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August 20, 2019

Ms. Tanowa Troupe, Secretary
Ohio Power Siting Board
Docketing Division
180 East Broad Street, 11th Floor
Columbus, OH 43215

Re: Case Nos. 17-773-EL-BGN and 18-1360-EL-BGN
In the Matter of the Applications of Hardin Solar Energy LLC/Hardin Solar Energy II LLC
for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered
Electric Generation Facility in Hardin County, Ohio.

**Compliance with Condition 22, Case No. 18-1360-EL-BGN,
Frac-out Contingency Plan/Inadvertent Return Plan**

Dear Ms. Troupe:

Hardin Solar Energy LLC/Hardin Solar Energy II LLC ("Applicant") is certified to construct a solar-powered electric generation facility in Hardin County, Ohio, in accordance with the orders issued by the Ohio Power Siting Board ("OPSB") in the above-referenced cases. By Entry issued May 16, 2019, the OPSB approved the merger of the certificates issued to Hardin Solar Energy LLC and Hardin Solar Energy II LLC, for a combined generating capacity of 320 megawatts ("MW"). The Applicant is currently preparing to begin construction on the initial 150 MWs of the 320-MW project.

At this time, the Applicant is filing the attached Frac-out Contingency Plan/Inadvertent Return Plan, in compliance with Condition 22 of the OPSB's May 16, 2019 Order in Case No. 18-1360-EL-BGN.

We are available, at your convenience, to answer any questions you may have.

Respectfully submitted,

/s/ Christine M.T. Pirik

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/Hardin Solar Energy II LLC

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HARDIN SOLAR FARM

DIRECTIONALLY DRILLED INSTALLATIONS
INADVERTENT RETURN PLAN

HARDIN COUNTY, OH

August, 2019

Horizontal Directional Drilling Inadvertent Return Control Plan

NOTE: Before any drilling operations begin, all applicable erosion and sedimentation controls included in the Stormwater Pollution Prevention Plan (SWPPP) will be properly installed per the included drawings and specifications and inspected by a qualified environmental inspector. The SWPPP, state permit(s), landowner restriction list, and any other applicable documents must be carefully reviewed before any disturbance occurs.

Horizontal directional drilling (HDD) is a pipeline installation method typically used to avoid disturbance of sensitive surface features, including water bodies and wetlands. There is however, the potential for surface disturbance through an inadvertent drilling fluid release. Drilling fluid releases are typically caused by pressurization of the drill hole beyond the containment capability of the overburden soil material, which allows the drilling fluid to flow to the ground surface. Releases can also be caused by fractures in bedrock or other voids in the geologic strata that allow the fluid to surface even if down hole pressures are low.

The directional drilling process uses drilling fluid to remove the cuttings from the borehole, stabilize the borehole, and act as a coolant and lubricant during the drilling process. The fluid consists primarily of water and bentonite, naturally occurring clay, active clays, inert solids and water. Drilling fluid is not a hazardous material, as it is composed of benign components; however, an inadvertent release will require mitigation measures to reduce the impact to a water body or sensitive area.

The areas that present the highest potential for drilling fluid seepage are the drill entry and exit points where the overburden depth is minimal. At the entry and exit points, a pit will be constructed to collect and provide temporary storage for the drilling fluid seepage until it can be removed. These pits will be lined with geotextile and sized adequately to accommodate the maximum volume of drilling fluid that may need to be contained in the pits. Secondary containment of the pits will contain any seepage and minimize any migration of the mud from the work area. This containment system may consist of straw bales and silt fencing around the pit.

To determine if an inadvertent release has occurred, horizontal directional drilling activities will constantly be monitored by the contractor.

The monitoring procedures will include:

- Inspection along the drill path
- Continuous examination of drilling mud pressures and return flows
- Periodic documentation of status of conditions during drilling activities

The contractor will address an inadvertent return immediately upon discovery.

If a wetland/water body release occurs, inspection to determine the potential movement of released drilling mud within the wetland/water body will be necessary. To contain and control drilling fluid seepage on land or in a water body, the contractor will have equipment and materials available onsite. Containment equipment including portable pumps, hand tools, sandbags, straw bales, silt fencing, inadvertent return barrel, and lumber will be readily available and stored at the drilling site.

The following measures will be implemented to minimize or prevent further release, contain the release, and clean up the affected area:

Upland Release

The contractor will place containment structures at the affected area to prevent migration of the release.

