

STMO Bn, LLC (Starfire)  
Second Supplemental Response to Siting Board Staff's First Request for Information  
Case No. 2024-00255

Request No. 17:

Refer to the Kentucky Geological Survey Oil and Gas Wells Search (<https://kgs.uky.edu/kygeode/services/oilgas/>).

- a. File a map identifying all active and inactive oil or gas wells on the proposed site. Also include any gas-gathering pipelines associated with the wells.
- b. Determine and explain whether any of these wells are currently permitted and active. If active, identify the wells as such on the map provided in response to Item 17(a).
- c. Explain whether the existence of oil and gas wells and pipelines will require adjustments to the proposed location of solar panels.

Response:

- a. See attached.
- b. See map provided in response to 17(a) for any currently permitted and active wells based on the KGS website.
- c. There is at least one well that may require adjustments to the proposed location of panels. It is anticipated that some wells may be inactive by the time construction commences. Project representatives plan to communicate with well owners regarding these well locations within the next several months.

Supplemental Response:

- a. Well #564, located immediately northwest of the Project's O&M building, was previously listed as an active, permitted well on the map submitted as the attachment to RFI 1-17. After further investigation, the Project has determined that this well is inactive and dismantled, and submitted an updated map attached to RFI 2-8 with the names and status of all onsite wells labeled, which is reattached hereto.

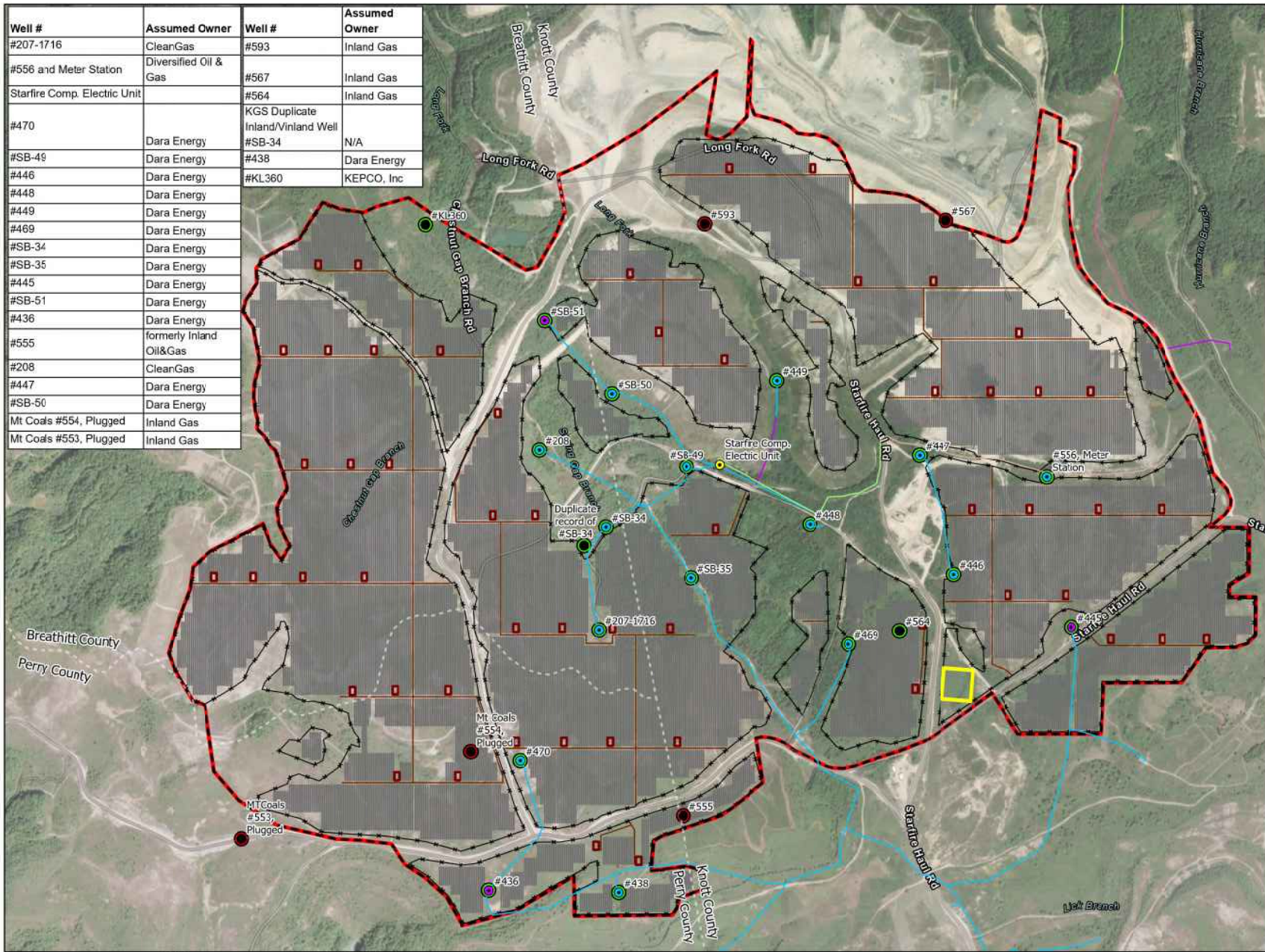
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- b. See Response to RFI 2-7. After further investigation, all wells that overlap with proposed panel locations have been dismantled, so no changes to the site's planned layout are proposed.
- c. See Supplemental Responses (a) and (b) above.

