



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

AIR AND RADIATION DIVISION  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

DATE: AUG 20 1993

SUBJECT: Southeast Michigan Ozone Study UAM Workplan

FROM: Sheila Breen *Sheila Breen*  
Air Toxics and Radiation Branch (AT-18J)  
Regulation Development Section

TO: Ellen Baldrige  
OAQPS, Technical Support Division (MD-14)

Attached you will find a copy of the Southeast Michigan (Detroit-Ann Arbor) Ozone Study UAM Workplan, compiled by the Modeling Contractor, ENVAIR. I am requesting your assistance in reviewing and commenting on this document so that we can assure consistency with other ongoing UAM projects. Michigan is requesting that the USEPA review this Workplan expeditiously, since the State wants the contractor to move forward as soon as possible to ensure meeting the November 15, 1994, modeling results submittal deadline.

If you have any questions, please feel free to contact me at (312) 886-6053 or Becky Calby at (312) 886-6065. Thank you for all of your assistance.

## STATE OF MICHIGAN



JOHN ENGLER, Governor

## DEPARTMENT OF NATURAL RESOURCES

Stevens T. Mason Building, P.O. Box 30028, Lansing, MI 48908

ROBERT J. HAMMILL, Director

August 31, 1993

**DRAFT**

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Dr. Steve Reynolds  
Envair  
12 Palm Avenue  
San Rafael, CA 94901

Dear Dr. Reynolds:

Thank you for Envair's thorough job in completing the draft *Southeast Michigan Ozone Study: Work Plan for Photochemical Modeling* dated August 12. The SEMOS Modeling Committee looked it over on its August 25, 1993 meeting and is pleased with its content. SEMOS members have made comments and asked questions about certain points, and I would like to summarize them for you.

Page	Subject	Comment
1-3	general	Will Roth and Tesche be available to evaluate base case performance and other kinds of help, e.g. tweaking the model?
1-3	Task 2	Will a 1993 historical UAM base case be created (perhaps as a Task 5B)?
2-1	¶1	Given these comments, do you think a final work plan will be necessary, or will an addendum letter be sufficient?
2-1	¶2	Consumers Power is currently working on cloud cover data. What type of cloud cover? Opaque only?
2-2	¶1	Radian may already have land use data.
2-3	last ¶	Mixing heights over the lakes and shoreline can be based on water surface temperature. Does Envair have a first, second, and third preference? Why those three?
2-5	¶1	Please let us know what you would like from us for the CSUMM-FDDA requirements.
2-6	top	Please clarify "alternative procedures" in regards to CSUMM wind mapping.
2-7	¶2	Radian has already collected this data for us.
2-8	Last ¶	We will use the 1993 Field Study data for speciation.
2-9	¶1	How are the 1993 data going to be used to make changes in 1988 boundary conditions? EPA would like a rationale. SEMOS feels it is needed since there is no 1988 field data and ROM performance is limited. EPA suggests running UAM with ROM inputs, then altering with the 1993 data.

