



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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August 14, 2015

Michael Barrett, Chairman
Stoughton Redevelopment Authority
10 Pearl Street
Stoughton, MA 02072

and

Thomas Murphy
Borrego Solar Systems, LLC
1115 Westford Street, 2nd Floor
Lowell, MA 01851

RE: Approval with Conditions
Application for: BWP SW 36 Post-Closure Use - Major
Solar Photovoltaic Array
Transmittal #: X263158

AT: Stoughton Landfill
100 Page Street
Stoughton, Massachusetts
Facility ID#: 39766, Regulated Object#: 172970

Dear Mr. Barrett and Mr. Murphy;

The Massachusetts Department of Environmental Protection, Solid Waste Management Section (the "MassDEP"), has completed its Administrative Review and Technical Review of the referenced Post-Closure Use permit application (the "Application") for the Stoughton landfill (the "Landfill").

MassDEP has determined the Application is administratively and technically complete and hereby **Approves** the Post-Closure Use of the Landfill for a 1.115 megawatt ("MW") solar photovoltaic ("PV") array subject to conditions as specified herein.

I. APPLICANTS:

The Stoughton Redevelopment Authority (“SRA”) is the owner of the Landfill and maintains responsibility for management of the Landfill. The Application includes a letter from the Stoughton Town Manager and the SRA chair stating that the Town of Stoughton (Town”) and the SRA support the proposed solar facility on the Landfill.

Conroy Development (aka TW Conroy 5, LLC) leases the Landfill site through an agreement with the SRA and has entered into a 20 year lease agreement, with two 5-year extensions, with Borrego Solar Systems, Inc. (“Borrego” aka Page Street Solar1 LLC) for the project site. The Town will purchase electricity generated by the project through a power purchase agreement with Borrego

Hereinafter, the SRA and Borrego shall be referred to as the "Applicants". The Applicants and all construction and maintenance personnel associated with construction and operation of the PV array and maintenance of Landfill areas to be maintained by the Applicant shall be referred to as the "Applicants' Contractors".

The Application was prepared and submitted on behalf the Applicants by Tighe & Bond, Inc., of Westfield, Massachusetts (the “Engineer”).

II. SUBMITTALS:

MassDEP has reviewed the Application pursuant to 310 CMR 19.000: *Solid Waste Regulations*, 310 CMR 19.143: *Post-Closure Use of Landfills* and MassDEP's *Landfill Technical Guidance Manual, May 1997* (the "Manual"). The Application consists of the following:

- A. A permit transmittal form assigned No. X263158, an application form for Post-Closure Use - Major (BWP SW 36), a narrative describing the proposed use, engineering calculations, engineering drawings, received by MassDEP on April 7, 2015.
- B. Supplemental Application information, prepared by the Engineer in response to comments e-mailed to the Engineer on April 27, 2015, received by MassDEP on July 10, 2015.

The Application was signed by Dave Albrecht of Borrego Solar Systems, Inc. Brian S. Huntley, Massachusetts Professional Civil Engineer No. 46273 signed the Application and the geotechnical calculations. The Design Drawings bear the signature and seal of David A. Murphy, Massachusetts Professional Civil Engineer No. 35462. The structural design calculations performed by Panel Claw bear the signature and seal of Richard D. Turley, Massachusetts Professional Civil Engineer No. 34880.

III. APPLICATION REVIEW AND DECISION PROCESS:

The Application was submitted and reviewed pursuant to the provisions of 310 CMR 19.029(2): *Applicable Permit Procedures* and 310 CMR 19.033: *Permit Procedure for an Application for a Permit Modification or Other Approval*. According to these review procedures, MassDEP’s decision regarding the proposed activities shall be either: a “Provisional Decision” pursuant to 310 CMR 19.033(4)(a); or a non-provisional decision pursuant to 310 CMR 19.033(4)(b). MassDEP has determined that a non-provisional decision is appropriate for this Application.