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Responding Witness: David Gil

Well #	Assumed Owner	Well #	Assumed Owner
#207-1716	CleanGas	#593	Inland Gas
#556 and Meter Station	Diversified Oil & Gas	#567	Inland Gas
Starfire Comp. Electric Unit		#564	Inland Gas
#470	Dara Energy	KGS Duplicate Inland/Vinland Well #SB-34	N/A
#SB-49	Dara Energy	#438	Dara Energy
#446	Dara Energy	#KL360	KEPCO, Inc
#448	Dara Energy		
#449	Dara Energy		
#469	Dara Energy		
#SB-34	Dara Energy		
#SB-35	Dara Energy		
#445	Dara Energy		
#SB-51	Dara Energy		
#436	Dara Energy		
#555	formerly Inland Oil&Gas		
#208	CleanGas		
#447	Dara Energy		
#SB-50	Dara Energy		
Mt Coals #554, Plugged	Inland Gas		
Mt Coals #553, Plugged	Inland Gas		



**Starfire Solar Project**  
**Knott, Perry, and Breathitt Counties,**  
**Kentucky**

**Item 17a: Oil & Gas Wells**

**LEGEND**

- Substation
- Inverters
- Proposed Project Area
- Proposed Solar Panels
- Access Road
- Proposed Fenced Area

Oil & Gas Wells per KY Geological Survey

- Active Well - Permitted
- Inactive Well - Previously Permitted

Surveyed Oil & Gas Wells

- Active Gas Well
- Active Well
- Active Oil Well
- Dismantled Well

Pipelines

- 3 inch gas line surveyed
- 3 inch gas line not surveyed
- 4 inch gas line surveyed
- 4 inch gas line not surveyed
- 6 inch gas line surveyed

**Data Sources:**  
 ESRI Aerial Imagery 2024; Kentucky Geological Survey 2025; BrightNight 2025

**Prepared for:** STMOBn, LLC  
**Prepared by:** Tetra Tech GIS Team (NB)  
**Updated:** 5/6/2025



0 2,000 4,000 US Feet

Spatial Reference  
 NAD 1983 StatePlane Kentucky FIPS 1600 Feet

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Request No. 48:

Provide a Cumulative Environmental Assessment (CEA) study for the project.

Response:

A CEA has not been finalized to date because the Project is not seeking any deviation from the Siting Board's 2,000-foot statutory setback requirement.

Supplemental Response:

Please see attached.

Responding Witness: Bob Roy

# Cumulative Environmental Assessment

Starfire Solar Project  
Breathitt, Perry, & Knott Counties,  
Kentucky

May 2025

**Prepared for**

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

**Prepared by**



4101 Cox Road, Suite 100  
Glen Allen, Virginia 23060

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## Acronyms and Abbreviations

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 <sub>x</sub>	Nitrous oxides
O <sub>3</sub>	Ozone
Pb	Lead
Applicant	STMO, LLC
PJD	Preliminary Jurisdictional Determination
PM <sub>2.5</sub>	Particulate matter less than 2.5 microns in diameter
Project	Starfire Solar Project
PV	Photovoltaic
SO <sub>2</sub>	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

STMO Bn, LLC (“Applicant”) is proposing to build an up to 210-megawatt AC (MWac) photovoltaic (PV) solar generation facility on an approximately 1,980-acre portion of a former coal mine in various reclamation stages (Project) spread across Breathitt, Knott, and Perry counties, 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 (EEC). In compliance with KRS 224.10-280, this report evaluates air pollutants, water pollutants, wastes, and water withdrawal as it pertains to the potential Project.

