

CARB Diesel Vehicle & Equipment Regulations

An Update on Regulations Applicable to Diesel Powered Equipment in CA, Enforcement & Filtration Systems



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Presented by:

Randy Opfer

CA Air Resources Board

California Environmental Protection Agency

 **Air Resources Board**

Agenda

- Diesel Emission Control Strategies
- Enforcement
- On-Road Truck & Bus Rule
- On-Road Public Fleet Rule
- Idling
- In Use Off-Road
- Portable Equipment Registration Program (PERP)

Diesel Particulate Filter (DPF) Technology



Program Outline...

- What is a Diesel Particulate Filter (DPF) and how does it work
- What does having a DPF equipped truck or piece of equipment mean to the driver?

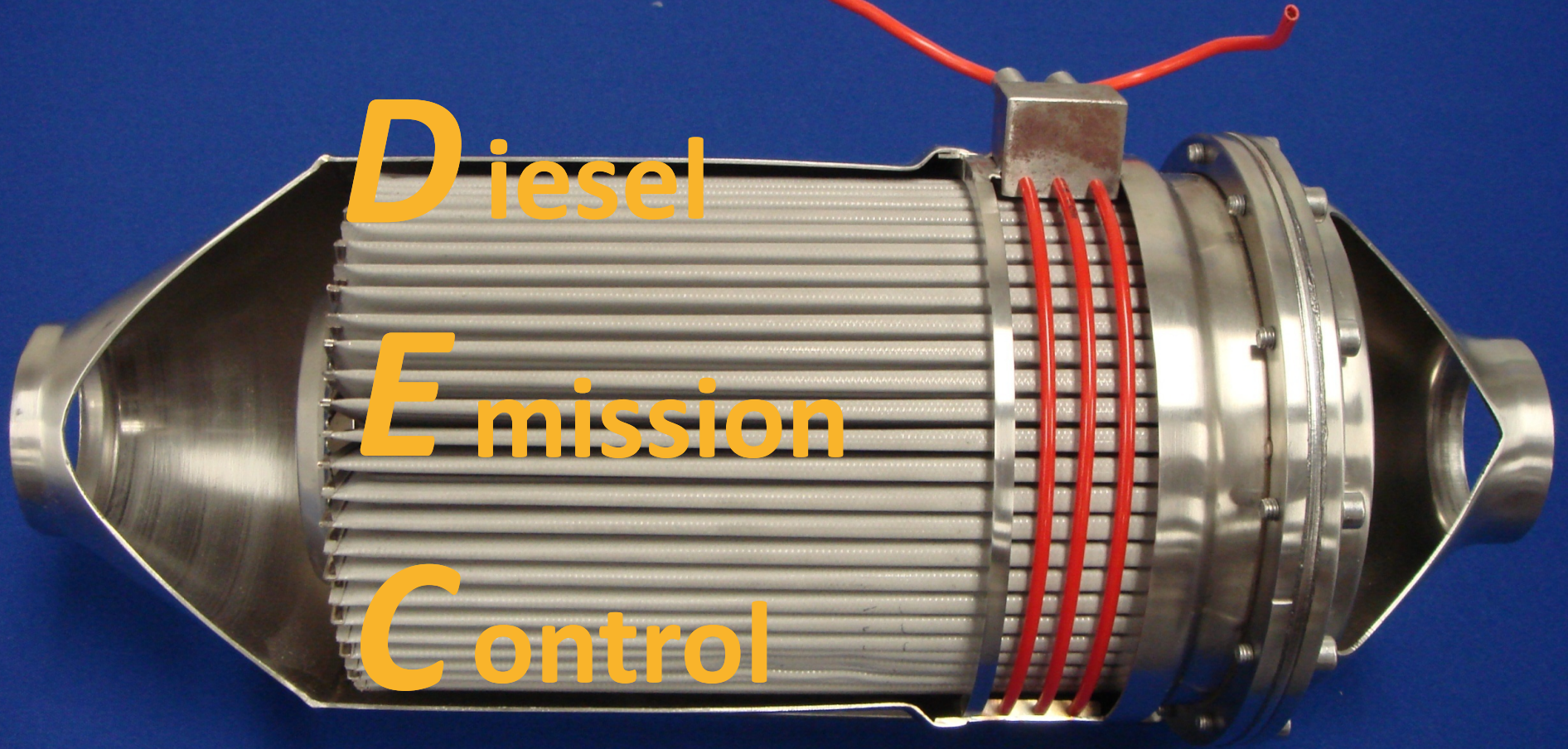
Verified *(Diesel Particulate Filter)*

Diesel

Emission

Control

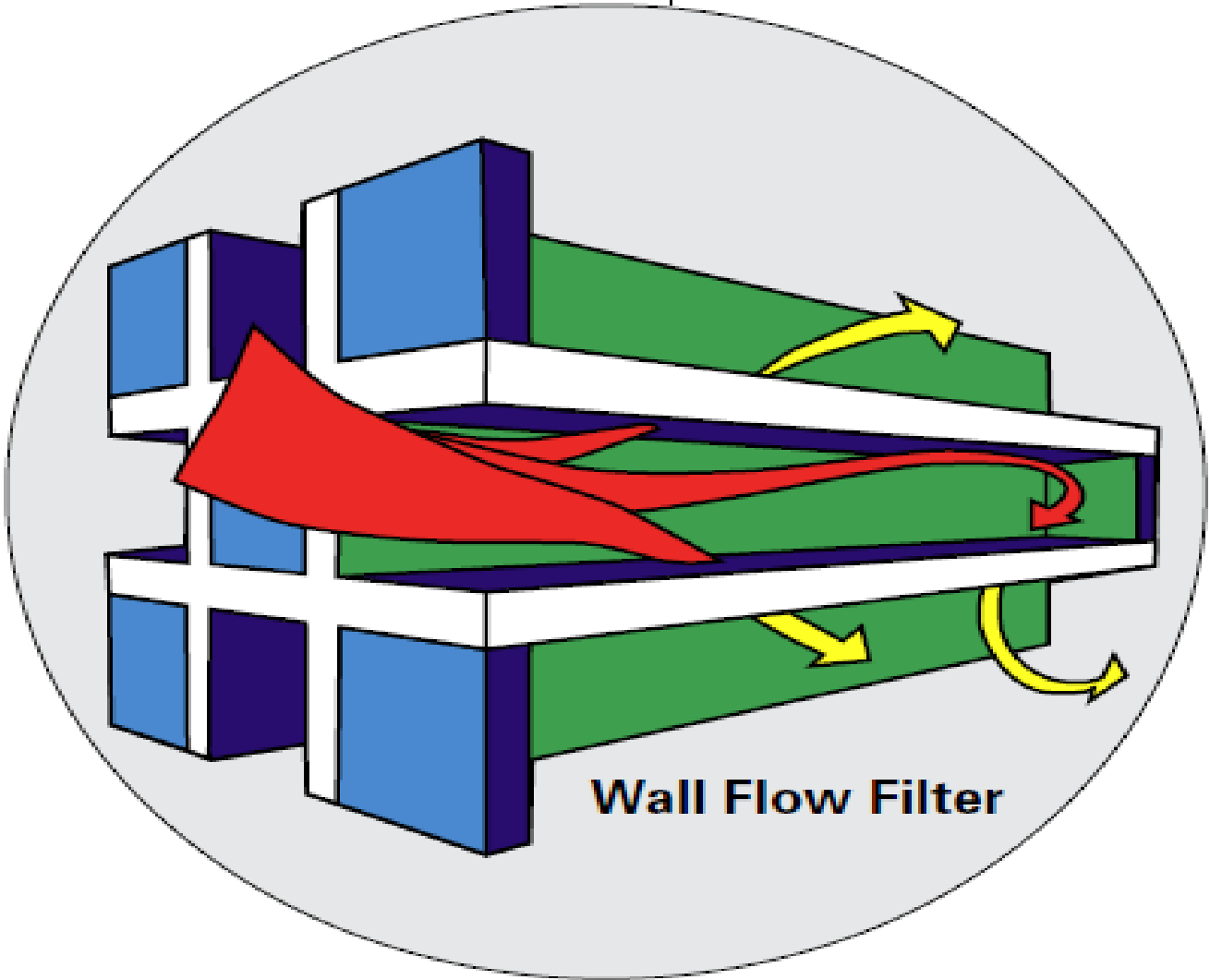
Strategy



What is a Diesel Particulate Filter (DPF) and How Does It Work?

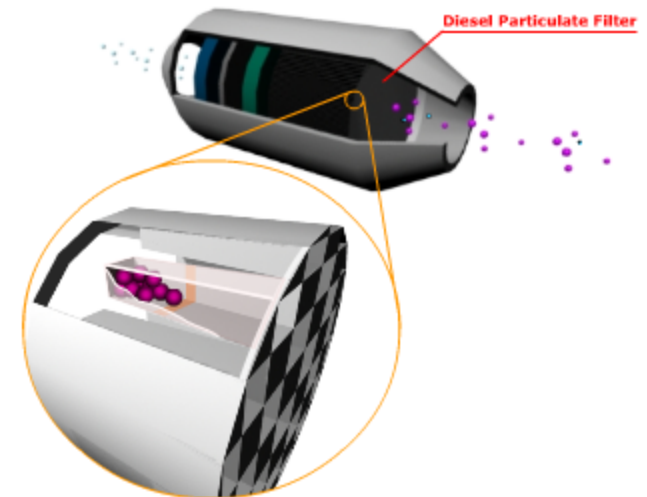
- Wall-flow Filter Technology
- Ceramic or Metal Filter Substrate
- Semi-solid Walls with Micro Pores
- Gases Flow Through Walls, Solids Become Trapped
- Filters Installed Retroactively on Pre-'07 Engines
- Filters Come with '07 and Newer Engines





What is a Diesel Particulate Filter (DPF) and How Does It Work?

