

State of California  
AIR RESOURCES BOARD

Resolution 86-16  
March 27, 1986

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; and

WHEREAS, an unsolicited research proposal, Number 1385-124, entitled "Retention and Metabolism of Toxics: Inhalation Uptake of Xenobiotic Vapors by People," has been submitted by the University of California, Davis;

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:

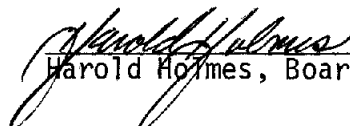
Proposal Number 1385-124, entitled "Retention and Metabolism of Toxics: Inhalation Uptake of Xenobiotic Vapors by People," submitted by the University of California, Davis, for a total amount not to exceed \$119,023.

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 1385-124, entitled "Retention and Metabolism of Toxics: Inhalation Uptake of Xenobiotic Vapors by People," submitted by the University of California, Davis, for a total amount not to exceed \$119,023.

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 in an amount not to exceed \$119,023.

I hereby certify that the above  
is a true and correct copy of  
Resolution 86-16 as adopted by  
the Air Resources Board.

  
Harold Holmes, Board Secretary

ITEM NO.: 86-4-3 (b) (1)  
DATE: March 27, 1986

State of California  
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1385-124 entitled "Retention and Metabolism of Toxics: Inhalation Uptake of Xenobiotic Vapors by People"

RECOMMENDATION: Adopt Resolution 86-16 approving Proposal No. 1385-124 for funding in an amount not to exceed \$119,023.

SUMMARY: The Toxic Air Contaminant program requires information on the absorption of inhaled toxic substances in order to model accurately the health risks of populations exposed to these substances. The proponent has recently completed a study which measured the uptake by inhalation of trace levels of six selected organic toxicants in laboratory animals. The validity of extrapolation of the results obtained from animal studies to apply to humans is often uncertain. The proposed study will eliminate this source of uncertainty because data will be derived from human subjects.

The exposure apparatus and techniques developed in the prior study will measure the inhalation uptake of trace levels of five of these six compounds in human volunteers. Separate measurements for oral and for nasal inhalation will determine whether the route of inhalation affects the uptake of each compound. The use of low levels (approximately 10 ppb) of these compounds will ensure that the data will be applicable to estimation of risk under ambient conditions, where the levels of toxic air contaminants are very low.

The principal investigator, Dr. Otto Raabe, will perform the research at the University of California, Davis.

B U D G E T   S U M M A R Y

University of California, Davis

"Retention and Metabolism of Toxics: Inhalation  
Uptake of Xenobiotic Vapors by People"

BUDGET ITEMS:

Salaries	\$69,660
Benefits	19,358
Supplies*	18,610
Other Costs	300
Travel	<u>275</u>

TOTAL, Direct Costs	\$108,203
TOTAL, Indirect Costs	<u>10,820</u>

TOTAL PROJECT COST      \$119,023

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* Radiolabeled vapors	\$11,000
Other laboratory and office supplies	7,610

State of California  
AIR RESOURCES BOARD

Resolution 86-17  
March 27, 1986

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; and

WHEREAS, an unsolicited research proposal, Number 1384-124, entitled "Effects of Ozone on Cellular Synthesis and Viral Replication In Vitro," has been submitted by the University of California, Davis;

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:

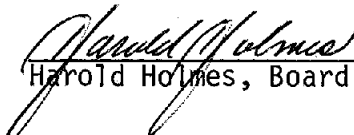
Proposal Number 1384-124, entitled "Effects of Ozone on Cellular Synthesis and Viral Replication In Vitro," submitted by the University of California, Davis, for a total amount not to exceed \$43,353.

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 1384-124, entitled "Effects of Ozone on Cellular Synthesis and Viral Replication In Vitro," submitted by the University of California, Davis, for a total amount not to exceed \$43,353.

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 in an amount not to exceed \$43,353.

I hereby certify that the above  
is a true and correct copy of  
Resolution 86-17 as adopted by  
the Air Resources Board.

  
Harold Holmes, Board Secretary

ITEM NO.: 86-4-3 (b) (2)  
DATE: March 27, 1986

State of California  
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1384-124 entitled "Effects of Ozone on Cellular Synthesis and Viral Replication In Vitro"

RECOMMENDATION: Adopt Resolution 86-17 approving Proposal No. 1384-124 for funding in an amount not to exceed \$43,353.

