

1 SECTION .1500 – SOIL REMEDIATION

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3 15A NCAC 02T .1501 is proposed for readoption without substantive changes as follows:

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5 **15A NCAC 02T .1501 SCOPE**

6 The rules in this Section apply to the Disposal or Treatment of Soils Containing Petroleum Products or other
7 Contaminated Soil by Land Application, Storage, or Containment and Treatment. These Rules do not apply to:

8 (1) "hazardous waste" as defined in 40 CFR 260.10 as adopted by reference in 15A NCAC 13A
9 .0102(b), 40 CFR 261.3 as adopted by reference in 15A NCAC 13A .0106(a), and North
10 Carolina General Statute 130A-290;

11 (2) soil contaminated with "hazardous waste" or "hazardous waste constituents" as defined in 40
12 CFR 260.10 as adopted by reference in 15A NCAC 13A .0102(b) and 40 CFR 261.3 as adopted
13 by reference in 15A NCAC 13A .0106(a) from a "Facility" as defined in 15A NCAC 13A
14 .0102(c); or

15 (3) cuttings and other wastes generated in the construction and development of oil and gas wells
16 regulated by Article 27 of G.S. 113.

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18 *History Note: Authority G.S. 143-215.1; 143-215.3(a);*

19 *Eff. September 1, 2006;*

20 *Amended Eff. March 19, 2015.*

21 *Readopted Eff. XX 1, 201X.*

1 15A NCAC 02T .1502 is proposed for readoption with substantive changes as follows:

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3 **15A NCAC 02T .1502 DEFINITIONS**

4 The following definitions apply to this Section:

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

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31 *History Note: Authority G.S. 143-215.1; 143-215.3(a);*

32 *Eff. September 1, 2006.*

33 *Readopted Eff. XX 1, 201X.*

1 15A NCAC 02T .1503 is proposed for readoption without substantive changes as follows:
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3 **15A NCAC 02T .1503 PERMITTING BY REGULATION**

4 (a) The following systems are deemed permitted pursuant to Rule .0113 of this Subchapter provided the system
5 meets the criteria in Rule .0113 of this Subchapter and all criteria required for the specific system in this Rule:

6 (1) Storage sites for petroleum contaminated soils that are utilized for less than 45 days, storage is
7 on 10 mil or thicker plastic, provisions are made for containing potential leachate and runoff,
8 setbacks required in Rule .1506 of this Section are maintained, and approval of the activity has
9 been received from the appropriate Regional Supervisor or his designee that the site meets the
10 criteria of this Rule.

11 (2) Land application sites for petroleum contaminated soils with volumes of soil from each source
12 of less than or equal to 50 cubic yards or for the application of up to 100 cubic yards if the
13 application is at minimum rate, setbacks required in Rule .1506 of this Section are maintained,
14 and approval of the activity has been received from the appropriate Regional Supervisor or his
15 designee that the site meets the criteria of this Rule.

16 (3) Land application sites for the disposal of drill cuttings if applied on the site where the drilling
17 occurs and setbacks required in Rule .1506 of this Section are maintained. Soils contaminated
18 with non-petroleum substances must be determined by chemical analysis to be non-hazardous
19 wastes.

20 (b) The Director may determine that a system should not be deemed permitted in accordance with this Rule and
21 Rule .0113 of this Subchapter. This determination shall be made in accordance with Rule .0113(e) of this
22 Subchapter.

23
24 *History Note: Authority G.S. 143-215.1; 143-215.3(a);*

25 *Eff. September 1, 2006.*

26 *Readopted Eff. XX 1, 201X.*

1 15A NCAC 02T .1504 is proposed for readoption without substantive changes as follows:
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3 **15A NCAC 02T .1504 APPLICATION SUBMITTAL**

4 (a) For all applications the following shall be submitted to the permitting agency by the applicant:

5 (1) A complete chemical analysis of the contaminated soil to be remediated, including total
6 petroleum hydrocarbons (TPH), semivolatile and volatile organics, pH, and heavy metals. All
7 methods and procedures shall be in accordance with 15A NCAC 02H .0800.

