



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Central Regional Office • 627 Main Street, Worcester MA 01608 • 508-792-7650

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

RICHARD K. SULLIVAN JR.
Secretary

KENNETH L. KIMMELL
Commissioner

November 4, 2011

Jack Hathaway, Town Administrator
One Liberty Lane
Town Hall, 2nd Floor, Rm. 205
Norfolk, MA 02056

Re: CERO – SWM – Norfolk Landfill – Solar Project, Transmittal No. X239663
Application for BWP SW37 – Application for Minor Post-Closure Use, Determination of Technical
Completeness, Final Permit

Dear Mr. Hathaway:

The Massachusetts Department of Environmental Protection (“MassDEP”) has completed the Technical Review of the permit application listed above and has determined that the application is technically complete. Accordingly, the MassDEP hereby issues the attached Permit.

In accordance with the provisions of 310 CMR 19.037(4)(b), an applicant aggrieved by the MassDEP’s decision may request that the decision be deemed a provisional decision by filing a written request within 21 day of MassDEP’s final decision.

If you have any further questions or comments regarding this matter, please contact Susan Landau at 508-767-2705.

Sincerely,

D. Lynne Welsh
Acting Section Chief
Solid Waste Management Program

LW/sl

Attachment Permit No.X239663

Cc: Wayne C. Perry, P.E., Norfolk RAM Group, LLC, One Roberts Road, Plymouth, MA 02360
Norfolk BOH, One Liberty Lane, Town Hall, Norfolk, MA 02056
Tolga Tural, Constellation Solar Massachusetts, LLC, One Constellation Way, Suite 600C, Balt., MD 21202



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BWP SW 37 POST-CLOSURE USE – MINOR Norfolk Landfill: Solar Project

Permit Issuance Date: November 4, 2011

Name of Permittee: Town of Norfolk (“Applicant” or “Permittee”)
33 Medway Branch
Norfolk, Massachusetts 02056

Name of Facility: Town of Norfolk Landfill (“Facility” or “Landfill”)
Facility Address: 33 Medway Branch
Norfolk, Massachusetts 02056

DEP Region: Department of Environmental Protection (“Department” or “MassDEP”)
Central Regional Office (CERO), Worcester
Division of Solid Waste Management

Permit Number: X239663 (Transmittal No.)

Facility Master File Number: 37008
BWP Classification: CLF

I. FACILITY DESCRIPTION AND OUTSTANDING APPROVAL STATUS

A. Facility

1. Owner: Town of Norfolk
33 Medway Branch
Norfolk, Massachusetts 02056
2. Operator: Constellation Solar Massachusetts, LLC
100 Constellation Way, Suite 600C
Baltimore, MD 21202
3. Description: Approximately 54.67 acres of land is located on Medway Branch of which approximately eighteen acres on the western side contains an unclosed landfill. An operating compost station is located on the southeastern portion of the site abutting Medway Branch.

B. Reviews and Approvals Affecting Current or Planned Operation.

1. MEPA: Not Applicable
2. Site Suitability Report: Not Applicable
3. Site Assignment: September 14, 1978
And corrected May 24, 1983 by Norfolk Board of Health
4. Landfill Closure: July 15, 1998

C. Permit Application Information for BWP SW 37 Post-Closure Use – Minor

1. Applicant Name: Constellation Solar Massachusetts, LLC
100 Constellation Way, Suite 600C
Baltimore, MD 21202
2. Transmittal Number: X 239663 (Permit No.)
3. Start Date of Application: September 8, 2011
4. Date of Fee Receipt: September 7, 2011
5. Consulting Registered Professional Engineer:

Norfolk RAM Group, LLC
One Roberts Road
Plymouth, MA 02360
Contacts: John B. McAllister, P.E., Project Engineer and
Wayne C. Perry, P.E., Associate
Tel.: 508-747-7900 Ext. 193
6. Title of Plans & Reports, Submission and Date of Receipt at MassDEP-CERO:

BWP SW 37 Minor Post-Closure Use Permit Application, Norfolk, MA
East Array Solar Project, Norfolk, MA
Prepared by Norfolk RAM Group, LLC
Prepared for: Constellation Solar Massachusetts, LLC and Town of
Norfolk DPW
Dated: August 2011
Received by MassDEP-CERO: September 6, 2011

