



AIR ISSUES & REGULATIONS COMMITTEE
A Committee of the Bay Area Clean Water Agencies

Quarterly Meeting
May 31, 2023

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Agenda

- 2023 State Legislation
- CARB Statewide Air Toxics Two-Step Process
- CARB Scoping Plan Update Targeting Carbon Neutrality by 2045
- Methane Review/Monitoring at WRRFs
- BACWA-BAAQMD Implementation Workgroup Upcoming June 12
Potential Topics
- Open Discussion/Member Updates
- Adjourn



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2023 State Legislation Update

- Bills introduced by February 17th (>2,000)
- Spot bills refined by March 31st
- Bills making it through May 19th deadline in attached list
- Spotlight: AB 1216 (Muratsuchi D) WWTPs: monitoring of air pollutants
 - Requires Hyperion on or before January 1, 2025, to develop, install, operate, maintain a fence-line monitoring system in accordance with guidance developed by SCAQMD for hydrogen sulfide, nitrogen oxides, and VOCs and the data be made public immediately
- Implications for the Bay Area – Odor Study



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CARB Two-Step Process: Updates to Criteria Pollutants & Air Toxics Reporting

- AB 617 to “harmonize” air monitoring, reporting, & emission reductions from stationary sources across the state
- AB 2588 Hot Spots compound list >1,700 (from >500)
 - Unknown toxicity levels
 - Unknown emission factors
 - Many are not relevant to WWTPs
- Report business-as-usual through 2028 (reporting begins 2029 for 2028 data)
- Perform “two-step process” for determining shortlist of compounds and emission factors (to be used by local air districts)
- Met with BAAQMD Feb 9th to further coordinate
- Kickoff with CARB’s new leadership was held April 25th

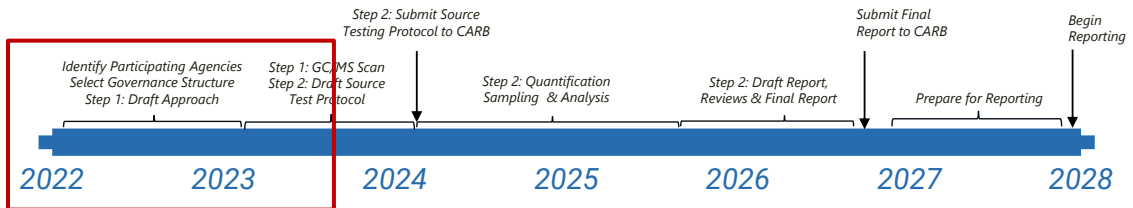


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How WWTPs can comply with CARB's Air Toxics Reporting and Inventorying Programs

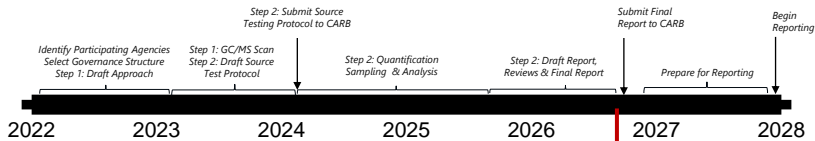
- Who does this apply to? (based on actual flow)
 - ≥5 MGD, uncovered primaries
 - ≥10 MGD, covered primaries
- What is required?
 - Participation in a two-step process (whether as a statewide group or individually)



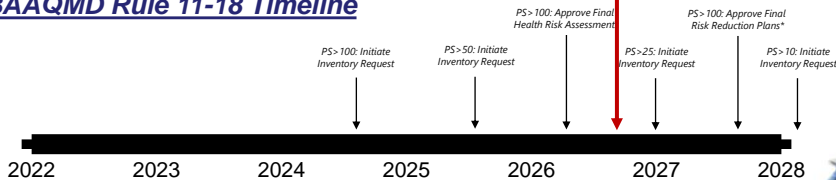
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Timing of BAAQMD Rule 11-18 implementation relative to CARB Two-Step Process

CARB AB 617 Two-Step Process Timeline



BAAQMD Rule 11-18 Timeline



*If applicable.



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Summary and Next Steps

- Actions led by CASA Air Toxics Subgroup, meet monthly (next meeting June 14th)
- CASA continues outreach to Air Districts/CAPCOA/CARB to develop an approvable approach for Step 1:
 - Updated list of compounds and using criteria to narrow it down based on:
 - Approved sampling and analysis methods
 - Assigned toxicity potentials
 - Toxics influent to plants
 - Consider preliminary scanning at small set of facilities in Bay Area, Central Valley, South Coast
- Cost per participating agency estimated at ~\$2,000/permitted ADWF
- CASA to serve as fiscal agent in coordination with regional associations
- Need to hire Program Manager



CARB Scoping Plan Update Targeting Carbon Neutrality by 2045

- Advanced Clean Fleet Regulations (adopted April 28)
- SB 1383 Short-Lived Climate Pollutant (SLCP) Reduction Implementation
 - Little Hoover Commission Report



How do CARB’s Advanced Clean Fleet Regulations apply to POTWs?