SUMMARY: Current indicators of health damage such as death, illness or impaired respiratory function are, in many ways, rudimentary. There is a need to develop indicators to increase the sensitivity of assessing health effects by detecting more subtle, early markers of change and a need to link such sensitive indicators to subsequent gross disease. Measurable changes at the biochemical and cellular level are expected to provide sensitive indications of subsequent disease.

This is to be the second year of a two-year study. The proponent uses an exposure system designed to expose various animal cells in vitro to ozone. He is studying: 1. the relationship between ozone concentrations and early indicators of cellular damage in several cell lines; 2. The effects of ozone on the replication of several animal and human viruses; and 3. the effect of ozone on the ability of cells to produce interferon. The principal investigator, Dr. Yuan-Chung Zee, will perform the research at the University of California, Davis.

State of California  
AIR RESOURCES BOARD

Resolution 86-18  
March 27, 1986

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; and

WHEREAS, an unsolicited research proposal, Number 1386-124, entitled "Field Intercomparison of Sampling and Analysis Procedures for Carbonaceous Aerosols and Gases: Coordination and Data Analysis," has been submitted by the University of California, Los Angeles;

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:

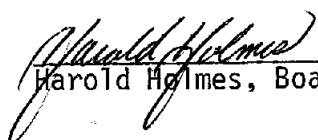
Proposal Number 1386-124, entitled "Field Intercomparison of Sampling and Analysis Procedures for Carbonaceous Aerosols and Gases: Coordination and Data Analysis," submitted by the University of California, Los Angeles, for a total amount not to exceed \$117,417.

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 and approves the following:

Proposal Number 1386-124, entitled "Field Intercomparison of Sampling and Analysis Procedures for Carbonaceous Aerosols and Gases: Coordination and Data Analysis," submitted by the University of California, Los Angeles, for a total amount not to exceed \$117,417.

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 in an amount not to exceed \$117,417.

I hereby certify that the above  
is a true and correct copy of  
Resolution 86-18 as adopted by  
the Air Resources Board.

  
Harold Holmes, Board Secretary

ITEM NO.: 86-4-3 (b) (3)  
DATE: March 27, 1986

State of California  
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1386-124 entitled "Field Intercomparison of Sampling and Analysis Procedures for Carbonaceous Aerosols and Gases: Coordination and Data Analysis"

RECOMMENDATION: Adopt Resolution 86-18 approving Proposal No. 1386-124 for funding in an amount not to exceed \$117,417.

SUMMARY: The Air Resources Board is sponsoring a multi-year, integrated air quality study in the South Coast Air Basin, which is scheduled to begin in July 1987. The overall objective of that program is to develop a comprehensive meteorological and aerometric data base for improved air quality simulation models for PM<sub>10</sub> and oxidants in the South Coast Air Basin. An important component of the field study will be the accurate measurement of carbonaceous species in a multi-station network mode. Therefore, it is necessary to perform a carbonaceous species methods comparison study in Los Angeles, the major objective of which will be to determine measurement methods for gas and particle phase carbon-containing compounds, which can be used in a multi-station monitoring mode in Los Angeles, whose validity, accuracy and precision are known.

This proposal is to coordinate and assist the Research Division of the ARB in a field intercomparison of measurements methods for carbonaceous compounds in the South Coast Air Basin. Approximately 12 groups, including researchers from the U. S. Environmental Protection Agency, will be participating in a 7-10 day field sampling study in August 1986. The major emphasis of the study will be to validate simple and inexpensive methods for sampling airborne carbon-containing pollutants.

The proposed effort consists of four tasks:  
1) experimental design, site preparation and protocol development; 2) study management; 3) data retrieval; and 4) data analysis and report preparation. The contractor will work under the direct supervision of the Research Division staff in coordinating this major methods comparison study.

