

## PART C

### SUMMARY OF COMMENTS FOR THE DIESEL EXHAUST PART A REPORT June 1994

#### **Comments on the Air Resources Board's (ARB) Approach Used to Estimate Ambient Diesel Exhaust Particulate Matter (PM) Concentrations:**

Please note that an updated exposure estimate (including the new EMFAC7G motor vehicle emissions inventory model) will be presented at the June 19, 1997, workshop. The methodology for calculating ambient exposure diesel exhaust PM concentrations will not change. We anticipate that the new inventory will result in a 5 to 10 percent reduction in our ambient concentration estimates.

1. **Comment:** The approach used by ARB to calculate ambient diesel exhaust PM concentrations should use all available data.

**Response:** This version of the report has been updated since it's original June 1994 release to incorporate public comments received during the first public comment period (June-December 1994) and at the September 1994 and January 1996 public workshops. We have included additional data as follows: additional chemical mass balance receptor modeling studies from the South Coast (including the Southeast Desert) and San Jose areas to better characterize California's population exposure in these areas; updated our population census distribution data to reflect 1990 totals; updated 1990 stationary area, point, and mobile source emissions inventory; and exposure estimates from indoor environments, including a total exposure analysis. Use of this data has resulted in lower estimates of annual average diesel exhaust PM<sub>10</sub> concentrations. The ARB will continue to update future versions of this report as more information becomes available.

**Commentors:**

Glenn F. Keller, Engine Manufacturers Association  
Joint Comments From a Consortium of 50 Industries

2. **Comment:** Secondary PM species should be removed from the emission scaling procedure used to estimate primary diesel exhaust PM ambient concentrations. By using the San Joaquin Valley in the baseline estimates, the PM concentrations attributable to diesel exhaust are significantly overestimated in areas where there is an abundance of secondary PM.

**Response:** We have removed secondary PM from the emission scaling procedure. Our revised estimate is based on primary PM emissions from diesel engine exhaust and primary PM in ambient air. We do, however, acknowledge that a non-quantifiable percentage of secondary PM is the result of diesel exhaust emissions precursors such as oxides of nitrogen (NO<sub>x</sub>) and sulfates (see Chapter III, section D, page A-24,25).

**Commentors:**

Glenn F. Keller, Engine Manufacturers Association  
Joint Comments From a Consortium of 50 Industries  
David J. Hewitt, Industrial Compliance  
Karen Rasmussen, California Trucking Association  
Jeff Sickenger, Western States Petroleum Association

3. **Comment:** ARB's estimates of ambient diesel exhaust PM concentrations are highly uncertain, due to a combination of uncertain input variables, and assumptions used. A more complete characterization of uncertainty and its implications is needed.

**Response:** We have included a section on the assumptions and uncertainties used in the calculation of ambient diesel exhaust concentrations in Chapter IV, section B, page A-33 and a detailed explanation of the assumptions used and uncertainties of input variables used in our approach in Appendix B. Furthermore, the results are similar to ambient air concentrations reported by other researchers (see Table IV-1, page A-30).

**Commentors:**

Glenn F. Keller, Engine Manufacturers Association  
Joint Comments From a Consortium of 50 Industries  
Charles F. Nalen, Crowley Marine Services  
Jeff Sickenger, Western States Petroleum Association  
David J. Hewitt, Industrial Compliance

4. **Comment:** ARB's estimates of ambient diesel exhaust PM concentrations are biased due to the locations of ambient PM monitors.

**Response:** The locations of our ambient PM air monitors are not biased due to the locations near vehicular emissions. The ambient air monitors are used to determine whether criteria pollutant ambient air quality standards are achieved and maintained. They are sited in accordance with federal and state requirements, which means that they are not overly influenced by freeway traffic. The sites are used to collect data for carbon monoxide (CO) and ozone in addition to other criteria pollutants. If the monitors are sited too close to "busy roadways" we will overestimate the CO concentrations and underestimate the ozone concentrations [nitric oxide (NO) ozone scavaging].

In the June 1994 report we used results from three microscale samplers as part of ARB's analysis for calculating ambient PM<sub>10</sub> concentrations. These samplers are designed to measure the highest concentrations, or impacts, of nearby sources of emissions. We have omitted calculations from the three microscale samplers from our analysis. Although small, this would bias the results towards overestimation. Those monitoring stations are Oildale (1500243), Arroyo Grande (4000851), and Nipomo-Guadalupe (4000849) (see Appendix B).