- Filter Regeneration
 - If filters are allowed to load with too much PM, they become plugged
- Regeneration Options
 - Passive
 - Active
 - Hybrid



What Does a DPF Mean to a Driver / Operator?

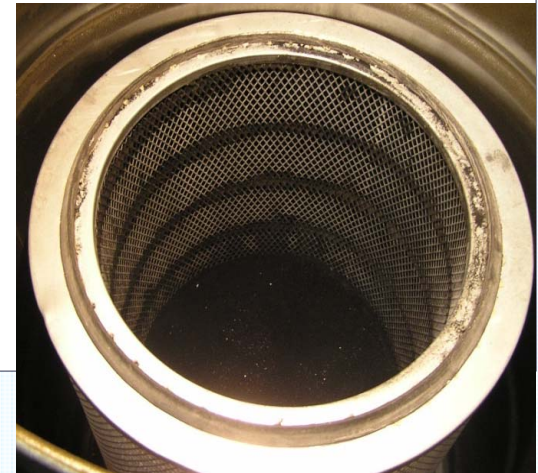
- Warning Lamps
 - Green
 - Amber
 - Red
- Sensors
 - Pressure
 - Temperature



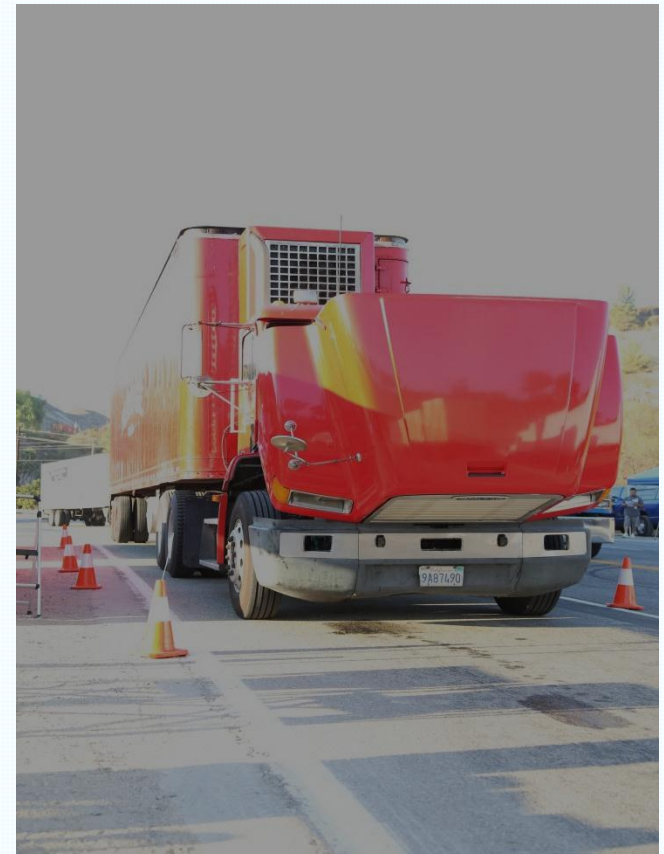
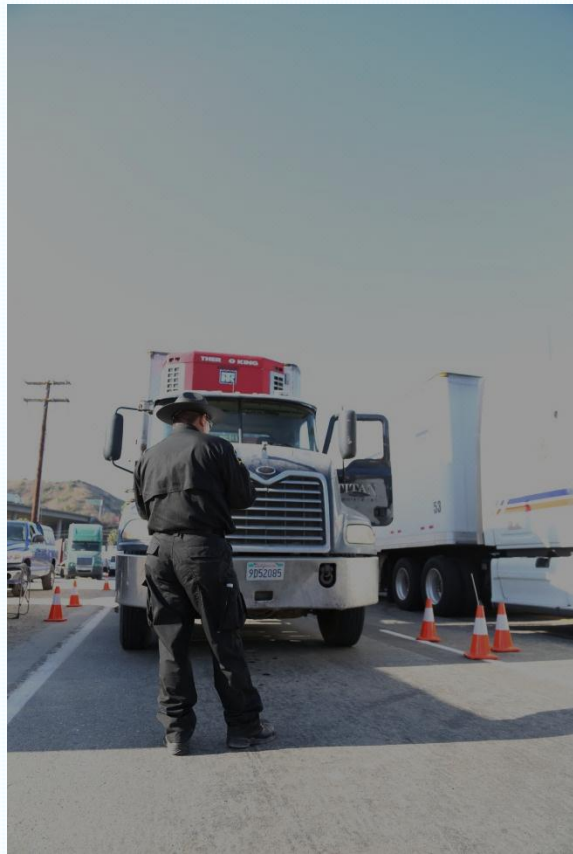


What Does a DPF Mean to a Driver / Operator?

