Wetland and Waterbody Delineation Report

Crab Run Solar Project

PREPARED FOR
Crab Run Solar Project, LLC

DATE
July 28, 2025

REFERENCE
0787671

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1. INTRODUCTION

On behalf of Crab Run Solar Project, LLC, Environmental Resources Management, Inc. (ERM) performed a desktop review and field delineation for wetlands and waterbodies (streams and open waterbodies such as ponds) within the proposed Crab Run Solar Project (Project) in Marion County, Kentucky. The following report describes existing site conditions, methodologies, and findings associated with this site assessment.

A desktop review was conducted to identify the potential for the occurrence of wetlands, waterbodies, and other sensitive environmental areas. This was completed using the U.S. Geological Survey (USGS) topographic maps, high resolution aerial photography, National Hydrography Dataset (NHD), U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) database, and Federal Emergency Management Agency (FEMA) floodplain data within the Site.

Following the desktop review, ERM conducted a field wetland and waterbody delineation on July 9-11, 2025. All figures referenced in the following report are provided in Appendix A, Antecedent Precipitation Tool (APT) results are included in Appendix B, Site photographs are included in Appendix C, and United States Army Corps of Engineers (USACE) wetland determination data forms in Appendix D.

2. SITE LOCATION

The Project encompasses approximately 412 acres of predominantly agricultural land in Marion County, Kentucky, located 1.80 miles southeast of the town of Loretto (Site; Appendix A, Figures 1 and 2). Based on review of desktop resources, including aerial imagery via Google Earth, two access roads were identified on the western side of the Site. These farm roads, both of which enter the property near the intersection of Frogtown Road and Ben Daughter Road, provide access to the western and central portions of the Site.

3. METHODOLOGY

Waters of the United States (WOTUS), including wetlands, are federally protected under Section 404 of the Clean Water Act (CWA). On August 29, 2023, the agencies issued a final rule to amend the January 2023 Rule, to conform the definition of "waters of the United States" to the Supreme Court's decision in Sackett. This conforming rule amends the provisions of the agencies' definition of "waters of the United States" that are invalid under the Supreme Court's interpretation of the CWA in the Sackett decision and became effective on September 8, 2023, upon publication in the Federal Register. The definition of a wetland is "*those areas that are inundated or saturated by surface or groundwater 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*" (Code of Federal Regulations §230.3(t)).

ERM delineated wetlands and waterbodies at the Site July 9-11, 2025. All surveys were conducted in accordance with the three-parameter methodology outlined in the 1987 USACE *Wetlands*

Delineation Manual (Manual), the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region (Version 2.0)*, and per recent guidance issued jointly by the U.S. Environmental Protection Agency and the USACE.

The three parameters required for identifying a jurisdictional wetland are as follows:

- The presence of hydrophytic vegetation - Hydrophytic vegetation is determined by the dominant species present at any given data point, where each species is assigned a plant indicator status as to its preference/tolerance for wetland conditions. Data points having dominant species that are greater than 50 percent facultative or wetter are considered to meet the hydrophytic vegetation criterion.
- The presence of hydrology - Each data point is evaluated for evidence of wetland hydrology or persistent saturation or inundation of soils. The Manual identifies both primary and secondary hydrologic indicators, and one primary indicator or two secondary indicators must be observed in order for the sample point to meet the hydrology criterion. Indicators include saturated soils in the upper 12 inches, inundation, water marks, drift lines, sediment deposits, drainage patterns, oxidized root channels in the upper 12 inches, water-stained leaves, local soil survey data, and others.
- The presence of hydric soils - Soil in each sample plot is sampled with a soil spade to a depth of at least 18 inches, or to the B horizon, whichever appears first. The delineator obtains a profile description and identifies hydric soil indicators based on soil texture(s) and soil color(s). Soil textures are determined by manual tactile sampling. Soil colors (in a moist condition) are compared to Munsell Soil-Color charts (2009 Edition, 2015 production year, Munsell Color, Grand Rapids, MI, USA) to determine hue, value, and chroma to determine if hydric characteristics are present.

An area is classified as a wetland only in instances where all three parameters exist under normal circumstances. If one or more criteria are absent, then the area is deemed upland.

To identify wetlands and waterbodies within the Site, the area was traversed on foot. Data points were taken within the Site to verify or refute the presence of wetland soils, vegetation, and hydrology. USACE wetland data forms were completed at each sample point. One corresponding upland community sample point was also taken for each wetland or wetland complex. If more than one type of wetland was observed within a larger wetland complex, the boundaries of the different types were identified, and separate USACE wetland data forms were completed for each type within the complex. Completed USACE Eastern Mountains and Piedmont Region wetland determination data forms are presented in Appendix D.

ERM utilized a Trimble R1 Submeter Global Positioning System to obtain coordinates for the wetland data points, wetland boundaries, and waterbody boundaries during the field survey effort. This unit is capable of sub-meter accuracy (following post-processing and differential correction via a known base station) and allows the digital data to be incorporated into drawings for mapping/design purposes.

4. RESULTS

The following sections present the results of the desktop analysis, and the wetland and waterbody field surveys conducted July 9-11, 2025.

4.1 EXISTING SITE CONDITIONS

The project is located in the Lexington Plain, part of the Interior Low Plateau physiographic province (USGS, 1946) and is located within the Hardins Creek sub-watershed Hydrologic Unit Code (HUC) 051401030303. The Site consists mainly of undeveloped agricultural pasture with some forested streams and cultivated cropland. As such, the majority of vegetation consists of grazing/forage species, and natural hydrology has not been significantly altered. Based on a review of aerial orthoimagery and observations from the Site visit, the Site is noted as an aggregation of agricultural fields with portions observed as undeveloped and forested. The western portion of the Site was accessed by Frogtown Road and a connecting farm road. An access road is located on the southern portion of the Site via Arthur Mattingly Road but could not be utilized during delineation. Additionally, several undeveloped agricultural roads traversed the Site.

Topography at the Site is classified as flat with gentle slopes. Elevation ranges at the Site from 753 to 662 feet above mean sea level, trending from west to east (Appendix A, Figure 2).

Soil within the Site consists primarily of silt loams with slopes ranging from 0 to 20 percent slopes. The following soil mapping units were identified on the Site by using the USDA SSURGO (Appendix A; Figure 3). Three hydric soils were identified: Newark silt loam (Ne), Lawrence silt loam (La), and Nolin silt loam (No).

TABLE 1 SUMMARY OF SOILS WITHIN THE SITE (MARION COUNTY)

Map Unit Symbol	Map Unit Name	Acres within Site	Percentage of Site	Hydric
LoC2	Lowell silty clay loam, 6 to 12 percent slopes, eroded	97.7	23.7%	No
BcC2	Beasley silty clay loam, 6 to 12 percent slopes, eroded	69.1	16.8%	No
FaD2	Faywood silty clay loam, 12 to 20 percent slopes, eroded	59.3	14.4%	No
SaB	Sandview silt loam, 2 to 6 percent slopes	48.0	11.6%	No
Ne	Newark silt loam, 0 to 2 percent slopes, frequently flooded	39.8	9.7%	Yes
TbB	Tilsit-Berea silt loams, 2 to 6 percent slopes	27.9	6.8%	No
FaC2	Faywood silty clay loam, 6 to 12 percent slopes, eroded	26.5	6.4%	No
OtB	Otwell silt loam, 2 to 8 percent slopes	19.1	4.6%	No
CrB	Crider silt loam, 2 to 6 percent slopes	9.8	2.4%	No
La	Lawrence silt loam, 0 to 2 percent slopes, rarely flooded	5.5	1.3%	Yes
No	Nolin silt loam, 0 to 2 percent slopes, frequently flooded	4.7	1.1%	Yes
NhB	Nicholson silt loam, 2 to 6 percent slopes	2.7	0.7%	No
GrB	Greenbriar silt loam, 2 to 6 percent slopes	1.1	0.3%	No
W	Water	0.9	0.2	No
Total Acreage		**412.1**	**100%**	

The USFWS NWI indicates there are 3.97 acres of Riverine wetland and 0.73 acres of freshwater ponds within the Site. The USGS NHD mapping indicates that there are approximately 8,922 linear feet of streams and 1.70 acres of waterbodies present within the Site (Appendix A; Figure 4).

The site includes an area classified as FEMA Flood Zone A, representing a 1% annual chance of flooding. A small 9.24-acre portion of the Site, located along Crab Run in the northeastern area, falls within FEMA Flood Zone A (FIRM 21155C0175D and 21155C0135D; FEMA 2023). The flood-

prone area is concentrated along Crab Run and its adjacent low-lying regions, particularly in the north and northeastern sections of the site (Appendix A; Figure 5).

Climatic conditions at the Site were evaluated using the APT, developed by the USACE and the U.S. Environmental Protection Agency. The APT assesses recent precipitation patterns by comparing 30-day rolling totals to a 30-year historical normal range to determine if conditions are drier than normal, normal, or wetter than normal at the time of investigation.

Based on the APT output for the Site, conditions during the evaluated period were classified as wetter than normal, with the majority of recent 30-day intervals exceeding the 70th percentile of the historical range. One interval reflected normal conditions (7/10/2025); however, the weighted results support an overall classification of wetter than normal. These findings indicate that site conditions at the time of the field investigation were influenced by above-average precipitation. A summary of APT results is included in Appendix B.

