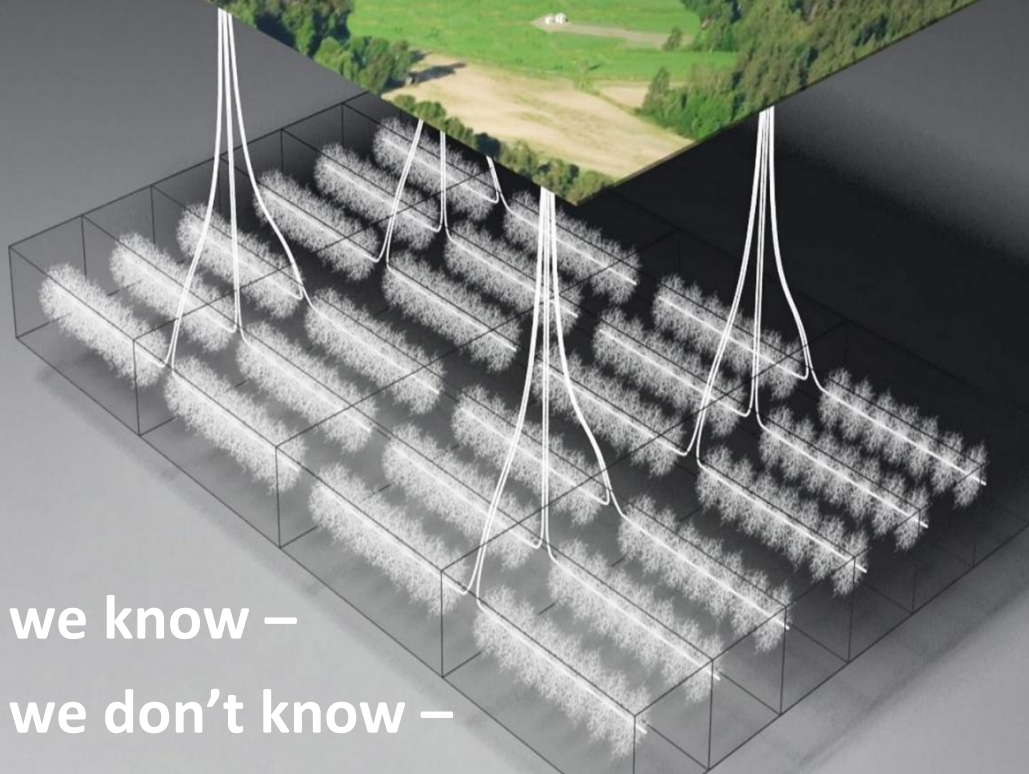


# Unconventional Shale Drilling

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What we know –

What we don't know –

What we need to know to move forward

**CONFERENCE**  
**APRIL 5 AND 6, 2013**

**WEAN FOUNDATION**  
**WARREN, OHIO**

**Organized by**  
**FracTracker**  
**Buckeye Forest Council**  
**FreshWater Accountability Project Ohio**

## Unconventional Shale Drilling

What we know - what we don't know - what we need to know to move forward

A conference to bring together a forum of diverse subject matter experts from academic, industry, government and private organizations to discuss and prioritize using a knowledge-based approach the various major issues facing local, state and national agencies and private citizens.

Conventional hydraulic fracturing has proven its viability as an energy source for the US and overseas customers, revenue generator for the industry and as a short-term job creator for Ohioans. Its newer unconventional horizontal drilling technology counterpart is, however, still in its early development. Its rapid deployment throughout the shale plays in the United States and hence its long-term environmental, health,

social, and economic cost-to-benefit and Energy Return On Investment (EROI) ratios have yet to be quantified. The meeting objectives are to present known information, identify what needs to be known, and ways to achieve objectives through a gap analysis. Outcomes will help define optimal strategies and milestones that can be used to craft a viable policy statement along with proposed research and development suggestions to advance a more fact-based and environmentally sustainable approach to advance and promote best in class technologies by government and industry. Discussions are focused on ways to create healthy and sustainable energy resources in the United States

### - Conference Organizers -

#### **FracTracker ([www.fractracker.org](http://www.fractracker.org))**

The FracTracker Alliance is a non-profit organization dedicated to enhancing the public's understanding of the impacts of the global shale gas industry by collecting, interpreting, and sharing data and visualizations through our website, FracTracker.org. We partner with citizens, organizations and institutions – allied in a quest for objective, helpful information – to perpetuate awareness and support actions that protect public health, the environment, and socioeconomic well-being.

