North Carolina Department of Environmental Quality Division of Waste Management
Hazardous Waste Section
"Contained-In" Policy for Excavated Contaminated Soil that Contains a Listed Hazardous Waste

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TABLE OF CONTENTS

		Page
1.0	PURPOSE AND SCOPE	1
2.0	APPLICABILITY	1
3.0	CONTAMINATED SOIL MANAGEMENT AND CHARACTERIZATION	4
4.0	PROCEDURE FOR "CONTAINED-IN" DECISION AND "CONTAINED-OUT" DETERMINATION	4
5.0	FREQUENTLY ASKED QUESTIONS	5
6.0	CONTACTS	6
7.0	GLOSSARY	6

FLOWCHART

North Carolina Hazardous Waste Section Contained-In Policy Decision Making Flowchart 3

ATTACHMENT

Certification Form for Meeting North Carolina "Contained-Out" Levels Att. 1-1

North Carolina Department of Environmental Quality
Division of Waste Management
Hazardous Waste Section
"Contained-In" Policy for Excavated Contaminated Soil that Contains a Listed Waste

1.0 PURPOSE AND SCOPE

The "Contained-In" Policy for Excavated Contaminated Soil that Contains a Listed Hazardous Waste ("Contained-In" Policy) provides guidelines for determining whether or not excavated and containerized soil contaminated with ***listed*** **hazardous waste**, as defined in 40 CFR 261 Subpart D, adopted by reference in 15A NCAC 13A .0106 (see https://deq.nc.gov/about/divisions/waste-management/hw/rules), meets contained-out levels. The document identifies the criteria used to determine when the soil must be disposed as Subtitle C wastes.

Notes:

A. This document is only for use with North Carolina remedial action projects and does not apply to soil generated out of state and transported to North Carolina for disposal.

B. Soil containing hazardous waste must be properly managed, and any treatment of the soil must be pre-approved by the Hazardous Waste Section or the agency overseeing the remedial action (see Sections 6, 7, and 9 of the Hazardous Waste Section's Generator Closure Guidelines at https://www.deq.nc.gov/technical-assistance-and-guidance-documents#ClosurePostClosure-2196

C. The levels used for determining when excavated soil may be managed as non-hazardous waste should not be confused with site-specific clean-up levels. Site specific clean-up levels should be obtained from the agency program providing remediation oversight.

2.0 APPLICABILITY

The "Contained-In" Policy guidelines apply to soil that has been contaminated with ***listed*** **hazardous waste** and, therefore, contains hazardous constituents. When soil has been contaminated from the release of a listed hazardous waste, the listed hazardous waste is considered to be "contained-in" the soil. While the soil itself is not considered a listed hazardous waste, **when "generated" by removal/excavation, it must be managed as a hazardous waste**. For soil to be eligible for management outside of the "Contained-In" policy, the soil must not exhibit a hazardous characteristic.

Notes:

A. This policy APPLIES ONLY TO EXCAVATED SOIL CONTAINING A LISTED WASTE. Section 6.0 of the Hazardous Waste Section's Generator Closure Guidelines provides information on conducting a waste determination for investigative derived wastes (IDW) and remediation wastes. If, after a thorough review has been completed, it is determined the soil does not contain a listed waste, then the Contained-In Policy is not applicable. Instead, Section 9.0 of the Generator Closure Guidelines should be followed for sampling and disposal procedures for IDW and remediation wastes that do not contain listed wastes or have one or more hazardous waste characteristic(s).

B. The policy is not intended to provide details for determining a final disposal option. If the soil no longer contains a listed waste, see Section 9.0 of the Generator Closure Guidelines for further instructions.

