Air, Climate, & Biosolids Updates

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AIR

Statewide Approach to Comply with CARB's Air Toxics Reporting Requirements

Two air toxics programs were updated in 2020

AB 2588: Air Toxics "Hot Spots" Program (1987)

- Established statewide inventory programs for emissions from individual facilities and requirements for risk assessments and public notification of those risks.

AB 617: Criteria Air Pollutant & Toxic Air Contaminant Reporting Regulation (2019)

- Established statewide annual reporting of emissions data.
- Updates to improve emissions data to better understand sources contributing to adverse health risks or other impacts at local, regional, and statewide levels.

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

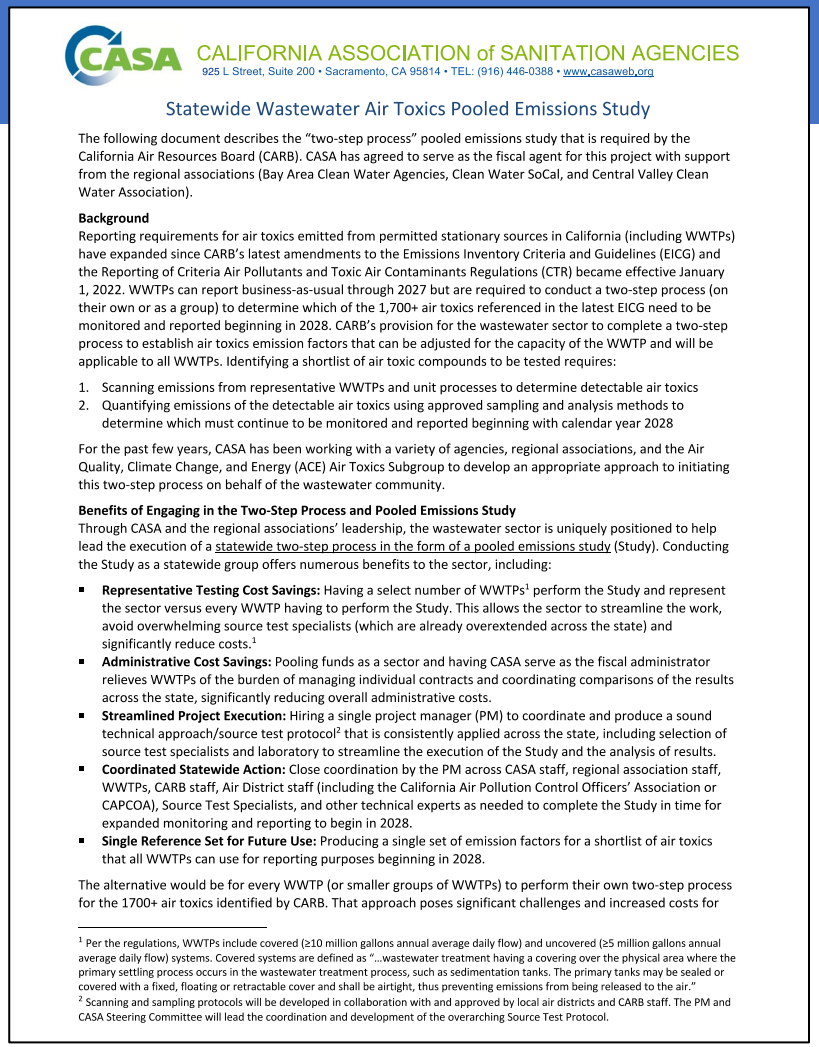
- AB 2588 Hot Spots compound list expanded to >1700 compounds (previously >500), including ~75 PFAS:
  - Many have unknown toxicity levels and emission factors
  - Many are not relevant to WWTPs
- AB 617 updates require monitoring/reporting all compounds OR to perform a "two-step process" to determine which compounds are relevant
- CASA negotiated phased compliance, allowing WWTPs to:
  - Report business as usual through 2027 (begin updated monitoring in 2028)
  - Perform "two-step process" (individually or a statewide pooled emissions study) to determine relevant compounds
    1. Scan airspace of unit processes to determine detectable compounds
    2. Quantify emissions of detectable compounds to determine potential risk

Who does this apply to?
- *≥5 MGD*, uncovered primaries*
- *≥10 MGD*, covered primaries*

**average annual daily flow*

Benefits of performing a Statewide Pooled Emissions Study?

