

# Implementing Assessment Monitoring (NR 508.05)



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**Description:** This guidance interprets s. NR 508.05, Wis. Adm. Code, which requires the owner or operator of a landfill to conduct an assessment monitoring program when a groundwater standard is attained or exceeded at a designated Subtitle D monitoring well.

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Under s. NR 507.15(2), Wis. Adm. Code, Subtitle D wells are required at landfills which accepted municipal solid waste on or after October 9, 1993, except facilities which received less than 100 tons per day on an annual basis and which ceased accepting solid waste prior to April 9, 1994.

A small number of landfills have associated "Subtitle D" groundwater monitoring wells that currently have groundwater quality standard exceedances that may trigger assessment monitoring. Although the requirements for assessment monitoring are described in NR 507 and NR 508, the purpose of this guidance is to clarify some of these requirements that may cause confusion and to establish guidance on other aspects of assessment monitoring.

Keep in mind that the NR 500 series codes now take precedence over Subtitle D requirements, since the NR 500 series has been revised and EPA has approved the wording in the series as meeting the intent of Subtitle D.

1. The basis of assessment monitoring requirements is a confirmed public health, welfare, or detection (indicator) groundwater quality standard exceedance at a Subtitle D well as required in the first paragraph of NR 508.05. What do we mean by "confirmed"?

Adm. Code Confirmation is defined using the ordinary meaning of the term as set forth in a note that follows both ss. NR 508.04 and 508.05.

Note: NR 140.14 outlines an alternative method of evaluating groundwater monitoring data that our program has generally not used. This approach utilizes a valid statistical procedure "to determine if a change in the concentration of a substance has occurred" (i.e., is the exceedance statistically valid?) using a test with a significance level of 0.05.

Guidance A groundwater standard (PAL, ES, or ACL) exceedance is considered to be confirmed when a groundwater standard for a substance has been attained or exceeded in a well in at least two consecutive sampling rounds, with at least one occurring on or after July 1, 1996.

Staff Discretion Staff may exercise professional judgement to decide if the exceedance is confirmed, based on the validity of the results and the circumstances of the sample collection and analysis.

2. How and when does DNR notify landfill owners that they must begin assessment monitoring?

Adm. Code The code doesn't specifically require the department to notify owners. However, NR 140.14(1)(a) and NR 507.30 require the owner to notify the Department of an exceedance of a groundwater standard. If the exceedance is at a Subtitle D well, NR 508.05 is self-implementing: the owner must begin assessment monitoring if the exceedance is confirmed and if the owner doesn't successfully demonstrate that the confirmed exceedance is a false exceedance. Section NR 507.30 requires that the landfill owner submit to us the monitoring results and two copies of the exceedance notification within 60 days of the end of the sampling period. (The end of the sampling period is the end of the month in which sampling is required.)

Guidance If the landfill owner does not begin assessment monitoring as required, the hydrogeologist assigned to the landfill with a confirmed exceedance should then send a letter reminding the owner of the self-implementing assessment monitoring requirements. If the owner does not comply with the assessment monitoring requirements, we may use the Department's stepped enforcement process by sending a notice of noncompliance or notice of violation.

The reminder letter, which could be a standard letter revised for the specific situation, would state that the owner must begin assessment monitoring with the next sampling round unless the owner chooses to try to demonstrate that a false exceedance has occurred. We would also mention in the letter that all assessment monitoring samples being analyzed for metals must be unfiltered and obtained using the low-flow sampling technique (see NR 508.05(3)(d)).

Historical perspective EPA, in Subtitle D requirements, established notification deadlines that differ from those in NR 507 and 508. Subtitle D requires that owners put a notice in the operating record within 14 days of receiving a sample result that exceeds a groundwater standard. They must also notify DNR of the sample result and their action. However, as noted at the beginning of this guidance, the 1996 NR 500 series revisions have been approved by EPA, so our administrative code takes precedence over Subtitle D requirements. As noted above, we require, in NR 507.30, that the landfill owner submit to us the monitoring results and two copies of the exceedance notification within 60 days of the end of the sampling period.

3. After confirmation of the exceedance, the landfill owner or operator has the opportunity to demonstrate that a false exceedance has occurred. What is a false exceedance?

Adm. Code Sections NR 508.05 and 507.28(3) contain information on false exceedances and their demonstration. (See NR 140.16(3) for related but different information on addressing invalid groundwater monitoring results.) Demonstration of a false exceedance can be based on: (1) the source of the confirmed exceedance is something other than the landfill; or (2) the confirmed exceedance is the result of error (for example, sampling, laboratory, or data management errors). The owner must first include the notification of the intent to make the demonstration with the notification to the Department of the groundwater standard exceedance(s). The owner must then submit the written demonstration with the results of the next routine groundwater monitoring. We have 30 days to concur with the demonstration, in which case no assessment monitoring is necessary, or to not concur, in which case assessment monitoring must begin with the next routine groundwater monitoring.

Guidance No additional guidance is needed since the code is explicit on these requirements.

Staff discretion Staff have the responsibility to decide if an exceedance is valid or false, based on the demonstration submitted.

Also note that the staff assigned to a landfill are not expected to be immediately aware of an exceedance at a Subtitle D well if an owner fails to notify us within the deadlines contained in NR 507.30. However, we should remind the owner of assessment monitoring requirements when we become aware of an exceedance through routine monitoring data review or review of a submittal. To accomplish this, we will generate summary/exceedance reports on Subtitle D wells periodically to identify exceedances at these wells.

4. When and at which wells does a landfill owner have to begin assessment monitoring after a confirmed exceedance at a Subtitle D well?

