

## **Fiscal Impacts of Proposed Rules**

**Rule Topic:** Modifications to 15A NCAC 02T, Section .1500  
Modification of Cleanup Standard from Analysis based Below Detection Limit (BDL) to Risk based Standards.

**Rule Citation and Title:** 15A NCAC 02T .1502 – Definitions  
15A NCAC 02T .1505 – Design Criteria  
15A NCAC 02T .1507 – Closure Requirements

**Name of Commission:** Environmental Management Commission

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**Impact Summary:** State government: Yes  
Local government: No  
Federal government: No  
Substantial impact: No  
OSBM Tier II Non-Substantial Economic Impact Rules

**Authority: § 143-215. Effluent standards or limitations.**

(a) The Commission is authorized and directed to develop, adopt, modify and revoke effluent standards or limitations and waste treatment management practices as it determines necessary to prohibit, abate, or control water pollution. The effluent standards or limitations and management practices may provide, without limitation, standards or limitations or management practices for any point source or sources; standards, limitations, management practices, or prohibitions for toxic wastes or combinations of toxic wastes discharged from any point source or sources; and pretreatment standards for wastes discharged to any disposal system subject to effluent standards or limitations or management practices.

**Necessity:** The Division of Waste Management has taken comments from a stakeholder stating that, for closure of a soil remediation permitted facility, having a closure/cleanup based on a non-detection level of soil contamination is unreasonable. Changing the closure/cleanup to a risk-based closure/cleanup requirement requires rule changes to modify certain closure/cleanup requirements applicable to the soil remediation permitting. This change will be protective of human health and the environment and will reduce costs to some stakeholders.

## I. Summary

The Division of Waste Management has taken comments from a stakeholder who maintains it is unreasonable to require non-detection levels for contamination in soil for closure of a permitted soil remediation facility. Petroleum releases at residences, gas stations, and other sites are remediated to the applicable risk-based soil cleanup levels to ensure properties are cleaned up to levels that are protective of human health and the environment. Risk-based remediation provides property owners with liability relief, financial incentives, cost savings, and an economical and protective mechanism to return properties to productive reuse. As the science of laboratory methods and equipment improves, the detection level of constituents gets lower and lower resulting in higher and higher costs to achieve a non-detection. Furthermore, some plant materials may contribute to petroleum detects such as pine resins, hemp, cotton, corn, etc. which would make it hard to achieve non-detection resulting in more financial burdens for continued monitoring for an unknown amount of time. Reaching a non-detection level at permitted soil remediation facilities ultimately costs more money for remediation of petroleum contaminated soil to return the property to a pristine condition while not being any more protective of human health and the environment when compared to residential and business properties. That is why in 1998 the risk-based clean-up criteria were adopted in the 15A NCAC 2L rules. The stakeholder would like the same criteria applied to remediation of soil remediation facilities to have the same cost savings for remediation of petroleum contaminated soil. Also, it is unreasonable to allow a petroleum release at a residence that is a low risk to be remediated to less than the residential levels while requiring a soil remediation facility to remediate to less than detection limits while most soil remediation facilities (land-farms) are returned to farming.

Changing the closure/cleanup to a risk-based closure/cleanup requirement requires rule changes to modify certain closure/cleanup requirements applicable to the soil remediation permitting. This change will be protective of human health and the environment and will reduce costs to some stakeholders.

This change affects 15A NCAC 02T .1502, .1505 and .1507. 15A NCAC 02T .1502, .1505 and .1507 are modified to only require remediation to "soil-to-groundwater" or residential standards whichever is lower.

The rule changes will primarily affect the specific soil remediation facilities that are known as land-farms. A land-farm is an agricultural field where the petroleum contaminated soil is spread and mixed with the native soils to aerate and allow natural bacteria to break down the petroleum contamination. This operation is conducted in the same manner as a producing agricultural farm through tilling, fertilizing, soil amendment and seeding of non-food crops. The average closeout time for a land-farm to achieve closure based on non-detection of petroleum constituents is 20 years requiring a total of four permits. If risk-based levels are allowed the closeout time frame should be reduced from 20 years to five years requiring just one permit. This will result in a net savings to the average land farm operator of \$137,414.<sup>1</sup> The most common alternative use is farming and the land owner would be able to begin farming (or some other productive use) 15 years sooner.

