Update on Truck Field Enforcement Activities and New Screening Technologies for High Emitting Vehicles

April 27, 2017

Enforcement Division

Monitoring and Laboratory Division

Outline

- Reducing heavy duty vehicle emissions
- Field enforcement
- Portable Emissions AcQuisition System
- How CARB will keep collected data secure

In-Use Diesel Regulations

- CARB Truck Stop

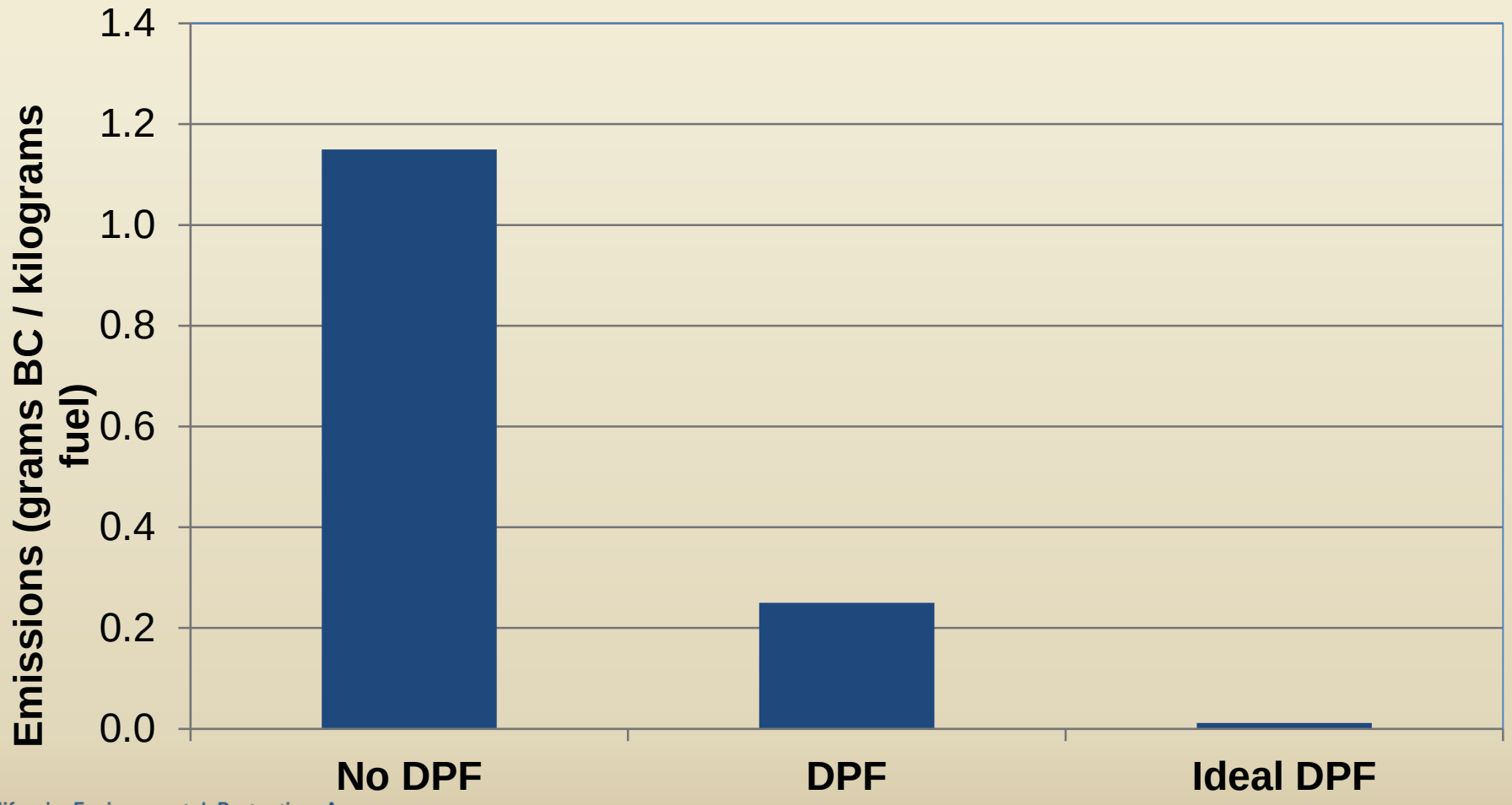
https://www.arb.ca.gov/msprog/truckstop/truckstop.htm

  - Truck & Bus
  - Transportation Refrigeration Unit
  - Drayage Truck Regulation
  - Tractor Trailer Greenhouse Gas
  - Diesel-Fueled Commercial Motor Vehicle Idling
  - Emission Control Label
  - Heavy Duty Vehicle Inspection Program
  - Periodic Smoke Inspection Program

Improving Compliance in Truck and Bus Sector

- More than one million trucks operate in California annually
- Implementing streamlined enforcement
- Heavy truck compliance rate is 70%
- SB 1 (2017) requires compliance to obtain DMV registration

Diesel Particulate Filters Dramatically Reduce PM Emissions



California Environmental Protection Agency
Air Resources Board

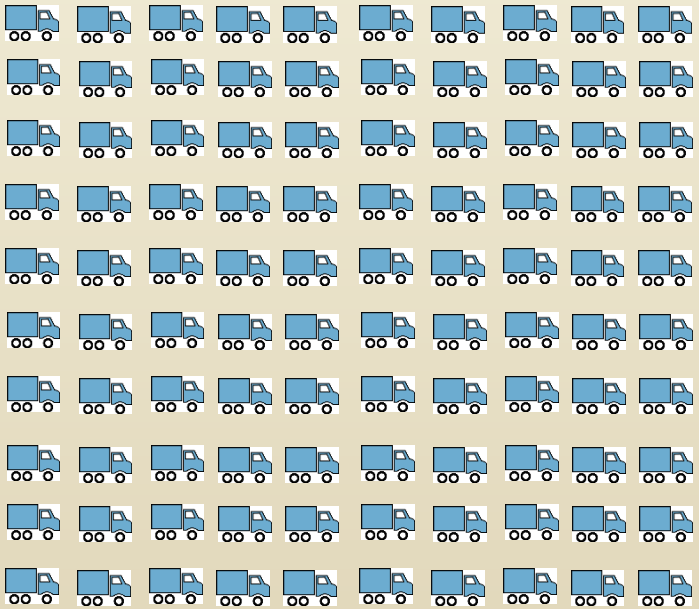
Harley and Stedman Studies

- UC Berkeley
- Robert Harley
- 2009 - 2013
  - Port of Oakland
  - Orinda, CA

- University of Denver
- Don Stedman & Gary Bishop
- 2013, 2015, 2017
  - Port of Los Angeles
  - Cottonwood CHP Scales

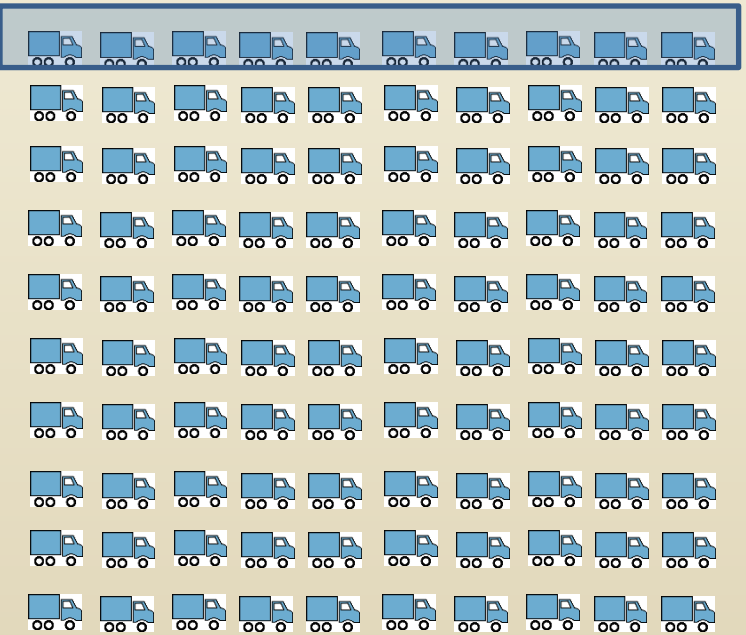
Particulate Emissions from DPF-Equipped Trucks in California

