

November 13, 2020

Paul Williamson  
Littlefield Solar, LLC  
c/o Walden Renewables Development, LLC.

Subject:           Engineering Review  
                      Littlefield Solar Project at the Former Wells Landfill  
                      Route 9B, Wells, Maine

Dear Mr. Williamson:

### **INTRODUCTION**

Sevee & Maher Engineers, Inc. (SME) was retained by Littlefield Solar, LLC (Littlefield Solar), a subsidiary of Walden Renewables, to provide an engineering review of Littlefield Solar's proposed project to be located on the former Town of Wells solid waste landfill (Landfill) located on Route 9B in Wells, Maine.

SME was retained by Littlefield Solar because of SME's extensive experience in: 1) the permitting, design, operation, and monitoring of active landfills in Maine and 2) projects involving the installation of solar panels on closed landfills.

For this project, SME has reviewed the project documents listed below. SME's engineering review of the Littlefield Solar Project is limited solely to the portion of the solar project that will be installed on the Landfill.

The engineering review focuses on: 1) the impact that the proposed solar development will have on the Landfill, including the Landfill cover system, 2) disturbance of the waste deposit, and 3) potential that the solar development will exacerbate contamination associated with the Landfill.

For this engineering review, SME reviewed documents provided by Walden Renewables and other documents, which include: 1) existing plans for the Littlefield Solar Project, 2) historic reports, 3) monitoring data, and 4) Maine Department of Environmental Protection (MEDEP) correspondence, including the October 30, 2020 MEDEP letter, which grants Littlefield Solar a variance allowing Littlefield Solar to install solar panels on the Landfill. This letter is provided in Attachment 1. SME also had discussions with members of the Littlefield Solar project team.

The documents include:

- Littlefield Solar Plans prepared for the Littlefield Solar Project; dated June 11, 2020; by Boyle Associates and Krebs & Lansing.
- Solar Project Feasibility Study for Two Sites in Wells, Maine; dated January 22, 2019; by TRC.
- MEDEP Reports including the 2003 Report on MEDEP Investigation Work at the Wells 9B Landfill.

- Needs and Feasibility Assessment for Site Re-Use; Route 9B Landfill; dated July 22, 2005; by Stratex.
- Landfill Monitoring Data obtained for the Town of Wells.
- MEDEP Correspondence dated October 30, 2020, which grants a Variance for the Littlefield Solar Project at the Landfill site.

Drawing C-1.3, LANDFILL SURFACE WORK PLAN, LITTLEFIELD SOLAR, LLC, WELLS LANDFILL, prepared by Boyle Associates and Krebs & Lansing, is included as Attachment 2. This drawing is included as a reference to show the proposed plan for the placement of solar panels on the Landfill.

### **PROJECT BACKGROUND AND UNDERSTANDING**

As indicated above, SME reviewed project documents related to the Landfill and the proposed Littlefield Solar Project. Following is a brief summary of the project background. This summary is not intended to provide a detailed discussion of the Landfill history. That information can be found in the documents listed above.

Based on information reviewed by SME, the Landfill burned wastes from about 1920 until 1960. During the 1960s, solid waste delivered to the site was buried at the Landfill. In 1972, the Landfill stopped receiving waste. The Town closed the Landfill prior the effective date of Maine's first rules related to landfill closure. After the Landfill was closed, the property was sold, subdivided and homes were built over the closed Landfill. Following the construction of homes at the Landfill site, concerns related to potential impacts related to the Landfill arose. After a series of investigations and studies by the Town of Wells and MEDEP in the early 2000s, the Town purchased the properties on, and adjacent to the Landfill in the mid-2000s. MEDEP did not require, and the Town has not, closed the Landfill, with an engineered cover system, in accordance with current MEDEP requirements.

Based on studies conducted at the Landfill, for the Town of Wells and MEDEP, in the 2000s, low levels of groundwater contamination and landfill gas were measured in the vicinity of the Landfill. Following the removal of the residences located on and adjacent to the Landfill, MEDEP determined that no further corrective action was required, related to the Landfill.

