



Division of Waste Management

Solid Waste Program

Coal-Fired Power Plants With Landfills (See Figure 2):

- Stokes County (Duke Energy Belews Creek)
 - Permit 8503-INDUS-1984 closed
 - Permit 8504-INDUS-
 - Permit 8505-INDUS-
- Catawba County (Duke Energy Marshall)
 - Permit 1804-INDUS-1983 closed
 - Permit 1809-INDUS-
 - Permit 1812-INDUS-2008 * #
- Rutherford County (Duke Energy Cliffside)
 - Permit 8106-INDUS-2009
- Gaston County (Duke Energy Allen)
 - Permit 3612-INDUS-2008 * #
- Person County (Duke Energy Roxboro)
 - Permit 7302-INDUS-1988 *
- Person County (Duke Energy Mayo)
 - Permit 7305-INDUS-2012
- Halifax County (Westmoreland Partners
Roanoke Valley Energy Plant)
 - Permit 4204-INDUS-1994

Notes:

- * Constructed on top of retired ash basin
- # Leachate leak detection only

Coal-Fired Power Plants Without Landfills:

- Buncombe County (Asheville)
- New Hanover County (Sutton)*
- Robeson County (Weatherspoon)**
- Chatham County (Cape Fear)**
- Gaston County (Riverbend)**
- Rockingham County (Dan River)*
- Rowan County (Buck Steam)*
- Wayne County (Lee)*

Notes:

- * Retired coal fired, converted to combined cycle turbine
- ** Retired power plants (no electricity production)

Quick Facts About the 11 CCR Landfills:

- Nine active lined landfills
- Two unlined inactive landfills
- All landfills are located at power plants except for Halifax County 4204-INDUS-1994
- The program has regulated CCR landfills since 1983 and the beneficial use of CCP since 1994.
- Required buffers:
 - 50 feet between property lines, streams and rivers
 - 500 feet between private dwellings and potable wells
 - 4 feet between bottom of waste and seasonal high groundwater

Structural Fill Current Inventory: 18 pre-regulatory and 63+ regulated by DWM and DWR.



POWER PLANT COAL COMBUSTION RESIDUALS

The Division of Waste Management's Solid Waste Program regulates coal combustion residuals (CCR) from coal-fired electric power plants that are disposed of on land in accordance with North Carolina General Statute 130a, which includes the Coal Ash Management Act of 2014 (SL 2014-122 on August 20, 2014). CCRs primarily consist of coal bottom and fly ash, and flue gas desulfurization residuals. The program regulates CCR industrial landfills in accordance with the North Carolina Administrative Code 15A NCAC 13B .0503 (Siting and Design Requirements), .0504 (Application Requirements), and .0505 (Operational Requirements) and the beneficial use of coal combustion products (CCP) in accordance with 15A NCAC 13B .1700.

Industrial landfill regulations require a natural and synthetic bottom liner, a leachate collection system, a natural and synthetic closure cap, and a water quality monitoring plan. Slope stability analysis is required. Typically, industrial landfills have a single liner, but some have a double liner design allowable under NCGS 130A-295.4. A double-lined landfill system may be required for landfills constructed on existing CCR disposal areas such as retired ash basins, closed unlined landfills or structural fills. Leachate at lined facilities is routed via gravity-fed piping to an active coal ash pond on-site, which then flows to a permitted National Pollutant Discharge Elimination System (NPDES) outfall. DENR's Division of Water Resources issues the NPDES permits. The Coal Ash Management Act will phase out this practice in coming years.

Environmental Monitoring

All industrial landfills, both active and closed, are required to conduct semi-annual water quality monitoring to ensure groundwater quality standards prescribed by 15A NCAC 2L .0202(g) are met. Single-lined and unlined landfills require groundwater and surface water monitoring, while double-lined landfills require leachate monitoring. The contaminants of concern for CCR landfills are sulfate and heavy metals, specifically boron, chromium, iron, manganese and selenium.



