State of California
AIR RESOURCES BOARD

Resolution 86-105
December 18, 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 1462-130, entitled "Documentation of Ozone as the Primary Phytotoxic Agent in Photochemical "Smog"," has been submitted by the University of California, Riverside;

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

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

> Proposal Number 1462-130, entitled "Documentation of Ozone as the Primary Phototoxic Agent in Photochemical Oxidant "Smog"," submitted by the University of California, Riverside for a total amount not to exceed $66,202.

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 1462-130, entitled "Documentation of Ozone as the Primary Phototoxic Agent in Photochemical Oxidant "Smog"," submitted by the University of California, Riverside for a total amount not to exceed $66,202.

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 $66,202.

I hereby certify that the above is a true and correct copy of Resolution 86-105, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM NO.: 86-14-4(b) 1
DATE: December 18, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1462-130 entitled "Documentation of Ozone as the Primary Phytotoxic Agent in Photochemical Oxidant "Smog"."

RECOMMENDATION: Adopt Resolution 86-105 approving Proposal No. 1462-130 for funding in an amount not to exceed $66,202.

SUMMARY: The objective of this study is to compare the response of plants exposed to ambient oxidants with the response of plants exposed to experimentally-generated ozone. Both types of atmospheres have been used experimentally, but it is not clear whether results obtained with experimentally generated ozone are equivalent to those resulting from ambient oxidant exposure. In this study the investigator will expose alfalfa to either ambient Riverside oxidants, or to filtered air to which the ambient concentration of pure ozone has been added. Physiological responses, growth, yield, and foliar injury will be measured. The investigator is Dr. David M. Olszyk.

The results of this study will help determine any significant differences in response of plants to ambient and to experimental atmospheres. Any important differences would need to be considered in reviewing scientific research used to support regulatory action. A finding of no important differences would provide support for present estimates of ozone effects.

BUDGET SUMMARY

University of California, Riverside

"Documentation of Ozone as the Primary Phototoxic Agent in Photochemical Oxidant "Smog"

BUDGET ITEMS:

Salaries	$34,595	
Benefits	9,544	
Equipment*	4,000	
Supplies	150	
Other Costs	2,900	
Travel	1,358	
TOTAL, Direct Costs		$60,547
TOTAL, Indirect Costs		5,655
TOTAL PROJECT COST		$66,202

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* Four open top field chambers and refurbishing of blower boxes.

State of California
AIR RESOURCES BOARD

Resolution 86-106
December 18, 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 1467-130, entitled "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops: Grapes, Tomatoes, and Stone Fruits," 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 1467-130, entitled "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops: Grapes, Tomatoes, and Stone Fruits," submitted by the University of California, Riverside for a total amount not to exceed $75,871.

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 1467-130, entitled "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops: Grapes, Tomatoes, and Stone Fruits," submitted by the University of California, Riverside for a total amount not to exceed $75,871.

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 $75,871.

I hereby certify that the above is a true and correct copy of Resolution 86-106, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM NO.: 86-14-4(b) 2
DATE: December 18, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1467-130 entitled "The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops: Grapes, Tomatoes, and Stone Fruits."

RECOMMENDATION: Adopt Resolution 86-106 approving Proposal No. 1467-130 for funding in an amount not to exceed $75,871.

SUMMARY: This study will address two areas of research. The first portion of this study will extend for an additional year a study now in progress on the growth, yield and quality of Thompson Seedless grapes ambient oxidants. A portion of that study, examining effects of sulfur dioxide on grapes will be discontinued, and a new study, under a separate contract, will be initiated to examine the effect ambient oxidants on grape physiology. This experiment will provide information useful in estimating losses in grape yields due to exposure to ambient oxidants under field conditions.

The second portion of the study is intended to determine if modification of fertilization levels for nitrogen, phosphorus and potassium can alter crop plant sensitivity to air pollution. This experiment would be conducted with ozone sensitive processing tomatoes. Four levels of oxidant, three levels of nitrogen, and two each of phosphorus and potassium will be used. The investigator will measure vegetative growth, flowering and fruit production of the tomatoes. The results of this study will indicate whether changing the amounts of fertilizers applied to crops can provide a practical means of reducing yield losses caused by oxidant exposure.

