dense forests and woodlands, suburban areas in winter.	1985	No
Crustaceans					
Swamp Dwarf Crayfish (<i>Cambarellus puer</i>)	State Endangered	DD	Swamps, marshes, ditches, and heavily vegetated ponds.	1980	Yes
Fishes					
Cypress Minnow (<i>Hybognathus hayi</i>)	State Endangered	SGCN	Slow-moving, swampy streams, oxbow lakes, and backwaters with sandy or muddy bottoms.	N/A	No
Finescale Stoneroller (<i>Campostoma pullum</i>)	State Special Concern	None	Clear, fast-flowing streams and rivers with gravel or rocky substrates.	N/A	No
Plants					
Chaffweed (<i>Lysimachia minima</i>)	State Threatened	None	Wetlands, along pond edges, ditches, and disturbed areas.	1920	Yes
Crimson-Eyed Rose-Mallow (<i>Hibiscus lasiocarpus</i>)	None	None	Marshes, swamps, riverbanks, and moist meadows.	2022	No
Eastern Blue-Star (<i>Amsonia salicifolia</i>)	None	None	Open woodlands, prairies, and well-drained rocky or sandy soils.	1967	No
Lance-Leaved Loosestrife (<i>Lythrum lanceolatum</i>)	None	None	Moist meadows, stream banks, pond edges, and open wetlands.	2022	Yes
May Grass (<i>Phalaris caroliniana</i>)	None	None	Ditches and wet, sandy, open fields.	1971	Yes

Species	OKNP State Status	KDFWR Status	Habitat Description	Last OKNP Observation Year	Suitable Habitat in Study Area?
Rosinweed (<i>Silphium integrifolium</i>)	None	None	Dry, open prairies, grasslands.	1968	No
Sweet Coneflower (<i>Rudbeckia subtomentosa</i>)	State Endangered	None	Moist prairies, open woodlands, stream banks, and roadside ditches.	1977	Yes
Zigzag Iris (<i>Iris brevicaulis</i>)	State Threatened	None	Moist forests, shaded woodland edges, and rich, well-drained soils.	1974	No

SCGN = Species of Greatest Conservation Need (from KDFWR 2023);

DD = Data Deficient (more information is needed to determine the rarity of the species)

N/A = Not Applicable (the record for the species is from KDFWR only)

5.2 STATE-LISTED SPECIES DISCUSSION

Habitats within the study area are largely limited to maintained agricultural fields and no trees are present within the study area boundary. Aquatic and wetland habitats include some perennial streams, open water ponds, and emergent and farmed wetlands. It does not appear that there is suitable habitat within the study area for most of the state-listed species.

6. DISCUSSION

Once detailed designs are developed, an analysis of the project area can be performed to determine whether the project activities will potentially impact federally-listed species.

Several construction activities may require agency permits. Coordination may be required with the USFWS, Kentucky state agencies, and/or the U.S. Army Corps of Engineers (USACE) on construction projects prior to conducting tree thinning, tree removal, in-stream work, or the filling of wetlands, streams, or ponds. Section 7 of the ESA requires consultation with the USFWS for projects that receive a federal permit, federal funding, or federal oversight, and Section 10 of the ESA applies to many activities that may affect listed species and their habitats, even without a federal nexus.

Based on the site assessment, no suitable habitat is present within the study area for the majority of the federally-listed and state-listed species. The agricultural fields could be used for foraging by the whooping crane, but the site does not provide unique or high-quality habitat. Some wetlands, streams, or edge habitats present on site could be used by some state-listed species; however, these areas are small and separated from adjacent areas of natural habitat and are not likely to be used by the listed species. Development activities within the study area are not expected to have significant impacts to federally-listed and state-listed species.

Bald Eagles: These birds are delisted from the ESA but are still protected under the BGEPA and MBTA. The USFWS has prepared National Bald Eagle Management Guidelines (USFWS 2007), which are intended to help people minimize activities that impact bald eagles, particularly where the activities would result in “disturbance,” which is prohibited by the BGEPA. The USFWS also administers a permit program for “take” of eagles under the BGEPA where disturbance is unavoidable. As of 2026, the USFWS issues two broad types of eagle disturbance permits: specific permits for eagle nest disturbance that can be issued for up to five years, and general permits for eagle disturbance that are issued for a maximum of one year. However, many activities do not require eagle disturbance permits. USFWS guidelines state that typical construction activities over 660 feet from an active bald eagle nest generally do not require a permit. Construction activities that create extremely loud noises (such as blasting) require a permit if the activity is closer than a half-mile to an active eagle nest. KDFWR recommendations are more stringent and state that disturbance to hawks and eagles (triggering a flight response) can occur from activities as far as one mile from the nest in some cases.

The study area is located in close proximity to some areas which have been identified as having High or Medium Suitability for use by bald eagles. No suitable habitat for bald eagles is present within the study area, but some High or Medium Suitability habitat is located within a 660-foot buffer of the site boundary. Adult bald eagles have been observed within one mile of the parcel during previous field surveys for the Mayfield Solar Project.

