Cumulative Environmental Assessment

Mayfield Solar Project

Graves County, Kentucky

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Prepared for

MYSO, LLC
515 N Flagler Dr. Suite 250
West Palm Beach, FL 33401

Prepared by

TETRA TECH

4101 Cox Road, Suite 100
Glen Allen, Virginia 23060

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Acronyms and Abbreviations

Applicant	MYSO, LLC
BMP	Best management practice(s)
CAA	Clean Air Act
CEA	Cumulative Environmental Assessment
CFC	chlorofluorocarbons
CO	Carbon monoxide
EPA	U.S. Environmental Protection Agency
KDOW	Kentucky Division of Water
MWac	Megawatts, alternating current
NAAQS	National Ambient Air Quality Standards
NO_x	Nitrous oxides
O_3	Ozone
Pb	Lead
PJD	Preliminary Jurisdictional Determination
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
Project	Mayfield Solar Project
PV	Photovoltaic
SO_2	Sulfur dioxide
SPCC	Spill Prevention, Containment, and Countermeasures Plan
SWPPP	Stormwater Pollution and Prevention Plan
Tetra Tech	Tetra Tech, Inc.
USACE	U.S. Army Corps of Engineers

1.0 INTRODUCTION

MYSO, LLC (Applicant) is proposing to build an up to a 200-megawatt AC (MWac) photovoltaic (PV) solar generation facility on an approximately 1,342-acre portion of prior agricultural land that was targeted for industrial development by the Purchase Area Regional Industrial Authority (Project) in Graves County, Kentucky.

This Cumulative Environmental Assessment (CEA) has been prepared on behalf of the Applicant by Tetra Tech, Inc. for submittal to the Kentucky Energy and Environment Cabinet. In compliance with KRS 224.10-280[1], this report evaluates the Project's potential to cause air pollutants, water pollutants, wastes, and water withdrawal.

2.0 AIR POLLUTANTS

The Clean Air Act (CAA) regulates the emission of air pollutants and enabled the U.S. Environmental Protection Agency (EPA) to establish the National Ambient Air Quality Standards (NAAQS). The criteria pollutants regulated by NAAQS include ozone (O_3), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), carbon monoxide (CO), nitrous oxides (NO_x), sulfur dioxide (SO_2), and lead (Pb).

Geographic areas are designated as attainment, nonattainment, or unclassified[2] based on NAAQS. Areas with ambient concentrations of the aforementioned pollutants that exceed the NAAQS are designated as nonattainment areas, and emissions sources within these areas are typically subject to more stringent air permitting requirements.

Graves County, Kentucky is designated as within attainment for all criteria pollutants (EPA 2026).

Project site preparation and construction will produce temporary air pollutant emissions; these emissions would result from operation of construction equipment, ground-disturbing activities, and worker and delivery vehicles. The amount of increased air pollutant emissions will vary by weather conditions and occurring construction activities. Despite the anticipated increased air pollutant emissions due to site preparation and construction activities, Project emissions would remain well below the NAAQS. All contractors involved with Project site preparation and construction will be required to implement best management practices (BMPs) to reduce dust or air quality impacts to the greatest extent practicable. These include cleaning and properly maintaining construction equipment, re-vegetating disturbed areas, covering soil piles and truck loads, and wet dust suppression.

Vegetation and tree clearing associated with Project construction is expected to be minimal as majority of the site is open land that has been historically used for agricultural row crops. Any vegetative debris accumulated during construction and site preparation will be chipped, ground, and composted on site or will be managed at an offsite facility.

[1] https://apps.legislature.ky.gov/law/statutes/statute.aspx?id=10323

[2] Attainment: Any area that meets the national primary or secondary ambient air quality standard for a NAAQS.
Nonattainment: Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for a NAAQS.
Unclassified: An area that cannot be designated based on available information as meeting or not meeting the NAAQS.

