In-Use Off-Road Diesel Vehicle Regulation

ARB Off-road Implementation Section

California Environmental Protection Agency

Air Resources Board

Outline

- Need for Emissions Reductions
- Exhaust Retrofit Technologies
- Off-Road Regulation Requirements
- Off-Road Compliance Steps and Examples
- Technology Demonstrations
- Funding Programs
- SOON Program
- Compliance Assistance and Outreach
- DOORS
- Contacts

Need for Emission Reductions

Need for Emission Reductions

- Must reduce Diesel Particulate Matter (PM)
  - 70% of known cancer risk from all air toxics
  - Thousands of deaths per year in California (heart disease and cancer)
- Must reduce oxides of nitrogen (NOx)
  - Ozone and secondary PM formation
  - Ozone is a serious lung irritant, associated with premature deaths and asthma
- Attain ozone and PM standards
  - Could lose federal highway funds if California cannot show that standards will be attained by deadline

In-Use Diesel Vehicle Population (2005)

Year Regulated:

2000

Urban Buses

2003

Solid Waste Collection Vehicles

2005

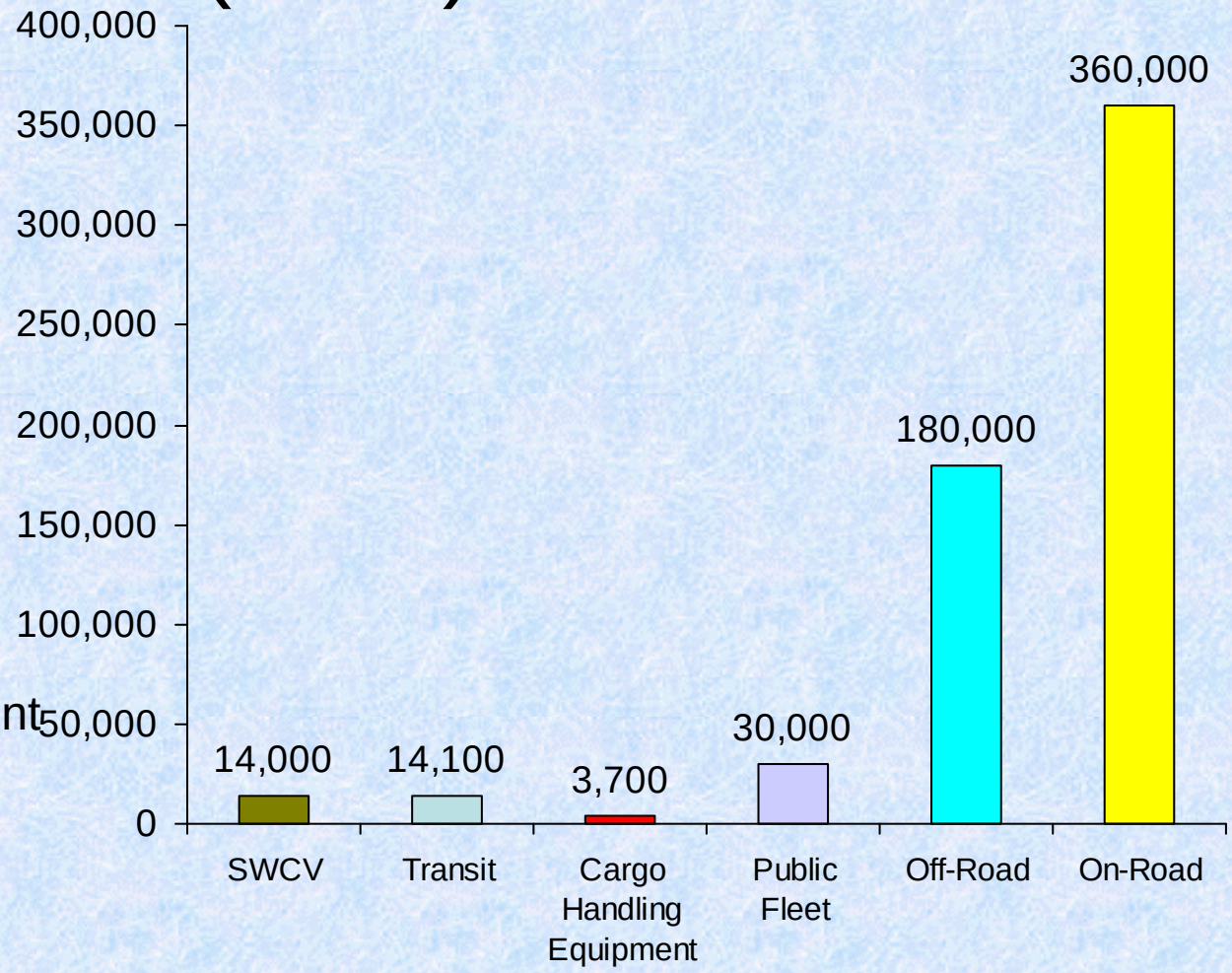
Transit Fleet Vehicles

Cargo Handling Equipment

Public Agency and Utility Vehicles

Planned for 2008

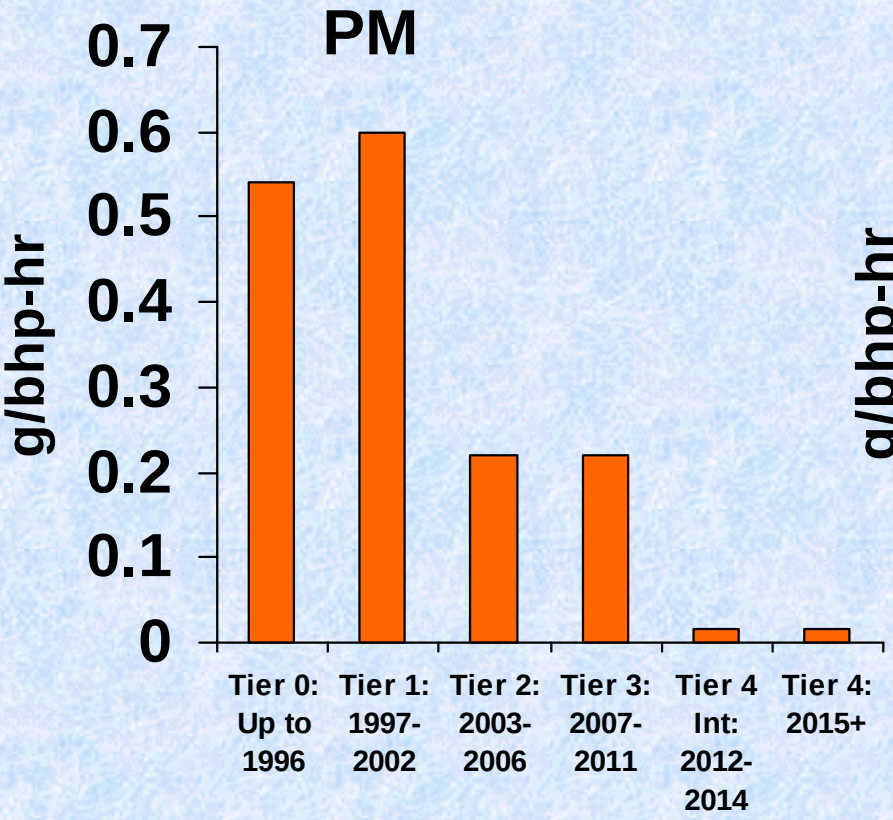
Private On-Road Trucks

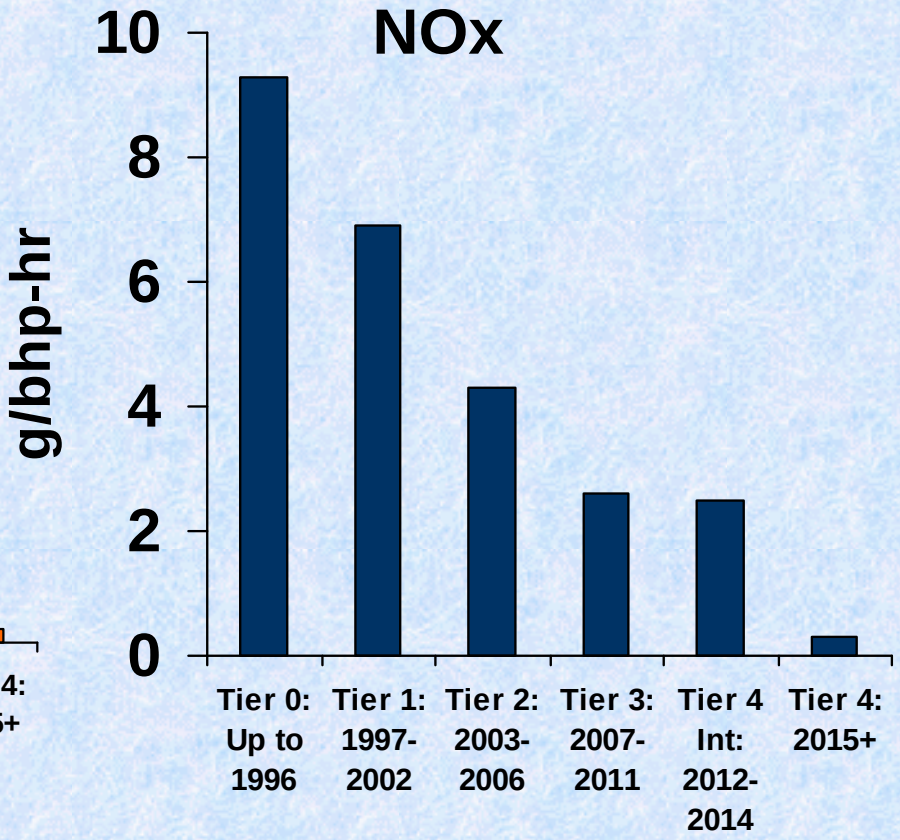


Planned for 2009

Agricultural Equipment

New Engine Standards Make New Engines Cleaner (100-174 hp)





Cumulative Health Benefits

- **4,000 fewer premature deaths**
- 110,000 fewer cases of asthma and lower respiratory symptoms
- 680,000 work loss days
- 3,900,000 restricted activity days
- $18 - $26 billion in avoided health costs
- 2020:
  - 32% reduction in NOx
  - 74% reduction in diesel PM

Exhaust Retrofit Technologies

What is an Exhaust Retrofit?

- Systems that reduce specific pollutants
  - Can control one or more pollutants such as PM, NOx, or both
  - Installed on an in-use vehicle
- Systems include, but are not limited to:
  - Diesel particulate filters (DPFs)
  - Flow through filters (FTFs)
  - Diesel Oxidation Catalysts (DOCs)
  - Selective Catalytic Reduction (SCR)

Exhaust Retrofits Cont.

- Also commonly referred to as retrofits, filters, scrubbers
- “Repowers” are not considered exhaust retrofits
- Once a device is verified with ARB, it becomes a verified diesel emission control strategy (VDECS)

ARB Verification of Retrofits

- Ensures emission reductions and durability
- Provides end user warranty
  - 4-5 years and 2,600-4,200 operating hours
  - A current list of verified devices is located at: www.arb.ca.gov/diesel/verdev/verdev.htm

Level	PM Reduction	Typical Device
1*	≥ 25%	Oxidation catalyst
2	≥ 50%	Flow-thru filter
3	≥ 85%	Particulate filter

DPF durability demonstration on concrete

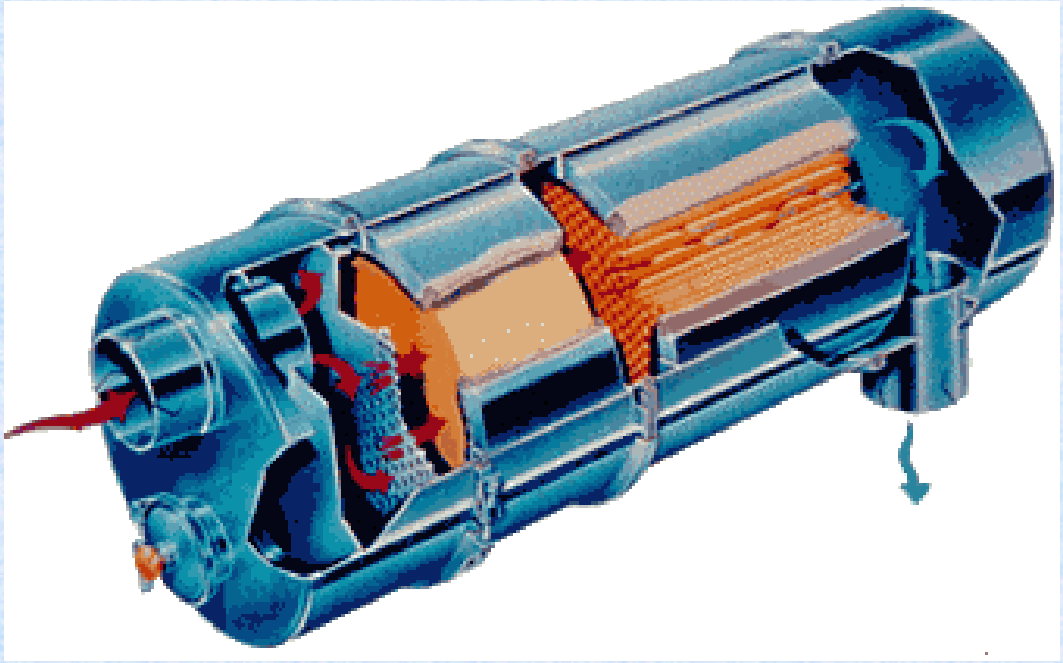
* - No credit for Level 1 in off-road regulation

ARB Verification Cont.

- VDECS that reduce NOx are not given a “Level”
  - NOx VDECS are currently verified by % NOx reduction
  - Soon will be verified with Mark 1 to Mark 5
- Highest Level VDECS
  - Required by off-road regulation
  - Achieve maximum PM reductions
  - Do not take into account NOx reductions
  - Most commonly are DPFs

How Does a Diesel Particulate Filter (DPF) Work?

- The filter is positioned in the exhaust stream to trap or collect a significant fraction of the particulate emissions while allowing the exhaust gases to pass through the system.



DPF Information Cont.

- The volume of PM generated by a diesel engine will fill up (load) a DPF over time; thus the trapped PM must be burned off or "regenerated“ periodically
  - Active regeneration: Needs heat to regenerate – electricity or burning additional fuel
  - Passive regeneration: No outside energy required
- DPF requires periodic cleaning of ash
  - Build-up of ash occurs due to regeneration
  - Ash cleaning required ~ yearly depending on usage

Verified Level 3 Off-road Devices

(as of 11/20/08)

Product	Applicability
Caterpillar DPF	Many 1996-2008 model year engines; 175-600 hp, passive
Cleaire Horizon	Conditionally verified, active plug-in
DCL MINE-X Sootfilter	Conditionally verified for 1996-2008 model year, rubber tired
Engine Control System Combifilter	2007 or older, active plug-in
Engine Control Systems' PurifilterTM	Conditionally verified for many 1996-2008 model years, passive
HUSS Umwelttechnik FS_MK	Most engines through 2007 model year, active fuel-burner