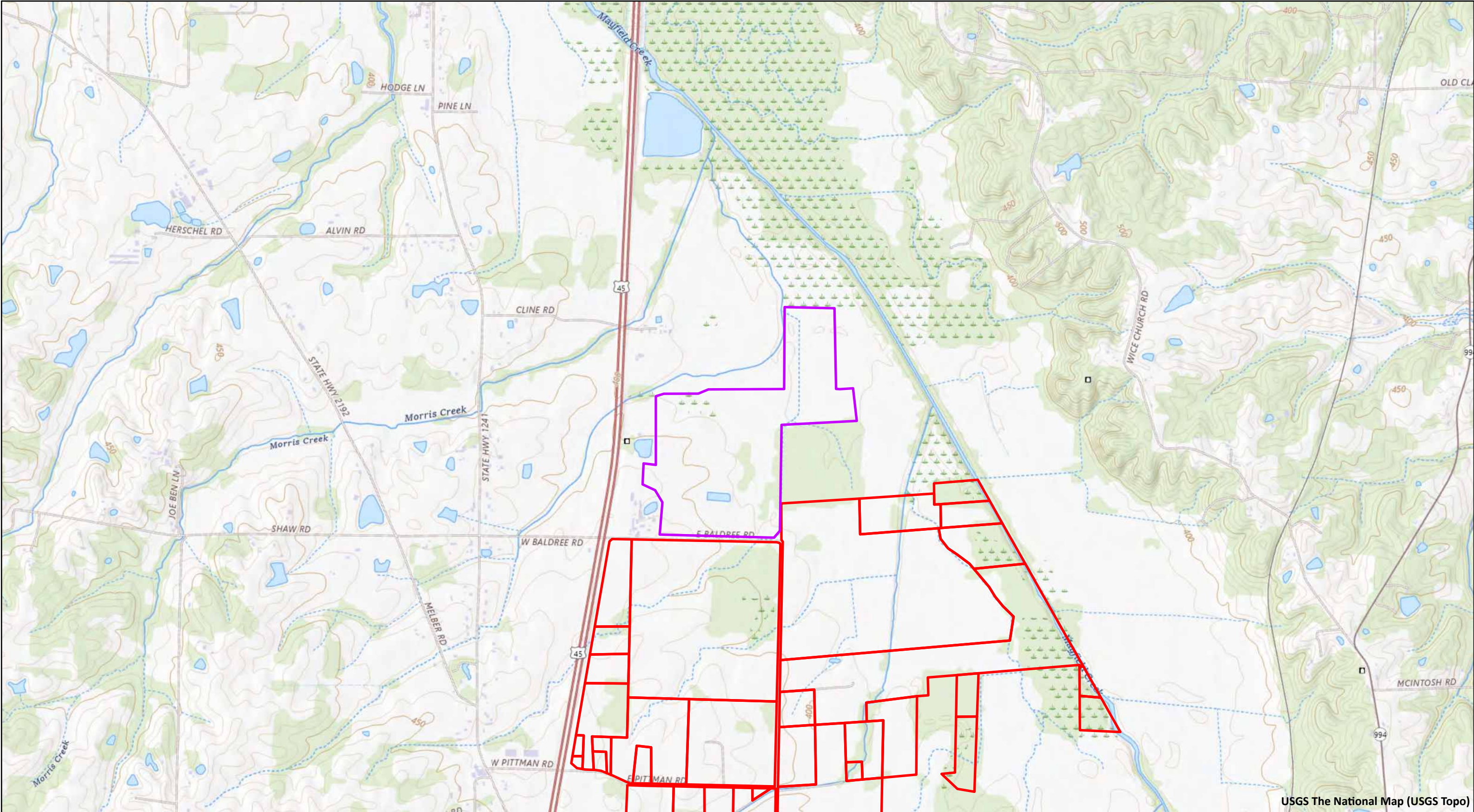
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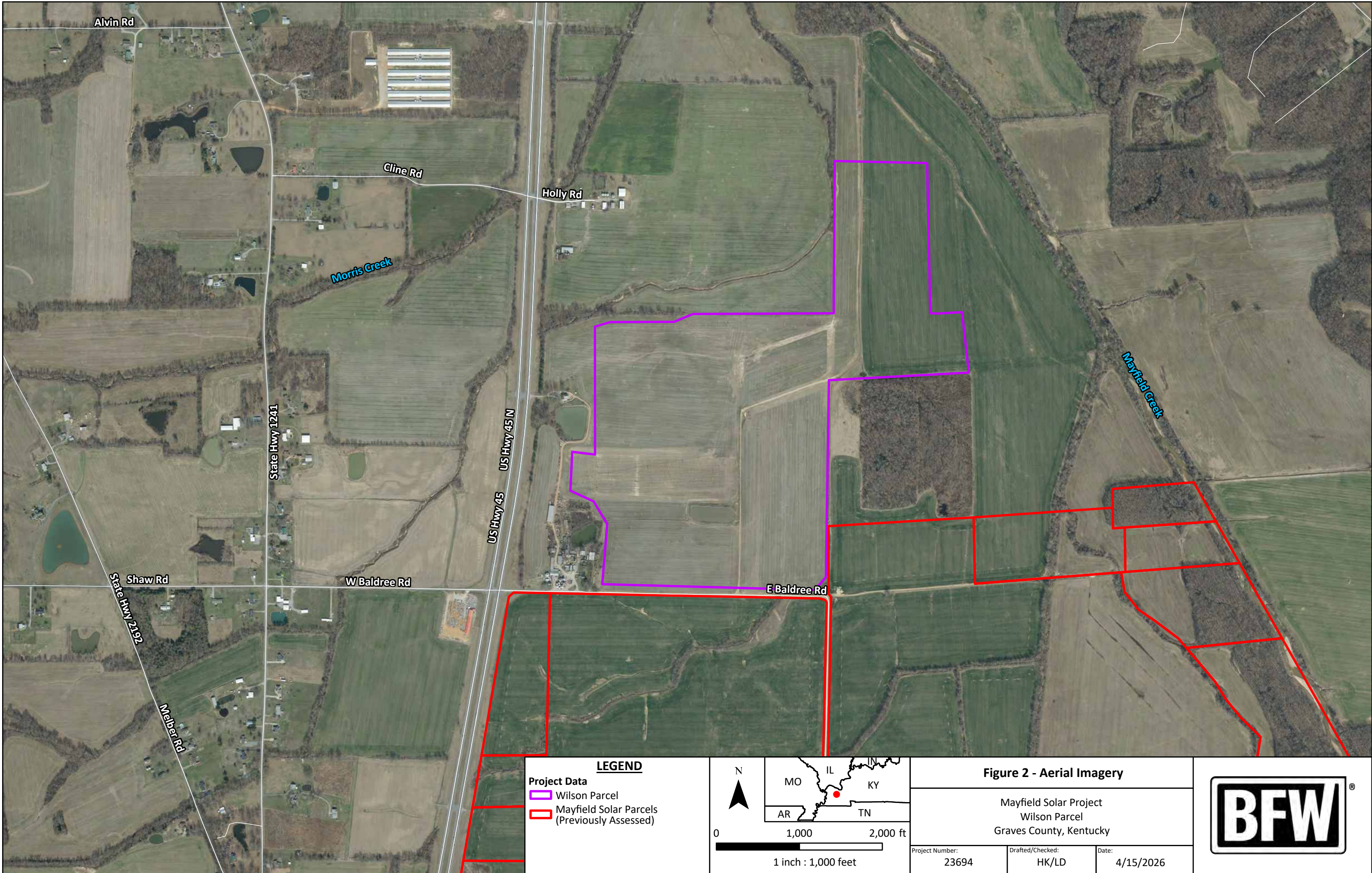
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Appendix A

Figures



LEGEND Project Data Wilson Parcel Mayfield Solar Parcels (Previously Assessed)	 0 2,000 4,000 ft 1 inch : 2,000 feet	Figure 1 - USGS Topographic Map		
		Mayfield Solar Project Wilson Parcel Graves County, Kentucky		
		Project Number: 23694	Drafted/Checked: HK/LD	Date: 4/15/2026



LEGEND

Project Data

- ▮ Wilson Parcel
- ▮ Mayfield Solar Parcels (Previously Assessed)

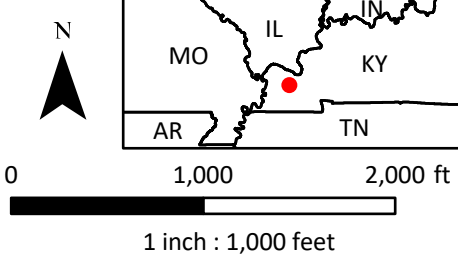
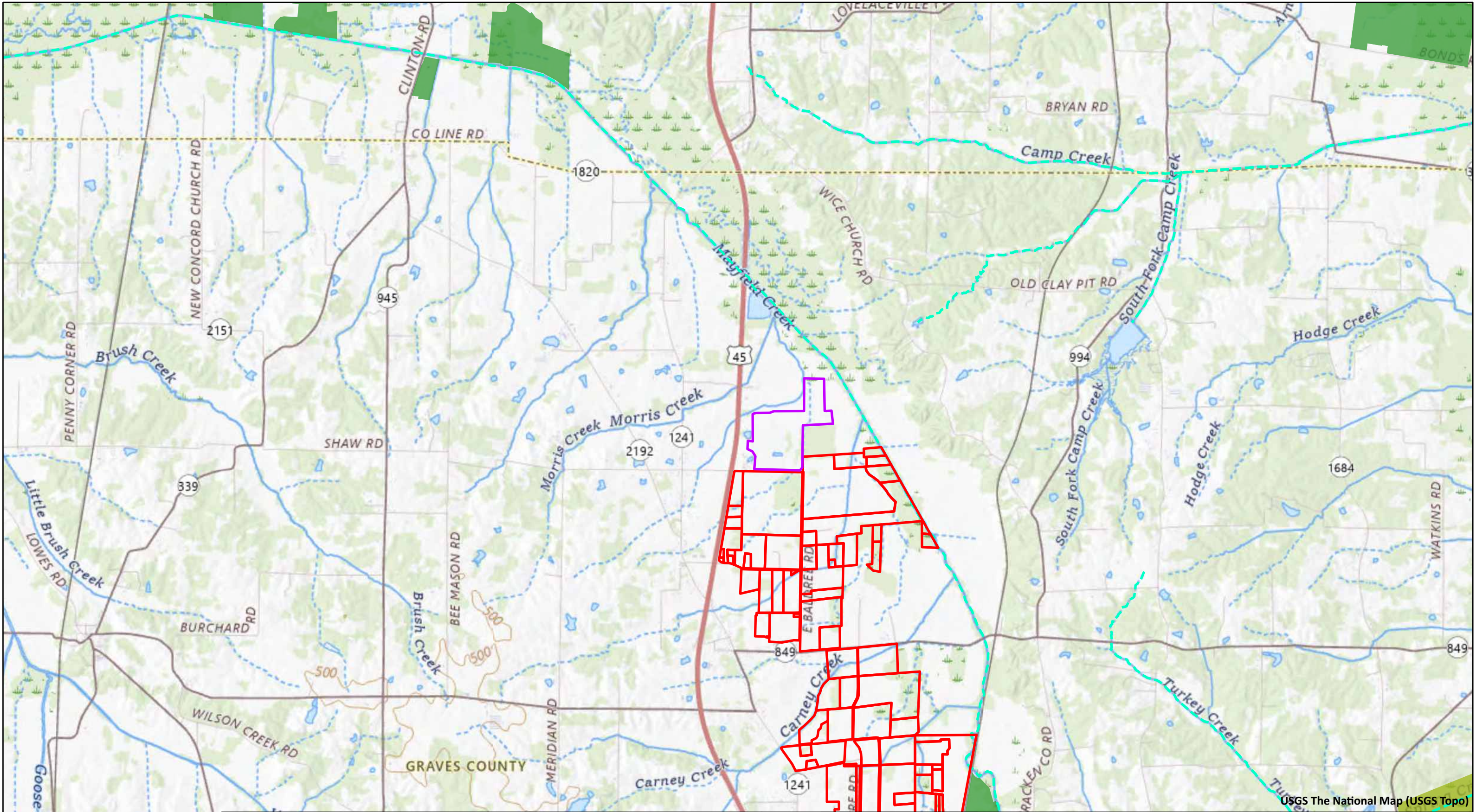