MEDEP in a letter to Walden Renewables, dated October 30, 2020, regarding the proposed Littlefield Solar Project, granted a Variance from Ch. 401 §(5)(B)(%) (a) for the Littlefield Solar Project, with the following conditions:

- No excavation into the buried waste;
- Exposed waste shall be collected and properly re-covered, within the footprint of the Landfill, in accordance with the Boyle Associates Submittal;
- Best Management practices for erosion and sediment control must be followed; and
- Construction workers must be trained on the hazards of working in areas with potential exposure to landfill gases and unknown solid and liquid wastes.

## **OBSERVATIONS AND OPINION**

Based on SME's review of the project files provided by Littlefield, a site visit, and discussions with representatives of Littlefield Solar, the following observations and opinions, regarding the potential impact of the proposed solar project on the Landfill, are offered:

- The MEDEP has prepared a document (APPLYING FOR APPROVAL TO INSTALL SOLAR PANELS ON A CLOSED LANDFILL; Rev 08-2017) that provides instructions and guidelines for installing solar panels on a closed landfill. Although the Landfill was not formally closed under the MEDEP Rules, and is not specifically covered by these MEDEP requirements, the solar project proposed by Littlefield Solar will meet the standards described by MEDEP for installing solar panels on a closed landfill.
- Prior to installing the solar panels, Littlefield Solar will complete a Pre-Construction Site Assessment. This Assessment will include performing test pits and/or borings through and around the perimeter of the Landfill. This Assessment will improve the understanding of the Landfill boundary and the nature (soil type and thickness) of the Landfill cover system. This information will allow Littlefield Solar to undertake preconstruction activities that will improve the cover system and take steps that may improve the integrity of the Landfill systems. Completing the Assessment and implementing the measures described in sheet C-1.3 LANDFILL SURFACE WORK PLAN, construction of the project will meet the MEDEP requirements for installing solar panels on a closed landfill.
- Prior to installing the solar panels, Littlefield Solar will implement Pre-Construction Site Stabilization tasks that include filling low areas to achieve positive drainage, placing additional soils to achieve a 12-inch (minimum) soil, and other possible activities to help stabilize the site. The pre-construction site stabilization tasks will enhance the Landfill cover system to: 1) improve stability and to assure that Landfill wastes will not be exposed at the ground surface and 2) improve stormwater management at the Landfill. These improvements will improve surface water runoff and reduce the amount of surface water that migrates through the Landfill waste.
- Littlefield Solar will improve the cover system and surface water management system at the Landfill, prior to the installation of the solar panels. In areas of the Landfill where the thickness of the existing cover soil is less than one foot thick, additional soil will be placed to provide at least one foot of cover.
- Landfill debris and/or waste materials that are observed at the Landfill surface will be relocated to an area where they can be properly covered, to prevent contact with waste.
- The security of the Landfill will be improved by the installation of an 8-foot high fence, which will limit access to the Landfill.
- The proposed solar development will not adversely affect the Landfill waste. As a condition of the MEDEP variance for this project, Littlefield Solar will not excavate below the landfill cover soils or disturb the waste deposit. The plans for the Littlefield Solar Project indicate that care will be taken during the clearing of the Site to minimize disturbance to the existing cover soil and the waste deposits.
- SME agrees with the statement included in the October 30, 2020 variance letter from MEDEP, which states, the Littlefield Solar Submittal, "...proposes the use of construction methods that

*will not penetrate what cover the landfill does have, will not exacerbate conditions at the Site, and that will manage any landfill waste materials properly, if encountered.”*

