

## Book Chapter

Pederson J.R., Roberts P.T., and Main H.H. (1994) Measuring boundary conditions: initial strategies, field testing, and recommendations. In *Planning and Managing Regional Air Quality Modeling and Measurement Studies: A Perspective Through the San Joaquin Valley Air Quality Study and AUSPEX*, Solomon P.A. and Silver T.A., eds., CRC Press, Inc., Boca Raton, FL, pp. 561-586.

## Journal Articles

Brown S.G., Frankel A., Raffuse S.M., Roberts P.T., Hafner H.R., and Anderson D.J. (2007) Source apportionment of fine particulate matter in Phoenix, AZ, using positive matrix factorization. *J. Air and Waste Manag. Assoc.* **57**, 741-752 (STI-2675).

Buzcu-Guven B., Brown S.G., Frankel A., Hafner H.R., and Roberts P.T. (2007) Analysis and apportionment of organic carbon and fine particulate matter sources at multiple sites in the midwestern United States. *J. Air and Waste Manag. Assoc.* **57**, 606-619 (STI-2876).

Brown S.G., Frankel A., and Hafner H.R. (2007) Source apportionment of VOCs in the Los Angeles area using positive matrix factorization. *Atmos. Environ.* **41**, 227-237 (STI-2725).

McCarthy M.C., Hafner H.R., Chinkin L.R., and Charrier J.G. (2007) Temporal variability of selected air toxics in the United States. *Atmos. Environ.*, doi:10.1016/j.atmosenv.2007.1005.1037 (STI-2894).

MacDonald C.P., McCarthy M.C., Dye T.S., Wheeler N.J.M., Hafner H.R., and Roberts P.T. (2006) Transport and dispersion during wintertime particulate matter episodes in the San Joaquin Valley, California. *J. Air & Waste Manag. Assoc.* **56**, 961-976 (STI-902329-2660).

McCarthy M.C., Hafner H.R., and Montzka S.A. (2006) Background concentrations of 18 air toxics for North America. *J. Air & Waste Manage. Assoc.* **56**, 3-11 (STI-903550-2589).

McCarthy M.C., Eisinger D.S., Hafner H.R., Chinkin L.R., Roberts P.T., Black K.N., Clark N.N., McMurry P.H., and Winer A.M. (2006) Particulate matter: a strategic vision for transportation-related research. *Environ. Sci. Technol.* **40** (18), 5593-5599 (STI-904750-2843). Available on the Internet at <http://pubs.acs.org/doi/abs/10.1021/es062767i>.

Kenski D., Koerber M., Hafner H.R., McCarthy M.C., and Wheeler N. (2005) Lessons learned from air toxics data: a national perspective. *Environ. Man. J.*, 19-22.

Kim E., Brown S.G., Hafner H.R., and Hopke P.K. (2005) Characterization of non-methane volatile organic compounds sources in Houston during 2001 using positive matrix factorization. *Atmos. Environ.* **39**, 5934-5946.

Chinkin L.R., Coe D.L., Funk T.H., Hafner H.R., Roberts P.T., Ryan P.A., and Lawson D.R. (2003) Weekday versus weekend emissions activity patterns for ozone precursor emissions in California's South Coast Air Basin. *J. Air & Waste Manag. Assoc.* **53**, 829-843 (STI-999679-2225).

MacDonald C.P., Roberts P.T., Main H.H., Dye T.S., Coe D.L., and Yarbrough J. (2001) The 1996 Paso del Norte Ozone Study: phenomena that influence the local ozone concentrations. *Sci. Total Environ.* (Special Issue: U.S.-Mexico Transboundary Air Pollution Studies) **276**, Nos. 1-3, 93-110 (STI-1949).

Seila R.L., Main H.H., Arriaga J.L., Martinez G.V., and Ramadan A.B. (2001) Atmospheric volatile organic compound measurements during the 1996 Paso Del Norte study. *Sci. Total Environ.* **276**, 153-169.

Lyons J.M., Venkataraman C., Main H.H., and Friedlander S.K. (1993) Size distributions of trace metals in the Los Angeles atmosphere. *Atmos Environ.* **27B**, 237-249.

Fujita E.M., Croes B.E., Bennett C.L., Lawson D.R., Lurmann F.W., and Main H.H. (1992) Comparison of emission inventory and ambient concentration ratios of CO, NMOG, and NO<sub>x</sub> in California's South Coast Air Basin. *J. Air & Waste Manag. Assoc.* **42**, 264-276.

Main H.H. and Friedlander S.K. (1990) Dry deposition of atmospheric aerosols by dual tracer method, part I. point source. *Atmos. Environ.* **24A**, 103-108.

### **Meeting Presentations and Conference Proceedings**

Hafner H.R. and Brown S.G. (2011) Data validation workshop. *Prepared for Lake Michigan Air Directors Consortium; presented in Rockford, IL, and Toledo, OH, October 25-28* (STI-911051-4242).

Hafner H.R., Pasch A.N., and Vaughn D.L. (2011) EPA's near-road NO<sub>2</sub> pilot study: aiding states in selecting monitoring sites to meet new NAAQS requirements. Presented for the U.S. Environmental Protection Agency Region 9's Children's Health Month, San Francisco, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-4215, October 13.

McCarthy M., Charrier J., Brown S., and Hafner H. (2011) Trends analysis update. Presentation prepared for U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC Sonoma Technology, Inc., Petaluma, CA, STI-910219-4205, September 8.

Hafner H. and McCarthy M. (2011) How to create a successful air toxics monitoring project. Training prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-910219-4112, April.

Wheeler N., Hafner H., Roberts P., Craig K., MacDonald C., Gray E., and Reid S. (2011) Design recommendations for the three-state pilot study. Presented at the *Federal Leadership Forum, Denver, CO, January 19* by Sonoma Technology, Inc., Petaluma, CA (STI-910208-4079).

Hafner H. and McCarthy M. (2010) Examples of community-level risk-weighted air toxics concentrations. Presented at the *Air and Waste Management Association Measurements Conference, Los Angeles, CA, November 2* (STI-620000-3975).

McCarthy M.C., Hafner H.R., and Roberts P.T. (2010) Literature review for NO<sub>2</sub> near-roadway monitoring guidance. Technical memorandum prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, September 30.

McCarthy M. and Hafner H. (2010) Community-scale air toxics monitoring review. Presentation prepared for U.S. Environmental Protection Agency by Sonoma Technology, Inc., Petaluma, CA, STI-910107-3976, September 30.

Alrick D.M., Miller D.S., MacDonald C.P., and Hafner H.R. (2010) Wyoming statewide air monitoring network assessment Task E: meteorological network assessment. Technical memorandum prepared for the Wyoming Department of Environmental Quality by Sonoma Technology, Inc., Petaluma, CA, STI-910019-3935-TM, September 10.

Hafner H., O'Brien T.E., Brown S.G., and DeWinter J.L. (2010) Systat: Statistical visualization software training. Presented to the Wyoming Department of Environmental Quality, Cheyenne, WY, by Sonoma Technology, Inc., Petaluma, CA, STI-910019-3946, August.

Hafner H.R. and Wheeler N.J.M. (2010) Pilot project design for the data warehouse and regional air quality modeling effort: monitoring workgroup meeting. Presented to 3-State Monitoring Workgroup, Lakewood, CO, June 30 Sonoma Technology, Inc., Petaluma, CA (STI-910117-3911).

DeWinter J.L., Brown S.G., O'Brien T.E., and Hafner H.R. (2010) Systat: statistical visualization software. Training presented to the Michigan Department of Environmental Quality, Lansing, MI, March 31-April 1 (908015-3834).

*Prior to July 2002, Hilary R. Hafner was Hilary H. Main*

- Hafner H., Alrick D., Huang S.M., and Pasch A. (2010) The importance of meteorological data in exceptional events analysis. *National Air Quality Conferences, Raleigh, NC, March 15-18* (STI-3801).
- McCarthy M., Hafner H., Simpson J., and Fauci M. (2009) Air toxics around a pulp and paper mill. Presentation at the *2009 National Ambient Air Monitoring Conference, Nashville, TN, November 2-5*, by Sonoma Technology, Inc., Petaluma, CA, and the Nez Perce Tribe's Environmental Restoration and Waste Management Division, Air Quality Program, Lapwai, ID (STI-3682).
- Hafner H. (2009) Data validation overview. Presented at the *2009 National Ambient Air Monitoring Conference, Nashville, TN, November 2-5* by Sonoma Technology, Inc., Petaluma CA (STI-620000-3726).
- Wade K. and Hafner H. (2009) Air quality management support. Presented to U.S. Environmental Protection Agency and North Carolina Department of Environmental Quality, Division of Air Quality, Raleigh, NC, by Sonoma Technology, Inc., STI-905515-3656, June.
- Wade K. and Hafner H. (2009) Exceptional events case study. Presented at the *Air and Waste Management Association's 102nd Annual Conference and Exhibition, Detroit, MI, June 16-19* (STI 620000-3519).
- Landreneau J.V., Ray A.E., Hafner H.R., Roberts P.T., Chan A., Jackson J.A., and Zell E. (2009) Designing an air quality monitoring network for urban centers. Training course presented at the *Curso Regional sobre Aseguramiento de la Calidad de las Mediciones de Inmisiones y Emisiones de Contaminantes de Aire Universidad Nacional, Costa Rica, March 30–April 3, 2009*, by Sonoma Technology, Inc., Petaluma, CA, and Battelle Memorial Institute, Arlington, VA (STI-908078.03).
- Hafner H., O'Brien T.E., McCarthy M.C., and Brown S.G. (2009) Prescribed analyses of PAMS data collected from 1994 to 2006. Presented to the San Diego Air Pollution Control District, San Diego, CA, STI-908050-3634, June.
- Hafner H. (2009) VOCDat training: Validating, reporting, and analyzing toxics data. Presented to the San Diego Air Pollution Control District, San Diego, CA, STI-908050-3636, June.
- Hafner H.R., Funk T.H., and Penfold B.M. (2009) Monitoring network assessments: lessons learned. Presented at the *National Air Quality Conference, Dallas, TX, March 2-5*, by Sonoma Technology, Inc., Petaluma, CA (STI-3547). Also presented at the EPA Region 5 State/Local/Tribal Contacts Meeting, Chicago, IL, April 21 (STI-3620).
- Hafner H.R. and McCarthy M.C. (2009) Summary of national air toxics data analyses - 2007. Online webinar presented on behalf of the U.S. Environmental Protection Agency, Research Triangle Park, NC, on November 6, 2008 (STI-908302-3485). Also presented to the Wyoming Dept. of Environmental Quality on March 18, 2009, by Sonoma Technology, Petaluma, CA.
- McCarthy M.C. and Hafner H.R. (2008) Relating changes in ambient concentrations to mobile source air toxics controls. Presented at the *CRC Mobile Source Air Toxics Workshop, Phoenix, AZ, December 2* by Sonoma Technology, Inc., Petaluma, CA (STI-3407).
- Hafner H.R., McCarthy M.C., and Funk T.H. (2008) Network assessment for the photochemical assessment monitoring stations (PAMS) program: A national overview. Presented at the *Air & Waste Management Association Symposium on Air Quality Measurement Methods and Technology, Chapel Hill, NC, November 3-6*, by Sonoma Technology, Inc., Petaluma, CA (STI-3409).
- McCarthy M.C. and Hafner H.R. (2008) National picture of risk-weighted concentrations of ambient air toxics. Presented at the *Air & Waste Management Association Symposium on Air Quality Measurement Methods and Technology, Chapel Hill, NC, November 3-6, 2008* by Sonoma Technology, Inc., Petaluma, CA (STI-3410).

