

Volatile Organic Compound Parameters for Landfill Gas Monitoring at Municipal Solid Waste Landfills Guidance Document (PUB-WA 1701)

Summary of Changes Based on Public Comments

Thank you to all of the individuals and groups that provided feedback on the Department of Natural Resources (Department) proposed new guidance titled, "Volatile Organic Compound Parameters for Landfill Gas Monitoring at Municipal Solid Waste Landfills".

The Department made the following changes based on the feedback:

1. Deleted two duplicate parameters (1,1,2,2-Tetrachloroethane and 1,3,5-Trimethylbenzene) from the parameter list and corrected the parameter code for Methylene chloride.
2. Deleted Chlorodifluoromethane, 1,1,2-Trichloro-1,2,2-trifluoroethane, and 1,2-Dichloro-1,1,2,2-tetrafluoroethane from the parameter list.

If you have any questions regarding these changes, please contact Valerie Joosten at (920) 662-5486 or Valerie.Joosten@Wisconsin.gov.

Response to Public Comments

For additional information we are also providing a response below to all of the public comments received. The comments have been summarized below.

- Comment: Current plan of operations for landfills all over Wisconsin all have yearly budgeted costs for current VOC test methods TO-14 or TO-15. It will be interesting to know what additional costs laboratories will now have to charge for extra VOCs not on the current methods.

Response: The majority of the parameters included in the guidance are included on the method TO-15 list, which is more inclusive than the TO-14A parameter list. It is our understanding that those parameters not on the method TO-15 list can still be obtained using method TO-15 or TO-14A and in some cases are already being included by landfills. During the development of this guidance, the Department verified the difference in costs between methods TO-14A and TO-15 with two different laboratories. It is our understanding that if a landfill currently using method TO-14A needs to switch to method TO-15 the cost difference is limited (\$0 to \$20). A number of landfills already use method TO-15.

- Comment: When this guidance gets finalized, we agree that it would be very helpful if WDNR would require the most consistent and inclusive VOCs method (i.e. TO-15 method vs TO-14A or TO-14 methods) so that all of the landfills are consistent.

Response: The proposed parameter list is consistent with a condition currently included in a number of plan of operation approvals where VOC gas monitoring is required. The condition provides some flexibility in determining the test method for volatile organic compounds by specifying EPA Test Method TO-14A or TO-15, or similar methods as approved by the Department. The intent of establishing the list included in this guidance is to provide the desired consistency among landfills. Specifying the list included in method TO-15 would include more parameters than necessary and exclude some parameters of importance to the Department. We

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agree that any inconsistent plan of operation approvals should be modified when the opportunity arises.

- Comment: GEMS Parameter Code 99163 is for 1,1,1,2-Tetrachloroethane (in as 1,1,2,2-Tetrachloroethane). GEMS Parameter Code 99032 is in the table twice. GEMS Parameter Code 99347 is in as Methylene Chloride (Chloromethane), it should be Dichloromethane in parenthesis.

Response: The corrections were made as noted previously.

- Nine of the proposed parameters in the guidance may be inconsistent with the definition of VOCs contained in NR 400.02(162):
 3. Methylene chloride (Dichloromethane).
 4. 1,1,1-Trichloroethane (Methyl chloroform).
 5. Trichlorofluoromethane (CFC-11).
 6. Dichlorodifluoromethane (CFC-12).
 7. Chlorodifluoromethane (HCFC-22).
 9. 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113).
 10. 1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114).
 23. Acetone.
 24. Perchloroethylene (Tetrachloroethylene).

Response: We agree that the above parameters are excluded from the regulatory definition of VOCs according to s. NR 400.02(162)(a), Wis. Adm. Code. It is our understanding that the parameters have been excluded from the ch. NR 400 definition since they have been shown to have negligible photochemical reactivity. However, the parameters mentioned above are included as VOCs on the method TO-14A or TO-15 lists with the exception of Chlorodifluoromethane. The proposed list of VOCs for gas monitoring at landfills was developed based on additional considerations including potential impacts to groundwater or surface water, whether the parameter is currently required by air permits and for evaluating the waste degradation process inside the landfill. After further evaluating the above parameters we determined that Chlorodifluoromethane, 1,1,2-Trichloro-1,2,2-trifluoroethane, and 1,2-Dichloro-1,1,2,2-tetrafluoroethane could be removed from the list since they are not frequently detected in landfill gas or would provide limited additional benefit. In some cases Chlorodifluoromethane may still be required by a landfills air permit.

- In some cases it may make sense to test for the parameters that are tested in the detection monitoring program to help determine if they are related to landfill gas. The standard list from the laboratory or from the EPA method has served this purpose well to date. The value of adding VOCs to the gas testing that are not part of the NR 507 appendix III list (groundwater detection monitoring list) would seem to have questionable value. The new VOC guidance is showing 68 VOCs while the groundwater detection monitoring contains 42 VOCs.

We recommend that DNR adopt inconsistencies in the parameter lists and add parameters only to the extent justified by the likelihood of detecting an exceedance of a parameter at levels injurious to public health.

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Response: The proposed list includes the majority of the parameters included in ch. NR 507, Wis. Adm. Code Appendix III. As mentioned above, potential impacts to groundwater was one of the items taken into consideration in the development of the proposed list. We noted variation among the monitoring parameters included by landfills based on which list was being used and whether additional parameters were added. The intent of this guidance is to address the inconsistencies and ensure the necessary parameters are included.