- The following avoidance measures will be taken by Littlefield Solar as part of the installation of the solar panels at the Landfill. These measures will reduce impact on the Landfill waste and existing cover system, and will improve the cover system and surface water management systems.
  - There will be no excavation into the existing waste deposit and the existing wastes will not be disturbed.
  - Landfill waste, waste materials, and other debris visible at the existing ground surface will be collected and properly re-covered, within the footprint of the Landfill, in accordance with the MEDEP variance, as part of the pre-construction activities, prior to installing the solar panels.
  - The existing Landfill cover system will be improved, where needed, to include a minimum soil depth of 12 inches.
  - The existing stormwater and erosion control systems will be improved and new erosion controls will be installed in accordance with Maine Erosion Control Best Management Practices.
  - A new 8-foot-high fence will be installed to prevent access to the Landfill and the solar panels and associated systems.
  - Littlefield Solar will have long-term responsibility for the maintenance of the Landfill cover system, including the stormwater management system, following completion of construction.
- Based on SME’s review of the Littlefield Solar Project at the Landfill, and based on the avoidance measures (described above) that Littlefield Solar will take prior to, and during, installation of the solar panels, SME does not believe that the proposed Littlefield Solar Project will adversely affect the conditions at the Landfill. The proposed solar project is not expected to exacerbate the conditions associated with the Landfill, related to groundwater quality, surface water quality, or the presence of landfill gas. SME also believes, the avoidance measures that Littlefield Solar will be taking as part of this project, have the potential to improve the conditions and reduce potential for future issues associated with the Landfill.

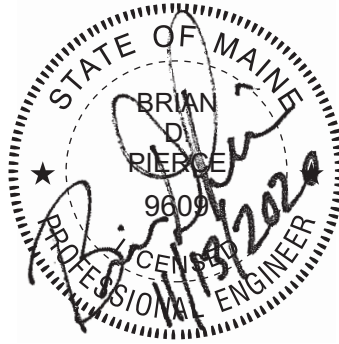
If you have questions concerning the information included in this letter, please let me know.

Sincerely,

SEVEE & MAHER ENGINEERS, INC.



Brian D. Pierce, P.E.  
Principal/Chief Engineer



- Attachments: 1. October 30, 2020 Letter from MEDEP  
2. Drawing C-1.3 (Boyle Associates)

cc: Jack Kenworthy, Walden Renewables

**ATTACHMENT 1**  
**OCTOBER 30, 2020 LETTER FROM MEDEP**



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



JANET T. MILLS  
GOVERNOR

MELANIE LOYZIM  
ACTING COMMISSIONER

October 30, 2020

Walden Renewables Development LLC  
155 Fleet Street  
Portsmouth, NH 03801  
Attn: Jack Kenworthy

Town of Wells  
208 Sanford Road  
Wells, ME 04090  
Attn: Larissa Crockett

Regarding: Variance for Proposed Solar Project on the Wells 9B Abandoned Landfill

Dear Mr. Kenworthy,

The Department of Environmental Protection (Department) has had an opportunity to review Littlefield Solar LLC’s plan to install a solar array on an abandoned landfill in Wells. The plan was submitted as an attachment to an August 31, 2020 letter from Boyle Associates to the Department (Submittal). The Submittal shows the proposed solar array will cover parts of the abandoned pre-1976 landfill referred to in Department records as the “Wells Route 9B Landfill”, #REM02157, located on Route 9B in Wells (Site).

The following information is a synopsis of the Site’s history:

The Site is a 5-acre landfill that was closed prior to 1976, although the closure date and procedure of closure is not documented in Department records. The Site was sold and then subdivided in the 1970’s. As wastes began to work up through the un-engineered cover, the Department was informed of the situation, investigated and identified limited risks to ground water and surface materials requiring remediation. Drinking water supply wells, soil contamination and vapor intrusion of landfill gasses into nearby residences were investigated. As part of remediation activities, the Town’s drinking water supply line was extended to supply the impacted residences, and the municipality purchased all of the structures on or adjacent to the landfill area on or around 2005. The Department funded a portion of the remediation through the landfill closure and remediation program, including the Site investigations and the extension of the waterline.

The Submittal details plans to place a solar array on top of and beside the buried solid waste at the Site. Department rules, Chapter 401 (5)(B)(5)(a), prohibits the establishment of structures, including solar arrays, on or within 100 feet of the solid waste boundary of landfills without a modification of an existing landfill license, if licensed, or through a variance process, if unlicensed. The Department does encourage the re-use of landfills for appropriate development.