- Periodic Ash Removal
 - Loaded PM is burned off during regeneration
 - Non-combustibles don't participate in regeneration
 - Non-combustibles come from...
 - Engine oil, engine/exhaust wear, fuel additives
 - Cleaning Machines
 - Shake, bake, reverse air flow
 - Frequency
 - Annually or less frequently



Heavy-Duty Vehicle Inspection Program (HDVIP) (1988)



What Vehicles Are Inspected?

Diesel or gasoline fueled vehicles 6,000 GVWR or greater operating in California, including:

- Trucks
- Transit Buses
- School Buses
- Government Vehicles
- Military Vehicles
(excluding tactical vehicles)



Where Are Vehicles Inspected?

Vehicles can be inspected anywhere in CA;

- CHP scales or inspection facility
- Ports
- AG inspection station
- Rail yards
- Distribution centers
- Truck stops
- Rest area
- Random roadside locations



What will ARB inspectors be looking for?

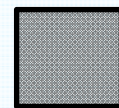
- Excessive Smoke
- Emission Control Label
- Tampering
- Use of Illegal Diesel Fuel
- Compliance with Fleet Rules
 - Emissions Control Equipment



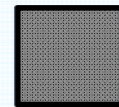
Excessive Smoke – Visual Inspection

Inspector will conduct a visual snap acceleration test:

- Gear in neutral, driver rapidly accelerates engine
- Inspector visually checks smoke opacity



– 40% opacity for 1991
and newer

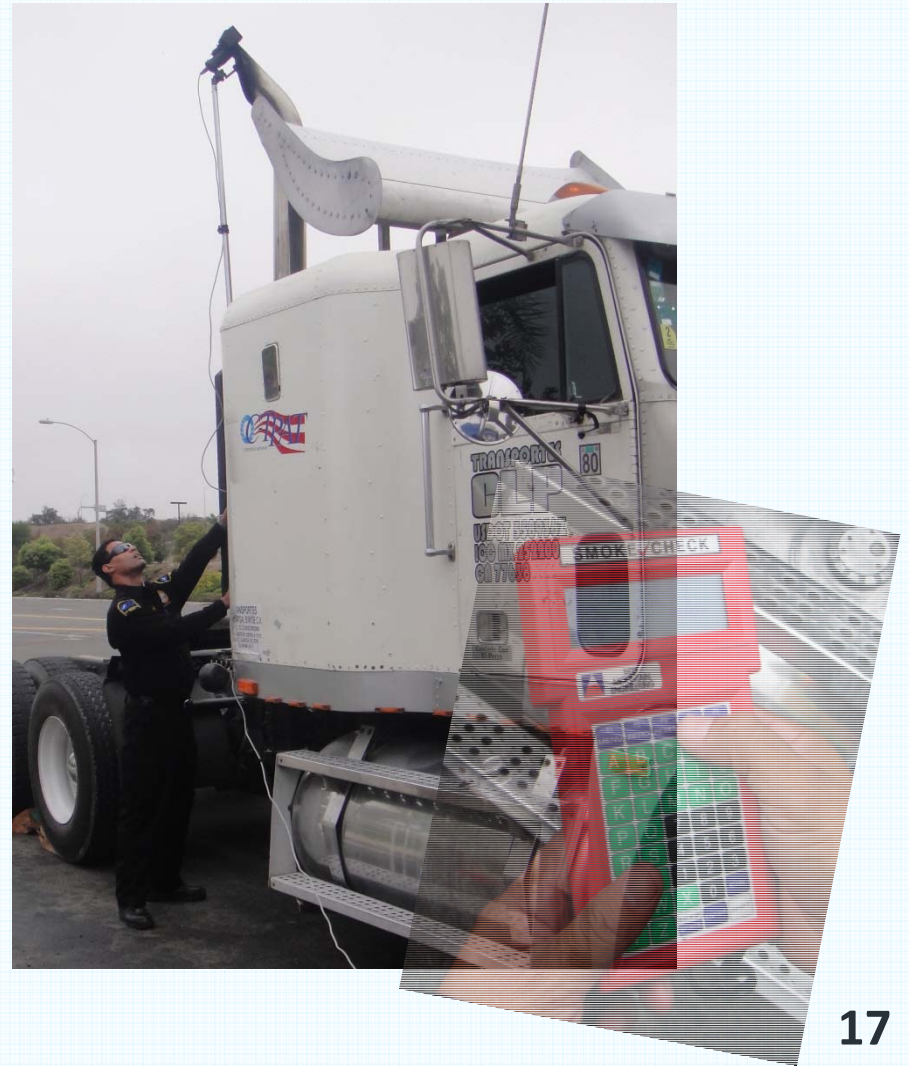


– 55% opacity for pre-1991

>3% opacity on trucks with DPFs,
may be cited for mal-maintenance

Excessive Smoke - Inspection via Opacity Meter

- If vehicle does not pass opacity test, inspector will conduct test using a smoke opacity meter



Diesel Fleet Inspections (Periodic Smoke Inspection Program)



- **Authorized by SB 2330 of 1990**
- **Same cut points as roadside program**
 - Uses SAE J1667 test protocol
 - Four-year rolling exemption for HDDVs
- **Fleets must test trucks & buses every year and keep the records for two years or in violation (applies to fleets with two or more)**
- **Regulations codified at: 13 CCR 2190 et seq.**

Emission Control Labels (ECL)

- ECL's demonstrate the engine meets the appropriate emission standards for the model year that the engine was manufactured and must be;
 - Legible
 - Maintained at the location originally installed by the engine manufacturer
 - Label must show engine was certified to US EPA emissions standards



Compliance with Fleet Rules

- Determine if vehicle meets applicable regulations and met reporting requirements.

