Solid Waste Section
Guidelines for Corrective Action Evaluation Reports

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION
Environmental Compliance Unit

The purpose of this document is to provide guidance as requested by the regulated community regarding the content for Corrective Action Evaluation Reports.

Requirements
Corrective Action Evaluation Reports (CAERs) should be submitted on a periodic basis as specified in the approved Corrective Action Plan and Solid Waste Section guidance. CAERs should contain the following information at a minimum:

1. Proof that a reduction in contaminant concentrations is occurring along specific transects

2. A demonstration that contaminant reduction is caused by chemical or biologic attenuation of the contaminant(s) of concern. Include historical data for reference

3. Proof that the plume has stabilized or is decreasing within the horizontal and vertical extent based upon the data

Report Format
The CAER should be submitted as a stand-alone technical document sealed by a North Carolina professional and licensed geologist. The CAER should also be submitted electronically in a pdf or tiff format. A paper copy is not required. There may be some site-specific instances where technical data may require additional information beyond that listed in these instructions as a means of more fully characterizing the technical data available and conclusions derived from that data. These instructions set no limit on the number or content of such additional report sections as long as the information included pertains to that required of a CAER.

The recommended format and content for a CAER is as follows:

Cover Page
- Facility Name
- Facility Location
- Permit #
- Consultant Name and Address
- Permittee Name and Address
- Report Date
- Signature and seal of the NC certified licensed geologist.

Completed Environmental Monitoring Reporting Form - This page should contain the signature and seal of the NC certified licensed geologist. Any work that would constitute the "public practice of geology" as defined by G.S. 89E shall be performed under the responsible charge of, and signed and sealed by, a geologist licensed in the state of North Carolina.

Table of Contents

Chapter 1 – Introduction (At a Minimum)

- Site Background
- Aquifer Characteristics
- Contaminant Distribution
- Description of Site Conceptual Model
- Regulatory Status

Chapter 2 - Correction Action Summary (At a Minimum)

- Physical Changes in Aquifer Conditions
- Chemical Changes in Aquifer Conditions
- Physical Changes in Plume Characteristics
- Chemical Changes in the Plume
- Refining the Site Conceptual Model
- Evaluation of impacts on contaminant levels, hydraulic gradients, recovery well capture zones, evaluation of the treatment train, contaminant removal efficiencies, total mass of contaminants removed, etc.
- Status of impacts at the relevant point of compliance (compliance boundary)
- Any off-site migration of contaminants of concern

Chapter 3 - Conclusion

- Any modifications needed to the selected remedy
- Any supplemental assessment or risk assessment activities to further characterize the issues
- Does the contingency plan(s) need to be implemented
- Imposition of land use restrictions on the facility property and/or on any buffer property acquired to ensure that the migration of groundwater (and landfill gas) from the sanitary landfill is confined to property owned and controlled by the responsible party.

References

Tables (At a Minimum)

- Groundwater elevation data
- Groundwater analytical data

Figures (At a Minimum)

- USGS 7 ½-minute topographic map - showing the site location
- Site Plan - to include topographic contours, permanent structures, surface water features, a bar scale, north arrow, facility boundary, waste management unit boundary, compliance boundary, and all relevant monitoring wells or sampling points
- Recent Potentiometric map
- Graphs/Charts
- Isoconcentration countour maps
- Biochlor results

- Cross sections

Appendices (At a Minimum)

- Boring logs for all Corrective Action monitoring program wells/borings
- Sample Field Sampling Sheets
- Sample Chain of Custody Records
- Inventory and map of all wells, springs, and surface water intakes used as sources of potable water within 1,500 feet from the edge of waste
- Copies of field logs and notes, and color copies of site photographs
- Laboratory reports for all samples collected and laboratory quality control samples, including results for bias and precision and control limits used. The following minimum laboratory quality control sample reporting is required: (a) at least one matrix spike and one matrix spike duplicate per sample delivery group or 14-day period, whichever is more frequent (control limits must be specified); (b) at least one method blank per sample delivery group or 12-hour period, whichever is less; and (c) system monitoring compounds, surrogate recovery required by the method and laboratory control sample analysis (acceptance criteria must be specified). All samples that exceed control limits/acceptance criteria must be flagged in the laboratory report.