JAMES G. WILKINSON, PhD
SENIOR ENGINEER
ALPINE GEOPHYSICS, LLC

EDUCATION:

Ph.D, Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, PA, 2004.
Ph.D. Candidate, Environmental Engineering, Georgia Institute of Technology, Atlanta, GA, 1996.
B.S. (with Honors), Petroleum Engineering, Montana College of Mineral Science and Technology, Butte, MT, 1985.
A.A., Computer Science, Montana College of Mineral Science and Technology, Butte, MT, 1983.

PROFESSIONAL EXPERIENCE:

Senior Engineer, Alpine Geophysics, Atlanta, GA, 1993

Senior Engineer, Radian Corporation, Sacramento, CA, 1992-1993.

Staff Engineer, Radian Corporation, Sacramento, CA, 1989-1992.

Group Leader, Data Management, Radian Corporation, Sacramento, CA, 1988-1989.

Computer Scientist/Engineer, Radian Corporation, Sacramento, CA, 1987-1988.

Petroleum Engineer, ARCO Alaska, Inc., Anchorage, AK, 1985-1986.

Programmer II, Montana Tech Computer Services, Montana College of Mineral Science and Technology, Butte, MT, 1984-1985.

Petroleum Engineer, ARCO Alaska, Inc., Anchorage, AK, 1984.

Teaching Assistant, Environmental Engineering Department, Montana College of Mineral Science and Technology, 1982-1984.

FIELDS OF EXPERIENCE:

Dr. Wilkinson is a senior engineer with Alpine Geophysics. He is also a Ph.D. candidate in Environmental Engineering at the Georgia Institute of Technology. Dr. Wilkinson possess knowledge and experience in applied research and directly related technical experience in disciplines spanning the physical sciences, geophysical sciences, mathematics, and computational sciences. Experience includes but is not limited to managing large scale, multidisciplinary applied research projects with multiple stakeholders and sponsors such as urban- to continental-scale air quality modeling studies using such models as CAMx, UAM, MAQSIP, and URM (e.g., Southern Appalachian Mountains Initiative, California Integrated Transportation Network); emissions modeling system design, development, and application (e.g. SMOKE, CONCEPT, EMS-95); micro- to global-scale environmental data base management system design and deployment; design, development, and application of computational mathematical models of the environment (e.g., URM, BIOME); formulation of public policy perspectives associated with the technical and scientific findings of basic and applied research; and teaching at the university level.

Dr. Wilkinson continues to conduct research in the areas of emissions uncertainty and economic-based incentives (e.g. market trading programs) to control regional emissions. More specifically, his current, primary research project is concerned with determining the geographic extent of areas whose sources may contribute to air quality exceedances. These areas are known as Areas of Influence (AOI). He is also interested in elucidating the impacts that uncertainty in biogenic emissions estimates have on urban- and regional-scale emissions control strategies.

Dr Wilkinson is constructing a turn-key system that integrates the CONCEPT emissions modeling platform with the CAMx air quality modeling for the Coordinating Research Council (CRC) to support its to study the impacts of alternative ethanol-blended fuels on air quality in multiple urban regions in the United States. He is leading the effort to ingest multiple link-based on-road mobile source networks into CONCEPT and apply on-road mobile source emissions factors from the MOVES2010 motor vehicle emissions simulator that have been adjusted to account for effects on emissions factors due to alternative ethanol-blended fuels. An additional component to this effort is likely to be an assessment of the effects of meteorology that is “flexi-nested” from 12 km to 04 km in CAMx contrasted to a meteorology derived from first principles at 04 km resolution using MM5.

Dr. Wilkinson is providing in-depth analyses of emissions, meteorological, and air quality modeling results developed by the Texas Commission on Environmental Quality (TCEQ). Further, he is developing an independent sets of stationary, area, non-road, on-road, and biogenic source emissions files suitable for use in SMOKE to provide parallel, corroborative and alternative base case and future year episodic emissions development capabilities for use by the Coalition and the US EPA. Models that are being used in this effort include CAMx, CMAQ, MM5, SMOKE, EPS3, MEGAN, BEIS3, and MOBILE6.

