State of California
AIR RESOURCES BOARD

Resolution 86-27
April 25, 1986

WHEREAS, the Air Resources Board has been directed to design and implement a comprehensive program of research and monitoring of acid deposition in California pursuant to Health and Safety Code Sections 39900 through 39915; and

WHEREAS, a solicited research proposal, Number 105-16, entitled "Measurement of Organic Acids in the South Coast Air Basin," has been submitted by Daniel Grosjean and Associates, Inc. to the ARB; and

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

WHEREAS, the Scientific Advisory Committee on Acid Deposition has reviewed and recommends for funding:

> Proposal Number 105-16, entitled "Measurement of Organic Acids in the South Coast Air Basin," submitted by Daniel Grosjean and Associates, Inc., for a total amount not to exceed $79,150.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Scientific Advisory Committee on Acid Deposition and approves the following:

> Proposal Number 105-16, entitled "Measurement of Organic Acids in the South Coast Air Basin," submitted by Daniel Grosjean and Associates, Inc., for a total amount not to exceed $79,150.

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 $79,150.

I hereby certify that the above is a true and correct copy of Resolution 86-27, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (1)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 105-16 entitled "Measurement of Organic Acids in the South Coast Air Basin."

RECOMMENDATION: Adopt Resolution 86-27 approving Proposal No. 105-16 for funding in an amount not to exceed $79,150.

SUMMARY: The Kapiloff Acid Deposition Act requires the ARB to identify the contribution of pollution source types to acidic deposition and to study the chemical mechanisms of acid formation in the atmosphere. Previous measurements of Los Angeles rainfall samples have shown that the most abundant contaminant was organic carbon. In September 1985, dew chemistry measurements made at Pomona College also showed apparently significant amounts of organic acids.

The proposed study is to identify and quantify gas and particle phase organic acids in the Los Angeles atmosphere for a ten-day period in August 1986. The project will coincide with the ARB-sponsored Carbonaceous Species Methods Comparison Study (CSMCS), and will permit assessment of the relative abundance of organic acids in the Los Angeles aerosol during the CSMCS period. In addition, if dew formation occurs at the study site during the CSMCS, the abundance and influence of organic acids on dew chemistry will be assessed.

The study will be carried out by Daniel Grosjean and Associates with Dr. Grosjean as the principal investigator.

State of California
AIR RESOURCES BOARD

Resolution 86-28
April 25, 1986

WHEREAS, the Air Resources Board has been directed to design and implement a comprehensive program of research and monitoring of acid deposition in California pursuant to Health and Safety Code Sections 39900 through 39915; and

WHEREAS, an unsolicited research proposal, Number 106-16, entitled "Statewide Survey of Aquatic Ecosystem Chemistry," has been submitted by California Department of Fish and Game to the ARB; and

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

WHEREAS, the Scientific Advisory Committee on Acid Deposition has reviewed and recommends for funding:

> Proposal Number 106-16, entitled "Statewide Survey of Aquatic Ecosystem Chemistry," submitted by California Department of Fish and Game for a total amount not to exceed $102,778.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Scientific Advisory Committee on Acid Deposition and approves the following:

> Proposal Number 106-16, entitled "Statewide Survey of Aquatic Ecosystem Chemistry," submitted by California Department of Fish and Game for a total amount not to exceed $102,778.

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 $102,778.

I hereby certify that the above is a true and correct copy of Resolution 86-28, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (2)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 106-16 entitled "Statewide Survey of Aquatic Ecosystem Chemistry."

RECOMMENDATION: Adopt Resolution 86-28 approving Proposal No. 106-16 for funding in an amount not to exceed $102,778.

SUMMARY: This project would provide baseline data on the geographic extent of California lakes that are sensitive to acidic deposition. This research is a continuation of work that the California Department of Fish and Game (DFG) is currently doing for the ARB. DFG would sample 50 lakes distributed throughout California during the fall dry period of 1986. Water samples would be measured for conductivity, pH, alkalinity, sulfate, chloride, nitrate, phosphate, silica, calcium, magnesium, sodium, potassium, aluminum, iron, and manganese.

After the completion of the fall 1986 sampling, DFG would have data on fifty lakes for the springs of 1985 and 1986 and the falls of 1985 and 1986. This data should provide an indication of the year-to-year variability in alkalinity and other measures of lake water quality throughout the State. These data will be used to help develop a least-cost sampling approach for determining trends in surface water quality, as required by the Kapiloff Act.

The California Department of Fish and Game has successfully carried out this monitoring in the past through an interagency agreement with ARB. This proposal would continue that agreement for one more field season, after which a comprehensive analysis would be performed.

The principal investigator would be Dr. Kim McCleneghan.