Response to MassDEP September 29, 2011 request for additional
information
Prepared by: Norfolk RAM Group, LLC
Date: October 6, 2011
Received by MassDEP-CERO: October 7, 2011
7. Project Description:

The post-closure use request is for the installation of a 1,050 kilowatt solar array project on site-assigned land adjacent to the town-owned landfill. The solar array project will be constructed within the site assigned boundaries on the eastern portion of the site assigned property, but not within the landfill footprint. Project development includes clearing approximately 5.75 acres of land and installing 3.54 acres of solar panels that will be accessible by existing and new access roads. A separate major post closure use permit application has been submitted for the Landfill under another transmittal number. This project includes:

- Stormwater management plan,
- A letter of determination from Mass Fish and Wildlife Natural Heritage Endangered Species Program for the Eastern Box Turtle (*Terrapene Carolina*) protection.
- Plans for land grading and shaping with anticipated land cuts up to 25 feet, filling of up to 11 feet and rock blasting,
- Health and Safety Plan, and
- Environmental monitoring system protection.

The finished project consists of the following components:

- Solar panels generating 1,050 kilowatts of electricity,
- Solar panels mounted on metal posts set a minimum of 5 feet below grade,
- Buried electrical wiring to transfer power from panels to a 500 KVA transformer, and
- A permanent perimeter fence and locking gate that will provide site security.

This post-closure use permit authorizes the installation and maintenance of the proposed solar array within the site-assigned area and does not apply to the Landfill the composting operation.

II. POST-CLOSURE USE – MINOR, APPLICATION REVIEW AND APPROVAL

This application complies with the application requirements set forth at 310 CMR 19.016: Post-Closure Use and 19.143: Post Closure Use of Landfills, and was reviewed in accordance with 310 CMR 19.037: Review Procedure for Permit Modifications, Permit Renewals and Other Approvals, the plans and reports described above, which establish that the submittal complies with the criteria set forth in 310 CMR 19.038: Applicability and Review Criteria for a Permit or Permit Modification and 310 CMR 19.143: Post-Closure Use of Landfills.

This document is a Permit, issued pursuant to Massachusetts General Laws (MGL) Chapter 111, Section 150A and 310 CMR 19.000, the Solid Waste Management Facility Regulations (the “Facility Regulations”) and is subject to the conditions set forth below. In the event this Permit conflicts with all or parts of prior plan approvals or permits issued pursuant to Chapter 111, Section 150A or solid waste regulations in effect prior to July 1, 1990, the terms and conditions of this Permit shall supersede the conflicting provisions of the prior permits and/or approvals. This Permit does not convey property rights of any sort or any exclusive privilege.

III. GENERAL PERMIT CONDITIONS

- A. **Compliance with Plans** - The owner/operator shall assure that the Facility and appurtenances thereto operated in accordance with approved plans, reports, and other submissions described in Section I, except as may be modified by the conditions set forth in Section IV. No material changes in the design or activities described in the approved documents shall be performed without prior written MassDEP approval.
- B. **Compliance with Other Approvals** - The post-closure use of this Facility and appurtenances thereto shall be in compliance with other applicable local, state and federal laws and regulations. The NPDES Permit Number shall be submitted to this office prior to beginning construction.
- C. **Standard Conditions** - The Facility and appurtenances thereto shall be maintained in accordance with the conditions set forth at 310 CMR 19.007-19.011 and 19.043(5).
- D. **Joint Liability** - This Permit is issued subject to the conditions of joint liability of the Owner and the Operator in accordance with 310 CMR 19.043(3).
- E. **Transfer** - No transfer of the Permit shall be permitted except in accordance with 310 CMR 19.044.
- F. **Permit Modification** - MassDEP reserves the right to rescind, suspend or modify this Permit by the imposition of additional conditions based upon a determination of actual, or the threat of, adverse impacts from the maintenance, closure or post-closure use of the Facility and appurtenances thereto.