Dr. Wilkinson is providing emissions, air quality, and meteorological modeling capabilities to determine impacts to the Sacramento urban heat island, biogenic emissions, and air quality as a result of alternative tree planting scenarios in the Sacramento urban area. The goal of this effort is to quantify the SIP credit that can be taken for planting new urban forests in Sacramento or exchanging lower-emitting tree species for existing high-emitting tree species. He is using urbanized-MM5 (uMM5) to quantify localized meteorological changes that may occur due to landuse/landcover changes as the results of tree planting scenarios. He is propagating the meteorological predictions through BEIS3 and MEGAN to estimate changed in biogenic emissions. Finally, he is using CAMx to determine the outcome on air quality, in particular ozone, due to changes as a result of various tree planting scenarios.

Dr. Wilkinson developed a software tool to display Comprehensive Air Quality Model with extensions (CAMx) predictions in Google Earth. The software tool allows a user to select the time period and chemicals to display from a CAMx output file and prepares a KMZ file containing PNG graphics and a KML file. The tool is based on Open Source and freeware tools PostgreSQL, PostGIS, and perl. He recently extended the tool to display stationary source daily emissions as estimated by SMOKE. Further, Dr. Wilkinson is currently extending the tool to display air quality observations.

Dr. Wilkinson developed version three of the Integrated Transportation Network (ITN) for the California Air Resource Board. The ITN was constructed using Open Source and freeware tools PostgerSQL, PostGIS, and perl. The ITN was based on the travel demand modeling results from more than twenty metropolitan planning organizations (MPO's). The ITN was constructed to function within the CONCEPT framework, but can also operate as a stand-alone system. The ITN utilized on-road mobile source emissions factors that were extracted from EMFAC2007. The extraction of emissions factors from EMFAC2007 was automated with the Windows-based tool AutoIt. The goal of this effort was to construct a unified travel demand modeling link-based network with associated travel analysis zone (TAZ) data for the state of California that can be used for such purposes as environmental justice litigation, conformity planning, development of on-road mobile source emissions estimates, and SIP-quality air quality modeling.

Dr. Wilkinson worked on a study of historical regional haze in the Columbia River Gorge. The study focused on assigning source culpability to haze and visibility degradation in the Columbia River Gorge. He developed CAMx-ready emissions estimates using SMOKE for winter and summer episodes in 2005 and 2018. He used SMOKE to develop CAMx-ready emissions estimates for such sources as confined animal feeding operations, commercial marine vessels, railroad operations, dairy operations, pulping operations, lumber mills, and EGUs to name but a few. He prepared hourly estimates of SO2 emissions from Mt. St, Helens. He also estimated hourly emissions of CO, NOX, VOC, SO2, PM2.5, PM-coarse, and NH3 from controlled burns and wildfires. He prepared hourly estimates of emissions from EGUs and pulping facilities based on data extracted from the US EPA CEM archive. Further, the emissions estimates were aggregated into multiple categories for use in the Particulate Matter Source Apportionment Technology (PSAT) tool of the CAMx air quality model. Dr. Wilkinson developed an Excel workbook with associated Visual Basic macros that allows a user to investigate emissions by source category and source region (further extending the PSAT and OSAT capabilities of CAMx). The Excel workbook with Visual Basic macros takes output from the SMOKE/SMKREPORT tool as input to the spreadsheet. Further, the Excel workbook has macros that allow the user to prepare summary graphics of the emissions estimates. Finally, Dr. Wilkinson modeled air quality using CAMx for 2018 to determine if air quality objectives for regional haze and visibility can be met.

Dr. Wilkinson is currently working with the US EPA to develop the Control Strategy Tool (CoST). CoST is EPA's vision to replace AirControlNET. CoST will be used to develop overall program costs associated with the selection of control measures and control programs that may be implemented to control emissions to achieve future year air quality objectives. Dr. Wilkinson is collecting control measure and control program data and costs for criteria

pollutants, air toxics, and green house gases. He is also providing analyses to determine the applicability of these data to sources in the US as some of these data are being derived from programs outside the US.