BUDGET SUMMARY

California Department of Fish and Game

"Statewide Survey of Aquatic Ecosystem Chemistry"

BUDGET ITEMS:

Salaries	$37,758		
Benefits	11,407		
Supplies	3,600		
Other Costs	10,067		
Travel	10,000		
Equipment	500		
Data Analysis and Interpretation*	10,000		
TOTAL, Direct Costs			$83,332
TOTAL, Indirect Costs			19,446
		TOTAL PROJECT COST	$102,778

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* Scientific Advisory Committee approved up to an additional $10,000, if needed, for analysis and interpretation of data.

State of California
AIR RESOURCES BOARD

Resolution 86-29
April 25, 1986

WHEREAS, the Air Resources Board has been directed to design and implement a comprehensive program of research and monitoring of acid deposition in California pursuant to Health and Safety Code Sections 39900 through 39915; and

WHEREAS, an unsolicited research proposal, Number 107-16, entitled "Effects of Acid Fog on Airway Function in People with Asthma," has been submitted by the University of California, San Francisco to the Air Resources Board; and

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

WHEREAS, the Scientific Advisory Committee on Acid Deposition has reviewed and recommends for funding:

> Proposal Number 107-16, entitled "Effects of Acid Fog and Airway Function in People with Asthma," submitted by the University of California, San Francisco for a total amount not to exceed $603,733.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Scientific Advisory Committee on Acid Deposition and approves the following:

> Proposal Number 107-16, entitled "Effects of Acid Fog on Airway Function in People with Asthma," submitted by the University of California, San Francisco for a total amount not to exceed $603,733.

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 $603,733.

I hereby certify that the above is a true and correct copy of Resolution 86-29, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (3)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 107-16 entitled "Effects of Acid Fog on Airway Function in People with Asthma."

RECOMMENDATION: Adopt Resolution 86-29 approving Proposal No. 107-16 for funding in an amount not to exceed $603,733.

SUMMARY: In view of the findings of high acidity in fogs at California locations, the Scientific Advisory Committee has placed a high priority on determining what effects such fogs might have on humans. Because of the difficulty of producing simulated fogs for work in exposure chambers, the Committee advised that work should start by designing a feasible system for generating fog for exposure chambers. Another ARB contractor has now completed a comprehensive design study for generating, monitoring and controlling simulated acidic fog. The proponent for the current study, Dean Sheppard, M.D. of the University of California, San Francisco, has completed a study of effects of controlled acidic droplets of water delivered to asthmatic subjects by mouth piece.

About half the cost of the present proposal is to build and install the essential device, a prototype fog generator, in an existing exposure chamber, along with needed monitoring equipment. This major investment is needed because no facilities exist that are suitably equipped to allow the proposed work to be performed.

The other half of the cost would go to studying asthmatic subjects. In the first year the study would continue to use the mouth piece exposure. In the second year, the exposures would be carried out in the newly equipped chamber.

The investigators will explore the extent and nature of the respiratory response of asthmatics exposed to acidic fogs and aerosols. The major aim is to apportion the effects of using different acids, differing overall acidity, different anionic compositions, and differing osmolarities of fog droplets. This approach would begin to fill the very large gap in knowledge of the effects of acidic fogs on humans.

The principal investigator for this study is Dean Sheppard, M.D.

BUDGET SUMMARY

University of California, San Francisco

"Effects of Acid Fog on Airway Function in People with Asthma"

BUDGET ITEMS:

Salaries*	$146,688	
Benefits	36,131	
Supplies	18,952	
Other Costs	17,540	
Travel	3,708	
Equipment**	359,512	
TOTAL, Direct Costs		$582,531
TOTAL, Indirect Costs		21,202
TOTAL PROJECT COST		$603,733

* Includes payment to human subjects

** Acid Fog generator, delivery, monitoring and data aquisition devices. Includes labor to facilitate test and calibrate system. $355,262

Freezing point osmometer $ 4,250

State of California
AIR RESOURCES BOARD

Resolution 86-30
April 25, 1986

WHEREAS, the Air Resources Board has been directed to design and implement a comprehensive program of research and monitoring of acid deposition in California pursuant to Health and Safety Code Sections 39900 through 39915; and

WHEREAS, an unsolicited research proposal, Number 108-16, entitled "Acquisition of Acid Vapor and Aerosol Concentration Data for Use in Dry Deposition Studies in the South Coast Air Basin," has been submitted by California Institute of Technology to the ARB; and

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

WHEREAS, the Scientific Advisory Committee on Acid Deposition has reviewed and recommends for funding:

> Proposal Number 108-16, entitled "Acquisition of Acid Vapor and Aerosol Concentration Data for Use in Dry Deposition Studies in the South Coast Air Basin," submitted by California Institute of Technology for a total amount not to exceed $87,839.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Scientific Advisory Committee on Acid Deposition and approves the following:

> Proposal Number 108-16, entitled "Acquisition of Acid Vapor and Aerosol Concentration Data for Use in Dry Deposition Studies in the South Coast Air Basin," submitted by California Institute of Technology for a total amount not to exceed $87,839.

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 $87,839.

I hereby certify that the above is a true and correct copy of Resolution 86-30, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (4)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 108-16 entitled "Acquisition of Acid Vapor and Aerosol Concentration Data for Use in Dry Deposition Studies in the South Coast Air Basin."