Emissions Results from Port of Oakland Study



Particulate Emissions from DPF-Equipped Trucks in California

10% of Fleet



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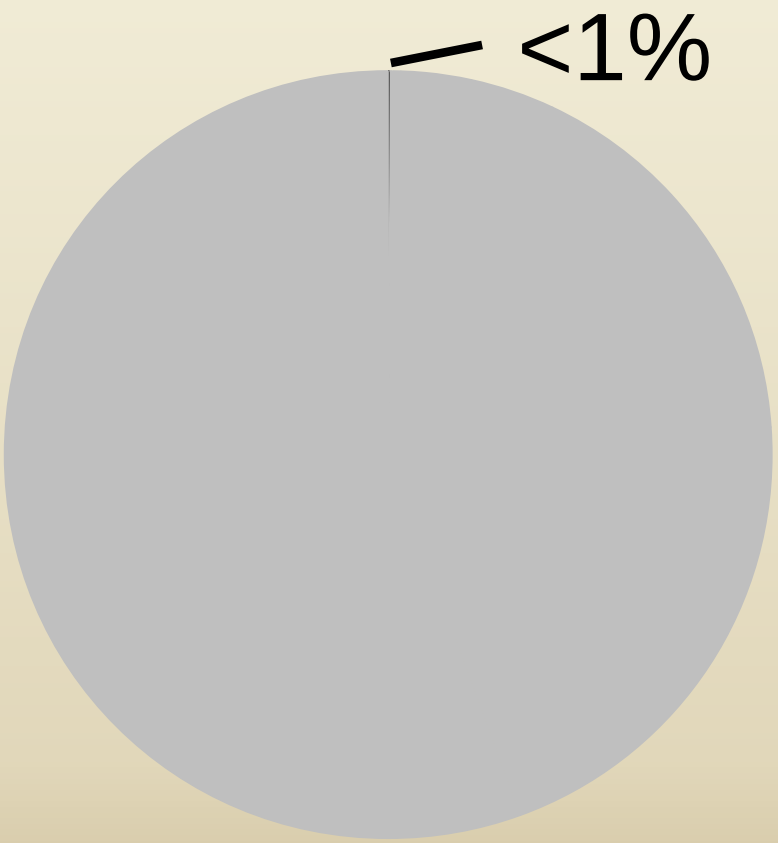
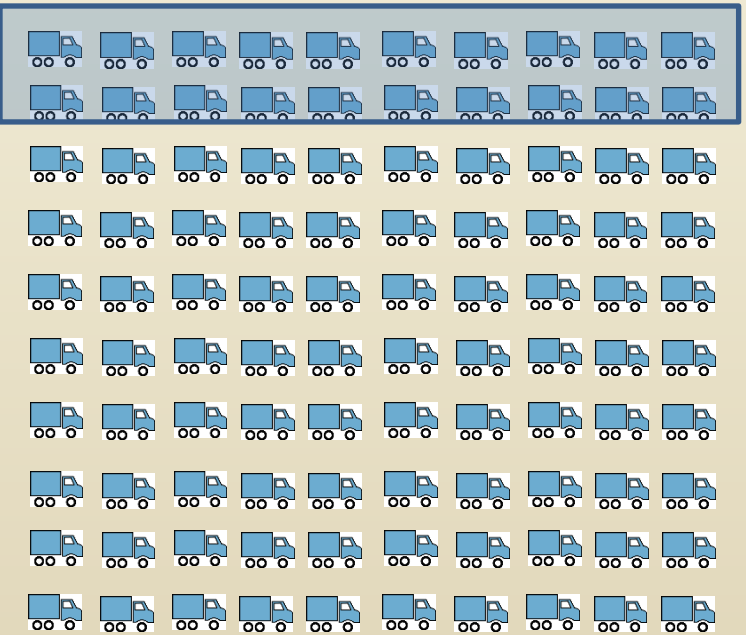


Particulate Emissions from DPF-Equipped Trucks in California

20% of Fleet



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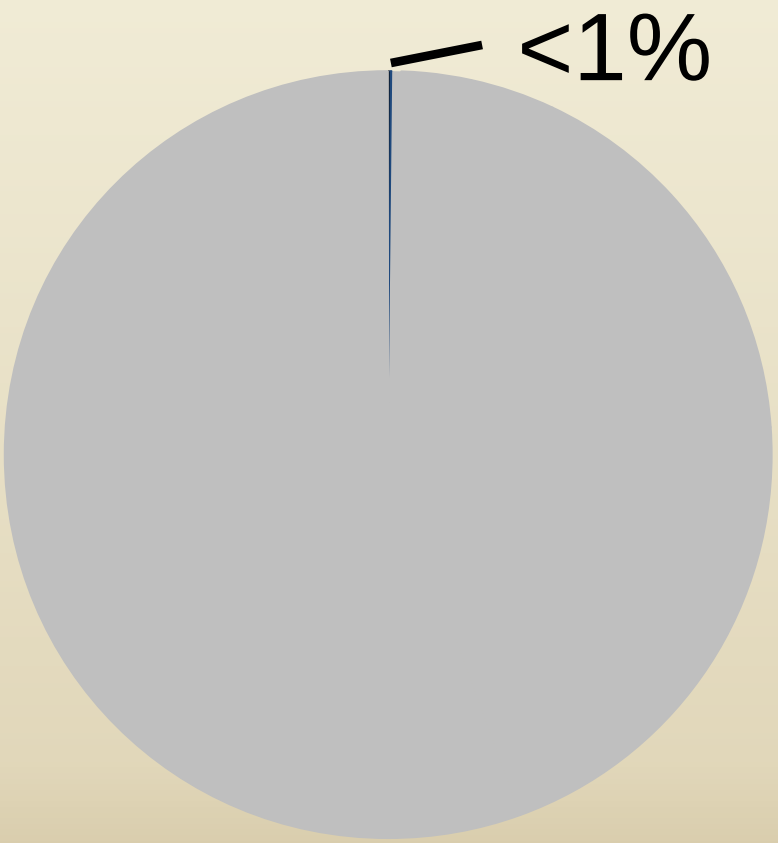
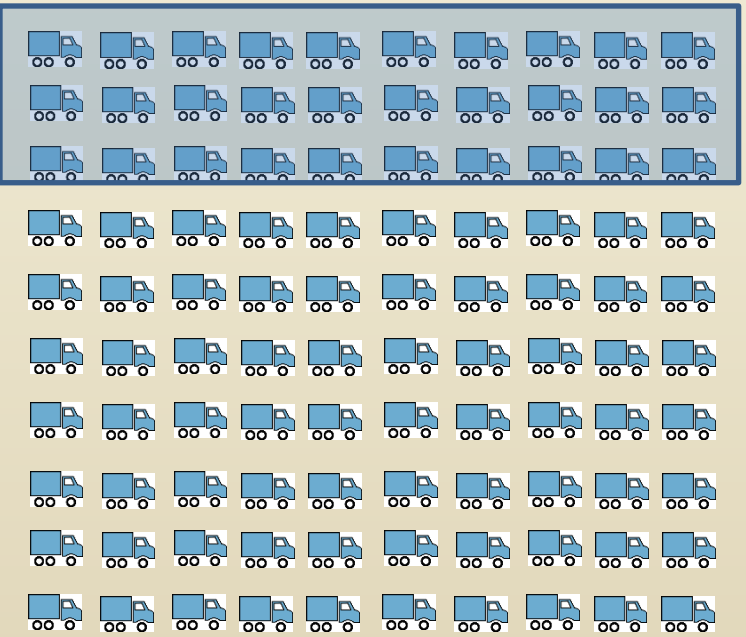


