



NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Division of Waste Management

Dexter R. Matthews

Director

Solid Waste Section

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

December 22, 2010

Mr. Simon Lobdell, P.E.
Department of Water Management, City of Durham
1600 Mist Lake Drive
Durham, NC 27704

Subject: Approval for Expansion of the Existing Landfill Gas Collection and Control System
Durham Sanitary Landfill, Durham County, North Carolina
Permit No. 32-01, Document ID No. (Doc ID) 12510

Dear Mr. Lobdell:

On December 10, 2010, the Division of Waste Management (DWM), Solid Waste Section received the following document submitted on behalf of the City of Durham and MP Development, LLC. by Richardson Smith Gardner and Associates (RSG) in Raleigh, North Carolina:

- *“Authorization Request for GCCS Expansion Project, City of Durham Landfill (NC Solid Waste Permit No. 32-01)”* dated December 10, 2010. The submittal includes the letter work plan and a set of figure - a total of eight drawings (Doc ID 11604).

According to the above-referenced work plan, the City of Durham requested to expand the existing well-field at the closed Durham Sanitary Landfill (Permit No. 32-01) by installing eight (8) additional gas extraction wells, valves, condensate sumps/traps, and approximately 5,000 linear-foot lateral/header piping. Upon completion of the expansion project, the new wells, piping, and apparatus will be connected to the existing on-site landfill gas collection and control system (LFGCCs) and the landfill gas-to-energy system (LFGTE).

After completing the review of the above-referenced work plan, the Solid Waste Section hereby approves your request for the LFGCCs expansion project. Please note that this authorization for the LFGCCs expansion project does not remove any responsibilities that the City of Durham may have to comply with any permit condition, or any local, state or federal regulation.

To initiate construction activities at the landfill, the City of Durham agrees to accept and implement following actions, in addition to the tasks described in the above-referenced work plan, which were agreed by the representatives of the DWM, RSG and MP Development, LLC in the December 13 2010 meeting:

- i. In order to address potential nuisances, such as odors and vectors and to keep dry trench condition, the pipe trench shall not left open more than 200 feet in advance of pipe installation and trench backfill so there is no exposed waste and open trench at the conclusion of each working day. The excavated wastes generated either from well installation or trench excavation must be removed from the working areas and disposed either at an off-site permitted solid waste management facility or

on-site cover containers which later will be transported to an off-site permitted solid waste management facility.

- ii. During the course of installing piping and backfilling trench, the disturbed clay liner, a component of the Type 2 final cover system shall be restored to have a minimum permeability (hydraulic conductivity) of less than 1×10^{-5} cm/sec, which shall be tested and confirmed by ASTM D 5084 (at a confining pressure simulated to the final cover loading condition, maximum confining pressure of 5 psi and maximum hydraulic gradient of 15) at a frequency of one test per lift. The restored clay liner must also be tested at the frequency of once per every 300 feet by ASTM D6938 to demonstrate the in-place densities of at least 90 percent of the maximum of the density as determined by the method - ASTM D698. Should the results from the first four consecutive tests meet or exceed the above-specified density criterion, then the testing frequency can be adjusted to once every 500 feet. If a test fails to achieve the density criterion, the testing frequency must return to the original request of one test every 300 linear feet.
- iii. During the course of installing piping and backfilling trench in the Type 1 final cover areas, the visual monitoring for compaction efforts and confirmation are required.
- iv. The Asbestos Work Plan that approved by the NC DHHS/ Division of Public Health must be implemented for this project.
- v. The Erosion and Sediment Control Plan that approved by the NC Division of Land Resources, Land Quality Section must be executed to protect the surface water quality and prevent soil erosion in the course of construction.

Upon completion of the construction of LFGCCs project, the Solid Waste Section may approve the City of Durham to operate the constructed systems. The authorization for operation will be issued pending receipt and approval of the construction completion reports (both the LFGCCs Expansion Project and the LFGTE Project which approved for construction on April 29, 2009), the revised cost estimates for post-closure cares by including costs to decommissioning the LFGCCs and LFGTE system, as-built drawings, and the statutorily required permit modification fee of \$3,000.00 dollars.

If you should have any questions about the permit modification processes, please contact me at 919-508-8507.

Sincerely,



Ming-Tai Chao, P.E.
Environmental Engineer II
Solid Waste Section

cc: Stacey Smith, P.E., RSG
Ed Mussler, Permitting Branch Supervisor
Jason Watkins, DWM
Central Files

Amy Ratliff, P.E., Methane Power, Inc.
Christ Marriot, DWM
Donald Herndon, DWM