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Re: Comment Period for 173-408 WAC Landfill Methane Emissions

Thank you for this opportunity to provide comments on the draft rules to reduce methane emissions from landfills.

Although I'm now retired, I worked for close to 25 years on waste prevention and recycling issues for local governments and a statewide non-profit. I'm currently volunteering with the 350 WA Civic Action Team, which advances socially equitable solutions to the climate crisis. However, the following comments solely represent my personal perspectives and recommendations.

I appreciate the improvements Department of Ecology has made on these draft rules from the earlier informal draft. However, as we watch the climate emergency becoming more and more severe, it's clear that we are running out of time. Methane is a potent greenhouse gas and landfills are a major source of methane in Washington. We need to act as boldly and quickly as we are able. I therefore urge the Department of Ecology to take full advantage of this opportunity to reduce methane emissions from Washington's landfills by further strengthening these draft rules. The stronger these rules, the greater the impact on methane. Every fraction of a degree increase that we can prevent is critical.

#### Applicable landfills

Limited purpose landfills, especially those that contain organic materials such as CDL and wood, can emit significant amounts of methane. It's important that those landfills be covered by these rules so that methane emissions are monitored and so that gas collection and control systems are implemented where needed. Although the underlying law does not explicitly refer to limited purpose landfills, it can be argued that the law language is broad enough to cover them. I therefore urge Department of Ecology to finalize rules that cover limited purpose landfills.

#### Surface emissions monitoring

It's critically important to get the monitoring requirements right. Landfills settle and shift, so frequent and comprehensive monitoring is needed. I was extremely

concerned to read a recent [Grist article](#) describing how EPA inspections at certain Washington landfills found excessive levels of methane emissions. Some readings showed concentrations above 10,000 parts per million, more than 20 times higher than the federal limit.

Unfortunately, the proposed draft rules do not require comprehensive monitoring and instead would lock in an ineffective and often unsafe system relying on humans walking a grid pattern to search for leaks. I urge the Department to strengthen the monitoring requirements in the draft rules to ensure frequent, accurate, comprehensive, and transparent monitoring:

- The rules should require - or at the very least specifically authorize - the use of remote sensing technology such as drones that are able to survey the entire landfill surface. This technology is available, effective, accurate and safe. I understand that remote sensing may be requested as an alternative compliance measure. However, that misses this rare opportunity to build a viable technology into the rules.
- Please require surface monitoring and mitigation when a landfill is notified that a leak has been detected using technologies such as satellites by agencies or third parties that submit credible data to Ecology. (See recent public workshop slide #11 from the California Air Resources Board [here](#).)
- Please consider requiring more frequent bi-monthly monitoring to identify and correct problems more quickly.
- At the very least, please do not provide exceptions to quarterly monitoring. For example, surface monitoring of closed landfills should not be weakened to annual monitoring. Therefore, please delete WAC 173-408-110 (1)(c)(iii), (1)(d)(iii) and (1)(e).
- Please require comprehensive surface monitoring with no more than 25-foot spacing intervals so that exceedances will be discovered and corrected as soon as possible. Delete WAC 173-408-120(3)(a)(ii)(A) and (B) that would allow 100-foot intervals if there are no exceedances over a certain timeframe. Allowing 100-foot intervals coupled with annual (rather than quarterly) surface monitoring would be even more problematic.
- WAC 173-408-120(3)(b)(iii) requires that landfill surface areas with cover penetrations, distressed vegetation, cracks, or seeps must be inspected visually and with a hydrocarbon detector. This is an important requirement, but the rules don't specify how often those areas must be inspected. Please add language that landfill operators must perform this inspection at least monthly.
- The rules exempt working faces from methane concentration limits. However please require monitoring of methane emissions on the working face to collect data that will help inform how best to manage those emissions.

### Surface emissions monitoring and shutdown of gas collection and control systems:

- The draft rules set requirements for the permanent shutdown and removal of a gas collection and control system at a closed MSW landfill (WAC 173-408-090). The way that revised section is written, it appears that a provisional shutdown could be allowed even if surface monitoring exceeds methane emission limits as long as the facility has been in operation for at least 15 years. Please add language clarifying that provisional shutdowns may not be proposed if there have been recent exceedances.
- Surface emissions monitoring is required during provisional shutdown of a gas collection and control system to determine whether it can be permanently shut down or must be restarted. Since thorough data is necessary to make that important decision, I strongly recommend that WAC 173-408-090(2)(b) be deleted so that a walking grid of 25-foot intervals is required during the provisional shutdown.