(Truck and Bus, Drayage, PAU, SWCV, Transit, TRU)



ARB Diesel Vehicle Regulations

- Urban Buses (2000)
- Garbage Trucks (2003)
- School Bus Idling (2003)
- Stationary Engines (2004)
- TRUs (2004)
- Commercial Idling (2004)
- **Portable Engines (2004)**
- Transit Fleet Vehicles (2005)
- Public Fleet & Utilities (2005)
- Cargo Handling Equipment (2005)
- Port Trucks (2007)
- **Off-Road Vehicles (2007)**
- GHG Tractor-Trailer (2008)
- **Truck and Bus Regulation (2008)**
- Off-Road Agricultural Vehicles (TBD)



Truck and Bus Regulation



Who Must Comply?



- **Private and federal fleets (one or more vehicles)**
 - Operating in California
 - Diesel or alternative diesel fuel
 - GVWR over than 14,000 lbs.
- **Public and private school buses**
 - Specific requirements
- **Two-engine street sweepers**
- **Public agency & private utility fleets must comply under a separate rule**

Responsibility to Comply

- **Any person, business or agency that**
 - Owns, leases/rents, sells, & CA based brokers & dispatchers
- **Must verify hired fleets are in compliance**
- **Must provide sales disclosure in writing to buyer**
 - Exact language can be found on Advisory 451



Exclusions

- Emergency vehicles
- Military tactical vehicles
- Personal use motor homes
- Personal use pickup trucks $\leq 19,500$ lbs. GVWR
- Historic vehicles
- Vehicles subject to other in-use regulations
 - Two engine vehicles (subject to off-road regulation)



Regulation Requirements

Light

14,001 – 26,000 lbs. GVWR



Heavy

26,001 lbs. GVWR and greater



- Requirements based on GVWR & engine model year
- Must have 2010 model year or newer engines by 2023
- Most heavier trucks must have PM Exhaust filters installed

Basic Compliance Schedule for Lighter Vehicles (14,001 – 26,000 lbs. GVWR)

Schedule for Lighter Trucks and Buses	
Engine Year	2010 MY Engine
1995 and older	January 1, 2015
1996	January 1, 2016
1997	January 1, 2017
1998	January 1, 2018
1999	January 1, 2019
2003 and older	January 1, 2020
2004-2006	January 1, 2021
2007-2009	January 1, 2023

- No PM filter requirements
- Reporting only required if certificate is needed to show compliance

Basic Compliance Schedule for Heavier Vehicles (26,001 lbs. GVWR and greater)

Schedule for Heavier Trucks and Buses		
Engine Year	PM Filter	2010 MY Engine
Pre-1994	Not required	January 1, 2015
1994-1995	Not required	January 1, 2016
1996-1999	January 1, 2012	January 1, 2020
2000-2004	January 1, 2013	January 1, 2021
2005 or newer	January 1, 2014	January 1, 2022
2007-2009	Already equipped	January 1, 2023

- Reporting is only required if a certificate is needed to show compliance

Flexibility Options

Available During Open Reporting Period* (Jan. 1-31 Annually)	Closed Options	Other
<ul style="list-style-type: none"> • Low-use exemption 	<ul style="list-style-type: none"> • Small fleet Option 	<ul style="list-style-type: none"> • Three day pass for out of state fleets
<ul style="list-style-type: none"> • Low-mileage work truck option 	<ul style="list-style-type: none"> • PM filter phase-in & credits 	<ul style="list-style-type: none"> • Limit on 2010 MY engines required in any year
<ul style="list-style-type: none"> • Clean air area extension/NOx Exempt 	<ul style="list-style-type: none"> • Ag vehicle extension 	<ul style="list-style-type: none"> • PM filter availability extension
<ul style="list-style-type: none"> • Heavy Crane Extension 	<ul style="list-style-type: none"> • Log truck phase-in 	<ul style="list-style-type: none"> • Manufacturer delay
<ul style="list-style-type: none"> * Or within 30 days of adding a vehicle to the fleet 	<ul style="list-style-type: none"> • Extended use of PM filter installed by Jan. 2014 	
	<ul style="list-style-type: none"> • Economic hardship extension 	

Low-Use Vehicle Exemption

Low-use vehicles may operate without PM filters or 2010 or newer MY engines if they stay below specified mileage limitation

Key Information:

- Less than 5,000 total miles/year* or;
 - Less than 1,000 miles/year* in CA
 - Jan. 1, 2020 all low-use vehicles must stay below 1,000 miles/year
 - No limit on the number of low-use vehicles in a fleet
 - Must have functioning odometer/hub-odometer
 - Must report annually & update odometer readings
- * Excludes mileage accrued in emergency/emergency support operation*



Low-Mileage Work Truck Option

Qualifying low mileage work trucks may operate under specified mileage threshold if the fleet meets a minimum % of PM filters

Key Information:

- To be eligible, vehicle must:
 1. Operate less than 20,000 miles/year
 2. Have been owned Jan. 1, 2012 OR have a 1996 or newer engine
 3. Meet one of the following vehicle types:
 - Dump Truck
 - Owned by a company that has a valid CA Contractors license
 - Truck w/ attached bed/body
 - Truck that exclusively pulls a lowboy trailer
 - Any lighter truck (GVWR 14,001 – 26,000 lbs.)
- Vehicle must be labeled with “WT” or “CT”



EXCLUDES – Truck and trailer combinations that haul goods

Low-Mileage Work Truck Option

Qualifying low mileage work trucks may operate under specified mileage threshold if the fleet meets a minimum % of PM filters

Compliance Date	PM Filters Required
Jan. 1, 2014	33%
Jan. 1, 2015	40%
Jan. 1, 2016	60%
Jan. 1, 2017	80%
Jan. 1, 2018	100%
Jan. 1, 2020	Meet MY schedule

Key Information

- Heavy/light portion of fleet must meet minimum % of PM filters
 - Excludes low-use & funded vehicles
- Must report (all heavy/light portion of fleet)

AG Vehicle Mileage Extension

AG vehicles may operate without PM filters or 2010 or newer MY engines if they stay below specified mileage limitations

Key Information:

- Option closed, final opt-in was Jan. 31, 2015
- Only for specified AG Vehicles
 - Specialty AG Vehicles, seasonal and not-for-hire Cattle trucks do not have mileage limitations
- Vehicle must be labeled with “AG”
- Annual mileage limits based on engine MY
 - Must report odometer readings annually from 2011 – 2023



AG Vehicle Mileage Extension

Engine Model Year	Annual Limit
2006 or newer	25,000 miles
1996 – 2005	20,000 miles
1995 and older	15,000 miles

15,000 miles/year after Jan. 1, 2017
10,000 miles/year after Jan. 1, 2020
2010 MY engine by Jan. 1, 2023



Reporting

- 2016 reporting for flexibility options closed, general reporting always open
- Must complete/update info by January 31st annually
 - Changes must be reported within 30 days
- Truck Regulation Upload, Compliance, and Reporting System (TRUCRS)
 - Company information, vehicle information, engine information, flexibility based information
 - Email trucrs@arb.ca.gov with questions
- Paper reporting forms available

www.arb.ca.gov/truckstop

The screenshot displays the California Truck Stop website. The top navigation bar includes 'Regulations', 'Reporting', 'Help & Resources', 'Financial Assistance', 'Contact Us', and 'A-Z Index'. A search bar is located on the right. A dropdown menu under 'Reporting' is open, listing 'Truck & Bus', 'School Buses', 'Tractor-Trailer GHG', 'TRU (Reefer)', 'Drayage (Port, Railyard)', and 'Off-Road'. The 'Truck & Bus' option is circled in red. Below the navigation is a banner for 'Out of State?' with a 'View 3-Day Pass' link. The main content area features a 'Start Here' section with links to 'Financial Assistance', 'Where to Get a Filter', 'Multi-Regulation Summary (MRS)', 'Factsheets', and 'Upcoming Deadlines'. A 'NEW & TRENDING' section on the right lists various news items. A left sidebar contains 'GET STARTED', 'REGULATIONS & REPORTING', and 'ENFORCEMENT' sections.

the TRUCK STOP Official California Diesel Truck Information

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Regulations Reporting Help & Resources Financial Assistance Contact Us A-Z Index

Google™ Custom Search Search

Truck & Bus
School Buses
Tractor-Trailer GHG
TRU (Reefer)
Drayage (Port, Railyard)
Off-Road

Out of State?
View 3-Day Pass

Start Here

[Financial Assistance >>](#)

[Where to Get a Filter >>](#)

[Multi-Regulation Summary \(MRS\) >>](#)

[Factsheets >>](#)

[Upcoming Deadlines >>](#)

NEW & TRENDING

- 2015 ARB Funding Events
- Prop1B Solicitation Period Now Open
- Truck Driver Appreciation Days - Blog
- TruckStop Gets a Makeover! - Blog
- Engine Model Year and Small Fleet Schedule Postcard Reminders
- 2015 Prop 1B Program Guidelines
- Updated VIP Guidelines

