



State of Oregon Department of Environmental Quality
Discussion Responses

Landfill Gas Emissions 2021 Rulemaking Advisory Committee Meeting #3

The Landfill Gas Emissions rulemaking will limit and reduce greenhouse gas emissions from landfills in Oregon. DEQ has developed draft rules that are at least as stringent as the California Landfill Methane Regulations and include operational requirements in EPA rules regarding landfill gas emissions as well as additional Oregon-specific requirements.

In the Feb. 25, 2021 Rules Advisory Committee (RAC) meeting, the draft landfill gas emission rules were discussed. Below, DEQ has consolidated the discussion into several overall discussion topics and discusses any proposed modifications to the rules based on this discussion.

Discussion Topic 1: Age of landfills covered by the rules

The California Landfill Methane Rules apply to landfills that have received waste since Jan. 1, 1977. The California rules were adopted June 17, 2010 – almost 11 years ago. The federal rules apply to landfills that have received waste since Nov. 8, 1987. One RAC member recommended considering delaying the landfill applicability year by 11 years to account for the time since the California rules were adopted.

DEQ Consideration

The new Oregon rules must be as stringent as the federal rules; therefore Oregon cannot adopt a landfill applicability threshold beyond Nov. 8, 1987.

DEQ reviewed data from DEQ’s Materials Management Program on landfills with solid waste disposal permits. Based on this data, there are four landfills that received waste after 1977 but before 1987. Based on the available data, 3 of the 4 landfills would not trigger the methane generation rate and would therefore not be required to provide additional data. One landfill, Newberg Landfill, exceeds the methane generation rate. However, the rate is close enough to the threshold rate (664 tons/year) that it is unlikely the landfill would ultimately be required to install a landfill gas collection and control system (GCCS). These landfills are listed below.

Table 1: Landfills closed between 1977 and 1987 and the estimated Methane Generation Rate.

Landfill Name	Closure Year	Waste-in-Place, tons	Estimated MGR (tons/year) ¹	Estimated MGR with Oxidation (tons/year) ²	Notes
Newberg Landfill	1984	2,800,000	1,156.4	867.3	Site received approximately 200,000-300,000 cy/yr of municipal waste between 1963-1984. Capped with 2-6 feet of soil cover.
Rossmann's Landfill, Inc.	1983	2,000,000	860.2	559.1	Site received approximately 2 million tons (total) municipal waste between 1969 and 1983.

H.G. Lavelle Landfill	1982	1,472,000	436		Site received approximately 147,200 tons/year between 1972-1981 ³ . Mostly C&D waste but with ground wood residue as daily cover.
Whiteson Landfill	1982	350,000	113		Site received approximately 350,000 tons (total) municipal waste between 1973-1983.
Warrenton Landfill	1986	Unknown			5 acre site. Received waste approximately 1965 to 1985. Methane is not detected during monthly surface level methane monitoring. Due to size and surface monitoring, not expected to exceed MGR.

1: Estimated based on information in the notes, using EPA's HH-1 Calculation Spreadsheet

2: Calculated using site information and EPA's HH-5 Calculation Spreadsheet

3: Metro Report. *Our Landfill Legacy, Metro-area landfills closed since 1960 and their impact on the region's urban and natural environment*. March 2004. Prepared by Engineering and Environmental Services Solid Waste and Recycling Department. Metro MGR = Methane generation rate based on a reporting year of 2022.

DEQ Conclusion

DEQ proposes to modify the initial applicability date to Nov. 8, 1987.

Potential methane emission impacts from changes:

DEQ does not anticipate that this rule modification will allow increased methane emissions over the original proposed rules or compared to the California rules.

Discussion Topic 2: Size threshold for landfills covered by the rules

RAC members asked where the 450,000 ton waste-in-place threshold came from in the California Rules. RAC members also asked if a lower threshold would provide additional benefit and recommended DEQ did a more thorough analysis of the appropriate waste-in-place threshold.

DEQ Consideration

The worst case scenario for methane generation from a new landfill would be a large amount deposited the first year in the western part of Oregon (due to the higher precipitation amounts). Table 1 provides the size of the waste deposition required for the three different k-values (precipitation amounts) to see how large the waste mass would need to be to results in the methane generation rate of 664 tons/year. Table 2 provides a list of landfills that have between 200,000 and 408,000 tons of waste-in-place¹.

Table 2: Metric tons deposited in one year to result in 664 metric tons/year methane, based on precipitation.

Metric tons	Short tons	K value	K value basis - Precipitation plus leachate recirculation amount (inches per year)
503,000	554,000	0.02	<20
267,000	294,000	0.038	20-40
179,800	198,000	0.057	>40

¹ Data provided by DEQ's Materials Management Program. Waste-in-Place data only goes back to 1990.

Table 2: Landfills with greater than 200,000 tons but less than 408,000 tons of waste-in-place.

Landfill Name	County	Landfill Type	Waste-in-Place, tons
Esco Sauvie Island	Multnomah	Active Industrial	406,390
POTB Wood Waste Landfill	Tillamook	Active Industrial	363,499
Roseburg Forest Products Dillard Disposal Site	Douglas	Active Industrial	337,117
South Coast Lumber	Curry	Active Industrial	309,254
Boise Cascade Wood Products, LLC - Elgin Complex	Union	Active Industrial	284,306
Lytle Boulevard Landfill	Malheur	Active Municipal	200,468

DEQ Conclusion

DEQ proposes to lower the waste-in-place threshold to 200,000 short tons.