Dr. Wilkinson worked with the Lake Michigan Air Directors Consortium (LADCo) to update the Consolidated Community Emissions Processing Tool (ConCEPT) to include the biogenic emissions estimates model MEGAN. MEGAN (the Model for the Emissions of Gases and Aerosols from Nature) is the state-of-the-science model to estimates biogenic emissions. MEGAN is currently designed in MS-Access VBA and MS-Excel VBA. Dr. Wilkinson was the lead analyst and programmer who is converting MEGAN to run under the PostgreSQL data base. Dr. Wilkinson performed the tasks to improve throughput of MEGAN under the SQL framework as well as the throughput of the CONCEPT meteorological data processor. He also guided the effort to verify the MEGAN emissions estimates against the BEIS3 emissions estimates.

Dr. Wilkinson prepared spatially and temporally resolved emissions estimates from stationary, area, and on-road mobile sources for a period spanning 1990 through 2004. These emissions estimates were compared to air quality measurements made over the same period to determine if trends in the air quality matched trends in the emissions inventory. One goal of this effort was to determine where deficiencies existed in the emissions inventory. Dr. Wilkinson is currently working with the California Air Resources Board (ARB) to determine trends of NOx and VOC emissions versus ozone in Central California from 1990 through 2004. Comparisons of emission trends with ambient air quality trends at an air-basin level of aggregation may obscure important local changes, but the large-scale comparisons do serve to illustrate why the rates of progress in improving ozone levels may be of concern in some areas. For example, in both the SJV and SoCAB areas, emissions of carbon monoxide (CO) declined by approximately 60 percent between 1990 and the present, and maximum ambient concentrations of CO declined by about the same amount (~60 percent) in the two areas. In both areas, substantial, albeit somewhat different, decreases occurred in the emissions of both oxides of nitrogen (NOx) and reactive organic gases (ROG). In both areas, ambient NO2 levels declined by approximately the same magnitude as did NOx emissions (~35 to 40%). Yet, maximum 1-hour and 8-hour ozone levels declined appreciably in the SoCAB while remaining virtually unchanged in the SJV. Dr. Wilkinson is providing emissions support for this study preparing emissions data for use in regression and trends analyses.

Dr. Wilkinson prepared Area of Influence (AOI) diagrams and estimated emissions reductions needed to attain visibility objectives by 2018 for ten Central Regional Air Planning Association (CENRAP) Class I areas and twelve near-CENRAP Class I areas. He developed AOIs for the twenty-two Class I areas by synthesizing the following data: Residence Time Difference plots; Probability of Regional Source Contribution to Haze (PORSCH) plots; and Tagged Species Source Apportionment (TSSA) results. The results of this effort were converted to geocoded coverages and maps using ARC/Info. He estimated sensitivity coefficients (a value that for example is -0.001 µg/m3 of sulfate per ton per day SO2 reduced tells one that for each ton of SO2 reduced within an AOI, the Class I area will exhibit a decrease of 0.001 µg/m3 in sulfate concentration) by synthesizing the results of numerous brute force and DDM-3D air quality model runs. These data were in turn used to estimate the annualized costs to achieve emissions reductions necessary to meet future year air quality objectives in each of the Class I areas.

Dr. Wilkinson has completed an emissions modeling study for the Bay Area Air Quality Management District (BAAQMD). He estimated emissions for multi-day ozone episodes for base case years in July 1999 and July 2000 using the EMS-05 emissions modeling system. He also estimated emissions for future years 2002, 2005, 2007, and 2010. Dr. Wilkinson estimated emissions for area sources, stationary sources, non-road mobile sources, on-road mobile source, commercial marine shipping, and biogenics for an airshed that encompassed most of California. The emissions estimates developed by him were used to model base year air quality levels over California with particular emphasis on model performance over the San Francisco Bay Area. Further, the future year emissions estimates will be used in on-going air quality modeling efforts to develop emissions control strategies for mitigation of the one-hour and eight-hour ozone National Ambient Air Quality Standards. In an effort to understand where potential deficiencies in the emissions inventory exists, he also completed an in-depth, comparative analysis of emissions estimates among common source categories between the Central California Ozone Study (CCOS) emissions data base and the VISTAS emissions data base.

