

## Chapter NR 508

## RESPONSES WHEN A GROUNDWATER STANDARD IS ATTAINED OR EXCEEDED

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**Note:** Chapter NR 508 as it existed on June 30, 1996 was repealed and a new chapter NR 508 was created effective July 1, 1996. Corrections made under s. 13.93 (2m) (b) 7., Register, August, 1997, No. 500.

**NR 508.01 Purpose.** The purpose of this chapter is to establish procedures for responding to a groundwater standard that is attained or exceeded at any groundwater monitoring well at a solid waste facility and for conducting assessment monitoring at Subtitle D wells and CCR wells. This chapter is adopted under ch. 289, Stats., and s. 227.11, Stats.

**History:** Cr. Register, June, 1996, No. 486, eff. 7-1-96; **CR 21-076: am. Register July 2022 No. 799, eff. 8-1-22.**

**NR 508.02 Applicability. (1)** (a) Except as provided in par. (b) and except as otherwise provided, this chapter governs all environmental monitoring for solid waste disposal facilities as defined under s. 289.01 (35), Stats., including all CCR landfills and expansions.

(b) This chapter does not govern any of the following:

1. Hazardous waste facilities as defined under s. 291.01 (8), Stats., and regulated under chs. NR 660 to 679.
2. Metallic mining operations for nonferrous minerals as defined under s. 293.01 (9), Stats., and regulated under ch. NR 182.
3. Metallic mining operations for ferrous minerals as defined under s. 295.41 (26), Stats., including mining wastes and mining waste sites as defined under s. 295.41 (30) and (31), Stats., and regulated under subch. III of ch. 295, Stats.

(2) This chapter does not apply to the design, construction or operation of industrial wastewater facilities, sewerage systems and waterworks treating liquid wastes approved under s. 281.41, Stats., or permitted under ch. 283, Stats., nor to facilities used solely for the disposal of liquid municipal or industrial wastes which have been approved under s. 281.41, Stats., or permitted under ch. 283, Stats., except for facilities used for the disposal of solid waste.

**History:** Cr., Register, June, 1996, No. 486, eff. 7-1-96; correction in (1) made under s. 13.93 (2m) (b) 7., Stats., Register March 2003 No. 567; correction in (1) made under s. 13.93 (2m) (b) 7., Stats., Register April 2013 No. 688; CR 13-057: am. (1) Register July 2015 No. 715, eff. 8-1-15; **CR 21-076: renum. (1) to (1) (a) and (b) 1. to 3. and am., cr. (1) (b) (intro.) Register July 2022 No. 799, eff. 8-1-22.**

**NR 508.03 Definitions.** The terms used in this chapter are defined in s. NR 500.03.

**History:** Cr., Register, June, 1996, No. 486, eff. 7-1-96.

**NR 508.04 Responses when a groundwater standard is attained or exceeded at any groundwater monitoring well.** If a PAL, ACL or ES is attained or exceeded at any groundwater monitoring well according to s. NR 140.14 and the value is confirmed, the owner or operator shall comply with subs. (1) and (2) and may be required, either by the department or under s. NR 508.05 (5), to comply with subs. (3) and (4).

(1) The owner or operator shall notify the department in accordance with s. NR 507.30.

(2) The owner or operator shall respond in accordance with s. NR 140.24 or 140.26.

(3) If required by the department, the owner or operator shall develop a site investigation workplan and a site investigation report in accordance with ss. NR 716.05 to 716.11 and 716.15 to 716.17. If a site investigation report is submitted under s. NR 716.15, it shall include proof of financial responsibility to comply with s. NR 520.05 (1).

(4) If required by the department, the owner or operator shall evaluate and select remedial action options and develop a remedial action options report in accordance with ch. NR 722. Any soil contamination shall be addressed in accordance with the requirements of ch. NR 720.

(5) If the owner or operator implements remedial action, the department shall determine whether the remedial action has met the requirements of ch. NR 140 in accordance with ch. NR 726.

**Note:** For the purpose of this chapter, the department considers a value to be confirmed if a follow up field sample attains or exceeds the groundwater standard.

