

Review of the New C&D Landfill Rules

NC-SWANA

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Division of Waste Management
Solid Waste Section

How are you affected?

- The **Major Changes** are:
 - Public Notice & Hearings
 - Increased Site Suitability Requirements
 - Subgrade Standards
 - Separate GW Monitoring Capabilities for New Units
 - Closure Standards
 - Financial Assurance

When are you affected?

- Rules .0531 through .0547 became effective January 1, 2007
 - Site Studies submitted after that date use the new rules
- For Current Operations:
 - Next phase after current Permit to Operate expires

What has not changed?

- The definition of C&D Waste:
“...solid waste resulting solely from construction, remodeling, repair, or demolition operations on pavement, buildings or other structures, but does not include inert debris, land-clearing debris or yard debris.”

[GS 130A-290(a)(4)]

Closure of Existing C&DLF *[.0547(1)]*

- Existing C&DLFs that will not continue taking waste after **June 30, 2008**, must close in compliance with:
 - Existing Permit Conditions
 - Rule .0510

Continued C&DLF Operations *[.0547(2)]*

- Existing C&DLFs that will continue taking waste must submit an application by **July 1, 2008**, containing:
 - Closure/Post-Closure Plan *[.0543]*
 - Financial Assurance *[.0546]*

Next Phase at Existing C&DLF [.0547(3)]

- The PTC application for the next construction phase at existing C&DLFs after **January 1, 2007**, must contain:
 - Facility Plan [.0537]
 - Engineering Plan [.0539]
 - CQA Plan [.0541]
 - Operation Plan [.0542]
 - Monitoring Plan [.0544]
 - Closure/Post-Closure Plan [.0543]
 - Financial Assurance [.0546]

Existing C&DLF over MSWLF [.0547(4)]

- C&DLFs over MSWLFs that will continue taking waste must submit an application by **July 1, 2008**, containing:
 - Local Government Approval [.0536(c)(11)]
 - Operations Plan [.0542]
 - Corrective Action Plan for the MSWLF the C&D is atop [.1635, .1636, .1637]
 - Closure/Post-Closure Plan [.1627]
 - Financial Assurance [.1628]

New C&D Landfills

- New or Substantial Amendment C&DLFs must submit an application containing:
 - Local Government Approvals [.0533]
 - Site Study [.0536]
 - Permit to Construct Application [.0535]
 - Permit to Operate Application [.0535]

Application Phase [.0533]

- Franchise [*GS 130A-294(b1) as revised*]
- Amendments for subsequent phases
 - Must apply at least 180 days prior to construction or 5 years since last PTO
- Application changes:
 - Applicant signature
 - Narrative description of permit action
 - Still 3 bound copies, but submittals also in electronic format

Application Phase *[continued]*

- Public Information Procedures *[.0533]*
 - For New, Substantial Amendments & Corrective Action
 - Notices
 - Comments
 - Hearings

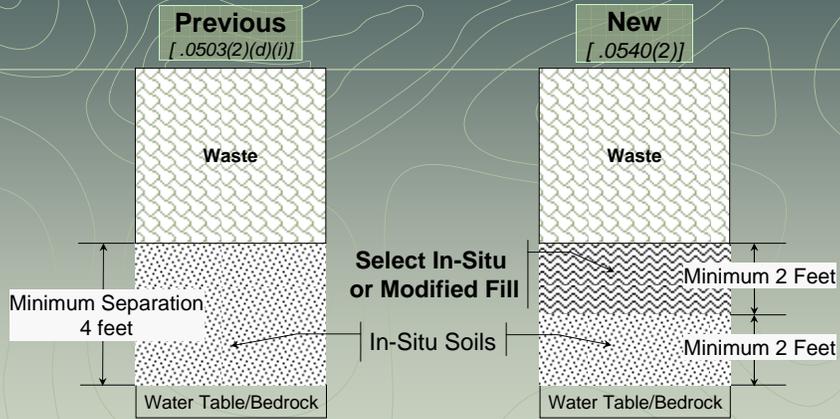
Application Requirements

- Site Study *[.0536]*
 - Comparable to MSW Site Study
 - Includes Local Government Approval
- Plans Required:
 - Facility *[.0537]*
 - Engineering *[.0539]*
 - CQA *[.0541]*
 - Operation *[.0542]*
 - Closure *[.0543]*
 - Monitoring *[.0544]*

