



Technical Memorandum

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Prepared for: Greenway Waste Solutions at North Meck, LLC
Project Title: 2011 Capacity Analysis
Project No: 138677 - 100

Technical Memorandum No. 1

Subject: Capacity Analysis Findings
Date: June 16, 2011
To: Ron Gilkerson, Griffin Brothers
From: Carl J. McDonald, PE, Senior Engineer
Copy to: Robert Kendrick, Engineer II

Prepared by: *Robert Kendrick*
Robert Kendrick, Engineer II

Reviewed by: *Carl J. McDonald*
Carl J. McDonald, PE, Senior Engineer
License No. 035011, Expiration 12/31/11



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1. Introduction and Background

Brown and Caldwell has been retained by Greenway Waste Solutions at North Meck, LLC to conduct a capacity analysis on the waste disposal operations at Greenway Waste Solutions at North Meck, LLC (NCDENR Facility Permit No. 60-13). This study includes an analysis of landfill capacity from the Permit to Operate date, March 12, 2006, to May 6, 2011 (period of study). The following items outline the objectives for this study:

- Determine the tonnage of C&D debris disposed and the associated volume of airspace used during the period of study.
- Determine the remaining capacity as of May 6, 2011.

Figure 1 (attached) shows a plan view of the study area, which is based on a survey of the active portion of the landfill, completed by Patterson Land Surveying, P.A. on May 6, 2011 (see attached letter).

2. Scalehouse Data

As shown on Table 2-1, Greenway Waste Solutions at North Meck, LLC disposed a total of 621,548.30 tons of waste during the period of study.

Table 2-1. Total Waste Disposed	
Vehicle Type	Tonnage
Pick Up	5,611.13
Single	156,583.76
Roll Off	384,683.09
Tandem	31,799.90
Quad	11.95
Trailer (<28)	27,857.85
Trailer (>28)	6,827.84
Tri-Axle	8,172.78
Total	621,548.30

Data Provided by: Ron Gilkerson, Griffin Brothers Companies

3. Volume Calculations

In order to determine the volume of air space used for this period of study, Patterson Land Surveying, P.A. was contracted to perform a topographic survey on the active landfill area. From the survey, a topographical map was generated. Using the topographical map, AutoCAD Civil 3D 2010 was used to calculate volumes for the period of study, relative to the certified floor elevations and permitted closure contours. These calculations show that Greenway Waste Solutions at North Meck, LLC operations utilized 817,600 CY of airspace during the period of study. It is assumed none of this volume is occupied by the final cover system, non-landfill waste stockpiles or daily/intermediate cover.

4. Density Determination

The Density Determination (DD) provides a method for landfill operators to monitor the effectiveness of disposal operations. For the purpose of this report, DD is defined as weight in pounds (lbs) of waste disposed per cubic yard (CY) of airspace used for disposal. The DD is calculated by dividing the weight of waste disposed during the time period by the airspace used for disposal of the same waste. It should be noted that the DD calculation does not differentiate between airspace used for waste and that used for cover. Brown and Caldwell estimates the DD for the life of the landfill is 1,520 lbs/CY. This DD was calculated by dividing the 621,548.30 tons of waste disposed to date by 817,600 CY of airspace used to date.