**Commentors:**

Glenn F. Keller, Engine Manufacturers Association  
Allen R. Schaeffer, American Trucking Association  
Joint Comments From a Consortium of 50 Industries  
Charles F. Nalen, Crowley Marine Services  
Karen Rasmussen, California Trucking Association  
Jeff Sickenger, Western States Petroleum Association

5. **Comment:** The spatial distributions and linear scaling method used to apportion diesel exhaust emissions and the transport of these emissions in the San Joaquin Valley may not be representative for other California air basins.

**Response:** We have included in our report, in addition to the San Joaquin Valley, chemical mass balance receptor modeling results for the South Coast (including the Southeast Desert) and San Jose areas. The spatial distribution pattern and linear scaling method used for the South Coast and San Jose areas better represent the distributions in these areas. However, until more representative data becomes available, we believe that the San Joaquin Valley spatial distributions and linear scaling method best represent diesel exhaust emissions in other California air basins. These concentrations are in the range of results observed by other researchers (see Table IV-1, page A-30).

**Commentors:**

Glenn F. Keller, Engine Manufacturers Association  
Joint Comments From a Consortium of 50 Industries  
Jeff Sickenger, Western States Petroleum Association  
David Hewitt, Industrial Compliance

6. **Comment:** The ARB's approach in estimating ambient exposures does not adequately account for differences among microenvironments (indoors, near-roadway, in-vehicle, etc.) where people spend a significant portion of their time.

**Response:** We agree. A total exposure calculation would better represent actual daily exposures to diesel exhaust. For this reason, we have included in the report estimates of indoor concentrations in different environments and an estimate of population indoor air exposure. We have also calculated total air exposure and average air exposure

concentrations that integrates exposures across all the different environments in which people are exposed, including outdoor exposures (see Chapter IV, section F, page A-38). These results (exposures) are used to estimate average statewide population risk.

**Commentors:**

Glenn F. Keller, Engine Manufacturers Association  
Allen R. Schaeffer, American Trucking Association  
Joint Comments From a Consortium of 50 Industries  
Charles F. Nalen, Crowley Marine Services  
Jeff Sickenger, Western States Petroleum Association  
Janet Hathaway, Natural Resources Defense Council

7. **Comment:** The ARB's ambient air exposure estimates should include recent and future reductions in motor vehicle diesel exhaust emissions resulting from regulations currently in place.

**Response:** We agree. Diesel emissions have changed dramatically over the past 20 years because of improvements in engine technology, controls, and fuel formulation. To reflect these improvements, we have included outdoor ambient air concentration projections for 1995, 2000 and 2010 (see Figure IV-2, page A-36). The results show that ambient concentrations have dropped from  $3.2 \mu\text{g}/\text{m}^3$  in 1990 to a projected  $2.3 \mu\text{g}/\text{m}^3$  in 2010. These estimates are based on emissions inventory projections and are linearly scaled to estimate ambient air concentrations. Included in these projections are diesel exhaust PM regulations adopted by the U.S. EPA and the ARB since 1996.

**Commentors:**

Glenn F. Keller, Engine Manufacturers Association  
Charles E. Koske, Gillig Corporation  
Allen R. Schaeffer, American Trucking Association  
Joint Comments From a Consortium of 50 Industries  
Jeff Sickenger, Western States Petroleum Association  
Karen Rasmussen, California Trucking Association

8. **Comment:** The ARB approach used to calculate ambient exposures to diesel exhaust is overestimated due, in part, to the use of arithmetic means.

**Response:** In the revised Part A, the California Population Indoor Exposure Model (CPIEM) was used to estimate total exposure. This model does not rely on arithmetic means but uses distributions of data for input values and uses a Monte Carlo simulation approach (repeated sampling from a distribution) to estimate exposures. These distributions are now used as inputs, and modeling results are reported as distributions as well as means and standard deviations.

**Commentor:**

David J. Hewitt, Industrial Compliance

9. **Comment:** Quantitative secondary particulate estimates should be included in ARB's ambient exposure calculations. The report should also include estimates of combined primary and secondary particulate emissions from different vehicle classes.

**Response:** We acknowledge that a portion of gaseous diesel exhaust emissions from secondary precursors such as NO<sub>x</sub>, reactive organic gases (ROG), and sulfur oxides (SO<sub>x</sub>) contributes to atmospheric formation of particulates. However, at this time, we are not aware of data that quantifies secondary PM<sub>10</sub> formation from diesel exhaust emitted NO<sub>x</sub>, SO<sub>x</sub>, or ROG from motor vehicle sources. We have included a qualitative discussion of secondary particle formation into our revised draft report (see Chapter III, section D, page A-24, 25).

