

**Sebree Solar II, LLC**

**Case No. 2022-00131**

**Application – Exhibit 13**

**Kentucky State Board on Electric Generation and Transmission Siting  
Sebree Solar II, LLC – Case No. 2021-00131**

**Application – Exhibit 13**

**Filing Requirement**

*The board may grant a deviation from the requirements of subsection (2) of this section on a finding that the proposed facility is designed to and, as located, would meet the goals of ... KRS 224.10-280 (KRS 278.704(4)); and*

*The cumulative environmental assessment shall contain a description, with appropriate analytical support, of:*

- (a) For air pollutants:*
  - 1. Types and quantities of air pollutants that will be emitted from the facility; and*
  - 2. A description of the methods to be used to control those emissions;*
- (b) For water pollutants:*
  - 1. Types and quantities of water pollutants that will be discharged from the facility into the waters of the Commonwealth; and*
  - 2. A description of the methods to be used to control those discharges;*
- c) For wastes:*
  - 1. Types and quantities of wastes that will be generated by the facility; and*
  - 2. A description of the methods to be used to manage and dispose of such wastes; and*
- (d) For water withdrawal:*
  - 1. Identification of the source and volume of anticipated water withdrawal needed to support facility construction and operations; and*
  - 2. A description of the methods to be used for managing water usage and withdrawal. (KRS 224.10-280(3))*

**Respondent: Brian Bartels**

Sebree Solar II, LLC is not seeking a deviation from the statutory setback requirements pursuant to KRS 278.704(4) and, therefore, it is not required to file its Cumulative Environmental Assessment as part of its Application. Nevertheless, as a courtesy, pursuant to KRS 224.10-280, the attached Cumulative Environmental Assessment was prepared by Environmental Consulting and Technology, Inc., under the direction and supervision of Brian Bartels, on behalf of Sebree II. It was tendered to the Kentucky Energy and Environment Cabinet on April 18, 2023.

Attachment A: Cumulative Environmental Assessment (13 Pages)

**Case No. 2023-00131**  
**Application - Exhibit 13**  
*Attachment (13 pages)*

**Sebree Solar II, LLC**

**Case No. 2022-00131**

**Application – Exhibit 13  
Attachment A**

**Cumulative Environmental  
Assessment  
(13 Pages)**



# Cumulative Environmental Assessment for Proposed Sebree Solar II Project

April 2023

ECT No. 220483-0707

Sebree Solar II, LLC  
Juno Beach, Florida

**ECT**

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## List of Acronyms and Abbreviations

Applicant	Sebree Solar II, LLC
BMPs	Best Management Practices
CEA	Cumulative environmental assessment
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
DOW	Division of Water
ECT	Environmental Consulting & Technology, Inc.
EPA	U.S. Environmental Protection Agency
E&S	Erosion and sediment
HMPB	Hazardous Materials Business Plan
HUC	Hydrologic Unit Code
KAR	Kentucky Administrative Code
KPDES	Kentucky Pollution Discharge Elimination System
KRS	Kentucky Revised Statues
kV	kilovolts
MSDS	Material Safety Data Sheet
MW AC	Megawatt alternating current
NAAQS	National Ambient Air Quality Standards
NO <sub>x</sub>	Nitrous oxides
PM	Particulate Matter
PPE	Personal protective equipment
Project	Sebree Solar II Project
PV	Photovoltaic
SCADA	Solar meteorological station, supervisory control, and data acquisition
SES	Solar Energy System
SO <sub>2</sub>	Sulfur Dioxide
SPCC	Spill Prevention Control and Countermeasure Plan
SWPPP	Stormwater Pollution Prevention Plan
VOC	Volatile organic compounds
WOTUS	Waters of the United States

