State of California
AIR RESOURCES BOARD

Resolution 80-64

November 21, 1980

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 948-79 entitled "Alternatives to the Open Burning of Wood Waste from Trees, Vines and Bushes, and Waste from Fruit and Nut Crops and Field Crops Other than Rice" has been submitted by the Battelle Pacific Northwest Laboratories to the Air Resources Board; and

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 948-79 entitled "Alternatives to the Open Burning of Wood Waste from Trees, Vines and Bushes, and Waste from Fruit and Nut Crops and Field Crops Other than Rice" submitted by the Battelle Pacific Northwest Laboratories for an amount not to exceed $94,000;

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 948-79 entitled "Alternatives to the Open Burning of Wood Waste from Trees, Vines and Bushes, and Waste from Fruit and Nut Crops and Field Crops Other than Rice" submitted by the Battelle Pacific Northwest Laboratories for an amount not to exceed $94,000.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed $94,000.

I certify that the above is a true and correct copy of Resolution 80-64 as passed by the Air Resources Board.

Sally Rump

Sally Rump
BOARD SECRETARY

State of California
AIR RESOURCES BOARD

ITEM NO: 80-24-3b1
DATE: November ~~13,~~ 21 1980

ITEM: Research Proposal No. 948-79 entitled "Alternatives to the Open Burning of Wood Waste from Trees, Vines and Bushes, and Waste from Fruit and Nut Crops and Field Crops Other than Rice."

RECOMMENDATION: Adopt Resolution 80-64 approving Research Proposal No. 948-79 for funding in an amount not to exceed $94,000.

SUMMARY: The objective of this project is to identify viable alternatives to the open burning of wood waste and the wastes from fruit and nut crops and field crops other than rice. Technologically and economically feasible alternatives, including methods of implementation, are to be identified and fully evaluated.

Four proposals were submitted in response to the Request for Proposals for this study. The proposal submitted by Battelle Pacific Northwest Laboratories was recommended for funding by the staff and by the Research Screening Committee.

Battelle proposed to address each task in the Request for Proposals. The alternatives to be evaluated include production of fiberboard, pulp and paper, hydromulch, energy and fuels, chemicals, compost and controlled burning. The assessment will include an analysis of environmental, public policy, technical and economic factors which will affect the overall feasibility of the alternatives. Technical details to be documented include the basic characteristics of the wastes, mass and energy balances, and engineering flow sheets. Various criteria weightings will be applied to rank the alternatives, with consideration given to both short-term and long-term feasibility.

State of California

Memorandum

To : Mary Nichols, Chairwoman
California Air Resources Board

Date : November 19, 1980

Subject: Mail Ballot

From : **Air Resources Board**

John R. Holmes, Ph.D.
Chief, Research Division

At its October 29, 1980 meeting, the Research Screening Committee recommended three proposals for funding. These were:

1. "Alternatives to the Open Burning of Wood Waste from Trees, Vines, and Bushes, and Waste from Fruit and Nut Crops and Field Crops Other than Rice" by Battelle Pacific Northwest Laboratories, $94,000.

2. Scope Expansion of Contract A8-127-31, "Emission Characteristics of Primary Oil Production Operations in California" by KVB, $75,000.

3. "Correlative and Sensitive Discriminants for Air Quality Control (Combination of O_3/NO_2)" by Professional Staff Association of Los Angeles County/University of Southern California, $125,602.

Because of the extreme time constraints during the November hearings on Rule 1135.1, we were unable to present these proposals to the Board for your consideration. With the holiday season coming up, it is extremely important to us and to at least one of the proponents to begin immediately to move these contracts through the appropriate State agencies for their approval. Accordingly, I would appreciate very much your reviewing the attached summaries and associated resolutions as soon as possible. We have attached a mail ballot for your use in indicating your approval or disapproval of these proposed research projects. We will need to confirm the results of the mail ballot at the next public meeting of the Board.

If you have questions regarding any of these projects or require further information, please feel free to call me. Thank you very much for your assistance in this matter.

Attachments

AIR RESOURCES BOARD BALLOT

1. "Alternatives to the Open Burning of Wood Waste from Trees, Vines, and Bushes, and Waste from Fruit and Nut Crops and Field Crops Other than Rice"

☐ Approved ☐ Disapproved

2. Scope Expansion of Contract A8-127-31, "Emission Characteristics of Primary Oil Production Operations in California"

☐ Approved ☐ Disapproved

3. "Correlative and Sensitive Discriminants for Air Quality Control (Combination of O_3/NO_2)"

☐ Approved ☐ Disapproved

Signature

Date

State of California
AIR RESOURCES BOARD

Resolution 80-65

November 21, 1980

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, an unsolicited research Proposal Number 821-69(a) entitled Scope Expansion of Contract A8-127-31 "Emission Characteristics of Primary Oil Production Operations in California" has been submitted by KVB, Inc., to the Air Resources Board; and

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 821-69(a) entitled Scope Expansion of Contract A8-127-31 "Emission Characteristics of Primary Oil Production Operations in California" submitted by KVB, Inc., for an amount not to exceed $75,000;

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 821-69(a) entitled Scope Expansion of Contract A8-128-31 "Emission Characteristics of Primary Oil Production Operations in California" submitted by KVB, Inc., for an amount not to exceed $75,000.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed $75,000.