Figure 2 - Aerial Imagery

Mayfield Solar Project
Wilson Parcel
Graves County, Kentucky

Project Number: 23694	Drafted/Checked: HK/LD	Date: 4/15/2026
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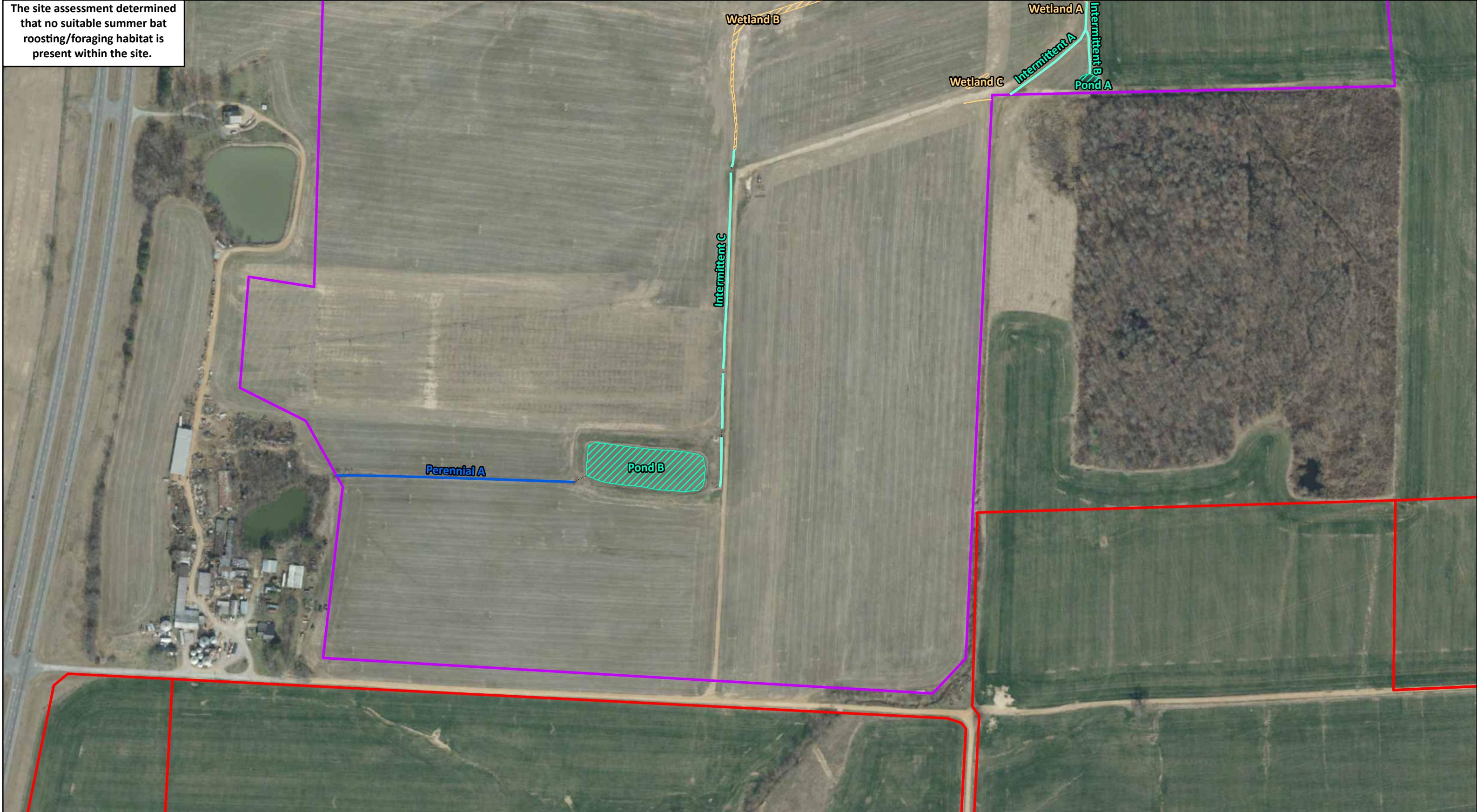




USGS The National Map (USGS Topo)

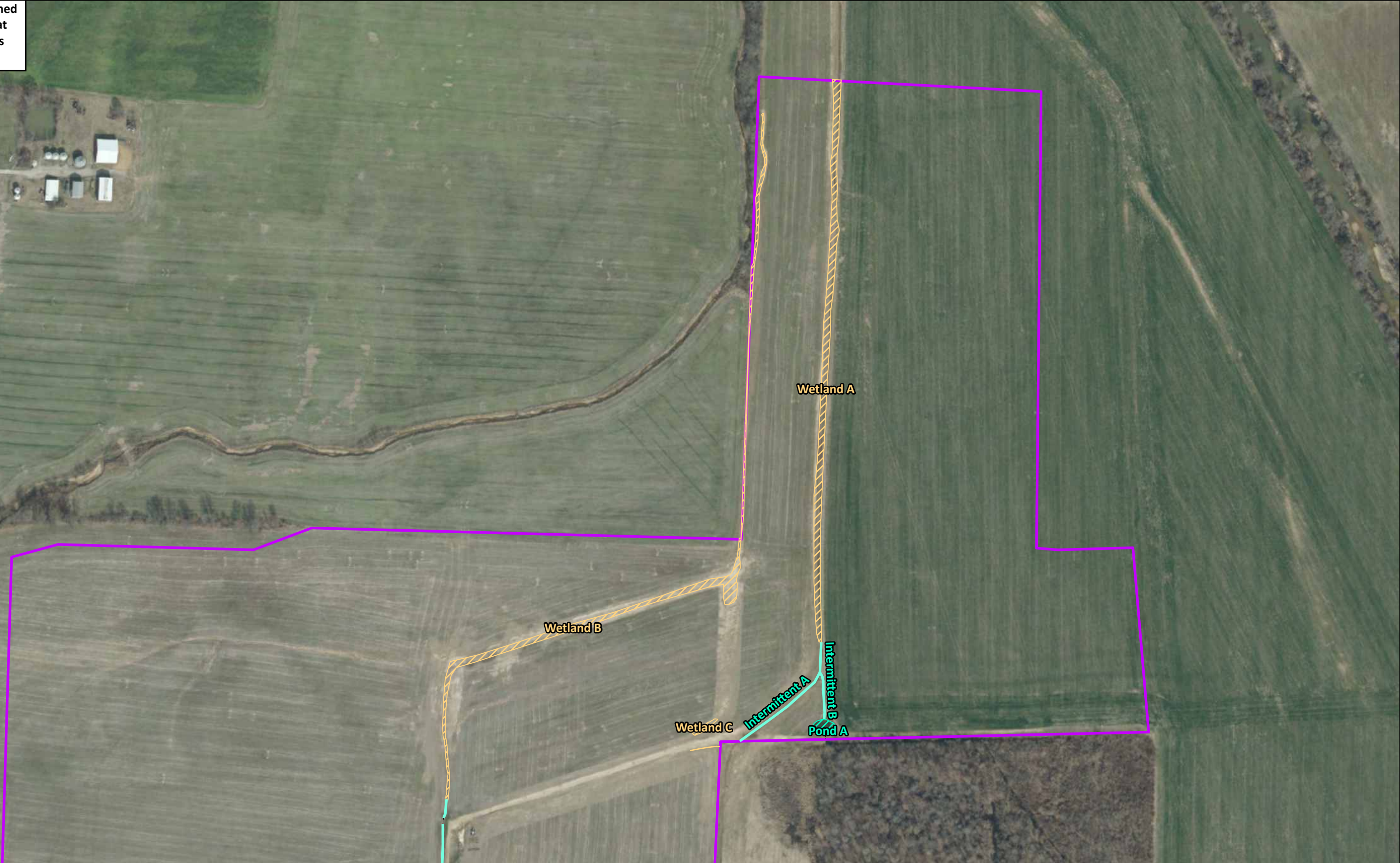
Project Data Wilson Parcel Mayfield Solar Parcels (Previously Assessed)		LEGEND DOW Designated Areas Listed Impaired Stream Public-Owned or Managed Protected Lands Federal State		N 0 5,000 10,000 ft 1 inch : 5,000 feet MO IL IN KY TN AR	Figure 3 - Priority Waters Map			BFW®
					Mayfield Solar Project Wilson Parcel Graves County, Kentucky Project Number: 23694 Drafted/Checked: HK/LD Date: 4/16/2026			

The site assessment determined that no suitable summer bat roosting/foraging habitat is present within the site.