## 1.0 Introduction

### 1.1 Project Description

Sebree Solar II, LLC (Applicant) contracted Environmental Consulting & Technology, Inc. (ECT) to prepare a cumulative environmental assessment (CEA) for the Sebree Solar II Project (Project). The Applicant proposes to develop a Solar Energy System (SES) in Henderson County, Kentucky. The final design Project Facilities (i.e. fenced-in array areas with PV solar panels and access roads) will be constructed within a 1,000-acre site mapped approximately six (6) miles south of the City of Henderson, directly west of the Town of Robards, west of U.S. Highway 41 (“US-41”), north of State Road 56 (“HWY-56”), and east of US-41A (**Figure 1**). The Project site consists of primarily active agricultural fields, areas of successional woods, and upland shrub thicket. Collection line easements connecting the Project with the collector substation, as shown in **Figure 1**, are to be sited on an additional eleven (11) parcels that total approximately 970 acres.

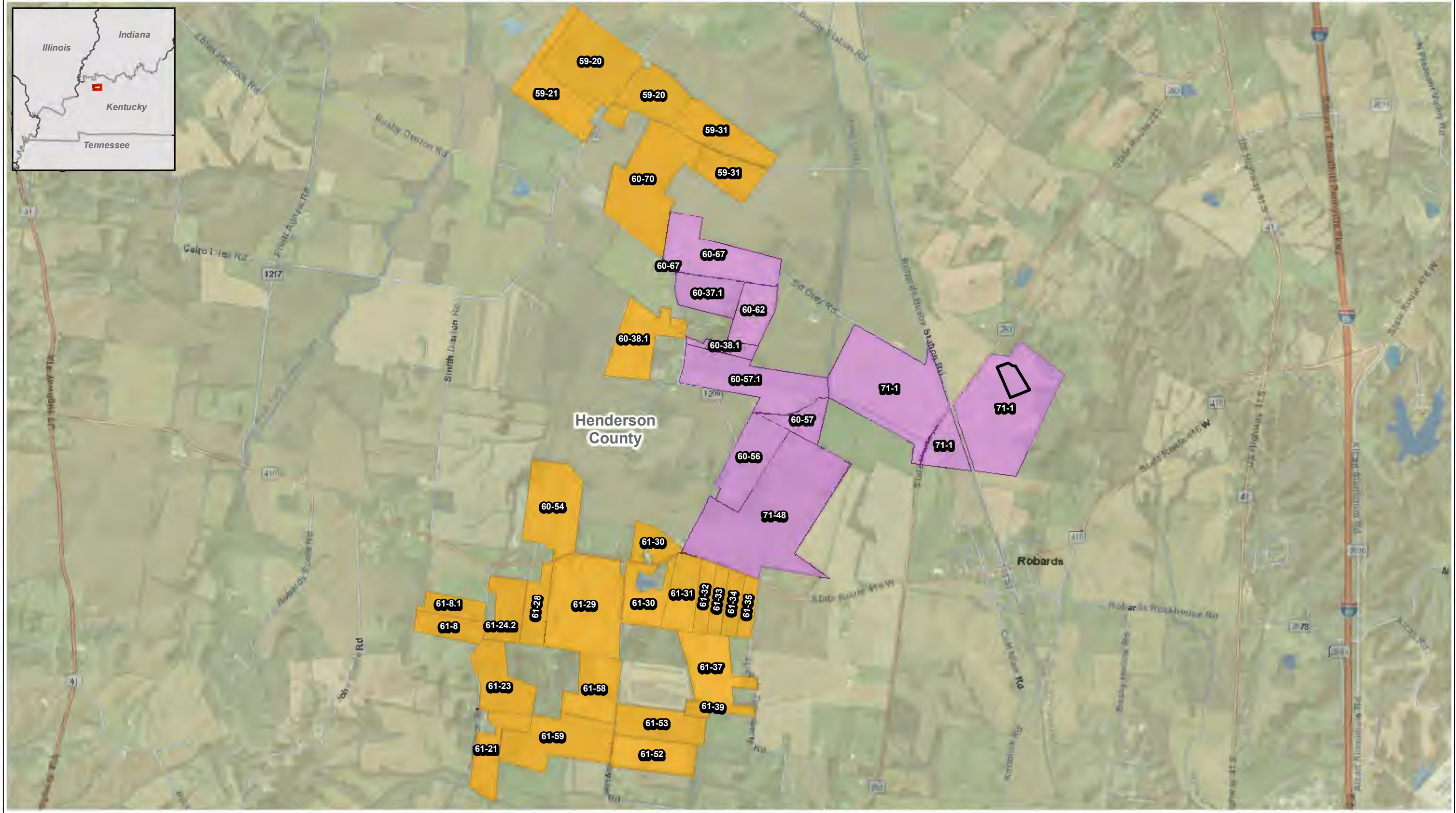
The Project is a 150-megawatt alternating current (MW AC) SES. The 150-MW AC SES would connect to an existing 161-kilovolt (kV) transmission system via an approximately 4.85-mile transmission line. The point of interconnection (POI) for the Project is an existing substation owned by Big Rivers Electric Corporation located east of Pennyrile Parkway (Interstate 69) in Webster County, Kentucky. Both the above-mentioned transmission line and POI were submitted as part of the Sebree Solar Project, previously submitted under separate cover to the Kentucky State Siting Board (KYSB) under case number 2021-00072, and as such, are not considered part of the Sebree Solar II Project.

