State of California
Air Resources Board

Board Item Summary

Item # 25-8-1: Public Hearing to Consider the Proposed Amendments to the Regulation on Methane Emissions from Municipal Solid Waste Landfills

Staff Recommendation:

Staff recommends the California Air Resources Board (CARB or Board) approve for adoption the proposed amendments to the Regulation on Methane Emissions from Municipal Solid Waste Landfills (Landfill Methane Regulation or LMR).

Discussion:

Landfills are the second largest source of methane emissions in California, accounting for 22 percent of California's total methane emissions. Scientists estimate that methane is responsible for around 25 percent of current climate warming, and as a short-lived climate pollutant, reducing emissions will rapidly decrease concentrations in the atmosphere, slowing the pace of temperature rise in this decade.

CARB adopted the Landfill Methane Regulation in 2010 as an early action measure under Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006) to reduce methane emissions from landfills. The regulation requires owners and operators to install and optimally operate landfill gas collection and control systems (GCCS), monitor surface methane concentration and other performance parameters, repair emission exceedances and other performance issues, conduct source testing of combustion devices used to destroy methane, keep records of these actions and data, and report compliance information to CARB and local air districts. Controlling landfill gas also reduces emissions of co-pollutants that may be found in trace quantities in landfill gas, such as toxic air contaminants, volatile organic compounds, and odorous compounds.

Over the past decade, CARB has conducted and funded innovative research to better understand sources of methane emissions and advance the deployment of new technologies for emissions detection. Findings from research, and the rapid development of emerging technologies, have revealed new opportunities to improve collection and control of methane emissions from landfills. The proposed amendments to LMR leverage these advances and benefit from CARB's and air districts' experience implementing and enforcing LMR as well as public feedback.

Between 2022-2025, CARB staff held three public workshops, conducted a community meeting, and participated in numerous discussions with interested parties, including landfill operators, technology providers, regulatory partners, academic researchers, environmental advocacy groups, and community groups. The information gathered during this engagement supported development of the proposed LMR amendments.

Summary and Impacts:

The proposed Landfill Methane Regulation amendments are expected to result in improved gas collection and destruction; improved detection of leaks from both the landfill surface and GCCS components; reduced emissions from the landfills' working face; improved cover integrity; better monitoring and operation of the GCCS, which prevents disruptions, failures, odors, and co-pollutant emissions; and improved clarity and enforceability. The changes would also standardize, streamline, and digitize reporting to enhance CARB's understanding of landfill gas control and allow for more effective oversight and greater data transparency.

The proposed amendments include numerous provisions designed to accomplish the outcomes outlined above. Key changes to improve methane emissions monitoring include requirements for operators to investigate and repair leaks when notified by CARB of remotely detected emission plumes, increasing monitoring coverage at existing regulated landfills by removing exemptions from monitoring, increasing frequency of monitoring in areas with recurring leaks, reducing repair timelines, and incorporating advanced leak detection technologies. Key changes to support safe and effective GCCS operations include requiring earlier installation of gas collection infrastructure in areas of new waste deposition, limiting downtime of the GCCS and mitigating emissions from unavoidable downtime, and increasing wellhead monitoring requirements. Additionally, the proposal clarifies responsibilities of third-party landfill gas control system owners and operators, reduces barriers to using continuous monitoring technologies, and expands the information that operators must report to regulators.

Staff estimates methane emissions reductions of 427,000 metric tons of carbon dioxide equivalent (MT CO_2e) per year from improved gas collection and control under these rule amendments, and additional emissions reductions through other mechanisms in the amendments (such as improved cover integrity) that staff are not able to quantify. The quantified emissions reductions would provide benefits including avoided social costs of methane between $18 million and $61 million per year.

CARB has concluded that these amendments are exempt from the California Environmental Quality Act (CEQA), under the "Class 1" exemption (Cal. Code Regs., tit. 14, § 15301) for modifications to existing facilities, "Class 2" exemption (Cal. Code Regs., tit. 14, § 15302) for replacement or reconstruction of existing structures or facilities, "Class 3" exemption (Cal. Code Regs., tit. 14, § 15303) for new construction or conversion of small structures, "Class 4" exemption (Cal. Code Regs., tit. 14, § 15304) for minor alterations to land, and "Class 8" exemption (Cal. Code Regs., tit. 14, § 15308) for actions taken by regulatory agencies for the protection of the environment. More information can be found in the *Environmental Analysis, Chapter VI of the Staff Report*.