8 (2) A determination of hazardous waste constituents using the Toxicity Characteristic Leaching
9 Procedure (TCLP) described in 40 CFR 261.24. Any substance shall be considered a hazardous
10 waste if the results of the TCLP analysis indicates concentrations of constituents greater than
11 the federal regulatory level, unless documentation is provided stating that the contaminated soil
12 is not a hazardous waste (i.e. within the scope of this Section as provided in Rule .1501 of this
13 Section). A TCLP analysis shall be required for all permit applications to dispose of petroleum
14 contaminated soil in accordance with the following criteria:

15 (A) If the source of the soil contamination is a virgin (unused) petroleum product from an
16 underground storage tank regulated under Subtitle I of RCRA, the contaminated soil
17 shall not be considered a hazardous waste and no TCLP analysis is required. In lieu
18 of the TCLP analysis, certification of soil contamination from a virgin petroleum
19 product shall be required.

20 (B) If an analysis of the source of petroleum product is submitted showing concentrations
21 less than the regulatory level associated with the constituents of the TCLP analysis
22 (Table II.2 of the Federal Register, Volume 55, No. 61), the contaminated soil shall
23 not be considered a hazardous waste and no TCLP analysis shall be required.

24 (C) For soils contaminated with used motor oil, the soils shall be considered hazardous
25 until proven otherwise by a TCLP analysis for volatile organics and metals (EPA
26 Hazardous Waste Nos. D004-D011).

27 (D) For soils contaminated by waste oil, a TCLP analysis for all constituents in Table II.2
28 of the Federal Register, Volume 55, No. 61, with the exception of pesticides and
29 herbicides, shall be required.

30 (E) For soils contaminated with petroleum products not regulated under Subtitle I of
31 RCRA (excluding used motor and waste oils), the soils shall be considered hazardous
32 waste until proven otherwise.

33 (3) Site map. If required by G.S. 89C, a professional land surveyor shall provide location
34 information on boundaries and physical features not under the purview of other licensed
35 professions. A scaled map of the site with a horizontal scale of one inch equals 100 feet or less
36 and topographic contour intervals not exceeding 10 feet or 25 percent of total site relief,
37 whichever is less and including the following:

1 [Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined,
2 via letter dated December 1, 2005, that locating boundaries and physical features, not under the
3 purview of other licensed professions, on maps pursuant to this Paragraph constitutes practicing
4 surveying under G.S. 89C.]

5 (A) all property boundaries and all structures within the treatment, storage and land
6 application areas,

7 (B) the location of all wells, springs, lakes, ponds, or other surface drainage features within
8 500 feet of the waste disposal site;

9 (C) setbacks as required by Rule .1506 of this Section; and

10 (D) any residences or place of public assembly under separate ownership within 400 feet
11 of the waste disposal site.

12 (4) Confirmation that an erosion control plan has been submitted to the Division of Land Quality
13 or its designee, for disposal sites encompassing more than one acre.

14 (5) The volume of contaminated soil to be remediated.

15 (6) A landowner agreement to allow the use of the property for the purpose of remediating
16 contaminated soil. The agreement is not required when the permit applicant is the sole
17 landowner.

18 (b) For soil remediation at minimum rates the following shall be submitted to the permitting agency by the
19 applicant:

20 (1) a calculation of the area required for land application using the maximum application thickness
21 of one inch,

22 (2) an indication of cover crop(s), and

23 (3) proof of written notification in the form of certified mail return receipts to each city and county
24 government having jurisdiction over any part of the land over which disposal is to occur.

25 (c) For soil remediation at conventional rates (dedicated or non-dedicated sites) the following shall be submitted
26 to the permitting agency by the applicant:

27 (1) A soils evaluation report of the disposal area to evaluate the soil to a depth of five feet. If
28 required by G.S. 89F, a soil scientist shall prepare this evaluation. The report shall include:

29 [Note: The North Carolina Board for Licensing of Soil Scientists has determined, via letter
30 dated December 1, 2005, that preparation of soils reports pursuant to this Paragraph constitutes
31 practicing soil science under G.S. 89F.]

32 (A) field descriptions of texture, color, and structure,

33 (B) depth and thickness of soil horizons,

34 (C) presence of any restrictive horizons,

35 (D) depth to seasonal high water table,

36 (E) soil pH and cation exchange capacity, and

37 (F) estimates of liming and fertilization requirements.

