

**SECTION .0500 - RISK-BASED ASSESSMENT AND CORRECTIVE ACTION FOR NON-UST  
PETROLEUM RELEASES**

**15A NCAC 02L .0501 PURPOSE AND SCOPE**

(a) The purpose of this Section is to establish procedures for risk-based assessment and corrective action sufficient to:

- (1) protect human health and the environment;
- (2) abate and control contamination of the waters of the State as deemed necessary to protect human health and the environment;
- (3) permit management of the State's groundwaters to protect their designated current usage and potential future uses;
- (4) provide for anticipated future uses of the State's groundwater;
- (5) recognize the diversity of contaminants, the State's geology and the characteristics of each individual site; and
- (6) accomplish these goals in a cost-efficient manner to assure the best use of the limited resources available to address groundwater pollution within the State.

(b) The applicable portions of Section .0100 not specifically excluded apply to this Section.

History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282;  
Eff. Month 1, year.

**15A NCAC 02L .0502 DEFINITIONS**

The definitions as set out in 15A NCAC 02L .0102 apply to this Section, except that the following definitions apply throughout this Section:

- (1) "Aboveground storage tank" or "AST" means any one or a combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of petroleum.
- (2) "AST system" means an aboveground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any".
- (3) "Discharge" means, but is not limited to, any emission, spillage, leakage, pumping, pouring, emptying, or dumping of oil into groundwater or surface water or upon land in such proximity to such water that it is likely to reach the water and any discharge upon land which is intentional, knowing or willful.
- (4) "Operator" means any person in control of, or having responsibility for the daily operation of the AST system.
- (5) "Owner" means any person who owns a petroleum aboveground storage tank or other non-UST petroleum tank, stationary or mobile, used for storage, use, dispensing, or transport.
- (6) "Person" means an individual, trust, firm, joint stock company, Federal agency, corporation, state, municipality, commission, political subdivision of a state, or any interstate body. "Person" also includes a consortium, a joint venture, a commercial entity, and the United States Government.
- (7) "Petroleum" is defined in G.S. 143-215.94A(10).
- (8) "Release" means any spilling, leaking, emitting, discharging, escaping, or leaching or disposing into groundwater, surface water, or surface or subsurface soils.
- (9) "Tank" is a device used to contain an accumulation of petroleum and constructed of non-earthen materials (e.g., concrete, steel, plastic) that provides structural support.

History Note: Authority G.S. 143-212(4); 143-215.2; 143-215.3(a)(1); 143-215.77; 143B-282; Eff. Month 1, year.

1 **15A NCAC 02L .0503 RULE APPLICATION**

2 This Section applies to any non-UST petroleum discharge. The requirements of this Section shall apply to the  
3 owner and operator of a petroleum aboveground storage tank or other non-UST petroleum tank, stationary or  
4 mobile, from which a discharge or release occurred and any person determined to be responsible for assessment  
5 and cleanup of a discharge or release from a non-UST petroleum source, including any person who has  
6 conducted or controlled an activity which results in the discharge or release of petroleum or petroleum products  
7 (as defined in G.S. 143-215.94A(10)) to the groundwaters of the State, or in proximity thereto; these persons  
8 shall be collectively referred to for purposes of this Section as the "responsible party".

9  
10 History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282;  
11 Eff. Month 1, year.  
12

**15A NCAC 02L .0504 REQUIRED INITIAL RESPONSE AND ABATEMENT ACTIONS BY RESPONSIBLE PARTY**

A responsible party shall:

- (1) take immediate initial response actions to prevent any further discharge or release of petroleum from the non-UST petroleum source; identify and mitigate any fire, explosion or vapor hazard; and report the release within 24 hours, in compliance with G.S. 143-215.83(a), 84(a), and 85(b);
- (2) perform initial abatement actions to measure for the presence of a release where contamination is most likely to be present and to confirm the precise source of the release; to investigate to determine the possible presence of free product and to begin free product removal immediately; and to continue to monitor and mitigate any additional fire, vapor, or explosion hazards posed by vapors or by free product; and submit a report within 20 days after release confirmation summarizing these initial abatement actions;
- (3) remove contaminated soil which would act as continuing source of contamination to groundwater. For a new release, if initial abatement actions involving control and removal of contaminated materials can be initiated within 48 hours; before contaminated materials have the opportunity to impact groundwater; and if remaining soils contain contaminants with levels less than the TPH action level or less than either the soil-to-groundwater or residential MSCCS (whichever is lowest); no further action is necessary.
- (4) conduct initial site assessment, assembling information about the site and the nature of the release, including but not necessarily limited to the following:
  - (a) Site history and site characterization, including but not limited to, data on nature and estimated quantity of release and data from available sources and site investigations concerning surrounding populations, water quality, use, and approximate locations of wells, surface water bodies, and subsurface structures potentially effected by the release, subsurface soil conditions, locations of subsurface utilities, climatological conditions, and landuse;
  - (b) Results of free product investigations and free product removal, if applicable;
  - (c) Results of groundwater and surface water investigations, if applicable;
  - (d) Summary of initial response and abatement actions;and submit this information in the report required under Item (5) of this Rule.
- (5) submit within 90 days of the discovery of the discharge or release an initial assessment and abatement report containing the site characterization information required in Item (4) of this Rule; soil assessment information sufficient to show that remaining unsaturated soil in the side walls and at the base of the excavation does not contain contaminant levels which exceed either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the Department pursuant to Rule .0511 of this Section, whichever is lower; and documentation to show that neither bedrock nor groundwater was encountered in the