Verified Devices - www.arb.ca.gov/diesel/verdev/verdev.htm

Off-road VDECS Applications*

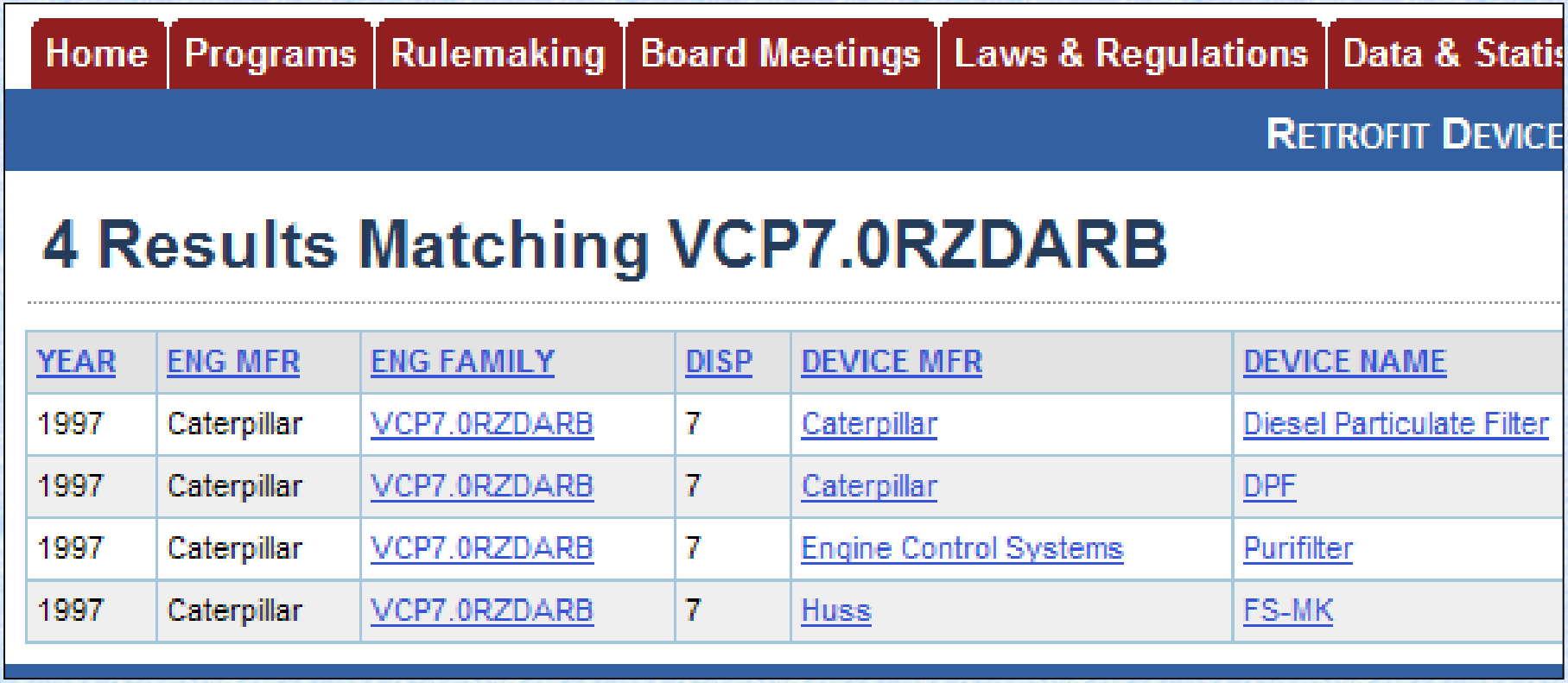
Passive	Active
Caterpillar, DCL, ECS Purifilter	Cleaire, ECS Combifilter, HUSS
•50 – 750 Horsepower •1996 or newer engine •Certified to 0.2 g/bhp-hr or less •Appropriate duty cycle	•Time between regenerations based on vehicle emissions •May need to be plugged in •Huss exempts some large hp applications – Some wheel loaders, dozers, track-type tractors, scrapers and haul trucks – See http://www.arb.ca.gov/msprog/moyer/retrofit/exemptions.htm
No Exhaust Gas Recirculation	
Properly Maintained	

*Current as of November 24, 2007

Verification Database

http://www.arb.ca.gov/diesel/verdev/vdb/disclaimer.php

Search by:
VDECS, Engine Family, or
Manufacturer / Model Year / Displacement



4 Results Matching VCP7.0RZDARB

YEAR	ENG MFR	ENG FAMILY	DISP	DEVICE MFR	DEVICE NAME
1997	Caterpillar	VCP7.0RZDARB	7	Caterpillar	Diesel Particulate Filter
1997	Caterpillar	VCP7.0RZDARB	7	Caterpillar	DPF
1997	Caterpillar	VCP7.0RZDARB	7	Engine Control Systems	Purifilter
1997	Caterpillar	VCP7.0RZDARB	7	Huss	FS-MK

Off-Road Regulation Requirements

Applicability

Regulation applies to any person, business, or government agency who owns or operates any diesel-fueled or alternative diesel fueled off-road vehicle horsepower within California

- Applies to vehicles >= 25 horsepower
- Applies to the “drive” engine only
- Includes out-of-state vehicles brought into California
- Excludes vehicles primarily used (> 50% time) for agricultural operations
- Excludes vehicles used for personal use

Applicability Cont.

- What is considered an off-road vehicle?
  - Vehicles that were intended to be used off-road
  - Designed for off-road use and have off-road engines
  - Cannot be registered to drive safely on-road
  - A workover rig
- Excludes vehicles designed to operate on-road regardless of use
- Current proposal to add 2 engine cranes (both engines)

Requirements Vary by Fleet Size

Fleet Size Category	Description
Small	Fleet with <= 2,500 hp, or Municipal fleet in low population county
Medium	Fleet with 2,501 to 5,000 hp
Large	Fleet with more than 5,000 hp, or State or Federal Government fleet

5 Minute Limit on Idling

- Requirement effective June 15, 2008
- 5 minute idling limit for off-road vehicles
- Exemptions from this requirement:
  - idling when queuing
  - idling to verify that the vehicle is in safe operating condition
  - idling for testing, servicing, repairing or diagnostic purposes
  - idling necessary to accomplish work for which the vehicle was designed (such as operating a crane)
  - idling required to bring the machine system to operating temperature
  - idling necessary to ensure safe operation of the vehicle

Idling Limit Cont.

- Can apply to ARB Executive Officer to idle > 5 min. if reason not covered in exemptions
- Enforcement of 5 min. idling
  - Field audits began September 15, 2008
- Fines
  - First time offense: $300 per violation
  - Subsequent offenses: Can be $1,000 to $10,000 per violation

Disclosure of Applicability

- Disclosure of regulation applicability:
  - Persons selling in California to California buyer
  - Disclosure records must be kept for 3 years
  - Disclosure not required for manufacturers selling to dealers
  - Language must be included on the bill of sale, invoice, or price quote that is signed by buyer

Disclosure of Applicability Cont.

"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 http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm"

Disclosure of Applicability Cont.

- Enforcement of disclosure provision
  - Field audits began September 15, 2008
- Fines
  - First time offense: $500 per violation
  - Subsequent offenses: $1,000 to $10,000 per violation

Beginning March 1, 2009

- Written 5 minute idling policy should be established by fleet owner
  - Required for medium and large fleets
  - Must make idling policy available to all vehicle operators in fleet
- Can no longer add Tier 0 vehicles to fleet

Initial Reporting

- Initial reporting varies by fleet size
  - Fleets must report their fleet information as it was on March 1, 2009
  - Fleets must report their information to ARB by their designated reporting date
  - Reporting is free, no cost to fleets to register vehicles with ARB

Fleet Size Category	Initial Reporting Date
Large	April 1, 2009
Medium	June 1, 2009
Small	August 1, 2009

Vehicle Labeling

- All vehicles subject to the regulation must be labeled
  - ARB assigns Equipment Identification Number (EIN) after initial reporting period; label stays with vehicle for life
  - Fleets must label vehicles within 30 days of receiving EIN; labels not issued by ARB
  - Label dimensions/specifications found in section 2449(f)

DB8B97

Compliance Requirements

- Compliance requirements must be met by March 1 of each year

Fleet Size Category	Dates and Requirements
Large*	2010-2020 PM and NOx
Medium*	2013-2020 PM and NOx
Small	2015-2025 PM only

* Same requirements for large and medium fleets, only initial compliance date varies.

NOx Requirements

Two ways to meet the NOx requirements (the lesser of the two can be done):

- NOx fleet average targets requirements
  - Meet NOx emissions targets set in regulation by any means

or

- Best Available Control Technology (BACT) requirements:
  - Turn over engines at a rate of 8% of total fleet horsepower per year (after 2015, the 8% turnover rate increases to 10%)

NOx Emission Factors*

NO_X Emissions Factors by Horsepower and Year (g/bhp-hr)								
	Horsepower Groups							
Year	**25-49**	**50-74**	**75-99**	**100-174**	**175-299**	**300-599**	**600-750**	**750+**
1900	7.2	14.8	14.8	15.9	15.9	15.2	15.2	15.2
1969	7.2	14.8	14.8	15.9	15.9	15.2	15.2	15.2
1970	7.2	14.8	14.8	14.8	14.8	14.1	14.1	14.1
1972	7.2	14.8	14.8	13.6	13.6	13.0	13.0	13.0
1980	7.2	14.8	14.8	12.5	12.5	11.9	11.9	11.9
1988	7.1	9.9	9.9	9.3	9.3	8.9	8.9	8.9
1989	7.1	9.9	9.9	9.3	9.3	8.9	8.9	8.9
1996	7.1	9.9	9.9	9.3	6.9	6.9	6.9	8.9
1997	7.1	9.9	9.9	6.9	6.9	6.9	6.9	8.9
1998	7.1	6.9	6.9	6.9	6.9	6.9	6.9	8.9
1999	6.2	6.9	6.9	6.9	6.9	6.9	6.9	8.9
2000	6.2	6.9	6.9	6.9	6.9	6.9	6.9	6.9
2001	6.2	6.9	6.9	6.9	6.9	4.2	6.9	6.9
2002	6.2	6.9	6.9	6.9	6.9	4.2	4.2	6.9

* Only partial chart shown

NOx Fleet Average Calculation Example

Example fleet of 3 vehicles:

Vehicle 1: 1996, 100 hp, NOx EF = 9.3

Vehicle 2: 2000, 200 hp, NOx EF = 6.9

Vehicle 3: 2002, 300 hp, NOx EF = 4.2

NOx Fleet Average

= [(9.3*100)+(6.9*200)+(4.2*300)]/(100+200+300)

= 6.0

NOx Fleet Average Emission Targets

NOX Fleet Average Targets: MEDIUM AND LARGE FLEET											
Horsepower Group	**2010***	**2011***	**2012***	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
25-49 hp	5.8	5.6	5.3	5.1	4.9	4.6	4.4	4.2	4.0	3.7	3.5
50-74 hp	6.5	6.2	5.8	5.5	5.1	4.8	4.4	4.1	3.7	3.4	3.2
75-99 hp	7.1	6.7	6.2	5.7	5.2	4.8	4.3	3.8	3.3	2.8	2.4
100-174 hp	6.4	6.0	5.5	5.1	4.7	4.3	3.8	3.4	3.0	2.6	2.2
175-299 hp	6.2	5.8	5.3	4.9	4.5	4.1	3.6	3.2	2.8	2.3	1.9
300-599 hp	5.9	5.5	5.1	4.7	4.3	3.9	3.5	3.1	2.7	2.3	1.9
600-750 hp	6.1	5.6	5.2	4.8	4.4	4.0	3.6	3.2	2.7	2.3	1.9
Greater than 750 hp	7.2	6.8	6.5	6.1	5.7	5.3	4.9	4.5	4.1	3.8	3.4

* Targets in 2010, 2011, and 2012 are for LARGE fleets only

Vehicle 1 = 100 hp, NOx 2010 target is 6.4

Vehicle 2 = 200 hp, NOx 2010 target is 6.2

Vehicle 3 = 300 hp, NOx 2010 target is 5.9

NOx Fleet Average Target Calculation Example

For 2010 compliance date:

Vehicle 1 (100 hp): NOx target = 6.4

Vehicle 2 (200 hp): NOx target = 6.2

Vehicle 3 (300 hp): NOx target = 5.9

NOx Fleet Average Target:

= [(6.4*100)+(6.2*200)+(5.9*300)]/(100+200+300)

= 6.1

Compare Target with Average

NOx fleet average = 6.0

NOx fleet average 2010 target = 6.1

6.0 < 6.1

Since NOx fleet average is less than the NOx fleet target set for 2010, the fleet is in compliance

NOx BACT Requirements

- Must turn over Tier 0 and Tier 1 (without PM standard) vehicles first
- Compliance options for NOx BACT turnover requirements:
  - Replace older vehicles with new or used vehicles
  - Replace diesel vehicles with electric or alternative fuel vehicles
  - Repower older engines with a Tier 2 or higher engines
  - Retire vehicles from fleet
  - Designate vehicles as low use (used < 100 hours per year)
  - Install NOx verified diesel emission control strategy (VDECS)

Special Provisions for Attainment Counties

- Fleets captive to listed attainment counties
  - Do not need to meet turnover requirements or NOx fleet averages
- These counties are always in: they cannot fall out of this provision, and other counties cannot come in
- Fleets can travel within multiple attainment counties

Attainment Counties

Attainment counties include:

Alpine, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Monterey, Plumas, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Shasta, Sierra, Siskiyou, Trinity, Tehama, and Yuba

PM Requirements

Two ways to meet the PM requirements (the lesser of the two can be done):

- PM fleet average targets requirements
  - Meet PM emissions targets set in regulation by any means

or

- Best Available Control Technology (BACT) requirements:
  - Install verified diesel emission control strategy VDECS (also referred to as PM retrofits) on 20% of total fleet horsepower per year

PM Fleet Average Calculation

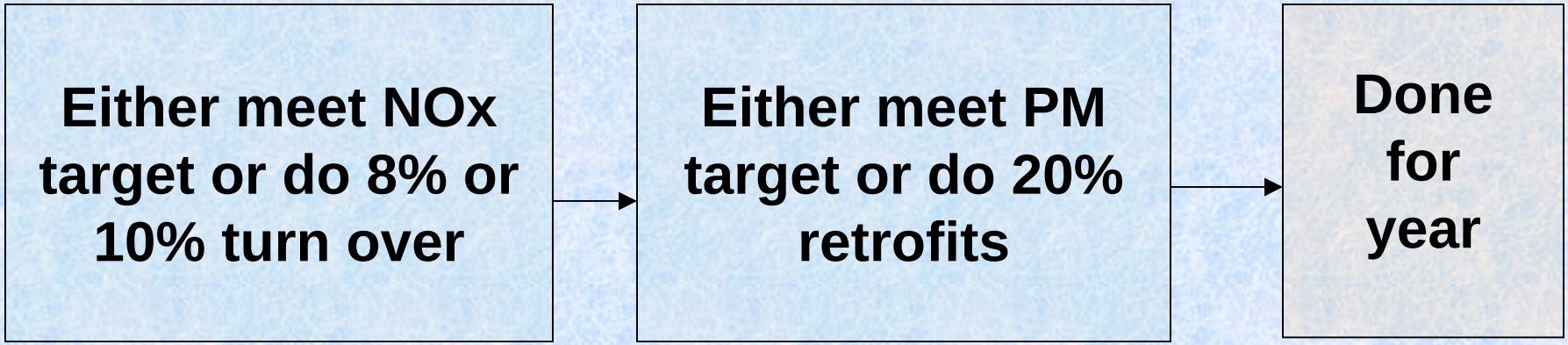
- Same procedure as for NOx
- Calculate fleet average
  - Read off emission factor for each engine
  - Weight by hp
- Calculate target for each model year
  - Read off target for each engine
  - Weight by hp
- Fleet average calculator or DOORS will do calculations for you

PM BACT Requirements

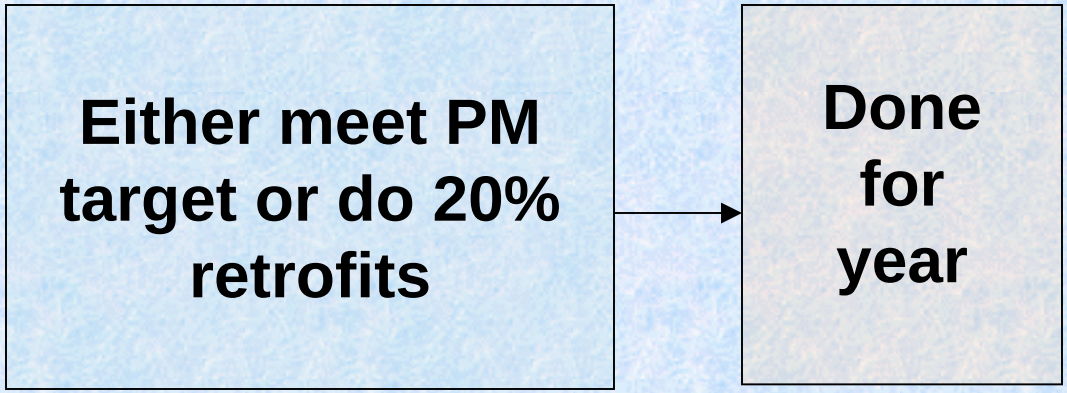
- Compliance options for PM BACT retrofit requirements:
  - Install PM VDECS
- Retirement of Tier 0s for a fleet decreasing in horsepower
  - If a fleet is “shrinking” from the previous year, the Tier 0 horsepower retired (and not replaced) from the fleet can count towards PM BACT compliance
  - Example: If a fleet retires 20% Tier 0 vehicles, both the PM and NOx BACT requirements are fulfilled

Annual Compliance Process

Large and Medium Fleets: NOx* and PM Requirements



Small Fleets: PM Requirements ONLY



*Captive attainment area fleets must only meet the PM requirements

NOx Final Compliance

- As of March 1, 2020 (for medium and large fleets only):
  - If 2020 NOx fleet average target is not met, the fleet must do the required NOx BACT turnover until that 2020 target is met