- Cost savings through representative testing (select subset of WWTPs) and reduced administrative demands
- Streamlined project execution with single project manager
- Statewide coordination of stakeholders
- Identify a single set of compounds and emission factors for use/reference



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Statewide Wastewater Air Toxics Pooled Emissions Study

The following document describes the "two-step process" pooled emissions study that is required by the California Air Resources Board (CARB). CASA has agreed to serve as the fiscal agent for this project with support from the regional associations (Bay Area Clean Water Agencies, Clean Water SoCal, and Central Valley Clean Water Association).

Background
Reporting requirements for air toxics emitted from permitted stationary sources in California (including WWTPs) have expanded since CARB's latest amendments to the Emissions Inventory Criteria and Guidelines (EICG) and the Reporting of Criteria Air Pollutants and Toxic Air Contaminants Regulations (CTR) became effective January 1, 2022. WWTPs can report business-as-usual through 2027 but are required to conduct a two-step process (on their own or as a group) to determine which of the 1,700+ air toxics referenced in the latest EICG need to be monitored and reported beginning in 2028. CARB's provision for the wastewater sector to complete a two-step process to establish air toxics emission factors that can be adjusted for the capacity of the WWTP and will be applicable to all WWTPs. Identifying a shortlist of air toxic compounds to be tested requires:

1. Scanning emissions from representative WWTPs and unit processes to determine detectable air toxics
2. Quantifying emissions of the detectable air toxics using approved sampling and analysis methods to determine which must continue to be monitored and reported beginning with calendar year 2028

For the past few years, CASA has been working with a variety of agencies, regional associations, and the Air Quality, Climate Change, and Energy (ACE) Air Toxics Subgroup to develop an appropriate approach to initiating this two-step process on behalf of the wastewater community.

Benefits of Engaging in the Two-Step Process and Pooled Emissions Study
Through CASA and the regional associations' leadership, the wastewater sector is uniquely positioned to help lead the execution of a statewide two-step process in the form of a pooled emissions study (Study). Conducting the Study as a statewide group offers numerous benefits to the sector, including:

- **Representative Testing Cost Savings:** Having a select number of WWTPs[1] perform the Study and represent the sector versus every WWTP having to perform the Study. This allows the sector to streamline the work, avoid overwhelming source test specialists (which are already overextended across the state) and significantly reduce costs.[1]
- **Administrative Cost Savings:** Pooling funds as a sector and having CASA serve as the fiscal administrator relieves WWTPs of the burden of managing individual contracts and coordinating comparisons of the results across the state, significantly reducing overall administrative costs.
- **Streamlined Project Execution:** Hiring a single project manager (PM) to coordinate and produce a sound technical approach/source test protocol[2] that is consistently applied across the state, including selection of source test specialists and laboratory to streamline the execution of the Study and the analysis of results.
- **Coordinated Statewide Action:** Close coordination by the PM across CASA staff, regional association staff, WWTPs, CARB staff, Air District staff (including the California Air Pollution Control Officers' Association or CAPCOA), Source Test Specialists, and other technical experts as needed to complete the Study in time for expanded monitoring and reporting to begin in 2028.
- **Single Reference Set for Future Use:** Producing a single set of emission factors for a shortlist of air toxics that all WWTPs can use for reporting purposes beginning in 2028.

The alternative would be for every WWTP (or smaller groups of WWTPs) to perform their own two-step process for the 1700+ air toxics identified by CARB. That approach poses significant challenges and increased costs for

[1] Per the regulations, WWTPs include covered (≥10 million gallons annual average daily flow) and uncovered (≥5 million gallons annual average daily flow) systems. Covered systems are defined as "…wastewater treatment having a covering over the physical area where the primary settling process occurs in the wastewater treatment process, such as sedimentation tanks. The primary tanks may be sealed or covered with a fixed, floating or retractable cover and shall be airtight, thus preventing emissions from being released to the air."
[2] Scanning and sampling protocols will be developed in collaboration with and approved by local air districts and CARB staff. The PM and CASA Steering Committee will lead the coordination and development of the overarching Source Test Protocol.