B U D G E T   S U M M A R Y

University of California, Los Angeles

"Field Intercomparison of Sampling and Analysis Procedures  
for Carbonaceous Aerosols and Gases: Coordination and Data Analysis"

BUDGET ITEMS:

Salaries	\$27,997	
Benefits	7,149	
Supplies*	47,300	
Other Costs, Consultant	5,800	
Travel and per diem	<u>7,930</u>	
TOTAL, Direct Costs		\$96,176
TOTAL, Indirect Costs		<u>21,241</u>
	<u>TOTAL PROJECT COST</u>	<u>\$117,417</u>

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\*Includes:

o	site preparation, electrical power and clean up	\$22,500
o	sampling platform rental	5,000
o	cylinder gases	2,000
o	telephone and incidental	1,000
o	security guard duty	14,000
o	secretarial, xeroxing and computer costs	2,800



State of California  
AIR RESOURCES BOARD

Resolution 86-19  
March 27, 1986

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; and

WHEREAS, a solicited research proposal, Number 1382-124, entitled "Intercomparison of Methods for the Measurement of Carbonaceous Aerosol Species," 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:

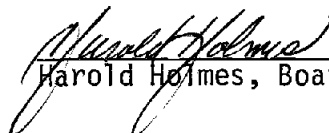
Proposal Number 1382-124, entitled "Intercomparison of Methods for the Measurement of Carbonaceous Aerosol Species," submitted by the University of California, Riverside, for a total amount not to exceed \$37,654.

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 1382-124, entitled "Intercomparison of Methods for the Measurement of Carbonaceous Aerosol Species," submitted by the University of California, Riverside, for a total amount not to exceed \$37,654.

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 in an amount not to exceed \$37,654.

I hereby certify that the above  
is a true and correct copy of  
Resolution 86-19 as adopted by  
the Air Resources Board.

  
Harold Holmes, Board Secretary

ITEM NO.: 86-4-3 (b) (4)  
DATE: March 27, 1986

State of California  
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1382-124 entitled  
"Intercomparison of Methods for the Measurement of  
Carbonaceous Aerosol Species: Chromatography"

RECOMMENDATION: Adopt Resolution 86-19 approving Proposal No. 1382-124  
for funding in an amount not to exceed \$37,654.

SUMMARY: The Air Resources Board is sponsoring a multi-year,  
integrated air quality study in the South Coast Air  
Basin, which is scheduled to begin in July 1987. The  
overall objective of that program is to develop a  
comprehensive meteorological and aerometric data base  
for improved air quality simulation models for PM<sub>10</sub>  
and oxidants in the South Coast Air Basin. An  
important component of the field study will be the  
accurate measurement of carbonaceous species in a  
multi-station mode. Therefore, it is necessary to  
perform a carbonaceous species methods comparison  
study in Los Angeles. The major objective of this  
study will be to determine measurement methods for gas  
and particle phase carbonaceous pollutants, which can  
be used in a multi-station monitoring mode in  
Los Angeles, whose validity, accuracy and precision  
are known.

This proposal will be conducted in conjunction with  
the Statewide Air Pollution Research Center study on  
the role of nitrogenous pollutants in the formation of  
atmospheric mutagens and acid deposition. UCR  
proposes to measure gas and particle phase C<sub>20</sub>  
alkanes, gas and particle phase PAH's and gas phase  
C<sub>10</sub>-C<sub>20</sub> alkanes during the study. Samples will be  
collected on Hi-Vol filters, polyurethane foam (PUF)  
plugs behind Hi-Vol filters and Tenax solid sorbent.  
Analysis will be performed by extraction, followed by  
a variety of methods: gas chromatography, liquid  
chromatography, and gas chromatography-mass  
spectrometry.

State of California  
AIR RESOURCES BOARD

Resolution 86-20  
March 27, 1986

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; and

WHEREAS, a solicited research proposal, Number 1377-124, entitled "Intercomparison of Methods for the Measurement of Carbonaceous Aerosol Species," has been submitted by Environmental Monitoring & Services, Inc.;

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 1377-124, entitled "Intercomparison of Methods for the Measurement of Carbonaceous Aerosol Species," submitted by Environmental Monitoring & Services, Inc., for a total amount not to exceed \$25,938.

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 1377-124, entitled "Intercomparison of Methods for the Measurement of Carbonaceous Aerosol Species," submitted by Environmental Monitoring & Services, Inc., for a total amount not to exceed \$25,938.

