Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

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Bureau of Materials Management and Compliance Assurance
Notice of Rejection

Candlewood Solar LLC
111 Speen Street
Framingham, MA 01701-2000
Attn: Jim Walker, Vice President

Re: Registration Number: 201816062
Site Name: Candlewood Solar
Received on: January 2, 2019

Pursuant to Sections 4(h)(1) and 4(h)(4) of the **General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, effective October 1, 2018 ("General Permit")**, the Department of Energy and Environmental Protection ("the Department") hereby gives notice that Registration No. 201816062 submitted on January 2, 2019 is rejected.

The registration is rejected because it fails to meet the requirements of the General Permit. As documented in the attached memorandum, a review by Department staff and observations of site conditions by Department staff during a February 7, 2019 site visit indicate that the stormwater analysis, which is the basis for the design and sizing of stormwater controls, is flawed and that the Stormwater Pollution Control Plan ("Plan") is lacking elements necessary to demonstrate the appropriateness and effectiveness of the proposed construction and post-construction stormwater management measures. While detailed specifics are set forth in the attached memorandum, in general the Plan:

- Is not representative of and lacks information regarding the existing topographic, geologic and hydraulic site conditions necessary for the design of erosion and sediment controls and long-term stormwater management measures (detention/infiltration);
- Does not identify naturally occurring and man-made landscape features (roadways, stonewalls, small streams, intermittent seeps, naturally eroded gullies, steep slopes, and rock ledges) that will direct and channelize stormwater flow;
- Lacks a detailed construction sequencing, grading and phasing plan;
- Lacks documentation of adequate erosion and sediment controls along steep and/or long slopes, and; and
- Lacks documentation of adequate outlet protection at discharge locations to prevent adverse downstream impacts.

The Department will not process the Candlewood Solar January 2, 2019 registration any further. Any new registration under the General Permit submitted after the date of mailing of this notice must be accompanied by a new fee as provided in RCSA Section 22a-430-6(i)(2) and will require a new public comment period.

Please be aware that performing an activity without the permit required by Title 22a of the Connecticut General Statutes may subject you to an injunction and penalties.

Please contact the Water Permitting and Enforcement division at 860-424-3025 if you have any questions about this notice or your registration.

March 14, 2019
Date

Oswald Inglese, Jr.
Director
Bureau of Materials Management and
Compliance Assurance

CERTIFIED MAIL
RRR

interoffice
MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Water Permitting and Enforcement Division

to: Ozzie Inglese
cc: Neal Williams, Karen Allen
from: Sharon Yurasevecz, Sanitary Engineer 3 SY
subject: Registration Number 201816062
Candlewood Solar LLC
New Milford, CT
date: March 13, 2019

Brief History on registration submittal
9/17/18 - Registration submitted through ezfile.

10/18/18 – Registration Rejected- Failed to provide NDDB Determination, Plans and supporting Calculations.

11/5/18 - 1st follow-up meeting. Major points conveyed, including but not limited to below.

- H & H analysis.
- NDDB Determination (still pending)
- Construction Plans not complete.
- Financial Assurance (letter of Credit).
- Compliance with MOU for District inspection.
- Row Spacing and WQV (Minnesota Guidelines)
- TST- Confirm adequate area to construct/convert and maintain
- Soils testing supporting design.
- Tree clearing and winter work included in SWPCP
- Detailed phasing plan
- Slopes
- Dam Safety Determination
-

12/3/18 – 2nd follow-up meeting. Many issues in first meeting discussed with emphasis on the disconnected impervious surface, basin sizing and phasing.

1/2/19- Registration re-submitted.

Review of Registration
Review of the 1/2/19 registration and supporting documents indicates a lack of information to support meeting the terms and conditions of the Construction General Permit. There are substantial flaws in the stormwater design analysis and Stormwater Pollution Control Plan (SWPCP), as listed below.

Candlewood Solar, New Milford
March 13, 2019 Memo

1. The registration did not include the necessary updated precipitation frequency. The NOAA Atlas 14 precipitation frequency estimates supersede those in Technical Paper No.40 (1961) (TP-40) and therefore, the TP-40 rainfall data provided in the stormwater analysis is not valid. This is of significant importance as the updated data will affect the design of stormwater controls. The need for this NOAA data had been previously conveyed to the Applicant's design engineers.

2. The registration assumes a post-development run-off curve number of 71 (Meadow coverage) for a majority of the site. However, a higher runoff curve number must be assumed especially in the wooded area where grass is proposed. It has not been demonstrated that the wooded area with panels will support a meadow coverage or maintain the hydrologic soils group. In addition, construction compaction and other disturbances can alter the soil profile where the existing hydrologic soils group no longer applies thereby changing from Group C (71) to a group D (78). This change will affect the design of the stormwater controls.

3. There has been no site survey included on the plans or in the analysis submitted. The existing conditions depicted on the plans must be developed from a combined effort of photogrammetric mapping, LIDAR or other mapping as appropriate, and augmented by an on the ground survey. The existing topography shown on the plans is not representative of the actual site conditions as observed on the Department's 2/7/19 site visit. The site visit confirmed steep and/or long slopes, rocky land cover with rock outcrops, existing intermittent watercourses with evidence of erosion, natural detention-type storage which if removed will increase peak flows, existing dirt roadways throughout potentially changing drainage patterns and challenging proposed temporary and permeant basins locations. In short, the needed updated survey will likely affect the design of the stormwater controls for the site.