CASA

CASA is serving as fiscal administrator supporting the Statewide Pooled Emissions Study

Statewide Pooled Emissions Study details:

- Broad set of compounds to be sampled
- 145+ WWTPs to share the costs
- 1 Project Manager
- Estimated duration: 3-4 years
- Estimated budget: ~$10 M

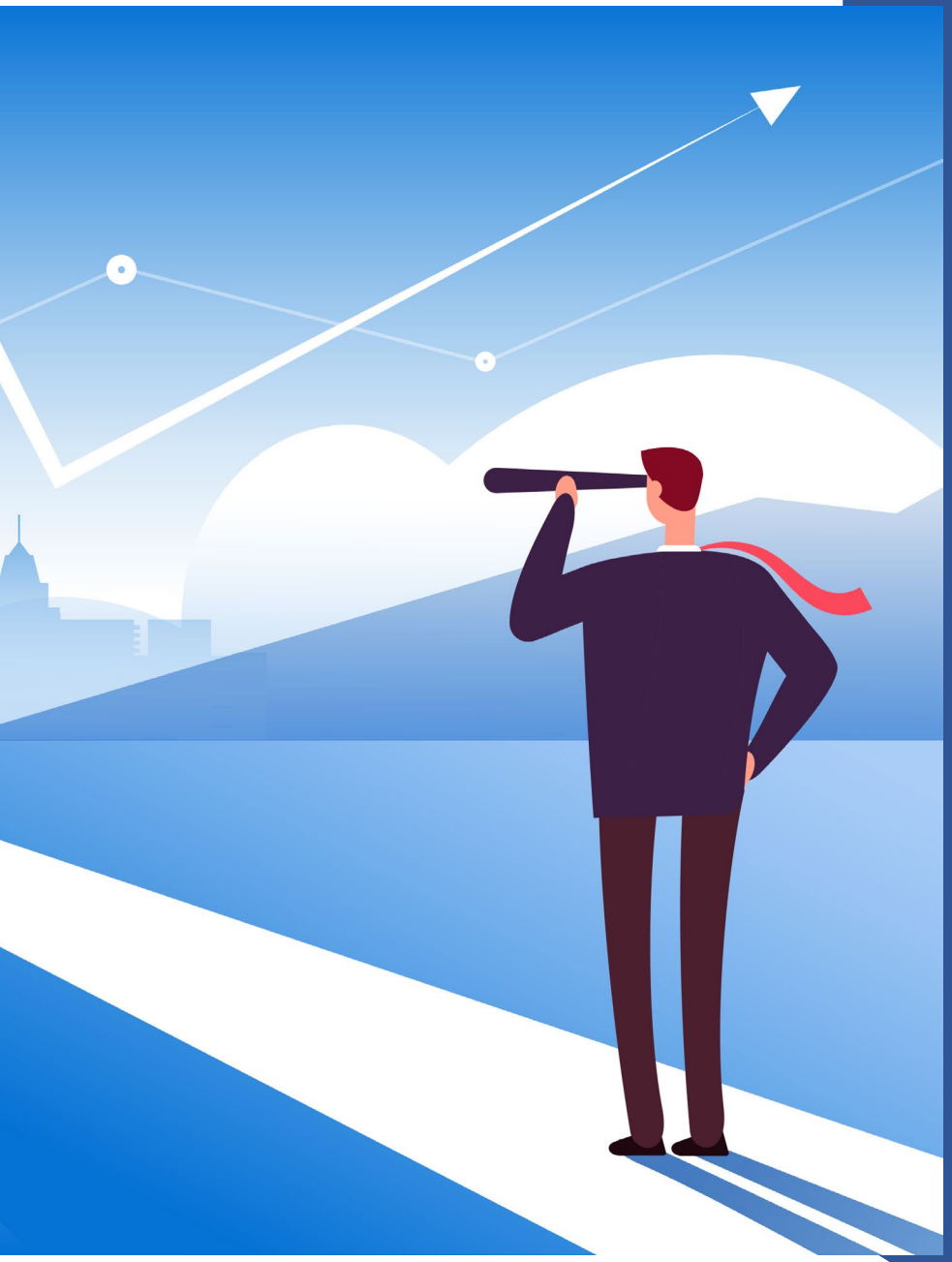
- CASA working with Regional Associations (like CVCWA) to coordinate participation