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<sup>1</sup>Savings calculated in 2017 dollars using a 7% discount rate.

State government will lose approximately \$1440 in permit fees per land-farm because the average closing period will decrease by 15 years and require just one permit.

In addition to these rules the remaining rules in Section .1500 are proposed for re-adoption without substantive changes pursuant to G.S. 150B-21.3A, “Periodic Review and Expiration of Existing Rules.” G.S. 150-21.3A, directs state agencies to review and update their rules every 10 years. As a result, the rules are being readopted in accordance with G.S. 150B-21.3A(d)(2).

The proposed effective date is January 1, 2018.

## **II. Background**

Under the authority of **§143-215**, the department manages and regulates wastes which includes contaminated soils. **§143-215.1** requires that disposal of wastes, directly or indirectly discharged or intermixed with the waters of the State requires a permit, special order or other appropriate instrument. The removal/excavation of contaminated soil produces a solid waste and the disposal/treatment of the solid waste requires a disposal/remediation permit.

The treatment/remediation of contaminated soil in place (without removal) is considered the prevention and abatement of pollution (solid waste) and is required to proceed to completion, through **15A NCAC 02L .0103 POLICY** and the rest of the 02L rules (“other appropriate instrument”), to protect groundwater quality, human health and the environment.

The treatment/remediation of contaminated soil that has been removed from the source area is treated/remediated in a permitted Soil remediation facility regulated under 15A NCAC 02T Section .1500. The contaminated soil currently requires remediation/closure to the analysis based non-detection level. The detection level is a constantly evolving goal; it keeps getting lower and lower as technology advances. Historically, there was very little knowledge available to determine health based limits and even detection levels weren’t very accurate. Today, trace amounts of various constituents are found (some are even naturally occurring) throughout our environment. It is more reasonable to use risk based levels to avoid extensive and expensive determinations that trace amounts of a constituent are or are not a background artifact.

The soil-to-groundwater MSCCs have been determined by the Department to be protective of groundwater impacted by contaminants leaching from soil and therefore protective of human health and the environment.

- The laboratory detection limit (method detection limit) is the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte per Title 40 Code of Federal Regulations Part 136, Appendix B. New laboratory reporting levels may differ from previously established minimum detection levels which may change over time due to

improvements in laboratory equipment, methods, and procedures. Calculating the MDL at the 99% confidence interval allows for the probability that 1% of the samples analyzed which have a true concentration at the MDL level will be false positives (type I error). Additionally, reporting data down to the MDL does nothing to control the possibility for false negatives (type II error). Another way of looking at this is that any substance detected at a concentration equal to or less than the MDL is less than 99% likely to be present. Concentrations less than the MDL are considered to be non-detect/not present by the UST Section.

- Regulatory requirements under 15A NCAC 2L .0400 and .0500 require that releases of petroleum contaminated soil to the environment must be remediated to the risk-based standard of the “soil-to-groundwater or residential standard (MSCCs) whichever is lower for high and intermediate risk sites. For low risk sites with releases of petroleum contaminated soil to the environment must be remediated to the residential standard. The soil-to-groundwater MSCCs have been determined by the Department to be protective of groundwater impacted by contaminants leaching from soil and therefore protective of human health and the environment. Residential MSCCs have been determined by the Department to be protective of the health of children and adult residents who may be exposed to contaminated soil for a limited period of time (target cancer risk one in a million). The calculations are defined in 15A NCAC 2L .0400 and .0500. Please note that nearly every soil-to-groundwater MSCC is less than the residential MSCC (except four constituents) therefore providing greater than one in a million target cancer risk. Also, nearly all of the MSCCs are greater than the laboratory detection limits. For those constituents that do not have a calculated MSCC or the laboratory detection limit is greater than the MSCC, the laboratory detection limit is used as the MSCC for that particular constituent. No change in risk to human health or the environment using the soil-to-groundwater or residential MSCCs whichever is lower since those MSCCs are already being used for petroleum releases across the state at residences and businesses where a vast number of people may be in contact with petroleum contaminated soil. Land-farms have much less potential human exposure to petroleum contaminants than residences or businesses because the land-farms are located in rural areas only visited by a very limited number of people (farmers/property owners and government inspectors).