- Hafner H.R. and Funk T.H. (2008) Southwest Wyoming air monitoring network assessment. Presented to the Southwest Wyoming Network Assessment External Advisory Committee, July 30, by Sonoma Technology, Inc., Petaluma, CA.
- Hafner H.R. (2008) National air toxics data analysis overview. Presented to the Oregon Department of Environmental Quality, Portland, OR, by Sonoma Technology, Inc., Petaluma, CA, STI-3400, June.
- Roberts P.T. and Hafner H.R. (2008) Recommendations for data reporting of uncertainty and measurement process characteristics. Presented at the *Air & Waste Management Association's 101st Annual Conference & Exhibition, Portland, OR, June 24-27* (STI-3274).
- Hafner H.R. (2008) Establishing a visibility goal for wilderness and urban areas in British Columbia and Canada. Presented on behalf of the British Columbia Ministry of Environment, Victoria, BC, Building a Visibility Roadmap for Canada, Vancouver, Canada, March 26 by Sonoma Technology, Petaluma, CA.
- McCarthy M.C., O'Brien T.E., and Hafner H.R. (2007) Risk and hazard characterization summary. Presented at the *Air Toxics Data Analysis Workshop, Rosemont, IL, October 4*, by Sonoma Technology, Inc., Petaluma, CA (STI-905306-3236).
- McCarthy M.C., Charrier J.C., and Hafner H.R. (2007) Trends and accountability. Presented at the *Air Toxics Data Analysis Workshop, Rosemont, IL, October 4*, by Sonoma Technology, Inc., Petaluma, CA (STI-905306-3236).
- Hafner H.R., McCarthy M.C., and Charrier J.G. (2007) Trends in ambient air toxics concentrations. Presented at the *Symposium on Air Quality Measurement Methods and Technology, Air and Waste Management Association, San Francisco, CA, May 2*, by Sonoma Technology, Inc., Petaluma, CA (STI-3110).
- McCarthy M.C., Wade K.S., and Hafner H.R. (2007) Analysis of ambient air quality after Hurricane Katrina. Presented at the *Symposium on Air Quality Measurement Methods and Technology, Air and Waste Management Association, San Francisco, CA, May 2*, by Sonoma Technology, Inc., Petaluma, CA (STI-3111).
- Wade K.S., Brown S.G., and Hafner H.R. (2007) Combined air toxics and PM<sub>2.5</sub> component source apportionment for Baltimore. Presented at the *Symposium on Air Quality Measurement Methods and Technology, Air and Waste Management Association, San Francisco, CA, April 30-May 2*, by Sonoma Technology, Inc., Petaluma, CA (STI-3123).
- McCarthy M.C., Hafner H.R., and Charrier J.G. (2007) Southeastern air toxics data collection and analysis. Presented at the *EPA Region 4, SESARM, and Metro 4 Air Toxics Summit, Atlanta, GA, February 27-28*, by Sonoma Technology, Inc., Petaluma, CA (STI-906021-3134).
- Hafner H. and Penfold B.M. (2006) An introduction to monitoring network assessment. Presented at the *National Air Monitoring Conference, Las Vegas, NV, November 6-9*, Sonoma Technology, Inc., Petaluma, CA (STI-3062).
- Sundblom M., Armijo C., and Hafner H. (2006) Joint Air Toxics Assessment Project (JATAP) for the Maricopa/Pinal urban area, Arizona. Presentation for the *EPA National Air Monitoring Conference, Las Vegas, NV, November 8*, by the Arizona Department of Environmental Quality, the Salt River Pima Maricopa Indian Community, and Sonoma Technology, Inc., Petaluma, CA.
- Penfold B.M., Hafner H., and Raffuse S. (2006) Analytical techniques used for regional-scale network assessments. Presented at the *National Air Monitoring Conference, Las Vegas, NV, November 6-9*, Sonoma Technology, Inc., Petaluma, CA (STI-3061).

- Hafner H.R. and McCarthy M.C. (2006) What is the national picture of ambient air toxics concentrations? Paper presented at the *22nd Annual National Environmental Monitoring Conference, Arlington, VA, August 28-30* (STI-2992).
- Hafner H.R., McCarthy M.C., and Chinkin L.R. (2006) National, regional, between-city, and within-city spatial variability in air toxics. Presented at the *AWMA Symposium on Air Quality Measurement Methods and Technology, Durham, NC, May 9*, by Sonoma Technology, Inc., Petaluma, CA (STI-2884).
- Hafner H.R., McCarthy M.C., and Chinkin L.R. (2006) Temporal trends in air toxics. Presented at the *AWMA Symposium on Air Quality Measurement Methods and Technology, Durham, NC, May 9*, by Sonoma Technology, Inc., Petaluma, CA (STI-2885).
- Hafner H.R., O'Brien T.E., Frankel A.P., McCarthy M.C., and Brown S.G. (2006) 2005 JATAP monitoring project gaseous air toxics data validation and analysis. Presented at the *JATAP Workshop Meeting, Phoenix, AZ, March 6*, by Sonoma Technology, Inc., Petaluma, CA (STI-905039.02-2921).
- Hafner H.R. (2006) Air quality data analysis: how monitoring data are used to answer policy-relevant questions. Presented at *Washington State University, Pullman, WA, February 13* (STI-2915).
- Hafner H.R., McCarthy M.C., and Chinkin L.R. (2005) National air toxics assessments: lessons learned in quantifying ambient air toxics temporal and spatial trends. Presented at the *2005 Air Toxics Summit, Seeking Solutions for our Rural and Urban Communities, Portland, OR, October 18-19*, by Sonoma Technology, Inc., Petaluma, CA (STI-905102-2756).
- Hafner H.R., Penfold B.M., and Brown S.G. (2005) Using GIS tools to select suitable DPM monitoring locations: Phoenix, Arizona. Presented at the *2005 Air Toxics Summit, Seeking Solutions for our Rural and Urban Communities, Portland, OR, October 18-19*, by Sonoma Technology, Inc., Petaluma, CA (STI-904234-2755).
- Brown S.G. and Hafner H.R. (2005) Source apportionment using positive matrix factorization of VOCs at a heavily industrialized site in Houston, Texas. Presentation at the *AWMA Annual Conference, Minneapolis, MN, June 23* (STI-900700-2609).
- Brown S.G. and Hafner H.R. (2005) Using VOCDat to validate and process air toxics data. Presentation to the *U.S. Environmental Protection Agency's 15th Annual National Air Quality Systems Conference, San Diego, CA, June 13-17* (STI-905102.08-2752).
- Hafner H.R. (2005) Identifying significant contributions to ambient fine particulate matter (PM<sub>2.5</sub>) in Prince George, British Columbia. Presentation to the Ministry of Water, Land, and Air Protection, University of Northern British Columbia, Prince George, BC, by Sonoma Technology, Inc., Petaluma, CA, STI-904391-2709, March.
- Brown S.G., McCarthy M.C., Raffuse S.M., and Hafner H.R. (2005) Assessment of ozone and PM<sub>2.5</sub> exceedances on a national scale. Presentation at the *U.S. Environmental Protection Agency's 2005 National Air Quality Conference: Quality of Air Means Quality of Life, San Francisco, CA, February 12-13* (STI-2647).
- Hafner H.R., Penfold B.M., and Brown S.G. (2005) Using spatial analysis techniques to select monitoring locations. Presentation at the *U.S. Environmental Protection Agency's 2005 National Air Quality Conference: Quality of Air Means Quality of Life, San Francisco, CA, February 12-13* (STI-2645).
- Hafner H.R., McCarthy M.C., and Roberts P.T. (2005) Using air toxics monitoring data to quantify mobile source contributions. Presented at the *Transportation Research Board 84th Annual Meeting, Workshop 124: Mobile Source Air Toxics, Washington, DC, January 9* (STI-2685).

