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October 14, 2022

Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, California 95814

Re: Comments on Proposed Advanced Clean Fleets (ACF) Regulation

To Whom It May Concern,

I want to thank the California Air Resources Board (CARB) for taking the time to review Waste Management's (WM's) comments pertaining to the Advanced Clean Fleets (ACF) Regulation.

It is important to highlight that WM has been an early adopter of clean energy technology in California since the early 1990s and continues to support innovation. WM has the largest heavy-duty natural gas fleet of its kind in North America, having invested $2.5 billion in natural gas vehicles and an additional $550 million in fueling infrastructure. Our 2,136 natural gas collection trucks operating in California also represent the largest heavy-duty natural gas truck fleet in the state, providing reliable, essential services to our customers while fueling 100 percent of these vehicles with renewable natural gas (RNG).

These investments have provided significant support for the goals of both vehicle emission reductions and greenhouse gas reductions. As noted in an August 2, 2021, letter from Wayne Nasri, Executive Director of the South Coast Air Quality Management District, natural gas trucks are "at least 90% cleaner than new diesel trucks on NO_X and 100% cleaner on cancer-causing diesel particulate matter. When fueled by **renewable natural gas**, these vehicles can also provide substantial greenhouse gas emission reductions." (emphasis added).

Although WM supports the state's long-term goal of electrifying the transportation sector, we believe that the final rule should be revised to consider and give credit to the large investments already made, harmonize this rule with the current SB 1383 Short-Lived Climate Pollutants (SLCP) program implemented by a sister state agency, and address the concerns set forth below.

The regulations should include an alternative compliance timeframe if zero-emission vehicles (ZEVs) and their related infrastructure (public and private) are not commercially available in the quantity needed.

While RNG vehicles have helped WM to significantly reduce fleet emissions, we continue to look for ways to further reduce our environmental impact. WM works with major domestic and international original equipment manufacturers to identify state-of-the-art zero-emissions truck and compaction technologies for our fleet.

We began operating our first electric-powered collection truck in 2020 in Southern California and are continuing with pilot vehicles and programs throughout the United States, evaluating new vehicles and technology to provide the best service to our customers while reducing our vehicle emissions in the communities where we live and work. WM now is in the second stage of piloting full-electric, and

hybrid-electric Class 8 collection vehicles, and we are field-testing class 4-6 electric vehicles in our large support vehicle fleet where we believe the current technology is commercially available.

Based on our experiences to date, weight limitations present a challenge for our heavy-duty collection trucks. Our collection vehicles consume a significant amount of energy from the collection and compaction work they do, and there are still significant technological hurdles to overcome. Current battery technology requires these trucks to carry multiple batteries to complete their routes, which adds weight. Our Class 8 collection trucks are limited by legal weight limits on roadways that determine how much various types of trucks can carry. To carry enough battery power and comply with these weight limits, WM would need more trucks on the road to provide the same level of service. These limitations, combined with the cost of the trucks to date (as outlined below), have been an impediment to the adoption of this technology.

In addition, infrastructure readiness is a critical concern regarding powering large electrified solid waste fleets. Most solid waste facilities have capacity to power only a few Class 8 electrified vehicles. However, the electrical supply needed for a 50-100 vehicle site is significant and the infrastructure is not in place in most cities and counties in California. Additionally, lag times for increased delivery of energy from suppliers seems to be in the range of two to five years.

In some respects, we have seen this scenario play out before. In 2008, WM and the waste and recycling industry were required to meet CARB's ultra-low emission vehicle requirement. At that time, we experienced difficulties because the vehicle technology that was anticipated did not materialize, forcing WM and the solid waste and recycling industry to delay the purchase of needed vehicle replacements as engine and equipment technology did not meet regulatory timelines.

As the ACF regulations are currently drafted, there could be a repeat of this scenario, with an even more undesirable outcome. Lack of ZEVs and their related charging infrastructure will force heavy-duty fleets to invest in more diesel-powered vehicles, instead of RNG, as short-term vehicle replacements are needed. This is because under the ACF, if finalized as currently structured, investment in a new RNG vehicle would not be fiscally prudent in that it would become a stranded asset as ZEVs become available and are delivered.

While this does not appear to be the intent of the draft regulations, we believe this will be the result if the regulation does not include reasonable accommodations for alternative compliance timeframes that consider the substantial investment in RNG vehicles, fueling infrastructure, organic waste processing, and RNG production already underway within our industry, and consider whether ZEVs and their related infrastructure (public and private) are commercially available in the quantity needed.

The regulations should not strand RNG investments but instead should accommodate RNG as a bridge to ZEV deployment with a dual benefit – lowering emissions (versus diesel) and assisting in meeting the state's SB 1383 objectives.

