

Blue Moon Energy LLC  
Response to Public Service Commission's Second Request for Information  
Case No. 2021-00414

Request No. 1:

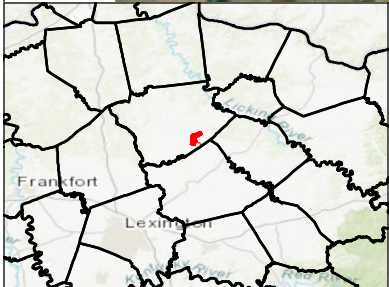
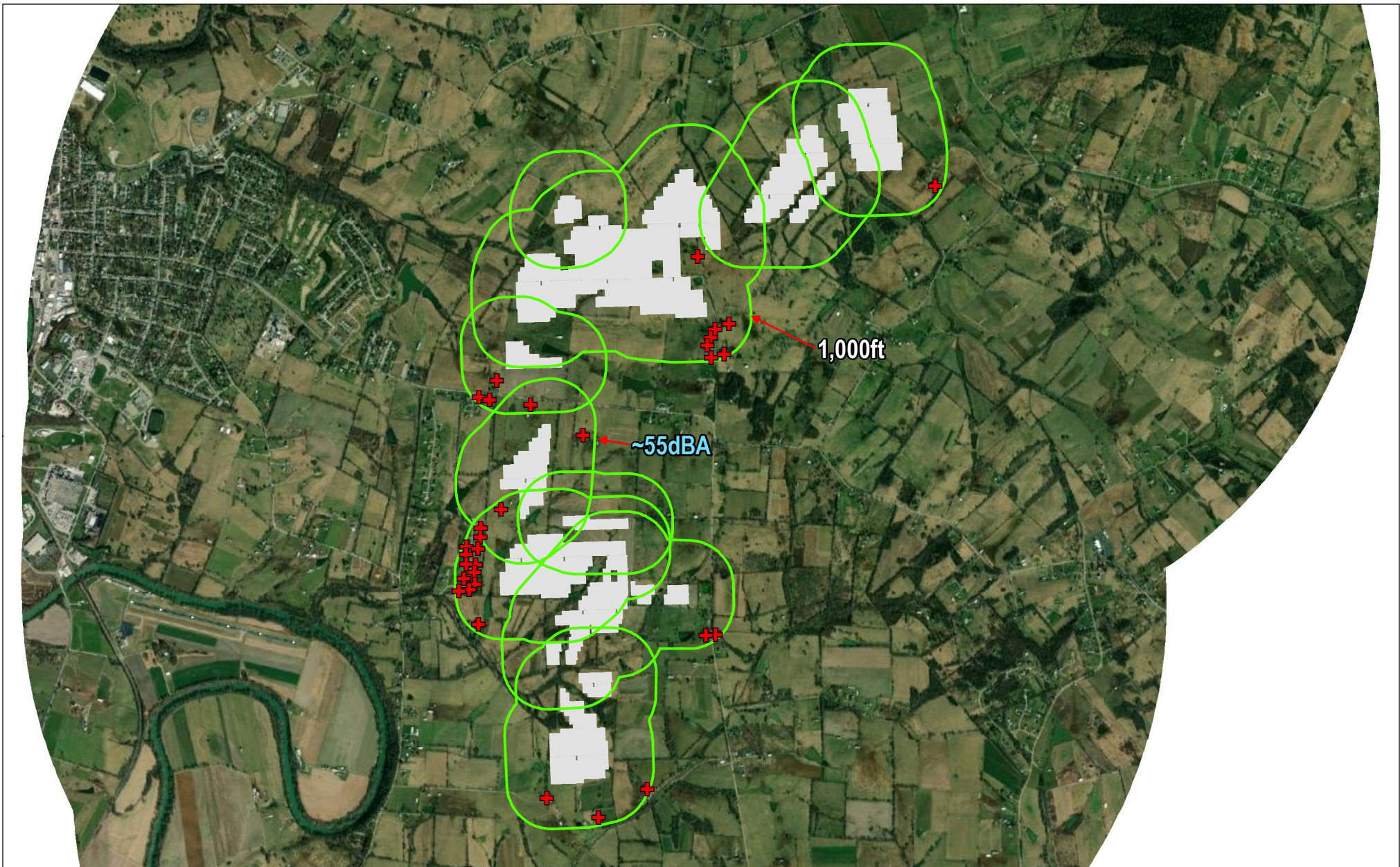
Refer to Blue Moon Energy's response to Siting Board Staff's First Request for Information (Response to Staff's First Request), Item 16a.

- a. Confirm that the nonparticipating residences shown in the plot are the only residences within 500 feet that will experience construction activity sound levels in excess of the Environmental Protection Agency's recommended 55 dBA daytime sound level.
- b. If not, provide a listing of those residences that will experience construction activity sound levels in excess of 55 dBA and indicate those locations on the site plan map.
- c. For any indicated residences in part b., please explain what sound dampening techniques Blue Moon Energy will employ during the pile driving activity as a mitigation measure.

Response No. 1:

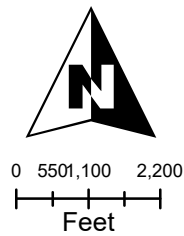
- a. Please refer to the attached map, which shows estimated residences within 1,000 ft and 55dBA contour based upon pile driving noise analysis.
- b. See attached map.
- c. Sound levels at 55dBA will be temporary and dependent upon pile driving operations near the specific residences. These noise levels will be during daylight hours and are expected to last no more than 1 week at specific receptors. The map labeled Exhibit C is a worst-case scenario and does not take into account natural factors that may mitigate noise such as vegetation/tree lines, wind, humidity, etc. which all affect noise.

Responding Witness: Chad Martin



**Legend**

- Panels
- ✚ 55dBA Receptors
- Construction Noise 1,000ft Buffer



**RECURRENT ENERGY**

Estimated Sound Receptors  
Level of 55 dBA

**EXHIBIT C**

Date: March 2022	Project No: E320201803	Figure No:
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Blue Moon Energy LLC  
Response to Public Service Commission's Second Request for Information  
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Request No. 2:

Refer to Response to Staff's First Request, Item 40, and provide an estimated portion of the anticipated \$0.9 million in excise taxes, if any, that is expected to be paid to the Commonwealth of Kentucky.

Response No. 2:

Excise taxes paid to the Commonwealth of Kentucky are estimated to be approximately \$0.78 million (based on IMPLAN calculations).

Responding Witness: Jayce Walker

Blue Moon Energy LLC  
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Request No. 3:

Refer to the overall site plan and parcel map submitted as Exhibit A to the amended application, specifically parcel # 128-0000-013-00-000. The plan shows solar panels; however, this section of solar panels is separated from other sections by a delineated wetland of FEMA flood zone. Identify and explain any risk or danger of interconnection and all mitigating procedures for such risk or danger.

Response No. 3:

There is minimal risk because this part of the project will be connected through either an overhead or underground MV collection line which will be designed outside the boundaries of the FEMA flood zone.

Responding Witness: Karol Kamasinski, Kathryn Garcia



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Request No. 4:

Refer to the amended application, Exhibit F, Hessler Associates, Inc.'s Sound Emissions Assessment dated October 11, 2021, and Plots 1 and 2 maps attached with its report. At the end of Hedges Lane, there is a nonparticipating residence; however, it does not appear on either map. In addition, refer to the amended application, Exhibit F, Cardno Inc.'s Construction Noise Assessment dated October 2021, 2-1: noise receptors map. The same nonparticipating residence does not appear on that illustrative map either. Provide information on this residence regarding the expected noise effect, noise contours during construction and operation, the application of any noise ordinance, and mitigating procedure planned by Blue Moon Energy regarding the project's noise impact during and after the construction phase.

Response No. 4:

This residence is a rental property, owned by a participating landowner. We understand from the participating landowner that the house will not be rented during the construction of this project.

Responding Witness: Chad Martin, Jayce Walker

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Request No. 5:

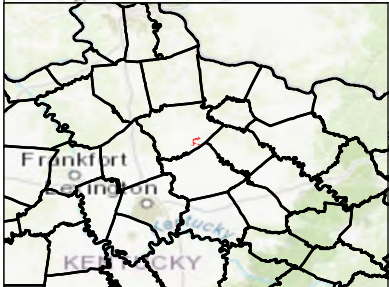
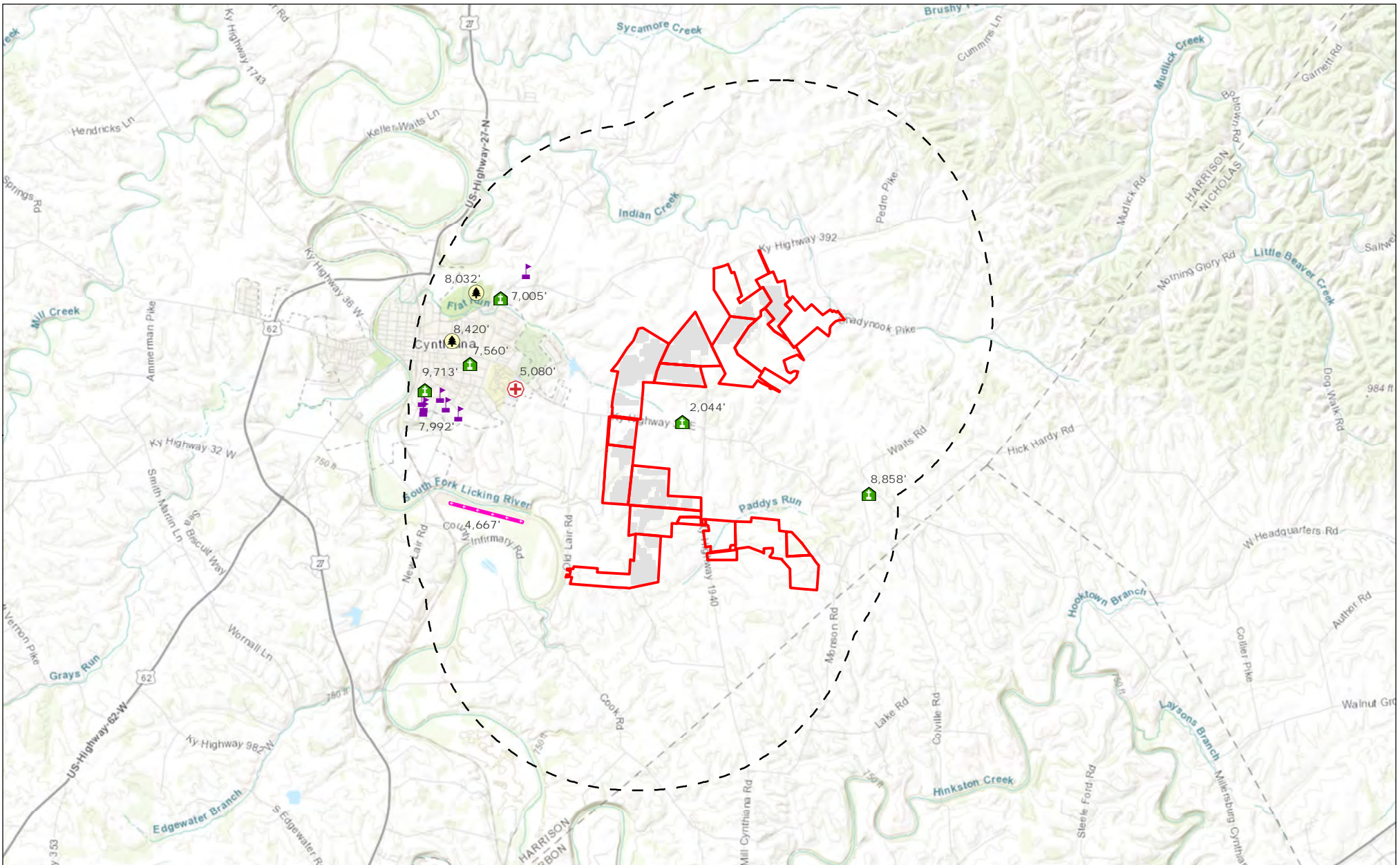
Refer to the amended application, Exhibit A, Schools and Local Parks within two miles of PV Panels (2-Mile Radius Map). Indicate the distances (in feet) from the project boundary to each residential neighborhood, park, hospital, church, and airport as provided in KRS 278.706(2)(b).

Response No. 5:

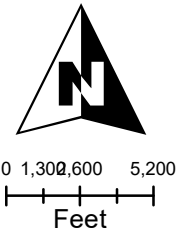
Please see updated map.

Responding Witness: Chad Martin





- 000' = Distance to Panels
- Project Boundary
- 2 Mile Buffer of Panels
- Airport Runways
- ✙ Churches
- ✎ Schools
- 🌳 Local Parks
- + Hospitals
- Panels



## RECURRENT ENERGY

Public Resources  
within 2 Miles of PV Panels

### EXHIBIT A

Date: March 2022	Project No: E320201803	Figure No:
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Blue Moon Energy LLC  
Response to Public Service Commission's Second Request for Information  
Case No. 2021-00414

Request No. 6:

Disclose whether any environmental assessment study has been completed. If so, provide a copy.

Response No. 6:

A Natural Resources report and Phase I ESA have been completed. See attached.

Responding Witness: Chad Martin, Kathryn Garcia



# Natural Resource Report

Blue Moon Solar Project  
Blue Moon Energy LLC

Harrison County, Kentucky



## Document Information

Prepared for           Blue Moon Energy LLC & Recurrent Energy  
Project Name           Blue Moon Solar Project  
Project Number        E320201803  
Project Manager       Chad Martin  
Date                    July 9, 2021

Prepared for:



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- Appendix B Photographic Log
- Appendix C Project Mapping
- Appendix D USWFS IPaC

# Acronyms

FEMA	Federal Emergency Management Agency
GIS	Geographic information systems
IPaC	Information for Planning and Consultation
KDFWR	Kentucky Department of Fish and Wildlife Resources
KGS	Kentucky Geological Survey
KHC	Kentucky Heritage Council
KSNCP	Kentucky State Natural Preserve Commission
NHD	National Hydrographic Dataset
NOI	Notice of National Hydrography Intent
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTCHS	National Technical Committee for Hydric Soils
NWP	Nation Wide Permit
NWI	National Wetland Inventory
SHPO	State Historic Preservation Office
SWPPP	Storm Water Pollution Prevention Plan
T&E	Threatened and Endangered
TNW	Traditionally Navigable Water
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geologic Survey
USEPA	Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WOUS	Waters of the U.S.

# 1 Executive Summary

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Cardno was contracted by Blue Moon Energy LLC, a wholly-owned subsidiary of Recurrent Energy, LLC, to conduct a natural resources assessment on multiple properties consisting of approximately 1,982 acres, referenced as the Blue Moon Solar Project (Project). The Project consists of multiple parcels in Harrison County, Kentucky that were surveyed for wetland and waterbodies as well as other environmental concerns by Cardno from June 21-25, 2021. The tasks performed as part of this assessment included a review of threatened and endangered (T&E) species and a delineation of potential waters of the United States (WOUS). The methodology, results, and recommendations of the review as it pertains to the Project are contained within and summarized below.

Cardno conducted a threatened and endangered species review during desktop environmental assessments of the Project area. There are three mammal species, eight freshwater mussel species, and two flowering plant species listed by the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) and Kentucky Department of Fish and Wildlife Resources (KDFWR) as having the potential to occur within or be affected by the Project. No designated critical habitat for listed species exists within the Project area. Cardno inspected all habitats within the Project area for the presence of suitable habitat for listed species. Cardno scientists investigated the area for bat habitat as defined in USFWS 2018 Range-wide Indiana Bat Summer Survey Guidelines (also applicable to Northern Long Eared Bat) during field site assessments. One potential roosting tree (trees with loose bark or hollows) was identified. Although the NLEB is listed to occur within Harrison County, there are no USFWS documented hibernaculum in the Project site. Due to the undisturbed small patches of forested riparian areas and the distance to current summer and winter grounds, it is unlikely that NLEB would be impacted by this Project. Though Cardno scientists did not conduct ‘in water’ surveys, no mussel relics were identified along their stream banks. Two perennial streams flow through portions of the Project area and may contain suitable habitat for listed freshwater mussel species; however, impacts to the creeks are not anticipated as a result of the Project.

The Project area could contain habitat for the federally listed endangered running buffalo clover and Short’s goldenrod. Wetland surveys were completed outside of optimum species survey window (August) and therefore presence/absence surveys for potential species were not completed.

Cardno scientists identified **14** ephemeral drainages, **six** intermittent streams, **two** perennial streams, and **27** wetlands, including **17** ponds within the Project area. From the field investigation, it was determined that **seven** of the identified streams, as well as **one** of the identified wetlands may possess a hydrological connection to South Fork Licking River, a traditionally navigable water (TNW). It is Cardno’s opinion that these delineated streams and associated wetlands may likely be classified as jurisdictional under USACE guidance. The ephemeral streams did exhibit flow during field investigations due to recent rain events. **Twenty-six** of the identified wetlands, including the excavated ponds appeared to be isolated in nature. It is Cardno’s opinion that these drainages/streams and wetlands lack adequate connectivity to a TNW, and would most likely be classified as non-jurisdictional under USACE guidance. Coordination with the USACE Louisville District Office to obtain an approved jurisdictional determination for the streams and wetlands identified onsite is recommended if Project infrastructure will impact these features. There are no regulations or permits that regulate isolated wetlands or non-jurisdictional streams for the state of Kentucky.

According to the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), approximately 21.31 acres of the Project area occur within the 100-Year Floodplain of South Indian Creek. Additional permitting from the Harrison Floodplain Administrator may be required if construction will take place in these areas.

If any streams and/or wetlands are deemed 'jurisdictional' by the USACE, the proposed Project could be completed under a Nationwide Permit (NWP) 51, 14, and/or 57. Additionally, the Project would need to develop a Storm Water Pollution Prevention Plan (SWPPP) and provide Notice of Intent (NOI) prior to Project construction. As stated in the text of the NWPs, the discharge of dredged or fill material into wetlands and non-tidal WOUS must not cause the loss of greater than ½-acre of wetlands and non-tidal WOUS. If impacts from the construction of the energy generation facility and associated infrastructure including roads, parking lots, stormwater management facilities, and pipelines permanently impact less than ½-acre then the Project may proceed under a NWP. Permanent impacts which exceed the ½-acre threshold for NWPs will require an Individual Permit.

Cardno performed a search for potential sinkhole areas utilizing Geographic Information Systems (GIS) data from the Kentucky Geological Survey (KGS). **One** sinkhole area comprising 0.3 acres was identified within the Project area using this dataset, an additional potential sinkhole was found by Cardno staff during the onsite field investigation.

## 2 Introduction

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Cardno was contracted by Blue Moon Energy LLC, a wholly owned subsidiary of Recurrent Energy, LLC, to perform a natural resource assessment of potential habitat for federally listed T&E species and WOUS that may exist within the Project area in Harrison County, Kentucky (**Figure 2-1**). The Project area consists of approximately 1,982 acres of land that was assessed by Cardno June 21-25, 2021. This report contains a delineation of all resources that potentially fall under the jurisdiction of the USACE.

Cardno conducted desktop investigations to:

- > Identify potential environmental permits that may be required to construct the Project; and

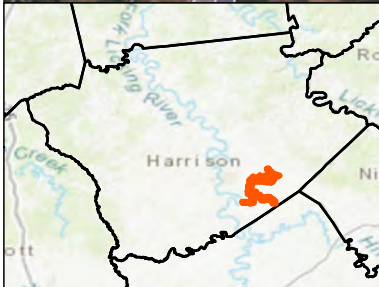
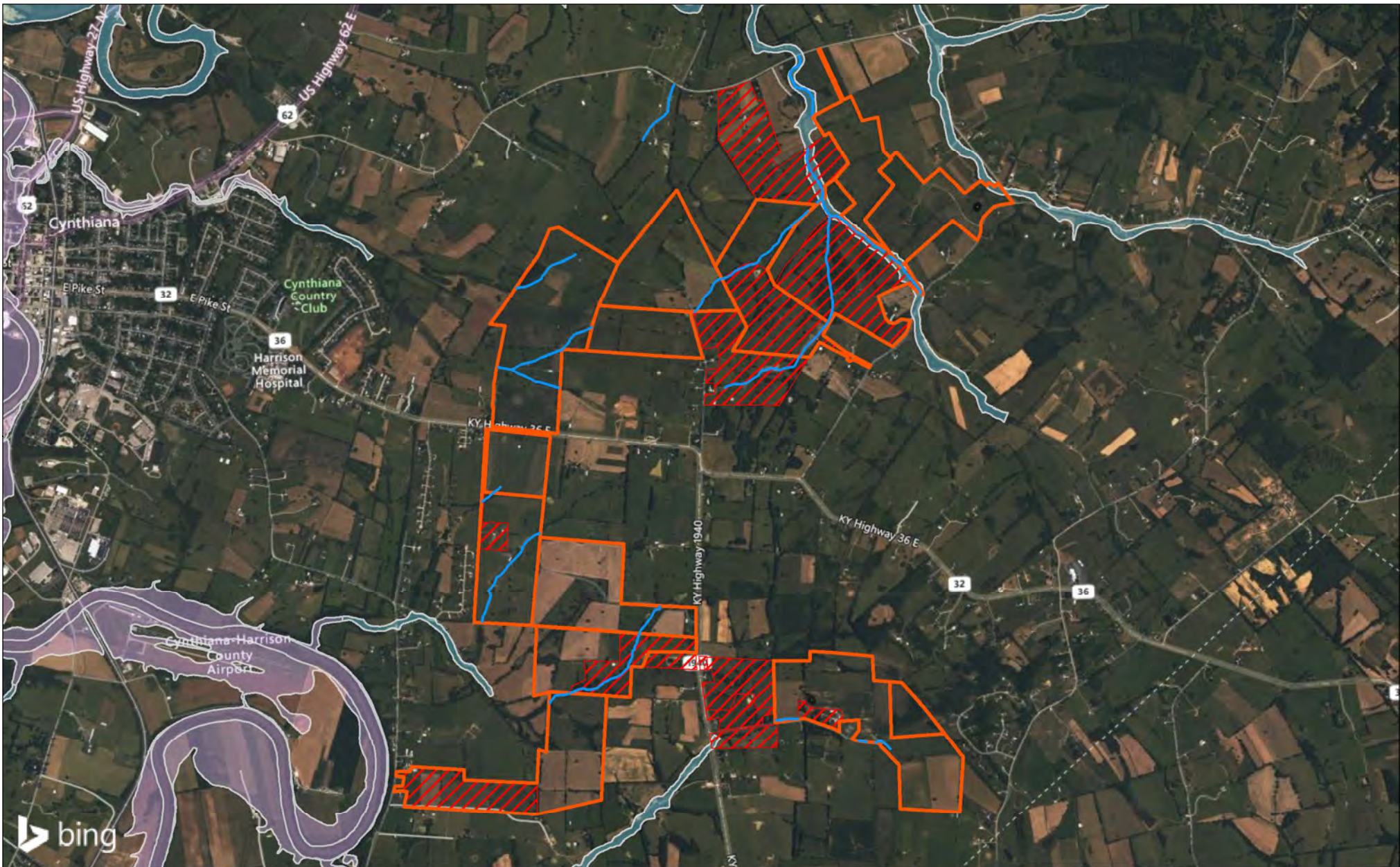
This report contains a delineation of all resources that potentially fall under the jurisdiction of the USACE.

Cardno scientists conducted field delineations within the entire Project area on June 21-25, 2021 to:






- > Delineate the approximate boundaries of potential jurisdictional wetlands and waterbody ordinary high water marks (OHWM) within the Project; and
- > Document general site conditions; and
- > Evaluate the potential for federally listed species habitat.

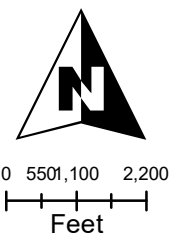
The results of the desktop and onsite investigations are provided in this report.





**Legend**

-  Project Boundary
-  Excluded Parcels
-  NHD Streams
-  100-Year Floodplain (Unstudied BFE)
-  100-Year Floodplain (Studied BFE)



Blue Moon Energy LLC Solar Project  
 Critical Issues Analysis  
 Harrison County, Kentucky

**Project Overview Map**

Date: June 2021	Project No: E320201803	Figure No: <b>2-1</b>
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## 3 Site Location

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The Project is located east of the city of Cynthiana in Harrison County, Kentucky. According to the United States Environmental Protection Agency (USEPA) Level III and IV Ecoregions of Kentucky map accessed July 2021, within the Outer Bluegrass (71d) and Hills of the Bluegrass (71k) ecoregions.

The Outer Bluegrass ecoregion consist of sinkholes, springs, entrenched rivers, and intermittent and perennial streams. At the time of settlement, open savanna woodlands were found on most uplands. On less fertile, more acidic soils derived from Silurian dolomite, white oak stands occurred and had barren openings. Cane grew along streams and was especially common in the east. Today, pastureland and cropland are widespread and dissected areas are wooded (Kentucky 2013, Omernik 1987, 2004).

The Hills of the Bluegrass ecoregion consists of forested hills on steep terrain underlain by Upper Ordovician calcareous shale, siltstone, and limestone. Upland soils are fairly high in phosphorus, potassium, and lime but are not as naturally fertile as the Outer Bluegrass ecoregion. It supports young, mixed forests rich in white oak, hickory, and cedar. It has higher drainage density, and is prone to erosion. As a result, less than ten percent of the ecoregion is suited to row crop agriculture and the rest is wooded, pastureland, or hayland (Kentucky 2013, Omernik 1987, 2004).

The Project is located within the Lexington Limestone formation. This formation is largely composed of limestone, however shale is also usually present in varying amounts, and is dominant in some sub-units of the formation.

### 3.1 Land Use

The land located within and in proximity to the Project is rural, mostly of agricultural use, with scattered residential development. The Project is located on private land, with no public parks, wildlife areas, or critical habitat within or adjacent to the Project area.

### 3.2 Soil Series

Soils within the Project area can be generally described as well drained soils that occur on broad, nearly level land to gently sloping floodplains, uplands, interfluves, and ridges. According to the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) website accessed July 2021 (Soil Survey Staff, 2021), the Project is located within twenty-four soil map units, which are listed and described below (**Table 3-1**). None of the map units within the Project area meets the hydric soils criteria as described by the National Technical Committee for Hydric Soils (NTCHS) (**Figure 3-1**).

It should be noted that caution must be used when comparing the list of hydric components to soil survey maps. Many of the soils on the list have ranges in water table depths that allow the soil component to range from hydric to non-hydric depending on the location of the soil within the landscape as described in the map unit. Lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but they are not a substitute for observations made during onsite investigations.



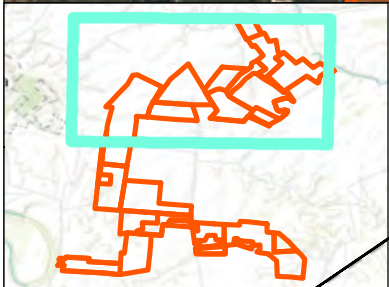
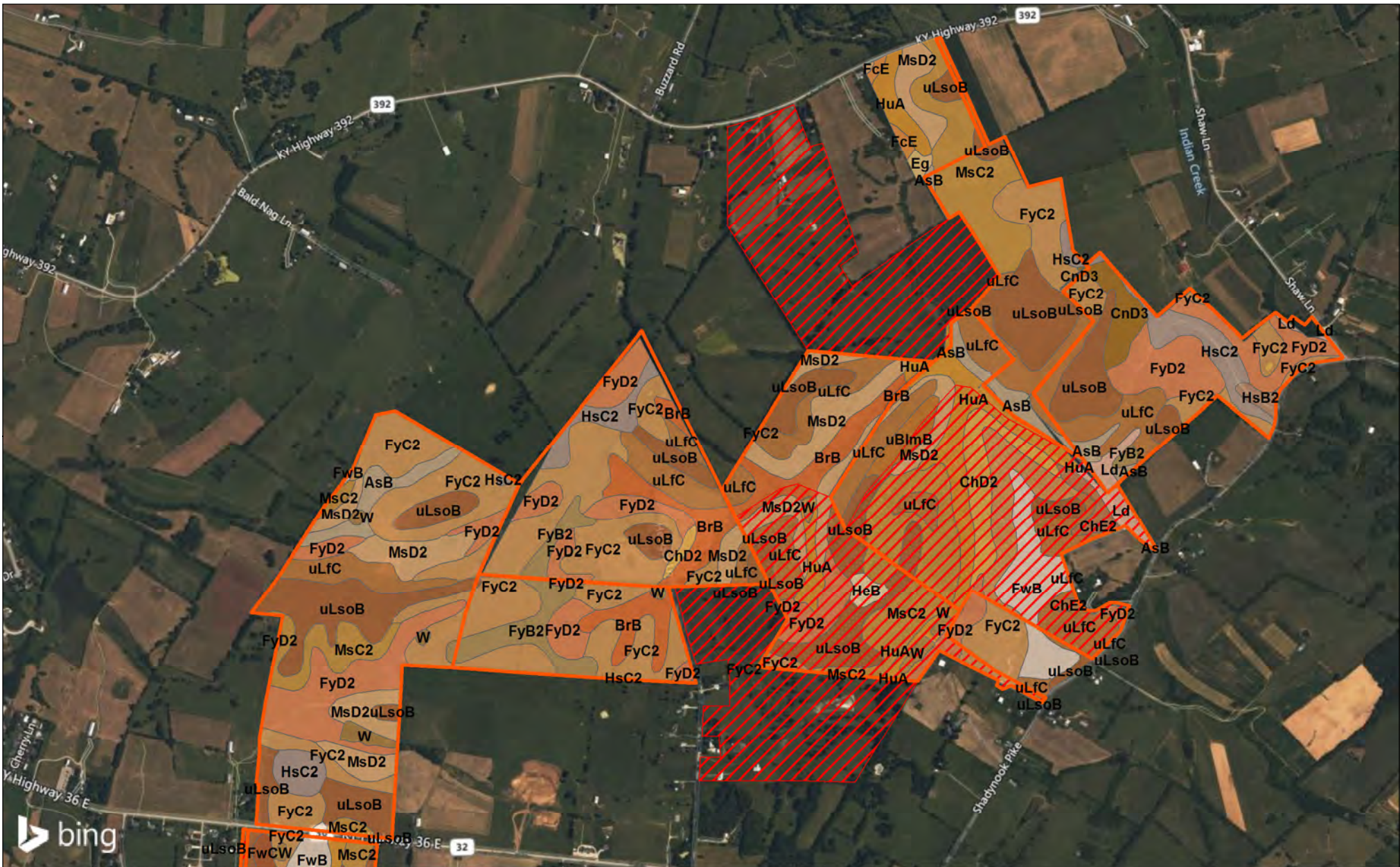
Table 3-1 Characteristics of Soil Mapping Units within the Project Area

Soil Name	Soil Symbol	Drainage Class	Permeability	Surface Runoff	Meets Hydric Criteria	% of Project Area
<b>Ashton silt loam, 2 to 6 percent slopes</b>	AsB	Well drained	High	Low	No	3.3
<b>Brashear silt loam, 2 to 6 percent slopes</b>	BrB	Well drained	High	Medium	No	2.2
<b>Cynthiana very stony silty clay loam, 12 to 20 percent slopes, eroded</b>	ChD2	Well drained	High	High	No	0.9
<b>Cynthiana very stony silty clay loam, 20 to 30 percent slopes</b>	ChE2	Well drained	Moderately High	High	No	0.3
<b>Cynthiana very stony clay, 12 to 20 percent slopes, severely eroded</b>	CnD3	Well drained	High	High	No	0.5
<b>Egam silt loam</b>	Eg	Well drained	Moderately High	Low	No	0.1
<b>Etowah silt loam, 2 to 6 percent slopes</b>	EtB	Well drained	Moderately High	Low	No	0.1
<b>Fairmount and Cynthiana extremely rocky soils, 20 to 30 percent slopes</b>	FcE	Well drained	Moderately High	Very High	No	0.1
<b>Faywood silt loam, 2 to 6 percent slopes</b>	FwB	Well drained	High	High	No	6.6
<b>Faywood silt loam, 6 to 12 percent slopes</b>	FwC	Well drained	Very High	Medium	No	8.3
<b>Faywood silty clay loam, 2 to 6 percent slopes, eroded</b>	FyB2	Well drained	High	High	No	1.1
<b>Faywood silty clay loam, 6 to 12 percent slopes, eroded</b>	FyC2	Well drained	Very High	Very High	No	18.4
<b>Faywood silty clay loam, 12 to 20 percent slopes, eroded</b>	FyD2	Well drained	Very High	Very High	No	8.4

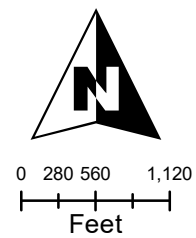
Table 3-1 Characteristics of Soil Mapping Units within the Project Area

Soil Name	Soil Symbol	Drainage Class	Permeability	Surface Runoff	Meets Hydric Criteria	% of Project Area
Heitt silt loam, 2 to 6 percent slopes	HeB	Well drained	Moderately High	Medium	No	0.2
Heitt silty clay loam, 2 to 6 percent slopes, eroded	HsB2	Well drained	Moderately High	Medium	No	0.1
Heitt silty clay loam, 6 to 12 percent slopes, eroded	HsC2	Well drained	High	High	No	1.6
Huntington silt loam, 0 to 4 percent slopes	HuA	Well drained	High	Negligible	No	4.1
Lindside silt loam, 0 to 2 percent slopes, occasionally flooded	Ld	Moderately well drained	Moderately High	Low	No	0.6
McAfee silt loam, 6 to 12 percent slopes, eroded	MsC2	Well drained	Very High	High	No	5.3
McAfee silt loam, 12 to 20 percent slopes, eroded	MsD2	Well drained	Very High	High	No	4.0
Bluegrass-Maury silt loams, 2 to 6 percent slopes	uBlmB	Well drained	High	Low	No	2.8
Lowell-Faywood silt loams, 6 to 12 percent slopes	uLfC	Well drained	Very High	Medium	No	10.2
Lowell-Sandview silt loams, 2 to 6 percent slopes	uLsoB	Well drained	Very High	Low	No	18.4
Maury-Bluegrass silt loams, 6 to 12 percent slopes	uMlmC	Well drained	High	Medium	No	1.3
Water	W	-	-	-	-	1.0

Source: Soil Survey Staff, 2021



Legend		Non-Hydric Soils	
	Project Boundary		AsB
	Excluded Parcels		FcE
			FwB
			ChD2
			ChE2
			CnD3
			Eg
			FyB2
			FyC2
			FyD2
			EtB
			FwC
			FyC2
			HeB
			HsB2
			HuA
			Ld
			MsC2
			MsD2
			W
			uBlmB
			uLFC
			uLsoB
			uLlmC



Blue Moon Energy LLC Solar Project  
 Critical Issues Analysis  
 Harrison County, Kentucky

Soils within the Project Area Map

Date: June 2021	Project No: E320201803	Figure No: <b>3-1a</b>
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## 4 Assessment Methodology

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Cardno conducted desktop reviews of the Project area utilizing local and federal GIS data to identify potential habitat for listed species, wetlands, hydric soils, and floodplains that could affect the Project development process.

Cardno also performed a review of potential T&E species individuals and their habitat that may be found at or near the Project area. Information from a current USFW IPaC report was reviewed, as well as the KDFWR which maintains a database of rare species and natural communities. All species listings were reviewed for compatible habitat within or near the Project boundaries. Results of the threatened and endangered species review are provided in **Section 5.1**.

### 4.1 WOUS Delineation

The delineation of WOUS, including wetlands was conducted during a site visit to the Project from June 21-25, 2021. Cardno scientists performed all wetland delineation surveys in accordance with the USACE Wetland Delineation Manual (USACE Manual; Environmental Laboratory 1987) in conjunction with the Eastern Mountains and Piedmont Regional Supplement to the USACE Delineation Manual (USACE 2010). The results of the delineation are provided in **Sections 5.2 and 5.3**.

Wetlands are collectively defined by the USACE (Environmental Laboratory 1987) and the U.S. Environmental Protection Agency (EPA; Federal Register 1980) as those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. An area is a wetland if it meets the wetland hydrology, hydrophytic vegetation, and hydric soil criteria established in the USACE Manual.

Cardno scientists collected all pertinent field data information on USACE Eastern Mountains and Piedmont wetland forms (**Appendix A**).

#### **Hydrophytic Vegetation**

Hydrophytic vegetation is defined as “the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present” (Environmental Laboratory 1987). Dominant vegetation was identified and categorized in accordance with the regional indicator status in the national list of plant species that occur in wetlands (Lichvar et. al. 2016). The indicator status of a plant species is expressed in terms of the estimated probability of that species to occur in wetland conditions within a given region. **Table 4-1** lists the plant indicator status categories. A vegetative community would be determined to be hydrophytic if more than 50 percent of the dominant species present were FAC, FACW, or OBL.

#### **Wetland Hydrology**

Wetland hydrology includes all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively (Environmental Laboratory 1987).

Table 4-1 Plant Indicator Status Categories

Category	Indicator	Frequency of Occurrence in Wetlands (percent)
<b>Obligate Wetland Plants</b>	OBL	Plants that occur almost always (estimated probability >99%) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1%) in non-wetlands. Examples: <i>Carya aquatica</i> , <i>Persicarian punctata</i> .
<b>Facultative Wetland Plants</b>	FACW	Plants that occur usually (estimated probability 67-99%) in wetlands, but also occurring in both wetlands and non-wetlands. Examples: <i>Spartina patens</i> ; <i>Panicum dichotomifrum</i> .
<b>Facultative Plants</b>	FAC	Plants with a similar likelihood (estimated probability of 33-67%) of occurring in both wetlands and non-wetlands. Examples: <i>Stenotaphrum secundatum</i> ; <i>Rumex crispus</i> .
<b>Facultative Upland Plants</b>	FACU	Plants that occur sometimes (estimated probability 1-33%) in wetlands, but occur more often (estimated probability 67-99%) in non-wetlands. Examples: <i>Cirsium vulgare</i> ; <i>Rubus trivialis</i> .
<b>Obligate Upland Plants</b>	UPL	Plants that occur rarely (estimated probability <1%) in wetlands, but almost always (>99% estimated probability) in non-wetlands. Examples: <i>Geranium carolinianum</i> .

**Hydric Soils**

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper stratum. In general, hydric soils are flooded, ponded, or saturated for a week or more during the growing season when soil temperatures are above 32 degrees Fahrenheit. The anaerobic conditions created by repeated or prolonged saturation or flooding result in permanent changes in soil color and chemistry, and are used to differentiate hydric from non-hydric soils (Environmental Laboratory 1987).

At each recorded data point, a pit up to 20-inches deep was excavated for evaluation. Soils were surveyed for horizon profile, matrix, value, chroma, texture, and concretions.

Hydric soils were determined to be present if one primary hydric soil indicator was present. Background soils information of the Project area was obtained from the USDA NRCS Web Soil Survey.

**4.2 Mapping**

All wetlands and other water features were recorded using a sub-meter Global Positioning System (GPS) device. The GPS was programmed to record points with a minimum of four satellites and a Position Dilution of Precision (PDOP) value no greater than 6.0. Water features were delineated by collecting GPS points along the perimeter of the wetland or ordinary high water mark with suitable frequency to represent the feature within the Project area.

**4.3 Photographs**

Photographs are the visual documentation of site conditions as they existed during the field survey. Representative photos were taken at wetland and upland areas. For all other features, a minimum of one photo was taken, unless the area was large and required additional representation. The photographic log is provided in **Appendix B**.

## 5 Results of Findings

### 5.1 Threatened and Endangered Species Review

Cardno conducted a desktop analysis utilizing information from the USFWS IPaC and the KDFWR to obtain information on state and federally-listed species that have the potential to occur within or be affected by the Project.

In total, there are eleven federally listed endangered species and two federally listed threatened species with the potential to occur within or be affected by the Project (USFWS 2020, KDFWR 2013). No critical habitat was identified within the Project area. Each species and its habitat requirements are described in **Table 5-1**.

Group	Common Name	Scientific Name	Likelihood of Occurrence	Habitat	Federal Status	State Status
Flowering Plants	Running Buffalo Clover	<i>Trifolium stoloniferum</i>	Moderate	This species occurs in disturbed soils, partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails.	Endangered	Threatened
	Short's Goldenrod	<i>Solidago shortii</i>	Moderate	This species occurs in moist, gravelly, well-drained soils in full sun to part shade. Best performance is in full sun.	Endangered	Endangered
Freshwater Mussels	Clubshell	<i>Pleurobema clava</i>	None	This species is known to occur within the South Fork Licking River	Endangered	Endangered
	Fanshell	<i>Cyprogenia stegaria</i>	None	This species is known to occur within the South Fork Licking River	Endangered	Endangered
	Northern Riffleshell	<i>Epioblasma torulosa rangiana</i>	None	This species is known to occur within the South Fork Licking River	Endangered	Endangered
	Pink Mucket (pearlymussel)	<i>Lampsilis abrupta</i>	None	This species is known to occur within the South Fork Licking River	Endangered	Endangered
	Purple Cat's Paw	<i>Epioblasma obliquata</i>	None	This species is known to occur within the South Fork Licking River	Endangered	Endangered
	Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	None	This species is known to occur within the South Fork Licking River	Threatened	Threatened

	Rough Pigtoe	<i>Pleurobema plenum</i>	None	This species is known to occur within the South Fork Licking River	Endangered	Endangered
	Sheepnose Mussel	<i>Plethobasus cyphus</i>	None	This species is known to occur within the South Fork Licking River	Endangered	Endangered
Mammals	Indiana Bat	<i>Myotis sodalis</i>	Low	Summer habitat includes small to medium river and stream corridors with well-developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests	Endangered	Endangered
	Northern Long-eared bat	<i>Myotis septentrionalis</i>	Low	Northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. This bat has also been found rarely roosting in structures, like barns and sheds.	Threatened	Endangered
	Gray Bat	<i>Myotis grisescens</i>	None	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.	Endangered	Threatened

Cardno inspected all habitats within the Project area for the presence of suitable habitat for listed species. Cardno investigated the area for bat habitat as defined in USFWS 2018 Range-wide Indiana Bat Summer Survey Guidelines (also applicable to Northern Long-eared Bat) during field site assessments. One potential roosting tree (trees with loose bark or hollows) was identified (Appendix C); additionally, some scattered large diameter trees with crevices do exist sporadically in the small patches of forest within the facility footprint. Although the NLEB is listed to occur within Harrison County, there are no USFWS documented hibernaculum or roosting trees in the Project site USGS quadrangle (USFWS, 2017). Due to the small patches of forested riparian areas (less than 10-acres) and potential tree clearing that would only occur in the non-roosting season (fall), the Project is not likely to adversely affect the NLEB or Indiana bat.

Cardno scientists did not conduct ‘in water’ survey; however, no mussel relics were identified along the stream banks. Two perennial streams flow through the Project area and may contain suitable habitat for listed freshwater mussel species; however, impacts to the creeks are not anticipated as a result of the Project.

The Project area could contain habitat for the federally listed endangered running buffalo clover and Short’s goldenrod. Presence/absence surveys during the listed species flowering seasons: running buffalo clover (April-August) and Short’s goldenrod (August-October) may be required to determine potential impacts to these species.

## 5.2 Wetlands

Cardno scientists investigated the entire Project for wetlands that exhibited the three USACE criteria (hydrophytic vegetation, wetland hydrology, and hydric soils). Cardno's onsite investigations identified **27** wetlands (**Table 5-2**) totaling **11.11** acres. Unconsolidated bottom, herbaceous, and forested wetlands were observed within the Project.

Wetland ID	Type	Acreage	Potentially Jurisdictional
WET-1	PUB(x)	0.12	No
WET-2	PUB(x)	0.91	No
WET-3	PFO	0.07	No
WET-4	PUB(x)	0.47	No
WET-5	PFO	0.16	No
WET-6	PUB(x)	1.27	No
WET-7	PUB(x)	0.77	No
WET-8	PUB(x)	0.17	No
WET-9	PEM	0.38	No
WET-10	PUB(x)	1.14	No
WET-11	PEM	0.13	No
WET-12	PFO	0.03	No
WET-13	PUB(x)	0.99	No
WET-14	PUB(x)	0.40	No
WET-15	PFO	0.30	No
WET-16	PUB(x)	0.21	No
WET-17	PUB(x)	1.77	No
WET-18	PUB(x)	0.42	No
WET-19	PUB(x)	0.55	No
WET-20	PUB(x)	0.11	No
WET-21	PFO	0.15	Yes
WET-22	PUB(x)	0.16	No



Table 5-2 Delineated Wetlands			
Wetland ID	Type	Acreage	Potentially Jurisdictional
WET-23	PFO	0.10	No
WET-24	PUB(x)	0.13	No
WET-25	PUB(x)	0.05	No
WET-26	PFO	0.05	No
WET-27	PFO	0.10	No
<b>Total</b>		<b>11.11</b>	
<b>Total Non-jurisdictional</b>		<b>10.96</b>	
<b>Total Jurisdictional</b>		<b>0.15</b>	

### Vegetation Community Types

Cardno scientists identified two types of wetland vegetative communities within the Project area: herbaceous wetland and forested wetland. Community identification was based on soils, hydrology, and an emphasis on dominant vegetation. **Appendix A** provides datasheets which include survey point-specific vegetative community species data.

### Hydrology

The entire Project area is relatively well drained by overland flow, drainages, and streams which lead to runs and creeks that flow offsite. Many ag-field drainages were identified by a review of aerial imagery. Cardno scientists inspected these drainages at the time of the onsite investigation, and determined them to be ephemeral in nature.

### Soils

Soils were delineated with the X-Rite Munsell M50215B Soil Book of Color, and exhibited a hue, lightness, and chroma ranging from 5 YR (3/3) to 7.5 YR (4/6) throughout the Project area. The datasheets presented in **Appendix A** provide soils color data for each soil pit.

## 5.3 Waterbodies

**Fourteen** ephemeral drainages, **six** intermittent streams, **two** perennial streams, and **17** ponded areas (recorded as PUB(x) wetlands above) were identified to be located within the Project boundaries (**Table 5-3**) (**Appendix C**).

Table 5-3 Delineated Streams						
Stream ID	Flow Type	Stream Length (ft)	Water Depth (In.)	Width at Bankfull (ft)	Substrate	Potentially Jurisdictional (USACE)
S-1	Ephemeral	842.83	2	2	Silt/Loam	No
S-2	Intermittent	2,251.53	4	6	Silt/Loam	Yes
S-3	Ephemeral	309.42	2	3	Silt/Loam	No

S-4	Ephemeral	580.02	4	3	Silt/Loam	No
S-5	Ephemeral	981.57	2	2	Silt/Loam	No
S-6 A	Ephemeral	1,515.41	3	3	Silt/Loam	No
S-6 B	Intermittent	596.45	6	8	Silt/Loam	Yes
S-7	Ephemeral	1,503.59	3	3	Silt/Loam	No
S-8	Ephemeral	1,123.66	2	3	Silt/Loam	No
S-9 (Sellers Run)	Intermittent	1,476.22	6	12	Rock/Sand	No
S-10 A	Ephemeral	1,113.66	3	3	Silt/Loam	No
S-10 B	Intermittent	414.40	4	6	Loam	Yes
S-11	Ephemeral	428.39	2	2	Silt/Loam	No
S-12 (Flat Run)	Ephemeral	533.54	2	2	Silt/Loam	No
S-13	Ephemeral	1,677.15	6	4	Rock/Loam	No
S-14 A	Ephemeral	560.04	2	2	Rock/Loam	No
S-14 B	Intermittent	642.74	4	7	Silt/Loam	Yes
S-15	Ephemeral	1,417.33	0	2	Rock	No
S-16	Intermittent	2,983.18	12	6	Silt/Rock	Yes
S-17	Perennial	982.84	18	10-15	Silt/Rock	Yes
S-18	Ephemeral	521.37	1	2	Silt/Loam	No
S-19 (Indian Creek)	Perennial	452.91	24	15-20	Silt/Rock	Yes
<b>Total</b>		<b>22,908.34</b>				
<b>Total Non-jurisdictional</b>		<b>14,584.29</b>				
<b>Total Jurisdictional</b>		<b>8,324.05</b>				

## 5.4 Jurisdictional Summary

Cardno scientists identified **14** ephemeral drainages, **six** intermittent streams, **two** perennial streams, and **27** wetlands, including **17** ponds within the Project area. From the field investigation, it was determined that **seven** of the identified streams, as well as **one** of the identified wetlands (Wet-21) may possess a hydrological connection to South Fork Licking River, a TNW. It is Cardno's opinion that these delineated streams and associated wetland may likely be classified as jurisdictional under USACE guidance. The ephemeral streams did exhibit flow during field investigations due to recent rain events. **Twenty-six** of the

identified wetlands, including the excavated ponds, appeared to be isolated in nature. It is Cardno's opinion that these drainages/streams and wetlands lack adequate connectivity to a TNW, and would most likely be classified as non-jurisdictional under USACE guidance. Cardno completed this wetland and stream assessment under the rules and guidelines defined in the Navigable Waters Protection Rule published on April 21, 2020 and in effect on June 22, 2020. Our classification of streams and adjacent wetlands are classified accordingly, to the best of our understanding of normal hydraulic conditions at the property under review.

## **5.5 Sinkholes**

Cardno performed a search for potential sinkhole areas utilizing Geographic Information Systems (GIS) data from the Kentucky Geological Survey (KGS). **One** sinkhole area comprising 0.3 acres was identified within the Project area; an additional potential sinkhole was found by Cardno staff during the onsite field investigation. The sinkhole area locations are illustrated in **Appendix C**.

## 6 Conclusion and Recommendations

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Cardno reviewed current and historic mapping, as well as local, state, and federal GIS data layers as part of a desktop investigation during its natural resources assessment. No significant concerns were identified onsite that would affect construction of the proposed Project.

Cardno conducted a threatened and endangered species review during desktop environmental assessments of the Project area. There are three mammal species, eight freshwater mussel species and two flowering plant species listed by the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) and Kentucky Department of Fish and Wildlife Resources (KDFWR) as having the potential to occur within or be affected by the Project. No designated critical habitat for listed species exists within the Project area. Cardno inspected all habitats within the Project area for the presence of suitable habitat for listed species. Cardno scientists investigated the area for bat habitat as defined in USFWS 2018 Range-wide Indiana Bat Summer Survey Guidelines (also applicable to Northern Long Eared Bat) during field site assessments. One potential roosting tree (trees with loose bark or hollows) was identified. Although the NLEB is listed to occur within Harrison County, there are no USFWS documented hibernaculum or roosting trees in the Project site. Due to the undisturbed small patches of forested riparian areas and the distance to current summer and winter grounds, it is unlikely that NLEB would be impacted by this Project. Though Cardno scientists did not conduct ‘in water’ surveys, no mussel relics were identified along the Project stream banks. Indian Creek flows through portions of the Project area and may contain suitable habitat for listed freshwater mussel species; however, impacts to this creek is not anticipated as a result of the Project.