The Project will include photovoltaic (PV) solar panels mounted on racking, along with the associated infrastructure listed below:

- central electric inverters and transformer;
- underground electrical collection systems (distribution equipment);
- solar meteorological stations;
- supervisory control and data acquisition (SCADA) hardware;
- control house for protective relay panels, site controllers, and associated facilities;
- private gravel access roads with gated ingress/egress points;
- security fencing; and
- temporary construction laydown yard.

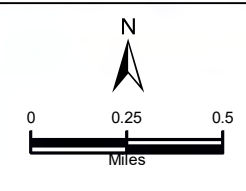
Collectively, the PV solar panels and infrastructure components listed above comprise the “Project Facilities”.





Project Location Map  
 Sebree Solar II Project  
 Henderson County, KY  
 Date: 4/5/2023  
 Sources: ESRI World Imagery 9/2021; Sebree Solar II, LLC, 2022; ECT 2023.

**Legend**  
 [Orange Box] Project Parcel  
 [Purple Box] Proposed Project Parcel - Collection Line Easement Only  
**Sebree Solar Project Application Component (Not Included in Sebree Solar II Project)**  
 [Black Line] Collector Substation fence



## 1.2 CEA Requirements

Kentucky Revised Statutes (KRS) 224.10-280 states that no person shall commence to construct a facility to be used for the generation of electricity unless that person submits a CEA to the Kentucky Energy and Environment Cabinet. The CEA must be submitted with the project permit application. This CEA contains descriptions of proposed Project impacts and mitigation strategies for the following categories as outlined in KRS 224.10-280:

- Air Pollutants
- Water Pollutants
- Wastes
- Water Withdrawal

Sections 2.0 through 5.0 specifically address each one of the above categories (air pollutants, water pollutants, wastes, water withdrawal) as required by KRS 224.10-280.

## 2.0 Air Pollutants

National Ambient Air Quality Standards (NAAQS) for several “criteria” air pollutants have been developed by the United States Environmental Protection Agency (EPA), in accordance with the Clean Air Act. These NAAQS are designed to protect public health and welfare by regulating pollutants deemed harmful to public health and the environment. The six principal pollutants, referred to as “criteria” air pollutants, are ozone, particulate matter (PM), carbon monoxide (CO), nitrous oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and lead.