**Note:** Section NR 140.14 (3) addresses exceedances for analytical results that fall between the limit of detection and the limit of quantitation.

**History:** Cr. Register, June, 1996, No. 486, eff. 7-1-96.

**NR 508.05 Responses when a groundwater standard is attained or exceeded at a Subtitle D well.** If a PAL, ACL or ES is attained or exceeded at a Subtitle D well and the value is confirmed, the owner or operator shall continue detection monitoring in accordance with s. NR 507.19 and shall respond in accordance with s. NR 508.04 and the following requirements:

(1) The owner or operator may demonstrate that a reported value represents a false exceedance of a groundwater standard in accordance with s. NR 507.28 (3). If the department does not concur with the written demonstration within 30 days, the owner or operator shall begin assessment monitoring in accordance with this subsection. If the department concurs within 30 days after receipt of the demonstration, the owner or operator need not begin assessment monitoring.

(2) The department may approve an alternate assessment monitoring program if the only parameters which are at or above the groundwater standards are the inorganic detection monitoring parameters listed under municipal solid waste in ch. NR 507 Appendix I Table 1.

(3) The owner or operator shall conduct an assessment monitoring program in accordance with all of the following requirements:

(a) The owner or operator shall collect and analyze assessment monitoring samples from all of the Subtitle D wells at the facility. The first set of assessment monitoring samples shall be collected during the first routine monitoring event following receipt of the groundwater standard exceedance. The first set of assessment monitoring samples shall be analyzed for the parameters determined under either subd. 1. or 2. or as approved by the department in writing:

1. All of the parameters listed in ch. NR 507 Appendix II.
2. All of the parameters detected in leachate samples collected to date in accordance with s. NR 507.21 (2).

(b) Annually, the owner or operator shall sample and analyze the leachate for the parameters listed in ch. NR 507 Appendix II.

Within 14 days after obtaining the leachate sampling results, the owner or operator shall place the results in the operating record. Within 60 days after the end of the sampling period, the owner or operator shall submit the leachate sampling results to the department.

(c) Semiannually, the owner or operator shall sample the Subtitle D wells for all of the following:

1. All ch. NR 507 Appendix II parameters which have been detected in the leachate after July 1, 1996.
2. All ch. NR 507 Appendix II parameters which have been detected in Subtitle D wells after July 1, 1996.

(d) All assessment monitoring samples being analyzed for metals shall be obtained using the low-flow sampling technique.

(3m) The owner or operator may submit a written request to eliminate select parameters from the assessment monitoring program required under this section after 4 rounds of assessment monitoring have been collected and analyzed. The request shall demonstrate that these parameters were not detected in any of the 4 rounds. The department may approve eliminating any parameters that were not detected in the first 4 rounds or detected once but not confirmed in subsequent rounds.

(4) The owner or operator may submit a written request to cease the assessment monitoring program required under this section. The request shall demonstrate that 2 consecutive semi-annual sampling rounds show that all detected parameters in the groundwater samples from the Subtitle D wells are at or below groundwater standards listed in ch. NR 140 Tables 1 and 2, or PALs or ACLs established in accordance with s. NR 507.27. The department may approve the cessation of assessment monitoring if the only parameters which remain above the groundwater standards are the inorganic detection parameters listed under municipal solid waste in ch. NR 507 Appendix I Table 1.

(5) If an ES is attained or exceeded at a Subtitle D well and the value is confirmed, the owner or operator, in addition to s. NR 508.05 (intro.) and subs. (1) to (3), shall do all of the following:

(a) Notify the clerk of each municipality within which the landfill is located and whose boundary is within 1,200 feet of the limits of filling of any sampling result which exceeds an enforcement standard. The owner or operator shall notify the clerk within 14 days of receiving the sample result.

(b) Develop a site investigation work plan and a site investigation report in accordance with s. NR 508.04 (3).

(c) Evaluate and select remedial action options and develop a report in accordance with s. NR 508.04 (4).