The investigator will be Dr. Robert F. Brewer of the University of California, Riverside.

BUDGET SUMMARY

University of California, Riverside

"The Effects of Present and Potential Air Pollution on Important San Joaquin Valley Crops: Grapes, Tomatoes, and Stone Fruits"

BUDGET ITEMS:

Salaries	$40,254	
Benefits	11,439	
Supplies	9,600	
Other Costs	5,806	
Travel	1,875	
TOTAL, Direct Costs		$68,974
TOTAL, Indirect Costs		6,897
TOTAL PROJECT COST		$75,871

State of California
AIR RESOURCES BOARD

Resolution 86-107
December 18, 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 1480-130, entitled "The Effects of Air Pollutants on Photosynthesis, Vegetative Growth and Development of Grape Vines in the San Joaquin Valley of California," has been submitted by the University of California, Daivs;

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 1480-130, entitled "The Effects of Air Pollutants on Photosynthesis, Vegetative Growth and Development of Grape Vines in the San Joaquin Valley of California," submitted by the University of California, Davis for a total amount not to exceed $39,416.

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 1480-130, entitled "The Effects of Air Pollutants on Photosynthesis, Vegetative Growth and Development of Grape Vines in the San Joaquin Valley of California," submitted by the University of California, Davis for a total amount not to exceed $39,416.

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 $39,416.

I hereby certify that the above is a true and correct copy of Resolution 86-107, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-14-4(b) 3
DATE: December 18, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1480-130 entitled "The Effects of Air Pollutants on Photosynthesis, Vegetative Growth and Development of Grape Vines in the San Joaquin Valley of California."

RECOMMENDATION: Adopt Resolution 86-107 approving Proposal No. 1480-130 for funding in an amount not to exceed $39,416.

SUMMARY: Studies have shown that Thompson Seedles grapes and processing tomatoes are subject to significant losses in yield as a result of exposure to ambient air pollution in the San Joaquin Valley. This study will examine the effects of air pollution in the physiology and development of Thompson Seedless and five other grape varities and on processing tomatoes. The investigator will use established vines to study the response to air pollution of Thompson Seedless grapes, and rooted cutting of five other varieties for comparative studies to assess varietal differences in sensitivity to air pollutants. Grapes and tomato plants will be exposed to several levels of oxidant air pollutants in open top field chambers. The investigator will measure differences in growth, yield, physiological response, and plant biochemistry of plants exposed to different oxidant pollutant levels. The resulting data will be incorporated into mathematical models which may be used to improve estimates of yield losses caused by pollutant exposure.

The principal investigator will be Dr. Larry Williams of the University of California, Davis.

BUDGET SUMMARY

University of California, Davis

"The Effects of Air Pollutants on Photosynthesis, Vegetative Growth, and Development of Grape Vines in the San Joaquin Valley of California"

BUDGET ITEMS:

Salaries	$26,123	
Benefits	7,210	
Supplies	1,700	
Other Costs	600	
Travel	200	
TOTAL, Direct Costs		$35,833
TOTAL, Indirect Costs		3,583
	TOTAL PROJECT COST	$39,416

State of California
AIR RESOURCES BOARD

Resolution 86-108
December 18, 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 1482-130, entitled "Twenty-one Day Exposure to Mixed Air Pollutants: Effects on Lung Airways and Macrophages," has been submitted by the University of California, Irvine;

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 1482-130, entitled "Twenty-one Day Exposure to Mixed Air Pollutants: Effects on Lung Airways and Macrophages," submitted by the University of California, Irvine for a total amount not to exceed $65,427.

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 1482-130, entitled "Twenty-one Day Exposure to Mixed Air Pollutants: Effects on Lung Airways and Macrophages," submitted by the University of California, Irvine for a total amount not to exceed $65,427.

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 $65,427.

I hereby certify that the above is a true and correct copy of Resolution 86-108, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM NO.: 86-14-4(b) 4
DATE: December 18, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1482-130 entitled "Twenty-one Day Exposure to Mixed Air Pollutants: Effects on Lung Airways and Macrophages."

RECOMMENDATION: Adopt Resolution 86-108 approving Proposal No. 1482-130 for funding in an amount not to exceed $65,427.