1 excavation (or if groundwater was encountered, that contaminant concentrations in  
2 groundwater were equal to or less than the groundwater quality standards established in 15A  
3 NCAC 2L .0202). If such showing is made, the discharge or release shall be classified as low  
4 risk by the Department.

5  
6 History Note: Authority G.S. 143-215.2; 143-215.3(a)(1);; 143B-282;  
7 Eff. Month 1, year.  
8

**15A NCAC 02L .0505 REQUIREMENTS FOR LIMITED SITE ASSESSMENT**

If the required showing cannot be made under Rule .0504 of this Section, submit within 120 days of the discovery of the discharge or release, or within such other greater time limit approved by the Department, a report containing information needed by the Department to classify the level of risk to human health and the environment posed by a discharge or release under Rule .0506 of this Section. Such report shall include, at a minimum:

- (1) a location map, based on a USGS topographic map, showing the radius of 1500 feet from the source area of a confirmed release or discharge and depicting all water supply wells, surface waters and designated wellhead protection areas as defined in 42 U.S.C. 300h-7(e) within the 1500-foot radius. For purposes of this Section, source area means point of release or discharge from the non-UST petroleum source or, if the point of release cannot be determined precisely, source area is defined as the area of highest contaminant concentrations;
- (2) a determination of whether the source area of the discharge or release is within a designated wellhead protection area as defined in 42 U.S.C. 300h-7(e);
- (3) if the discharge or release is in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985, a determination of whether the source area of the discharge or release is located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer which is being used or may be used as a source of drinking water;
- (4) a determination of whether vapors from the discharge or release pose a threat of explosion due to the accumulation of vapors in a confined space, pose a risk to public health from exposure, or pose any other serious threat to public health, public safety or the environment;
- (5) scaled site map(s) showing the location of the following which are on or adjacent to the property where the source is located: site boundaries, roads, buildings, basements, floor and storm drains, subsurface utilities, septic tanks and leach fields, underground and aboveground storage tank systems, monitoring wells, water supply wells, surface water bodies and other drainage features, borings and the sampling points;
- (6) the results from a limited site assessment which shall include the following actions:
  - (a) Determine the presence, the lateral and vertical extent, and the maximum concentration levels of soil and, if possible, groundwater contamination and free product accumulations.
  - (b) Install as many monitoring wells within the area of maximum soil or groundwater contamination as needed to determine the groundwater flow direction and maximum concentrations of dissolved groundwater contaminants or accumulations of free product, to include at a minimum three monitoring wells, unless a greater or lesser number are specified for a particular site by the Department ; during well construction, collect and analyze soil samples, which should represent the suspected

- 1                    highest contaminant-level locations by exhibiting visible contamination or elevated  
2                    levels of volatile organic compounds, from successive locations at five-foot depth  
3                    intervals in the boreholes of each monitoring well within the unsaturated zone;  
4                    collect potentiometric data from each monitoring well; and collect and analyze  
5                    groundwater or measure the amount of free product, if present, in each monitoring  
6                    well;
- 7                    (7) the availability of public water supplies and the identification of properties served by the  
8                    public water supplies within 1500 feet of the source area of a confirmed discharge or release;
- 9                    (8) the land use, including zoning if applicable, within 1500 feet of the source area of a  
10                    confirmed discharge or release;
- 11                    (9) a discussion of site specific conditions or possible actions which could result in lowering the  
12                    risk classification assigned to the release. Such discussion shall be based on information  
13                    known or required to be obtained under this Paragraph; and
- 14                    (10) names and current addresses of all responsible parties for all petroleum sources for which a  
15                    discharge or release is confirmed, the owner(s) of the land upon which such petroleum  
16                    sources are located, and all potentially affected real property owners. Documentation of  
17                    ownership of ASTs or other sources and of the property upon which a source is located  
18                    should be provided. When considering a request from a responsible party for additional time  
19                    to submit the report, the Division shall consider the extent to which the request for additional  
20                    time is due to factors outside of the control of the responsible party, the previous history of  
21                    the person submitting the report in complying with deadlines established under the  
22                    Commission's rules, the technical complications associated with assessing the extent of  
23                    contamination at the site or identifying potential receptors, and the necessity for immediate  
24                    action to eliminate an imminent threat to public health or the environment.

