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# FLS ENERGY

YOUR SOLAR EXPERTS

February 12, 2009

Allen Gaither  
Environmental Engineer  
The Division of Waste Management  
Western Regional Office  
[Allen.gaither@ncmail](mailto:Allen.gaither@ncmail)  
Ph: 828-296-4703

Allen,

Please find enclosed an Installation Plan for FLS Energy's Solar Farm on Evergreen's (Blue Ridge Paper's) closed out landfill cell. The plan is based on the outline you shared with me when we spoke in October.

Evergreen has reviewed this Installation Plan for submission to the NC Division of Waste Management and agrees the installation is within the Lease Agreement area.

We are very excited about creating the one of the largest solar farms in the Southeast, right here in Western North Carolina, and we are especially pleased that we can use an old landfill cell to generate clean energy and create jobs.

I am submitting to you two hard and one electronic copies. Thank you for your support and your review of this plan.

Sincerely,

Michael Shore  
President, FLS Energy, Inc.

**RECEIVED**

FEB 12 2009

SOLID WASTE SECTION  
ASHEVILLE REGIONAL OFFICE

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# Installation Plan

## Solar Farm on Evergreen’s Closed Landfill Cell

### 1. Introduction

FLS Energy proposes to build a 1 MW photovoltaic system at the Blue Ridge Paper Landfill #6, Canton, NC utilizing closed cells B (Lower) and part of cell C (Lower).

### 2. Project Description

The photovoltaic modules will be mounted on tracking units which will track the sun as it transits from east to west. The tracker units will be supported on above-ground concrete foundations. A complete layout of the tracker units is shown in Attachment A. A photo of a similar system using the concrete foundations is shown in Attachment B.

All wiring throughout the array will be contained in above-ground conduit or cable trays. There are no plans for digging or excavation within the capped landfill area.

Some underground conduit will be installed outside the cap area.

Estimate of the total land area to be covered by the PV module arrays:

7.8 acres of Area B Lower

2.9 acres of Area C Lower

10.7 acres total

Dimensions for PV module spacing: Modules will be mounted on tracking arrays. The arrays will be spaced approximately 17’-4’ on center.

Details on module foundations (i.e. weight and dimensions): The typical module foundations are sized as counterweights for uplift prevention. The final determination of the foundation size is dependent on the system voltage. We have listed the two options, 600 V and 1,000 V. There are two different foundations for each mounting unit, a large one for the north side and a smaller one for the south. See pictures on Page 6. The sizes and weights are as follows:

	<u>600 V System</u>	<u>1,000 V System</u>
North:	5,860 lbs	4,300 lbs
South:	1,540 lbs	2,358 lbs

### 3. Waste Management Goals

- Protect integrity of the landfill cell cap
- Eliminate erosion due to solar energy system.

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#### 4. Environmental Issues

##### Avoid penetration of cap

The cap will not be penetrated. Additional fill will be added to low areas in order to create a more level surface which will meet the requirements of the system manufacturer. There will be no grading of existing soil cap. Once the fill is in place temporary roadway surfaces will be used as required to minimize compaction and soil disturbance. Some vegetation may be disturbed due to construction vehicle traffic.

##### Ground Cover / Grass

Grass will be planted on any disturbed areas and areas where fill is added to the cell. Once established, native vegetation will be maintained by mowing twice per year or as required to prevent woody plants from becoming established.

Since the panels are raised above the surface and are rotating throughout the day, it is not anticipated that the vegetation will die due to lack of sun. If areas do come under stress from lack of light, shade tolerant grasses will be planted and maintained.

##### Soil Erosion

Silt barriers will be established at the perimeter of the cell in order to minimize soil erosion and siltation of existing storm drains

##### Vehicle Equipment Access

Construction traffic will be minimized in the cell areas. It will be necessary to use construction machinery to place the tracker foundations and photovoltaic module arrays. When it is necessary to transverse the cell cap, temporary roadway surfaces will be used to minimize compaction and soil disturbance. A possible product that is under consideration is shown in Attachment C.

##### Contingency Plans

If, for any reason, remediation, maintenance or construction activities must take place within the solar farm perimeter the following guidelines will be followed:

- Most repairs can be accomplished by personnel on foot. If equipment is used, it will be very similar in size and weight as a medium-sized farm tractor.
- If heavy equipment is necessary, temporary roadway surfaces will be used to minimize compaction and soil disturbance.

If, for any reason, the solar farm must be abandoned due to unforeseen landfill impacts the following guidelines will be followed:

- Nothing permanent will be installed on the landfill cells. In the event the solar farm needs to be abandoned, all equipment will be removed and cap repaired if needed.

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Attachments:

Attachment A — Tracker Array Layout

Attachment B — Tracker Array Photos

Attachment C — Temporary Roadway Information

Attachment D — Area B Closure Documentation



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**Attachment B — Tracker Array Photos**



**T20 TRACKER BUILDING BLOCK**



**T20 TRACKER STEEL STRUCTURE**

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## Attachment C — Temporary Roadway Information



**Attachment D — Area B Closure Documentation**

**SME**

*Sevee & Maher Engineers, Inc.*  
*Water Management and Hydrologic Consultants*

**STATEMENT OF COMPLIANCE  
WITH APPROVED PLANS AND SPECIFICATIONS**

Project Owner: *Blue Ridge Paper Products*  
Project Title: *Landfill No. 6 Area B Closure*  
Project Location: *Canton, North Carolina*  
Engineer: *Sevee & Maher Engineers, Inc.*  
*Cumberland, Maine*

The undersigned, registered Professional Engineer in the State of North Carolina and in the employ of Sevee & Maher Engineers, Inc., which is responsible for construction monitoring pursuant to its contract with Blue Ridge Paper Products, states to the North Carolina Department of Environmental Services that it is the professional engineering opinion of Sevee & Maher Engineers, Inc., based on the attached information, was in general accordance and compliance with the contract, plans, specifications, and conditions as approved by the North Carolina Department of Environmental Services.