The statewide Pooled Emissions Study will be performed in two phases:

1. **Phase 1 (2024):** PM to develop (and gain approval from CARB and Air Districts for) an overarching **emissions quantification plan** to perform CARB's Two-Step Process.

2. **Phase 2 (2025-2027):** PM to **perform the Two-Step Process** with Source Test Specialists and in close collaboration with CARB, air districts, CASA's Steering Committee and participating WWTPs.

Outcome: Shortlist of relevant compounds and emission factors for use in complying with AB 617 reporting requirements and for all in assessing air permits going forward.



Study Activities

- Participant outreach underway
  - 145+ facilities statewide (working through regional associations)
  - Monthly Air Toxics Subgroup meetings
    2nd Wednesday's, 1-2 pm
    Next: June 12th (please join!)
- Steering Committee established
- Project Manager selected – Yorke Engineering
- Phase I Kickoff held May 15th

CLIMATE

CARB's Push to Zero-Emission Vehicles to Achieve Carbon Neutrality by 2045

ACCII & ACF Regulations

Advanced Clean Cars II

- Applies to light-duty passenger car, pickup truck and SUV emissions starting with 2026 model year through 2035
- Requires new vehicles sold in CA be zero-emission by 2035 (manufacturer focus)
- Amends low-emission vehicle regulations to include more stringent standards for passenger trucks

Advanced Clean Fleets

- Applies to medium- and heavy-duty vehicles with gross vehicle weight rating >8,500 lbs
- Requirements for both manufacturers and fleet owners
- Fleet owners are required to replace conventional vehicles with zero-emission vehicles or ZEV (timelines vary based on fleet owner and vehicle type)
- ZEVs (e.g., battery electric and hydrogen fuel cell)

CARB's Advanced Clean Fleet Regulations/Resolution

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

1. State & Local Government Agency Fleets

(cities, counties, special districts, State agencies)

2. High Priority & Federal Fleet Requirements

(POTWs can opt in until 2030 – if opt in, can't opt out)

3. Drayage Truck Requirements

4. 2036 100 Percent Medium- and Heavy-Duty Zero-Emission Vehicle Sales Requirements

Contain requirements/schedules for POTWs!

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

State & Local Government Agency Fleets *include cities, counties, special districts, state agencies*

- **If NOT considered** a low population county, having >10 vehicles in fleet:
  - 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, ≤10 vehicles in fleet:
  - January 1, 2027, 100% of vehicle purchases in each calendar year must be ZEVs.

- <u>No requirement to end the use of existing compliant vehicles</u>
- Exemptions/extensions are available but limited eligibility

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

High Priority & Federal Fleets Requirements

If you are a WWTP, you can opt your entire medium and heavy-duty fleet into this regulation

- Timeline to transition entire medium- and heavy-duty fleet
- Allows vehicles purchased before Jan 1st (2024) AND fueled only with biomethane to opt into Milestone Group 3

Percentage of fleet 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 +
Milestone Group 2: Work trucks, day cab tractors, buses with three axles	2027	2030	2033	2036	2039 +
Milestone Group 3: Sleeper cab tractors and specialty vehicles	2030	2033	2036	2039	2042 +

Most POTWs have selected registering under the State & Local Government Agency Fleet for increased flexibility!

Does AB 1594 take the place of or change any provisions in ACF?