### Gas collection and control system & wellhead monitoring

- Please ensure timely planning and installation of the gas collection systems whenever possible. A [recent EPA report](#) indicated that fifty percent of the carbon in food waste is degraded to landfill gas within 3.6 years. We need to get these systems in place as soon as possible.
- When a leak is detected from a component containing landfill gas, retesting should be required after the component is repaired. Please strengthen WAC 173-408-110(2)(c) by adding this requirement and the timeline for retesting.
- Please strengthen WAC 173-408-110(3) to require owners and operators of MSW landfills to notify the Department and local authority of any wellhead positive pressure measurements, corrective action taken, and retesting results.

### Landfill cover

The type of landfill cover has a significant impact on the level of methane emissions, generating higher emissions with the use of daily and intermediate cover.

- Thank you for removing problematic exemptions for “inactive areas” of landfills that only have temporary cover and are only temporarily inactive. Since “inactive” now only appears in one remaining and unnecessary place in the draft rules, I strongly recommend removing it from the definitions to avoid the possibility that it could be taken as a precedent for other rules or laws.
- WAC 173-408-100(3)(a) states that requirements related to methane concentration limits do not apply to the working face of the landfill. However,

working faces with temporary cover will emit significantly higher levels of methane than areas with final cover. I therefore recommend that the Department of Ecology develop standards and best practices to minimize emissions from the working face, e.g. by limiting the area of the working face, limiting the time it remains open, moving more quickly to intermediate cover, limiting the concentration of wet waste, ensuring use of types of daily cover that adequately limit methane emissions, etc.

#### Design Plans for gas collection and control systems

- In 173-408-080(2), please specify that the design plan should be approved only if it contains all required information and meets all requirements.
- In 173-408-080(2)(a)(viii), please remove “or inactive” (see my comment above about landfill cover).
- The working face of a landfill can generate significant methane emissions. Please add a subsection to 173-408-080 (2)(a) requiring that the Design Plan include a description of how the release of methane will be minimized on the working face, for example by limiting the area of the working face, moving more quickly to intermediate cover, limiting the concentration of wet organic waste, etc. The following is possible language: “The design plan must include a description of mitigation measures to be used to prevent the release of methane and other pollutants from the working face into the ambient air.”
- Thank you for strengthening WAC 173-408-080 (2)(a)(vii). Please require that the owner or operator notify the Department and local authority prior to undertaking any specific projects of the types listed in that section and also require inclusion of the following information: *a description of mitigation measures that will be taken to minimize methane emissions, the areas of the MSW landfill that will be affected, the reason the actions are required, any landfill gas components that will be affected, projected start and finish dates, and projected shut down times for individual gas collection system components.*

#### Alternative Compliance Measures

All requests for alternative compliance measures should be made available to the public for review and comment.

### Submission of plans and reports

- All required reports and plans should be submitted electronically and be available to the public on request. Please specify in the rules that electronic submission is required. This will significantly improve accessibility and transparency to the public.
- Thank you for including the Department of Ecology as one of the entities, along with the local authority, to which many of the plans and reports may be submitted. However, it's unclear how it will be determined which agency will receive the required documents and how the two agencies will know whether the other has received the documents, therefore causing confusion as to whether all plans and reports have been submitted as required. I strongly recommend that instead of allowing documents to be submitted to either the Department or local authority, the rules should require that all required documents be submitted to both the Department and the local authority. This should be a quick and simple process if the documents are submitted electronically.

### Recordkeeping

- Records should be maintained in electronic format and be available to the public.
- WAC 173-408-160(1)(a)(v) requires records of all instantaneous surface readings of 200 ppm or greater. I recommend strengthening this to require records of all instantaneous surface readings of 100 ppm or greater, which would match [Oregon's rule](#).
- Please add a requirement to maintain records on mitigation measures taken to prevent the release of methane or other emission on the landfill's working face.

### Reporting

- Required reports should be submitted electronically to both the Department of Ecology and the local air pollution control agency to increase accessibility by the public.
- Thank you for adding WAC 173-408-160(1)(a)(vii) requiring records to be kept of any component leak exceedances and corrective actions taken. Please also require annual reporting of component leak exceedances and corrective actions in WAC 173-408-170(7) under gas collection and control system operations.
- Please add the following underlined language to WAC 173-408-170(7)(g): *Total volume of landfill gas shipped off-site and how the gas is shipped, the composition of the landfill gas collected (reported in percent methane and percent carbon dioxide by volume), and the recipient of the gas.* The way gas

is transported off site will impact overall amounts of methane emitted and therefore should be publicly disclosed.

- In WAC 173-408-080(9)(c) regarding repairs and temporary shutdown of gas control collection system components, please require that records be reported in the annual report rather than only requiring them to be provided on request.

Thank you again for this opportunity to provide input as you develop these critical rules. Feel free to contact me with any questions.

Sincerely,

Suellen Mele