The Project area could contain habitat for the federally listed endangered running buffalo clover and Short’s goldenrod. Presence/absence surveys during the listed species flowering seasons: running buffalo clover’s (April-August), Short’s goldenrod (August-October) may be required to determine status of the species within the Project boundary.

Cardno scientists identified **14** ephemeral drainages, **six** intermittent streams, **two** perennial streams, and **27** wetlands, including **17** ponds within the Project area. From the field investigation, it was determined that **seven** of the identified streams, as well as **one** of the identified wetlands may possess a hydrological connection to South Fork Licking River. It is Cardno’s opinion that these delineated streams and associated wetland may likely be classified as jurisdictional under USACE guidance. The ephemeral streams did exhibit flow during field investigations due to recent rain events. **Twenty-six** of the identified wetlands, including the excavated ponds appeared to be isolated in nature. It is Cardno’s opinion that these drainages/streams and wetlands lack adequate connectivity to a TNW, and would most likely be classified as non-jurisdictional under USACE guidance.

Because only the USACE may issue determinations on the jurisdictional status of the streams and wetlands identified within the Project, Cardno recommends avoiding these resources to the greatest extent practicable during initial design phases, until a jurisdictional determination has been issued by the USACE Louisville District. If any of the identified streams or wetlands are deemed jurisdictional by the USACE, the Project may proceed under a NWP 51, 14 and/or 57. Nationwide 51 requires a pre-construction notification to the USACE and allows for construction, expansion or modification of land-based renewable energy production facilities, including attendant features. For Electric Utility Line and Telecommunications Activities, each separate and distant crossing of waters of the United States may be covered by its own NWP authorization. If the only activity requiring USACE authorization is the construction, maintenance, repair, and removal of electrical utility lines, then a NWP 57 may be used. As stated in the text of the NWPs, the discharge of dredged or fill material into wetlands and non-tidal WOUS must not cause the loss of greater than ½-acre of wetlands and non-tidal WOUS. Permanent impacts which exceed the ½-acre threshold for NWPs will require an Individual Permit.

According to the FEMA floodplain data, approximately 21.31 acres of the Project area occur within the 100-Year Floodplain of South Indian Creek. Additional permitting from the Harrison County Floodplain Administrator may be required if construction will take place in these areas.

Cardno performed a search for potential sinkhole areas utilizing GIS data from the KGS. **One** sinkhole area comprising 0.3 acres was identified within the Project area using this dataset, an additional potential sinkhole was found by Cardno staff during the onsite field investigation.



## 7 References

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Blue Moon Solar Project  
CIA Report

APPENDIX

A

WETLAND DETERMINATION AND  
STREAM CHARACTERIZATION  
DATASHEETS

## Stream Identification Form

<b>Date:</b> 05/22/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.35832
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.22957
<b>Total Points:</b> <i>Stream is at least intermittent* 5: Ephemeral if ≥ 19 or perennial if ≥ 30*</i>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 1</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>2.5</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>2</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>1</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:

Sketch:

## Stream Identification Form

<b>Date:</b> 05/22/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.36068
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.2271
<b>Total Points:</b> <i>Stream is at least intermittent. 20.25: Intermittent if <math>\geq 19</math> or perennial if <math>\geq 30^*</math></i>	<b>Stream Determination (circle one)</b> Ephemeral Intermittent Perennial	<b>Other Stream 2</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>14</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>3</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>3.25</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:

Sketch:

## Stream Identification Form

<b>Date:</b> 05/22/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.36054
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.22803
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 3</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>8.5</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>4</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>2.75</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:

Sketch:

## Stream Identification Form

<b>Date:</b> 05/22/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.36357
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.23342
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 4</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>3</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>2</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>3.75</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:

Sketch:

## Stream Identification Form

<b>Date:</b> 05/22/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.37835
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.26009
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 5</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>5</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>3</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>2.75</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:

Sketch:



## Stream Identification Form

<b>Date:</b> 05/22/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.37534
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.26093
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>10.75: Ephemeral</b>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 6A</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>5</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>3</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>2.75</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

**Notes:**

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**Sketch:**

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## Stream Identification Form

<b>Date:</b> 05/22/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.37534
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.26093
<b>Total Points:</b> <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i> <b>23.5: Intermittent</b>	<b>Stream Determination (circle one)</b> Ephemeral <b>Intermittent</b> Perennial	<b>Other Stream 6B</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>13</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>5</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>5.5</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

**Notes:**

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**Sketch:**

## Stream Identification Form

<b>Date:</b> 05/22/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.37256
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.25766
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>10.5: Ephemeral</b>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 7</b> e.g. Quad Name:

A. Geomorphology (Subtotal = <u>6</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>2.5</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>2</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:
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Sketch:
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## Stream Identification Form

<b>Date:</b> 05/23/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.36774
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.25448
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>11: Ephemeral</b>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 8</b> e.g. Quad Name:

A. Geomorphology (Subtotal = <u>6</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>2.5</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>2.5</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:
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Sketch:
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## Stream Identification Form

<b>Date:</b> 05/23/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.36268
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.25653
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>28.25: Intermittent</b>	<b>Stream Determination (circle one)</b> Ephemeral <b>Intermittent</b> Perennial	<b>Other Stream 9</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>16</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>7</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>5.25</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:

Sketch:

## Stream Identification Form

<b>Date:</b> 05/23/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.36182
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.25644
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>9.5: Ephemeral</b>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 10A</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>6</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>1.5</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>2</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:

Sketch:

## Stream Identification Form

<b>Date:</b> 05/23/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.36182
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.25644
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>20.75: Intermittent</b>	<b>Stream Determination (circle one)</b> Ephemeral <b>Intermittent</b> Perennial	<b>Other Stream 10B</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>12.5</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>5.5</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>2.75</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:

Sketch:

## Stream Identification Form

<b>Date:</b> 05/23/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.3606
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.25356
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>6.75: Ephemeral</b>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 11</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>  2  </u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>  2  </u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>  2.75  </u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:

Sketch:



## Stream Identification Form

<b>Date:</b> 05/23/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.38232
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.25763
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>17.25: Ephemeral</b>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 12</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>12</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>2.5</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>2.75</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:
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Sketch:
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## Stream Identification Form

<b>Date:</b> 05/23/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.38302
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.25876
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>17.75: Ephemeral</b>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 13</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>10.5</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>3.5</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>3.75</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

**Notes:**

**Sketch:**

## Stream Identification Form

<b>Date:</b> 05/23/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.38808
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.25813
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>6: Ephemeral</b>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 14A</b> e.g. Quad Name:

A. Geomorphology (Subtotal = <u>3.5</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>1</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>2</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:

Sketch:

## Stream Identification Form

<b>Date:</b> 05/23/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 37.68229
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -85.97114
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>20.75: Intermittent</b>	<b>Stream Determination (circle one)</b> Ephemeral <b>Intermittent</b> Perennial	<b>Other Stream 14B</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>12.5</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>5.5</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>2.75</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

**Notes:**

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**Sketch:**

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## Stream Identification Form

<b>Date:</b> 05/23/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.3894
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.25429
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>7: Ephemeral</b>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 15</b> e.g. Quad Name:

A. Geomorphology (Subtotal = <u>3</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>2</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>2</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes: Ephemeral Swale

Sketch:

## Stream Identification Form

<b>Date:</b> 05/24/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.38935
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.23907
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>28.25: Intermittent</b>	<b>Stream Determination (circle one)</b> Ephemeral <b>Intermittent</b> Perennial	<b>Other Stream 16</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>15.5</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	<b>2</b>	3
2. Sinuosity of channel along thalweg	0	1	<b>2</b>	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	<b>2</b>	3
4. Particle size of stream substrate	0	<b>1</b>	2	3
5. Active/relict floodplain	0	<b>1</b>	2	3
6. Depositional bars or benches	0	<b>1</b>	2	3
7. Recent alluvial deposits	0	<b>1</b>	2	3
8. Headcuts	0	<b>1</b>	2	3
9. Grade control	0	<b>0.5</b>	1	1.5
10. Natural valley	0	0.5	<b>1</b>	1.5
11. Second or greater order channel	No = 0		<b>Yes = 3</b>	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>8</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	<b>2</b>	3
13. Iron oxidizing bacteria	0	<b>1</b>	2	3
14. Leaf litter	1.5	<b>1</b>	0.5	0
15. Sediment on plants or debris	0	<b>0.5</b>	1	1.5
16. Organic debris lines or piles	0	<b>0.5</b>	1	1.5
17. Soil-based evidence of high water table?	No = 0		<b>Yes = 3</b>	

C. Biology (Subtotal = <u>4.75</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	<b>2</b>	1	0
19. Rooted upland plants in streambed	3	<b>2</b>	1	0
20. Macroinvertebrates (note diversity and abundance)	<b>0</b>	1	2	3
21. Aquatic Mollusks	<b>0</b>	1	2	3
22. Fish	<b>0</b>	0.5	1	1.5
23. Crayfish	<b>0</b>	0.5	1	1.5
24. Amphibians	<b>0</b>	0.5	1	1.5
25. Algae	<b>0</b>	0.5	1	1.5
26. Wetland plants in streambed	<b>FACW = 0.75; OBL = 1.5 Other = 0</b>			

Notes:
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Sketch:
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## Stream Identification Form

<b>Date:</b> 05/24/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.39195
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.2328
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>42.5: Perennial</b>	<b>Stream Determination (circle one)</b> Ephemeral Intermittent <b>Perennial</b>	<b>Other Stream 17</b> e.g. Quad Name:

A. Geomorphology (Subtotal = <u>25</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>9</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>8.5</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:
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Sketch:
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## Stream Identification Form

<b>Date:</b> 05/24/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.39055
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.22672
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30</math>*</i> <b>6.75: Ephemeral</b>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other Stream 18</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>  2  </u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>  2  </u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>  2.75  </u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:

Sketch:



## Stream Identification Form

<b>Date:</b> 05/22/2021	<b>Project/Site:</b> Blue Moon Solar	<b>Latitude:</b> 38.39316
<b>Evaluator:</b> Wyatt Goertz and Corbin Hoffmann	<b>County:</b> Harrison County, Kentucky	<b>Longitude:</b> -84.21968
<b>Total Points:</b> <i>Stream is at least intermittent if <math>\geq 19</math> or perennial if <math>\geq 30^*</math></i> <b>44.5: Perennial</b>	<b>Stream Determination (circle one)</b> Ephemeral Intermittent <b>Perennial</b>	<b>Other Stream 19</b> <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>27</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated.

B. Hydrology (Subtotal = <u>9</u> )	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>8.5</u> )	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

Notes:
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Sketch:
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**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 22-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-1  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): none Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.35536855 Long.: -84.2263972 Datum: \_\_\_\_\_  
 Soil Map Unit Name: uMImC - Maury-Bluegrass silt loams, 6 to 12 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><input type="checkbox"/> Surface Water (A1)</td> <td style="width:50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Drift deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> FAC-neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)																																		
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<input type="checkbox"/> Microtopographic Relief (D4)																																			
<input type="checkbox"/> FAC-neutral Test (D5)																																			

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-1**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	50.0%	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)
1. <u>Juglans nigra</u>	10	<input checked="" type="checkbox"/>	50.0%	FACU	
2. <u>Celtis occidentalis</u>	10	<input checked="" type="checkbox"/>	50.0%	FACU	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
20 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____  OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>20</u> x 5 = <u>100</u> Column Totals: <u>80</u> (A) <u>280</u> (B)  Prevalence Index = B/A = <u>3.500</u>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Ambrosia trifida</u>	20	<input checked="" type="checkbox"/>	33.3%	FAC	
2. <u>Conium maculatum</u>	20	<input checked="" type="checkbox"/>	33.3%	FACW	
3. <u>Carduus nutans</u>	20	<input checked="" type="checkbox"/>	33.3%	UPL	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
11. _____	0	<input type="checkbox"/>	0.0%	_____	
12. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>					

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	4/6	100				Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 22-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-2  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): none Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.3608894 Long.: -84.22770471 Datum: \_\_\_\_\_  
 Soil Map Unit Name: uLfc - Lowell-Faywood silt loams, 6 to 12 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-2**

	Absolute % Cover		Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
1. <u>Ulmus americana</u>	20	<input checked="" type="checkbox"/>	25.0%	FACW	
2. <u>Celtis occidentalis</u>	20	<input checked="" type="checkbox"/>	25.0%	FACU	
3. <u>Acer saccharinum</u>	20	<input checked="" type="checkbox"/>	25.0%	FACW	
4. <u>Fraxinus americana</u>	20	<input checked="" type="checkbox"/>	25.0%	FACU	
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
80 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____  OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>80</u> x 5 = <u>400</u> Column Totals: <u>160</u> (A) <u>640</u> (B)  Prevalence Index = B/A = <u>4.000</u>
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Verbesina hellanthis</u>	40	<input checked="" type="checkbox"/>	50.0%	UPL	
2. <u>Lonicera maackii</u>	40	<input checked="" type="checkbox"/>	50.0%	UPL	
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
11. _____	0	<input type="checkbox"/>	0.0%		
12. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
Remarks: (Include photo numbers here or on a separate sheet.)					

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>		
0-20	7.5YR	4/6	100				Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 22-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-3  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): none Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.35931101 Long.: -84.23121625 Datum: \_\_\_\_\_  
 Soil Map Unit Name: AsB- Ashton silt loam, 2 to 6 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-3**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b>
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b>
5. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: _____ Multiply by: _____
6. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>
7. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>
8. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>20</u> x 3 = <u>60</u>
	0 = Total Cover			FACU species <u>20</u> x 4 = <u>80</u>
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				UPL species <u>20</u> x 5 = <u>100</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	Column Totals: <u>60</u> (A) <u>240</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Prevalence Index = B/A = <u>4.000</u>
3. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Indicators:</b>
4. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation
5. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Dominance Test is > 50%
6. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>
7. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9. _____	0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
10. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Definition of Vegetation Strata:</b>
	0 = Total Cover			<b>Four Vegetation Strata:</b>
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Tree stratum</b> – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
1. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Sapling/shrub stratum</b> – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
2. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Herb stratum</b> – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.
3. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Woody vines</b> – Consists of all woody vines greater than 3.28 ft in height.
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Five Vegetation Strata:</b>
5. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Tree</b> - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
6. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Sapling stratum</b> – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
7. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Shrub stratum</b> – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
8. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Herb stratum</b> – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.
9. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Woody vines</b> – Consists of all woody vines, regardless of height.
10. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
	60 = Total Cover			
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
	0 = Total Cover			

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 22-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-4  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): none Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.3636371 Long.: -84.23344555 Datum: \_\_\_\_\_  
 Soil Map Unit Name: AsB- Ashton silt loam, 2 to 6 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><input type="checkbox"/> Surface Water (A1)</td> <td style="width:50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Drift deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> FAC-neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)																																		
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<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)																																		
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<input type="checkbox"/> Microtopographic Relief (D4)																																			
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<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-4**

	Absolute % Cover		Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
1. <u>Ulmus americana</u>	20	<input checked="" type="checkbox"/>	25.0%	FACW	
2. <u>Acer saccharinum</u>	20	<input checked="" type="checkbox"/>	25.0%	FACW	
3. <u>Celtis occidentalis</u>	20	<input checked="" type="checkbox"/>	25.0%	FACU	
4. <u>Fraxinus americana</u>	20	<input checked="" type="checkbox"/>	25.0%	FACU	
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
80 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____  OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>40</u> x 5 = <u>200</u> Column Totals: <u>120</u> (A) <u>440</u> (B)  Prevalence Index = B/A = <u>3.667</u>
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Verbesina hellanthisoides</u>	20	<input checked="" type="checkbox"/>	50.0%	UPL	
2. <u>Lonicera maackii</u>	20	<input checked="" type="checkbox"/>	50.0%	UPL	
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
11. _____	0	<input type="checkbox"/>	0.0%		
12. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____ )					
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>					
Remarks: (Include photo numbers here or on a separate sheet.)					

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>		
0-20	10YR	4/6	100				Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 22-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-5  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.36427257 Long.: -84.23594232 Datum: \_\_\_\_\_  
 Soil Map Unit Name: AsB- Ashton silt loam, 2 to 6 percent slopes 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Wetland 3	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><input type="checkbox"/> Surface Water (A1)</td> <td style="width:50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Drift deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> FAC-neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry Season Water Table (C2)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-5

	Absolute % Cover		Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. <u>Carya ovata</u>	10	<input checked="" type="checkbox"/>	20.0%	FACU	
2. <u>Fraxinus americana</u>	10	<input checked="" type="checkbox"/>	20.0%	FACU	
3. <u>Quercus bicolor</u>	10	<input checked="" type="checkbox"/>	20.0%	FACW	
4. <u>Acer negundo</u>	10	<input checked="" type="checkbox"/>	20.0%	FAC	
5. <u>Quercus macrocarpa</u>	10	<input checked="" type="checkbox"/>	20.0%	FAC	
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
50 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____  OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>310</u> (B)  Prevalence Index = B/A = <u>2.818</u>
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Persicaria maculosa</u>	40	<input checked="" type="checkbox"/>	66.7%	FACW	
2. <u>Plantago rugellii</u>	10	<input type="checkbox"/>	16.7%	FACU	
3. <u>Ambrosia trifida</u>	10	<input type="checkbox"/>	16.7%	FAC	
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
11. _____	0	<input type="checkbox"/>	0.0%		
12. _____	0	<input type="checkbox"/>	0.0%		
60 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
Remarks: (Include photo numbers here or on a separate sheet.)					

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 22-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-6  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.363782 Long.: -84.23610171 Datum: \_\_\_\_\_  
 Soil Map Unit Name: uLfc - Lowell-Faywood silt loams, 6 to 12 percent slopes NWI classification: PUBHh

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><input type="checkbox"/> Surface Water (A1)</td> <td style="width:50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Drift deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> FAC-neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-neutral Test (D5)
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<input type="checkbox"/> Crayfish Burrows (C8)																																			
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)																																			
<input type="checkbox"/> Stunted or Stressed Plants (D1)																																			
<input type="checkbox"/> Geomorphic Position (D2)																																			
<input type="checkbox"/> Shallow Aquitard (D3)																																			
<input type="checkbox"/> Microtopographic Relief (D4)																																			
<input type="checkbox"/> FAC-neutral Test (D5)																																			

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-6

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b>
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b>
5. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: _____ Multiply by: _____
6. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>
7. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>
8. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u> x 3 = <u>0</u>
	0 = Total Cover			FACU species <u>20</u> x 4 = <u>80</u>
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				UPL species <u>20</u> x 5 = <u>100</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	Column Total s: <u>40</u> (A) <u>180</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Prevalence Index = B/A = <u>4.500</u>
3. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Indicators:</b>
4. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation
5. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Dominance Test is > 50%
6. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>
7. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9. _____	0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
10. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Definition of Vegetation Strata:</b>
	0 = Total Cover			<b>Four Vegetation Strata:</b>
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Tree stratum</b> – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
1. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Sapling/shrub stratum</b> – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
2. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Herb stratum</b> – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.
3. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Woody vines</b> – Consists of all woody vines greater than 3.28 ft in height.
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Five Vegetation Strata:</b>
5. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Tree</b> - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
6. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Sapling stratum</b> – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
7. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Shrub stratum</b> – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
8. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Herb stratum</b> – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.
9. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Woody vines</b> – Consists of all woody vines, regardless of height.
10. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
	40 = Total Cover			
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
	0 = Total Cover			

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>		
0-20	7.5YR	4/6	100				Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 22-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-7  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.37539811 Long.: -84.26033874 Datum: \_\_\_\_\_  
 Soil Map Unit Name: HuA - Huntington silt loam, 0 to 4 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-7

	Absolute % Cover		Dominant Species? Rel.Strat. Cover		Indicator Status
<b>Tree Stratum</b> (Plot size: _____ )					
1. <u>Fraxinus americana</u>	20	<input checked="" type="checkbox"/>	50.0%		FACU
2. <u>Celtis occidentalis</u>	20	<input checked="" type="checkbox"/>	50.0%		FACU
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
	40	= Total Cover			
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
	0	= Total Cover			
<b>Shrub Stratum</b> (Plot size: _____ )					
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
	0	= Total Cover			
<b>Herb Stratum</b> (Plot size: _____ )					
1. <u>Ambrosia trifida</u>	20	<input checked="" type="checkbox"/>	33.3%		FAC
2. <u>Vernonia fasciculata</u>	20	<input checked="" type="checkbox"/>	33.3%		FAC
3. <u>Arctium minus</u>	20	<input checked="" type="checkbox"/>	33.3%		FACU
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
11. _____	0	<input type="checkbox"/>	0.0%		
12. _____	0	<input type="checkbox"/>	0.0%		
	60	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: _____ )					
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
	0	= Total Cover			

**Dominance Test worksheet:**

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 40 x 3 = 120

FACU species 60 x 4 = 240

UPL species 0 x 5 = 0

Column Totals: 100 (A) 360 (B)

Prevalence Index = B/A = 3.600

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**Hydrophytic Vegetation Indicators:**

Rapid Test for Hydrophytic Vegetation

Dominance Test is > 50%

Prevalence Index is ≤3.0 <sup>1</sup>

Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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**Definition of Vegetation Strata:**

**Four Vegetation Strata:**

**Tree stratum** – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub stratum** – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb stratum** – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

**Woody vines** – Consists of all woody vines greater than 3.28 ft in height.

**Five Vegetation Strata:**

**Tree** - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling stratum** – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub stratum** – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb stratum** – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vines** – Consists of all woody vines, regardless of height.

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**Hydrophytic Vegetation Present?** Yes  No

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 22-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-8  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.37162329 Long.: -84.25887842 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FWC - Faywood silt loam, 6 to 12 percent slopes 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>2</u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-8**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. <u>Salix nigra</u>	50	<input checked="" type="checkbox"/> 100.0%	OBL	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
50 = Total Cover				
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>50</u> x 1 = <u>50</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>225</u> (B)  Prevalence Index = B/A = <u>2.250</u>
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>Herb Stratum</b> (Plot size: _____ )				<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Vernonia fasciculata</u>	25	<input checked="" type="checkbox"/> 50.0%	FAC	
2. <u>Erigeron strigosus</u>	25	<input checked="" type="checkbox"/> 50.0%	FACU	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
12. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____ )				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	3/1	90	5YR	3/4	10	C	M	Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)
- Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- 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 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 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147,148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 22-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-9  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.37086018 Long.: -84.25926705 Datum: \_\_\_\_\_  
 Soil Map Unit Name: HuA - Huntington silt loam, 0 to 4 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-9**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b> 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)
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				<b>Prevalence Index worksheet:</b> 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>20</u> x 4 = <u>80</u> UPL species <u>20</u> x 5 = <u>100</u> Column Totals: <u>40</u> (A) <u>180</u> (B)  Prevalence Index = B/A = <u>4.500</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>Herb Stratum</b> (Plot size: _____ )				<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Arrhenatherum elatius</u>	20	<input checked="" type="checkbox"/> 50.0%	FACU	
2. <u>Carduus nutans</u>	20	<input checked="" type="checkbox"/> 50.0%	UPL	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>Woody Vine Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



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 <sup>1</sup>		
0-20	7.5YR	4/6	100				Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)
- Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- 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 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 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147,148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 22-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-10  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.36804493 Long.: -84.26175501 Datum: \_\_\_\_\_  
 Soil Map Unit Name: HuA - Huntington silt loam, 0 to 4 percent slopes 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>12</u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-10

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:		
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)		
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)		
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)		
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b>		
5. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: _____ Multiply by: _____		
6. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>60</u> x 1 = <u>60</u>		
7. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>		
8. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u> x 3 = <u>0</u>		
9. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>0</u> x 4 = <u>0</u>		
10. _____	0	<input type="checkbox"/> 0.0%	_____	UPL species <u>0</u> x 5 = <u>0</u>		
11. _____	0	<input type="checkbox"/> 0.0%	_____	Column Totals: <u>60</u> (A) <u>60</u> (B)		
12. _____	0	<input type="checkbox"/> 0.0%	_____	Prevalence Index = B/A = <u>1.000</u>		
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Indicators:</b>		
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation		
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> Dominance Test is > 50%		
3. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>		
4. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)		
5. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
6. _____	0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
7. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Definition of Vegetation Strata:</b>		
8. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Four Vegetation Strata:</b>		
9. _____	0	<input type="checkbox"/> 0.0%	_____	Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.		
10. _____	0	<input type="checkbox"/> 0.0%	_____	Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.		
11. _____	0	<input type="checkbox"/> 0.0%	_____	Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.		
12. _____	0	<input type="checkbox"/> 0.0%	_____	Woody vines – Consists of all woody vines greater than 3.28 ft in height.		
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Five Vegetation Strata:</b>		
1. _____	0	<input type="checkbox"/> 0.0%	_____	Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).		
2. _____	0	<input type="checkbox"/> 0.0%	_____	Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.		
3. _____	0	<input type="checkbox"/> 0.0%	_____	Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.		
4. _____	0	<input type="checkbox"/> 0.0%	_____	Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.		
5. _____	0	<input type="checkbox"/> 0.0%	_____	Woody vines – Consists of all woody vines, regardless of height.		
6. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>		
7. _____	0	<input type="checkbox"/> 0.0%	_____			
8. _____	0	<input type="checkbox"/> 0.0%	_____			
9. _____	0	<input type="checkbox"/> 0.0%	_____			
10. _____	0	<input type="checkbox"/> 0.0%	_____			
11. _____	0	<input type="checkbox"/> 0.0%	_____			
12. _____	0	<input type="checkbox"/> 0.0%	_____			
<b>Herb Stratum</b> (Plot size: _____ )						
1. <u>Typha latifolia</u>	20	<input checked="" type="checkbox"/> 33.3% OBL	_____			
2. <u>Juncus roemeranus</u>	20	<input checked="" type="checkbox"/> 33.3% OBL	_____			
3. <u>Alternanthera philoxeroides</u>	20	<input checked="" type="checkbox"/> 33.3% OBL	_____			
4. _____	0	<input type="checkbox"/> 0.0%	_____			
5. _____	0	<input type="checkbox"/> 0.0%	_____			
6. _____	0	<input type="checkbox"/> 0.0%	_____			
7. _____	0	<input type="checkbox"/> 0.0%	_____			
8. _____	0	<input type="checkbox"/> 0.0%	_____			
9. _____	0	<input type="checkbox"/> 0.0%	_____			
10. _____	0	<input type="checkbox"/> 0.0%	_____			
11. _____	0	<input type="checkbox"/> 0.0%	_____			
12. _____	0	<input type="checkbox"/> 0.0%	_____			
<b>Woody Vine Stratum</b> (Plot size: _____ )						
1. _____	0	<input type="checkbox"/> 0.0%	_____			
2. _____	0	<input type="checkbox"/> 0.0%	_____			
3. _____	0	<input type="checkbox"/> 0.0%	_____			
4. _____	0	<input type="checkbox"/> 0.0%	_____			
5. _____	0	<input type="checkbox"/> 0.0%	_____			
6. _____	0	<input type="checkbox"/> 0.0%	_____			
<b>Total Cover</b>						

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>			Loc <sup>2</sup>
0-20	7.5YR	3/1	90	5YR	3/4	10	C	M	Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR N)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p>	<p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input checked="" type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)</p> <p><input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)</p> <p><input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 22-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-11  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.36815461 Long.: -84.26194448 Datum: \_\_\_\_\_  
 Soil Map Unit Name: HuA - Huntington silt loam, 0 to 4 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-11

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	<input type="checkbox"/>	Indicator Status	Dominance Test worksheet:	
1. _____	0	0.0%	<input type="checkbox"/>	0.0%	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)	
2. _____	0	0.0%	<input type="checkbox"/>	0.0%	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	0	0.0%	<input type="checkbox"/>	0.0%	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)	
4. _____	0	0.0%	<input type="checkbox"/>	0.0%		
5. _____	0	0.0%	<input type="checkbox"/>	0.0%		
6. _____	0	0.0%	<input type="checkbox"/>	0.0%		
7. _____	0	0.0%	<input type="checkbox"/>	0.0%		
8. _____	0	0.0%	<input type="checkbox"/>	0.0%		
	0	= Total Cover				
Sapling-Sapling/Shrub Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	<input type="checkbox"/>	Indicator Status	Prevalence Index worksheet:	
1. _____	0	0.0%	<input type="checkbox"/>	0.0%	Total % Cover of: _____ Multiply by: _____	
2. _____	0	0.0%	<input type="checkbox"/>	0.0%	OBL species <u>0</u> x 1 = <u>0</u>	
3. _____	0	0.0%	<input type="checkbox"/>	0.0%	FACW species <u>0</u> x 2 = <u>0</u>	
4. _____	0	0.0%	<input type="checkbox"/>	0.0%	FAC species <u>0</u> x 3 = <u>0</u>	
5. _____	0	0.0%	<input type="checkbox"/>	0.0%	FACU species <u>20</u> x 4 = <u>80</u>	
6. _____	0	0.0%	<input type="checkbox"/>	0.0%	UPL species <u>20</u> x 5 = <u>100</u>	
7. _____	0	0.0%	<input type="checkbox"/>	0.0%	Column Totals: <u>40</u> (A) <u>180</u> (B)	
8. _____	0	0.0%	<input type="checkbox"/>	0.0%	Prevalence Index = B/A = <u>4.500</u>	
9. _____	0	0.0%	<input type="checkbox"/>	0.0%		
10. _____	0	0.0%	<input type="checkbox"/>	0.0%		
	0	= Total Cover				
Shrub Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	<input type="checkbox"/>	Indicator Status	Hydrophytic Vegetation Indicators:	
1. _____	0	0.0%	<input type="checkbox"/>	0.0%	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
2. _____	0	0.0%	<input type="checkbox"/>	0.0%	<input type="checkbox"/> Dominance Test is > 50%	
3. _____	0	0.0%	<input type="checkbox"/>	0.0%	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	0	0.0%	<input type="checkbox"/>	0.0%	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	0	0.0%	<input type="checkbox"/>	0.0%	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	0	0.0%	<input type="checkbox"/>	0.0%	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	0	0.0%	<input type="checkbox"/>	0.0%		
	0	= Total Cover				
Herb Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	<input type="checkbox"/>	Indicator Status	Definition of Vegetation Strata:	
1. <u>Arrhenatherum elatius</u>	20	50.0%	<input checked="" type="checkbox"/>	FACU	<b>Four Vegetation Strata:</b>	
2. <u>Carduus nutans</u>	20	50.0%	<input checked="" type="checkbox"/>	UPL	Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
3. _____	0	0.0%	<input type="checkbox"/>	0.0%	Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
4. _____	0	0.0%	<input type="checkbox"/>	0.0%	Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.	
5. _____	0	0.0%	<input type="checkbox"/>	0.0%	Woody vines – Consists of all woody vines greater than 3.28 ft in height.	
6. _____	0	0.0%	<input type="checkbox"/>	0.0%		
7. _____	0	0.0%	<input type="checkbox"/>	0.0%		
8. _____	0	0.0%	<input type="checkbox"/>	0.0%		
9. _____	0	0.0%	<input type="checkbox"/>	0.0%		
10. _____	0	0.0%	<input type="checkbox"/>	0.0%		
11. _____	0	0.0%	<input type="checkbox"/>	0.0%		
12. _____	0	0.0%	<input type="checkbox"/>	0.0%		
	0	= Total Cover				
Woody Vine Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	<input type="checkbox"/>	Indicator Status	Five Vegetation Strata:	
1. _____	0	0.0%	<input type="checkbox"/>	0.0%	Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
2. _____	0	0.0%	<input type="checkbox"/>	0.0%	Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
3. _____	0	0.0%	<input type="checkbox"/>	0.0%	Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
4. _____	0	0.0%	<input type="checkbox"/>	0.0%	Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.	
5. _____	0	0.0%	<input type="checkbox"/>	0.0%	Woody vines – Consists of all woody vines, regardless of height.	
6. _____	0	0.0%	<input type="checkbox"/>	0.0%		
	0	= Total Cover				

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	4/6	100				Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)
- Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- 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 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 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147,148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup> 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:



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 23-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-12  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.37081121 Long.: -84.25231888 Datum: \_\_\_\_\_  
 Soil Map Unit Name: uLfc - Lowell-Faywood silt loams, 6 to 12 percent slopes 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><input type="checkbox"/> Surface Water (A1)</td> <td style="width:50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Drift deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> FAC-neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)																																		
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)																																		
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)																																		
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)																																		
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)																																		
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)																																		
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)																																		
<input type="checkbox"/> Iron Deposits (B5)																																			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)																																			
<input type="checkbox"/> Water-Stained Leaves (B9)																																			
<input type="checkbox"/> Aquatic Fauna (B13)																																			
<input type="checkbox"/> Surface Soil Cracks (B6)																																			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)																																			
<input checked="" type="checkbox"/> Drainage Patterns (B10)																																			
<input type="checkbox"/> Moss Trim Lines (B16)																																			
<input type="checkbox"/> Dry Season Water Table (C2)																																			
<input type="checkbox"/> Crayfish Burrows (C8)																																			
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)																																			
<input type="checkbox"/> Stunted or Stressed Plants (D1)																																			
<input type="checkbox"/> Geomorphic Position (D2)																																			
<input type="checkbox"/> Shallow Aquitard (D3)																																			
<input type="checkbox"/> Microtopographic Relief (D4)																																			
<input type="checkbox"/> FAC-neutral Test (D5)																																			

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-12

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)
1. <u>Juglans nigra</u>	30	<input checked="" type="checkbox"/> 100.0%	FACU	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
30 = Total Cover				
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____  OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>20</u> x 5 = <u>100</u> Column Totals: <u>110</u> (A) <u>380</u> (B)  Prevalence Index = B/A = <u>3.455</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Herb Stratum</b> (Plot size: _____ )				<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Carduus nutans</u>	20	<input checked="" type="checkbox"/> 25.0%	UPL	
2. <u>Ambrosia trifida</u>	20	<input checked="" type="checkbox"/> 25.0%	FAC	
3. <u>Conium maculatum</u>	20	<input checked="" type="checkbox"/> 25.0%	FACW	
4. <u>Symphotrichum pilosum</u>	20	<input checked="" type="checkbox"/> 25.0%	FAC	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 23-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-13  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.36909608 Long.: -84.25322221 Datum: \_\_\_\_\_  
 Soil Map Unit Name: W- Water NWI classification: PUBHh

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>6</u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-13

<b>Tree Stratum</b> (Plot size: _____ )	<b>Absolute % Cover</b>	<b>Dominant Species? Rel.Strat. Cover</b>	<b>Indicator Status</b>	<b>Dominance Test worksheet:</b>		
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)		
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)		
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)		
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b>		
5. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: _____ Multiply by: _____		
6. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>40</u> x 1 = <u>40</u>		
7. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>30</u> x 2 = <u>60</u>		
8. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u> x 3 = <u>0</u>		
				FACU species <u>0</u> x 4 = <u>0</u>		
				UPL species <u>0</u> x 5 = <u>0</u>		
				Column Totals: <u>70</u> (A) <u>100</u> (B)		
				Prevalence Index = B/A = <u>1.429</u>		
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )	<b>Absolute % Cover</b>	<b>Dominant Species? Rel.Strat. Cover</b>	<b>Indicator Status</b>	<b>Hydrophytic Vegetation Indicators:</b>		
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation		
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> Dominance Test is > 50%		
3. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>		
4. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)		
5. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
6. _____	0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
7. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Definition of Vegetation Strata:</b>		
8. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Four Vegetation Strata:</b>		
9. _____	0	<input type="checkbox"/> 0.0%	_____	Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.		
10. _____	0	<input type="checkbox"/> 0.0%	_____	Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.		
11. _____	0	<input type="checkbox"/> 0.0%	_____	Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.		
12. _____	0	<input type="checkbox"/> 0.0%	_____	Woody vines – Consists of all woody vines greater than 3.28 ft in height.		
<b>Shrub Stratum</b> (Plot size: _____ )	<b>Absolute % Cover</b>	<b>Dominant Species? Rel.Strat. Cover</b>	<b>Indicator Status</b>	<b>Five Vegetation Strata:</b>		
1. _____	0	<input type="checkbox"/> 0.0%	_____	Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).		
2. _____	0	<input type="checkbox"/> 0.0%	_____	Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.		
3. _____	0	<input type="checkbox"/> 0.0%	_____	Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.		
4. _____	0	<input type="checkbox"/> 0.0%	_____	Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.		
5. _____	0	<input type="checkbox"/> 0.0%	_____	Woody vines – Consists of all woody vines, regardless of height.		
6. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>		
<b>Herb Stratum</b> (Plot size: _____ )	<b>Absolute % Cover</b>	<b>Dominant Species? Rel.Strat. Cover</b>	<b>Indicator Status</b>			
1. <u>Persicaria maculosa</u>	30	<input checked="" type="checkbox"/> 42.9%	FACW			
2. <u>Eleocharis palustris</u>	20	<input checked="" type="checkbox"/> 28.6%	OBL			
3. <u>Alternanthera philoxeroides</u>	20	<input checked="" type="checkbox"/> 28.6%	OBL			
4. _____	0	<input type="checkbox"/> 0.0%	_____			
5. _____	0	<input type="checkbox"/> 0.0%	_____			
6. _____	0	<input type="checkbox"/> 0.0%	_____			
7. _____	0	<input type="checkbox"/> 0.0%	_____			
8. _____	0	<input type="checkbox"/> 0.0%	_____			
9. _____	0	<input type="checkbox"/> 0.0%	_____			
10. _____	0	<input type="checkbox"/> 0.0%	_____			
11. _____	0	<input type="checkbox"/> 0.0%	_____			
12. _____	0	<input type="checkbox"/> 0.0%	_____			
<b>Woody Vine Stratum</b> (Plot size: _____ )	<b>Absolute % Cover</b>	<b>Dominant Species? Rel.Strat. Cover</b>	<b>Indicator Status</b>			
1. _____	0	<input type="checkbox"/> 0.0%	_____			
2. _____	0	<input type="checkbox"/> 0.0%	_____			
3. _____	0	<input type="checkbox"/> 0.0%	_____			
4. _____	0	<input type="checkbox"/> 0.0%	_____			
5. _____	0	<input type="checkbox"/> 0.0%	_____			
6. _____	0	<input type="checkbox"/> 0.0%	_____			
				<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>		

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 23-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-14  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.36880259 Long.: -84.25427303 Datum: \_\_\_\_\_  
 Soil Map Unit Name: uLfc - Lowell-Faywood silt loams, 6 to 12 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-14**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b>
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b>
5. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: _____ Multiply by: _____
6. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>
7. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>
8. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u> x 3 = <u>0</u>
	0 = Total Cover			FACU species <u>40</u> x 4 = <u>160</u>
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				UPL species <u>40</u> x 5 = <u>200</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	Column Totals: <u>80</u> (A) <u>360</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Prevalence Index = B/A = <u>4.500</u>
3. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Indicators:</b>
4. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation
5. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Dominance Test is > 50%
6. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>
7. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9. _____	0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
10. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Definition of Vegetation Strata:</b>
	0 = Total Cover			<b>Four Vegetation Strata:</b>
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Tree stratum</b> – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
1. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Sapling/shrub stratum</b> – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
2. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Herb stratum</b> – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.
3. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Woody vines</b> – Consists of all woody vines greater than 3.28 ft in height.
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Five Vegetation Strata:</b>
5. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Tree</b> - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
6. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Sapling stratum</b> – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
7. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Shrub stratum</b> – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
8. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Herb stratum</b> – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.
9. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Woody vines</b> – Consists of all woody vines, regardless of height.
10. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
	80 = Total Cover			
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
	0 = Total Cover			

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	3/4	100				Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 23-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-15  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.36808997 Long.: -84.25415935 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FyC2 -Faywood silty clay loam, 6 to 12 percent slopes, eroded 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>2</u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-15

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	50.0%	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>4</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>100.0%</u> (A/B)
1. <u>Salix nigra</u>	30	<input checked="" type="checkbox"/>	50.0%	OBL	
2. <u>Ulmus americana</u>	20	<input checked="" type="checkbox"/>	33.3%	FACW	
3. <u>Juglans nigra</u>	10	<input type="checkbox"/>	16.7%	FACU	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
60 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>45</u> x 2 = <u>90</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>120</u> (A) <u>275</u> (B)  Prevalence Index = B/A = <u>2.292</u>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Vernonia fasciculata</u>	25	<input checked="" type="checkbox"/>	41.7%	FAC	
2. <u>Persicaria maculosa</u>	25	<input checked="" type="checkbox"/>	41.7%	FACW	
3. <u>Eriqeron strigosus</u>	10	<input type="checkbox"/>	16.7%	FACU	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
11. _____	0	<input type="checkbox"/>	0.0%	_____	
12. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____ )					
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>					

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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

Depth (inches)	Matrix			Redox Features				Loc <sup>2</sup>	Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>			
0-20	7.5YR	3/2	95	5YR	3/4	5	C	M	Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input checked="" type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 23-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-16  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.36790317 Long.: -84.25462383 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FyC2 -Faywood silty clay loam, 6 to 12 percent slopes, eroded 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-16

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)	
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>		<b>Prevalence Index worksheet:</b>	
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				Total % Cover of: _____ Multiply by: _____	
1. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>	
2. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u> x 3 = <u>0</u>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>35</u> x 4 = <u>140</u>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	UPL species <u>35</u> x 5 = <u>175</u>	
6. _____	0	<input type="checkbox"/> 0.0%	_____	Column Totals: <u>70</u> (A) <u>315</u> (B)	
7. _____	0	<input type="checkbox"/> 0.0%	_____	Prevalence Index = B/A = <u>4.500</u>	
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>		<b>Hydrophytic Vegetation Indicators:</b>	
<b>Shrub Stratum</b> (Plot size: _____ )				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Dominance Test is > 50%	
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____	0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>		<b>Definition of Vegetation Strata:</b>	
<b>Herb Stratum</b> (Plot size: _____ )				<b>Four Vegetation Strata:</b>	
1. <u>Arrhenatherum elatius</u>	35	<input checked="" type="checkbox"/> 50.0%	FACU	Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2. <u>Carduus acanthoides</u>	35	<input checked="" type="checkbox"/> 50.0%	UPL	Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.	
4. _____	0	<input type="checkbox"/> 0.0%	_____	Woody vines – Consists of all woody vines greater than 3.28 ft in height.	
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
12. _____	0	<input type="checkbox"/> 0.0%	_____		
	70	<b>= Total Cover</b>		<b>Five Vegetation Strata:</b>	
<b>Woody Vine Stratum</b> (Plot size: _____ )				Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
2. _____	0	<input type="checkbox"/> 0.0%	_____	Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.	
4. _____	0	<input type="checkbox"/> 0.0%	_____	Woody vines – Consists of all woody vines, regardless of height.	
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>		Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	4/6	100				Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)
- Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- 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 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 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147,148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 23-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-17  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.36668541 Long.: -84.25594238 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FWC - Faywood silt loam, 6 to 12 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-17

	Absolute % Cover		Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
1. <u>Celtis occidentalis</u>	40	<input checked="" type="checkbox"/>	80.0%	FACU	
2. <u>Ulmus americana</u>	10	<input checked="" type="checkbox"/>	20.0%	FACW	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
50 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____  OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>60</u> x 4 = <u>240</u> UPL species <u>45</u> x 5 = <u>225</u> Column Totals: <u>140</u> (A) <u>560</u> (B)  Prevalence Index = B/A = <u>4.000</u>
1. <u>Celtis occidentalis</u>	20	<input checked="" type="checkbox"/>	100.0%	FACU	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
20 = Total Cover					
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Rubus occidentalis</u>	20	<input checked="" type="checkbox"/>	100.0%	UPL	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
20 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Ambrosia trifida</u>	25	<input checked="" type="checkbox"/>	50.0%	FAC	
2. <u>Lonicera maackii</u>	25	<input checked="" type="checkbox"/>	50.0%	UPL	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
11. _____	0	<input type="checkbox"/>	0.0%	_____	
12. _____	0	<input type="checkbox"/>	0.0%	_____	
50 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	4/6	100				Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)
- Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- 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 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 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147,148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 23-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-18  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.36473495 Long.: -84.25719265 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FwB - Faywood silt loam, 2 to 6 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><input type="checkbox"/> Surface Water (A1)</td> <td style="width:50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Drift deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> FAC-neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-18

<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
1. <u>Celtis occidentalis</u>	30	<input checked="" type="checkbox"/>	66.7%	FACU	
2. <u>Ulmus americana</u>	15	<input checked="" type="checkbox"/>	33.3%	FACW	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
	45	= Total Cover			
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>50</u> x 5 = <u>250</u> Column Totals: <u>140</u> (A) <u>555</u> (B)  Prevalence Index = B/A = <u>3.964</u>
1. <u>Celtis occidentalis</u>	20	<input checked="" type="checkbox"/>	100.0%	FACU	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
	20	= Total Cover			
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Rubus occidentalis</u>	25	<input checked="" type="checkbox"/>	100.0%	UPL	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
	25	= Total Cover			
<b>Herb Stratum</b> (Plot size: _____ )					
1. <u>Ambrosia trifida</u>	25	<input checked="" type="checkbox"/>	50.0%	FAC	
2. <u>Lonicera maackii</u>	25	<input checked="" type="checkbox"/>	50.0%	UPL	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
11. _____	0	<input type="checkbox"/>	0.0%	_____	
12. _____	0	<input type="checkbox"/>	0.0%	_____	
	50	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: _____ )					Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
	0	= Total Cover			

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	4/6	100				Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)
- Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- 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 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 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147,148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 23-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-19  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.36068684 Long.: -84.25398419 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FWC - Faywood silt loam, 6 to 12 percent slopes 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>1</u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-19

	Absolute % Cover		Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)
1. <u>Ulmus americana</u>	20	<input checked="" type="checkbox"/>	33.3%	FACW	
2. <u>Acer saccharinum</u>	20	<input checked="" type="checkbox"/>	33.3%	FACW	
3. <u>Celtis occidentalis</u>	20	<input checked="" type="checkbox"/>	33.3%	FACU	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
60 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____  OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>65</u> x 2 = <u>130</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>285</u> (B)  Prevalence Index = B/A = <u>2.591</u>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Vernonia fasciculata</u>	25	<input checked="" type="checkbox"/>	50.0%	FAC	
2. <u>Persicaria maculosa</u>	25	<input checked="" type="checkbox"/>	50.0%	FACW	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
11. _____	0	<input type="checkbox"/>	0.0%	_____	
12. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.





## WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

**Project/Site:** Blue Moon **City/County:** Cyntiana/Harrison **Sampling Date:** 23-Jun-21  
**Applicant/Owner:** Recurrent Energy **State:** KY **Sampling Point:** DP-20  
**Investigator(s):** Corbin Hoffmann and Wyatt Goertz **Section, Township, Range:** S T R  
**Landform (hillslope, terrace, etc.):** \_\_\_\_\_ **Local relief (concave, convex, none):** \_\_\_\_\_ **Slope:** 0.0 % / 0.0 °  
**Subregion (LRR or MLRA):** MLRA 217 in LRR N **Lat.:** 38.360463 **Long.:** -84.25315467 **Datum:** \_\_\_\_\_  
**Soil Map Unit Name:** FWC - Faywood silt loam, 6 to 12 percent slopes **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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

### Hydrology

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-20**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)
1. <u>Celtis occidentalis</u>	30	<input checked="" type="checkbox"/> 75.0%	FACU	
2. <u>Ulmus americana</u>	10	<input checked="" type="checkbox"/> 25.0%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
40 = Total Cover				
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____  OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>75</u> (A) <u>275</u> (B)  Prevalence Index = B/A = <u>3.667</u>
1. <u>Celtis occidentalis</u>	10	<input checked="" type="checkbox"/> 100.0%	FACU	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
10 = Total Cover				
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Herb Stratum</b> (Plot size: _____ )				<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Ambrosia trifida</u>	15	<input checked="" type="checkbox"/> 60.0%	FAC	
2. <u>Lonicera maackii</u>	10	<input checked="" type="checkbox"/> 40.0%	UPL	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>		
0-20	7.5YR	4/6	100				Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 23-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-21  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.35964445 Long.: -84.25668315 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FWC - Faywood silt loam, 6 to 12 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-21**

<b>Tree Stratum</b> (Plot size: _____ )	<b>Absolute % Cover</b>	<b>Dominant Species? Rel.Strat. Cover</b>	<b>Indicator Status</b>	<b>Dominance Test worksheet:</b>	
1. <u>Celtis occidentalis</u>	30	<input checked="" type="checkbox"/> 50.0%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)	
2. <u>Fraxinus americana</u>	30	<input checked="" type="checkbox"/> 50.0%	FACU	Total Number of Dominant Species Across All Strata: <u>5</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%		<b>Prevalence Index worksheet:</b>	
5. _____	0	<input type="checkbox"/> 0.0%		Total % Cover of: _____ Multiply by: _____	
6. _____	0	<input type="checkbox"/> 0.0%		OBL species <u>0</u> x 1 = <u>0</u>	
7. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>0</u> x 2 = <u>0</u>	
8. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>30</u> x 3 = <u>90</u>	
	60 = Total Cover			FACU species <u>75</u> x 4 = <u>300</u>	
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				UPL species <u>0</u> x 5 = <u>0</u>	
1. _____	0	<input type="checkbox"/> 0.0%		Column Totals: <u>105</u> (A) <u>390</u> (B)	
2. _____	0	<input type="checkbox"/> 0.0%		Prevalence Index = B/A = <u>3.714</u>	
3. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Indicators:</b>	
4. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
5. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Dominance Test is > 50%	
6. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
7. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
8. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
9. _____	0	<input type="checkbox"/> 0.0%		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
10. _____	0	<input type="checkbox"/> 0.0%		<b>Definition of Vegetation Strata:</b>	
	0 = Total Cover			<b>Four Vegetation Strata:</b>	
<b>Shrub Stratum</b> (Plot size: _____ )				Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
1. _____	0	<input type="checkbox"/> 0.0%		Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
2. _____	0	<input type="checkbox"/> 0.0%		Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.	
3. _____	0	<input type="checkbox"/> 0.0%		Woody vines – Consists of all woody vines greater than 3.28 ft in height.	
4. _____	0	<input type="checkbox"/> 0.0%		<b>Five Vegetation Strata:</b>	
5. _____	0	<input type="checkbox"/> 0.0%		Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
6. _____	0	<input type="checkbox"/> 0.0%		Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
7. _____	0	<input type="checkbox"/> 0.0%		Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
8. _____	0	<input type="checkbox"/> 0.0%		Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.	
9. _____	0	<input type="checkbox"/> 0.0%		Woody vines – Consists of all woody vines, regardless of height.	
10. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
11. _____	0	<input type="checkbox"/> 0.0%			
12. _____	0	<input type="checkbox"/> 0.0%			
<b>Herb Stratum</b> (Plot size: _____ )					
1. <u>Vernonia fasciculata</u>	15	<input checked="" type="checkbox"/> 33.3%	FAC		
2. <u>Ambrosia trifida</u>	15	<input checked="" type="checkbox"/> 33.3%	FAC		
3. <u>Arctium minus</u>	15	<input checked="" type="checkbox"/> 33.3%	FACU		
4. _____	0	<input type="checkbox"/> 0.0%			
5. _____	0	<input type="checkbox"/> 0.0%			
6. _____	0	<input type="checkbox"/> 0.0%			
7. _____	0	<input type="checkbox"/> 0.0%			
8. _____	0	<input type="checkbox"/> 0.0%			
9. _____	0	<input type="checkbox"/> 0.0%			
10. _____	0	<input type="checkbox"/> 0.0%			
11. _____	0	<input type="checkbox"/> 0.0%			
12. _____	0	<input type="checkbox"/> 0.0%			
<b>Woody Vine Stratum</b> (Plot size: _____ )					
1. _____	0	<input type="checkbox"/> 0.0%			
2. _____	0	<input type="checkbox"/> 0.0%			
3. _____	0	<input type="checkbox"/> 0.0%			
4. _____	0	<input type="checkbox"/> 0.0%			
5. _____	0	<input type="checkbox"/> 0.0%			
6. _____	0	<input type="checkbox"/> 0.0%			
	45 = Total Cover				

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	4/6	100				Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 23-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-22  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.38718563 Long.: -84.25531136 Datum: \_\_\_\_\_  
 Soil Map Unit Name: uLfc - Lowell-Faywood silt loams, 6 to 12 percent slopes NWI classification: PUBHh

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-22

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b>
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		<b>Prevalence Index worksheet:</b>
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				Total % Cover of: _____ Multiply by: _____
1. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>
2. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u> x 3 = <u>0</u>
4. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>35</u> x 4 = <u>140</u>
5. _____	0	<input type="checkbox"/> 0.0%	_____	UPL species <u>35</u> x 5 = <u>175</u>
6. _____	0	<input type="checkbox"/> 0.0%	_____	Column Total s: <u>70</u> (A) <u>315</u> (B)
7. _____	0	<input type="checkbox"/> 0.0%	_____	Prevalence Index = B/A = <u>4.500</u>
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Indicators:</b>
10. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation
	0	<b>= Total Cover</b>		<input type="checkbox"/> Dominance Test is > 50%
<b>Shrub Stratum</b> (Plot size: _____ )				<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3. _____	0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Definition of Vegetation Strata:</b>
6. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Four Vegetation Strata:</b>
7. _____	0	<input type="checkbox"/> 0.0%	_____	Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
	0	<b>= Total Cover</b>		Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
<b>Herb Stratum</b> (Plot size: _____ )				Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.
1. <u>Arrhenatherum elatius</u>	35	<input checked="" type="checkbox"/> 50.0%	FACU	Woody vines – Consists of all woody vines greater than 3.28 ft in height.
2. <u>Carduus nutans</u>	35	<input checked="" type="checkbox"/> 50.0%	UPL	
3. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Five Vegetation Strata:</b>
4. _____	0	<input type="checkbox"/> 0.0%	_____	Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
5. _____	0	<input type="checkbox"/> 0.0%	_____	Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
6. _____	0	<input type="checkbox"/> 0.0%	_____	Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
7. _____	0	<input type="checkbox"/> 0.0%	_____	Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.
8. _____	0	<input type="checkbox"/> 0.0%	_____	Woody vines – Consists of all woody vines, regardless of height.
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
	70	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	<b>= Total Cover</b>		
<b>Hydrophytic Vegetation Present?</b>				Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	4/6	100					

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 23-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-23  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.38924848 Long.: -84.25671608 Datum: \_\_\_\_\_  
 Soil Map Unit Name: MsD2 - McAfee silt loam, 12 to 20 percent slopes, eroded 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-23**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)
1. <i>Fraxinus americana</i>	25	<input checked="" type="checkbox"/> 62.5%	FACU	
2. <i>Celtis occidentalis</i>	15	<input checked="" type="checkbox"/> 37.5%	FACU	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>40 = Total Cover</b>				
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				<b>Prevalence Index worksheet:</b> 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>40</u> x 3 = <u>120</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>10</u> x 5 = <u>50</u> <b>Column Totals:</b> <u>90</u> (A) <u>330</u> (B)  Prevalence Index = B/A = <u>3.667</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>0 = Total Cover</b>				
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>0 = Total Cover</b>				
<b>Herb Stratum</b> (Plot size: _____ )				<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <i>Ambrosia trifida</i>	30	<input checked="" type="checkbox"/> 60.0%	FAC	
2. <i>Vernonia fasciculata</i>	10	<input checked="" type="checkbox"/> 20.0%	FAC	
3. <i>Lonicera maackii</i>	10	<input checked="" type="checkbox"/> 20.0%	UPL	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>0 = Total Cover</b>				
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>0 = Total Cover</b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>				

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-24  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.38565216 Long.: -84.24901686 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FyB2 - Faywood silty clay loam, 2 to 6 percent slopes, eroded 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-24**

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	<input type="checkbox"/>	Indicator Status	Dominance Test worksheet:
1. _____	0	0.0%	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	0	0.0%	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	0	0.0%	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
4. _____	0	0.0%	<input type="checkbox"/>	_____	<b>Prevalence Index worksheet:</b> 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>100</u> x 5 = <u>500</u> Column Totals: <u>100</u> (A) <u>500</u> (B) Prevalence Index = B/A = <u>5.000</u>
5. _____	0	0.0%	<input type="checkbox"/>	_____	
6. _____	0	0.0%	<input type="checkbox"/>	_____	
7. _____	0	0.0%	<input type="checkbox"/>	_____	
8. _____	0	0.0%	<input type="checkbox"/>	_____	
0 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					
1. _____	0	0.0%	<input type="checkbox"/>	_____	
2. _____	0	0.0%	<input type="checkbox"/>	_____	
3. _____	0	0.0%	<input type="checkbox"/>	_____	
4. _____	0	0.0%	<input type="checkbox"/>	_____	
5. _____	0	0.0%	<input type="checkbox"/>	_____	
6. _____	0	0.0%	<input type="checkbox"/>	_____	
7. _____	0	0.0%	<input type="checkbox"/>	_____	
8. _____	0	0.0%	<input type="checkbox"/>	_____	
9. _____	0	0.0%	<input type="checkbox"/>	_____	
10. _____	0	0.0%	<input type="checkbox"/>	_____	
0 = Total Cover					
<b>Shrub Stratum</b> (Plot size: _____ )					
1. _____	0	0.0%	<input type="checkbox"/>	_____	
2. _____	0	0.0%	<input type="checkbox"/>	_____	
3. _____	0	0.0%	<input type="checkbox"/>	_____	
4. _____	0	0.0%	<input type="checkbox"/>	_____	
5. _____	0	0.0%	<input type="checkbox"/>	_____	
6. _____	0	0.0%	<input type="checkbox"/>	_____	
7. _____	0	0.0%	<input type="checkbox"/>	_____	
0 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					
1. <u>Medicago sativa</u>	100	100.0%	<input checked="" type="checkbox"/>	UPL	
2. _____		0.0%	<input type="checkbox"/>	_____	
3. _____	0	0.0%	<input type="checkbox"/>	_____	
4. _____	0	0.0%	<input type="checkbox"/>	_____	
5. _____	0	0.0%	<input type="checkbox"/>	_____	
6. _____	0	0.0%	<input type="checkbox"/>	_____	
7. _____	0	0.0%	<input type="checkbox"/>	_____	
8. _____	0	0.0%	<input type="checkbox"/>	_____	
9. _____	0	0.0%	<input type="checkbox"/>	_____	
10. _____	0	0.0%	<input type="checkbox"/>	_____	
11. _____	0	0.0%	<input type="checkbox"/>	_____	
12. _____	0	0.0%	<input type="checkbox"/>	_____	
0 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____ )					
1. _____	0	0.0%	<input type="checkbox"/>	_____	
2. _____	0	0.0%	<input type="checkbox"/>	_____	
3. _____	0	0.0%	<input type="checkbox"/>	_____	
4. _____	0	0.0%	<input type="checkbox"/>	_____	
5. _____	0	0.0%	<input type="checkbox"/>	_____	
6. _____	0	0.0%	<input type="checkbox"/>	_____	
0 = Total Cover					

**Hydrophytic Vegetation Indicators:**

Rapid Test for Hydrophytic Vegetation

Dominance Test is > 50%

Prevalence Index is ≤3.0 <sup>1</sup>

Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definition of Vegetation Strata:**

**Four Vegetation Strata:**

**Tree stratum** – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub stratum** – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb stratum** – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

**Woody vines** – Consists of all woody vines greater than 3.28 ft in height.

**Five Vegetation Strata:**

**Tree** - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling stratum** – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub stratum** – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb stratum** – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vines** – Consists of all woody vines, regardless of height.

**Hydrophytic Vegetation Present?** Yes  No

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-25  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.39216946 Long.: -84.24493378 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FyC2 -Faywood silty clay loam, 6 to 12 percent slopes, eroded 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><input type="checkbox"/> Surface Water (A1)</td> <td style="width:50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Drift deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> FAC-neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)																																		
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<input type="checkbox"/> Microtopographic Relief (D4)																																			
<input type="checkbox"/> FAC-neutral Test (D5)																																			

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-25

<b>Tree Stratum</b> (Plot size: _____ )	<b>Absolute % Cover</b>	<b>Dominant Species? Rel.Strat. Cover</b>	<b>Indicator Status</b>	<b>Dominance Test worksheet:</b>	
1. <u>Celtis occidentalis</u>	30	<input checked="" type="checkbox"/> 66.7%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)	
2. <u>Ulmus americana</u>	15	<input checked="" type="checkbox"/> 33.3%	FACW	Total Number of Dominant Species Across All Strata: <u>4</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: _____ Multiply by: _____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>	
7. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>15</u> x 2 = <u>30</u>	
8. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>15</u> x 3 = <u>45</u>	
	45 = Total Cover			FACU species <u>30</u> x 4 = <u>120</u>	
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				UPL species <u>15</u> x 5 = <u>75</u>	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Column Totals: <u>75</u> (A) <u>270</u> (B)	
2. _____	0	<input type="checkbox"/> 0.0%	_____	Prevalence Index = B/A = <u>3.600</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Indicators:</b>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
5. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Dominance Test is > 50%	
6. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
7. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
8. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
9. _____	0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
10. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Definition of Vegetation Strata:</b>	
	0 = Total Cover			<b>Four Vegetation Strata:</b>	
<b>Shrub Stratum</b> (Plot size: _____ )				Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
2. _____	0	<input type="checkbox"/> 0.0%	_____	Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Woody vines – Consists of all woody vines greater than 3.28 ft in height.	
4. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Five Vegetation Strata:</b>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
6. _____	0	<input type="checkbox"/> 0.0%	_____	Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
7. _____	0	<input type="checkbox"/> 0.0%	_____	Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
8. _____	0	<input type="checkbox"/> 0.0%	_____	Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.	
9. _____	0	<input type="checkbox"/> 0.0%	_____	Woody vines – Consists of all woody vines, regardless of height.	
10. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
11. _____	0	<input type="checkbox"/> 0.0%	_____		
12. _____	0	<input type="checkbox"/> 0.0%	_____		
<b>Woody Vine Stratum</b> (Plot size: _____ )	30 = Total Cover				
1. _____	0	<input type="checkbox"/> 0.0%	_____		
2. _____	0	<input type="checkbox"/> 0.0%	_____		
3. _____	0	<input type="checkbox"/> 0.0%	_____		
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
	0 = Total Cover				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>					

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-26  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.38793335 Long.: -84.24284745 Datum: \_\_\_\_\_  
 Soil Map Unit Name: BrB - Brashear silt loam, 2 to 6 percent slopes 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>6</u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-26

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	80.0%	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )					
1. <u>Salix nigra</u>	40	<input checked="" type="checkbox"/>	80.0%	OBL	
2. <u>Ulmus americana</u>	10	<input checked="" type="checkbox"/>	20.0%	FACW	
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
	50	= Total Cover			
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
	0	= Total Cover			
<b>Shrub Stratum</b> (Plot size: _____ )					
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
	0	= Total Cover			
<b>Herb Stratum</b> (Plot size: _____ )					
1. <u>Typha latifolia</u>	20	<input checked="" type="checkbox"/>	66.7%	OBL	
2. <u>Alternanthera philoxeroides</u>	10	<input checked="" type="checkbox"/>	33.3%	OBL	
3. _____		<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
11. _____	0	<input type="checkbox"/>	0.0%		
12. _____	0	<input type="checkbox"/>	0.0%		
	30	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: _____ )					
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
	0	= Total Cover			

**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: 100.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: 70 Multiply by: \_\_\_\_\_

OBL species 70 x 1 = 70

FACW species 10 x 2 = 20

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 80 (A) 90 (B)

Prevalence Index = B/A = 1.125

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**Hydrophytic Vegetation Indicators:**

Rapid Test for Hydrophytic Vegetation

Dominance Test is > 50%

Prevalence Index is ≤ 3.0 <sup>1</sup>

Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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**Definition of Vegetation Strata:**

**Four Vegetation Strata:**

**Tree stratum** – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub stratum** – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb stratum** – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

**Woody vines** – Consists of all woody vines greater than 3.28 ft in height.

**Five Vegetation Strata:**

**Tree** - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling stratum** – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub stratum** – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb stratum** – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vines** – Consists of all woody vines, regardless of height.

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**Hydrophytic Vegetation Present?** Yes  No

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	3/2	90	5YR	3/3	10	C	M	Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)
- Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- 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 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 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147,148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-27  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.38790435 Long.: -84.24360025 Datum: \_\_\_\_\_  
 Soil Map Unit Name: BrB - Brashear silt loam, 2 to 6 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-27

		Dominant Species? Rel.Strat. Cover		Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )	Absolute % Cover				<b>Dominance Test worksheet:</b> 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)
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> 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>100</u> x 5 = <u>500</u> Column Totals: <u>100</u> (A) <u>500</u> (B)  Prevalence Index = B/A = <u>5.000</u>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					
1. <u>Medicago sativa</u>	100	<input checked="" type="checkbox"/>	100.0%	UPL	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
11. _____	0	<input type="checkbox"/>	0.0%	_____	
12. _____	0	<input type="checkbox"/>	0.0%	_____	
<b>Woody Vine Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.





**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-28  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.38766638 Long.: -84.24761018 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FyC2 -Faywood silty clay loam, 6 to 12 percent slopes, eroded 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><input type="checkbox"/> Surface Water (A1)</td> <td style="width:50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Drift deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> FAC-neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)																																		
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)																																		
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<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)																																		
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<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)																																			
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<input type="checkbox"/> Microtopographic Relief (D4)																																			
<input type="checkbox"/> FAC-neutral Test (D5)																																			

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-28

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</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>25.0%</u> (A/B)
1. <u>Maclura pomifera</u>	10	<input checked="" type="checkbox"/> 100.0%	UPL	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
10 = Total Cover				
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>25</u> x 5 = <u>125</u> Column Totals: <u>65</u> (A) <u>255</u> (B)  Prevalence Index = B/A = <u>3.923</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Sambucus nigra ssp. canadensis</u>	20	<input checked="" type="checkbox"/> 100.0%	FAC	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
20 = Total Cover				
<b>Herb Stratum</b> (Plot size: _____ )				<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Carduus nutans</u>	15	<input checked="" type="checkbox"/> 42.9%	UPL	
2. <u>Erigeron strigosus</u>	15	<input checked="" type="checkbox"/> 42.9%	FACU	
3. <u>Conium maculatum</u>	5	<input type="checkbox"/> 14.3%	FACW	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
35 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	4/6	100				Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-29  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.39034585 Long.: -84.24027277 Datum: \_\_\_\_\_  
 Soil Map Unit Name: uLfc - Lowell-Faywood silt loams, 6 to 12 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-29**

<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>16.7%</u> (A/B)
1. <u>Celtis occidentalis</u>	30	<input checked="" type="checkbox"/>	75.0%	FACU	
2. <u>Fraxinus americana</u>	10	<input checked="" type="checkbox"/>	25.0%	FACU	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
40 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> 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>20</u> x 3 = <u>60</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>40</u> x 5 = <u>200</u> Column Totals: <u>110</u> (A) <u>460</u> (B)  Prevalence Index = B/A = <u>4.182</u>
1. <u>Celtis occidentalis</u>	10	<input checked="" type="checkbox"/>	100.0%	FACU	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
10 = Total Cover					
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Rubus occidentalis</u>	20	<input checked="" type="checkbox"/>	100.0%	UPL	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
20 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Lonicera maackii</u>	20	<input checked="" type="checkbox"/>	50.0%	UPL	
2. <u>Ambrosia trifida</u>	20	<input checked="" type="checkbox"/>	50.0%	FAC	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
11. _____	0	<input type="checkbox"/>	0.0%	_____	
12. _____	0	<input type="checkbox"/>	0.0%	_____	
20 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-30  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.39495895 Long.: -84.23152973 Datum: \_\_\_\_\_  
 Soil Map Unit Name: uLsoB - Lowell-Sandview silt loams, 2 to 6 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-30

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	62.5%	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)
1. <u>Celtis occidentalis</u>	25	<input checked="" type="checkbox"/>	62.5%	FACU	
2. <u>Fraxinus americana</u>	15	<input checked="" type="checkbox"/>	37.5%	FACU	
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
40 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> 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>10</u> x 3 = <u>30</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>20</u> x 5 = <u>100</u> Column Totals: <u>70</u> (A) <u>290</u> (B)  Prevalence Index = B/A = <u>4.143</u>
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Rubus occidentalis</u>	10	<input checked="" type="checkbox"/>	100.0%	UPL	
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
10 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Ambrosia trifida</u>	10	<input checked="" type="checkbox"/>	50.0%	FAC	
2. <u>Lonicera maackii</u>	10	<input checked="" type="checkbox"/>	50.0%	UPL	
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
11. _____	0	<input type="checkbox"/>	0.0%		
12. _____	0	<input type="checkbox"/>	0.0%		
20 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
0 = Total Cover					

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	4/6	100				Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-31  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.39744412 Long.: -84.23171295 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FyC2 -Faywood silty clay loam, 6 to 12 percent slopes, eroded 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-31**

	Absolute % Cover		Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</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>50.0%</u> (A/B)
1. <u>Gleditsia triacanthos</u>	20	<input checked="" type="checkbox"/>	50.0%	FAC	
2. <u>Celtis occidentalis</u>	20	<input checked="" type="checkbox"/>	50.0%	FACU	
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
	40	= Total Cover			
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> 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>35</u> x 3 = <u>105</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>25</u> x 5 = <u>125</u> Column Totals: <u>80</u> (A) <u>310</u> (B)  Prevalence Index = B/A = <u>3.875</u>
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
	0	= Total Cover			
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
	0	= Total Cover			
<b>Herb Stratum</b> (Plot size: _____ )					<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Lonicera maackii</u>	25	<input checked="" type="checkbox"/>	62.5%	UPL	
2. <u>Vitis rotundifolia</u>	15	<input checked="" type="checkbox"/>	37.5%	FAC	
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
11. _____	0	<input type="checkbox"/>	0.0%		
12. _____	0	<input type="checkbox"/>	0.0%		
	40	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
	0	= Total Cover			

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	4/6	100				Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)
- Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- 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 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 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147,148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-32  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.39389264 Long.: -84.23289197 Datum: \_\_\_\_\_  
 Soil Map Unit Name: uLfc - Lowell-Faywood silt loams, 6 to 12 percent slopes 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-32

	Absolute % Cover	Dominant Species? Rel.Strat. Cover		Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )					<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)
1. <u>Gleditsia triacanthos</u>	15	<input checked="" type="checkbox"/>	37.5%	FAC	
2. <u>Celtis occidentalis</u>	25	<input checked="" type="checkbox"/>	62.5%	FACU	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
40 = Total Cover					
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index worksheet:</b> 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>45</u> x 3 = <u>135</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>15</u> x 5 = <u>75</u> Column Totals: <u>85</u> (A) <u>310</u> (B)  Prevalence Index = B/A = <u>3.647</u>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Shrub Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Herb Stratum</b> (Plot size: _____ )					<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Vitis rotundifolia</u>	15	<input checked="" type="checkbox"/>	33.3%	FAC	
2. <u>Lonicera maackii</u>	15	<input checked="" type="checkbox"/>	33.3%	UPL	
3. <u>Ambrosia trifida</u>	15	<input checked="" type="checkbox"/>	33.3%	FAC	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
7. _____	0	<input type="checkbox"/>	0.0%	_____	
8. _____	0	<input type="checkbox"/>	0.0%	_____	
9. _____	0	<input type="checkbox"/>	0.0%	_____	
10. _____	0	<input type="checkbox"/>	0.0%	_____	
11. _____	0	<input type="checkbox"/>	0.0%	_____	
12. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					
<b>Woody Vine Stratum</b> (Plot size: _____ )					<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/>	0.0%	_____	
2. _____	0	<input type="checkbox"/>	0.0%	_____	
3. _____	0	<input type="checkbox"/>	0.0%	_____	
4. _____	0	<input type="checkbox"/>	0.0%	_____	
5. _____	0	<input type="checkbox"/>	0.0%	_____	
6. _____	0	<input type="checkbox"/>	0.0%	_____	
0 = Total Cover					

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-33  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.39090324 Long.: -84.22629248 Datum: \_\_\_\_\_  
 Soil Map Unit Name: uLfc - Lowell-Faywood silt loams, 6 to 12 percent slopes 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>2</u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-33**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>4</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>100.0%</u> (A/B)
1. <u>Salix nigra</u>	30	<input checked="" type="checkbox"/> 75.0%	OBL	
2. <u>Ulmus americana</u>	10	<input checked="" type="checkbox"/> 25.0%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
40 = Total Cover				
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>60</u> x 1 = <u>60</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>70</u> (A) <u>80</u> (B)  Prevalence Index = B/A = <u>1.143</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Herb Stratum</b> (Plot size: _____ )				<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Alternanthera philoxeroides</u>	15	<input checked="" type="checkbox"/> 50.0%	OBL	
2. <u>Typha latifolia</u>	15	<input checked="" type="checkbox"/> 50.0%	OBL	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>		
0-20	7.5YR	3/1	95	5YR	3/4	5	C	M	Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR N)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p>	<p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input checked="" type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)</p> <p><input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)</p> <p><input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-34  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.38959619 Long.: -84.2279695 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Ld - Lindside silt loam, 0 to 2 percent slopes, occasionally flooded 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>8</u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **DP-34**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>4</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>100.0%</u> (A/B)
1. <i>Salix nigra</i>	30	<input checked="" type="checkbox"/> 100.0%	OBL	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
30 = Total Cover				
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>80</u> x 1 = <u>80</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>0</u> x 5 = <u>0</u> Column Totals: <u>80</u> (A) <u>80</u> (B)  Prevalence Index = B/A = <u>1.000</u>
1. <i>Salix nigra</i>	10	<input checked="" type="checkbox"/> 100.0%	OBL	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>Herb Stratum</b> (Plot size: _____ )				<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <i>Typha latifolia</i>	30	<input checked="" type="checkbox"/> 75.0%	OBL	
2. <i>Alternanthera philoxeroides</i>	10	<input checked="" type="checkbox"/> 25.0%	OBL	
3. <i>Persicaria maculosa</i>	0	<input type="checkbox"/> 0.0%	FACW	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
<b>Woody Vine Stratum</b> (Plot size: _____ )				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>			Loc <sup>2</sup>
0-20	7.5YR	3/1	90	5YR	3/3	10	C	M	Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR N)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p>	<p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input checked="" type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)</p> <p><input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)</p> <p><input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-35  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): \_\_\_\_\_ Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.38996059 Long.: -84.22802062 Datum: \_\_\_\_\_  
 Soil Map Unit Name: uLfc - Lowell-Faywood silt loams, 6 to 12 percent slopes 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-35

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)	
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>		<b>Prevalence Index worksheet:</b>	
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				Total % Cover of: _____ Multiply by: _____	
1. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>	
2. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u> x 3 = <u>0</u>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>75</u> x 4 = <u>300</u>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	UPL species <u>25</u> x 5 = <u>125</u>	
6. _____	0	<input type="checkbox"/> 0.0%	_____	Column Totals: <u>100</u> (A) <u>425</u> (B)	
7. _____	0	<input type="checkbox"/> 0.0%	_____	Prevalence Index = B/A = <u>4.250</u>	
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>		<b>Hydrophytic Vegetation Indicators:</b>	
<b>Shrub Stratum</b> (Plot size: _____ )				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Dominance Test is > 50%	
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____	0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>		<b>Definition of Vegetation Strata:</b>	
<b>Herb Stratum</b> (Plot size: _____ )				<b>Four Vegetation Strata:</b>	
1. <i>Arrhenatherum elatius</i>	75	<input checked="" type="checkbox"/> 75.0%	FACU	Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2. <i>Carduus nutans</i>	25	<input checked="" type="checkbox"/> 25.0%	UPL	Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.	
4. _____	0	<input type="checkbox"/> 0.0%	_____	Woody vines – Consists of all woody vines greater than 3.28 ft in height.	
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
12. _____	0	<input type="checkbox"/> 0.0%	_____		
	100	<b>= Total Cover</b>		<b>Five Vegetation Strata:</b>	
<b>Woody Vine Stratum</b> (Plot size: _____ )				Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
2. _____	0	<input type="checkbox"/> 0.0%	_____	Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.	
4. _____	0	<input type="checkbox"/> 0.0%	_____	Woody vines – Consists of all woody vines, regardless of height.	
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>		Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>		
0-20	7.5YR	4/6	100				Loam	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)
- Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- 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 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 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147,148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup> 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:



**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-36  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.39028564 Long.: -84.22698526 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Ld - Lindside silt loam, 0 to 2 percent slopes, occasionally flooded 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4)	<input checked="" type="checkbox"/> FAC-neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>12</u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-36

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u>Salix nigra</u>	30	<input checked="" type="checkbox"/> 100.0%	OBL	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
30 = Total Cover				
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>60</u> x 1 = <u>60</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>0</u> x 5 = <u>0</u> Column Totals: <u>60</u> (A) <u>60</u> (B)  Prevalence Index = B/A = <u>1.000</u>
1. <u>Salix nigra</u>	10	<input checked="" type="checkbox"/> 100.0%	OBL	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
10 = Total Cover				
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>Herb Stratum</b> (Plot size: _____ )				<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Alternanthera philoxeroides</u>	20	<input checked="" type="checkbox"/> 100.0%	OBL	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
11. _____	0	<input type="checkbox"/> 0.0%		
12. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>	Loc <sup>2</sup>				
0-20	7.5YR	3/1	90	5YR	3/4	10	C	M	Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR N)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p>	<p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input checked="" type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)</p> <p><input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)</p> <p><input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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<sup>3</sup> 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:

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Blue Moon City/County: Cyntiana/Harrison Sampling Date: 24-Jun-21  
 Applicant/Owner: Recurrent Energy State: KY Sampling Point: DP-37  
 Investigator(s): Corbin Hoffmann and Wyatt Goertz Section, Township, Range: S T R  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °  
 Subregion (LRR or MLRA): MLRA 217 in LRR N Lat.: 38.3923034 Long.: -84.22166381 Datum: \_\_\_\_\_  
 Soil Map Unit Name: FyC2 -Faywood silty clay loam, 6 to 12 percent slopes, eroded 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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Potential sink hole	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><input type="checkbox"/> Surface Water (A1)</td> <td style="width:50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Drift deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> FAC-neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-neutral Test (D5)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)																																		
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)																																		
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)																																		
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)																																		
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)																																		
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)																																		
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)																																		
<input type="checkbox"/> Iron Deposits (B5)																																			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)																																			
<input type="checkbox"/> Water-Stained Leaves (B9)																																			
<input type="checkbox"/> Aquatic Fauna (B13)																																			
<input type="checkbox"/> Surface Soil Cracks (B6)																																			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)																																			
<input checked="" type="checkbox"/> Drainage Patterns (B10)																																			
<input type="checkbox"/> Moss Trim Lines (B16)																																			
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<input type="checkbox"/> Geomorphic Position (D2)																																			
<input type="checkbox"/> Shallow Aquitard (D3)																																			
<input type="checkbox"/> Microtopographic Relief (D4)																																			
<input type="checkbox"/> FAC-neutral Test (D5)																																			

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
---	--

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

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: DP-37

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____ )				<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
1. <u>Celtis occidentalis</u>	20	<input checked="" type="checkbox"/> 66.7%	FACU	
2. <u>Carya ovata</u>	10	<input checked="" type="checkbox"/> 33.3%	FACU	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
30 = Total Cover				
<b>Sapling-Sapling/Shrub Stratum</b> (Plot size: _____ )				<b>Prevalence Index worksheet:</b> 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>30</u> x 3 = <u>90</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>60</u> (A) <u>210</u> (B)  Prevalence Index = B/A = <u>3.500</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Shrub Stratum</b> (Plot size: _____ )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Herb Stratum</b> (Plot size: _____ )				<b>Definition of Vegetation Strata:</b> <b>Four Vegetation Strata:</b> Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height.  <b>Five Vegetation Strata:</b> Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.
1. <u>Ambrosia trifida</u>	30	<input checked="" type="checkbox"/> 100.0%	FAC	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
11. _____	0	<input type="checkbox"/> 0.0%	_____	
12. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____ )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				

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

Hydrophytic Vegetation Present? Yes  No

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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 <sup>1</sup>		
0-20	7.5YR	4/6	100				Loam	

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

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147,148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
---	---	---

<sup>3</sup> 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:

APPENDIX


# B


PHOTOGRAPHIC LOG

<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>1</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.359127, -84.231475			
<b>Photo Direction:</b> Southwest			
<b>Description:</b> Freshwater Pond (Wet 1)			


		<h1>PHOTOGRAPHIC LOG</h1>	
<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>2</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.363793, -84.234322			
<b>Photo Direction:</b> East			
<b>Description:</b> Freshwater Pond (Wet 2)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>3</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.364239, -84.235985			
<b>Photo Direction:</b> South			
<b>Description:</b> Data Point 5 - Forested Wetland (Wet 3)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>4</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 338.378647, -84.259714			
<b>Photo Direction:</b> North			
<b>Description:</b> Freshwater Pond (Wet 4)			





<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>5</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.371549, -84.258811			
<b>Photo Direction:</b> Southeast			
<b>Description:</b> Data Point 8 - Forested Wetland (Wet 5)			

<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>6</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.372055, -84.258325			
<b>Photo Direction:</b> South			
<b>Description:</b> Freshwater Pond (Wet 6)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>7</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.369899, -84.260801			
<b>Photo Direction:</b> Southwest			
<b>Description:</b> Freshwater Pond (Wet 7)			

		<h1>PHOTOGRAPHIC LOG</h1>	
<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>8</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.367383, -84.261856			
<b>Photo Direction:</b> Southeast			
<b>Description:</b> Freshwater Pond (Wet 8)			



<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>9</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.367787, -84.261721			
<b>Photo Direction:</b> Southwest			
<b>Description:</b> Data Point 10 - Emergent Wetland (Wet 9)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>10</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.368591, -84.253674			
<b>Photo Direction:</b> Southwest			
<b>Description:</b> Freshwater Pond (Wet 10)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>11</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.369123, -84.253185			
<b>Photo Direction:</b> Northeast			
<b>Description:</b> Data Point 13 - Emergent Wetland (Wet 11)			

<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>12</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.369123, -84.253185			
<b>Photo Direction:</b> Southeast			
<b>Description:</b> Data Point 15 - Forested Wetland (Wet 12)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>13</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.367227, -84.255162			
<b>Photo Direction:</b> Southeast			
<b>Description:</b> Freshwater Pond (Wet 13)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>14</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.361376, -84.255561			
<b>Photo Direction:</b> Northeast			
<b>Description:</b> Freshwater Pond (Wet 14)			



<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>15</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.360550, -84.253814			
<b>Photo Direction:</b> South			
<b>Description:</b> Data Point 19 - Forested Wetland (Wet 15)			

<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>16</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.367311, -84.248770			
<b>Photo Direction:</b> East			
<b>Description:</b> Freshwater Pond (Wet 16)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>17</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.382064, -84.256514			
<b>Photo Direction:</b> Southwest			
<b>Description:</b> Freshwater Pond (Wet 17)			


		<h1>PHOTOGRAPHIC LOG</h1>	
<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>18</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.388583, -84.256435			
<b>Photo Direction:</b> Southeast			
<b>Description:</b> Freshwater Pond (Wet 18)			



**Property Name:**  
Blue Moon Solar Project**County/State:**  
Harrison County, Kentucky**Project No.**  
E320201803**Photo No.**  
**19****Date:**  
5-24-2021**Coordinates:**  
38.386011, -84.245137**Photo Direction:**  
West**Description:**  
Freshwater Pond (Wet 19)**Property Name:**  
Blue Moon Solar Project**County/State:**  
Harrison County, Kentucky**Project No.**  
E320201803**Photo No.**  
**20****Date:**  
5-24-2021**Coordinates:**  
38.392023, -84.245149**Photo Direction:**  
Southeast**Description:**  
Freshwater Pond (Wet 20)




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>21</b>	<b>Date:</b> 5-24-2021		
<b>Coordinates:</b> 38.387869, -84.242881			
<b>Photo Direction:</b> Southwest			
<b>Description:</b> Data Point 26 - Forested Wetland (Wet 21)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>22</b>	<b>Date:</b> 5-24-2021		
<b>Coordinates:</b> 38.387821, -84.246047			
<b>Photo Direction:</b> West			
<b>Description:</b> Freshwater Pond (Wet 22)			



<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>23</b>	<b>Date:</b> 5-24-2021		
<b>Coordinates:</b> 38.390917, -84.226310			
<b>Photo Direction:</b> South			
<b>Description:</b> Data Point 33 - Forested Wetland (Wet 23)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>24</b>	<b>Date:</b> 5-24-2021		
<b>Coordinates:</b> 38.390310, -84.227186			
<b>Photo Direction:</b> East			
<b>Description:</b> Freshwater Pond (Wet 24)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>25</b>	<b>Date:</b> 5-24-2021		
<b>Coordinates:</b> 38.389511, -84.228088			
<b>Photo Direction:</b> Southeast			
<b>Description:</b> Freshwater Pond (Wet 25)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>26</b>	<b>Date:</b> 5-24-2021		
<b>Coordinates:</b> 38.389556, -84.227988			
<b>Photo Direction:</b> North			
<b>Description:</b> Data Point 34 - Forested Wetland (Wet 26)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>27</b>	<b>Date:</b> 5-24-2021		
<b>Coordinates:</b> 38.390269, -84.227019			
<b>Photo Direction:</b> East			
<b>Description:</b> Data Point 36 - Forested Wetland (Wet 27)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>28</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.35832, -84.22957			
<b>Photo Direction:</b> Northeast			
<b>Description:</b> Ephemeral Stream (S-1)			



<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>29</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.36068, -84.2271			
<b>Photo Direction:</b> Northeast			
<b>Description:</b> Intermittent Stream (S-2)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>30</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.36054, -84.22803			
<b>Photo Direction:</b> North			
<b>Description:</b> Ephemeral Stream (S-3)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>31</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.36357, -84.23342			
<b>Photo Direction:</b> West			
<b>Description:</b> Ephemeral Stream (S-4)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>32</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.37835, -84.26009			
<b>Photo Direction:</b> North			
<b>Description:</b> Ephemeral Stream (S-5)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>33</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.37534, -84.26093			
<b>Photo Direction:</b> Northeast			
<b>Description:</b> Intermittent Stream (S-6B)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>34</b>	<b>Date:</b> 5-22-2021		
<b>Coordinates:</b> 38.37256, -84.25766			
<b>Photo Direction:</b> Southwest			
<b>Description:</b> Ephemeral Stream (S-7)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>35</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.36774, -84.25448			
<b>Photo Direction:</b> Southeast			
<b>Description:</b> Ephemeral Stream (S-8)			

<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>36</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.36268, -84.25653			
<b>Photo Direction:</b> South			
<b>Description:</b> Intermittent Stream (S-9)			





<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>37</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.36182, -84.25644			
<b>Photo Direction:</b> Northeast			
<b>Description:</b> Intermittent Stream (S-10B)			


		<h1>PHOTOGRAPHIC LOG</h1>	
<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>38</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.3606, -84.25356			
<b>Photo Direction:</b> Southwest			
<b>Description:</b> Ephemeral Stream (S-11)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>39</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.38232, -84.25763			
<b>Photo Direction:</b> West			
<b>Description:</b> Ephemeral Stream (S-12)			


		<h1>PHOTOGRAPHIC LOG</h1>	
<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>40</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.38302, -84.25876			
<b>Photo Direction:</b> Southwest			
<b>Description:</b> Ephemeral Stream (S-13)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>41</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.38808, -84.25813			
<b>Photo Direction:</b> West			
<b>Description:</b> Intermittent Stream (S-14B)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>42</b>	<b>Date:</b> 5-23-2021		
<b>Coordinates:</b> 38.3894, -84.25429			
<b>Photo Direction:</b> Northeast			
<b>Description:</b> Ephemeral Stream (S-15)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>43</b>	<b>Date:</b> 5-24-2021		
<b>Coordinates:</b> 38.38935, -84.23907			
<b>Photo Direction:</b> South			
<b>Description:</b> Intermittent Stream (S-16)			


<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>44</b>	<b>Date:</b> 5-24-2021		
<b>Coordinates:</b> 38.39195, -84.2328			
<b>Photo Direction:</b> South			
<b>Description:</b> Perennial Stream (S-17)			




<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>45</b>	<b>Date:</b> 5-24-2021		
<b>Coordinates:</b> 38.39055, -84.22672			
<b>Photo Direction:</b> South			
<b>Description:</b> Ephemeral Stream (S-18)			

		<h1>PHOTOGRAPHIC LOG</h1>	
<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky	<b>Project No.</b> E320201803
<b>Photo No.</b> <b>46</b>	<b>Date:</b> 5-24-2021		
<b>Coordinates:</b> 38.39316, -84.21968			
<b>Photo Direction:</b> North			
<b>Description:</b> Perennial Stream (S-19) – Indian Creek			



<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky		<b>Project No.</b> E320201803
<b>Photo No.</b> <b>47</b>	<b>Date:</b> 5-24-2021			
<b>Coordinates:</b> 38.368406, -84.25289				
<b>Photo Direction:</b> West				
<b>Description:</b> Potential Bat Tree – Large Hollow Cavity				

<b>Property Name:</b> Blue Moon Solar Project		<b>County/State:</b> Harrison County, Kentucky		<b>Project No.</b> E320201803
<b>Photo No.</b> <b>46</b>	<b>Date:</b> 5-24-2021			
<b>Coordinates:</b> 38.39242, -84.22158				
<b>Photo Direction:</b> East				
<b>Description:</b> Potential Sinkhole near DP-37				

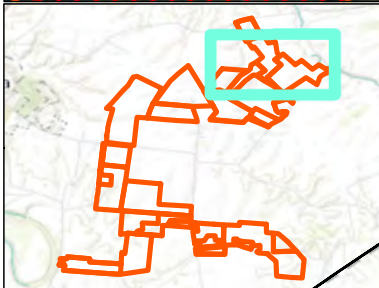
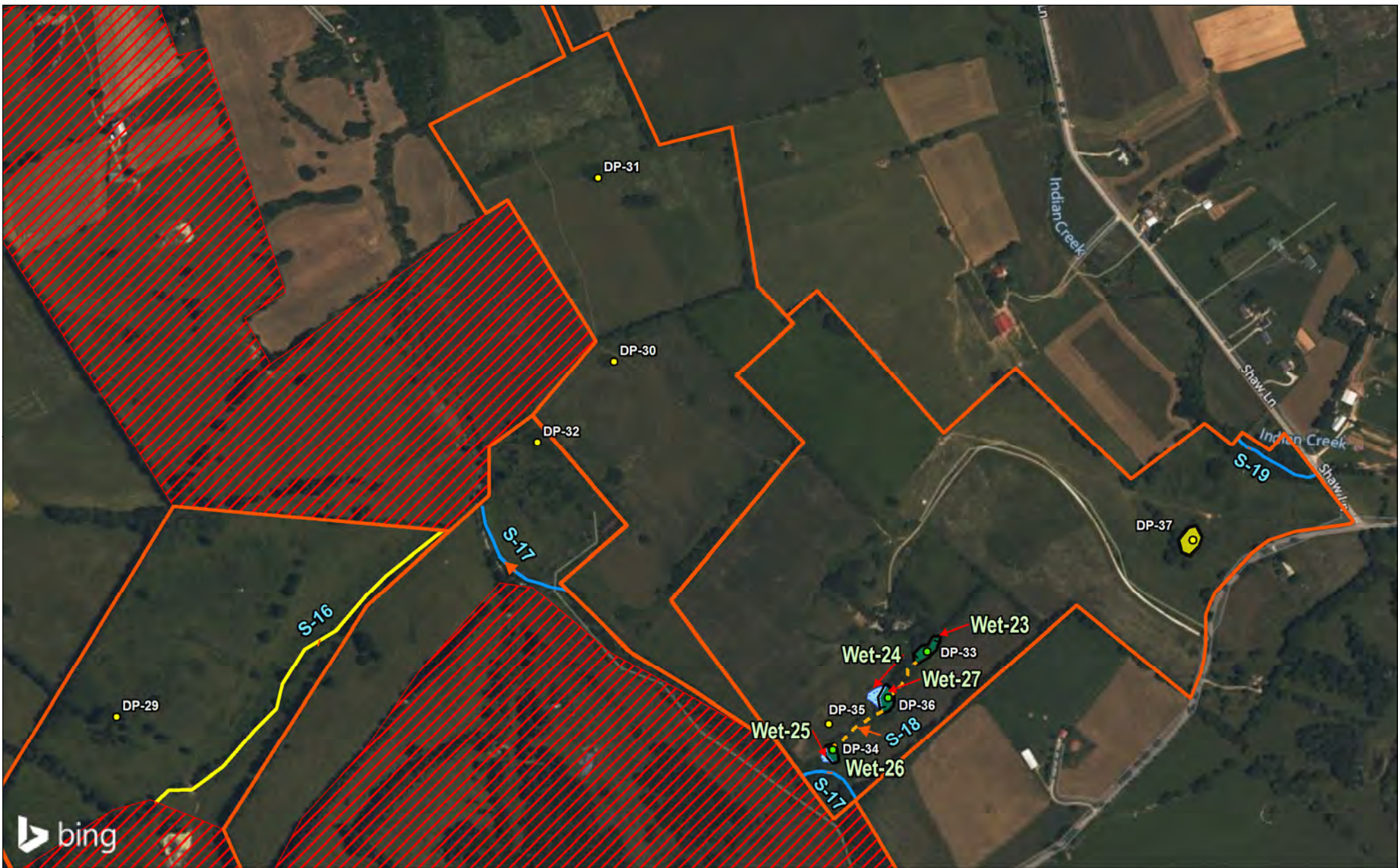
Date & Time: Thu Jun 24 14:43:14 EDT 2021  
 Position: +038.39242, -084.22158  
 Altitude: 253m  
 Datum: WGS-84  
 Azimuth Bearing: 161.519E 2062mils (True)  
 Zoom: 1X  
 Potential Sink



APPENDIX

# C

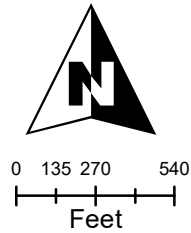
PROJECT MAPPING



- Legend**
- Project Boundary
  - Excluded Parcels
  - Wetland Point
  - Upland Point
  - Potential Sinkhole
  - ★ Potential Bat Tree

- Streams**
- Ephemeral Stream
  - Intermittent Stream
  - Perennial Stream

- Wetlands**
- PEM Wetland
  - PFO Wetland
  - PUB(x) Pond

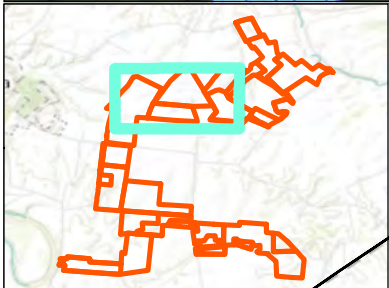
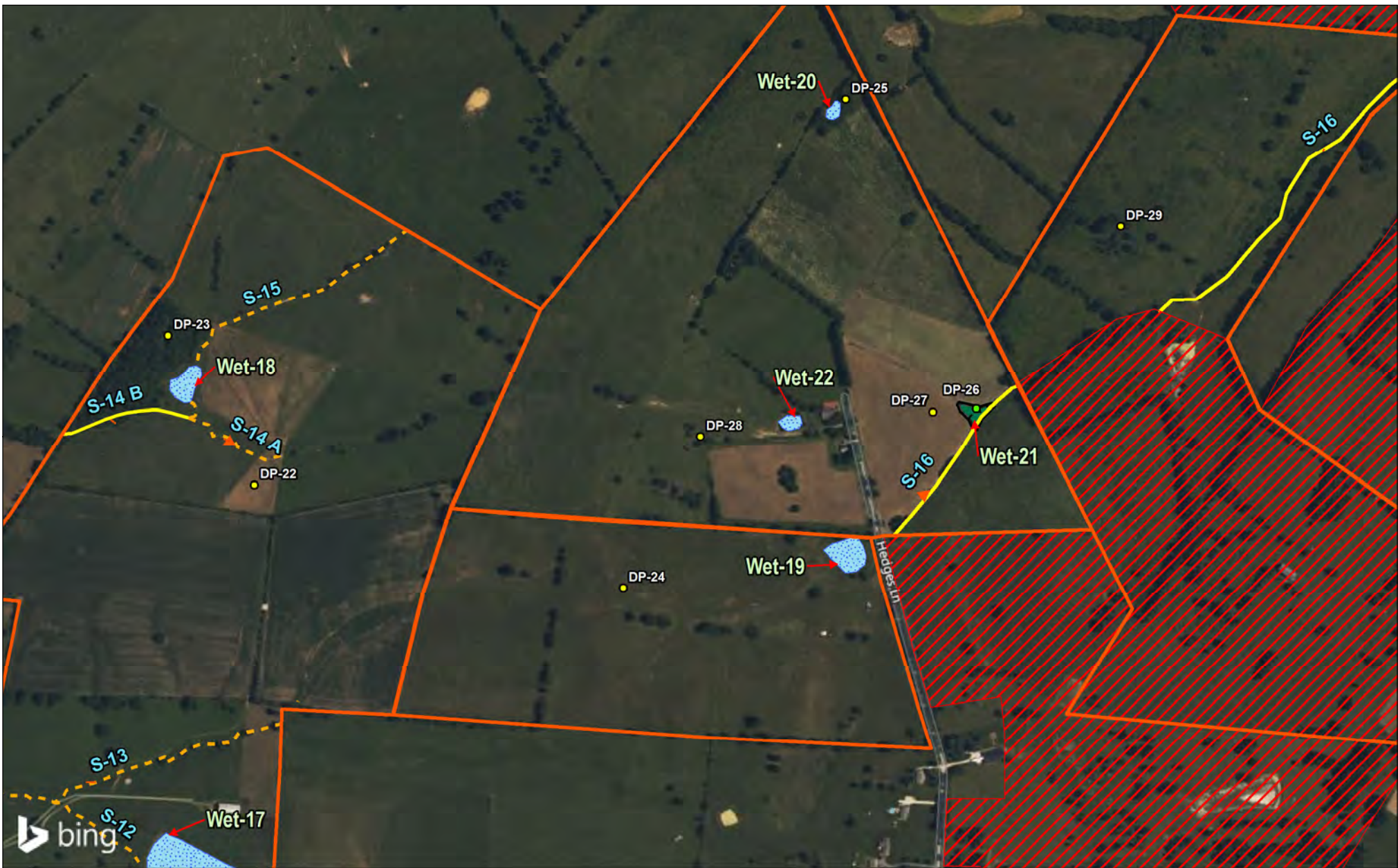


Blue Moon Energy LLC Solar Project  
 Critical Issues Analysis  
 Harrison County, Kentucky

Delineated Wetlands and Waterbodies

Date: June 2021	Project No: E320201803	Figure No: C-1
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**Legend**


- Project Boundary
- Excluded Parcels
- Wetland Point
- Upland Point
- Potential Sinkhole
- ★ Potential Bat Tree

**Streams**

- Ephemeral Stream
- Intermittent Stream
- Perennial Stream

**Wetlands**

- PEM Wetland
- PFO Wetland
- PUB(x) Pond



0 135 270 540  
Feet



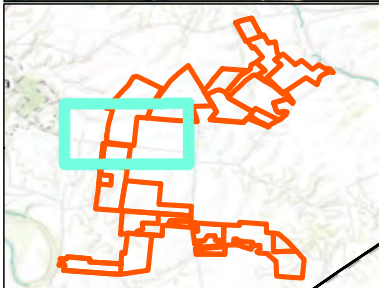
Blue Moon Energy LLC Solar Project  
Critical Issues Analysis  
Harrison County, Kentucky

Delineated Wetlands and Waterbodies

Date: June 2021	Project No: E320201803	Figure No: C-2
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Data Source: Basemap: Bing Maps Aerial (2020)





**Legend**

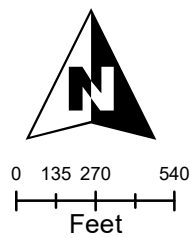
- Project Boundary
- Excluded Parcels
- Wetland Point
- Upland Point
- Potential Sinkhole
- Potential Bat Tree

**Streams**

- Ephemeral Stream
- Intermittent Stream
- Perennial Stream

**Wetlands**

- PEM Wetland
- PFO Wetland
- PUB(x) Pond

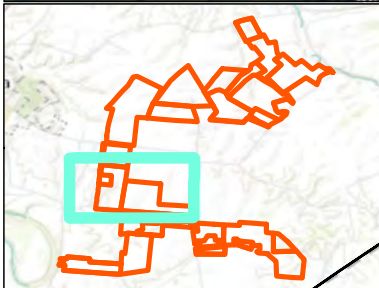


Blue Moon Energy LLC Solar Project  
Critical Issues Analysis  
Harrison County, Kentucky

Delineated Wetlands and Waterbodies

Date: June 2021	Project No: E320201803	Figure No: C-3
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**Legend**

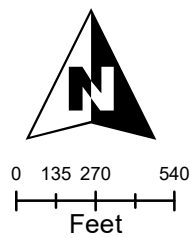
- Project Boundary
- Excluded Parcels
- Wetland Point
- Upland Point
- Potential Sinkhole
- ★ Potential Bat Tree

**Streams**

- Ephemeral Stream
- Intermittent Stream
- Perennial Stream

**Wetlands**

- PEM Wetland
- PFO Wetland
- PUB(x) Pond

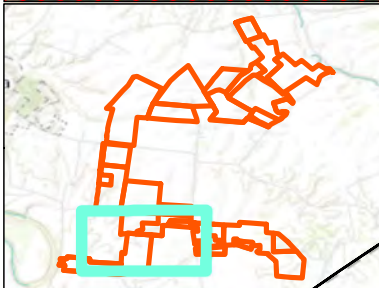
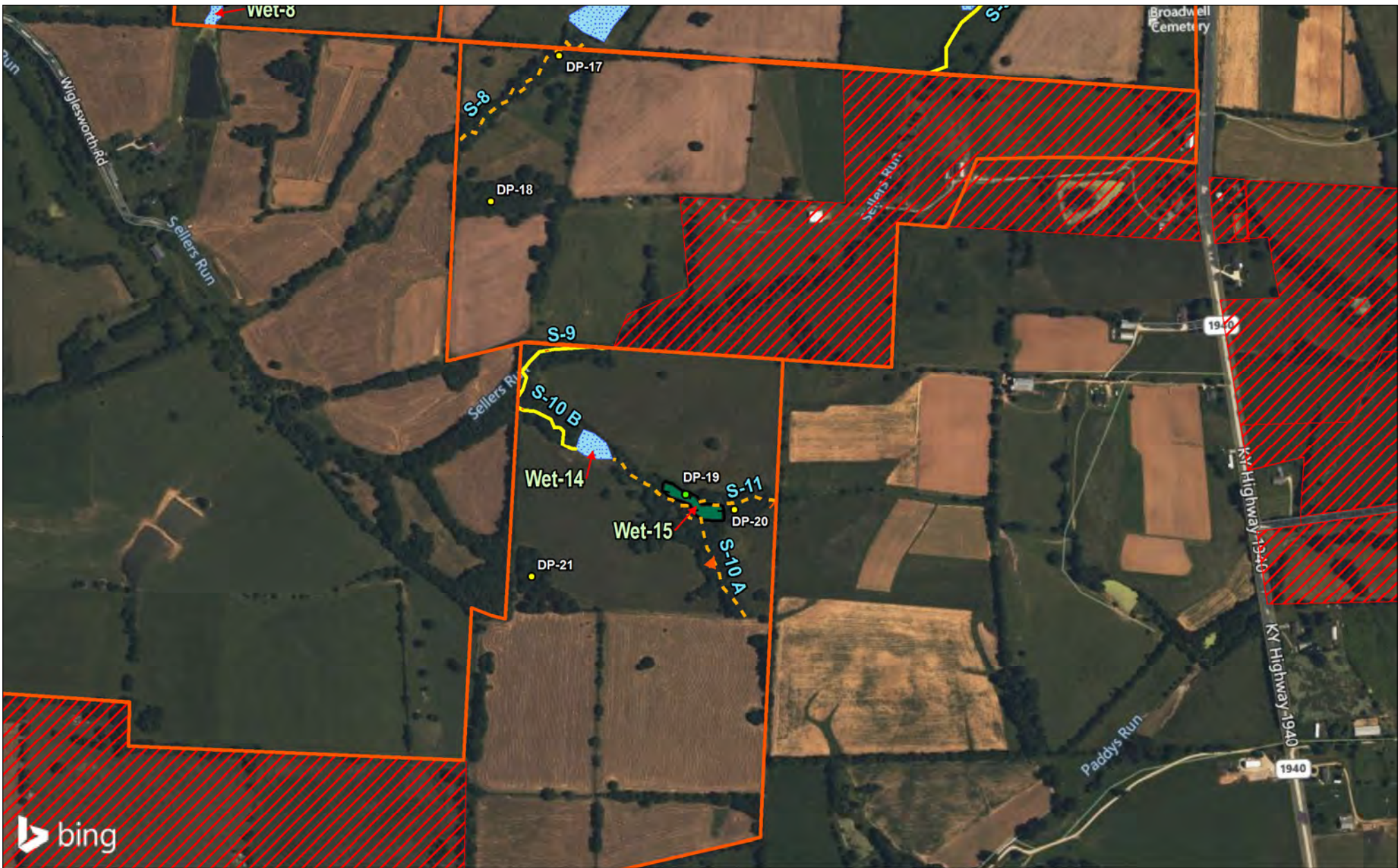


Blue Moon Energy LLC Solar Project  
 Critical Issues Analysis  
 Harrison County, Kentucky

**Delineated Wetlands and Waterbodies**

Date:	Project No:	Figure No:
June 2021	E320201803	C-4





**Legend**

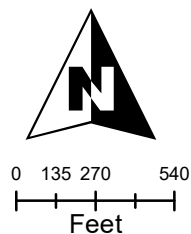
- Project Boundary
- Excluded Parcels
- Wetland Point
- Upland Point
- Potential Sinkhole
- Potential Bat Tree

**Streams**

- Ephemeral Stream
- Intermittent Stream
- Perennial Stream

**Wetlands**

- PEM Wetland
- PFO Wetland
- PUB(x) Pond

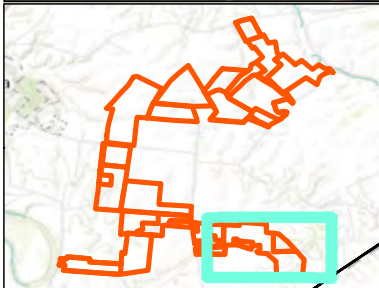


Blue Moon Energy LLC Solar Project  
 Critical Issues Analysis  
 Harrison County, Kentucky

**Delineated Wetlands and Waterbodies**

Date: June 2021	Project No: E320201803	Figure No: C-5
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**Legend**

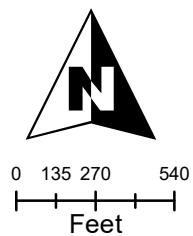
- Project Boundary
- Excluded Parcels
- Wetland Point
- Upland Point
- Potential Sinkhole
- Potential Bat Tree

**Streams**

- Ephemeral Stream
- Intermittent Stream
- Perennial Stream

**Wetlands**

- PEM Wetland
- PFO Wetland
- PUB(x) Pond



Blue Moon Energy LLC Solar Project  
 Critical Issues Analysis  
 Harrison County, Kentucky

**Delineated Wetlands and Waterbodies**

Date: June 2021	Project No: E320201803	Figure No: C-6
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APPENDIX

# D

USFWS IPAC

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Harrison County, Kentucky



## Local office

Kentucky Ecological Services Field Office

☎ (502) 695-0468

📅 (502) 695-1024

J C Watts Federal Building, Room 265  
330 West Broadway  
Frankfort, KY 40601-8670

<http://www.fws.gov/frankfort/>



# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

NAME

STATUS

**Gray Bat** *Myotis grisescens*

Endangered

Wherever found

This species only needs to be considered if the following condition applies:

- The project area includes potential gray bat habitat.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6329>

**Indiana Bat** *Myotis sodalis*

Endangered

Wherever found

This species only needs to be considered if the following condition applies:

- The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species.