IV. POST-CLOSURE USE PROPOSAL SUMMARY:

The Applicants have proposed to develop a 1.115 MW solar photovoltaic installation on the Landfill consisting of the following components:

- Approximately 3,982 LG Solar LG28ON1C-B3 PV modules installed on a PanelClaw, Inc. Panda Bear® Mounting System;
- One SMA-SC800CP inverter, or equivalent, mounted on a concrete pad;
- One 800 kVA transformer and one 750 kVA transformer, mounted on a concrete pad;
- Low voltage wiring supported on the panel mounting rack system;
- Low voltage and medium voltage wiring in an above grade cable tray or rigged conduit for wiring above the Landfill final cover system; and
- Polyvinyl chloride (“PVC”) conduits installed in a below-grade concrete duct bank for wiring adjacent to and crossing under the Landfill access road.

The ground mounted PV system is to be constructed in 8 sub-arrays and will encompass approximately 4.16 acres of the Landfill. The PV array will be constructed on areas of the Landfill with a maximum slope of 10% (approximately 6 degrees). (refer to Condition 1)

The PV array will utilize PV modules (3.2 feet by 5.28 feet) mounted on a PanelClaw, Inc. Panda Bear® Mounting System. The rows of solar panels will be oriented east-west with approximately 2 feet to 4 feet between each row (north-south measurement).

A geotextile fabric will be placed over the existing Landfill cover system gravel layer and be overlain by 3 to 5 inches of crushed stone to provide a level area for the racking system over the entire array area. The proposed design will not impact the final cover system and the existing elevation and grade of the Landfill will not be altered. As a condition of this permit the Landfill must be inspected prior to construction and all settled areas and uneven areas regraded to promote stormwater flow. (refer to Condition 8). Only low ground pressure equipment (<7 psi) is propose to be use on the Landfill final cover system, except on the access road. (refer to Condition 14).

The rack foundation will consist of metal ballast pans placed on the crushed stone leveling layer. Each pan will include a post to support the racking system with bracing installed between posts. Four to eight, 72 pound, concrete masonry blocks will be placed on each pan to provide ballast against overturning, uplift and sliding.

The racking system will hold the panels at a fixed tilt of 10 degrees from horizontal. The racks will be placed to avoid interference with access roads and the passive landfill gas venting wells. A 10 foot setback from the existing landfill gas vents will be maintained to minimize the potential for adverse impacts due to landfill gas emissions. (refer to Condition 10)

Switchgear, two inverters and one transformer are proposed and will be located on a cast-in-place reinforced concrete pad located above the Landfill final cover system in the top plateau area located at the end of the existing access road.

The concrete pad will be 42 feet 10 inches long and 31 feet 10 inches wide, 1.5 feet thick at the perimeter and 1 foot thick in the center. In the July 8, 2015 response to comments, the engineer stated that the equipment pad is proposed to be the same as has been permitted and constructed on multiple other landfills. The conduits below the pad will be sealed and the transition where the cables are outside the pad is also to be sealed. The Engineer states that the electrical conduit and equipment design will be mindful of the presence of landfill gas and will meet applicable codes as required for a solar installation on a closed landfill. Detailed plans for the equipment pad and conduits were not submitted in the Application. As per conditions of this permit the construction details of the equipment pad and conduits must be submitted prior to construction. (refer to Condition #11 and 12)

The low voltage cable conduits will be mounted on the rack assemblies of each array. As the wiring runs between arrays and traverses the Landfill to the inverters/transformer the wiring will be installed in a cable ladder tray or be encased in rigid conduit, supported on pedestals. Medium voltage wiring will be run in polyvinyl chloride ("PVC") conduits installed within a concrete bank duct installed along the south side of the existing access road leading to the top of the Landfill. The duct bank will cross beneath the access road at the landfill perimeter and extend to the new utility riser pole. New overhead wires will convey power from the riser pole to the point of interconnection. The final electrical design must be prepared by a Massachusetts Professional Registered Electrical Engineer and electrical drawings sealed and signed by the Massachusetts Professional Registered Electrical Engineer must be submitted prior to commencement of installation. (refer to Conditions 13 and 14)

Five new utility poles will be installed outside the landfill footprint to support switches and metering equipment (refer to Drawings C-3 and E-1.0). The point of interconnection will be an existing utility pole. Note 2 on Drawing C-3 requires that test pits be hand excavated and observed by the field engineer before the installation of utility poles and guy wires to ensure that the landfill final cover system is not impacted.

