

March 31, 2006

Annette Hebert
Chief, Heavy-Duty Diesel In-Use Strategies Branch
California Air Resources Board
9480 Telstar Ave.
El Monte, CA 91731

Subject: Proposed Revisions to CARB Off-Road Equipment Concept

Dear Ms. Hebert:

We appreciate CARB staff's efforts to develop a draft regulation that reduces particulate matter emissions from off-road engines while considering its economic impact on the California construction industry.

The Construction Industry Air Quality Coalition and the California Diesel Work Group⁽¹⁾ have reviewed and approved the following comments and recommendations to your January 20, 2006 Diesel Off-Road Equipment Measure Regulatory Concepts:

- 1) After considerable discussion, participants reached consensus that the concept should apply to engines in the 100 to 200 horsepower range instead of engines over 25 horsepower. The recommendation for a horsepower range is made because many factors will influence the decision to repower, retrofit or replace an engine. Repowers and after treatment are generally not as available or are not as cost effective in lower horsepower engines. Also, the turnover of lower powered equipment is more rapid than higher powered equipment.
- 2) A large fleet should be defined as a fleet with over 25 pieces of equipment. A medium size fleet should be a fleet with from 11 to 25 pieces of equipment. A small fleet should be a fleet with ten or less pieces of equipment. Increasing a small fleet to a ten machine maximum will include more small and minority contractors who would otherwise be forced out of business. Also, this would be more consistent with industry standards.
- 3) Large, medium size and small fleets should have the options of BACT, Company Fleet Emission Averaging, or Project Fleet Emission Averaging paths or any combination of those options.
- 4) Low use equipment should be defined as equipment operating less than 250 hours per year instead of 50 hours per year. Operating less than 250 hours per year is only 12% of normal operating time or three days per month, which is not economically viable.

- 5) Company fleet emission average should be defined as an average of emissions from all applicable off-road diesel equipment owned or leased by a company, excluding exemptions for engines under the 100 to 200 horsepower range and low use equipment operating less than 250 hours per year.

Note: Businesses that operate fleets spread over several states and mining type businesses with multiple fixed site operations should be able to define their fleets by fleet manager, fleet location or on a company wide basis to best reflect the nature of their businesses and how they manage them.

- 6) Project fleet emission averaging should be defined as an average of emissions from all applicable off-road diesel equipment assigned to a project, excluding exemptions for engines under the 100 to 200 horsepower range and low use equipment operating less than 250 hours per year.
- 7) Sequential Engine Identification Number should be replaced with Owner Equipment Number. Engines will be changed, but equipment will remain constant. Engines will be replaced with equivalent or cleaner engines. One fleet identification number should be assigned to all equipment within a fleet.
- 8) "Not to use again in California" should be removed from definition of "To retire".
- 9) Prohibition against selling, installing or using Tier 0 or Tier 1 engines should be removed as long as it meets emission averaging or BACT requirements. Owners should not be restricted in retaining, purchasing or selling existing equipment.

Note: During ARB's Workgroup Meeting in El Monte on March 15, 2006, it was presented in Table C-4, that Off-Road Construction/Mining Population by Emission Standard Tier level totals 168,125 pieces of equipment statewide. It was further discussed that, depending on which off-road emission model was used, Tier 0 engines represent between 55% and 65% of the population. Based on ARB's data, there are approximately 92,000 to 110,000 Tier 0 engines currently operating in the State of California. Construction companies, including many family-owned and minority contractors, use the asset value from their construction equipment fleet as collateral for banking, bonding and operational considerations. Any restrictions to sell or operate Tier 0 and/or Tier 1 diesel-powered off-road construction equipment in California would directly affect a contractor's financial ability to operate.

- 10) The CIAQC and California Diesel Work Group can not comment or make recommendations on target emission rates for fleet emission averaging or the BACT path until CARB can explain the basis for its 2000 baseline. It is evident from the

March 15, 2006 Workgroup Meeting presentation that the off-road equipment inventory CARB used to estimate the 2000 baseline needs to be validated. Modeling assumptions such as engine useful life and inventory age are fundamental components that can significantly affect the baseline. CIAQC and the California Diesel Work Group are preparing a separate comment letter to address inventory related issues associated with the baseline and will forward it to CARB shortly.