- Adopted October 8, 2023
- Applies to public agencies, including community water systems, water districts, and wastewater treatment providers
- Authorizes public agencies to purchase traditional replacements for medium- and heavy-duty vehicles at the end of their useful life to maintain reliable service and respond to major foreseeable events

- ACF regulations re-opened in March 2024 to incorporate requirements
- Rulemaking (amendment) process to be complete by early 2025

BIOSOLIDS

SB 1383 Organics Diversion to Reduce Short-Lived Climate Pollutants & PFAS

SB 1383: Organics Diversion to Reduce Short-Lived Climate Pollutants (Methane)

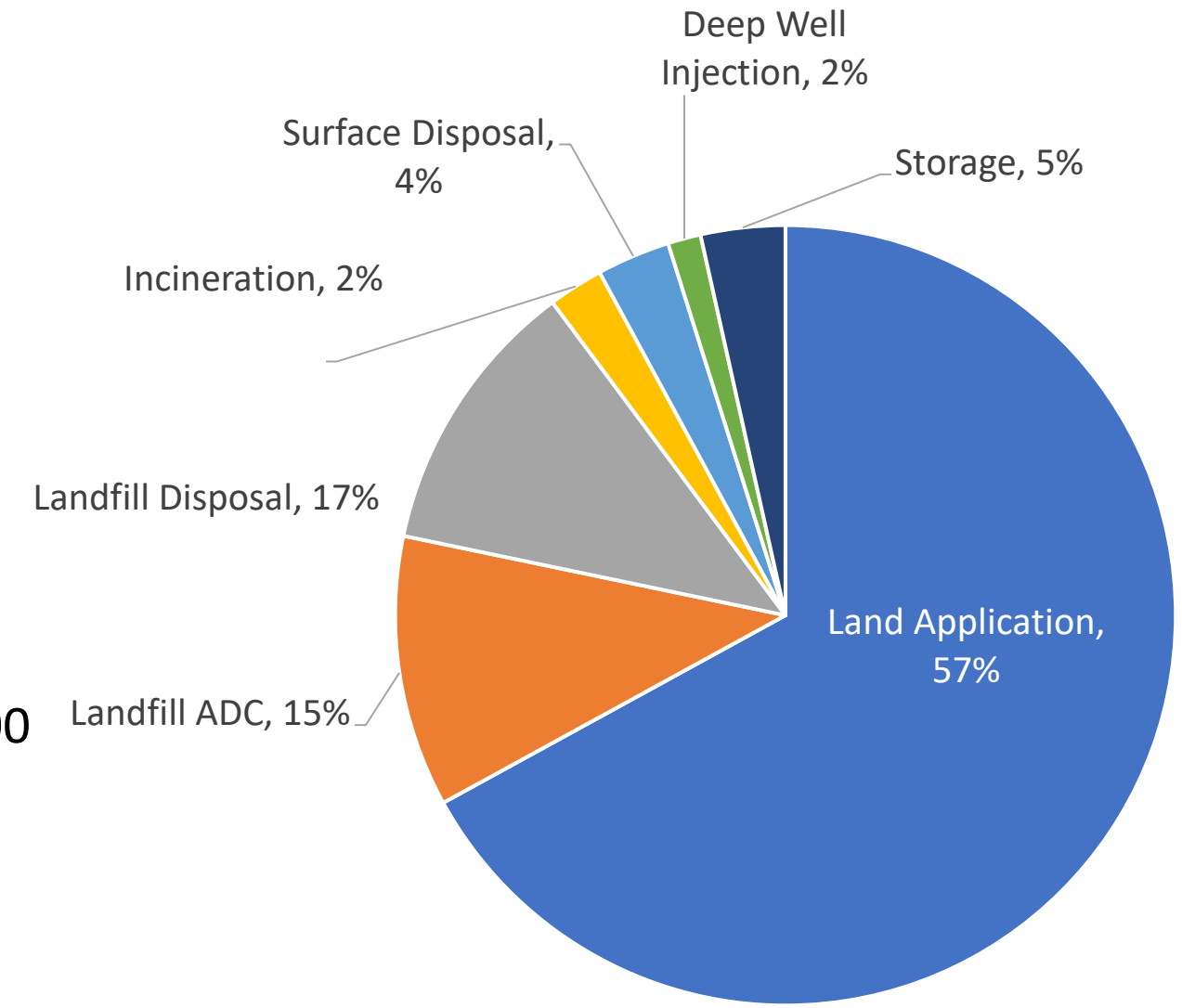
- Reduce methane by 40% below 2013 emissions by 2030
- Divert 50% organic waste below 2014 levels by 2020
- Divert 75% organic waste below 2014 levels by 2025
- At least 20% edible food recovery