The Application did not include a Health and Safety Plan for the construction phase of the proposed PV array. Health and Safety Plans are required to be submitted for MassDEP's records as a condition of this Approval. (**refer to condition #8**).

Bearing Capacity, Settlement, and Stability: The Application included a geotechnical evaluation for the installation of the array and supporting structures.

Based on the anticipated maximum loading of the ballasts, racking system, and modules on the Landfill surface, the Engineer calculated a bearing pressure of 2.2 pounds per square inch ("psi") on the final cover geomembrane. The anticipated maximum loading scenario of the concrete equipment pad and equipment on the Landfill surface will result in a bearing pressure of 3.7 psi. The Engineer stated these loads are less than the 7 psi loads experienced during the final cover construction and are expected to have a negligible effect on the final cover system.

Settlement analysis was also performed by the Engineer for the ballasts bearing on the final cover system. These calculations indicate initial settlement of less than one-tenth inch.

Uplift, tipping and sliding stability evaluations were performed for the concrete ballasts by PanelClaw and reviewed by Richard D. Turley, P.E. Factors of safety of 1.63, 1.71, and 1.84 were calculated for sliding, overturning and uplift respectively for panels mounted on a flat surface. For surfaces sloped up to 10% it was determined that an average of 4.9 blocks per mounting pan were required to achieve a factor of safety of 1.5. The actual number of blocks per pan will vary and based on slope and wind exposure and will average over 5 blocks per pan.

Access Road: There is an existing access road extending to the top plateau area of the Landfill. The Engineer stated that, given the existing road was proof tested with in and off highway construction equipment and loaded trucks, it is not expected that the loading of the geomembrane will be any higher during construction of the solar project. As a condition of this permit, the Engineer is required to monitor the construction equipment proposed to be used for the solar project construction and ensure that the access road is suitable for the proposed equipment. (refer to Condition xx)

Storm Water: Under existing conditions stormwater saturates the Landfill cap soils and excess runoff sheet flows across the Landfill surface into existing swales and downchutes. The Engineer states that the spacing and orientation of the ballast blocks will allow stormwater to mimic existing conditions. The existing and proposed conditions were evaluated to determine the effect of the crushed stone ballast pan support layer on the runoff curve number. The Engineer determined that the overall curve number would be reduced thereby reducing peak stormwater runoff rate and that no changes to the existing stormwater control system would be required.

Post Closure and Post-Closure Use Operations and Maintenance: Currently the Landfill is maintained by Conroy Development. There are no proposed changes to the post closure operation and maintenance plan for the Landfill. Conroy Development will continue to maintain the entire Landfill including the PV array area. Borrego will perform annual site visits to the landfill to inspect the PV array.

MassDEP is requiring that during the first year of operation of the PV array inspections of the Landfill final cover system be performed on a monthly basis and thereafter quarterly, at a minimum (**refer to Condition #15**).

The Application did not include a Health and Safety Plan for the operation and maintenance phase of the proposed PV array. Health and Safety Plans are required to be submitted for MassDEP's records as a condition of this Approval. (**refer to condition #5**).

Site Security: The Applicants state that the Landfill site is enclosed by a chain-link fence except where some gaps exist in the fence. Additional perimeter fencing will be installed to improve security.

Decommissioning Plan: Conroy Development and Borrego have entered into a long term lease agreement that requires Borrego to remove the PV system from the Landfill upon expiration of the lease agreement, with the exception of the geogrid and crushed stone layer.

Since the Town maintains ultimate responsibility for the maintenance of the Landfill, MassDEP has determined that no separate financial assurance mechanism with MassDEP is required. A written decommissioning plan is required to be submitted prior to decommissioning. (refer to Condition #20)

V. SITE DESCRIPTION & INVESTIGATIONS:

The Landfill site is comprised of approximately 33 acres used for waste disposal and capped with a landfill final cover system. The Landfill site is located in a commercial/industrial area of Stoughton and is generally bound by Mack Drive to the east, an unnamed pond and Page Street to the south, Reebok Drive and BJ's Wholesale Club to the west/north-west, and the Reebok Factory Direct Store and undeveloped land to the north. The Stoughton/Avon town line and a utility corridor run parallel to the parcel's eastern boundary.