**Note:** For the purpose of this chapter, the department considers a value to be confirmed if a follow up field sample attains or exceeds the groundwater standard.

**History:** Cr. Register, June, 1996, No. 486, eff. 7-1-96; CR 05-020: cr. (3m) Register January 2006 No. 601, eff. 2-1-06.

**NR 508.06 Responses when a groundwater standard is attained or exceeded at a CCR well. (1) NOTIFICATION AND CONFIRMATION.** If a PAL, ACL, or ES is attained or exceeded at a CCR well according to s. NR 140.14 and the value is confirmed, the owner or operator of the CCR landfill shall continue detection monitoring in accordance with s. NR 507.15 (3) (L) and shall respond in accordance with all of the following requirements:

(a) The owner or operator shall notify the department in accordance with s. NR 507.30 (1). The notification shall be submitted to the department under s. NR 506.17 (4), placed in the written operating record under s. NR 506.17 (2) and posted on a publicly accessible internet site under s. NR 506.17 (3).

(b) The owner or operator shall determine whether a reported value has attained or exceeded a PAL or ES in accordance with s. NR 140.14 at the point of standards application and respond in accordance with s. NR 140.24 or 140.26.

(c) The owner or operator may demonstrate that a reported value represents a false exceedance of a groundwater standard in

accordance with s. NR 507.28 (3) and shall submit the demonstration within 60 days of the groundwater standard attainment or exceedance. If the department does not concur with the written demonstration within 30 days after receipt of the demonstration, the owner or operator shall begin assessment monitoring in accordance with sub. (2). If the department concurs within 30 days after receipt of the demonstration, the owner or operator is not required to begin assessment monitoring. The owner or operator shall include the demonstration in the annual groundwater monitoring and corrective action report.

(2) **ASSESSMENT MONITORING PROGRAM.** The owner or operator of a CCR landfill shall conduct an assessment monitoring program in accordance with all of the following requirements:

(a) The owner or operator shall collect and analyze assessment monitoring samples from all of the CCR wells at the facility. The assessment monitoring samples shall be collected within 90 days of triggering an assessment monitoring program and annually thereafter. The owner or operator of the CCR landfill shall sample and analyze the groundwater for all constituents listed under ch. NR 507, Appendix I, Table 3 for CCR wells. The number of samples collected and analyzed for each well during each sampling event shall be consistent with the approved sampling plan and shall be no less than one sample from each well.

(b) After obtaining the results from the initial assessment sampling event required under par. (a), the owner or operator shall, within 90 days of obtaining the results, and semiannually thereafter, resample all CCR wells, conduct analyses for all detection monitoring parameters under ch. NR 507, Appendix I, Table 1A and for those constituents under ch. NR 507, Appendix I, Table 3 that are detected in response to par. (a), and report the results to the department in accordance with s. NR 507.30 (1). The number of samples collected and analyzed for each CCR well during subsequent semiannual sampling events shall be consistent with the approved sampling plan and shall consist of a minimum of one sample from each well.

(c) If the concentrations of all constituents sampled under par. (b) are shown to be at or below a PAL or ES under s. NR 140.10 or an approved ACL for two consecutive sampling events at the point of standards application, the owner or operator may return to detection monitoring of the CCR landfill. The owner or operator shall notify the department that detection monitoring is resuming for the CCR landfill within 60 days after the end of the sampling period. The notification shall be submitted to the department under s. NR 506.17 (4), placed in the written operating record under s. NR 506.17 (2) and posted on a publicly accessible internet site under s. NR 506.17 (3).

(d) If the concentrations of any sampled parameter are above the PAL or ES standards in s. NR 140.10 or approved ACL at the point of standards application, the owner or operator shall continue assessment monitoring in accordance with this section.

(e) If one or more constituents in the assessment monitoring are detected at levels above the groundwater protection standard under s. NR 140.10 in any sampling event, the owner or operator shall do all of the following:

1. Notify the department in accordance with s. NR 507.30 (1). The notification shall be submitted to the department under s. NR 506.17 (4), placed in the written operating record under s. NR 506.17 (2) and posted on a publicly accessible internet site under s. NR 506.17 (3).