Date: 7/30/07

President:

*John F. Sevee*  
John F. Sevee, P.E.  
/Reg. No. 20589



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July 31, 2007

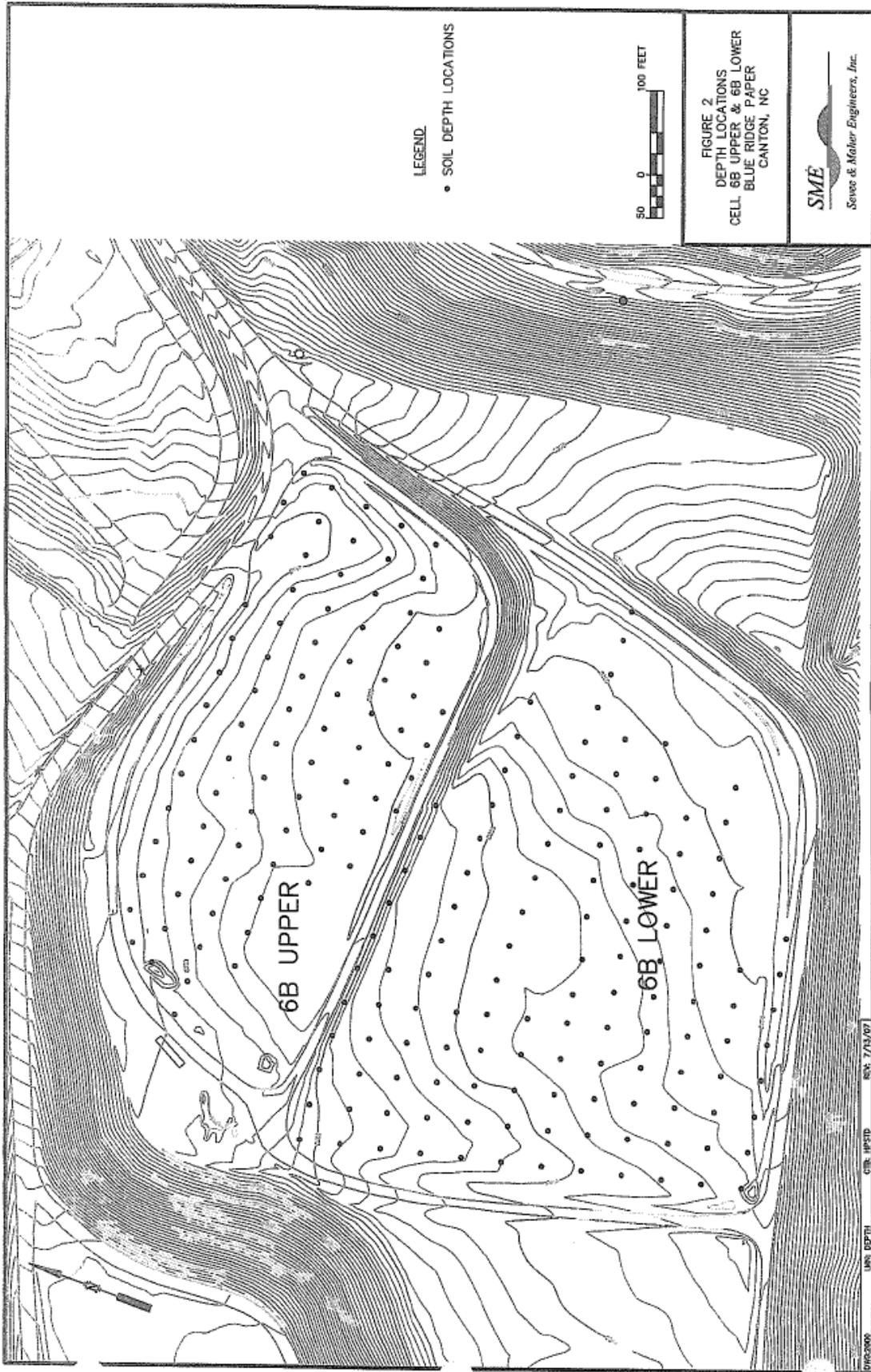
4 Blanchard Road P.O. Box 85A Cumberland Center, ME 04921 (207) 829-5076 FAX (207) 829-5093 [www.smeinc.com](http://www.smeinc.com)

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**BLUE RIDGE PAPER PRODUCTS  
CANTON, NORTH CAROLINA  
LANDFILL NO. 6  
AREA B CLOSURE**

**1.0 PROJECT DESCRIPTION**

Blue Ridge Paper Products (Blue Ridge) owns and operates a 240 acre landfill referred to as Landfill #6 in Canton, North Carolina, Permit #44-06. The landfill is used for the disposal of sludge, lime mud, ash, and wood waste into discrete areas, A through H. In July 1995, Blue Ridge reached capacity in Area B and constructed a soil cover over the waste. The requirement for closure of Area B was a minimum cover soil depth of 24 inches. Based on the worksheets provided by Blue Ridge, a total of 204 sample locations were measured for thickness. A copy of the worksheets is attached and the locations compiled on a site plan, see Figure 1. The measurements show that a minimum of 24 inches of cover soil was placed over the waste in Area B.



B-LOWER FILL DIRT

