

**Assistance Agreement Quarterly Report  
for the period of July 1, 2002, to September 30, 2002**

October 1, 2002

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

**WORK PROGRESS AND STATUS**

Third quarter 2002 activities are summarized based on applicable tasks stated in the Fresno Supersite QAPP.

Task 1 – Equipment Procurement and Installation.

- A TSI Scanning Mobility Particle Sizer (SMPS), model 3936N25, which includes a Condensation Particle Counter (CPC), model 3025A-S, and a nano particle size Differential Mobility Analyzer (DMA), model 3080N, was installed by Mark Stolzenburg, Aerosol Dynamics, Inc., during the week of August 19-26, 2002. This unit was placed alongside the currently operating SMPS, model 3936L10, and began acquiring particles between 3 and 100 nm on August 26, 2002.
- A Graseby Andersen IP-10 hivol sampler retrofitted with PM<sub>2.5</sub> insert (TE-6001-205 SSI Retrofit Kit) was installed and began operation on August 24, 2002. The prefired and preweighed 8"x10" high-volume samples acquired on an every-third-day schedule will be used to evaluate the comparability of different organic and elemental carbon analysis methods as part of the supersite's objective on method evaluation.

Task 2 – Network Operations and Data Processing.

- Network operations and data processing have continued through this period.

Task 3 – Laboratory Measurements.

- PM<sub>2.5</sub> mass and chemistry analyses of filter samples from FRM and chemical speciation samplers collected every sixth day through 5/31/02 have been completed. Samples dated from 6/1/02 to 8/31/02 have been analyzed and validated for mass only. Chemical speciation is in progress and expected to be completed by 12/31/02.

Task 4 – Quality Assurance.

- On August 28, 2002, David Gemmill of the University of California, Riverside, College of Engineering – Center for Environmental Research and Technology

(CE-CERT), submitted a draft report (Gemmill, 2002) of the results of the first external site audit conducted on March 6-7, 2002.

- On September 16-20, 2002, David Gemmill of CE-CERT conducted the second external site audit. During this audit, a collocated comparison was done between the particle sizing instruments and a new SMPS system belonging to CE-CERT. The next scheduled audit, which will involve a lab and data analysis audit at the Desert Research Institute in Reno, NV, is planned during the fourth quarter of 2002.
- Continued to assemble, revise, and update standard operating procedures for the field measurements and data analysis methods.

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 8/31/02. Data validation criteria for the continuous instruments are being developed. Data submittal to the California Air Resources Board's CCAQS database is underway and should be completed by 10/31/02. Level II validation on this data set will then resume and should be completed by the end of 2002.

Task 6 – Management and Reporting. The principal investigators visited the Fresno supersite on August 22, 2002. Matt Gonzi, data analyst at DRI, visited the Fresno supersite on August 20-23, 2002, to perform instrument calibrations, conduct routine maintenance, and document quality assurance records. A final report (Watson et al., 2002) summarizing the results of Phase I measurements at the Fresno supersite was submitted to CIASTA on August 30, 2002.

There have been no changes of key personnel related this study.

#### **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 revised and updated for the field measurements and data analysis procedures.

#### **RESULTS**

There are no results to report for this period.

**PLANNED ACTIVITIES FOR THE FORTHCOMING QUARTER:**

During the fourth quarter of 2002, the principal investigators plan to: 1) finalize standard operating procedures, and 2) finalize data validation criteria and database structure.

**PUBLICATIONS, PRESENTATIONS, AND REPORTS:**

One manuscript was published during this quarter, while a second manuscript was accepted for publication and is currently in press:

- Watson, J.G., J.C. Chow, D. Lowenthal, M.R. Stolzenburg, and N.M. Kreisberg, S.V. Hering (2002). Particle Size Relationships at the Fresno Supersite. *Journal of the Air & Waste Management Association*, **52**(7):822-827.
- Watson, J.G., and J.C. Chow (2002). Comparison and Evaluation of In-Situ and Filter Carbon Measurements at the Fresno Supersite. *Journal of Geophysical Research–Atmospheres*, in press.

Two presentations were given this quarter:

- Watson, J.G., and J.C. Chow (2002). Data Management Approach for Supersite Measurements. Presented to the Taiwan Environmental Protection Agency, 13 September 2002.
- Chow, J.C., and J.G. Watson (2002). Measurements at the Fresno Supersite. Presented to the Taiwan Environmental Protection Agency, 13 September 2002.

Two reports were prepared this quarter:

- Gemmill, D. (2002). Draft Quality Assurance Audit Report: Fresno Supersite – Audit Date: March 6-7, 2002. University of California, College of Engineering–Center for Environmental Research and Technology, Riverside, CA. 28 August 2002.
- Watson, J.G., J.C. Chow, S.V. Hering, and D.R. Fitz (2002). Final Report for Phase I of Fresno Supersite Measurements. Prepared for Cooperative Institute for Atmospheric Sciences and Terrestrial Applications (CIASTA), Las Vegas, NV, by Desert Research Institute, Reno, NV. 30 August 2002.

**QUARTERLY REPORT SUMMARY:**

See attached.