Environmental Assessment

CCR landfills undergo routine monitoring on a semi-annual basis to make sure groundwater contamination does not exceed the 15A NCAC 2L standards at the compliance boundary, which is a maximum of 250 feet from the edge of waste. If groundwater contamination is found to exceed the 15A NCAC 2L standards at or beyond the compliance boundary, the facility must undergo an environmental assessment. Currently, four CCR landfills (Permit 8503, 8504, 1804 and 1809) have completed environmental assessments and no CCR landfills are undergoing corrective action. One CCR landfill (Permit 8505) is still undergoing assessment, while the other four showed that the CCR landfill was not the cause of contamination exceeding the 15A NCAC 2L standards.

News

The EPA released the published Disposal of Coal Combustion Residuals from Electric Utilities final rule on April 17, 2015. <http://www2.epa.gov/coalash/coal-ash-rule>

Changes to Landfill Operation per EPA Law

The EPA rule effects new CCR landfills and lateral expansions as follows: 1) 5-ft buffer between bottom of waste and uppermost aquifer, 2) annual inspections by a P.E., 3) weekly inspections by a qualified person, 4) 8 independent samples for each background and downgradient well analyzing for Appendix III and IV and 5) owner/operator maintains a publically accessible website with specified information concerning the landfill such as groundwater monitoring and inspection reports.

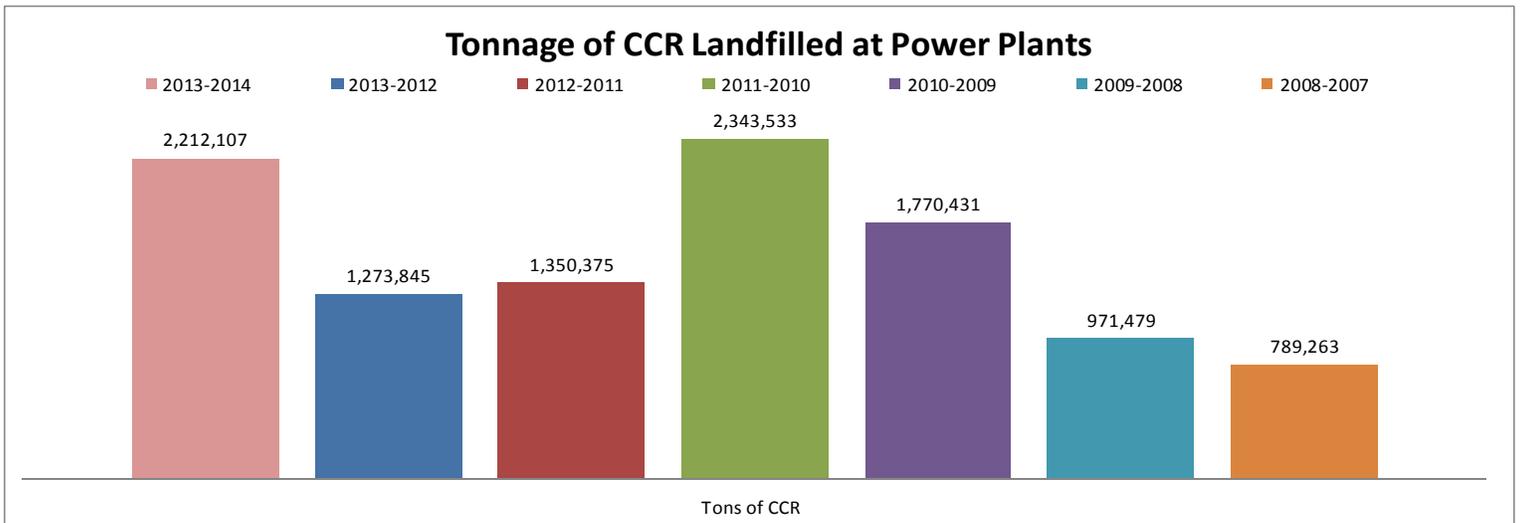


Figure 1— Tonnage of CCR Disposed in Landfills as Reported Annually in the Facility Report per G.S. 130A-309.09D



Figure 2 — N.C. County Map with Highlighted Counties Indicating Locations of CCR Landfills