- Hafner H.R., Brown S.G., and Anderson D. (2004) Source apportionment of PM<sub>2.5</sub> in Phoenix, Arizona using positive matrix factorization. Presented at *Regional and Global Perspectives on Haze: Causes, Consequences and Controversies - Visibility Specialty Conference, Asheville, NC, October 25-29*, by Sonoma Technology, Inc., Petaluma, CA (STI-2512).
- Hafner H.R., McCarthy M.C., Brown S.G., Raffuse S.M., Shields E., Stiefer P.S., and Wheeler N.J. (2004) Workshop on air toxics data analysis. *Prepared for Lake Michigan Air Directors Consortium; presented in Rosemont, IL, June 2-3, 2004* (STI-903555).
- Hafner H.R. and Wheeler N.J.M. (2004) What we have learned from Photochemical Assessment Monitoring Stations (PAMS). Presentation to the Annual Meeting of the West Coast Section, Air & Waste Management Association, Ventura, CA, May 13 by Sonoma Technology, Inc., Petaluma, CA, STI-2538, May.
- Hafner H.R., Brown S.G., and McCarthy M.C. (2004) An approach to data validation of air toxics data. Paper no. 34 presented at the *Air & Waste Management Association Symposium on Air Quality Measurement Methods and Technology, Research Triangle Park, NC, April 19-22* (STI-2443).
- Hafner H.R., Brown S.G., Penfold B.M., and Funk T.H. (2004) Use of GIS tool to investigate suitable diesel emissions monitoring locations in Detroit, Michigan. Paper no. 35 presented at the *Air & Waste Management Association Symposium on Air Quality Measurement Methods and Technology, Research Triangle Park, NC, April 19-22* (STI-2444).
- Brown S.G., Hafner H.R., and Shields E. (2004) Source apportionment of Detroit air toxics data with positive matrix factorization. Paper no. 41 presented at the *Air & Waste Management Association Symposium on Air Quality Measurement Methods and Technology, Research Triangle Park, NC, April 19-22* (STI-2450).
- Brown S.G. and Hafner H.R. (2003) Source apportionment of VOCs in the Houston, Texas, area. Presented at the *NARSTO Workshop on Innovative Methods for Emission-Inventory Development and Evaluation, Austin, TX, October 14-16* (STI-2356).
- Hafner H.R. (2003) VOCDat for validating, reporting, and analyzing toxics. Presented at *Joint Air Toxics Workshop sponsored by U.S. Environmental Protection Agency and Northeast States for Coordinated Air Use Management, Las Vegas, NV, October 8-9* (STI-903553-2425).
- Hafner H.R. (2003) Analysis of metals data to date: what can/does analysis indicate about sampling and/or analytical methods issues? Presented at *Joint Air Toxics Workshop sponsored by U.S. Environmental Protection Agency and Northeast States for Coordinated Air Use Management, Las Vegas, NV, October 8-9* (STI-903553-2426).
- Penfold B.M., Funk T.H., and Hafner H.R. (2003) Exploring the use of suitability modeling to locate air toxics monitors in Massachusetts. Paper and presentation prepared for the *ESRI International User Conference 2003, San Diego, CA, July 7-11* (STI-2388).
- Brown S.G., Hafner H.R., and Ryan P.A. (2003) Nitrogen deposition into the Casco Bay Estuary, Maine. Paper and presentation prepared for the *Air & Waste Management Association's 96th Annual Conference & Exhibition, San Diego, CA, June 22-26* (STI-2327).
- Hafner H.R. and Brown S.G. (2003) Investigating the effect of selected control strategies on ambient hydrocarbon data in the northeastern and mid-Atlantic United States: 1994-2001 trends. Paper and presentation prepared for the *Air & Waste Management Association's 96th Annual Conference & Exhibition, San Diego, CA, June 22-26* (STI 2250).

- Hafner H.R., Hyslop N.P., and Roberts P.T. (2003) Managing and validating data from the California Regional PM<sub>10</sub>/PM<sub>2.5</sub> Air Quality Study. Paper and presentation prepared for the *Air & Waste Management Association's 96th Annual Conference & Exhibition, San Diego, CA, June 22-26* (STI-2255).
- Hafner H.R. (2003) VOCDat training: validating, reporting and analyzing toxics data. Presented at EPA Region V Offices, Chicago, IL, May 14-15; Research Triangle Park, NC, June 4; Albany, NY, June 10; and EPA Region IX Offices, San Francisco, CA, June 17, STI-902600-2365.
- Hafner H.R. and Brown S.G. (2003) Assessment of elemental carbon and its relationship with diesel particulate matter. Presented at the *National Workshop on Air Toxics Monitoring, Chicago, IL, May 13-14* (STI-902530-2369).
- Hafner H.R., Brown S.G., Penfold B.M., and Funk T.H. (2003) Suitability analysis for monitoring diesel particulate matter in the Detroit area. Presented at the *National Workshop on Air Toxics Monitoring, Chicago, IL, May 13-14* (STI-902530-2372).
- Brown S.G. and Hafner H.R. (2003) Source apportionment of Detroit pilot city air toxics data. Presented at the *National Workshop on Air Toxics Monitoring, Chicago, IL, May 13-14*.
- Brown S.G., Knoderer C.A., and Hafner H.R. (2003) Meteorological effects on air toxics concentrations in Detroit. Presented at the *National Workshop on Air Toxics Monitoring, Chicago, IL, May 13-14* (STI-902530-2370).
- Brown S.G. and Hafner H.R. (2002) Analysis of volatile organic compounds and their impact on ozone formation in the Houston area. Presented at the Symposium on Air Quality Measurements Methods and Technology, San Francisco, CA, November 14, STI-900670-2233.
- Hafner H.R., Funk T.H., Penfold B.M., and Anderson D. (2002) Assessment of the toxics monitoring network in Phoenix, Arizona. Presented at the Symposium on Air Quality Measurement Methods and Technology, San Francisco, CA, November 13, STI-901483-2232.
- Hafner H.R. and Roberts P.T. (2002) Recommendations for the PAMS network in the Northeast and Mid-Atlantic states. Presented at the Symposium on Air Quality Measurement Methods and Technology, San Francisco, CA, November 13, STI-900860-2231.
- Hafner H.R. (2002) Using MAPPER. Presentation prepared for and presented at Pima Association of Governments, Tucson, AZ, October 23 (STI-902170-2270).
- Main H.H. and Bortnick S. (2002) Temporal variability in ambient air toxics: implications to monitoring network design. Presentation at the *Coordinating Research Council (CRC) Air Toxics Modeling Workshop, Houston, TX, February 26-27* (STI-2153).
- Main H.H. (2001) PAMS analysis for southern California: characteristics of VOC data 1994-1997. Presented at the SCOS97-NARSTO Data Analysis Conference, Los Angeles, CA, February 13-15 (STI-2054).
- Main H.H. (2000) Analysis of air toxics data collected in Barrio Logan, California. Presented at the Barrio Logan Toxics Monitoring Stakeholders Meeting, September 21 (STI-900800-2011).
- Main H.H. and Roberts P.T. (2000) Review of air toxics modeling for the mid-Atlantic region. Paper presented at the *Air & Waste Management Association/Environmental Protection Agency International Symposium on Measurement of Toxic and Related Air Pollutants, Research Triangle Park, NC, September 12-14* (STI 1962).

- Main H.H. and Roberts P.T. (2000) The usefulness of PAMS VOC data: examples using data collected in the northeast, mid-Atlantic, and California. Presented at the *Air & Waste Management Association/Environmental Protection Agency International Symposium on Measurement of Toxic and Related Air Products, Research Triangle Park, NC, September 12-14* (STI 1963).
- Main H.H. (2000) Data analysis workshop: Analysis of PM and ozone data. Presented at a conference co-sponsored by Central States Air Resources Agencies Association (CENSARA), Air Pollution Training Institute (APTI), and the Environmental Protection Agency, Austin, TX, May 16-19.
- Roberts P.T. and Main H.H. (2000) Discussion of PAMS data uses, gaps, and other issues. Presented at the *STAPPA-ALAPCO PAMS Workshop, Las Vegas, NV, March 8-10* (STI-1952).
- Main H.H., Roberts P.T., MacDonald C.P., and Timin B. (1998) VOC data analyses to assist North Carolina DEQ ozone modeling. Presented at the *Measurement of Toxic and Related Air Pollutants Conference, Cary, NC, September 1-3* (STI 1826).
- Richards L.W., Main H.H., Hurwitz S.B., and Chinkin L.R. (1998) 1995 integrated monitoring study: comparison of light scattering measurements during winter months in the San Joaquin Valley. Presented at *PM<sub>2.5</sub> A Fine Particle Standard, Long Beach, CA, sponsored by Air & Waste Management Association, the U.S. Environmental Protection Agency, and the U.S. Department of Energy, January 28-30* (STI-997216-1803).
- Main H.H. and Haste T.L. (1997) Data validation of PAMS auto-GC VOC data: more lessons learned. Paper presented at the *Air & Waste Management Association Measurement of Toxic and Related Air Pollutants Symposium Conference, Research Triangle Park, NC, April 29-May 1* (STI-1718).
- Main H.H., Roberts P.T., and Haste T.L. (1997) Spatial and temporal variations of PAMS VOCs in the Northeast. Paper presented at the *Air & Waste Management Association Measurement of Toxic and Related Air Pollutants Symposium Conference, Research Triangle Park, NC, April 29-May 1* (STI-1717).
- Main H.H., Haste T.L., and Roberts P.T. (1996) Preliminary analysis of 1995 VOC data in the Northeast. Presented at the *NARSTO-Northeast Data Analysis Symposium and Workshop, Norfolk, VA, December 10-12* (STI-1624).
- Main H.H., Chinkin L.R., and Roberts P.T. (1996) Analysis of VOC data in support of pollutant transport studies in Shasta County, California. In *Measurement of Toxic and Related Air Pollutants. Proceedings of an Air & Waste Management/U.S. Environmental Protection Agency International Specialty Conference, Raleigh-Durham, NC, May 7-9*, Air & Waste Management, Pittsburgh, PA, (STI-1581), pp. 67-74.
- Main H.H., Roberts P.T., Leston A.R., and Brunelli P. (1996) Data validation of PAMS auto-GC VOC data: lessons learned. In *Measurement of Toxic and Related Air Pollutants. Proceedings of an Air & Waste Management Association/U.S. Environmental Protection Agency International Specialty Conference, Raleigh-Durham, NC, May 7-9*, Air & Waste Management Association, Pittsburgh, PA, (STI-1581), pp. 59-66.
- Main H.H., Roberts P.T., Korc M.E., Coe D.L., Dye T.S., Lindsey C.G., and Reiss R. (1995) Analysis of PAMS and NARSTO-Northeast data - supporting evaluation and design of ozone control strategies: a workshop. Presented at the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Santa Rosa, CA, December 11-12, STI-94551/94581-1551-WD1, EPA WA-5-95 and WA-8-95.