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/5949>

**Northern Long-eared Bat** *Myotis septentrionalis*

Threatened

Wherever found

This species only needs to be considered if the following condition applies:

- The specified area includes areas in which incidental take would not be prohibited under the 4(d) rule. For reporting purposes, please use the "streamlined consultation form," linked to in the "general project design guidelines" for the species.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9045>

**Clams**

NAME

STATUS

**Clubshell** *Pleurobema clava*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/3789>

**Fanshell** *Cyprogenia stegaria*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4822>

Northern Riffleshell *Epioblasma torulosa rangiana* Endangered

Wherever found

This species only needs to be considered if the following condition applies:

- The species may potentially occur in suitable habitat in the South Fork Licking River.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/527>

Pink Mucket (pearlymussel) *Lampsilis abrupta* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/7829>

Purple Cat's Paw (=purple Cat's Paw Pearlymussel) *Epioblasma obliquata obliquata* Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/5602>

Rabbitsfoot *Quadrula cylindrica cylindrica* Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/5165>

Rough Pigtoe *Pleurobema plenum* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6894>

Sheepnose Mussel *Plethobasus cyphus* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6903>

## Flowering Plants

NAME

STATUS

Running Buffalo Clover *Trifolium stoloniferum* Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/2529>

Short's Goldenrod *Solidago shortii* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/5367>



# Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

# Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

#### Henslow's Sparrow *Ammodramus henslowii*

Breeds May 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3941>

#### Prairie Warbler *Dendroica discolor*

Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

#### Red-headed Woodpecker *Melanerpes erythrocephalus*

Breeds May 10 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

#### Wood Thrush *Hylocichla mustelina*

Breeds May 10 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (🟡)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

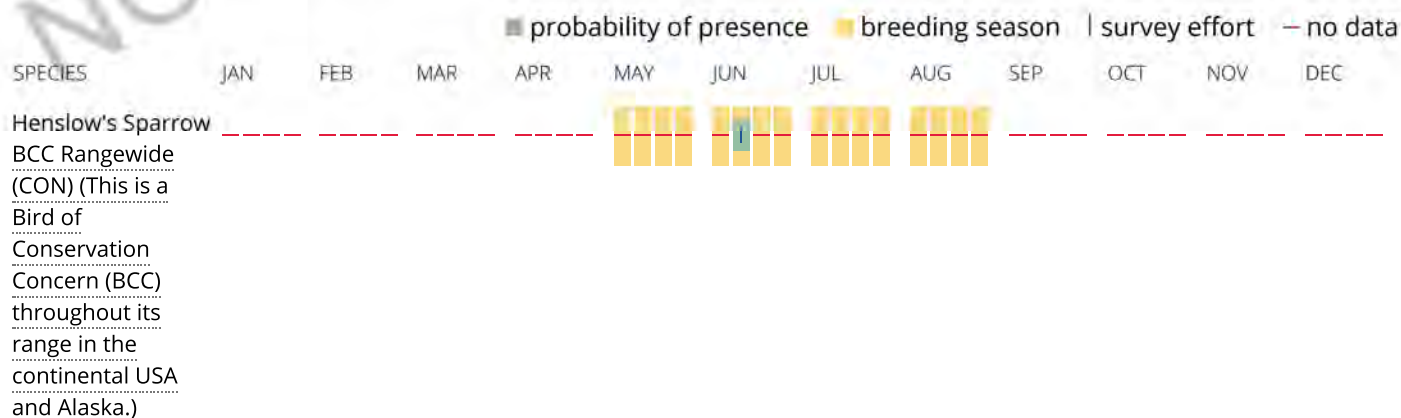
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (-)

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





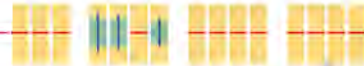
Prairie Warbler  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)



Red-headed  
Woodpecker  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)



Wood Thrush  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)



**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

## What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

## How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

## What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

## Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

## What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.



## Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1Ch](#)

FRESHWATER POND

[PUBHh](#)

[PUBFh](#)

[PUBHx](#)

RIVERINE

[R5UBH](#)

[R4SBC](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

#### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

#### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

#### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

# Phase I Environmental Site Assessment

Blue Moon Energy LLC – Harrison  
County, Kentucky

E321200400

**Prepared by**

Cardno, Inc.  
1142 West 2320 South, Suite  
A  
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Phone: (801) 256-3800  
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**Prepared for**

Blue Moon Energy LLC

September 20, 2021



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# 1 Executive Summary

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## 1.1 General Information

<b>Project Information</b>	Approximate 1,581 acres of land
<b>Site Information</b>	Blue Moon Energy LLC – Harrison County, Kentucky Cynthia, Kentucky
<b>Site Access Contact</b>	Joshua Harding
<b>Client Information</b>	Blue Moon Solar LLC
<b>Consultant Information</b>	Cardno, Inc. 76 San Marcos Street Austin, Texas 78702 Phone: 512 745 8129
<b>Reconnaissance Date</b>	August 25, 2021
<b>Site Assessor</b>	Chad Martin and Sam Waltman
<b>Report Writer</b>	Chad Martin
<b>Environmental Professional</b>	Chad Martin

### Environmental Professional Statement

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 part of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Chad Martin  
National Client Manager  
Environmental Professional

## 1.2 Findings and Conclusions Summary

Cardno, Inc. performed this Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of American Society of Testing and Material (ASTM) Standard Practice E 1527-13. Any exceptions to, or deletions from, this practice are described in Section 2.0 of this report. This assessment did not reveal evidence of *recognized environmental conditions* (RECs) in connection with the Subject Property. Information regarding this finding is detailed in the following table.

### Findings and Conclusions Summary

Report Section	Further Action	<i>De Minimis</i> Condition	REC	Historical REC	Controlled REC	ASTM Non-Scope Condition	Description
4.0	User Provided Information	No					
5.1.1	Federal Database Findings	No					
5.1.2	State and Tribal Database Findings	No					
5.1.3	Local Environmental Record Sources	No					
5.3	Historical Records Sources	No					
6.2	Hazardous Substance Use, Storage and Disposal	No					
6.3	Underground Storage Tanks	No					
6.4	Aboveground Storage Tanks	No					
6.5	Other Petroleum Products	No					
6.6	Polychlorinated Biphenyls	No					
6.7	Unidentified Substance Containers	No					
6.8	Nonhazardous Solid Waste	No					
6.9	Wastewater	No					
6.10	Waste Pits, Ponds and Lagoons	No					
6.11	Sumps	No					
6.12	Septic Systems	No					
6.13	Storm water Management System	No					
6.14	Wells	No					
7.0	Interviews	No					
8.1	Asbestos-Containing Material	No					
8.2	Radon	No					
8.3	Lead in Drinking Water	No					
8.4	Lead-Based Paint	No					
8.5	Mold Screening	No					
8.6	Vapor Encroachment	No					

### 1.3 Significant Data Gap Summary

*Data gaps* may have been encountered during the performance of this Phase I ESA and are discussed within the section of the report where they were encountered. According to ASTM Standard Practice E 1527-13, *data gaps* are only significant if "other information and/or professional experience raise reasonable concerns involving the *data gap*." The following is a list of common sources of *significant data gaps* and Cardno, Inc.'s experience with them on this Phase I ESA.

#### Significant Data Gap Summary

Report Section		Description
3.5	Current Uses of Adjoining Property	No significant data gap identified.
4.2	Environmental Liens or Activity and Use Limitations	No significant data gap identified.
5.1	Standard Environmental Records	No significant data gap identified.
5.2	Physical Setting Sources	No significant data gap identified.
5.3	Historical Records Sources	No significant data gap identified.
6.1	Methodology and Limiting Conditions	No significant data gap identified.
7.0	Interviews	No significant data gap identified.

### 1.4 Findings

#### 1.4.1 Recognized Environmental Condition

A REC refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property due to release to the environment, under conditions indicative of a release to the environment, or under conditions that pose a material threat of a future release to the environment.

Cardno, Inc. did not identify any RECs at the Subject Property during the course of this assessment.

#### 1.4.2 Controlled Recognized Environmental Condition

A *controlled recognized environmental condition* (CREC) refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

Cardno, Inc. did not identify any CRECs at the Subject Property during the course of this assessment.

#### 1.4.3 Historical Recognized Environmental Condition

An *historical recognized environmental condition* (HREC) refers to a past release of any hazardous substances or petroleum products that occurred in connection with the Subject Property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the Subject Property to any required controls.

Cardno, Inc. did not identify any HRECs at the Subject Property during the course of this assessment.

#### 1.4.4 Environmental Issue

An *environmental issue* refers to environmental concerns identified by Cardno, Inc. that warrant further discussion, but that do not qualify as RECs.

Cardno, Inc. did not identify any environmental issues during the course of this assessment.

## 1.5 Conclusions, Opinions and Recommendations

Cardno, Inc. performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 of the real property described herein, in Cynthia, Kentucky (the “Subject Property”). Any exceptions to, or deletions from, are described in Section 1.3 of this report.

This assessment did not reveal evidence of RECs or environmental issues in connection with the Subject Property. Based on the conclusions of this assessment, Cardno, Inc. recommends no further investigation regarding the environmental condition of the Subject Property.

## 2 Introduction

---

### 2.1 Purpose

The purpose of this Phase I ESA was to identify RECs and certain potential environmental conditions outside the scope of ASTM Standard Practice E 1527-13 in connection with the Subject Property at the time of the site reconnaissance. This report documents the findings, opinions, and conclusions of the Phase I ESA.

### 2.2 Scope

This Phase I ESA was conducted in general accordance with the ASTM Standard Practice E 1527-13, consistent with a level of care and skill ordinarily practiced by the environmental consulting profession currently providing similar services under similar circumstances. Significant additions, deletions, or exceptions to ASTM Standard Practice E 1527-13 are noted below or in the corresponding sections of this report. The scope of this assessment included an evaluation of the following:

- Physical setting characteristics of the Subject Property through a review of referenced sources such as topographic maps and geologic, soils, and hydrologic reports.
- Usage of the Subject Property, adjoining property, and surrounding area through a review of referenced historical sources such as land title records, fire insurance maps, city directories, aerial photographs, prior reports, and interviews.
- Observations and interviews regarding current Subject Property usage and conditions including the use, treatment, storage, disposal, or generation of hazardous substances, petroleum products, hazardous wastes, non-hazardous solid wastes, and wastewater.
- Usage of adjoining and surrounding property and the likely impact of known or suspected releases of hazardous substances or petroleum products on the Subject Property.
- Information referenced in environmental agency databases and local environmental records within the specified approximate minimum search distance from the Subject Property.

The scope of the assessment also included consideration of the following environmental issues or conditions that are beyond the scope of ASTM Standard Practice E 1527-13:

- Mold screening to report the findings of a baseline survey of readily observable mold and conditions conducive to mold on the Subject Property identified by limited interview, document review, and physical observation and to provide an opinion on whether an identified condition warrants further action. The scope of work for the mold screening was intended to be consistent with ASTM Standard Practice E 2418-06: *Standard Guide for Readily Observable Mold and Conditions Conducive to Mold in Commercial Buildings: Baseline Survey Process*. The scope of work, including potential deviations from the Standard Guide, is described as follows. The interview was limited to one knowledgeable person from property management or engineering staff. The document review was limited to only those relevant documents made readily available to Cardno, Inc. in a



timely manner. The physical observations were limited to certain heating, ventilation, and air conditioning (HVAC) system areas and other readily accessible building areas likely to become subject to water damage, plumbing leaks, and flooding. Unless noted otherwise herein, Cardno, Inc. observed the HVAC equipment room(s) and readily accessible mechanical rooms and, in buildings with package units in the ceiling, at least one unit per floor. Also, unless noted otherwise, Cardno, Inc. observed readily accessible areas of the basement (or lowest level), the top floor, the roof and at least one mid-level floor (if applicable). For multi-story buildings, the total number of floors observed (inclusive of those already mentioned) was intended to be up to 10% of the total number of floors (if readily accessible). For hotel and multi-family buildings, Cardno, Inc. targeted the lowest and highest levels and roof as described above and up to 10% of units, including one per floor if readily accessible. The mold screening did not include destructive methods of observation. No sampling or laboratory analyses were conducted. The mold screening service as described herein was limited in scope and by the time and cost considerations typically associated with performing a Phase I ESA. No method can guarantee that a hazard will be discovered if evidence of the hazard is not encountered within the performance of the mold screening as authorized and that opinions and conclusions must, out of necessity, be extrapolated from limited information and discrete, non-continuous data points. Unidentified mold or other microbial conditions may exist on the Subject Property.

- Visual observation and limited sampling of suspect asbestos-containing material (ACM) at the Subject Property. The visual observation consists of providing an opinion on the condition of suspect ACM on the Subject Property, based upon visual observation during the site reconnaissance. The limited sampling, if conducted, consists of the submission of bulk material samples to an accredited laboratory for determination of asbestos concentrations. The sampling was “limited” in that it was not intended to comply with the sampling requirements described in 40 CFR Part 763 or 40 CFR Part 61. Limited surveys are performed to identify the presence of readily accessible suspect ACM and to develop recommendations as to the need for a more thorough survey and/or an operations and maintenance (O&M) program.
- Radon document review, consisting of the review of published radon data with regard to the potential for elevated levels of radon gas in the surrounding area of the Subject Property.
- Lead in drinking water data review, consisting of contacting the water supplier for information regarding whether or not the potable water provided to the Subject Property meets or exceeds drinking water standards for lead.
- Visual observation of lead-based paint (LBP), consisting of providing an opinion on the potential for LBP based on the construction date of buildings on the Subject Property and visual observation of the condition of suspect LBP.
- Wetlands document review, consisting of a review of a current National Wetlands Inventory map of the surrounding area to note if the Subject Property is identified as having a wetland.
- Flood plain document review, consisting of a review of a reasonably ascertainable flood plain map of the surrounding area to note if the Subject Property is identified as being located within a flood plain.

## **2.3 Significant Assumption**

Any assumptions in this report were not considered as having significant impact on the determination of RECs associated with the Subject Property.

## **2.4 Limitations and Exceptions**

Cardno, Inc. prepared this Phase I ESA report using reasonable efforts to identify RECs associated with hazardous substances or petroleum products at the Subject Property. Findings contained within this report are based on information collected from observations made on the day(s) of the site reconnaissance and from reasonably ascertainable information obtained from certain public agencies and other referenced sources.

The ASTM Standard Practice E 1527-13 recognizes inherent limitations for Phase I ESAs, including, but not limited to:

- *Uncertainty Not Eliminated* – A Phase I ESA cannot completely eliminate uncertainty regarding the potential for RECs in connection with any property.
- *Not Exhaustive* – A Phase I ESA is not an exhaustive investigation of the Subject Property and environmental conditions on such property.
- *Past Uses of the Property* – Phase I requirements only require review of standard historical sources at five year intervals; therefore, past uses of the Subject Property at less than five year intervals may not be discovered.

Users of this report may refer to ASTM Standard Practice E 1527-13 for further information regarding these and other limitations. This report is not definitive and should not be assumed to be a complete and/or specific definition of all conditions above or below grade. Current subsurface conditions may differ from the conditions determined by surface observations, interviews, and reviews of historical sources. The most reliable method of evaluating subsurface conditions is through intrusive techniques, which are beyond the scope of this report. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation, or other property construction purposes. Any use of this report by any party, beyond the scope and intent of the original parties, shall be at the sole risk and expense of such user.

Cardno, Inc. makes no representation or warranty that the past or current operations at the Subject Property are, or have been, in compliance with all applicable federal, state, and local laws, regulations, and codes. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated. Regardless of the findings stated in this report, Cardno, Inc. is not responsible for consequences or conditions arising from facts not fully disclosed to Cardno, Inc. during the assessment.

An independent data research company provided the government agency database referenced in this report. Information on surrounding area property was requested for approximate minimum search distances and is assumed to be correct and complete unless obviously contradicted by Cardno, Inc.'s observations or other credible referenced sources reviewed during the assessment. Cardno, Inc. shall not be liable for any such database firm's failure to make relevant files or documents properly available, to properly index files, or otherwise to fail to maintain or produce accurate or complete records.

Cardno, Inc. used reasonable efforts to identify evidence of aboveground and underground storage tanks (USTs) and ancillary equipment on the Subject Property during the assessment. "Reasonable efforts" were limited to observation of accessible areas, review of referenced public records and interviews. These reasonable efforts may not identify subsurface equipment or evidence hidden from view by things including, but not limited to, snow cover, paving, construction activities, stored materials and landscaping.

Any estimates of costs or quantities in this report are approximations for commercial real estate transaction due diligence purposes and are based on the findings, opinions, and conclusions of this assessment, which are limited by the scope of the assessment, schedule demands, cost constraints, accessibility limitations, and other factors associated with performing the Phase I ESA. Subsequent determinations of costs or quantities may vary from the estimates in this report. The estimated costs or quantities in this report are not intended to be used for financial disclosure related to the Financial Accounting Standards Board (FASB) Statement No. 143, FASB Interpretation No. 47, Sarbanes/Oxley Act or any United States Securities and Exchange Commission reporting obligations, and may not be used for such purposes in any form without the express written permission of Cardno, Inc.

Cardno, Inc. is not a professional title insurance or land surveyor firm and makes no guarantee, express or implied, that any land title records acquired or reviewed in this report, or any physical descriptions or depictions of the Subject Property in this report, represent a comprehensive definition or precise delineation of property ownership or boundaries.

The Environmental Professional Statement in Section 1.1 of this report does not “certify” the findings contained in this report and is not a legal opinion of the Environmental Professional. The Environmental Professional Statement is intended to document Cardno, Inc.’s opinion that an individual meeting the qualifications of an Environmental Professional was involved in the performance of the assessment and that the activities performed by, or under the supervision of, the Environmental Professional were performed in conformance with the standards and practices set forth in 40 CFR Part 312 per the methodology in ASTM Standard Practice E 1527-13 and the scope of work for this assessment.

Per ASTM Standard Practice E 1527-13, Section 6, User Responsibilities, the user of this assessment has specific obligations for performing tasks during this assessment that will help identify the possibility of RECs in connection with the Subject Property. Failure by the user to fully comply with the requirements may impact their ability to use this report to help qualify for Landowner Liability Protections (LLPs) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Cardno, Inc. makes no representations or warranties regarding a user’s qualification for protection under any federal, state, or local laws, rules, or regulations.

In accordance with the ASTM Standard Practice E 1527-13, this report is presumed to be valid for a six-month period. If the report is older than six months, the following information must be updated for the report to be valid: (1) regulatory review, (2) site visit, (3) interviews, (4) specialized knowledge, and (5) environmental liens search. Reports older than one year may not meet the ASTM Standard Practice 1527-13 and, therefore, the entire report must be updated to reflect current conditions and property-specific information.

Other limitations and exceptions that are specific to the scope of this report may be found in corresponding sections.

## **2.5 Special Terms and Conditions (User Reliance)**

This report is for the use and benefit of and may be relied upon by Blue Moon Energy LLC, its affiliates, and third parties authorized in writing by the client and Cardno, Inc., including the lender(s) in connection with a secured financing of the Subject Property, and their respective successors and assigns. Any third party agrees by accepting this report that any use or reliance on this report shall be limited by the exceptions and limitations in this report, and with the acknowledgment that actual Subject Property conditions may change with time, and that hidden conditions may exist at the Subject Property that were not discovered within the authorized scope of the assessment. Any use by or distribution of this report to third parties, without the express written consent of Cardno, Inc., is at the sole risk and expense of such third party.

Cardno, Inc. makes no other representation to any third party except that it has used the degree of care and skill ordinarily exercised by environmental consultants in the preparation of the report and in the assembling of data and information related thereto. No other warranties are made to any third party, either expressed or implied. Unless otherwise agreed upon in writing by Cardno, Inc. and a third party, or as set forth in the environmental consulting services agreement between Blue Moon Solar LLC and Cardno, Inc., Cardno, Inc.’s liability to any third party authorized to use or rely on this report with respect to any acts or omissions shall be limited to a total maximum amount of \$50,000. In the event of any conflict between the terms and conditions of this report and the terms and conditions of the environmental consulting services agreement, the environmental consulting services agreement shall control.

# **3 Site Description**

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## **3.1 Local and Legal Description**

The Subject Property are located at the following 14 assessor parcel numbers (APN)/owner information:

First Name	Last Name	APN
Sarah	Haley	130-0000-004-00-000
Kent	Bradford	130-0000-003-01-000
Pam	McCauley White	116-0000-012-01-000
James	Wilson	117-0000-009-00-000
Chapel	Mastin	130-0000-012-00-000
William	Cook	129-0000-007-01-000
Gerald	Whalen	128-0000-013-00-000
Gerald	Whalen	129-0000-024-00-000
Paul	Wilson	129-0000-009-00-000
	Cynona Farms, LLC	130-0000-003-00-000
	Cynona Farms, LLC	130-0000-002-00-000
	Cynona Farms, LLC	116-0000-011-02-000
Richard	Midden	129-0000-022-02-000
Richard	Midden	129-0000-019-00-000
James	McKee	117-0000-022-00-000

A Site Vicinity Map is located in Appendix A, a Site Plan is included in Appendix B, and Subject Property photographs are provided in Appendix C.

### 3.2 Surrounding Area General Characteristics

The surrounding areas are primarily characterized by agricultural and residential properties. The Subject Property can be accessed from Old Lair Pike, Millersburg Road/Highway 36, Hedges Lane, Republican Pike/Highway 392, Shady Nook Pike, Ruddles Mill Road/Highway 1940 and Steffe Lane. Elevation at the Subject Property range from approximately 800 to 900 feet above mean sea level (msl), and the topography of the Subject Property are generally flat. The Subject Property topography is discussed in detail in Section 5.2.1 of this report.

Specific adjoining property information is further discussed in Section 3.5.

### 3.3 Current Use of the Property

The Subject Property are currently occupied by residential and agricultural use. The subject buildings are rectangular-shaped structures that are oriented in various directions and are situated randomly throughout the Subject Property. The subject buildings are of wood-frame construction with reinforced concrete foundations. The building exteriors are finished with painted masonry brick veneer and painted wood siding. The roofs of the subject buildings are covered with different types of roofing materials.

The Subject Property are designated for multi-family residential development and agricultural use and are considered a legal use in its current configuration.

The Subject Property were not identified in the regulatory database report of Section 5.1.

Subject Property photographs are provided in Appendix C.

### 3.4 Description of Property Improvements

The following table provides general descriptions of the Subject Property improvements.

**Property Improvements**

Size of Property (approximate)	Approximate 1,581-acre parcels
General Topography of Property	Generally the topography of the Subject Property are flat
Adjoining and/or Access/Egress Roads	Vehicular access to the Subject Property can be accessed from Old Lair Pike, Millersburg Road/Highway 36, Hedges Lane, Republican Pike/Highway 392, Shady Nook Pike, Ruddles Mill Road/Highway 1940 and Steffe Lane.
Approximate % Unimproved Areas	98%
Approximate % Landscaped Areas	0%
Approximate % Surface Water	2%
Potable Water Source	Harrison County Water Association and Cynthiana Water Department
Sanitary Sewer Utility	City of Cynthiana
Storm Sewer Utility	City of Cynthiana
Electrical Utility	East Kentucky Power Cooperative, Blue Grass Energy Cooperative and Kentucky Utilities
Natural Gas Utility	Columbia Gas of Kentucky
Current Occupancy Status	5 single family residences are located throughout the Subject Property
Unoccupied Buildings/Spaces/Structures	26 barns or garages/sheds are located throughout the Subject Property
Number of Occupied Buildings	5 single family residences are located throughout the Subject Property
General Building Description	The subject buildings are rectangular-shaped structures that are oriented in various directions and are situated randomly throughout the Subject Property. The subject buildings are of wood-frame construction with reinforced concrete foundations.
Exterior Finishes Description	The building exteriors are finished with painted masonry brick veneer and painted wood siding. The roofs of the subject buildings are covered with different types of roofing materials
Emergency Power	East Kentucky Power Cooperative, Blue Grass Energy Cooperative and Kentucky Utilities

**3.5 Current Uses of Adjoining Properties**

The Subject Property are located within a mixed residential and agricultural area of Cynthia. During the vicinity reconnaissance, Cardno, Inc. observed land use in the immediate vicinity of the Subject Property as residential and agricultural use.

**4 User-Provided Information**

The following section summarizes information (if any) provided by Blue Moon Energy LLC (User) with regard to the Phase I ESA. Documentation may be found where referenced in this report.

**4.1 Title Records**

User provided no title record information for the Subject Property.

**4.2 Environmental Liens or Activity and Use Limitations**

Cardno, Inc. attempted to identify environmental liens and AULs through client-supplied data. User provided no information that indicated any environmental liens or activity and use limitations (AULs) related to the Subject Property.



### **4.3 Specialized Knowledge**

User provided no specialized knowledge regarding RECs associated with the Subject Property.

### **4.4 Significant Valuation Reduction for Environmental Issues**

User provided no information indicating any significant valuation reduction for environmental issues associated with the Subject Property.

### **4.5 Owner, Property Manager and Occupant Information**

User provided Cardno, Inc. with a site access contact indicating that some of the Subject Property were currently occupied and an escort would not be needed.

### **4.6 Reason for Performing Phase I ESA**

User indicated that the Phase I ESA was being completed prior to a financial transaction regarding the Subject Property.

### **4.7 Other User Provided Documents**

The User and property owners were provided an environmental questionnaire concerning the Subject Property. To date, Cardno, Inc. has received the completed document from **seven** of eleven property owners. The completed questionnaires do not materially change the findings of the Phase I. No RECs were identified in any of the responses. One removed UST (gas or diesel) and seven in-use ASTs were reported (four liquid petroleum, one gas, and two diesel). Chemical usage, consistent with agricultural use (ie, gasoline/diesel for equipment and pesticides/herbicides) were reported. No other documents were supplied to Cardno, Inc. as described in the ASTM Standard Practice E 1527-13. Completed questionnaires, along with a summary, are provided in Appendix K. These features do not represent an environmental concern.

## **5 Records Review**

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### **5.1 Standard Environmental Records**

The regulatory agency databases report discussed in this section, provided by Environmental Risk Information Services (ERIS), was reviewed for information regarding reported releases of hazardous substances and petroleum products on or near the Subject Property. Cardno, Inc. also reviewed the “unmappable” (also referred to as “orphan”) listings within the database reports, cross-referencing available address information and facility names. Unmappable sites are listings that could not be plotted with confidence, but are potentially in the general area of the Subject Property based on the partial street address, city, or zip code. Any unmappable site that was identified by Cardno, Inc. as a being within the approximate minimum search distance from the Subject Property based on the site reconnaissance and/or cross-referencing to mapped listings, is included in the discussion within this section. The complete regulatory agency database reports may be found in Appendix E. The following table is a summary of the findings of the databases reviewed.

**Summary of Federal, State, and Tribal Database Findings**

Regulatory Database	Approx. Minimum Search Distance	Property Listed?	Additional Sites Listed
<b>Federal NPL site list</b>			
NPL	1 mile	No	No
Proposed NPL	1 mile	No	No
NPL LIENS	property	No	No
<b>Federal Delisted NPL site list</b>			
Delisted NPL	1 mile	No	No
<b>Federal CERCLIS list</b>			
FEDERAL FACILITY	½ mile	No	No
SEMS	½ mile	No	No
<b>Federal CERCLIS NFRAP site list</b>			
SEMS-ARCHIVE	½ mile	No	No
<b>Federal RCRA CORRACTS facilities list</b>			
CORRACTS	1 mile	No	No
<b>Federal RCRIS non-CORRACTS TSD facilities list</b>			
RCRA-TSDF	½ mile	No	No
<b>Federal RCRA Generators list</b>			
RCRA-LQG	¼ mile	No	No
RCRA-SQG	¼ mile	No	No
RCRA-CESQG	¼ mile	No	No
<b>Federal Institutional Control/Engineering Control Registry</b>			
LUCIS	½ mile	No	No
US ENG CONTROLS	½ mile	No	No
US INST CONTROL	½ mile	No	No
<b>Federal ERNS list</b>			
ERNS	property	No	No
<b>State - and tribal - equivalent CERCLIS</b>			
SHWS	NA	No	No
<b>State and tribal landfill and/or solid waste disposal site lists</b>			
SWF/LF	½ mile	No	No
<b>State and tribal leaking storage tank lists</b>			
PSTEAF	½ mile	No	No
INDIAN LUST	½ mile	No	No
SB193	½ mile	No	No
<b>State and tribal registered storage tank lists</b>			
FEMA UST	¼ mile	No	No
UST	¼ mile	No	No
AST	¼ mile	No	No
INDIAN UST	¼ mile	No	No

Regulatory Database	Approx. Minimum Search Distance	Property Listed?	Additional Sites Listed
<b>State and tribal institutional control/engineering control registries</b>			
ENG CONTROLS	½ mile	No	No
INST CONTROL	½ mile	No	No
<b>State and tribal voluntary cleanup sites</b>			
VCP	½ mile	No	No
INDIAN VCP	½ mile	No	No
<b>State and tribal Brownfields sites</b>			
BROWNFIELDS	½ mile	No	No
<b>Local Brownfield lists</b>			
US BROWNFIELDS	½ mile	No	No
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>			
HIST LF	½ mile	No	No
SWRCY	½ mile	No	No
INDIAN ODI	½ mile	No	No
DEBRIS REGION 9	½ mile	No	No
ODI	½ mile	No	No
IHS OPEN DUMPS	½ mile	No	No
<b>Local Lists of Hazardous waste / Contaminated Sites</b>			
US HIST CDL	property	No	No
CDL	property	No	No
US CDL	property	No	No
<b>Local Land Records</b>			
LIENS 2	property	No	No
<b>Records of Emergency Release Reports</b>			
HMIRS	property	No	No
SPILLS	property	No	No

Regulatory Database	Approx. Minimum Search Distance	Property Listed?	Additional Sites Listed
<b>Other Ascertainable Records</b>			
RCRA NonGen / NLR	¼ mile	No	No
FUDS	1 mile	No	No
DOD	1 mile	No	No
SCRD DRYCLEANERS	½ mile	No	No
US FIN ASSUR	property	No	No
EPA WATCH LIST	property	No	No
2020 COR ACTION	¼ mile	No	No
TSCA	property	No	No
Tris	property	No	No
SSTS	property	No	No
ROD	1 mile	No	No
RMP	property	No	No
RAATS	property	No	No
PRP	property	No	No
PADS	property	No	No
ICIS	property	No	No
FTTS	property	No	No
MLTS	property	No	No
COAL ASH DOE	property	No	No
COAL ASH EPA	½ mile	No	No
PCB TRANSFORMER	property	No	No
RADINFO	property	No	No
HIST FTTS	property	No	No
DOT OPS	property	No	No
CONSENT	1 mile	No	No
INDIAN RESERV	1 mile	No	No
FUSRAP	1 mile	No	No
UMTRA	½ mile	No	No
LEAD SMELTERS	Property	No	No
US AIRS	property	No	No
US MINES	¼ mile	No	No
ABANDONED MINES	¼ mile	No	No
FINDS	property	No	No
DOCKET HWC	1 mile	No	No
UXO	property	No	No
ECHO	property	No	No

Regulatory Database	Approx. Minimum Search Distance	Property Listed?	Additional Sites Listed
FUELS PROGRAM	¼ mile	No	No
DRYCLEANERS	¼ mile	No	No
EWA	Property	No	No
Financial Assurance	property	No	No
FUDS	property	No	No
MMRP	property	No	No
NPDES	property	No	No
TIER 2	property	No	No
UIC	property	No	No
UOPF	property	No	No

**5.1.1 Subject Property Listings**

The Subject Property were not identified in the regulatory database report.

**5.1.2 Adjacent Property Listings**

Adjacent Properteis were not identified in the regulatory database report.

**5.1.3 Sites of Concern Listings**

No sites of concern are identified in the regulatory database report.

**5.1.4 Orphan Listings**

Orphan listings were identified in the regulatory database report. The listings were located and found to be outside the search radius or of no concern.

**5.1.5 Local Environmental Records Search**

**Name of Agency:** Kentucky Energy & Environment Cabinet, Department of Environmental Protection (KDEP)

**Point of Contact:** [http://dep.gateway.ky.gov/eSearch/Search\\_AI.aspx](http://dep.gateway.ky.gov/eSearch/Search_AI.aspx)

**Agency Address:** 300 Sower Boulevard, Frankfort, Kentucky 40601

**Agency Phone Number:** (502) 564-0323

**Date of Contact:** September 17, 2021

**Method of Communication:** Online

**Communication Summary:** No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the Subject Property were on file with the agency.



#### 5.1.6 Health Department

**Name of Agency:** Kentucky Cabinet for Health and Family Services, Department for Public Health (KDPH)

**Point of Contact:** KDPH Answering Service

**Agency Address:** 275 East Main Street, HS1C-D, Frankfort, Kentucky 40621

**Agency Phone Number:** (502) 564-4856

**Date of Contact:** September 17, 2021

**Method of Communication:** Telephone

**Communication Summary:** As of the date of this report, Cardno, Inc. has not received a response from this agency for inclusion in this report.

#### 5.1.7 Fire Department

**Name of Agency:** Harrison County Fire District

**Point of Contact:** Charles A. Carson

**Agency Address:** 140 West Electric Avenue, Cynthiana, Kentucky 41031

**Agency Phone Number:** (859) 588-9039

**Date of Contact:** September 17, 2021

**Method of Communication:** Telephone

**Communication Summary:** No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the Subject Property were on file with the agency.

#### 5.1.8 Building Department

**Name of Agency:** Planning and Community Development

**Point of Contact:** <https://www.harrisonplanning.com/>

**Agency Address:** 111 South Main Street, Suite 202, Cynthiana, Kentucky 41031

**Agency Phone Number:** (859) 234-7165

**Date of Contact:** September 17, 2021

**Method of Communication:** Online

**Communication Summary:** Additional records were not available for review for the Subject Property.

### 5.1.9 Planning Department

**Name of Agency:** Planning and Community Development  
**Point of Contact:** <https://www.harrisonplanning.com/>  
**Agency Address:** 111 South Main Street, Suite 202, Cynthiana, Kentucky 41031  
**Agency Phone Number:** (859) 234-7165  
**Date of Contact:** September 17, 2021  
**Method of Communication:** Online  
**Communication Summary:** Additional records were not available for review for the Subject Property.

### 5.1.10 Oil & Gas Exploration

**Name of Agency:** Kentucky Energy & Environment Cabinet, Natural Resources, Oil & Gas Department  
**Point of Contact:** <https://eec.ky.gov/Natural-Resources/Oil-and-Gas/Pages/default.aspx>  
**Agency Address:** 300 Sower Boulevard, Frankfort, Kentucky 40601  
**Agency Phone Number:** (502) 564-0323  
**Date of Contact:** September 17, 2021  
**Method of Communication:** Online  
**Communication Summary:** According to records reviewed, no oil or gas wells are located on or adjacent to the Subject Property

### 5.1.11 Utilities

Utility providers for the Subject Property are detailed in the following table.

#### Utility Providers

Utility	Provider
Electrical Utility Company	East Kentucky Power Cooperative, Blue Grass Energy Cooperative and Kentucky Utilities
Water Utilities	Harrison County Water Association, Cynthiana City Water/Sewage and Kentucky American Water
Sewer Utility	Cynthiana City Water/Sewage and Berry Sewage Treatment
Natural Gas Utility	Columbia Gas of Kentucky

### 5.1.12 Other Local Environmental Records Sources

No additional local environmental records sources were reviewed for this assessment.

## **5.2 Physical Setting Sources**

### **5.2.1 Topography**

The United States Geological Survey (USGS) *Shady Nook, Millersburg, Shawhan, and Cynthiana*, Kentucky Quadrangle 7.5-minute series topographic maps were reviewed for this ESA. According to the contour lines on the topographic map, the Subject Property range from approximately 800 to 900 feet above msl, and are generally flat. The Subject Property are depicted on the 2013 maps as undeveloped.

### **5.2.2 Geology/Soils**

The Subject Property are situated within the Ordovician System in the Inner Bluegrass physiographic province of the state of Kentucky. It covers the central and southern part of Harrison County. The entire county is underlain by rocks of the Eden and Cynthiana formations.

Based on information obtained from the USDA Natural Resources Conservation Service Web Soil Survey online database, the Subject Property are mapped as Faywood silty clay loam, which slopes from a range of 2 to 20 percent, eroded; Lowell-Sandview silt loams, which slopes from a range of 2 to 6 percent; Faywood silt loam, which slopes from a range of 2 to 12 percent; Lowell-Faywood silt loams, which slopes from a range of 6 to 12 percent; McAfee silt loam, which slopes from a range of 6 to 20 percent; Huntington silt loam, which slopes from a range of 0 to 4 percent; Bluegrass-Maury silt loams, which slopes from a range of 2 to 6 percent; Ashton silt loam, which slopes from a range of 2 to 6 percent; Heitt silty clay loam, which slopes from a range of 2 to 12 percent; Brasher silt loam, which slopes from a range of 2 to 6 percent; and a Maury-Bluegrass silt loams, which slopes from a range of 6 to 12 percent.

### **5.2.3 Hydrology**

According to topographic map interpretation, the direction of groundwater in the vicinity of the Subject Property are inferred to flow toward the west. The nearest surface water is the Indian Creek located in the northwestern portion of the Subject Property APN 128-0000-013-00-000. Also the North Fork Licking River, located approximately 250-feet west of Subject Property APN 117-0000-022-00-000. During this assessment, multiple ponds were observed throughout the Subject Property.

According to available information, a public water system operated by the Harrison County Water Association serves the Subject Property. According to the 2018 Water Quality Report, all water for the county comes from treated surface water. The producers and their sources include, City of Cynthiana withdraws from South Fork of Licking River; Kentucky-American Water withdraws from Kentucky River and Jacobson Reservoir; City of Paris withdraws from Stoner Creek; Nicholas County Water District purchases from Western Fleming Water District and the city of Carlisle which withdraws from Licking River.

Information specific to the Subject Property regarding the depth to groundwater and direction of groundwater flow was not available for the subject area.

### **5.2.4 Other Physical Setting Sources**

#### **5.2.4.1 Flood Plain Map**

Cardno, Inc. performed a review of the Flood Insurance Rate Maps, published by the Federal Emergency Management Agency (FEMA). According to Harrison County Map Number 21097C0 Panel Numbers 169, 200, 257 and 300, dated January 6, 2011, the Subject Property appears to be located in Zone A, an area with no base flood elevations determined and Zone X, an area located within an area of minimal flood hazard.

A copy of the FEMA Map is included in Appendix K.

#### **5.2.4.2 Wetlands Map**

According to the U.S. Fish and Wildlife Service, National Wetlands Inventory, wetlands are *not* located on the Subject Property. A copy of the Wetland Map is included in Appendix G. It is noted that this investigation did not include a formal determination relating to the presence of possible wetlands areas on the Subject Property.

### **5.3 Historical Records Sources**

The following table summarizes the findings of the research presented in the following subsections pertaining to historical property and surrounding area uses.

#### **Historical Use Information**

Period / Date	Source	Description / Use
1929 – 2013	Topographic Maps	Residential buildings and undeveloped land
1950 – 2016	Aerial Photographs	Residential buildings and undeveloped land

Potential environmental concerns were not identified in association with the current or former use of the Subject Property.

#### **5.3.1 Aerial Photographs**

Cardno, Inc. obtained available aerial photographs of the Subject Property and the surrounding areas from 1950 to 2016. Potential environmental concerns were not identified in association with the current or former use of the Subject Property.

Copies of select aerial photographs are included in Appendix F of this report.

#### **5.3.2 Fire Insurance Maps**

Cardno, Inc. reviewed the collection of Sanborn Fire insurance maps from Environmental Data Resources on September 17, 2021. Sanborn map coverage was not available for the Subject Property.

A copy of the reviewed Sanborn Maps Report is included in Appendix H of this report.

#### **5.3.3 Property Tax Files**

The Subject Property are located on 15 assessor parcel numbers as seen in Section 3.1.

Additional historical ownership information was not available. The review of tax files did not identify past uses indicating RECs at the Subject Property.

#### **5.3.4 Recorded Land Title Records and AULs**

The acquisition of recorded land title records was not required by the scope of work for this ESA.

#### **5.3.5 Historical USGS Topographic Quadrangles**

Cardno, Inc. reviewed historical topographic maps obtained from EDR on August 2, 2019. The historical topographic maps, of the Subject Property and the surrounding areas, range from 1929 to 2013. Potential environmental concerns were not identified in association with the current or former use of the Subject Property.

Copies of reviewed topographic maps are included in Appendix I of this report.

#### **5.3.6 City Directories**

Cardno, Inc. reviewed historical city directories obtained from EDR on May 20, 2019 for past names and businesses that were listed for the Subject Property APN 117-0000-022-00-000 and 130-0000-012-00-000 and its

adjacent property. Potential environmental concerns were not identified in association with the current or former use of the Subject Property APN 117-0000-022-00-000 and 130-0000-012-00-000 and its adjacent property.

Copies of reviewed city directories are included in Appendix J of this report.

### **5.3.7 Building Department Records**

Building Department records were previously discussed in Section 5.1.8.

### **5.3.8 Zoning/Land Use Records**

Zoning/land use records were previously discussed in Section 5.1.9.

### **5.3.9 Prior Reports**

Information obtained for and contained within the Cardno March 2, 2021 Phase I ESA were utilized to complete this review.

### **5.3.10 Other Historical Sources**

No other historical sources were reviewed for this assessment.

## **6 Site Reconnaissance**

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The initial unaccompanied site reconnaissance was conducted by Samuel Waltman of Cardno, Inc. on July 17, 2019. This visit was focused on the publically accessible areas of the Subject Property and noted only exterior features. Multiple single-family residences, barns and garages/sheds were observed throughout the Subject Property. A second reconnaissance was conducted on February 25, 2021 by Justin Stelly and Corbin Hoffmann and the same structures were observed. Sam Waltman and Chad Martin made a tertiary visit on August 25, 2021. No new observations were made.

Photographs of the Subject Property are included in Appendix C.

### **6.1 Methodology and Limiting Conditions**

The site reconnaissance consisted of visual and/or physical observations of the Subject Property and improvements, adjoining sites as viewed from the Subject Property, and the surrounding area based on visual observations made during the trip to and from the Subject Property. At the time of the Subject Property inspection, the weather conditions were sunny and approximately 85 degrees Fahrenheit. The ground was clear, allowing for full visual inspection.

### **6.2 Hazardous Substance Use, Storage, and Disposal**

No hazardous substances or petroleum products were observed on the Subject Property during the site reconnaissance.

### **6.3 Aboveground and Underground Hazardous Substance or Petroleum Product Storage Tanks**

Cardno, Inc. observed multiple aboveground storage tanks (ASTs); located throughout the Subject Property. Three propane ASTs were observed on the Subject Property APN 117-0000-022-00-000 (1-AST) and 130-0000-012-00-000 (2-ASTs); one diesel AST was observed on the Subject Property APN 129-0000-009-00-000; two empty ASTs, two unlabeled ASTs and one unlabeled UST were observed on APN 130-0000-012-00-000. There



was no visible staining around the ASTs or UST located throughout the Subject Property, and they appear unlikely to represent an environmental concern.

## **6.4 Polychlorinated Biphenyls**

Older transformers and other electrical equipment could contain polychlorinated biphenyls (PCBs) at a level that subjects them to regulation by the U.S. Environmental Protection Agency (EPA). PCBs in electrical equipment are controlled by U.S. EPA regulations 40 CFR, Part 761. Under the regulations, there are three categories into which electrical equipment can be classified: (1) less than 50 parts per million (ppm) of PCBs – “*Non-PCB*,” (2) 50 to 500 ppm – “*PCB-Contaminated*,” and (3) greater than 500 ppm – “*PCB-Containing*.” The manufacture, process, or distribution in commerce or use of any PCB in any manner other than in a totally enclosed manner was prohibited after January 1, 1977.

The on-site reconnaissance addressed outdoor transformers that may contain PCBs. Eight pole-mounted transformers were observed throughout the Subject Property. One transformer was observed on the Subject Property APN 117-0000-022-00-000, 128-0000-013-00-000, 129-0000-007-01-000, 129-0000-009-00-000, and 129-0000-024-00-000; and three transformers were observed on APN 130-0000-012-00-000. The transformers are not labeled indicating PCB content. No staining or leakage was observed in the vicinity of the transformers. Based on the good condition of the equipment, the transformers are not expected to represent a significant environmental concern.

Additionally, no other potential PCB-containing equipment (interior transformers, oil-filled switches, hoists, lifts, dock levelers, hydraulic elevators, balers, etc.) was observed on the Subject Property.

## **6.5 Unidentified Substance Containers**

Cardno, Inc. observed four silos, located throughout the Subject Property. One silo was observed on the Subject Property APN 129-0000-009-00-000 and 129-0000-024-00-000; and two silos were observed on APN 130-0000-012-00-000. Based on the good condition of the silos and no observed visible staining present, the silos appear unlikely to represent an environmental concern.

## **6.6 Non-hazardous Solid Waste**

Cardno, Inc. observed two trash debris piles on the north central portion of the Subject Property APN 116-0000-012-01-000, which do not represent an environmental concern.

## **6.7 Wastewater**

Cardno, Inc. did not observe evidence of wastewater generated, treated or discharged (including sanitary sewage and storm water) on the Subject Property or to adjoining properties.

