

**State of California
AIR RESOURCES BOARD**

Resolution 01-16
April 26, 2001

Agenda Item No.: 01-3-4

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code sections 39700 through 39705;

WHEREAS, a research proposal, number 2485-219, entitled "Evaluation of Atmospheric Impacts of Selected Coatings VOC Emissions," has been submitted by the University of California, Riverside.

WHEREAS, the Research Division staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 2485-219 entitled "Evaluation of Atmospheric Impacts of Selected Coatings VOC Emissions," submitted by the University of California, Riverside, for a total amount not to exceed \$60,000.

NOW, THEREFORE BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 2485-219 entitled "Evaluation of Atmospheric Impacts of Selected Coatings VOC Emissions," submitted by the University of California, Riverside, for a total amount not to exceed \$60,000.

BE IT FURTHER RESOLVED, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein, and as described in Attachment A, in an amount not to exceed \$60,000.

I hereby certify that the above is a true and correct copy of Resolution 01-16, as adopted by the Air Resources Board.

Marie Kavan, Clerk of the Board

Attachment A

“Evaluation of Atmospheric Impacts of Selected Coatings VOC Emissions”

Background

Because emissions from architectural coatings are an important component of the stationary source volatile organic compounds' (VOC) inventory, the ARB approved a mass-based control measure for VOCs in architectural coatings in June 2000. The ARB also decided to evaluate the feasibility of reactivity-based regulations for architectural coatings because they can potentially make regulations more cost-effective and flexible. There are several issues regarding the feasibility of reactivity-based regulations. The uncertainties associated with the reactivity of VOCs in architectural coatings are considered to be a high priority.

Reactivity estimates are currently available for a wide variety of VOCs, including many of those emitted from architectural coatings. These are based on the current version of the SAPRC-99 mechanism, which incorporates results of environmental chamber and laboratory studies of a variety of representative compounds. However, based on a recent survey, several important VOCs that are found in architectural coatings are not well represented in the mechanism.

Objective

The objective of this three-year project is to carry out the research most needed to reduce uncertainties in ozone reactivity estimates for selected VOCs in architectural coatings. This project will focus on developing and applying procedures to reduce the uncertainties in ozone reactivity estimates for Texanol and selected petroleum distillate mixtures in architectural coatings.

Expected Results

The product from this effort will be the reactivity estimates for selected VOCs in architectural coatings and procedures developed to reduce the uncertainties of reactivity estimates.

Significance to the Board

The results of this project will provide useful information regarding the feasibility of a reactivity-based control strategy for architectural coatings.

Contractor:

University of California, Riverside

Contract Period:

36 months

Principal Investigator (PI):

William P. L. Carter, Ph.D.

Contract Amount:

\$59,984

Cofunding:

This proposal is an extension of several ongoing reactivity projects being carried out by Dr. William Carter at the University of California, Riverside. The method development of

direct reactivity is being funded by the California Air Resources Board, and the U.S. EPA is funding the development of “next generation” smog chamber.

Basis for Indirect Cost Rate:

The indirect cost rate of 10 percent is a negotiated rate agreed to by the State and the University of California campuses.

Past Experience with this Principal Investigator:

The principal investigator, Dr. William Carter, is one of the pioneers in determining and quantifying VOC reactivity. He is the leader of the NARSTO’s VOC reactivity assessment team. He has published approximately 75 journal articles and almost 70 technical reports in the areas of atmospheric chemistry, chemical mechanism development, and VOC reactivity assessment. He compiled the list of compound reactivities codified in California’s Low Emission Vehicles/Clean Fuels and aerosol coatings regulations. He has completed several studies on VOC reactivity for the ARB and has always delivered a quality product at a very reasonable cost.

Prior Research Division Funding to the University of California, Riverside:

Year	2000	1999	1998
Funding	\$0	\$479,943	\$278,579

BUDGET SUMMARY

University of California, Riverside

“Evaluation of Atmospheric Impacts of Selected Coatings VOC Emissions “

DIRECT COSTS AND BENEFITS

1.	Labor and Employee Fringe Benefits	\$ 27,352	
2.	Subcontractors	\$ 0	
3.	Equipment	\$ 0	
4.	Travel and Subsistence	\$ 1,000	
5.	Electronic Data Processing	\$ 0	
6.	Reproduction/Publication	\$ 500	
7.	Mail and Phone	\$ 0	
8.	Supplies	\$ 0	
9.	Analyses	\$ 20,181 ¹	
10.	Miscellaneous	\$ 6,048	
	Total Direct Costs		\$ 55,081

INDIRECT COSTS

1.	Overhead	\$ 4,903	
2.	General and Administrative Expenses	\$ 0	
3.	Other Indirect Costs	\$ 0	
4.	Fee or Profit	\$ 0	
	Total Indirect Costs		<u>\$ 4,903</u>

TOTAL PROJECT COSTS \$ 59,984

¹ Lab Costs: 31 Experiments @ \$651 per test