

State of California
AIR RESOURCES BOARD

Resolution 02-22

May 16, 2002

Agenda Item No.: 02-4-2

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 2518-225, entitled "Alternatives to Automotive Consumer Products that use Volatile Organic Compounds (VOC) and/or Chlorinated Organic Compound Solvents", has been submitted by the Institute for Research and Technical Assistance, in response to RFP No. 01-317;

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 2518-225 entitled "Alternatives to Automotive Consumer Products that use Volatile Organic Compounds (VOC) and/or Chlorinated Organic Compound Solvents", submitted by the Institute for Research and Technical Assistance, for a total amount not to exceed \$189,966.

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 2518-225 entitled "Alternatives to Automotive Consumer Products that use Volatile Organic Compounds (VOC) and/or Chlorinated Organic Compound Solvents", submitted by the Institute for Research and Technical Assistance, for a total amount not to exceed \$189,966.

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 \$189,966.

I hereby certify that the above is a true and correct copy of Resolution 02-22, as adopted by the Air Resources Board.

Stacey Dorais, Clerk of the Board

ATTACHMENT A

“Alternatives to Automotive Consumer Products that use Volatile Organic Compounds (VOC) and/or Chlorinated Organic Compound Solvents ”

Background

About 4.5 million aerosol spray cans and spray bottles of automotive cleaning and degreasing products are currently sold annually in California. Virtually all of these products are based on VOC and chlorinated solvents. Emissions from automotive cleaning operations amount to more than 21 tons per day. The Air Resources Board (ARB) has adopted a ban on the use of chlorinated automotive products. This ban becomes effective after December 31, 2002. Although the ARB has also established VOC limits for automotive cleaning products, emissions are still very high. This research describes a detailed plan of work for developing effective and cost-effective water-based, near zero VOC, low-toxicity aerosol automotive cleaners. If these cleaners are developed, the ARB could consider reducing the VOC content and emissions of VOC solvents from these products substantially.

Objective

The major objective of this project is to identify, test, and demonstrate low-VOC, low toxicity, water-based aerosol automotive cleaners that are capable of replacing traditional VOC and chlorinated-solvent aerosol cleaners that are in use today. The development and demonstration of low-VOC water-based aerosol automotive cleaners would allow the ARB to regulate further these product categories.

Methods

The contractor proposes first to assess the availability of existing water-based aerosol products for brake cleaning, carburetor and fuel injection system cleaning, engine degreasing and general purpose degreasing. As part of the assessment the contractor will survey the technical literature, manufacturers of automotive products, and automotive supply stores and users to identify existing near-zero VOC water-based aerosol automotive products. The contractor will summarize the types and the amounts of active ingredients and propellants in any water-based products found to be available. The contractor will then prepare a plan in which these products will be tested on actual automotive parts so that their potential to replace current cleaning products can be evaluated.

The contractor will conduct a test program in which at least 25 non-aerosol water-based cleaners will be tested to determine if they are effective alternatives to solvent-based cleaners. The test program will consist of two phases. During the first phase of the testing the prospective alternatives will be tested on various different types of auto parts to assess their effectiveness and to determine the optimum concentrations. The testing will be conducted on discarded automotive parts at a test center specializing in testing water-based cleaners. The cleaners first will be tested in spray bottles to simulate the delivery method of aerosols. Then, the best performing water-based cleaners will be packaged in aerosol form and tested again. If it appears that water-based cleaners

have little promise for a particular application, the contractor will investigate the feasibility of vegetable oil cleaners. The second phase of the test program will include field testing at auto repair centers of the most promising low-VOC water-based and vegetable-based products identified during the phase 1 testing. At least five products in each of the four cleaning categories will be tested during the field testing. Both the current cleaners and the low-VOC alternative cleaners will be tested so that the relative performance of the alternatives can be established. If any shortcomings or deficiencies in the alternatives are identified during this testing, the contractor will attempt to address these through product modification (e.g., changes in concentration or delivery).

Expected Results

It is expected that this study will provide a comprehensive assessment on the potential for current automotive cleaning products to be replaced with low-VOC water-based or vegetable oil based cleaners.

Significance to the Board

The results should provide the ARB staff with information needed to consider the feasibility of further regulations for automotive parts cleaners, and to assess the potential emissions reductions from such regulations.

Contractor:

Institute for Research and Technical Assistance (IRTA)

Contract Period:

18 months

Principal Investigator (PI):

Dr. Katy Wolf

Contract Amount:

\$189,966

Cofunding:

None

Basis for Indirect Cost Rate:

There are no indirect costs in this contract.

Past Experience with this Principal Investigator:

Dr. Katy Wolf has recently completed, for the ARB's Stationary Source Division, a study entitled "Investigation of Technologies to Reduce Emissions of Methylene Chloride from Furniture Stripping Operations." During this study the staff found Dr. Wolf to be a highly competent researcher. All tasks included in the proposal were completed on time and on budget. Furthermore, the ARB staff always has had an excellent working relationship with Dr. Wolf, and has always found her to be receptive and responsive to the staff's comments and input.

Prior Research Division Funding to Institute for Research and Technical Assistance:

Year	2001	2000	1999
Funding	\$0	\$0	\$0

BUDGET SUMMARY

Institute for Research and Technical Assistance (IRTA)

Alternatives to Automotive Consumer Products that use Volatile Organic Compounds
(VOC) and/or Chlorinated Organic Compound Solvents

DIRECT COSTS AND BENEFITS

1.	Labor and Employee Fringe Benefits	\$ 183,750
2.	Subcontractors	\$ 0
3.	Equipment	\$ 4,216
4.	Travel and Subsistence	\$ 0
5.	Electronic Data Processing	\$ 0
6.	Reproduction/Publication	\$ 1,000
7.	Mail and Phone	\$ 500
8.	Supplies	\$ 500
9.	Analyses	\$ 0
10.	Miscellaneous	<u>\$ 0</u>
	Total Direct Costs	<u>\$ 189,966</u>

INDIRECT COSTS

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

TOTAL PROJECT COSTS **\$189,966**