Once constructed, the Project will not produce any impactful emissions during operation. The only negligible emissions associated with the facility will be from use of maintenance vehicles and personal transportation vehicles by workers performing routine operations. Limited site visits are expected, and will be for the purposes of inspections, equipment maintenance, and vegetation management.

3.0 WATER POLLUTANTS

3.1 Surface Water

Surface water is any water found on the earth's surface. The Project is located within the Carney Creek-Mayfield Creek watershed (12-digit HUC: 080102010201) which drains to Mayfield Creek (KDOW 2026). No waterways within or adjacent to the Project are designated as Outstanding State Resource Waters or other Special Use Waters as defined by the Kentucky Division of Water (KDOW 2020). If Project activities or construction occur within surface waters, an Individual Water Quality Certification from KDOW will be obtained.

Bacon, Farmer, Workman Engineering and Testing, Inc. (BFW) conducted a delineation of Wetlands and Waters of the United States (U.S.) at the Project site on behalf of the Applicant. This investigation was performed with the goal of informing Project development and in support of a Preliminary Jurisdictional Determination (PJD). If any impacts to wetlands and waters are necessary and unavoidable, the Applicant will pursue the appropriate permits through the U.S. Army Corps of Engineers (USACE) and KDOW.

Floodplains were identified within the Project. All necessary floodplain development permits will be obtained by the Project prior to construction.

To minimize the potential of construction activities resulting in increased erosion and sedimentation impacting onsite streams and wetlands, the Project is designed with the existing topography being utilized to the greatest extent practicable, resulting in minimal grading and ground disturbance. The Project is expected to yield stormwater discharge during construction; the Applicant will comply with KDOW's Construction Storm Water Discharge General Permit for any construction activities that disturb an acre or more. A Notice of Intent will be submitted to KDOW before any work begins on the site, and the Project will submit a Notice of Termination to KDOW once work is complete.

Stormwater discharge will be mitigated utilizing measures such as silt fences, temporary sediment basins and traps, buffer zones around streams and wetlands, and other BMPs to minimize the impacts of stormwater runoff. The Applicant will prepare a Stormwater Pollution Prevention Plan (SWPPP) to be implemented throughout all ground-disturbing activities in compliance with KDOW requirements. These BMPs will be used from construction through final vegetative stabilization to prevent degradation and minimize sediment runoff from the Project into Waters of the United States and the Commonwealth.

All disturbed areas will be revegetated using a mixture of low growing, non-invasive grass and herbaceous plant seed mix that will be certified weed-free by a reputable dealer. All plantings and other erosion control measures will be inspected and maintained until they are deemed stable.

If necessary, only herbicides that are EPA-approved would be utilized for vegetation control on the site. Any herbicides used will be applied in accordance with label directions to limit any applications near Waters of the United States or the Commonwealth.

After completing construction activities, the Project will have little to no impact on surface waters during operations and maintenance. BMPs will be utilized during any activities that may cause runoff of sediments or pollutants. The reduction in chemical use and animal wastes related to the agricultural activities currently occurring on the site may have beneficial impacts to surface water resources in and adjacent to the Project.

3.2 Groundwater

Groundwater is any water found under the earth's surface. Groundwater is frequently used as a source of drinking water, and any pollution or contamination poses a potential risk to these waters and thus poses a potential health risk to nearby populations. The main source of these contaminants in the vicinity of the Project is agricultural activities.

Precipitation that runs off of the solar panels will not pose a risk to groundwater, as solar panels are sealed and do not leach contaminants. Hazardous materials used during construction that could potentially contaminate groundwater such as fuels, lubricants and other fluids will be stored on site. As an added precaution, contractors will utilize BMPs to minimize the risk of leaks and spills and implement plans and procedures to immediately address any spills and leaks that may occur. These practices will limit the risk of potential impacts to groundwater.

The development and operation of the Project is not anticipated to have negative impacts to groundwater.

4.0 WASTE

All waste generated during the construction and operation of the Project will be disposed of in accordance with all local, state, and federal regulations.