IV. **SPECIFIC PERMIT CONDITIONS**

- A. **Criteria for Post-Closure Use** - This approval for post-closure use of the Norfolk Site Assigned property shall be accomplished such that all activity associated with the project, as described in the application, will take place outside the footprint of the Landfill and shall not in any way alter the Landfill or the environmental monitoring systems associated with the Facility and appurtenances thereto.
- B. **Post-Closure Environmental Monitoring** - The Permittee shall maintain the existing and/or any future environmental control or monitoring systems in accordance with 310 CMR 19.133: Maintenance of Environmental Control and Monitoring Systems. Historic, environmental monitoring associated with the Landfill shows ongoing detections of methane gas above the lower explosive levels at the DPW offices across Medway Branch and along the access road to the proposed solar array project.

The Owner/Operator shall install additional gas monitoring wells between the Landfill and solar array project prior to the beginning of construction and notify MassDEP when the gas monitoring wells have been installed. The owner/operator shall include these new wells in subsequent environmental monitoring activities and shall maintain the existing and/or any future environmental control or monitoring systems in accordance with 310 CMR 19.133.

- C. **Other Post-Closure Use** – the Landfill shall not be used for any other post-closure activity without submittal and Department approval of a Post-Closure Use Permit Application in accordance with 310 CMR 19.143: Post-Closure Use of Landfills.

- D. **Notification of Construction:** The owner/operator shall notify MassDEP in writing (e-mail is acceptable) when the post-closure use construction commences and when the construction has been completed.
- E. **Certification Report:** Within ninety (90) days of completing the installation of the solar photovoltaic array project, MassDEP shall be provided with a certification report. All construction work shall be completed under the supervision of a Massachusetts Registered Professional Engineer who shall have sufficient staff on-site to provide quality assurance/quality control (QA/QC) oversight for all construction work associated with the project. The report shall include, at a minimum, written certification from the supervising engineer that the project was performed in accordance with MassDEP regulations, applicable requirements and the approved Post-Closure Use Permit application. The report shall include as-built drawings depicting all pertinent site features and the extent of the Facility and appurtenances thereto.
- F. **Personnel Training:** The Owner/Operator and their contractors shall be instructed regarding the potential hazards associated with landfill gas and shall instruct or give on-the-job training to all personnel involved in any activity authorized by this Permit. Such instruction or on-the-job training shall teach personnel how to comply with the conditions of this Permit to carry out the authorized activity in a manner that is not hazardous to public health, safety, welfare or the environment. Training shall be provided to workers conducting monitoring and maintenance activities at the Landfill regarding potential hazards associated methane gas and with the solar array including but not limited to electrical hazards.
- G. **Health and Safety:** The owner/operator and their contractor(s) are responsible to ensure all necessary precautions are taken to protect the health and safety of workers and the general public during both construction and maintenance of the solar array. Because landfill gas has been detected in soil-gas monitoring probes located around the Landfill's perimeter, a copy of the site-specific health and safety plan for the construction of the solar array shall be submitted to MassDEP (for its files) prior to the beginning of any construction work. The health and safety plan shall include protocols for monitoring of landfill gas (i.e. lower explosive limit, methane, hydrogen sulfide, etc.) as needed, protocols for modifying work practices if landfill gas is detected at the project site at levels deemed unsuitable, protocols for workers entering any potential enclosures, and protocols for responding to any landfill gas conditions.
- H. **Construction Precautions:**
- a. All necessary precautions shall be taken to ensure that the proposed construction and maintenance work associated with the solar array does not damage the environmental monitoring network at the Landfill. Prior to the commencement of construction activities, environmental monitoring locations between the Landfill and project area and along the access road(s) shall be flagged for visibility and permanently protected with a vehicle proof barrier. If any damage occurs to the environmental monitoring network components, the Owner/Operator or its contractor(s) shall notify Lynne Welsh, Acting Section Chief, MassDEP-CERO within 24 hours and provide a written plan for repairs, including a schedule.
 - b. During the post-closure monitoring period, landfill gas has been detected in soil-gas monitoring probes located around the Landfill's perimeter. This Permit requires that all installed subsurface utilities be designed to address the safety concerns (explosion, fire, asphyxiation hazard, etc.) associated with subsurface landfill gas soil-gas migration. Any inverter/ transformer pad or appurtenances must be

designed not to create a potential fire safety hazard. Potential design features may include but are not limited to the installation of fully sealed conduits, explosion proof connections, and fittings. Utility trenches shall also be designed so they do not act as a conduit for landfill gas migration.