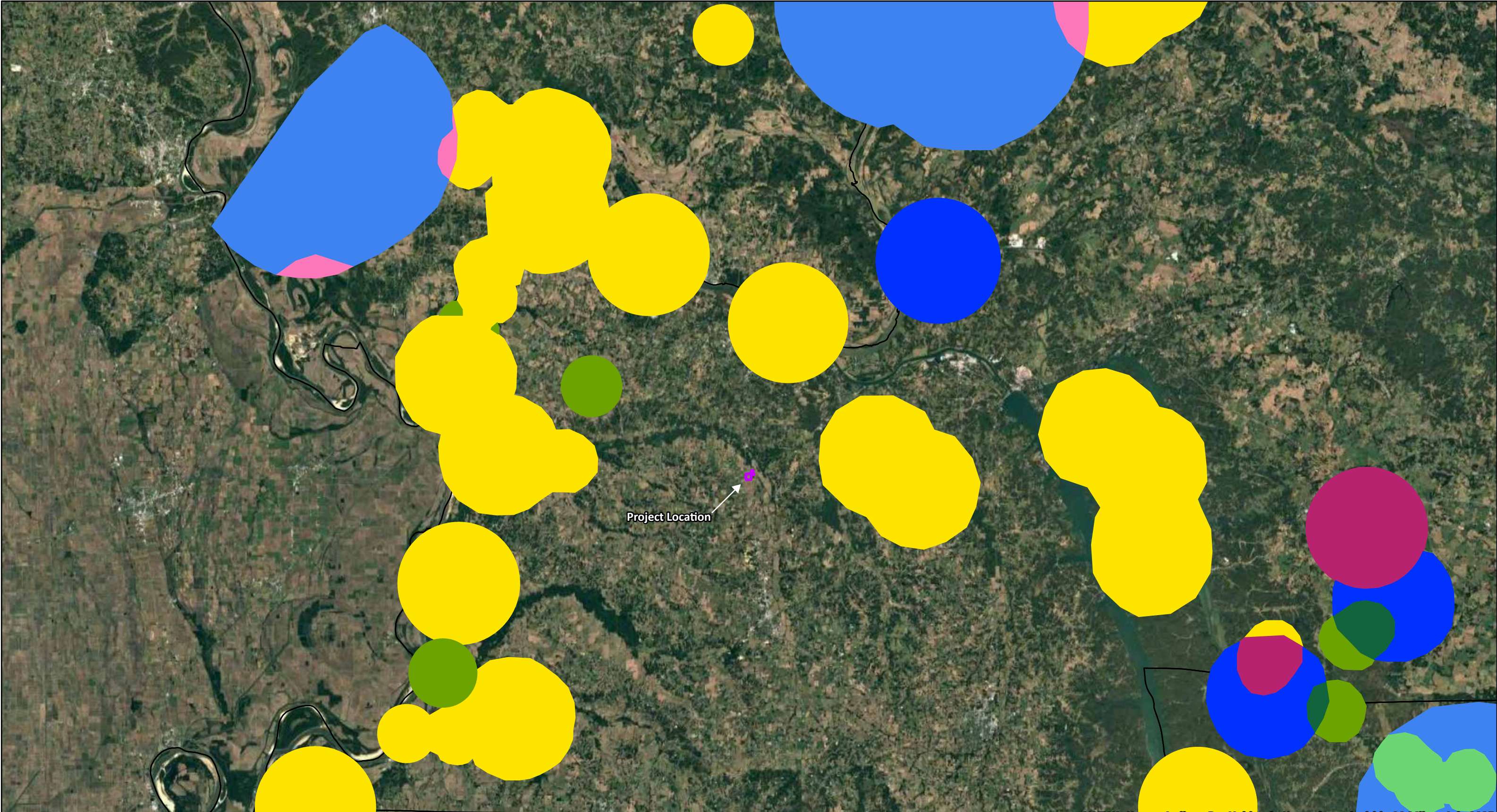


Project Data Wilson Parcel Mayfield Solar Parcels (Previously Assessed)	Legend Delineation Data Culvert Ditch Ephemeral Stream Intermittent Stream Perennial Stream	Ponds Emergent Wetland	 0 300 600 ft 1 inch : 300 feet	Figure 4 - Site Habitat Map Sheet 1 of 2			
				Mayfield Solar Project Wilson Parcel Graves County, Kentucky			
				Project Number: 23694	Drafted/Checked: HK/LD	Date: 4/17/2026	

The site assessment determined that no suitable summer bat roosting/foraging habitat is present within the site.