Particulate Emissions from DPF-Equipped Trucks in California

30% of Fleet



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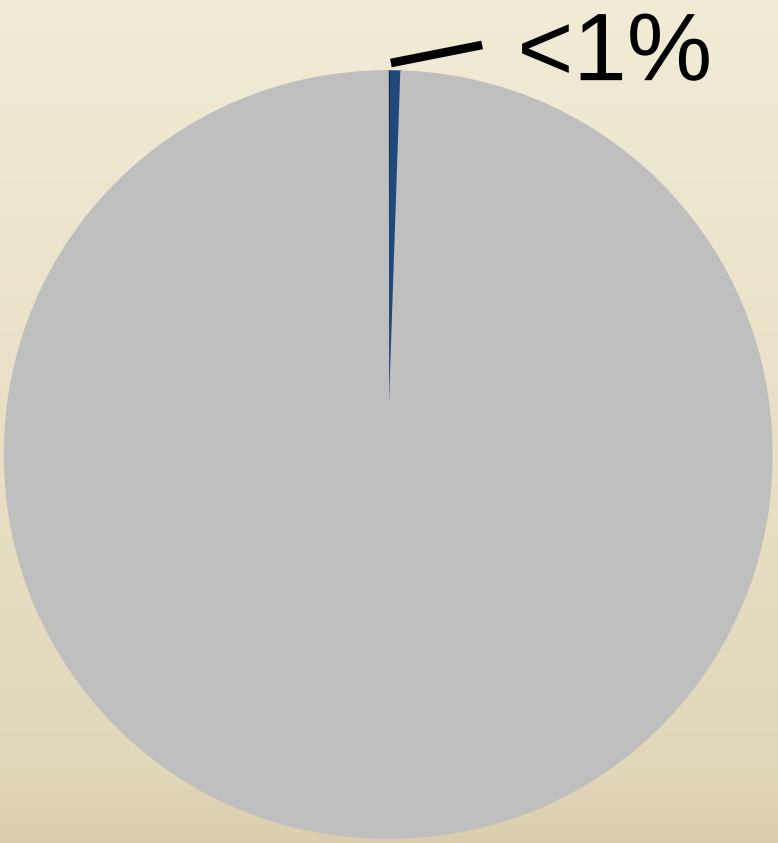
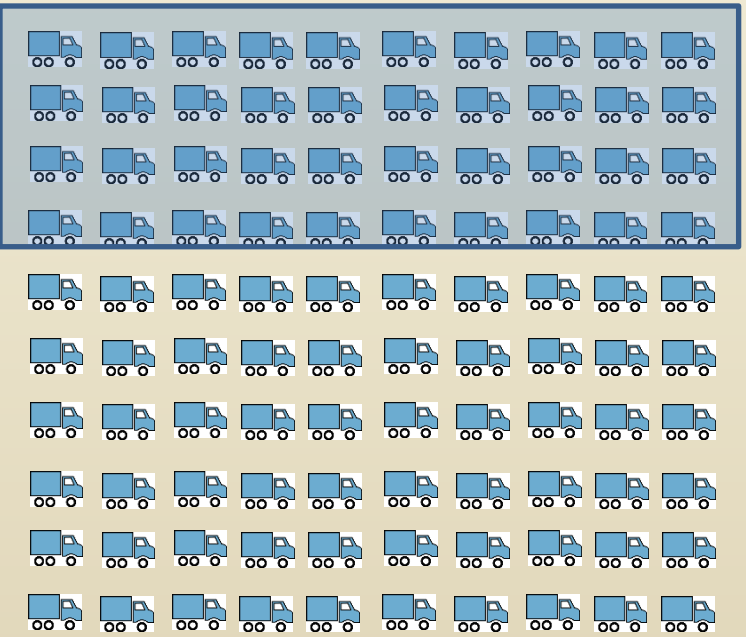


Particulate Emissions from DPF-Equipped Trucks in California

40% of Fleet



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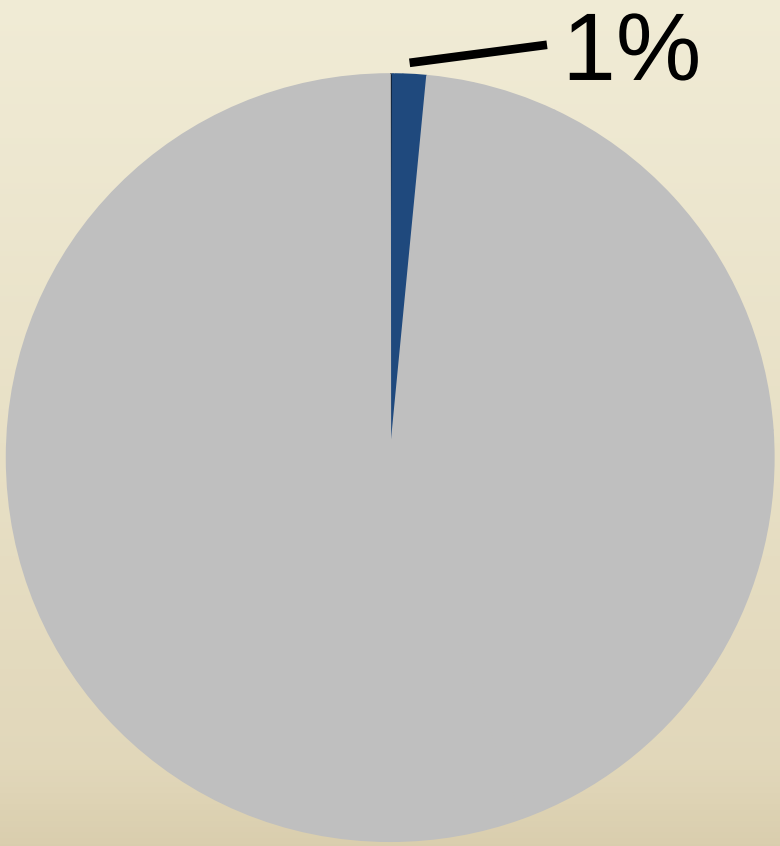
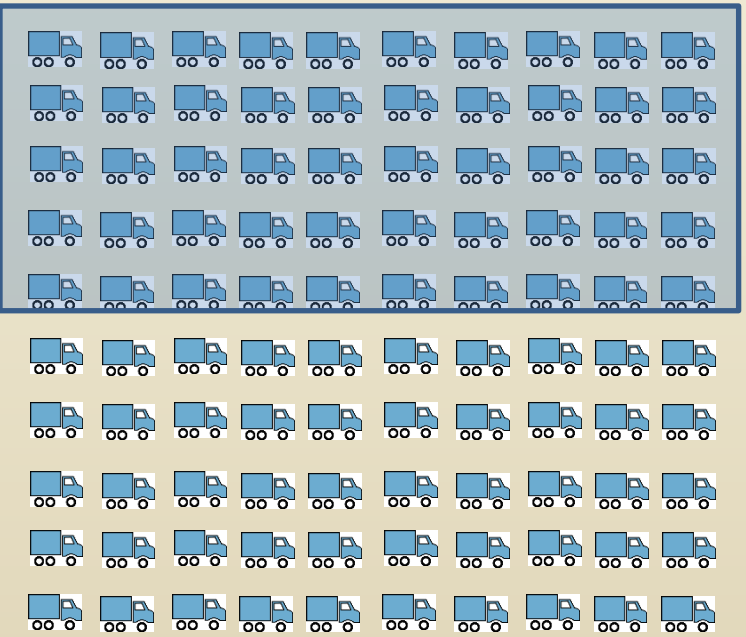