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 in an amount not to exceed \$25,938.

I hereby certify that the above  
is a true and correct copy of  
Resolution 86-20 as adopted by  
the Air Resources Board.

  
Harold Holmes, Board Secretary

ITEM NO.: 86-4-3 (b) (5)

DATE: March 27, 1986

State of California  
AIR RESOURCES BOARD

- ITEM: Research Proposal No. 1377-124 entitled  
"Intercomparison of Methods for the Measurement of  
Carbonaceous Aerosol Species: Quality Assurance"
- RECOMMENDATION: Adopt Resolution 86-20 approving Proposal No. 1377-124  
for funding in an amount not to exceed \$25,938.
- SUMMARY: The Air Resources Board is sponsoring a multi-year,  
integrated air quality study in the South Coast Air  
Basin, which is scheduled to begin in July 1987. The  
overall objective of that program is to develop a  
comprehensive meteorological and aerometric data base  
for improved air quality simulation models for PM<sub>10</sub>  
and oxidants in the South Coast Air Basin. An  
important component of the field study will be the  
accurate measurement of carbonaceous species in a  
multi-station network mode. Therefore, it is  
necessary to perform a carbonaceous species methods  
comparison study in Los Angeles, the major objective  
of which will be to determine measurement methods for  
gas and particle phase carbon-containing compounds,  
which can be used in a multi-station monitoring mode  
whose validity, accuracy and precision are known.
- The proposed project would have EMSI serve as the  
reference laboratory during the carbon intercomparison  
study. EMSI proposes to analyze portions of all the  
samples taken by the different investigators during  
the field study, and thus provide an unambiguous  
comparison of the various sampling methods employed.  
This procedure will provide an evaluation of the  
influence of samples flow rate, sampling period,  
sampler-induced artifacts, and ambient conditions. By  
serving as the reference laboratory, a satisfactory  
quality assurance program for the carbonaceous species  
methods comparison study will be implemented.

State of California  
AIR RESOURCES BOARD

Resolution 86-21  
March 27, 1986

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; and

WHEREAS, a solicited research proposal, Number 1380-124, entitled "Sampling and Analysis of Organic Aerosol," has been submitted by the Oregon Graduate Center;

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:

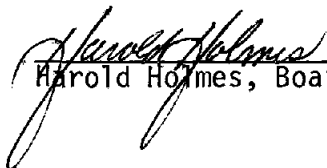
Proposal Number 1380-124 entitled "Sampling and Analysis of Organic Aerosol," submitted by the Oregon Graduate Center, for a total amount not to exceed \$49,446.

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 and approves the following:

Proposal Number 1380-124 entitled "Sampling and Analysis of Organic Aerosol," submitted by the Oregon Graduate Center, for a total amount not to exceed \$49,446.

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 in an amount not to exceed \$49,446.

I hereby certify that the above  
is a true and correct copy of  
Resolution 86-21 as adopted by  
the Air Resources Board.

  
Harold Holmes, Board Secretary

ITEM NO.: 86-4-3 (b) (6)  
DATE: March 27, 1986

State of California  
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1380-124 entitled "Sampling and Analysis of Organic Aerosol"

RECOMMENDATION: Adopt Resolution 86-21 approving Proposal No. 1380-124 for funding in an amount not to exceed \$49,446.

SUMMARY: The Air Resources Board is sponsoring a multi-year, integrated air quality study in the South Coast Air Basin, which is scheduled to begin in July 1987. The overall objective of that program is to develop a comprehensive meteorological and aerometric data base for improved air quality simulation models for PM<sub>10</sub> and oxidants in the South Coast Air Basin. An important component of the field study will be the accurate measurement of carbonaceous species in a multi-station network mode. Therefore, it is necessary to perform a carbonaceous species methods comparison study in Los Angeles. The major objective of this study will be to evaluate measurement methods for gas and particle phase carbon-containing compounds, which can be used in a multi-station monitoring mode, whose validity, accuracy and precision are known.

This project will compare organic and elemental carbon analytical data from the OGC analyzer with other participants' results. In addition, an in situ carbon analyzer will be used for time-resolved organic and elemental carbon data. This study will also investigate the influence of sampling conditions on the collected sample. Gas chromatography-mass spectrometry analysis will be performed for major species on backup filters to assess the chemical composition of species involved in volatilization and/or absorption on filters.