Buffer Requirements

- Horizontal Requirements [.0540(1)]
 - Property Line: 200 ft
 - Residential Structures & Wells: 500 ft
 - Surface Waters: 50 ft
 - Existing LF Units: Establish a Monitoring Zone
- Vertical Requirements
 - Post-settlement Waste Bottom to Seasonal high Ground Water Table & Bedrock Datum: Minimum 4 ft

C&D Bottom Standards



Bolded text is New C&D Subgrade Standard
Drawing is Not to Scale

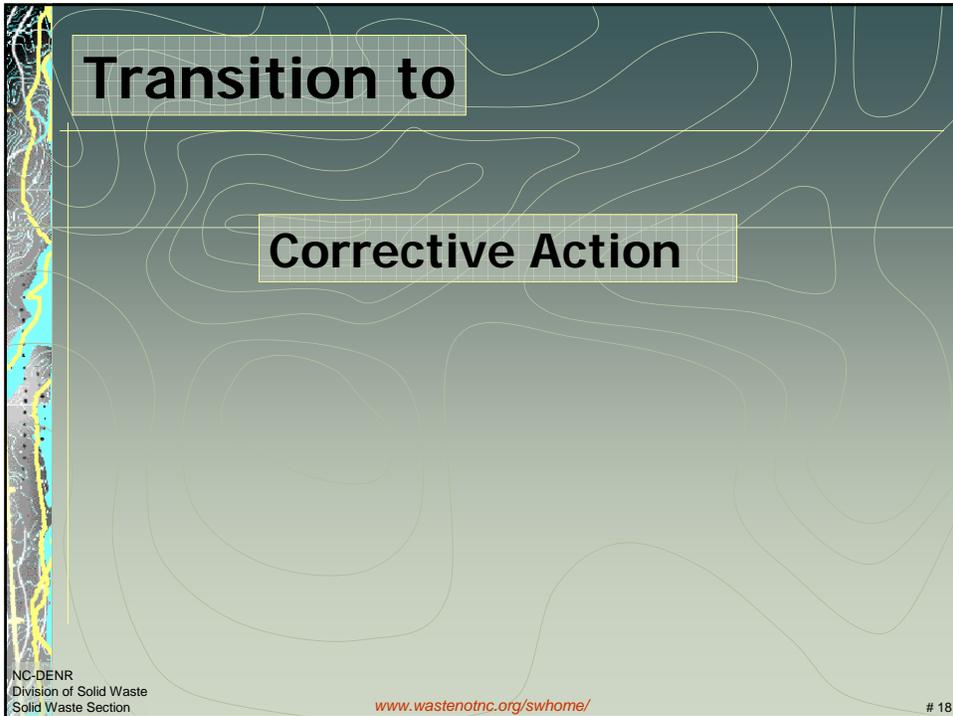
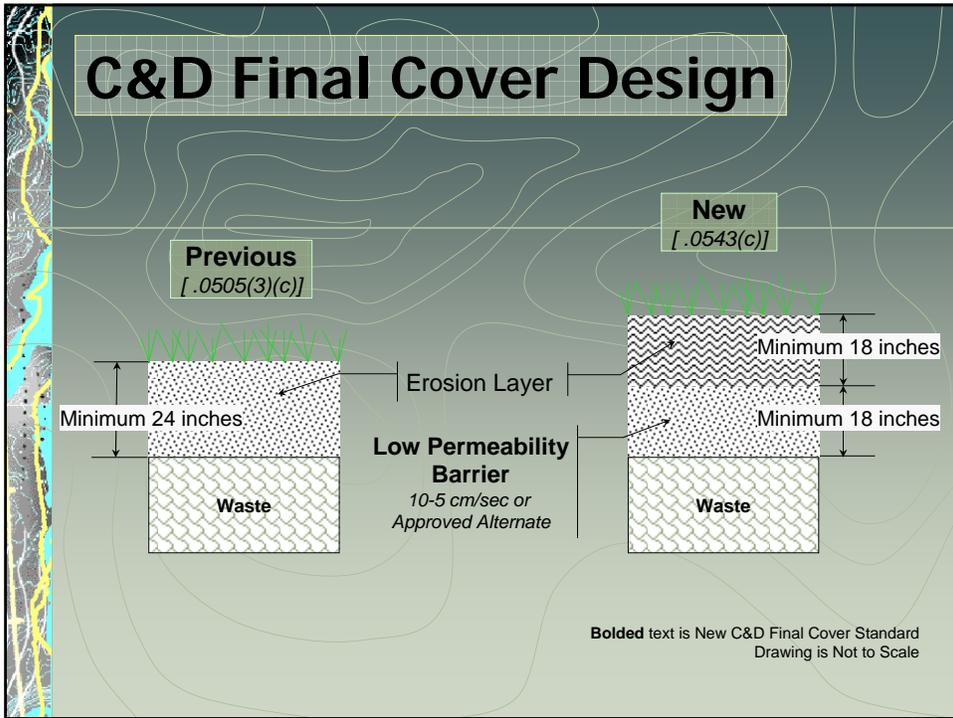
Select In-Situ or Modified Fill