Particulate Emissions from DPF-Equipped Trucks in California

50% of Fleet



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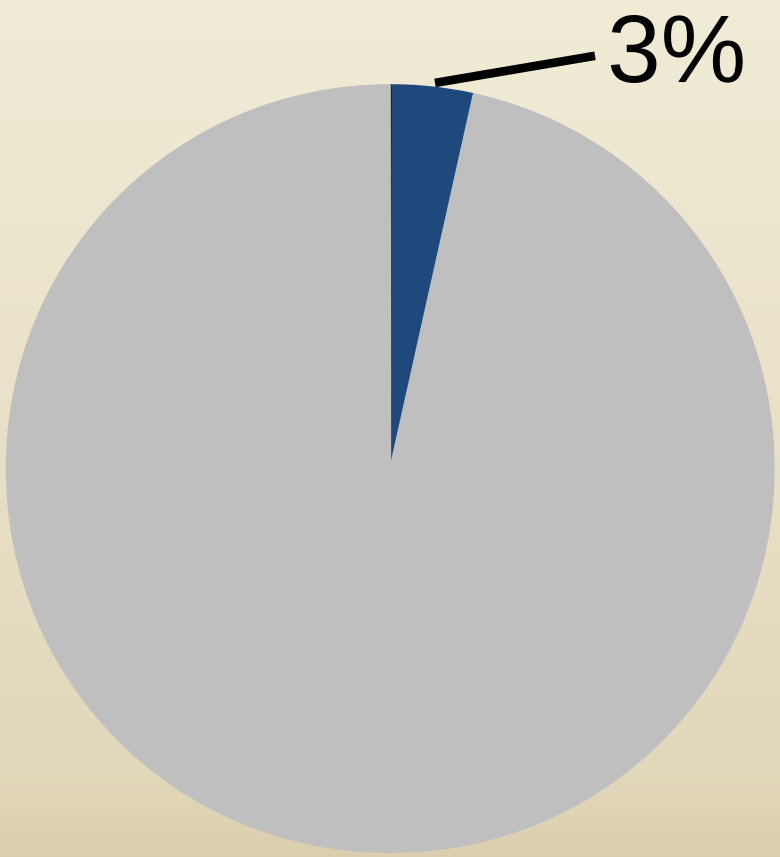

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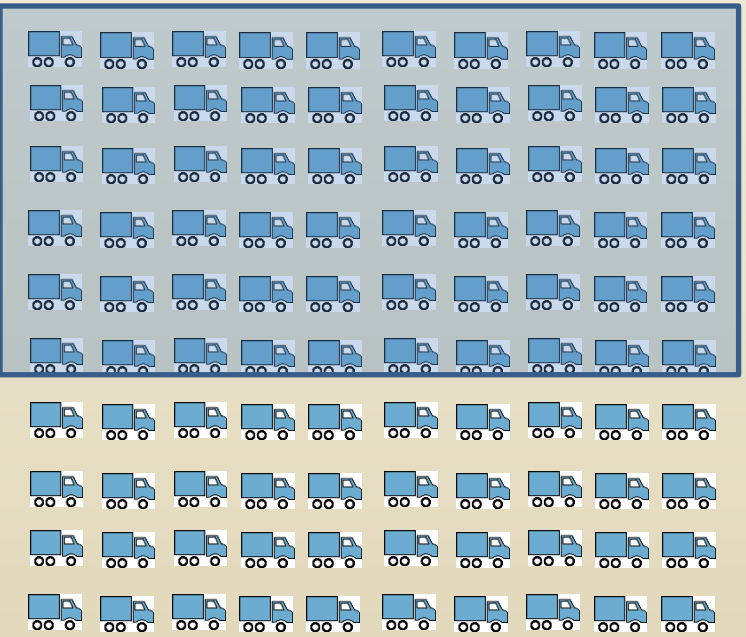
60% of Fleet



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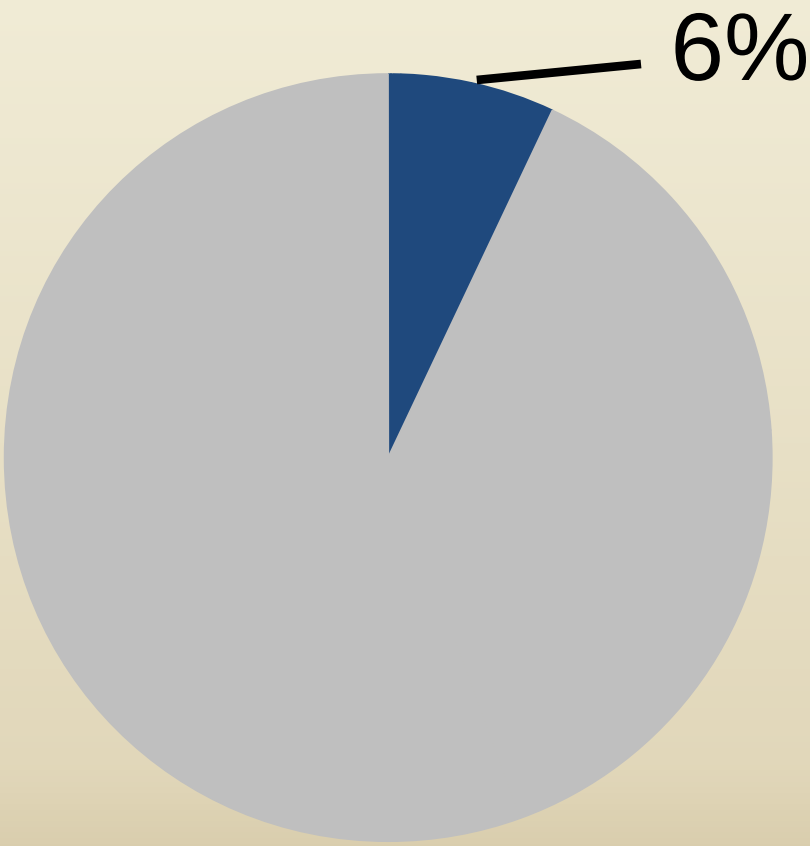
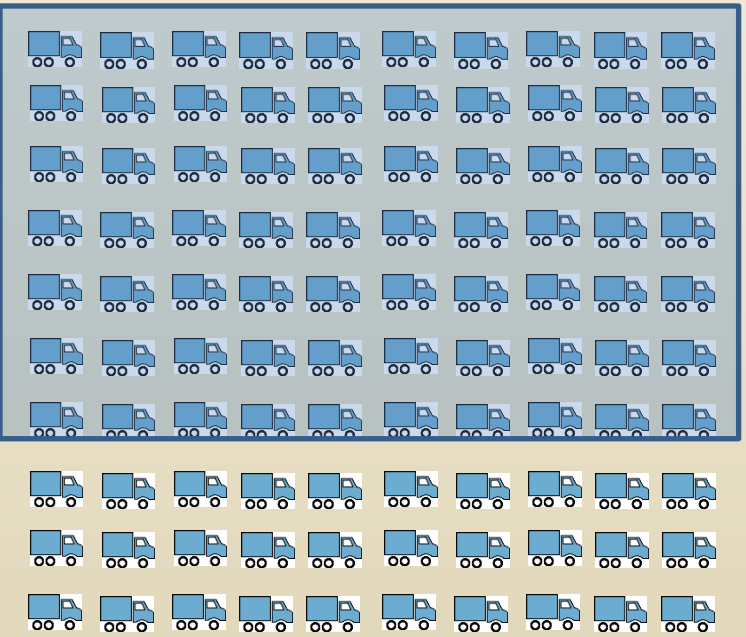