State of California  
AIR RESOURCES BOARD

Resolution 86-22  
March 27, 1986

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; and

WHEREAS, an unsolicited research proposal, Number 1373-124, entitled "The Effects of Ozone on Primary Determinants of Plant Productivity," 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:

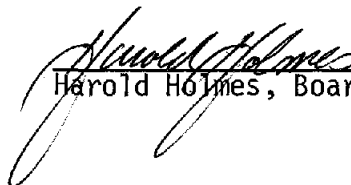
Proposal Number 1373-124, entitled "The Effects of Ozone on Primary Determinants of Plant Productivity," submitted by the University of California, Riverside, for a total amount not to exceed \$59,714.

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 1373-124, entitled "The Effects of Ozone on Primary Determinants of Plant Productivity," submitted by the University of California, Riverside, for a total amount not to exceed \$59,714.

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 in an amount not to exceed \$59,714.

I hereby certify that the above  
is a true and correct copy of  
Resolution 86-22 as adopted by  
the Air Resources Board.

  
Harold Holmes, Board Secretary

ITEM NO.: 86-4-3 (b) (7)  
DATE: March 27, 1986

State of California  
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1373-124 entitled "The Effects of Ozone on Primary Determinants of Plant Productivity"

RECOMMENDATION: Adopt Resolution 86-22 approving Proposal No. 1373-124 for funding in an amount not to exceed \$59,714.

SUMMARY: The objectives of this study are: (1) to determine the relationships among ozone exposure, physiological response, and plant growth, and (2) to determine interspecific variation among these relationships for four California crops. Dr. David M. Olszyk and Dr. Robert L. Heath, principal investigators, will conduct the project at the University of California, Riverside.

The investigators will test the hypothesis that physiological measurements, such as photosynthetic rates during growth, indicate the eventual yield of plants, even in different species.

Plants will be grown in hydroponic (water) culture to permit harvesting of entire plants. This will facilitate establishing the relationship between differences in physiological responses, such as photosynthesis rates, and differences in plant growth. The investigators will keep the plants in filtered air greenhouses and expose them to ozone in closed top exposure chambers inside of the greenhouses. This environment will provide the uniform conditions needed for reliable physiological measurements which a study of this type requires. The proposed study is in two parts. The first part will use spinach as the experimental plant to test and refine the experimental protocol. The second part will examine the effects of ozone on rice, lettuce, cauliflower, and cantaloupe melons.

The proposed study can support the ARB's program in crop loss assessment for several important reasons. First, it would be a significant step toward understanding the general response of plants to air pollution exposure in a way that can cut across



species and varietal differences by measuring changes in processes that occur in all higher plants. Second, the methods for measuring physiological indicators are adaptable to field use so that gathering these kinds of data in the future would not be restricted to the controlled greenhouse environment. Third, clarifying the role of physiology as the mediator between air pollution exposure and yield loss may lead to reasonable yield loss estimates for a number of species without the need for chamber studies over a complete season in each and every case.

B U D G E T   S U M M A R Y

University of California, Riverside

"The Effects of Ozone on Primary Determinants  
of Plant Productivity"

BUDGET ITEMS:

Salaries	\$35,332	
Benefits	8,850	
Equipment*	2,270	
Supplies	4,250	
Other Costs	1,840	
Travel	<u>1,950</u>	
TOTAL, Direct Costs		\$54,492
TOTAL, Indirect Costs		<u>5,222</u>
	<u>TOTAL PROJECT COST</u>	<u>\$59,714</u>

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\* Equipment includes: cuvette (0.25 liter), hardware package, and rechargeable battery pack for Lamda Instrument LI 6000 portable photosynthesis system.

State of California  
AIR RESOURCES BOARD

Resolution 86-23  
March 27, 1986

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; and

WHEREAS, an unsolicited research proposal, Number 1374-124, entitled "Time Series Analysis of Mortality and Associated Weather and Pollution Effects in Los Angeles County," has been submitted by the University of California, Davis;

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 1374-124, entitled "Time Series Analysis of Mortality and Associated Weather and Pollution Effects in Los Angeles County," submitted by the University of California, Davis, for a total amount not to exceed \$51,546.