SUMMARY: This proposal would supplement an ongoing project which is being funded by the Electric Power Research Institute (EPRI). The objective of the study is to determine the effects of exposing the lungs of laboratory rats to a complex mixture of air pollutants for several weeks. The composition of the test atmosphere is based on air quality data obtained from Lennox, California. The proposed work will: 1) add two biological measurements that are thought to be more sensitive than those used in the EPRI study; and 2) allow for a more realistic simulation of exposure to ambient air by exposing rats to a less concentrated atmosphere than used in the current EPRI project. The results of this study will provide information about the effect on the lung of prolonged exposure to an atmosphere that simulates polluted ambient air.

The principal investigator will be Dr. Robert Phalen of the University of California, Irvine.

BUDGET SUMMARY

University of California, Irvine

"Twenty-one Day Exposure to Mixed Air Pollutants:
Effects on Lung Airways and Macrophages"

BUDGET ITEMS:

Salaries	$30,990	
Benefits	8,616	
Supplies	11,000	
Other Costs	-0-	
Travel	-0-	
Equipment *	8,000	
Consultant Costs	1,600	
TOTAL, Direct Costs		$60,206
TOTAL, Indirect Costs		5,221
	TOTAL PROJECT COST	$65,427

* Inverted - Stage Microscope $8,000

State of California
AIR RESOURCES BOARD

Resolution 86-109
December 18, 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 1484-130, entitled "Pilot Investigation of Indoor-Outdoor and Personal PM_{10} and Associated Ionic Compounds and Mutagenic Activity," has been submitted by the University of California, Irvine;

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 1484-130, entitled "Pilot Investigation of Indoor-Outdoor and Personal PM_{10} and Associated Ionic Compounds and Mutagenic Activity," submitted by the University of California, Irvine for a total amount not to exceed $53,509.

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 1484-130, entitled "Pilot Investigation of Indoor-Outdoor and Personal PM_{10} and Associated Ionic Compounds and Mutagenic Activity," submitted by the University of California, Irvine for a total amount not to exceed $53,509.

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 $53,509.

I hereby certify that the above is a true and correct copy of Resolution 86-109, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-14-4(b) 5
DATE: December 18, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1484-130 entitled "Pilot Investigation of Indoor-Outdoor and Personal PM_{10} and Associated Ionic Compounds and Mutagenic Activity."

RECOMMENDATION: Adopt Resolution 86-109 approving Proposal No. 1484-1301 for funding in an amount not to exceed $53,509.

SUMMARY: The purpose of this pilot study is to evaluate methods of measuring personal exposure to PM_{10} and its constituent ionic species. Studies have shown that ambient monitors may not accurately measure the amount of PM_{10} to which people are actually exposed. Accurate estimates of exposure are necessary to predict the risk posed to public health, but it is not presently possible to make such estimates. The proposed study includes field testing of asthmatics using personal PM_{10} monitors. The results of this pilot study will be used to design future larger scale studies to provide information that would allow for a more accurate estimation of Californians' exposure to PM_{10} and to provide additional information relevant to future reviews of the State PM_{10} standard.

The principal investigator will be Dr. Steven Colome of the University of California, Irvine

BUDGET SUMMARY

University of California, Irvine

"Pilot Investigation of Indoor-Outdoor and Personal PM_{10} and Associated Ionic Compounds and Mutagenic Activity"

BUDGET ITEMS:

Salaries	$15,931	
Benefits	2,330	
Supplies	6,058	
Other Costs*	24,412	
Travel	1,178	
Equipment**	700	
TOTAL, Direct Costs		$50,609
TOTAL, Indirect Costs		2,900
	TOTAL PROJECT COST	$53,509

* U. C. Davis, Mutagenicity testing $20,912
Nicotine analysis 2,000
Aeroallergen characterization 1,500
$24,412

** 2 Burkard personal aeroallergen volumetric samplers at $350 each

State of California
AIR RESOURCES BOARD

Resolution 86-110
December 18, 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 1479-130, entitled "Incidence of Respiratory Symptoms and Chronic Diseases in a Nonsmoking Population as a Function of Long Term Cumulative Exposure to Ambient Air Pollutants (AHSMOG Follow-up Study)," has been submitted by Loma Linda University;

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 1479-130, entitled "Incidence of Respiratory Symptoms and Chronic Diseases in a Nonsmoking Population as a Function of Long Term Cumulative Exposure to Ambient Air Pollutants (AHSMOG Follow-up Study)," submitted by Loma Linda University for a total amount not to exceed $254,795.