Representative: Ted Aucht,

#### **Buckeye Forest Council ([www.buckeyeforestcouncil.org](http://www.buckeyeforestcouncil.org))**

The Buckeye Forest Council (BFC) is a membership-based, grassroots organization dedicated to protecting Ohio's native forests and their inhabitants. The BFC uses education, advocacy and organizing to address the need for forest preservation and low-impact recreation over logging and resource extraction. We seek to instill in Ohioans a sense of personal connection to and responsibility for Ohio's native forests and to challenge the exploitation of land, wildlife and people.

Representative: Nathan Johnson

#### **FreshWater Accountability Project Ohio ([www.fwapoh.org](http://www.fwapoh.org))**

FreshWater Accountability Project Ohio is tracking and communicating the consumption of Ohio's freshwater supplies for unconventional shale drilling, as well as the production and import of toxic and radioactive waste into Ohio. FWAPOH has a long-term goal and perspective that seeks to work with all interested constituents to preserve and protect Ohio's freshwater supplies.

Representative: Lea Harper is the co-founder of Southeast Ohio Alliance to Save Our Water (SOASOW) and coordinator for the FreshWater Accountability Project Ohio. Mrs. Harper holds a graduate degree in Organization Development from BGSU and is a systems thinker and coalition builder. She is the former owner of the “Nature Reserve,” a health food and earth-friendly business in Bowling Green, and began the “Walk for the World” in Wood County which held Earth Day observances and raised funds for the Maumee Remedial Action Plan, spreading awareness on the importance of clean, abundant water for future generations. Mrs. Harper is a teacher, life coach and author, as well as a caring mother and grandmother, the source of her motivation to preserve clean air and water, while addressing ways to control and eliminate toxic waste generation and dumping in Ohio.

**- Keynote Speaker and Presentation -**

**DEBORAH ROGERS, Energy Policy Forum**

***“Shale and Wall Street: Was the Decline in Natural Gas Prices Orchestrated?”***

Deborah Rogers began her financial career in London working in investment banking. Upon her return to the US, she worked as a financial consultant for several major Wall Street firms, including Merrill Lynch and Smith Barney. In 2003, Rogers struck out on an entrepreneurial venture, founding Deborah’s Farmstead, an artisanal cheese-making operation. The company became one of the premier artisanal dairies and cheese makers in the US, winning several national awards.

In 2013, Ms. Rogers was appointed to the U.S. Extractive Industries Transparency Initiative (USEITI), an advisory committee within the Department of Interior. She also served on the Advisory Council for the Federal Reserve Bank of Dallas from 2008-2011. In 2011, Rogers was appointed by the Texas Commission on Environmental Quality (TCEQ) to a task force reviewing air monitor placement in the Barnett Shale region due to air quality concerns regarding natural gas operations.

In June 2012, she spoke in Rio de Janeiro at the International Society for Ecological Economics in conjunction with the United Nations Rio+20 world summit. She is a Member of the Board of Earthworks/OGAP (Oil and Gas Accountability Project). She also founded the Energy Policy Forum, a consultancy and educational forum dedicated to policy and financial issues on shale gas and renewable energy. She lectures on shale gas economics across the US and abroad at universities, businesses and public forums, and has appeared on MSNBC and NPR. She has been featured in articles discussing the financial anomalies of shale gas in the New York Times, Rolling Stone and Village Voice. In addition, she will appear in the upcoming documentary GasLand 2.

**- Agenda -  
Friday, April 5, 2013**

**LEGAL & LEGISLATIVE CONCERNS**

9:00 am	Opening Remarks, Introductions & Vision	Ted Auch, FracTracker.org
9:15 – 9:35	Welcome & Background on Organizing Collaborative	Adam Keck, Mahoning Valley Organizing Collaborative
9:35 – 10:15	<u>Panel Discussion:</u> <i>History &amp; Current State Ohio Legislation, Rules &amp; Regulations, and Ohio Litigation Opportunities</i>	Nathan Johnson, Buckeye Forest Council Melissa English, Ohio Citizen Action Terry Lodge
10:15 – 10:30	Discussion	
10:30-10:45	Break	
10:45 – 11:15	Legislative Issues & Medical Right to Know	Gwen Fisher, Concerned Citizens Ohio
11:15 – 11:35	Summary & Future Considerations	Amanda Woodrun, Policy Matters
11:35 - Noon	Supersized Oil and Gas Require a Higher Level of Social Response	Don Hollister, Ohio League of Conservation Voters
Noon – 1:00 pm	Lunch & Keynote Speaker <i>Shale and Wall Street: Was the Decline in Natural Gas Prices Orchestrated?</i>	Deborah Rogers, Energy Policy Forum