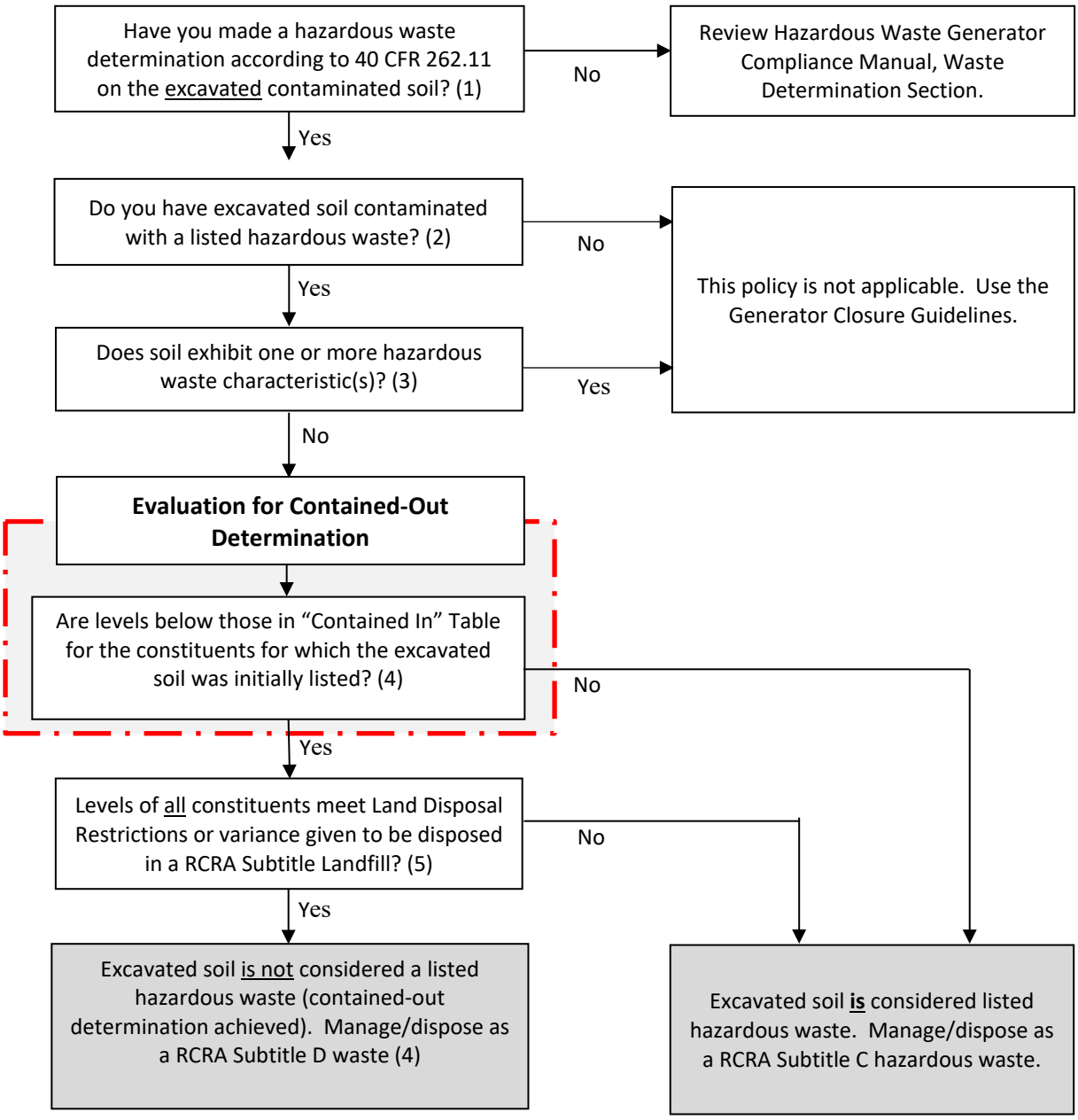
C. **Section 7.0 of the Generator Closure Guidelines provide procedures for managing IDW and remediation wastes while completing a waste determination and finalizing disposal alternatives.**