- Upper 2 feet consists of:
 - SC: Sandy Clay – CL: Clayey Loams
 - SM: Sandy Silts – MH: High Plasticity Silts
 - ML: Silty Loams – CH: High Plasticity Clays

[.0540(2)(b)]

Closure/Post Closure Requirements

- Cap System [.0543(c)]
 - 18" Infiltration Layer ($<1 \times 10^{-5}$ cm/sec)
 - 18" Erosion Layer
- Gas Venting System in Cap [.0543(c)]
- Post Closure Period: 30 years [.0543(e)]



In addition to the other requirements that must be met by July 1, 2008 (see Rule .0547), the application must contain a Corrective Action Plan (CAP) as specified in Rule .0547(4)(c) as follows:

A corrective action plan for the closed MSWLF, as required by Rule .1635 of this Subchapter prepared in accordance with Rules .1636 and .1637 of this Subchapter

Summary of Necessary Steps Prior to Submitting Corrective Action Plan

1. Complete delineation of contaminant groundwater plume
2. Identify all contaminants of concern
3. Submit an Assessment of Corrective Measures Report
4. Conduct a public meeting and outline all possible remedial strategies
5. Submit a letter report documenting the selected remedy for approval
6. Prepare and submit a Corrective Action Plan

Recommended Assessment of Corrective Measures Report Content

- Introduction
- Contaminant Characterization
- Corrective Measures Screening
- Assessment of Corrective Measures
- Summary and Conclusions
- References
- Figures
- Appendices

A description of recommended content can be found at:

www.wastenotnc.org/swhome/EnvMonitoring/SWCorrectiveMeasuresGuidance.pdf

Summary of Required Actions After ACM Completion and Approval

- The remedy(ies) selected must meet the requirements listed Solid Waste Rules .1635 through .1636, and Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina 15A NCAC Subchapter 2L.
- Rule .1635(d) requires a public meeting to discuss the results of the Assessment of Corrective Measures.
- The Owner/Operator must then select a remedy in accordance of the requirements of Rule .1636.
- After the selected remedy has been approved by the Solid Waste Section, the Corrective Measure(s) and Contingency Plan are submitted in a Corrective Action Plan (CAP).
- Implementation of the approved Corrective Measure(s) must then take place in accordance with Rule .1637.

Corrective Action Plan Recommended Content

- Introduction
- Contaminant Characterization
- Selected and Approved Remedy/Technical Approach
- Groundwater and Surface Water Monitoring
- Evaluation of Effectiveness and Report Submittals
- Contingency Plan
- Schedule
- Financial Assurance
- Completion of Corrective Action
- References, Tables, Figures, and Appendices

A description of recommended content can be found at:
www.wastenotnc.org/swhome/EnvMonitoring/SWCorrectiveMeasuresGuidance.pdf

Examples of Approved Groundwater Corrective Measures For Solid Waste Management Facilities

- Constructed Wetlands
- Monitored Natural Attenuation
- Bioremediation
- Ultra Violet Oxidation
- Air Stripping
- Phytoremediation

Examples of Additional Groundwater Corrective Measures For Solid Waste Management Facilities

- Treatment Walls
- Surfactants
- Hyrdaulic and Pneumatic Fracturing
- Thermal Enhancement
- In Situ Oxidation
- Electrokinetics
- Chemical Treatment
- Other Innovative Technologies

Important Deadlines

- **June 1, 2007** - Inform the Solid Waste Section in writing whether or not you plan to continue operations of your C&DLF unit on top of the closed MSWLF after the date of July 1, 2008
- **September 1, 2007** – Assessment of Corrective Measures (ACM) Report must be submitted to the Solid Waste Section
- **July 1, 2008** – Permit Application for the continued operations of the units must be submitted to the Section, including the required Corrective Action Plan (CAP)

For More Information...

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