The Landfill was operated by the Town as a municipal solid waste disposal site from the mid 1940's until operations ceased in approximately 1976 when it was closed and covered with soil but not capped in accordance with the regulations 310 CMR 19.000.

In 1973, the Town of Stoughton, conveyed responsibility for management of the site to the Stoughton Redevelopment Authority (the "SRA"). In 1976, the SRA leased a portion of the site to the Stoughton Department of Public Works ("DPW"). In 1996, the SRA leased a portion of the site (i.e. 28.8 acres) to Conroy for potential development considerations. In 2002, the SRA amended its lease to include Conroy as a sublease regarding operations at the site. The amended lease also allowed for the establishment of a solid waste transfer operation on a 5.1-acre portion of the site an operated by Stoughton Recycling Technologies ("SRT"). During this period MassDEP determined that the SRA would be deemed the "owner" of the site, and that the DPW and Conroy would be deemed to be "operators" of the site

On February 9, 2004, MassDEP issued a provisional of a BWPSW25 - Corrective Action Design ("CAD") permit (i.e. Transmittal #W039959) in order to close/cap the Landfill. On May 26, 2006, MassDEP entered into an Administrative Consent Order with Penalty (#ACOP-SE-06-4006) for violations of the BWPSW25-CAD permit. The ACOP resulted in a three-phase corrective action plan in order to achieve compliance. MassDEP approved Corrective Action Plans for the Phase 1, Phase 2, and Phase 3 on September 26, 2006, December 29, 2006, and March 28, 2007, respectively. On November 14, 2008, MassDEP revised the Phase 3 CAD by approving the use of construction and demolition ("C&D") debris including fines & residuals generated by SRT as grading/shaping landfill closure material. On December 22, 2009, Sitec Environmental, Inc. submitted a closure certification report for Phase 1 and Phase 2 of the Landfill.

On June 6, 2013, MassDEP issued an amendment to the ACOP that extended the date for completion of closure of Phase 3 and modified the closure design. The design change included the disruption of a portion of the final cover system in Phase 1 for the purpose of acceptance of additional grading and shaping materials to facilitate a larger plateau area on the Landfill to maximize the area available for a future PV array. On November 12, 2014, Green Seal Environmental, Inc. submitted a closure certification report for Phase III of the Landfill, including the disturbed area of Phase 1.

Existing Final Cover System: The final cover system on the Landfill side slopes consists of the following:

- a prepared subgrade; overlain by
- a 6 inch layer of sand with a minimum hydraulic conductivity of 1×10^{-3} cm/sec, acting as a geomembrane subgrade and gas venting layer; overlain by
- a 40-mil High Density Polyethylene (HDPE) textured, flexible geomembrane liner material, overlain by
- a 12-inch sand layer minimum hydraulic conductivity of 3×10^{-3} cm/sec, with sub drains installed a maximum of 75 feet on center, acting as a drainage layer; overlain by
- an 8-inch layer of vegetative support material with a minimum organic content of 5%.

The final cover system on the Landfill top plateau area, where the PV array and electrical equipment will be installed consists of the following:

- a prepared subgrade; overlain by
- a 6 inch layer of sand with a minimum hydraulic conductivity of 1×10^{-3} cm/sec, acting as a geomembrane subgrade and gas venting layer; overlain by
- a 40-mil High Density Polyethylene (HDPE) textured, flexible geomembrane liner material, overlain by
- a 12-inch sand layer minimum hydraulic conductivity of 1×10^{-2} cm/sec, acting as a drainage layer; overlain by
- a biaxial geogrid and non-woven geotextile layer, overlain by
- a 12-inch dense grade gravel layer.

Landfill Gas Extraction System: The Landfill has a passive landfill gas venting system consisting of 47 passive gas vents and a landfill gas barrier trench.

Post-Closure Environmental Monitoring: On October 6, 2009 MassDEP issued a Comprehensive Site Assessment ("CSA") approval. The Landfill gas monitoring results included in the CSA identified soil-gas migration along the Landfill's northwest perimeter. MassDEP required that a permit application be submitted to address the landfill soil-gas migration. On August 26, 2010, MassDEP approved a gas barrier interceptor trench designed to be constructed along part of the west side of the Landfill that abuts Reebok Drive. The trench was designed to be approximately 645 feet long, 3 feet wide and extend approximately 3 feet below the groundwater level or to bedrock, whichever was shallower.