GET STARTED

REGULATIONS & REPORTING

ENFORCEMENT

*Public Agency and Utility
Regulation (2005)*



Public Agency and Utility (PAU) Regulation

Applicability

- Vehicles owned, leased or operated by a municipality or public agency of the State of California
 - Privately-owned company vehicles that provides same or similar services for water, natural gas, and electricity
- Diesel vehicles greater than 14,000 lbs. gross vehicle weight rating (GVWR)
 - 1960-2006 model year engines
 - 2007 or newer model year engines that do not have a PM exhaust filter

Public Agency and Utility (PAU) Regulation **Compliance Requirements**

- General Compliance Schedule
 - December 31st, 2012
 - 100% of vehicles must meet Best Available Control Technology (BACT)
- Low Population County Status Compliance Schedule
 - December 31st, 2013
 - 60% of Group 1 & 3 vehicles, 40% of Group 4 vehicles must meet BACT
- Private utility vehicles must meet requirements of the Truck and Bus Regulation starting 2021

Public Agency and Utility (PAU) Regulation

Record Keeping Requirements

- Fleet Vehicle Records
 - Keep updated records either as hard copy or electronic computer record
 - Must be made available to ARB upon request
- Statement of Compliance
- Vehicle Labels
 - Durable and legible
 - Driver's side door jamb
 - Accurate information

PUBLIC AGENCY OR UTILITY VEHICLE EMISSION SYSTEM INFORMATION	
LOW USAGE	
OWNER/OPERATOR:	
ENGINE MODEL YEAR:	
PERCENTAGE OF ENGINE HOURS AS OF	
DECEMBER 31, 2007:	10

PUBLIC AGENCY OR UTILITY VEHICLE EMISSION SYSTEM INFORMATION	
COMPLIANT	
OWNER/OPERATOR:	
EMISSION CONTROL STRATEGY FAMILY NAME:	
ENGINE MODEL YEAR:	INSTALLATION DATE:

Public Agency and Utility Regulation

Common Areas of Non-Compliance

- Fleet records are not being kept annually or readily available to submit to ARB upon request
- Vehicle labels are not updated with status change
- Third party vehicle sellers are not being notified of out-of-state vehicle sale requirements
- Vehicles that are used through contracts are not compliant with applicable ARB regulations

Commercial Idling



Idling Limitation

- 5 minute idling limit for diesel fueled commercial vehicles greater than 10,000 lbs. GVWR

- Exceptions
 - Testing, servicing, repair
 - Queuing
 - When needed to operate equipment (PTO)
 - Certified clean idle vehicles with clean idle label



School Zone Idling Limitation

- Turn off vehicle immediately upon arriving at, or within 100 feet of a school or residence
- Restart engine no more than 30 seconds before departing
- Applies to all commercial vehicles including gasoline



In-Use Off-Road Vehicle Regulation



Off-Road Vehicle Regulation

Applicability

- Diesel and alternative diesel fueled vehicles (including biodiesel) that are:
 - Operated within California
 - Self-propelled (no generators, etc.)
 - 25 horsepower or greater
 - True off-road vehicles (check engine label)
- All oilfield & natural gas workover rigs
- All two-engine cranes and water well drilling rigs
- Certain other two-engine vehicles

Off-Road Vehicle Regulation

Exemptions

- Vehicles used only for 100% agricultural, forest operations, or personal use are completely exempt
- Exempt from performance requirements (still must report, label and do recordkeeping)
 - Low-use vehicles operated < 200 hrs/yr
 - Emergency vehicles
 - Dedicated snow removal vehicles
 - Equipment used a majority of the time for agricultural purposes (>50%)

Off-Road Vehicle Regulation

Labeling Requirements

- All vehicles subject to the regulation must be labeled
 - ARB assigns Equipment Identification Number (EIN)
 - Fleets must label vehicles within 30 days of receiving EIN
 - EIN stays with vehicle for life, even after vehicle sold
 - Labels not issued by ARB
 - Starting January 1, 2013 label must be on both sides of vehicle



DB8B97



Off-Road Vehicle Regulation

Idling Limitation



- 5 minute limit on idling
- EXCEPTIONS:
 - Queuing
 - Maintenance
 - Ensure safe operation
- Responsibility of owner or Renter
- Large & Medium fleets must have written policy

Off-Road Vehicle Regulation **Sales Disclosure**

Must include this language in bill of sale, and keep records for 3 years (only required for in-state transactions):

“When operated in California, any off-road diesel vehicle may be subject to the California Air Resources Board In-Use Off-Road Diesel Vehicle Regulation. It therefore could be subject to retrofit or accelerated turnover requirements to reduce emissions of air pollutants. For more information please visit the California Air Resources Board website at www.arb.ca.gov/ordiesel.”

Off-Road Vehicle Regulation

Performance Requirements

- Met by January 1st of compliance year
- Must meet one of the two options below:
 - Fleet average requirements
 - Overall NOx emissions meet target
 - Best Available Control Technology (BACT)
 - Replace % of fleet each year (oldest vehicles)

Fleet Size	Compliance Dates
Large	2014-2023
Medium	2017-2023
Small	2019-2028

For More Information...