- 1 (2) The calculation of the size of the disposal area and thickness of application.
- 2 (3) A description of the proposed cover crop.
- 3 (4) A site maintenance plan.
- 4 (5) Proposed groundwater quality monitor well network (dedicated sites only).
- 5 (6) Proof of written notification in the form of certified mail return receipts to each city and county
- 6 government having jurisdiction over any part of the land over which disposal is to occur.
- 7 (d) For containment and treatment the following shall be submitted to the permitting agency by the applicant:
- 8 (1) A soils evaluation report of the disposal area to evaluate the soil to a depth of five feet. If
- 9 required by G.S. 89F, a soil scientist shall prepare this evaluation. The report shall include:
- 10 [Note: The North Carolina Board for Licensing of Soil Scientists has determined, via letter
- 11 dated December 1, 2005, that preparation of soils reports pursuant to this Paragraph constitutes
- 12 practicing soil science under G.S. 89F.]
- 13 (A) field descriptions of texture, color, and structure,
- 14 (B) depth and thickness of soil horizons,
- 15 (C) presence of any restrictive horizons, and
- 16 (D) depth to seasonal high water table.
- 17 (2) The plans and specifications of the soil containment vessel and any associated leachate
- 18 collection system, including the operating thickness of the soil to be contained and treated.
- 19 (3) A description of the chemical or biological additives used in treating the contaminated soil.
- 20 (e) For containment and utilization at brick, asphalt, or other production facilities, a site management plan,
- 21 consisting of a complete description of all operational procedures related to the handling of soils at the proposed
- 22 facility shall be submitted to the permitting agency by the applicant, including:
- 23 (1) a description of the staging area(s) designated for initial receipts of the contaminated soils,
- 24 (2) the method of emplacement of the soils in the containment area(s),
- 25 (3) the average residence time of the soils in the containment area(s),
- 26 (4) the method of incorporation of the soils into the production facility's product materials, and
- 27 (5) the method of containment and disposal of any leachate or runoff resulting from the
- 28 containment and storage of contaminated soils.
- 29 (f) For soil remediation using mobile or portable self-contained facilities the following shall be submitted to the
- 30 permitting agency by the applicant:
- 31 (1) a description of the treatment system to include procedures for controlling any vapors, liquid
- 32 or solid by-products of the treatment process,
- 33 (2) the method by which any by-products will be disposed,
- 34 (3) the predicted average concentration of contaminants in the untreated soil,
- 35 (4) the sampling procedures and analytical methods by which the concentration(s) and type(s) of
- 36 contaminants in the treated soil will be determined,
- 37 (5) the method of disposal of the treated soil, and

1 (6) for applications proposing to stage soils, a description of the method proposed to prevent
2 contact of contaminated soil with the environment.

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4 *History Note: Authority G.S. 143-215.1; 143-215.3(a);*

5 *Eff. September 1, 2006.*

6 *Readopted Eff. XX 1, 201X.*

1 15A NCAC 02T .1505 is proposed for t readoption with substantive changes as follows:

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3 **15A NCAC 02T .1505 DESIGN CRITERIA**

4 (a) Land Application of Soils Containing Petroleum Products at Minimum Rates. Petroleum contaminated soils
5 shall be incorporated into the native soils of the receiver site immediately upon application. Liming, fertilization,
6 and aeration of the soils mixture shall be optional. Subsequent application of petroleum contaminated soils onto
7 the same receiver site shall not occur for at least 18 months from the date of the most recent application of
8 petroleum contaminated soils and shall cause the receiver site to be reclassified as a "dedicated site" unless the
9 permittee or applicant can demonstrate, through soil sampling and contaminant analytical procedures pursuant to
10 15A NCAC 02H .0800, that the petroleum contaminant level in the upper eight inches of the receiver site soils is
11 below either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established
12 by the Department pursuant to 15A NCAC 02L .0411, whichever is lower. ~~analytical detection levels.~~

13 (b) Land Application of Soil Containing Petroleum Products at Conventional Rates. Land application of soils
14 containing petroleum products at an application thickness greater than one inch shall require fertilization, liming,
15 and aeration of the native soils and petroleum contaminated soils mixture. Application thickness shall be based
16 upon the nature of the receiver site soils, depth to the seasonal high water table, the intended cover crop, and the
17 source of contamination. Operation of the land application program shall not result in contravention of
18 groundwater or surface water standards. Subsequent application of petroleum contaminated soils onto the same
19 receiver site shall not occur for at least 18 months from the date of the most recent application of petroleum
20 contaminated soils and shall cause the receiver site to be reclassified as a "dedicated site" unless the permittee or
21 applicant can demonstrate, through soil sampling and contaminant analytical procedures pursuant to 15A NCAC
22 02H .0800, that the petroleum contaminant level in the upper eight inches of the receiver site soils is below either
23 the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the
24 Department pursuant to 15A NCAC 02L .0411, whichever is lower. ~~analytical detection levels.~~

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

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

30 (1) A containment structure designed to bioremediate or volatilize contaminated soil shall be
31 constructed of either a synthetic liner of at least 30 mils thickness or of a one foot thick liner of
32 natural material, compacted to at least 95 percent standard proctor dry density and with a
33 permeability of less than 1×10^{-7} cm/sec.