Post-closure environmental monitoring (groundwater and soil-gas monitoring) is currently conducted by the Town. The Town has not proposed any changes to the post-closure environmental monitoring plan based on the proposed post-closure use.

IV. PERMIT DECISION:

MassDEP, having determined the information in the Application is satisfactory and in accordance with its authority granted pursuant to M.G.L. c.111, s. 150A, and 310 CMR 19.000, hereby **APPROVES** the Post-Closure Use of the Stoughton Landfill for a Solar Photovoltaic Array subject to the conditions identified herein.

V. PERMIT CONDITIONS:

1. Permit Limitations: The issuance of this approval is limited to the proposed Solar Photovoltaic Array at the Stoughton Landfill as detailed in the Application and does not relieve the Applicants from the responsibility to comply with all other regulatory or permitting requirements. Post-Closure Use construction shall proceed in complete compliance with the approved plans, MassDEP's regulations and requirements, the Manual or as required by this Approval. There shall be no deviation from this Approval without prior consent from MassDEP. MassDEP shall be consulted prior to any deviation from the approved design. MassDEP may require a permit modification application for significant design modifications.
2. Regulatory Compliance: The Applicants, Engineer and Applicants' Contractors shall fully comply with all applicable local, state and federal laws, regulations and policies, by-laws, ordinances and agreements. This includes but is not limited to, 310 CMR 19.142: *Post-Closure Requirements*, 310 CMR 19.143: *Post-Closure Use of Landfills*, and 310 CMR 19.043: *Standard Conditions*. Applicable federal regulations include, but are not limited to, 29 CFR Part 1910, OSHA standards governing employee health and safety in the workplace and all applicable local, state and federal electrical codes and permits, including National Electrical Code (NEC), 2011 Edition, Article 690-"Solar Photovoltaic (PV) Systems".
3. Construction Precautions: All construction shall be supervised by a Massachusetts Registered Professional Engineer. All necessary precautions shall be taken to protect the Landfill final cover system, storm water control system, environmental monitoring network and the Landfill gas extraction wells. All operators of vehicles entering the area should be clearly instructed by the on-site engineer and/or the Applicants' Contractor of the permit requirements to avoid damage to the Landfill components. Prior to the commencement of construction activities, all Landfill gas vents located in close proximity to the proposed array shall be flagged for visibility to minimize the potential for damage by vehicles during construction. If any damage occurs to the any Landfill components, the Applicants shall notify MassDEP within 24 hours and provide a written plan with a schedule for repairs.
4. Notification of Construction: The Applicants shall notify MassDEP in writing (e-mail to the solid waste section chief is acceptable) when the post-closure use construction commences and is completed.
5. Health and Safety: The Applicants, Engineer and Applicants' Contractors are responsible to ensure all necessary precautions are taken to protect the health and safety of workers and the general public during both the construction phase and during the operation and maintenance phase of the post-closure use.

A site specific Solar Array Construction Period Health and Safety Plan shall be developed and submitted to MassDEP (for its files) prior to the beginning of any construction work. The Solar Array Construction Period Health and Safety Plan shall include as a minimum;

- protocols for monitoring of landfill gas as needed,
- protocols for modifying work practices if landfill gas is detected at levels deemed unsuitable, and
- training for all workers including town workers conducting construction activities at the Landfill regarding hazards associated with the landfill gas and the PV array, including electrical hazards.

A site specific Post Closure Operations and Maintenance Health and Safety Plan for the post-closure use period, shall be developed and submitted to MassDEP (for its files) prior to commencement of operation of the PV array. The Post Closure Operations and Maintenance Health and Safety Plan shall include as a minimum;

- protocols for monitoring of landfill gas as needed,
- protocols for modifying work practices if landfill gas is detected at levels deemed unsuitable, and
- training for all workers including town workers conducting maintenance activities at the Landfill regarding hazards associated with the landfill gas and the PV array, including electrical hazards.

6. Personnel Training: The Applicants, Engineer and Applicants' Contractors shall instruct all personnel regarding the potential hazards associated with landfill gas and shall give on-the-job training involving in any activity authorized by this permit. Such instruction and on-the-job training shall teach personnel how to comply with the conditions of the permit to carry out the authorized activity in a manner that is not hazardous to public health, safety, welfare or the environment.