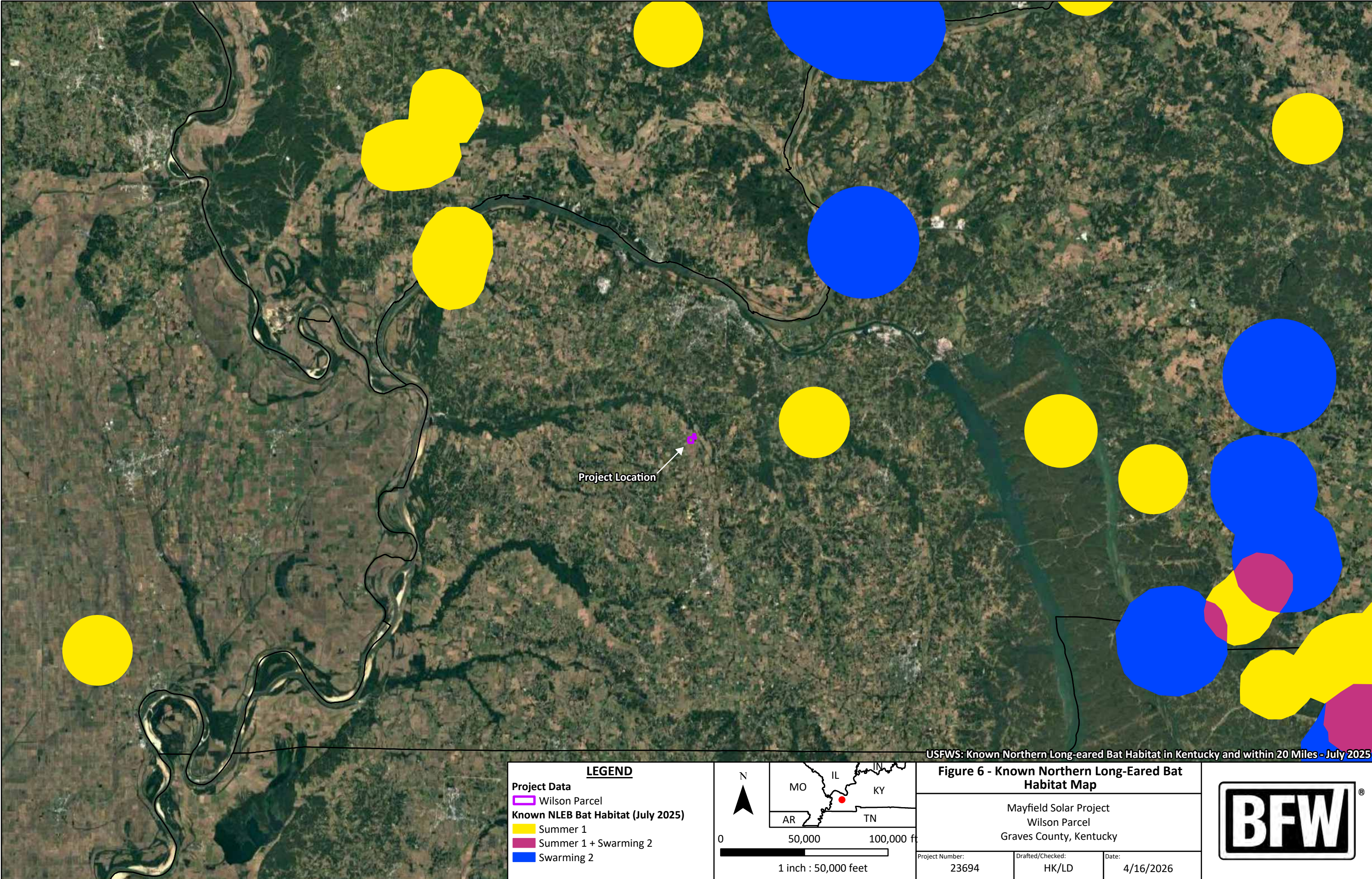


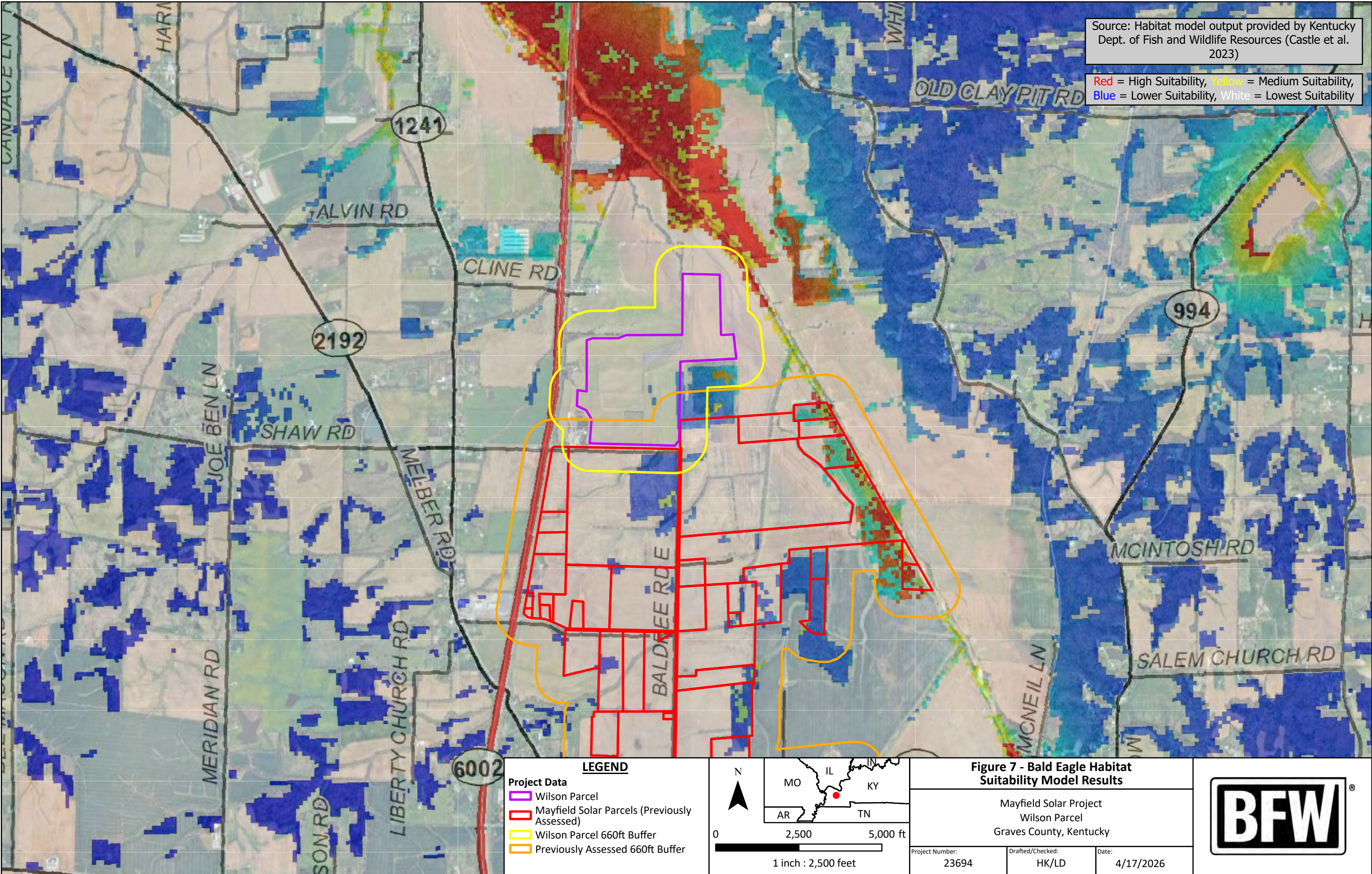
Project Data Wilson Parcel Mayfield Solar Parcels (Previously Assessed)		Legend Delineation Data Culvert Ditch Ephemeral Stream Intermittent Stream Perennial Stream		 Ponds Emergent Wetland		 0 300 600 ft 1 inch : 300 feet		Figure 4 - Site Habitat Map Sheet 2 of 2 Mayfield Solar Project Wilson Parcel Graves County, Kentucky				
Project Number: 23694		Drafted/Checked: HK/LD		Date: 4/17/2026								



USFWS: Known Indiana Bat Habitat in Kentucky and within 20 Miles - July 2025

Project Data Wilson Parcel Known Indiana Bat Habitat (July 2025) Summer 1 Summer 1 + Swarming 1 Summer 1 + Swarming 2		LEGEND Summer 2 Summer 2 + Swarming 1 Summer 2 + Swarming 2 Swarming 1 Swarming 2		 0 50,000 100,000 ft 1 inch : 50,000 feet		Figure 5 - Known Indiana Bat Habitat Map Mayfield Solar Project Wilson Parcel Graves County, Kentucky			
Project Number: 23694		Drafted/Checked: HK/LD		Date: 4/16/2026					





Appendix B
Resource Agency Documentation



KENTUCKY DEPARTMENT OF FISH & WILDLIFE RESOURCES

Rich Storm
Commissioner

#1 Sportsman's Lane
Frankfort, Kentucky 40601
Phone (502) 564-3400
Fax (502) 564-0506

Brian Clark
Deputy Commissioner

Gabe Jenkins
Deputy Commissioner

March 12, 2024

Bacon Farmer Workman Engineering & Testing, Inc.
Attn: Laura Darnell, PWS
2456 Fortune Dr. Suite 105
Lexington, KY 40509

RE: Mayfield Solar Project (Graves and McCracken Counties)

Dear Ms. Darnell:

The Kentucky Department of Fish and Wildlife Resources (KDFWR) has received your request for information regarding the proposed Mayfield Solar Project in Graves and McCracken Counties, KY. The proposed project area has been reviewed for impacts wildlife resources and other sensitive areas. The following comments are provided:

KDFWR Records Review:

Our records indicate the following federally listed and proposed listed species occur within ten (10) miles of the proposed project areas. Be advised that the KDFWR does not have the authority to confirm compliance with the Endangered Species Act. Please coordinate with the U.S. Fish and Wildlife Service for specific recommendations and compliance requirements for these federally listed species.