### **III. Costs**

- Costs to state government:
  - Implementing Agency – The UST Section of the Division of Waste Management of the Department of Environmental Quality. Three permits will no longer be needed because closeout times will be reduced from 20 years to 5 years with each permit issued for five years. Reduced permit fee collections of 3 permits per site at a cost of \$480 per permit will result in a loss of approximately \$1440 per site in permit fees.
- No local government revenue decrease expected.
- Loss to private sector.

- Soil Remediation Site (Land-farm) Operator – may not receive as much soil to land-farm. This amount is difficult to quantify since the process of determining quantity of contaminated soil is dependent on sampling and analysis conducted by the contractor to determine how much soil must be excavated, the number of operating land-farms, and the number of contaminated sites. Until recently uncontaminated soil (soil less than the risk based MSCCs) was mixed in with soil contaminated above the soil MSCCs. Revised standard operating procedures in the UST Guidelines concerning excavation, transportation, and disposal of petroleum contaminated soils targets only soils above the soil MSCCs. Therefore, the same amount of soil will probably be excavated, transported, and disposed at the land-farms; however, the soil should be just soil contaminated above the MSCCs and not include soil less than the MSCCs. The potentially contaminated soil may be transported to the land-farm before the contamination values are known in order to proceed with site cleanup, which may contain a miniscule amount of soil less than the MSCCs resulting in no cost change. Land-farms have a limited capacity for remediation of petroleum contaminated soil. Currently, available capacity is decreasing due to land-farms going through closure while no new permits are being requested. This will allow the remaining land-farms to continue at operating capacity resulting in no cost change.
  - Contractor/Consultant – may not have to manage as much contaminated soil (loss of income). Also, difficult to quantify since the process of determining quantity of contaminated soil is dependent on sampling and analysis by the contractor. Sampling and analysis requirements as well as criteria for excavation and disposal of petroleum contaminated soil is detailed in UST Guidance Documents. Changing the 2T requirements from non-detect to risk based levels will allow the contractor to place soil back in the excavation rather than having the soil at levels less than the soil MSCCs transported to a land-farm for remediation. The contractor will still have to handle the soil on-site (income increase). However, this potential loss of transporting soils less than the risk based MSCCs may also be offset by increased sampling and analysis requirements (income increase) managing the soil on-site (income increase), and targeting only soil contaminated above the MSCCs for excavation, transportation, and disposal. As noted above, revised standard operating procedures in the UST Guidelines concerning excavation, transportation, and disposal of petroleum contaminated soils targets only soils above the soil MSCCs. Therefore, the same amount of soil will probably be excavated, transported, and disposed at the land-farms; however, the soil should be just soil contaminated above the MSCCs and not include soil less than the MSCCs.
- No compliance cost increase expected.
  - No opportunity cost expected.