D. **No other environmental media, process waste streams, debris or other materials are covered by the policy. The HWS may make case-by-case waste determinations for any other type of environmental media, and for contaminated soil generated from out-of-state. Prior approval from the HWS must be received before this policy is used for any other type of environmental media containing listed waste other than contaminated soil. Failure to comply with the requirements in the policy will result in contaminated soil being subject to all the requirements of the North Carolina Hazardous Waste Management Rules 15A NCAC 13A and penalties may be imposed for the mismanagement of soil containing hazardous wastes.**

Using the "Contained-In" Policy and making a "Contained-Out" determination is designed to be self-implementing by the party(ies) responsible for the soil contamination and their agent(s). No regulatory agency approval is required prior to disposal of the soil if all criteria of this policy have been met. Documentation of adherence to the policy must be maintained by the party implementing the policy to demonstrate compliance with a waste determination as required by 40 CFR 262.11. A tabulation of all data used to determine the selected management options should be maintained as well. **A decision flow chart for using the "Contained-In" Policy for soil contaminated with listed hazardous waste and making a "Contained-Out" determination is provided below**. **A form for documenting disposal of "Contained-Out" waste is provided as an Attachment.**

If the remedial action is under the jurisdiction of the HWS, please contact the appropriate HWS project manager overseeing the cleanup for site-specific assistance and proper documentation. For remedial actions taking place under the jurisdiction of any another agency, assistance and documentation of the cleanup should be submitted to the staff contact in the appropriate oversight program (e.g., Superfund Section, Brownfield Program, Underground Storage Tank Section, etc.) and the staff person will contact the HWS for assistance if necessary.

Contained-In Policy /Contained-Out Determination Decision Making Flowchart for Soil Contaminated with Listed Hazardous Waste



Notes for this Flowchart

(1) A waste determination must be performed according to 40 CFR 262.11, adopted by reference at 15A NCAC 13A .0107.

(2) Hazardous waste listings are described at 40 CFR 261 Subpart D, adopted by reference at 15A NCAC 13A .0106. Remember you cannot test for listings. Hazardous waste listings are determined by knowledge of the waste(s)/process(es) generating the waste.

(3) Hazardous waste characteristics (ignitability, corrosivity, reactivity, and toxicity) defined in 40 CFR 261 Subpart C, adopted by reference at 15A NCAC 13A .0106.

(4) See "Contained- In" Levels Table when making a contained-out determination. See 40 CFR 261 Appendix VII for basis for listing of F and K listed wastes. See 40 CFR 261 Appendix VIII for the hazardous constituents associated with P and U listed wastes. When the levels for those constituents for which the waste was initially listed are below Subtitle C levels, the soil can be disposed in accordance with Subtitle D. Subtitle D Landfills may have additional limits/criteria for disposal of waste beyond the level described in this policy and always has the right of refusal of any waste.

(5) Treatment standards for disposal in a land-based unit must be met for all constituents evaluated (not just for those constituents for which the waste was listed). See the alternative land disposal restrictions treatment standards for contaminated soil (10 x Universal Treatment Standard or 90% reduction in concentration) per 40 CFR 268.49, adopted by reference at 15A NCAC 13A .0112. The variance procedure is described in 40 CFR 268.44, adopted by reference at 15A NCAC 13A .0112.

3.0 CONTAMINATED SOIL MANAGEMENT AND CHARACTERIZATION

Whenever contamination is suspected in environmental media, whether discovered at a facility's hazardous waste unit or at a contaminated site/property under the jurisdiction of another regulatory program, RCRA compliance should be an integral part of the remedial efforts. Procedures for characterization and management of contaminated soil should be considered prior to any soil excavation. For specific instructions, refer to the Hazardous Waste Generator Closure Guidelines and review Section 7.0 Procedures for Managing Investigative Derived Wastes and Remediation Wastes and Section 9.0 Procedures for Sampling and Disposal of Investigative Derived Wastes and Remediation Wastes.