Dr. Wilkinson helped design and implement the open source emissions modeling system Consolidated Community Emissions Processing Tool (CONCEPT). CONCEPT is a PostgreSQL-based system whose goal is to house all data

related to the emissions modeling process under a single data base. GIS-related functions are managed within the same PostgreSQL data base using the PostGIS plugin.

The California Air Resources Board commissioned Dr. Wilkinson to develop version two of the California Integrated Transportation Network (ITN). He recently completed the first version of the ITN using data from transportation demand models (TDMs) from fifteen California metropolitan planning organizations (MPOs). In version two of the ITN, TDM data from approximately twenty MPOs were used. The ITN is a seamless representation of the on-road mobile source transportation network for all of California. On behalf of the ARB, Dr. Wilkinson has used the ITN, in conjunction with the on-road emissions factors model EMFAC2002 and the Direct Travel Impact Model (DTIM), to estimate on-road mobile source emissions for a variety of multi-day air quality modeling episodes spanning the years 2000 through 2010. An interesting component of this effort was the development of a transportation gravity model in Excel VBA that can be used to estimate commercial truck trips and their distribution on the ITN.

In on going collaborative research with Dr. Robert Bornstein at San Jose State University, Dr. Wilkinson is using MM5 to develop meteorological fields for the 1997 Southern California Ozone Study (SCOS-97). He developed both the initialization fields as well as the FDDA fields for use in MM5 for the 4-7 August 1997 modeling period. Dr. Wilkinson continues to develop alternative inputs to MM5 for this period (e.g., updated landuse) in an effort to garner better performance. He is also responsible for all aspects of model performance evaluation. Ultimately, Dr. Wilkinson will use the MM5 outputs to prepare meteorological inputs to the CAMx air quality model.

Dr. Wilkinson has recently completed work to estimate emissions for four ozone episodes in the Houston, TX area using GloBEIS. He estimated emissions for 36 km, 12 km, and 04 km grid structures. He prepared all meteorological inputs (base temperatures, antecedent temperatures, Palmer Drought Index, PAR, wind speed, and mixing ratio) based on predictions from MM5. The episodes ran from eight to fifteen days in duration. GloBEIS outputs were speciated using CB4 and reformatted for use in the CAMx and CMAQ chemical transport models.

Dr. Wilkinson prepared estimates of biogenic emissions for the Missouri Department of Natural Resources for 36 km, 12 km, and 04 km grid structures that center on St Louis, MO. He used SMOKE/BEIS to model the emissions for three multi-day episodes. Dr. Wilkinson prepared all input files to SMOKE/BEIS. The landuse data were derived from version three of the Biogenic Emissions Landuse Database (BELD3). Temperature and PAR data were based on MM5 predictions.

Dr. Wilkinson has completed an emissions modeling study for the Bay Area Air Quality Management District (BAAQMD). He estimated emissions for multi-day ozone episodes for base case years in July 1999 and July 2000. He also estimated emissions for future years 2002, 2005, 2007, and 2010. Dr. Wilkinson estimated emissions for area sources, stationary sources, non-road mobile sources, on-road mobile source, commercial marine shipping, and biogenics for an airshed that encompassed most of California. The emissions estimates developed by him were used to model base year air quality levels over California with particular emphasis on model performance over the San Francisco Bay Area. Further, the future year emissions estimates will be used in on-going air quality modeling efforts to develop emissions control strategies for mitigation of the one-hour and eight-hour ozone National Ambient Air Quality Standards. In an effort to understand where potential deficiencies in the emissions inventory exists, he also completed an in-depth, comparative analysis of emissions estimates among common source categories between the Central California Ozone Study (CCOS) emissions data base and the VISTAS emissions data base.