Waste generated during construction activities will include wooden crates, pallets, cardboard boxes, other packaging material, and general trash. Additionally, excess wiring and other random debris could be intermittently produced. No waste will be disposed of at the Project site. Where practicable, construction waste will be recycled, and any material that cannot be recycled will be disposed of offsite at a permitted facility. Construction contractors and subcontractors will be responsible for proper cleanup, disposal, and storage activities.

Primary construction materials stored on site will be liquids such as, used oil, diesel fuel, gasoline, hydraulic fluid, and other lubricants. Proper containers, specifically designed for management of such materials, will be located at onsite staging areas. The storage containers will have secondary containment in case of tank or vessel failure. Safety data sheets and any required training will be available to on-site personnel for all applicable materials.

Fueling of construction related machinery, such as tractors, trucks, and semi- trucks with petroleum-based fuels will take place on the Project site in specific designated areas. A Spill Prevention, Containment, and Countermeasures Plan (SPCC) will be developed and implemented to minimize the

potential for spills of hazardous materials and any resulting impacts. Additionally, spill control kits will be carried on all refueling vehicles.

Paint, degreasers, pesticides, herbicides, air conditioning fluids (chlorofluorocarbons [CFC]), gasoline, propane, hydraulic fluid, welding rods, and janitorial supplies may be stored on site in small quantities (less than 55 gallons, 500 pounds, or 200 cubic feet). No significant environmental impacts caused by a potential spill are anticipated due to the small quantity of materials and the containment and clean up procedures that will be implemented.

Additionally, portable chemical toilets will be placed on site for construction workers. Licensed contractors will be responsible for pumping sewage from the portable toilets. The sewage waste will be disposed of at a permitted location selected by the chemical toilet contractor. Permanent bathroom facilities are not anticipated.

Little to no waste is expected to be generated from the Project during the operations phase. Any waste generated during maintenance activities will be removed from the site and disposed of in accordance with state and federal regulations.

At the end of the Project's operational life, the Project will follow a decommissioning and site restoration plan to disconnect, remove, and recycle the solar array equipment and restore the site. Non-recyclable components will be disposed of in a suitable licensed facility. Once all equipment has been removed, the Site will be restored via topsoiling and seeding following the methodology set forth in the Project decommissioning plan.

No adverse effects from waste generation or disposal in relation to construction or operation of the Project are anticipated.

5.0 WATER WITHDRAWAL

At this time, it is anticipated that the Project's use of external water utility services would be limited to service to the Operations & Maintenance Building. If water service is required during construction or operations, the Project will use onsite well water or connect to the local water utility if services are available.

Water use related to construction activities will include site preparation such as dust control and grading activities. Proper BMPs outlined in the SWPPP will be followed during any equipment washing and potential dust control discharges. The volume of water required during the construction process is minimal and water resources are not anticipated to be adversely affected.

The Project will minimally and infrequently use water during normal operations and maintenance. Typical rainfall in the region is sufficient to remove dust and other debris from the PV panels. Otherwise, water may be used for vegetation management needs, including screening vegetation installation and during periods of drought.

6.0 CONCLUSION

Project construction and associated land disturbance associated with the proposed Project may result in temporary impacts to environmental resources. The Project will utilize BMPs to minimize

potential impacts, including dust minimization measures, erosion control measures, and stormwater control measures. The Project will comply with all KDOW and Kentucky Pollutant Discharge Elimination System (KPDES) requirements. Material containment will abide by the appropriate measures and safe storage requirements through a SPCC Plan. The Project will not generate wastewater during construction or operation. Material waste will be disposed of at appropriate disposal or recycling facilities. Water withdrawal necessary for construction of the Project will source from existing on-site wells or the local water utility if service is available to the area.

7.0 REFERENCES

Kentucky Administrative Regulations (KAR). 2020. 401 KAR 10:026 – Designation of uses of surface waters. Table C: Waters with Added Designated Uses. Available online at: https://apps.legislature.ky.gov/law/kar/titles/401/010/026/ .

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