I. Transformer Pad and Interconnection Equipment: A copy of the proposed final design for the transformer pad and any other electrical and protective switchgear (interconnection equipment) proposed on-site shall be submitted to MassDEP for its files. The Owner/Operator and its contractor(s) are responsible to ensure that utilities/structures will not accumulate landfill gas during construction and operation of the project.

J. The Owner/Operator and their contractor(s) are responsible to ensure that the proposed work complies with all applicable local, state and federal electrical codes and permits, including the National Electrical Code (NEC), 2011 Edition, Article 690 – “Solar Photovoltaic (PV) Systems”. MassDEP notes that Article 690.31(a) “Wiring Systems” of the NEC states that “Where PV source output circuits operating at maximum system voltage greater than 30 volts are installed in readily accessible locations, circuit conductors shall be installed in a raceway”.

K. Landfill Gas Notification Requirements:

a. As specified in solid waste management regulations at 310 CMR 19.132 (4) (g): Gas Monitoring,

"When, at any time, the concentration of explosive gasses exceeds 10% of the lower explosive limit (LEL) in any building, structure, or underground utility conduit, excluding gas control, gas recovery and leachate collection system components, the owner/operator shall:

1. take immediate action to protect human health and safety;
2. notify the Department within two hours of the finding; and
3. undertake the actions specified under 310 CMR 19.150 Landfill Assessment Requirements and 310 CMR 19.151 Corrective Action Requirements as required by the Department."

b. Pursuant to 310 CMR 40.0321(1)(a), if at any time, monitoring detects the presence of any combustible gases at or in excess of 10% of the lower explosive limit at any location within a building or within any utility conduits on site or off-site, the Town shall notify the local fire department and MassDEP's Bureau of Waste Site Cleanup-Emergency Response Section at 888-304-1133 within two (2) hours of the exceedance.

V. RIGHT OF APPEAL

1. **Review of Decision** - Pursuant to 310 CMR 19.037(4)(b), if the Applicant (Permittee) is aggrieved by MassDEP's decision to issue this Permit, it may within twenty-one (21) days of the date of issuance file a written request that the decision be deemed a provisional decision, and a written statement of the basis on which the Applicant believes it is aggrieved, together with any supporting materials. Upon timely filing of such a request, the decision shall be deemed a provisional decision with an effective date twenty-one (21) days after MassDEP's receipt of the request. Such a request shall reopen the administrative record, and MassDEP may rescind, supplement,

modify, or reaffirm its decision. If MassDEP reaffirms its decision, the decision shall become a final Permit on the effective date. **Failure by an applicant to exercise the right provided in 310 CMR 19.037(4)(b) shall constitute a waiver of the applicant's right to appeal.**

2. **Right to Appeal** - Any person aggrieved by the issuance or denial of this Permit, except as provided for under 310 CMR 19.037(4)(b), may file an appeal for judicial review of said decision in accordance with the provisions of M.G.L. c. 111, § 150A and M.G.L. c. 30A not later than thirty (30) days following the receipt of the final Permit. Unless the person requesting an appeal requests and is granted a stay of the terms and conditions of the Permit by a court of competent jurisdiction, the Permit shall remain effective at the conclusion of the 30 day period.
3. **Notice of Action** - Any aggrieved person intending to appeal the issuance of this Permit to the Superior Court shall first provide notice of intention to commence such action. Said notice of intention shall include the file number [Transmittal No. X239663] and shall identify with particularity the issues and reason why it is believed the permit decision was not proper. Such notice shall be provided to the Office of General Counsel of MassDEP and the Regional Director for the regional office that processed the permit application at least five (5) days prior to the filing of an appeal.

Office of General Counsel
Massachusetts Department of Environmental Protection
One Winter Street
Boston, MA 02108

and

Martin Suuberg, Regional Director
Massachusetts Department of Environmental Protection
627 Main Street
Worcester, MA 01608

No allegation shall be made in any judicial appeal of this permit decision unless the matter complained of was raised at the appropriate point in the administrative review procedures established in 310 CMR 19.000, provided that a matter may be raised upon a showing that it is material and that it was not reasonably possible with due diligence to have been raised during such procedures or that matter sought to be raised is of critical importance to the environmental impact of the permitted activity.

D. Lynne Welsh
Acting Section Chief
Solid Waste Management Program

DLW/sl