

Technical Follow-up Discussion on Subsurface Modeling Participants from the US Environmental Protection Agency

Stephen Kraemer, Research Hydrologist, National Exposure Research Laboratory

Stephen Kraemer currently serves as a research hydrologist for the Regulatory Support Branch in US EPA's National Exposure Research Laboratory in Athens, GA. His research focuses on developing computer modeling approaches and tools supporting the Safe and Sustainable Water Resources research program. The work includes capture zone delineation software for water supply wellhead protection, area of potential impact modeling and mapping associated with deep CO₂ injection for underground injection control, and most recently, modeling support for the well injection and water acquisition components of EPA's Hydraulic Fracturing Study. He received a BS in Engineering Science from the University of Notre Dame, a MS in Environmental Science and a PhD in Environmental Science from Indiana University Bloomington.

Jennifer Orme-Zavaleta, Director of National Exposure Research Laboratory

Jennifer Orme-Zavaleta is Director of EPA's National Exposure Research Laboratory. She is responsible for leading the development and application of exposure science to support EPA's research programs, including hydraulic fracturing research. She has 31 years of experience with EPA in the Office of Toxic Substances and the Office of Water, in addition to the Office of Research and Development working in the areas of human health and ecological research, risk assessment, policy and regulation development, strategic planning and program implementation. The focus of her experience includes the evaluation of risks to human and ecosystem health and the influence of environmental change on human health in response to a variety of stressors including synthetic organic and inorganic chemicals, radionuclides, microorganisms and vector-borne disease. Her research is in toxicology, wildlife science and public health. She is a Member of the Society of Toxicology, where she is Past President of the Risk Assessment Specialty Section, the International Society of Exposure Science and the Society of Risk Analysis. She received a BA from Ohio Wesleyan University, a MS from Miami University and a PhD from Oregon State University.

Glenn Paulson, Science Advisor

Glenn Paulson is the Science Advisor to the Acting EPA Administrator. Among his responsibilities at EPA, he is an Ex *Officio* Member of the Steering Committee for the Federal Multiagency Collaboration on Unconventional Oil and Gas Research and Co-Chairman of the Committee on Environment, Natural Resources and Sustainability of the National Science and Technology Council. He has over 40 years experience in environmental science, technology and policy issues in the public, private and academic sectors. He has directly managed emergency response, site assessment and/or cleanup at over 100 Superfund sites and Resource Conservation and Recovery Act facilities as well as spills of oil, hazardous chemicals and radioactive materials. He has been a member of many federal government advisory committees, including being a Charter Member of the U.S. Secretary of Energy's Advisory Board, as well as serving on advisory bodies at EPA and other federal agencies. Prior to his

appointment at EPA, he was Associate Dean for Research and Professor of Occupational and Environmental Health at the University of Medicine and Dentistry of New Jersey's School of Public Health. He has also served as the first Assistant Commissioner for Science at the State of New Jersey's Department of Environmental Protection. While Senior Vice President of the National Audubon Society, he was responsible for approving and guiding exploration for and production of natural gas on Audubon's largest wildlife sanctuary, located on the Gulf Coast of Louisiana. He has an Honorary Doctor of Science degree from Long Island University and is a Fellow of both the American Association for the Advancement of Science and the American Institute of Chemists. He earned his PhD in Environmental Sciences and Ecology from The Rockefeller University in New York, New York, and a BS in Chemistry from Northwestern University.

E. Ramona Trovato, Associate Assistant Administrator, Office of Research and Development

Ramona Trovato is the Associate Assistant Administrator for EPA's Office of Research and Development (ORD). She provides executive leadership on EPA's hydraulic fracturing research. During her distinguished 33 year career at EPA, Trovato has served in numerous leadership positions in the Office of the Administrator, Office of Water, Office of Enforcement and Compliance Assurance, Office of Air and Radiation, Office of Environmental Information and Office of Solid Waste and Emergency Response, as well as her present leadership position in ORD. She has successfully led many implementation initiatives focused on improving operational performance, and building efficiency into environmental protection efforts. Some notable examples include her work in protecting and promoting children's health; developing and implementing the Comprehensive State Ground Water Protection Program; working with the private sector and states to make the best and highest use of properties cleaned up under the Superfund program; and, developing and implementing the National Environmental Laboratory Accreditation Program. Among the many awards received during government service, she was recognized with the Distinguished Career Award in recognition of extraordinary leadership and exceptional dedication in serving the American people, and the President's Meritorious Executive Rank Award for building strong coalitions and partnerships to achieve environmental and public health goals. She has a BS in Zoology from the University of Maryland at College Park and has undertaken additional studies in chemistry, facilitation, negotiation, information technology management, management and leadership throughout her career.