34 (2) The bottom of the containment structure shall be at least three feet above the seasonal high
35 water table or bedrock.

1 (3) A leachate collection system ~~must~~shall be installed in order to prevent runoff from the
2 contaminated soils within the containment structure, or a cover provided to avoid accumulation
3 of stormwater within the containment structure.

4 (4) The containment structure shall be compatible with the chemical and physical properties of the
5 contaminants involved.

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7 *History Note:* *Authority G.S. 143-215.1; 143-215.3(a);*
8 *Eff. September 1, 2006.*
9 *Readopted Eff. XX 1, 201X.*

1 15A NCAC 02T .1506 is proposed for readoption without substantive changes as follows:

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3 **15A NCAC 02T .1506 SETBACKS**

4 Remediation systems shall adhere to the following setbacks and greater where necessary to comply with
5 minimum horizontal distance requirements set by the Division pursuant to Subchapter 15A NCAC 02L .0107:

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7 Feet

8 Any habitable residence or place of public assembly under separate ownership or not to

9 be maintained as part of the project site 100

10 Any well with the exception of a Division approved groundwater monitoring well 100

11 Surface waters (streams – intermittent and perennial, perennial waterbodies, and wetlands) 100

12 Surface water diversions (ephemeral streams, waterways, ditches) 25

13 Groundwater lowering ditches (where the bottom of the ditch intersects the SHWT) 25

14 Subsurface groundwater lowering drainage systems 25

15 Any building foundation except treatment facilities 15

16 Any basement 15

17 Any property line 50

18 Any water line 10

19 Any swimming pool 100

20 Rock outcrops 25

21 Public right-of-way 50

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23 *History Note: Authority G.S. 143-215.1; 143-215.3(a);*

24 *Eff. September 1, 2006.*

25 *Readopted Eff. XX 1, 201X.*

1 15A NCAC 02T .1507 is proposed for readoption with substantive changes as follows:
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3 **15A NCAC 02T .1507 CLOSURE REQUIREMENTS**

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

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

10 (1) Any and all outstanding enforcement actions levied by the permitting agency have been
11 resolved.

12 (2) Requirements for all other related on-site permitted activities have been met.

13 (3) For all land application sites the applicant shall provide to the permitting agency:

14 (A) Demonstration that no contaminant constituents in the groundwater exceed
15 groundwater standards for dedicated and conventional rate land application sites.

16 (B) Demonstration that all remaining contaminated soil has been remediated to below
17 either the "soil-to-groundwater" or the residential maximum soil contaminant
18 concentrations established by the Department pursuant to 15A NCAC 02L .0411,
19 whichever is lower.~~detection levels.~~ The demonstration shall be based upon
20 representative samples from the permitted site.

21 (C) If a groundwater drainage system or surface waters are present on the site or within
22 the compliance boundary, a demonstration that surface water has not been impacted
23 by contaminants at concentrations in excess of those established in Subchapter 15A
24 NCAC 02B.

25 (4) For facilities utilizing containment and treatment or portable self-contained treatment systems.

26 (A) Demonstration by the applicant to the permitting agency that all treated soil has been
27 remediated to below either the "soil-to-groundwater" or the residential maximum soil
28 contaminant concentrations established by the Department pursuant to 15A NCAC
29 02L .0411, whichever is lower.~~detection levels.~~ based upon analysis of representative
30 soil samples or is disposed of under Subparagraph (b)(4)(B) of this Rule.

31 (B) All remaining soil that contains contaminants at levels that exceed either the "soil-to-
32 groundwater" or the residential maximum soil contaminant concentrations established
33 by the Department pursuant to 15A NCAC 02L .0411, whichever is lower.~~the method~~
34 ~~detection levels.~~ must~~shall~~ be disposed of at another permitted facility and the
35 permitting agency ~~must~~shall be notified prior to transport.

36 (C) Demonstration by the applicant to the permitting agency that the facility has been
37 decontaminated based upon analysis of samples.

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

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

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

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

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

1 *Amended Eff. August 1, 2012 (see S.L. 2012-143, s.1.(f)).*
2 *Readopted Eff. XX 1, 201X.*