**Commentors:**

Gregory P. Nowell, State University of New York

Bonnie Holmes, Sierra Club California

Janet Hathaway, Natural Resources Defense Council

**Other Comments on the Part A Report:**

1. **Comment:** The diesel exhaust draft risk assessment is based on "old" formulation of diesel fuel and older technology engines. Future decisions regarding diesel exhaust identification and regulatory impacts, should be based on studies on current fuels and technology, and future projections.

**Response:** Studies have shown that the composition of diesel exhaust does vary with engine types, year and fuel formulation. How these variations impact the risks associated with diesel exhaust cannot be assessed until further study on the composition of the exhausts from differing engines and technologies along with the specific toxicological endpoints associated with each of the components are quantified. Because this information is not available, we have not been able to take into account, in the risk assessment, differences among the different diesel engines, model years, or fuels.

The exhaust emitted from diesel engines, past and present, is a complex mixture of chemicals including some known, or suspected to be, carcinogens. We are funding research to investigate the chemical and speciated differences between old and reformulated diesel fuels. This research is being conducted by the College of Engineering-Center for Environmental Research and Technology (CE-CERT), the Statewide Air Pollution Research Center (SAPRC) at the University of California (UC) at Riverside, and the UC Davis Department of Environmental Toxicology. We have

included a section in the report that addresses this research (see Chapter II, section G, page A-10).

Future regulatory decisions regarding diesel exhaust will be determined based on the most recent data available, including information available on current fuels and technologies. As in the identification process of our program, the process of risk management involves full public participation, with numerous workshops and comment periods, to ensure that ARB's efforts are cost-effective and appropriately balance public health protection and economic growth.

**Commentors:**

Charles E Koske, Gillig Corporation

Roger A. Isom, California Cotton Growers Association

Martin Drott, Construction Industry Manufacturers Association

Charles F. Nalen, Crowley Marine Services

2. **Comment:** The report indicates that the PM portion of diesel exhaust has been associated with most of the mutagenicity of whole diesel exhaust. If the new diesel fuel and engine standards lower PM emissions, it should be deduced that the toxic emissions have been reduced and continue to be reduced from diesel exhaust.

**Response:** We agree that reductions in mass of diesel PM will correspondently reduce an individuals risk. We have added an emissions projections section to the report which describes the emission reduction benefits as a result of emission regulations adopted by the ARB and the U.S. EPA which reduce diesel PM (see Chapter IV, section D, page A-36). We have also included a sentence on the reductions in risk expected to occur with decreasing emissions (see Chapter III, section D, page A-24).

**Commentor:**

Roger A. Isom, California Cotton Growers Association

3. **Comment:** New studies should be performed on reformulated diesel fuel and new technologies before identifying diesel exhaust as a toxic air contaminant.

**Response:** The data from existing health studies are adequate for addressing the toxicity of diesel exhaust toxicity. We are in the process of investigating chemical and speciated comparisons of old versus new diesel exhaust. Please see response to Comment 1, page C-5.

**Commentor:**

Roger A. Isom, California Cotton Growers Association

4. **Comment:** The 1989 Volkswagen study used in the report, should not be used to make future policy decisions. More recent studies should be used to address diesel exhaust PM contributions and risk.

**Response:** The 1989 Volkswagen study estimates were not used in our calculations to determine statewide exposure to diesel exhaust PM<sub>10</sub>, and thus, will not be used to make future policy decisions. The study, along with others, was used for comparison purposes only. The ARB staff used several source apportionment studies from the San Joaquin Valley, South Coast, and San Jose areas to estimate diesel exhaust PM contributions and risk.

**Commentor:**

Charles E. Koske, Gillig Corporation

5. **Comment:** The ARB should notify the public about the dangers of diesel exhaust exposure and take action as soon as possible to implement controls.

**Response:** The ARB is proceeding in an appropriate scientific manner to assess the risk to diesel exhaust exposure. With its primary mandate to protect the public health of Californians, under AB 1807, the state set a clear public policy to address the potential health effects from air toxic substances in a deliberate, public, and science-based approach. We do believe that it is in the best interest of the public to allow the resolution of the scientific discussions on risk before other actions are taken. The ARB continues to evaluate the exposure and toxicity of diesel exhaust in a full open public process, and will, if diesel exhaust is identified as a TAC, assess the need for future control in a similar open public process.