Adm. Code The landfill owner, to comply with NR 508.05, must continue detection monitoring AND either start assessment monitoring with the next routine groundwater sampling round OR try to demonstrate that the value was a false exceedance. As noted above, the written demonstration must be submitted to us with the results of the routine monitoring event following the exceedance. If we concur within 30 days that the result was a false exceedance, no assessment monitoring is necessary. If we do not concur with the demonstration within 30 days of submittal, the owner must start assessment monitoring at all Subtitle D wells with the next routine monitoring event.

This means that the first round of assessment monitoring would start with the second round of routine sampling following the first confirmed exceedance, if the owner is unsuccessful in his/her demonstration of a false exceedance. If groundwater is monitored on a semi-annual basis at a facility, assessment monitoring would begin one year after the first confirmed exceedance. If the owner does not attempt to demonstrate that a false exceedance has occurred, assessment monitoring would start with the first round of routine sampling following the first confirmed exceedance. This would be six months after the first confirmed exceedance on a semi-annual monitoring basis.

Note: While detection and assessment monitoring are occurring, the owner must also respond to the exceedance in accordance with ss. NR 508.04 and NR 140.24 or 140.26 and, if required, with ss. NR 716.05 to 716.11 and ss. 716.15 to 716.17.

Guidance & Staff Discretion No departures or clarifications of the code are necessary at this time.

Historical Perspective Subtitle D contains the requirement that the owner must start assessment monitoring within 90 days of receiving the exceedance results, unless they can demonstrate that the facility is not the cause of a value exceeding groundwater standards. However, as noted at the beginning of this guidance, the 1996 NR 500 series revisions have been approved by EPA, so our administrative code takes precedence over Subtitle D requirements.

5. When can the facility stop assessment monitoring?

Adm. Code A facility owner can request in writing to end assessment monitoring, according to NR 508.05(4). We would approve this request if two consecutive semi-annual monitoring results of all parameters detected in leachate and Subtitle D wells after July 1, 1996 (see NR 508.05(3)(c)) are below groundwater quality standards in all Subtitle D wells.

Guidance and Staff Discretion As noted above, NR 508.05(3)(a) requires that all Subtitle D wells for a facility must initially be included in assessment monitoring, regardless of whether each of the wells had a confirmed exceedance. However, if no groundwater standard exceedances occur in the first two rounds of assessment monitoring for a specific Subtitle D well, staff may, by exercising professional judgement, authorize the owner or operator to cease assessment monitoring at that specific well.

6. How flexible can we be with respect to assessment monitoring?

In addition to the information on department flexibility noted above, the following items also impact our flexibility in implementing assessment monitoring.

Adm. Code Section NR 508.05(2) allows us to approve alternative assessment monitoring programs if exceedances are limited to inorganic detection monitoring parameters (see Table 1, Appendix I, NR 507). The alternative program consists of monitoring for the metals designated "baseline groundwater monitoring public health parameters", excluding nitrate and nitrite (as nitrogen), in Table 3, Appendix I, NR 507.

Assessment monitoring is required, regardless of how the contaminants migrated to the groundwater. That is, it is irrelevant whether the confirmed exceedance is the result of, for example, leachate migration through the bottom of the landfill, from surface seeps and infiltration, or from gas migration and subsequent condensation and contamination of groundwater.

Guidance Section NR 508.05(3) allows the first round of assessment monitoring to be limited to the parameters detected in an annual leachate analysis. Under this portion of the code, an owner could monitor leachate once for Appendix II parameters between July 1, 1996 (when the revised NR 500 series rules became effective) and July 1, 1997 and use the results to choose assessment monitoring parameters for the Subtitle D wells. For exceedances first confirmed after July 1, 1997, leachate would have had to have been monitored in that first year (7/1/96 to 7/1/97) and in each succeeding year for Appendix II parameters in order for the detected leachate parameters to suffice for Subtitle D well assessment monitoring. In the absence of a leachate monitoring program meeting the requirements of NR 507.21(2) and NR 508.05, the owner must initially monitor the Subtitle D wells at a municipal solid waste landfill for all of the parameters in Appendix II of NR 507.

Note that we strongly prefer assessment monitoring for Appendix II parameters in groundwater to monitoring leachate parameters. Leachate analyses often have higher detection limits than groundwater analyses because of the higher concentrations of leachate constituents. As a result, parameters may not be detected in leachate that could be detected in groundwater.

## 7. Miscellaneous Information

Problem Compounds We have had some difficulty interpreting assessment monitoring results for the plasticizer di (2-ethylhexyl) phthalate (DEHP) (parameter number 39100) and arsenic. We've seen DEHP levels above groundwater standards in wells near at least four different landfills and have had difficulty determining whether the DEHP is caused by the landfill in question or has leached from the well casing, sampling equipment or laboratory equipment. Background levels of arsenic are elevated in some parts of the state, so it is difficult to determine the cause of elevated arsenic levels near landfills.

Role of NR 140 We can continue to use ch. NR 140 as our main tool for investigations and remedial actions, in conjunction with chs. NR 507, NR 508, and the NR 700 code series.

Contiguous Landfill Areas; Multiple Landfills On One Property In applying assessment monitoring requirements, we consider a landfill with contiguous waste fill areas to be one landfill under ch. NR 508. We don't distinguish between lined vs. unlined cells, etc. On the other hand, if two landfills are close to each other but not contiguous, then they can be treated as two landfills, depending on the circumstances.

**Contact 608/266-2111 or [DNRWasteMaterials@Wisconsin.gov](mailto:DNRWasteMaterials@Wisconsin.gov) for further information.**

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