Before excavation of contaminated soil from a listed waste source, the Hazardous Waste Section must review on a case-by-case basis any other scenario that is not explicitly covered by this policy

4.0 PROCEDURE FOR "CONTAINED-IN" DECISION AND "CONTAINED-OUT" DETERMINATION

Contaminated soil, containerized from site investigations (investigative derived wastes) and remedial actions, that originate from a ***listed* hazardous wastes** source, but **does not** exhibit one or more hazardous waste characteristics (see Flowchart), can be evaluated for a "contained-out" determination. A "Contained-In" Levels Table for Excavated Contaminated Soil ("Contained-In" Levels Table) is provided on the Hazardous Waste Section website at https://www.deq.nc.gov/technical-assistance-and-guidance-documents#Contained-inPolicy-2394 The containerized soil must be managed as a Subtitle C waste when contaminant levels of the hazardous waste constituents found in 40 CFR 261 are at or above the "Contained-In" criteria, which are established as follows:

1) For the TCLP constituents listed in Table 1, 40 CFR 261.24, the concentration level in the soil must be ***less than*** the listed regulatory hazardous waste level. TCLP constituents are highlighted blue in the "Contained-In" Levels Table. The first tier of analyses is for totals; leachate analyses may also be needed for a final decision on waste disposal at an approved receiving facility.

or

2) For constituents not on the TCLP list, the levels are established as the ***lower*** of:

   a) The most recently updated NCDEQ Industrial Preliminary Soil Remedial Goal (PSRG), which is derived from the USEPA Regional Screening Tables (RSL). These levels are based on total analysis value; or

   b) A leachate concentration equivalent to a TCLP level (soil leachate value < 100 times the 2L standards[1]). Total values are required; leachate analyses may also be needed for a final decision on waste disposal at an approved receiving facility[2]; or

   c) Land Disposal Restriction (Land Ban) levels for contaminated media (90% reduction or 10 times the Universal Treatment Standard). Most UTSs are based on total analysis values, although a few are leachate based.

Notes:

1. **TCLP analysis can only be used for the constituents in the "Contained-In" Levels Table that have a listed leachate value. The constituents without leachate values have other criteria such as a risk-based concentration or Universal Treatment Standard that determine the disposal value. Therefore, disposal as a Subtitle C waste will be necessary unless all constituents for which the waste was listed, and any other constituents expected to be present in the contaminated soil, are less than the total values as well as the leachate values (whenever a TCLP analysis is conducted).**

2. **Underlying constituents not associated with the listing may also have to meet Land Disposal Restrictions and are handled by the Hazardous Waste Section on a case-by-case basis.**

Failure to comply with the requirements in this policy will result in contaminated soil being subject to all the requirements of 15A NCAC 13A, including applicable penalties for the mismanagement of (soil containing) hazardous wastes.

1. The following hierarchy of risk-based levels for the protection of groundwater was used when a 2L standard was not available:
   - North Carolina's Interim Maximum Allowable Concentration
   - US EPA Regional Screening Level for Tapwater. Alternatively, the US EPA Regional Screening Level for soil was used if available.
2. TCLP analysis covers only 40 constituents out of over 200 listed hazardous waste constituents. The leachate must be tested for all constituents detected during assessment. A dilution factor of twenty is used as a conversion from leachate to total values. Note, the policy is for soil. If a slurry exists, a different formula must be used (see https://archive.epa.gov/epawaste/hazard/web/html/faq_tclp.html).

5.0 FREQUENTLY ASKED QUESTIONS (FAQs)

How do you initially determine whether contaminated soil contains listed hazardous waste? If the contamination occurs after the waste was listed (most waste codes came under regulation in 1980), and the contaminated soil is near a process or storage area that handled these waste codes or in the pathway between, the soil probably "contains" listed hazardous waste. Please review Section 6.0 of the Hazardous Waste Generator Closure Guidelines for additional information. If additional assistance is needed, contact the Hazardous Waste Section for assistance in making this determination which is based on the type of facility involved (TSD, generator or site not regulated under RCRA, respectively).