Additionally, in accordance with the desktop and field analysis, no waterways are present within the Site that would require a special use or cold-water habitat designation (e.g., Outstanding State Resource Waters, Coldwater Aquatic Habitats, or other Special Use Waters) from the Kentucky Division of Water (KDOW; KDOW 2025). Photographs of the delineated waterbodies are presented in Appendix C.

4.2 WETLANDS

During the onsite delineation, ERM identified four wetlands totaling 2.27 acres within the Site, which include three Palustrine Emergent (PEM) wetlands, totaling 1.13 acres, and one Palustrine Shrub-Scrub (PSS) wetlands, totaling 1.14 acres.

Based on ERM's professional opinion, Wetland-01 and Wetland-03, totaling 0.72 acres of PEM wetlands, and Wetland-04, a 1.14-acre PSS wetland, are considered potential jurisdictional features. These wetlands appear to be adjacent to relatively permanent waters (RPWs).

Wetland-02, which is also classified as PEM and is 0.41 acre, is a potentially non-jurisdictional feature. It is identified as either an isolated wetland.

Preliminary jurisdictional opinion is based off the current definition of WOTUS for the Commonwealth of Kentucky at the completion of this report, 2023 Rule as amended by the decision of *Sackett v. U.S. Environmental Protection Agency*. Table 2 lists each wetland by a unique Feature ID, Cowardin classification, feature acreage, and preliminary jurisdictional opinion. The delineated wetland features are shown in Appendix A, Figure 6. A photographic log of representative wetland types is presented in Appendix C. Additional details and justifications for the classification of the wetlands can be found on the USACE Wetland Determination Data Forms, provided in Appendix D.

TABLE 2 WETLANDS IDENTIFIED WITHIN THE SITE

Feature	Cowardin Classification[1]	Area (Acres)[2]	Preliminary Jurisdictional Opinion[3]	Lattitude	Longitude
Wetland 1	PEM	0.54	Jurisdictional	37.612069	-85.374159
Wetland 2	PEM	0.41	Non-Jurisdictional	37.610779	-85.375876
Wetland 3	PEM	0.18	Jurisdictional	37.611189	-85.367842
Wetland 4	PSS	1.14	Jurisdictional	37.604098	-85.359873
	Total PEM	**1.13**			
	Total PSS	**1.14**			
Total		**2.27**			

[1] Classifications are based on ERM's professional judgment of actual field conditions.
[2] Feature size within Site
[3] Jurisdictional determinations and boundaries when presented are preliminary and subject to final verification by the USACE.

4.3 WATERBODIES

4.3.1 STREAMS

During the delineation, ERM identified 13 stream and ditch features totaling approximately 13,806 linear feet. Of these, three were classified as perennial stream features totaling 8,392 linear feet; six were classified as intermittent stream features totaling approximately 4,280 linear feet; and four were classified as ephemeral stream features totaling approximately 1,134 linear feet. Photographs of the stream features are provided in Appendix C.

Perennial streams on the Site are expected to flow year-round. These streams typically exhibited moderate to strong geomorphology, well-defined bed and bank, moderate sinuosity, and moderate to strong in-stream features such as variable particle size and aquatic habitat. Intermittent streams had well-defined beds and banks and were connected to both groundwater and surface water, but do not flow continuously throughout the year. Ephemeral streams lacked consistent hydrological indicators such as baseflow, sediment and organic debris piles, and leaf litter. These features typically drained agricultural fields and lacked biological indicators such as aquatic fauna.

Approximately 8,392 linear feet of perennial streams (Streams 1, 8, and 9) and 4,280 linear feet of intermittent streams (Streams 2, 4, 5, 6, 12, and 13) are considered potential jurisdictional features, classified as RPWs. The remaining features (Streams 3, 7, 10, and 11) are classified as ephemeral streams and ditches and are not considered RPWs. Therefore, they would most likely not be considered jurisdictional. Table 3 lists each waterbody by a unique feature name, hydrologic flow regime, length in linear feet, and preliminary jurisdictional opinion.

TABLE 3 STREAMS IDENTIFIED WITHIN THE SITE

Feature ID	Flow Regime	Length (Linear feet)[2]	Preliminary Jurisdictional Opinion[3]	Cowardin Class	Lattitude	Longitude
Stream 1	Perennial	5,615	Jurisdictional	R2UB1/R2UB2	37.611278	-85.370561
Stream 2	Intermittent	179	Jurisdictional	R4SB3	37.610980	-85.370512
Stream 3	Ephemeral	44	Non-Jurisdictional	R6	37.611602	-85.371747
Stream 4	Intermittent	329	Jurisdictional	R4SB3	37.611050	-85.375440
Stream 5	Intermittent	577	Jurisdictional	R4SB3	37.613425	-85.376283
Stream 6	Intermittent	575	Jurisdictional	R4SB4/R4SB5	37.611450	-85.368713
Stream 7	Ephemeral	319	Non-Jurisdictional	R6	37.612070	-85.370999
Stream 8	Perennial	2,130	Jurisdictional	R2UB1/R2UB2	37.607882	-85.370086
Stream 9	Perennial	647	Jurisdictional	R2UB2/R2UB3	37.607788	-85.368435
Stream 10	Ephemeral	497	Non-Jurisdictional	R6	37.606530	-85.368127
Stream 11	Ephemeral	275	Non-Jurisdictional	R6	37.604755	-85.357965
Stream 12	Intermittent	478	Jurisdictional	R4SB5	37.606866	-85.372610
Stream 13	Intermittent	2,142	Jurisdictional	R4SB3/R4SB6	37.608801	-85.356454
	Total Ephemeral	**1,134**				
	Total Intermittent	**4,280**				
	Total Perennial	**8,392**				
	Total	**13,806**				

[1] Classifications are based on ERM's professional judgment of actual field conditions.
[2] Feature size within Site
[3] Jurisdictional determinations and boundaries when presented are preliminary and subject to final verification by the USACE.

4.3.2 OPEN WATERBODIES

During the onsite delineation, ERM identified six open waterbodies classified as ponds totaling 3.65 acres. The ponds are likely used for agricultural purposes and are potentially non-jurisdictional features as they do not have connection to a RPW.

TABLE 4 OPEN WATERBODIES IDENTIFIED WITHIN THE SITE

Feature ID	Cowardin Classificaion[1]	Area (Acres)[2]	Preliminary Jurisdictional Opinion[3]	Lattitude	Longitude
OW-01	PUBA	0.36	Non-Jurisdictional	37.605425	-85.357700
OW-02	PUBA	0.32	Non-Jurisdictional	37.607330	-85.364514
OW-03	PUBA	1.08	Non-Jurisdictional	37.606234	-85.373191
OW-04	PUBA	0.83	Non-Jurisdictional	37.607724	-85.366396
OW-05	PUBA	0.53	Non-Jurisdictional	37.607298	-85.374097
OW-06	PUBA	0.53	Non-Jurisdictional	37.603053	-85.360300
Total		**3.65**			

[1] Classifications are based on ERM's professional judgment of actual field conditions.
[2] Feature size within Site
[3] Jurisdictional determinations and boundaries when presented are preliminary and subject to final verification by the USACE.

5. CONCLUSION

ERM conducted a desktop review and field delineation to identify wetlands and waterbodies within the Site. A total of four wetlands, totaling 2.27 acres, 13 streams and ditches totaling 13,806 linear feet, and six open waterbodies, likely agricultural ponds for livestock use, totaling 3.65 acres, were identified within the Site.

Although these findings are based upon a survey utilizing USACE-approved protocols and current regulatory guidance, the USACE must make the official determinations on the presence or absence of jurisdictional WOTUS on Site through the jurisdictional determination process.

6. REFERENCES

Current Implementation of Waters of the United States. 2024. U.S. Environmental Protection Agency (EPA). Available at: https://www.epa.gov/wotus/current-implementation-waters-united-states. Accessed July 2025.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. U.S. Army Corps of Engineers. Published January 1987.

Environmental Laboratory. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region. Version 2.0. U.S. Army Corps of Engineers. Published April 2012.

Federal Emergency Management Agency (FEMA). 2023. FEMA Flood Insurance Rate Map (FIRM), Map Number 21155C0175D. Effective May 23, 2023.

Geological, U.S. 1946. Physiographic Divisions of the Conterminous United States. U.S. Geological Survey Data Release. Available at: https://doi.org/10.5066/P9B1S3K8. Accessed July 2025.

Kentucky Energy and Environment Cabinet – Department of Water (KDOW). 2025. Special Use Waters. Available at: https://eec.ky.gov/Environmental-Protection/Water/Regs/Pages/SpecialH2O.aspx. Accessed July 2025.

U.S. Department of Agriculture (USDA). 2019. Web Soil Survey. Available at: https://websoilsurvey.nrcs.usda.gov/app/. Accessed July 2025.

U.S. Environmental Protection Agency (EPA). 2023. *Antecedent Precipitation Tool (APT)*. Available at: https://www.epa.gov/wetlands/antecedent-precipitation-tool-apt. Accessed July 2025.

U.S. Fish and Wildlife Service (USFWS). 2023. National Wetland Inventory. Updated October 23, 2023. Available at: https://www.fws.gov/program/national-wetlands-inventory/download-state-wetlands-data. Accessed July 2025.

U.S. Geological Survey (USGS). 2023. National Hydrography Dataset. Updated May 5, 2023. Available at: https://apps.nationalmap.gov/viewer/. Accessed July 2025.

U.S. Geological Survey (USGS). 2025. The National Map Viewer. Available at: https://apps.nationalmap.gov/viewer/. Accessed July 2025.