Particulate Emissions from DPF-Equipped Trucks in California

70% of Fleet



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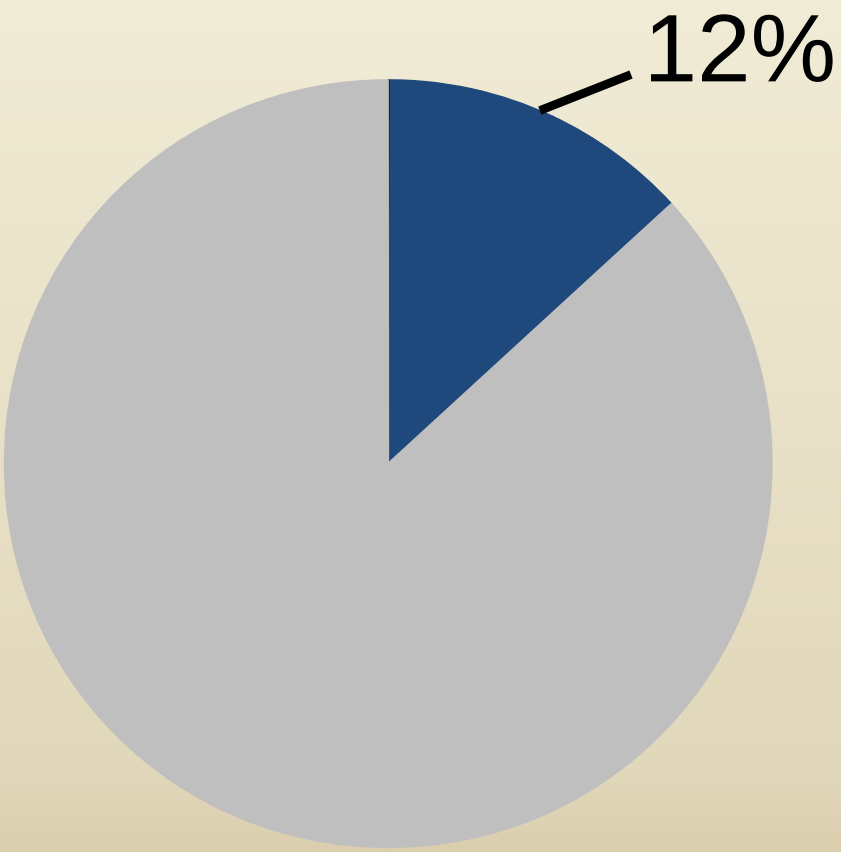
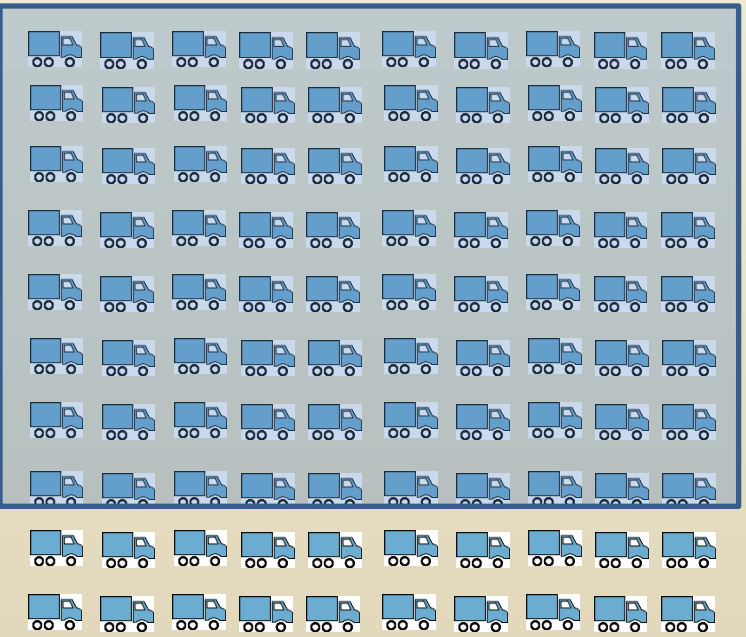


Particulate Emissions from DPF-Equipped Trucks in California

80% of Fleet



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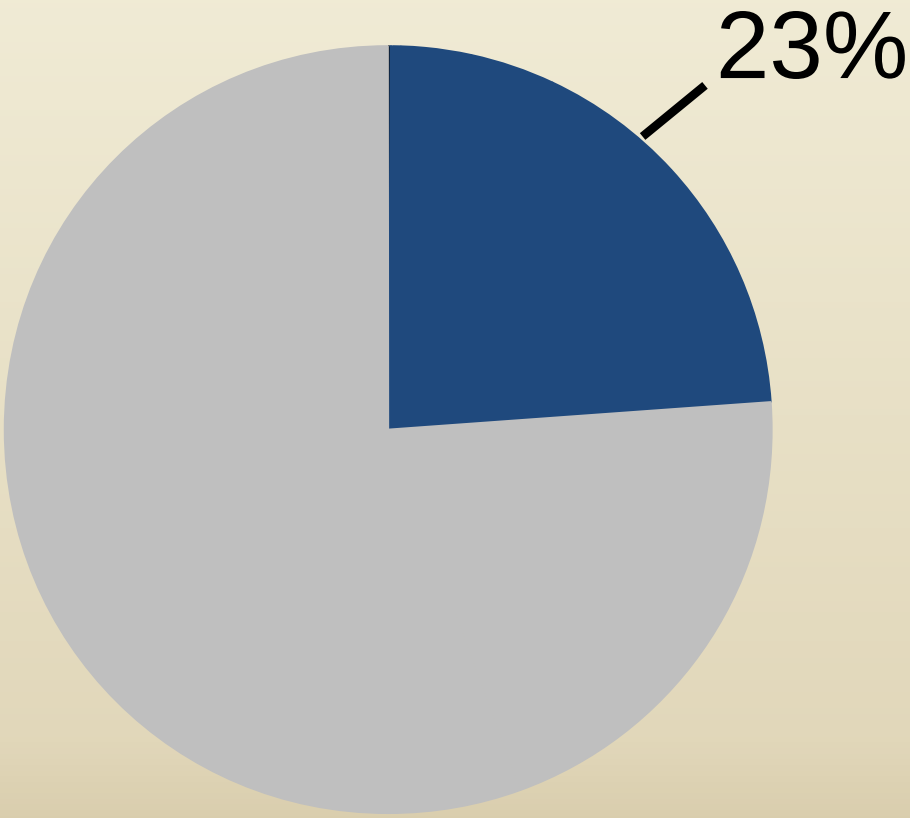

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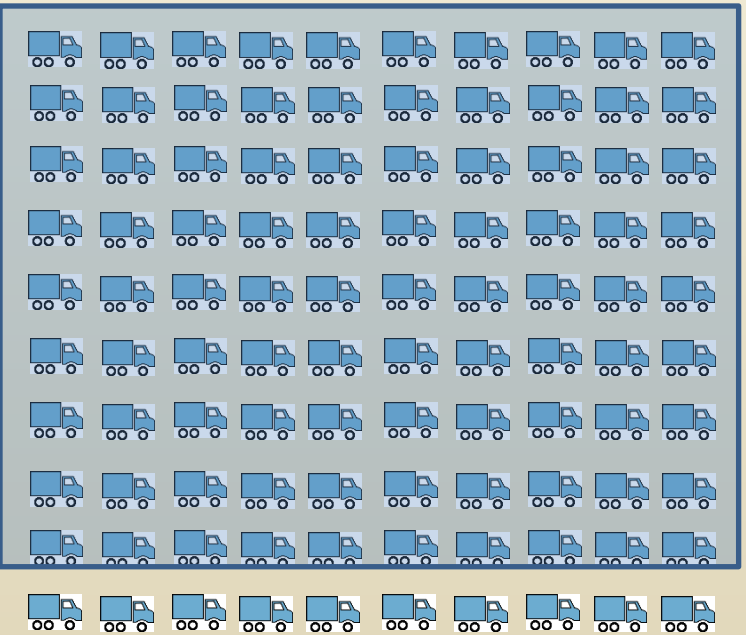
90% of Fleet