Can soil background levels be taken into consideration for meeting "contained-out" levels?
No, background levels cannot be taken in consideration for meeting "contained-out" levels. The "Contained-In" Policy is for determining if excavated contaminated soil from a listed waste must be managed and disposed as a Subtitle C waste. See the Hazardous Waste Generator Closure Guidelines for information regarding site cleanup levels.

What can be done if concentrations are not available in the "Contained-In" Levels Table for a constituent of concern?
When there are no levels available for constituents of concern, this self-implementing policy ***cannot be used***. A request for "contained-out" levels must be made to the Hazardous Waste Section before excavation of soil begins. There may not be sufficient toxicological or other chemical information available for the HWS to be able to establish these levels.

Do unrestricted use values apply to this policy and affect site-specific clean-up levels approved by either the Hazardous Waste Section or other programs?
First determine if the contaminated soil contains listed hazardous waste. If the contamination is not from hazardous waste, this policy is not applicable to the remedial activity. The policy also is not applicable for

unrestricted use of excavated and containerized contaminated soil. Unrestricted use of the containerized soil will be handled by the Hazardous Waste Section on a case-by-case basis. In addition, this policy in no way supersedes a site-specific clean-up value that has been determined to be protective to the potential receptors of that contamination. If no site-specific clean-up levels have been approved by the agency providing regulatory oversight, any excavated soil determined to contain hazardous waste must, by default, use the conservative numbers included with this policy.

6.0 CONTACTS

For information on the contents of this document, contact the Hydrogeologist for your Region. If you do not know your Region, see the map at the following link: https://www.deq.nc.gov/about/divisions/waste-management/hazardous-waste-section/about-hazardous-waste-program/contact-staff-hazardous-waste-program
Technical Assistance is also available from the Hazardous Waste Section Central Office:
NC Department of Environmental Quality Division of Waste Management
Hazardous Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646
Telephone: (919) 707-8200

> If the remedial action is under the jurisdiction of the HWS, please contact the appropriate HWS project manager overseeing the cleanup for site-specific assistance and proper documentation. For remedial actions taking place under the jurisdiction of any another agency, assistance and documentation of the cleanup should be submitted to the staff contact in the appropriate oversight program (e.g., Superfund Section, Brownfield Program, Underground Storage Tank Section, etc.) and the staff person will contact the HWS for assistance, if necessary.

7.0 GLOSSARY

2L Standards
Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina (15A NCAC 2L .0202). These standards are protective of groundwater that is being used or can potentially be used as a drinking water source. NC groundwater standards (2Ls) and interim standards (IMACs) may be applicable.

Background levels
The concentrations of naturally occurring constituents found in soil surrounding a waste site, taken from a geologically similar area and having similar biological, physical and chemical characteristics as the contaminated site. Samples for determining background levels should not be collected in areas affected by site activities or releases.

Characteristic Waste
A solid waste that exhibits any of the four hazardous characteristics—ignitability, corrosivity, reactivity or toxicity as defined in 40 CFR 261 Subpart C, adopted by reference at 15A NCAC 13A .0106.

"Contained-in"
When environmental media contain listed hazardous waste, the media itself is not a solid waste and therefore not hazardous but must be managed as hazardous waste. Since only soil is covered in this policy, the soil "contains" listed waste and is managed "in" the jurisdiction of the RCRA, Subtitle C waste regulations.

"Contained-out"
The concentrations at which a soil is determined to no longer contain listed hazardous waste. This policy describes the levels that must be met for the soil not to be disposed as a Subtitle C waste. When the soil meets these levels, it is no longer considered to contain hazardous waste. The soil may still "contain" hazardous constituents, but at levels that are protective of human health and the environment when properly managed (see Hazardous Waste Generator Closure Guidelines). This soil is managed "out" of the jurisdiction RCRA Subtitle C regulations.

Environmental media
Refers to soil, sediment, groundwater and surface water. Soil is the only type of environmental media covered by this policy. Debris, process wastes, and sludges are not environmental media and are ***not*** covered under this policy.