Cardno, Inc. did observe multiple freshwater ponds on and adjacent to the Subject Property.

## **6.8 Sumps**

Cardno, Inc. did not observe evidence of sumps or oil/water separators on the Subject Property.

## **6.9 Septic Systems**

Cardno, Inc. did not observe evidence of a septic system on the Subject Property.

## **6.10 Storm water Management System**

Cardno, Inc. did not observe evidence of surface water, surface impoundments, retention ponds, dry wells, or other storm water management systems at the Subject Property.

Storm water from the Subject Property either percolates into the ground or runs off the Subject Property to adjacent sites.

## 6.11 Wells

Cardno, Inc. did not observe evidence of wells on the Subject Property.

# 7 Interviews

Persons were interviewed to obtain information regarding RECs in connection with the Subject Property. Pertinent information (if any) identified during those interviews are discussed in the respective sections of this report.

### Record of Communication

Communication with	Date	Summary of Communication
Kentucky Energy & Environmental Cabinet, Department of Environmental Protection (KDEP)	September 17, 2019	Cardno, Inc. contacted the KDEP regarding records for the Subject Property. No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the Subject Property were on file with the KDEP.
Kentucky Cabinet for Health and Family Services, Department for Public Health (KDHP)	September 17, 2019	Cardno, Inc. contacted the KDHP regarding records for the Subject Property. No records of any violations were available for the Subject Property.
Harrison County Fire District	September 17, 2019	Cardno, Inc. contacted Fire Chief Charles Carson and no records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the Subject Property were on file with the agency.
Planning and Community Development	September 17, 2019	Cardno, Inc. contacted the Planning and Community Development Department regarding records for the Subject Property and at the time this report was prepared, the information/records have not been received from the agency.

# 8 Other Environmental Conditions

## 8.1 Asbestos-Containing Material

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful property such as thermal insulation, chemical and thermal stability, and high tensile strength. The Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.1101 requires certain construction materials to be presumed to contain asbestos, for purposes of this regulation. All thermal system insulation (TSI), surfacing material, and asphalt/vinyl flooring that are present in a building constructed prior to 1981 and have not been appropriately tested are *presumed asbestos-containing material* (PACM).

Due to the commercial nature of use of the Subject Property, ACMs were not considered within the scope of this assessment.

## 8.2 Radon

Radon is a colorless, odorless, naturally occurring, radioactive, inert, gaseous element formed by radioactive decay of radium (Ra) atoms. The U.S. EPA has prepared a map to assist national, state, and local organizations to target their resources and to implement radon-resistant building codes. The map divides the country into three Radon Zones, as detailed in the following table.

### U.S. EPA Radon Zones

Zones	Average Predicted Radon Levels	Potential
Zone 1	Exceed 4.0 pCi/L	Highest
Zone 2	Between 2.0 and 4.0 pCi/L	Moderate
Zone 3	Less than 2.0 pCi/L	Low

It is important to note that the U.S. EPA has found homes with elevated levels of radon in all three zones, and the U.S. EPA recommends site-specific testing to determine radon levels at a specific location; however, the map does give a valuable indication of the propensity of radon gas accumulation in structures.

Radon sampling was not conducted as part of this assessment. Review of the U.S. EPA Map of Radon Zones places the Subject Property in Zone 2. Based upon the radon zone classification, radon is unlikely to represent an environmental concern. The EPA Map of Radon Zones for Kentucky is provided in Appendix G.

### 8.3 Lead in Drinking Water

According to available information, a public water system operated by the Harrison County Water Association serves the Subject Property. According to the 2018 Water Quality Report, there are two sources used for the public water for Fleming County are provided by the Morehead Utility Plant Board, which obtains its source from the Licking River, and the Greater Fleming County Regional Water Commission, which uses groundwater supplied by three wells in the northwestern Lewis County. According to the 2018 Water Quality Report, water supplied to the Subject Property is in compliance with all state and federal regulations pertaining to drinking water standards, including lead and copper.

Information specific to the Subject Property regarding the depth to groundwater and direction of groundwater flow was not available for the subject area; however, according to information obtained from online research, depth to the high water table is anticipated between 14 and 24 feet below ground surface (bgs).

### 8.4 Lead-Based Paint

Lead is a highly toxic metal that affects virtually every system of the body. Lead-based paint (LBP) is defined as any paint, varnish, stain, or other applied coating that has 1 mg/cm<sup>2</sup> (or 5,000 µg/g or 0.5% by weight) or more of lead. Congress passed the Residential Lead-Based Paint Hazard Reduction Act of 1992, also known as “Title X,” to protect families from exposure to lead from paint, dust, and soil. Under Section 1017 of Title X, intact LBP on most walls and ceilings is not considered a “hazard,” although the condition of the paint should be monitored and maintained to ensure that it does not become deteriorated. Further, Section 1018 of this law directed the U.S. Department of Housing and Urban Development (HUD) and the U.S. EPA to require the disclosure of known information on LBP and LBP hazards before the sale or lease of most housing built before 1978.

Due to the agricultural nature of use of the Subject Property, LBP was not considered within the scope of this assessment.

### 8.5 Mold Screening

Molds are microscopic organisms found virtually everywhere, indoors and outdoors. Mold will grow and multiply under the right conditions, needing only sufficient moisture (e.g., in the form of very high humidity, condensation, or water from a leaking pipe), and organic material (e.g., ceiling tile, drywall, paper, or natural fiber carpet padding).

Cardno, Inc. observed no indications of water damage or mold growth during Cardno, Inc.’s visual assessment.

## 8.6 Vapor Encroachment

Cardno, Inc. did not conduct a limited screening for potential vapor encroachment conditions (VECs) that may affect the Subject Property. A VEC screening would focus on the current and historical usage of the Subject Property and also used the aforementioned regulatory database report provided by EDR to evaluate identified chemicals of concern, including petroleum hydrocarbons. If the client should choose to further evaluate the potential VECs, Cardno, Inc. can provide those services accordingly. Cardno, Inc. identified no conditions at around the Subject Property, however, that appear to represent a concern in relation to soil vapor.

## 9 References

---

ASTM International (ASTM). *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation E 1527-13*, dated November 2005.

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Environmental Risk Information Services (ERIS). Database Report - Radius - Linear Reports; Order Number 21021200299, dated February 18, 2021.

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United States Department of Agriculture (USDA) Soil Conservation Service (SCS) Soil Survey website, <http://websoilsurvey.sc.egov.usda.gov/App/>, accessed September 17, 2021.

United States Geological Survey (USGS) Interactive Geologic Map of Kentucky, <http://ngmdb.usgs.gov/maps/>, accessed September 17, 2021.

Harrison County Water Association. *Water Quality Report*, dated 2018.

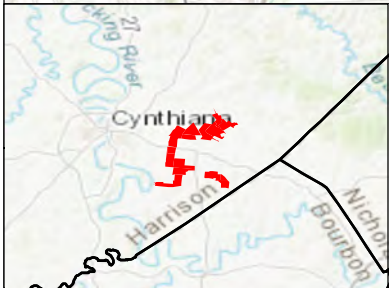
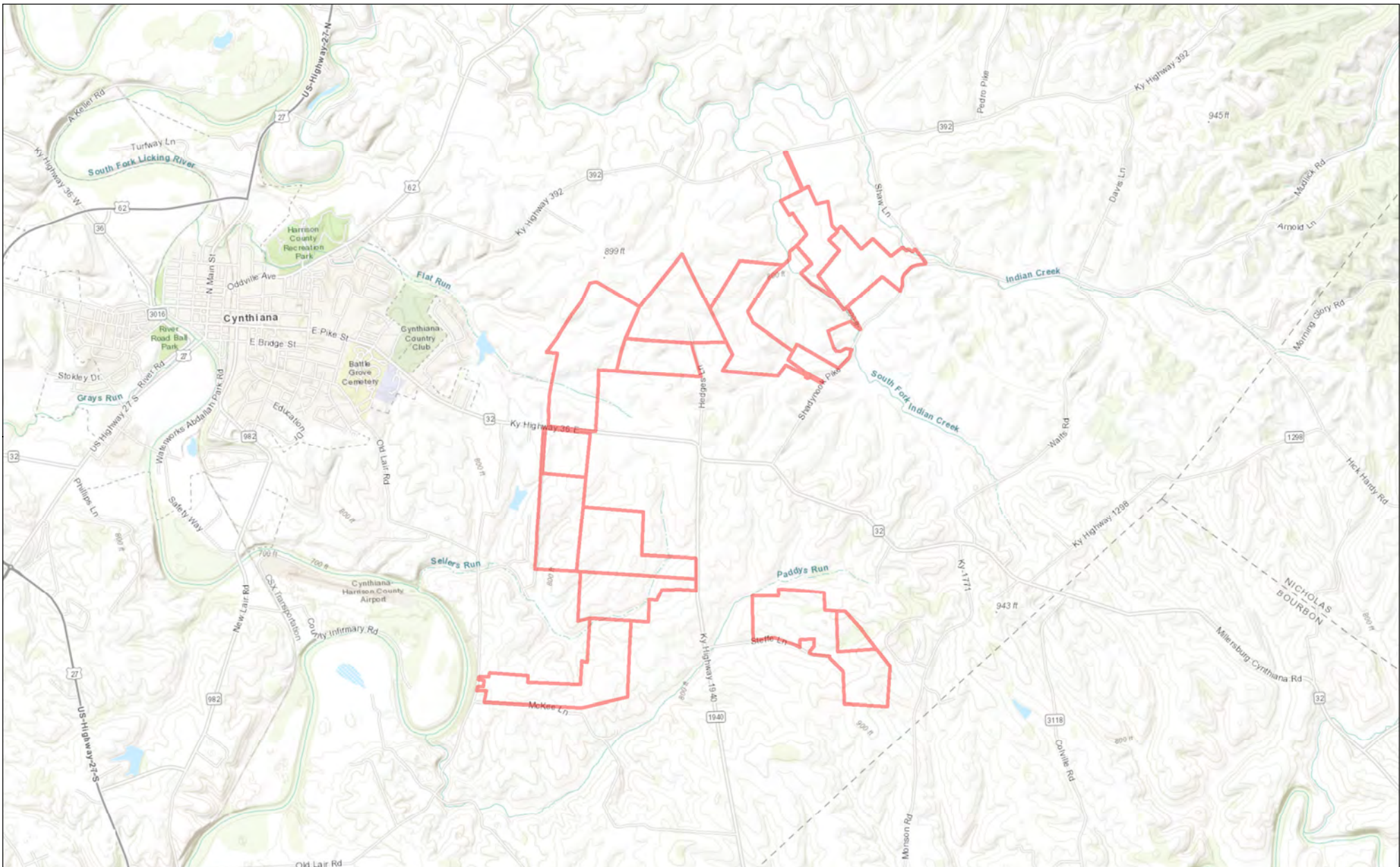
Blue Moon Solar – Harrison County, Kentucky

Appendix

A

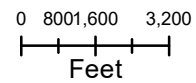
Site Vicinity Map





**Legend**

 Project Boundary



**RECURRENT ENERGY**

Blue Moon Energy Project

Figure 1: Site Vicinity Map

Date:	Project No:	Figure No:
Sept 2021	E320201803	

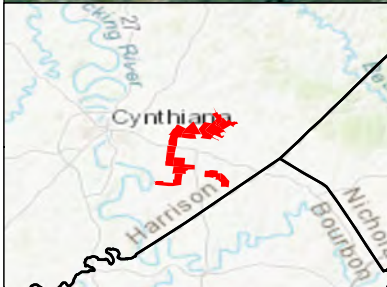
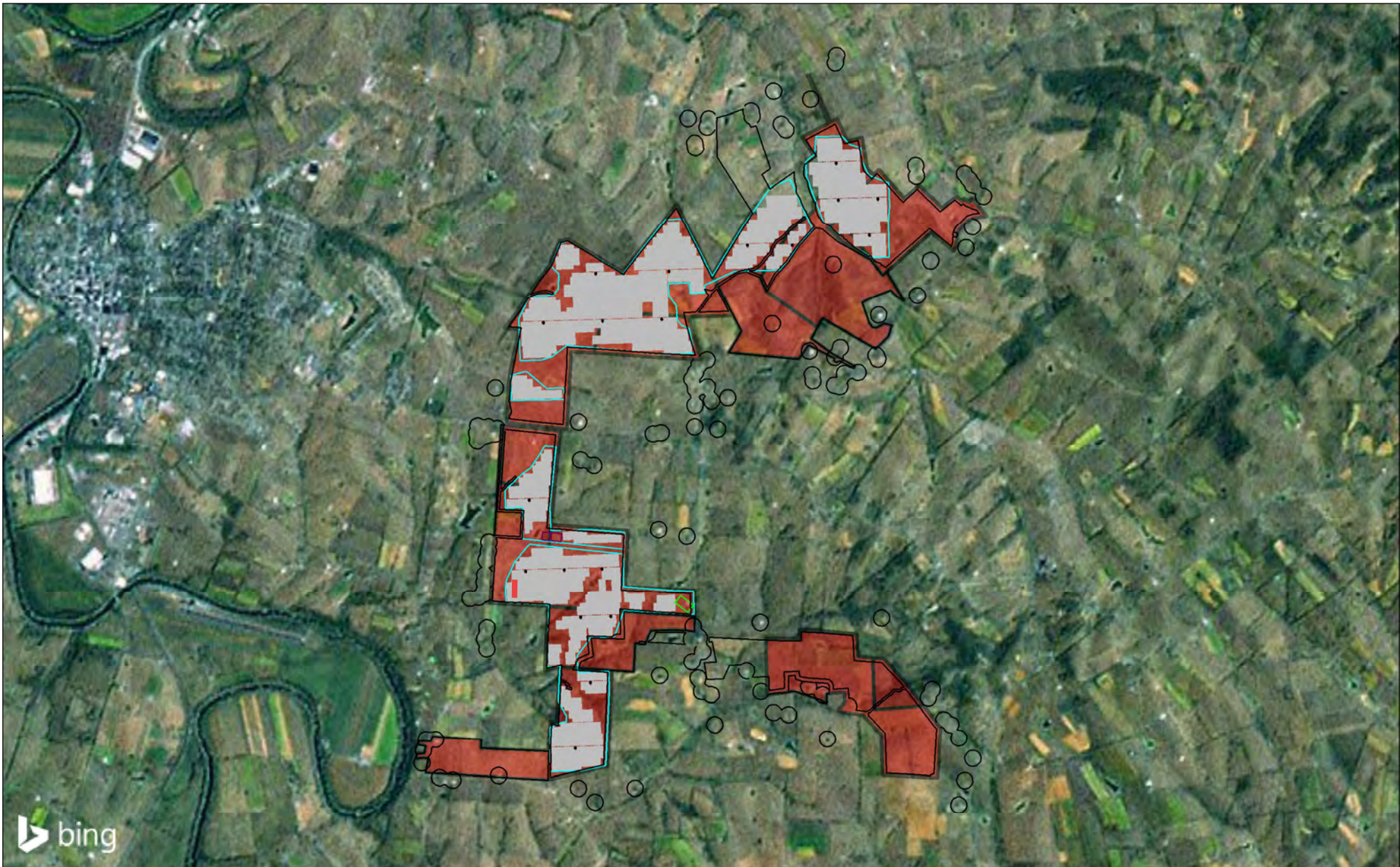


Blue Moon Solar – Harrison County, Kentucky

Appendix

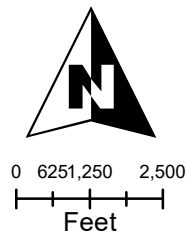
# B

Site Plan



**Legend**

 **Project Boundary**



**RECURRENT ENERGY**

Blue Moon Energy Project

Figure 2: Site Map

Date: Sept 2021	Project No: E320201803	Figure No:
--------------------	---------------------------	------------

Blue Moon Solar – Harrison County, Kentucky

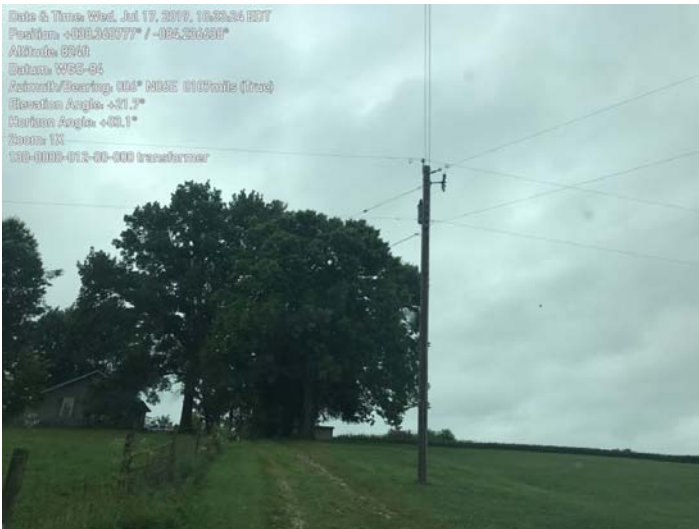
Appendix

C

Subject Property Photographs



Date & Time: Wed, Jul 17, 2019, 16:36:44 EDT  
 Position: +48.146277° / -086.266480°  
 Altitude: 836ft  
 Datum: WGS-84  
 Azimuth/Bearing: 304° N10SE 0100mils (True)  
 Elevation Angle: +01.7°  
 Horizon Angle: +00.1°  
 Zoom: 1X  
 130-0000-012-00-000 transformer



Date & Time: Wed, Jul 17, 2019, 16:34:26 EDT  
 Position: +48.146188° / -086.26598°  
 Altitude: 841ft  
 Datum: WGS-84  
 Azimuth/Bearing: 133° S133E 0320mils (True)  
 Elevation Angle: +05.6°  
 Horizon Angle: -02.2°  
 Zoom: 1X  
 130-0000-012-00-000 shed



Date & Time: Wed, Jul 17, 2019, 16:36:42 EDT  
 Position: +48.146271° / -086.266277°  
 Altitude: 837ft  
 Datum: WGS-84  
 Azimuth/Bearing: 000° S00E 1742mils (True)  
 Elevation Angle: -00.1°  
 Horizon Angle: -00.6°  
 Zoom: 6X  
 130-0000-012-00-000 ASTs



Date & Time: Wed, Jul 17, 2019, 16:37:02 EDT  
 Position: +48.146088° / -086.266784°  
 Altitude: 832ft  
 Datum: WGS-84  
 Azimuth/Bearing: 085° S085E 0301mils (True)  
 Elevation Angle: +02.7°  
 Horizon Angle: +00.1°  
 Zoom: 1X  
 130-0000-012-00-000 propane tank



Date & Time: Wed, Jul 17, 2019, 16:36:18 EDT  
 Position: +48.146491° / -086.266464°  
 Altitude: 844ft  
 Datum: WGS-84  
 Azimuth/Bearing: 064° N064E 0100mils (True)  
 Elevation Angle: +04.9°  
 Horizon Angle: +01.2°  
 Zoom: 1X  
 130-0000-012-00-000 propane tank, empty ASTs, storage



Date & Time: Wed, Jul 17, 2019, 16:37:07 EDT  
 Position: +48.146082° / -086.266784°  
 Altitude: 834ft  
 Datum: WGS-84  
 Azimuth/Bearing: 192° S192E 0316mils (True)  
 Elevation Angle: +04.4°  
 Horizon Angle: +01.2°  
 Zoom: 1X  
 130-0000-012-00-000 barn/shed



**APPENDIX C: SITE PHOTOGRAPHS**

Project No. E319202000





Date & Time: Wed, Jul 17, 2019, 10:41:57 EDT  
Position: +499.348546° / -106.233646°  
Altitude: 644ft  
Datum: WGS-84  
Azimuth/Bearing: 135° SSW 3297mils (True)  
Elevation Angle: +02.2°  
Horizon Angle: +01.1°  
Zoom: 1X  
130-0000-072-00-000 hay storage



Date & Time: Wed, Jul 17, 2019, 10:40:58 EDT  
Position: +499.348546° / -106.233646°  
Altitude: 650ft  
Datum: WGS-84  
Azimuth/Bearing: 135° SSW 3297mils (True)  
Elevation Angle: +02.2°  
Horizon Angle: +01.5°  
Zoom: 1X  
130-0000-072-00-000 hay storage



Date & Time: Wed, Jul 17, 2019, 10:46:00 EDT  
Position: +499.349161° / -106.233618°  
Altitude: 650ft  
Datum: WGS-84  
Azimuth/Bearing: 135° SSW 3297mils (True)  
Elevation Angle: +02.2°  
Horizon Angle: +01.1°  
Zoom: 1X  
130-0000-012-00-000 barn, transformer



Date & Time: Wed, Jul 17, 2019, 12:46:07 EDT  
Position: +499.349206° / -106.233610°  
Altitude: 650ft  
Datum: WGS-84  
Azimuth/Bearing: 135° SSW 3297mils (True)  
Elevation Angle: +02.2°  
Horizon Angle: +01.7°  
Zoom: 2X  
129-0000-024-00-000 transformer



Date & Time: Wed, Jul 17, 2019, 12:50:24 EDT  
Position: +038.392385° / -084.226539°  
Altitude: 851ft  
Datum: WGS-84  
Azimuth/Bearing: 168° S12E 2987mils (True)  
Elevation Angle: +05.2°  
Horizon Angle: +00.0°  
Zoom: 1X  
129-0000-024-00-000 barn



Date & Time: Wed, Jul 17, 2019, 12:51:03 EDT  
Position: +038.392385° / -084.226539°  
Altitude: 852ft  
Datum: WGS-84  
Azimuth/Bearing: 213° S43W 3789mils (True)  
Elevation Angle: +00.0°  
Horizon Angle: +00.0°  
Zoom: 1X  
129-0000-024-00-000 shed



### APPENDIX C: SITE PHOTOGRAPHS

Project No. E319202000





Date & Time: Wed, Jul 17, 2019, 12:56:01 EDT  
Position: +038.3726371° / -094.2268111°  
Altitude: 866ft  
Datum: WGS-84  
Azimuth/Bearing: 338° SSW 4811mils (True)  
Elevation Angle: +01.2°  
Horizon Angle: +00.2°  
Zoom: 1X  
117-0000-016-00-000 shed



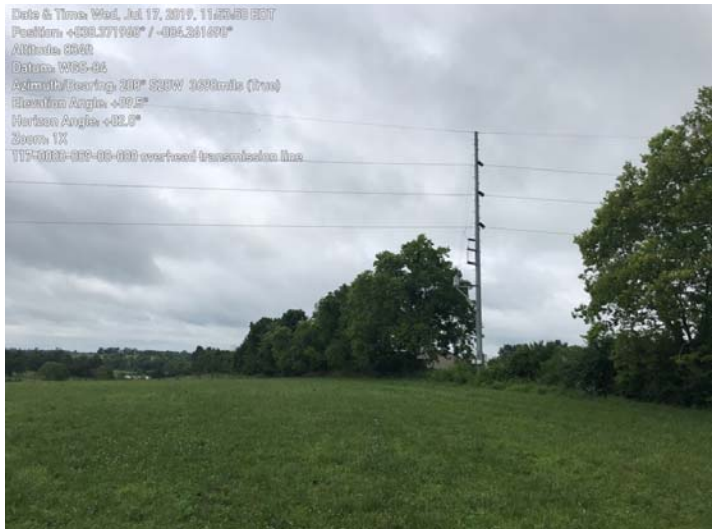
Date & Time: Wed, Jul 17, 2019, 12:56:01 EDT  
Position: +038.3726371° / -094.2268111°  
Altitude: 826ft  
Datum: WGS-84  
Azimuth/Bearing: 338° SSW 4811mils (True)  
Elevation Angle: +01.2°  
Horizon Angle: +00.2°  
Zoom: 2X  
117-0000-016-00-000 shed



Date & Time: Wed, Jul 17, 2019, 11:50:51 EDT  
Position: +038.372827° / -094.261312°  
Altitude: 808ft  
Datum: WGS-84  
Azimuth/Bearing: 109° S71E 1938mils (True)  
Elevation Angle: -00.7°  
Horizon Angle: +00.5°  
Zoom: 8X  
117-0000-009-00-000 propane tanks



Date & Time: Wed, Jul 17, 2019, 11:50:50 EDT  
Position: +038.371946° / -094.261491°  
Altitude: 856ft  
Datum: WGS-84  
Azimuth/Bearing: 318° S28W 4688mils (True)  
Elevation Angle: +00.2°  
Horizon Angle: +02.6°  
Zoom: 1X  
117-0000-019-00-000 overhead transmission line



Date & Time: Wed, Jul 17, 2019, 11:52:46 EDT  
Position: +038.377755° / -094.231227°  
Altitude: 830ft  
Datum: WGS-84  
Azimuth/Bearing: 130° S70E 1956mils (True)  
Elevation Angle: +01.2°  
Horizon Angle: +01.6°  
Zoom: 2X  
117-0000-009-00-000 overhead transmission line, barn



Date & Time: Wed, Jul 17, 2019, 11:52:51 EDT  
Position: +038.358084° / -094.259977°  
Altitude: 819ft  
Datum: WGS-84  
Azimuth/Bearing: 125° S85E 2023mils (True)  
Elevation Angle: +06.7°  
Horizon Angle: -00.8°  
Zoom: 2X  
117-0000-022-00-000 garage



**APPENDIX C: SITE PHOTOGRAPHS**

Project No. E319202000





Date & Time: Wed, Jul 17, 2019, 11:24:05 EDT  
Position: +436.340000° / -084.249104°  
Altitude: 856ft  
Datum: WGS-84  
Azimuth/Bearing: 092° S88E 1630mils (True)  
Elevation Angle: +02.4°  
Horizon Angle: -00.8°  
Zoom: 8X  
117-0000-022-00-000 propane tank



Date & Time: Wed, Jul 17, 2019, 11:25:44 EDT  
Position: +436.340000° / -084.249104°  
Altitude: 856ft  
Datum: WGS-84  
Azimuth/Bearing: 102° S88E 1610mils (True)  
Elevation Angle: +04.4°  
Horizon Angle: +00.2°  
Zoom: 8X  
117-0000-022-00-000 propane tank



Date & Time: Wed, Jul 17, 2019, 11:28:33 EDT  
Position: +436.365000° / -084.262600°  
Altitude: 855ft  
Datum: WGS-84  
Azimuth/Bearing: 077° N77E 1369mils (True)  
Elevation Angle: +04.2°  
Horizon Angle: +01.7°  
Zoom: 10X  
117-0000-022-00-000 barn



Date & Time: Wed, Jul 17, 2019, 11:30:07 EDT  
Position: +436.350000° / -084.261000°  
Altitude: 856ft  
Datum: WGS-84  
Azimuth/Bearing: 092° S88E 1310mils (True)  
Elevation Angle: +03.9°  
Horizon Angle: +01.6°  
Zoom: 3X  
117-0000-012-00-000 barn



Date & Time: Wed, Jul 17, 2019, 10:55:34 EDT  
Position: +436.340000° / -084.245113°  
Altitude: 856ft  
Datum: WGS-84  
Azimuth/Bearing: 213° S93W 3787mils (True)  
Elevation Angle: +05.2°  
Horizon Angle: -02.5°  
Zoom: 1X  
130-0000-003-00-000 barn



Date & Time: Wed, Jul 17, 2019, 11:46:07 EDT  
Position: +436.340000° / -084.249104°  
Altitude: 856ft  
Datum: WGS-84  
Azimuth/Bearing: 270° N90W 4800mils (True)  
Elevation Angle: +01.3°  
Horizon Angle: -00.8°  
Zoom: 4X  
130-0000-003-00-000 barn



**APPENDIX C: SITE PHOTOGRAPHS**

Project No. E319202000





Date & Time: Wed, Jul 17, 2019, 12:00:47 EDT  
Position: +038.378540° / -084.258439°  
Altitude: 840ft  
Datum: WGS-84  
Azimuth/Bearing: 334° S84E 1.57mils (True)  
Elevation Angle: +02.2°  
Horizon Angle: +02.2°  
Zoom: 1X  
116-0000-012-01-000 barn



Date & Time: Wed, Jul 17, 2019, 12:00:43 EDT  
Position: +038.378540° / -084.258439°  
Altitude: 840ft  
Datum: WGS-84  
Azimuth/Bearing: 354° N06W 4.213mils (True)  
Elevation Angle: -12.4°  
Horizon Angle: +01.6°  
Zoom: 1X  
116-0000-012-01-000 trash pile



Date & Time: Wed, Jul 17, 2019, 12:04:28 EDT  
Position: +038.378634° / -084.258411°  
Altitude: 840ft  
Datum: WGS-84  
Azimuth/Bearing: 300° S00W 3.672mils (True)  
Elevation Angle: +08.2°  
Horizon Angle: +08.2°  
Zoom: 1X  
116-0000-012-01-000 barn



Date & Time: Wed, Jul 17, 2019, 12:04:27 EDT  
Position: +038.378594° / -084.258439°  
Altitude: 840ft  
Datum: WGS-84  
Azimuth/Bearing: 278° N08W 4.692mils (True)  
Elevation Angle: -08.4°  
Horizon Angle: +01.9°  
Zoom: 1X  
116-0000-012-01-000 trash



Date & Time: Wed, Jul 17, 2019, 12:05:17 EDT  
Position: +038.387731° / -084.258524°  
Altitude: 861ft  
Datum: WGS-84  
Azimuth/Bearing: 068° N68E 1.209mils (True)  
Elevation Angle: +06.9°  
Horizon Angle: +01.6°  
Zoom: 1X  
129-0000-009-00-000 residence: unoccupied



Date & Time: Wed, Jul 17, 2019, 12:07:31 EDT  
Position: +038.387614° / -084.258440°  
Altitude: 861ft  
Datum: WGS-84  
Azimuth/Bearing: 269° S69W 4.782mils (True)  
Elevation Angle: +01.5°  
Horizon Angle: +01.6°  
Zoom: 1X  
129-0000-009-00-000 house



### APPENDIX C: SITE PHOTOGRAPHS

Project No. E319202000







**APPENDIX C: SITE PHOTOGRAPHS**

Project No. E319202000



Appendix

D

User Provided Documentation  
(intentionally left blank)

Blue Moon Solar – Harrison County, Kentucky

Appendix

E

Regulatory Database Report





# DATABASE REPORT

**Project Property:** *E319202000 Blue Moon Solar  
n/a  
Cynthiana KY*

**Project No:**

**Report Type:** *Quote - Custom Radius - Linear Reports*

**Order No:** *21021200299*

**Requested by:** *Cardno Inc.*

**Date Completed:** *February 18, 2021*

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# Executive Summary

## Property Information:

**Project Property:** *E319202000 Blue Moon Solar  
n/a Cynthiana KY*

**Project No:**

**Coordinates:**

**Latitude:** 38.37848012  
**Longitude:** -84.24408927  
**UTM Northing:** 4,251,405.60  
**UTM Easting:** 740,734.24  
**UTM Zone:** 16S

**Elevation:** 902 FT

## Order Information:

**Order No:** 21021200299  
**Date Requested:** February 12, 2021  
**Requested by:** Cardno Inc.  
**Report Type:** Quote - Custom Radius - Linear Reports

## Historicals/Products:

**ERIS Xplorer** [ERIS Xplorer](#)  
**Excel Add-On** Excel Add-On

## Executive Summary: Report Summary

<i>Database</i>	<i>Searched</i>	<i>Project Property</i>
<b><u>Standard Environmental Records</u></b>		
<b>Federal</b>		
FRP	Y	0
NPL	Y	0
PROPOSED NPL	Y	0
DELETED NPL	Y	0
SEMS	Y	0
SEMS ARCHIVE	Y	0
ODI	Y	0
CERCLIS	Y	0
IODI	Y	0
CERCLIS NFRAP	Y	0
CERCLIS LIENS	Y	0
RCRA CORRACTS	Y	0
RCRA TSD	Y	0
RCRA LQG	Y	0
RCRA SQG	Y	0
RCRA VSQG	Y	0
RCRA NON GEN	Y	0
FED ENG	Y	0
FED INST	Y	0
ERNS 1982 TO 1986	Y	0
ERNS 1987 TO 1989	Y	0
ERNS	Y	0
FED BROWNFIELDS	Y	0
FEMA UST	Y	0
REFN	Y	0
BULK TERMINAL	Y	0
SEMS LIEN	Y	0

<b>Database</b>	<b>Searched</b>	<b>Project Property</b>
SUPERFUND ROD	Y	0
<b>State</b>		
BROWNFIELDS	Y	0
SHWS	Y	0
DSHW	Y	0
SWF/LF	Y	0
SB193	Y	0
PSTEAF	Y	0
UST	Y	0
DELISTED STORAGE TANK	Y	0
ENG	Y	0
INST	Y	0
VCP	Y	0
BROWNFIELD INV	Y	0
<b>Tribal</b>		
INDIAN LUST	Y	0
INDIAN UST	Y	0
DELISTED ILST	Y	0
DELISTED IUST	Y	0
<b>County</b>	<b>No County standard environmental record sources available for this State.</b>	
<b><u>Additional Environmental Records</u></b>		
<b>Federal</b>		
PFAS NPL	Y	0
FINDS/FRS	Y	0
TRIS	Y	0
PFAS TRI	Y	0
PFAS WATER	Y	0
HMIRS	Y	0
NCDL	Y	0
TSCA	Y	0
HIST TSCA	Y	0
FTTS ADMIN	Y	0
FTTS INSP	Y	0
PRP	Y	0
SCRD DRYCLEANER	Y	0
ICIS	Y	0
FED DRYCLEANERS	Y	0
DELISTED FED DRY	Y	0



<b>Database</b>	<b>Searched</b>	<b>Project Property</b>
FUDS	Y	0
PIPELINE INCIDENT	Y	0
MLTS	Y	0
HIST MLTS	Y	0
MINES	Y	0
ALT FUELS	Y	0
SSTS	Y	0
PCB	Y	0

**State**

SPILLS Y 0

**Tribal**

*No Tribal additional environmental record sources available for this State.*

**County**

*No County additional environmental record sources available for this State.*

---

**Total:** 0

## Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Distance (mi/ft)</i>	<i>Elev Diff (ft)</i>	<i>Page Number</i>
--------------------	-----------	--------------------------	----------------	-----------------------------	---------------------------	------------------------

No records found in the selected databases for the project property.

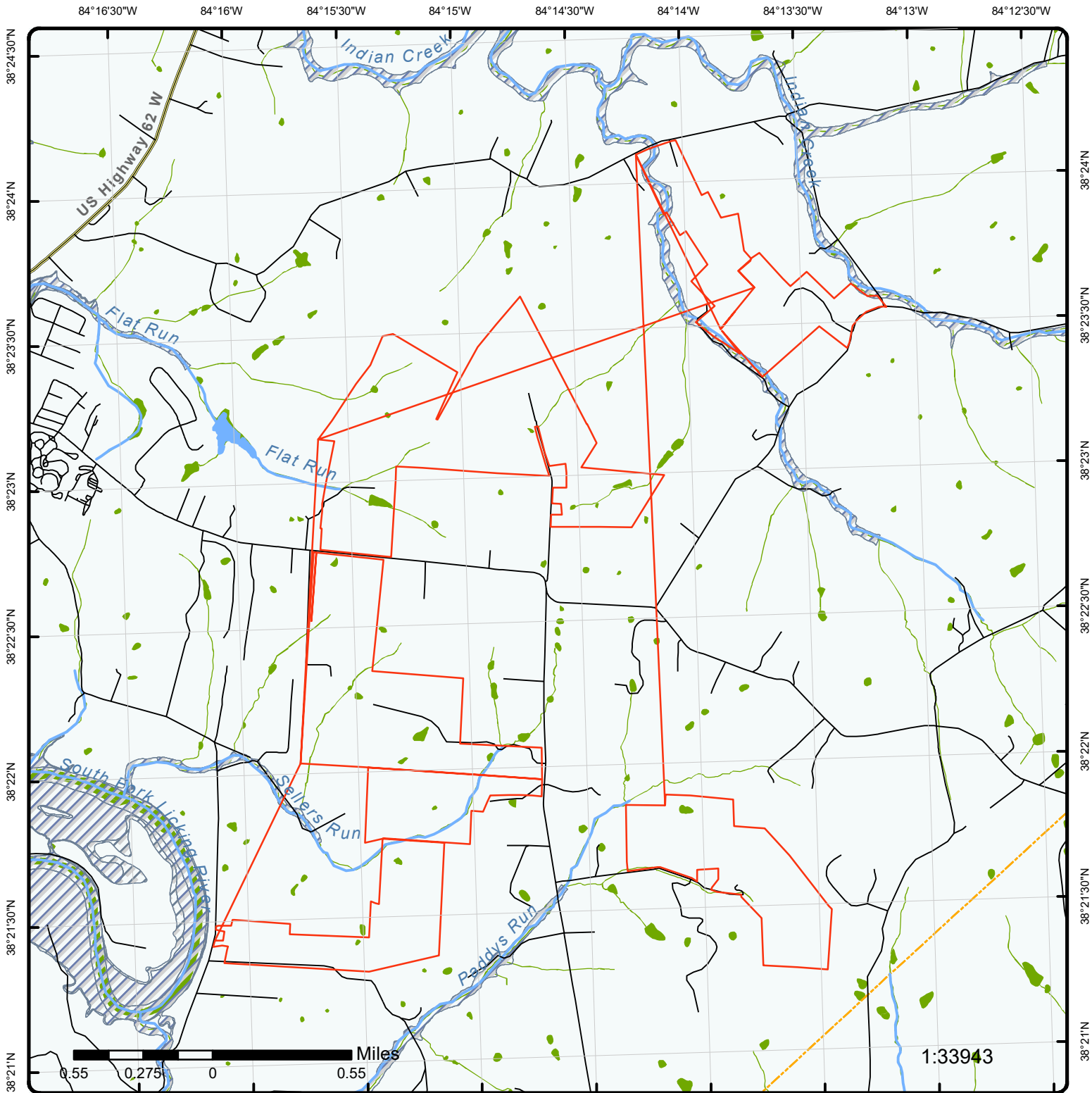
## Executive Summary: Site Report Summary - Surrounding Properties

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Distance (mi/ft)</i>	<i>Elev Diff (ft)</i>	<i>Page Number</i>
--------------------	-----------	--------------------------	----------------	-----------------------------	-------------------------------	--------------------

No records found in the selected databases for the surrounding properties.

## Executive Summary: Summary by Data Source

No records found in the selected databases for the project property or surrounding properties.



**Grid**

Order Number: 21021200299

Address: n/a, Cynthiana, KY



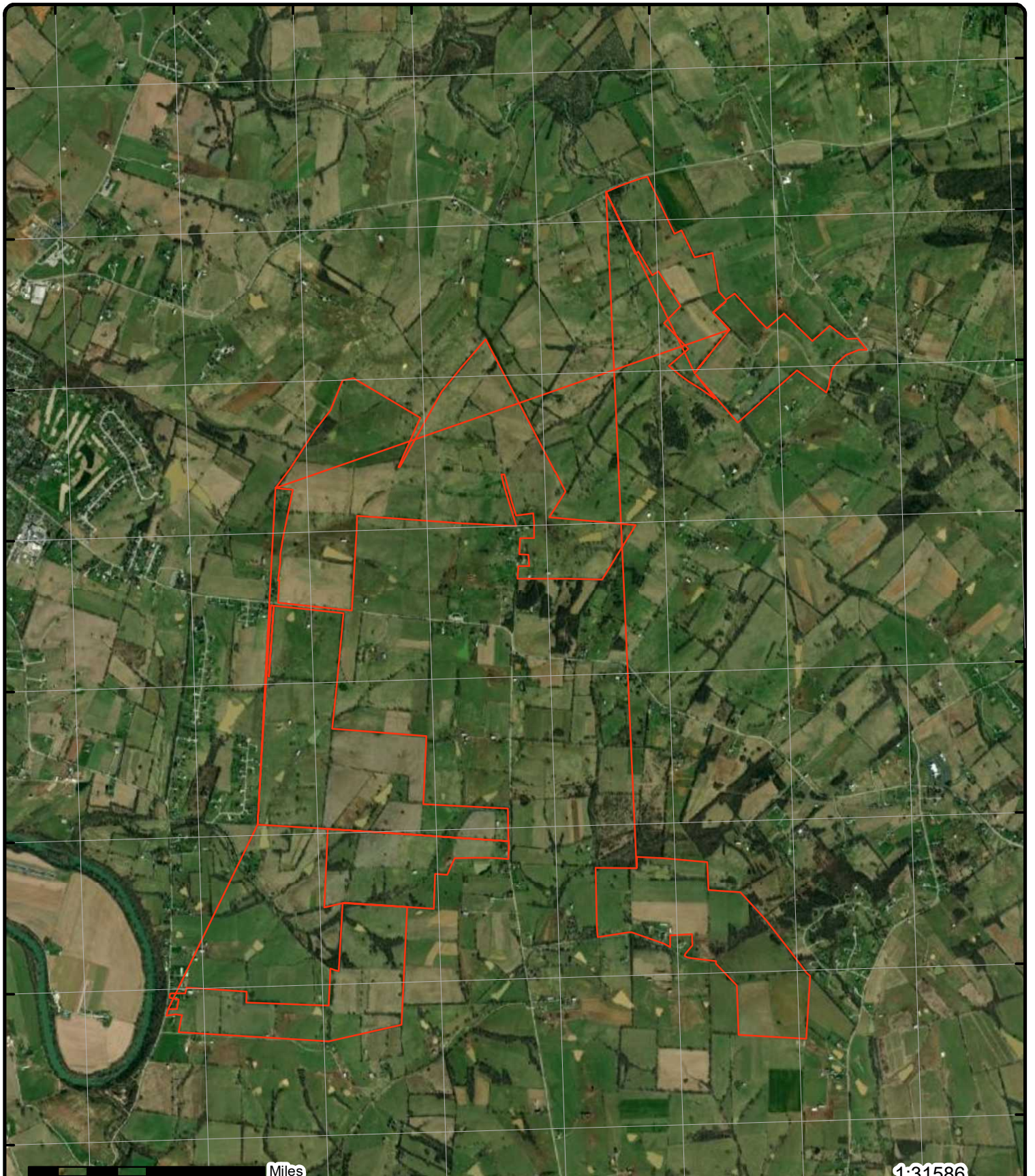
Project Property	Rails	State Boundary	FWS Special Designation Areas
Buffer Outline	Major Highways	National Priority List Sites	State Brownfield Sites
Eris Sites with Higher Elevation	Major Highways Ramps	National Wetland	State Brownfield Areas
Eris Sites with Same Elevation	Major Roads	Indian Reserve Land	State Superfund Areas: Dept. of Defense
Eris Sites with Lower Elevation	Major Roads Ramps	100 Year Flood Zone	State Superfund Areas: NPL
Eris Sites with Unknown Elevation	Secondary Roads	500 Year Flood Zone	WQARF Areas
County Boundary	Secondary Roads Ramps		Federal Lands: Dept. of Defense (owned/administered areas)
	Local Roads and Ramps		



84°16'30"W 84°16'W 84°15'30"W 84°15'W 84°14'30"W 84°14'W 84°13'30"W 84°13'W 84°12'30"W

38°24'30"N  
38°24'N  
38°23'30"N  
38°23'N  
38°22'30"N  
38°22'N  
38°21'30"N  
38°21'N

38°24'30"N  
38°24'N  
38°23'30"N  
38°23'N  
38°22'30"N  
38°22'N  
38°21'30"N  
38°21'N



1:31586

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Aerial** Year: 2018

Address: n/a, Cynthiana, KY

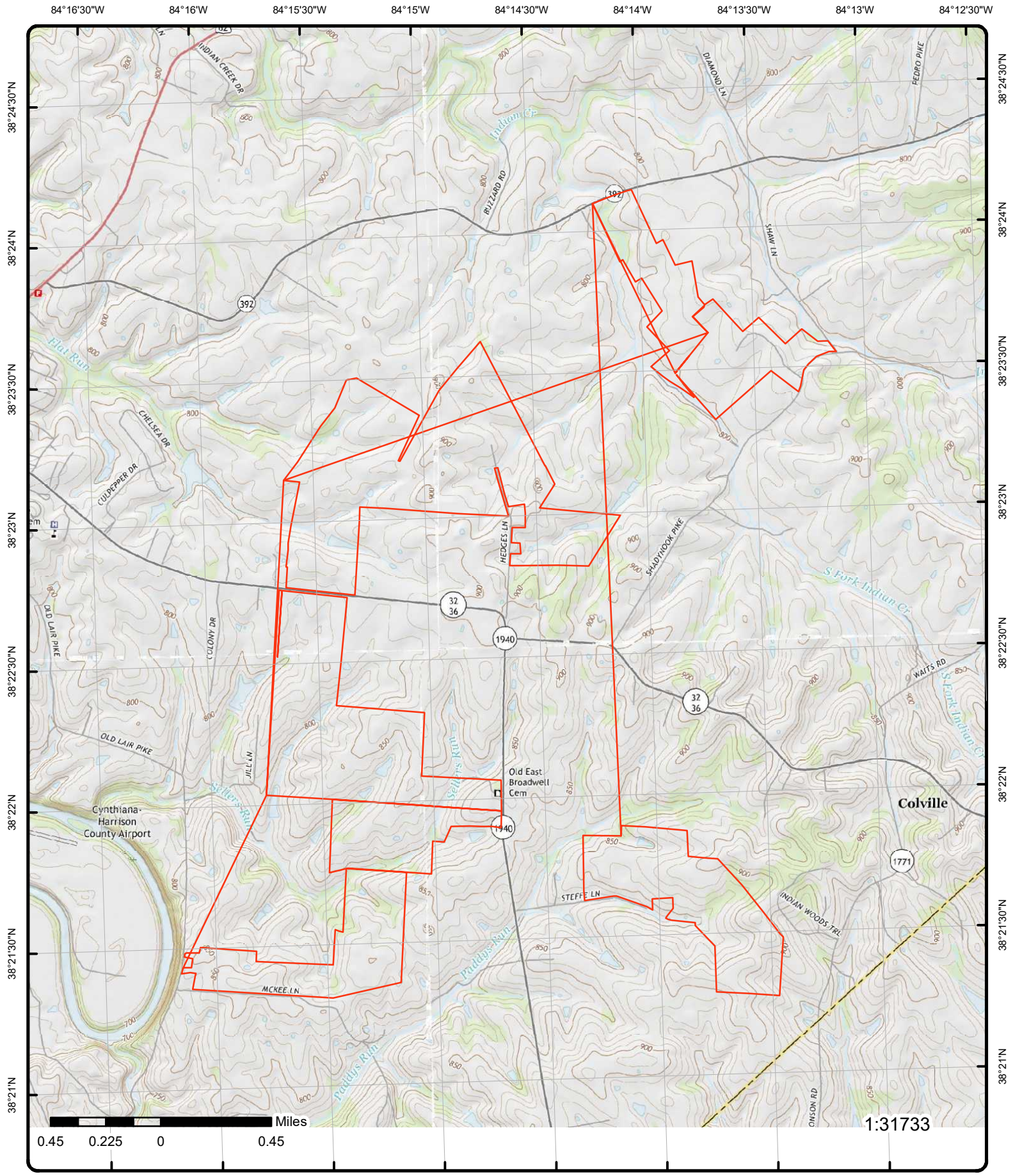
Source: ESRI World Imagery

Order Number: 21021200299



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# Topographic Map

Year: 2016

Address: n/a, KY

Quadrangle(s): Cynthiana, KY; Millersburg, KY; Shady Nook, KY; Shawhan, KY

Source: USGS Topographic Map

Order Number: 21021200299



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# Detail Report

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction</i>	<i>Distance (mi/ft)</i>	<i>Elev/Diff (ft)</i>	<i>Site</i>	<i>DB</i>
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No records found in the selected databases for the project property or surrounding properties.

