



# Oregon

Tina Kotek, Governor

## Department of Environmental Quality

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August 26, 2025

*via electronic delivery*

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Waste Management, Inc.  
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RE: Focused Landfill Gas Remedial Investigation Work Plan  
Former Wastech Facility, ECSI No. 1271  
701 N. Hunt Street, Portland, Oregon

Dear Ariel:

The Oregon Department of Environmental Quality (DEQ) has reviewed the June 12, 2025 *Focused Landfill Gas Remedial Investigation Work Plan* (hereafter referred to as the “Work Plan”) for the former Wastech Facility (“site”) has been prepared by Maul Foster Alongi (MFA) on behalf of Waste Management (WM). The Work Plan describes proposed landfill gas (LFG) monitoring to be performed at the site. One of several necessary components to complete a remedial investigation identified in the 2004 Voluntary Agreement between WM and DEQ is to investigate impacts and potential threats from methane generation. Prior LFG monitoring has generally focused on above-ground methane measurements in confined spaces and under currently existing structures. A Focused RI was requested by DEQ in 2024 to fully characterize sitewide LFG in the subsurface and to estimate risks for site workers exposed to methane under current and possible future use conditions as well as risk of offsite migration of LFG.

DEQ has the following general and specific comments on the Work Plan. While DEQ is supportive of focusing the investigation of LFG at your Facility, the Work Plan would benefit from more detail and clear rationale related to the objectives and methods proposed in the Work Plan.

### **General Comments**

1. The objectives of the Work Plan are unclear and need clarification; please provide justification for the number and types of samples to be collected, locations and depths, methods of collection, and the reason the information from these samples will achieve project objectives. For example, provide and/or expand on the following to support this focused RI

Work Plan consistent with the scope of work in Attachment B of the 2004 Voluntary Agreement and relevant guidance (e.g., USEPA 1988, 1991):<sup>1,2</sup>

- a. Expand on the site history and existing datasets, including information describing the extent of landfill materials and current site features, to provide context for the proposed sampling strategy. For instance, what are the estimated boundaries of the landfill and depth using available boring information, historical records, and examining historical aerial photos? Identify site utilities, piping, manholes, other exterior confined spaces, and other relevant site features where LFG could accumulate or move along preferential pathways. Summarize all existing LFG monitoring data. Integrate data into tables, maps, and cross-section drawings to support conceptual site model (CSM) development.
  - b. Present a preliminary CSM for LFG. The CSM should be used to inform the scope of the project by describing the site, identifying data gaps, evaluating potential risks, and leading to clear and concise Work Plan objectives.
  - c. Work Plan objectives and data quality objectives should be defined, and proposed sampling and analytical methods should directly connect to the objectives.
  - d. Provide greater detail on the sampling design, methods, and procedures for collection.
2. Waste materials in landfills are heterogeneous and can, therefore, break down at different rates and times in different areas. Accordingly, it is reasonable to expect that subsurface LFG generation, migration, and accumulation across the site is spatially and temporally dynamic. The spatial coverage, depths, frequency, and timing of sampling should better capture LFG fate and transport under variable conditions.
3. Please address the following gaps in the sampling plan:
- a. Provide rationale for the selection of sampling locations.
    - i. Proposed locations are primarily along the property perimeter, suggesting the main goal is to evaluate offsite migration potential. The focused RI should also characterize the nature and extent of the landfill and associated LFG levels and use this information to evaluate risks to workers under reasonably expected exposure scenarios. DEQ recommends placing additional sampling points within the site to fill spatial gaps in the RI investigation.
    - ii. DEQ has expressed concern that LFG can accumulate in enclosed spaces<sup>3</sup> and along preferential pathways created by utilities. Please add a discussion of how potential preferential pathways for LFG migration will be assessed. Soil gas sampling locations should be placed near existing subsurface structures
    - iii. LFG is expected to accumulate under paved areas and building footprints, whereas sampling points are proposed primarily in unpaved areas. DEQ recommends also sampling in paved areas outdoors.
  - b. Provide rationale for sampling depths.
    - i. Clarify why sampling would be conducted at 3 to 5 feet below ground surface (bgs). Sampling depths in unpaved areas should be  $\geq 5$  ft bgs to prevent the influence of above-ground conditions on sample results (e.g., dilution with