RECOMMENDATION: Adopt Resolution 86-30 approving Proposal No. 108-16 for funding in an amount not to exceed $87,839.

SUMMARY:

California Institute of Technology is currently operating a dual purpose monitoring network of enhanced PM_{10} measurements for the South Coast Air Quality Management District (funded by the EPA), and acid gas/particle measurements for the ARB. The data from this network will be used to estimate dry deposition of acidic species and in determining its spatial and temporal variations in the SoCAB.

In order to ensure the highest quality for its data, and at the request of ARB staff, Caltech temporarily stopped work on the ARB monitoring network to participate in the South Coast nitric acid methods intercomparison study held in September 1985. Because of Caltech's participation, the starting date of the ARB monitoring network was delayed from August 1, 1985, to January 1, 1986. Accordingly, the schedules for the two parts of Caltech's network are out of phase by five months. Under this augmentation of the existing contract, Caltech would continue to operate the EPA/SCAQMD PM_{10} network from August 1, 1986 through January 1, 1987 under ARB funding. This would provide a full year of simultaneous data from both networks, thus allowing for an estimation of the annual flux of dry acid deposition for all major pollutant species. In addition, Caltech is requesting funding and a time extension to complete laboratory analysis of ARB network samples.

The Board's Scientific Advisory Committee requested the original modification of Caltech's monitoring schedule and recommends this augmentation to allow for the collection of one full year of monitoring data for both PM_{10} and acid gases/particles in the SCAB.

The principal investigator of this project is Glen Cass.

BUDGET SUMMARY

California Institute of Technology

"Acquisition of Acid Vapor and Aerosol Concentration Data for Use in Dry Deposition Studies in the South Coast Air Basin"

BUDGET ITEMS:

Salaries	$30,301		
Benefits	8,939		
Supplies	7,267		
Other Costs*	13,440		
Travel	2,120		
TOTAL, Direct Costs			$62,067
TOTAL, Indirect Costs			25,772
		TOTAL PROJECT COST	$87,839

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* Chemical analysis of samples.

State of California
AIR RESOURCES BOARD

Resolution 86-31
April 25, 1986

WHEREAS, the Air Resources Board has been directed to design and implement a comprehensive program of research and monitoring of acid deposition in California pursuant to Health and Safety Code Sections 39900 through 39915; and

WHEREAS, an unsolicited research proposal, Number 109-16, entitled "Analysis of Trace Metals in the Emerald Lake Watershed," has been submitted by the U.S. Geological Survey to the ARB; and

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

WHEREAS, the Scientific Advisory Committee on Acid Deposition has reviewed and recommends for funding:

> Proposal Number 109-16, entitled "Analysis of Trace Metals in the Emerald Lake Watershed," submitted by the U.S. Geological Survey for a total amount not to exceed $8,892.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Scientific Advisory Committee on Acid Deposition and approves the following:

> Proposal Number 109-16, entitled "Analysis of Trace Metals in the Emerald Lake Watershed," submitted by the U.S. Geological Survey for a total amount not to exceed $8,892.

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 $8,892.

I hereby certify that the above is a true and correct copy of Resolution 86-31, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (5)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 109-16 entitled "Analysis of Trace Metals in the Emerald Lake Watershed."

RECOMMENDATION: Adopt Resolution 86-31 approving Proposal No. 109-16 for funding in an amount not to exceed $8,892.

SUMMARY: This proposal would provide about five percent of the total cost of a major U.S. Geological Survey (USGS) study at Emerald Lake in Sequoia National Park.

The USGS, Water Resources Division, is planning to conduct a study of the occurrence, distribution and chemistry of trace elements (Cu, Cd, Pb, Zn, Cr, Ni and V) in deposition and surface waters in Sequoia National Park. Such a study is important in understanding the role of acid deposition in mobilizing toxic trace metals in sensitive ecosystems.

Dr. Howard Taylor of the USGS will be heading this field and laboratory effort. Most of the funding (approximately $180,000) will be provided by the USGS; the proponent has requested funding from the Air Resources Board for travel to the IWS.

BUDGET SUMMARY

U.S. Geological Survey

"Analysis of Trace Metals in the

Emerald Lake Watershed"

BUDGET ITEMS:

Salaries	$ -0-	
Benefits	-0-	
Supplies	-0-	
Other Costs	-0-	
Travel	7,800	
TOTAL, Direct Costs		$7,800
TOTAL, Indirect Costs		1,092
	TOTAL PROJECT COST	$8,892*

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* All other projects costs (estimated to be approximately $180,000) will be paid by the U.S. Geological Survey.

State of California
AIR RESOURCES BOARD

Resolution 86-32
April 25, 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;

WHEREAS, a solicited research proposal, Number 1397-125, entitled "A Study of the Efficacy of Aerosol vs. Non-Aerosol Laundry Products," has been submitted by American Research and Testing, 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 1397-125, entitled "A Study of the Efficacy of Aerosol vs. Non-Aerosol Laundry Products," submitted by American Research and Testing, Inc. for a total amount not to exceed $28,435.

