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January 22, 2009

Mary D. Nichols
Chairman
California Air Resources Board
1001 I St.
P.O. Box 2815
Sacramento, CA 95812

Comments
California Air Resources Board Regulation for
In-Use Off Road Diesel Equipment

Dear Chairman Nichols:

Lehigh Hanson, an integrated producer and marketer of cement, aggregate, and concrete in California, is providing these comments in response to CARB's proposed changes to the In Use Off Road Diesel regulation. In the course of its business, Lehigh Hanson operates over 450 pieces of equipment in California subject to this rule, representing over 140,000 horsepower. This rule has the potential to cost Lehigh Hanson over $100 million dollars in equipment expenditures between now and 2020. As you well know, the California economy as a whole and the construction industry in particular, are in a deep recession. The detailed comments below will illustrate how this downturn itself has caused emission reductions from the subject engines equal to or in excess of this regulation. Lehigh Hanson proposes that the full implementation of this rule be delayed until economic conditions make compliance feasible.

Background

The California Air Resource Board (CARB) Off Road Diesel (ORD) regulation requires reductions in Particulate Matter (PM) and Nitrogen Oxides (NOx) from diesel-powered equipment used off road. This equipment, such as bulldozers, front-end loaders, heavy-duty haul trucks, excavators, and similar "yellow" equipment is widely used in construction and mining operations in California. The equipment is used to prepare earth for building construction, both residential and commercial, roads, public works, and other projects. "Mining" in California now refers to the excavation and preparation of construction materials consumed here in California by the construction industry. These materials include limestone for cement, construction aggregates, sand, and other supporting materials. These materials are expensive to produce, and therefore, are typically produced and sold based on immediate demand. Large-scale storage of prepared materials is not typical in this industry.

Mining of metals and other minerals for export from California has been reduced to a mere fraction of overall "mining" activity. Therefore, current, widely accepted construction industry economic statistics directly reflect the actual level of construction activity, the mining of

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construction materials, and thus, the activity of levels of ORD equipment in these industry segments.

Examples of relevant construction activity statistics include the following:

- New Housing units, number of units
- Residential and Nonresidential construction spending, dollars
- Cement consumption, tons
- Aggregate consumption, tons

Sources of these statistics include the United States Geological Survey, Construction Industry Research Board, University of California Los Angeles Anderson School of Business, the Portland Cement Association, the California Construction and Industrial Materials Association, and others.

ORD Regulation Emission Activity and Reduction Projections

The Technical Support Document[1] (TSD) and other documents supporting the regulation established 2000 as the base year for comparison of emission reductions. The TSD provided specific levels of ORD equipment activity in 2000. This report stated that 147,005 pieces of diesel equipment were in use in the Construction and Mining Industry in 2000. This equipment created an estimated 21.4 Tons per Day (TPD) of PM emissions, or 88% of the statewide ORD PM emissions. The 2010 projection of PM emissions from the Construction and Mining industry is 15.8 TPD, or, a 26.2% reduction. The reductions were projected to be caused by the implementation of regulated reductions due to lower emission standards for new ORD equipment and retrofit of existing equipment with Diesel Particulate Filters (DPFs).

Further PM emissions from the Construction and Mining industry caused by the implementation of the regulation by 2015 and 2020 were also projected in this report. The projected emissions in 2015 were 10.8 TPD and 6.4 TPD in 2020. These correspond to 49.5% and 70% reductions in 2015 and 2020.

Construction and Mining Economic Activity

At this time in January 2009, the California Construction industry is recording significantly depressed activity levels, largely caused by the worst housing market conditions in the US since the Great Depression. The related credit availability crisis has also contributed to the reduction in construction spending.

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[1] CARB 2007. TECHNICAL SUPPORT DOCUMENT: .PROPOSED REGULATION FOR IN-USE OFF-ROAD DIESEL VEHICLES. California Air Resources Board Mobile Source Control Division Heavy Duty Diesel In-Use Strategies Branch April 2007

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As discussed above, publically available economic statistics describe the activity levels of the California Construction and Mining activity, and thus the activity level of ORD equipment in the industry. Some statistical values are as follows:

Table 1
Construction & Mining Industry Economic Activity
2000 to 2007

Statistic	2000 Level	2007 Level	% Change
New Housing Units [2]	148,540	113,034	-23.9
Residential Construction Spending (Billion 2007$)[2]	38.078	28.621	-24.8
Non Residential Construction Spending (Billion 2007 $)[2]	25.349	22.542	-11.0
Construction Spending Combined (Billion 2007 $)[2]	63.427	51.163	-19.3
California Cement Consumption[3] (million metric tons)	13.043	12.679	-2.8
California Aggregate Consumption[4] (million metric tons)	207.74	173.24	-16.6

Table 2
Construction & Mining Industry Economic Activity
2000 to 2010 (Projected)

Statistic	2000 Level	2010 Level	% Change
New Housing Units[5]	149,000	101,000	-32.2
Non Residential Construction Spending (Million 2000 $)[5]	18,571	13,535	-27.1
California Cement Consumption (million metric tons)	13.043[6]	9.61[7]	-26.3

Effect of Current Construction & Mining Activity On ORD PM Emissions

The projected ORD PM emission in 2010 were -26.2% from 2000 levels. The drastic reduction from 2000 levels in California Construction & Mining industry activity in 2007, -19.3%, and the projected levels for 2010, -26 to -32%, indicate that economic conditions have equaled or exceeded the PM emission reductions that would have been attributed to the ORD regulatory program.

[2] Construction Industry Research Board
[3] US Geological Survey
[4] California Construction and Industrial Materials Association
[5] UCLA Anderson Economic Forecast December 2008
[6] US Geological Survey
[7] Portland Cement Association

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Current Problems Facing the Implementation of the ORD Regulation

The Construction & Mining Industry has been preparing for the implementation of the regulation as set forth in the rule. However, discussions with the suppliers of ORD equipment and DPFs have revealed some implementation problems.

One assumption that CARB made was that Tier 4 engines would be available by 2011. For the large horsepower equipment widely used in the industry (>200 horsepower), equipment manufacturers are indicating that it is more likely that Tier 4 engines will be available in 2015 or 2016. Tier 4 engines are expected to have lower emission rates than a Tier 3 engine controlled with the highest level DPF. This delayed availability would make compliance difficult, if not impossible, for this industry.

Another problem is the feasibility of applying DPFs to large horsepower equipment that were not originally designed for these filters. Safety concerns due to blocked visibility and higher operating temperatures are becoming apparent with these installations.

Finally, the control effectiveness of the DPFs and their frequent malfunctions are also testing the viability of this technology.

Proposed Changes to Implementation of the ORD Regulation

As the statistics describe, the drop in construction activity alone has equaled or exceeded the proposed ORD PM emission reductions required by the regulation. This reduction has come at a great cost to the California economy.

It is proposed that the implementation of the ORD regulation be delayed until Construction & Mining industry activity levels begin to rise and then proceed at a pace that will allow attainment of the 2020 PM emissions target.

This delay will also allow the implementation problems discussed above (and others) to be addressed and hopefully solved.

Gregory A. Knapp
Director ESH West Region