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26 *History Note:* Authority G.S. 143-215.2; 143-215.3(a)(1);; 143B-282;  
27 Eff. Month 1, year.  
28

**15A NCAC 02L .0506 DISCHARGE OR RELEASE CLASSIFICATIONS**

The Department shall classify the risk of each known discharge or release as high, intermediate or low risk unless the discharge or release has been classified under 15A NCAC 02L .0504(3) of this Section. For purposes of this Section:

(1) "High risk" means that:

- (a) a water supply well, including one used for non-drinking purposes, has been contaminated by the release or discharge;
- (b) a water supply well used for drinking water is located within 1000 feet of the source area of a confirmed discharge or release;
- (c) a water supply well not used for drinking water is located within 250 feet of the source area of a confirmed discharge or release;
- (d) the groundwater within 500 feet of the source area of a confirmed discharge or release has the potential for future use in that there is no source of water supply other than the groundwater;
- (e) the vapors from the discharge or release pose a serious threat of explosion due to accumulation of the vapors in a confined space or pose a risk to public health from exposure; or
- (f) the discharge or release poses an imminent danger to public health, public safety, or the environment.

(2) "Intermediate risk" means that:

- (a) surface water is located within 500 feet of the source area of a confirmed discharge or release and the maximum groundwater contaminant concentration exceeds the applicable surface water quality standards and criteria found in 15A NCAC 02B .0200 by a factor of 10;
- (b) in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985, the source area of a confirmed discharge or release is located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer which the Department determines is being used or may be used as a source of drinking water;
- (c) the source area of a confirmed discharge or release is within a designated wellhead protection area, as defined in 42 U.S.C. 300h-7(e);
- (d) the levels of groundwater contamination for any contaminant except ethylene dibromide, benzene and alkane and aromatic carbon fraction classes exceed 50 percent of the solubility of the contaminant at 25 degrees Celsius or 1,000 times the groundwater standard or interim standard established in 15A NCAC 02L .0202, whichever is lower; or



1                   (e) the levels of groundwater contamination for ethylene dibromide and benzene exceed  
2                   1,000 times the federal drinking water standard set out in 40 CFR 141.

3           (3) "Low risk" means that:

4                   (a) the risk posed does not fall within the high or intermediate risk categories; or

5                   (b) based on review of site-specific information, limited assessment or interim  
6                   corrective actions, the Department determines that the discharge or release poses no  
7                   significant risk to human health or the environment.

8 If the criteria for more than one risk category applies, the discharge or release shall be classified at the highest  
9 risk level identified in Rule .0507 of this Section.

10  
11 History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282;

12 Eff. Month 1, year.

**15A NCAC 02L .0507 RECLASSIFICATION OF RISK LEVELS**

(a) The Department may reclassify the risk posed by a release if warranted by further information concerning the potential exposure of receptors to the discharge or release or upon receipt of new information concerning changed conditions at the site. After initial classification of the discharge or release, the Department may require limited assessment, interim corrective action, or other actions which the Department believes will result in a lower risk classification. It shall be a continuing obligation of each responsible party to notify the Department of any changes that might affect the level of risk assigned to a discharge or release by the Department if the change is known or should be known by the responsible party. Such changes shall include, but shall not be limited to, changes in zoning of real property, use of real property or the use of groundwater that has been contaminated or is expected to be contaminated by the discharge or release, if such change could cause the Department to reclassify the risk.

(b) If the risk posed by a discharge or release is determined by the Department to be high risk, the responsible party shall comply with the assessment and cleanup requirements of Rule .0106(c), (g) and (h) of this Subchapter. The goal of any required corrective action for groundwater contamination shall be restoration to the level of the groundwater standards set forth in 15A NCAC 02L .0202, or as closely thereto as is economically and technologically feasible. In any corrective action plan submitted pursuant to this Paragraph, natural attenuation shall be used to the maximum extent possible. If the responsible party demonstrates that natural attenuation prevents the further migration of the plume, the Department may approve a groundwater monitoring plan.

