



North Carolina Department of Environment and Natural Resources

Division of Waste Management

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Governor

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Director

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Secretary

October 5, 2009

Mr. Jim Giauque
Blue Ridge Paper Products Inc.
PO Box 4000
Canton, North Carolina 28716

Subject: Alternative Soil Test Methods
Blue Ridge Paper Landfill, No. 6D-South
Haywood County, Permit #44-06, Document ID No. 8726

Mr. Giauque:

The Division of Waste Management, Solid Waste Section (Section) has reviewed your letter, submitted on October 1, 2009, requesting additional methods for testing soil density and compaction. This letter approves the use of the following ASTM test methods for determining in-place soil density:

1. D1556 – Standard Test Method for Density and Unit Weight of Soil In-Place by the Sand-Cone Method
2. D6938 – Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
3. D2937 – Standard Test Method for Density and Unit Weight of Soil In-Place by the Drive-Cylinder Method

It should be noted, if a nuclear gauge is used as the primary method for construction testing of the liner system the test data must be verified by alternate test methods at least once for every 10 tests performed.

In addition, the following ASTM test methods are approved for determining laboratory soil compaction characteristics:

1. D1557 – Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort
2. D698 – Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort

If you should have any questions regarding this matter please contact me at (828) 296-4703, or by email at allen.gaither@ncdenr.gov.

Sincerely,

Allen Gaither
Environmental Engineer

Cc: Guy Cote – Sevee & Maher Engineers
Christine Ritter – SWS/RCO
Andrea Keller – SWS/ARO