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 1479-130, entitled "Incidence of Respiratory Symptoms and Chronic Diseases in a Nonsmoking Population as a Function of Long Term Cumulative Exposure to Ambient Air Pollutants (AHSMOG Follow-up Study)," submitted by Loma Linda University for a total amount not to exceed $254,795.

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 $254,795.

I hereby certify that the above is a true and correct copy of Resolution 86-110, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-14-4(b) 6
DATE: December 18, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1479-130 entitled "Incidence of Respiratory Symptoms and Chronic Diseases in a Nonsmoking Population as a Function of Long Term Cumulative Exposure to Ambient Air Pollutants (AHSMOG Follow-up Study)."

RECOMMENDATION: Adopt Resolution 86-110 approving Proposal No. 1479-130 for funding in an amount not to exceed $254,795.

SUMMARY: There have been only two major studies of effects of chronic exposure on California populations. One of these two studies was the AHSMOG study, which this proposal would extend. Ten years ago the AHSMOG study surveyed a sample of 7500 non-smokers who had resided at least ten years in their neighborhoods, in which average ambient pollution concentration had been much different. The survey determined the incidence and severity of chronic obstructive pulmonary disease (COPD) and the presence or absence of factors potentially influencing it. Analysis of these data, which avoid the confounding effect of cigarette smoking, showed that greater exposure to high ozone and suspended particle concentrations was associated with a significantly higher relative risk of COPD.

This proposed extension of the AHSMOG project would again survey the sample by mail and telephone to collect another ten years of residence history, to determine the incidence and severity of COPD, and to collect relevant lifestyle and exposure information by means of a very detailed questionnaire. Updated estimates of exposure to ambient pollutants would be computed. The project would then perform a very extensive statistical analysis of these data to ascertain if exposure to pollutants and health effects are again associated. Analyses would include additional health endpoints not obtained in the original AHSMOG study -- incidence of cancer and heart disease, mortality from these two causes, and overall mortality. A subcontract would obtain airport visibility data; this data should provide the best surrogate for inhalable particle concentrations, which have not been monitored until recently. Staff of the Environmental Protection Agency who have successfully used visibility data in epidemiological studies will assist with obtaining and using these visibility data.

Funds reported will cover only one year of the two year effort. The project is cost-effective because it would again survey a previously obtained sample and use health effect data obtained by other projects. About half the cost of the study is to conduct the survey. The other half is to prepare the data for processing and to perform the statistical analyses.

Complex and time-consuming epidemiological studies provide the only direct method of observing how chronic exposure to air pollution affects human health. This information is needed to improve the basis of setting air quality standards.

The principal investigator will be Dr. David Abbey of the Loma Linda University.

BUDGET SUMMARY

Loma Linda University

"Incidence of Respiratory Symptoms and Chronic Diseases in a Nonsmoking Population as a Function of Long Term Cumulative Exposure to Ambient Air Pollutants (AHSMOG Follow-up Study)"

December 18, 1986

BUDGET ITEMS:

Salaries	$94,750	
Benefits	28,425	
Supplies	23,268	
Equipment	1,632	
Three file cabinets		
Other Costs	19,000	
Consultant	3,000	
Subcontract*	24,000	
Travel	1,307	
TOTAL, Direct Costs		$195,382
TOTAL, Indirect Costs		59,413
	TOTAL PROJECT COST	$254,795

* To add airport visibility data to the data base.

State of California
AIR RESOURCES BOARD

Resolution 86-111
December 18, 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 1485-130, entitled "Southern California Air Quality Study - Hydrocarbon Speciation at Type B Stations," has been submitted by Biospherics 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 1485-130, entitled "Southern California Air Quality Study - Hydrocarbon Speciation at Type B Stations," submitted by Biospherics Corporation for a total amount not to exceed $140,000.

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 1485-130, entitled "Southern California Air Quality Study - Hydrocarbon Speciation at Type B Stations," submitted by Biospherics Corporation for a total amount not to exceed $140,000.