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<sup>1</sup> USEPA's 1988 Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA

<sup>2</sup> USEPA's 1991 Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites

<sup>3</sup> DEQ recognizes that historical sampling in enclosed or confined spaces has generally resulted in non-detection of methane (as noted in, for example, Sections 2.4.5 and 2.4.9).

ambient air). DEQ can consider depths <5 ft bgs in areas where pavement is in good condition and where sample points can be well sealed at the ground surface. Because LFG can migrate below 5 ft bgs, DEQ recommends that sampling generally be conducted at 5 and 10 ft bgs during the preliminary sampling stage and which locations should be determined based on what is known about the depth and footprint of the landfill. Longer-term monitoring locations should be informed by a more spatially and vertically comprehensive dataset.

- ii. Please clarify whether or not sampling of LFG is proposed within landfill waste material.
- c. Provide more detail on the bar-hole sampling method and proposed sample design.
- i. Provide more detail on the LFG gas sampling protocol, for example whether purging and stabilization before sample collection will occur. Explain how the method will generate representative data. Discuss the likely radius of influence associated with this sampling method. What is the strength of the pump associated with the monitoring equipment, and will this create a reasonably large radius of influence to confidently capture LFG (without short circuiting)? Are there measures that need to be taken to ensure representativeness that aren't mentioned in the plan?
  - ii. Pressure can be indicative of LFG behavior. Explain whether pressure can and will be monitored at bar-hole locations. Discuss uncertainty related to low soil gas pressure in the landfill.
  - iii. A single point in time is proposed for bar-hole monitoring. DEQ has noted previously that LFG monitoring should be conducted in multiple seasons and conditions that capture variability throughout the year. At a minimum, events should be in both warm/dry and wet/cool seasons targeting times of low barometric pressure (consistent with the EMP). This is consistent with DEQ's comments on the recently-approved Environmental Monitoring Plan (EMP) for the site and is informed by data generated per the EMP.<sup>4</sup> Sampling should avoid high-pressure events.
  - iv. A substantially decreased spatial scope for monitoring is proposed in the Work Plan for the second phase of LFG monitoring. The specific number, locations, and screen depths of samples collected in the second phase of LFG monitoring must be informed by the results of the initial phase; therefore, an adaptive monitoring strategy should be proposed, with adjustments made over time to account for future data and an evolving CSM. Rationale for the monitoring of only two locations is not currently provided in the Work Plan.
  - v. Clarify how many sampling events are proposed at the permanent monitoring locations in the second phase of monitoring. As written, this would depend on the date that DEQ approves the Work Plan within the context of the ongoing EMP monitoring schedule. See also Comment 3c.iv; the schedule will also depend on the timing of collection, delivery, and review of LFG data from the first phase of monitoring.

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<sup>4</sup> Preliminary LFG data were reported to DEQ by WM via email for March 12, 17, 19, and 21, 2025, April 23 and 30, 2025, and May 7, 2025.

4. The Work Plan should present a plan (or identify a separate deliverable) to investigate the active methane mitigation system, which is not well documented or understood.<sup>5</sup> Apart from the location of above-ground elements of the system (e.g., piping, monitoring locations at vent risers, and blower type) there is limited documentation for the design of the below-ground elements. Without an understanding of how the system was designed and performance reliability, it is unclear whether the system is a sufficient long-term remedy for LFG. However, based on monitoring of the active vent risers (“VA-4” in particular), DEQ believes that methane is still generated under the building and that some type of engineering control (e.g., the active system) is needed to mitigate LFG.
5. Design and construction of the passive sub-slab methane mitigation system under the tipping floor is well documented, and monitoring is being conducted to evaluate its performance. Thus far, data collected per the EMP show periodically high levels of methane under the floor or in passive vent risers VP-A, VP-B, and VP-C. The earlier CREtelligent (2022) report also reported elevated methane (>1.25 percent by volume [pbv]) in subsurface samples across the footprint of the new tipping floor building (prior to construction), with the greatest concentrations extending from east to west in the center of the footprint. DEQ will continue to work with WM throughout the focused RI/FS process as additional performance monitoring data are collected to determine whether the current system is adequately protective or if further remedial actions (e.g., activation of the system) are warranted.