- Main H.H., Roberts P.T., and Ligocki M.P. (1995) Assessing the usefulness of VOC data as indicators of change in fuel composition in the South Coast Air Basin (California). Paper No. 95-FA113C.02 presented at the *Air & Waste Management Association 88th Annual Meeting, San Antonio, TX, June 18-23* (STI-1501).
- Main H.H. and Roberts P.T. (1993) Analysis of the 1991 Lake Michigan Ozone Study (LMOS) NMOC data: spatial and temporal issues. Paper FM2-II.5 presented at the *Air & Waste Management Association Regional Photochemical Measurement and Modeling Studies Conference, San Diego, CA, November 8-12* (STI-1377).
- Main H.H. (1993) Validation of the LMOS hydrocarbon and carbonyl data. Paper presented at the *Air & Waste Management Association Regional Photochemical Measurement and Modeling Studies Conference, San Diego, CA, November 8-12*.
- Roberts P.T., Korc M.E., Main H.H., Chinkin L.R., and Lurmann F.W. (1993) Reconciliation of emission inventory and ambient data in the Lake Michigan air quality region. Paper No. 93-WP-100.05 presented at the *Air & Waste Management Association 86th Annual Meeting, Denver, CO, June 14-18*.
- Lurmann F.W. and Main H.H. (1992) Spatial and temporal variations in nonmethane organic compounds and NMOC/NO<sub>x</sub> ratios. Paper presented at the *SCAQS Data Analysis Conference, University of California, Los Angeles, CA, July 21-23, VIP-26*.
- Main H.H. (1992) Validation of SCAQS hydrocarbon and carbonyl data. Paper presented at the *SCAQS Data Analysis Conference, University of California, Los Angeles, CA, July 21-23, VIP-26*.
- Main H.H. and Lurmann F.W. (1992) Ambient versus emission inventory NMOC speciation during the SCAQS. Paper presented at the *SCAQS Data Analysis Conference, University of California, Los Angeles, CA, July 21-23, VIP-26*.
- Roberts P.T. and Main H.H. (1992) Characterization of three-dimensional air quality during the SCAQS. Paper presented at the *SCAQS Data Analysis Conference, University of California, Los Angeles, CA, July 21-23, STI-1223*. In *Southern California Air Quality Study Data Analysis*, Air & Waste Management Association, Pittsburgh, PA, VIP-26.
- Roberts P.T., Dye T.S., and Main H.H. (1992) Data analysis for the Lake Michigan Ozone Study. Paper No. 92-87.05 presented at the *Air & Waste Management Association 85th Annual Meeting, Kansas City, KS, June 21-26*.
- Main H.H., Lurmann F., and Fujita E. (1991) Analysis of Southern California Air Quality Study (SCAQS) NMOC data: spatial and temporal issues. Paper No. 91-66.10 presented at the *Air & Waste Management Association 84th Annual Meeting, Vancouver, BC, June 16-21*.
- Roberts P.T. and Main H.H. (1991) Important phenomena and pollutant flux estimates at an air basin boundary. In *Tropospheric Ozone and the Environment. Transactions No. 19 from Air & Waste Management Association Ozone Conference, March 1990*, R.L. Berglund, D.R. Lawson, and D.J. McKee, eds., Air & Waste Management Association, Pittsburgh, PA (STI-1009).

### **Formal Reports**

- Pasch A.N., Hafner H.R., Vaughn D.L., and O'Brien T.E. (2011) Summary of results from near-road NO<sub>2</sub> monitoring pilot study. Draft final report 2 prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC by Sonoma Technology, Inc., Petaluma, CA, STI-910214-4211-DR2, November 30.

- Pasch A.N., Hafner H.R., Ray A.E., and Roberts P.T. (2011) Data validation procedures for NCore trace-level measurements. Draft report prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC by Sonoma Technology, Inc., Petaluma, CA, STI-910212-3993-DR3, September 30.
- Hafner H., Vaughn D.L., and Pasch A.N. (2011) Quality assurance project plan: use of passive sampling devices (PSDs) in a near-road monitoring environment. Quality assurance project plan prepared for the Ambient Air Monitoring Group, Air Quality Assessment Division, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-910214-4060-QAPP, April. Available on the Internet at <http://www.epa.gov/ttn/amtic/files/nearroad/20110428qapp.pdf>.
- Wheeler N.J.M., Hafner H.R., Roberts P.T., Craig K.J., Reid S.B., MacDonald C.P., and Gray E.A. (2011) Design recommendations for the three-state pilot study data warehouse. Report prepared for the U.S. Environmental Protection Agency, Region 8, Denver, Colorado, by Sonoma Technology, Inc., Petaluma, California, STI-910208-4092-FR, March 21.
- McCarthy M.C. and Hafner H.R. (2010) Analysis of trends in air toxics in Michigan. Prepared for the Michigan Department of Environmental Quality, Lansing, MI by Sonoma Technology, Inc., Petaluma, CA, STI-908015-4063-FR, December.
- McCarthy M.C. and Hafner H.R. (2010) Community-scale air toxics ambient monitoring review. Technical memorandum prepared for U.S. Environmental Protection Agency Office of Air Quality Planning and Standards by Sonoma Technology, Inc., Petaluma, CA, STI-910107-3984-TM, September 28.
- Hafner H., Penfold B.M., and O'Brien T.E. (2010) Wyoming statewide air monitoring network assessment Task A: quality assurance. Technical memorandum prepared for the Wyoming Department of Environmental Quality, Cheyenne, WY, by Sonoma Technology, Inc., Petaluma, CA, STI-910019-3883, September 16.
- McCarthy M., Hafner H., and Penfold B.M. (2010) Wyoming statewide air monitoring network assessment Task B: statistical analysis. Technical memorandum prepared for the Wyoming Department of Environmental Quality by Sonoma Technology, Inc., Petaluma, CA, STI-910019-3903-TM, September 13.
- Miller D.S., Craig K.J., DeWinter J.L., MacDonald C.P., Reid S.B., and Hafner H.R. (2010) An air parcel transport corridor analysis for Sublette County, Wyoming. Technical memorandum prepared for the Wyoming Department of Environmental Quality by Sonoma Technology, Inc., Petaluma, CA, STI-910028-3954, September 2.
- McCarthy M.C. and Hafner H. (2010) Review of formaldehyde measurements in Prince George, BC. Technical memorandum prepared for Ministry of Environment, Victoria, BC, Canada by Sonoma Technology, Inc., Petaluma, CA, STI-910046-3955, August.
- Brown S.G. and Hafner H.R. (2010) Assessment of PM<sub>2.5</sub> and gaseous air toxics data in Detroit, Michigan. Final report prepared for the Michigan Department of Environmental Quality, Lansing, MI, by Sonoma Technology, Inc., Petaluma, CA, STI-908015-3920-FR2, December.
- Penfold B.M. and Hafner H. (2010) Wyoming statewide air monitoring network assessment Task C: area-, population-, and emissions-served analyses. Technical memorandum prepared for the Wyoming Department of Environmental Quality, Cheyenne, WY, by Sonoma Technology, Inc., Petaluma, CA, STI-910019-3915-TM, July 9.
- Hafner H. and McCarthy M. (2010) Summary of school air toxics monitoring efforts from 1999 through 2009. Technical memorandum prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-910107-3867-TM, May 5.  
*Prior to July 2002, Hilary R. Hafner was Hilary H. Main*

- Charrier J.G., Hafner H.R., Wade K.S., Brown S.G., and MacDonald C.P. (2010) California ambient dioxin air monitoring program 2002 to 2006 data analysis of dioxins, furans, biphenyls, and diphenylethers. Final report 2 prepared for the California Air Resources Board, Sacramento, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-907024.05-3292-FR2, March.
- McCarthy M.C., Shiffrin J.P., O'Brien T.E., and Hafner H.R. (2010) Evaluation of regional ozone monitoring network and analysis of data to determine trends. Final report prepared for the Capital Airshed Partnership, Edmonton AB, Canada, by Sonoma Technology, Inc., Petaluma, CA, STI-909049-3811-FR, March.
- U.S. Environmental Protection Agency (2010) Our nation's air: status and trends through 2008. Prepared by the Office of Air Quality Planning and Standards, Research Triangle Park, NC, EPA-454/R-09-002, February. Available on the Internet at <http://www.epa.gov/airtrends/2010/report/fullreport.pdf>.
- McCarthy M.C., Stone J.M., O'Brien T.E., and Hafner H.R. (2009) Lewiston area air toxics data analysis. Final report prepared for the Nez Perce Tribe, Environmental Restoration and Waste Management Division, Lapwai, ID, by Sonoma Technology, Inc., Petaluma, CA, STI-909027-3654, June.
- O'Brien T.E., Brown S.G., McCarthy M.C., and Hafner H. (2009) Prescribed analyses of San Diego photochemical assessment monitoring station (PAMS) hydrocarbon data collected from 1994 to 2006. Final report prepared for the San Diego Air Pollution Control District, San Diego, CA, by Sonoma Technology, Inc., STI-908050-3621-FR, June.
- Reid S.B., Pollard E.K., and Hafner H. (2009) Ambient data analysis in support of CRC RFP A-69: regional modeling of weekday/weekend ozone changes. Prepared for the Coordinating Research Council, Alpharetta, GA, STI-909006-3609-FR, May.
- Hafner H.R. (2009) PAMS literature review. Update prepared for the San Diego Air Pollution Control District, San Diego, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-908050.02-3576, March.
- McCarthy M.C., Huang S.M., DeWinter J.L., and Hafner H.R. (2009) Measuring progress in air toxics using ambient data. Final report prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-908303.02-3450-FR, January.
- Hafner H.R. and Funk T. (2009) Ambient air quality monitoring network assessment for the San Joaquin Valley. Prepared for the San Joaquin Valley Unified Air Pollution Control District, Fresno, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-908072-3522-WP, January.
- Hafner H.R., Charrier J.G., and McCarthy M.C. (2009) Air toxics data analysis workbook. Prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-90830403-3224, January. Available on the Internet at <http://www.epa.gov/ttnamti1/files/ambient/airtox/workbook/AirToxicsWorkbook6-09.pdf>.
- U.S. Environmental Protection Agency (2008) National air quality status and trends through 2007. Prepared by the Office of Air Quality Planning and Standards, Air Quality Assessment Division, Research Triangle Park, NC, EPA-454/R-08-006, November. Available on the Internet at <http://www.epa.gov/airtrends/2008/report/TrendsReportfull.pdf>.
- Brown S.G., Hafner H.R., and Wade K.S. (2008) Multivariate receptor modeling workbook. Prepared for the U.S. Environmental Protection Agency, Office of Research and Development, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-908027-3401, October.
- McCarthy M.C., DeWinter J., and Hafner H.R. (2008) Toxics indicator development - progress report. Technical memorandum prepared for Eastern Research Group, Lexington, MA, by Sonoma Technology, Inc., Petaluma, CA, STI-908401.03-3486, October.