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 in an amount not to exceed $140,000.

I hereby certify that the above is a true and correct copy of Resolution 86-111, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM NO.: 86-14-4(b) 7
DATE: December 18, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1485-130 entitled "Southern California Air Quality Study - Hydrocarbon Speciation at Type B Stations."

RECOMMENDATION: Adopt Resolution 86-111 approving Proposal No. 1485-130 for funding in an amount not to exceed $140,000.

SUMMARY: The Southern California Air Quality Study is a multi-year, integrated air quality study whose overall goal is to develop a comprehensive and properly archived air quality and meteorological data base for the South Coast Air Basin. This data base will be used to test, evaluate and improve elements of air quality simulation models for oxidants, PM_{10}, fine particles, toxic air contaminants and acidic species. The study is proposed to take place in the South Coast Air Basin during two intensive study periods during the summer of 1987 for twelve study days and during the fall-winter of 1987 for seven study days. The field study will be conducted primarily at existing SCAQMD air quality monitoring stations.

Speciation of gas phase hydrocarbons at the Class B station during the Southern California Air Quality Study has been specified in the SCAQS program plan. Measurement of this pollutant class is needed in order to study the relationships between hydrocarbons and nitrogen oxides in the formation of ozone, which is the most serious air pollution problem in Los Angeles.

The contractor will analyze collected samples for CH_4, CO and C_2-C_{10} hydrocarbons and several halocarbon compounds. These results will be submitted to ARB and will become part of the SCAQS data set.

The principal investigator will be Dr. Rei Rasmussen of the Biospherics Corporation.

BUDGET SUMMARY

Biospherics Corporation

"Southern California Air Quality Study -
Hydrocarbon Speciation at Type B Stations"

BUDGET ITEMS:

Salaries	$ 1,500		
Hydrocarbon Speciation Measurements	103,500	(690 samples @ $150/sample)	
Canister use fee	22,900		
Travel	1,200		
Equipment Rental	5,600		
Postage for Shipping Canisters	5,300		
TOTAL, Direct Costs			$140,000
TOTAL, Indirect Costs			-0-
	TOTAL PROJECT COST		$140,000

State of California
AIR RESOURCES BOARD

Resolution 86-112
December 18, 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 1487-130, entitled "Southern California Air Quality Study (SCAQS) - Quality Assurance," has been submitted by Environmental Research and Technology;

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

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

> Proposal Number 1487-130, entitled "Southern California Air Quality Study (SCAQS) - Quality Assurance," submitted by Environmental Research and Technology for a total amount not to exceed $63,085.

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 1487-130, entitled "Southern California Air Quality Study (SCAQS) - Quality Assurance," submitted by Environmental Research and Technology for a total amount not to exceed $63,085.

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 $63,085.

I hereby certify that the above is a true and correct copy of Resolution 86-112, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-14-4(b) 8
DATE: December 18, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1487-130 entitled "Southern California Air Quality Study (SCAQS) - Quality Assurance."

RECOMMENDATION: Adopt Resolution 86-112 approving Proposal No. 1487-130 for funding in an amount not to exceed $63,085.

SUMMARY: The Southern California Air Quality Study is a multi-year, integrated air quality study whose overall goal is to develop a comprehensive and properly archived air quality and meteorological data base for the South Coast Air Basin. This data base will be used to test, evaluate and improve elements of air quality simulation models for oxidants, PM_{10}, fine particles, toxic air contaminants and acidic species. The study is proposed to take place in the South Coast Air Basin during two intensive study periods for approximately six weeks during the summer of 1987 for twelve study days and during the fall-winter of 1987 for seven study days. The field study will be conducted primarily at existing SCAQMD air quality monitoring stations.

The objective of this project is to design a quality assurance (Q/A) support program for the SCAQS study and to implement part of that program. EPA and other SCAQS sponsors will also contribute to the Q/A program. Quality assurance is the complementary part of the measurement process which provides estimates of the precision, accuracy, and validity of the data base, and guarantees that these attributes are held within acceptable limits. The function of the quality assurance manager is to ensure that the final program design contains adequate quality control procedures and adequate external checks to assure that the data obtained will be suitable for its intended use. A quality assurance program will be impelemented for all repetitive measurements for which standard operating procedures can be developed.