#### IV. Benefits

- Benefits to state government:
  - Implementing Agency – The UST Section of the Division of Waste Management of the Department of Environmental Quality. No substantive staff time savings are expected since sampling and analyses as well as soil management are conducted by the contractor while the government continues its current oversight and enforcement activities at the same level of effort. The only difference will be comparing soil analytical results to risk based levels versus non-detect comparisons. The UST Section will continue to issue land-farm permits within the same time frame of five years that currently exists.
  - The Trust Fund Branch of the UST Section will benefit from the proposed rules with guidance improving and clarifying standard operating procedures for excavation, management, transportation, and disposal of petroleum contaminated soil. The proposed changes allow for verifying confirmation of soil excavation, transportation and disposal of petroleum contaminated soil which will help provide documentation, clarity, and avoid controversy concerning trust fund reimbursement claims. The result will decrease trust fund reimbursement review time and speed up trust fund reimbursement. However, no Trust Fund expenditure decrease is expected.
- Benefits to private sector:
  - Soil Remediation Site (Land-farm) Operators – These operators receive shipments of contaminated soils from the Regulated Parties. They treat these contaminated soils to achieve either reapplication action levels, unrestricted use levels (currently non-detect), or site closure levels (currently non-detect). This rule change will be unlikely to cause any change for dedicated sites that continue to reapply (are operating with) contaminated soil for treatment. The rule change will reduce the time necessary for all soil remediation sites to achieve site closure (decreased compliance cost). A decrease (one permit cycle) in required permit duration is expected. See Appendix A for detailed description.
  - Regulated Parties — The regulated parties are unlikely to see net change in cost/benefits. In the unlikely event of a reduced amount of contaminated soils to be managed will likely be offset by sampling and analysis costs to be targeting only contaminated soils. Soil sampling and analysis requirements have been modified in guidance to require more sampling and analyses to verify that all the petroleum contaminated soil has been excavated to the risk based levels as well as that the soil being transported to land-farms is contaminated above the risk-based levels. Furthermore, targeted sampling and analysis will allow for only soils contaminated above the risk based criteria to be excavated, transported, and disposed of at land-farms instead of excavating soils less than the risk based criteria soils mixed in with contaminated soils and transporting and disposing of those soils at land-farms. The UST guidelines will still only allow the same maximum amount of soil to be excavated at a site (e.g., per trust fund guidance 1200 tons) during closure and initial abatement activities. Nearly every site will excavate the maximum amount of soil allowed by trust fund which in the past has included soils both above and below the risk based levels (clean soils). Not all

contaminated soil is excavated at a site due to the maximum amount of soil allowed to be excavated during closure and initial abatement. This change may reduce the time necessary for soil cleanup sites to achieve closure since only targeted contaminated soils will be excavated, transported, and disposed at land-farms while leaving soil at levels less than the risked based criteria at the site.

V. Economic Impact Summary

For the average land-farm, DWM estimates the net savings over the three permit cycles (15 years) to be \$137,414.<sup>2</sup> Assuming the cost of closing an average land-farm under the current requirements, there will not be any cost savings for the first 4 years. Land-farm operators will incur normal closing costs in the fifth year of \$31,760.00. Land farms will see savings (avoided permitting costs) in years 6 – 20. The most common alternative use is farming and the land owner would be able to begin farming (or some other productive use) 15 years sooner. The benefits of alternative land use are not quantified in this analysis.

Cost Benefit Table for Rules .1505 and .1507 – Impact to Land Farm Operator

Land-Farm Life Cycle Year	1	2	3	4	5	6 - 19	20
New Savings	0	0	0	0	0	\$23,384	\$55,144
Earlier Costs	0	0	0	0	\$31,760	0	0
Net Impact (benefits–costs)	0	0	0	0	(\$31,760)	\$23,384 per year	\$55,144
Net Present Value \$137,414							

State government will lose approximately \$1440 in permit fees per land farm because the average closing period will decrease by 15 years and require just one permit.

<sup>2</sup>Net savings calculated in 2017 dollars using a 7% discount rate.

## Appendix A

Historical tracking indicates that one dedicated land-farm closes approximately every 5 years (Table 1).

The cost of closing a land-farm under the current requirements includes the following assumptions:

1. Normal gasoline and/or diesel contaminated soils.
2. Average 20 acre land-farm (Table 2).
3. Monitoring well system containing 8 wells.
4. Decision to close land-farm, before end of current permit.
5. Three additional 5-year permits, with no additional soils to be added.

The cost of closing a land-farm under the new requirements includes the following assumptions:

1. Normal gasoline and/or diesel contaminated soils.
2. Average 20 acre land-farm (Table 2).
3. Monitoring well system containing 8 wells.
4. Decision to close land-farm, before end of current permit.
5. Estimated reduction of three 5-year permits.