If the amount of the release is large enough to allow collection, the drilling mud released into containment structures will be collected and disposed of per the *HDD Fluid/Cutting Disposal* procedures at the end of this document. If the amount of the release is not large enough to allow collection, the affected area will be diluted with fresh water and restored as necessary. Steps will be taken to prevent silt-laden water from flowing into a wetland or water body.

If public health and safety are threatened by an inadvertent release, drilling operations will be shut down until the threat is eliminated.

All disturbed areas associated with the project will be stabilized and restored per the specifications outlined in the project SWPPP.

Water Body Release

If a release occurs within a water body, the contractor will attempt to place containment structures at the affected area to prevent migration of the release if feasible. If public health and safety are threatened by an inadvertent release, drilling operations will be shut down until the threat is eliminated.

All disturbed areas associated with the project will be stabilized and restored per the specifications outlined in the project SWPPP.

In the event of a return to a stream, wetland, or other water body, the contractor will contact the construction environmental manager immediately. The Contractor will use the contact information included in the *Project Information Table* at the beginning of this document to contact the appropriate parties as necessary.

Drilling Operation Controls/Adjustments

If an inadvertent return takes place, the contractor will immediately cease operations and contact the Owner. If directed by the Owner, drilling operations will be further reduced or suspended to assess the extent of the release and to implement corrective actions. Drilling will resume after the Owner's assessment of the situation. If public health and safety are threatened, drilling fluid circulation pumps will be turned off. This measure will be taken as a last resort because of the potential for drill hole collapse resulting from loss of down-hole pressure.

After a drilling fluid seepage has been contained, the contractor will make every effort to determine the cause of the seepage. After the cause has been determined, measures will be implemented to control the factors causing the seepage and to minimize the chance of recurrence.

For either water body or upland returns, the contractor, in conjunction with environmental inspectors, drill operator, etc., will attempt to adjust the drilling technique or composition of drilling fluid and implement any modifications to minimize or prevent further releases of drilling mud. This may include:

- Thickening of mud by increasing bentonite content
- Changing the drilling rate
- Changing the fluid pumping rate
- Attempting a deeper directional drill

Developing the corrective measure will be a joint effort of the Owner and the contractor and will be site and problem specific. In some cases, the corrective measure may involve a determination that the existing hole encountered a void, which may be bypassed with a slight change in the profile. In other cases, it may be determined that the existing hole encountered a zone of unsatisfactory soil material and the hole may have to be abandoned. If abandoned, the hole will be filled with cuttings and drilling fluid.

Containment equipment and materials, including lumber for temporary shoring, sandbags, portable pumps, hand tools, silt fence, and hay bales, etc., will be stored on-site. The drilling contractor will also have heavy equipment such as track excavators that can be utilized to control and clean up drilling fluid seepage. Equipment associated with fluid removal shall be of

sufficient enough quality (i.e., pump capacity, hose condition) and quantity (i.e. hose length, number of pumps), to efficiently manage any returns associated with the project.

Equipment on Site

The items listed below are recommended equipment to contain an inadvertent return. Additionally, for all projects, the Material Safety Data Sheet for the fluid being used must be on site at all times.

- Vacuum Truck
- 55 Gal. drums with bottoms cut out
- Track Excavators
- Hay Bales
- Leak free portable pumps
- Spill Kits
- Sandbags
- Leak free hoses
- Plastic Sheeting
- Filter Sock/Fence

HDD Fluid/Cutting Disposal

If applicable, a VacBox/Tank/Container for containment will be placed on site or on call (within 3 hours) to contain the drilling fluids and cuttings associated with the drilling operation. A composite sample of the drilling fluids will be collected for analytical testing and completion of the Form U (chemical data reporting) composite. Once the drilling fluids have passed the analytical testing and the Form U has been approved, drilling fluid will be disposed of at an approved disposal facility. However, if drilling fluid is found to be impacted or contaminated, the contractor will defer to The Owner for disposal instructions as well as any cost associated with removal of impacted or contaminated soils.

***All residual directional drill material must be disposed of at a properly certified facility or location in accordance with all applicable laws and regulations.**

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Case No(s). 17-0773-EL-BGN, 18-1360-EL-BGN

Summary: Notice of Compliance with Condition 22,
Frac-out Contingency Plan/Inadvertent Return Plan electronically filed by Christine M.T. Pirik
on behalf of Hardin Solar Energy II LLC and HARDIN SOLAR ENERGY LLC