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826

BANGOR  
106 HOGAN ROAD, SUITE 6  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769  
(207) 764-0477 FAX: (207) 760-3143

Due to the Site being closed prior to any landfill closure or licensing requirements enacted by the State, the Site would need to obtain a variance prior to construction of the solar development. The Department deems the Submittal to be an acceptable plan to obtain a variance. The purpose of Ch. 400 § (5) is to protect the solid waste cover system. Although there is no engineered cover system at the Site, the Submittal proposes the use of construction methods that will not penetrate what cover the landfill does have, will not exacerbate conditions at the Site, and that will manage any landfill waste materials properly, if encountered. The Department hereby grants a variance from Ch. 401 § (5)(B)(5)(a) for the Site, subject to the following conditions:

1. There shall be no excavation into the buried waste and if there is exposed waste found on the surface during construction, then the waste shall be collected and disposed of at a licensed facility or the waste shall be re-covered, in accordance with the Submittal.
2. Work must follow the most up to date Department best management practices for erosion and sediment control found online here ([https://www.maine.gov/dep/land/erosion/escbmps/esc\\_bmp\\_engineers.pdf](https://www.maine.gov/dep/land/erosion/escbmps/esc_bmp_engineers.pdf)); and
3. All construction crews brought on Site for any aspect of this project must be trained on the hazards of working in an environment with the potential for exposure to landfill gases and unknown solid and liquid wastes.

If you have any questions or need clarification regarding this variance, then please contact me at 207-215-7841 or by email at [matthew.r.young@maine.gov](mailto:matthew.r.young@maine.gov).

Best Regards,



Matthew R. Young  
Project Manager - Landfill Closure and Remediation Program

cc: Dale Knapp, Boyle Associates

**ATTACHMENT 2**  
**DRAWING C-1.3 (BOYLE ASSOCIATES)**

## LANDFILL SURFACE WORK PLAN

### 1. SITE

The proposed Littlefield Solar project is partially located on a former landfill site owned by the Town of Wells, Maine. The site is located north and east of Route 9B and bisected by Abenaki Trail. The landfill area was used for waste burning from ~1920 to 1960. The landfill accepted solid waste from approximately 1960 to 1971. The landfill was not capped with an impermeable cap. Upon closure, the waste was simply covered over with soil. The site is presently covered with scrub-shrub and woody vegetation. See the Feasibility Study prepared for the Town of Wells by TRC dated January 22, 2019 for further detail. The approximate limits of the landfill use derived from aerial photography are shown on this plan.

### 2. OBJECTIVE

This work plan outlines the measures and work procedures to be employed during the construction and operation of the solar electric generation facility to ensure that the refuse remains covered at all times. Please note that the measures and procedures detailed in this memorandum are in addition to the measures dictated by the State of Maine operational and construction stormwater permitting requirements (38 MRSA § 420-D and 38 MRSA § 413 Chapter 3).

### 3. PRECONSTRUCTION SITE ASSESSMENT

The limits of all construction shall be marked prior to the commencement of any construction or clearing activities. Littlefield Solar shall employ an Engineer qualified to evaluate solid waste containment to review the site. The Engineer selected shall be preapproved by the Town of Wells. The preconstruction site review will document any areas with exposed waste or very limited cover within the project limit of disturbance. These areas will need to be stabilized prior to the clearing activities. The preconstruction site review will confirm the approximate landfill limits derived from aerial photography. If these limits are not found to be accurate the preconstruction site review will establish the limits of the former landfill operations within the solar project limits of disturbance.

### 4. PRECONSTRUCTION SITE STABILIZATION

The limits of any areas within the solar project limits of disturbance that were potentially used as landfill identified by the Engineer shall be clearly marked in the field. The limits of any areas of exposed waste or limited cover (less than one foot) identified by the Engineer shall be clearly marked in the field prior to the commencement of any clearing activities. The Contractor shall clear only those areas necessary to reach the areas identified as requiring additional fill in the wooded portions of the project site. The Contractor shall place fill in these areas so as to maintain at least one foot of cover over any waste prior to clearing. If recommended by the Engineer, a layer of non-woven geotextile fabric shall be placed over the existing ground surface prior to placement of the fill.