The difference is the cost of three 5-year permits which includes:

1. Soil remediation verification: assume Total Petroleum Hydrocarbon (TPH) analysis or similar screening events twice per year ( $4.5 \times 2 = 9$  events), with a final full analysis. Two composite samples are required for each acre or part thereof.
2. GW compliance sampling 4x first year, if no impact seen 2x last 4 years.
3. 5 year permit fee and estimated renewal costs:  $\$480 + \$500 = \$980$

### Average Soil Remediation Site Sampling Information

Using trust fund 2017 Reasonable Rate Document (RRD), sampling groundwater from a monitoring well is \$140 for the first well and \$80 for each well thereafter for a sampling event, . Soil sampling using the RRD 2010 stockpile sample cost (\$391 each). The 2010 stockpile soil sample cost is a conservatively high estimate that is still considered valid for current cost estimates.

The lab costs from the 2017 RRD.

Soil TPH GRO and DRO together \$65 per sample, Soil MADEP VPH \$54 per sample, Soil MADEP EPH \$94 per sample, Soil EPA 8260 \$79 per sample, Soil EPA 8270 \$176 per sample,

Groundwater: SM 6200B \$88 per sample, MADEP VPH \$52 per sample and MADEP EPH \$94 per sample.

Table 1. Dedicated Land-farms undergoing closure

Soil Technologies	ARO	
Coastal Environmental Services, Inc. Colerain #1	WaRO	Estimated to close within 1-2 yrs.
G&S LF	WaRO	– Closing (soils may be taken as daily cover if sampling passes..?) UNKNOWN TIME for closure due to mineral oils
Environmental Soil Services LF	WaRO	In Closure (reduced monitoring granted based on G&S LF Settlement Agreement) Estimated to close 1-2 years?

Table 2. Dedicated Land-farms Acreage

Dedicated Land-farms	acres	Location
Environmental Soils	28	ARO
Soilworks	41	FRO
Oakhill	30	FRO
Carlisle	32	FRO
GTA	12	FRO
Pridgen Farms, Inc.	22	RRO
Soil Resources	12.2	RRO
Coastal Environmental Services, Inc. - Colerain #1	3.27	WaRO
Colerain #2	12.7	WaRO
Windsor Land-farm (merged WLF#1 & WLF#2)	7.76	WaRO
Environmental Soil Services	8.9	WaRO
G & S Land Farm	44.3	WaRO
Environmental Farming, LLC	14.5	WaRO
Soil Remedies (Wheely Lane)	9.5	WSRO
Total	278.13	
Average	19.86643	

#### Sampling and Analysis Costs

Assuming the cost of closing an average land-farm under the current requirements, there will no change for the first 4 years. Normal permitting, testing, and analysis would be completed (40 composite soil TPHs (GRO and DRO, 20 acres with 2 composite samples per acre per year) and 16 well samples (8 wells with 2 sampling events per year) as well as the permit fee (\$480) would be the same) for an average cost of \$23,384.00 per year.

Under the new rules, the land farm is expected to close in the fifth year rather than the 20<sup>th</sup> year. The land farm operator will incur additional costs (additional 40 constituent specific analyses) for closure requirements as indicated below.

<b>Year 5 – Earlier Closure Costs</b>	<b>Items</b>	<b>Cost Each</b>		
Composite Soil Sampling	40	\$391.00	\$15,640.00	
Soil EPA 8260	40	\$79.00	\$3,160.00	
Soil EPA 8270	40	\$176.00	\$7,040.00	
Soil MADEP VPH	40	\$54.00	\$2,160.00	
Soil MADEP EPH	40	\$88.00	\$3,760.00	
<b>Total Cost</b>			<b>\$31,760.00</b>	<b>\$31,760.00</b>

Under the new rules, closure will occur in the fifth year, on average, rather than year 20, saving land farm owners the costs of annual soil and well sampling for 14 years, and avoiding closure costs in year 20.

Avoided costs in land farm life cycle years 6 – 19 include 40 composite soil TPHs (GRO and DRO, 20 acres with 2 composite samples per acre per year) and 16 monitoring well samples (8 wells with 2 sampling events per year) for a savings of \$23,384.00 per year.