Scientific Name	Common Name	Class	Federal Status
<i>Theliderma cylindrica</i>	Rabbitsfoot	Bivalvia	T
<i>Fusconaia subrotunda</i>	Longsolid	Bivalvia	T
<i>Plethobasus cooperianus</i>	Orangefoot Pimpleback	Bivalvia	E
<i>Lampsilis abrupta</i>	Pink Mucket	Bivalvia	E
<i>Plethobasus cyphus</i>	Sheepnose	Bivalvia	E
<i>Potamilus capax</i>	Fat Pocketbook	Bivalvia	E
<i>Macrochelys temminckii</i>	Alligator Snapping Turtle	Chelonia	PT
<i>Perimyotis subflavus</i>	Tricolored Bat	Mammalia	PE
<i>Myotis septentrionalis</i>	Northern Long-Eared Bat	Mammalia	T
<i>Myotis sodalis</i>	Indiana Bat	Mammalia	E

The following state-listed species were recorded within one (1) mile of the proposed project area:

Scientific Name	Common Name	Class	Federal Status	KSNPC Status
<i>Campostoma pullum</i>	Finescale Stoneroller	Actinopterygii	N	S
<i>Hybognathus hayi</i>	Cypress Minnow	Actinopterygii	N	E
<i>Lithobates areolatus circulosus</i>	Northern Crawfish Frog	Amphibia	N	S
<i>Tyto alba</i>	Barn Owl	Aves	N	S
<i>Perimyotis subflavus</i>	Tricolored Bat	Mammalia	PE	T

The KDFWR recently updated the Kentucky State Wildlife Action Plan (SWAP) under a federal grant from the U.S. Fish and Wildlife Service. The updated SWAP is a user-friendly guide for conservation of species of greatest conservation need (SGCN) in the state. The KDFWR invites you to review the updated SWAP on its website (<https://app.fw.ky.gov/kyswap/>). Species experts from the public and private sectors helped develop the SWAP by determining which species were rare, vulnerable, declining in population, or for which there was not enough information to determine status, and therefore had the greatest need for conservation actions. The SWAP is intended to provide guidance to developers, regulators, resource agencies, the public, and other stakeholders to conserve SGCN by prioritizing threats and recommending conservation actions for each species. The KDFWR is promoting the use of the SWAP to prevent declines in SGCN thereby preventing the need to list them in the Endangered Species Act. SGCN status does not invoke regulatory restrictions or requirements. However, the KDFWR encourages project sponsors to consider actions that provide conservation benefits to these species such as minimization of habitat encroachment, using buffer areas near projects to provide habitat, or other measures. Please refer to the SWAP for specific conservation actions that may benefit the SGCN identified within one (1) mile that may be compatible with the proposed project:

Scientific Name	Common Name	Class	Federal Status	KSNPC Status
<i>Hybognathus hayi</i>	Cypress Minnow	Actinopterygii	N	E
<i>Lithobates areolatus circulosus</i>	Northern Crawfish Frog	Amphibia	N	S
<i>Tyto alba</i>	Barn Owl	Aves	N	S
<i>Perimyotis subflavus</i>	Tricolored Bat	Mammalia	PE	T

No trout streams, fish spawning areas, or sensitive waterways were identified as occurring in the project footprint. It is possible that wetlands occur in the project area based on a desktop review of the National Wetlands Inventory Mapping and soil data. Soil data showed Routon silt loam, which can be associated with wetlands. Additionally, numerous streams are depicted on topographic maps and hydrologic map data. An on-site review of the project footprint is recommended. The KDFWR requests that you coordinate the proposed project with the U. S. Army Corps of Engineers (USACE) and the Kentucky Division of Water (KDOW) prior to any work within the waterways or wetland habitats of Kentucky.

There were no wildlife management areas, natural lands, or other protected areas identified in a review of such records within the footprint of the project or within one (1) mile. However, it should be noted that the proposed project site is located within the Jackson Purchase Conservation Opportunity Area (COA), established in the SWAP. A major conservation focus for this region has been to restore native open land systems, manage bottomland hardwood forest, and maintain natural hydrologic regimes.

KDFWR Comments and Guidance:

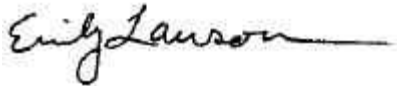
The listed mussel species are typically found in flowing waters of medium to large rivers in main channels over firm sand and gravel substrates (with the exception of the Fat Pocketbook—typically found in slack waters of large rivers). No records were found within Mayfield Creek, therefore it is unlikely that the proposed project will significantly affect these species.

The federally listed bat species occur in forests, caves, or mine portals at different times of the year. The Northern Long-Eared Bat and the Tricolored bat typically overwinter in caves or mines and spend the remainder of the year in forested habitats. The Indiana Bat relies on trees for maternity seasons and may use caves or mine portals throughout the year. The KDFWR asks that you coordinate any tree removal activities with the U.S. Fish and Wildlife Service Kentucky Field Office. Due to the presence of federally listed bat species near the project site, the USFWS may have seasonal requirements for removing those trees, especially those greater than 3" diameter-at-breast height (dbh). Removing these trees during the winter months would reduce possible direct impacts to tree-roosting bat species.

Records of the state-listed Finescale Stoneroller are near the project area in Carney Creek. KDFWR recommends that erosion control measures be developed and implemented prior to construction to reduce siltation into waterways located within/near the project area. These measures will also help reduce potential impacts on the other state-listed aquatic species near the proposed project footprint.

Thank you for coordinating with KDFWR. Please contact Emily Lawson at 502-892-4472 or emilym.lawson@ky.gov if you have further questions or require additional information.

Sincerely,



Emily Lawson
Environmental Branch Coordinator



Andy Beshear
Governor

Energy and Environment Cabinet Office of Kentucky Nature Preserves

300 Sower Boulevard
Frankfort, Kentucky 40601
Telephone: 502-782-7828
EEC.KYBAT@ky.gov

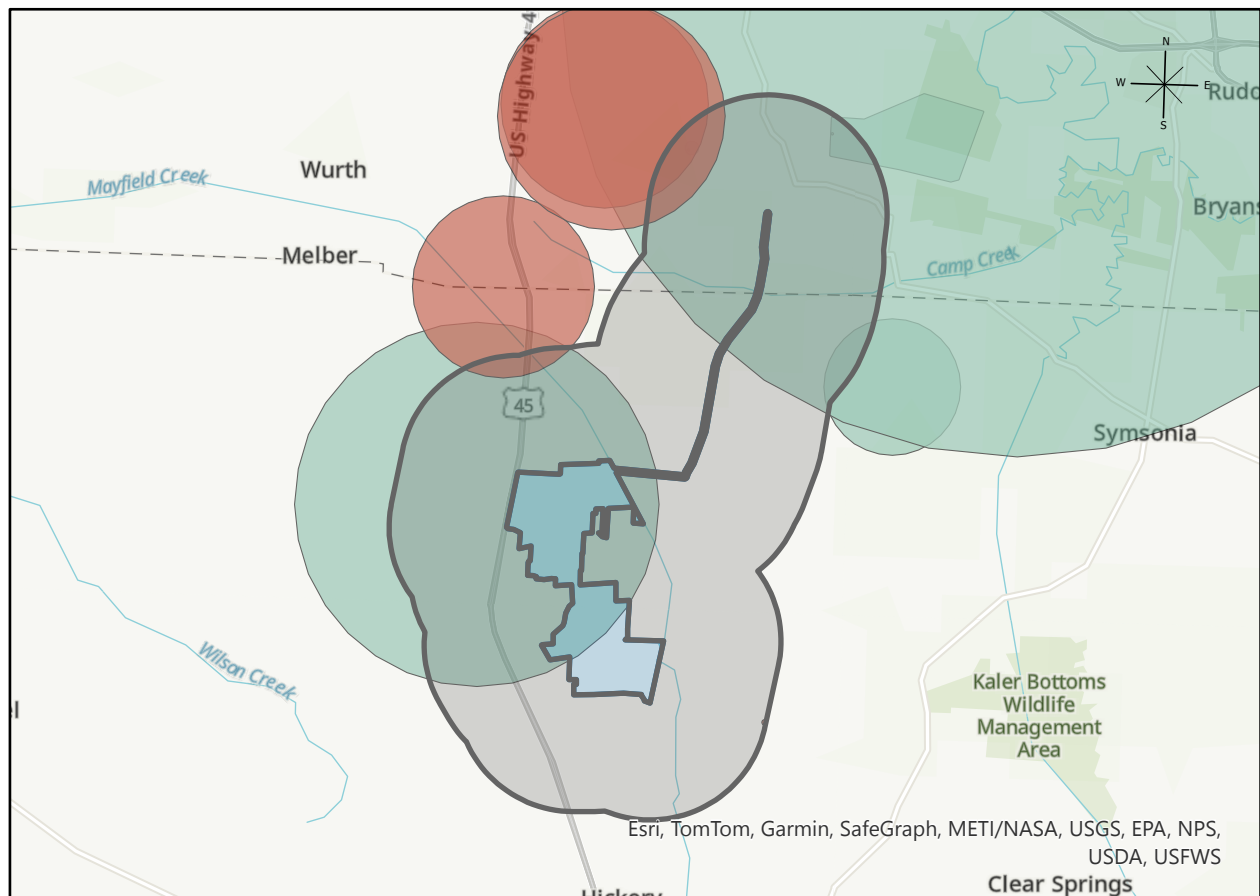
Rebecca W. Goodman
Secretary

Sunni Carr
Executive Director

<FNT style="Italic">Requested on Thursday, February 29, 2024</FNT> by <FNT style="Italic">Laura Darnell, Bacon Farmer Workman Engineering & Testing, Inc.