Dr. Wilkinson was the lead emissions and air quality modeler for the Southern Appalachian Mountains Initiative (SAMI) project. The SAMI was a multi-episodic, integrated (i.e. acid deposition, ozone, and visibility/particulate matter), regional-scale air quality modeling study over the eastern United States with particular focus on the southern Appalachian Mountains. Of note, the selected episodes were seven to fifteen days in length and span the years 1990 through 1995 with future years of 2010 and 2040. In the SAMI project, Dr. Wilkinson was responsible for the preparation of all aspects of the air quality model ready inputs including, but not limited to, emissions estimates (e.g. the area source spatial surrogates, the mobile source emissions estimates, biogenic emissions estimates, emissions estimates speciation, and data management of the emissions data); conversion of prognostic meteorological modeling results from RAMS and MM5 to URM-ready meteorological fields (including interpolation of the fields from the meteorological grid structure to the air quality modeling grid structure.); and diagnosis of boundary and initial air quality conditions. In the SAMI study, he designed, implemented, and

maintained the geographic information system-based (GIS) components of the emissions and air quality modeling system. As part of the GIS for the SAMI project, Dr. Wilkinson maintained coverages of population, housing, urban areas, water, political boundaries (i.e. states, counties, national boundaries, and airsheds), forests, biogenic land cover, railroads, major roadways, water ports, airports, major stationary sources of air pollution, and air quality monitoring stations. The GIS-based data were used to disaggregate county-wide estimates of emissions from minor emissions sources into sub-county areas for the purposes of air quality modeling. Dr. Wilkinson used the GIS-based data to link and display emissions estimates, to sources, to air quality observations, to air quality model predictions. Further, he was responsible for developing inputs to URM so that air quality model performance goals for ozone, particulates, and wet/dry acid deposition were met.

Dr. Wilkinson prepared point source, area source, on-road mobile source, and biogenic emissions estimates for multiple ozone episodes over peninsular Florida. Further, he developed a wildfire emissions estimates model that could estimate temporally and spatially varying wildfire emissions based on fuel types and fuel loads. Dr. Wilkinson collected day-specific emissions for all electric generating utilities in the air quality modeling domain. He also prepared alternative emissions estimates for commercial marine shipping. Point and area source emissions were based on the 1996 NEI supplemented with emissions data and estimates from the Florida DEP. Biogenic emissions were estimated using BEIS, BEIS2, and GloBEIS. Future year inventories were grown using E-GAS derived growth and control factors supplemented with growth and control factors developed for specific source categories as determined by the Florida DEP.

Dr. Wilkinson performed a study to develop the first biogenic emissions inventory for northern Mexico. The new biogenic emissions inventory was integrated with existing anthropogenic emissions in an effort to better understand transboundary air pollution along the Mexico-United States border. The biogenic emissions inventory was developed from Mexican-supplied ground-truthed agricultural and forest coverage data as well as satellite-based land use data. The data were compiled for use in BEIS2.

Dr. Wilkinson helped to complete a design of an air quality and meteorological monitoring network for the Breton Island National Wildlife Refuge Class I Area which is located in the Gulf of Mexico just east of New Orleans, Louisiana. Dr. Wilkinson designed the GIS emissions, air quality, and meteorological data base management system that will be used to house these data when the Breton Island Air Monitoring Program (BAMP) field program is implemented.

Dr. Wilkinson completed a study to evaluate and improve existing ammonia emissions estimates techniques for use in the San Joaquin Valley of California. This study included a comprehensive literature review which focused on the following: methods that were used to estimate ammonia emissions; the development of a new ammonia emissions inventory for the study domain; the implementation of a pilot field study to improve upon methods to estimate ammonia emissions from dairy livestock, soils, and wastewater treatment plants; and the development of methods to estimate quantitative values of uncertainty about the ammonia emissions estimates. He also developed a statistical model to estimate ammonia emissions from dairies.