### 5. SITE CLEARING

The Contractor shall carefully clear the site, taking care to cause as little disturbance to the soil surface as possible in all areas identified by the Engineer as having potential to have been formerly used for landfill activities.

### 6. FILL OF FORMER LANDFILL AREAS

After site clearing any areas of exposed waste or limited cover (less than one foot) will be filled. These areas shall be clearly marked in the field. The Contractor shall place fill in these areas so as to maintain at least one foot of cover over any waste prior to continuing with construction. If recommended by the Engineer, a layer of non-woven geotextile fabric shall be placed over the existing ground surface prior to placement of the fill. See the Feasibility Study prepared for the Town of Wells by TRC dated January 22, 2019 for further detail. The site shall then be stabilized in accordance with the construction stormwater permit (38 MRSA § 413 Chapter 3).

### 7. CONSTRUCTION MATTING

In all areas identified by the Engineer as having potential to have been formerly used for landfill activities suitability for construction traffic will be evaluated. Areas that do not proof roll well will be identified. Timber construction matting will be used for heavy equipment travel in these areas. The use of temporary construction roads as an alternative to timber matting in these areas will be allowed if approved by the Engineer. These temporary roads shall be constructed with a minimum of one foot of road gravel placed on a geotextile road fabric (Mirafi 500x or equal). These temporary roads over the former landfill areas shall be removed as construction proceeds. The temporary road footprints shall then be stabilized in accordance with the construction stormwater permit (38 MRSA § 413 Chapter 3).

### 8. INSTALLATION OF SOLAR IMPROVEMENTS

In all areas identified by the Engineer as having potential to have been formerly used for landfill activities, only above ground foundations and conduit systems shall be used. The solar module racking in these areas will use ballast blocks, no driven or pile type foundations will be allowed. All electrical conduit used in these areas shall be above ground. Any facilities requiring below ground work, such as pad mounted transformers, will be located outside of the areas identified by the Engineer as having potential to have been formerly used for landfill activities.

### 9. POST CONSTRUCTION REVIEW

The site shall be examined again at the end of construction prior to the full re-vegetation of the site. If needed, the Contractor shall place additional fill so as to maintain at least one foot of cover over any waste prior to final re-vegetation of the site. The Contractor shall re-vegetate the site in accordance with the construction stormwater permit (38 MRSA § 413 Chapter 3).



# LITTLEFIELD SOLAR

Wells, Maine



*Berry, Huff, McDonald, Milligan Inc.*  
Engineers, Surveyors

28 State Street  
Gorham, Maine 04038

**ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION**

SOURCE DATA LEGEND		
MAPPING SOURCE DATA USED FOR PLAN COMPILATION		
Civil Engineering:	Krebs and Lansing Consulting Engineers, Inc. 164 Main Street, Suite 201 Colchester, Vermont 05446	
Environmental:	Boyle Associates 254 Commercial Street Merrill's Wharf, Suite 101 Portland, ME 04101	
Stormwater:	BH2M Inc. 28 State Street Gorham, ME 04038	
Applicant:	Littlefield Solar LLC. Applicant's Address: 155 Fleet St., Portsmouth, NH 03801	
Property Owner:	Town of Wells Property Owner's Address: 208 Sanford Road, Wells, ME 04090	
<p>STANDARD GRAPHIC SCALE (1" = 50') VALID WHEN PLOTTED ON 24" BY 36" MEDIA</p>		

REV. NO.	REVISIONS/COMMENTS	DATE
1	200' Setback from Webhannet River	07/06/20
2	Revisions per Town Comment	07/15/20
3	Revised environmental feature setback	08/31/20

Drawing Title:  
**LANDFILL SURFACE  
WORK PLAN  
LITTLEFIELD SOLAR LLC  
WELLS LANDFILL  
SOLAR ARRAY**

DATE of Issue: 06/11/2020  
Drawn by: EJM Checked by: IAJ  
Project No.: 20181 Scale: 1" = 50'  
Drawing No.: C-1.3 Rev No.: 2