PM Final Compliance

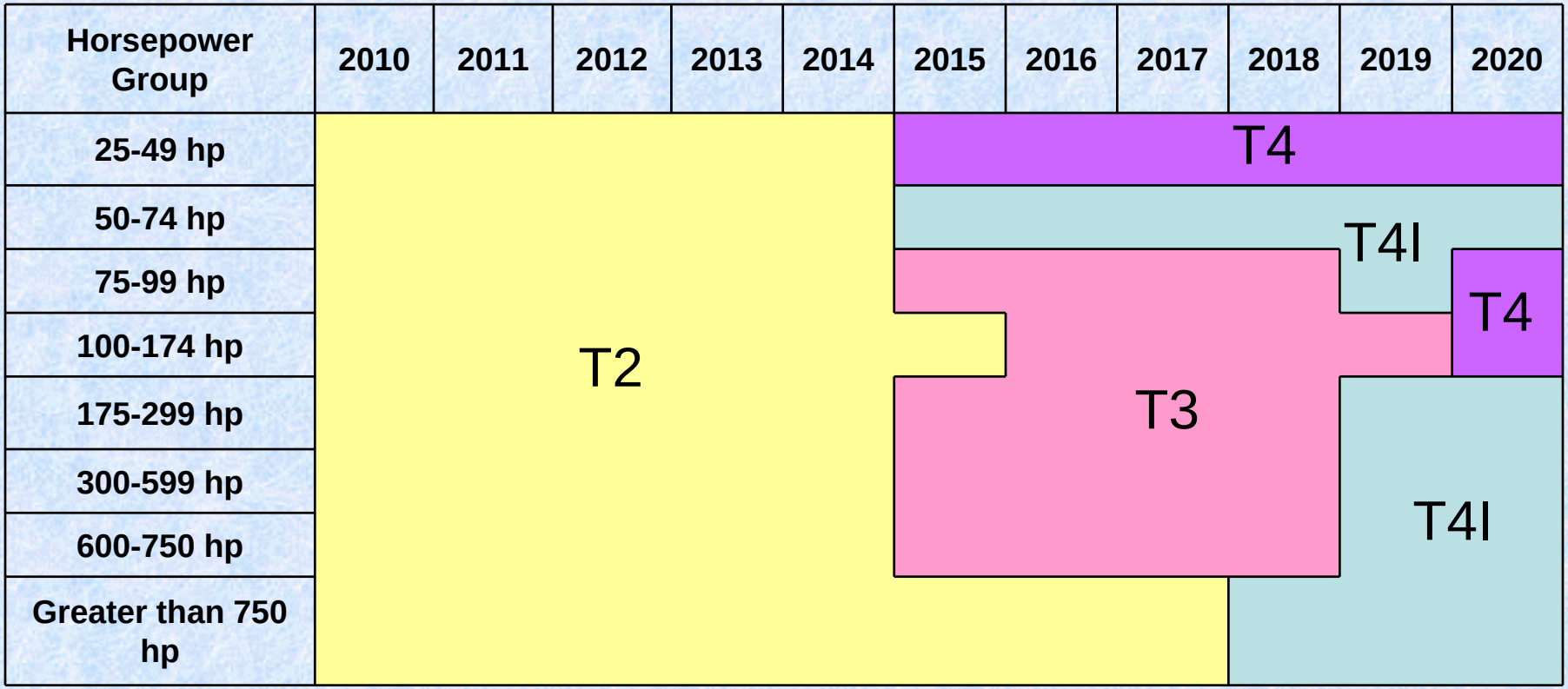
- As of March 1, 2021 (for medium and large fleets), and March 1, 2026 (for small fleets):
  - All vehicles must have the highest level VDECS installed; if not, the fleet is required to install the highest level VDECS at the required PM BACT retrofit rate
  - Fleets not meeting the NOx final compliance targets must do so first

Restrictions on Adding Vehicles

- Cannot add Tier 0 vehicles after March 1, 2009
- Fleet averages met in the previous year
  - Fleets may not add vehicles that cause them to exceed the most recent targets
  - If the targets are exceeded, the fleet has 3 months to bring the fleet back into compliance
- BACT requirements met in the previous year
  - Small fleets: The vehicle must be Tier 2 or higher

Adding Vehicles Cont.

– Large/Medium fleets: The vehicle must be Tier 2 or higher and have a NOx emission factor less than or equal to the current year NOx fleet average target



Annual Reporting

- Report any changes to the fleet from the previous year
  - Includes VDECS installed, vehicles replaced, etc.
- If final compliance target is not met, reporting must continue beyond last designated reporting date
- Reporting dates vary by fleet size:

Fleet Size Category	Reporting Date
Small	August 1st: 2014-2026
Medium	June 1st: 2012-2021
Large	April 1st: 2010-2021

Annual Record Keeping

- Records must be kept between reporting periods:
  - Changes in the fleet since last reported
  - Newly purchased vehicles
  - Rebuilt engines
  - VDECS that have failed
  - VDECS serial numbers
  - Manufacturer delays
  - Executive Officer approvals for extensions, approval of alternative fuels, idling exceptions, etc.
- Records must be kept until the vehicle is retired, or 2030 (whichever is earlier)

Rental and Leased Vehicles

Vehicles owned by a rental or leasing company

- If rented/leased < 1 year
  - Vehicle must be included in the owner's fleet
- If rented/leased >= 1 year
  - May be excluded from the owner's fleet, and included in the lessee's fleet only if written into the lease agreement
- Leases occurring before June 15, 2008
  - If "leased" as defined in California Uniform Commercial Code for at least one year, the vehicle must be included in the lessee's fleet (not owner)

Persons who provide financing in the form of "finance leases," as defined in California Uniform Commercial Code 10103(a)(7) do not "own" such vehicles for the purposes of this regulation

Out-of-State Fleets

- All vehicles operating in California that are owned by an out-of-state company must still comply with the regulation
  - If they report initially in 2009, they can comply with the fleet average or BACT approach
  - If they are a new fleet that enters California after March 1, 2009, they must meet the fleet average targets upon entering the state
    - Stricter than for in-state fleets
  - All vehicles brought into California must be reported to ARB within 30 days of entering the state

Early Credit Examples

- Early credit for actions taken before March 1, 2009
- Double credit for PM retrofits
  - A VDECS installed early on a 200 hp vehicle would provide 400 hp credit towards the PM BACT requirements
- Single credit for repowers
  - A repower completed on a 300 hp machine would provides a 300 hp credit towards the NOx BACT requirements
  - A repower from a Tier 0 to Tier 1 will receive NOx BACT credit only until March 1, 2009

Early Credit Examples

- Credit for replacement of Tier 0s in excess of an average 8%/year turnover rate between March 1, 2006 and March 1, 2009
  - If a fleet retired/replaced its Tier 0 machines at a rate of 10% per year between 2006 and 2009, the fleet would obtain a 6% early credit towards the NOx BACT requirements
- Double credit for electric vehicles until 2016
  - If an electric vehicle is replacing a 200 hp diesel vehicle, 400 hp with a 0 NOx and 0 PM emission factor should be included in the NOx and PM fleet averages

Exemptions from Engine Turnover Requirements

- Small fleets
- Captive area attainment fleets
- Vehicles less than 10 years old
- Specialty vehicles if certain criteria are met
- Vehicles retrofit in past 6 years
- Tier 4 or Tier 4 Interim vehicles

Exemptions from Retrofit Requirements

- Engines in vehicles less than 5 years old
- Engines for which there is no retrofit available or for which one cannot be safely installed
- New engines that come with an OEM diesel particulate filter
- Engines already retrofit with the highest level VDECS at time of installation

Other Exemptions and Compliance Extensions

- Exempt from all but recordkeeping/reporting
  - Low-use vehicles
    - Operated less than 100 hours/year
  - Emergency vehicles
  - Dedicated snow removal vehicles
- Compliance extensions
  - Manufacturer delays for retrofits or new engines
  - Delay of Tier 4 interim or final vehicles

Fines for Non-Compliance

- Violation of the NOx provisions
  - Up to $1,000 per vehicle per day of non-compliance
- Violation of the PM provisions
  - Up to $10,000 per vehicle per day of non-compliance
  - If a citation is given, and the violation is not corrected, the fines can go up to $40,000 per vehicle per day of non-compliance

Off-Road Compliance Steps and Examples

Getting Started

1. Determine which vehicles are subject to the regulation
   - Dedicated snow removal, emergency use, agricultural, and personal use vehicles are exempt
   - On-road vehicles and portable equipment are not covered
2. Gather vehicle data for applicable vehicles
   - Engine model year, vehicle model year, engine hp
   - Are any vehicles low use?

Getting Started Cont.

3. Determine fleet size
   - Calculate total fleet hp: exclude any exempted vehicles from 1. above, also exclude low use vehicles
4. Determine compliance requirements
   - Based on fleet size, determine whether the fleet must comply with the NOx requirements
   - Is the fleet a captive area attainment fleet?
   - Determine first compliance date, also based on fleet size
5. Calculate early credit
   - Add up hp credit for any early repowers, exhaust retrofits, or replacements

Getting Started Cont.

6. Calculate NOx and PM fleet averages and targets (can use Fleet Average Calculator for this, available on ARB website)
   - Determine if the fleet is currently meeting fleet targets
   - If fleet is meeting the NOx and/or PM targets, no turnover and/or exhaust retrofitting is required
   - If not meeting the targets, determine turnover and/or retrofits needed to meet targets
7. If not meeting the fleet targets, calculate the applicable turnover and retrofits required by BACT (Best Available Control Technology requirements
8. Determine the minimum turnover/retrofit requirements for compliance: BACT or targets

What About Turnover Exemptions?

- What if I have vehicles exempt from the BACT turnover requirements in a given year?
  - Vehicles < 10 years-old, specialty vehicles, etc.
  - Calculate the amount of turnover (in horsepower) needed, and compare to amount of horsepower with exemptions
- Cannot utilize exemption until all non-exempt hp has been turned over first

Turnover Example

- Fleet A has 10,000 total fleet hp
- 9,500 hp has turnover exemptions in 2010
- Therefore, 500 hp available for turnover
- 8% turnover required to meet NOx BACT requirements = 10,000*0.08 = 800 hp
  - Available hp for turnover = 500 hp
  - Required hp for NOx BACT turnover = 800 hp

Turnover Example Cont.

- Since available hp (500 hp) < required hp (800 hp), perform available turnover (500 hp) to meet the NOx requirements
- If available hp = 1,000 hp, only required hp (800 hp) would need to be turned over to meet NOx BACT turnover requirements

What About Retrofit Exemptions?

- What if there are no available VDECS for some/all of my fleet? What if some of my vehicles are > 5 years-old?
  - VDECS not available, vehicle < 5 years-old
  - Calculate amount of horsepower with retrofits needed, and compare to amount of horsepower with retrofit exemptions
- Cannot utilize exemption until all non-exempt hp has been retrofit

Retrofit Example

- Fleet A has 10,000 total fleet hp
- There are no retrofits available for 9,500 hp of the fleet in 2010
- Therefore, 500 hp available to retrofit
- 20% of fleet must be retrofitted to meet PM BACT requirements = 10,000*0.2 = 2,000 hp
  - Available hp to retrofit = 500 hp
  - Required hp to retrofit for PM BACT = 2,000 hp

Retrofit Example Cont.

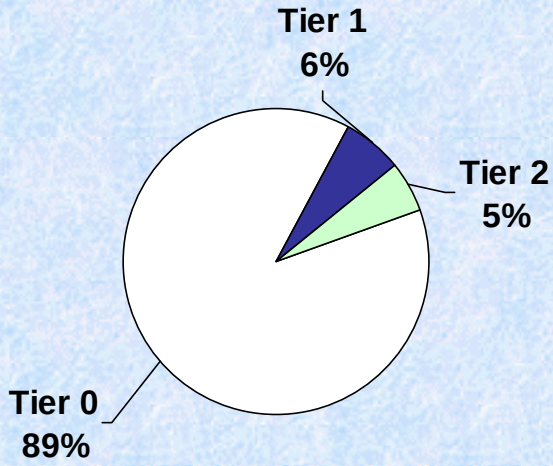
- Since available hp (500 hp) < required hp (2,000 hp), perform available retrofits (500 hp) to meet the PM requirements
- If available hp = 3,000 hp, only required hp (2,000 hp) would need to be retrofit to meet PM BACT retrofit requirements

Other Considerations

- Hours in fleet average provision
  - Hours of operation can be used in the fleet average calculations
  - Beneficial for fleets with many minimal use Tier 0 vehicles
  - However, an 18% penalty is applied to fleet averages
- Use ARB Fleet Average Calculator or DOORS compliance tool to evaluate compliance options

Compliance Example
Fleet 1 - Older Earth Moving Fleet

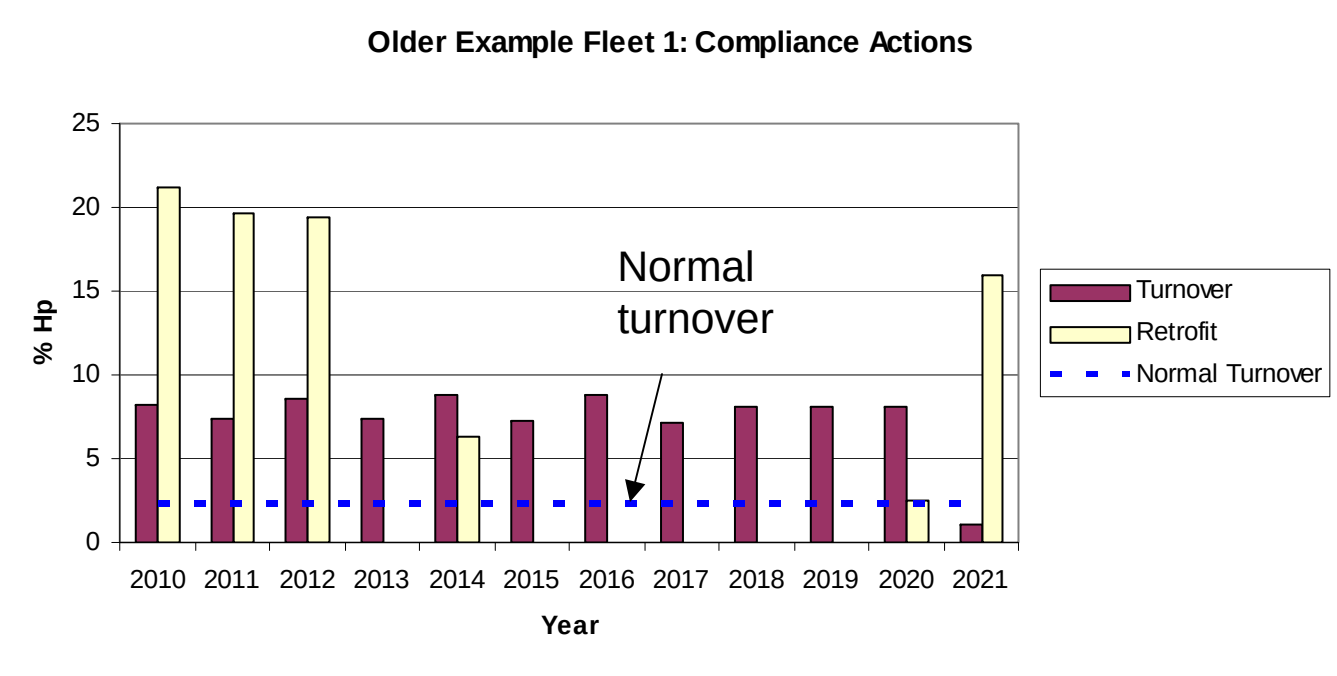
- Fleet in 2008
  - 88 engines totaling 40,000 hp
  - Scrapers, tractors, and dozers
  - Average age of vehicles 21 yrs
  - Normal turnover 2% per year
  - Normally buys used



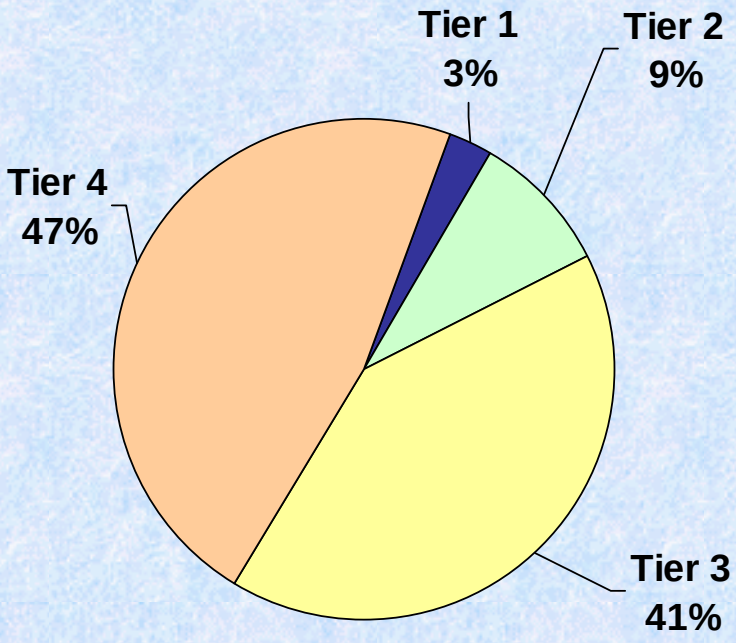
Tier Distribution in 2008

Fleet 1 Compliance Actions

- Continues to buy used vehicles
- 8% turnover per year (safety valve)
- 20% retrofits in first 3 years; few thereafter



Fleet 1
Engine Tier Distribution in 2020



- Majority of engines needed to comply with 2020 goals already available today

Technology Demonstrations

Loader with Passive DPF

Scraper with Passive DPF

Off-Road Showcase Demonstration

- $4.9 million allocated through SCAQMD (South Coast Air Quality Management District) & MSRC (Mobile Source Air Pollution Reduction Review Committee)
  - Close coordination with ARB
- Achieve early emission reductions
- Prove effectiveness of technologies on wide range of off-road engines
  - Interested fleets may view retrofits in action
- Will spur verification of new retrofits
  - Applicants required to pursue verification concurrently with Showcase demonstration

Off-Road Showcase Cont.