Dr. Wilkinson helped to complete the technical analysis for the state implementation plan (SIP) for Pittsburgh-Beaver Valley ozone non-attainment area which is located in the Pittsburgh, PA area. The technical analysis includes the emissions modeling, air quality modeling, and attainment demonstration work needed for the SIP.

Dr. Wilkinson completed work to determine the association of airborne pollutants to increased visits of children with respiratory problems to Atlanta-area emergency rooms. Using the geospatial statistical method known as kreiging, he prepared maps of temporally and spatially disaggregated air quality measurements over greater Atlanta, GA. He coupled these data with information derived from emergency room visits to Atlanta area hospitals to determine that there was a statistically significant increase in respiratory associated visits to the ER in the presence of elevated ozone levels.

Dr. Wilkinson was involved in examining the impacts that the horizontal advection solver in three dimensional air quality models had on emissions control strategies. In that study, he was responsible for running the UAM-IV and CIT models for established air quality modeling studies and statistical analysis of the air quality modeling outputs. The statistical analyses were conducted to isolate and quantify the numerical interference due to various horizontal advection solvers that were introduced into the UAM and CIT air quality models.

Dr. Wilkinson was involved in the Ozone Transport and Assessment Group's (OTAG) efforts to examine regional-scale air quality in the eastern United States. He was the primary engineer tasked with preparing emissions modeling inputs (e.g. area source spatial surrogates, on-road mobile source transportation network, and GIS-based EMS-95 foundation data) for the Emissions Modeling System version 1995 (EMS-95). He also provided technical support to the OTAG participants in the application of EMS-95 to the eastern United States and southern Canada.

Dr. Wilkinson was instrumental in the design and development of the Geocoded Emissions Modeling and Projections System (GEMAP) which was the predecessor of EMS-95. He prepared design documents for the overall architecture of the system as well as for the point and area source models. He developed both SAS and ARC/Info code for the point source, area source, and on-road mobile source models. Further, Dr. Wilkinson applied GEMAP to develop emissions estimates for the SARMAP and LMOS air quality modeling studies.

Dr. Wilkinson's projects in the last ten years have included work with emissions modeling efforts in the Lake Michigan Ozone Study (LMOS) and the San Joaquin Valley Air Quality Study (SJVAQS) and Atmospheric Utility Signatures, Predictions, and Experiments (AUSPEX) Model Adaptation Project (SARMAP) using EMS-95. The LMOS and SARMAP are regional-scale air quality studies that were established to determine the regional emissions control strategies necessary to bring the associated ozone (and particulate matter for the SARMAP) non-attainment areas into compliance with the National Ambient Air Quality Standards (NAAQS).

Dr. Wilkinson's areas of expertise include emissions modeling systems (design, development, execution, and evaluation), design and development of data base management systems, and design and development of engineering graphics and statistical analysis software.

HONORS:

National Science Foundation Fellow (1994-1997)
President's Fellow (Georgia Institute of Technology, 1996-2000)

PROFESSIONAL SOCIETIES:

Institute of Electrical and Electronics Engineers (IEEE)
Air and Waste Management Association (AWMA)

REFEREED JOURNAL PUBLICATIONS:

Bergin, M.S, JS Shih, A. J. Krupnick, J. W. Boylan, J. G. Wilkinson, M. T. Odman, A. G. Russell (2007). "Regional Air Quality: Local and Interstate Impacts of NO_x and SO_2 Emissions on Ozone and Fine Particulate Matter in the Eastern United States." *Environmental Science & Technology*. 41 (13):4677–4689.

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Yang, Y. J., J. G. Wilkinson and A. G. Russell (1999). "Fast, Direct Sensitivity Analysis of Multidimensional Photochemical Models." *Environmental Science & Technology*, Vol. 33, No. 7, 1116-1126.

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OTHER PUBLICATIONS:

"User's Guide and Standards & Design: California Integrated Transportation Network (ITN)." Prepared for Ms. Cheryl Taylor, Atmospheric Modeling and Support Section, CalEPA – Air Resources Board, Planning and Technical Support Division, 1001 I Street, Sacramento, CA. Prepared by James G. Wilkinson, Alpine Geophysics, LLC, Eugene, OR. 30-September-2009.

