

State of California
AIR RESOURCES BOARD

RESEARCH PROPOSAL

Resolution 05-11

January 20, 2005

Agenda Item No.: 05-1-2

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 2573-246, entitled "Investigation of Atmospheric Ozone Impacts of Selected Pesticides", has been submitted by William Carter;

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 2573-246 entitled "Investigation of Atmospheric Ozone Impacts of Selected Pesticides", submitted by William Carter, for a total amount not to exceed \$99,850.

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 2573-246 entitled "Investigation of Atmospheric Ozone Impacts of Selected Pesticides", submitted by William Carter, for a total amount not to exceed \$99,850.

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 \$99,850.

I hereby certify that the above is a true and correct copy of Resolution 05-11, as adopted by the Air Resources Board.

Lori Andreoni, Clerk of the Board

ATTACHMENT A

“Investigation of Atmospheric Ozone Impacts of Selected Pesticides”

Background

Volatile organic compounds, along with oxides of nitrogen, are known precursors to ozone formation and pesticides are a significant source of VOCs in many agricultural areas of California (e.g., San Joaquin Valley). However, the ozone impacts (i.e., reactivity) of most of the VOCs used in pesticides are unknown. To develop VOC control strategies for ozone attainment in these areas, improved understanding of the ozone impacts (i.e., reactivity) of pesticides is needed by the ARB and the California Department of Pesticide Regulation (DPR).

Objective

The objective of this project is to develop methods for estimating and quantifying ozone impacts for major pesticides.

Methods

Environmental chamber experiments will be carried out for selected pesticides to obtain data needed to develop and test atmospheric chemical mechanisms that can be used in airshed models to estimate ozone impacts associated with pesticide emissions in the atmosphere.

Expected Results

Chemical mechanisms for selected pesticides will be developed and evaluated using chamber data and will be used to estimate their reactivity. Mechanisms and the reactivity for other major pesticides used in California will also be estimated where feasible.

Significance to the Board

The outcome of this project can improve our understanding of pesticides' role in ozone formation in agricultural areas and may help ARB and DPR further improve control strategies for VOC emissions.

Contractor:

The University of California, Riverside

Contract Period:

24 months

Principal Investigator (PI):

William P. L. Carter, Ph.D.

Contract Amount:

\$99,850

Basis for Indirect Cost Rate:

The State and the UC system have agreed to a ten percent indirect cost rate.

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 reactivity assessment team and the developer of the SAPRC99 chemical mechanisms that are widely used in different applications throughout the world. He has published over 150 journal articles and technical reports in the areas of atmospheric chemistry, chemical mechanism development, and VOC reactivity assessment. He compiled the list of VOC reactivities codified in the California Low Emission Vehicle/Clean Fuels and Aerosol Coating Products regulations. He has completed several studies on VOC reactivity for the ARB and has always delivered a high quality product at a very reasonable cost.

Prior Research Division Funding to UCR:

Year	2004	2003	2002
Funding	\$0	\$1,036,130	\$0

BUDGET SUMMARY

University of California, Riverside

Investigation of Atmospheric Ozone Impacts of Selected Pesticides

DIRECT COSTS AND BENEFITS

1.	Labor and Employee Fringe Benefits	\$	57,602
2.	Subcontractors	\$	0
3.	Equipment	\$	0
4.	Travel and Subsistence	\$	520
5.	Electronic Data Processing	\$	170
6.	Reproduction/Publication	\$	0
7.	Mail and Phone	\$	0
8.	Supplies	\$	17,980 ¹
9.	Analyses	\$	0
10.	Miscellaneous ²⁾	\$	<u>15,942²</u>
	Total Direct Costs		\$92,222

INDIRECT COSTS

1.	Overhead	\$	7,628
2.	General and Administrative Expenses	\$	0
3.	Other Indirect Costs	\$	0
4.	Fee or Profit	\$	<u>0</u>
	Total Indirect Costs		<u>\$7,628</u>

TOTAL PROJECT COSTS **\$99,850**

¹ This includes laboratory supplies, maintenance contracts, lamp supplies, TDLAS supplies, general analyzer repairs and supplies, chamber infrastructure maintenance, FEP teflon, and other office supplies.

² This is rental fee of facilities