Re: Kentucky Biological Assessment Data Request 240229L01
MYSO, LLC - Mayfield Solar
Energy Storage - Solar, 2 mile buffer.
GRAVES-MCCRACKEN County, Kentucky

This letter is in response to your data request for the project referenced above. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants, animals, features or exemplary natural communities monitored by the Office of Kentucky Nature Preserves are noted within your submitted project area.





Andy Beshear
Governor

Energy and Environment Cabinet Office of Kentucky Nature Preserves

300 Sower Boulevard
Frankfort, Kentucky 40601
Telephone: 502-782-7828
EEC.KYBAT@ky.gov

Rebecca W. Goodman
Secretary

Sunni Carr
Executive Director

This report includes the following items:

- A - A report for occurrences which intersect the project area
- B - A report for occurrences which intersect the buffer around the project area
- C - A list of best management practices relevant to occurrences near to or within the project area
- D - A list of best management practices relevant to the chosen project type

Thank you for using Office of Kentucky Nature Preserves' Biological Assessment Tool.

We would like to take this opportunity to remind you of the [terms](#) of the data request license, which you agreed upon in order to submit your request. The license agreement states "Data and data products received from the Office of Kentucky Nature Preserves, including any portion thereof, may not be reproduced in any form or by any means without the express written authorization of the Office of Kentucky Nature Preserves." The exact location of plants, animals, and natural communities, if released by the Office of Kentucky Nature Preserves, may not be released in any document or correspondence. These products are provided on a temporary basis for the express project (described above) of the requester, and may not be redistributed, resold or copied without the written permission of the Office of Kentucky Nature Preserves Biological Assessment Branch (300 Sower Blvd - 4th Floor, Frankfort, KY, 40601. Phone: 502-782-7828).

Please note that the quantity and quality of data collected by the Kentucky Natural Heritage Program are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Kentucky have never been thoroughly surveyed and new plants and animals are still being discovered. For these reasons, the Kentucky Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Kentucky. Heritage reports summarize the existing information known to the Kentucky Natural Heritage Program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the occurrences being considered, nor should they be substituted for on-site surveys required for environmental assessments. We would greatly appreciate receiving any pertinent information obtained as a result of on-site surveys.

If you have any questions, or if we can be of further assistance, please do not hesitate to contact our office by email at EEC.KYBAT@ky.gov or by phone at 502-782-7828.

Sincerely,

Alexis R. Schoenlaub
Geoprocessing Specialist
Office of Kentucky Nature Preserves

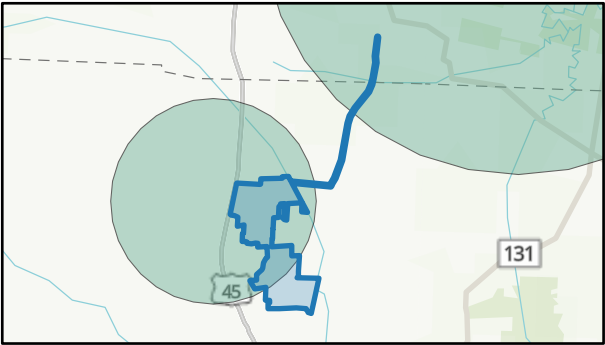
A.1. Project Area - Occurrence Report

The following table outlines occurrences found within your project footprint (if any). You can find more information about global and state rank status definitions on our [Standard Occurrence Report Key](#) . Please note that certain sensitive occurrences found within the buffer area may be listed in this table but are not represented on the map. Please contact the appropriate source as outlined in the “Directions” column should you have further questions related to sensitive occurrences found within the project area.



Map Credits: Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, USFWS

- Botanical
- Ecological
- Zoological



EO ID	Scientific Name	Common Name	G Rank	S Rank	Fed. Status	State Status	SWAP	Precision	Last Obs. Date
15883	Lanius ludovicianus	Loggerhead Shrike	G4	S3S4B,S4N	None	S	Y	Q	1990
15887	Lanius ludovicianus	Loggerhead Shrike	G4	S3S4B,S4N	None	S	Y	Q	1985
26391	Lysimachia minima	Chaffweed	G5	S2	None	T		G	1920-06-17
14395	Phalaris caroliniana	May Grass	G5?	S2?	None	N		S	1971-07-09
16681	Silphium integrifolium	Rosinweed	G5	S3S4	None	N		G	1968-07-04

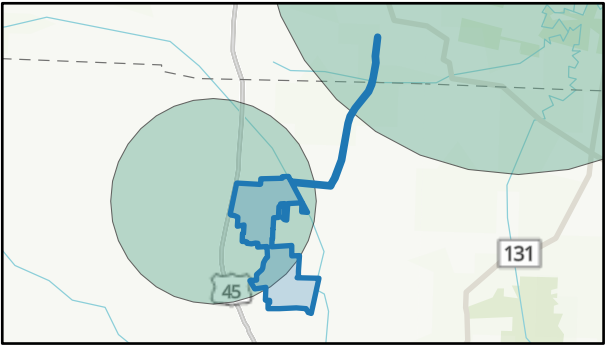
A.2. Project Area – Occurrence Habitat and Location

The following table provides supplemental occurrence information found within your project footprint (if any). You can find more information about global and state rank status definitions on our [Standard Occurrence Report Key](#) . Please note that certain sensitive occurrences found within the buffer area may be listed in this table but are not represented on the map. Please contact the appropriate source as outlined in the “Directions” column should you have further questions related to sensitive occurrences found within the



Map Credits: Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, USFWS

- Botanical 
- Ecological 
- Zoological 



EOID	Scientific Name	Habitat	Location
15883	Lanius ludovicianus		CW block of quadrangle
15887	Lanius ludovicianus		NW block of Quadrangle.
14395	Phalaris caroliniana	DITCHES AND WET, SANDY, OPEN FIELDS.	Ditches and banks of the railroad crossing of Wice Baptist C
16681	Silphium integrifolium		From Mayfield, KY go north on Hwy 45 for 10 miles. Take left
26391	Lysimachia minima		Near Paducah (001A).

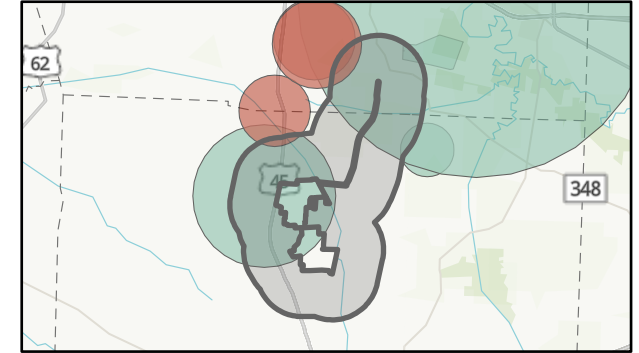
B. Buffer Area - Occurrence Report

The following table outlines occurrences found within your buffered project footprint (if any). You can find more information about global and state rank status definitions on our [Standard Occurrence Report Key](#). Please note that certain sensitive occurrences found within the buffer area may be listed in this table but are not represented on the map. Please contact the appropriate source as outlined in the “Directions” column should you have further questions related to sensitive occurrences found within the project area.