2. Characterize the nature and extent of the release and any relevant site conditions that may affect the remedy ultimately selected. The characterization shall include a complete and accurate assessment of the corrective measures necessary to effectively prevent and remediate all releases from the CCR landfill.

3. Install additional monitoring wells necessary to define the contaminant plumes.

4. Collect data on the nature and estimated volume of leachate including specific information on the constituents listed under ch.

NR 507, Appendix I, Table 3 and the concentrations at which the constituents are present in the landfill leachate.

5. Install at least one additional monitoring well at the property boundary in the direction of contaminant migration and sample this well in accordance with par. (b).

6. Sample all wells in accordance with par. (b) to characterize the nature and extent of the release.

7. Notify all property owners and residents on land that directly overlies any part of the plume of contamination if contaminants have migrated off-site as indicated by sampling of wells in accordance with subd. 6. The owner or operator shall provide the department with copies of the notifications within 60 days of their certified delivery to the affected property owners or residents.

(f) Within 60 days of finding that one or more constituents in the assessment monitoring are detected at levels at or above a PAL, ACL, or ES in any sampling event according to s. NR 140.14 and the value is confirmed, the owner or operator shall do one of the following:

1. Develop a site investigation workplan in accordance with ss. NR 716.05 to 716.11 and submit it to the department within 60 days of confirming an exceedance of a PAL, ACL, or ES in accordance with s. NR 716.09 (1) and containing the information required under s. NR 716.09 (2). The department shall review the submitted work plan within 30 days and respond or direct the owner or operator to proceed without departmental review of the submitted work plans in accordance with s. NR 716.09 (3). The owner or operator shall initiate a site investigation within 90 days of submittal of the workplan to the department in accordance with s. NR 716.11 (2g). The owner or operator shall then submit a site investigation report in accordance with ss. NR 716.15 to 716.17 to the department within 60 days of completing the site investigation and receipt of laboratory data in accordance with s. NR 716.15 (1). The department may impose additional requirements on the owner or operator based on the results of the site investigation in accordance with s. NR 716.17 including implementation of an immediate or interim action in accordance with ch. NR 708, if warranted. If a site investigation report is submitted under s. NR 716.15, the report shall include proof of financial responsibility to comply with s. NR 520.05 (1).

2. Submit a report to the department that demonstrates that a source other than the CCR landfill caused the contamination, or that the groundwater standard exceedance resulted from error in sampling, analysis, or natural variation in background groundwater quality. The report shall include the factual or evidentiary basis for any conclusions. The department shall review the submitted report within 30 days and respond with either a denial or acknowledgement that the owner or operator successfully demonstrated that an alternate source was responsible for the exceedances. If the department determines that the owner or operator did not successfully demonstrate that the exceedances were the result of a source other than the CCR landfill, the owner or operator shall develop a site investigation workplan in accordance with subd. 1. If a successful demonstration is made, as determined by the department, the owner or operator shall continue monitoring in accordance with the assessment monitoring program and may return to detection monitoring if the constituents under ch. NR 507, Appendix I for CCR wells are below the groundwater protection standards. The owner or operator shall include the report required under this subdivision in the annual groundwater monitoring and corrective action report required under par. (a).

**(3) REMEDIAL ACTION OPTIONS.** (a) Upon confirmation of a release from a CCR landfill or confirmation under s. NR 508.06 (2) that a PAL, ACL, or ES has been attained or exceeded at any CCR well according to s. NR 140.14 and an alternate source was not demonstrated in accordance with sub. (2) (f) 2., the owner or operator shall evaluate and select remedial action options and develop a remedial action options report in accordance with ch. NR 722 to assess potential corrective measures to prevent further