Potential methane emission impacts from changes:

As smaller landfills are being required to track methane emissions and potentially conduct surface emission monitoring or install a GCCS, this change should reduce overall methane emissions as compared to the original proposed rules or compared to the California rules. The actual reduction will be assessed as additional data is reported.

Discussion Topic 3: Data collection

RAC members discussed the need to collect more data.

DEQ Consideration

DEQ agrees that data collection is an important part of this rulemaking.

DEQ Conclusion

DEQ proposes to require all landfills to submit data on amounts of waste received as well as the characterization of the waste received. This requirement is specified in the requirements for the Waste-In-Place Report in OAR 340-239-0700.

DEQ proposes to require that, upon exceeding the 200,000 ton waste-in-place threshold, all landfills must conduct one round of surface emission monitoring. For landfills where the calculated methane generation rate is less than 664 metric tons per year, the owner or operator may use a 100-foot spacing. The 100 foot spacing is intended to reduce the impact of this additional requirement. This information may be used in the future to analyze actual surface emissions from smaller landfills.

DEQ proposes to require landfill owners or operators that are submitting a Methane Generation Rate Report also include a summary of efforts being implemented at the landfill to reduce landfill gas emissions. There is no requirement to make any specific effort; however, this data will help DEQ assess what efforts are being taken and if they are effective.

Potential methane emission impacts from changes:

DEQ does not anticipate any changes in the potential methane emissions from these proposed changes to the draft rules. The additional data collection will assist DEQ analyze methane emissions from landfills in the future.

Discussion Topic 4: Open Flares

The RAC members discussed the use of open flares at landfills, how they are integral parts of landfill operations. RAC members also advised to minimize the use of open flares as much as possible since they are the most uncontained control.

DEQ Consideration

The draft rules already allow open flares in certain, limited situations, past Jan. 1, 2024. DEQ agrees that there should be some flexibility allowed to use open flares when they are the best option for controlling emissions and they do not result in increased emissions.

DEQ Conclusion

DEQ has made a small typographical modification to the rules to clarify that open flares will be allowed under certain conditions past Jan. 1, 2024. DEQ also provided language allow open flares using the alternative compliance option pathway. This pathway requires landfill owners or operators to use alternative methods as long as certain conditions are met, including verification that methane emissions are not increase.

Potential methane emission impacts from changes:

DEQ does not anticipate any changes in the potential methane emissions from these proposed changes to the draft rules.

Discussion Topic 5: Temporary Shutdown of GCCS

RAC members asked for clarification on what is considered a temporary shutdown of the GCCS and what the required notification is.

DEQ Consideration

The draft rules require notification within 10 days of shutdown due to emergency, catastrophic event, or landfill fires. All other shutdown notifications must be included in the annual report.

DEQ must be notified 30 days in advance of shutdowns scheduled to connect new landfill gas collection system components to the existing system, to perform construction activities pursuant to OAR 340-239-0300, or to conduct performance testing.

Other periods of startup, shutdown, and malfunction must be reporting in the semi-annual report.

In general, GCCS downtimes less than 1-hour do not need to be reported.

DEQ Conclusion

DEQ added language indicating that shutdowns due to any emergency require notification. DEQ did not make any additional changes to the rules based on this discussion.

Discussion Topic 6: Penetration Monitoring

RAC members discussed penetration monitoring and if a reduced monitoring schedule could be included in the rules. The justification for the reduction was that leaks at penetration, once fixed, generally do not have new leaks for many years. DEQ requested additional data on this topic.

DEQ Consideration

The Oregon rules must be as stringent as the federal rules. Federal rules require quarterly penetration monitoring. So the Oregon rules would only be able to lessen the penetration monitoring schedule for landfills with a design capacity less than 2.5 million megagrams and 2.5 million cubic meters.

DEQ Conclusion

To-date, DEQ has not received any information on penetration monitoring results. At this time, DEQ is not proposing any changes to the draft rules.

Discussion Topic 7: Phased Shutdown and Post Shutdown Monitoring OAR 340-239-0400

RAC members discussed the addition of post GCCS shutdown surface emission monitoring. RAC members asked if shutdown activities could happen in a phased manner.

DEQ Consideration

DEQ agrees the phased shutdown and post-shutdown surface emission monitoring is a reasonable approach.

DEQ Conclusion

DEQ added language to reflect that the post-shutdown monitoring can occur at closed areas of the landfill.

Potential methane emission impacts from changes:

DEQ does not anticipate any changes in the potential methane emissions from these proposed changes to the draft rules.

Discussion Topic 8: Surface Emission Monitoring

RAC members discussed that the 25-foot spacing for the surface emission monitoring is quite onerous, especially for closed landfills that do not have a source of income.

DEQ Consideration

DEQ understands the concerns; however this is in alignment with the California rules and has the potential to significantly decrease methane emissions from landfills as additional cover leaks are discovered and remedied.

DEQ Conclusion

DEQ is not proposing to make any changes to the rules based on this discussion.

Alternative formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.