



State of Tennessee
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
KNOXVILLE ENVIRONMENTAL FIELD OFFICE
3711 MIDDLEBROOK PIKE
KNOXVILLE, TENNESSEE 37921-6538

April 16, 2014

Chairman Steve Field
Loudon County Solid Waste Disposal Board
100 River Road # 106
Loudon, Tennessee 37774

RE: Proposed Expansion of Loudon County Matlock Bend Landfill, SNL 53-0203
Notice of Deficiency

Dear Mr. Field:

In accordance with the Regulations Governing Solid Waste Processing and Disposal, Rule Chapter 0400-11-7, the application for a Class I Permit for the above facility has been reviewed for technical merit. Our review has determined the need for additional or revised information in the application text or plans in order to clarify, modify, or supplement the previously submitted material. Additional items may be requested as the Division continues its review of the application and of site survey monitoring data.

The permit process will proceed when the information requested is received which enables further review by the Knoxville Field Office with input from the Nashville's Central Office.

If you have any questions, please do not hesitate to contact me at (865) 594-5474.

Sincerely,

Paula Plont
Environmental Protection Specialist
Division of Solid Waste Management

Revendra Awasthi
Environmental Field Office Manager
Division of Solid Waste Management

cc: DSWM NCO
Santek – Ron Vail

Matlock Bend Landfill Class I Permit Application

SNL 53-103-0203

Comments on the latest submittal dated March 12, 2014.

1. The existing site topographic information shown on the drawings dated September, 2008 is not current. The revised plan should include current topographic information.
2. Please include a sheet showing the existing (current) topographic contour lines, and permitted final contour lines in a different color.
3. With the information obtained from item #2, produce another drawing showing the areas that have reached the final grades and delineate those areas that require partial final closure with closure date.
4. Revise cross section sheets to show existing (current) grades and proposed final grades in different colors.
5. Drawing # 1 (Stormwater Network Flow Diagram): The revised plan should include a watershed map of each drainage structure. Please note that with the addition of the proposed tack - on berms on side slopes, the watershed areas of some of the drainage structures have been changed. Please verify that the drainage areas are correct. Also Drawing # 1 should match with hydrograph summary reports as shown on attachment B.
6. Soil loss calculation: The C value (crop management factor) used in computation is for good fully established grass and does not reflect portions with soil cover only followed by early thin grass sections that are more normal in actual site landfill interim operating conditions. Please use a realistic value in computations. Also double check other soil loss coefficients to ensure the values used conform are appropriate such as slope, length...etc. The soil loss rate for both active and closed scenarios must be within the acceptable levels.
7. There are too many proposed drainage structures, and the labeling of drainage structures on the engineering drawings does not coincide with the storm water calculation input data (Attachment B). Please verify.
8. The revised plan should include input values used for determining peak (Q_{25}) discharge (e.g. CN, C, I, Tc) and methodology used for determining peak discharge (Q_{25}).
9. Side Slope benches and Tack-on Berm. There are many benches and tack-on berms proposed and it is preferable to have benches set for every 30 feet to 40 feet vertical height. The waste streams presently managed by this landfill does not support longer distances.
10. Reevaluate all pond sizes for both scenarios (closed & interim).
11. Please revised and eliminate the type 2 junction boxes from the final cap design. The use of such structures in a cover design due to expected waste settlement goes against the criteria for minimizing long term maintenance.
12. Please include, with details, the calculations for rip rap relative to any pipes needing outlet protection.
13. Please provide the HELP Model run data to support the required 30 days storage capacity.

14. Provide dewatering times for all proposed sediment ponds.
15. Again please check the hydraulic capacity of all drainage structures. It appears that they are under sized, especially proposed pond #3. For example pond # 3 has the following output summary (copy attached).
 - a. Required 25yr.-24 hr storm volume = 417,749 cuft.
 - b. Contributing drainage area = ??? ac
 - c. Peak discharge(Q_{25}) = 154.64 cfs

Based on our simple calculations the required 25 yr. - 24hr is greater than the proposed volume. See below calculations:

- a. *Area draining into pond #3 = 37.6 ac*
- b. *Runoff amount = 3.78 in (based on CN value of 83 and rainfall depth of 5.6")*
- c. *Required 25yr-24hr runoff volume = 11.81 ac-ft.*

$$37.5 \text{ ac} \times 3.78 \text{ in} \times 1 \text{ ft} / 12 \text{ in} = 12 \text{ ac-ft. or}$$

$$11.81 \text{ ac-ft} \times 43560 \text{ ft}^2 / \text{ac} = 514443.6 \text{ cu-ft}$$

Plus 10% dead sediment storage volume

$$\begin{aligned} \text{Total required 25yr.-24hr. storage volume} &= 514443.6 + 514443.6 \times 0.1 \text{ (sediment storage volume)} \\ &= 565887 \text{ cu-ft.} \end{aligned}$$

16. The stability evaluation should be expanded to look through the older waste areas. Mixing to produce a more uniform strength and moisture values was not normal in the earlier operations at the site. Much of the industrial wastes this landfill accepted were received wet and landfilled in isolated pockets. Specifically a section through Module A using the 20 degree back calculated from the slide event and using actual strength values is needed for the Division to review relative to any expansion application.
17. The reasons identified to not modify the phased filling plan to allow a phased closure in this landfill application is not based in sufficient merit to be accepted by the Division. Specifically filling Module O should be moved to earlier thereby enabling the closure of the southern section is desired. The buttressing support that was determined beneficial for Module G/B is at least prudent to be applied to the older area. The internal slope of Module A has been left for too long. The timeframes identified for this current expansion to be filled does not justify waiting to determine "if" some other expansion will be considered so far out in the future. The application of a synthetic liner required by the regulations for class I landfills is meant to end the moisture infiltration cycle and some section of this older area should be transitioned into post closure care in the earlier phase of the site's phased closure plan.