- Emission control manufacturer participants
  - 14 Manufacturers, 26 systems
  - 11 Active DPFs
  - 15 Passive DPFs
  - 7 PM + NOx devices
  - 6 Fuel borne catalyst systems
- Eighteen Fleet Owners
  - 5 Public Fleets
  - 13 Private Fleets
- Total of 202 Vehicles

U.S. EPA SEP

- U.S. EPA settlement against Chevron and Valero
  - $700,000 in fines
- Settlement agreements stipulated money to be spent on retrofit of off-road equipment
- Overall goals similar to Showcase
- Help fill gaps in Vehicle Matrix
- Demonstrate Additional Technologies
- 21 vehicles have been successfully retrofitted with DPFs so far
  - 11 Passive DPF Devices
  - 10 Active DPF Devices
  - 3 NOx Control Systems

Funding Programs

Pilot Off-Road Loan Incentives (POLI)

- Help some fleets obtain loans for which they would not otherwise qualify
- Pilot program for fleets in SJV
- Must meet criteria
- Apply at participating lenders
- More info: http://arb.ca.gov/ba/loan/loan.htm or contact Jessica Dean at jdean@arb.ca.gov

POLI Criteria

- < 100 employees
- <$10 mil annual revenues
- Loan for ARB-verified diesel retrofit
- Operate at least part time in SJV
- Difficulty obtaining conventional financing
- Any fleet sizes
- Other program & financial criteria

Carl Moyer Incentive Program

- Statewide program with $140 million/yr in incentive monies
- Program provides incentive money to clean up equipment in California
  - Equipment includes: off-road, on-road, marine, locomotive, agricultural
- Eligible off-road projects include engine repowers, exhaust retrofits, equipment replacement
- Vehicle owner has to pay a small portion of the project costs
- Must do more than required by regulation
- More information is located at: www.arb.ca.gov/msprog/moyer/moyer.htm

Is Incentive Funding Available?

- Small fleets
  - 100% eligible if completed by February 28, 2012
  - Eligible based on NOx and ROG reductions thereafter
- Medium fleets
  - 100% eligible if completed by February 28, 2010
  - Early compliance needed after
- Large fleets
  - Early compliance needed to receive funding

SOON Program

What is the SOON Program?

- Surplus Off-road Opt-in for NOx (SOON) program is designed to achieve additional NOx reductions
- Local air districts may opt into this program to reduce NOx emissions beyond what is required by the off-road regulation
  - May make program voluntary or mandatory
- Carl Moyer incentive money is used to fund these additional NOx reductions
- If fleets meet the applicable criteria, district may require them to apply for SOON funding

Fleet Criteria for SOON

- If SOON mandatory, a fleet must apply if they:
  - Operate vehicles in participating air district
  - Must have operated in that district more than any other air district and >100 hrs/yr for the past three years and
  - Contain over 20,000 hp statewide
  - Have >40% Tier 0 & 1 vehicles
- If they receive funds – must take actions funded
- Must apply for enough actions to go from compliance with ARB rule to SOON targets
- A way for large fleets to access incentive monies

Participating Districts

- South Coast
  - Opted in on May 2, 2008
  - Have already awarded $10 – $15 million
  - Current solicitation due May 1, 2009
- San Joaquin Valley
  - Have proposed to opt-in
  - Currently in the guideline development stage

Compliance Assistance and Outreach

Compliance Assistance and Outreach

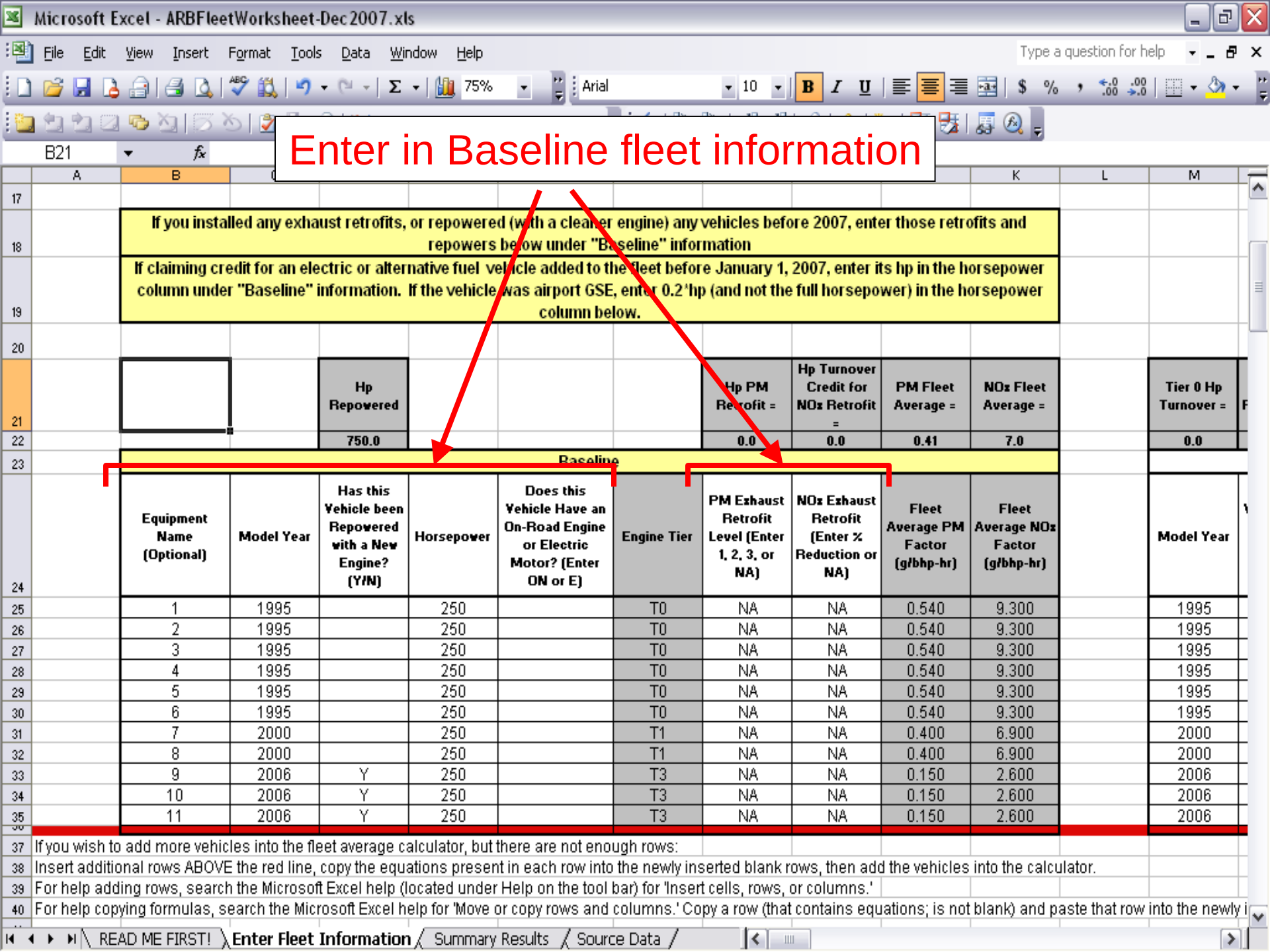
- Staff will be available to work with individual fleets on their compliance plans
- First round of 12 statewide Off-road Implementation Seminars conducted July – September 2008
- Second round of four trainings November – December 2008
  - Additional trainings will be held in early 2009, contact Eric Brown (ebrown@arb.ca.gov) with questions
- Staff available to give off-road presentations at the request of fleet owners, industry groups, equipment dealers and manufacturers

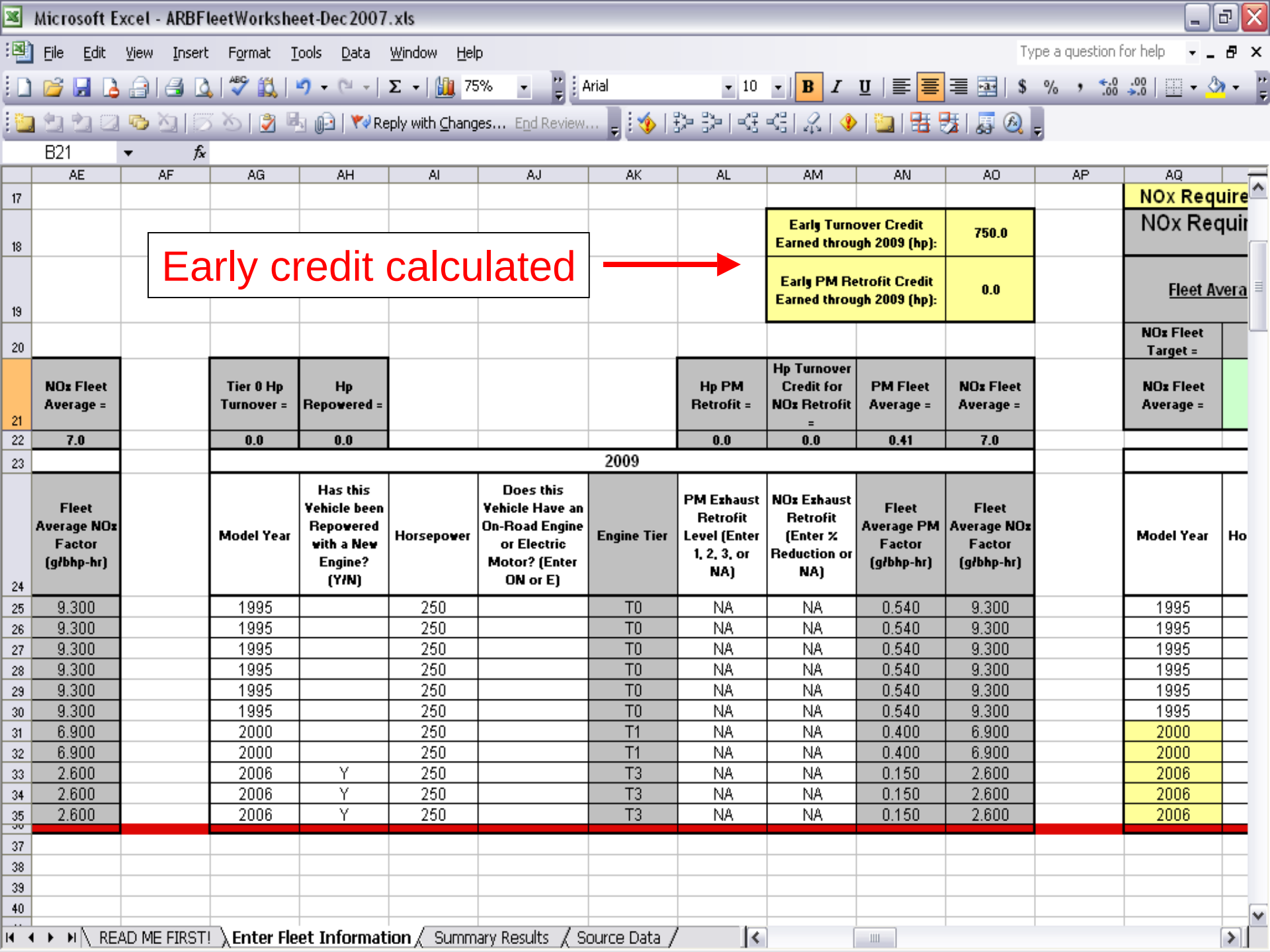
Off-Road Implementation Advisory Group (ORIAG)

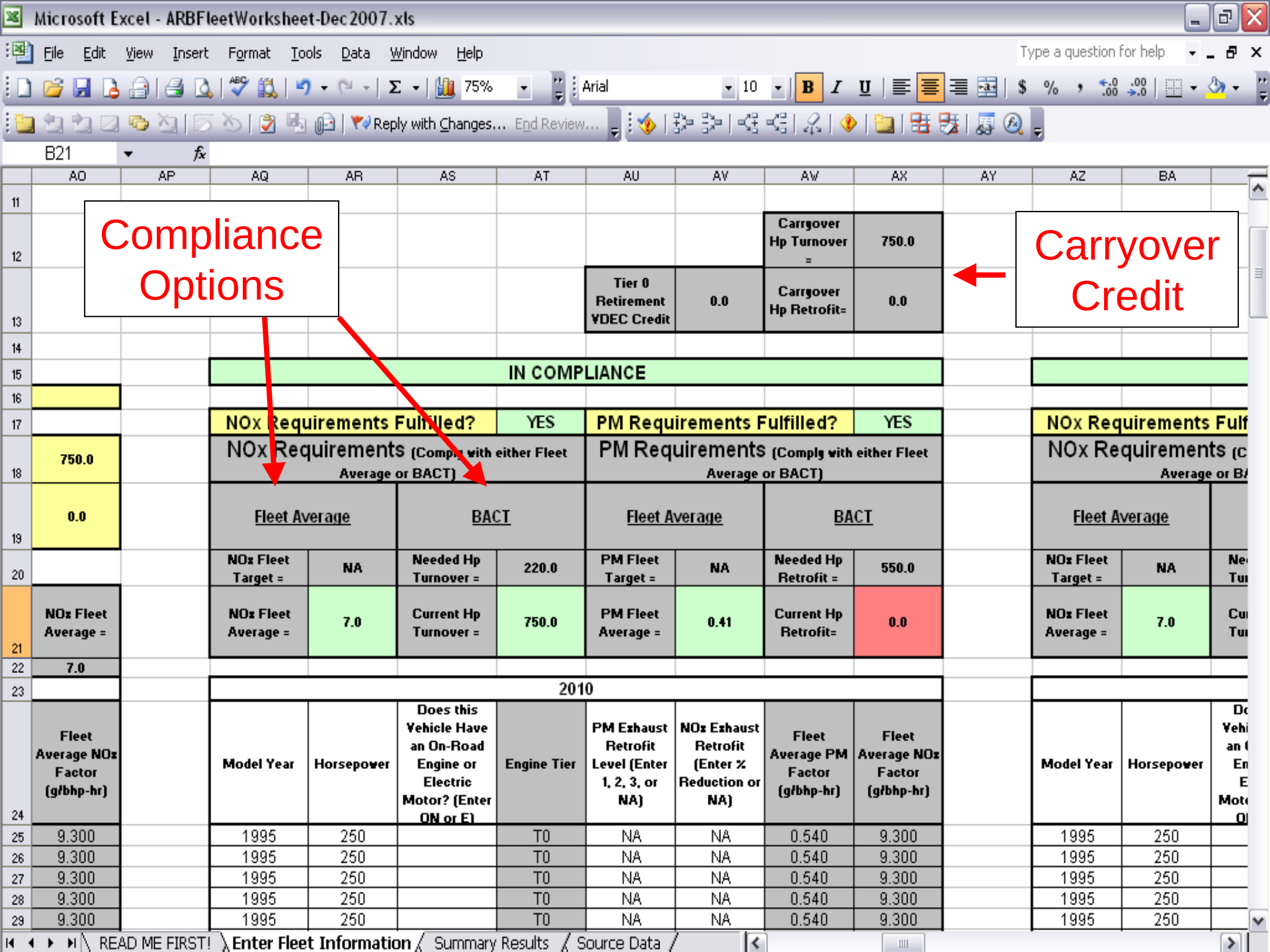
- Informal committee of affected fleets, air districts, and industry representatives
- Goal is to help ARB to fine tune outreach and training materials, and assist with implementation
- Members of the public welcome to attend
- Three ORIAG meetings held since May, 2008 in Sacramento and El Monte
  - Next meeting slated for February, 2009 in San Diego
  - Subcommittee meetings held as needed
- Contact Beth White (eiwhite@arb.ca.gov) or visit http://www.arb.ca.gov/msprog/ordiesel/oriag/oriag.htm for more details