Woods, A.J., Omernik, J.M., Martin, W.H., Pond, G.J., Andrews, W.M., Call, S.M., Comstock, J.A., and Taylor, D.D. 2002. Ecoregions of Kentucky (color poster with map, descriptive text, summary tables, and photographs). U.S. Geological Survey, Reston, VA. Scale 1:1,000,000.

APPENDIX A FIGURES

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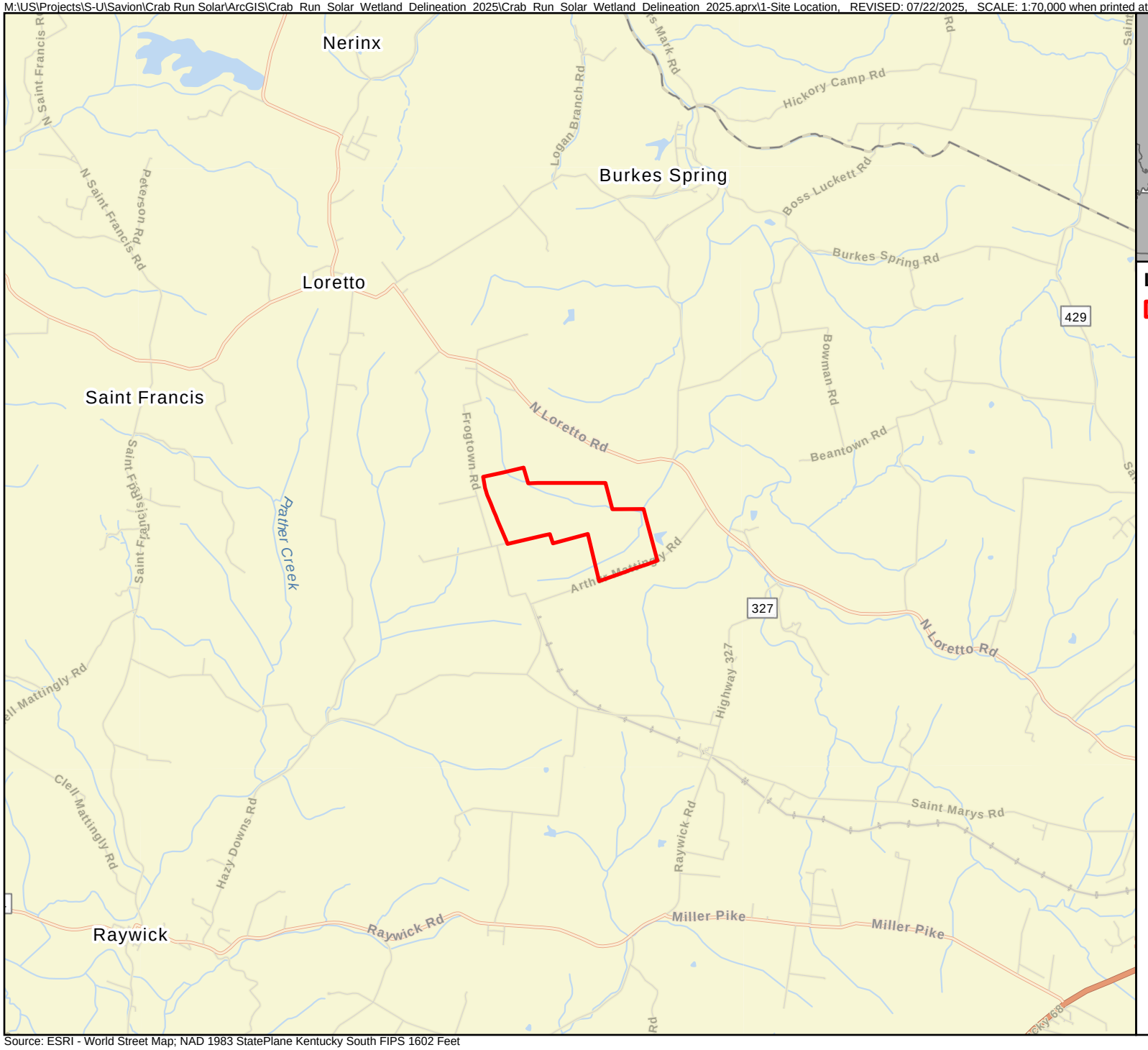

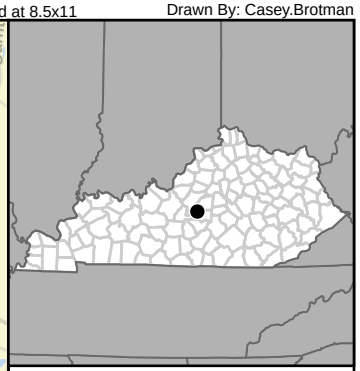

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Project Site

N

0 0.5 1

Miles

Figure 1
Site Map
Crab Run Solar Project
Crab Run Solar Project, LLC
Marion County, Kentucky

ERM

Source: ESRI - World Street Map; NAD 1983 StatePlane Kentucky South FIPS 1602 Feet

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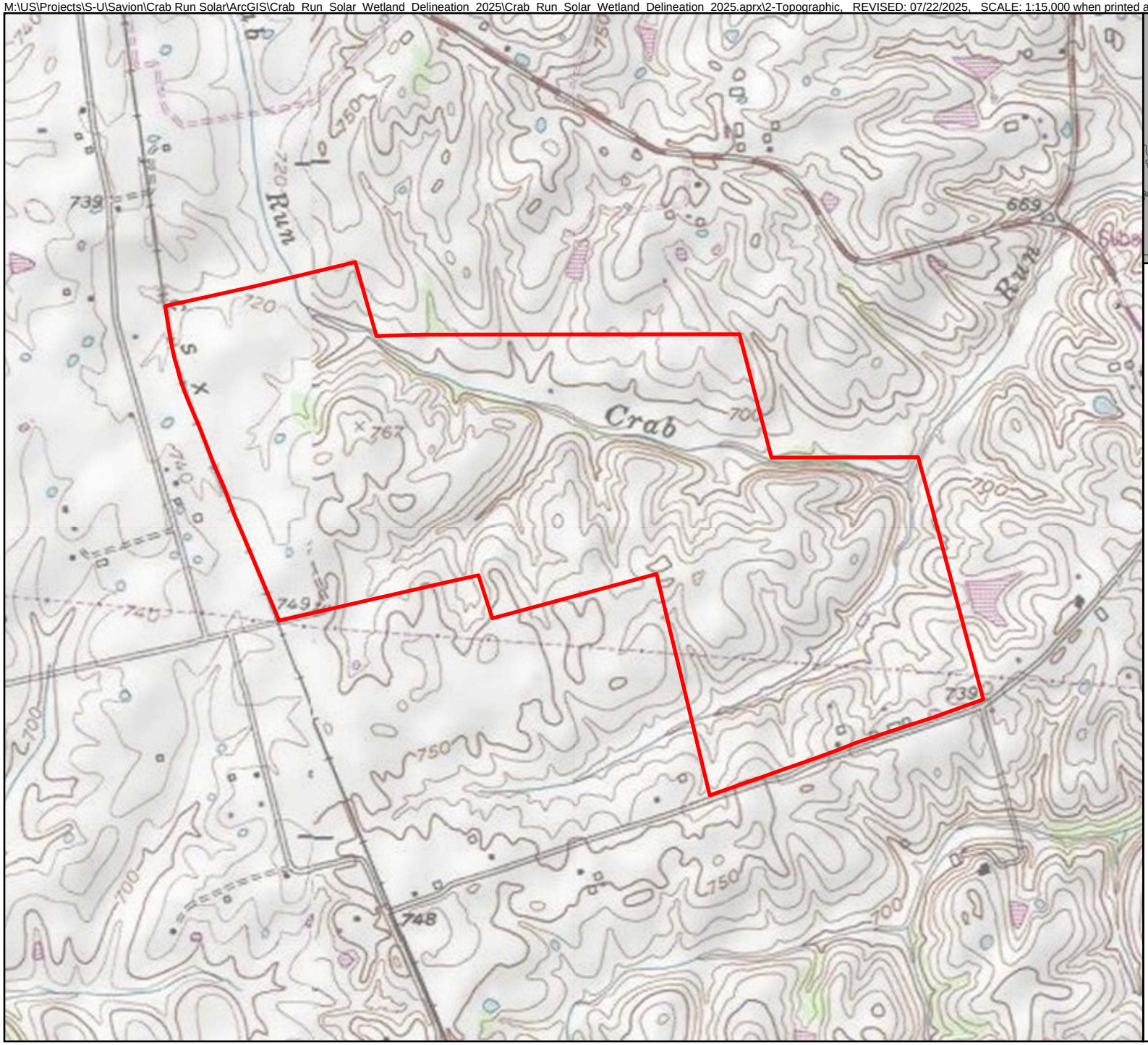

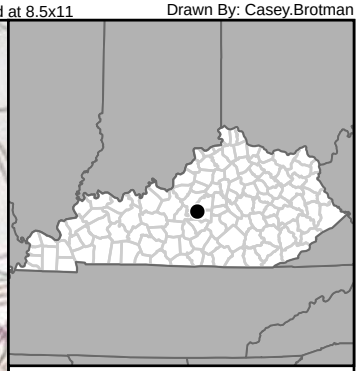

Legend

Project Site

N

0 500 1,000

Feet

Figure 2

USGS Topographic Map

Crab Run Solar Project

Crab Run Solar Project, LLC

Marion County, Kentucky

ERM

Source: USGS Topo Maps (Map Service); NAD 1983 StatePlane Kentucky South FIPS 1602 Feet
Raywick, KY (2022) and Lebanon West, KY (2022)