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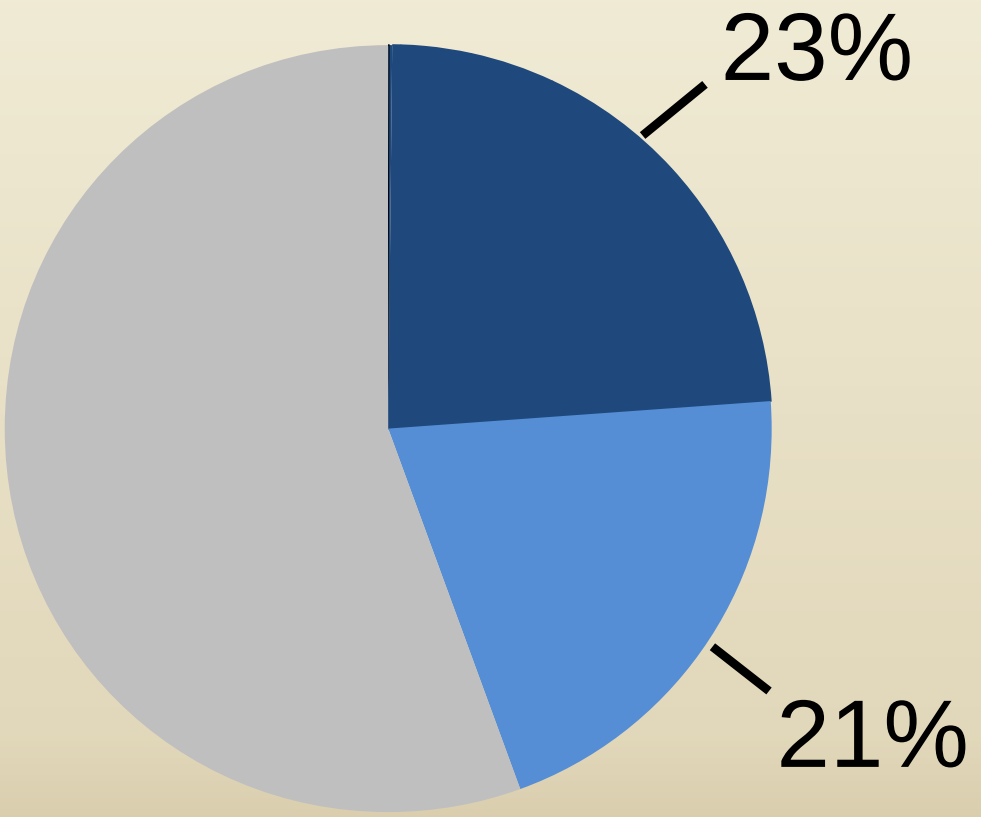
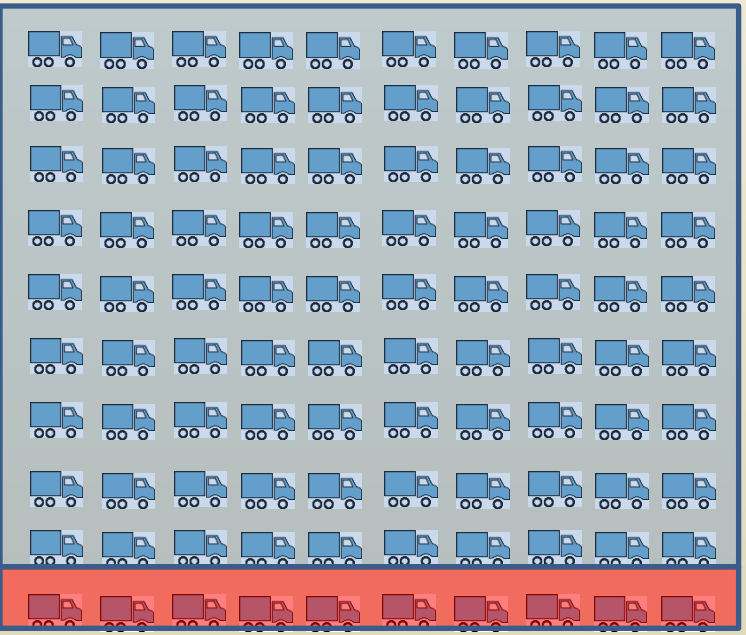


Particulate Emissions from DPF-Equipped Trucks in California

100% of Fleet



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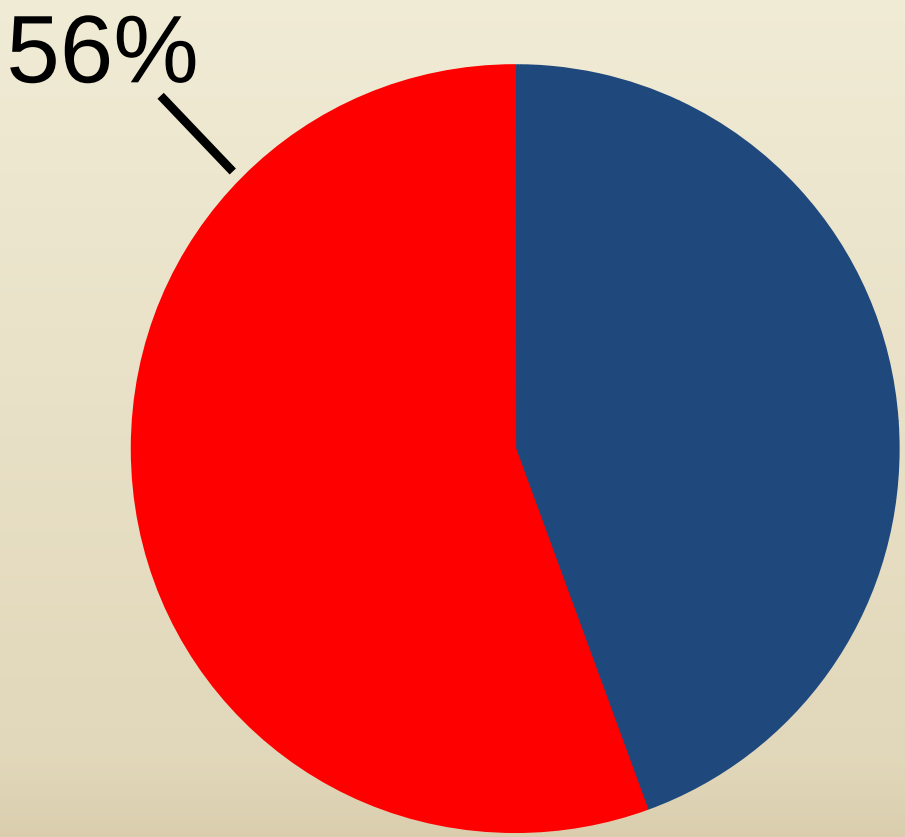