Off-Road Fleet Average Calculator Overview

- Microsoft Excel spreadsheet tool designed by ARB staff
- Fleet enters in horsepower and model year of each engine
- Calculates the NOx and PM fleet averages, targets, and BACT requirements for each year
- Also calculates early credit and carryover credits earned by fleets


Microsoft Excel - ARBFleetWorksheet-Dec2007.xls
Enter in Baseline fleet information
If you installed any exhaust retrofits, or repowered (with a cleaner engine) any vehicles before 2007, enter those retrofits and repowers below under "Baseline" information
If claiming credit for an electric or alternative fuel vehicle added to the fleet before January 1, 2007, enter its hp in the horsepower column under "Baseline" information. If the vehicle was airport GSE, enter 0.2 hp (and not the full horsepower) in the horsepower column below.
Hp Repowered
750.0
Hp PM Retrofit =
0.0
Hp Turnover Credit for NOx Retrofit =
0.0
PM Fleet Average =
0.41
NOx Fleet Average =
7.0
Tier 0 Hp Turnover =
0.0
Baseline
Equipment Name (Optional)
Model Year
Has this Vehicle been Repowered with a New Engine? (Y/N)
Horsepower
Does this Vehicle Have an On-Road Engine or Electric Motor? (Enter ON or E)
Engine Tier
PM Exhaust Retrofit Level (Enter 1, 2, 3, or NA)
NOx Exhaust Retrofit (Enter % Reduction or NA)
Fleet Average PM Factor (g/bhp-hr)
Fleet Average NOx Factor (g/bhp-hr)
Model Year
1 1995 250 T0 NA NA 0.540 9.300 1995
2 1995 250 T0 NA NA 0.540 9.300 1995
3 1995 250 T0 NA NA 0.540 9.300 1995
4 1995 250 T0 NA NA 0.540 9.300 1995
5 1995 250 T0 NA NA 0.540 9.300 1995
6 1995 250 T0 NA NA 0.540 9.300 1995
7 2000 250 T1 NA NA 0.400 6.900 2000
8 2000 250 T1 NA NA 0.400 6.900 2000
9 2006 Y 250 T3 NA NA 0.150 2.600 2006
10 2006 Y 250 T3 NA NA 0.150 2.600 2006
11 2006 Y 250 T3 NA NA 0.150 2.600 2006
If you wish to add more vehicles into the fleet average calculator, but there are not enough rows:
Insert additional rows ABOVE the red line, copy the equations present in each row into the newly inserted blank rows, then add the vehicles into the calculator.
For help adding rows, search the Microsoft Excel help (located under Help on the tool bar) for 'Insert cells, rows, or columns.'
For help copying formulas, search the Microsoft Excel help for 'Move or copy rows and columns.' Copy a row (that contains equations; is not blank) and paste that row into the newly i
READ ME FIRST!
Enter Fleet Information
Summary Results
Source Data


Microsoft Excel - ARBFleetWorksheet-Dec2007.xls
File Edit View Insert Format Tools Data Window Help
Type a question for help
Arial 10
Reply with Changes... End Review...
B21
Early credit calculated
Early Turnover Credit Earned through 2009 (hp): 750.0
Early PM Retrofit Credit Earned through 2009 (hp): 0.0
NOx Require
NOx Requi
Fleet Avera
NOx Fleet Target =
NOx Fleet Average =
NOx Fleet Average = 7.0
Tier 0 Hp Turnover = 0.0
Hp Repowered = 0.0
Hp PM Retrofit = 0.0
Hp Turnover Credit for NOx Retrofit = 0.0
PM Fleet Average = 0.41
NOx Fleet Average = 7.0
2009
Fleet Average NOx Factor (g/bhp-hr)
Model Year
Has this Vehicle been Repowered with a New Engine? (Y/N)
Horsepower
Does this Vehicle Have an On-Road Engine or Electric Motor? (Enter ON or E)
Engine Tier
PM Exhaust Retrofit Level (Enter 1, 2, 3, or NA)
NOx Exhaust Retrofit (Enter % Reduction or NA)
Fleet Average PM Factor (g/bhp-hr)
Fleet Average NOx Factor (g/bhp-hr)
Model Year
Ho
9.300 1995 250 T0 NA NA 0.540 9.300 1995
9.300 1995 250 T0 NA NA 0.540 9.300 1995
9.300 1995 250 T0 NA NA 0.540 9.300 1995
9.300 1995 250 T0 NA NA 0.540 9.300 1995
9.300 1995 250 T0 NA NA 0.540 9.300 1995
9.300 1995 250 T0 NA NA 0.540 9.300 1995
6.900 2000 250 T1 NA NA 0.400 6.900 2000
6.900 2000 250 T1 NA NA 0.400 6.900 2000
2.600 2006 Y 250 T3 NA NA 0.150 2.600 2006
2.600 2006 Y 250 T3 NA NA 0.150 2.600 2006
2.600 2006 Y 250 T3 NA NA 0.150 2.600 2006
READ ME FIRST! Enter Fleet Information Summary Results Source Data


Microsoft Excel - ARBFleetWorksheet-Dec2007.xls
Compliance Options
Carryover Credit
Carrgover Hp Turnover = 750.0
Tier 0 Retirement VDEC Credit 0.0
Carrgover Hp Retrofit= 0.0
IN COMPLIANCE
NOx Requirements Fulfilled? YES
PM Requirements Fulfilled? YES
NOx Requirements (Comply with either Fleet Average or BACT)
PM Requirements (Comply with either Fleet Average or BACT)
Fleet Average
BACT
NOx Fleet Target = NA
Needed Hp Turnover = 220.0
PM Fleet Target = NA
Needed Hp Retrofit = 550.0
NOx Fleet Average = 7.0
Current Hp Turnover = 750.0
PM Fleet Average = 0.41
Current Hp Retrofit= 0.0
750.0
0.0
NOx Fleet Average = 7.0
2010
Fleet Average NOx Factor (g/bhp-hr)
Model Year
Horsepower
Does this Vehicle Have an On-Road Engine or Electric Motor? (Enter ON or E)
Engine Tier
PM Exhaust Retrofit Level (Enter 1, 2, 3, or NA)
NOx Exhaust Retrofit (Enter % Reduction or NA)
Fleet Average PM Factor (g/bhp-hr)
Fleet Average NOx Factor (g/bhp-hr)
9.300 1995 250 T0 NA NA 0.540 9.300
READ ME FIRST!
Enter Fleet Information
Summary Results
Source Data

Introduction to DOORS

What is DOORS?

- Diesel Off-road On-line Reporting System
  - An on-line tool which allows you to compile and report your fleet information
  - Meets the reporting requirements
  - Retains your fleet data for future reporting
  - Includes additional features such as automated compliance planning

Outline of DOORS Discussion

- Where to find reporting forms, tools, and user guides
- Creating a DOORS account
- Submitting your fleet information
  - Directly on-line
  - Uploading with a spreadsheet
  - Hardcopy
- ARB review of your fleet – receive EINs and Certificate of Compliance
- Compliance planning and other features

Finding the Reporting Homepage

http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm

Home | Programs | Rulemaking | Board Meetings | Laws & Regulations | Data & Statistics | Permits, Etc. | Events

IN-USE OFF-ROAD DIESEL VEHICLE REGULATION

Monday, August 25, 2008

UP LINKS

- ARB Programs
  - Diesel Program
    - Mobile Vehicles and Equipment
  - Mobile Sources
    - **Off-Road Diesel**

LOCAL LINKS

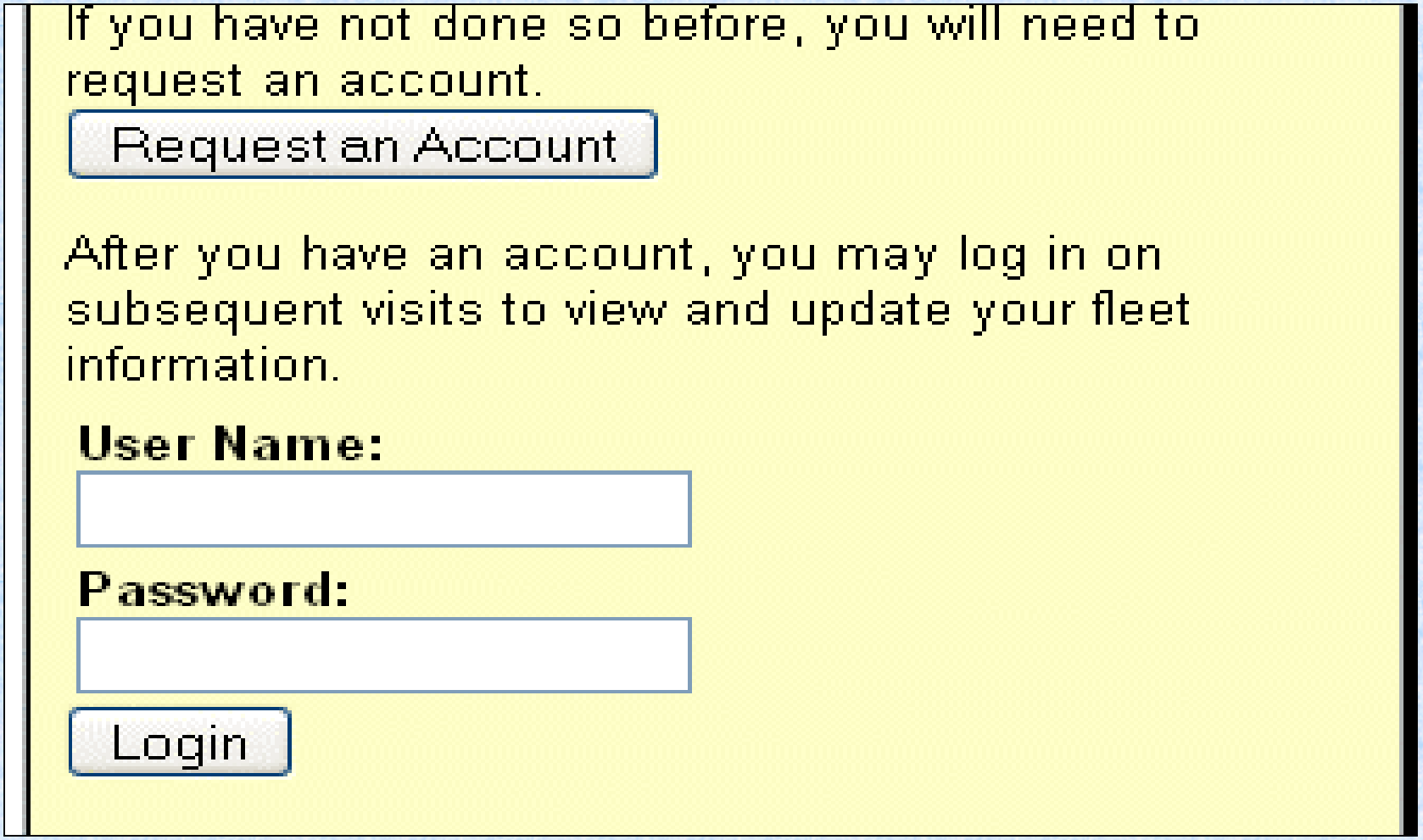
- Archived Documents
- Background
- Contacts
- Current Regulation
- Fact Sheets
- Fleet Average Calculators
- Frequently Asked Questions (FAQ)

This page last reviewed August 22, 2008

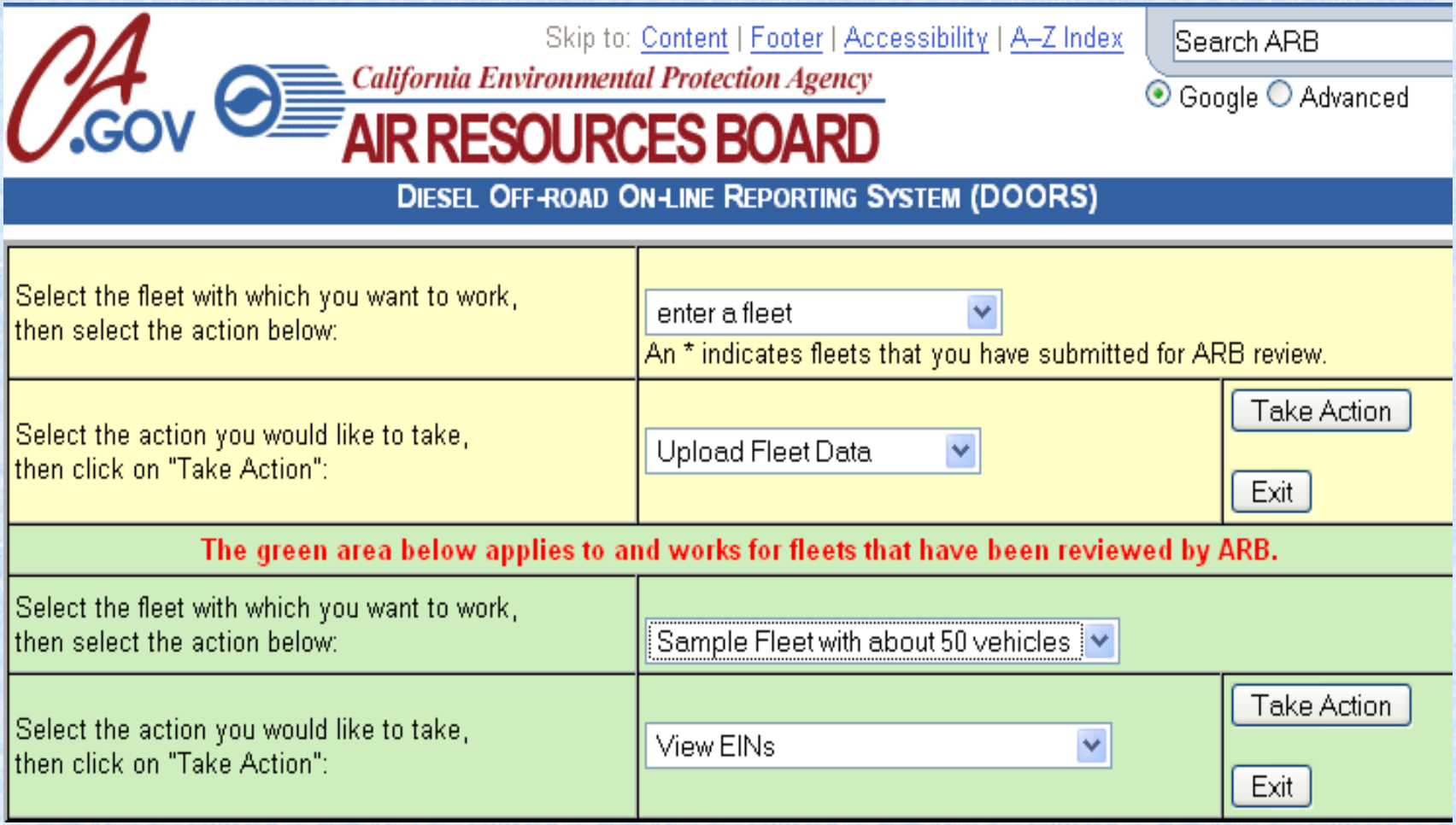
Quick Links

Overview & Fact Sheets | Free Training Seminars | Reporting Forms | Compliance Planning Tools | Regulation Language

On July 26, 2007, the Air Resources Board (ARB) adopted a regulation to reduce diesel particulate matter (PM) and oxides of nitrogen (NOx) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. For more information you can call the diesel vehicle information hot line at (866) 6-DIESEL or (866)


If you have not done so before, you will need to request an account.
Request an Account
After you have an account, you may log in on subsequent visits to view and update your fleet information.
User Name:
Password:
Login