## 2.0 AIR POLLUTANTS

The Clean Air Act (CAA) regulates the emission of air pollutants and enabled the US Environmental Protection Agency (EPA) to establish the National Ambient Air Quality Standards (NAAQS). The criteria pollutants regulated by NAAQS include ozone (O<sub>3</sub>), particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>), carbon monoxide (CO), nitrous oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and lead (Pb).

Geographic areas are designated as attainment, nonattainment, or unclassified 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.

Breathitt, Knott, and Perry Counties are designated as within attainment for all criteria pollutants (EPA 2024).

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 construction activity occurring. However, Project emissions would remain well below the NAAQS. All contractors involved with Project 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 (approximately 150 acres) as the majority of the site is open mining land. 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. No burning of materials, including vegetation or vegetative debris, is proposed.

Once constructed, the Project is not anticipated to generate emissions during operation. The only emissions associated with the facility will be from maintenance vehicles and personal transportation vehicles of workers used when 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

The Project is located within the Buckhorn Creek watershed (12-digit HUC: 051002010506) and the Lower Balls Fork watershed (12-digit HUC: 051002010505) which drain to Troublesome Creek (KDOW 2024). 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). Some upstream portions of Buckhorn Creek and its tributaries within the same watershed are designated as Outstanding State Resource Waters but are not adjacent to the Project nor will they be impacted by the Project (401 KAR 10:026, Table C).

Bacon, Farmer, Workman Engineering and Testing, Inc (BFW) conducted a delineation of wetlands and Waters of the United States at the Project site on the behalf of the Applicant. This investigation was performed with the goal of informing development of the Project. 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.

Construction activities may result in increased erosion and sedimentation impacting onsite streams and wetlands. In order to minimize impacts, the Project is designed with the existing topography being utilized to the greatest extent practicable. Some grading will be required, and will be minimized to the extent practicable. 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 before any work begins on the site, and the Project will submit a Notice of Termination 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 to comply with KDOW requirements and will consider the potential for extreme storm event flooding and damage that communities in eastern Kentucky have experienced in recent years. The SWPPP will consider the existing topography, and historical land use of this site. These BMPs will be used from construction through final vegetative stabilization to prevent degradation and minimize sediment runoff 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 the completion of construction activities, the Project is anticipated to result in minimal, if any, impacts 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 wastes

related to the mining 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 mining activities.

Hazardous materials that could potentially contaminate groundwater such as fuels, lubricants and other fluids will be stored on site during construction. 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. If a release occurs that meets or exceeds the reportable thresholds defined in KRS 224.1-400, the Project will contact the EEC – Emergency Response Branch immediately to ensure that the release is remediated properly.

The development of the Project is not anticipated to have any negative impacts to groundwater. Precipitation can freely run off of the solar panels and infiltrate into the water table or be collected by surface waters as it would naturally.

### **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 and 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 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, well away from any wetlands or streams on the site. 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 these 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 utilized 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 will be located at the Project Operations and Maintenance building. The facility will utilize either a storage tank or septic field; to be determined based on the final design of the Project and available space.

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. Should a septic holding tank be used at the Operations and Maintenance building, a capacity alarm will be used to ensure timely pumping of the tank.

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 not anticipated that the Project will require external utility services during typical plant operation. Water service required during construction will be provided using offsite sources and water trucks.

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, such as 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 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 off-site sources.

## 7.0 REFERENCES

Kentucky Administrative Regulations (KAR). 2022. 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/>.

Kentucky Division of Water (KDOW). 2024. KY Watershed Explorer. Available online at: <https://experience.arcgis.com/experience/a8a017332225466b9f25a2ed11c21a7c/page/GW%2FSW-Explorer/>

U.S. Environmental Protection Agency (EPA). 2024. AirData Air Quality Monitors Interactive Map. Retrieved from <https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=5f239fd3e72f424f98ef3d5def547eb5&extent=-146.2334,13.1913,-46.3896,56.5319>