With input from states and tribes, the EPA designates specific geographic areas as attainment, nonattainment, or unclassifiable for specific NAAQS. Geographic areas that meet or are cleaner than a specific NAAQS are designated “unclassifiable/attainment”, and areas that do not meet a specific NAAQS are designated as nonattainment areas. If the EPA is not able to determine an area’s status, it is designated as “unclassifiable”. New emissions in or near nonattainment areas are subject to more stringent air permitting requirements.

Henderson County and all surrounding counties (Union, Webster, McLean and Daviess counties in Kentucky, and Posey, Vanderburgh, and Warrick counties in Indiana) are in attainment for all criteria pollutants (EPA 2020). Henderson County is also protected by Air Quality Regulations found in Title 401, Chapters 50–68 of the Kentucky Administrative Regulations (KAR).

Construction and operation of the Project will produce transient air pollutant emissions. These emissions are expected to be minor and would result primarily from the operation of personnel vehicles, delivery trucks, construction equipment, and machinery. Construction equipment and machinery may include pile drivers, augers, tractors, forklifts, flatbed semi-trucks, concrete trucks, backhoes, and bulldozers. The operation of these vehicles and equipment will produce PM, NO<sub>2</sub>, carbon dioxide (CO<sub>2</sub>), SO<sub>2</sub>, and volatile organic compounds. While emissions are expected to be minor, calculating the precise quantity of emissions is difficult and would need to consider equipment age, horsepower, operating efficiency, and operation durations.

Project construction activities will occur primarily during daylight hours; however, potential delays may necessitate work to occur after dark. Project construction will occur over an approximately 18-24 month period and include a workforce of up to 200 workers over the construction period.

The majority of the Project site consists of cultivated crops and pasture/hay with a small portion of Project site being forested. As a result, vegetation removal and tree clearing are expected to be minimal. Debris resulting from vegetation removal and tree clearing will be ground, chipped, and composted onsite or managed at an offsite facility and will not be burned onsite.

In addition to criteria air pollutant emissions, Project construction will generate temporary fugitive air pollutant emissions (e.g., small particles suspended in the air or dust). Personnel vehicles and construction equipment traveling over unpaved roads and the construction site provide sources of fugitive dust. The Project will implement best management practices (BMPs), such as covering loads and applying water for dust suppression, to minimize potential air quality impacts. Most of the dust is expected to be deposited in the immediate vicinity of generation. While natural factors such as precipitation, soil moisture, and wind along with the intensity of construction activities have the

potential to influence dispersal across the Project site and offsite, the use of BMPs is expected to reduce air quality impacts greatly. As a result, impacts to offsite air quality will be minor and transient and ambient air quality standards will not be exceeded.

Air emissions generated during operation of the Project will be limited to personnel vehicles and maintenance equipment. Operation of the solar facility itself will not produce emissions of criteria pollutants, volatile organic compounds (VOCs), or Hazardous Air Pollutants. Maintenance equipment is expected to be limited to mowers and other equipment necessary to control vegetation growth. The Project anticipates approximately 2-3 full-time staff will be onsite for the life of the Project. Project maintenance activities will include vegetation management (mowing and trimming), equipment inspections, and general maintenance.

Air pollutant emissions related to the Project are expected to be negligible. By providing a zero-emission electricity source as an alternative to fossil fuel-generated and other non-renewable sources of energy, the Project will provide an overall benefit to local and regional air quality. Construction and operation of the Project do not require air quality permits.

## 3.0 Water Pollutants

### 3.1 Stormwater

The Project is in the Highland-Pigeon Watershed, Hydrologic Unit Code (HUC) 05140202, and the Lower Green Watershed (HUC 05110005). The Project's land cover consists primarily of active agricultural fields, areas of successional woods, and upland shrub thicket. ECT reviewed data available from the Kentucky Division of Water (DOW) and determined that no waterways in or adjacent to the Project are designated as Outstanding State Resource Waters or other Special Use Waters as defined by Kentucky DOW.