<b>Years 6 through 19 (14 years) - Savings</b>	<b>Items</b>	<b>Cost Each</b>	<b>Cost per Year</b>	
Composite Soil Sampling	40	\$391.00	\$15,640.00	
TPH GRO and DRO	40	\$65.00	\$2,600.00	
<b>Soil Sampling Subtotal</b>				<b>\$18,240.00</b>
GW Sampling	16	\$140 for the first well and \$80 for each well thereafter	\$1,400.00	
SM 6200B	16	\$88.00	\$1,408.00	
GW MADEP VPH	16	\$52.00	\$ 832.00	
GW MADEP EPH	16	\$94.00	\$1,504.00	
<b>Groundwater Sampling Subtotal</b>				<b>\$5,144.00</b>
Permit Fee (5 year)	0	\$480.00	\$ 0.00	
Permit Renewal labor	0	\$500.00	\$ 0.00	
<b>Permitting Cost Subtotal</b>				<b>\$ 0.00</b>
<b>Total Cost</b>			<b>\$23,384.00</b>	<b>\$23,384.00</b>

Closure costs in the final year of a land farm include 40 composite soil TPHs, 40 composite soil full analyses and 16 well samples (8 wells with 2 sampling events per year). Under the

new rules, the average land farm pays closure costs in year 5 instead of year 20, resulting in savings of \$55,144 in year 20.

<b>Year 20 Savings</b>	<b>Items</b>	<b>Cost Each</b>		
Composite Soil Sampling	80	\$391.00	\$31,280.00	
TPH GRO and DRO	40	\$65.00	\$2,600.00	
Soil EPA 8260	40	\$79.00	\$3,160.00	
Soil EPA 8270	40	\$176.00	\$7,040.00	
Soil MADEP VPH	40	\$54.00	\$2,160.00	
Soil MADEP EPH	40	\$94.00	\$3,760.00	
<b>Soil Sampling Subtotal</b>				<b>\$50,000.00</b>
GW Sampling	16	\$140 for the first well and \$80 for each well thereafter	\$1,400.00	
SM 6200B	16	\$88.00	\$1,408.00	
GW MADEP VPH	16	\$52.00	\$ 832.00	
GW MADEP EPH	16	\$94.00	\$1,504.00	
<b>Groundwater Sampling Subtotal</b>				<b>\$5,144.00</b>
Permit Fee (5 year)	0	\$480.00	\$ 0.00	
Permit Renewal labor	0	\$500.00	\$ 0.00	
<b>Permitting Cost Subtotal</b>				<b>\$ 0.00</b>
<b>Total Cost</b>			<b>\$55,144.00</b>	<b>\$55,144.00</b>

**Cost Benefit Table for Rules .1505 and .1507 – Impact to Land Farm Operator**

Land-Farm Life Cycle Year	1	2	3	4	5	6 - 19	20
New Savings	0	0	0	0	0	\$23,384	\$55,144
Earlier Costs	0	0	0	0	\$31,760	0	0
Net Impact (benefits–costs)	0	0	0	0	(\$31,760)	\$23,384 per year	\$55,144
Net Present Value \$137,414 <sup>3</sup>							

<sup>3</sup>Net savings calculated in 2017 dollars using a 7% discount rate.

## Appendix B: Text of Rule Changes

15A NCAC 02T .1502 is proposed for amendment as follows:

### 15A NCAC 02T .1502 DEFINITIONS

The following definitions apply to this Section:

- (1) "Contaminated soil" means soil containing petroleum products or other soil that has been affected by non-petroleum substances as a result of a release or discharge, but does not include hazardous waste.
- (2) "Dedicated site" means a site used for the repetitive treatment of soils.
- (3) "Permitting agency" means the Division of Waste Management, UST Section, for contaminated soils originating from underground storage tanks (USTs) and for dedicated sites. For other soil, the permitting agency means the Division of Water Quality. When the permitting agency is the Division of Waste Management, the Division of Waste Management shall be considered the Division for the purposes of Section .0100 of this Subchapter.
- (4) "Petroleum contaminated soil" or "Soil containing petroleum products" shall mean any soil that has been exposed to petroleum products because of any emission, spillage, leakage, pumping, pouring, emptying, or dumping of petroleum products onto or beneath the land surface and that exhibits characteristics or concentrations of petroleum product constituents in sufficient quantities which exceed either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the Department pursuant to 15A NCAC 02L .0411, whichever is lower as to be detectable by compatible laboratory analytical procedures pursuant to 15A NCAC 02H .0800.
- (5) "Petroleum product" means all petroleum products as defined by G.S. 143-215.94A and includes motor gasoline, aviation gasoline, gasohol, jet fuels, kerosene, diesel fuel, fuel oils (#1 through #6), and motor oils (new and used).
- (6) "Soil remediation at conventional rates" means the treatment of contaminated soils by land application methods, at an evenly distributed thickness not to exceed six inches.
- (7) "Soil remediation at minimum rates" means the treatment of contaminated soils by land application methods, at an evenly distributed application thickness not to exceed an average of one inch.