(c) If the risk posed by a discharge or release is determined by the Department to be an intermediate risk, the responsible party shall comply with the assessment requirements of 15A NCAC 02L .0106(c) and (g). As part of the comprehensive site assessment, the responsible party shall evaluate, based on site specific conditions, whether the release poses a significant risk to human health or the environment. If the Department determines, based on the site-specific conditions, that the discharge or release does not pose a significant threat to human health or the environment, the site shall be reclassified as a low risk site. If the site is not reclassified, the responsible party shall, at the direction of the Department, submit a groundwater monitoring plan or a corrective action plan, or a combination thereof, meeting the cleanup standards of this Paragraph and containing the information required in 15A NCAC 02L .0106(h). Discharges or releases which are classified as intermediate risk shall be remediated, at a minimum, to a cleanup level of 50 percent of the solubility of the contaminant at 25 degrees Celsius or 1,000 times the groundwater standard or interim standard established in 15A NCAC 02L .0202, whichever is lower for any groundwater contaminant except ethylene dibromide, benzene and alkane and aromatic carbon fraction classes. Ethylene dibromide and benzene shall be remediated to a cleanup level of 1,000 times the federal drinking water standard set out in 40 CFR 141. Additionally, if a corrective action plan or groundwater monitoring plan is required under this Paragraph, the responsible party shall demonstrate that the groundwater cleanup levels are sufficient to prevent a violation of:

(1) the rules contained in 15A NCAC 02B;

1       (2) the standards contained in 15A NCAC 02L .0202 in a deep aquifer as described in Rule  
2       .0506(2)(b) of this Section; and

3       (3) the standards contained in 15A NCAC 02L .0202 at a location no closer than one year time of  
4       travel upgradient of a well within a designated wellhead protection area, based on travel time  
5       and the natural attenuation capacity of the subsurface materials or on a physical barrier to  
6       groundwater migration that exists or will be installed by the person making the request.

7 In any corrective action plan submitted pursuant to this Paragraph, natural attenuation shall be used to the  
8 maximum extent possible.

9 (d) If the risk posed by a discharge or release is determined by the Department to be a low risk, the Department  
10 shall notify the responsible party that no cleanup, no further cleanup or no further action will be required by the  
11 Department, unless the Department later determines that the discharge or release poses an unacceptable risk or a  
12 potentially unacceptable risk to human health or the environment. No notification will be issued pursuant to  
13 this Paragraph, however, until the responsible party has completed soil remediation pursuant to Rule .0508 of  
14 this Section or as closely thereto as economically or technologically feasible; has submitted proof of public  
15 notification and has recorded any land-use restriction(s), if required; and paid any applicable statutorily  
16 authorized fees. The issuance by the Department of a notification under this Paragraph shall not affect any  
17 private right of action by any party which may be affected by the contamination.

18  
19 History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282;  
20 Eff. Month 1, year.  
21

**15A NCAC 02L .0508 ASSESSMENT AND REMEDIATION PROCEDURES**

Assessment and remediation of soil contamination shall be addressed as follows:

- (1) At the time that the Department determines the risk posed by the discharge or release, the Department shall also determine, based on site-specific information, whether the site is "residential" or "industrial/commercial." For purposes of this Section, a site is presumed residential, but may be classified as industrial/commercial if the Department determines based on site-specific information that exposure to the soil contamination is limited in time due to the use of the site and does not involve exposure to children. For purposes of this Item, "site" means both the property upon which the discharge or release has occurred and any property upon which soil has been affected by the discharge or release.
- (2) The responsible party shall submit a report to the Department assessing the vertical and horizontal extent of soil contamination.
- (3) For a discharge or release classified by the Department as low risk, the responsible party shall submit a report demonstrating that soil contamination has been remediated to either the residential or industrial/commercial maximum soil contaminant concentration established by the Department pursuant to Rule .0511 of this Section, whichever is applicable.
- (4) For a discharge or release classified by the Department as high or intermediate risk, the responsible party shall submit a report demonstrating that soil contamination has been remediated to the lower of:
  - (a) the residential or industrial/commercial maximum soil contaminant concentration, whichever is applicable, that has been established by the Department pursuant to Rule .0511 of this Section; or
  - (b) the "soil-to-groundwater" maximum soil contaminant concentration that has been established by the Department pursuant to Rule .0511 of this Section.

History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282;  
Eff. Month 1, year.