4. There has been no soils investigation/in situ testing, including, but not limited to, boring logs, test pit logs, percolation or permeability test which support the analysis and design of the proposed stormwater controls. The NRCS mapped soils shown in the analysis have not been confirmed as accurate. Updated in situ testing will likely affect the design of the stormwater controls. The location of all borings, test pits, percolation test and permeability holes must be shown on the plans.

5. The proposed design of the solar panels will very likely cause increases (beyond areas 5 and 6 already noted) in post-development flows for storms up to and including the 100-year storm event. Therefore, the design must address stormwater detention so that there will be no increases in peak flow leaving the site that will cause adverse impacts to downstream properties. Increases in peak flow will require detention and therefore, will change the design of stormwater controls.

6. The plans show very minimal grading. It is not clearly shown how tree clearing, grubbing, rock removal, access roads and existing hydrologic depression storage areas will be re-graded. All proposed grading must be depicted on the plans and must coincide with the design and supporting analysis.

7. The proposed sand filters do not show the required pretreatment forebay and therefore, are not in compliance with the Department's Erosion and Sedimentation Control Guidelines. Due to the restricted available area on the plans, it is not clear how the forebays can be added to the design as the project is designed. It is also not clear how the basins will be constructed below grade with the evidence of large boulder/rock, potential bedrock, high ground water, and steep slopes observed during the Department's 2/7/19 site visit. The required site survey, soil testing, maintenance access, and winter conditions all need to be considered prior to design.

8. The sequence of construction must include an estimated timetable for all construction activities. The plans need to clearly show the limits of disturbance for each phase of construction and for the entire construction activity, including the initial clearing and grubbing. Plan Note #5 states that the contractor shall submit a detailed construction sequence plan for review and approval prior to construction. The detailed sequence and phasing plan must be provided in the Stormwater Pollution Control Plan. The plans must clearly depict how 5 or less acres will be cleared, grubbed, graded, panels installed and both temporary and permeant stabilization achieved.

9. The solar panel detail shows a distance between rows that varies from 5.5' to 10.5'. The plans must clearly show design spacing at all locations. Documentation is required demonstrating no drip edge erosion will occur for all locations. The Water Quality Volume calculations must be calculated using the Minnesota Guidelines *Stormwater Management for Solar Projects and Determining Compliance with the NPDES Construction Stormwater Permit* or a suitable substitute recommended.

10. Documentation is required showing erosion and sedimentation controls over steep and/or long slopes. The design must include controls located along steep and/or long slopes to maintain sheet flow conditions. If site investigation finds geologic or hydraulic conditions (bedrock, groundwater) where there is a high potential for unstable soils, additional engineered structural design measures may be required.

11. The Interconnection Route shown on plans states "Under Separate Contract and Permit Scope of Work". The notes and plan details are vague and contradicting. This needs to be clarified and included in a SWPCP.

12. Documentation is needed confirming all discharge locations have adequate outlet protection and discharge to a suitable discharge point causing no adverse downstream impacts. The design proposes level spreaders at the 24 Sand filters. Documentation is required confirming that the exit velocities from all locations do not exceed the receiving area's capability to remain stable. It must be shown that the level spreader is constructed on undisturbed soils and the area below the level spreader lip has a slope of 5 percent or flatter and is stabilized with vegetation. Plans must show how level spreaders will: a) be maintained to continuously address heavy vegetative growth (trees/shrubs), debris and sediment build up; b) maintain level at 0.00 percent

slope for proper functioning; and c) repair any erosion with appropriate erosion control methods. The plans show chain link fence through the middle of several of the permanent basins, it is not clear how the basins can be accessed for adequate maintenance with these fences in place.

13. Calculations are required for all drainage swales, cross culverts and outlet protection pads.

14. Documentation is required showing adequate protection from the panel drip edge, especially on steep and/or long slopes and erodible soils.

15. The Inspection Report Form is blank. The Stormwater Best Management Practices, structural and non-structural, and areas that will be inspected, shall be numbered. A brief description of the BMP or areas should then be listed in the site-specific section of the inspection report.

16. Dam Safety Permit Need Determination is required. Verification from the Department's Dam Safety Program is needed regarding the potential cascading effect from failure of multiple trap/basins and the potential for causing a downstream hazard.

17. Plan note #21 states that the contractor shall submit a Notice of Intent to CTDEEP for registration under the Construction GP including SWPCP. The intent of this note is unclear.

18. Financial Assurance (Letter of Credit) has not been included with the registration.

The primary purpose of this memorandum is to highlight major deficiencies in the application and is not intended as a complete and final list. Without the aforementioned issues addressed, continuing further with a review at this time would not be productive.

NDDB Final Determination Letter dated November 15, 2018 lists numerous recommendations. I would suggest that the NDDB staff review the final plans to confirm that all recommendation have been included in the design and notes.