

15A NCAC 13B .1634 ASSESSMENT MONITORING PROGRAM

(a) Assessment monitoring shall be required if, in any sampling event, one or more constituents listed in 40 CFR 258 Appendix I is detected above the groundwater quality standards established in accordance with 15A NCAC 02L .0202, or the groundwater protection standards established in accordance with Paragraph (b) of this Rule.

(b) Assessment Requirements. Within 90 days of triggering an assessment monitoring program in accordance with Rule .1633(d)(2) of this Section, the owner or operator shall conduct an assessment in accordance with the following:

- (1) Install additional wells downgradient of the compliance wells where exceedances have been detected to characterize the nature and extent of the contamination. The additional wells shall include no less than one additional groundwater monitoring well at the facility's property boundary or the compliance boundary, as defined in 15A NCAC 02L .0102, in the direction of contaminant migration most likely to show impact based on the established geology and hydrogeology.
- (2) Collect no less than one groundwater sample from each downgradient monitoring well, including any well installed in accordance with Subparagraph (1) of this Paragraph, and analyze for the constituents listed in 40 CFR 258 Appendix II. The Division may remove any of the 40 CFR 258 Appendix II constituents, not also listed in Appendix I, from the monitoring list for a MSWLF unit if the owner or operator can show that the constituents proposed for removal are not expected to be in or derived from the waste contained in the unit. After the initial sampling event, for any constituent detected in the downgradient wells as a result of the Appendix II analysis, no less than three additional independent samples from each downgradient monitoring well and no less than four independent samples from each background well shall be collected and analyzed to establish a baseline for the new detected constituents. Once determined, baseline data for the new detected constituents shall be reported to the Division.
- (3) For constituents that do not have a groundwater quality standard established in accordance with 15A NCAC 02L .0202, the Division shall establish a groundwater protection standard for each constituent detected in groundwater. The groundwater protection standard shall be the most protective of the following:
 - (A) for constituents for which a maximum contaminant level (MCL) has been promulgated under 40 CFR 141, the MCL for that constituent;
 - (B) for constituents for which a public water quality standard has been established under 15A NCAC 18C, the public water quality standard for that constituent; or
 - (C) for constituents for which no MCLs or public water quality standards have been promulgated, the background concentration for the constituent established from the monitoring wells required in accordance with Rules .1631(a)(1) and .1632 of this Section.
- (4) The Division may establish an alternative groundwater protection standard for constituents for which no MCL or public water quality standard have been established. These groundwater protection standards shall be health-based levels that satisfy the following criteria:
 - (A) the level is derived in a manner consistent with U.S. E.P.A. guidelines provided in 40 CFR 258.55(i)(1) for assessing the health risks of environmental pollutants;
 - (B) the level is based on scientifically valid studies conducted in accordance with 40 CFR 792;
 - (C) for carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level due to continuous lifetime exposure of 1×10^{-6} ; and
 - (D) for systemic toxicants, the level represents a concentration to which the human population, including sensitive subgroups, could be exposed on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For the purposes of this Rule, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.
- (5) In establishing groundwater protection standards under this Paragraph, the Division shall consider the following:
 - (A) multiple contaminants in the groundwater;
 - (B) exposure threats to sensitive environmental receptors; and
 - (C) other site-specific exposure or potential exposure to groundwater.
- (6) The owner or operator may request that the Division approve a background level for the unit that is higher than the groundwater quality standard established in 15A NCAC 02L .0202 or the groundwater protection standard established in Subparagraph (3) or (4) of this Paragraph. The

background level shall be established in accordance with Rule .1632(e) of this Section. The approved background level shall be the established groundwater protection standard.

(c) Assessment Monitoring. After obtaining the results from the initial sampling event required in Subparagraph (b)(2) of this Rule, the owner or operator shall perform assessment monitoring in accordance with the following:

- (1) For each assessment monitoring event, the owner or operator shall submit a monitoring report to the Division as required by Rule .1632(i) of this Section and, if required by G.S. 89E, the report shall be certified by a licensed geologist. Any monitoring report submitted during assessment shall contain a summary description of assessment activities conducted in accordance with Paragraph (b) of this Rule that have not previously been reported to the Division, including boring logs and well installation records.
- (2) Within 30 days of obtaining the results of the sampling event, the owner or operator shall notify all persons who own land or reside on land that overlies any part of the plume of contamination if contaminants have migrated off-site.
- (3) Within 14 days of receipt of the analytical results, the owner or operator shall submit notice to the Division in writing and place the notice in the operating record identifying the 40 CFR 258 Appendix II constituents that have not previously been detected and reported to the Division.
- (4) Within 90 days, and no less than semiannually thereafter until the Division approves a return to detection monitoring in accordance with Paragraph (e) of this Rule, the owner or operator shall sample all of the monitoring wells for the unit in the monitoring system established in Rule .1633 of this Section and in Subparagraph (b)(1) of this Rule for all constituents listed in 40 CFR 258 Appendix I, and for those constituents in Appendix II not listed in Appendix I that have been detected. Any well with a reported groundwater standard exceedance shall be sampled for all constituents in 40 CFR 258 Appendix II no less than annually unless otherwise approved in accordance with Subparagraph (6) of this Paragraph or Subparagraph (b)(2) of this Rule. A report from each sampling event shall be submitted to the Division and placed in the facility operating record. No less than one sample from each background and downgradient monitoring well shall be collected and analyzed during each of these sampling events.
- (5) The owner or operator shall establish and report to the Division the background or baseline concentrations for any constituents detected.
- (6) The Division may approve an alternate frequency, no less than annually, or an alternate subset of wells for repeated sampling and analysis for constituents required by Paragraph (b) of this Rule, during the active life and post-closure care of the unit considering the following factors:
 - (A) lithology of the aquifer and unsaturated zone;
 - (B) hydraulic conductivity of the aquifer and unsaturated zone;
 - (C) groundwater flow rates;
 - (D) minimum distance between the upgradient edge of the MSWLF unit and the downgradient monitoring well screened interval;
 - (E) resource value of the aquifer; and
 - (F) nature, fate, and transport of any detected constituents.

(d) During assessment monitoring, the owner or operator may demonstrate, in accordance with Rule .1633(d)(3) of this Section for any constituent not previously reported to have a groundwater standard exceedance, that a source other than a MSWLF unit caused the exceedance of the groundwater quality standards established in accordance with 15A NCAC 02L .0202 or the groundwater protection standards established in accordance with Paragraph (b) of this Rule, or that the exceedance resulted from error in sampling, analysis, or natural variation in groundwater quality. If a successful demonstration is made for each exceedance, the owner or operator shall continue the existing assessment monitoring that was required by Paragraph (c) of this Rule unless and until the requirements of Paragraph (e) of this Rule are met.

(e) The Division shall give approval to the owner or operator to return to detection monitoring in accordance with Rule .1633 of this Section if all of the following are met:

- (1) for two consecutive sampling events, the concentrations of the constituents are shown to be at or below groundwater quality standards established in 15A NCAC 02L .0202, or the groundwater protection standards established in accordance with Paragraph (b) of this Rule;
- (2) the plume is not migrating horizontally or vertically; and
- (3) the plume has not exceeded the compliance boundary.

(f) If one or more Appendix II constituents are detected for two consecutive sampling events above background, the groundwater quality standards established in 15A NCAC 02L .0202, or the groundwater protection standards

established in accordance with Paragraph (b) of this Rule, the owner or operator shall initiate assessment of corrective measures in accordance with Rule .1635 of this Section.

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