

State of California
AIR RESOURCES BOARD

Resolution 02-13

March 21, 2002

Agenda Item No.: 02-2-2

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 2516-224, entitled "Research into the Development of Biological Methods of Dust Suppression in the Antelope Valley," has been submitted by San Diego State 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 2516-224 entitled "Research into the Development of Biological Methods of Dust Suppression in the Antelope Valley," submitted by San Diego State University, for a total amount not to exceed \$89,830.

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 2516-224 entitled "Research into the Development of Biological Methods of Dust Suppression in the Antelope Valley," submitted by San Diego State University, for a total amount not to exceed \$89,830.

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 \$89,830.

I hereby certify that the above is a true and correct copy of Resolution 02-13, as adopted by the Air Resources Board.

Marie Kavan, Clerk of the Board

ATTACHMENT A

“Research into the Development of Biological Methods of Dust Suppression in the Antelope Valley”

Background

Due to their lack of vegetation, the deserts of the southwest experience frequent dust problems that often induce air quality problems in local and surrounding areas. One area with just such a problem is Antelope Valley, the westernmost arm of the Mojave Desert. Dust particles continue to become airborne there because of abandoned and fallow agricultural fields and other disturbances of the desert soil.

One method to curtail the problem of airborne dust is to reintroduce native plant life to the area. Vegetation helps to reduce airborne dust in two ways. First, the very shape of the native plants slows the wind, thus allowing airborne dust to settle at the base of the plant. Secondly, the roots of the plants essentially grab the dirt around it, helping to hold potentially airborne dust in place.

Direct seeding of native species, the current method of restoration of plant life, has proven to be inadequate in arid and semi-arid ecosystems. This failure of direct seeding in arid and semi-arid environments can be attributed to the fact that the necessary requirements of precipitation, humidity, temperature, and soil conditions occur only rarely and at very irregular intervals. Since current methods have proven ineffective, there is a need to develop more effective methods of reintroducing native plants.

Objective

The primary objective of this project is to develop cost efficient methods for controlling airborne dust, particularly PM10 and smaller sized particles, from disturbed desert soils.

Methods

The contractor will conduct research at two agricultural sites (one where soil has been fallow for several (3-5) years since being disturbed and another that has been abandoned for many (15-20) years since disturbed). The contractor will evaluate, over a 3-year period, three types of irrigation and three types of soil amendments to determine the most effective method of reintroducing native plants for reducing the amount of windblown dust.

Expected Results

The contractor will determine the most cost efficient method of reintroducing native plant growth to disturbed desert soils.

Significance to the Board

The development of cost efficient methods to control airborne dust, particularly PM10 and smaller particles, will not only limit the loss of valuable soil, but will also remove a serious health hazard for the residents of Antelope Valley.

Contractor:

San Diego State University

Contract Period:

48 months

Principal Investigator (PI):

Dr. Thomas A. Zink

Contract Amount:

\$89,830

Cofunding:

None for this project.

Basis for Indirect Cost Rate:

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

Past Experience with this Principal Investigator:

ARB has not previously contracted with Dr. Zink, however he has been a member of the Dustbusters Cooperative for several years (using funding from a different source). Working with him in this setting we have observed Dr. Zink to be energetic, resourceful, and dedicated to the success of the Dustbusters program. We expect his diligent and efficient performance to continue under this contract.

Prior Research Division Funding to San Diego State University

Year	2001	2000	1999
Funding	\$0	\$0	\$284,080

BUDGET SUMMARY

San Diego State University

Research into the Development of Biological Methods of Dust Suppression in the
Antelope Valley

DIRECT COSTS AND BENEFITS

1.	Labor and Employee Fringe Benefits	\$	56,812
2.	Subcontractors	\$	-0-
3.	Equipment	\$	-0-
4.	Travel and Subsistence	\$	6,429
5.	Electronic Data Processing	\$	-0-
6.	Reproduction/Publication	\$	550
7.	Mail and Phone	\$	270
8.	Supplies	\$	15,503 ¹
9.	Analyses	\$	2,100
10.	Miscellaneous	\$	-0-
	Total Direct Costs	\$	<u>81,664</u>

INDIRECT COSTS

1.	Overhead	\$	8,166
2.	General and Administrative Expenses	\$	-0-
3.	Other Indirect Costs	\$	-0-
4.	Fee or Profit	\$	<u>-0-</u>
	Total Indirect Costs	\$	8,166

TOTAL PROJECT COSTS

\$89,830

(notes)

¹ The materials and supplies for this project consist of native seeds and plants (\$7150), plant protectors (\$3390), irrigation materials (\$2597), tractor rental (\$1500), and soil amendments (\$866).