releases, to remediate any releases, and to restore the affected area to original conditions if possible. The department may not grant the owner or operator of any CCR landfill an approval to prepare or submit a risk assessment under s. NR 722.11. Any soil contamination shall be addressed in accordance with the requirements under ch. NR 720. The initial remedial action options report shall be completed and submitted to the department within 90 days of the confirmation of a release from the CCR landfill in accordance with s. NR 722.13, unless the department determines that additional time to complete the report is needed due to site-specific conditions or circumstances. The 90-day deadline to complete the assessment of remedial action options may be extended by the department for no longer than an additional 60 days. The owner or operator shall submit an updated evaluation of the remedial action options based on the findings of the site investigation in an addendum to the initial remedial action options report to the department within 60 days of the submittal of the site investigation report required under sub. (2) (f) 1. The remedial action options report, any addendum, and department response shall be placed in the written operating record under s. NR 506.17 (2) and posted on a publicly accessible internet site under s. NR 506.17 (3). The owner or operator shall also include a copy of the remedial action options report and any addendums in the annual groundwater monitoring and corrective action report.

(b) The owner or operator of the CCR landfill shall continue to monitor groundwater in accordance with the assessment monitoring program under sub. (2) until completion of the remedy and case closure under sub. (5).

(c) The owner or operator shall also submit an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under par. (a) and address all of the following in the remedial action options report submitted to the department under ch. NR 722:

1. The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination.

2. The time required to begin and complete the remedy.

3. The institutional requirements, such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy.

(d) The department shall respond to the submission of the remedial action options report required under ch. NR 722 in accordance with s. NR 722.15.

(e) The department shall hold a public informational hearing to discuss the results of the remedial action options report with interested and affected parties at least 30 days prior to the selection of a remedy.

**(4) REMEDIAL ACTION SELECTION.** (a) Based on the results of the remedial action options evaluation, the owner or operator shall select a remedy that, at a minimum, meets the standards listed under par. (b) and meets the requirements under ch. NR 722 for the selection of remedial actions. The owner or operator shall describe the selected remedy in the remedial action options report and include a section indicating how the selected remedy meets the standards specified under par. (b).

(b) Any chosen remedial action shall meet all of the following standards:

1. Be protective of human health and the environment.

2. Be shown to have the ability to attain the groundwater protection standards under ch. NR 140.

3. Control the source or sources of releases to reduce or eliminate, to the maximum extent feasible, further releases of constituents under ch. NR 507, Appendix I for CCR landfills into the environment.

4. Remove from the environment as much of the contaminated material that may have been released from the CCR landfill



as is feasible, accounting for factors such as avoiding inappropriate disturbance of sensitive ecosystems.

5. Comply with standards for management of wastes as specified under ch. NR 506 for CCR material.

(c) In selecting a remedy that meets the standards under par. (b), the owner or operator of the CCR landfill shall consider all of the following evaluation factors:

1. The long- and short-term effectiveness and protectiveness of the potential remedy or remedies, along with the degree of certainty that the remedy will prove successful based on consideration of all of the following:

- a. The magnitude of reduction of existing risks.
- b. The magnitude of residual risks in terms of likelihood of further releases due to CCR remaining following the implementation of a remedy.
- c. The type and degree of long-term management required, including monitoring, operation, and maintenance.
- d. The short-term risks that might be posed to the community or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and re-disposal of the contaminant.
- e. The time until full protection will be achieved.
- f. The potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment.
- g. The long-term reliability of the engineering and institutional controls.
- h. The potential need for replacement of the remedy.

2. The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of all of the following factors:

- a. The extent to which containment practices will reduce further releases.
  - b. The extent to which treatment technologies may be used.
3. The ease or difficulty of implementing a potential remedy based on all of the following types of factors:
- a. The degree of difficulty associated with constructing the technology.
  - b. The expected operational reliability of the technology.
  - c. The need to coordinate with and obtain necessary approvals and permits from other municipalities, programs, or agencies.
  - d. The availability of necessary equipment and specialists.
  - e. The available capacity and location of needed treatment, storage, and disposal services.
  - f. The degree to which community concerns are addressed by a potential remedy.

