

State of California
AIR RESOURCES BOARD

RESEARCH PROPOSAL

Resolution 05-23

March 17, 2005

Agenda Item No.: 05-3-2

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

WHEREAS, a research proposal, number 2579-247, entitled "Development and Demonstration of an Aerosol Tracer Technique Based on Neutron Activation Analysis for Studying Cyclical Deposition and Resuspension of Aerosol-Associated Toxic Contaminants", has been submitted by the University of California, Los Angeles; 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 2579-247 entitled "Development and Demonstration of an Aerosol Tracer Technique Based on Neutron Activation Analysis for Studying Cyclical Deposition and Resuspension of Aerosol-Associated Toxic Contaminants", submitted by the University of California, Los Angeles, for a total amount not to exceed \$87,704.

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 2579-247 entitled "Development and Demonstration of an Aerosol Tracer Technique Based on Neutron Activation Analysis for Studying Cyclical Deposition and Resuspension of Aerosol-Associated Toxic Contaminants", submitted by the University of California, Los Angeles, for a total amount not to exceed \$87,704.

BE IT FURTHER RESOLVED, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein, and as described in Attachment A, in an amount not to exceed \$87,704.

I hereby certify that the above is a true and correct copy of Resolution 05-23, as adopted by the Air Resources Board.

Lori Andreoni, Clerk of the Board

ATTACHMENT A

“Development and Demonstration of an Aerosol Tracer Technique Based on Neutron Activation Analysis for Studying Cyclical Deposition and Resuspension of Aerosol-Associated Toxic Contaminants”

Background

Little is known about the transport processes that move particles emitted as fugitive material from roads, industrial facilities, etc., but it is suspected that cyclic resuspension and transport can spread pollutants across the urban landscape. Field measurements are needed to understand how cyclic resuspension occurs, the effects of particle size on transport, and the effects of various surfaces on rates of capture and re-emission of fugitive particles.

Objective

The objective of this research is to test tracer-based field methods to quantify large particle transport by cyclic suspension, deposition, and resuspension.

Methods

The proposed research design is to chemically label particles of known size, shape, and density, place them on test surfaces exposed to the ambient environment, and periodically sample the test surfaces to determine how fast the particles migrate from where they were placed.

Expected Results

Once successfully demonstrated, this technique will permit unbiased comparison of surface migration of particles across a wide spectrum of source types, even those whose emissions are chemically indistinct from that of other local sources, such as industrial sites, land fills, and other fugitive particle sources, without the necessity of direct chemical tracing of the emitted material.

Significance to the Board

This method will permit much better estimation of the downwind migration and consequent health risk of fugitive particle pollution.

Contractor:

University of California, Los Angeles

Contract Period:

24 months

Principal Investigators (PIs):

Professor Keith Stolzenbach, Ph.D.

Professor Arthur Winer, Ph.D.

Contract Amount:

\$87,704

Basis for Indirect Cost Rate:

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

Past Experience with this Principal Investigator:

ARB has had extensive experience working with Professor Winer, who has successfully completed research under several previous agreements. Professor Stolzenbach is new to working with ARB, but he has experience in particle deposition and has used "tagged" particle methods in studying particles in water. We believe his experience dove-tails nicely with Professor Winer's in approaching this project.

Prior Research Division Funding to the University of California, Los Angeles:

Year	2004	2003	2002
Funding	\$1,152,374	\$0	\$0

BUDGET SUMMARY

University of California, Los Angeles

"Development and Demonstration of an Aerosol Tracer Technique Based on Neutron Activation Analysis for Studying Cyclical Deposition and Resuspension of Aerosol-Associated Toxic Contaminants"

DIRECT COSTS AND BENEFITS

1.	Labor and Employee Fringe Benefits	\$	56,882
2.	Subcontractors	\$	0
3.	Equipment	\$	0
4.	Travel and Subsistence	\$	1,050
5.	Electronic Data Processing	\$	0
6.	Reproduction/Publication	\$	800
7.	Mail and Phone	\$	4,800
8.	Supplies	\$	6,000
9.	Analyses	\$	3,000
10.	Miscellaneous	\$	<u>0</u>

Total Direct Costs \$72,532

INDIRECT COSTS

1.	Overhead	\$	7,253
2.	General and Administrative Expenses	\$	0
3.	Other Indirect Costs (Fee Remission)	\$	7,919
4.	Fee or Profit	\$	<u>0</u>

Total Indirect Costs \$15,172

TOTAL PROJECT COSTS **\$87,704**