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 1397-125, entitled "A Study of the Efficacy of Aerosol vs. Non-Aerosol Laundry Products," submitted by American Rsearch and Testing, Inc. for a total amount not to exceed $28,435.

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 $28,435.

I hereby certify that the above is a true and correct copy of Resolution 86-32, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (6)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1397-125 entitled "A Study of the Efficacy of Aerosol vs. Non-Aerosol Laundry Products."

RECOMMENDATION: Adopt Resolution 86-32 approving Proposal No. 1397-125 for funding in an amount not to exceed $28,435.

SUMMARY: Emissions of photochemically reactive organic compounds (PROC) from the use of aerosol laundry products are estimated to be approximately 6.6 tons per day statewide. Because non-aerosol laundry products contain no propellants and generally little or no PROC solvent, emissions from non-aerosol products are much lower.

The objective of this study is to determine whether it would be feasible, in terms of product efficacy and consumer satisfaction, to switch from aerosol to non-aerosol laundry products. This would be achieved by measuring the effectiveness of both aerosol and non-aerosol laundry products via a carefully conducted scientific study.

Two proposals were received in response to the ARB's Request for Proposals. The proposal from American Research and Testing, Inc. is recommended for funding by the Research Screening Committee and the staff.

American Research and Testing proposes to use Federal Test Method 191, "Stiffness of Cloth, Directional; Cantilever Bending Method," to assess spray starch effectiveness. Three brands, in up to three product forms, would be tested on three fabric types. Spot removers would be evaluated using daylight reflectance measurements and a visual evaluation. Up to three forms of each spot remover brand would be used on five fabrics with seven stains, both fresh and heat-set. Fabric blanks subjected to similar washings, using a standard detergent, would be used throughout.

State of California
AIR RESOURCES BOARD

Resolution 86-33
April 25, 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 1389-125, entitled "Southern California Air Quality Study - Program Management," has been submitted by Sonoma Technology, 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 1389-125, entitled "Southern California Air Quality Study - Program Management," submitted by Sonoma Technology, Inc. for a total amount not to exceed $247,137.

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 1389-125, entitled "Southern California Air Quality Study - Program Management," submitted by Sonoma Technology, Inc. for a total amount not to exceed $247,137.

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 $247,137.

I hereby certify that the above is a true and correct copy of Resolution 86-33, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (7)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1389-125 entitled "Southern California Air Quality Study - Program Management."

RECOMMENDATION: Adopt Resolution 86-33 approving Proposal No. 1389-125 for funding in an amount not to exceed $247,137.

SUMMARY: The Southern California Air Quality Study (SCAQS) is a multi-year, integrated air quality study whose overall goal is to develop a comprehensive and properly archived aerometric data base for the South Coast Air Basin (SoCAB). The data base will be used to test, evaluate and improve elements of air quality simulation models for oxidants, PM_{10}, fine particles, toxic air cointaminants and acidic species. The field portion of the study is scheduled to take place in the SoCAB during two comprehensive study periods in the summer and fall of 1987. The field study will be conducted primarily at existing air quality monitoring locations in the SoCAB.

Inasmuch as ten or more different sponsors for elements of the SCAQS program will be involved, close program coordination is critical to the success of the endeavor. This project will provide for management coordination for the first half of SCAQS and will involve three individuals: a Program Coordinator (PC), who will report directly to the ARB and will be responsible for overall project management; a Field Manager (FM), who will be responsible for the logistical aspects of the field sampling efforts; and an analysis coordinator (AC), who will identify the data analysis methodologies needed to meet program objectives. The PC, under the direction of the ARB project manager, will coordinate the efforts of the FM and AC to produce a clearly defined and scientifically defensible study.

Two proposals were received in response to the ARB's Request for Proposals. The proposal from Sonoma Technology, Inc. (STI) was recommended by the Research Screening Committee, external reviewers and the staff. The principal investigator would be Dr. Donald Blumenthal of STI. Co-investigators would be Dr. John Watson of the Desert Research Institute as Analysis Coordinator, and Dr. Susanne Hering of STI as Field Manager.

BUDGET SUMMARY

Sonoma Technology, Inc.

"Southern California Air Quality Study - Program Management"

BUDGET ITEMS:

Salaries	$58,327	
Benefits	13,997	
Supplies*	12,300	
Subcontract to Desert Research Institute	52,001	
Travel	8,025	
TOTAL, Direct Costs		$144,650
TOTAL, Indirect Costs		102,487
TOTAL PROJECT COST		$247,137

*Includes publication costs, duplication costs, meeting expenses and communications.

State of California
AIR RESOURCES BOARD

Resolution 86-34
April 25, 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 1390-125, entitled "A Study of Application Rates of Aerosol and Pump Hair Sprays," has been submitted by American Research and Testing, 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 1390-125, entitled "A Study of Application Rates of Aerosol and Pump Hair Sprays," submitted by American Research and Testing, Inc. for a total amount not to exceed $99,026.