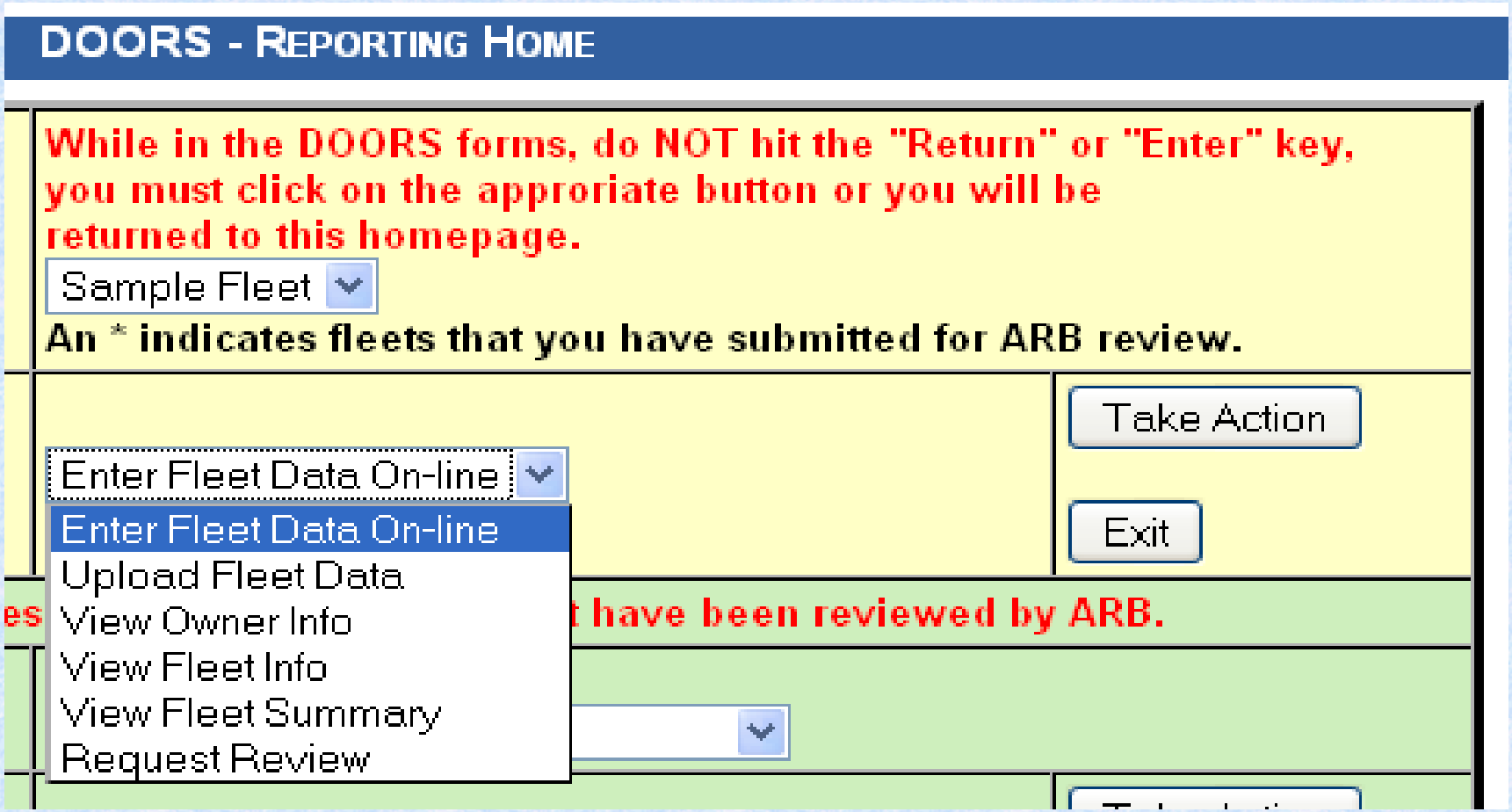
DOORS Reporting Homepage



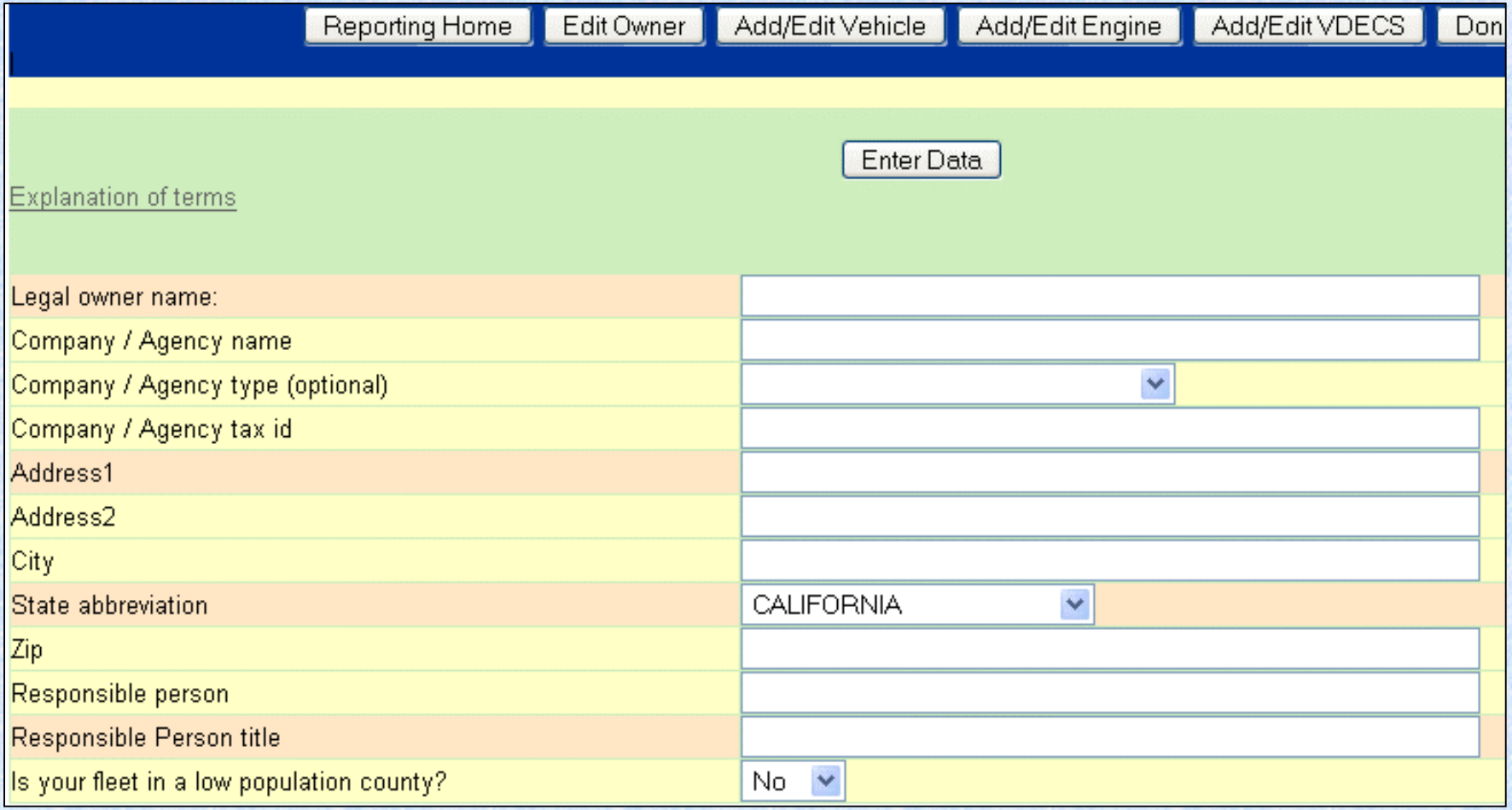
DOORS – Online Forms

“enter a fleet”

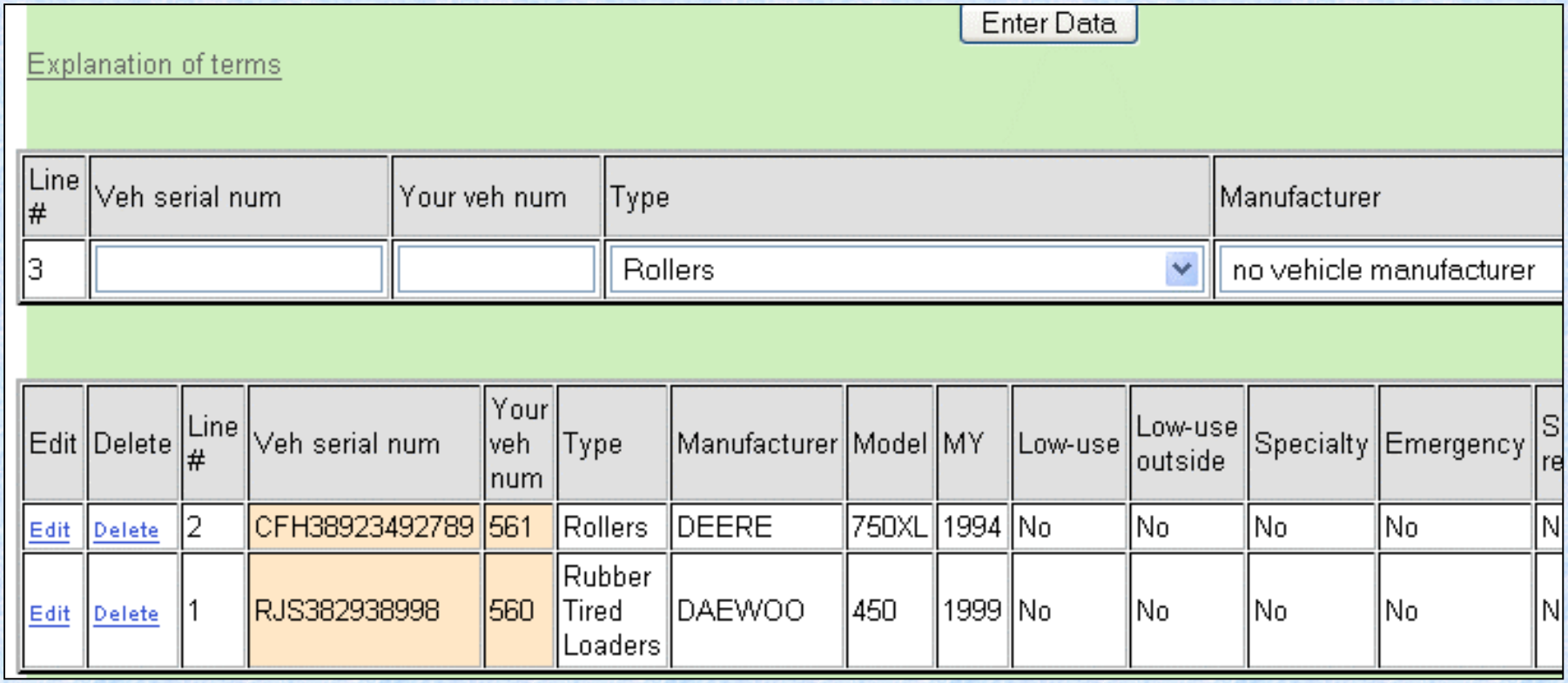
“Enter Fleet Data On-line”



Owner Information



Vehicle Information



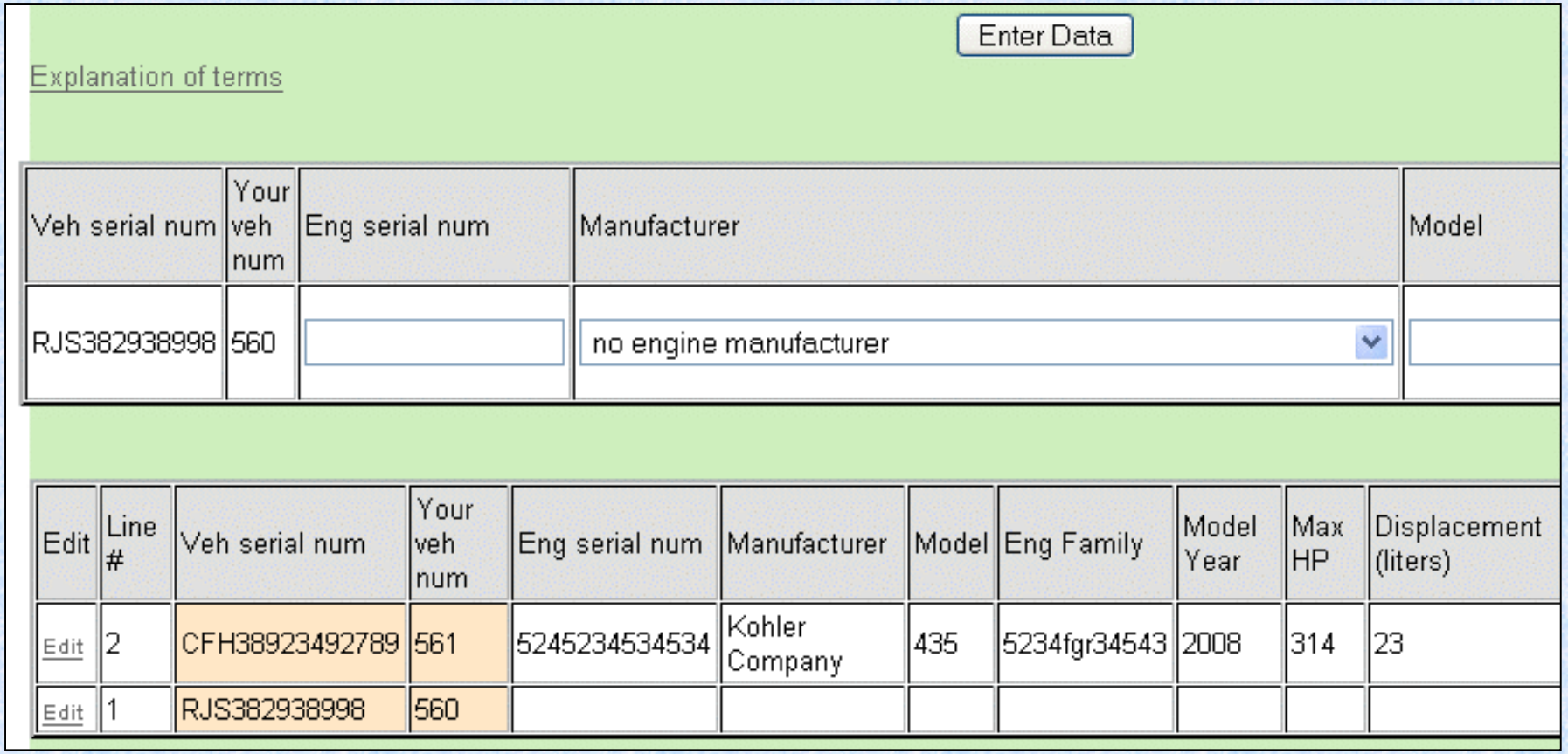
Enter Data

Explanation of terms

Line #	Veh serial num	Your veh num	Type	Manufacturer
3			Rollers	no vehicle manufacturer

Edit	Delete	Line #	Veh serial num	Your veh num	Type	Manufacturer	Model	MY	Low-use	Low-use outside	Specialty	Emergency	S re
Edit	Delete	2	CFH38923492789	561	Rollers	DEERE	750XL	1994	No	No	No	No	N
Edit	Delete	1	RJS382938998	560	Rubber Tired Loaders	DAEWOO	450	1999	No	No	No	No	N

Adding Engine Information



Enter Data

Explanation of terms

Veh serial num	Your veh num	Eng serial num	Manufacturer	Model
RJS382938998	560		no engine manufacturer	

Edit	Line #	Veh serial num	Your veh num	Eng serial num	Manufacturer	Model	Eng Family	Model Year	Max HP	Displacement (liters)
Edit	2	CFH38923492789	561	5245234534534	Kohler Company	435	5234fgr34543	2008	314	23
Edit	1	RJS382938998	560							

Viewing Your Fleet Data

erial num	Your veh num	Type	Manufacturer	Model	MY	Low-use	Low-use outside	Specialty	Emergency	Snow removal	Agri-culture
0DT606983		Off-Highway_Trucks	DEERE	350DW	2007	No	No	No	No	No	No
0DT610629		Off-Highway_Trucks	DEERE	350DW	2007	No	No	No	No	No	No
4JZ600860		Tractors/Loaders/Backhoes	DEERE	544JX	2006	No	No	No	No	No	No
4JZ595574		Tractors/Loaders/Backhoes	DEERE	624JX	2005	No	No	No	No	No	No
4JZ595840		Tractors/Loaders/Backhoes	DEERE	624JX	2006	No	No	No	No	No	No
4JZ601450		Tractors/Loaders/Backhoes	DEERE	624JX	2007	No	No	No	No	No	No
4JZ601451		Tractors/Loaders/Backhoes	DEERE	624JX	2006	No	No	No	No	No	No
4JZ615076		Tractors/Loaders/Backhoes	DEERE	624JX	2008	No	No	No	No	No	No
4JZ615706		Tractors/Loaders/Backhoes	DEERE	624JX	2008	No	No	No	No	No	No
4JZ617525		Tractors/Loaders/Backhoes	DEERE	624JX	2008	No	No	No	No	No	No
4HX588041		Tractors/Loaders/Backhoes	DEERE	644HX	2003	No	No	No	No	No	No
4JX600366		Tractors/Loaders/Backhoes	DEERE	644JX	2006	No	No	No	No	No	No
erial num	Your veh num	Type	Manufacturer	Model	MY	Low-use	Low-use outside	Specialty	Emergency	Snow removal	Agri-culture
4JX600814		Tractors/Loaders/Backhoes	DEERE	644JX	2006	No	No	No	No	No	No
4JX607478		Tractors/Loaders/Backhoes	DEERE	644JX	2007	No	No	No	No	No	No
4JX607480		Tractors/Loaders/Backhoes	DEERE	644JX	2007	No	No	No	No	No	No
4JZ616781		Tractors/Loaders/Backhoes	DEERE	644JX	2008	No	No	No	No	No	No
2DX617195		Graders	DEERE	672DX	2008	No	No	No	No	No	No
4JX606666		Tractors/Loaders/Backhoes	DEERE	744JX	2007	No	No	No	No	No	No
2DX611787		Graders	DEERE	872DX	2007	No	No	No	No	No	No
2DX618153		Graders	DEERE	872DX	2008	No	No	No	No	No	No

DOORS – Excel Spreadsheets

What if you already have your inventory information in a spreadsheet?