# Unplottable Summary

Total: 7 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
ERNS		HIGHWAY 36	CARLISLE KY	40311	806722481
ERNS		HWY 36	CARLISLE KY	40311	807133482
RCRA NON GEN	JOCKEY INTERNATIONAL, INC.	HIGHWAY 36	CARLISLE KY	40311	810121821
RCRA NON GEN	JONES SHOP SERVICE STATION	HWY 32/36	CYNTHIANA KY	41031	810144328
UST	Connersville Grocery	Hwy 32	Cynthiana KY	41031	819774542
UST	Service Station 208d BP 009	KY 36	Carlisle KY	40311	819769706
UST	Larrys Bar & Grill	KY 36	Cynthiana KY	41031	819765266



# Unplottable Report

**Site:** HIGHWAY 36 CARLISLE KY 40311 ERNS

<b>NRC Report No:</b>	497472	<b>Latitude Degrees:</b>	
<b>Type of Incident:</b>	FIXED	<b>Latitude Minutes:</b>	
<b>Incident Cause:</b>	UNKNOWN	<b>Latitude Seconds:</b>	
<b>Incident Date:</b>	9/3/1999 1:00:00 AM	<b>Longitude Degrees:</b>	
<b>Incident Location:</b>		<b>Longitude Minutes:</b>	
<b>Incident Dtg:</b>	OCCURRED	<b>Longitude Seconds:</b>	
<b>Distance from City:</b>	1.5	<b>Lat Quad:</b>	
<b>Distance Units:</b>	MI	<b>Long Quad:</b>	
<b>Direction from City:</b>	W	<b>Location Section:</b>	
<b>Location County:</b>	NICHOLAS	<b>Location Township:</b>	
<b>Potential Flag:</b>		<b>Location Range:</b>	
<b>Year:</b>	Year 1999 Reports		
<b>Description of Incident:</b>	CHLORINE SILNER / UNDER INVESTIGATION / DO NOT KNOW IF MATERIAL WASRELEASED		

## Material Spill Information

<b>Chris Code:</b>	CLX	<b>Unit of Measure:</b>	UNKNOWN AMOUNT
<b>CAS No:</b>		<b>If Reached Water:</b>	YES
<b>UN No:</b>		<b>Amount in Water:</b>	0
<b>Name of Material:</b>	CHLORINE	<b>Unit Reach Water:</b>	UNKNOWN AMOUNT
<b>Amount of Material:</b>	0		

## Calls Information

<b>Date Time Received:</b>	9/3/1999 3:11:53 PM	<b>Responsible City:</b>	CARLISLE
<b>Date Time Complete:</b>	9/3/1999 3:21:15 PM	<b>Responsible State:</b>	KY
<b>Call Type:</b>	INC	<b>Responsible Zip:</b>	40311
<b>Resp Company:</b>	JOCKEY INTERNATIONAL	<b>Source:</b>	UNAVAILABLE
<b>Resp Org Type:</b>	PRIVATE ENTERPRISE		

## Incident Information

<b>Tank ID:</b>		<b>Building ID:</b>	
<b>Tank Regulated:</b>	U	<b>Location Area ID:</b>	
<b>Tank Regulated By:</b>		<b>Location Block ID:</b>	
<b>Capacity of Tank:</b>		<b>OCSG No:</b>	
<b>Capacity Tank Units:</b>		<b>OCSF No:</b>	
<b>Description of Tank:</b>		<b>State Lease No:</b>	
<b>Actual Amount:</b>		<b>Pier Dock No:</b>	
<b>Actual Amount Units:</b>		<b>Berth Slip No:</b>	
<b>Tank Above Ground:</b>	ABOVE	<b>Brake Failure:</b>	N
<b>NPDES:</b>		<b>Airbag Deployed:</b>	
<b>NPDES Compliance:</b>	U	<b>Transport Contain:</b>	U
<b>Init Contin Rel No:</b>		<b>Location Subdiv:</b>	
<b>Contin Rel Permit:</b>		<b>Platform Rig Name:</b>	
<b>Contin Release Type:</b>		<b>Platform Letter:</b>	
<b>Aircraft ID:</b>		<b>Allision:</b>	N
<b>Aircraft Runway No:</b>		<b>Type of Structure:</b>	
<b>Aircraft Spot No:</b>		<b>Structure Name:</b>	
<b>Aircraft Type:</b>	UNKNOWN	<b>Structure Oper:</b>	Y
<b>Aircraft Model:</b>		<b>Transit Bus Flag:</b>	
<b>Aircraft Fuel Cap:</b>		<b>Date Time Norm Serv:</b>	
<b>Aircraft Fuel Cap U:</b>		<b>Serv Disrupt Time:</b>	
<b>Aircraft Fuel on Brd:</b>		<b>Serv Disrupt Units:</b>	
<b>Aircraft Fuel OB U:</b>		<b>CR Begin Date:</b>	
<b>Aircraft Hanger:</b>		<b>CR End Date:</b>	



**Road Mile Marker:**  
**Power Gen Facility:** U  
**Generating Capacity:**  
**Type of Fixed Obj:** UNKNOWN  
**Type of Fuel:**  
**DOT Crossing No:**  
**DOT Regulated:** U  
**Pipeline Type:** UNKNOWN  
**Pipeline Abv Ground:** ABOVE  
**Pipeline Covered:** U  
**Exposed Underwater:** U  
**Railroad Hotline:** No  
**Railroad Milepost:** UNKNOWN  
**Grade Crossing:** N  
**Crossing Device Ty:**  
**Ty Vehicle Involved:** UNKNOWN  
**Device Operational:** Y

**CR Change Date:**  
**FBI Contact:**  
**FBI Contact Dt Tm:**  
**Passenger Handling:**  
**Passenger Route:** XXX  
**Passenger Delay:** XXX  
**Sub Part C Test Req:** XXX  
**Conductor Test:**  
**Engineer Test:**  
**Trainman Test:**  
**Yard Foreman Test:**  
**RCL Operator Test:**  
**Brakeman Test:**  
**Train Dispat Test:**  
**Signalman Test:**  
**Oth Employee Test:**  
**Unknown Test:**

**Incident Details Information**

**Release Secured:** U  
**Release Rate:**  
**Release Rate Unit:**  
**Release Rate Rate:**  
**Est Duration of Rel:**  
**Desc Remedial Act:** ALARM WENT OFF LAST NIGHT / DO NOT KNOW IF IT WAS A FALSE ALARM /REPORT NO ODOR OTHER EQUIPMENT DID NOT REPORT SPILL

**State Agen Report No:**  
**State Agen on Scene:**  
**State Agen Notified:**  
**Fed Agency Notified:**  
**Oth Agency Notified:**  
**Body of Water:**

**Fire Involved:** N  
**Fire Extinguished:** U  
**Any Evacuations:** N  
**No Evacuated:**  
**Who Evacuated:**  
**Radius of Evacu:**  
**Any Injuries:** U  
**No. Injured:**  
**No. Hospitalized:**  
**No. Fatalities:**  
**Any Fatalities:** U  
**Any Damages:** N  
**Damage Amount:**  
**Air Corridor Closed:** N  
**Air Corridor Desc:**  
**Air Closure Time:**  
**Waterway Closed:** N  
**Waterway Desc:**  
**Waterway Close Time:**  
**Road Closed:** N  
**Road Desc:**  
**Road Closure Time:**  
**Road Closure Units:**  
**Closure Direction:**  
**Major Artery:** No  
**Track Closed:** N  
**Track Desc:**  
**Track Closure Time:**  
**Track Closure Units:**  
**Track Close Dir:**  
**Media Interest:**  
**Medium Desc:** AIR  
**Addl Medium Info:** ATMOSPHERE

**Tributary of:**  
**Near River Mile Make:**  
**Near River Mile Mark:**  
**Offshore:** N  
**Weather Conditions:**  
**Air Temperature:**  
**Wind Direction:**  
**Wind Speed:**  
**Wind Speed Unit:**  
**Water Supp Contam:** U  
**Water Temperature:**  
**Wave Condition:**  
**Current Speed:**  
**Current Direction:**  
**Current Speed Unit:**  
**EMPL Fatality:**  
**Pass Fatality:**  
**Community Impact:** N  
**Passengers Transfer:** UNK  
**Passenger Injuries:**  
**Employee Injuries:**  
**Occupant Fatality:**  
**Sheen Size:**  
**Sheen Size Units:**  
**Sheen Size Length:**  
**Sheen Size Length U:**  
**Sheen Size Width:**  
**Sheen Size Width U:**  
**Sheen Color:**  
**Dir of Sheen Travel:**  
**Sheen Odor Desc:**  
**Duration Unit:**  
**Additional Info:** SHUT DOWN PROCESS TO CHECK EQUIPMENT / STILL INVESTIGATING IF THEIR WAS A LEAK / BELIEVE IT WAS A FALSE ALARM AT THIS TIME

**Site:** HWY 36 CARLISLE KY 40311

ERNS

<b>NRC Report No:</b>	450385	<b>Latitude Degrees:</b>	
<b>Type of Incident:</b>	UNKNOWN SHEEN	<b>Latitude Minutes:</b>	
<b>Incident Cause:</b>	UNKNOWN	<b>Latitude Seconds:</b>	
<b>Incident Date:</b>	8/13/1998 7:45:00 AM	<b>Longitude Degrees:</b>	
<b>Incident Location:</b>		<b>Longitude Minutes:</b>	
<b>Incident Dtg:</b>	OCCURRED	<b>Longitude Seconds:</b>	
<b>Distance from City:</b>		<b>Lat Quad:</b>	
<b>Distance Units:</b>		<b>Long Quad:</b>	
<b>Direction from City:</b>		<b>Location Section:</b>	
<b>Location County:</b>	NICHOLAS	<b>Location Township:</b>	
<b>Potential Flag:</b>		<b>Location Range:</b>	
<b>Year:</b>	Year 1998 Reports		
<b>Description of Incident:</b>	10 EMPLOYEE'S SENT HOME BECAUSE OF COMPLAINTS OF FEELING SICK /AIR TESTING BEING DONE / ALL EMPLOYEE'S SENT HOME AT 0915		

**Material Spill Information**

<b>Chris Code:</b>	UNK	<b>Unit of Measure:</b>	UNKNOWN AMOUNT
<b>CAS No:</b>		<b>If Reached Water:</b>	YES
<b>UN No:</b>		<b>Amount in Water:</b>	0
<b>Name of Material:</b>	UNKNOWN MATERIAL	<b>Unit Reach Water:</b>	NONE
<b>Amount of Material:</b>	0		

**Calls Information**

<b>Date Time Received:</b>	8/13/1998 1:38:22 PM	<b>Responsible City:</b>	CARLISLE
<b>Date Time Complete:</b>	8/13/1998 1:50:20 PM	<b>Responsible State:</b>	KY
<b>Call Type:</b>	INC	<b>Responsible Zip:</b>	40311
<b>Resp Company:</b>	JOCKEY INTERNATIONAL	<b>Source:</b>	UNAVAILABLE
<b>Resp Org Type:</b>	PRIVATE ENTERPRISE		

**Incident Information**

<b>Tank ID:</b>		<b>Building ID:</b>	
<b>Tank Regulated:</b>	U	<b>Location Area ID:</b>	
<b>Tank Regulated By:</b>		<b>Location Block ID:</b>	
<b>Capacity of Tank:</b>		<b>OCSG No:</b>	
<b>Capacity Tank Units:</b>		<b>OOSP No:</b>	
<b>Description of Tank:</b>		<b>State Lease No:</b>	
<b>Actual Amount:</b>		<b>Pier Dock No:</b>	
<b>Actual Amount Units:</b>		<b>Berth Slip No:</b>	
<b>Tank Above Ground:</b>	ABOVE	<b>Brake Failure:</b>	N
<b>NPDES:</b>		<b>Airbag Deployed:</b>	
<b>NPDES Compliance:</b>	U	<b>Transport Contain:</b>	U
<b>Init Contin Rel No:</b>		<b>Location Subdiv:</b>	
<b>Contin Rel Permit:</b>		<b>Platform Rig Name:</b>	
<b>Contin Release Type:</b>		<b>Platform Letter:</b>	
<b>Aircraft ID:</b>		<b>Allision:</b>	N
<b>Aircraft Runway No:</b>		<b>Type of Structure:</b>	
<b>Aircraft Spot No:</b>		<b>Structure Name:</b>	
<b>Aircraft Type:</b>	UNKNOWN	<b>Structure Oper:</b>	Y
<b>Aircraft Model:</b>		<b>Transit Bus Flag:</b>	
<b>Aircraft Fuel Cap:</b>		<b>Date Time Norm Serv:</b>	
<b>Aircraft Fuel Cap U:</b>		<b>Serv Disrupt Time:</b>	
<b>Aircraft Fuel on Brd:</b>		<b>Serv Disrupt Units:</b>	
<b>Aircraft Fuel OB U:</b>		<b>CR Begin Date:</b>	
<b>Aircraft Hanger:</b>		<b>CR End Date:</b>	
<b>Road Mile Marker:</b>		<b>CR Change Date:</b>	
<b>Power Gen Facility:</b>	U	<b>FBI Contact:</b>	
<b>Generating Capacity:</b>		<b>FBI Contact Dt Tm:</b>	
<b>Type of Fixed Obj:</b>	UNKNOWN	<b>Passenger Handling:</b>	
<b>Type of Fuel:</b>		<b>Passenger Route:</b>	XXX
<b>DOT Crossing No:</b>		<b>Passenger Delay:</b>	XXX
<b>DOT Regulated:</b>	U	<b>Sub Part C Test Req:</b>	XXX
<b>Pipeline Type:</b>	UNKNOWN	<b>Conductor Test:</b>	
<b>Pipeline Abv Ground:</b>	ABOVE	<b>Engineer Test:</b>	
<b>Pipeline Covered:</b>	U	<b>Trainman Test:</b>	
<b>Exposed Underwater:</b>	U	<b>Yard Foreman Test:</b>	

**Railroad Hotline:** No  
**Railroad Milepost:** UNKNOWN  
**Grade Crossing:** N  
**Crossing Device Ty:**  
**Ty Vehicle Involved:** UNKNOWN  
**Device Operational:** Y

**RCL Operator Test:**  
**Brakeman Test:**  
**Train Dispat Test:**  
**Signalman Test:**  
**Oth Employee Test:**  
**Unknown Test:**

**Incident Details Information**

**Release Secured:** U  
**Release Rate:**  
**Release Rate Unit:**  
**Release Rate Rate:**  
**Est Duration of Rel:**  
**Desc Remedial Act:** AIR TESTING BEING DONE / UNKNOWN IF  
 RELEASE OF ANYTHING HAS  
 OCCURREDTESTS HAVE BEEN COMING  
 UP NEGATIVE

**Fire Involved:** N  
**Fire Extinguished:** U  
**Any Evacuations:** N  
**No Evacuated:**  
**Who Evacuated:**  
**Radius of Evacu:**  
**Any Injuries:** Y  
**No. Injured:** 6  
**No. Hospitalized:**  
**No. Fatalities:**  
**Any Fatalities:** U  
**Any Damages:** N  
**Damage Amount:**  
**Air Corridor Closed:** N  
**Air Corridor Desc:**  
**Air Closure Time:**  
**Waterway Closed:** N  
**Waterway Desc:**  
**Waterway Close Time:**  
**Road Closed:** N  
**Road Desc:**  
**Road Closure Time:**  
**Road Closure Units:**  
**Closure Direction:**  
**Major Artery:** No  
**Track Closed:** N  
**Track Desc:**  
**Track Closure Time:**  
**Track Closure Units:**  
**Track Close Dir:**  
**Media Interest:**  
**Medium Desc:** AIR  
**Addl Medium Info:** ATMOSPHERE

**State Agen Report No:**  
**State Agen on Scene:**  
**State Agen Notified:**  
**Fed Agency Notified:**  
**Oth Agency Notified:**  
**Body of Water:**

**Tributary of:**  
**Near River Mile Make:**  
**Near River Mile Mark:**  
**Offshore:** Y  
**Weather Conditions:**  
**Air Temperature:**  
**Wind Direction:**  
**Wind Speed:**  
**Wind Speed Unit:**  
**Water Supp Contam:** U  
**Water Temperature:**  
**Wave Condition:**  
**Current Speed:**  
**Current Direction:**  
**Current Speed Unit:**  
**EMPL Fatality:**  
**Pass Fatality:**  
**Community Impact:** N  
**Passengers Transfer:** UNK  
**Passenger Injuries:**  
**Employee Injuries:**  
**Occupant Fatality:**  
**Sheen Size:**  
**Sheen Size Units:**  
**Sheen Size Length:**  
**Sheen Size Length U:**  
**Sheen Size Width:**  
**Sheen Size Width U:**  
**Sheen Color:**  
**Dir of Sheen Travel:**  
**Sheen Odor Desc:**  
**Duration Unit:**  
**Additional Info:**

6 EMPLOYEE'S WENT TO HOSPITAL FOR NAUSIA AND HEADACHES / MANAGERIALSTAFF STILL IN FACILITY WITH NO SYMPTOMS / WX: CLEAR AND CALM

**Site:** JOCKEY INTERNATIONAL, INC.  
 HIGHWAY 36 CARLISLE KY 40311

RCRA NON GEN

**EPA Handler ID:** KYD981806201  
**Gen Status Universe:** No Report  
**Contact Name:** JAMES WELLS  
**Contact Address:** P.O. BOX 192, , CARLISLE, KY, 40311, US  
**Contact Phone No and Ext:** 606-289-2221  
**Contact Email:**  
**Contact Country:** US  
**County Name:** NICHOLAS  
**EPA Region:** 04  
**Land Type:** Private

Receive Date: 19920210

**Violation/Evaluation Summary**

**Note:** NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

**Handler Summary**

Importer Activity: No  
Mixed Waste Generator: No  
Transporter Activity: No  
Transfer Facility: No  
Onsite Burner Exemption: No  
Furnace Exemption: No  
Underground Injection Activity: No  
Commercial TSD: No  
Used Oil Transporter: No  
Used Oil Transfer Facility: No  
Used Oil Processor: No  
Used Oil Refiner: No  
Used Oil Burner: No  
Used Oil Market Burner: No  
Used Oil Spec Marketer: No

**Hazardous Waste Handler Details**

Sequence No: 1  
Receive Date: 19920210  
Handler Name: JOCKEY INTERNATIONAL, INC.  
Source Type: Notification  
Federal Waste Generator Code: N  
Generator Code Description: Not a Generator, Verified

**Waste Code Details**

Hazardous Waste Code: NONE  
Waste Code Description: DESCRIPTION

**Owner/Operator Details**

Owner/Operator Ind:	Current Owner	Street No:	
Type:	Private	Street 1:	2300 60TH STREET
Name:	JOCKEY INTERNATIONAL, INC.	Street 2:	
Date Became Current:		City:	KENOSHA
Date Ended Current:		State:	WI
Phone:	606-289-2221	Country:	
Source Type:	Notification	Zip Code:	53140

**Site:** JONES SHOP SERVICE STATION  
HWY 32/36 CYNTHIANA KY 41031

RCRA NON GEN

EPA Handler ID: KYR000016881  
Gen Status Universe: No Report  
Contact Name: LOUIS JONES  
Contact Address: RT 7 BOX 320, , CYNTHIANA, KY, 41031, US  
Contact Phone No and Ext: 606-234-2653  
Contact Email:  
Contact Country: US  
County Name: HARRISON  
EPA Region: 04  
Land Type: Private  
Receive Date: 19980805

**Violation/Evaluation Summary**

**Note:** NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

**Handler Summary**

**Importer Activity:** No  
**Mixed Waste Generator:** No  
**Transporter Activity:** No  
**Transfer Facility:** No  
**Onsite Burner Exemption:** No  
**Furnace Exemption:** No  
**Underground Injection Activity:** No  
**Commercial TSD:** No  
**Used Oil Transporter:** No  
**Used Oil Transfer Facility:** No  
**Used Oil Processor:** No  
**Used Oil Refiner:** No  
**Used Oil Burner:** No  
**Used Oil Market Burner:** No  
**Used Oil Spec Marketer:** No

**Hazardous Waste Handler Details**

**Sequence No:** 1  
**Receive Date:** 19980805  
**Handler Name:** JONES SHOP SERVICE STATION  
**Source Type:** Notification  
**Federal Waste Generator Code:** N  
**Generator Code Description:** Not a Generator, Verified

**Waste Code Details**

**Hazardous Waste Code:** NONE  
**Waste Code Description:** DESCRIPTION

**Owner/Operator Details**

<b>Owner/Operator Ind:</b>	Current Owner	<b>Street No:</b>	
<b>Type:</b>	Private	<b>Street 1:</b>	RT 7 BOX 320
<b>Name:</b>	LOUIS JONES	<b>Street 2:</b>	
<b>Date Became Current:</b>		<b>City:</b>	CYNTHIANA
<b>Date Ended Current:</b>		<b>State:</b>	KY
<b>Phone:</b>	606-234-2653	<b>Country:</b>	
<b>Source Type:</b>	Notification	<b>Zip Code:</b>	41031

**Site:** **Connersville Grocery**  
**Hwy 32 Cynthiana KY 41031**

UST

<b>AI ID:</b>	61277	<b>County:</b>	Harrison
<b>Int Doc ID:</b>	0	<b>Mail Addr Municip:</b>	Cynthiana
<b>Latitude:</b>		<b>Mailing Addr State:</b>	KY
<b>Longitude:</b>		<b>Mailing Addr Zip:</b>	41031
<b>AI Type:</b>	RETAIL- Retail Trade, Gasoline Stations (447)		

**Underground Storage Tanks**

<b>Subject Item ID:</b>	2	<b>Owner Name:</b>	Zelma Mcbee
<b>Tank Pit No:</b>		<b>Owner Address:</b>	RT 1 BOX 422
<b>Tank Status:</b>	TEX Exempt	<b>Owner Address 2:</b>	
<b>Temp Close Date:</b>	1/1/1979	<b>Owner Address 3:</b>	
<b>Site Seq ID:</b>	10000564	<b>Owner City:</b>	Cynthiana
<b>Install Date:</b>	1/1/1965	<b>Owner State:</b>	KY
<b>Lined Date:</b>		<b>Owner Zip:</b>	41031
<b>Tank Material:</b>	SST Single Wall Steel	<b>Owner Phone:</b>	606-234-4245
<b>Tank Inert Material:</b>		<b>Subj Item Cat Code:</b>	STOR



**Tank Release Detect:** NON None  
**Tank Spill Prevent:** UNK Unknown  
**Last Cont Prod Dt:**  
**Closed in Place Dt:**  
**Removal Date:**  
**Service Change Dt:**  
**Last Tank Test Dt:**  
**Last CP Test Date:**  
**Added to Flex Date:**  
**Added to Piping Dt:**  
**Added to Tank Date:**  
**Piping Install Dt:**  
**Tank Manufctr:**  
**Pipe Manufctr:**

**Last Pipe Test Dt:**  
**Lining Insp Date:**  
**Tank Ext Corr Protect:** UNK Unknown  
**Tank Int Corr Protect:** UNK Unknown  
**Tank Overfill Prevent:** UNK Unknown  
**Pipe Material Desc:** SST Single Wall Steel  
**Pipe Ext Corr Protect:** UNK Unknown  
**Pipe Type Desc:** SUC Suction  
**Pipe Rel Detect PRP:** NON None  
**Pipe Rel Detect SUC:** NON None  
**Pipe Leak Detect:** N/A Not Applicable

**Tank Compartment Information**

**Compartment No:** 1  
**Capacity MSR:** 560

**Tank Substance Cd:** GAS  
**Tank Subst Desc:** GAS Gasoline

**Underground Storage Tanks**

**Subject Item ID:** 1  
**Tank Pit No:**  
**Tank Status:** TEX Exempt  
**Temp Close Date:** 1/1/1979  
**Site Seq ID:** 10000564  
**Install Date:** 1/1/1965  
**Lined Date:**  
**Tank Material:** SST Single Wall Steel  
**Tank Inert Material:**  
**Tank Release Detect:** NON None  
**Tank Spill Prevent:** UNK Unknown  
**Last Cont Prod Dt:**  
**Closed in Place Dt:**  
**Removal Date:**  
**Service Change Dt:**  
**Last Tank Test Dt:**  
**Last CP Test Date:**  
**Added to Flex Date:**  
**Added to Piping Dt:**  
**Added to Tank Date:**  
**Piping Install Dt:**  
**Tank Manufctr:**  
**Pipe Manufctr:**

**Owner Name:** Zelma Mcbee  
**Owner Address:** RT 1 BOX 422  
**Owner Address 2:**  
**Owner Address 3:**  
**Owner City:** Cynthiana  
**Owner State:** KY  
**Owner Zip:** 41031  
**Owner Phone:** 606-234-4245  
**Subj Item Cat Code:** STOR  
**Last Pipe Test Dt:**  
**Lining Insp Date:**  
**Tank Ext Corr Protect:** UNK Unknown  
**Tank Int Corr Protect:** UNK Unknown  
**Tank Overfill Prevent:** UNK Unknown  
**Pipe Material Desc:** SST Single Wall Steel  
**Pipe Ext Corr Protect:** UNK Unknown  
**Pipe Type Desc:** SUC Suction  
**Pipe Rel Detect PRP:** NON None  
**Pipe Rel Detect SUC:** NON None  
**Pipe Leak Detect:** N/A Not Applicable

**Tank Compartment Information**

**Compartment No:** 1  
**Capacity MSR:** 560

**Tank Substance Cd:** GAS  
**Tank Subst Desc:** GAS Gasoline

**Site:** Service Station 208d BP 009  
KY 36 Carlisle KY 40311

UST

**AI ID:** 58794  
**Int Doc ID:** 0  
**Latitude:**  
**Longitude:**  
**AI Type:** RETAIL- Retail Trade, Gasoline Stations (447)

**County:** Nicholas  
**Mail Addr Municip:** Carlisle  
**Mailing Addr State:** KY  
**Mailing Addr Zip:** 40311

**Underground Storage Tanks**

**Subject Item ID:** 1  
**Tank Pit No:**  
**Tank Status:** TEX Exempt  
**Temp Close Date:**  
**Site Seq ID:** 7791091

**Owner Name:** A Kearns  
**Owner Address:** KY HWY 36  
**Owner Address 2:**  
**Owner Address 3:**  
**Owner City:** Carlisle

**Install Date:** 1/1/1978  
**Lined Date:**  
**Tank Material:** SST Single Wall Steel  
**Tank Inert Material:**  
**Tank Release Detect:** NON None  
**Tank Spill Prevent:** UNK Unknown  
**Last Cont Prod Dt:**  
**Closed in Place Dt:**  
**Removal Date:**  
**Service Change Dt:**  
**Last Tank Test Dt:**  
**Last CP Test Date:**  
**Added to Flex Date:**  
**Added to Piping Dt:**  
**Added to Tank Date:**  
**Piping Install Dt:**  
**Tank Manufctr:**  
**Pipe Manufctr:**

**Owner State:** KY  
**Owner Zip:** 40311  
**Owner Phone:** 000  
**Subj Item Cat Code:** STOR  
**Last Pipe Test Dt:**  
**Lining Insp Date:**  
**Tank Ext Corr Protect:** UNK Unknown  
**Tank Int Corr Protect:** UNK Unknown  
**Tank Overfill Prevent:** UNK Unknown  
**Pipe Material Desc:** UNK Unknown  
**Pipe Ext Corr Protect:** UNK Unknown  
**Pipe Type Desc:** UNK Unknown  
**Pipe Rel Detect PRP:** UNK Unknown  
**Pipe Rel Detect SUC:** UNK Unknown  
**Pipe Leak Detect:** N/A Not Applicable

**Tank Compartment Information**

**Compartment No:** 1  
**Capacity MSR:** 1000

**Tank Substance Cd:** GAS  
**Tank Subst Desc:** GAS Gasoline

**Site:** Larrys Bar & Grill  
KY 36 Cynthiana KY 41031

UST

**AI ID:** 61243  
**Int Doc ID:** 0  
**Latitude:**  
**Longitude:**  
**AI Type:** ACCOM-Accommodation & Food Services (72)

**County:** Harrison  
**Mail Addr Municip:** Cynthiana  
**Mailing Addr State:** KY  
**Mailing Addr Zip:** 41031

**Underground Storage Tanks**

**Subject Item ID:** 2  
**Tank Pit No:**  
**Tank Status:** TRM Removed Tank Verified  
**Temp Close Date:** 7/1/1998  
**Site Seq ID:** 7703049  
**Install Date:** 1/1/1972  
**Lined Date:**  
**Tank Material:** SST Single Wall Steel  
**Tank Inert Material:**  
**Tank Release Detect:** NON None  
**Tank Spill Prevent:** UNK Unknown  
**Last Cont Prod Dt:**  
**Closed in Place Dt:**  
**Removal Date:** 7/1/1998  
**Service Change Dt:**  
**Last Tank Test Dt:**  
**Last CP Test Date:**  
**Added to Flex Date:**  
**Added to Piping Dt:**  
**Added to Tank Date:**  
**Piping Install Dt:**  
**Tank Manufctr:**  
**Pipe Manufctr:**

**Owner Name:** Dorothy Holbrook  
**Owner Address:** Rt 5 Box 45  
**Owner Address 2:**  
**Owner Address 3:**  
**Owner City:** Cynthiana  
**Owner State:** KY  
**Owner Zip:** 41031  
**Owner Phone:** 859-234-8917  
**Subj Item Cat Code:** STOR  
**Last Pipe Test Dt:**  
**Lining Insp Date:**  
**Tank Ext Corr Protect:** NON None  
**Tank Int Corr Protect:** N/A Not Applicable  
**Tank Overfill Prevent:** UNK Unknown  
**Pipe Material Desc:** SST Single Wall Steel  
**Pipe Ext Corr Protect:** NON None  
**Pipe Type Desc:** SUC Suction  
**Pipe Rel Detect PRP:** NON None  
**Pipe Rel Detect SUC:** NON None  
**Pipe Leak Detect:** N/A Not Applicable

**Tank Compartment Information**

**Compartment No:** 1  
**Capacity MSR:** 1000

**Tank Substance Cd:** GAS  
**Tank Subst Desc:** GAS Gasoline

**Underground Storage Tanks**

**Subject Item ID:** 1

**Owner Name:** Dorothy Holbrook

**Tank Pit No:**  
**Tank Status:** TRM Removed Tank Verified  
**Temp Close Date:** 7/1/1998  
**Site Seq ID:** 7703049  
**Install Date:** 1/1/1972  
**Lined Date:**  
**Tank Material:** SST Single Wall Steel  
**Tank Inert Material:**  
**Tank Release Detect:** NON None  
**Tank Spill Prevent:** UNK Unknown  
**Last Cont Prod Dt:**  
**Closed in Place Dt:**  
**Removal Date:** 7/1/1998  
**Service Change Dt:**  
**Last Tank Test Dt:**  
**Last CP Test Date:**  
**Added to Flex Date:**  
**Added to Piping Dt:**  
**Added to Tank Date:**  
**Piping Install Dt:**  
**Tank Manufctr:**  
**Pipe Manufctr:**

**Owner Address:** Rt 5 Box 45  
**Owner Address 2:**  
**Owner Address 3:**  
**Owner City:** Cynthiana  
**Owner State:** KY  
**Owner Zip:** 41031  
**Owner Phone:** 859-234-8917  
**Subj Item Cat Code:** STOR  
**Last Pipe Test Dt:**  
**Lining Insp Date:**  
**Tank Ext Corr Protect:** NON None  
**Tank Int Corr Protect:** N/A Not Applicable  
**Tank Overfill Prevent:** UNK Unknown  
**Pipe Material Desc:** SST Single Wall Steel  
**Pipe Ext Corr Protect:** NON None  
**Pipe Type Desc:** SUC Suction  
**Pipe Rel Detect PRP:** NON None  
**Pipe Rel Detect SUC:** NON None  
**Pipe Leak Detect:** N/A Not Applicable

**Tank Compartment Information**

**Compartment No:** 1  
**Capacity MSR:** 1000

**Tank Substance Cd:** GAS  
**Tank Subst Desc:** GAS Gasoline

# Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

## Standard Environmental Record Sources

### Federal

#### Facility Response Plan:

FRP

List of facilities that have submitted Facility Response Plans (FRP) to EPA. Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit Facility Response Plans (FRPs). Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments.

**Government Publication Date: Mar 26, 2020**

#### National Priority List:

NPL

National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.

**Government Publication Date: Dec 30, 2020**

#### National Priority List - Proposed:

PROPOSED NPL

Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

**Government Publication Date: Dec 30, 2020**

#### Deleted NPL:

DELETED NPL

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

**Government Publication Date: Dec 30, 2020**

#### SEMS List 8R Active Site Inventory:

SEMS

The Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted.

**Government Publication Date: Oct 28, 2020**

#### SEMS List 8R Archive Sites:

SEMS ARCHIVE

The Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

**Government Publication Date: Oct 28, 2020**

**Inventory of Open Dumps, June 1985:**

ODI

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

**Government Publication Date: Jun 1985**

**Comprehensive Environmental Response, Compensation and Liability Information System -**

CERCLIS

**CERCLIS:**

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

**Government Publication Date: Oct 25, 2013**

**EPA Report on the Status of Open Dumps on Indian Lands:**

IODI

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

**Government Publication Date: Dec 31, 1998**

**CERCLIS - No Further Remedial Action Planned:**

CERCLIS NFRAP

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

**Government Publication Date: Oct 25, 2013**

**CERCLIS Liens:**

CERCLIS LIENS

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA).

**Government Publication Date: Jan 30, 2014**

**RCRA CORRACTS-Corrective Action:**

RCRA CORRACTS

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

**Government Publication Date: Oct 19, 2020**

**RCRA non-CORRACTS TSD Facilities:**

RCRA TSD

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

**Government Publication Date: Oct 19, 2020**

**RCRA Generator List:**

RCRA LQG

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

**Government Publication Date: Oct 19, 2020**



**RCRA Small Quantity Generators List:**

[RCRA SQG](#)

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

**Government Publication Date: Oct 19, 2020**

**RCRA Very Small Quantity Generators List:**

[RCRA VSQG](#)

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Very Small Quantity Generators (VSQG) generate 100 kilograms or less per month of hazardous waste, or one kilogram or less per month of acutely hazardous waste. Additionally, VSQG may not accumulate more than 1,000 kilograms of hazardous waste at any time.

**Government Publication Date: Oct 19, 2020**

**RCRA Non-Generators:**

[RCRA NON GEN](#)

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

**Government Publication Date: Oct 19, 2020**

**Federal Engineering Controls-ECs:**

[FED ENG](#)

Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).

**Government Publication Date: Aug 26, 2020**

**Federal Institutional Controls- ICs:**

[FED INST](#)

Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency ) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.

**Government Publication Date: Aug 26, 2020**

**Emergency Response Notification System:**

[ERNS 1982 TO 1986](#)

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

**Government Publication Date: 1982-1986**

**Emergency Response Notification System:**

[ERNS 1987 TO 1989](#)

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

**Government Publication Date: 1987-1989**

**Emergency Response Notification System:**

[ERNS](#)

Database of oil and hazardous substances spill reports made available by the United States Coast Guard National Response Center (NRC). The NRC fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. These data contain initial incident data that has not been validated or investigated by a federal/state response agency.

**Government Publication Date: Nov 9, 2020**

**The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database:**

[FED BROWNFIELDS](#)

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).

*Government Publication Date: Jan 6, 2021*

**FEMA Underground Storage Tank Listing:**

[FEMA UST](#)

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage tanks.

*Government Publication Date: Dec 31, 2017*

**Petroleum Refineries:**

[REFN](#)

List of petroleum refineries from the U.S. Energy Information Administration (EIA) Refinery Capacity Report. Includes operating and idle petroleum refineries (including new refineries under construction) and refineries shut down during the previous year located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and other U.S. possessions. Survey locations adjusted using public data.

*Government Publication Date: Jul 10, 2020*

**Petroleum Product and Crude Oil Rail Terminals:**

[BULK TERMINAL](#)

List of petroleum product and crude oil rail terminals made available by the U.S. Energy Information Administration (EIA). Includes operable bulk petroleum product terminals located in the 50 States and the District of Columbia with a total bulk shell storage capacity of 50,000 barrels or more, and/or the ability to receive volumes from tanker, barge, or pipeline; also rail terminals handling the loading and unloading of crude oil that were active between 2017 and 2018. Petroleum product terminals comes from the EIA-815 Bulk Terminal and Blender Report, which includes working, shell in operation, and shell idle for several major product groupings. Survey locations adjusted using public data.

*Government Publication Date: Apr 28, 2020*

**LIEN on Property:**

[SEMS LIEN](#)

The EPA Superfund Enterprise Management System (SEMS) provides LIEN information on properties under the EPA Superfund Program.

*Government Publication Date: Oct 28, 2020*

**Superfund Decision Documents:**

[SUPERFUND ROD](#)

This database contains a listing of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD), along with other associated memos and files. This information is maintained and made available by the US EPA (Environmental Protection Agency).

*Government Publication Date: Sep 22, 2020*

**State**

**Brownfield Redevelopment Program:**

[BROWNFIELDS](#)

A list of sites in the Brownfield Redevelopment Program. This list is made available by the Kentucky Energy and Environment Cabinet (EEC).

*Government Publication Date: Jan 22, 2021*

**State Leads Priority List:**

[SHWS](#)

State Leads Priority List that contains a listing of State Hazardous Waste sites. This list is maintained by The Kentucky Department of Environmental Protection (DEP). This database is state equivalent CERCLIS.

*Government Publication Date: Nov 24, 2020*

**Delisted State Leads Priority List:**

[DSHW](#)

This database contains a list of closed State Hazardous Waste sites that were removed from the Kentucky Department of Environmental Protection (DEP).

*Government Publication Date: Nov 24, 2020*

**Solid Waste Facilities and Landfills:**

[SWF/LF](#)

A list of Solid Waste Facilities (SWF) and Landfills (LF) made available by the Kentucky Department of Environmental Protection (DEP). This list includes registered contained landfills, construction/demolition debris landfills, residual landfills and special waste landfills.

*Government Publication Date: Dec 1, 2020*

**SB193 Branch Site Inventory List:**

SB193

This list is comprised of sites that have performed permanent closure activities at regulated underground storage tank facilities and have known soil and/or groundwater contamination. Historical listing made available by the underground storage tank branch in the Department of Environmental Protection (DEP) of Kentucky State.

**Government Publication Date: Apr 30, 1985**

**Ranking List for UST Facilities:**

PSTEAF

A list of UST facilities under site investigation which are eligible to receive reimbursement from Financial Responsibility Account (FRA) and Petroleum Storage Tank Account (PSTA) of the Petroleum Storage Tank Environmental Assurance Fund (PSTEAF). Reimbursements from the FRA and PSTA are determined by this ranking system. This list is maintained by the Kentucky Department of Environmental Protection (DEP).

**Government Publication Date: Dec 1, 2020**

**Underground Storage Tanks:**

UST

A list of registered Underground Storage Tanks (USTs) maintained by the Underground Storage Tank Branch in the Kentucky Department of Environmental Protection (DEP).

**Government Publication Date: Dec 3, 2020**

**Delisted Storage Tank:**

DELISTED STORAGE TANK

This database contains a list of closed storage tank sites that were removed from the Underground Storage Tank Branch in the Kentucky Department of Environmental Protection (DEP).

**Government Publication Date: Dec 3, 2020**

**Sites with Engineering Controls:**

ENG

Sites on the Institutional Controls and State Leads Lists that have engineering controls in place; both lists made available by the Kentucky Department of Environmental Protection (DEP).

**Government Publication Date: Nov 24, 2020**

**Sites with Institutional Controls:**

INST

Sites with institutional controls in place, provided by the Kentucky Department of Environmental Protection (DEP). Institutional controls are put in place to regulate activities on the property, such as a requirement that the property never be used for residential development or to prohibit the use of groundwater from below the property.

**Government Publication Date: Nov 24, 2020**

**Voluntary Cleanup Program Sites:**

VCP

The Kentucky Department of Environmental Protection (DEP) maintains an inventory of sites that are in the Voluntary Cleanup Program.

**Government Publication Date: Oct 8, 2020**

**Kentucky Brownfield Inventory:**

BROWNFIELD INV

Kentucky Brownfield Inventory consists primarily of properties that are receiving, or have received, assessments and/or cleanups under federal brownfield funding to states or local government entities. This list is managed by the Kentucky Department for Environmental Protection (DEP).

**Government Publication Date: Nov 16, 2020**

**Tribal**

**Leaking Underground Storage Tanks (LUSTs) on Indian Lands:**

INDIAN LUST

LUSTs on Tribal/Indian Lands in Region 4, which includes Kentucky. There are no LUST records in Kentucky at this time.

**Government Publication Date: Oct 14, 2017**

**Underground Storage Tanks (USTs) on Indian Lands:**

INDIAN UST

USTs on Tribal/Indian Lands in Region 4, which includes Kentucky. There are no UST records in Kentucky at this time.

**Government Publication Date: Oct 14, 2017**

**Delisted Tribal Leaking Storage Tanks:**

DELISTED ILST

Leaking Underground Storage Tank facilities which have been removed from the Regional Tribal LUST lists made available by the EPA.

**Government Publication Date: Apr 14, 2020**

**Delisted Tribal Underground Storage Tanks:**

DELISTED IUST

Underground Storage Tank facilities which have been removed from the Regional Tribal UST lists made available by the EPA.

**Government Publication Date: Apr 14, 2020**

**County**

**No County standard environmental record sources available for this State.**

**Additional Environmental Record Sources**

**Federal**

**PFOA/PFOS Contaminated Sites:**

PFAS NPL

List of sites where PFOA or PFOS contaminants have been found in drinking water or soil. Made available by the Federal Environmental Protection Agency (EPA).

**Government Publication Date: Nov 18, 2020**

**Facility Registry Service/Facility Index:**

FINDS/FRS

The Facility Registry Service (FRS) is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, and data collected from EPA's Central Data Exchange registrations and data management personnel. This list is made available by the Environmental Protection Agency (US EPA).

**Government Publication Date: Nov 2, 2020**

**Toxics Release Inventory (TRI) Program:**

TRIS

The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

**Government Publication Date: Feb 19, 2020**

**Perfluorinated Alkyl Substances (PFAS) Releases:**

PFAS TRI

List of Toxics Release Inventory (TRI) facilities at which the reported chemical is a Per- or polyfluorinated alkyl substance (PFAS) included in the Environmental Protection Agency (EPA)'s consolidated PFAS Master List of PFAS Substances. The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment.

**Government Publication Date: Feb 19, 2020**

**Perfluorinated Alkyl Substances (PFAS) Water Quality:**

PFAS WATER

The Water Quality Portal (WQP) is a cooperative service sponsored by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC). This listing includes records from the Water Quality Portal where the characteristic (environmental measurement) is in the Environmental Protection Agency (EPA)'s consolidated PFAS Master List of PFAS Substances.

**Government Publication Date: Jul 20, 2020**

**Hazardous Materials Information Reporting System:**

HMIRS

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

**Government Publication Date: Sep 1, 2020**

**National Clandestine Drug Labs:**

NCDL

The U.S. Department of Justice ("the Department") provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.

**Government Publication Date: Oct 5, 2020**

**Toxic Substances Control Act:**

[TSCA](#)

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

**Government Publication Date: Apr 11, 2019**

**Hist TSCA:**

[HIST TSCA](#)

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

**Government Publication Date: Dec 31, 2006**

**FTTS Administrative Case Listing:**

[FTTS ADMIN](#)

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

**Government Publication Date: Jan 19, 2007**

**FTTS Inspection Case Listing:**

[FTTS INSP](#)

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

**Government Publication Date: Jan 19, 2007**

**Potentially Responsible Parties List:**

[PRP](#)

Early in the cleanup process, the Environmental Protection Agency (EPA) conducts a search to find the potentially responsible parties (PRPs). EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site.

**Government Publication Date: Dec 30, 2020**

**State Coalition for Remediation of Drycleaners Listing:**

[SCRD DRYCLEANER](#)

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

**Government Publication Date: Nov 08, 2017**

**Integrated Compliance Information System (ICIS):**

[ICIS](#)

The Integrated Compliance Information System (ICIS) is a system that provides information for the Federal Enforcement and Compliance (FE&C) and the National Pollutant Discharge Elimination System (NPDES) programs. The FE&C component supports the Environmental Protection Agency's (EPA) Civil Enforcement and Compliance program activities. These activities include Compliance Assistance, Compliance Monitoring and Enforcement. The NPDES program supports tracking of NPDES permits, limits, discharge monitoring data and other program reports.

**Government Publication Date: Jan 6, 2021**

**Drycleaner Facilities:**

[FED DRYCLEANERS](#)

A list of drycleaner facilities from Enforcement and Compliance History Online (ECHO) online search. The Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

**Government Publication Date: Jan 20, 2020**

**Delisted Drycleaner Facilities:**

[DELISTED FED DRY](#)

List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).

**Government Publication Date: Jan 20, 2020**



**Formerly Used Defense Sites:**

FUDS

Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DoD) is responsible for an environmental restoration. This list is published by the U.S. Army Corps of Engineers.

**Government Publication Date: Jan 28, 2020**

**PHMSA Pipeline Safety Flagged Incidents:**

PIPELINE INCIDENT

A list of flagged pipeline incidents made available by the U.S. Department of Transportation (US DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA regulations require incident and accident reports for five different pipeline system types.

**Government Publication Date: Jul 7, 2020**

**Material Licensing Tracking System (MLTS):**

MLTS

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

**Government Publication Date: Aug 5, 2020**

**Historic Material Licensing Tracking System (MLTS) sites:**

HIST MLTS

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

**Government Publication Date: Jan 31, 2010**

**Mines Master Index File:**

MINES

The Master Index File (MIF) contains mine identification numbers issued by the Department of Labor Mine Safety and Health Administration (MSHA) for mines active or opened since 1971. Note that addresses may or may not correspond with the physical location of the mine itself.

**Government Publication Date: Nov 3, 2020**

**Alternative Fueling Stations:**

ALT FUELS

List of alternative fueling stations made available by the US Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Biodiesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE). The National Renewable Energy Laboratory (NREL) obtains information about new stations from trade media, Clean Cities coordinators, a Submit New Station form on the Station Locator website, and through collaborating with infrastructure equipment and fuel providers, original equipment manufacturers (OEMs), and industry groups.

**Government Publication Date: Jan 18, 2021**

**Registered Pesticide Establishments:**

SSTS

List of active EPA-registered foreign and domestic pesticide-producing and device-producing establishments based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that facilities producing pesticides, active ingredients, or devices be registered. The list of establishments is made available by the EPA.

**Government Publication Date: Mar 31, 2020**

**Polychlorinated Biphenyl (PCB) Notifiers:**

PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

**Government Publication Date: Nov 19, 2020**

**State**

**Incidents:**

SPILLS

A list of incidents reported to the Kentucky Department of Environmental Protection (Kentucky DEP) where hazardous materials may have been spilled and/or released.

**Government Publication Date: Nov 24, 2020**

**Tribal**

*No Tribal additional environmental record sources available for this State.*

**County**

*No County additional environmental record sources available for this State.*

# Definitions

**Database Descriptions:** This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

**Detail Report:** This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

**Distance:** The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

**Direction:** The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

**Elevation:** The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

**Executive Summary:** This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

**Map Key:** The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

**Unplottables:** These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

Blue Moon Solar – Harrison County, Kentucky

Appendix

F

Aerial Photographs



**Blue Moon**

Blue Moon

Cynthiana, KY 41031

Inquiry Number: 5652207.8

May 16, 2019

## The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)



**Date EDR Searched Historical Sources:**

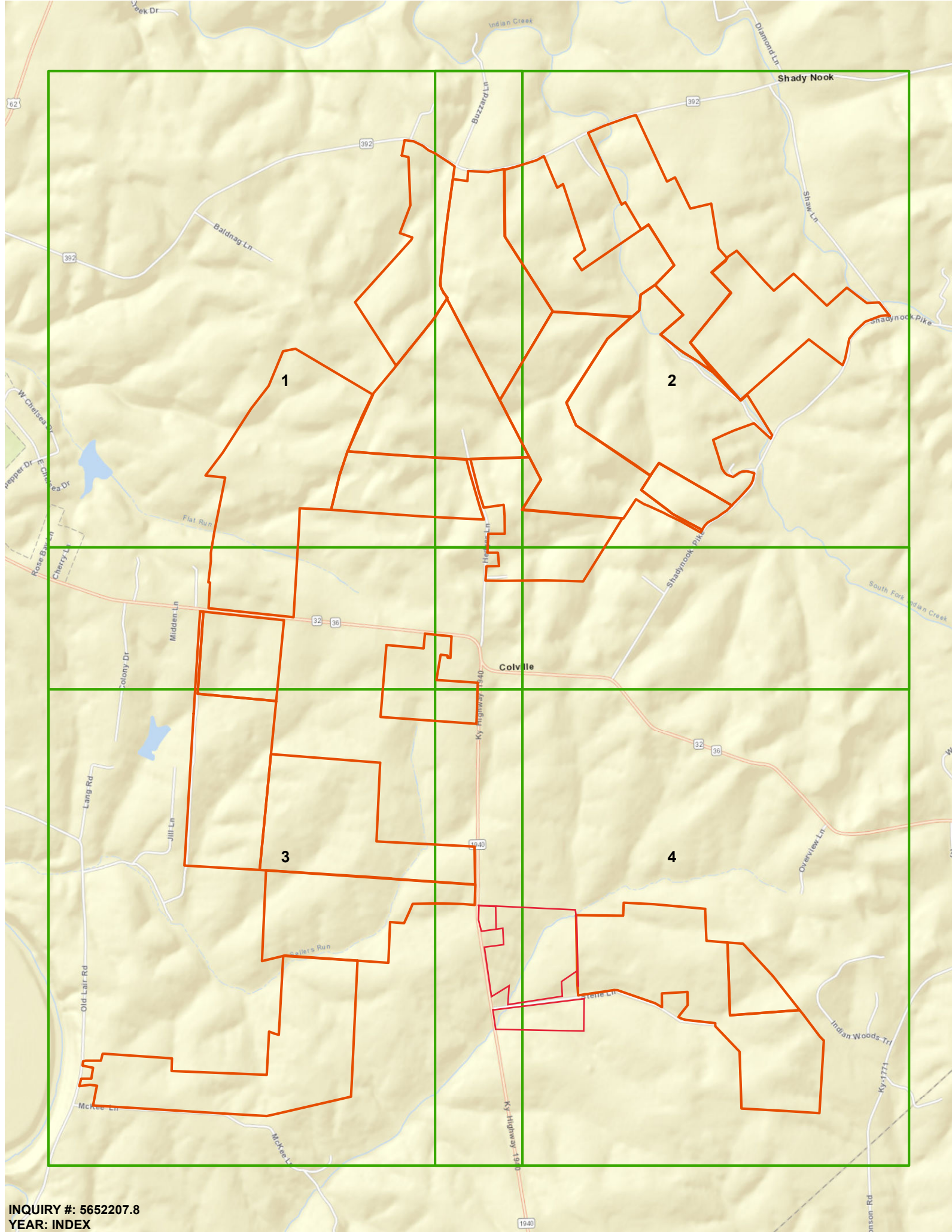
Aerial Photography May 16, 2019

**Target Property:**

Blue Moon

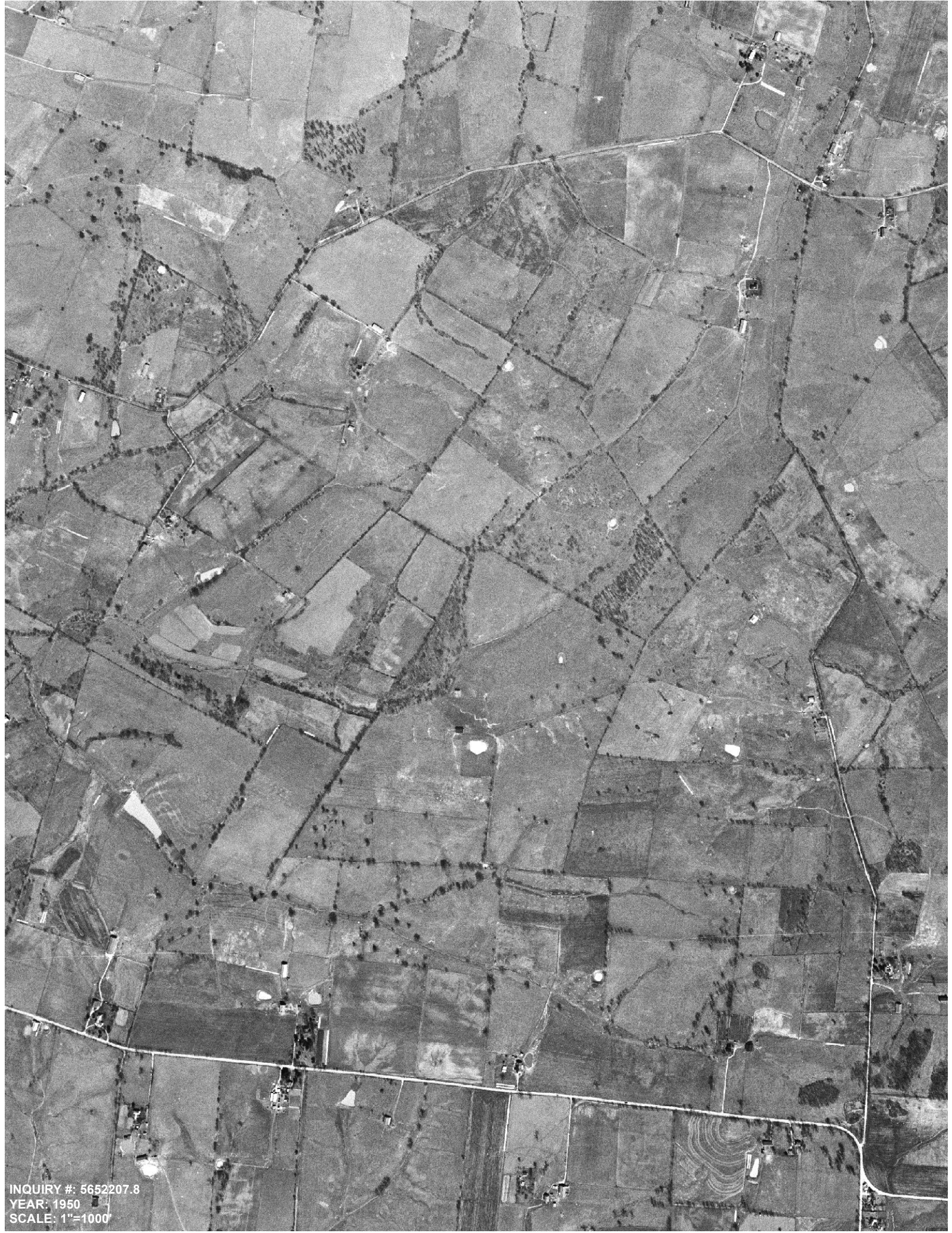
Cynthiana, KY 41031

<u><i>Year</i></u>	<u><i>Scale</i></u>	<u><i>Details</i></u>	<u><i>Source</i></u>
1950	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1950	USGS
1960	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1960	USGS
1984	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1984	USDA
1993	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1993	USGS
1997	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1997	DOQQ_USGS
2004	Aerial Photograph. Scale: 1"=1000'	Flight Year: 2004	NAIP_USGS
2008	Aerial Photograph. Scale: 1"=1000'	Flight Year: 2008	NAIP_USGS
2012	Aerial Photograph. Scale: 1"=1000'	Flight Year: 2012	NAIP_USGS
2016	Aerial Photograph. Scale: 1"=1000'	Flight Year: 2016	NAIP_USGS



INQUIRY #: 5652207.8  
YEAR: INDEX





INQUIRY #: 5652207.8  
YEAR: 1950  
SCALE: 1"=1000'





INQUIRY #: 565207.8  
YEAR: 1950  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1950  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1950  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1960  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1960  
SCALE: 1"=1000'





INQUIRY # 5652207.8  
YEAR: 1950  
SCALE: 1:50,000





INQUIRY #: 5652207.8  
YEAR: 1960  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1984  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1984  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1984  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1984  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1993  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1993  
SCALE: 1"=1000'



INQUIRY #: 5652207.8  
YEAR: 1993  
SCALE: 1"=1000'



INQUIRY #: 5652207.8  
YEAR: 1993  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1997  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 1997  
SCALE: 1"=1000'





INQUIRY # 5652207.8  
YEAR: 1997  
SCALE: 1"=1000'



INQUIRY #: 5652207.8  
YEAR: 1997  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2004  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2004  
SCALE: 1"=1000'





INQUIRY # 5652207.8  
YEAR: 2004  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2004  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2008  
SCALE: 1"=1000'





INQUIRY #: 566297.8  
YEAR: 2008  
SCALE: 1"=1000'





INQUIRY # 5652207.8  
YEAR: 2008  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2008  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2012  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2012  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2012  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2012  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2016  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2016  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2016  
SCALE: 1"=1000'





INQUIRY #: 5652207.8  
YEAR: 2016  
SCALE: 1"=1000'



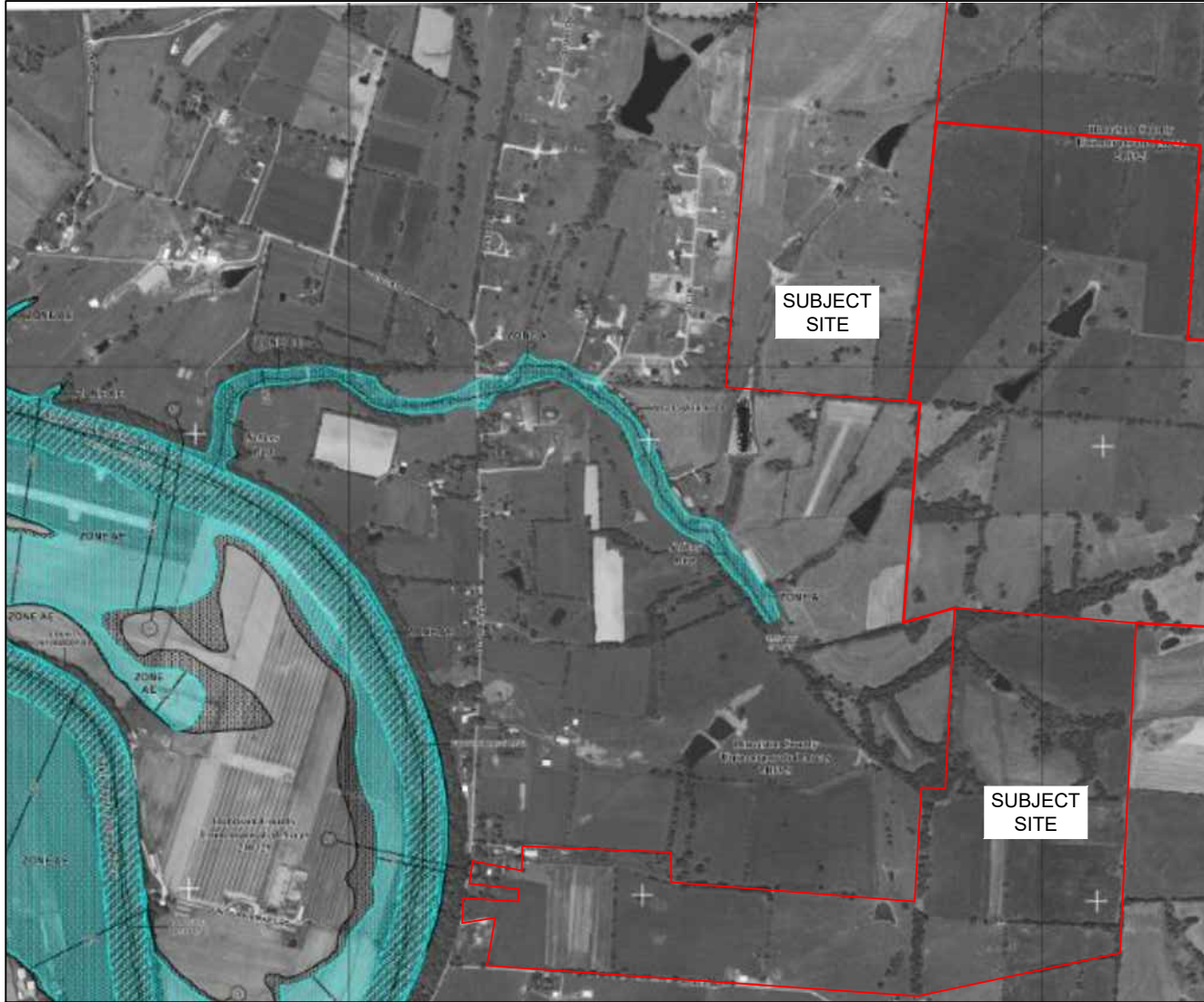
Blue Moon Solar – Harrison County, Kentucky

Appendix

G

Historical Research Documentation





### LEGEND

#### SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently derelict. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

#### FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

#### OTHER FLOOD AREAS

**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

#### OTHER AREAS

**ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.  
**ZONE D** Areas in which flood hazards are undetermined, but possible.

#### COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

#### OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- CBRS and OPA boundary
- International, State, or County boundary
- Corporate, Extraterritorial Jurisdiction, or Urban Growth boundary
- Area Not Included boundary
- Military Reservation, Native American Lands boundary
- Base Flood Elevation line and value; elevation in feet\*
- Base Flood Elevation value where uniform within zone; elevation in feet\*
- \* Referenced to the North American Vertical Datum of 1988
- Cross section line
- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 1000-meter Universal Transverse Mercator grid values, zone 16
- 5000-foot grid ticks: Kentucky State Plane coordinate system (FIPS 1600), Lambert Conformal Conic projection
- Bench mark (see explanation in Notes to Users section of this FIRN panel)

**G-1**

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Latitude: 38° 22' 43" N  
 Longitude: -84° 14' 39" W

Project No. E319201401.0001

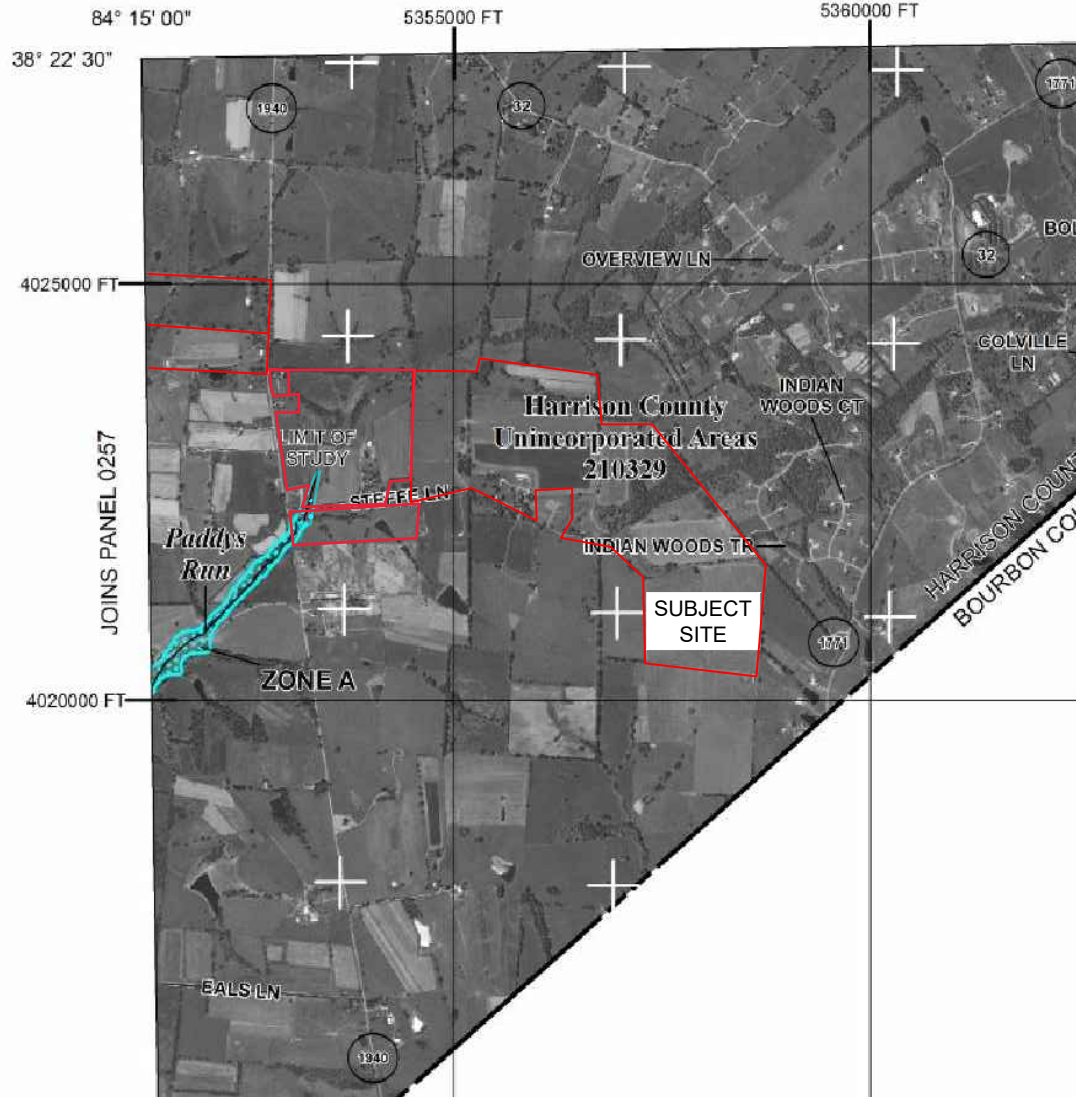
Date Created: 6/17/2019 Date Revised: 6/17/2019 File Path: C:\Users\alisha.strogl\Desktop\Projects\Recurrent Energy\Blue Moon - Harrison County, KY\XXX Figures\BM Figures.dwg  
 Data Sources: FEMA's National Flood Hazard Layer

## Appendix G-1: Flood Plain Map

**GEENEX**  
**Blue Moon**  
**Harrison County, Kentucky**

1142 WEST 2320 SOUTH, SUITE A  
 WEST VALLEY, UTAH 84119  
 P: 801-256-3800 F: 801-973-1095

CAD Analyst: Alisha Strong



**LEGEND**

- SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**  
 The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently dewatered. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE**  
 The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS**
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
- OTHERWISE PROTECTED AREAS (OPAS)**  
 CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- CBRS and OPA boundary
- International, State, or County boundary
- Corporate, Extrajurisdictional, or Urban Growth boundary
- Area Not Included boundary
- Military Reservation, Native American Lands boundary
- Base Flood Elevation line and value; elevation in feet\*
- Base Flood Elevation value where uniform within zone; elevation in feet\*
- \* Referenced to the North American Vertical Datum of 1988
- Cross section line
- Transect line
- 87° 07' 45", 32° 22' 30"
- 4276000m E
- 600000 FT
- DX5510 x
- M 1.5

G-1

Latitude: 38° 22' 43" N  
 Longitude: -84° 14' 39" W

Project No. E319201401.0001

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## Appendix G-1: Flood Plain Map 2

**GEENEX**  
**Blue Moon**  
 Harrison County, Kentucky



1142 WEST 2320 SOUTH, SUITE A  
 WEST VALLEY, UTAH 84119  
 P: 801-256-3800 F: 801-973-1095



## LEGEND

### SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

### FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

### OTHER FLOOD AREAS

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

### OTHER AREAS

- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.

### COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

### OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- CBRS and OPA boundary
- International, State, or County boundary
- Corporate, Extraterritorial Jurisdiction, or Urban Growth boundary
- Area Not Included boundary
- Military Reservation, Native American Lands boundary
- Base Flood Elevation line and value; elevation in feet\*
- Base Flood Elevation value where uniform within zone; elevation in feet\*
- \* Referenced to the North American Vertical Datum of 1988
- Cross section line
- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 1000-meter Universal Transverse Mercator grid values, zone 16
- 5000-foot grid ticks: Kentucky State Plane coordinate system (FPS 1600), Lambert Conformal Conic projection
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile



SUBJECT SITE

# G-1

Latitude: 38° 22' 43" N  
Longitude: -84° 14' 39" W

Project No. E319201401.0001

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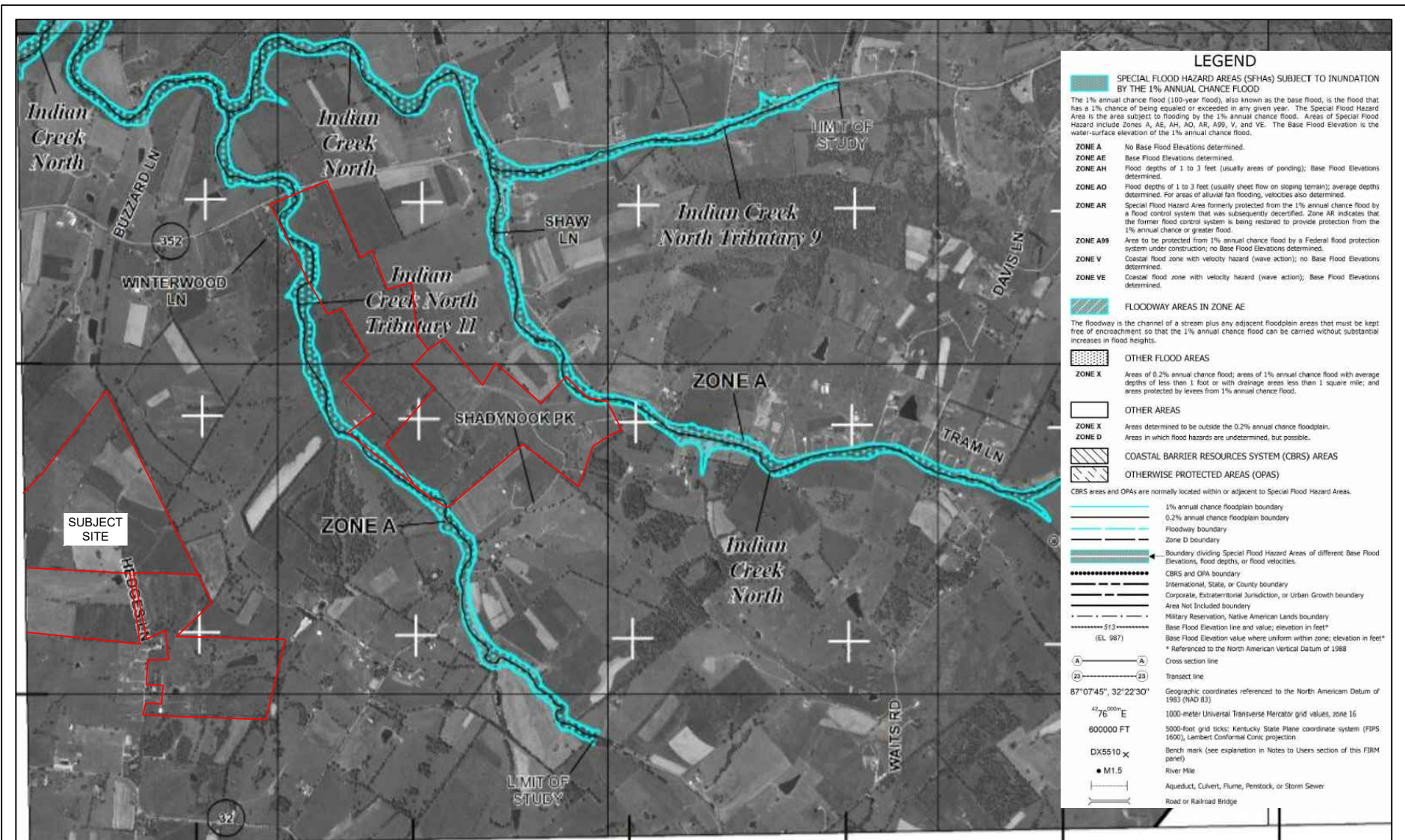
## Appendix G-1: Flood Plain Map 3

GEENEX  
Blue Moon  
Harrison County, Kentucky



1142 WEST 2320 SOUTH, SUITE A  
WEST VALLEY, UTAH 84119  
P: 801-256-3800 F: 801-973-1095





### LEGEND

**SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equal or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

**ZONE A** No Base Flood Elevations determined.

**ZONE AE** Base Flood Elevations determined.

**ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

**ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

**ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

**ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

**ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

**ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

**OTHER FLOOD AREAS**

**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

**OTHER AREAS**

**ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.

**ZONE D** Areas in which flood hazards are undetermined, but possible.

**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**

**OTHERWISE PROTECTED AREAS (OPAS)**

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- CBRS and OPA boundary
- International, State, or County boundary
- Corporate, Extrajurisdictional, or Urban Growth boundary
- Area Not Included boundary
- Military Reservation, Native American Lands boundary
- Base Flood Elevation line and value; elevation in feet\*
- Base Flood Elevation value where uniform within zone; elevation in feet\*
- \* Referenced to the North American Vertical Datum of 1988
- Cross section line
- Transect line

87°07'45", 32°22'30"

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

42° 00' 00" E  
76° E  
1000-meter Universal Transverse Mercator grid values, zone 16

600000 FT  
5000-foot grid ticks: Kentucky State Plane coordinate system (FIPS 1500), Lambert Conformal Conic projection

DX5510 x  
Bench mark (see explanation in Notes to Users section of this FIRM panel)

M1.5  
River Mile

Aqueduct, Culvert, Flume, Penstock, or Storm Sewer

Road or Railroad Bridge

**G-1**

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Latitude: 38° 22' 43" N  
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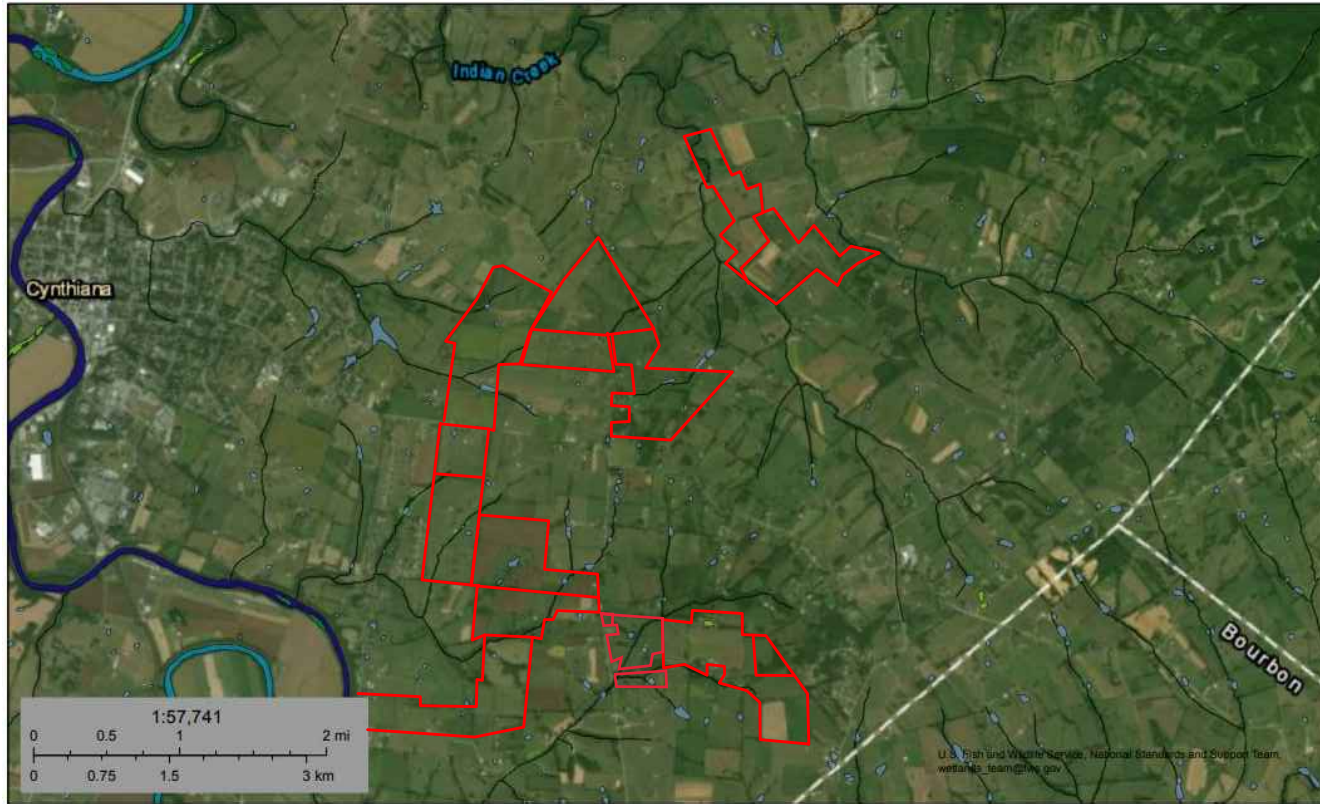
Project No. E319201401.0001

## Appendix G-1: Flood Plain Map 4

GEENEX  
Blue Moon  
Harrison County, Kentucky



1142 WEST 2320 SOUTH, SUITE A  
WEST VALLEY, UTAH 84119  
P: 801-256-3800 F: 801-973-1095



May 25, 2019

**Wetlands**

- |                                |                                   |          |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Emergent Wetland       | Lake     |
| Estuarine and Marine Wetland   | Freshwater Forested/Shrub Wetland | Other    |
|                                | Freshwater Pond                   | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)  
This page was produced by the NWI mapper

G-2

Latitude: 38° 22' 43" N  
Longitude: -84° 14' 39" W

Project No. E319201401.0001

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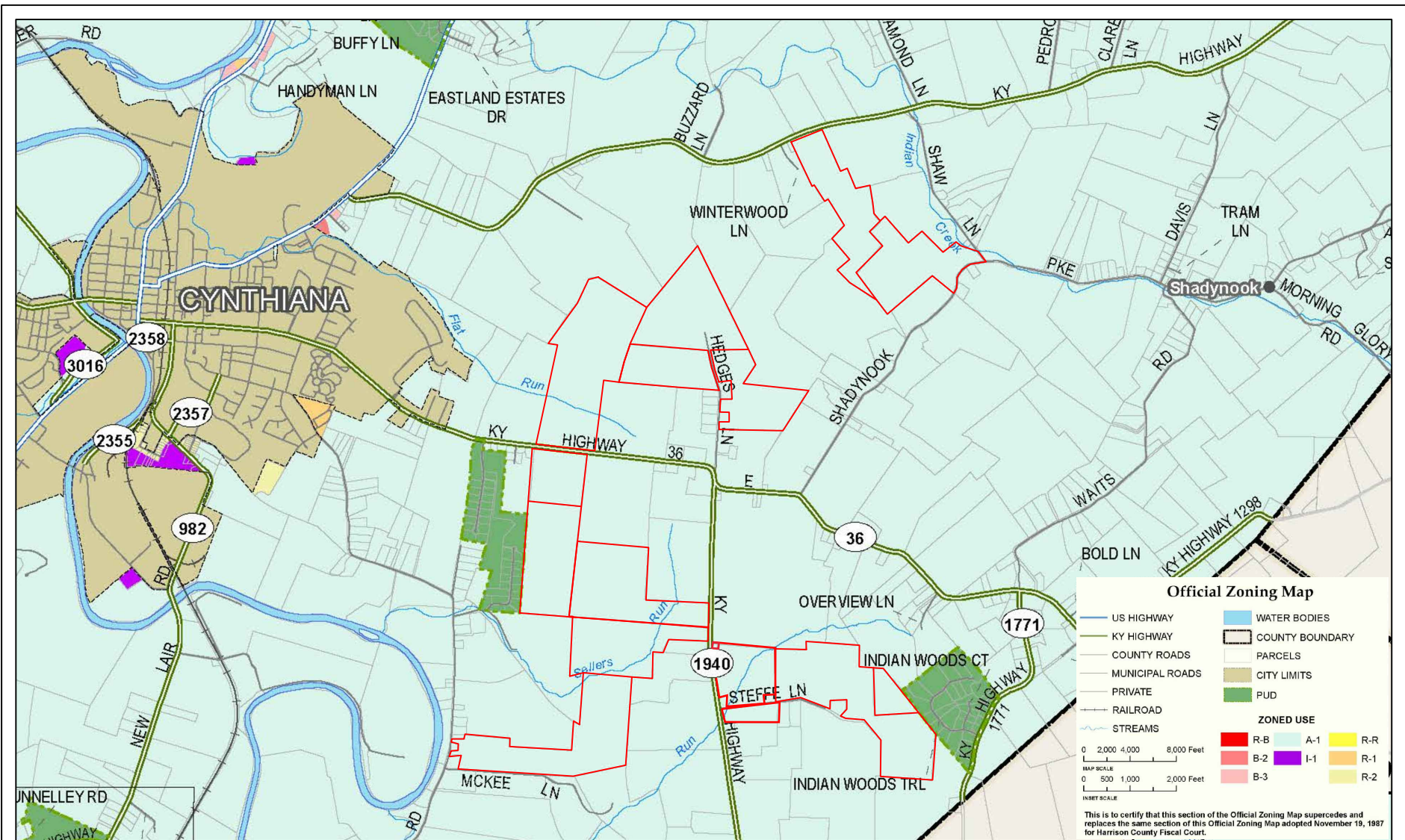
Appendix G-2: Wetlands Map

GEENEX  
Blue Moon  
Harrison County, Kentucky



1142 WEST 2320 SOUTH, SUITE A  
WEST VALLEY, UTAH 84119  
P: 801-256-3800 F: 801-973-1095





**G-3**

Latitude: 38° 22' 43" N  
Longitude: -84° 14' 39" W

Project No. E319201401.0001

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### Appendix G3: Zoning Map

GEENEX  
Blue Moon  
Harrison County, Kentucky



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WEST VALLEY, UTAH 84119  
P: 801-256-3800 F: 801-973-1095



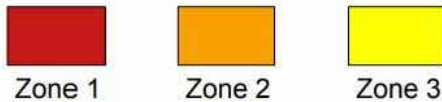
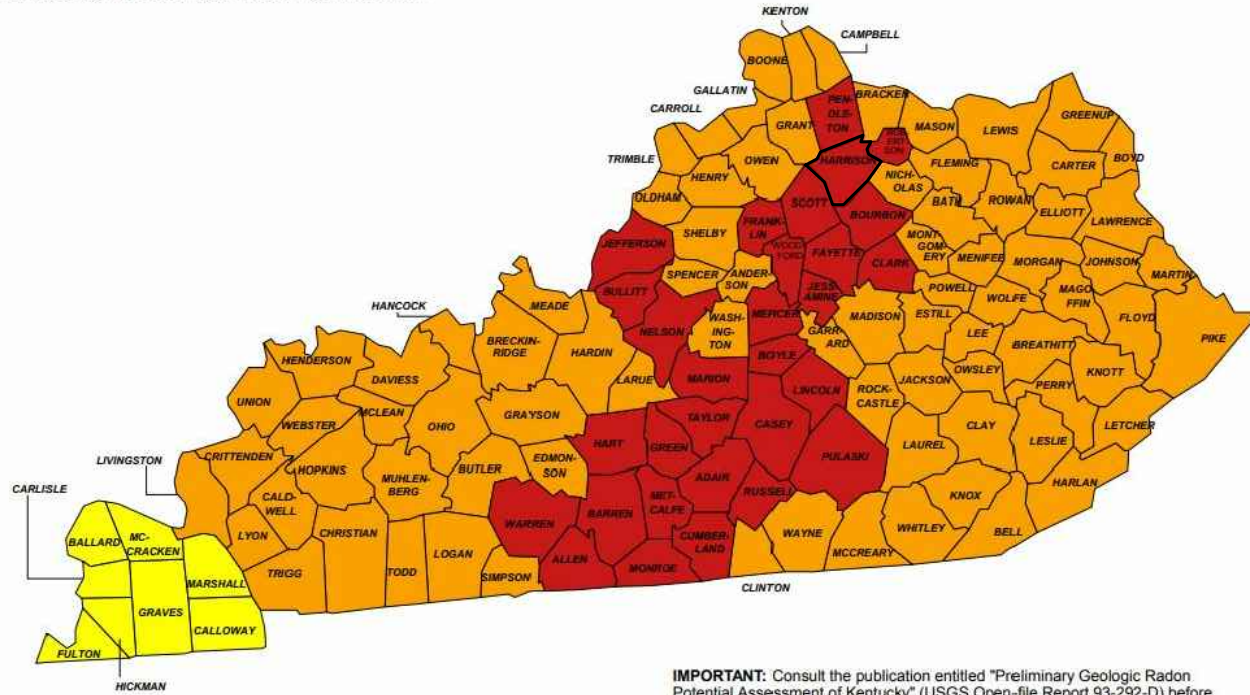
# KENTUCKY - EPA Map of Radon Zones

<http://www.epa.gov/radon/zonemap.html>

The purpose of this map is to assist National, State and local organizations to target their resources and to implement radon-resistant building codes.

This map is not intended to determine if a home in a given zone should be tested for radon. Homes with elevated levels of radon have been found in all three zones.

**All homes should be tested, regardless of zone designation.**



**IMPORTANT:** Consult the publication entitled "Preliminary Geologic Radon Potential Assessment of Kentucky" (USGS Open-file Report 93-292-D) before using this map. <http://energy.cr.usgs.gov/radon/grpinfo.html> This document contains information on radon potential variations within counties. EPA also recommends that this map be supplemented with any available local data in order to further understand and predict the radon potential of a specific area.

K-1

Latitude: 38° 22' 43" N  
Longitude: -84° 14' 39" W

Project No. E319201401.0001

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## Appendix K1: Radon Map

GEENEX  
Blue Moon  
Harrison County, Kentucky



1142 WEST 2320 SOUTH, SUITE A  
WEST VALLEY, UTAH 84119  
P: 801-256-3800 F: 801-973-1095

Blue Moon Solar – Harrison County, Kentucky

Appendix

H

Sanborn Map Report



Blue Moon

Blue Moon

Cynthiana, KY 41031

Inquiry Number: 5652207.3

May 15, 2019

## Certified Sanborn® Map Report



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)



# Certified Sanborn® Map Report

05/15/19

**Site Name:**

Blue Moon  
Blue Moon  
Cynthiana, KY 41031  
EDR Inquiry # 5652207.3

**Client Name:**

Cardno, Inc.  
1142 West 2320 South  
Salt Lake City, UT 84119  
Contact: Alisha Strong



The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Cardno, Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting [www.edrnet.com/sanborn](http://www.edrnet.com/sanborn).

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

## Certified Sanborn Results:

**Certification #** 58AE-4D44-8767  
**PO #** NA  
**Project** NA

### UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.



Sanborn® Library search results

Certification #: 58AE-4D44-8767

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- Library of Congress
- University Publications of America
- EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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Blue Moon Solar – Harrison County, Kentucky

Appendix



Topographic Map Report



Blue Moon

Blue Moon

Cynthiana, KY 41031

Inquiry Number: 5652207.4

May 15, 2019

# EDR Historical Topo Map Report

with QuadMatch™



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)



# EDR Historical Topo Map Report

05/15/19

**Site Name:**

Blue Moon  
Blue Moon  
Cynthiana, KY 41031  
EDR Inquiry # 5652207.4

**Client Name:**

Cardno, Inc.  
1142 West 2320 South  
Salt Lake City, UT 84119  
Contact: Alisha Strong



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Cardno, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR's Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

**Search Results:**

**P.O.#** NA  
**Project:** NA

**Coordinates:**

**Latitude:** 38.378611 38° 22' 43" North  
**Longitude:** -84.244167 -84° 14' 39" West  
**UTM Zone:** Zone 16 North  
**UTM X Meters:** 740727.01  
**UTM Y Meters:** 4251419.92  
**Elevation:** 904.00' above sea level

**Maps Provided:**

2013  
1976, 1978  
1961  
1952, 1953, 1954  
1934  
1929

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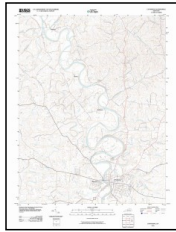
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## Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

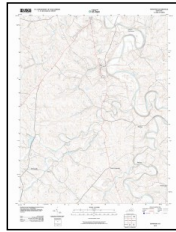
### 2013 Source Sheets



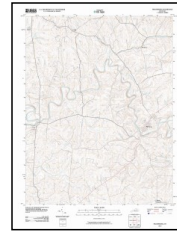
Cynthiana  
2013  
7.5-minute, 24000



Shady Nook  
2013  
7.5-minute, 24000



Shawhan  
2013  
7.5-minute, 24000



Millersburg  
2013  
7.5-minute, 24000

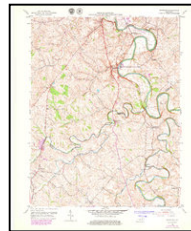
### 1976, 1978 Source Sheets



Shady Nook  
1976  
7.5-minute, 24000  
Aerial Photo Revised 1950



Millersburg  
1978  
7.5-minute, 24000  
Aerial Photo Revised 1976

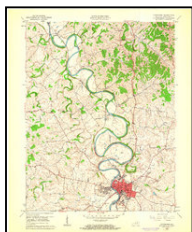


Shawhan  
1978  
7.5-minute, 24000  
Aerial Photo Revised 1976



Cynthiana  
1978  
7.5-minute, 24000  
Aerial Photo Revised 1976

### 1961 Source Sheets

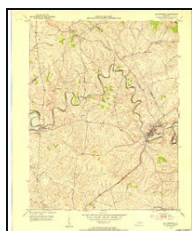


Cynthiana  
1961  
7.5-minute, 24000  
Aerial Photo Revised 1952

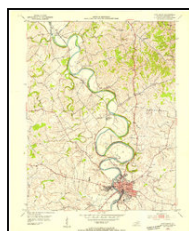
### 1952, 1953, 1954 Source Sheets



Shady Nook  
1952  
7.5-minute, 24000  
Aerial Photo Revised 1950



Millersburg  
1953  
7.5-minute, 24000  
Aerial Photo Revised 1950



Cynthiana  
1953  
7.5-minute, 24000  
Aerial Photo Revised 1952

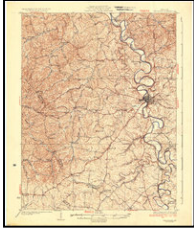


Shawhan  
1954  
7.5-minute, 24000  
Aerial Photo Revised 1952

## ***Topo Sheet Key***

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### **1934 Source Sheets**



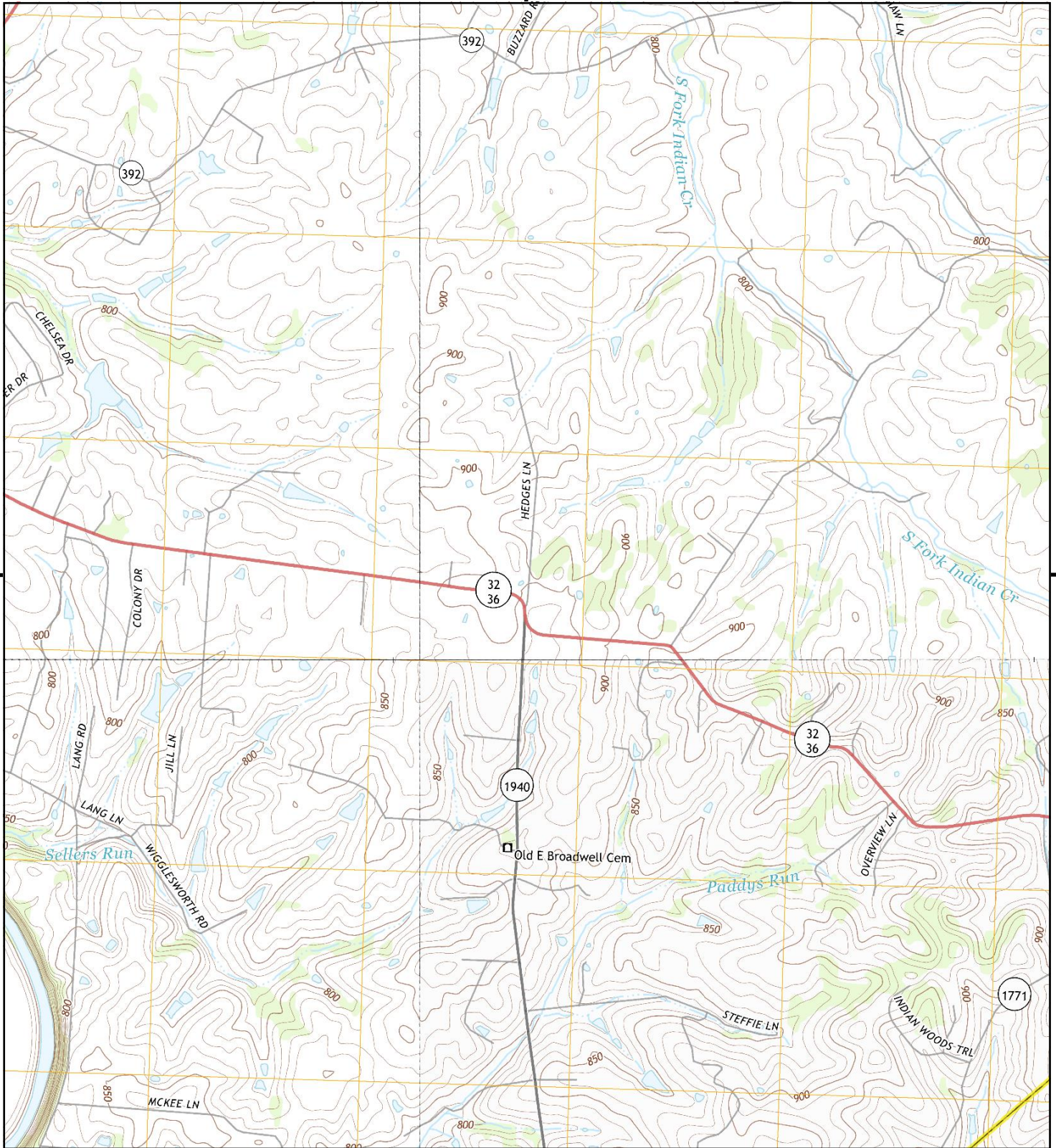
Cynthiana  
1934  
15-minute, 62500

### **1929 Source Sheets**

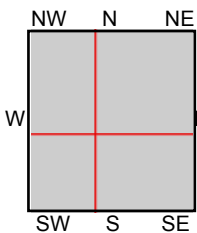


Cynthiana  
1929  
15-minute, 48000





This report includes information from the following map sheet(s).

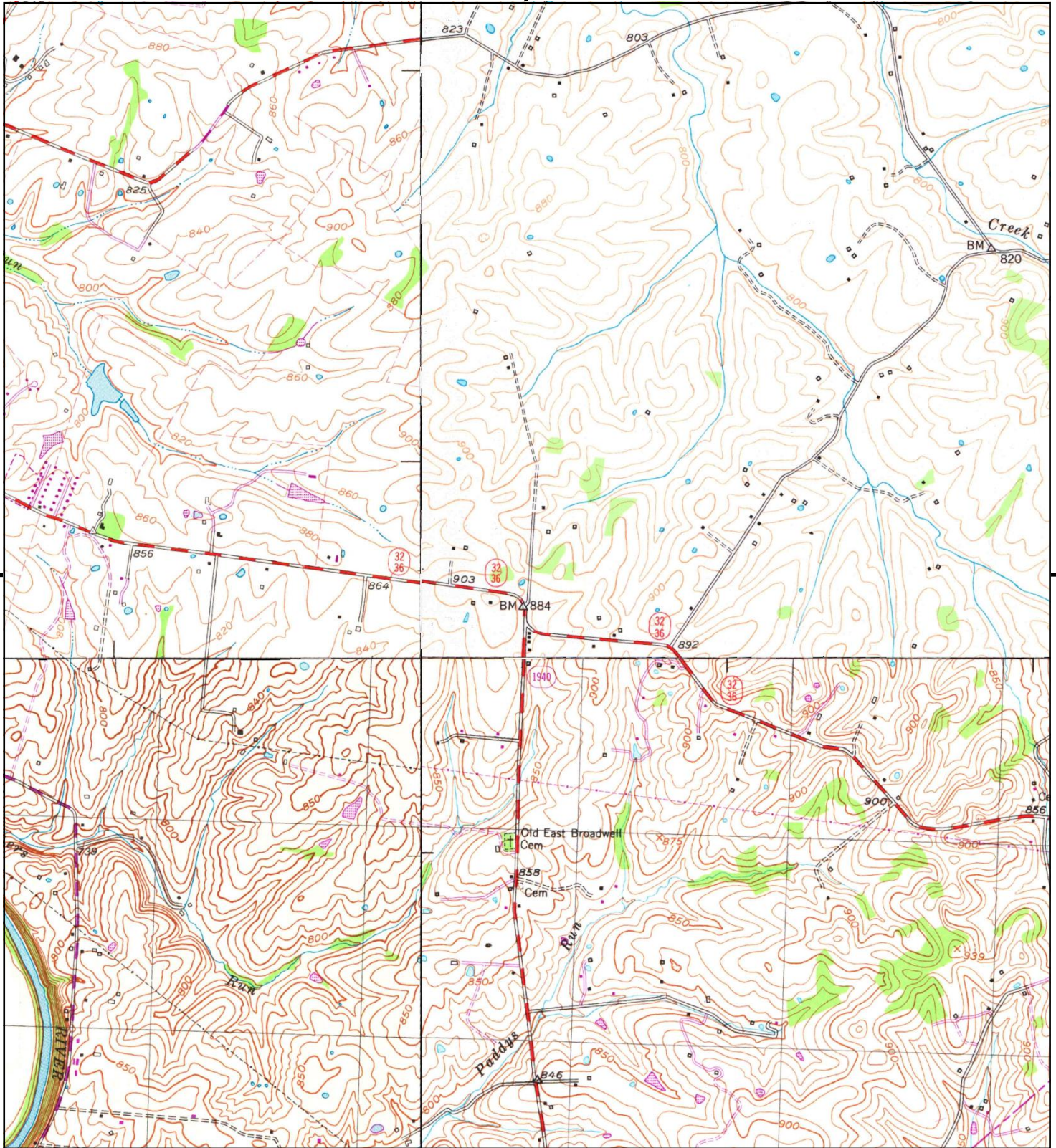


TP, Shady Nook, 2013, 7.5-minute  
 S, Millersburg, 2013, 7.5-minute  
 SW, Shawhan, 2013, 7.5-minute  
 NW, Cynthiana, 2013, 7.5-minute

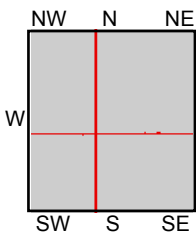
**SITE NAME:** Blue Moon  
**ADDRESS:** Blue Moon  
 Cynthiana, KY 41031  
**CLIENT:** Cardno, Inc.







This report includes information from the following map sheet(s).

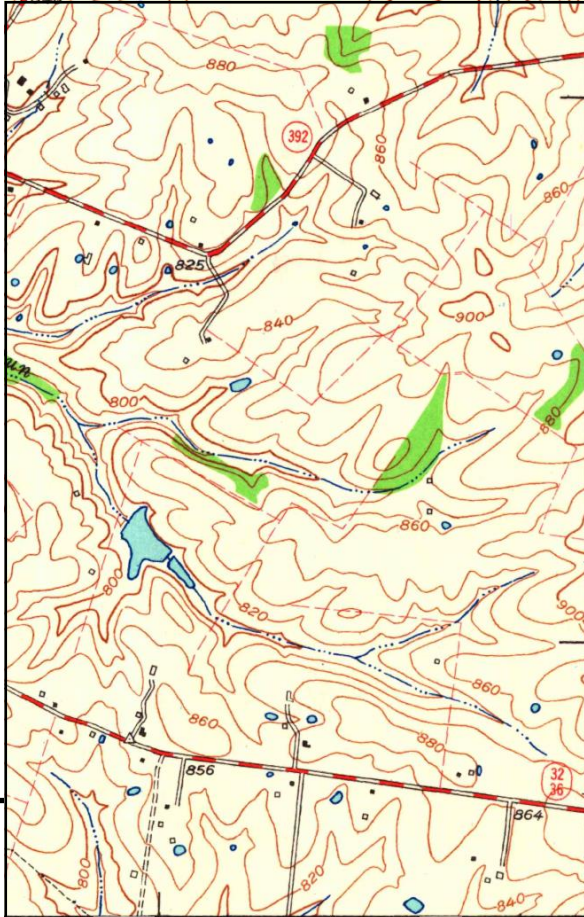


TP, Shady Nook, 1976, 7.5-minute  
 N, Cynthiana, 1978, 7.5-minute  
 SE, Millersburg, 1978, 7.5-minute  
 SW, Shawhan, 1978, 7.5-minute

SITE NAME: Blue Moon  
 ADDRESS: Blue Moon  
 Cynthiana, KY 41031  
 CLIENT: Cardno, Inc.



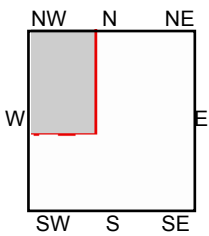
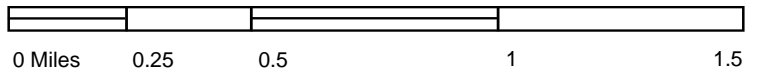




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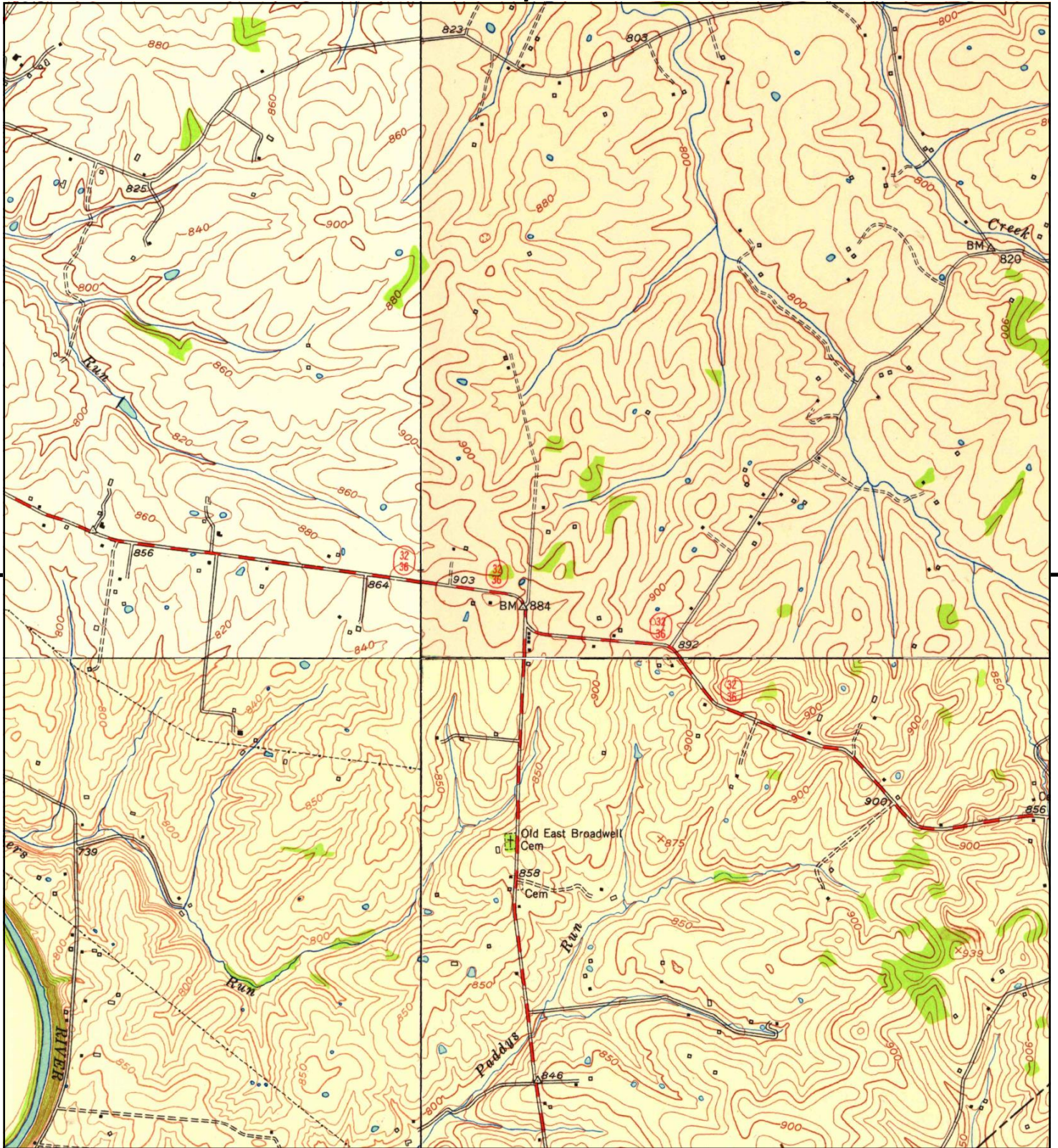


NW, Cynthiana, 1961, 7.5-minute

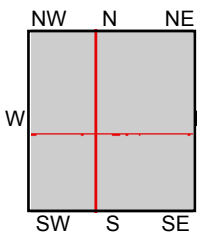
SITE NAME: Blue Moon  
 ADDRESS: Blue Moon  
 Cynthiana, KY 41031  
 CLIENT: Cardno, Inc.