- Bai S., McCarthy M.C., and Hafner H.R. (2008) Development of a new AQI indicator - progress report. Technical memorandum prepared for Eastern Research Group, Lexington, MA, by Sonoma Technology, Inc., Petaluma, CA, STI-908401.02-3487, October.
- McCarthy M.C., Funk T.H., and Hafner H.R. (2008) Network assessment for the national photochemical assessment monitoring stations (PAMS) program. Draft final report prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-905410.06-3438-DFR, September.
- Funk T.H. and Hafner H.R. (2008) Air monitoring network assessment for southwest Wyoming. Draft final report prepared for the State of Wyoming, Department of Environmental Quality, Air Quality Division, Cheyenne, WY by Sonoma Technology, Inc., Petaluma, CA, STI-908003.08-3423-DFR, August.
- McCarthy M.C. and Hafner H.R. (2008) Synopsis of data analysis Quality Assurance Project Plans (QAPPs). Technical memorandum prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Petaluma, CA, STI-905417.02-3390, June.
- Wade K.S., Turner J.R., Brown S.G., Garlock J.L., and Hafner H.R. (2008) Data analysis and source apportionment of PM<sub>2.5</sub> in selected midwestern cities. Final report prepared for the Lake Michigan Air Directors Consortium, Rosemont, IL, by Sonoma Technology, Inc., Petaluma, CA, and Washington University, St. Louis, MO, STI-907018.03-3264-FR, April.
- U.S. Environmental Protection Agency (2008) Latest findings on national air quality: status and trends through 2006. Report prepared by the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Assessment Division, Research Triangle Park, NC, EPA-454/R-07-007, February. Available on the Internet at [http://www.epa.gov/airtrends/2007/report/trends\\_report\\_full.pdf](http://www.epa.gov/airtrends/2007/report/trends_report_full.pdf).
- Hafner H.R. (2007) Framework for the British Columbia monitoring network. Final report prepared for the British Columbia Ministry of the Environment, Victoria, British Columbia, Canada, by Sonoma Technology, Inc., Petaluma, CA, STI-906059.05-3229-FR, December.
- McCarthy M.C., Charrier J.G., O'Brien T.E., and Hafner H.R. (2007) Phase V national air toxics data analysis. Compilation of work products prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-905306-3234, October.
- Wade K.S., Rubin J.I., McCarthy M.C., and Hafner H.R. (2007) Developing uncertainty estimates for gaseous air pollutants (HAPs). Technical memorandum prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-905306.02-3230, September 19.
- Wade K.S., Brown S.G., and Hafner H.R. (2007) Analysis of the impact of Hurricane Katrina on ambient air quality in Baton Rouge. Technical memorandum prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-905312.04-3237-TM, September.
- Brown S.G., Wade K.S., and Hafner H.R. (2007) Multivariate receptor modeling workbook. Prepared for the U.S. Environmental Protection Agency, Office of Research and Development, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-906207.01-3216, August.
- Hafner H.R. and Penfold B.M. (2007) British Columbia network assessment analysis results. Technical memorandum prepared for the Ministry of Water, Land, & Air Protection, British Columbia, Canada, by Sonoma Technology, Inc., Petaluma, CA, STI-906059.02-3186-TM, June.

- Wade K.S., Brown S.G., and Hafner H.R. (2007) Multipollutant source apportionment - Baltimore. Final report prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-906205.04-3165-FR, June.
- Hafner H.R. (2007) Review of scoping study and updated questions for monitoring network framework development. Report prepared for the Ministry of Water, Land, & Air Protection, British Columbia, Canada, by Sonoma Technology, Inc., Petaluma, CA, STI-906059.03-3182, April.
- Wade K.S., McCarthy M.C., and Hafner H.R. (2007) Analysis of ambient air quality after Hurricane Katrina. Final report prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-905312.03-3159-FR, April.
- McCarthy M.C., Charrier J.G., Rubin J.I., O'Brien T.E., and Hafner H.R. (2007) Southeastern air toxics data analysis. Final report prepared for the Southeastern States Air Resource Managers, Inc., Forest Park, GA, by Sonoma Technology, Inc., Petaluma, CA, STI-906021.07-3122-FR, March.
- McCarthy M.C., Roberts P.T., and Hafner H.R. (2007) Measurement reporting and process performance characteristics guidance. Final report prepared for NARSTO Quality Systems Science Center, by Sonoma Technology, Inc., Petaluma, CA, STI-906042-3119-FR2, March.
- Brown S.G., Rubin J.I., Wade K.S., and Hafner H.R. (2007) Accountability and source apportionment analyses of air quality data in Detroit. Executive summary prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-906201.03-3108-ES, January.
- Raffuse S.M., Sullivan D.C., McCarthy M.C., Penfold B.M., and Hafner H.R. (2007) Ambient air monitoring network assessment guidance: Analytical techniques for technical assessments of ambient air monitoring networks. Guidance document prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, EPA-454/D-07-001 (STI-905212.02-2805-GD), February.
- Brown S., Hafner H., MacDonald C., Wade K., and Miller D. (2006) Preliminary analysis of the contribution of wood smoke to PM<sub>2.5</sub> concentrations in Sacramento, California. Technical memorandum prepared for the Sacramento Metropolitan Air Quality Management District, Sacramento, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-906029-3118-TM, December.
- Hafner H.R. and O'Brien T.E. (2006) Analysis of air toxics collected as part of the Joint Air Toxics Assessment Project. Final report prepared for the Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-905039.03-3016-FR, December.
- Rubin J.I., Brown S.G., Wade K.S., and Hafner H.R. (2006) Apportionment of PM<sub>2.5</sub> and air toxics in Detroit, Michigan. Final report prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-906201.06-3103-FR, December.
- Brown S.G., Hafner H.R., Roberts P.T., Sheesley R.J., and Schauer J.J. (2006) Integration of results for the Upper Midwest Urban Organics Study. Final report prepared for the Lake Michigan Air Directors Consortium, Des Plaines, IL, by Sonoma Technology, Inc., Petaluma, CA, and the University of Wisconsin, Madison, WI, STI-903520-2942-FR, March.
- Hafner H.R. and Roberts P.T. (2006) A technical approach using ambient data to track and evaluate air quality programs. Draft final report prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-905213.02-2918-DFR, March.

- McCarthy M.C., Eisinger D.S., Hafner H.R., Tamura T.M., Chinkin L.R., Roberts P.T., Clark N., McMurry P.H., and Winer A. (2005) Strategic plan for particulate matter research: 2005-2010. Final report prepared for the Federal Highway Administration, Office of Natural Environment, Washington, DC, by Sonoma Technology, Inc., Petaluma, CA; West Virginia University, Department of Mechanical and Aerospace Engineering, Morgantown, WV; University of Minnesota, Particle Technology Lab, Minneapolis, MN; and University of California, Los Angeles, School of Public Health, Environmental Science & Engineering, Los Angeles, CA, STI-904750.06-2770-FR, November. Available on the Internet at [http://www.fhwa.dot.gov/environment/air\\_quality/research/particulate\\_matter/strategic\\_plan\\_2005-2010/](http://www.fhwa.dot.gov/environment/air_quality/research/particulate_matter/strategic_plan_2005-2010/).
- Chinkin L.R., Penfold B.M., Brown S.G., and Hafner H.R. (2005) Emission inventory evaluation and reconciliation in the South Coast Air Basin. Final report prepared for South Coast Air Quality Management District, Diamond Bar, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-904045-2728-FR, August.
- Sullivan D.C., Hafner H.R., Brown S.G., MacDonald C.P., Raffuse S.M., Penfold B.M., and Roberts P.T. (2005) Analyses of the causes of haze for the Central States (Phase II) Summary of findings. Executive summary prepared for the Central States Regional Air Planning Association by Sonoma Technology, Inc., Petaluma, CA, STI-904780.08-2754-ES, August.
- Brown S.G., Frankel A., and Hafner H.R. (2005) Principal component analysis and source apportionment of PAMS VOC data. Final report prepared for the South Coast Air Quality Management District, Diamond Bar, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-904046-2723-FR, July.
- Hafner H.R. and O'Brien T.E. (2005) Characteristics of PAMS hydrocarbon data collected by the South Coast Air Quality Management District 1994-2003. Final report prepared for the South Coast Air Quality Management District, Diamond Bar, CA by Sonoma Technology, Inc., Petaluma, CA, STI-904043-2701-FR, July.
- McCarthy M.C., O'Brien T.E., and Hafner H.R. (2005) Prescribed analyses of San Joaquin Valley hydrocarbon data collected from 1998 to 2003 version 2. Final report prepared for the San Joaquin Valley Unified Air Pollution Control District, Fresno, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-904442-2718-FR2, June.
- Brown S.G., Vaughn D.L., Raffuse S.M., Frankel A., Hafner H.R., and Roberts P.T. (2005) Analysis and comparison of Aethalometer black carbon with multiple thermal measurements of elemental carbon in Phoenix, Arizona. Technical memorandum prepared for the Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-905020.02-2767-TM, June.
- Tamura T.M., Hafner H.R., Brown S.G., and Eisinger D.S. (2005) Investigation of consistency between ambient monitoring data and MOBILE6.2 emissions predictions for air toxics. Final report prepared for the Federal Highway Administration, Washington, DC, by Sonoma Technology, Inc., Petaluma, CA, STI-903632-2621-FR, March.
- McCarthy M.C., Brown S.G., Hafner H.R., Frankel A., and Broaders K.E. (2004) Data analyses for Phoenix, Arizona, air toxics data collected from 2001 to 2004. Final report prepared for Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-904236-2666-FR, December.
- McCarthy M.C., Brown S.G., Frankel A., and Hafner H.R. (2004) Data analysis for air toxics collected at JATAP sites from 2001 to 2004: Task 2 results. Final report prepared for Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-903772-2620-FR, November.