(d) The owner or operator shall specify, as part of the selected remedy in the remedial action options report, a schedule for implementing and completing the selected remedial activities. The owner or operator shall propose in the schedule the completion of remedial activities within a reasonable period of time, subject to approval by the department. The owner or operator of the CCR landfill shall consider all of the following factors in determining the schedule for implementing and completing the selected remedial activities:

1. The extent and nature of contamination.
2. The reasonable probabilities of remedial technologies in achieving compliance with the ch. NR 140 groundwater protection standards and other objectives of the remedy.
3. The availability of treatment or disposal capacity for CCR managed during implementation of the remedy.

4. The potential risks to human health and the environment from exposure to contamination during implementation of the remedy.

5. The resource value of the aquifer, including all of the following:

- a. Current and future uses.
  - b. Proximity and withdrawal rate of users.
  - c. Groundwater quantity and quality.
  - d. The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to CCR constituents.
  - e. The hydrogeologic characteristic of the facility and surrounding land.
  - f. The availability of alternative water supplies.
6. Any other factors determined by the department.

(e) The department shall respond to the submission of the remedial action options report required under sub. (3) in accordance with s. NR 722.15.

**(5) REMEDIAL ACTION IMPLEMENTATION.** (a) Within 90 days after the department approves a remedy from the remedial action report under sub. (4), the owner or operator shall initiate remedial activities. Based on the schedule established under sub. (4) (d) for implementation and completion of remedial activities, the owner or operator shall do all of the following:

1. Establish and implement a corrective action groundwater monitoring program that, at a minimum, meets the requirements of an assessment monitoring program under sub. (2), documents the effectiveness of the corrective action remedy, and demonstrates compliance with the groundwater protection standards under ch. NR 140.

2. Implement the corrective action remedy selected by the department under sub. (4).

3. Take any interim measures necessary to reduce the contaminants leaching from the CCR landfill and potential exposures to human or ecological receptors. Interim measures shall, to the greatest extent feasible, be consistent with the objectives of and contribute to the performance of any remedy approved by the department under sub. (4). All of the following factors shall be considered by an owner or operator in determining whether interim measures are necessary:

- a. The time required to develop and implement a final remedy.
- b. The actual or potential exposure of nearby populations or environmental receptors to any of the constituents detected under ch. NR 507, Appendix I, Tables 1A, 3, and 4.
- c. The actual or potential contamination of drinking water supplies or sensitive ecosystems.
- d. Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously.
- e. Weather conditions that may cause any of the constituents detected under ch. NR 507, Appendix I, Tables 1A, 3, and 4 to migrate or be released.

f. The potential for exposure to any of the constituents listed under ch. NR 507, Appendix I as a result of an accident or failure of a container or handling system.

g. Any other situations that may pose threats to human health and the environment.

(b) If, at any time, the department determines that compliance with the requirements under ch. NR 140 in accordance with ending a remedial action under ch. NR 726 are not being achieved through the remedy selected, the department shall direct the owner or operator in writing to propose an alternative remedy or other methods or techniques that could feasibly achieve compliance with the requirements to the department in accordance with sub. (4).

(c) A remedy selected under sub. (4) shall be considered complete when the department determines all of the following:

1. The groundwater protection standards under ch. NR 140 have been achieved at all points within the plume of contamination that lie beyond the groundwater monitoring well system established at the CCR landfill.

2. The owner or operator of the CCR landfill has demonstrated that concentrations of constituents detected under ch. NR 507, Appendix I, Tables 1A, 3, and 4 have not exceeded the groundwater protection standards under ch. NR 140 for a period of 3 consecutive years.

3. All actions required to complete the remedy have been sat-

isfied.

(d) Upon completion of the remedy, the owner or operator shall notify the department in accordance with s. NR 507.30 (1). The notification shall be submitted to the department under s. NR 506.17 (4), placed in the written operating record under s. NR 506.17 (2) and posted on a publicly accessible internet site under NR 506.17 (3). The owner or operator shall apply to the department for a case closure under ch. NR 726.

**History:** CR 21-076: cr. Register July 2022 No. 799, eff. 8-1-22; correction in (2) (b), (c), (f) 1., (3) (a), (4) (c) 3. b. made under s. 35.17, Stats., Register July 2022 No. 799.