7. Landfill Gas Notification Requirements:

a. As specified in solid waste management regulations at 310 CMR 19.132 (5) (g),

"When, at any time, the concentration of explosive gases 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's regional Office that covers the municipality in which the facility is located within two hours of the findings; 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. 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 Applicant shall notify MassDEP's Bureau of Waste Site Cleanup-Emergency Response Section (508) 946-2850 within two (2) hours of the exceedance as per 310 CMR 40.0321(1) (a) of the regulations.

8. Inspection and Repair of Settlement Areas: Prior to construction of the PV array, any suspect settlement areas on the Landfill project area shall be surveyed to determine the lowest spot. The surrounding area should be then surveyed to find the "relief point" defined as the lowest surrounding area where ponded water would flow off the cap. The elevation difference is defined as the "pond value". Minor settlement shall be defined as less than a 12 inch pond value. Any Landfill project area that has undergone minor settlement shall be corrected by the placement of additional vegetative support soil to promote runoff and the area shall be reseeded. Any area repaired should be surveyed and the location marked on a plan with the pond value. Any future settlement should be recorded cumulatively. If/when the total settlement reaches 12-inches, the area will be considered to have suffered "major settlement" as defined below and appropriate repairs to eliminate ponding shall be performed.

Major settlement is defined as a pond value of 12 inches or more. When this occurs, the final cover system must be repaired to prevent water from ponding above the low permeability layer. The Town or Applicant may either:

- a. Strip off the final cover soils above the low permeability layer, inspect and repair the low permeability layer if/as necessary, place low permeability soil as necessary to promote runoff, replace final cover soils; or
- b. Expose the low permeability soil or geomembrane in a trench around the perimeter of the settled area. Fill the area with soil to form slopes promoting runoff. Cap the area with a new low permeability membrane, geosynthetic clay liner (GCL), or low permeability soil layer that ties into the existing low permeability layer at the identified perimeter. Place new drainage sand and vegetative support material over the new cap area.

Any proposal to repair minor settlement may be done as routine maintenance, provided that the Applicants report the settlement to MassDEP and state their intent to perform repairs and provides MassDEP with final survey results and a summary write up.

Any proposal to do major settlement repair must be submitted within a Corrective Action Design (BWP SW 25) permit application, since disruption of the final cover system will take place and repair details must be submitted and approved.

9. Integrity of the Final Cover System: No excavation of the Landfill final cover system has been proposed. No excavation of the Landfill final cover system shall be performed without a prior proposal and written MassDEP approval. All PV array installation work shall be as depicted and described within the Application and approved plans. Manufacturer's recommendations for standard construction practices **shall not be followed** if the practice may lead to damage to the final cover system.
10. Array Setbacks: The Applicant shall maintain a minimum 10 foot radius buffer between the closest edge of the PV array modules and all Landfill gas vents and a 10 foot radius buffer between the pad mounted electrical equipment and all Landfill gas vents.
11. Proposed Electrical Equipment: A copy of the proposed final design for the any electrical equipment and support pads proposed on-site shall be submitted to MassDEP for review and approval prior to installation. The Applicants, Engineer and Applicants' Contractors are responsible to ensure that utilities/structures will not accumulate landfill gas during construction and operation. Appropriate electrical plans shall be stamped by a Massachusetts Registered Electrical Engineer. The electrical design, including the complete grounding design, shall meet applicable NEC and local electrical code requirements.

If any grounding rods are installed as part of the grounding system, the rods shall only be driven into the ground outside the limits of the Landfill final cover system. The location of any such grounding rods shall be clearly depicted on a site plan. All utility trenches shall be designed so they do not act as a conduit for landfill soil-gas migration.