**Commentors:**

Mary Marple, Private Citizen

Roberta Planansky, Private Citizen

Janet Hathaway, Natural Resources Defense Council

6. **Comment:** When developing future regulations, the ARB should consider other media impacts such as the amount of contaminants in diesel exhaust that enter our drinking water supply.

**Response:** Although little is known about other routes of exposure for diesel exhaust, including drinking water, we have included a section on other routes into the report (see Chapter IV, section H, page A-42). As mentioned above, when ARB examines the need for future controls, all routes of exposure will be evaluated as part of the process for determining whether control measures are necessary.

**Commentors:**

Roberta Planansky, Private Citizen

Keith Whitman, Santa Clara Valley Nonpoint Source Pollution Control Program

7. **Comment:** The ARB should proceed with the identification of diesel exhaust as a toxic air contaminant.

**Response:** We are proceeding in an orderly, public process including several public comment periods and workshops. We plan to submit this report to the Scientific Review Panel (SRP) after the conclusion of this comment period. If the SRP approves the report, we will submit it to the Board. Based on the input from the public and the information gathered from the report, at a public hearing, the Board will then decide whether to identify diesel exhaust as a toxic air contaminant.

**Commentors:**

Teresa E. Ramirez, Private Citizen  
Bonnie Holmes, Sierra Club California  
Deborah Gorden, Union of Concerned Scientists  
William Pierson, Desert Research Institute  
Keith Whitman, Santa Clara Valley Nonpoint Source Pollution Control Program  
Roberta Planansky, Private Citizen

8. **Comment:** The ARB's report should more adequately address the risk-weighted consequences of high diesel exhaust exposure areas.

**Response:** We've included basin-specific estimates, which will be updated as a results of the new EMFAC7G inventory at the June 19, 1997 public workshop. We have included in the report a section on near source exposures to diesel exhaust (see Chapter IV, section E, page A-36). In this section, we modeled potential exposures near a freeway and have also included references to occupational exposures. Estimates of potential risk are found in the Executive Summary.

**Commentor:**

Gregory P. Nowell, State University of New York

9. **Comment:** The State of California must reduce risk from diesel exhaust to protect people with greater vulnerability (the young, the elderly, etc.) and people with high diesel exposure.

**Response:** We agree that the young, elderly, asthmatics, and other sensitive subpopulations may be at greater risk from exposures to diesel exhaust. Before any action is taken to reduce risk, the risk assessment phase must proceed in an open,

scientific manner. An evaluation of potential measures to reduce diesel exhaust exposure will occur in the risk management phase.

**Commentor:**

Janet Hathaway, Natural Resources Defense Council

10. **Comment:** "Average" statewide diesel exhaust levels do not represent the real-world exposure of the majority of citizens who live or work in urban areas, near roadways, near bus maintenance yards, or in other areas with significant diesel exhaust.

**Response:** Our annual average ambient exposure is based on diesel exhaust exposures to the majority of individuals in urban areas. We have also included a section on exposure to diesel exhaust near a freeway in the report (see Chapter IV, section E, page A-36) and included references to occupational exposures. See response to Comment 8.

**Commentor:**

Janet Hathaway, Natural Resources Defense Council

11. **Comment:** The ARB should identify a range of diesel exhaust exposure levels experienced by Californians to avoid underestimation of real world exposures. A risk estimate must be done for those Californian's who live and work in or near places with the highest diesel exhaust exposure.

**Response:** To estimate "real world" exposures, we have included a range of exposures, including those from outdoor ambient air concentrations, indoor exposure concentrations in different environments, and a total exposure estimate, which includes outdoor exposures. These estimates were developed using a full range of exposure distribution data, reported as mean and standard deviation. Updated estimates will be provided at the June 19, 1997 public workshop. We have also included a section on near source exposures (Chapter IV, section E, page A-36).

**Commentor:**

Janet Hathaway, Natural Resources Defense Council

12. **Comment:** Atmospheric transformation may increase the mutagenicity and the carcinogenicity of diesel exhaust.

**Response:** We are aware that atmospheric transformations of PAH to compounds with increased mutagenicity occur, and have included this in Chapter V, section C, page A-47. However, we have no data indicating that these transformation products significantly increase the carcinogenicity of ambient diesel exhaust exposures relative to the diesel exhaust studies from which cancer risk estimates have been derived. We have included a

description of the atmospheric transformation products of PAH into Chapter V, page A-47.