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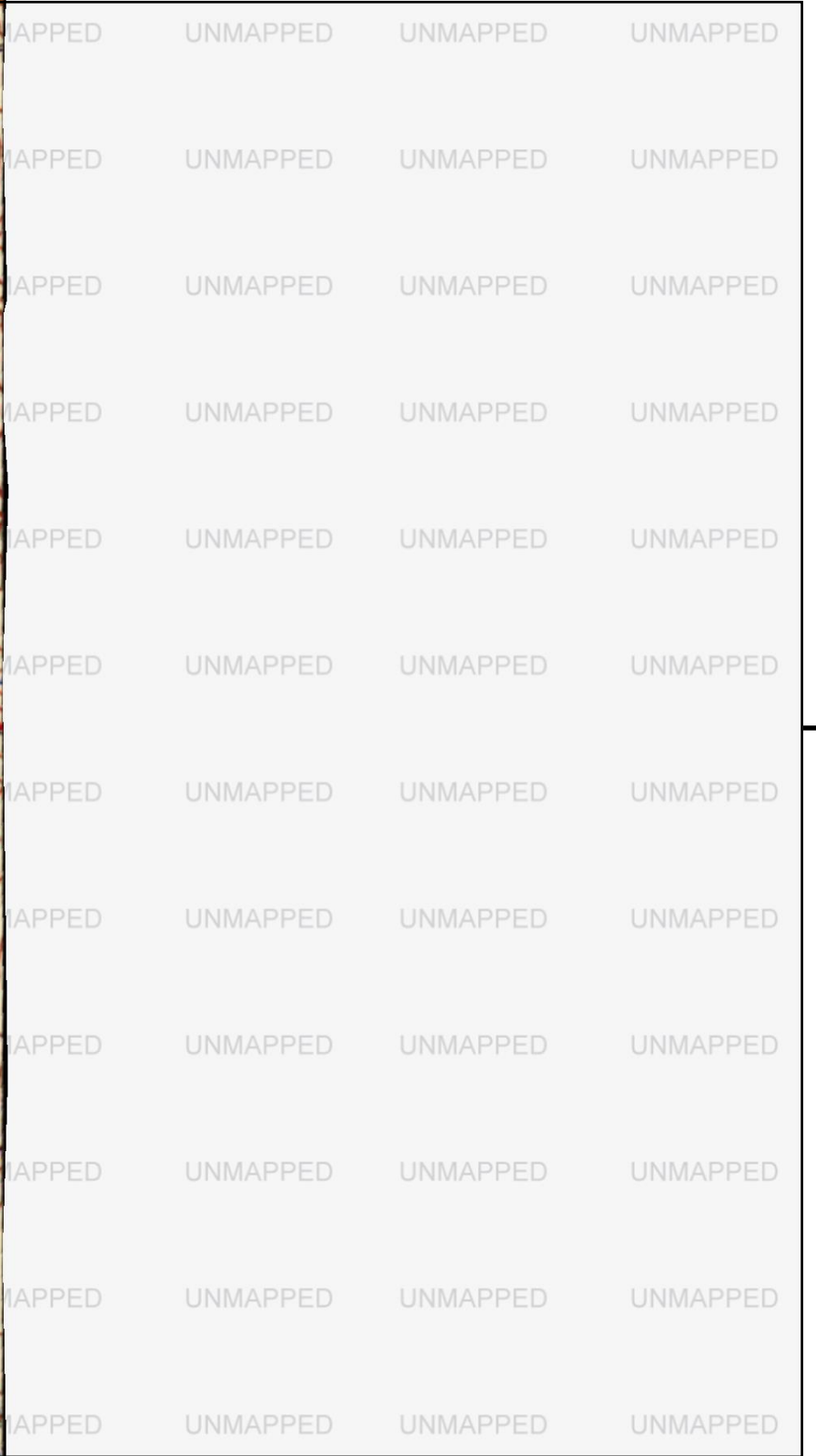
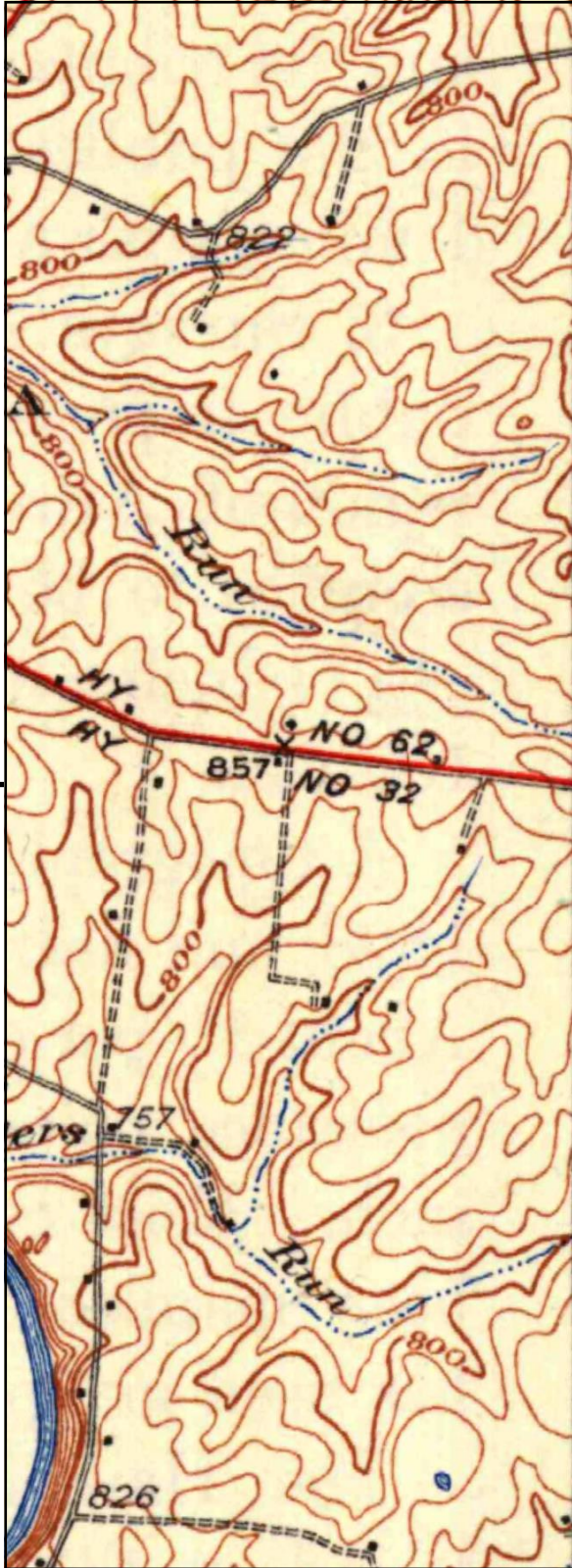


TP, Shady Nook, 1952, 7.5-minute  
 SE, Millersburg, 1953, 7.5-minute  
 S, Shawhan, 1954, 7.5-minute  
 NW, Cynthiana, 1953, 7.5-minute

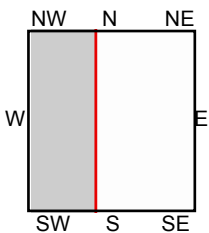
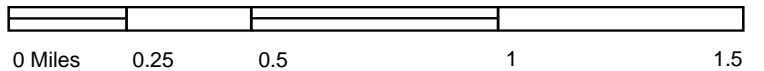
SITE NAME: Blue Moon  
 ADDRESS: Blue Moon  
 Cynthiana, KY 41031  
 CLIENT: Cardno, Inc.







This report includes information from the following map sheet(s).



W, Cynthiana, 1934, 15-minute

SITE NAME: Blue Moon  
ADDRESS: Blue Moon  
Cynthiana, KY 41031  
CLIENT: Cardno, Inc.







Blue Moon Solar – Harrison County, Kentucky

Appendix

J

City Directory Report

**Blue Moon**

Blue Moon  
Cynthiana, KY 41031

Inquiry Number: 5652207.5  
May 20, 2019

# The EDR-City Directory Image Report

## TABLE OF CONTENTS

### SECTION

Executive Summary

Findings

City Directory Images

*Thank you for your business.*  
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## EXECUTIVE SUMMARY

### DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

### RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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Data by

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### RESEARCH SUMMARY

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<u>Year</u>	<u>Target Street</u>	<u>Cross Street</u>	<u>Source</u>
2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive
2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive
2005	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive
2000	<input type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive
1995	<input type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive
1992	<input type="checkbox"/>	<input type="checkbox"/>	EDR Digital Archive

## FINDINGS

### TARGET PROPERTY STREET

Blue Moon  
Cynthiana, KY 41031

<u>Year</u>	<u>CD Image</u>	<u>Source</u>
-------------	-----------------	---------------

### MCKEE LN

2014	pg A1	EDR Digital Archive	
2010	pg A3	EDR Digital Archive	
2005	pg A5	EDR Digital Archive	
2000	-	EDR Digital Archive	Target and Adjoining not listed in Source
1995	-	EDR Digital Archive	Target and Adjoining not listed in Source
1992	-	EDR Digital Archive	Target and Adjoining not listed in Source

### STEFFE LN

2014	pg A2	EDR Digital Archive	
2010	pg A4	EDR Digital Archive	
2005	pg A6	EDR Digital Archive	
2000	-	EDR Digital Archive	Target and Adjoining not listed in Source
1995	-	EDR Digital Archive	Target and Adjoining not listed in Source
1992	-	EDR Digital Archive	Target and Adjoining not listed in Source

## FINDINGS

### CROSS STREETS

No Cross Streets Identified



## **City Directory Images**

**MCKEE LN 2014**

136	GRINSTEAD, MALCOLM B
649	MCKEE, JOE P
673	MCKEE JOE
	OCCUPANT UNKNOWN,
967	OCCUPANT UNKNOWN,

**STEFFE LN 2014**

29	OWSLEY, GINA M
185	DONOVAN, JAMES L
263	STEFFE, BEVERLY M
312	OCCUPANT UNKNOWN,
378	MCILVAIN, KEVIN K
415	OCCUPANT UNKNOWN,
469	MASTIN CHAPEL
	MASTIN, RACHEL D
488	KISKADEN, CHRISTINA
597	ASHER, DAVID B



**MCKEE LN 2010**

136	GRINSTEAD, MALCOLM B
649	MCKEE, JOE P
673	MCKEE JOE

**STEFFE LN 2010**

197	TRIBBLE, CHARLES C
263	STEFFE, BEVERLY M
378	MCILVAIN, KEVIN K
469	MASTIN CHAPEL
	MASTIN, RACHEL
597	ASHER, DAVID B

**MCKEE LN 2005**

136	GRINSTEAD, MALCOLM B
649	MCKEE, JOE P
673	MCKEE JOE
967	MCKEE, FRANK



**STEFFE LN 2005**

185 KEARNS, KATHY M  
197 TRIBBLE, CHARLES G  
263 STEFFE, BEVERLY M  
378 MCILVAIN, KEVIN K  
415 OWSLEY, GINA M  
469 MASTIN CHAPEL  
MASTIN, C

Blue Moon Solar – Harrison County, Kentucky

Appendix

K

Property Owner Questionnaires

## All Appropriate Inquiry Questionnaire



The All Appropriate Inquiry rule (40 CFR Part 312)

requires that certain inquiries be made to past and

present owners, operators and occupants to help evaluate the environmental conditions of the property. Please answer all questions to the best of your ability.

Name: Chapel Mastin

Date: 9-17-19

Property address: 469 Steffe Lane, Cynthia, KY 41031

- 1) What is the current use(s) of the property? For instance, residential, commercial, agricultural (multiple responses are acceptable). Please list all on-site businesses and contact information for each owner / operator, if any.

Residential (landowner's home and one small rental house) and agricultural

- 2) List the known uses/occupants of all adjacent properties including which direction the property is located relative to yours.

<u>Tom McKee / Betsy Clyde - South</u>	<u>Edward Magee - West</u>
<u>Larry Perreault - East</u>	<u>? Hemlock - Northeast</u>
<u>David + Julie Asher - East</u>	<u>Mrs. Ingram - East</u>
<u>Tereyl Tribble - West</u>	<u>? - Northeast</u>

- 3) Do you know the past uses of the property?  Yes  No

List: (i.e, undeveloped prior to 1940, agricultural 1940 to 1968, etc).

All surrounding property has been residential + agricultural for the last 44 years at least

- 4) What have adjacent properties been used for in the past (please include which direction the property is located relative to yours)?

All are residential + agricultural



- 5) What is the total acreage of the property? 1.89 and the square footage of each building? landowner's house - 2400 sq ft, Rental house 1200 sq ft, 2 barns approximately 7000 sq ft + 2800 sq ft, greenhouse 4800 sq ft, hay barn 3600 sq ft.
- 6) When was each structure built and what was there before construction?  
Barns are at least 44 yrs old, greenhouse + hay barn in the 1990's, <sup>land</sup>owner's home built in 1977 + rental house 1940's
- 7) What is the heating source of each building? Main home - electric, rental home +
- 8) Was the fuel source for the building(s) ever heating oil?  Yes  No  Unknown greenhouse @ gas heat
- 9) What is the water source for the property?  Public Supply  Well  Unknown
- 10) What is the sanitary service for the property?  Public Sanitary Sewer  Septic System  Unknown
- 11) Has there ever been a septic system on the property?  Yes  No  Unknown
- 12) Are any wells present on the property?  Yes  No  Unknown
- 13) Are floor drains present on the property?  Yes  No  Unknown
- 14) Where do the drains discharge?  N/A Septic System
- 15) Are any sumps, sand traps, grease traps or oil-water separators present now or historically on the property?  Yes  No  Unknown grease trap on tenant house
- 16) Are there any transformers, hydraulic lifts or other potentially PCB-containing equipment on the property?  Yes  No  Unknown
- 17) If so, has the PCB content been tested?  Yes  No  Unknown
- 18) Have areas of the property been used as borrow pits?  Yes  No If yes, please explain:  
 \_\_\_\_\_  
 \_\_\_\_\_
- 19) Have areas of the property been filled with debris or fill of unknown origin?  Yes  No  
 If yes, please explain: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
- 20) Is there now or has there been automobile/farm equipment/equipment repair, a parts washer or degreaser present at the property?  Yes  No If yes, please explain:  
 \_\_\_\_\_  
 \_\_\_\_\_

21) Are hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please list / explain:

above ground gas & diesel tanks at barn

22) Are there now or have there ever been underground storage tanks (USTs) present on the property?  Yes  No If yes, please list / explain:

~~22) Diesel tank removed 40 yrs ago at barn~~  
(N gas)

23) How many USTs are/were present? (Please provide the contents, age, location, and size for each)  N/A 1 at barn, removed 40 yrs ago. Not

sure if it stored diesel or gas

24) Are the USTs in service, closed-in-place or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed

Closed-in-place  N/A

25) Are there now or have there ever been aboveground storage tanks (ASTs) present on the property?  Yes  No If yes, please list / explain:

One gas and one diesel above ground tanks at barn  
One LP gas for fireplace at Master house, one at rental house,  
+ 2 LP gas at greenhouse.

26) How many ASTs are/were present? (Please provide the contents, age, location, and size for each)  N/A (4 are LP) see above question

27) Are the ASTs in service or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  N/A

28) Were chemicals, such as solvents, petroleum products, inks, paints, oils, or pesticides used in the past?  Yes  No If yes, please explain: \_\_\_\_\_

Just pesticides on farm crops

29) Do you know of specific chemicals that are present or once were present at the property or adjacent properties?  Yes  No If yes, please list: \_\_\_\_\_

Cornerstone (glyphosate) for agricultural use.

30) Were hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please explain / list: \_\_\_\_\_

31) Do you know of spills or other chemical releases that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

32) Do you know of any environmental cleanups that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

33) Has the property been the recipient of any notices or other correspondence from any government agency relating to past or present violations of environmental laws, rules or codes?  Yes  No If yes, please explain: \_\_\_\_\_



34) Do you know of any obvious indicators that point to the presence or likely presence of contamination at the property or adjacent properties?  Yes  No If yes, please explain:

35) Are you aware of any environmental cleanup liens or pending enforcement actions against the property that are filed or recorded under federal, tribal, state or local law?

Yes  No If yes, please explain: \_\_\_\_\_

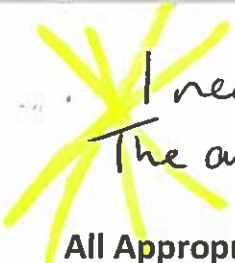
36) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state or local law?  Yes  No

If yes, please explain: \_\_\_\_\_

37) Do you have any other information that might indicate potential environmental concerns associated with the property or adjacent properties?  Yes  No If yes, please explain:

I have completed this questionnaire in good faith and to the best of my knowledge.

Signature: <i>Chapel Mastin</i>	Name: <i>Chapel Mastin</i>
Company:	Title: <i>Property Owner</i>
Relationship to the property: <i>OWNER</i>	Number of years associated with the property: <i>44 years</i>



I recieved 2 questionnaires. The properties are adjacent. The answers here in are for both properties, combined.

All Appropriate Inquiry Questionnaire



The All Appropriate Inquiry rule (40 CFR Part 312) requires that certain inquiries be made to past and present owners, operators and occupants to help evaluate the environmental conditions of the property. Please answer all questions to the best of your ability.

Name: GERALD M. WHALEN by Brod Whalen Date: 9-22-19

Property address: 1375 Shadybrook Pike Cynthiaana, Ky. 41031

1) What is the current use(s) of the property? For instance, residential, commercial, agricultural (multiple responses are acceptable). Please list all on-site businesses and contact information for each owner / operator, if any.

Residential - Brod Whalen 859 298-9878  
Agricultural - Nick Farmer 859 588-1970

2) List the known uses/occupants of all adjacent properties including which direction the property is located relative to yours.

All adjacent properties are Ag. use.  
WEST: Richard Midden, Kevin Bradford,  
EAST Keith Bradford, Rick O'brien,  
NORTH Brod Whalen

3) Do you know the past uses of the property?  Yes  No

List: (i.e, undeveloped prior to 1940, agricultural 1940 to 1968, etc).

Ag use past 100 years.

4) What have adjacent properties been used for in the past (please include which direction the property is located relative to yours)?

All ag. use

- 5) What is the total acreage of the property? 152 and the square footage of each building? 2,500' Log farm house  
1,500' barn
- 6) When was each structure built and what was there before construction?  
Log house - 1795
- 7) What is the heating source of each building? Wood + Electric heat
- 8) Was the fuel source for the building(s) ever heating oil?  Yes  No  Unknown
- 9) What is the water source for the property?  Public Supply  Well  Unknown
- 10) What is the sanitary service for the property?  Public Sanitary Sewer  Septic System  
 Unknown
- 11) Has there ever been a septic system on the property?  Yes  No  Unknown
- 12) Are any wells present on the property?  Yes  No  Unknown
- 13) Are floor drains present on the property?  Yes  No  Unknown
- 14) Where do the drains discharge?  N/A \_\_\_\_\_
- 15) Are any sumps, sand traps, grease traps or oil-water separators present now or historically on the property?  Yes  No  Unknown
- 16) Are there any transformers, hydraulic lifts or other potentially PCB-containing equipment on the property?  Yes  No  Unknown
- 17) If so, has the PCB content been tested?  Yes  No  Unknown
- 18) Have areas of the property been used as borrow pits?  Yes  No If yes, please explain:  
\_\_\_\_\_  
\_\_\_\_\_
- 19) Have areas of the property been filled with debris or fill of unknown origin?  Yes  No  
If yes, please explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 20) Is there now or has there been automobile/farm equipment/equipment repair, a parts washer or degreaser present at the property?  Yes  No If yes, please explain:  
\_\_\_\_\_  
\_\_\_\_\_



21) Are hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please list / explain:

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22) Are there now or have there ever been underground storage tanks (USTs) present on the property?  Yes  No If yes, please list / explain:

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23) How many USTs are/were present? (Please provide the contents, age, location, and size for each)  N/A \_\_\_\_\_

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24) Are the USTs in service, closed-in-place or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  Closed-in-place  N/A \_\_\_\_\_

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25) Are there now or have there ever been aboveground storage tanks (ASTs) present on the property?  Yes  No If yes, please list / explain:

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26) How many ASTs are/were present? (Please provide the contents, age, location, and size for each)  N/A \_\_\_\_\_

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27) Are the ASTs in service or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  N/A

28) Were chemicals such as solvents, petroleum products, inks, paints oils, or pesticides used in the past?  Yes  No If yes, please explain: \_\_\_\_\_

the house has been painted

29) Do you know of specific chemicals that are present or once were present at the property or adjacent properties?  Yes  No If yes, please list: \_\_\_\_\_

30) Were hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please explain / list: \_\_\_\_\_

31) Do you know of spills or other chemical releases that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

32) Do you know of any environmental cleanups that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

33) Has the property been the recipient of any notices or other correspondence from any government agency relating to past or present violations of environmental laws, rules or codes?  Yes  No If yes, please explain: \_\_\_\_\_

34) Do you know of any obvious indicators that point to the presence or likely presence of contamination at the property or adjacent properties?  Yes  No If yes, please explain:

35) Are you aware of any environmental cleanup liens or pending enforcement actions against the property that are filed or recorded under federal, tribal, state or local law?  Yes  No If yes, please explain:

36) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state or local law?  Yes  No  
If yes, please explain:

37) Do you have any other information that might indicate potential environmental concerns associated with the property or adjacent properties?  Yes  No If yes, please explain:

I have completed this questionnaire in good faith and to the best of my knowledge.

Signature: <i>Gerald M. Whalen</i> by:	Name: <i>GERALD M. WHALEN</i>
Company: <i>Burt Whalen</i>	Title: <i>OWNER</i>
Relationship to the property: <i>OWNER</i>	Number of years associated with the property: <i>OWNER FOR 53 YEARS</i>



## All Appropriate Inquiry Questionnaire



The All Appropriate Inquiry rule (40 CFR Part 312) requires that certain inquiries be made to past and present owners, operators and occupants to help evaluate the environmental conditions of the property. Please answer all questions to the best of your ability.

Name: JAMES O. & Shirley H McKee Date: 9-14-19

Property address: 2871 Old Lair Rd., Cynthia, KY 41031

- 1) What is the current use(s) of the property? For instance, residential, commercial, agricultural (multiple responses are acceptable). Please list all on-site businesses and contact information for each owner / operator, if any.

Agricultural nothing else

- 2) List the known uses/occupants of all adjacent properties including which direction the property is located relative to yours.

All properties, North, South, East, and West of ~~my~~ my property are agricultural and always have been.

- 3) Do you know the past uses of the property?  Yes  No

List: (i.e, undeveloped prior to 1940, agricultural 1940 to 1968, etc).

Agricultural, cattle grazing, hay & corn production, and tobacco production

- 4) What have adjacent properties been used for in the past (please include which direction the property is located relative to yours)?

Agricultural See # 2 and 3

5) What is the total acreage of the property? 140 and the square footage of each building? No buildings

6) When was each structure built and what was there before construction?

No buildings ever on property

7) What is the heating source of each building? N/A

8) Was the fuel source for the building(s) ever heating oil?  Yes  No  Unknown

9) What is the water source for the property?  Public Supply  Well  Unknown Creek & Ponds

10) What is the sanitary service for the property?  Public Sanitary Sewer  Septic System  Unknown No

11) Has there ever been a septic system on the property?  Yes  No  Unknown

12) Are any wells present on the property?  Yes  No  Unknown

13) Are floor drains present on the property?  Yes  No  Unknown

14) Where do the drains discharge?  N/A

15) Are any sumps, sand traps, grease traps or oil-water separators present now or historically on the property?  Yes  No  Unknown

16) Are there any transformers, hydraulic lifts or other potentially PCB-containing equipment on the property?  Yes  No  Unknown

17) If so, has the PCB content been tested?  Yes  No  Unknown

18) Have areas of the property been used as borrow pits?  Yes  No If yes, please explain:

19) Have areas of the property been filled with debris or fill of unknown origin?  Yes  No

If yes, please explain:

20) Is there now or has there been automobile/farm equipment/equipment repair, a parts washer or degreaser present at the property?  Yes  No If yes, please explain:

21) Are hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please list / explain:

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22) Are there now or have there ever been underground storage tanks (USTs) present on the property?  Yes  No If yes, please list / explain:

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23) How many USTs are/were present? (Please provide the contents, age, location, and size for each)  N/A \_\_\_\_\_

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24) Are the USTs in service, closed-in-place or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  Closed-in-place  N/A \_\_\_\_\_

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25) Are there now or have there ever been aboveground storage tanks (ASTs) present on the property?  Yes  No If yes, please list / explain:

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26) How many ASTs are/were present? (Please provide the contents, age, location, and size for each)  N/A \_\_\_\_\_

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27) Are the ASTs in service or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  N/A



28) Were chemicals such as solvents, petroleum products, inks, paints, oils, or pesticides used in the past?  Yes  No If yes, please explain: \_\_\_\_\_

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29) Do you know of specific chemicals that are present or once were present at the property or adjacent properties?  Yes  No If yes, please list:

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30) Were hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please explain / list:

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31) Do you know of spills or other chemical releases that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

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32) Do you know of any environmental cleanups that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

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33) Has the property been the recipient of any notices or other correspondence from any government agency relating to past or present violations of environmental laws, rules or codes?  Yes  No If yes, please explain: \_\_\_\_\_

34) Do you know of any obvious indicators that point to the presence or likely presence of contamination at the property or adjacent properties?  Yes  No If yes, please explain:

35) Are you aware of any environmental cleanup liens or pending enforcement actions against the property that are filed or recorded under federal, tribal, state or local law?

Yes  No If yes, please explain: \_\_\_\_\_

36) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state or local law?  Yes  No

If yes, please explain: \_\_\_\_\_

37) Do you have any other information that might indicate potential environmental concerns associated with the property or adjacent properties?  Yes  No If yes, please explain:

I have completed this questionnaire in good faith and to the best of my knowledge.

Signature: <i>James O. McKee</i>	Name: <i>JAMES O. MCKEE</i>
Company:	Title: <i>OWNER</i>
Relationship to the property: <i>owner</i>	Number of years associated with the property: <i>18 years</i>

## All Appropriate Inquiry Questionnaire



The All Appropriate Inquiry rule (40 CFR Part 312) requires that certain inquiries be made to past and

present owners, operators and occupants to help evaluate the environmental conditions of the property. Please answer all questions to the best of your ability.

Name: Kent Bradford

Date: 9/27/19

Property address: 858 KY. Highway 1940 Cynthia, KY. 41031

- 1) What is the current use(s) of the property? For instance, residential, commercial, agricultural (multiple responses are acceptable). Please list all on-site businesses and contact information for each owner / operator, if any.

agricultural

- 2) List the known uses/occupants of all adjacent properties including which direction the property is located relative to yours.

agricultural in all directions

- 3) Do you know the past uses of the property?  Yes  No

List: (i.e, undeveloped prior to 1940, agricultural 1940 to 1968, etc).

agricultural

- 4) What have adjacent properties been used for in the past (please include which direction the property is located relative to yours)?

all adjacent properties have been agricultural use in all directions



- 5) What is the total acreage of the property? 377 ac. and the square footage of each building? 4 x tobacco barns, about 3,000 ft<sup>2</sup> ea.  
1 x hay barn, 3000 ft<sup>2</sup>
- 6) When was each structure built and what was there before construction?  
Farmland was there before all barns built.  
Tobacco barns likely built in '50's & '60's, hay in 200
- 7) What is the heating source of each building? no heat
- 8) Was the fuel source for the building(s) ever heating oil?  Yes  No  Unknown
- 9) What is the water source for the property?  Public Supply  Well  Unknown
- 10) What is the sanitary service for the property?  Public Sanitary Sewer  Septic System  
 Unknown no sanitary service
- 11) Has there ever been a septic system on the property?  Yes  No  Unknown
- 12) Are any wells present on the property?  Yes  No  Unknown
- 13) Are floor drains present on the property?  Yes  No  Unknown
- 14) Where do the drains discharge?  N/A \_\_\_\_\_
- 15) Are any sumps, sand traps, grease traps or oil-water separators present now or historically on the property?  Yes  No  Unknown
- 16) Are there any transformers, hydraulic lifts or other potentially PCB-containing equipment on the property?  Yes  No  Unknown
- 17) If so, has the PCB content been tested?  Yes  No  Unknown
- 18) Have areas of the property been used as borrow pits?  Yes  No If yes, please explain:  
\_\_\_\_\_  
\_\_\_\_\_
- 19) Have areas of the property been filled with debris or fill of unknown origin?  Yes  No  
If yes, please explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 20) Is there now or has there been automobile/farm equipment/equipment repair, a parts washer or degreaser present at the property?  Yes  No If yes, please explain:  
\_\_\_\_\_  
\_\_\_\_\_

21) Are hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please list / explain:

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22) Are there now or have there ever been underground storage tanks (USTs) present on the property?  Yes  No If yes, please list / explain:

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23) How many USTs are/were present? (Please provide the contents, age, location, and size for each)  N/A \_\_\_\_\_

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24) Are the USTs in service, closed-in-place or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  Closed-in-place  N/A \_\_\_\_\_

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25) Are there now or have there ever been aboveground storage tanks (ASTs) present on the property?  Yes  No If yes, please list / explain:

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26) How many ASTs are/were present? (Please provide the contents, age, location, and size for each)  N/A \_\_\_\_\_

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27) Are the ASTs in service or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  N/A

28) Were chemicals such as solvents, petroleum products, inks, paints, oils, or pesticides used in the past?  Yes  No If yes, please explain: \_\_\_\_\_

Ag pesticides used in accordance to label requirements

29) Do you know of specific chemicals that are present or once were present at the property or adjacent properties?  Yes  No If yes, please list: \_\_\_\_\_

30) Were hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please explain / list: \_\_\_\_\_

31) Do you know of spills or other chemical releases that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

32) Do you know of any environmental cleanups that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

33) Has the property been the recipient of any notices or other correspondence from any government agency relating to past or present violations of environmental laws, rules or codes?  Yes  No If yes, please explain: \_\_\_\_\_



\_\_\_\_\_

\_\_\_\_\_

34) Do you know of any obvious indicators that point to the presence or likely presence of contamination at the property or adjacent properties?  Yes  No If yes, please explain:

\_\_\_\_\_

\_\_\_\_\_

35) Are you aware of any environmental cleanup liens or pending enforcement actions against the property that are filed or recorded under federal, tribal, state or local law?

Yes  No If yes, please explain: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

36) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state or local law?  Yes  No

If yes, please explain: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

37) Do you have any other information that might indicate potential environmental concerns associated with the property or adjacent properties?  Yes  No If yes, please explain:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I have completed this questionnaire in good faith and to the best of my knowledge.

Signature: <i>Kent Bradford</i>	Name: <i>Kent Bradford</i>
Company: <i>Cynona Farms, LLC</i>	Title: <i>managing member</i>
Relationship to the property: <i>Owner</i>	Number of years associated with the property: <i>21 - 53</i>

## All Appropriate Inquiry Questionnaire



The All Appropriate Inquiry rule (40 CFR Part 312)

requires that certain inquiries be made to past and

present owners, operators and occupants to help evaluate the environmental conditions of the property. Please answer all questions to the best of your ability.

Name: PAMELA D. McCALLEY-WHITE

Date: SEPT. 2019

Property address: 2308 KY. HWY 36 E, CYNTHIANA, KY. 41031

1) What is the current use(s) of the property? For instance, residential, commercial, agricultural (multiple responses are acceptable). Please list all on-site businesses and contact information for each owner / operator, if any.

MY CATTLE, ON MY PROPERTY, COW/CALF OPERATION, HAY HARVEST FOR CATTLE ON FARM - NOT SOLD

2) List the known uses/occupants of all adjacent properties including which direction the property is located relative to yours.

AG, CATTLE, ON SIDES AND BACK OF PROPERTY, HIGHWAY IN FRONT, ACCESS LANE TO SOUTH WEST FOR FARM BEHIND. ACROSS LANE IS ROTATION OF CORN/SOYBEANS. AND A CULDESACK SUBDIVISION

3) Do you know the past uses of the property?  Yes  No

List: (i.e, undeveloped prior to 1940, agricultural 1940 to 1968, etc).

MY PROPERTY WAS PART OF A LARGER FARM KNOWN AS "MIDDEN PROPERTY". IT HAS BEEN CATTLE AND HAY SINCE 1998, THERE WAS TOBACCO GROWN ON THE FARM

4) What have adjacent properties been used for in the past (please include which direction the property is located relative to yours)?

ALL PROPERTIES WERE PART OF MIDDEN PROPERTY - AN AGRICULTURAL BALE FAMILY FARM,

- 5) What is the total acreage of the property? 47 and the square footage of each building? 4 BENT TOBACCO BARN  
1900 sq. ft. HOUSE
- 6) When was each structure built and what was there before construction?  
HOUSE BUILT <sup>EARLY</sup> 1950's ERA - GRASS LAND  
BARN BUILT SAME ↑ - GRASS
- 7) What is the heating source of each building? FUEL OIL, REMOVED IN 2001
- 8) Was the fuel source for the building(s) ever heating oil?  Yes  No  Unknown
- 9) What is the water source for the property?  Public Supply  Well  Unknown
- 10) What is the sanitary service for the property?  Public Sanitary Sewer  Septic System  
 Unknown
- 11) Has there ever been a septic system on the property?  Yes  No  Unknown
- 12) Are any wells present on the property?  Yes  No  Unknown SPRINGS
- 13) Are floor drains present on the property?  Yes  No  Unknown
- 14) Where do the drains discharge?  N/A SEPTIC
- 15) Are any sumps, sand traps, grease traps or oil-water separators present now or historically on the property?  Yes  No  Unknown
- 16) Are there any transformers, hydraulic lifts or other potentially PCB-containing equipment on the property?  Yes  No  Unknown
- 17) If so, has the PCB content been tested?  Yes  No  Unknown
- 18) Have areas of the property been used as borrow pits?  Yes  No If yes, please explain:  
\_\_\_\_\_  
\_\_\_\_\_
- 19) Have areas of the property been filled with debris or fill of unknown origin?  Yes  No  
If yes, please explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 20) Is there now or has there been automobile/farm equipment/equipment repair, a parts washer or degreaser present at the property?  Yes  No If yes, please explain:  
\_\_\_\_\_  
\_\_\_\_\_



21) Are hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please list / explain:

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22) Are there now or have there ever been underground storage tanks (USTs) present on the property?  Yes  No If yes, please list / explain:

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23) How many USTs are/were present? (Please provide the contents, age, location, and size for each)  N/A \_\_\_\_\_

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24) Are the USTs in service, closed-in-place or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  Closed-in-place  N/A \_\_\_\_\_

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25) Are there now or have there ever been aboveground storage tanks (ASTs) present on the property?  Yes  No If yes, please list / explain:

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26) How many ASTs are/were present? (Please provide the contents, age, location, and size for each)  N/A \_\_\_\_\_

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27) Are the ASTs in service or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  N/A

28) Were chemicals such as solvents, petroleum products, inks, paints, oils, or pesticides used in the past?  Yes  No If yes, please explain: \_\_\_\_\_

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29) Do you know of specific chemicals that are present or once were present at the property or adjacent properties?  Yes  No If yes, please list:

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30) Were hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please explain / list:

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31) Do you know of spills or other chemical releases that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

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32) Do you know of any environmental cleanups that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

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33) Has the property been the recipient of any notices or other correspondence from any government agency relating to past or present violations of environmental laws, rules or codes?  Yes  No If yes, please explain: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

34) Do you know of any obvious indicators that point to the presence or likely presence of contamination at the property or adjacent properties?  Yes  No If yes, please explain:

\_\_\_\_\_

\_\_\_\_\_

35) Are you aware of any environmental cleanup liens or pending enforcement actions against the property that are filed or recorded under federal, tribal, state or local law?

Yes  No If yes, please explain: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

36) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state or local law?  Yes  No

If yes, please explain: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

37) Do you have any other information that might indicate potential environmental concerns associated with the property or adjacent properties?  Yes  No If yes, please explain:

\_\_\_\_\_

\_\_\_\_\_

I have completed this questionnaire in good faith and to the best of my knowledge.

Signature: <i>Randall M. McCauley White</i>	Name:
Company:	Title:
Relationship to the property: <i>OWNER</i>	Number of years associated with the property: <i>21 YRS.</i>

# All Appropriate Inquiry Questionnaire



The All Appropriate Inquiry rule (40 CFR Part 312) requires that certain inquiries be made to past and present owners, operators and occupants to help evaluate the environmental conditions of the property. Please answer all questions to the best of your ability.

Name: Paul Wilson

Date: 9-24-19

Property address: 731 Hedges Ln, Cynthia Ky 41031

- 1) What is the current use(s) of the property? For instance, residential, commercial, agricultural (multiple responses are acceptable). Please list all on-site businesses and contact information for each owner / operator, if any.

agricultural

- 2) List the known uses/occupants of all adjacent properties including which direction the property is located relative to yours.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 3) Do you know the past uses of the property?  Yes  No

List: (i.e, undeveloped prior to 1940, agricultural 1940 to 1968, etc).

agricultural

- 4) What have adjacent properties been used for in the past (please include which direction the property is located relative to yours)?

all agricultural



- 5) What is the total acreage of the property? 102 and the square footage of each building? House 1600 Square Feet (approx)  
Bas 3360 Square Ft
- 6) When was each structure built and what was there before construction?  
do not know
- 7) What is the heating source of each building? propane at house
- 8) Was the fuel source for the building(s) ever heating oil?  Yes  No  Unknown
- 9) What is the water source for the property?  Public Supply  Well  Unknown
- 10) What is the sanitary service for the property?  Public Sanitary Sewer  Septic System  
 Unknown
- 11) Has there ever been a septic system on the property?  Yes  No  Unknown
- 12) Are any wells present on the property?  Yes  No  Unknown
- 13) Are floor drains present on the property?  Yes  No  Unknown
- 14) Where do the drains discharge?  N/A South of house
- 15) Are any sumps, sand traps, grease traps or oil-water separators present now or historically on the property?  Yes  No  Unknown
- 16) Are there any transformers, hydraulic lifts or other potentially PCB-containing equipment on the property?  Yes  No  Unknown
- 17) If so, has the PCB content been tested?  Yes  No  Unknown
- 18) Have areas of the property been used as borrow pits?  Yes  No If yes, please explain:  
\_\_\_\_\_  
\_\_\_\_\_
- 19) Have areas of the property been filled with debris or fill of unknown origin?  Yes  No  
If yes, please explain: \_\_\_\_\_  
\_\_\_\_\_
- 20) Is there now or has there been automobile/farm equipment/equipment repair, a parts washer or degreaser present at the property?  Yes  No If yes, please explain:  
\_\_\_\_\_  
\_\_\_\_\_

21) Are hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please list / explain:

diesel tank for ag use  
\_\_\_\_\_  
\_\_\_\_\_

22) Are there now or have there ever been underground storage tanks (USTs) present on the property?  Yes  No If yes, please list / explain:

heating oil tank at house  
\_\_\_\_\_  
\_\_\_\_\_

23) How many USTs are/were present? (Please provide the contents, age, location, and size for each)  N/A heating oil near rear of house

size unknown  
\_\_\_\_\_  
\_\_\_\_\_

24) Are the USTs in service, closed-in-place or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed

Closed-in-place  N/A \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

25) Are there now or have there ever been aboveground storage tanks (ASTs) present on the property?  Yes  No If yes, please list / explain:

diesel tank for ag use  
\_\_\_\_\_  
\_\_\_\_\_

26) How many ASTs are/were present? (Please provide the contents, age, location, and size for each)  N/A 1 200 gal diesel tank beside barn

\_\_\_\_\_  
\_\_\_\_\_

27) Are the ASTs in service or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  N/A

28) Were chemicals such as solvents, petroleum products, inks, paints, oils, or pesticides used in the past?  Yes  No If yes, please explain: \_\_\_\_\_

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29) Do you know of specific chemicals that are present or once were present at the property or adjacent properties?  Yes  No If yes, please list:

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30) Were hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please explain / list:

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31) Do you know of spills or other chemical releases that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

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32) Do you know of any environmental cleanups that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

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33) Has the property been the recipient of any notices or other correspondence from any government agency relating to past or present violations of environmental laws, rules or codes?  Yes  No If yes, please explain: \_\_\_\_\_

34) Do you know of any obvious indicators that point to the presence or likely presence of contamination at the property or adjacent properties?  Yes  No If yes, please explain:

35) Are you aware of any environmental cleanup liens or pending enforcement actions against the property that are filed or recorded under federal, tribal, state or local law?

Yes  No If yes, please explain: \_\_\_\_\_

36) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state or local law?  Yes  No

If yes, please explain: \_\_\_\_\_

37) Do you have any other information that might indicate potential environmental concerns associated with the property or adjacent properties?  Yes  No If yes, please explain:

I have completed this questionnaire in good faith and to the best of my knowledge.

Signature: <i>Paul D. Wilson</i>	Name: <i>Paul Wilson</i>
Company:	Title: <i>Owner</i>
Relationship to the property: <i>Owner</i>	Number of years associated with the property: <i>12</i>



All Appropriate Inquiry Questionnaire



The All Appropriate Inquiry rule (40 CFR Part 312) requires that certain inquiries be made to past and present owners, operators and occupants to help evaluate the environmental conditions of the property. Please answer all questions to the best of your ability.

Name: WILLIAM R. COOK

Date: 9-16-19

Property address: 430 HEDGES LN CYNTHIANA, KY 41031

1) What is the current use(s) of the property? For instance, residential, commercial, agricultural (multiple responses are acceptable). Please list all on-site businesses and contact information for each owner / operator, if any.

AGRICULTURAL

2) List the known uses/occupants of all adjacent properties including which direction the property is located relative to yours.

DALE FRYMAN / RESIDENTIAL - SOUTH EAST

STEVE CRAYCRAFT / AGRICULTURAL - SOUTH

KENT BRADFORD / AGRICULTURAL - WEST

PAUL WILSON / AGRICULTURAL - NORTH

3) Do you know the past uses of the property?  Yes  No

List: (i.e, undeveloped prior to 1940, agricultural 1940 to 1968, etc).

AGRICULTURAL

4) What have adjacent properties been used for in the past (please include which direction the property is located relative to yours)?

AGRICULTURAL

5) What is the total acreage of the property? 56 and the square footage of each building? 1 SHED - APPROX. 600 SQ.FT. (WOODEN)  
(FOR STORAGE ONLY)

6) When was each structure built and what was there before construction?  
1965 - AGRICULTURAL

7) What is the heating source of each building? NA

8) Was the fuel source for the building(s) ever heating oil?  Yes  No  Unknown NONE

9) What is the water source for the property?  Public Supply  Well  Unknown NONE

10) What is the sanitary service for the property?  Public Sanitary Sewer  Septic System NONE  
 Unknown

11) Has there ever been a septic system on the property?  Yes  No  Unknown

12) Are any wells present on the property?  Yes  No  Unknown

13) Are floor drains present on the property?  Yes  No  Unknown

14) Where do the drains discharge?  N/A

15) Are any sumps, sand traps, grease traps or oil-water separators present now or historically on the property?  Yes  No  Unknown

16) Are there any transformers, hydraulic lifts or other potentially PCB-containing equipment on the property?  Yes  No  Unknown

17) If so, has the PCB content been tested?  Yes  No  Unknown

18) Have areas of the property been used as borrow pits?  Yes  No If yes, please explain:  
\_\_\_\_\_  
\_\_\_\_\_

19) Have areas of the property been filled with debris or fill of unknown origin?  Yes  No  
If yes, please explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

20) Is there now or has there been automobile/farm equipment/equipment repair, a parts washer or degreaser present at the property?  Yes  No If yes, please explain:  
\_\_\_\_\_  
\_\_\_\_\_

21) Are hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please list / explain:

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22) Are there now or have there ever been underground storage tanks (USTs) present on the property?  Yes  No If yes, please list / explain:

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23) How many USTs are/were present? (Please provide the contents, age, location, and size for each)  N/A \_\_\_\_\_

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24) Are the USTs in service, closed-in-place or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  Closed-in-place  N/A \_\_\_\_\_

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25) Are there now or have there ever been aboveground storage tanks (ASTs) present on the property?  Yes  No If yes, please list / explain:

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26) How many ASTs are/were present? (Please provide the contents, age, location, and size for each)  N/A \_\_\_\_\_

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27) Are the ASTs in service or removed? Please provide applicable closure/removal reports or current tightness testing results.  In Service  Removed  N/A

28) Were chemicals such as solvents, petroleum products, inks, paints, oils, or pesticides used in the past?  Yes  No If yes, please explain: \_\_\_\_\_

AGRICULTURAL USE MH30, 2-4-D - CROSS BOW

29) Do you know of specific chemicals that are present or once were present at the property or adjacent properties?  Yes  No If yes, please list: \_\_\_\_\_

SEE ABOVE

30) Were hazardous substances or petroleum products stored, generated, treated or disposed at the property?  Yes  No If yes, please explain / list: \_\_\_\_\_

31) Do you know of spills or other chemical releases that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

32) Do you know of any environmental cleanups that have taken place at the property or adjacent properties?  Yes  No If yes, please explain: \_\_\_\_\_

33) Has the property been the recipient of any notices or other correspondence from any government agency relating to past or present violations of environmental laws, rules or codes?  Yes  No If yes, please explain: \_\_\_\_\_



34) Do you know of any obvious indicators that point to the presence or likely presence of contamination at the property or adjacent properties?  Yes  No If yes, please explain:

35) Are you aware of any environmental cleanup liens or pending enforcement actions against the property that are filed or recorded under federal, tribal, state or local law?

Yes  No If yes, please explain: \_\_\_\_\_

36) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state or local law?  Yes  No

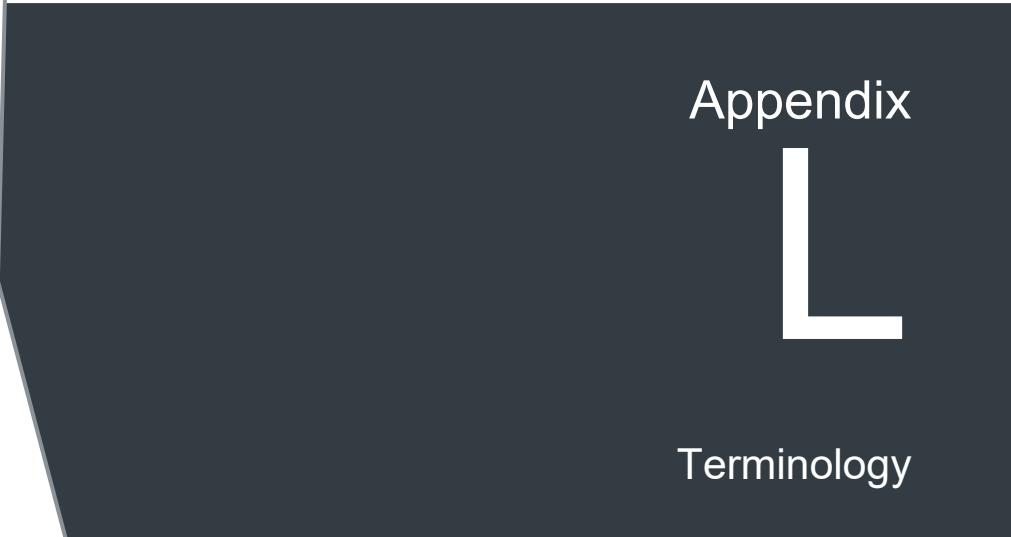
If yes, please explain: \_\_\_\_\_

37) Do you have any other information that might indicate potential environmental concerns associated with the property or adjacent properties?  Yes  No If yes, please explain:

I have completed this questionnaire in good faith and to the best of my knowledge.

Signature: <i>William R. Cook</i>	Name: <i>WILLIAM R. COOK</i>
Company:	Title: <i>Owner</i>
Relationship to the property: <i>OWNER.</i>	Number of years associated with the property: <i>69</i>

Blue Moon Solar – Harrison County, Kentucky



Appendix



Terminology

# Terminology

The following provides definitions and descriptions of certain terms that may be used in this report. Italics indicate terms that are defined by ASTM Standard Practice E 1527-13. The Standard Practice should be referenced for further detail (such as the precise wording), related definitions, or additional explanation regarding the meaning of terms.

***recognized environmental condition (REC)*** - the presence or likely presence of any hazardous substances or petroleum products in, on, or at the Subject Property: (1) due to any release to the environment, (2) under conditions indicative of a release to the environment, or (3) under conditions that pose a material threat of a future release to the environment.

***de minimis conditions*** – conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions.

***historical recognized environmental condition (HREC)*** – a past release of any hazardous substances in connection with the Subject Property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the V to any required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls). The final decision rests with the environmental professional and will be influenced by the current impact of the historical recognized environmental condition on the Subject Property.

***controlled recognized environmental condition (CREC)*** – a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

***material threat*** – a physically observable or obvious threat that is reasonably likely to lead to a release that, in the opinion of the environmental professional, is threatening and might result in impact to public health or the environment. An example might include an aboveground storage tank system that contains a hazardous substance and that shows evidence of damage such that it may cause or contribute to tank integrity failure with a release of contents to the environment.

***threat to human health or the environment*** – a substantial risk of harm to public health or the environment resulting from the presence or likely presence of an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the Subject Property or into the ground, ground water, or surface water of the Subject Property. An example might include a release of a hazardous substance in concentrations exceeding applicable governmental agency standards under conditions that could reasonably and foreseeably result in substantial exposure to humans or substantial damage to natural resources. The risk of that exposure or damage would represent a threat to human health or the environment.

***generally would not be the subject of an enforcement action*** – the likelihood that an environmental condition would not be subject to enforcement action if brought to the attention of appropriate governmental agencies. If the circumstances suggest an enforcement action would be less likely than not, then the condition is considered to be generally not the likely the subject of an enforcement action.

Blue Moon Energy LLC  
Response to Public Service Commission's Second Request for Information  
Case No. 2021-00414

Request No. 7:

Disclose whether a wetlands delineation study has been completed. If so, provide a copy.

Response No. 7:

A wetland delineation was completed as part of the Natural Resources report. See documents provided in Response No. 6.

Responding Witness: Chad Martin, Kathryn Garcia



Blue Moon Energy LLC  
Response to Public Service Commission's Second Request for Information  
Case No. 2021-00414

Request No. 8:

The feasibility study provided as Exhibit D to the amended application is dated July 2018. Disclose whether any update has been completed. If so, provide a copy.

Response No. 8:

There is no update to the July 31, 2018, Feasibility Study.

Responding Witness: Jayce Walker

Blue Moon Energy LLC  
Response to Public Service Commission's Second Request for Information  
Case No. 2021-00414

Request No. 9:

Explain and illustrate on a map any variations in site access roads from the original site plan submitted with the amended application.

Response No. 9:

There have been no changes to the site access roads since the original site plan was submitted with the amended application. Blue Moon Energy is considering an additional access point as indicated on the attached map off KY HW 392.

Responding Witness: Kathryn Garcia