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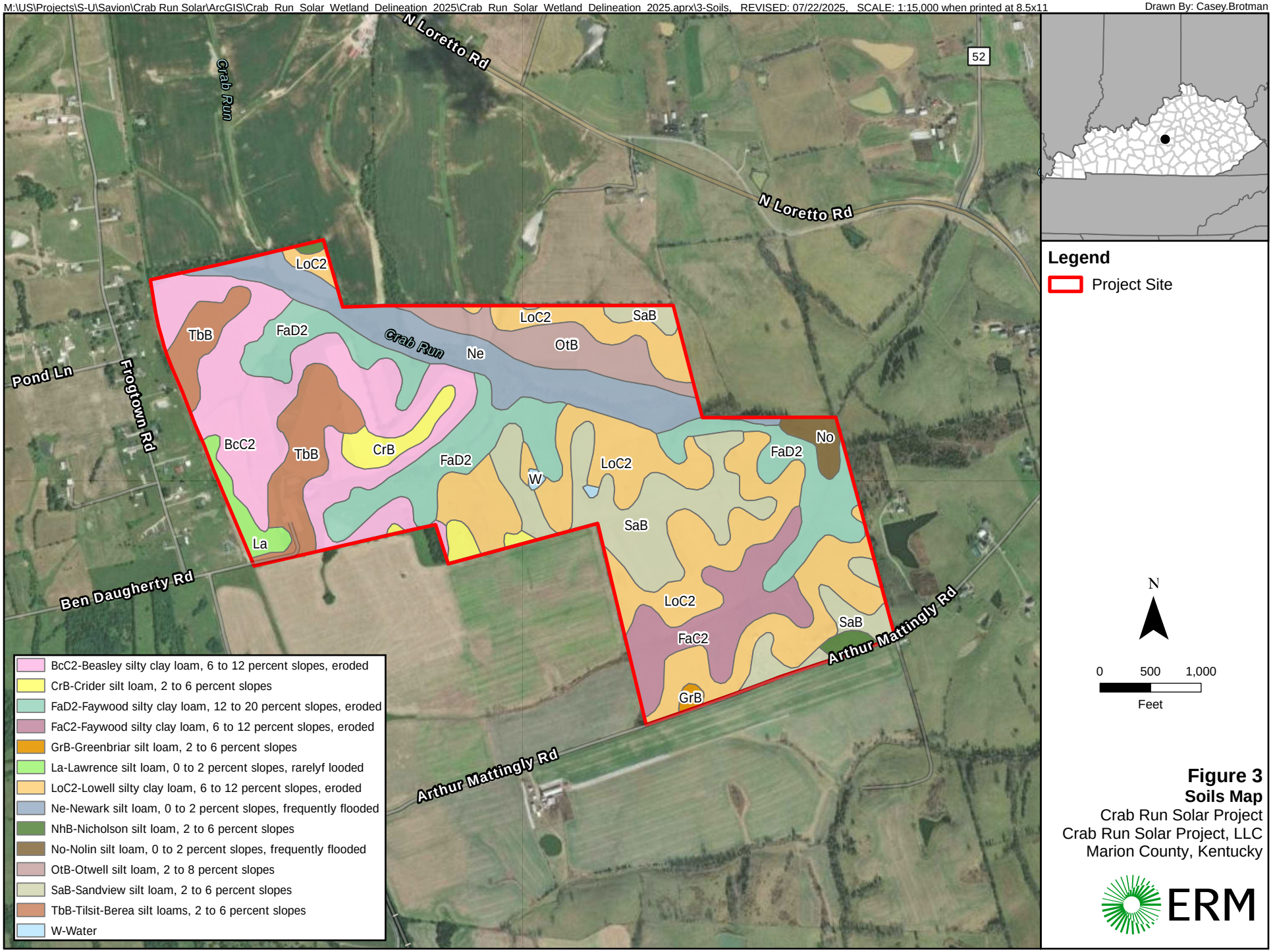

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Project Site

N

0 500 1,000

Feet

Figure 3
Soils Map
Crab Run Solar Project
Crab Run Solar Project, LLC
Marion County, Kentucky

ERM

Source: ESRI - World Imagery Map; NAD 1983 StatePlane Kentucky South FIPS 1602 Feet
Web Soil Survey (2023).

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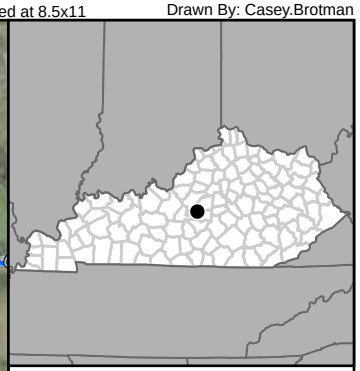

Legend

- Project Site

National Hydrography Dataset

- Waterbody
- Stream

National Wetland Inventory

- Freshwater Emergent Wetland
- Freshwater Pond
- Riverine

N

0 500 1,000

Feet

Figure 4

NWI and NHD Map

Crab Run Solar Project

Crab Run Solar Project, LLC

Marion County, Kentucky

ERM

Source: ESRI - World Imagery Map; NAD 1983 StatePlane Kentucky South FIPS 1602 Feet
USFWS National Wetland Inventory (2023). USGS National Hydrography Dataset (2023).

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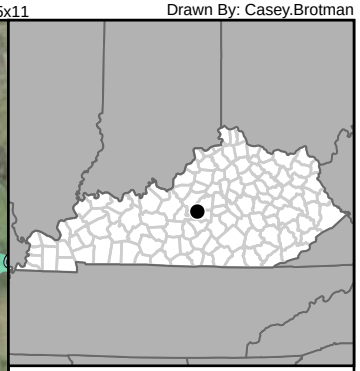

Legend

- Project Site
- Zone A (1% Annual Chance of Flood)

N

0 500 1,000

Feet

Figure 5

FEMA Flood Hazard Map

Crab Run Solar Project

Crab Run Solar Project, LLC

Marion County, Kentucky

ERM

Source: ESRI - World Imagery Map; NAD 1983 StatePlane Kentucky South FIPS 1602 Feet
FEMA Flood Map Service Center.