Off-Road (DOORS) Questions:

DOORS hot line:

(877) 59-DOORS or (877) 593-6677

Email: doors@arb.ca.gov

Websites:

Off-Road Regulation - www.arb.ca.gov/ordiesel

DOORS Reporting -

https://ssl.arb.ca.gov/ssldoors/doors_reporting/doors_login.html

Portable Equipment Registration Program (PERP)

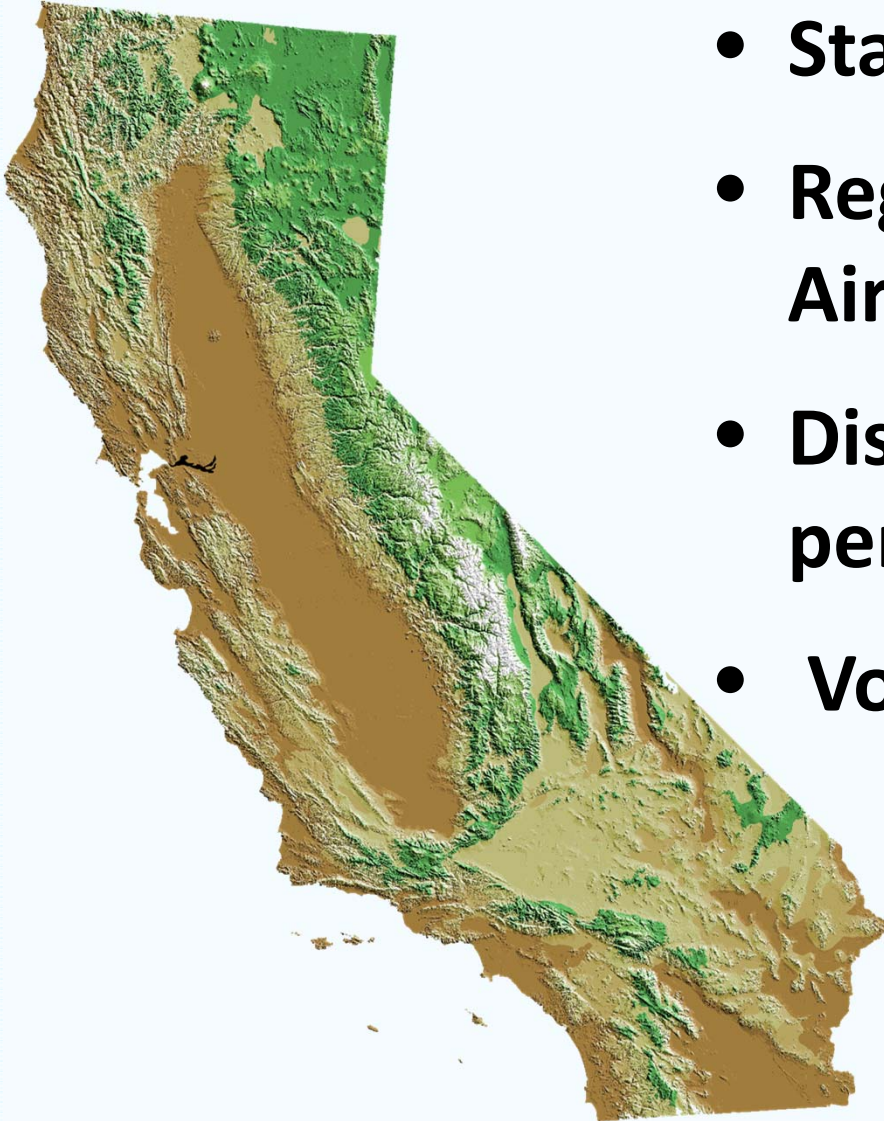


Portable Equipment Registration Program

Definitions

- **Engine** - reciprocating engine (no turbines)
 - Any fuel type
 - Typically 50 bhp and larger
- **Equipment Unit** - any device that emits only PM₁₀
- **Portable** – does not reside at a location more than 12 consecutive months
 - Circumvention not allowed
 - Storage facility okay

What is PERP?



- **Statewide Operation**
- **Registration in lieu of Air District permit**
- **District retains permitting authority**
- **Voluntary**



Generators

Caltrans Specific Equipment Units





tub grinders

Screening Plants



Portable Equipment Registration Program

Labeling Requirements

- All registered engines and equipment units must have labels and placards, except TSE
- Registration documents must be kept onsite



Portable Equipment Registration Program

Common Areas of Non-Compliance

- Unpermitted equipment
 - You must have either local air district permit or PERP for operating in most areas in the state.
- Tier 0 engines still operating
- Registration documents not on site with unit
- Sticker and placard not on equipment or expired
- ATCM compliance statements not submitted
 - *Due March 1 of 2013, 2017, and 2020*

Portable Equipment Registration Program

Program Contact Information

www.arb.ca.gov/portable/portable.htm



General Help

portable@arb.ca.gov

Hotline: 916-324-5869



QUESTIONS ?