**Commentor:**

Janet Hathaway, Natural Resources Defense Council

13. **Comment:** The ARB should include a careful evaluation of the effects that identifying diesel exhaust as a toxic air contaminant will have on the economic well being of the State of California.

**Response:** The identification of diesel exhaust as a toxic air contaminant, in itself, will result in no economic impacts for the people of the State of California. In the risk management phase, we will consider potential controls in consideration of costs and benefits. This information will be provided as part of our final draft report to the Board.

**Commentors:**

Martin Drott, Construction Industry Manufacturers Association

Edward R. Gerber, California Transit Association

Allen R. Schaeffer, American Trucking Association

Robert Mussetter, Private Citizen

Joint Comments From a Consortium of 50 Industries

Frank J. Lichtanski, The Bus: Monterey-Salinas Transit

Charles F. Nalen, Crowley Marine Services

14. **Comment:** The labeling of diesel exhaust as a toxic air contaminant could cause workers and the public to panic if the perception is greater than the risk.

**Response:** If diesel exhaust meets the criteria for designation as a TAC, then it is the Board's responsibility to identify it as one. This will occur only after a full, open, public process which provides a full scientific debate of the issues. Diesel exhaust has been designated a probable human carcinogen by the International Agency for Research Cancer and by the U.S. EPA. These designations by well respected scientific organizations have not been a source of alarm or panic.

**Commentors:**

Edward R. Gerber, California Transit Association

Charles F. Nalen, Crowley Marine Services, Inc.

15. **Comment:** The draft diesel exhaust report should address the PM issue in conjunction with NO<sub>x</sub>. All issues should be addressed with one issue rather than a piecemeal approach which could waste public money.

**Response:** Diesel exhaust is in the risk assessment phase of the TAC program. If diesel exhaust is identified as a toxic air contaminant, it will enter the risk management phase. In this phase, the staff will consider the appropriate need and degree of control to reduce exposures to diesel exhaust as an air toxic. The State and Federal agencies are addressing NO<sub>x</sub> and PM exposures under the federal Clean Air Act of 1990, which specifically include ambient air quality standards for these pollutants.

**Commentors:**

Edward R. Gerber, California Transit Association  
Frank J. Lichtanski, The Bus: Monterey-Salinas Transit

16. **Comment:** The exposure assessment should specify the portion of the exhaust that causes the toxicity. There can be no effective listing of diesel exhaust as a complex mixture that can be subject to regulation.

**Response:** Although some studies suggest that the PM fraction is responsible for diesel exhaust toxicity, there are many compounds in the gaseous phase that are potential carcinogens (see Table II, page A-4). Other agencies have declared whole diesel exhaust a probable carcinogen. Until more studies are conducted to determine the cause of diesel exhaust toxicity, we are proceeding to identify whole diesel exhaust as a TAC.

**Commentors:**

Kelly Brown, Ford Motor Company  
Glenn F. Keller, Engine Manufacturers Association

17. **Comment:** The differences between U.S. EPA and OEHHA on the unit risk factor and diesel exhaust particulate exposure must be resolved.

**Response:** We have worked and are continuing to work with the U.S. EPA to resolve differences and improve the scientific analysis presented in the report. The approaches of the OEHHA and the U.S. EPA in assessing the risk of diesel exhaust exposure are complementary and consistent. Both agencies are expected to conclude that the human and animal data are useful in characterizing the possible range of cancer potency values. However, OEHHA is giving greater emphasis to the human evidence.

**Commentors:**

Jeff Sickenger, Western States Petroleum Association  
Joint Comments from a Consortium of 50 Industries  
Allan Schaffer, American Trucking Association

18. **Comment:** The different estimates of exposure from U.S. EPA is 20 times less than ARB's exposure estimates and need to be reconciled.

**Response:** Our revised ambient exposure estimate is less than two times that of the U.S. EPA's ambient exposure estimate (December 1994). Our estimate for exposure to diesel exhaust in California is an integrated estimate which includes exposures to different microenvironments. The U.S. EPA's estimates of exposure are based on the use of models that represent the nation's exposure to diesel exhaust PM<sub>10</sub>. Given the available database, our approach, based on California data, is a better technique to estimate ambient exposures to diesel exhaust PM<sub>10</sub>.