SB 1383 Implementation

- State recognizes Wastewater Sector is key to successful implementation
- To that end, two incentives were included in regulations intended to create markets
  - Disallow local ordinances that unreasonably restrict or prohibit land application of biosolids
  - Every jurisdiction required to divert organic waste must then procure a product of that diversion → compost and/or beneficial use of biogas

California Biosolids Management in 2022

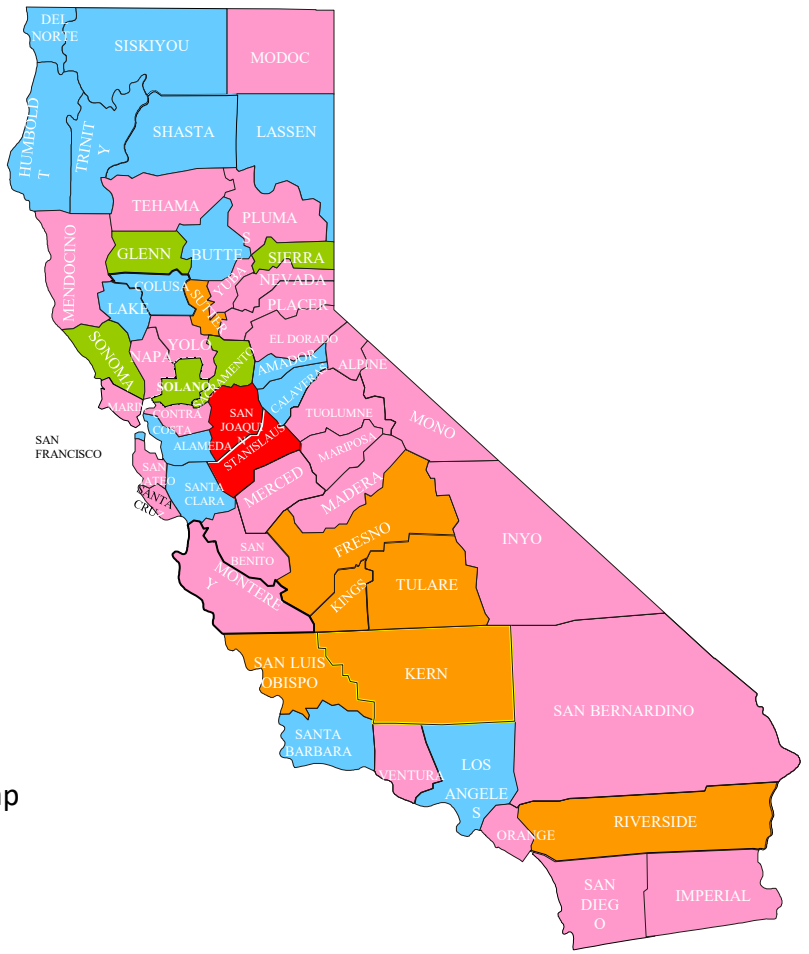
- Total Generated:
  718,000 Dry Metric Tons (DMT)
  - Land Application: 408,000
  - Landfill: 225,000
    - 105,000 Alternative Daily Cover
    - 120,000 Burial
  - Incinerate: 15,000
  - Surface Disposal: 20,000
  - Deep Well Injection: 13,000
  - Storage, long-term treatment: 39,000



Biosolids Land Application in California - 2024

County Ordinance Requirements and Biosolids Bans

- Ban on All Land Application
- Ban on Class B
- Conditional Use Permit Required
- Class B Land Application Allowed
- No Regulations/Ordinances Enacted



This map is based on a search of online available Codes and may have missed County other requirements such as non-codified requirements or requirements of city or regional agencies. This map presents findings for individual county requirements and deals only with the unincorporated areas of the counties, all area in California are subject to California and Federal biosolids regulations.

