

**Assistance Agreement Quarterly Report
for the period of July 1, 2003 to September 30, 2003**

October 2, 2003

Fresno, California, Particulate Matter (PM) Supersite Monitoring Program
EPA Assistance Agreement No. R-82805701-01

WORK PROGRESS AND STATUS

Third quarter 2003 activities are summarized based on applicable tasks stated in the Fresno Supersite QAPP.

Task 1 – Equipment Procurement and Installation.

- The Sunset Laboratory Inc., semi-continuous OCEC analyzer received final hardware and software repairs and began acquiring valid samples on August 4th, 2003.
- A Rupprecht & Patashnik Co., Inc, Series 5400 Ambient Particulate Carbon Monitor, procured from the California Air Resources Board/University of California, Berkley, Fresno Asthmatic Children's Environment Study, was installed by Scott Scheller, site operator, on August 28th, 2003.
- A Carusso Multi-Angle Absorption Photometer was installed by Kevin Goohs of Thermo ESM Anderson and began collecting data on August 26th, 2003. This instrument conducts a continuous measurement of the atmospheric black carbon loading.
- A SPM-612D Dichotomous Monitor, manufactured by Kimoto Electric Co., Ltd., is to be installed at the Fresno site during the last week of October, 2003. The analyzer utilizes the Beta Gauge method to continuously measure fine and coarse particles as well as the ambient black carbon concentration.

Task 2 – Network Operations and Data Processing.

- Network operations and data processing have continued through this calendar quarter.
- The new DAS computer is currently being set up for deployment. This computer will replace the existing Data Acquisition PC and provide additional data access support.

Task 3 – Laboratory Measurements.

- PM_{2.5} mass and chemistry analyses of filter samples from FRM and chemical speciation samplers, collected every sixth day through 3/31/03, have been completed. Samples dated through 6/30/03 have been analyzed and validated for

mass only. Chemical speciation and data validation is in progress and expected to be completed by 12/31/03.

Task 4 – Quality Assurance.

- Continued to finalize standard operating procedures for the data analysis methods of the field measurements.

Task 5 – Data Validation and Data Analysis.

- Level 1a and 1b data validation is in process for continuous gas, particle mass and chemistry, light scattering, light absorption, particle size, and meteorological measurements through 9/30/03. Data validation criteria for the continuous instruments are being finalized. A majority of the continuous data, collected through 8/31/03, has been submitted to the California Air Resources Board's CCAQS FTP site. This task should be completed during the fourth quarter of 2003. Level II validation on this data set will then resume. Submission of Supersite data to the NARSTO database is also underway and should also be completed during the fourth quarter of 2003 for data collected through September 2003.

Task 6 – Management and Reporting.

- Drs. John Watson and Judith Chow visited the Fresno Supersite on July 29, 2003.

EXPENDITURES

Budget expenditures to date are on target, and no revisions to the approved budget are expected to be necessary at this time.

QUALITY ASSURANCE

Standard operating procedures continue to be updated for the data analysis procedures.

RESULTS

There are no results to report for this period.

PLANNED ACTIVITIES FOR THE FORTHCOMING QUARTER:

During the fourth quarter of 2003, the principal investigators plan to: 1) assist in coordination of 2003/2004 Winter Carbon Intercomparison Study, 2) finalize procedures for the data handling protocols for the Fresno Asthmatic Children's Environment Study (the concurrent health study

conducted by the University of California, Berkeley and California Air Resources Board), 3) finalize data validation criteria and database structure, and 4) finish and install the computer upgrade for the Data Acquisition System.

PUBLICATIONS, PRESENTATIONS, AND REPORTS:

Two manuscripts were submitted during this quarter:

- Chen, L-W.A., J.C. Chow, and W.P. Arnott (2003). Modeling Reflectance and Transmittance of Quartz-Fiber Filter Samples Containing Elemental Carbon Particles: Implications for Thermal/Optical Analysis. *Journal of Aerosol Science*, submitted.
- Chow, J.C., J.G. Watson, L-W.A. Chen, W.P. Arnott, H. Moosmüller, and K. Fung (2003). Equivalence of Elemental Carbon by the IMPROVE and STN Thermal/Optical Carbon Analysis Methods. *Environmental Science and Technology*, submitted.

One presentation was given during this quarter:

- Chow, J.C. and J.G. Watson (2003). Differences Among Thermal/Optical Analysis Methods for Organic and Elemental Carbon in Ambient Aerosols. Presented at the 2003 European Aerosol Conference, Madrid, Spain, 1 September 2003.

No reports were prepared this quarter.

QUARTERLY REPORT SUMMARY:

See attached.