- McCarthy M.C., Brown S.G., Hafner H.R., and Frankel A. (2004) Data analyses for Gila River air toxics collected from 2003 to 2004. Final report prepared for Gila River Indian Community Department of Environmental Quality, Sacaton, AZ, by Sonoma Technology, Inc., Petaluma, CA, 904063-2608-FR, September.
- McCarthy M.C., Brown S.G., Hafner H.R., and Shields E. (2004) Prescribed data analysis for Phoenix, Arizona, hydrocarbon data collected in 2002 and 2003. Final report prepared for Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-903701-2600-FR, September.
- Hafner H.R. and Prouty J.D. (2004) VOCDat user's guide. Prepared for U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-902620-2015-UG, September.
- Hafner H.R. (2004) WA 2-15 – Summary of task 4, integration and assessment of several sources of air quality data. Prepared for Basil Coutant, Battelle Memorial Institute, Columbus, OH, by Sonoma Technology, Inc., Petaluma, CA, STI-902630-2623, September.
- Hafner H.R. and McCarthy M.C. (2004) Phase III air toxics data analysis workbook. Workbook prepared for the Lake Michigan Air Directors Consortium, Des Plaines, IL, by Sonoma Technology, Inc., Petaluma, CA, STI-903553-2592-WB, August.
- Blanchard C.L. and Hafner H.R. (2004) SCAQMD PAMS assessment task 1: literature review. Technical Memorandum prepared for South Coast Air Quality Management District, Diamond Bar, CA, by Sonoma Technology, Inc., Petaluma, CA, and Envair, Albany, CA, STI-904042-2569-TM, July.
- Hafner H.R., McCarthy M.C., Brown S.G., Roberts P.T., and Koerber M. (2004) Policy-relevant lessons learned from Phase I/II air toxics analyses. White paper prepared for the Lake Michigan Air Directors Consortium, Des Plaines, IL, by Sonoma Technology, Inc., Petaluma, CA and Lake Michigan Air Directors Consortium, Des Plaines, IL, STI-903553-2479-WP2, April.
- Hafner H.R. (2004) Golden, British Columbia PM<sub>2.5</sub> source apportionment study: review and recommendations. Technical memorandum prepared for Water, Air and Climate Change Branch, Air Protection Section, Victoria, BC, by Sonoma Technology, Inc., Petaluma, CA, STI-904050-2496-TM, February.
- Brown S.G., Simon E.M., and Hafner H.R. (2004) Assessment of PM<sub>2.5</sub> speciation data validation tool and procedures. Technical memorandum prepared for Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-903177, January.
- McCarthy M.C. and Hafner H.R. (2004) Data validation of ADEQ continuous methane/nonmethane hydrocarbon analyzer measurements collected from 2001 to 2003. Draft final report prepared for the Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-903701-2462-DFR, January.
- Battelle Memorial Institute and Sonoma Technology, Inc. (2003) Phase II air toxics monitoring data: analyses and network design recommendations. Final technical report prepared for Lake Michigan Air Directors Consortium, Des Plaines, IL by Battelle Memorial Institute, Columbus, OH, and Sonoma Technology, Inc., Petaluma, CA, December.
- Hafner H.R. (2003) Data validation workshop. Prepared for the Lake Michigan Air Directors Consortium and U.S. Environmental Protection Agency, Region V, Chicago, IL, by Sonoma Technology, Inc., Petaluma, CA, STI-903510-2424, October.

- Hafner H.R., Brown S.G., and Simon E.M. (2003) Comparison of collocated PM<sub>10</sub> mass, PM<sub>2.5</sub> mass, and PM<sub>2.5</sub> speciation measurements at the Phoenix Supersite. Technical memorandum prepared for Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-903172-2397, July.
- Hafner H.R., Brown S.G., Simon E.M., Knoderer C.A., and Hyslop N.P. (2003) Arizona PM network assessment. Technical memorandum prepared for Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-903176-2416-TM, July.
- Ryan P.A., Hafner H.R., and Brown S.G. (2003) Deposition of air pollutants to Casco Bay. Final report prepared for Casco Bay Estuary Project, University of Southern Maine, Portland, ME, by Sonoma Technology, Inc., Petaluma, CA, STI-902150-2209-FR2, July.
- Chinkin L.R., Coe D.L., Hafner H.R., and Tamura T.M. (2003) Air toxics emission inventory training workshop. Sponsored by the U.S. Environmental Protection Agency, Region IX, Richmond, CA. Prepared by Sonoma Technology, Inc., Petaluma, CA, STI-903320-2398, July 15-16.
- Hafner H.R. (2003) VOCDat toxics training: Chicago, IL, Research Triangle Park, NC, Albany, NY, and San Francisco, CA. Training Manual prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-902600-2364-TM, May and June.
- U.S. Environmental Protection Agency (2003) Guidelines for developing an air quality (ozone and PM<sub>2.5</sub>) forecasting program. Prepared by Dye T.S., MacDonald C.P., Anderson C.B., Hafner H.R., Wheeler N.J.M., and Chan A.C. at Sonoma Technology, Inc., Petaluma, CA, STI-902461-2295-FR, EPA-456/R-03-002, June. Available on the Internet at [http://www.epa.gov/airnow/aq\\_forecasting\\_guidance-1016.pdf](http://www.epa.gov/airnow/aq_forecasting_guidance-1016.pdf).
- Hafner H.R., Hyslop N.P., and Green C.N. (2003) California Regional PM<sub>10</sub>/PM<sub>2.5</sub> Air Quality Study management of anchor site data. Prepared for the San Joaquin Valleywide Air Pollution Study Agency and the California Air Resources Board, Sacramento, CA, by Sonoma Technology, Inc., Petaluma, CA, 999242-2087-FR, May.
- Brown S.G. and Hafner H.R. (2003) Exploratory source apportionment of Houston's Clinton Drive auto-GC 1998-2001 data. Final report prepared for Texas Commission on Environmental Quality, Austin, TX, by Sonoma Technology, Inc., Petaluma, CA, 900700-2317-FR, May.
- Coutant B.W., Holloman C.H., Swinton K.E., and Hafner H.R. (2003) Eight-site source apportionment of PM<sub>2.5</sub> speciation trends data. Revised draft report prepared for U.S. Environmental Protection Agency Office of Air Quality Planning and Standards Emissions, Monitoring, and Analysis Division, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, April.
- Hafner H.R., Brown S.G., Penfold B.M., and Funk T.H. (2003) Designing a monitoring regimen for air toxics from landfills. Final report prepared for Massachusetts Department of Environmental Protection, Boston, MA, by Sonoma Technology, Inc., Petaluma, CA, STI-902133-2335-FR, March.
- Hafner H.R. and Brown S.G. (2003) Review of Detroit DRUM impactor data. Technical memorandum prepared for the Lake Michigan Air Directors Consortium, Des Plaines, IL, by Sonoma Technology, Inc., Petaluma, CA, STI-902910, February.
- Hyslop N.P., Brown S.G., Gorin C.A., and Hafner H.R. (2003) California Regional PM<sub>10</sub>/PM<sub>2.5</sub> Air Quality Study (CRPAQS) data quality summary reports. Final report prepared for San Joaquin Valleywide Air Pollution Study Agency c/o California Air Resources Board, Sacramento, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-999242-2310-FR, February.

- Brown S.G. and Hafner H.R. (2003) Prescribed data analyses for Phoenix, Arizona, hydrocarbon data collected in 2001. Final report prepared for Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-902263-2285-FR, January.
- Brown, S.G. and Hafner, H.R. (2002) Prescribed data analyses for Massachusetts PAMS sites. Technical memorandum prepared for Commonwealth of Massachusetts, Department of Environmental Protection, Lawrence, MA, by Sonoma Technology, Inc., Petaluma, CA, STI-902133-2263-TM, October.
- Main H.H. (2002) Evaluation of control program effectiveness. Technical memorandum prepared for the Northeast States for Coordinated Air Use Management, Boston, MA, by Sonoma Technology, Inc., Petaluma, CA, STI-902071-2253-TM, September.
- Main H.H., Funk T.H., and Penfold B.M. (2002) Arizona Department of Environmental Quality toxics network assessment. Report prepared for the Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-901483-2226-FR, September.
- Main H.H. and Brown S.G. (2002) PAMS data validation for the northeast states 2000-2001. Report prepared for Northeast States for Coordinated Air Use Management, Boston, MA, by Sonoma Technology, Inc., Petaluma, CA, STI-902071-2205-FR, September.
- Main H.H. (2002) Prescribed data analyses for Tucson, Arizona, hydrocarbon data collected in 2000 and 2001. Final report (revised) prepared for Pima Association of Governments, Tucson, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-902170-2227-FR2, August.
- Brown S.G. and Main H.H. (2002) Acquisition, review, and analysis of auto-GC VOC data in the Houston area, 1998-2001. Prepared for Texas Natural Resource Conservation Commission, Austin, TX, by Sonoma Technology, Inc., Petaluma, CA, STI-900670-2224-FR, July.
- Main H.H. (2002) Phoenix area toxics data 1994-1998: Data validation and analysis summary. Report prepared for the Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-901481-2186-FR, May.
- Hyslop N.P., Main H.H., and Roberts P.T. (2002) Compilation, summary, and transport analysis of air quality data collected along the California/Mexico border. Prepared for California Air Resources Board, Sacramento, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-999410-2063-FR, May.
- Coutant B., Wood B., Scott B., Ma J., Kelly T., and Main H. (2002) Source apportionment analysis of air quality monitoring data: Phase 1. Final report prepared for Mid-Atlantic/Northeast Visibility Union and Midwest Regional Planning Organization by Battelle, Columbus, OH, and Sonoma Technology, Inc., Petaluma, CA, May.
- Main H. (2002) Validation of VOC data collected in Tucson, Arizona, during 2000 and 2001 special studies. Technical memorandum prepared for Pima Association of Governments, Tucson, AZ, by Sonoma Technology, Inc., Petaluma, CA, 902170-2183-TM, April.
- Chinkin L.R., Main H.H., and Roberts P.T. (2002) Weekday/weekend ozone observations in the South Coast Air Basin Volume III: analysis of summer 2000 field measurements and supporting data. Final report prepared for National Renewable Energy Laboratory, Golden, CO, by Sonoma Technology, Inc., Petaluma, CA, STI-999670-2124-FR, April.
- Main H.H. and Brown S.G. (2002) Validation and analysis of Atlanta, Georgia 1999 and 2000 PAMS data. Technical memorandum prepared for the Georgia Department of Natural Resources, Atlanta, GA, by Sonoma Technology, Inc., Petaluma, CA, STI-999434-2177-TM, March.
- Main H.H. (2001) Prescribed data analysis for the Phoenix, Arizona, PAMS site 1999-2000. Final report prepared for the Arizona Department of Environmental Quality, Phoenix, AZ, by Sonoma Technology, Inc., Petaluma, CA, STI-901074-2103-FR, November.