5. Remaining Capacity

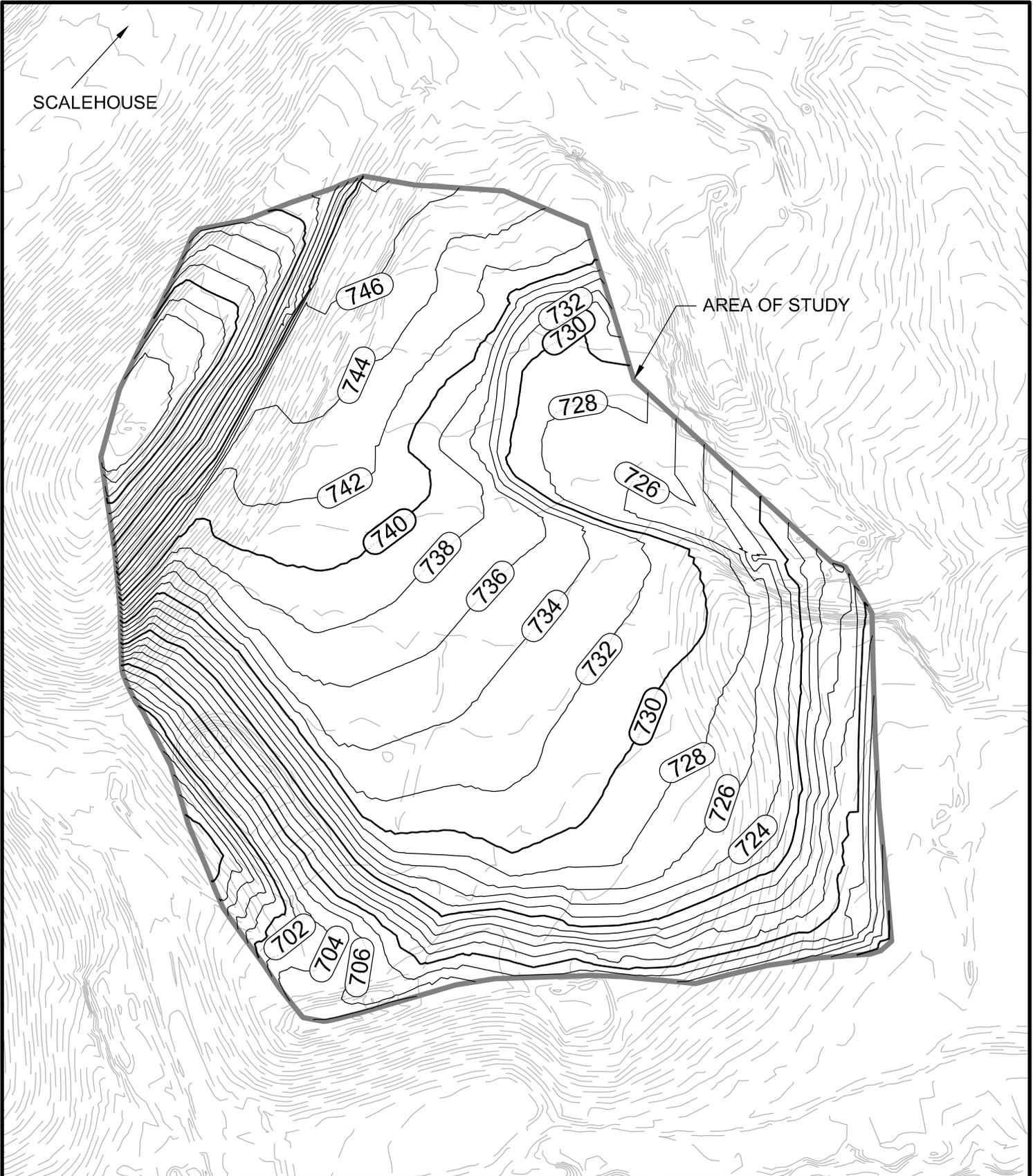
Brown and Caldwell estimates 282,400 CY of gross airspace remain in the landfill as of May 6, 2011. This estimation is based on a volume calculation of 1,100,000 CY between the certified floor grades and closure contours for the current operational area, beginning at the waste boundary. Of this remaining volume, 89,543 CY of airspace are required for final cover (3 foot thick cap system), leaving 192,857 CY remaining for waste placement. Using the DD of 1,520 lbs/CY, the landfill has approximately 146,612 tons of waste capacity remaining.

At the average disposal rate for the period of study of 120,300 tons per year, approximately 1.2 years of life remain in the currently operational area; therefore, the Greenway Waste Solutions at North Meck, LLC should be prepared to initiate waste disposal operations in a new area before June 2012. Table 5-1 provides a summary of the remaining capacity.

Total Waste Accepted (Tons)	621,548.3
Total Airspace Used (CY)	817,600
Airspace Remaining for Waste Placement (CY)	192,857

6. Conclusion

The factors most associated with a varying DD are waste compaction and operational cover. The Density Determination provides the Greenway Waste Solutions at North Meck, LLC operation with a tool for evaluating operational procedures to determine if improvement is necessary. However, the remaining time for the landfill operations is proportional to incoming waste stream and DD. At the average waste disposal rate of 120,300 tons per year, Greenway Waste Solutions at North Meck, LLC should be prepared to initiate disposal operations in a new area before June 2012.



1. EXISTING CONTOURS PER SURVEY BY INDEPENDENT MAPPING CONSULTANTS - FEBRUARY 7, 2008
2. 2011 CONTOURS PROVIDED BY PATTERSON LAND SURVEYING, PA - MAY 6, 2011

Brown AND
Caldwell

SCALE: 1" = 150'
JOB NUMBER: 138677
DATE: JUNE 27, 2011

2011 CAPACITY ANALYSIS
GREENWAY WASTE SOLUTIONS
AT NORTH MECK, LLC

FIGURE
F1



PATTERSON
LAND SURVEYING, P.A.

May 9, 2011

Robert Kendrick
Brown and Caldwell
309 East Morehead Stet, Suite 160
Charlotte, NC 28202

Project Name: North Mecklenburg Landfill

Dear Robert

The fieldwork data was collected at the North Mecklenburg Landfill for the preparation of the Topographical survey on May 6, 2011. The contour data was prepared on May 9, 2011.

Patterson Land Surveying appreciates the opportunity to provide our services for the project. Please contact us if you have any questions or need additional information

Sincerely,

Joel H. Patterson, III P.L.S.



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