Map Credits: Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, USFWS

Botanical ■
Ecological ■
Zoological ■



EO ID	Scientific Name	Common Name	G Rank	S Rank	Fed. Status	State Status	SWAP	Precision	Last Obs. Date
5214	<i>Accipiter striatus</i>	Sharp-shinned Hawk	G5	S3B,S4N	None	S	Y	M	1985
14430	<i>Amsonia salicifolia</i>	Eastern Blue-star	GNR	S2?	None	N		M	1967-04-14
3605	<i>Cambarellus puer</i>	Swamp Dwarf Crayfish	G5	S1	None	E		M	1980-02-22
24487	<i>Hibiscus lasiocarpus</i>	Crimson-eyed Rosemallow	G5T4	S2?	None	N		S	2022-07-13
13337	<i>Iris brevicaulis</i>	Zigzag Iris	G4	S2	None	T		G	1974-06-14
15883	<i>Lanius ludovicianus</i>	Loggerhead Shrike	G4	S3S4B,S4N	None	S	Y	Q	1990
15882	<i>Lanius ludovicianus</i>	Loggerhead Shrike	G4	S3S4B,S4N	None	S	Y	Q	1988-06-23
15887	<i>Lanius ludovicianus</i>	Loggerhead Shrike	G4	S3S4B,S4N	None	S	Y	Q	1985
26391	<i>Lysimachia minima</i>	Chaffweed	G5	S2	None	T		G	1920-06-17
24559	<i>Lythrum lanceolatum</i>	Lance-leaved Loosestrife	G5T5	S1?	None	N		S	2022-07-15
20	<i>Rudbeckia subtomentosa</i>	Sweet Coneflower	G5	S1	None	E		M	1977-09-04
16681	<i>Silphium integrifolium</i>	Rosinweed	G5	S3S4	None	N		G	1968-07-04
7505	<i>Tyto alba</i>	Barn Owl	G5	S3	None	S	Y	G	1991
11179	<i>Tyto alba</i>	Barn Owl	G5	S3	None	S	Y	S	2004-10-11

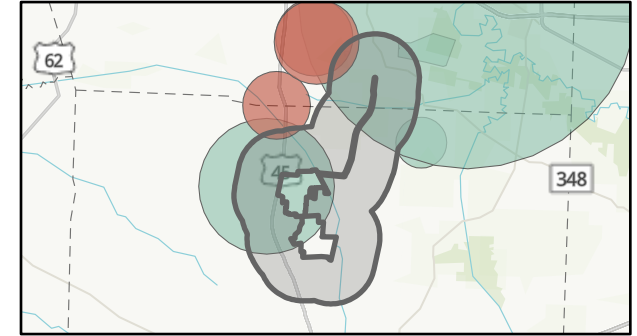
C. Occurrence References and Recommendations (1 of 1)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.



Map Credits: Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, USFWS

Botanical 
Ecological 
Zoological 



Per the U.S. Fish and Wildlife Service's recommendations: Birds covered under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) should be considered during project reviews. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish & Wildlife Service (50 C.F.R. § 10.12 and 16 U.S.C. § 668(a)). For more information regarding these acts go to: <http://www.fws.gov/migratorybirds/RegulationsandPolicies.html>.

The MBTA currently has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within a NEPA document (if there is a federal nexus), a Bird- or Eagle-specific Conservation Plan, or both. Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds to the project-related stressors; proponents should also implement a rigorous plan to monitor the effectiveness of conservation measure. For more information on avian stressors and recommended conservation measures go to: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/BirdHazards.html>.

In addition to MBTA and BGEPA, Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <http://www.fws.gov/migratorybirds/AboutUS.html>.

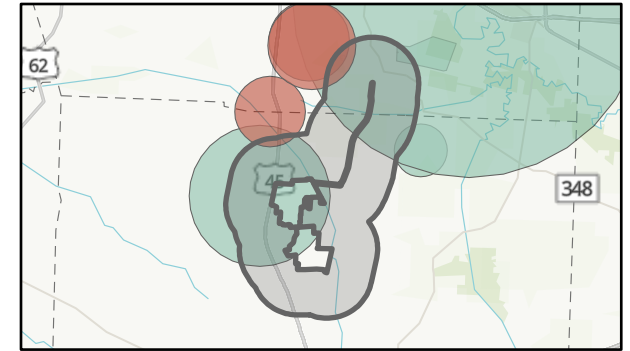
D. Project References and Recommendations (1 of 1)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.



Map Credits: Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, USFWS

Botanical 
Ecological 
Zoological 





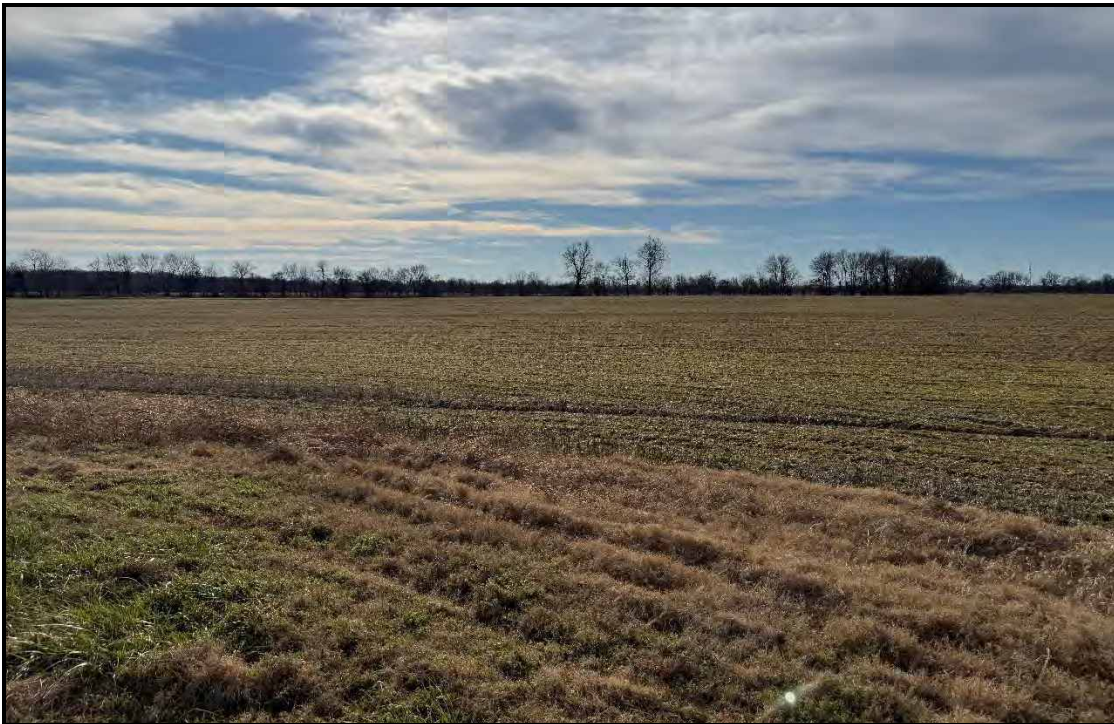
Thank you for using the Office of Kentucky Nature Preserves
Biological Assessment Tool.

OKNP's species dataset relies on continuous monitoring and surveying for species of concern throughout the state. Any records of species of concern found within this project area would greatly benefit the quality and comprehensiveness of the state-wide dataset for rare, threatened and endangered species. If you would like to contribute any additional species information, please do not hesitate to contact our office by email at EEC_KYBAT@ky.gov or by phone at 502-782-7828.

Appendix C
Site Photographs



Photograph 1: General view of agricultural fields on the site. January 13, 2026.



Photograph 2: View of some mowed field habitat along the southern edge of the largest pond, facing south toward agricultural fields and East Baldree Road. January 13, 2026.



Photograph 3: View of Intermittent Stream A, facing northeast (downstream). January 13, 2026.



Photograph 4: View from the southern side of Pond A, facing north. Intermittent Stream B flows out of the pond in the background. January 13, 2026.



Photograph 5: View of Intermittent Stream C, facing north from north of Pond B. January 13, 2026.



Photograph 6: View of Perennial Stream A, facing west from west of Pond B. January 13, 2026.



Photograph 7: View of Wetland A, facing north from near the southern end of the wetland. January 13, 2026.



Photograph 8: View of Wetland B, facing north from the southwestern end of the wetland. January 13, 2026.



Photograph 9: View of Wetland C, facing northeast from the southwest portion of the wetland. January 13, 2026.



Photograph 10: View of Pond A, facing east from the western side of the pond. A woodlot located offsite to the east and south is visible in the background. January 13, 2026.



Photograph 11: View of Pond B, facing southwest from the northeastern end of the pond. January 13, 2026.



Photograph 12: View looking at the western edge of Pond B (left background) with a section of Perennial Stream A in the right foreground. January 13, 2026.