*Prior to July 2002, Hilary R. Hafner was Hilary H. Main*

- Bortnick S., Coutant B., Holdren M., Stetzer S., Holdcraft J., House L., Pivetz T., and Main H. (2001) Air toxics monitoring data: Analyses and network design recommendations. Revised Draft Technical Report prepared for Lake Michigan Air Directors Consortium, Des Plaines, IL, by Sonoma Technology, Inc., Petaluma, CA and Battelle Memorial Institute, Columbus, OH, October.
- Main H.H. and Roberts P.T. (2001) Recommendations for the PAMS network in the Northeast and Mid-Atlantic states. Report prepared for NESCAUM, Boston, MA, by Sonoma Technology, Inc., Petaluma, CA, STI-900860-2067-FR, June.
- Main H.H. and O'Brien T. (2001) Statistical summary of PAMS data collected in the Northeast and Mid-Atlantic states. Report prepared for NESCAUM, Boston, MA, by Sonoma Technology, Inc., Petaluma, CA, STI-900860-2045-FR2, June.
- Main H.H. and O'Brien T. (2001) PAMS data validation for the Northeast and Mid-Atlantic states, 1994-1999. Report prepared for NESCAUM, Boston, MA, by Sonoma Technology, Inc., Petaluma, CA, STI-900860-2040-FR, June.
- Blanchard C. and Main H.H. (2001) Literature review in support of PAMS program assessment. Report prepared for NESCAUM, Boston, MA, by Sonoma Technology, Inc., Petaluma, CA, STI-900860-2039-FR, June.
- Main H.H. and Stiefer P.S. (2001) Analysis of air toxics data collected in Barrio Logan, California from October 1999 through March 2000. Final report prepared for San Diego Air Pollution Control District, San Diego, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-900800-2004-FR, March.
- Main H.H. and Roberts P.T. (2001) PM<sub>2.5</sub> Data Analysis Workbook. Draft workbook prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-900242-1988-DWB, February.
- Roberts P.T., Funk T.H., MacDonald C.P., Main H.H., and Chinkin L.R. (2001) Weekday/weekend ozone observations in the South Coast Air Basin: retrospective analysis of ambient and emissions data and refinement of study hypotheses. Report prepared for the National Renewable Energy Laboratory, Golden, CO, by Sonoma Technology, Inc., Petaluma, CA, STI-999670-1961-FR, January.
- Main H.H. (2000) Spatial and temporal characteristics of VOC data: 1998 Atlanta, Georgia, PAMS sites. Prepared for Georgia Department of Natural Resources, Atlanta, GA, by Sonoma Technology, Inc., Petaluma, CA, STI-999433-2044-TM, November.
- Chinkin L.R., Funk T.H., Main H.H., and Roberts P.T. (2000) PAMS data analysis for southern California. Volume VI: use of PAMS data to evaluate a South Coast Air Basin emission inventory. Report prepared for South Coast Air Quality Management District, Diamond Bar, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-997528-1916-FR, November.
- Main H.H. and Roberts P.T. (2000) PAMS data analysis workbook: illustrating the use of PAMS data to support ozone control programs. Prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-900243-1987-FWB, September.
- Main H.H., Alcorn S.H., and Roberts P.T. (1999) Characteristics of volatile organic compounds in the Mid-Atlantic region. Report prepared for MARAMA, Baltimore, MD, by Sonoma Technology, Inc., Petaluma, CA, STI-998482-1869-FR2, November.
- Coe D.L., Main H.H., and Chinkin L.R. (1999) A review of current emission estimating techniques for petroleum refinery cooling towers and flares. Report prepared for the American Petroleum Institute, Washington, DC, by Sonoma Technology, Inc., Petaluma, CA, STI-998540-1895-FR2, October.

- Main H.H., Chinkin L.R., Chamberlin A.H., and Hyslop N.M. (1999) PAMS data analysis for southern California. Volume I: characteristics of hydrocarbon data collected in the South Coast Air Quality Management District from 1994 to 1997. Report prepared for the South Coast Air Quality Management District, Diamond Bar, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-997521-1899-DFR, September.
- Alcorn, S.H., Roberts P.T., and Main H.H. (1999) Comparison of 8-hr and 1-hr ozone exceedances in the Mid-Atlantic Region. Final report prepared for MARAMA, Baltimore, MD, by Sonoma Technology, Inc., Petaluma, CA, STI-998482-1874-FR2, July.
- Main H.H., Hurwitt S.B., and Roberts P.T. (1999) Spatial and temporal characteristics of California PAMS and long-term trend site VOC data (1990-1997). Report prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-998241-1883-FR, May.
- Wittig A.E., Main H.H., Roberts P.T., and Hurwitt S.B. (1999) Analysis of PAMS data in California Volume III: trends analysis of California PAMS and long-term trend air quality data (1987-1997). Report prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, STI-998393-1885-FR, May.
- Main H.H. (1999) VOCdat training: Chicago, Illinois. Training manual prepared for Lake Michigan Air Directors Consortium, Des Plaines, IL, by Sonoma Technology, Inc., Petaluma, CA, STI-999070-1877-TM, April.
- Chinkin L.R., Main H.H., Anderson C.B., Coe D.L., Haste T.L., Hurwitt S., and Kumar N. (1999) Study of air quality conditions including ozone formation, emission inventory evaluation, and mitigation measures for Crittenden County, Arkansas. Report prepared for the Arkansas Department of Pollution Control and Ecology, Little Rock, AR, by Sonoma Technology, Inc., Petaluma, CA, STI-998310-1837-FR, March.
- Roberts P.T., Main H.H., and Hurwitt S.B. (1999) Technical assistance to MARAMA on EPA Cumulative Exposure Project (CEP): Review of air toxics modeling. Report prepared for MARAMA, Baltimore, MD, by Sonoma Technology, Inc., Petaluma, CA, STI-998561-1853-FR, January.
- Stoeckenius T., Yarwood G., Shepard S., Taylor A., Lee K., Main H.H., and Haste T.L. (1998) Analysis of data from the 1995 NARSTO-northeast air quality study. Volume I: data validation and statistical summaries of routine data. Report prepared for the Coordinating Research Council, Atlanta, GA, by ENVIRON International Corporation, Novato, CA, and Sonoma Technology, Inc., Petaluma, CA, December.
- Chinkin L.R., Main H.H., Hurwitt S., Haste T.L., Coe D.L., and Kumar N. (1998) A study of air quality conditions including emissions inventory, ozone formation, PM<sub>10</sub> generation, and mitigation measures for Mendocino County, California. Report prepared for the Mendocino County Air Quality Management District, Ukiah, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-998080-1816-FR, November.
- MacDonald C.P., Roberts P.T., Main H.H., Kumar N., Haste T.L., Chinkin L.R., and Lurmann F.W. (1998) Analysis of meteorological and air quality data for North Carolina in support of modeling. Report prepared for North Carolina Department of Environment and Natural Resources, Division of Air Quality, Raleigh, NC, by Sonoma Technology, Inc., Petaluma, CA, STI-997420-1818-DFR, October.
- Dye T.S., Reiss R., Kwiatkowski J.J., MacDonald C.P., Main H.H., and Roberts P.T. (1998) 8-hr and 1-hr ozone exceedances in the NESCAUM region (1993-1997). Report prepared for the Northeast States for Coordinated Air Use Management, Boston, MA, by Sonoma Technology, Inc., Petaluma, CA, STI-998100-1810-FR, September.

- Main H.H., Richards L.W., Hurwitt S.B., and Chinkin L.R. (1998) Characterization of the spatial and temporal patterns of visibility in the San Joaquin Valley during IMS95. Final report prepared for the San Joaquin Valleywide Air Pollution Study Agency, c/o the California Air Resources Board, Sacramento, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-997217-1778-FR, July.
- Main H.H., Roberts P.T., and Reiss R. (1998) Analysis of photochemical assessment monitoring station (PAMS) data to evaluate a reformulated gasoline (RFG) effect. Report prepared for the U.S. Environmental Protection Agency, Office of Mobile Sources, Fuels and Energy Division, Washington, DC, by Sonoma Technology, Inc., Santa Rosa, CA, STI-997350-1774-FR2, April. Available on the Internet at [http://www.epa.gov/oar/oaqps/pams/rfg\\_oms.pdf](http://www.epa.gov/oar/oaqps/pams/rfg_oms.pdf).
- Main H.H. (1998) VOCDat training for Ventura County. Training manual prepared for the Ventura County Air Pollution Control District, Ventura, CA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-997450-1793-TM, March.
- Main H.H. and Chinkin L.R. (1998) Example photochemical assessment monitoring station (PAMS) data analysis for Ventura County. Final report prepared for Ventura County Air Pollution Control District, Ventura, CA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-997450-1795-FR, March.
- Haste T.L., Chinkin L.R., Main H.H., Kumar N., and Roberts P.T. (1998) Analysis of data from the 1995 NARSTO-Northeast Study, Volume II: Use of PAMS data to evaluate a regional emission inventory. Final report prepared for the Coordinating Research Council, Atlanta, GA, by Sonoma Technology, Inc., Santa Rosa, CA under subcontract to ENVIRON International Corp., Novato, CA, STI-95424-1737-FR, March.
- Roberts P.T., MacDonald C.P., Main H.H., Dye T.S., Coe D., and Haste T.L. (1997) Analysis of meteorological and air quality data for the 1996 Paso del Norte ozone study. Final report prepared for U.S. Environmental Protection Agency, Region 6, Dallas TX under subcontract to SAIC, McLean, VA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-997330-1754-FR, EPA Contract No. 68-D3-0030, Work Assignments III-102 and III-130, September.
- Main H.H. and Chinkin L.R. (1997) Analysis of aloft ozone, ozone precursors, and exotic species in the mid-Sacramento Valley on September 7, 1995. Report prepared for Sacramento Valley Basin Wide Air Pollution Control Council, Woodland, CA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-95350-1730-FR, June.
- Main H.H., Roberts P.T., and Chinkin L.R. (1997) PAMS data analysis workshop: illustrating the use of PAMS data to support ozone control programs. Prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, presented at California Air Resources Board and EPA Region IX, Sacramento, CA, STI-997100-1719-WD7, May.
- Main H.H., Roberts P.T., Chinkin L.R., and Korc M.E. (1997) PAMS data analysis workshop: illustrating the use of PAMS data to support ozone control programs. Prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, presented at Camp Mabry for Texas Natural Resources Conservation Commission, Austin, TX, by Sonoma Technology, Inc., Santa Rosa, CA, STI-997160-1704-WD6, April.
- Main H.H., Chinkin L.R., Haste T.L., Roberts P.T., and Reiss R. (1997) Shasta County Ozone and Ozone Precursor Transport Quantification Study. Final report prepared for Shasta County Department of Resource Management, Redding, CA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-95180-1714-FR, March.