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 1390-125, entitled "A Study of Application Rates of Aerosol and Pump Hair Sprays," submitted by American Research and Testing, Inc. for a total amount not to exceed $99,026.

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 $99,026.

I hereby certify that the above is a true and correct copy of Resolution 86-34, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (8)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1390-125 entitled "A Study of Application Rates of Aerosol and Pump Hair Sprays."

RECOMMENDATION: Adopt Resolution 86-34 approving Proposal No. 1390-125 for funding in an amount not to exceed $99,026.

SUMMARY: The use of certain aerosol consumer products, such as hair sprays, results in emissions of photochemically reactive organic compounds. Emissions from aerosol type hair sprays are estimated to release about 22 tons per day of reactive hydrocarbons statewide. Estimating the effects of candidate control measures, such as substitution of pump or other nonaerosol products, requires reliable data on application rates of the various dispensing systems. The purpose of this study is to obtain reliable information on application rates of selected aerosol, pump and bag-in-can spray products used by a carefully selected representative panel.

In the proposed American Research and Testing study, market research would be conducted with the cooperation of a selected panel of hair spray users. In addition, a comprehensive chemical analysis of propellants, solvents and resins would be conducted.

Data from this study would be used by the ARB staff to explore the feasibility and effectiveness of a suggested control measure for emissions from the use of aerosol hair spray products.

Five proposals were received in response to the RFP. The proposal received from American Research and Testing, Inc. was ranked highest by the Research Screening Committee and by the staff. The Principal Investigator would be Dr. Rita R. Boggs.

State of California
AIR RESOURCES BOARD

Resolution 86-35
April 25, 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 1400-125, entitled "Characterization of Exhaust Emissions from Trap-Equipped Light-Duty Diesels," has been submitted by Southwest Research Institute;

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 1400-125, entitled "Characterization of Exhaust Emissions from Trap-Equipped Light-Duty Diesels," submitted by Southwest Research Institute for a total amount not to exceed $249,954.

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 1400-125, entitled "Characterization of Exhaust Emissions from Trap-Equipped Light-Duty Diesels," submitted by Southwest Research Institute for a total amount not to exceed $249,954.

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 $249,954.

I hereby certify that the above is a true and correct copy of Resolution 86-35, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (9)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1400-125 entitled "Characterization of Exhaust Emissions from Trap-Equipped Light-Duty Diesels."

RECOMMENDATION: Adopt Resolution 86-35 approving Proposal No. 1400-125 for funding in an amount not to exceed $249,954.

SUMMARY:

Diesel-emitted particulate matter is respirable, contains mutagenic and carcinogenic substances, and absorbs light, thus contributing to visibility degradation in the atmosphere.

While the composition of particulate matter from uncontrolled diesels has been extensively studied, additional work is needed to determine the chemical characteristics of exhaust emissions from trap-equipped diesels in various modes of operation. This is particularly true of systems that use fuel additives to facilitate trap regeneration.

The objective of this project is to characterize thoroughly and to quantify the particulate and gaseous emissions from two different types of, trap-equipped, light-duty vehicles. One vehicle will be equipped with the catalyzed trap system used on 1985 and 1986 Mercedes-Benz passenger cars sold in California; the second vehicle will utilize an additive-regenerated trap. The Urban Dynamometer Driving Cycle, Highway Fuel Economy Test Cycle, and a low-speed will be used to conduct the emissions testing.

The information provided by this study will permit ARB and others to make more informed decisions in the future about particulate emission standards and fuel additives for diesel-powered vehicles.

This study would be performed by the Southwest Research Institute. The Principal Investigator would be Dr. Lawrence R. Smith.

BUDGET SUMMARY

Southwest Research Institute

"Characterization of Exhaust Emissions from Trap-Equipped Light-Duty Diesels"

BUDGET ITEMS:

Salaries	$65,576	
Benefits	24,919	
Supplies	9,976	
Other Costs*	15,606	
Travel	6,180	
TOTAL, Direct Costs		$122,257
TOTAL, Indirect Costs		127,697
TOTAL PROJECT COST		$249,954

* Includes vehicle lease and miscellaneous services.

State of California
AIR RESOURCES BOARD

Resolution 86-36
April 25, 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 1402-125, entitled "Interaction of Humidity with Air Pollutants on Vegetation," 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 1402-125, entitled "Interaction of Humidity with Air Pollutants on Vegetation," submitted by the University of California, Riverside for a total amount not to exceed $76,620.

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 1402-125, entitled "Interaction of Humidity with Air Pollutants on Vegetation," submitted by the University of California, Riverside for a total amount not to exceed $76,620.

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 $76,620.

I hereby certify that the above is a true and correct copy of Resolution 86-36, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (10)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1402-125 entitled "Interaction of Humidity with Air Pollutants on Vegetation."