"8-Hour Ozone SIP Coalition Comments on the Proposed Houston-Galveston-Brazoria Attainment Demonstration SIP Revision for the 1997 Eight-Hour Ozone Standard Rule Project Number 2009-017-SIP-NR." Prepared for Ms. Lola Brown, Texas Commission on Environmental Quality, Austin, Texas 78711-3087. Prepared by BASF Corporation, Enterprise Products Operating LLC, Exxon Mobil Corporation, Lyondell Chemical Company, NRG Texas Power LLC, Shell Oil Company, Valero Refining-Texas, L.P. with support from James G. Wilkinson, Alpine Geophysics, and T. W. Tesche, Climate and Atmospheric Research Associates.

"Factors Contributing to the Simultaneous Decline in Measured Design Values (DVbs), Modeled Relative Response Factors (RRFs), and Calculated Future Design Values (DVfs) in Houston as the Result of Advancing to the More Recent TexAQSII 2006 Baseline." Prepared for Baker-Botts, LLP, 910 Louisiana, Houston, TX 77002. Prepared by James G. Wilkinson, Alpine Geophysics, LLC, Eugene, OR and Thomas W. Tesche, Climate & Atmospheric Research Associates, LLC, Ft. Wright, KY. 06-February-2009.

"Flexibility in EPA's 8-hr Ozone Attainment Test." Prepared for Baker-Botts, LLP, 910 Louisiana, Houston, TX 77002. Prepared by James G. Wilkinson, Alpine Geophysics, LLC, Eugene, OR and Thomas W. Tesche, Climate & Atmospheric Research Associates, LLC, Ft. Wright, KY. 16-January-2009.

"Evaluation of 36/12 km MM5 and WRF for February and August 2005 over the Continental and Western United States." Prepared for the U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, RTP, NC 27711 and UNC Institute for the Environment, Chapel Hill, NC 27599. Prepared under contract: Modeling Support for Source Sector Projects, Contract Number EP-D-07-102, Work Assignment 1-08. Prepared by James G. Wilkinson and Dennis McNally, Alpine Geophysics, LLC, Arvada, CO 80007. 30-September-2008.

"Evaluation of 36/12/4 km MM5 for Calendar Year 2005 over the Continental and Western United States with Emphasis in Southwestern Wyoming." Prepared for ARCADIS-US, Inc., Highlands Ranch, CO 80129. Prepared by Dennis McNally and James G. Wilkinson, Alpine Geophysics, LLC, Arvada, CO 80007. December-2008.

"Final Report: Modeling Analyses Conducted for the Columbia River Gorge National Scenic Area Air Quality Study." Prepared for The Southwest Clean Air Agency, 11815 NE 99th Street, Vancouver, Washington 98682. Prepared by Chris Emery, Edward Tai, Uarporn Nopmongcol, Jeremiah Johnson, and Ralph Morris, ENVIRON International Corporation, 101 Rowland Way, Novato, California 94945 and Jim Wilkinson and Dennis McNally, Alpine Geophysics, LLC, 2076 Westwood Lane, Eugene, OR 97401.August 28, 2007. www.swcleanair.org/gorgereports.html

"Implementation of the Model of Emissions of Gases ad Aerosols from Nature (MEGAN) into the CONCEPT Modeling Framework." Prepared for Mr. Mark Janssen, Lake Michigan Air Directors' Consortium, 2250 East Devon Ave. Suite 250, Des Plaines IL, 60018. Prepared by J. G. Wilkinson, Alpine Geophysics, LLC, 2076 Westwood Lane, Eugene, OR 97401. 16-June-2006.
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"Area Of Influence: Identifying Regions Whose Sources Potenitally Impact Downwind Air Quality," presented at the Twenty-third NATO/CCMS International Technical Meeting On Air Pollution Modeling And Its Application, 28 September through 2 October 1998, Varna, Bulgaria, (with Y. J. Yang).

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