Download Excel Spreadsheet from ARB

Enter your information

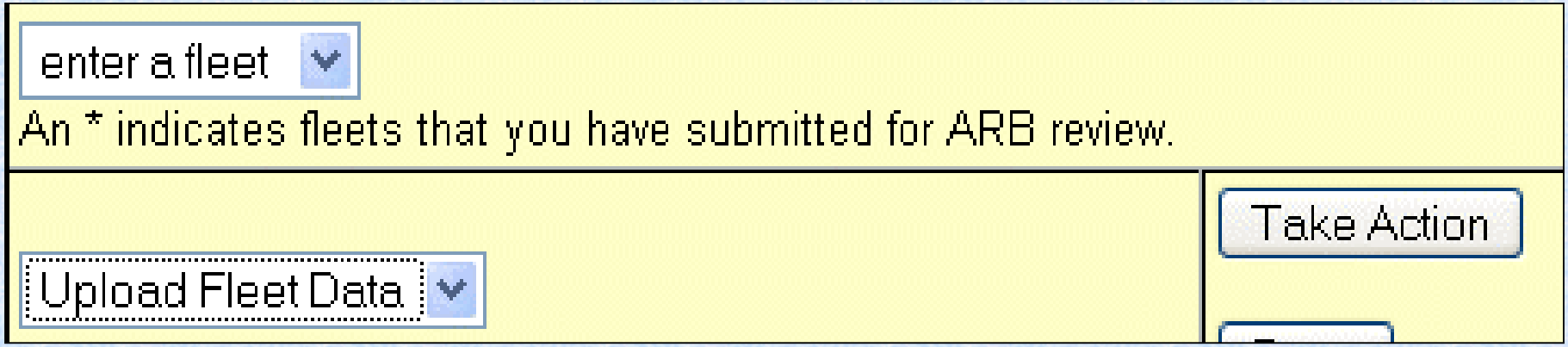
Save the spreadsheet as a .PRN

Upload the files to ARB

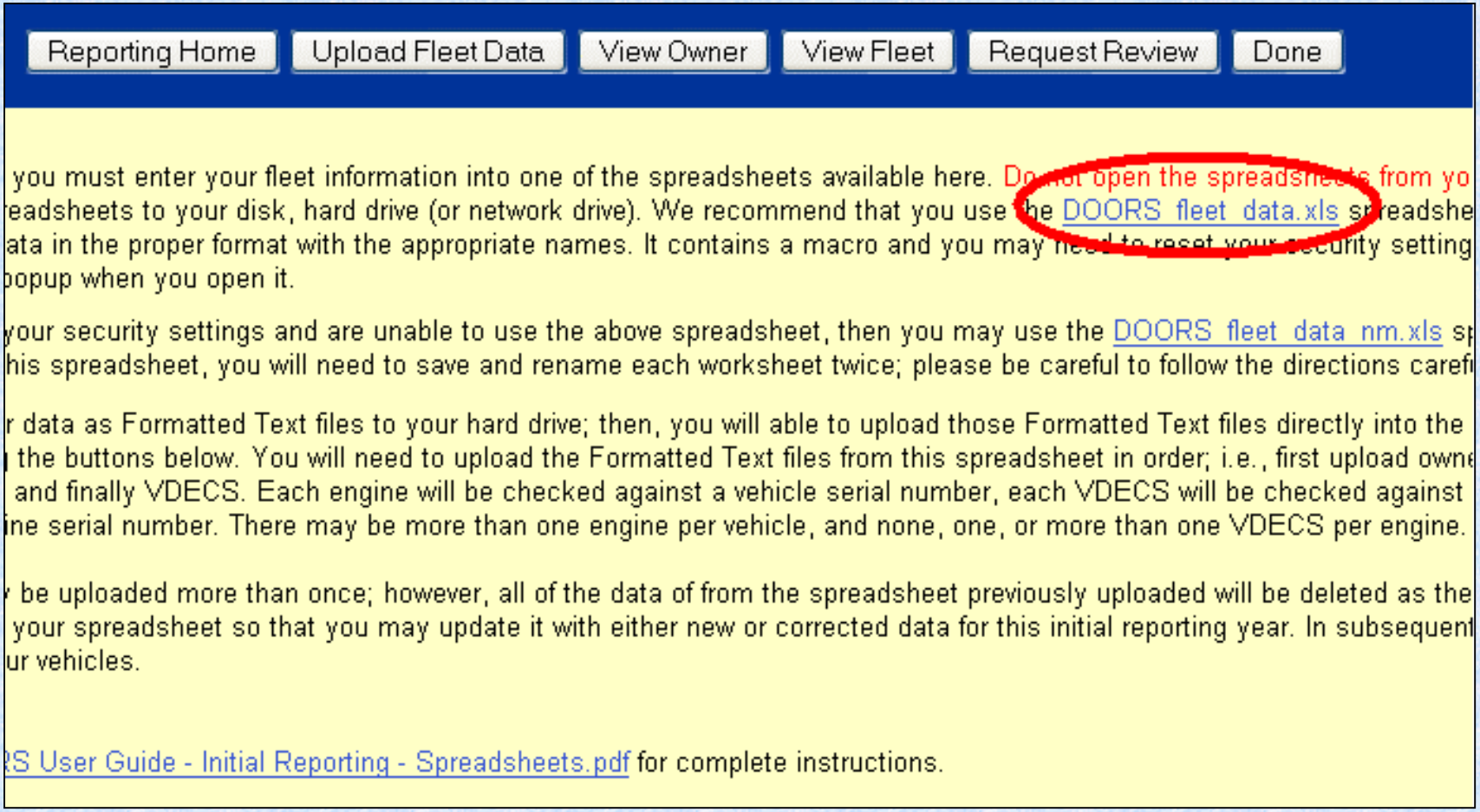
DOORS – Excel Spreadsheets

What if you already have your inventory information in a spreadsheet?

"enter a fleet" – "Upload Fleet Data"

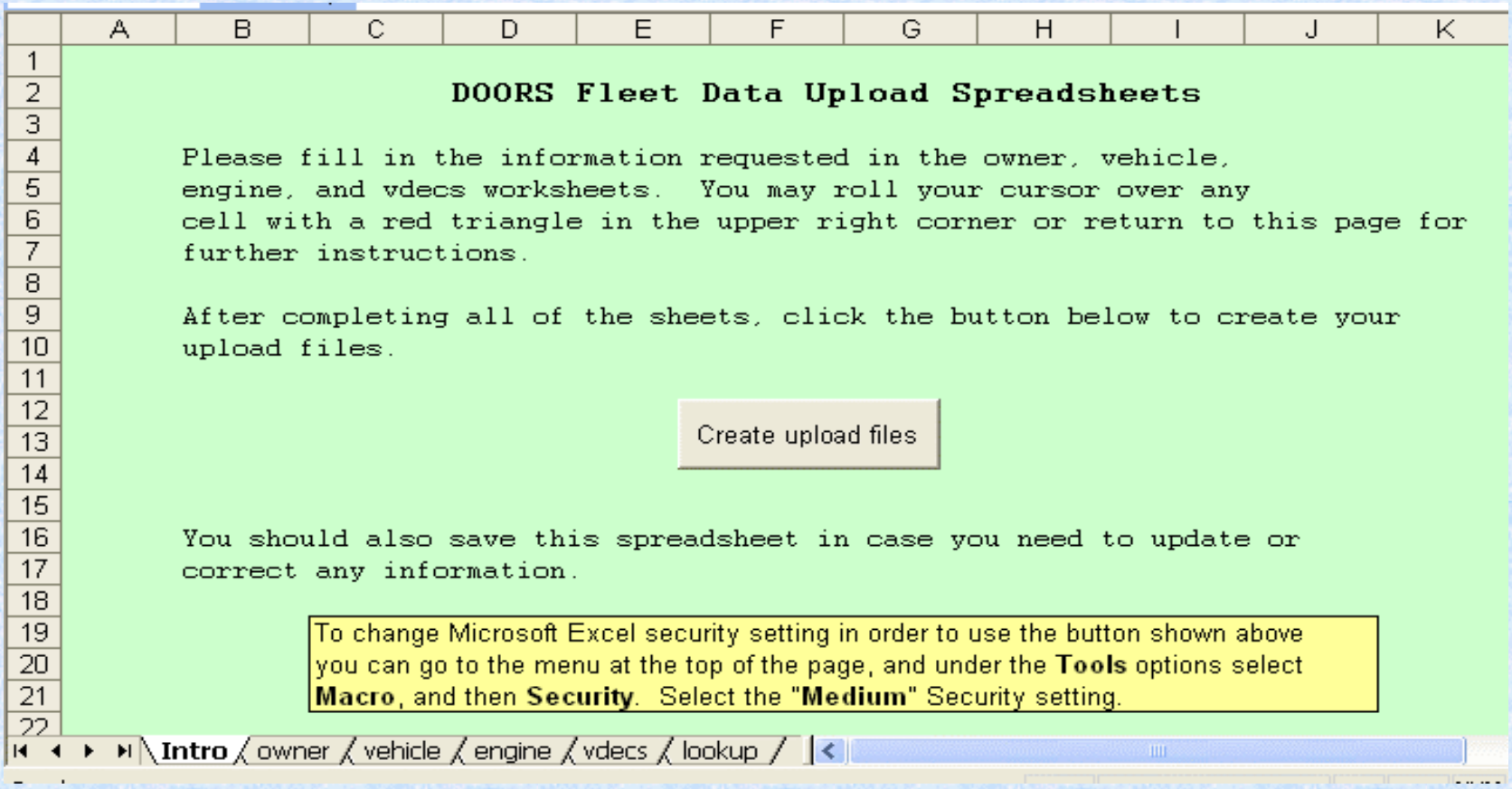


Download the Spreadsheet



Linked Worksheets & Macros

Change your macro security settings in Excel.



DOORS – Excel Spreadsheets

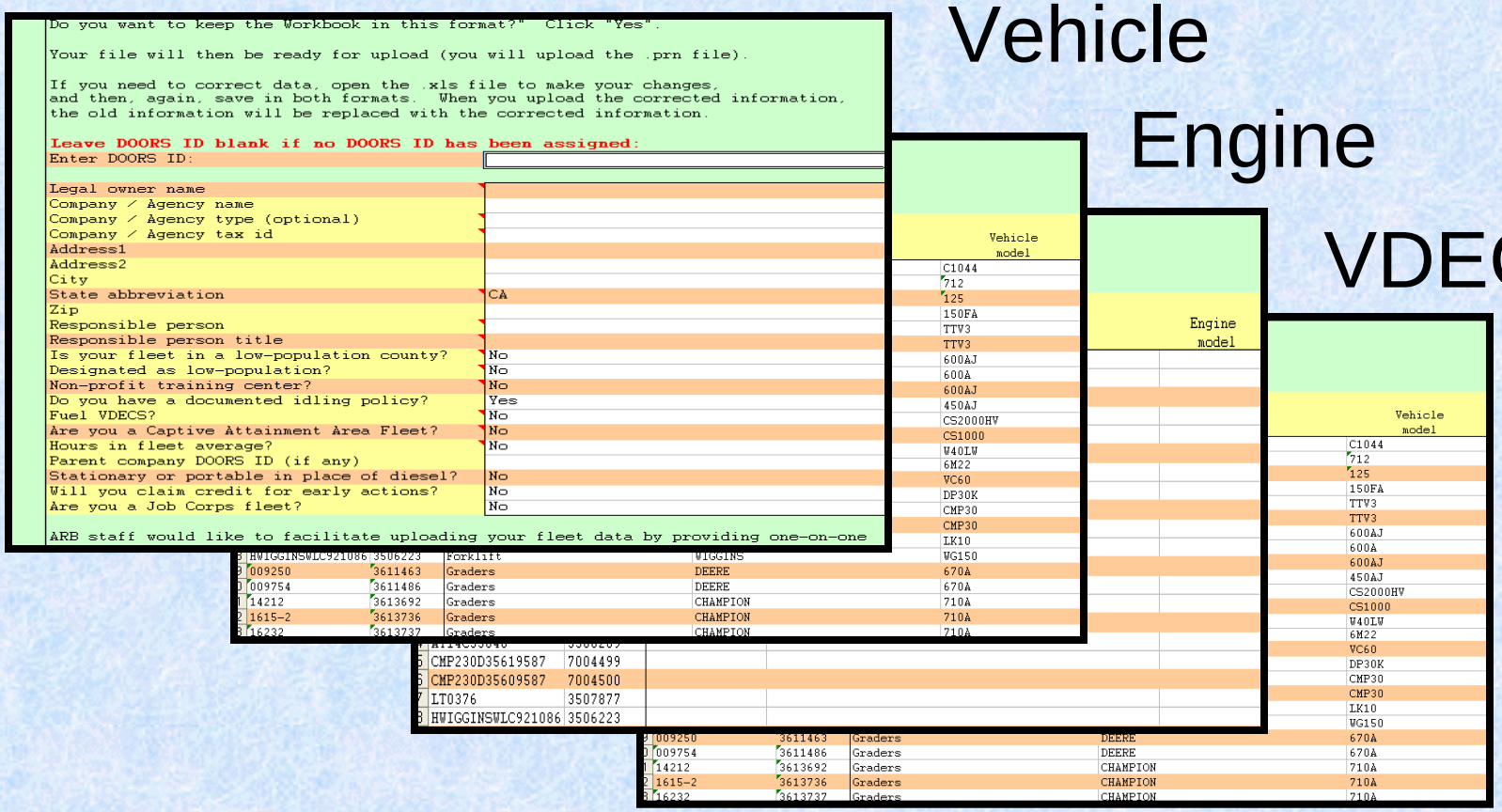
Fill out the spreadsheets

Owner

Vehicle

Engine

VDECS



Do you want to keep the Workbook in this format?" Click "Yes".

Your file will then be ready for upload (you will upload the .prn file).

If you need to correct data, open the .xls file to make your changes, and then, again, save in both formats. When you upload the corrected information, the old information will be replaced with the corrected information.