# DRAFT

Dr. Steve Reynolds

August 31, 1993

Page	Subject	Comment
2-10	¶3	Radian or DNR can prepare the EMISSIONS and PTSOURCE files. They can request for Envair to do it if needed.
2-11	"Performance Measures"	Will MAPS be included in our software package?
2-11 to 2-13	equations	Shouldn't the equations read the reverse, i.e. $c_a - c_e$ (observed minus estimated), as per EPA guidance Appendix C (even though positive numbers in the numerators make sense when $c_e > c_a$ )? *
2-14	"Preliminary Assessment of Performance"	Is this a flagging procedure? Values of $\pm 20\%$ are not final (EPA guidance is $\pm 30\%$ ). What happens when, despite major tweaking, the model just cannot predict acceptable levels? If we cannot get good performance for one day, can that one day be omitted? ?
2-15	"Sensitivity Runs"	First bullet--Set all anthropogenic emissions to zero?! Please explain.
before 2-17	Exhibit 2-6	From a control strategy point of view, if the ozone ( $O_3$ ) levels are $< 0.120$ ppm isn't our work done (second box from top left)? In that case, 15% reductions would be implemented. If $O_3$ exceeds 0.12 ppm at that point, then you proceed to the box labeled "1996 Base Case with Substantial $NO_x$ reductions." Even if $O_3$ does not exceed, the committee can still opt to proceed to the latter box. (DNR will update Exhibit 2-6 and include a date.)
2-18	¶2	Since $O_3$ levels of 0.121 ppm technically violate the standard, we must be careful with significant digits. References to 120 pph should read 0.12 ppm. Also, the first sentence should end "... standard of 0.12 ppm is not exceeded at any U.S. location or time." EPA has no jurisdiction in a foreign country.
2-21	¶1	SEMCOG may purchase more than one workstation. References to "a workstation" should read "workstations." <i>Safep Dr. multiple?</i>
2-22	bullets	What are the memory requirements for EPS? Make sure to specify the latest version of MOBILE5. What is ABLM?
2-23	¶2	Site licenses for DNR will be additional, not initial.
2-23	"Modeling Data Bases"	Possibly add a bullet for the 1996 base case with 15% VOC reductions?
before 2-25	Exhibit 2.9, Day 2, Item 7	More GEMAP training is preferable rather than spending too much time on EPS, unless the comparison of the two will be a valuable tool.

**FY-93 MODEL CLEARINGHOUSE MEMORANDA**

<u>Date</u>	<u>Region</u>	<u>Subject</u>
10/7/92	IV	Response to Proposal to Allow Credit for a Stack Height Increase at the Dade County Resource Recovery Facility, Dade County, Florida
10/28/92	V	Demonstrating Attainment of the Ozone National Ambient Air Quality Standards (NAAQS) with the Urban Airshed Model (UAM) for Detroit
10/28/92	VII	Demonstrating Attainment of the Ozone National Ambient Air Quality Standards (NAAQS) with the Urban Airshed Model (UAM) for St. Louis
10/28/92	IV	Attainment Demonstrations using the Empirical Kinetics Modeling Approach (EKMA)
11/5/92	I	Proposal to Use ISCRDT to Model Intermediate Terrain (Boise Cascade, Rumford, Maine)
11/12/92	VIII	Denver PM-10 State Implementation Plan (SIP) Modeling Issues
12/11/92	V	Proposal for Resolving Part D Sulfur Dioxide State Implementation Plan Revision for Rhinelander, Wisconsin
12/15/92	IV	The Ozone Attainment Test in the State Implementation Plan (SIP) Modeling Demonstrations
2/22/93	VIII	Carbon Monoxide State Implementation Plan Attainment Demonstrations
2/23/93	II	AES Guayama, Puerto Rico Proposal to Use the Rough Terrain Dispersion Model with Off-Site Meteorological Data

FY-93 MODEL CLEARINGHOUSE MEMORANDA (Cont'd)

<u>Date</u>	<u>Region</u>	<u>Subject</u>
3/2/93	VIII	E. Helena Lead SIP Attainment Demonstration
4/6/93	V	Nonmethane Organic Compounds (NMOC) and Nitrogen Oxides (NOx) Monitoring Required for the Empirical Kinetics Modeling Approach (EKMA) for Nonattainment Areas in Ohio
5/19/93	VI	Technical Comparison Document-- Phelps Dodge Smelter
6/9/93	VII	Wind Field Development for the Urban Airshed Model (UAM)
6/18/93	V	Draft Protocol for Modeling a Sewage Sludge Incinerator
7/9/93	II	Proposal for Calculating Plume Rise for Stacks with Horizontal Releases or Rain Caps for Cookson Pigment, Newark, New Jersey
7/1/93	VII	Stack-Structure Relationships-- Further clarification of our memoranda dated May 11, 1988 and June 28, 1989
7/22/93	IV	Draft Protocol for the Urban Airshed Model V (UAM-V)
9/22/93	V	Detroit Modeling Protocol, Model Clearinghouse Review Comments