Office of Environmental Health Hazard Assessment

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Terry Tamminen
Agency Secretary

Arnold Schwarzenegger
Governor

MEMORANDUM

TO: Catherine Witherspoon
Executive Officer
California Air Resources Board

FROM: George V. Alexeeff, Ph.D., D.A.B.T.
Deputy Director for Scientific Affairs

DATE: March 30, 2004

SUBJECT: HEALTH IMPACTS OF LOW-SULFUR DIESEL PRODUCTION AND USE

Staff of the Reformulated Fuels Assessment Program in the Office of Environmental Health Hazard Assessment (OEHHA) have reviewed information on low-sulfur diesel fuel in the report *Recommendation on Need for Multimedia Evaluation of Amendments to the California Diesel Fuel Regulations* prepared by staff of the Air Resources Board for the California Environmental Policy Council. This information includes a description of technology for producing low-sulfur diesel, byproducts of this technology, reduction of sulfur-containing combustion emissions and potential benefits of post-combustion oxidation technology of low-sulfur diesel fuel.

OEHHA scientists note that a large amount of sulfur is removed during diesel fuel production to meet current fuel specification regulations. A low-sulfur diesel regulation will result in an increase of several percent in the quantity of elemental sulfur byproduct produced per gallon of diesel fuel. The sulfur that is produced is a solid of low toxicity and is widely used in commerce. The technology for removing additional sulfur will produce additional emissions of the greenhouse gas carbon dioxide, but this increase will be offset by reduced carbon dioxide emissions per gallon of low-sulfur diesel as a result of its higher energy content per gallon. More extensive hydrotreating of diesel will result in a small increase in fugitive emissions of the greenhouse gas methane.

The removal of additional sulfur to produce low-sulfur diesel will result in a decrease in sulfur-containing combustion products. These include oxides of sulfur, sulfuric acid, sulfate and sulfite. These substances are irritants in the human lung that may contribute to asthma and other pulmonary diseases.

OEHHA scientists note that use of low-sulfur diesel will make it possible to add post-combustion pollution reduction technology to diesel engines. Adding such technology will have significant benefits for human health and the environment by reducing emissions of toxic air contaminants and other harmful substances. These include particulate emissions, the carcinogens benzene and formaldehyde and pulmonary irritants including acetaldehyde and acrolein.

In summary, OEHHA scientists conclude that production and use of low-sulfur diesel in California has a significant potential health benefit due to reduction of post-combustion contaminants from diesel engines. Production and use of low-sulfur diesel will result in a decrease in sulfur-containing pulmonary irritants but will result in a small increase in fugitive emissions of the greenhouse gas methane.

If you or your staff have any questions regarding this memorandum, please have your staff contact Dr. Page Painter by telephone at (916) 327-1094 or by email at: ppainter@oehha.ca.gov.

cc: Page Painter, Ph.D., M.D., Chief
Integrated Exposure Assessment Unit

State Water Resources Control Board

Division of Water Quality

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Terry Tamminen
Secretary for Environmental Protection

Arnold Schwarzenegge
Governor

TO: Peter Venturini, Chief
Stationary Source Division
Air Resources Board

FROM: Stan Martinson
Division Chief
DIVISION OF WATER QUALITY

DATE: MAR 26 2004

SUBJECT: REVIEW OF THE NEED FOR A MULTIMEDIA ENVIRONMENTAL EVALUATION OF THE AIR RESOURCES BOARD'S LOW SULFUR CALIFORNIA DIESEL FUEL REGULATIONS

This is to provide you our assessment of your report regarding the need for an environmental evaluation of the amendments to the California Diesel Fuel Regulations. The report will be submitted to the Environmental Policy Council for their consideration when the Council meets on April 30, 2004.

As you know, Section 43830.8 of the California Health and Safety Code requires a multimedia environmental impact assessment prior to the Air Resources Board's adoption of any regulation that establishes a specification for motor vehicle fuel. However, the law provides an exception to this process. Subsection 43830.8(i) allows the ARB to adopt a fuel regulation without the proposed regulation being subject to a multimedia evaluation if, following an initial evaluation of the proposed regulation, the Council conclusively determines that the regulation will not have any significant adverse impact on public health or the environment.

State Water Resources Control Board staff have reviewed the report and agree that the proposed changes to the California Diesel Fuel Regulations will not have a significant adverse effect on the quality of California's surface waters or groundwaters when compared to the fuel produced in compliance with the current California Diesel Fuel Regulations.

If you have any questions regarding this matter further, please contact James Giannopoulos at (916) 341-5680.

Terry Tamminen
Agency Secretary
Cal/EPA

Department of Toxic Substances Control

Edwin F. Lowry, Director
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Arnold Schwarzenegger
Governor

MEMORANDUM

TO: Peter Venturini, Chief
Stationary Source Division
California Air Resources Board

FROM: Peggy Harris, P.E., Chief
Regulatory and Program Development Division

DATE: March 23, 2004

SUBJECT: MULTI-MEDIA EVALUATION OF DIESEL FUEL SULFUR REDUCTION REGULATIONS

As part of regulatory adoption process, the California Air Resources Board (ARB) has completed the report "Recommendation on Need for Multimedia Evaluation of Amendments to the California Diesel Fuel Regulations." This report will be submitted to the Environmental Council for their consideration when the Council meets on April 30, 2004.

DTSC has reviewed the report and agrees that the proposed changes to the Diesel Fuel regulation will not have a significant affect on hazardous waste management or soil contamination when compared to current diesel fuel.

If you have any questions, please contact Edward Nieto (916) 322-7893.

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