

February 18, 2020

Via email chris.stone@ct.gov

Christopher Stone, P.E.
Department of Energy and Environmental Protection
Water Permitting and Enforcement Division
Bureau of Materials Management and Compliance Assurance
79 Elm Street
Hartford, CT 06106 5127

RE: Notice of Tentative Decision of Intent to Reissue the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Mr. Stone:

Tighe & Bond has been involved with several large-scale solar projects in Connecticut and throughout the northeast from the initial inception of the project, through permitting and construction. We have met multiple times with DEEP staff prior to permitting, during permitting and during construction and have insight and perspective of these projects from the engineering, development and construction vantage and would like to provide our recommendations to DEEP as it relates to the proposed General Permit changes, specifically Appendix I (Appendix) as it relates to solar array development.

Our comments are as follows, broken into sections and paragraphs as detailed in the proposed Appendix.

Design and construction requirements

Section 1 indicated that "...all solar panels in the array shall also be considered effective impervious cover for the purposes of calculating the WQV..." dependent on ground surface slopes and additional requirements in subsections (a) through (e).

Solar panels are not sources of materials pertinent to the Total Suspended Solid (TSS) removal process as the runoff does not come into contact with sediment loads, therefore, there is no sediment to remove from stormwater that comes in contact with the panels. Runoff from solar panels can be considered "clean" for purposes of WQV calculations. We recommend that for the purposes of water quality treatment design, only impervious surfaces which are subject to potential pollutant loading (ie. gravel or paved access road) are considered "impervious" for purposes of this aspect of design.

Requirement (1)(c) indicates that, on slopes of 5-10%, practices such as level spreaders, terraces or berms should be implemented to ensure long term sheet flow conditions. It is our opinion that these measures should be implemented on a case-by-case basis in areas susceptible to shallow concentrated flow or rilling conditions as determined by the Engineer. In those situations, the direction of the slope as it compares with the rows of panels should be taken into consideration and measures should be designed and included as determined by the Engineer. Additionally, the installation of multiple measures (e.g. level spreaders as contemplated in the draft document) throughout the site increase the maintenance requirements substantially as compared to established vegetation. Each of these measures has the potential of becoming a concentrated discharge point that can increase the potential for erosion and impacts to off-site properties if there is settlement, damage or animal burrows that could create a breach of the impoundment, causing more damage than if they were not used.

Requirement (1)(c) also indicates that solar panels may not be installed on slopes greater than 15%. Our experience has shown that appropriately managed sites can utilize slopes up to 20%



and provide stable, vegetated surfaces beneath the array. Vegetation growth, as a form of stormwater management, can only be achieved through a suitable topsoil material and proper seed usage. Many solar developments that require tree clearing do not have adequate on-site topsoil for reuse, and large quantities of topsoil must be imported to the site in order to achieve a stable vegetative ground cover. We recommend DEEP consider a requirement for solar developments to provide a minimum of 4-inch depth of topsoil, whether imported to the site or spread from within the site, to encourage suitable vegetative growth.

Design requirements for post-construction stormwater management measures

Requirement (3)(a) indicates the hydrologic analysis must evaluate pre- and post-construction stormwater flows for 2, 25, 50 and 100-year storm events. The 2004 Connecticut Stormwater Quality Manual provides a table of Design Rainfall Amounts by County. The table includes rainfall amounts for the 1-year, 2-year, 10-year, 25-year, and 100-year 24-hour storm events. Appendix I does not indicate the recommended or required source of the rainfall amount data, specifically for the 50-year storm event; we therefore recommend that the hydrologic analysis be required for the storm events included in the table (2-year, 10-year, 25-year, and 100-year 24-hour storm events).

Requirement (2)(c) indicates a need for a reduction in infiltrative capacity, or increase in runoff expectancy, of stormwater management measures to account for the compaction of soils over the course of the array construction. It is our opinion that a reduction in the infiltrative capacity based on the surveyed hydrologic soil group (HSG) would not accurately reflect the conditions that result from soil compaction and also does not encourage contractors to utilize best practices to minimize compaction and encourage vegetation growth on the site as a whole. Rather than reducing the infiltration capacity across the site, we recommend that the actual soil properties of the site for infiltration be determined by the Engineer through field investigations and/or USGS Soil Mapping, and the project should include measures such as tilling or scarifying compacted soils to improve the conditions of the soil and encourage appropriate vegetation growth that will provide the benefits of encourage infiltration, maintain sheet flow and provide site stabilization.

In areas where a stormwater management measure (such as a basin) is developed by excavation, the compacted soils would be removed during the construction of the feature. In areas where a stormwater management feature is developed by the addition of a berm rather than excavation, a requirement to till the area where infiltration is proposed would adequately reduce compaction. Finally, vegetation growth is vital for recharge. Ensuring the medium in which the vegetation is planted is conducive to vegetative growth would further promote recharge in areas of stormwater management features.

We encourage DEEP to consider the above recommendations prior to finalizing the General Permit and the Appendix. We would welcome the opportunity to discuss any of these recommendations in further detail should there be any questions. Please contact me via email at bshuntley@tighebond.com or via phone at 413.875.1301 with any questions.

Very truly yours,

TIGHE & BOND, INC.



Brian S. Huntley, PE
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