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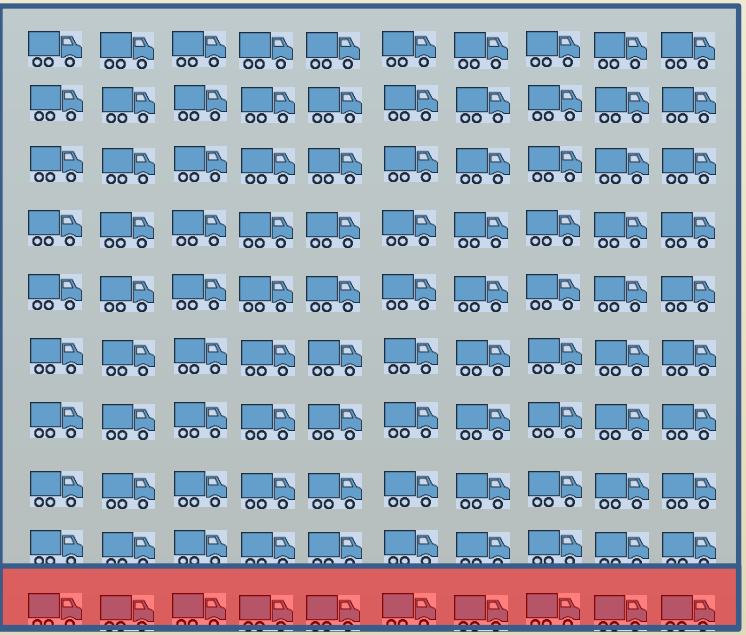

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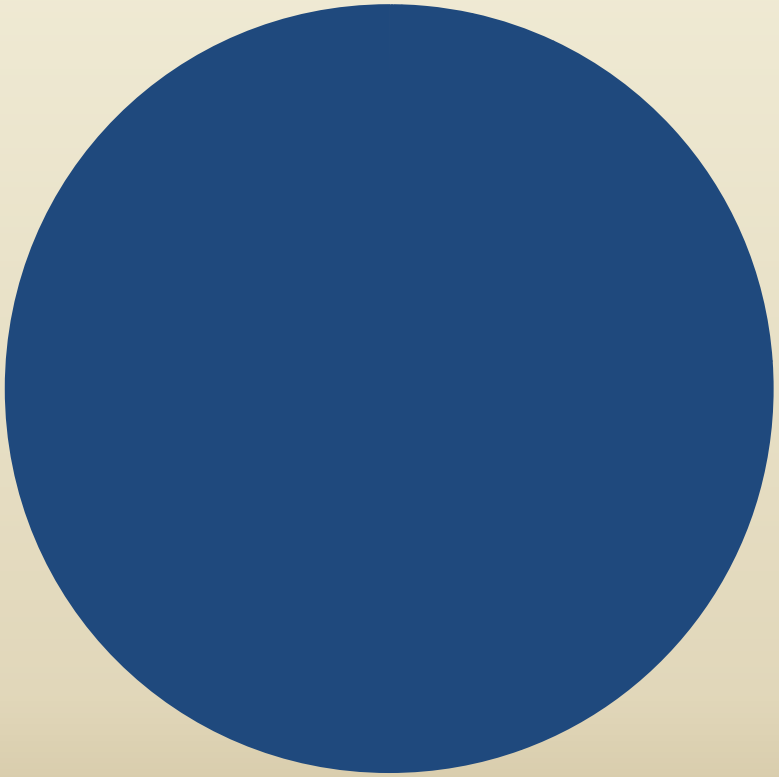


Current Opacity Standards

Established in 1990s

- SAE J1667 snap acceleration test
- 40% opacity for 1991 engine model year and newer
- Citation issued for non-compliance

40% Opacity Standard is too High for Modern Trucks

- Working with Mobile Source Control Division to lower limit
  - Proposing 5% limit for DPF-equipped trucks
- Transition to Heavy Duty Inspection and Maintenance Program

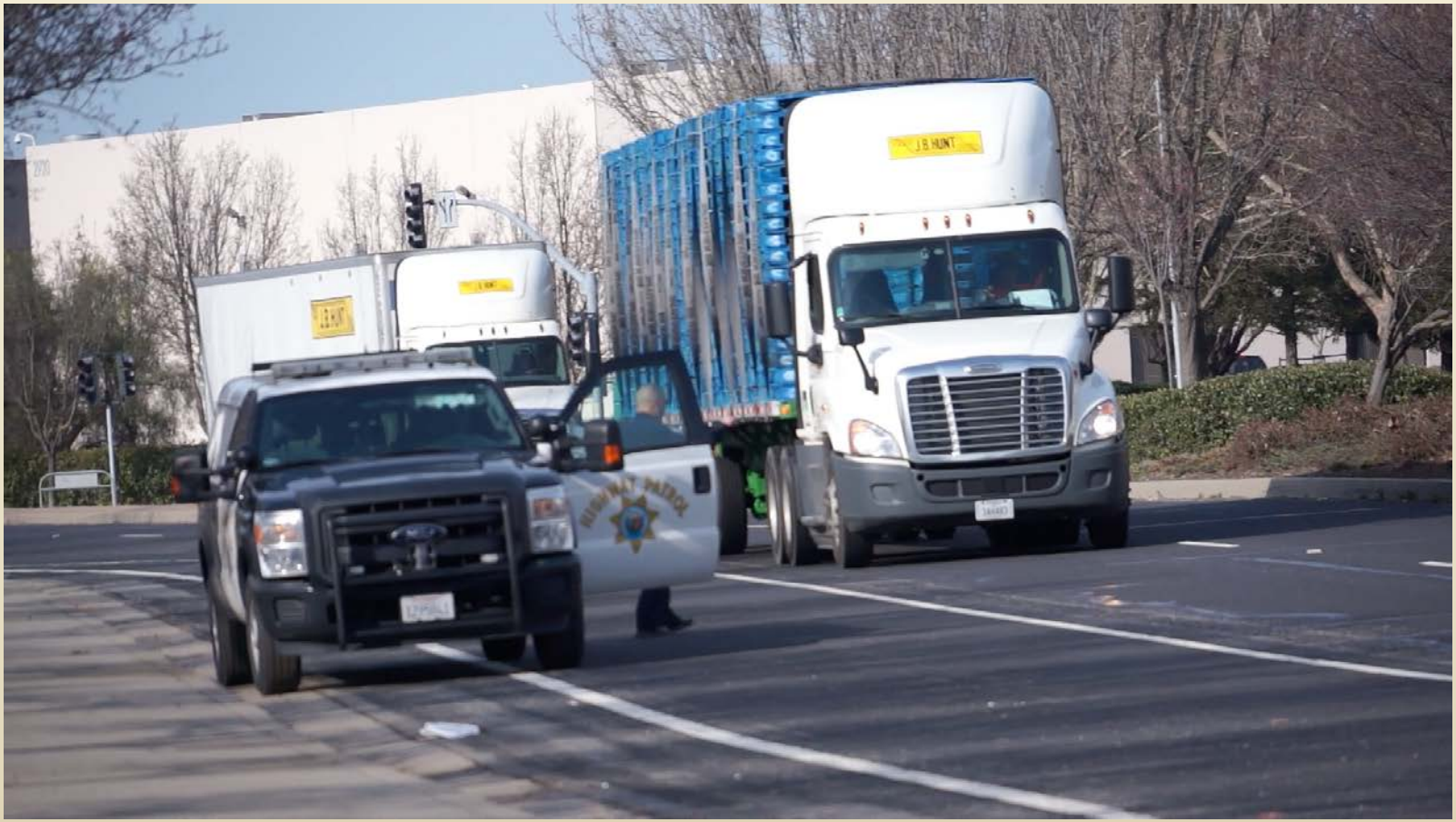
Outline

- Reducing heavy duty vehicle emissions
- Field enforcement
- Portable Emissions AcQuisition System
- How CARB will keep collected data secure

Enforcement in the Field

- ED conducts inspections in the field of heavy duty diesel vehicles and equipment
- Health and Safety Code § 44011.6
  - Gives authority for inspections
- Staff issue citations for noncompliance
  - $300 - $1,800 fine