Interim Maximum Allowable Concentration (IMAC)
An interim maximum allowable concentration is established for a substance for which there is *not* an existing 2L standard. An IMAC is enforceable under the 2L rules.

Land Disposal Restrictions (LDR or Land Ban)
The regulations under 40 CFR 268, adopted by reference at 15A NCAC 13A .0112 that prohibit placing hazardous waste or materials containing hazardous waste directly on the land except in a staging pile or a CAMU. Containment, liners, run-on/run-off control, covers, etc. may still be required.

Listed Waste
A solid waste that has been named as a hazardous waste and appears on one of four lists in 40 CFR 261 Subpart D, adopted by reference at15A NCAC 13A .0106.

Maximum Contaminant Level (MCL)
The maximum permissible level of a contaminant in water which is delivered to any user of a public water supply. The MCL is set as close to the MCLG as feasible, which the Safe Drinking Water Act defines as the level that may be achieved with the use of the best available technology, treatment techniques, and other means which EPA finds are available. This includes an examination for efficiency under field conditions and not solely under laboratory conditions and takes cost into consideration. MCLs were not used in this policy.

Maximum Contaminant Level Goal (MCLG)
Non-enforceable concentrations of a drinking water contaminant that is protective of adverse human health effects and allow an adequate margin of safety. Since MCLGs consider only public health and not the limits of detection and treatment technology, they are sometimes set at a level that water treatment systems cannot meet.

Preliminary Soil Remediation Goal (PSRG)
Soil remediation goals that have been established using current U.S. EPA risk assessment guidance that are based on a lifetime excess cancer risk of 1 x 10-6 (carcinogens) and a hazard quotient of 0.2 (non-carcinogens). The hazard quotient of 0.2 is used to account for multiple (average of five) non-carcinogens in the same critical effect group.

Remediation waste
All solid and hazardous wastes, and all media (including groundwater, surface water, soil and sediment) and debris that contain listed hazardous wastes or that exhibit a hazardous characteristic and are managed during cleanup.

Soil
Unconsolidated earth material composing the superficial geologic strata (material overlying bedrock),

consisting of clay, silt, sand or gravel size particles as classified by the U.S. Natural Resources Conservation Service. Or, a mixture of such materials with liquids, sludges or solids which is inseparable by simple mechanical removal process and is made up primarily of soil by volume based on visual inspection. ***Any deliberate mixing of prohibited hazardous waste with soil that changes its treatment classification (i.e., from waste to contaminated soil) is not allowed*** under the dilution prohibition in 40 CFR 268.3, adopted by reference at 15A NCAC 13A .0112.

Soil hazardous by characteristic
Soil that is ignitable (waste code D001 as described in 40 CFR 261.21), corrosive (waste code D002 as described in 40 CFR 261.22), reactive (waste code D003 as described in 40 CFR 261.23) or toxic by characteristic (waste codes D004-D043 as described in 40 CFR 261.24), adopted by reference at 15A NCAC 13A .0106) are considered hazardous by characteristic.

Soil containing listed hazardous waste
Any concentration of hazardous constituents in soil, attributable to contamination from listed hazardous waste that is at or above the levels described in this policy. Soil not meeting the levels must only be disposed as a Subtitle C waste.

Subtitle D Landfill
A discrete area of land or an excavation that receives household waste, and is not a land application unit, surface impoundment, injection well or waste pile. Such a landfill may be publicly or privately owned. A Subtitle D landfill may also be permitted to receive other types of non-hazardous solid waste. It is constructed with a base liner and leachate collection system designed in accordance with Subtitle D Part 258 regulations, adopted by reference at 15A NCAC 13B .1600.

Subtitle C Landfill
A discrete area of land or an excavation that receives listed hazardous waste, and is not a land application unit, surface impoundment, injection well or waste pile. Such a landfill may be publicly or privately owned. It is constructed with two or more liners and a leachate collection system above and between such liners designed in accordance with Subtitle N Part 264 regulations, adopted by reference at 15A NCAC 13A .0109.