Applies to gross vehicle weight rating >8,500 lbs (medium- and heavy-duty)

Public Fleets Regulation applies to State and local government fleets (city, county, special district, State agency)

– **If NOT considered** a low population county and have >10 fleet vehicles:

- January 1, 2024, 50% of vehicle purchases in each calendar year must be ZEVs
- January 1, 2027, 100% of vehicle purchases in each calendar year must be ZEVs

– **If considered** low population county OR have ≤10 fleet vehicles:

- January 1, 2027, 100% of vehicle purchases in each calendar year must be ZEVs.



– Exemptions/Extensions may apply

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How do CARB’s Advanced Clean Fleet Regulations impact biogas utilization & SB 1383 implementation?

High Priority & Federal Fleets Requirements

If you have trucks that support diversion of organic waste in effort to implement SB 1383 mandates, you can opt your fleet (asking CARB to confirm) into this regulation and SB 1383 vehicles can opt into Milestone Option 3 (but must do so soon!)

- Only allows SB 1383 vehicles fueled exclusively by biomethane as of January 1, 2024
- Does **NOT** provide for the anticipated increase in trucks fueled by biomethane in support of SB 1383

Percentage of vehicles that must be ZEVs →	10%	25%	50%	75%	100%
Milestone Group 1: Box trucks, vans, buses w/ two axles, yard tractors, light-duty package delivery vehicles	2025	2028	2031	2033	2035 & beyond
Milestone Group 2: Work trucks, day cab tractors, buses with three axles	2027	2030	2033	2036	2039 & beyond
Milestone Group 3: Sleeper cab tractors and specialty vehicles	2030	2033	2036	2039	2042 & beyond

CASA is summarizing the regulation applicability and exemptions/extensions!

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CARB's Advanced Clean Fleet Regulations

- Next Steps

- CASA to champion the coordination of regular meetings with CARB Board, CARB executives/staff and state agencies on ACF implementation – starting with CARB's EO, Dr. Steve Cliff
- Developing draft regulation summary document (to be updated as needed)
- Support streamlining exemption/extension requests
- Schedule follow-on education meeting with Senator Henry Stern
- Other:
 - Early Lessons Learned Group (SoCal) to document barriers
 - CARB expected to be sued as the regulation is submitted to the Office of Administrative Law



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SB 1383 SLCP Reduction Implementation



- 40% methane reduction by 2030 (relative to 2013 levels)
- Organic waste diversion from landfills (includes biosolids, digestate, and sludges)
 - 50% by 2020 (relative to 2014 levels)
 - 75% by 2025 (relative to 2014 levels)
- Implementation
 - State to enforce jurisdictions Jan 1, 2022 (local entities enter agreements)
 - Local jurisdictions to start enforcement Jan 1, 2024
 - Compliance by Jan 1, 2025 (but ACF Regulations may be result in cooling effect)
- CalRecycle outreach regarding county ordinances
- Article 2 applicant, H Cycle, theoretically produces a low-carbon hydrogen using thermal conversion technology
- Little Hoover Commission met May 23rd – voted to delay



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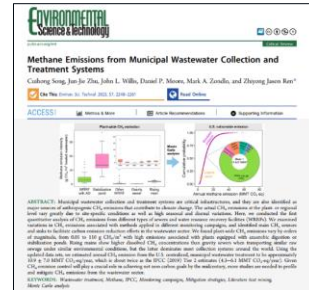
Methane Review/Monitoring at WWTPs

1. Methane Emissions from Municipal Wastewater Collection and Treatment Systems

Cuihong Song, Jun-Jie Zhu, John L. Willis, Daniel P. Moore, Mark A. Zondlo, and Zhiyong Jason Ren

doi: [10.1021/acs.est.2c04388](https://doi.org/10.1021/acs.est.2c04388)

Published: February 3rd, 2023

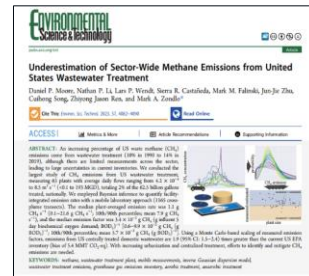


2. Underestimation of Sector-Wide Methane Emissions from United States Wastewater Treatment

Daniel P. Moore, Nathan P. Li, Lars P. Wendt, Sierra R. Castaneda, Mark M. Falinski, Jun-Jie Zhu, Cuihong Song, Zhiyong Jason Ren, and Mark A. Zondlo

doi: [10.1021/acs.est.2c05373](https://doi.org/10.1021/acs.est.2c05373)