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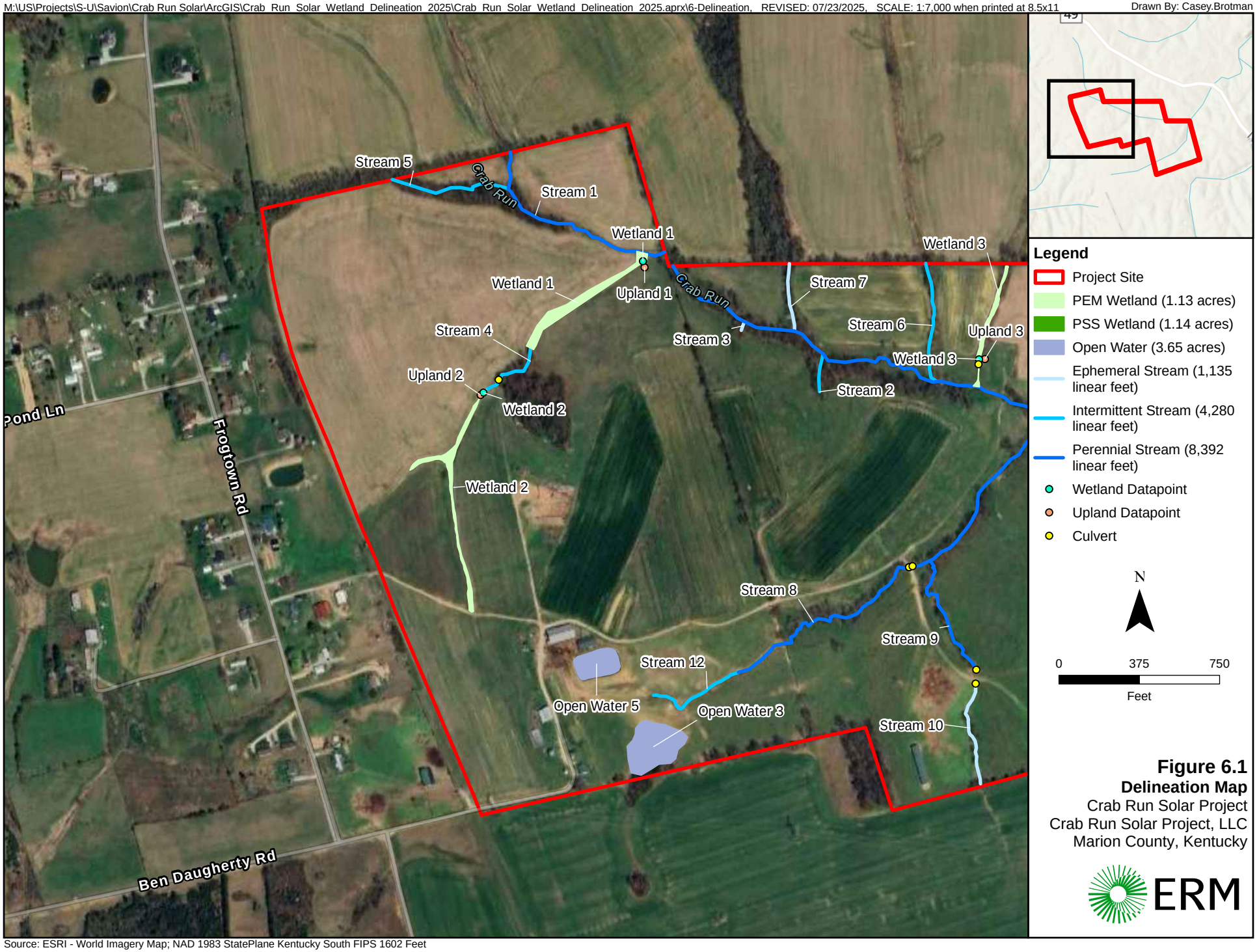
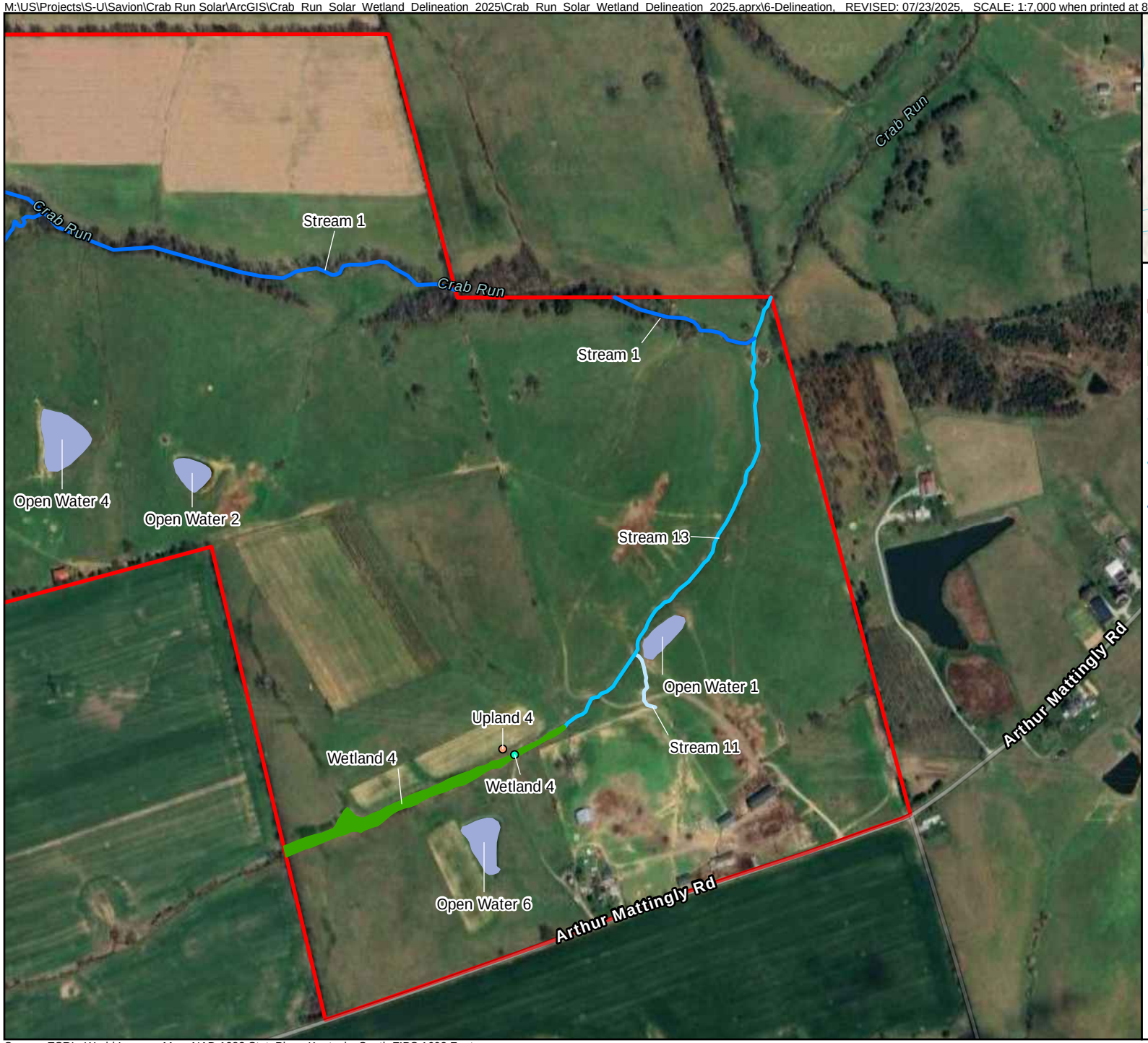


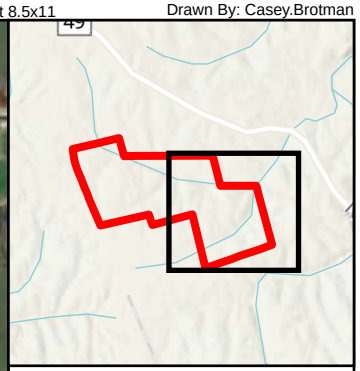
Figure 6.1
Delineation Map
Crab Run Solar Project
Crab Run Solar Project, LLC
Marion County, Kentucky

ERM

Source: ESRI - World Imagery Map; NAD 1983 StatePlane Kentucky South FIPS 1602 Feet

M:\US\Projects\S-U\Savion\Crab Run Solar\ArcGIS\Crab_Run_Solar_Wetland_Delineation_2025\Crab_Run_Solar_Wetland_Delineation_2025.aprx\6-Delineation, REVISED: 07/23/2025, SCALE: 1:7,000 when printed at 8.5x11 Drawn By: Casey.Brotman





Legend

- Project Site
- PEM Wetland (1.13 acres)
- PSS Wetland (1.14 acres)
- Open Water (3.65 acres)
- Ephemeral Stream (1,135 linear feet)
- Intermittent Stream (4,280 linear feet)
- Perennial Stream (8,392 linear feet)
- Wetland Datapoint
- Upland Datapoint
- Culvert

N

0 375 750

Feet

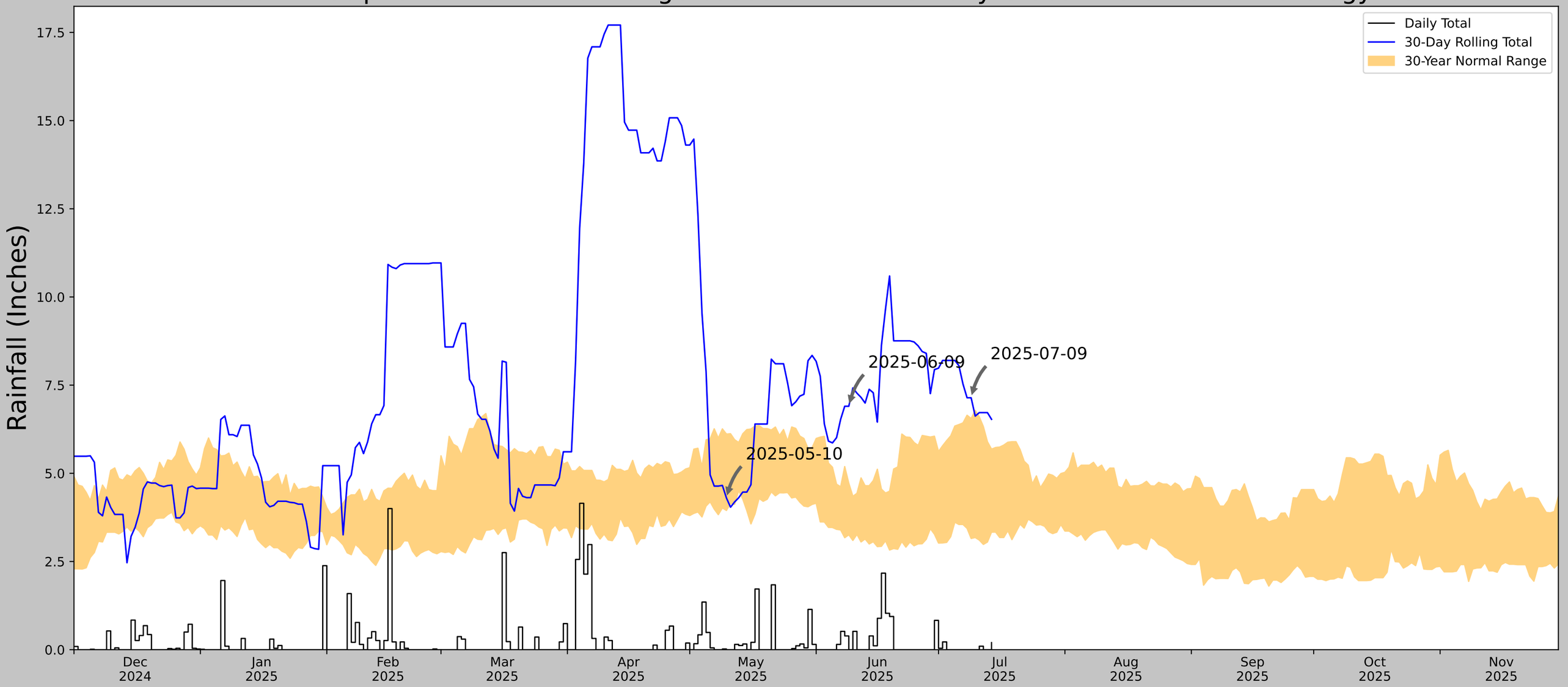
Figure 6.2
Delineation Map
Crab Run Solar Project
Crab Run Solar Project, LLC
Marion County, Kentucky