- 11) The 2010, 2013 and 2017 fleet average requirements should be removed because of the uncertainty of availability of Verified Diesel Emission Control Systems (VDECS) and the unacceptable cost to owners of replacing machines at least two times for machines with higher Tier engines. The 2020 emission reduction target is the only relevant target for the program. With interim targets, more than one program would need to be met. In addition, the 2020 date leaves only 13 years to comply.
- 12) The BACT path is complicated, difficult to comprehend and problematic for an equipment owner to implement. We suggest that CARB either clarify the requirements or simplify the BACT path so it is more easily understood.
- 13) Commercial feasibility for a VDECS should be defined as two years following verification for at least two devices for each engine group or family. This will allow manufactures time to target and reach potential buyers and for engine owners to evaluate which device is best.
- 14) "Contacting the foreman or site superintendent for clearance" should be added under "Right of Entry".
- 15) The following should be added to the exemptions on the 5-minute idling limit: "Idling required to bring the machine system to operating temperature". Operation of an engine below operating temperature will be detrimental engine life."
- 16) Equation for calculating Fleet Average Composite Emission Factor should be:

$$\text{Fleet average} = \frac{\sum(\text{HP}_i \times \text{LF}_i \times \text{MH}_i \times \text{EF}_i)}{\sum(\text{HP}_i \times \text{MH}_i)} \quad (\text{grams/ bhp-hour})$$

With terms as defined in this table

ID # (i)	Machine Horsepower HP (brake hp)	Load factor LF (decimal)	Machine Hours MH (hours)	Emission Factor EF (grams per brake hp hour)	HPx LFx MH x EF (Grams)	HP x MH (hp hours)
1	HP 1	LF 1	MH 1	EF 1	HP 1x LF 1 x MH 1x EF 1	HP1 x MH1
2	HP 2	LF 2	MH 2	EF 2	HP 2x LF 2 x MH 2x EF 2	HP 2 x MH 2
3	HP 3	LF 3	MH 3	EF 3	HP 3x LF 3 x MH 3x EF 3	HP 3 x MH3
..
....
N	HP n	LF n	MH n	EF n	HP n x LF n x MH n x EF n	HP n x MHn
					$\sum(\text{HP } i \times \text{LF } i \times \text{MH } i \times \text{EF } i)$	$\sum(\text{HP } i \times \text{MH } i)$

Emission Factor = emission factor (grams per brake horsepower – hour) given in Table B12 of the 2005 Carl Moyer Program Guidelines; or other ARB certified engine data. For engines that have been retrofitted with VDECS, the Emission Factor is the PM Emissions factor for a Tier 1, 2 or 3 engine, multiplied by 0.75 for a Level 1 VDECS, 0.50 for a Level 2 VCECS and 0.15 for a Level 3 VDECS; or decimal fractions certified by ARB.

Note: Carl Moyer Table B12 Emission Factors incorporate the use of ultra-low sulfur diesel fuel. Carl Moyer Table B12 Emission Factors are used to evaluate and award incentive funding applications for the Carl Moyer Grant Program, for which \$140 million per year has been appropriated by legislature. Actual emission factors for the Tier levels found in Table B12 are based on data referenced by ARB executive orders.

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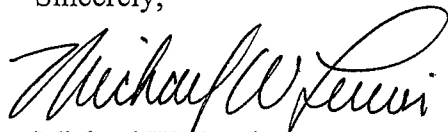
For emission factor purposes, emission certification values (engine data) should reflect emission reductions associated with the use of ultra-low sulfur fuel for certifications conducted with fuel containing sulfur levels greater than 15 parts per million.

Load Factor = The load factor assigned to the machine category in Table B13 of the 2005 Carl Moyer Program Guidelines.

We also believe the measure should provide incentives for voluntary emission reductions. One example of voluntary emission reductions for which incentives should apply is diesel engine repowers made prior to the adoption of the regulation. In addition, the measure should also include incentives for the voluntary replacement of diesel technology with non-diesel alternatives. For example, site facilities such as mining operations may, depending on site specific conditions, have the flexibility to replace haul trucks with stationary conveyor systems. The regulation should provide incentives for operators to do so by allowing the haul truck emissions reductions averages to be calculated in the fleet average for the remaining useful life of the equipment.

In conclusion, we recognize that the primary goal of the Off-Road Equipment Measure is to achieve PM emissions reductions. We also recognize that in order for the construction industry to continue to operate in California, the measure must be structured in a manner that is technologically and economically feasible. We thank you and your staff for considering our comments and recommendations and would like the opportunity to meet with you before revisions to the draft regulatory concepts are released. One of the issues that needs further discussion and hopefully agreement is the most cost effective registration and fee process. We look forward to working further with you on this significant measure.

Sincerely,



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- (1) Participants in the California Diesel Workgroup include representatives from the following organizations:

Construction Industry Air Quality Coalition:
(Associated General Contractors of California,
Engineering Contractors Association,
Southern California Contractors Association,
Building Industry Association of Southern California,
Southern California Rock Products Association, Associate Member)

California Mining Association
Construction Materials Association of California
Engineering & General Contractors Association
Engineering & Utility Contractors Association
American Rental Association
Granite Construction Incorporated
Teichert Aggregates
Red Mountain Machinery