RECOMMENDATION: Adopt Resolution 86-36 approving Proposal No. 1402-125 for funding in an amount not to exceed $76,620.

SUMMARY: Humidity is believed to be one of the most important environmental factors affecting the sensitivity of crops to air pollution. Marked differences in humidity among the important agricultural regions of California represent one important influence that makes it difficult to predict accurately the effects that a particular air pollutant may have on plants under ambient conditions in the field. The objective of this study is to determine how different levels of humidity affect the physiological and growth responses of plants exposed to ambient oxidants or sulfur dioxide. The investigators are Dr. C. R. Thompson and Dr. D. M. Olszyk.

The study will consist of three separate experiments: a summertime experiment with two levels of humidity and two levels of ambient oxidants, using tomatoes as the test species; a wintertime experiment with two levels of humidity and two levels of sulfur dioxide, using alfalfa, potatoes, onions, and wheat as test species; and a springtime experiment with two levels of humidity, two levels of ambient oxidants, and alfalfa as the test species. The investigators will measure photosynthesis, stomatal conductance, leaf water potential, leaf area, total plant growth, and yield. They will examine leaf samples microscopically and will evaluate visible injury over the course of the experiment. The investigators will analyze these data to clarify how differences in humidity affect plant response to air pollutant exposure.

It is important to understand how differences in growing conditions alter plant response to air pollution exposure. California presents a unique and varied assortment of growing conditions not found in other parts of the country. With information on how

differences in growing conditions, such as humidity, affect plant response to air pollution exposure, experimental results from one location could more easily be generalized to other locations. Information of this kind would greatly aid ARB's efforts to determine air pollution impacts on crops on a statewide basis through the program in crop loss assessment.

Successful completion of the study would also aid the standard setting process by providing a basis for using research results from more humid eastern states to develop and support air quality standards in California without the need to duplicate studies.

State of California
AIR RESOURCES BOARD

Resolution 86-37
April 25, 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 1387-125, entitled "The Role of Ozone Induced Lung Inflammation in Humans Varying Widely in Pulmonary Function Response," 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 1387-125, entitled "The Role of Ozone Induced Lung Inflammation in Humans Varying Widely in Pulmonary Function Response," submitted by the University of California, Davis, for a total amount not to exceed $157,268.

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 1387-125, entitled "The Role of Ozone Induced Lung Inflammation in Humans Varying Widely in Pulmonary Function Response," submitted by the University of California, Davis, for a total amount not to exceed $157,268.

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 $157,268.

I hereby certify that the above is a true and correct copy of Resolution 86-37, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (11)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1387-125 entitled "The Role of Ozone Induced Lung Inflammation in Humans Varying Widely in Pulmonary Function Response."

RECOMMENDATION: Adopt Resolution 86-37 approving Proposal No. 1387-125 for funding in an amount not to exceed $157,268.

SUMMARY: Previous studies of human pulmonary function have shown large individual variations in response to ozone. This study would investigate why some people appear to show substantial response to ozone at ambient concentrations while others do not.

The principal investigator, Dr. William Adams, of UC Davis has proposed to investigate the relationship between ozone-induced lung inflammation and pulmonary function impairment. An integrated study consisting of two parts is proposed to investigate this relationship. One part will study two groups of human subjects, one which is sensitive to the effects of ozone on pulmonary function and one which is rather insensitive to these effects. This part of the study would relate the results of pulmonary function tests to blood levels of substances associated with the inflammatory process. The other part of the study will use an animal model to investigate the relationship between lung inflammation and blood levels of the substances being measured in the human subjects and to further relate these measurements to ozone exposure.

A better understanding the issue of individual variability is important in setting ambient air quality standards. In order to protect sensitive individuals, it is necessary to find ways to identify them and to measure characteristics of their sensitivity. The work may also provide important information on the extent to which repeated exposures to ozone can produce long-term injury. This, of course, would have useful applications in designing and interpreting epidemiological field studies.

BUDGET SUMMARY

University of California, Davis

"The Role of Ozone Induced Lung Inflammation in Humans Varying Widely in Pulmonary Function Response"

BUDGET ITEMS:

Salaries*	$77,406	
Benefits	17,519	
Supplies	33,550	
Other Costs	2,950	
Travel	2,000	
Equipment**	10,500	
TOTAL, Direct Costs		$143,925
TOTAL, Indirect Costs		13,343
TOTAL PROJECT COST		$157,268

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* Includes payment to volunteer subjects

** Ozone generating and delivery system $1,000
Dasibi ozone monitor 3,500
Busco pulmonary function computer 6,000

State of California
AIR RESOURCES BOARD

Resolution 86-38
April 25, 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 1405-125, entitled "Nitrogen Dioxide Effects on Progression of Mouse Lymphoma/Leukemia, A Blood Cell Malignancy," has been submitted by the University of Southern California;

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 1405-125, entitled "Nitrogen Dioxide Effects on Progression of Mouse Lymphoma/Leukemia, A Blood Cell Malignancy," submitted by the University of Southern California for a total amount not to exceed $112,940.