ERM

Source: ESRI - World Imagery Map; NAD 1983 StatePlane Kentucky South FIPS 1602 Feet

APPENDIX B APT RESULTS

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



Coordinates	37.608762, -85.366244
Observation Date	2025-07-09
Elevation (ft)	703.856
Drought Index (PDSI)	Severe wetness (2025-06)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-07-09	3.152362	6.553937	7.141733	Wet	3	3	9
2025-06-09	3.256299	4.720473	6.901575	Wet	3	2	6
2025-05-10	3.946851	6.112599	4.299213	Normal	2	1	2
Result							Wetter than Normal - 17

US Army Corps of Engineers

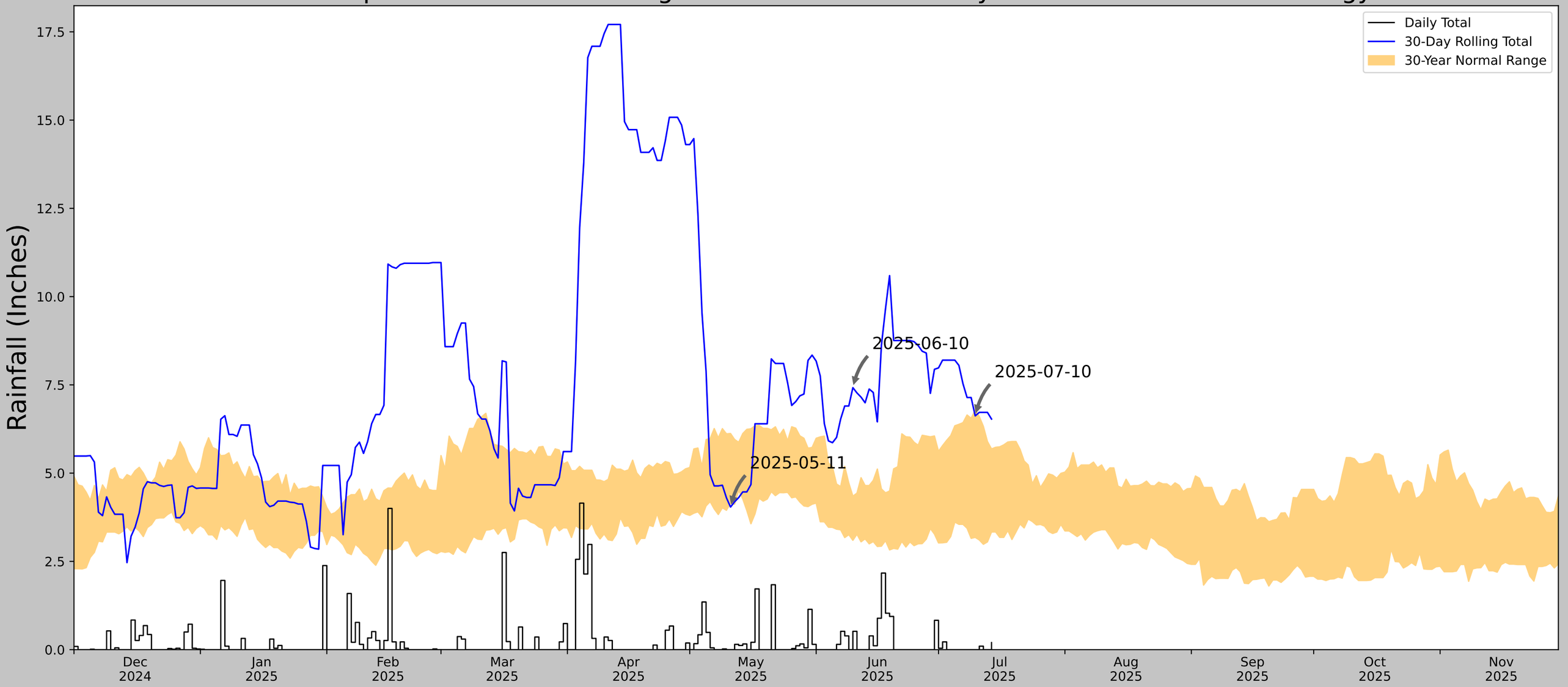
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
NEW HAVEN 6.4 NE	37.7327, -85.5174	613.845	11.902	90.011	6.427	6027	90
BARDSTOWN 5E	37.8194, -85.3847	779.856	9.402	166.011	5.792	5248	0
BERNHEIM FOREST	37.9161, -85.6572	549.869	14.791	63.976	7.602	73	0
SPRINGFIELD 2W	37.7053, -85.2639	740.158	13.984	126.313	8.059	5	0

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



Coordinates	37.608762, -85.366244
Observation Date	2025-07-10
Elevation (ft)	703.856
Drought Index (PDSI)	Severe wetness (2025-06)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-07-10	3.179528	6.78504	6.622047	Normal	2	3	6
2025-06-10	3.096063	4.349606	7.42126	Wet	3	2	6
2025-05-11	4.148032	6.123229	4.03937	Dry	1	1	1
Result							Normal Conditions - 13

US Army Corps of Engineers

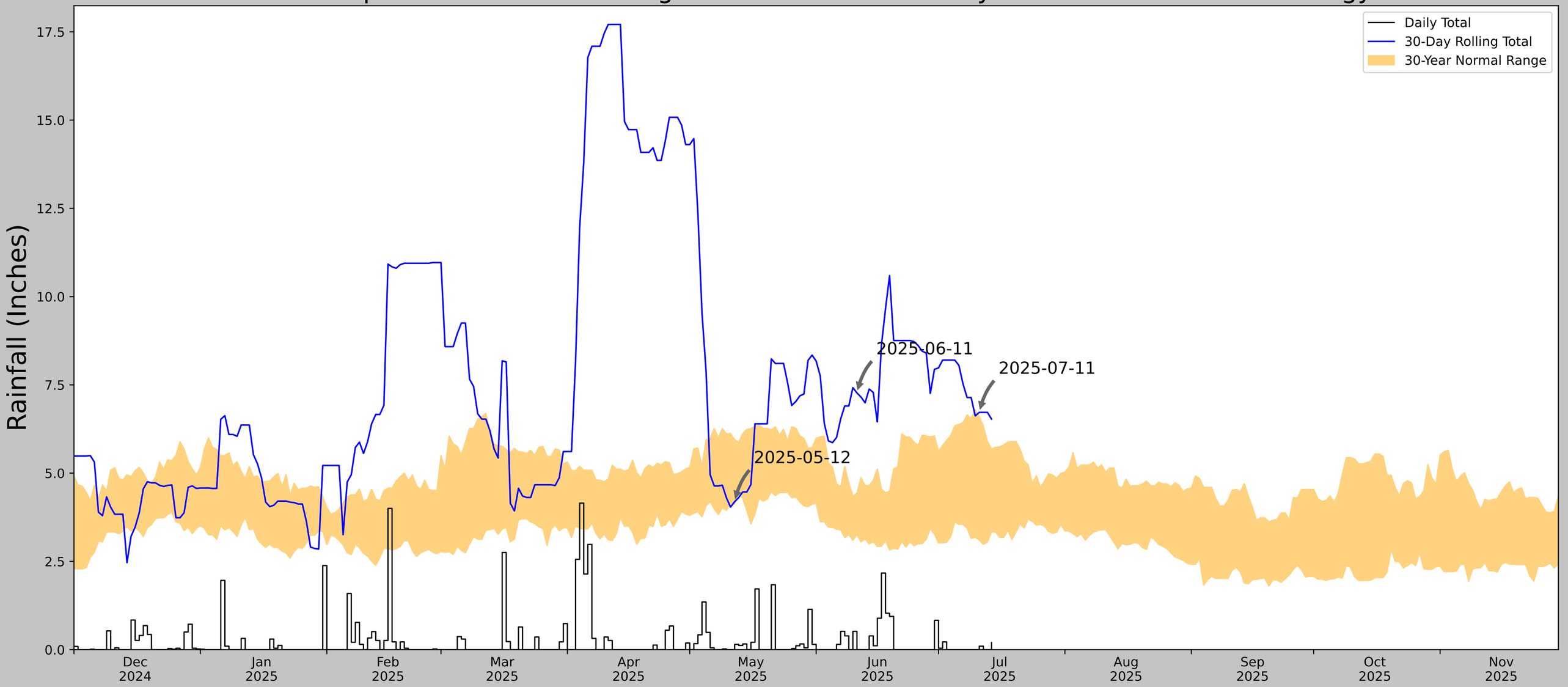
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
NEW HAVEN 6.4 NE	37.7327, -85.5174	613.845	11.902	90.011	6.427	6027	90
BARDSTOWN 5E	37.8194, -85.3847	779.856	9.402	166.011	5.792	5248	0
BERNHEIM FOREST	37.9161, -85.6572	549.869	14.791	63.976	7.602	73	0
SPRINGFIELD 2W	37.7053, -85.2639	740.158	13.984	126.313	8.059	5	0

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



Coordinates	37.608762, -85.366244
Observation Date	2025-07-11
Elevation (ft)	703.856
Drought Index (PDSI)	Severe wetness (2025-06)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-07-11	3.106693	6.602362	6.720473	Wet	3	3	9
2025-06-11	3.268504	4.432284	7.271654	Wet	3	2	6
2025-05-12	4.11811	5.95315	4.188977	Normal	2	1	2
Result							Wetter than Normal - 17