Maine PFAS Issues

- Two farms found elevated PFAS levels in milk at dairy farms
- One farm applied paper mill sludge and municipal biosolids on separate fields
  - Soil receiving paper mill sludge had elevated levels of PFAS
  - Soil receiving biosolids did not
- Other farm received biosolids which had been contaminated with paper mill sludge

Maine PFAS Issues

- One paper mill produced food packaging products impregnated with PFAS
- The other recycled paper products containing PFAS
- Nevertheless, Maine blamed municipal biosolids and has banned all land application of biosolids
- Quebec has now banned importation of biosolids from Maine and landfills are no longer accepting them
- Emergency approval has been given to store biosolids and solutions are still unknown

Michigan Approach: Land Application of Biosolids Containing PFAS Interim Strategy Goals

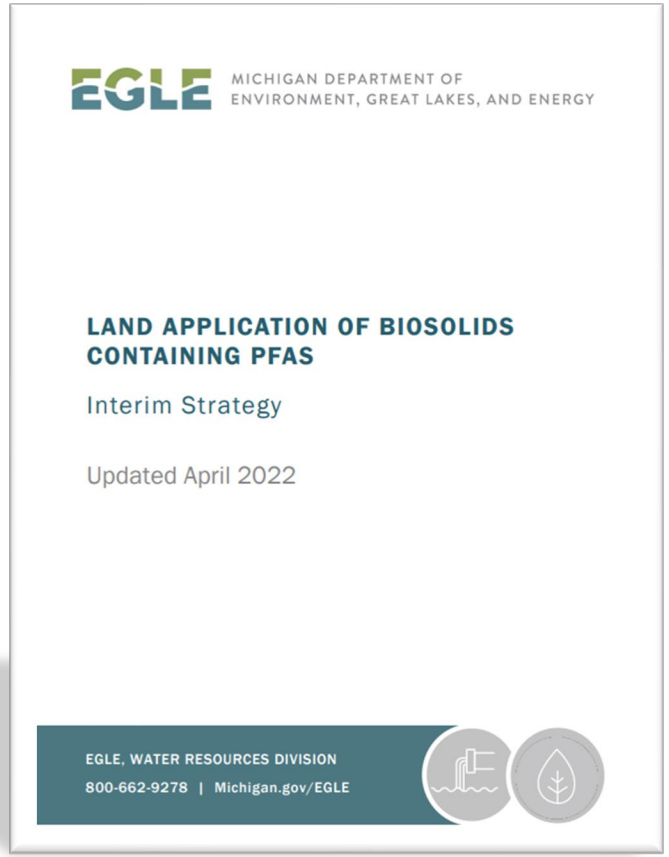
- Reduce PFAS concentrations in biosolids to maximum extent practicable, while achieving or maintaining compliance with Surface Water Quality Values (WQV) at the WWTP effluent
- Prevent land application of industrially-impacted biosolids
- Mitigate (reduce) risks moving forward
- Continue source identification and reduction efforts to drive down PFAS concentrations in impacted biosolids as quickly as possible

Michigan Approach: PFOS in Biosolids

- 2018 statewide analysis of PFOS in biosolids
- Set threshold of 150 ppb, above which would assume an industrial contribution
- 6 plants exceeded threshold and land application stopped until lowered
- **In each of the 6 plants a source was identified and mitigated**

Updates to Biosolids Interim Strategy Tiers (New York has adopted this as well)

- EGLE Updated Interim Strategy
- Effective January 1, 2024
  - **PFOA added as analyte to review**
  - Based on the PFOS and/or PFOA results:
    - **Less than or Equal to 20 ppb (no change)**
      - No restrictions/additional requirements
    - **Between 20 ppb and 100 ppb (updated)**
      - ***Required*** to sample effluent and identify sources
      - ***Required*** to mitigate during land application rate
        - Reduce land application rate to 1.5 dry tons per acre or submit alternative strategy
    - **Equal to or Greater than 100 ppb (updated)**
      - Deemed Industrially Impacted and land application prohibited
      - Required to sample effluent and identify sources



Questions

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