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 1405-125, entitled "Nitrogen Dioxide Effects on Progression of Mouse Lymphoma/Leukemia, A Blood Cell Malignancy," submitted by the University of Southern California for a total amount not to exceed $112,940.

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 $112,940.

I hereby certify that the above is a true and correct copy of Resolution 86-38, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (12)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1405-125 entitled "Nitrogen Dioxide Effects on Progression of Mouse Lymphoma/Leukemia, A Blood Cell Malignancy."

RECOMMENDATION: Adopt Resolution 86-38 approving Proposal No. 1405-125 for funding in an amount not to exceed $112,940.

SUMMARY:

Recent research by the proponent and others has indicated that two common air pollutants, nitrogen dioxide and ozone, may play a role in the cause or progression of cancer in rodents. There is also new evidence for nitrogen dioxide that the occurence of cancer in exposed animals is linked to the suppression of the immune system, along with accompanying tissue changes. These results suggest a causal role for one of these pollutants, nitrogen dioxide, and cancer.

This proposal is to investigate the role of inhaled nitrogen dioxide in cancer causation. The proposed study would use a lymphoma/leukemia animal model that is much closer to the natural progress of a human cancer than previously used models.

Mice would be exposed to nitrogen dioxide at 0.25 ppm on an intermittent basis for 15 months, during which time groups of animals would be reviewed for study. The proposed study would also continue exploration of the effects of nitrogen dioxide inhalation on specific components of the immune system.

Positive finding from this study would provide substantial evidence linking ambient NO_2 exposure to human cancer. Taken with other evidence it could further substantiate the need to limit exposure to this common air pollutant.

Dr. Arnis Richters is the principal investigator for the project.

State of California
AIR RESOURCES BOARD

Resolution 86-39
April 25, 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 1404-125, entitled "A Demonstration of the Effects of Smog on Ornamental and Home Garden Plants," has been submitted by California Arboretum Foundation, 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 1404-125, entitled "A Demonstration of the Effects of Smog on Ornamental and Home Garden Plants," submitted by California Arboretum Foundation, Inc. for a total amount not to exceed $62,934.

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 1404-125, entitled "A Demonstration of the Effects of Smog on Ornamental and Home Garden Plants," submitted by California Arboretum Foundation, Inc. for a total amount not to exceed $62,934.

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 $62,934.

I hereby certify that the above is a true and correct copy of Resolution 86-39, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (13)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1404-125 entitled "A Demonstration of the Effects of Smog on Ornamental and Home Garden Plants."

RECOMMENDATION: Adopt Resolution 86-39 approving Proposal No. 1404-125 for funding in an amount not to exceed $62,934.

SUMMARY:

The vast majority of Californians are city dwellers whose main contact with vegetation is with ornamental and home garden plants. These plants improve the quality of the urban living environment and enhance the appearance and value of homes, businesses, and public buildings.

The objective of this project is to increase public awareness of the effects of air pollution on plants as well as to document the nature of injury on a wide range of plants through an experimental facility at the Los Angeles State and County Arboretum in Arcadia. The Director of the Arboretum, Mr. Francis Ching, would direct the work.

The facility would consist of a greenhouse divided into two parts. One part would receive ambient air, the other would receive carbon filtered air. The two parts of the greenhouse would contain duplicate plantings of ornamental and home garden plants that have been grown historically in the Los Angeles Basin. Visitors to the Arboretum would be permitted to view experiments in progress.

An information shelter would house materials explaining the display and the role of the individual citizen in improving air quality. ARB staff will work closely with the Arboretum staff in the preparation of explanatory materials. Arboretum staff would assess public response to the display and photograph the plants in the display to provide a pictorial record. The project is planned for three years.

A demonstration of this type would greatly enhance ARB's efforts to documment and to increase public awareness of the effects of air pollution on familiar ornamental species. The Los Angeles State and County Arboretum offers a unique combination of conditions advantageous for this type of project. The Arboretum receives from 3000-6000 visitors each week and is located in an area with some of the highest air pollution levels recorded in California. Arboretum staff are skilled in plant care and the preparation of displays about plants.

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

California Arboretum Foundation, Inc.

"A Demonstration of the Effects of Smog on Ornamental and Home Garden Plants"

BUDGET ITEMS:

Salaries	$9,626	
Benefits	1,093	
Facilities*	51,957	
Other Costs	-0-	
Travel	-0-	
TOTAL, Direct Costs		$62,676
TOTAL, Indirect Costs		258
	TOTAL PROJECT COST	$62,934

* Greenhouse and support systems (including construction and installation) $48,207

Information shelter and display 2,500

Photographic and plant culture supplies and equipment 1,250

State of California
AIR RESOURCES BOARD

Resolution 86-40
April 25, 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 1406-125, entitled "Air Pollutant Effects on Nasal Function," has been submitted by the University of California, San Francisco;

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 1406-125, entitled "Air Pollutant Effects on Nasal Function," submitted by the University of California, San Francisco for a total amount not to exceed $113,784.