The Applicant expects the proposed Project to use approximately 1,000 acres of land, including the array facilities. Project facilities will be carefully sited to disturb the least amount of land possible while safely and efficiently constructing the Project. Streams, wetlands, floodplains, and drainages will be avoided to the greatest extent practicable. Unavoidable impacts to Waters of the United States (WOTUS) and county-regulated floodplains will be permitted, as applicable.

Project components will include the installation of PV solar panels mounted on fixed racking structures. Associated infrastructure will include central electric inverters and transformers, underground electrical collection systems, two solar meteorological stations, and SCADA hardware. A control house for protective relay panels and site controllers will also be constructed. Permanent private gravel access roads with gated ingress/egress points and security fencing will be constructed to access and maintain the facilities. During construction, existing access roads will be utilized where available. Temporary laydown yards will be utilized during construction for mobile office trailers, equipment staging, vehicle parking, and material storage. Land disturbance will be limited to the extent practicable and will take place during grading for general site preparation and during the construction of laydown yards, foundations, equipment pads, and access roads.

The Applicant intends to comply with the Kentucky Pollution Discharge Elimination System (KPDES) Stormwater Construction General Permit (KYR10). A Stormwater Pollution Prevention Plan (SWPPP) will be prepared and implemented to comply with Kentucky DOW requirements. BMPs will be utilized to prevent and reduce construction stormwater from directly or indirectly entering streams or wetlands. The Applicant will install and maintain erosion and sediment (E&S) control devices, such as silt fence or silt sock, sediment basins, sediment traps, and/or buffer zones around sensitive resources.

Post-construction, disturbed areas will be seeded with a native and/or non-invasive perennial grass and herbaceous seed mix. E&S control devices will be inspected and maintained until vegetation in the disturbed areas has returned to preconstruction conditions or the Project Site is stable. The use of BMPs would be implemented for any future maintenance activities that could result in construction stormwater runoff.

### 3.2 Groundwater

Groundwater exists beneath the ground surface within the pore spaces of soils and rock. Subsurface areas with sufficient permeability to conduct groundwater and produce significant quantities of water through wells and natural springs are referred to as aquifers. Aquifers are recharged by precipitation

that permeates the ground. In addition to extraction through man-made wells and natural springs, groundwater can also discharge to waterbodies such as streams and lakes.

The Project is not expected to produce direct adverse impacts to groundwater. Rainwater will naturally drain off the panels to the adjacent vegetated ground surface. Because this water will not be collected, impacts to water infiltration and surface water runoff are expected to be minor. Additionally, converting the land use from agricultural to solar may provide a net improvement to groundwater quality through reductions in herbicide, pesticide, and fertilizer use.

The Applicant will prepare a groundwater protection plan in accordance with 401 KAR 5:037 Section 1 (1) (a-p) for any applicable activities under this statute.

### **3.3 Hazardous Materials**

Project construction will require the use and storage of various hazardous materials on site. To prevent contaminating surface or groundwater features, The Applicant will utilize BMPs and implement a Spill Prevention Control and Countermeasure plan (SPCC) to avoid and address any potential leaks or spills of hazardous materials. Adequate supplies of spill cleanup materials will be stored on-site, and facility personnel will be trained in the proper procedures to be followed in the event of a leak or spill. A Hazardous Materials Business Plan (HMBP) will also be in place and followed to ensure hazardous materials are stored and disposed of safely and properly and do not pose a risk to facility personnel, the environment, or the public. Material Safety Data Sheets (MSDS) and personal protective equipment (PPE) will be made available for facility personnel.

The primary hazardous materials on-site will be petroleum products (gasoline, diesel, oils, hydraulic fluid, etc.) related to construction vehicles and equipment. Vehicle and equipment refueling will take place off-site or within designated refueling zones. Refueling zones will be in upland areas away from streams, wetlands, or other aquatic resources. Spill kits will be carried on all refueling vehicles and at locations throughout the Project site. Vehicles and equipment will be appropriately maintained to prevent leaks or spills of hazardous materials.