12. Electrical Equipment Pad: The Applicants shall not construct the electrical equipment pad until all subsurface conduits and trenches are designed to be explosion proof and designed to prevent the migration of landfill gas and the equipment pad and sub-base are designed to eliminate the potential for subsurface landfill gas to impact the electrical equipment.
13. Enclosures and Combustible Gas Alarms: There shall be no penetrations (utility, conduits or other) at the base of the electrical equipment support concrete slab. Any enclosures shall have a landfill gas monitor that is fully operational at all times. The monitor shall be calibrated to a methane standard; have an audible and a lighted beacon. At a minimum, the alarm shall be set to sound when the concentration of explosive gases exceeds 10% of the Lower Explosive Limit (LEL).
14. Vehicles Operating on the Landfill Assess Road and above the Final Cover System:
Prior to operation of any vehicle with a ground pressure greater than 7 psi on the Landfill final cover system or on the access road above the Landfill final cover system during PV array construction and or during PV array maintenance or Landfill maintenance, the Applicants shall prepare a list of the proposed equipment and the fully loaded ground pressure of the equipment. A Massachusetts Registered Professional Engineer shall prepare an evaluation demonstrating that the access road and the final cover soils above the final cover geomembrane are adequate to protect the final cover system geomembrane from adverse impacts from the proposed vehicles. The Engineer's evaluation shall be maintained on site at all time during construction and shall be submitted in the Closure Certification Report required pursuant to Condition #17.
15. Post-closure Use Operation and Maintenance Plan: During the first year of operation of the PV array, inspections of the Landfill final cover system shall be performed on a monthly basis. Monthly inspection reports shall be submitted to MassDEP within 14 days of completion. Following the first year of operation of the PV array, inspections of the Landfill shall be performed on a quarterly basis and shall be submitted to MassDEP within 14 days of completion. Inspections shall be conducted by a third-party consulting Massachusetts Registered Professional Engineer, or

other qualified solid waste professional. The Applicants, Engineer and Applicants' Contractors shall monitor the effectiveness of the storm water management system which should include; swales, structures and any and all conveyance systems. MassDEP shall be consulted prior to any deviation from the approved storm water control design. MassDEP may require a permit modification application for significant design modifications. Any erosion problems, settlement problems, security or other issues observed at the Landfill shall be reported to MassDEP within 24 hours. The notification must include a written plan with a schedule for repairs and repaired immediately.

16. Site Security: Pursuant to 310 CMR 19.130(23) SRA is required to provide sufficient fences or other barriers to prevent unauthorized access to the Landfill. SRA must continually monitor and evaluate the potential for unauthorized access and institute all appropriate measures to prevent unauthorized access during the closure and post-closure period.
17. Certification Report: Within ninety (90) days of completing the installation of solar photovoltaic array, 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 at the Landfill. The report shall be signed and stamped by a Massachusetts-registered professional engineer and include, at a minimum, written certification from the supervising engineer that the project was performed in accordance with MassDEP regulations, requirements and the approved Post Closure Use permit application. The report shall include as-built drawings depicting all pertinent site features.
18. Ongoing Landfill Maintenance: During installation and operation of the PV array, the Applicants shall not impede the inspection and maintenance of the Landfill.
19. Entries and Inspections: In accordance with *310 CMR 19.043: Standard Conditions*, MassDEP and its agents and employees shall have the right to inspect the Landfill and any equipment, structure or land located thereon, take samples, recover materials or discharges, have access to and photocopy records, to perform tests and to otherwise monitor compliance with this permit and all environmental laws and regulations.
20. Decommissioning Plan: If the proposed project is abandoned, during or after completion of construction, the Applicant shall submit a detailed written decommissioning plan. The decommissioning and site restoration plan should include, at a minimum; dismantling and removal of all panels and supporting equipment, transformers, overhead cables, slabs, foundations and buildings and restoration of the roads to restore the site to substantially the same physical condition that existed prior to post-closure use construction. The plan should describe the methods and equipment proposed to be use during decommissioning and to ensure the integrity of the landfill final cover system is maintained.
21. Permit Transfer: Pursuant to 310 CMR 19.044, no sale, assignment, or transfer of the rights or privileges, or effective control of such rights or privileges, granted under a permit to establish, expand, construct, operate or maintain a facility shall be valid until a responsible official of the transferee submits a transfer certification, using a BWP SW 49 application form, in accordance with 310 CMR 19.011(1) to MassDEP. Accordingly the Applicants are jointly and severably liable for maintaining the landfill and PV array as specified in this permit and for adhering to the permit conditions, unless and until a properly completed BWP SW49 application is submitted to MassDEP. The Applicants should refer to 310 CMR 19.044 and the BWP SW 49 application form for the complete permit transfer requirements.
22. Reservation of Rights: MassDEP reserves the right to require additional assessment or action, as deemed necessary to protect and maintain an environment free from objectionable nuisance conditions, dangers or threats to public health, safety and the environment. MassDEP reserves all rights to suspend, modify or rescind this permit if it determines the solar array compromises the integrity of the final cover system and/or results in a threat to public health, safety or the environment.