**Commentor:**

Charles F. Nalen, Crowley Marine Services, Inc.

19. **Comment:** The diesel exhaust identification process must provide adequate time for full consideration of available data, and additional analysis.

**Response:** The diesel exhaust identification process does provide adequate time for full consideration of available data and additional analysis in an full and open public process. Diesel exhaust entered the program in 1989. In March 1990, ARB sponsored a conference on the risk assessment of diesel exhaust. On June 17, 1994, the draft report was released to the public for a six month comment period which was followed by a public workshop on September 14, 1994. By the end of 1994, the U.S. EPA and the Health Effects Institute (HEI) released comprehensive reviews of the exposure to diesel emissions. As a result of scientific differences in the use of the human data, the OEHHA, ARB, U.S. EPA, HEI, National Institute for Occupational Health and Safety, and the World Health Organization sponsored a workshop on January 29-30, 1996, to discuss the application of current human health study data in developing quantitative cancer risk estimates for diesel exhaust. ARB and OEHHA staff have revised this draft report to incorporate all the available data, findings of the U.S. EPA, and comments made on the report and at the two workshops. A public workshop has been scheduled for June 19, 1997 during the 90 day comment period. We plan on meeting with the Scientific Review Panel (SRP) to discuss the revised report after the staffs assess the comments received on this version of the report. We anticipate this could occur in the Fall of 1997.

**Commentors:**

Allen R. Schaeffer, American Trucking Association  
Joint Comments From a Consortium of 50 Industries

20. **Comment:** Preliminary exposure and health risk conclusions must be evaluated for consistency with the legislative mandate of Senate Bill 1082. Senate Bill 1082 is intended to ensure a more rigorous scientific analysis, and that the health effects be based on sound scientific knowledge, methods and practices.

**Response:** SB 1082 established a Risk Assessment Advisory Committee to provide recommendations in three areas of risk assessments conducted by the California

Environmental Protection Agency (CalEPA): 1) are risk assessments performed within CalEPA internally consistent; 2) do they utilize the best scientific practices; and 3) are they consistent with U.S. EPA. As part of this analysis, the Committee recognized that the SRP provides an important element of peer review to the AB 1807 identification process.

**Commentors:**

Allen R. Schaeffer, American Trucking Association  
Joint Comments From a Consortium of 50 Industries

21. **Comment:** California's process for identifying diesel exhaust as a TAC should complement work underway at the national and international levels.

**Response:** See Comment 19. We are working closely with the U.S. EPA to coordinate our efforts to avoid duplication of effort. In addition, we have been apprised of other national organizations work on diesel exhaust and plan to incorporate scientific information when developed.

**Commentors:**

Allen R. Schaeffer, American Trucking Association  
Joint Comments From a Consortium of 50 Industries  
Charles F. Nalen, Crowley Marine Services

22. **Comment:** There is insufficient scientific data to support the ARB's proposal to identify diesel exhaust as a toxic air contaminant.

**Response:** This risk assessment uses the best available scientific data in which to support the identification of diesel exhaust as a toxic air contaminant. State statute (Health and Safety Code, section 39660) requires us to utilize the best available data from the public, industry, federal, state, and local agencies, and the scientific community. However, we are also required by the same statute that, while absolute and undisputed scientific evidence may not be available to determine the exact nature and extent of risk from toxic air contaminants, it is necessary to take action to protect public health.

**Commentors:**

Charles F. Nalen, Crowley Marine Services  
John F. Beau, Private Citizen

23. **Comment:** The risk assessment is limited to only OEHHA staff and should include an extensive review by the national science community.

**Response:** The diesel exhaust risk assessment report has undergone extensive peer review from outside sources such as the U.S. EPA, NIOSH, and industry. Because of

the full public process built into our air toxics identification program, we have had extensive review from national and international scientific organizations, as well as from the public and industry. We will continue to have subsequent comment periods and review by the scientific community to insure that the best available science is used to make a determination to identify diesel exhaust as a toxic air contaminant.

**Commentor:**

John F. Beau, Private Citizen

24. **Comment:** The heavy-duty diesel particulate emissions are overstated and do not represent reliable estimates of the heavy duty diesel inventory. The ARB should use the latest revision of EMFAC7G in its report.

**Response:** We will be updating our exposure estimates to include the results from the new EMFAC7G motor vehicle emissions inventory model. We will present the results at the June 19, 1997 public workshop.

**Commentor:**

Karen Rasmussen, California Trucking Association