Leave DOORS ID blank if no DOORS ID has been assigned:

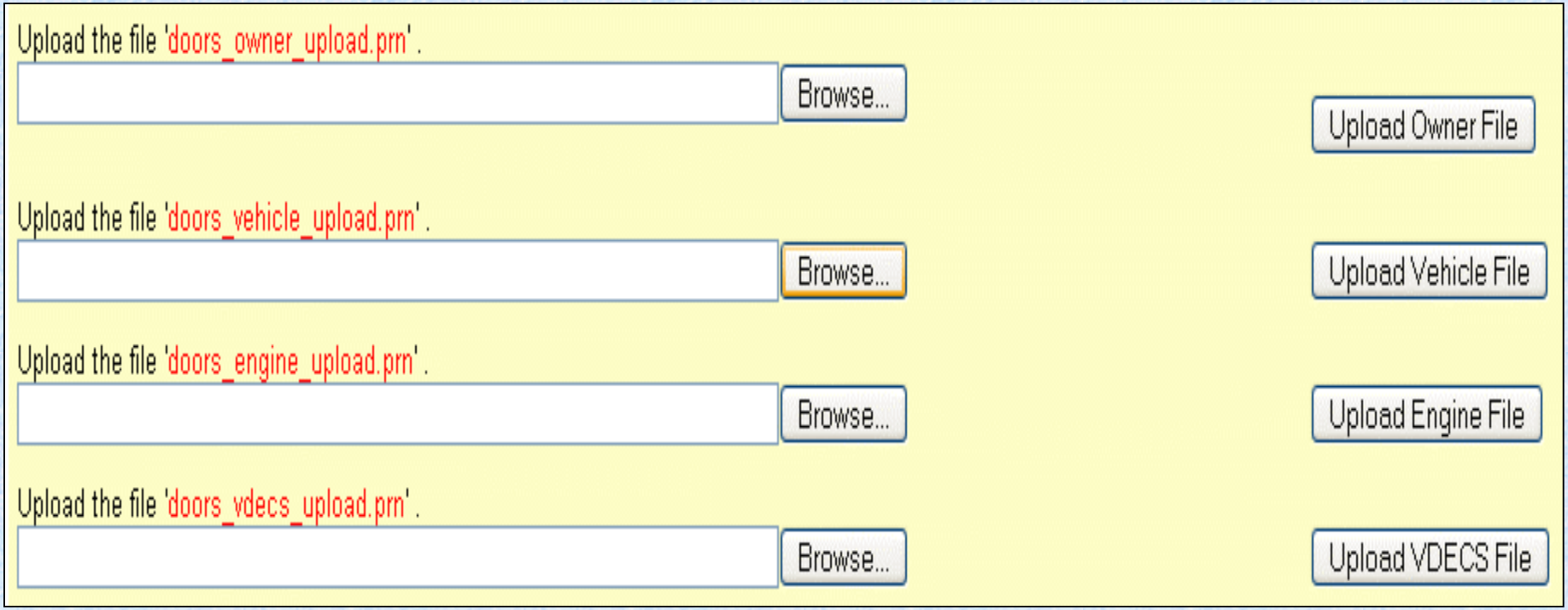
Enter DOORS ID:	
Legal owner name	
Company / Agency name	
Company / Agency type (optional)	
Company / Agency tax id	
Address1	
Address2	
City	
State abbreviation	CA
Zip	
Responsible person	
Responsible person title	
Is your fleet in a low-population county?	No
Designated as low-population?	No
Non-profit training center?	No
Do you have a documented idling policy?	Yes
Fuel VDECS?	No
Are you a Captive Attainment Area Fleet?	No
Hours in fleet average?	No
Parent company DOORS ID (if any)	
Stationary or portable in place of diesel?	No
Will you claim credit for early actions?	No
Are you a Job Corps fleet?	No

ARB staff would like to facilitate uploading your fleet data by providing one-on-one

					Vehicle model
HWIGGINSWLC921086	3506223	Forklift	WIGGINS	WG150	C1044
009250	3611463	Graders	DEERE	670A	712
009754	3611486	Graders	DEERE	670A	125
14212	3613692	Graders	CHAMPION	710A	150FA
1615-2	3613736	Graders	CHAMPION	710A	TTV3
16232	3613737	Graders	CHAMPION	710A	TTV3
					600AJ
CMP230D35619587	7004499				600A
CMP230D35609587	7004500				600AJ
LT0376	3507877				450AJ
HWIGGINSWLC921086	3506223				CS2000HV
					CS1000
					W40LW
					6M22
					VC60
					DP30K
					CMP30
					CMP30
					LK10
					WG150
009250	3611463	Graders	DEERE	670A	
009754	3611486	Graders	DEERE	670A	
14212	3613692	Graders	CHAMPION	710A	
1615-2	3613736	Graders	CHAMPION	710A	
16232	3613737	Graders	CHAMPION	710A	

DOORS – Excel Spreadsheets

Uploading



Fleet Summary

Reporting Home | Upload Fleet Data | View Owner | View Fleet | Request Review | Exit

DOORS ID: 1 Name: Sample Fleet

Current Diesel and Non-diesel Vehicles*	# vehicles	Horsepower
Total in fleet (Separable vehicles, scrapers, may count as two vehicles)	**8**	**4,715.0**
Exempt from regulation and reporting (awaiting sale, San Nicolas or San Clemente Island)	1	633.0
Exempt but must report (low-use, emergency, snow-removal, and ag)	1	343.0
Total in fleet average calculation	**6**	**3,739.0**
Fleet size	**Medium**	
Non-diesel fueled engines	4	3,051.0
Non-standard certified engines	2	687.0
Standard, diesel fueled engines	2	977.0

ARB Review

DOORS saves the information

Update / Review it later

Request ARB Review

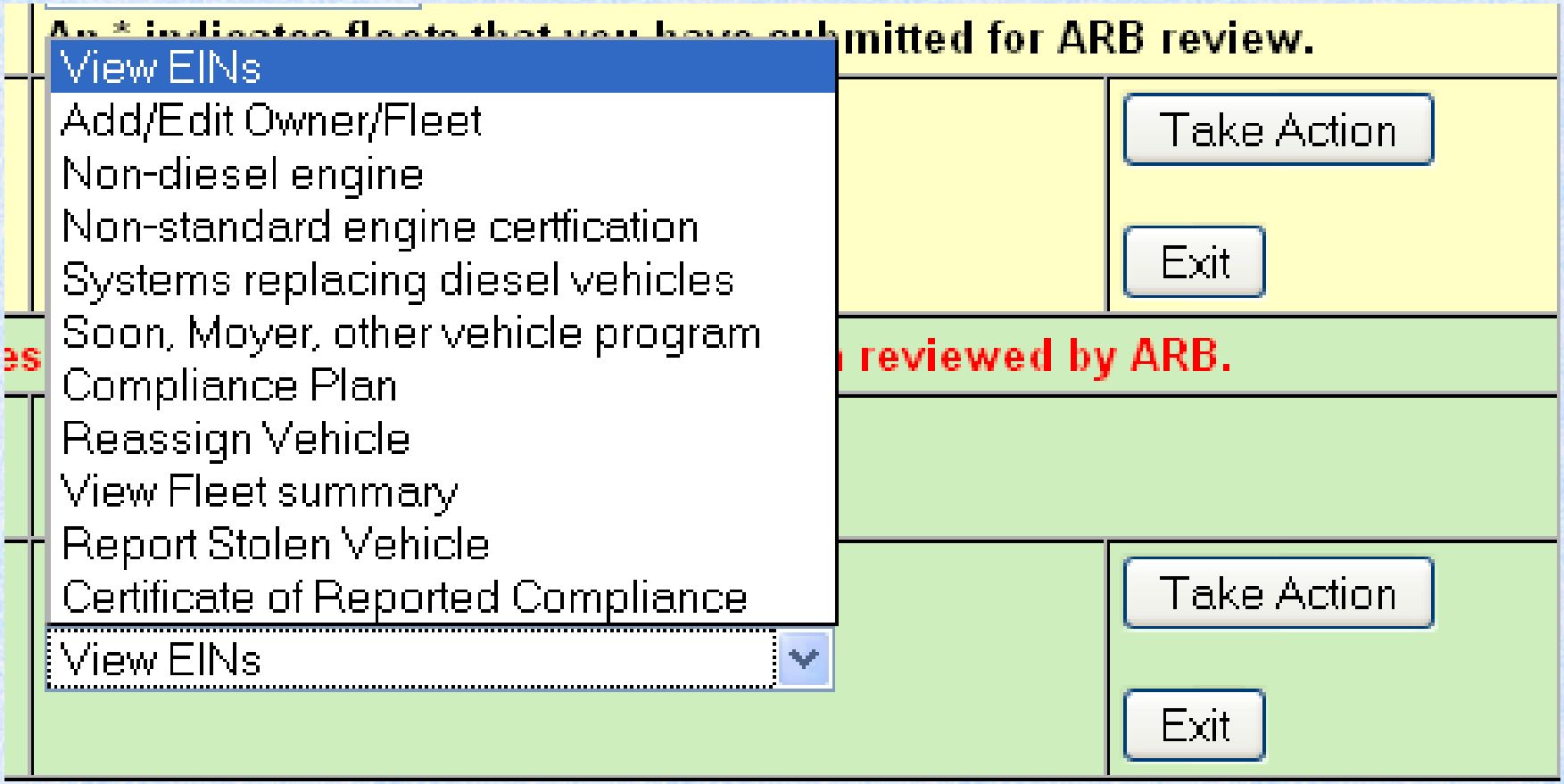
-Receive EINs to label vehicles

Make changes later in online forms

Hardcopy Forms

- Similar format to the Excel Spreadsheets
- Currently under development
- Will be available from the “Reporting Forms” page directly off of the Off-road Diesel Homepage

After ARB Reviews the Data



Fleet Information and EINs

Download As CSV

Line #	EIN	Veh serial num	Your veh num	Type	Manufacturer	Model	MY	Eng serial num	Engine manufacturer
1	A16U18	okli35579	hx123	Cranes	ZETTELMEYER	550G	1983	dsfo269	Detroit_Diesel_Corporation
2	A20M49	huy3868	uio68	Graders	MOSA	sadfasdf	1987	jkj915	Cummins_Inc.
3	A38O09	gty2826	ui80	Crawler_Tractors	CATERPILLAR	TSI37	2000	yht3290	Cummins_Inc.
4	A46L07	gty2857	ui111	Graders	FIATALLIS	2366	2002	yht3321	Cummins_Inc.
5	A62S00	huy3838	uio38	Graders	A._M._SNOWBLAST	sadfasdf	2007	jkj885	Kohler_Company
6	A89R64	gty2839	ui93	Graders	BOBCAT	etwerwtyr	2006	yht3303	Wartsila_North_America,_Inc.
7	B02X79	okli35580	hx124	Other_Material_Handling_Equipment	CASE	etwerwtyr	1976	dsfo270	Cummins_Inc.
8	B08N16	huy3843	uio43	Tractors/Loaders/Backhoes	HEM	TSI38	1991	jkj890	Wartsila_North_America,_Inc.
9	B29P23	huy3841	uio41	Rubber_Tired_Loaders	GENERAL_MOTORS	234	2003	jkj888	Caterpillar_Inc.
10	B67E00	okli35557	hx101	Scrapers	MANITOWOC	222B WEST	2006	dsfo247	Caterpillar_Inc.
11	B77S02	okli35543	hx127	Off-Highway_Tractors	MUSTANG	etwerwtyr	1983	dsfo233	Onan_-_Cummins_Power_Generation
12	B79S70	huy3853	uio53	Graders	CATERPILLAR	550H	2003	jkj900	Kubota_Engine_America_Corporation
Line #	EIN	Veh serial num	Your veh num	Type	Manufacturer	Model	MY	Eng serial num	Engine manufacturer
1	B98O46	huy3850	uio50	Pavers	MCNEILUS	236	2007	jkj897	Caterpillar_Inc.
2	C60K92	huy3837	uio37	Cranes	MANITOWOC	222B WEST	1999	jkj884	Cummins_Inc.
3	D08J28	okli35554	hx98	Off-Highway_Tractors	MUSTANG	etwerwtyr	1983	dsfo244	Onan_-_Cummins_Power_Generation
4	E17T85	huy3830	uio70	Other_Material_Handling_Equipment	MCNEILUS	asdfsdf	2004	jkj877	Wartsila_North_America,_Inc.

Fleet Summary

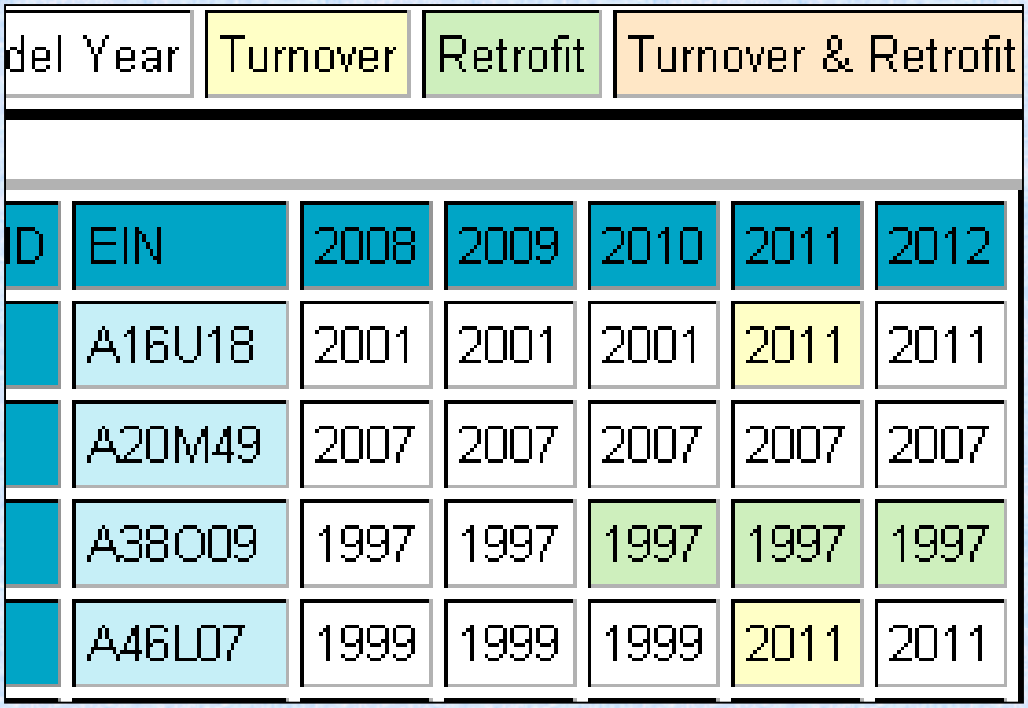
Home | View EINs | Add/Edit Owner/Fleet | Reassign Vehicle | Compliance Plan | Exit

DOORS ID: 81 **Name: New Fleet**

Current Diesel and Non-diesel Vehicles*	# vehicles	Horsepower
Total in fleet (Separable vehicles, scrapers, may count as two vehicles)	**3**	**433.0**
Exempt from regulation and reporting (awaiting sale, San Nicolas or San Clemente Island)	0	0.0
Exempt but must report (low-use, emergency, snow-removal, and ag)	0	0.0
Total in fleet average calculation	**3**	**433.0**
Fleet size	**Small**	
Non-diesel fueled engines	2	400.0
On-road engines	1	345.0

Compliance Planning (in progress)

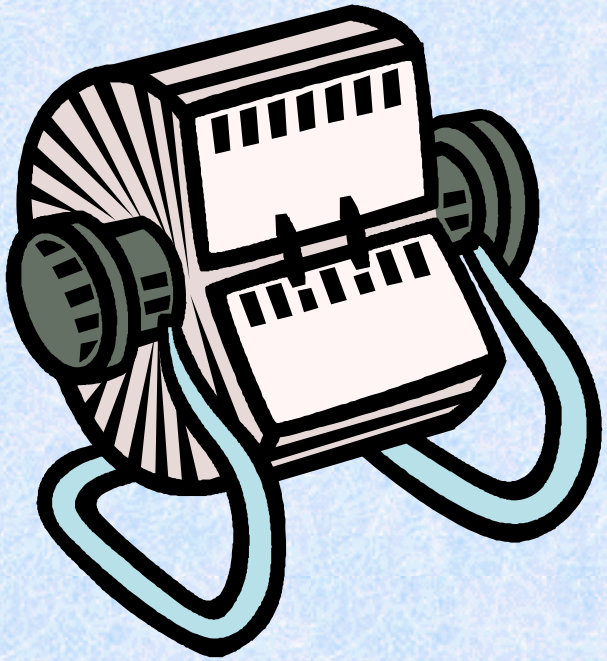
- Defaults to automated or customize as needed
- Calculate compliance for a thousand vehicle fleet in minutes



Reporting Tool: DOORS

- Staff currently looking for fleets to use DOORS and get EINs early
  - Email doors@arb.ca.gov for information
  - Hotline 1-877-59DOORS (877-593-6677)
  - Advantage for fleets to
    - Receive EINs early
    - Get more than 30 days to label vehicles (until 30 days after reporting deadline)
- Help us help you

ARB Website and Contacts



California Environmental Protection Agency

Air Resources Board

In-Use Off-Road Vehicle Regulation Homepage: www.arb.ca.gov/msprog/ordiesel/ordiesel.htm

Home | Programs | Rulemaking | Board Meetings | Laws & Regulations | Data & Statistics | Permits, Etc. | Events

IN-USE OFF-ROAD DIESEL VEHICLE REGULATION

Monday, August 25, 2008

UP LINKS

- ARB Programs
  - Diesel Program
    - Mobile Vehicles and Equipment
  - Mobile Sources
    - **Off-Road Diesel**

LOCAL LINKS

- Archived Documents
- Background
- Contacts
- Current Regulation
- Fact Sheets
- Fleet Average Calculators
- Frequently Asked Questions (FAQ)

This page last reviewed August 22, 2008

Quick Links

Overview & Fact Sheets | **Free Training Seminars** | **Reporting Forms** | **Compliance Planning Tools** | **Regulation Language**

On July 26, 2007, the Air Resources Board (ARB) adopted a regulation to reduce diesel particulate matter (PM) and oxides of nitrogen (NOx) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. For more information you can call the diesel vehicle information hot line at (866) 6-DIESEL or (866)

Off-Road Contacts

General Off-Road Regulation Questions:

Kim Heroy-Rogalski, Manager
Off-road Implementation Section
kheroyro@arb.ca.gov
(916) 327-2200

Elizabeth Yura, Staff
eyura@arb.ca.gov
(916) 323-2397

Diesel vehicle information hot line:
(866) 6-DIESEL
(866) 634-3735

ORIAG/Safety:
Beth White, Staff
eiwhite@arb.ca.gov
(916) 324-1704

DOORS:
Cory Parmer, Staff
pparmer@arb.ca.gov
(916) 323-1180

Carl Moyer Program:
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(626) 350-6485

Off-Road Regulation - www.arb.ca.gov/msprog/ordiesel/ordiesel.htm
Verified Devices - www.arb.ca.gov/diesel/verdev/verdev.htm
Carl Moyer Program - www.arb.ca.gov/msprog/moyer/moyer.htm