- Main H.H., Roberts P.T., and Korc M.E. (1997) PAMS data analysis workshop: illustrating the use of PAMS data to support ozone control programs. Prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, presented at the U.S. EPA Region V Headquarters, Chicago, IL, by Sonoma Technology, Inc., Santa Rosa, CA, STI-997100-1708-WD5, March.
- Blumenthal D.L., Lurmann F.W., Roberts P.T., Main H.H., MacDonald C.P., Knuth W.R., and Niccum E.M. (1997) Three-dimensional distribution and transport analyses for SJVAQS/AUSPEX. Draft final report prepared for San Joaquin Valley Air Pollution Study Agency, Sacramento, CA, by Sonoma Technology, Inc., Santa Rosa, CA, Technical & Business Systems, Santa Rosa, CA, and California Air Resources Board, Sacramento, CA, STI-91060-1705-FR, February.
- Main H.H., Roberts P.T., and Korc M.E. (1996) PAMS data analysis workshop: illustrating the use of PAMS data to support ozone control programs. Prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, presented at EPA Region VI Headquarters, Dallas, TX, by Sonoma Technology, Inc., Santa Rosa, CA, STI-996320-1606-WD4, December.
- Main H.H., Roberts P.T., and Korc M.E. (1996) PAMS data analysis workshop: illustrating the use of PAMS data to support ozone control programs. Prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, presented at EPA Region I Headquarters, Boston, MA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-996320-1604-WD3, December.
- Main H.H., Roberts P.T., and Korc M.E. (1996) PAMS data analysis workshop. Prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, presented at EPA Region 3 Headquarters, Philadelphia, PA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-996170-1589-WD2, July.
- Korc M.E., Jones C.M., Chinkin L.R., Main H.H., Roberts P.T., and Blanchard C. (1995) Use of PAMS data to evaluate the Texas coast emission inventory. Final report prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Santa Rosa, CA, Work assignment 2-95, EPA Contract No. 68D30020, STI-94520-1558-FR, December.
- Reiss R., Chinkin L.R., Roberts P.T., Main H.H., and Eisinger D.S. (1995) Investigation of monitoring networks for an alternative ozone NAAQS. Work assignment 7-95. Final report prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Santa Rosa, CA, EPA Contract No. 68D30020, STI-94571-1553-FR, December.
- Blumenthal D.L., Lindsey C.G., Dye T.S., Main H.H., Korc M.E., Roberts P.T., Arthur M., Ray S.E., and Blanchard C.L. (1995) Ozone episodes in the Northeastern U.S.: observations during 1994. Final report prepared for EPRI, Palo Alto, CA, by Sonoma Technology, Inc., Petaluma, CA, STI-94362-1511-FR, September.
- Haney J.L., Lolk N.K., Myers T.C., Causley M.C., Steiner C.K., Gardner L., Whitten G.Z., Douglas S.G., Burton C.S., Roberts P.T., Dye T.S., Korc M.E., Lindsey C.G., Main H.H., and Ray S.E. (1995) Gulf of Mexico Air Quality Study. Vol 1: Summary of data analysis and modeling. Final report prepared for U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA, by Systems Applications International, San Rafael, CA, and Sonoma Technology, Inc., Santa Rosa, CA, OCS Study MMS-95-0038, (SYSAPP-95/013d), August.
- Main H.H., Chinkin L.R., and Roberts P.T. (1995) Analysis of PAMS and NARSTO-Northeast ambient air quality data. Work assignment 5-95. Data analysis plan prepared for the U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Santa Rosa, CA, EPA Contract No. 68D30020, STI-94550-1526-DA, June.

- Main H.H., Richards L.W., Chinkin L.R., Evans V.A., Chow J.C., and Divita F. (1995) PM<sub>10</sub> chemical analysis and source receptor modeling study for the Seattle-Tacoma area. Final report prepared for Puget Sound Air Pollution Control Agency, Seattle, WA, by Sonoma Technology, Inc., Santa Rosa, CA, RMI, Novato, CA, and Desert Research Institute, Reno, NV, STI-93140-1444-FR, April.
- Stoeckenius T.E., Yarwood G., Ligocki M.P., Cohen J.P., Shepard S.B., Looker R.E., Fujita E.M., Main H.H., and Roberts P.T. (1995) Feasibility study for a 1995-1996 southern California air quality monitoring program. Final report prepared for Coordinating Research Council, Atlanta, GA, by Systems Applications International, San Rafael, CA, Desert Research Institute, Reno, NV, and Sonoma Technology, Inc., Santa Rosa, CA, SYAPP94-94/065d, January.
- Richards L.W., Main H.H., Chinkin L.R., and Collins J.F. (1994) Characteristics of the SCE long-term and high-density network precipitation chemistry database. Final report prepared for Southern California Edison, Rosemead, CA, by Sonoma Technology, Inc., Santa Rosa, CA, and Collins Consulting and Computing, Somis, CA, STI-94460-1447-FR, December.
- Chinkin L.R., Korc M.E., Main H.H., Roberts P.T., and Dye T.S. (1994) Scoping study report for the Wasatch Front Ozone Study. Report prepared for Utah Division of Air Quality, Salt Lake City, UT, by Sonoma Technology, Inc., Santa Rosa, CA, STI-94411-1430, September.
- Roberts P.T., Dye T.S., Korc M.E., and Main H.H. (1994) Air quality data analysis for the 1991 Lake Michigan Ozone Study. Final report prepared for Lake Michigan Air Directors Consortium, Des Plaines, IL, by Sonoma Technology, Inc., Santa Rosa, CA, STI-92022-1410-FR, September.
- Main H.H. and Roberts P.T. (1994) Investigation of hydrocarbon data in the South Coast air basin. Draft final report prepared for Systems Applications International, San Rafael, CA, and the Coordinating Research Council, Atlanta, GA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-94260-1415-DFR2, June. (Included as Appendix E of Stoeckenius et al., 1995).
- Roberts P.T., Chinkin L.R., Prins E.M., and Main H.H. (1994) 1990 Sacramento Area Ozone Study: data analysis summary and guide to the data base. Final report prepared for Systems Applications International, San Rafael, CA, and Sacramento Area Council of Governments, Sacramento, CA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-90048-1353-FR2, May.
- Roberts P.T., Lindsey C.G., Prins E.M., and Main H.H. (1994) 1989 Sacramento Area Ozone Study: data analysis summary and guide to the data base. Final report prepared for Systems Applications International, San Rafael, CA, and Sacramento Area Council of Governments, Sacramento, CA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-99071-1023-FR2, May.
- Main H.H. and Collins J.F. (1994) Quality assurance, data validation, and data screening for a precipitation chemistry study. Client confidential final report prepared by Sonoma Technology, Inc., Santa Rosa, CA, STI-92270-1369-FR, April.
- Main H.H., Chinkin L.R., and J.F. Collins (1994) Long-term trends in the SCE precipitation chemistry data base. Client confidential final report prepared by Sonoma Technology, Inc., Santa Rosa, CA, STI-92270-1368-FR, April.
- Main H.H., Chinkin L.R., and Strimaitis D. (1993) Evaluation of methods for simulating ambient impacts of area-wide sources of air toxics. Report prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Petaluma, CA, and Sigma Research Corporation, Concord, MA, STI-93241-1391-DFR, December.

- Main H.H., Chinkin L.R., Roberts P.T., and Hanna S.R. (1993) Modeling-based comparison and data analysis of open path analyzers versus fixed point analyzers. Report prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC, by Sonoma Technology, Inc., Santa Rosa, CA, STI-93251-1389-TM, November.
- Korc M.E., Roberts P.T., Chinkin L.R., and Main H.H. (1993) Comparison of emission inventory and ambient concentration ratios of CO, NMOC, and NO<sub>x</sub> in the Lake Michigan Air Quality Region. Draft final report prepared for Lake Michigan Air Directors Consortium, Des Plaines, IL, by Sonoma Technology, Inc., Santa Rosa, CA, STI-90218-1357-DFR, October.
- Roberts P.T., Main H.H., Lindsey C.G., and Korc M.E. (1993) Ozone and particulate matter case study analysis for the Southern California Air Quality Study. Final report prepared for the California Air Resources Board, Sacramento, CA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-90020-1222-FR, Contract No. A932-050, May.
- Main H.H. and P.T. Roberts (1993) Validation and analysis of the Lake Michigan Ozone Study ambient VOC data. Draft final report prepared for the Lake Michigan Air Directors Consortium, Des Plaines, IL, by Sonoma Technology, Inc., Santa Rosa, CA, STI-90217-1352-DFR, April.
- Roberts P.T., H.H. Main, L.R. Chinkin, S.F. Musarra, and T. Stoeckenius (1993) Methods development for quantification of ozone and ozone precursor transport in California. Final report prepared for the California Air Resources Board, Sacramento, CA, by Sonoma Technology, Inc., Santa Rosa, CA, and Systems Applications International, San Rafael, CA, STI-90100-1233-FR, ARB Contract No. A932-143, July.
- Roberts P.T., Main H.H., Smith T.B., Lindsey C.G., and Korc M.E. (1992) Analysis of 3-D air quality data and carbon, nitrogen, and sulfur species distributions during the Southern California Air Quality Study. Final report prepared for the Coordinating Research Council, Atlanta, GA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-99100-1213-FR, October.
- Lurmann F.W. and Main H.H. (1992) Analysis of the ambient VOC data collected in the Southern California Air Quality Study. Final report prepared for the California Air Resources Board, Sacramento, CA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-99120-1161-FR, Contract No. A823-130, February.
- Main H.H., Roberts P.T., Anderson J.A., and Fung K. (1991) Pollutant concentrations along the western boundary of the South Coast Air Basin part II: analysis of June 1990 data collected offshore. Final report prepared for the South Coast Air Quality Management District, Diamond Bar, CA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-90080-1149-FR, July.
- Main H.H., Lurmann F.W., and Roberts P.T. (1990) Pollutant concentrations along the western boundary of the South Coast Air Basin part I: a review of existing data. Final report prepared for the South Coast Air Quality Management District, Diamond Bar, CA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-90080-1016-FR, October.
- Main H.H. and Lurmann F.W. (1990) The development of a screening model to estimate atmospheric VOC reactivity from gasoline composition. Client confidential draft report by Sonoma Technology, Inc., Santa Rosa, CA, STI-99220-1001-DR, January.
- Roberts P.T. and Main H.H. (1989) The measurement of pollutant and meteorological boundary conditions: technical support study number 10. Final report prepared for the San Joaquin Valley Air Pollution Study Agency, Sacramento, CA, by Sonoma Technology, Inc., Santa Rosa, CA, STI-98030-920-FR, December.