WM is unique in that we are both a producer and an end-user of renewable fuel. WM currently has 16 RNG production facilities across North America. After recently announcing plans to invest an additional $825 million in RNG infrastructure, we plan to expand our RNG network with 17 new RNG projects in several areas across North America, including California. The increase in RNG production WM expects from the new investments will lead to displacement of approximately 1.3 million metric tons of greenhouse gas emissions by 2026, the equivalent of 3 billion miles driven by an average gasoline-powered passenger vehicle.

Our ongoing investments in RNG production facilities, coupled with a natural gas fleet that can operate on RNG, are contributing to meeting the statewide SLCP reduction strategy and SB 1383 requirements that local governments procure a substantial amount of recycled organic products, including RNG. As California has placed mandates around organic waste recycling that produces biogas, there is a need for RNG to remain as an option for compliance with the ACF rule.

In short, our investments are providing clean air benefits for California residents now while helping the state to comply with greenhouse gas emission reduction policies. We should not be penalized for being early adopters of RNG technology or for taking action to comply with SB 1383. Accordingly, WM requests that the regulations allow additional flexibility for our RNG vehicles powered by biogas captured from our operations and converted into RNG.

As currently drafted, the cost of compliance with the regulations is significantly higher than projected.

WM is concerned that compliance with the regulations as drafted will be significantly higher than current CARB projections.

As previously stated, WM has over 2,136 natural gas collection trucks operating in California. CARB estimates the cost of an electrified heavy-duty vehicle at approximately $240K per vehicle. Our experience has shown us that the current cost of an electrified heavy-duty vehicle is upwards of $700K per vehicle.

In addition to the increased cost per vehicle, WM will also need more ZEV trucks to maintain current service levels. Current WM pilot projects with heavy-duty electrified vehicles have shown vehicle capabilities that are nearly 20 percent lower than those of a near-zero RNG vehicle. (It is important to highlight that this lower performance does not take into consideration extreme weather conditions or elevations changes, which negatively impact battery capacity and performance.) In essence, WM will need to replace our current fleet of 2,136 RNG trucks with 2,563 ZEV trucks.

Lastly, charging infrastructure upgrades and installation represent an additional significant cost of compliance.

The cost of charging infrastructure and more trucks, at a higher cost per truck, will undoubtedly be passed along to customers and ratepayers, disproportionately affecting low-income households that rely on the affordability of services that the waste and recycling sector provides. As such, WM believes that heavy-duty vehicles fueled with RNG should remain as an option for the solid waste industry, especially as electric heavy-duty waste vehicles become commercially available.

Recommended Revisions to the Proposed ACF Rule

WM respectfully proposes the following revisions to the ACF Regulations, in order to address the concerns raised in this letter.

1. Infrastructure Construction Delay and ZEV Availability

WM recommends that Appendix A-2, Section 2015.3(c), be amended to provide that the infrastructure delay extension be for the number of years as determined by an independent advisory board. The availability of charging infrastructure is dependent on a number of case-by-case factors and setting a one-year limit is arbitrary. Likewise, allowing only one extension is also arbitrary, since the ability to obtain infrastructure is largely outside the control of fleet operators. Finally, such important determinations

should not be left to one person. Rather, these decisions should be made by an advisory board made up of representatives of the various stakeholders.

If these revisions are adopted, sections 2015.1(c)(3) and 2015.2(e)(3) would need to be revised for consistency.

WM also recommends that Appendix A-2, section 2015.2(e)(4), be amended to provide that the ZEV ordering deadline be for a period of time as determined by an independent advisory board. Again, setting a one-year limit is arbitrary given the challenges facing the adoption of this technology, and these determinations should have the input of a broad group of stakeholders.

2. Consistency with SB 1383 SLCP Requirements and Prior Investments

In order to provide credit for investments already made, and which will be made in the near future as SLCP programs are rolled out, WM recommends that RNG vehicles count toward compliance with ZEV milestones up to and including 2039.

To accomplish this, WM recommends that a new definition of RNG vehicles be added in Appendix A-2, which includes the following criteria: the fleet owner uses these vehicles for the collection of organic waste, solid waste, and recyclable materials; that absent circumstances beyond its control, the fleet operator uses RNG exclusively for fueling these vehicles; and that the fleet owner operates or contracts with facilities in California for the production of RNG.

Once defined, WM recommends that Appendix A-2, section 2015.2(c), be amended to allow RNG vehicles to count toward compliance with the Milestone requirements up to and including 2039.

WM values the opportunity to submit these comments. We are available and willing to provide insights to CARB regarding our ongoing pilot projects, concerns, and to provide additional data for CARB to consider in creating effective public policy and regulation. Please feel free to call me or email me with any questions. I can be reached at aoseguer@wm.com or via phone at 209-327-5017.

Sincerely,

Alex Oseguera
Director of Government Affairs, Waste Management
California, Hawaii

CC: CARB Board Members