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 1374-124, entitled "Time Series Analysis of Mortality and Associated Weather and Pollution Effects in Los Angeles County," submitted by the University of California, Davis, for a total amount not to exceed \$51,546.

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 in an amount not to exceed \$51,546.

I hereby certify that the above  
is a true and correct copy of  
Resolution 86-23 as adopted by  
the Air Resources Board.

  
Harold Holmes, Board Secretary

ITEM NO.: 86-4-3 (b) (8)  
DATE: March 27, 1986

State of California  
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1374-124 entitled "Time Series Analysis of Mortality and Associated Weather and Pollution Effects in Los Angeles County"

RECOMMENDATION: Adopt Resolution 86-23 approving Proposal No. 1374-124 for funding in an amount not to exceed \$51,546.

SUMMARY: Several studies have investigated daily mortality, pollution, and weather data to determine whether there are any consistent relationships between mortality and pollution in large metropolitan areas, adjusting for the effects of weather. This approach of correlating daily fluctuations solves one of the problems of traditional epidemiological studies, namely the need to find an appropriate control or unexposed group. Many of the analyses have indicated that there is a positive effect of pollution on mortality. However, there have not been extensive analyses of this type for California, which has its own characteristic types of pollution.

This preliminary investigation of the association between daily pollution, weather, and mortality in Los Angeles County in the years 1972-79 will derive a dose-reponse relationship if a positive association is obtained. The proponent will analyze the data by sophisticated time-series methods that he has successfully applied to similar data from London in previous work for the Air Resources Board. The study will yield information about adverse health effects of atmospheric conditions in Los Angeles County.

State of California  
AIR RESOURCES BOARD

Resolution 86-24  
March 27, 1986

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; and

WHEREAS, a solicited research proposal, Number 1365-123, entitled "Evaluation of Emissions from Selected Uninventoried Sources," has been submitted by the Radian Corporation;

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 1365-123, entitled "Evaluation of Emissions from Selected Uninventoried Sources," submitted by the Radian Corporation, for a total amount not to exceed \$74,999.

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 1365-123, entitled "Evaluation of Emissions from Selected Uninventoried Sources," submitted by the Radian Corporation, for a total amount not to exceed \$74,999.

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 in an amount not to exceed \$74,999.

I hereby certify that the above  
is a true and correct copy of  
Resolution 86-24 as adopted by  
the Air Resources Board.

  
Harold Holmes, Board Secretary

ITEM NO.: 86-4-3 (b) (8)  
DATE: March 27, 1986

State of California  
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1365-123 entitled "Evaluation of Emissions from Selected Uninventoried Sources"

RECOMMENDATION: Adopt Resolution 86-24 approving Proposal No. 1365-123 for funding in an amount not to exceed \$74,999.

SUMMARY: The purpose of this project is to compile an inventory of emissions of photochemically reactive volatile hydrocarbons, particulate matter (PM<sub>10</sub>) and criteria pollutants from approximately 40 uninventoried sources. These sources, identified by the Emission Inventory Technical Advisory Committee (EITAC) are not currently included in the statewide emission inventory. Because these emissions occur in areas which exceed the state and federal ambient air quality standards for the respective pollutants, it is important that such emissions be quantified and documented.

The objectives of this research project, consistent with the long-term goal of reducing uncertainty in the statewide emission inventory, are to: (1) identify the magnitude and potential significance of certain uninventoried emission sources; and (2) develop methods for inventorying significant uninventoried sources of emissions in a statistically sound manner.

To compile this inventory, the contractor will conduct a literature search for information concerning emissions of volatile organic hydrocarbons, particulate matter and criteria pollutants from each source type, and then list the source categories in order of decreasing emissions. The contractor will select for further refinement the emissions from the largest source categories and in an interim report to the ARB staff detail the methods, for ARB approval, to be used in this refinement. In addition to the listed pollutants the contractor will also identify and estimate emissions of toxic pollutants.

The Research Screening Committee has recommended that a contract be awarded to the Radian Corporation. Mr. William Oliver will be the Program Manager.