Other hazardous materials such as herbicides, pesticides, solvents, paints, welding gases, and janitorial supplies will also be used and stored on site. All materials will be labeled and stored in appropriate containers. Secondary containment systems will be utilized where necessary to prevent leaks or spills if the primary container fails. Hazardous waste generated by Project construction will be removed from the site and disposed of in accordance with local, state, and federal regulations specific to each waste type.

To minimize the potential for water impacts, only US EPA-registered and approved herbicides will be used in accordance with label directions designed in part to restrict applications near receiving waters and to prevent unacceptable aquatic impacts. All herbicides will be applied by Kentucky licensed and certified commercial pesticide applicators.

## 4.0 Waste

Hazardous materials and waste will be produced from the construction activities done at the Project site. All waste will be removed from the site and disposed of in accordance with local, state, and federal regulations. Roll-off dumpsters or similar containers will be acquired from waste disposal contractor(s) and placed within laydown yards/staging areas for disposal of general trash, debris, and non-hazardous materials (e.g., pallets, building materials, plastic packaging, cardboard, etc.). The waste disposal contractor(s) will be responsible for emptying the containers and proper disposal of the waste off-site.

Hazardous waste materials generated by construction may include spent petroleum products, lubricants, paints, aerosol cans, batteries, electronics, used spill cleanup materials, wastewater, and sewage. The HMBP will be followed, and hazardous waste will be labeled and stored in appropriate containers. Secondary containment systems will be utilized where necessary to prevent leaks or spills if the primary container fails. Hazardous waste will be removed from the site and disposed of in accordance with local, state, and federal regulations specific to each waste type.

Portable restrooms (chemical toilets) will be rented from a licensed contractor(s) and placed in laydown yards and other areas as deemed necessary. The portable restrooms will be on-site for the duration of the Project construction. The contractor(s) will be responsible for removing waste on a schedule appropriate to maintain sanitary conditions and will be responsible for disposing of the waste in accordance with local, state, and federal regulations. Restrooms will also be located inside of temporary construction trailers on site. Wastewater and sewage from these facilities will be collected in septic system tanks that will be pumped and maintained and emptied by a licensed contractor. Waste materials will be disposed of off-site in accordance with local, state, and federal regulations.

At the completion of construction any remaining trash, debris, or excess construction materials will be removed from the Project site. E&S control measures such as silt sock and silt fence may remain until the Project site is stable at which point the materials will be removed and disposed of off-site. Post-construction waste generation will be minimal and will generally be associated with maintenance (e.g., electrical materials, worn/broken equipment). All waste materials will be removed from the site at the completion of the maintenance activity and disposed of in accordance with applicable regulations.

No adverse effects are anticipated from wastewater treatment and disposal. Due to the size of the facility, no additional permanent bathroom facilities are anticipated. Based on a review of Project waste generation activities, no adverse effects from waste are anticipated.

## 5.0 Water Withdrawal

Construction of the Project will require the use of water for various activities. Water will primarily be used for dust control and compaction when grading and during the construction of access roads, foundations, equipment pads, and other land-disturbing activities. Depending on site conditions, the use of water for dust control along access roads may be on-going during construction. Some small amounts of water may also be used for equipment washing. Adherence to the SWPPP and use of BMPs will be implemented to prevent sedimentation from directly or indirectly entering streams or wetlands.

Potable water and water for handwashing will be made available for facility personnel.

On site wells are the preferred source for water; however, site geology may require water to be brought in from an off-site source. The potential for constructing a new on site well for the project is still being evaluated and will determine the need for withdrawal activities associated with the Project. If it is determined that water withdrawal is necessary, the withdrawal will be permitted in accordance with 401 KAR 4:010, as applicable.

Post-construction water use will be minimal to none. Some water may be used for vegetation management. Precipitation in the region is adequate to remove dust and other debris from the solar panels and manual washing is not anticipated.