Typical Field Inspection of Heavy Duty Diesel Truck



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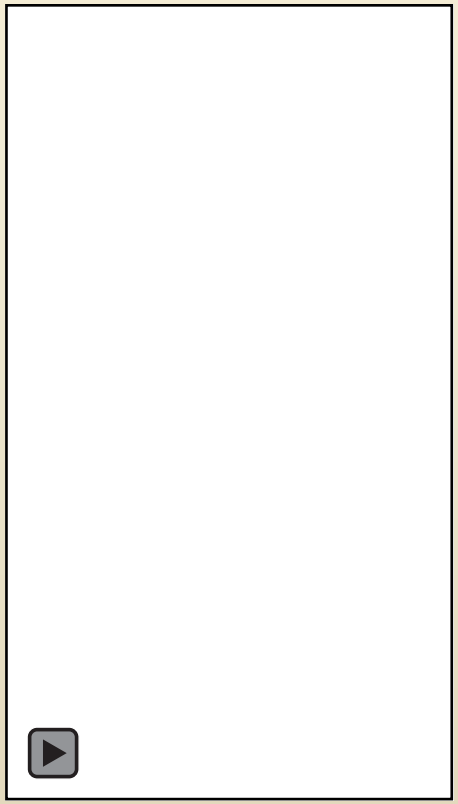
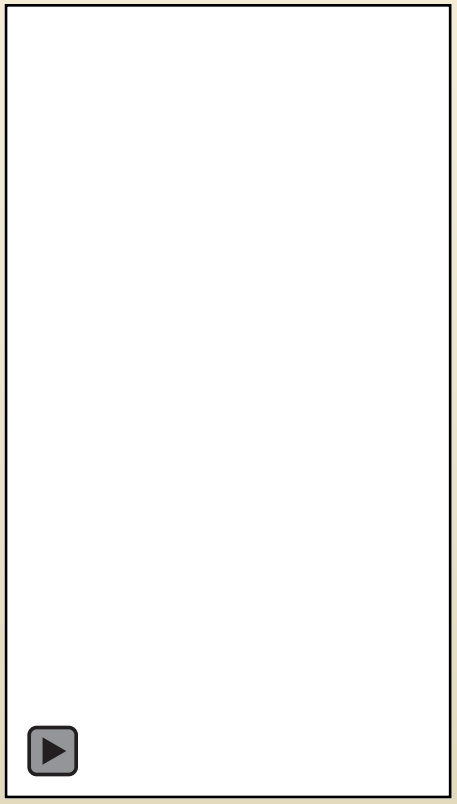
Snap Idle Test



Non-DPF Equipped



DPF Equipped

Field Enforcement

- Total inspections for all heavy duty vehicle programs in 2016
  - 15,459 heavy duty vehicles inspected
    - 8,586 in disadvantaged communities (56%)
  - 4,292 citations
    - 2,306 in disadvantaged communities (54%)
- Continue to conduct more than 50% of inspections in disadvantaged communities in 2017 and beyond

Outline

- Reducing heavy duty vehicle emissions
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- Portable Emissions AcQuisition System
- How CARB will keep collected data secure

New CARB Measurement Technology

- Developed prototype system in-house to sample emissions from trucks
  - Easily deployable
  - Cost effective
  - Real-time results
  - Able to measure hundreds of trucks per day

Portable Emissions AcQuisition System (PEAQS)

Automated License Plate Readers Have Many Uses

- FasTrack toll bridges
- Secure parking garages
- Airport parking lots
- CHP weigh stations

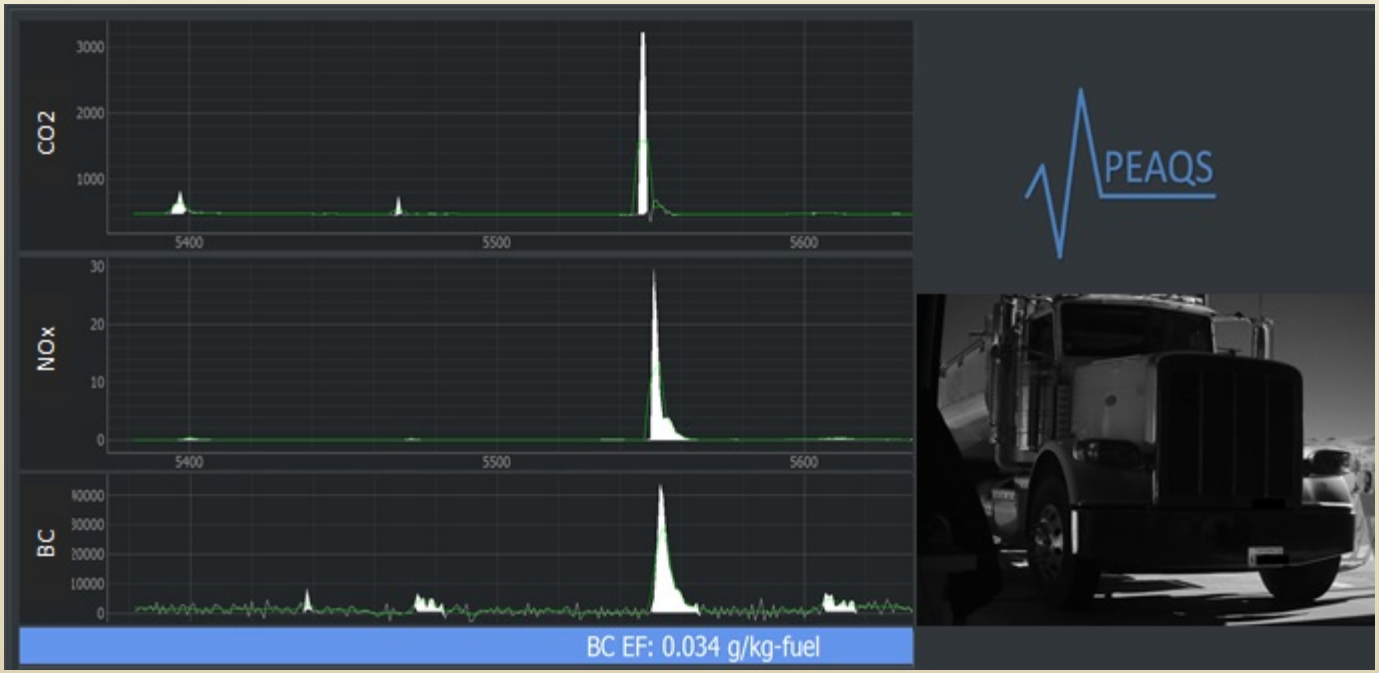
How PEAQS Will be Used

- Research
- Regulation development and implementation
- Air monitoring
- Fleet characterization
- Enforcement
  - Screening tool to prioritize inspections and investigations
  - Not the basis for any citation or notice of violation

What is PEAQS?

Data Collection and ALPR

- Emissions snapshots are paired with image of passing vehicle



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Senate Bill 34 Requirements

- Automated license plate recognition systems: use of data
  - Implement privacy policy
  - Purposes for using system
  - Keep data secure
  - Provide public notice of intent to use

- CARB is ALPR operator and end user

Key Policy Elements

- Data security
  - Only authorized users and operators can access data
  - Authorized users and operators must have training
  - Authorized users and operators must maintain compliance with privacy laws
  - Mechanisms in place to prevent data breach

Meeting SB 34 Requirements

- Public workshop on March 3, 2017
- Developed draft policy and implementation procedures to keep data secure

https://www.arb.ca.gov/enf/policy2017.htm

Conclusions and Next Steps

- High emissions from heavy duty trucks are a problem that can be addressed
  - Truck and Bus compliance rate
  - Lower opacity limit
  - PEAQS
  - Heavy-duty inspection and maintenance program
- Next steps
  - Deploy PEAQS
  - Operate the ALPR
  - Implement the new policy