I certify that the above is a true and correct copy of Resolution 80-65 as passed by the Air Resources Board.

Sally Rump

Sally Rump
BOARD SECRETARY

State of California
AIR RESOURCES BOARD

ITEM NO: 80-24-3b2
DATE: November 21, 1980

ITEM: Research Proposal No. 821-69(a) entitled Scope Expansion of Contract A8-127-31 "Emission Characteristics of Primary Oil Production Operations in California."

RECOMMENDATION: Adopt Resolution 80-65 approving Research Proposal No. 821-69(a) for funding in an amount not to exceed $75,000.

SUMMARY: The objectives of this study were: to analyze the character and rates of emissions associated with primary crude oil production operations in California, both on and offshore; to compile, from literature and/or by source testing where necessary, emission factors for the various operations, facilities and equipment; to quantify the emissions from the major primary crude oil production areas in California; and to assess the feasibility and cost of emission control measures.

At this time, about 85 percent of the work required to accomplish the original objectives has been completed and a corresponding amount of the original budget of $250,000 has been expended. The accomplishments include: completion of surveys and equipment counts for representative oil fields and offshore platforms; collection and review of available emission factor data; performance of limited source testing, with emphasis on internal combustion engines and heater treaters; classification of oil fields using field and well characteristics; assembly of a complete count of wells by oil field and county; and development of a computer program to process all of the above data.

This proposal would expand the scope of the original program to include features which would greatly improve the value of the study. The first feature provides for an expanded grouping of oil wells by leasehold. This grouping has a greater influence on the emissions associated with oil production than the geological and formation properties considered in the original proposal because each leaseholder has separate tanks and facilities to process and store the crude oil. If vapor recovery is employed, it is utilized on a leasehold basis, rather than an individual well basis.

A second feature provides for an improved software package which will provide capability to access the DOG data, assemble the individual wells and related information into leases, assign each lease to an appropriate emission model, and calculate the emissions associated with each lease. The emissions information will then be assembled and reported on a field, county, air basin and statewide basis as originally proposed. The modified system would improve the accuracy of the emissions inventory and provide the ARB staff with a capability for update and future projection of the inventory.

The third feature includes tertiary oil production emissions (from oil handling and processing) in the study. These teritary operations include about 3900 wells which are not included in the present Scope of Work.

State of California
AIR RESOURCES BOARD

Resolution 80-66

November 21, 1980

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, an unsolicited research Proposal Number 954-79 entitled "Correlative and Sensitive Discriminants for Air Quality Control" has been submitted by the Professional Staff Association of Los Angeles County/USC to the Air Resources Board; and

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 954-79 entitled "Correlative and Sensitive Discriminants for Air Quality Control" submitted by the Professional Staff Association of Los Angeles County/USC for an amount not to exceed $125,602.

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 954-79 entitled "Correlative and Sensitive Discriminants for Air Quality Control" submitted by the Professional Staff Association of Los Angeles County/USC for an amount not to exceed $125,602.

BE IT FURTHER RESOLVED, that the Executive Officer shall initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed in an amount not to exceed $125,602.

I certify that the above is a true and correct copy of Resolution 80-66 as passed by the Air Resources Board.

Sally Rump

Sally Rump
BOARD SECRETARY

State of California
AIR RESOURCES BOARD

ITEM NO: 80-24-3b3
DATE: November ~~13~~ 21, 1980

ITEM: Research Proposal No. 954-79 entitled "Correlative and Sensitive Discriminants for Air Quality Control", Professional Staff Association, L.A. County/USC Medical Center, Russell Sherwin.

RECOMMENDATION: Adopt Resolution 80-66 approving Research Proposal No. 954-79 for funding for an amount not to exceed $125,602.

SUMMARY: The proposed study is an extension of work done under ARB sponsorship, employing low levels of NO_2. The extension is to use ozone (O_3) and nitrogen dioxide (NO_2) mixtures, which should lead to health assessments under conditions more nearly similating real atmospheric conditions. Completed efforts consist of the development and application of methods developed for the study of cellular and biochemical indicators of nitrogen dioxide damage at near ambient or ambient concentrations. These methods have been employed in completed and ongoing studies to determine the rates of Type I to Type II pneumocyte conversions and studies of whether such changes are reversible. The importance of such studies lies in the function of the cells under study. The most common cell of the alveolar wall, in terms of area covered, is the Type I cell. It is a very thin cell whose role is the efficient exchange of gases between the atmosphere in the lung and the blood. The Type II cell is noted for its thickness and apparent role in lung defenses, including production of secretions. It appears from completed studies that some Type I cells are converted to Type II cells, even at very low concentrations of NO_2 (0.25 ppm). Such cellular changes are thought to be the early steps in several disease states, including emphysema.

Ongoing and completed studies into sensitive measures of rates of protein leakage into alveolar spaces also indicate increased leakage after exposures to NO_2 at near ambient concentrations. These measurements as well as image analysis of cells would be employed in tests using ozone as well as ozone with NO_2. Leakage into the alveolar spaces has also been observed on a gross level (edema) following acute exposures to certain other air pollutants. The final study areas to be continued and expanded upon with the ozone and combined ozone-NO_2 mixtures would be a study of the subcellular structures known as mitochondria and lamellar bodies.