### Specific Comments

6. Section 2.4, Previous Investigations.
  - a. The Work Plan currently deemphasizes site hazards related to methane, as evidenced by historical monitoring and above-ground monitoring. DEQ concurs that site investigations have been conducted at the site in phases, including investigations of soil and groundwater, but characterization has generally excluded LFG. Two focused methane monitoring summary documents were provided to DEQ, both of which showed methane gas at concerning levels, necessitating monitoring and remedy. In May 2022, methane was consistently measured above DEQ’s limit of 1.25 pbv and up to 31 pbv (CREtelligent 2022) in the footprint of the tipping floor. Carbon dioxide levels measured during that event also suggest that there is ongoing methane generation. In May 2023, methane was detected in the active extraction system, up to 6.9 pbv (WSP 2024). These levels are consistent with March to May 2025 levels observed in the system per the EMP. Based on the available site data it appears that methane generation is occurring and at levels of concern.
  - b. Confirm that oxygen and carbon dioxide levels will be included in future monitoring activities, and note how those data will support data interpretation and data quality discussions.
  - c. To support the Work Plan, the summary of investigations should identify hazardous substances of concern and associated risks, where observed, and relevant data, including compiling all existing LFG monitoring data to facilitate DEQ’s review. Summary data tables and maps of monitoring locations should be provided.

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<sup>5</sup> DEQ’s understanding stems from CH2MHill (2010), which gives a scanty description of the system’s design.

7. Section 2.4.1, 2001 CH2M Methane Gas Monitoring System – Construction of the active mitigation system occurred in 2001 after a methane-related fire at the facility. This was prior to the 2004 Voluntary Agreement with DEQ, and it does not appear that DEQ reviewed or provided oversight of construction of the system. DEQ has requested that WM provide details on the construction of the active extraction system, but reportedly detailed designs are no longer available. A lower level detail of information can be found in a 2010 CH2MHill memorandum.<sup>6</sup> DEQ is interested in understanding more about the system and its functionality to mitigate methane risks.

Above-ground features (e.g., six vent risers<sup>7</sup> and associated piping and blower) are known, whereas the design of below-ground features is less well understood. DEQ is not familiar with, for example, the spatial extent and orientation of the extraction system features (including depth relative to sub-slab materials like gravel), venting network configuration or type, etc. Because of DEQ's unfamiliarity with the system design, it remains unclear whether previous sub-slab sampling locations were appropriately placed within the venting network (e.g., away from extraction features and piping). DEQ requests that WM investigate the configuration of the system as part of the RI process to inform the selection of an approved remedy alternative.

8. Section 2.4.5, 2020 WM Methane Monitoring Evaluation – DEQ provided comments on this report on March 7, 2022, noting that the methods and data provided were insufficient to justify decommissioning the active methane mitigation system. It was unclear, for example, whether the system was turned off prior to monitoring interior spaces and for how long or whether barometric pressure was low/declining during the sampling event. In other words, it was unclear whether the lack of detectable methane was due in part to the system working as intended while activated.
9. Section 2.4.7, 2023 WM Landfill Gas Monitoring Technical Memorandum – WM submitted a methane sampling plan for monitoring sub-slab conditions at the older building (associated with WSP [2024] memo)<sup>8</sup>, but DEQ's comments on that plan were not fully incorporated nor was a revised plan provided for DEQ concurrence before being implemented. After reviewing the methods described in the WSP (2024) memo, DEQ determined that the assessment was not performed in a manner that would accurately document representative site conditions. For example, the use of suboptimal gas monitoring equipment (vapor pins) to assess methane gas levels, sampling location placement, short pre-sampling duration (two hours after turning off the active extraction system), and/or other environmental factors reduced data quality of the sub-slab samples. As such, the sub-slab methane data from the 2024 sampling event are considered unreliable.
10. Section 2.4.8, Environmental Management Plan – Summarize the performance monitoring data for the new tipping floor mitigation system collected to date. DEQ has seen the data collected between March and May 2025, but monthly sampling data should also have been

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<sup>6</sup> CH2MHill. 2010. Methane Collection System, Wastech Facility, 701 N Hunt St., Portland, Oregon. Dated May 11, 2010, authored by Cindy Donnerberg, and provided to Bob Willams of DEQ.