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
NEW HAVEN 6.4 NE	37.7327, -85.5174	613.845	11.902	90.011	6.427	6027	90
BARDSTOWN 5E	37.8194, -85.3847	779.856	9.402	166.011	5.792	5248	0
BERNHEIM FOREST	37.9161, -85.6572	549.869	14.791	63.976	7.602	73	0
SPRINGFIELD 2W	37.7053, -85.2639	740.158	13.984	126.313	8.059	5	0

APPENDIX C PHOTOLOG

Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Loretto, Kentucky	PROJECT NO.: 0787671

PHOTO NO. 1.	DATE 7/9/25
DIRECTION PHOTO TAKEN Downstream	
DESCRIPTION Stream 1	

PHOTO NO. 2.	DATE 7/9/25
DIRECTION PHOTO TAKEN Downstream	
DESCRIPTION Stream 2	

Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Marion County, Kentucky	PROJECT NO.: 0787671

PHOTO NO.	DATE
3.	7/9/25

DIRECTION PHOTO TAKEN
Upstream

DESCRIPTION
Stream 3

PHOTO NO.	DATE
4.	7/9/25

DIRECTION PHOTO TAKEN
Upstream

DESCRIPTION
Stream 4

Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Loretto, Kentucky	PROJECT NO.: 0787671

PHOTO NO. 5.	DATE 7/9/25
DIRECTION PHOTO TAKEN Downstream	
DESCRIPTION Stream 5	

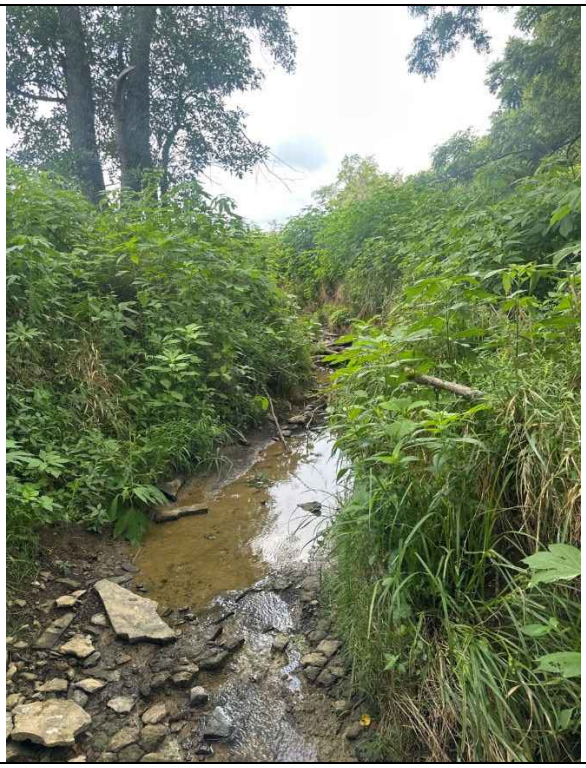
PHOTO NO. 6.	DATE 7/9/25
DIRECTION PHOTO TAKEN Downstream	
DESCRIPTION Stream 6	

Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Loretto, Kentucky	PROJECT NO.: 0787671

PHOTO NO. 7.	DATE 7/9/25
DIRECTION PHOTO TAKEN Downstream	
DESCRIPTION Stream 7	

PHOTO NO. 8.	DATE 7/10/25
DIRECTION PHOTO TAKEN Upstream	
DESCRIPTION Stream 8	



Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Loretto, Kentucky	PROJECT NO.: 0787671

PHOTO NO. 9.	DATE 7/10/25
DIRECTION PHOTO TAKEN Upstream	
DESCRIPTION Stream 9	

PHOTO NO. 10.	DATE 7/10/25
DIRECTION PHOTO TAKEN Upstream	
DESCRIPTION Stream 10	

Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Loretto, Kentucky	PROJECT NO.: 0787671

PHOTO NO. 11.	DATE 7/10/25
DIRECTION PHOTO TAKEN Downstream	
DESCRIPTION Stream 11	

PHOTO NO. 12.	DATE 7/10/25
DIRECTION PHOTO TAKEN Northeast	
DESCRIPTION Pond #1 located in the southeastern portion of the site.	

Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Loretto, Kentucky	PROJECT NO.: 0787671

PHOTO NO. 13.	DATE 7/10/25
DIRECTION PHOTO TAKEN Northwest	
DESCRIPTION Pond #2 located in the south-central part of the site.	

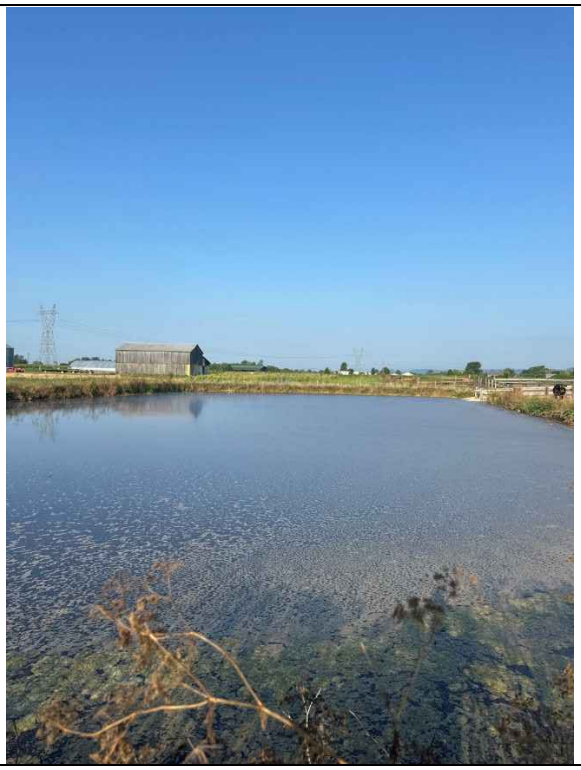
PHOTO NO. 14.	DATE 7/10/25
DIRECTION PHOTO TAKEN West	
DESCRIPTION Pond #3 located on the western side of the Site.	

Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Loretto, Kentucky	PROJECT NO.: 0787671

PHOTO NO. 15.	DATE 7/10/25
DIRECTION PHOTO TAKEN North	
DESCRIPTION Pond #4 located in the south-central part of the site.	

PHOTO NO. 16.	DATE 7/11/25
DIRECTION PHOTO TAKEN West	
DESCRIPTION Pond/Lagoon #5 is located in the southwestern portion of the site, within the first residential area east of the Frogtown Road and Ben Daughterty Road intersection.	



Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Loretto, Kentucky	PROJECT NO.: 0787671

PHOTO NO.	DATE
17.	7/11/25

DIRECTION PHOTO TAKEN
North

DESCRIPTION
Pond #6 is located in the southeastern portion of the site, within the second residential area north of Arthur Mattingly Road.

PHOTO NO.	DATE
18.	7/9/25

DIRECTION PHOTO TAKEN
Northeast

DESCRIPTION
Wetland #1 is a linear wetland located in the northern part of the site.

Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Loretto, Kentucky	PROJECT NO.: 0787671

PHOTO NO.	DATE
19.	7/9/25

DIRECTION PHOTO TAKEN
West

DESCRIPTION
Wetland #2 is a linear wetland located in the northwestern part of the site.

PHOTO NO.	DATE
20.	07/9/25

DIRECTION PHOTO TAKEN
Northeast

DESCRIPTION
Wetland #3 is a linear wetland located in the north-central part of the site.

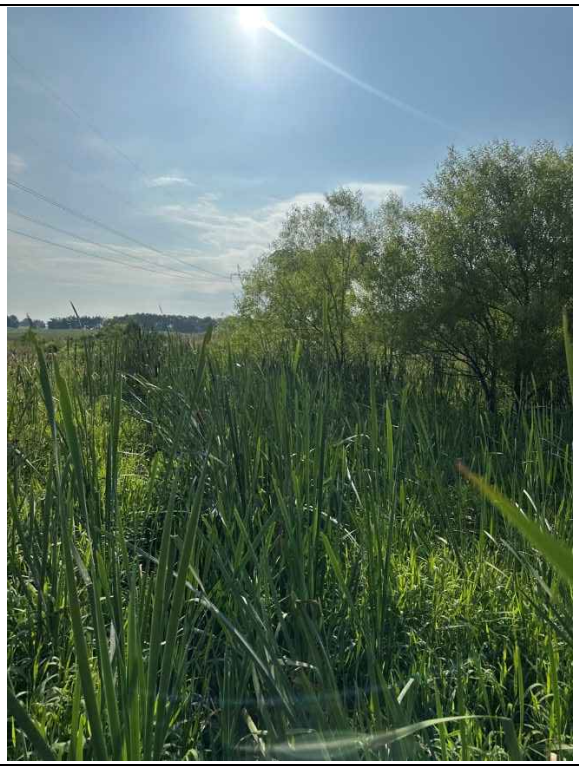
Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Loretto, Kentucky	PROJECT NO.: 0787671

PHOTO NO.	DATE
21.	7/11/25

DIRECTION PHOTO TAKEN
East

DESCRIPTION
Wetland #4 is a linear wetland located in the southern part of the site.