*History Note:* Authority G.S. 143-215.1; 143-215.3(a);  
Eff. September 1, 2006.  
Amended Eff. [date]

15A NCAC 02T .1505 is proposed for amendment as follows:

**15A NCAC 02T .1505 DESIGN CRITERIA**

(a) Land Application of Soils Containing Petroleum Products at Minimum Rates. Petroleum contaminated soils shall be incorporated into the native soils of the receiver site immediately upon application. Liming, fertilization, and aeration of the soils mixture shall be optional. Subsequent application of petroleum contaminated soils onto the same receiver site shall not occur for at least 18 months from the date of the most recent application of petroleum contaminated soils and shall cause the receiver site to be reclassified as a "dedicated site" unless the permittee or applicant can demonstrate, through soil sampling and contaminant analytical procedures pursuant to 15A NCAC 02H .0800, that the petroleum contaminant level in the upper eight inches of the receiver site soils is below either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the Department pursuant to 15A NCAC 02L .0411, whichever is lower. ~~analytical detection levels.~~

(b) Land Application of Soil Containing Petroleum Products at Conventional Rates. Land application of soils containing petroleum products at an application thickness greater than one inch shall require fertilization, liming, and aeration of the native soils and petroleum contaminated soils mixture. Application thickness shall be based upon the nature of the receiver site soils, depth to the seasonal high water table, the intended cover crop, and the source of contamination. Operation of the land application program shall not result in contravention of groundwater or surface water standards. Subsequent application of petroleum contaminated soils onto the same receiver site shall not occur for at least 18 months from the date of the most recent application of petroleum contaminated soils and shall cause the receiver site to be reclassified as a "dedicated site" unless the permittee or applicant can demonstrate, through soil sampling and contaminant analytical procedures pursuant to 15A NCAC 02H .0800, that the petroleum contaminant level in the upper eight inches of the receiver site soils is below either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the Department pursuant to 15A NCAC 02L .0411, whichever is lower. ~~analytical detection levels.~~

(c) Disposal of Soils Containing Petroleum Products at Dedicated Land Application Sites. Subsequent applications of petroleum contaminated soils at dedicated sites shall not recur until such time as it can be demonstrated that additional applications of contaminated soils will not result in the contravention of any groundwater or surface water standards.

(d) Containment and Treatment and Containment and Utilization of Contaminated Soil.

- (1) A containment structure designed to bioremediate or volatilize contaminated soil shall be constructed of either a synthetic liner of at least 30 mils thickness or of a one foot thick liner of natural material, compacted to at least 95 percent standard proctor dry density and with a permeability of less than  $1 \times 10^{-7}$  cm/sec.
- (2) The bottom of the containment structure shall be at least three feet above the seasonal high water table or bedrock.

- (3) A leachate collection system must be installed in order to prevent runoff from the contaminated soils within the containment structure, or a cover provided to avoid accumulation of stormwater within the containment structure.
- (4) The containment structure shall be compatible with the chemical and physical properties of the contaminants involved.

*History Note: Authority G.S. 143-215.1; 143-215.3(a);  
Eff. September 1, 2006.  
Amended Eff. [date]*

15A NCAC 02T .1507 is proposed for amendment as follows:

### **15A NCAC 02T .1507 CLOSURE REQUIREMENTS**

(a) A permit must be held and renewed if necessary until such time that the soil remediation facility has satisfied all conditions for closure and the permitting agency has notified the permit holder that the facility has satisfied conditions necessary for closure and rescinded the permit. The permittee must notify the permitting agency 30 days prior to the initiation of closure activities. This Rule does not apply to deemed permitted facilities as described in Rule .1503 of this Section.