Published: February 27th, 2023



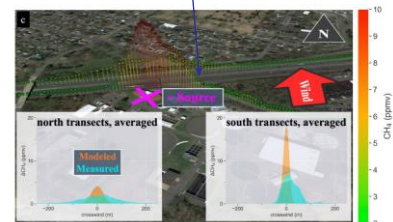
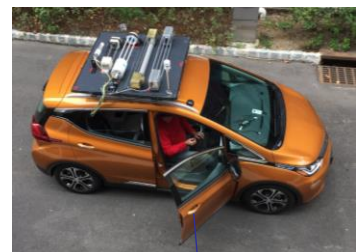
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Methane Review/Monitoring at WWTPs

- Two Princeton methane studies led by Mark Zondlo and Z. Jason Ren
 - Two approaches → same conclusion
 - Overall Conclusion: CH₄ emissions from WWTPs are significantly underestimated compared to IPCC/EPA estimates
- Approach 1: Real-Time Data Collection (Zondlo Group)
 - Objective: Measure emissions downwind of 63 WWTPs
 - Methods: Mobile Lab + Gaussian Modeling
 - Result: U.S. WW Sector emits 1.9 times more CH₄ (11.6 MMT CO₂-eq/year) than IPCC/EPA inventory (6.3 MMT CO₂-eq/year)

Princeton Mobile Lab



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Methane Review/Monitoring at WWTPs

- **Approach 2: Desktop Literature Review (Ren Group)**
 - Objective: Analyze WW sector (WWTPs & sewers) methane measurements from all published literature
 - Methods: Literature Mining
 - Results: U.S. WW Sector emits **2.5 times** more CH₄ (**10.9 ± 7.0 MMT CO₂-eq/year**) than 2020 EPA Report (**4.3 MMT CO₂-eq/year**)

- Conclusion: Based on measured & published-research data, it is estimated that the **U.S. WW Sector emits about twice as much CH₄ as IPCC/EPA estimates**

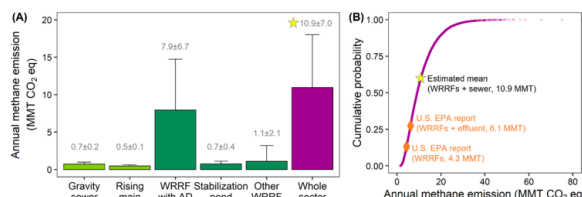


Figure 7. Nationwide CH₄ emissions from the U.S. wastewater sector. (A) Estimated annual mean (±s.d.) CH₄ flux of each group and (B) accumulative probability of CH₄ emissions from the whole wastewater sector.

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CA Methane Review/Monitoring at WRRFs

- California participating agencies:
 - San Jacinto WWTP
 - Colton WWTP
 - Redlands WWTP
 - Moreno Valley WWTP
 - Perris Valley WWTP
 - Turlock WWTP
 - Livermore Water Reclamation
 - Dublin San Ramon Water Reclamation
 - Edward C. Little WRP (El Segundo)
 - Modesto WWTP
 - Santa Rosa WWTP
 - Sonoma Valley CSD WWTP
 - Ellis Creek Water Recycling Facility
 - Delta Diablo WWTP
 - East Bay Municipal Utility District



EBMUD



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Summary of BAAQMD Presentation (Greg Nudd) at BACWA Annual Meeting

- Stated our shared goal of protecting public health and environment
- Acknowledged staffing issues/permit delays
- Environmental justice 5-year strategic plan in development
- AB 617 (Air Toxics/Odors)
- Ethylene Oxide
- Particulate Matter (PM 2.5) Precursors
- Revisit Regulation 13 (Methane, Nitrous Oxide) end of year
- White paper to guide future regulations



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BACWA-BAAQMD Implementation Workgroup Upcoming June 12 Potential Topics

- Statewide Two-Step Process Updates (meetings with CARB and CASA)
- Permitting Process and Timelines (engagement on standard permit conditions updates)
- Source Testing Concerns
- Other topics for collaboration?
 - Engage in strategic planning with new Executive Officer



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Open Discussion / Member Updates

- Share recent engine source testing experience
- Discuss whether BAAQMD accepts their own source tests for permit compliance
- Share any movement on permit application process (more engagement from BAAQMD or continued delay?)
- Share experiences with BAAQMD Online Permitting System
- Other topics?

- **Next Quarterly Meeting:**
TBD for 2023-2024 and sent in June



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Thank you!

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