This approval pertains only to the Solid Waste Management aspects of the proposal does not negate the responsibility of the owners or operators to comply with any other local, state or federal laws, statutes and regulations or enforcement actions, including orders issued by another agency now or in the future. Nor does this approval limit the liability of the owners or otherwise legally responsible parties from any other applicable laws, statutes or regulations now or in the future.

Review of Decision

The Application was submitted and reviewed pursuant to the provisions of 310 CMR 19.029(2): *Applicable Permit Procedures* and 310 CMR 19.033: *Permit Procedure for an Application for a Permit Modification or Other Approval* and MassDEP is issuing a non-provisional decision

Pursuant to 310 CMR 19.033(4)(b), if the Applicants are aggrieved by MassDEP's decision to issue this decision, they may within twenty-one days of the date of issuance file a written request that the decision be deemed provisional, and a written statement of the basis on which the Applicants believes they are 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 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 final decision on the effective date. Failure by the Applicants to exercise the right provided in 310 CMR 19.033(4)(b) shall constitute waiver of the Applicants' right to appeal.

REVIEW OF DECISION

Pursuant to 310 CMR 19.033(4)(b), if the Applicant is aggrieved by MassDEP's decision to issue this decision, it may within twenty-one days of the date of issuance file a written request that the decision be deemed provisional, 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 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 final decision on the effective date. Failure by the Applicant to exercise the right provided in 310 CMR 19.033(4)(b) shall constitute waiver of the Applicant's right to appeal.

RIGHT TO APPEAL

Right to Appeal: This approval has been issued pursuant to M.G.L. Chapter 111, Section 150A, and 310 CMR 19.033: *Permit Procedure for an Application for a Permit Modification or Other Approval*, of the "Solid Waste Management Regulations". Pursuant to 310 CMR 19.033(5), any person aggrieved by the final permit decision, except as provided for under 310 CMR 19.033(4)(b), may file an appeal for judicial review of said decision in accordance with the provisions of M.G.L. Chapter 111, Section 150A and M.G.L. Chapter 30A no later than thirty days following the date of issuance of the final permit decision to the applicant. The standing of a person to file an appeal and the procedures for filing such an appeal shall be governed by the provisions of M.G.L. c. 30A. 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 decision shall be effective in accordance with the terms of 310 CMR 19.033(3).

Notice of Appeal: Any aggrieved person intending to appeal a final permit decision to the Superior Court shall first provide notice of intention to commence such action. Said notices of intention shall include MassDEP Transmittal No. X263158 and shall identify with particularity the issues and reason why it is believed the final 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 which processed the permit application, if applicable at least five days prior to filing of an appeal. The appropriate addresses to send such notices are:

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

Millie Garcia-Serrano, Acting Regional Director
Department of Environmental Protection
20 Riverside Drive
Lakeville, MA 02347

No allegation shall be made in any judicial appeal of a final 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 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.

If you have any questions or comments regarding this approval letter, please contact me at (508) 946-2847 or Dan Connick at (508) 946-2884 or at the letterhead address. In any correspondence regarding this approval, please reference permit Transmittal No. X263158.

Very truly yours,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

Mark Dakers, Chief
Solid Waste Management Section

D/DC

cc: John Batchelder, Superintendent
Stoughton Department of Public Works
950 Central Street
Stoughton, MA 02072

ec: Stoughton Redevelopment Authority
Cheryl.Barrett@Stoughton-Ma.gov
Michael.Barrett@stoughton-ma.gov

Stoughton Town Manager
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Building Commissioner & Zoning Officer
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DEP-Boston
ATTN: R. Blanchet, S. Weinstein, T. Higgins

DEP- Lakeville

ATTN: M. Pinaud, L. Ramos, M. Dakers