<sup>7</sup> CH2MHill (2010) and the Work Plan note that there are seven risers associated with the active mitigation system, but only six have been observed by DEQ during site visits or in methane monitoring reports.

<sup>8</sup> The Work Plan cites the memo as WSP (2023), but it was finalized in 2024; therefore we cite it as WSP (2024).

collected in June to July or August. Discuss the range of methane levels detected in sub-slab monitoring points and vent risers, and relate the data to those from CREtelligent (2022).

11. Section 3.0, Field Activities - Please also clarify what are the applicable action levels referenced in this section.
12. Section 3.3, Monitoring Schedule – Please specify the duration and frequency over which sampling is proposed at fixed monitoring points. The Work Plan ties sampling to the EMP monitoring schedule, which is already ongoing and on a tentatively fixed 5-year schedule (with variable monitoring frequency over those 5 years). Depending on when installation of fixed monitoring points occurs, sample frequency and sample count over time may vary.
13. Sections 4 and 5, Reporting and Project Schedule.
  - a. The proposed reporting method and schedule suggests that a single round of RI data would be summarized in the 2026 EMP annual report. Comment 3 provides several recommended changes to the scope and scale of the Work Plan, and the schedule for delivering RI data should be extended accordingly (and clarified per Comment 12). After RI monitoring is completed, an RI Report is required; it should compile, summarize, and assess LFG data (including EMP data), present a revised CSM, evaluate site risks, and ultimately inform remedy selection, if a remedy is warranted. DEQ expects that one or more interim reports summarizing data from the first phase of LFG monitoring will be provided to guide the second phase.
  - b. To maintain consistent project progress, DEQ requests that WM submit quarterly progress reports per Section H of the 2004 Voluntary Agreement. These reports should summarize previous and upcoming quarter activities, a high-level summary of sampling, test results, and any other data generated by WM during the previous quarter; and a description of any problems experienced during the previous quarter and actions taken to resolve them.
14. Figure 2-1.
  - a. Figure 2-1 includes geoprobe and monitoring well locations but provides little or no context for them. For example, are the geoprobe data being used to delineate landfill materials and guide sample location selection?
  - b. Please include sample location names and tentative coordinates (and other relevant sample information) in the Work Plan. Include location names on Figure 2-1.
15. Appendix A. There are multiple Appendix As; the first is the Health and Safety Plan, and the second is the Job Hazard Analyses. Please name appendices sequentially.
16. Appendix B.
  - a. There are multiple Appendix Bs. See Comment 15.
  - b. The SOPs in Appendix B (second) do not identify a method for bar hole installation. Please explain how this will be conducted, including equipment specifications and methods for use.
  - c. The SOPs in Appendix B (second) do not identify a method for analyzing LFG. Please provide specifications, calibration information, and methods for using the GEM probe.

17. Appendix C.

- a. There are multiple Appendix Cs. See Comment 15.
- b. The purpose of Appendix C (first) is unclear for the current purposes. What concentration is being measured and reported in this form?
- c. Appendix C (second) is specific to the EMP and fixed monitoring locations within buildings. The proposed sampling locations for the focused RI are not the same locations provided in the air monitoring form. If an example form is to be provided in Appendix C, please provide a form that would be used.

Within 45 days, please submit a revised Work Plan that incorporates DEQ's comments and a Response to Comments describing how comments were addressed. Contact me at (503) 830-4442 or [brian.church@deq.oregon.gov](mailto:brian.church@deq.oregon.gov) if you have any questions or would like to discuss.

Sincerely,



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