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 1406-125, entitled "Air Pollutant Effects on Nasal Function," submitted by the University of California, San Francisco for a total amount not to exceed $113,784.

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 $113,784.

I hereby certify that the above is a true and correct copy of Resolution 86-40, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

ITEM NO.: 86-5-4 (b) (14)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1406-125 entitled "Air Pollutant Effects on Nasal Function."

RECOMMENDATION: Adopt Resolution 86-40 approving Proposal No. 1406-125 for funding in an amount not to exceed $113,784.

SUMMARY: The proposed work, submitted by Homer Boushey, M.D., is a departure from traditional respiratory function studies. The proponents would expose normal and sensitive human subjects to ozone or sulfur dioxide and would subsequently assess upper airway changes. The nasal chamber is very likely to be a sensitive target for the effects of inhaled air pollutants because its function in the protection of the respiratory tract makes it the site of greatest exposure to inhaled air pollutants. Nasal diseases are important childhood and adult illnesses and are known to be aggravated by irritants. However, few studies have been performed on the nasal response to air pollutants.

Upper airway changes will be monitored by direct measurements of nasal resistance, by nasal response to a provoking agent, and by cellular and biochemical changes in the nasal region. Subjects will include normal people, persons with allergic rhinitis, and persons with chronic rhinitis. Because the nasal airway is so accessible, results of this work may be useful not only in the clinical laboratory but may have future applications in epidemological studies on the effects of air pollution.

BUDGET SUMMARY

University of California, San Francisco

"Air Pollutant Effects on

Nasal Function"

BUDGET ITEMS:

Salaries*	$75,121		
Benefits	16,214		
Supplies	4,100		
Other Costs	3,750		
Travel	1,800		
Equipment**	2,700		
TOTAL, Direct Costs			$103,685
TOTAL, Indirect Costs			10,099
		TOTAL PROJECT COST	$113,784

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* Includes payment to volunteer subjects.

** Validyne amplifier $ 700

Graphico Video Display Terminal $2000

State of California
AIR RESOURCES BOARD

Resolution 86-47
April 25, 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 1419-126, entitled "Comparison of Indoor and Outdoor Toxic Air Pollutant Levels in Several Southern California Communities," has been submitted by the Research Triangle Institute;

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, entitled "Comparison of Indoor and Outdoor Toxic Air Pollutant Levels in Several Southern California Communities," submitted by the Research Triangle Institute for a total amount not to exceed $200,000.

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 1419-126, entitled "Comparison of Indoor and Outdoor Toxic Air Pollutant Levels in Several Southern California Communities," submitted by the Research Triangle Institute for a total amount not to exceed $200,000.

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 $200,000.

I hereby certify that the above is a true and correct copy of Resolution 86-47, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ITEM: 86-5-4 (b) (2)
DATE: April 25, 1986

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 1419-126 entitled "Comparison of Indoor and Outdoor Toxic Air Pollutant Levels in Several Southern California Communities."

RECOMMENDATION: Adopt Resolution 86-47 approving Proposal No. 1419-126 for funding in an amount not to exceed $200,000.

SUMMARY:

For the ARB to evaluate fully the risk to human populations posed by toxic air contaminants, the staff must have estimates of human exposures to these substances. A significant portion of the total exposure to some toxic air contaminants may occur indoors, where outdoor-indoor transfer of toxics may contribute significantly to this indoor exposure. The ARB lacks the necessary measurements of indoor levels of toxic air contaminants to estimate human exposures confidently. Moreover, there are no California data available on the contribution of outdoor levels of toxic air contaminants to the levels indoors.

This proposal is for ARB participation in a monitoring project scheduled to continue under overall Environmental Protection Agency sponsorship. That project will be a restudy of one of the areas tested in a recently completed field study called TEAM (Total Exposure Assessment Methodology). The TEAM study was funded by EPA and was designed to measure human exposure to a variety of volatile organic substances that are suspected of being toxic or have been declared toxic. Staff from the ARB have negotiated a cooperative effort with the EPA to extend the TEAM study to include an intensive restudy of an area located in southern California. ARB's participation will provide funds for concurrent indoor/outdoor monitoring of levels of approximately 30 volatile organic compounds at 55 homes during two seasons. The EPA is funding the overall project at approximately $600,000 with a somewhat different set of objectives. Our participation, by contributing $200,000, will ensure that the study will be performed in southern California and that data needed for ARB's Risk Assessment and Risk Management Program are collected.

BUDGET SUMMARY

Research Triangle Institute

"Comparison of Indoor and Outdoor Toxic Air Pollutant Levels in Several Southern California Communities"

BUDGET ITEMS:

Salaries/Benefits	$71,387	
Supplies	16,680	
Other Costs	3,005	
Travel	10,000	
Fixed Fee	15,668	
TOTAL, Direct Costs		$116,740
TOTAL, Indirect Costs		83,260
TOTAL PROJECT COST		$200,000