

## ***Environmental Impacts During Shale Gas Drilling: Causes, Impacts and Remedies***

### Author biographies

#### **Dr. Robert W. Watson**

Robert W. Watson is an associate professor emeritus of Pennsylvania State University's Petroleum and Natural Gas Engineering program and its Environmental Systems Engineering program. Watson has a combined 45 years of experience as a practicing engineer employed by an Appalachian-based integrated natural gas company, as an academician – teaching and research, as a consultant to industry, the Commonwealth of Pennsylvania and other universities, and as a member of the Commonwealth of Pennsylvania's Oil and Gas Management Technical Advisory Board (20-plus years). His focus during this time has been and is the development of oil and gas using techniques/technologies that meet or exceed all environmental regulations.

#### **Dr. Timothy J. Considine**

Dr. Timothy J. Considine is a SER Professor of Economics in the Department of Economics and Finance. He received his PhD from Purdue University. His research on petroleum market analysis has been published in the top economics journals. Recently, The Cato Institute published his paper exploring management policy issues facing the U.S. Strategic Petroleum Reserve. Also, the U.S. Department of Energy's Office of the Strategic Petroleum Reserve uses his econometric model of world crude oil markets to estimate the market impacts of various management policies. Considine also worked as an economist at Bank of America, and as the lead analyst for natural gas deregulation on the U.S. Congressional Budget Office.

#### **John P. Martin**

John P. Martin is the founder of JPMartin Energy Strategy LLC, which provides strategic planning, resource evaluation, project management and government/public relations services to the energy industry, academic institutions and governments and serves as director of the Shale Resources and Society Institute at the University at Buffalo. Martin spent 17 years working on energy research and policy issues at the New York State Energy Research and Development Authority and developed a series of projects targeting oil and gas resources, renewable energy development and environmental mitigation. He has served on various state and national panels including the U.S. Department of Energy's Unconventional Resources Technical Advisory Committee. He co-directed the New York State Governor's Carbon Capture and Sequestration (CCS) Working Group, an interagency committee organized in 2007 to address CCS

issues. He also was NYSERDA's point person on a series of technical studies looking at all aspects of hydraulic fracturing and multi-well pad development. In addition, he completed the initial research on the natural gas potential of New York's Utica Shale that helped stimulate significant industry investment in this resource. Martin regularly lectures and publishes on such diverse topics as the development of shale gas resources, carbon capture and sequestration, compressed-air energy storage, renewable energy resource development and research policy. Prior to joining NYSERDA, he worked in academia, consulting and regional planning. He holds a Ph. in Urban and Environmental Studies, an MS in Economics and a B.S. in Geology, all from Rensselaer Polytechnic Institute. He also holds an M.B.A. from Miami University and completed graduate work in mineral economics at West Virginia University.