Toxicity Characteristic Leaching Procedure (TCLP)
SW-846 Method 1311. Analysis of the resultant leachate is used to determine if a solid waste possesses the hazardous characteristic of toxicity. TCLP is designed to determine the mobility of both organic and inorganic analytes present in liquids, solids, and multi-phase wastes. The method simulates co-disposal with solid waste in a Subtitle D landfill however, the leachate produced by this method is normally used to analyze for only 40 constituents to determine if the waste possesses the characteristic of toxicity. To determine if the leachate is below the levels for a Subtitle C waste using this policy, this leachate must be analyzed for the complete suite of constituents present (i.e. all volatiles, semi-volatiles, pesticides, metals, etc. normally tested under methodologies analyzing for total constituent levels). Leachate testing results should be reported to the lowest available PQLs, not the regulatory reporting limit often submitted for TCLP waste determinations.

Universal treatment standards
Under 40 CFR 268.48, adopted by reference at 15A NCAC 13A .0112, a list of hazardous constituents used to regulate most prohibited hazardous wastes with numerical limits. Phase IV Land Disposal Restrictions provide alternative LDR treatment standards for contaminated soil (40 CFR 268.49). For the purposes of this policy, soil eligible for disposal as a non-Subtitle C waste will meet land disposal restrictions if a 90 percent reduction in total and underlying hazardous constituent concentrations has been achieved, or the levels are below 10 times the universal treatment standards.

ATTACHMENT

CERTIFICATION OF SOIL MEETING NORTH CAROLINA "CONTAINED-OUT" LEVELS

(Any soil containing hazardous waste not meeting these levels must be handled as if they were hazardous, including hazardous waste manifesting.)

I. Soil Location Information

Name of Site _____

EPA ID number (or Not Applicable) _____

If non-RCRA site, designate program with regulatory oversight _____

County _____

Street _____

City _____ **State** _____ **Zip** _____

Phone _____
(Area Code)

II. Soil Meeting Unrestricted Use Levels

Description of soil (source of contamination, number of roll-off boxes, area(s) spread on-site).

_____

_____

_____

III. Soil Meeting Levels for Disposal under Subtitle D, such as approval from a MSWLF

Description of soil (source of contamination, number of roll-off boxes, etc.)

_____

_____

_____

Quantity delivered: Volume in cubic yards and/or weight in tons

_____

Name of receiving landfill _____

Landfill Permit # _____

County _____ **State** _____

CERTIFICATION OF MEETING NORTH CAROLINA" CONTAINED-OUT" LEVELS

Physical (not mailing) address of landfill

Street _____

City _____ **State** _____ **Zip** _____

Phone _____
(Area Code)

IV. Analytical Information (Submit separate attachments for soil described in Sections II and III)

Attach information from laboratory analyses including:

- **Name, address and phone number of the analytical laboratory.**
- **A spreadsheet of soil levels for each roll-off box with comparison to the required "contained-out" level for that scenario. Data sheets are not needed with this certification but should be kept by the facility should any questions arise. If leachate levels are used, a summary of both the total and leachate analyses must be included.**
- **Information on the dilution factor.**
- **Supply detection limits for all constituents of concern found within the clean-up area for each analysis, whether present in that particular sample or not.**

V. Hazardous by Characteristic

It was determined that none of the soil described above has hazardous characteristics:

By testing methodologies ☐ **(specify here)** _____

By generator knowledge ☐ **(describe here)** _____

_____

_____

I hereby certify under penalty of law that the information contained in this document is accurate and that the soil described either met unrestricted use levels or was delivered to the landfill above in the original container or vehicle it was placed in without mixing with any other solid waste. Any soil not meeting these criteria was handled as hazardous waste, including hazardous waste manifesting to a TSD facility. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

Signature of site manager/facility contact _____

Printed name and title of above person _____

Phone _____
(Area Code)

The original of this signed certification must be sent to the project manager within the Division of Waste Management. A copy of this signed certification must be retained at the facility (if applicable) for a minimum of three years.