



North Carolina Department of Environment and Natural Resources

Pat McCrory  
Governor

Donald R. van der Vaart  
Secretary

August 20, 2015

Sent via Email - cstahl@maconnc.org

Mr. Chris Stahl  
Solid Waste Director  
Macon County Department of Solid Waste Management  
109 Sierra Drive  
Franklin, North Carolina 28734

Re: Design Hydrogeologic Approval  
Macon County MSW Landfill  
Phase 3-Cell 1 Expansion  
5703-MSWLF-1997  
DIN 24884

Dear Mr. Stahl,

The Solid Waste Section (Section) has completed a technical review of the *Design Hydrogeologic Report: Phase 3 (Cell No. 1)* submitted on your behalf by Bunnell-Lammons Engineering, Inc. on June 8, 2015 for the Phase 3-Cell 1 expansion at the Macon County MSW Landfill. The Water Quality Monitoring Plan and the Landfill Gas Monitoring Plan were also reviewed. The Phase 3-Cell 1 expansion is approximately 7.6 acres.

The Water Quality Monitoring Plan is amended to include three (3) groundwater monitoring wells (MW-24, MW-25, MW-26) and one (1) surface water sampling location (SW-5) associated with Phase 3-Cell 1. The current monitoring network associated with Phases 1-2 has eighteen (18) groundwater monitoring wells and four (4) surface water sampling locations. This approved water quality monitoring network shall be sampled semi-annually.

The Landfill Gas Monitoring Plan is amended to include seven (7) landfill gas monitoring wells associated with Phase 3-Cell 1 (GP-12 through GP-18). The existing monitoring network associated with Phases 1-2 consists of eleven (11) landfill gas monitoring wells. This approved landfill gas monitoring network shall be sampled quarterly.

The Design Hydrogeologic Report, the Water Quality Monitoring Plan and the Landfill Gas Monitoring Plan meet the criteria required in 15A NCAC 13B .1623(b), .1624(b)(4) and .1626(4). Therefore, this portion of the Permit to Construct application is approved. An electronic copy of the approved Design Hydrogeologic Report (DIN 24865), the Water Quality Monitoring Plan (DIN 24866) and Landfill Gas Monitoring Plan (DIN 24867) can be obtained on the Solid Waste Section's website: <http://portal.ncdenr.org/web/wm/sw>. Click on "Documents".

All existing monitoring wells, piezometers and/or borings within the proposed footprint of the Phase 3-Cell 1 expansion area shall be properly abandoned prior to construction activities commencing at Phase 3-Cell 1.

**Piezometers, groundwater monitoring wells, and borings, located in proposed Phase 3-Cell 1 may be abandoned now or after a Permit to Construct is issued by the Solid Waste Section. Please adhere to the following conditions:**

Prior to construction of cell(s), all piezometers, ground-water monitoring wells, and borings, located in the proposed cell(s), shall be properly abandoned by overdrilling first (exception of non-cased borings) and sealed with grout in accordance with 15A NCAC 2C .0113, entitled "Abandonment of Wells".

- a. In areas where soil is to be undercut, abandoned piezometers, monitoring wells, and borings must not be grouted to pre-grade land surface, but to the proposed base grade surface to prevent having to cut excess grout and potentially damaging the wells.
- b. Well abandonment records (GW-30 form) for each decommissioned piezometer, boring, and groundwater monitoring well must be certified by a Licensed Geologist in accordance with rule .1623(b)(2)(1) and submitted to the Solid Waste Section in accordance with 15A NCAC 02C.0114(b).

The new groundwater monitoring wells (MW-24, MW-25, and MW-26) associated the Phase 3-Cell1 expansion must be sampled for the Appendix I constituent list prior to the Section issuing the Permit to Operate. The groundwater and surface water monitoring data collected at the landfill facility shall be submitted to the Section in electronic (pdf) format. Guidelines for sampling groundwater and surface water, and submitting data electronically are located on the Section's web site. <http://portal.ncdenr.org/web/wm/sw/envmonitoring>

**Additional Geologic, Ground Water and Monitoring Requirements will be included in the Permit to Construct.**

If you have any questions or concerns, please do not hesitate to contact me via email [elizabeth.werner@ncdenr.gov](mailto:elizabeth.werner@ncdenr.gov) or phone (919) 707-8253.

Sincerely,

Elizabeth S. Werner  
Permitting Hydrogeologist  
Solid Waste Section

Cc: Andrew Alexander, P.G. – Bunnell-Lammons  
Mark Cathey, P.E. – McGill Associates  
Ed Mussler, P.E. – SWS, Permitting Brand Head  
Allen Gaither, P.E. – SWS, Permitting Engineer  
Ervin Lane – SWS, Compliance Hydrogeologist  
Jason Watkins – SWS, Field Operations Branch Head  
Deb Aja – SWS, Field Operations Western District Supervisor