(b) A facility may be considered for closure once all of the following conditions have been satisfied:

- (1) Any and all outstanding enforcement actions levied by the permitting agency have been resolved.
- (2) Requirements for all other related on-site permitted activities have been met.
- (3) For all land application sites the applicant shall provide to the permitting agency:
  - (A) Demonstration that no contaminant constituents in the groundwater exceed groundwater standards for dedicated and conventional rate land application sites.
  - (B) Demonstration that all remaining contaminated soil has been remediated to below either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the Department pursuant to 15A NCAC 02L .0411, whichever is lower.~~detection levels.~~ The demonstration shall be based upon representative samples from the permitted site.
  - (C) If a groundwater drainage system or surface waters are present on the site or within the compliance boundary, a demonstration that surface water has not been impacted by contaminants at concentrations in excess of those established in Subchapter 15A NCAC 02B.
- (4) For facilities utilizing containment and treatment or portable self-contained treatment systems.
  - (A) Demonstration by the applicant to the permitting agency that all treated soil has been remediated to below either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the Department pursuant to 15A NCAC 02L .0411, whichever is lower.~~detection levels.~~ based upon analysis of representative soil samples or is disposed of under Subparagraph (b)(4)(B) of this Rule.
  - (B) All remaining soil that contains contaminants at levels that exceed either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the Department pursuant to 15A NCAC 02L .0411, whichever is lower.~~the method detection levels.~~ must be disposed of at another permitted facility and the permitting agency must be notified prior to transport.
  - (C) Demonstration by the applicant to the permitting agency that the facility has been decontaminated based upon analysis of samples.

- (5) For storage facilities, a demonstration that the storage facility has been decontaminated to below either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the Department pursuant to 15A NCAC 02L .0411, whichever is lower-detection level shall be submitted by the permittee to the Division. The demonstration shall be based upon analysis of pollutants identified in the contaminated soil as provided in Rule .1504(a)(1) of this Section.

(c) A facility that satisfies the conditions for closure may petition the permitting agency for closure status approval and shall provide the following information:

- (1) identification of the original permit authorizing the construction and operation of the soil remediation facility;
- (2) the reason(s) for closure of facility;
- (3) the name and title of the contact;
- (4) sample analyses (tabulated and graphed) for the last four groundwater sampling events prior to facility shutdown showing the concentrations of the parameters of concern and if groundwater monitoring is required at a land application site, groundwater analytical results for sample collection to satisfy Rule .1507(b)(3)(A);
- (5) laboratory analytical results for soil samples collected from the treated soil, which have been analyzed by methods approved in accordance with Rule .1504(a)(1) of this Section;
- (6) if a groundwater drainage network (ditches) or surface waters are present on the site or within the compliance boundary, analytical results for surface water samples collected upstream of the facility, within the facility if applicable, and at a downstream location at the edge of the property to document that surface waters have not been impacted;
- (7) decontamination procedures for any treatment or containment structure;
- (8) a sedimentation and erosion control plan, prepared in accordance with the Division of Energy, Mineral, and Land Resources requirements pursuant to Subchapter 15A NCAC 04B, if a plan to restore the site to pre-soil treatment conditions is proposed that will disturb an area of land equal to or greater than one acre;
- (9) a map of the facility, which shows the size, orientation, and location of the facility relative to existing monitor wells, roads, structures, and other site features; and
- (10) certification that the closure has been accomplished and that the information submitted is complete, factual and accurate.

(d) Once the permitting agency has determined that all conditions required for site closure have been satisfied, the permitting agency shall issue a notice stating that the permit for the facility has been rescinded and "closure status" has been granted.

*History Note:* Authority G.S. 143-215.1; 143-215.3(a);  
Eff. September 1, 2006;

*Amended Eff. August 1, 2012 (see S.L. 2012-143, s.1.(f)).*

*Amended Eff. [date]*