The principal investigator will be Mr. John Collins of Environmental Research and Technology, Inc.,

BUDGET SUMMARY

Environmental Research and Technology

"Southern California Air Quality Study (SCAQS) - Quality Assurance"

BUDGET ITEMS:

Salaries	$18,134	
Supplies	$ 300	
Travel	$ 2,060	
TOTAL, Direct Costs		$20,494
TOTAL, Indirect Costs*		42,591
	TOTAL PROJECT COST	$63,085

*	Direct labor overhead	136%
	General and Administrative Costs	27%
	Fee	10%

State of California
AIR RESOURCES BOARD

Resolution 86-113
December 18, 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 augmentation proposal Number 1419-126(A), entitled "Comparison of Indoor Toxic Air Pollutant Levels in Several Southern California Communities," has been submitted by Research Triangle Institute to the Air Resources Board; and;

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 1419-126(A) submitted by Research Triangle Institute for a total amount not to exceed $12,080.

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 1419-126(A), entitled "Comparison of Indoor Toxic Air Pollution Levels in Several Southern California Communities," submitted by Research Triangle for a total amount not to exceed $12,080.

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 $12,080.

I hereby certify that the above is a true and correct copy of Resolution 86-113, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-14-4(b) 9
DATE: December 18, 1986

State of California
AIR RESOURCES BOARD

ITEM: Augmentation Proposal No. 1419-126(A) entitled "Comparison of Indoor Toxic Air Pollutant Levels in Several Southern California Communities."

RECOMMENDATION: Adopt Resolution 86-113 approving Proposal No. 1419-126(A) for funding in an amount not to exceed $12,080.

SUMMARY: This augmentation will provide funds to perform additional analyses of vapor phase organic samples collected as part of a much larger study. The larger effort is a co-funded project with the US EPA contributing major funding. It is designed to assess personal exposures to toxic compounds.

The new data to be collected by this augmented study requires a different collection method and is needed in the Board's exposure assessment and risk management program for toxic air contaminants.

The principal investigator for this study is Dr. Pellizzari of Research Triangle Institute.

State of California
AIR RESOURCES BOARD

Resolution 86-114
December 18, 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 1481-130, entitled "Proposal for ARB Support of Carbonaceous Aerosol Symposium," has been submitted by the University of California, Lawrence Berkeley Laboratory;

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 1481-130, entitled "Proposal for ARB Support of Carbonaceous Aerosol Symposium," submitted by the University of California, Lawrence Berkeley Laboratory for a total amount not to exceed $5,000.

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 1481-130, entitled "Proposal for ARB Support of Carbonaceous Aerosol Symposium," submitted by the University of California, Lawrence Berkeley Laboratory for a total amount not to exceed $5,000.

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 in an amount not to exceed $5,000.

I hereby certify that the above is a true and correct copy of Resolution 86-114, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-14-4(b) 10
DATE: December 18, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1481-130 entitled "Proposal for ARB Support of Carbonaceous Aerosol Symposium."

RECOMMENDATION: Adopt Resolution 86-114 approving Proposal No. 1481-130 for funding in an amount not to exceed $5,000.

SUMMARY: The Carbonaceous Species Methods Comparison Study, which was conducted at Citrus College in August 1986, was the largest study of its kind ever conducted. Thirty research groups from the United States and Canada were funded by nine government and industry sponsors to participate in the study. An important part of the study is the presentation of research results. The Third International Conference on Carbonaceous Particles in the Atmosphere will be held at Lawrence Berkeley Laboratory (University of California system) October 5-9, 1987. The ARB has been asked for $5,000 to help defray conference expenses. A major portion of the program for this week-long conference will be presentation of results from the Carbonaceous Species Methods Comparison Study which was coordinated by the ARB.

B U D G E T S U M M A R Y

University of California, Lawrence Berkeley Laboratory

"Proposal for ARB Support of Carbonaceous Aerosol Symposium"

BUDGET ITEMS:

$5,000 Will go toward defraying conference expenses. The money is for organizing and running the conference, and will include such items as printing, mailing, registration materials and special staff support during the meeting.

TOTAL, Direct Costs	$5,000
TOTAL PROJECT COST	$5,000