**15A NCAC 02L .0509 NOTIFICATION REQUIREMENTS**

(a) A responsible party who submits a corrective action plan which proposes natural attenuation or to cleanup groundwater contamination to a standard other than a standard or interim standard established in 15A NCAC 02L .0202, or to cleanup soil other than to the standard for residential use or soil-to-groundwater contaminant concentration established pursuant to this Section, whichever is lowest, shall give notice to: the local Health Director and the chief administrative officer of each political jurisdiction in which the contamination occurs; all property owners and occupants within or contiguous to the area containing the contamination; and all property owners and occupants within or contiguous to the area where the contamination is expected to migrate. Such notice shall describe the nature of the plan and the reasons supporting it. Notification shall be made by certified mail concurrent with the submittal of the corrective action plan. Approval of the corrective action plan by the Department shall be postponed for a period of 30 days following receipt of the request so that the Department may consider comments submitted. The responsible party shall, within a time frame determined by the Department to be sufficient, provide the Department with a copy of the notice and proof of receipt of each required notice, or of refusal by the addressee to accept delivery of a required notice. If notice by certified mail to occupants under this Paragraph is impractical, the responsible party may give notice by posting such notice prominently in a manner designed to give actual notice to the occupants. If notice is made to occupants by posting, the responsible party shall provide the Department with a copy of the posted notice and a description of the manner in which such posted notice was given.

(b) A responsible party who receives a notice pursuant to 15A NCAC 02L .0507(d) of this Section for a discharge or release which has not been remediated to the groundwater standards or interim standards established in Rule .0202 of this Subchapter or to the lower of the residential or soil-to-groundwater contaminant concentrations established under Rule .0511 of this Section, shall, within 30 days of the receipt of such notice, provide a copy of the notice to: the local Health Director and the chief administrative officer of each political jurisdiction in which the contamination occurs; all property owners and occupants within or contiguous to the area containing contamination; and all property owners and occupants within or contiguous to the area where the contamination is expected to migrate. Notification shall be made by certified mail. The responsible party shall, within a time frame determined by the Department, provide the Department with proof of receipt of the copy of the notice, or of refusal by the addressee to accept delivery of the copy of the notice. If notice by certified mail to occupants under this Paragraph is impractical, the responsible party may give notice by posting a copy of the notice prominently in a manner designed to give actual notice to the occupants. If notice is made to occupants by posting, the responsible party shall provide the Department with a description of the manner in which such posted notice was given.

*History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282;  
Eff. Month 1, year.*

1 **15A NCAC 02L .0510 DEPARTMENTAL LISTING OF DISCHARGES OR RELEASES**

2 To the extent feasible, the Department shall maintain in each of the Department's regional offices a list of all  
3 non-UST petroleum discharges or releases discovered and reported to the Department within the region.

4  
5 History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282:

6 Eff. Month 1, year.  
7

1 **15A NCAC 02L .0511 ESTABLISHING MAXIMUM SOIL CONTAMINATION**

2 **CONCENTRATIONS**

3 For purposes of risk-based assessment and remediation for non-UST petroleum releases, refer to 15A NCAC  
4 02L .0411 for establishment of maximum soil contamination concentrations.

5  
6 History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282;  
7 Eff. Month 1, year.  
8

1 **15A NCAC 02L .0512 ANALYTICAL PROCEDURES FOR SOIL SAMPLES**

2 For purposes of risk-based assessment and remediation for non-UST petroleum releases, refer to 15A NCAC  
3 02L .0412 for analytical procedures for soil samples.

4  
5 History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282:  
6 Eff. Month 1, year.  
7



1 **15A NCAC 02L .0513 ANALYTICAL PROCEDURES FOR GROUNDWATER SAMPLES**

2 For purposes of risk-based assessment and remediation for non-UST petroleum releases, refer to 15A NCAC  
3 02L .0413 for analytical procedures for groundwater samples.

4  
5 History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282:

6 Eff. Month 1, year.  
7

1 **15A NCAC 02L .0514 REQUIRED LABORATORY CERTIFICATION**

2 In accordance with 15A NCAC 02H .0804, laboratories are required to obtain North Carolina Division of Water  
3 Resources laboratory certification for parameters that are required to be reported to the State in compliance with  
4 the State's surface water, groundwater and pretreatment rules.

5  
6 History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282;  
7 Eff. Month 1, year.  
8

1 **15A NCAC 02L .0515 DISCHARGES OR RELEASES FROM OTHER SOURCES**

2 This Section shall not relieve any person responsible for assessment or cleanup of contamination from a source  
3 other than a non-UST petroleum release from its obligation to assess and clean up contamination resulting from  
4 such discharge or releases.

5  
6 History Note: Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282;  
7 Eff. Month 1, year.  
8