Photographic Log

CLIENT: Crab Run Solar, LLC	SITE LOCATION: Marion County, Kentucky	PROJECT NO.: 0787671

PHOTO NO.	DATE
22.	7/10/25

DIRECTION PHOTO TAKEN
Upstream

DESCRIPTION
Stream 13

APPENDIX D USACE DATA FORMS

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Crab Run City/County: Loretto / Marion County Sampling Date: 2025-07-06

Applicant/Owner: Crab Run Solar, LLC State: KY Sampling Point: Wetland 1

Investigator(s): J. Lay/ D. Rowland Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): Microtopography Slope (%): 0-2

Subregion (LRR or MLRA): 122 Lat: 37.612429 Long: -85.373460 Datum: WGS84

Soil Map Unit Name: FaD2 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
Wetland swale

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ True Aquatic Plants (B14)
- ____ 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)

Secondary Indicators (minimum of two required)

- ____ 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)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 1
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:
Surface water - saturated

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

Sampling Point: Wetland 1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 =Total Cover		
50% of total cover: 0.0	20% of total cover: 0.0		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 =Total Cover		
50% of total cover: 0.0	20% of total cover: 0.0		
Herb Stratum (Plot size: 5' radius)			
1. Phalaris arundinacea	90	Y	FACW
2. Ambrosia trifida	5	N	FAC
3. Impatiens capensis	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100.0 =Total Cover		
50% of total cover: 50.0	20% of total cover: 20.0		
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		
50% of total cover: 0.0	20% of total cover: 0.0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		205.00 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Swale dominated by reed canary grass

SOIL

Sampling Point: Wetland 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/6	10	C	M	C	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ✓ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators 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:

Hydric

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Crab Run City/County: Loretto / Marion County Sampling Date: 2025-07-09

Applicant/Owner: Crab Run Solar, LLC State: KY Sampling Point: upland point 1

Investigator(s): J. Lay/ D. Rowland Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Undulating Local relief (concave, convex, none): Microtopography Slope (%): 0-2

Subregion (LRR or MLRA): 122 Lat: 37.612366 Long: -85.373140 Datum: WGS84

Soil Map Unit Name: FaD2 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** ✓

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

Remarks:

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

Sampling Point: Upland 1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	

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

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0	=Total Cover	

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

Herb Stratum (Plot size: 5' radius)			
1. Lolium perenne	100	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100.0	=Total Cover	

50% of total cover: 50.0 20% of total cover: 20.0

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400.00 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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** ✓

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

SOIL

Sampling Point: upland point 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	5Y 5/4	100					LS	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators 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 – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Crab Run City/County: Loretto / Marion County Sampling Date: 2025-07-09

Applicant/Owner: Crab Run Solar, LLC State: KY Sampling Point: Wetland 2

Investigator(s): J. Lay/ D. Rowland Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): 122 Lat: 37.610782 Long: -85.375915 Datum: WGS84

Soil Map Unit Name: BcC2, FaD2 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ____ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ True Aquatic Plants (B14)
- ____ 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)

Secondary Indicators (minimum of two required)

- ____ 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)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

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

Sampling Point: wetland 2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	

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

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0	=Total Cover	

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

Herb Stratum (Plot size: 5' radius)			
1. Phalaris arundinacea	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100.0	=Total Cover	

50% of total cover: 50.0 20% of total cover: 20.0

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200.00 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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** ___

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

SOIL

Sampling Point: wetland 2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 5/1	100					C	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators 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 – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Crab Run City/County: Loretto / Marion County Sampling Date: 2025-07-09

Applicant/Owner: Crab Run Solar, LLC State: KY Sampling Point: upland point 2

Investigator(s): J. Lay/ D. Rowland Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Undulating Local relief (concave, convex, none): Microtopography Slope (%): 0-2

Subregion (LRR or MLRA): 122 Lat: 37.610767 Long: -85.375968 Datum: WGS84

Soil Map Unit Name: BcC2, FaD2 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** ✓

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

Remarks:

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

Sampling Point: Upland 2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	

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

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0	=Total Cover	

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

Herb Stratum (Plot size: 5' radius)			
1. Sorghum halepense	70	Y	FACU
2. Rumex crispus	15	N	FAC
3. Trifolium pratense	10	N	FACU
4. Carduus nutans	5	N	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100.0	=Total Cover	

50% of total cover: 50.0 20% of total cover: 20.0

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	80	x 4 =	320
UPL species	5	x 5 =	25
Column Totals:	100 (A)		390.00 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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** ✓

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

SOIL

Sampling Point: Upland 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 3/6	100						

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators 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 – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Crab Run City/County: Loretto / Marion County Sampling Date: 2025-07-09

Applicant/Owner: Crab Run Solar, LLC State: KY Sampling Point: Wetland 3

Investigator(s): J. Lay/ D. Rowland Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 3-7

Subregion (LRR or MLRA): 122 Lat: 37.610993 Long: -85.367929 Datum: WGS84

Soil Map Unit Name: Ne, OtB, SaB NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ✓ True Aquatic Plants (B14)
- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 2
Water Table Present?	Yes ✓	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:
Hydrology

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

Sampling Point: wetland 3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
50% of total cover: 0.0		20% of total cover:	0.0
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0	=Total Cover	
50% of total cover: 0.0		20% of total cover:	0.0
Herb Stratum (Plot size: 5' radius)			
1. Typha latifolia	60	Y	OBL
2. Echinochloa crus-galli	20	Y	FAC
3. Nasturtium officinale	10	N	OBL
4. Scirpus atrovirens	10	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100.0	=Total Cover	
50% of total cover: 50.0		20% of total cover:	20.0
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	
50% of total cover: 0.0		20% of total cover:	0.0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		140.00 (B)

Prevalence Index = B/A = 1.4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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** ___

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

SOIL

Sampling Point: wetland 3

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

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ✓ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators 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 – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Crab Run City/County: Loretto / Marion County Sampling Date: 2025-07-09

Applicant/Owner: Crab Run Solar, LLC State: KY Sampling Point: Upland 3

Investigator(s): J. Lay/ D. Rowland Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): 122 Lat: 37.599107 Long: -85.348724 Datum: WGS84

Soil Map Unit Name: Ne, OtB, SaB NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** ✓

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

Remarks:

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

Sampling Point: Upland 3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
50% of total cover: 0.0		20% of total cover:	0.0
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0	=Total Cover	
50% of total cover: 0.0		20% of total cover:	0.0
Herb Stratum (Plot size: 5' radius)			
1. Lolium perenne	95	Y	FACU
2. Trifolium pratense	5	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100.0	=Total Cover	
50% of total cover: 50.0		20% of total cover:	20.0
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	
50% of total cover: 0.0		20% of total cover:	0.0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400.00 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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** ✓

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

SOIL

Sampling Point: Upland 3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	100						
12-16	10YR 5/4	100					LS	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators 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 – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Crab Run | City/County: Loretto / Marion County | Sampling Date: 2025-07-11
Applicant/Owner: Crab Run Solar, LLC | State: KY | Sampling Point: Wetland 4
Investigator(s): J. Lay/ D. Rowland | Section, Township, Range: N/A
Landform (hillside, terrace, etc.): Swale | Local relief (concave, convex, none): Microtopography | Slope (%): 3
Subregion (LRR or MLRA): 122 | Lat: 37.604078 | Long: -85.359897 | Datum: WGS84
Soil Map Unit Name: FaC2 | NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ____ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ True Aquatic Plants (B14)
- ____ 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)

Secondary Indicators (minimum of two required)

- ____ 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)
- ____ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

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

Sampling Point: wetland 4

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	15	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	15.0	=Total Cover	
50% of total cover: 8		20% of total cover:	3.0

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	35.0	=Total Cover	
50% of total cover: 17.5		20% of total cover:	7.0

Herb Stratum (Plot size: 5' radius)			
1. Typha latifolia	35	Y	OBL
2. Eupatorium perfoliatum	25	Y	FACW
3. Scirpus atrovirens	25	Y	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85	=Total Cover	
50% of total cover: 43		20% of total cover:	10.0

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	
50% of total cover: 0.0		20% of total cover:	0.0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	75	x 1 =	75
FACW species	25	x 2 =	50
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		125.00 (B)

Prevalence Index = B/A = 1.25

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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** ___

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

SOIL

Sampling Point: wetland 4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 5/1	100					C	
10-16	10YR 4/1	100					C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators 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 – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Crab Run | City/County: Loretto / Marion County | Sampling Date: 2025-07-11
Applicant/Owner: Crab Run Solar, LLC | State: KY | Sampling Point: upland point 4
Investigator(s): J. Lay/ D. Rowland | Section, Township, Range: N/A
Landform (hillside, terrace, etc.): Undulating | Local relief (concave, convex, none): Microtopography | Slope (%): 0-2
Subregion (LRR or MLRA): 122 | Lat: 37.604846 | Long: -85.360013 | Datum: WGS84
Soil Map Unit Name: FaC2 | NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ 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)

Secondary Indicators (minimum of two required)

- ___ 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)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

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

Remarks:

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

Sampling Point: Upland 4

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	=Total Cover	
50% of total cover: 0.0		20% of total cover:	0.0
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0	=Total Cover	
50% of total cover: 0.0		20% of total cover:	0.0
Herb Stratum (Plot size: 5' radius)			
1. Ranunculus sardous	60	Y	FAC
2. Trifolium pratense	20	Y	FACU
3. Rumex crispus	20	Y	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100.0	=Total Cover	
50% of total cover: 50.0		20% of total cover:	20.0
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	
50% of total cover: 0.0		20% of total cover:	0.0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	100 (A)		320.00 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

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

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

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 or equal to 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** ___

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

SOIL

Sampling Point: Upland 4

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

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Compaction

Depth (inches): 12

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

Remarks:

No

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