**HEALTH & ENVIRONMENTAL CONCERNS**

1:00 – 1:30	The Potential Public Health Consequences of Unconventional Shale Gas Drilling	Dr. Bernard Goldstein, University of Pittsburgh
1:30 – 2:00	A One Health Perspective: Impacts of Unconventional Deep Horizontal Fracking on Human and Animal Health- What is unique to Ohio and what we do not yet know?	Dr. Peter Nara, President & CEO, Biological Mimetics, Inc.
2:00 – 2:15	Discussion	
2:15 – 2:30	Break	
2:30 – 2:50	Source Water Protection Considerations	Dr. Julie Weatherington-Rice
2:50 – 3:30	Health Effects – What We Know	Jill Kriesky, SW PA Environmental Health Project
3:30 – 4:00	Discussion, Summary & Future Considerations	Dr. Peter Nara

**- Agenda -  
Saturday, April 6, 2013**

9:00 – 9:15 am	Introduction, Review of 4/5 Information	Lea Harper, FreshWater Accountability Project Ohio Ted Auch, FracTracker.org
9:15 – 9:40	Waste Disposal Issues	Dr. Julie Weatherington-Rice
9:40 – 10:10	Local Issues, Impacts & Community Action	Tish O’Dell, CELDF, Ohio
10:10 – 10:35	On Advocacy	Matt Nisenoff, Ohio League of Conservation Voters
10:45 – 11:00	Break	
11:00 – 11:30	Life cycle and triple-bottom-line analysis: An ecological economics approach to assessing the impact of fracking	Dr. Rumi Shammin, Environmental Studies, Oberlin College
11:30 – Noon	Discussion & Summary	
Noon – 1:00 pm	Lunch & Organizing Groups	
1:00 – 2:30	<u>Break Out Groups and Discussion</u> Topics Include: <i>Legislation Reform</i> <i>Local Control Issues</i> <i>Toxic Waste Transportation &amp; Disposal</i> <i>Injection Well Disposal Issues</i> <i>Health Study Issues</i> <i>Water Use and Conservation Issues</i> <i>Litigation Opportunities</i> <i>Brine Spreading</i> <i>Direct Action Opportunities</i> <i>Radiation/TENORM Concerns</i> <i>Other</i>	Dr. Andrew Kear, BGSU
2:30 – 3:00	Presentations & Summary	Facilitated by Dr. Andrew Kear, BGSU
3:00 – 3:30	<b>Conclusion:</b> What we know, what we don’t know, what we need to know to move forward	

## - Presenters and Presentations -

**Melissa English,**  
Ohio Citizen Action

### **Panel Discussion: *What do we know in a fracking emergency?***

Ohio violates federal right to know laws. Doctors, nurses, firefighters, hazmat teams, EMS, police, and emergency planners don't get the same information from oil and gas drillers that they get from every other industry in Ohio.

What does federal law require? What does Ohio state law require? When did oil and gas get a free pass from the rules? What information would medical and emergency responders need in an oil and gas emergency?

The laws our legislators have passed over the last decade have slowly eroded protections that local communities have, as well as reduced the information available to life saving professionals. For example, the law lets oil and gas drillers determine their own trade secrets with no oversight, while other industries have to get permission from the US EPA and face steep fines if their trade secret claims are rejected.

**Gwen Fischer,**  
Concerned Citizens  
Ohio

### **Presentation: *Back Yard Grass Roots Are Messy but Weeds Have Fibrous Roots***

The biggest challenge to community organizing in response to the Shale Drilling boom has been the steep learning curve. In the last few years, concerned citizens found themselves thrown into an educational program before knowing who the teachers were, and quickly found ourselves to be the teachers.

Before the handful of us ever thought of developing a grassroots movement some state and national groups tried to teach us to be effective leaders. But we were too busy sorting advertising hype from serious science to focus on community organizing. This talk will reflect on the growth and development of the Portage County based Concerned Citizens Ohio.

CCO started as a small group of Portage County residents frantically trying to understand the complex process of fracking and its impacts. Like similar groups, we morphed into loosely connected clusters, with three or four email lists of several hundred people, many who turn out for larger events. This process has developed bottom up, top down and sideways, with increasing help from larger organizations.

**Bio:** Gwen B. Fischer, MA, PHD, is Professor Emerita, Hiram College and a Developmental and Cross-Cultural Psychologist. Gwen has been learning and teaching all of her life. Her first career was nursery school/kindergarten teacher. She returned to academia for an M.A. in Educational Psychology and PhD in Developmental Psychology. Her second career was 24 years of teaching Developmental and Cross-cultural Psychology. Wondering whether the principles of psychology applied across cultures led to developing a study abroad course--- taking students to Zimbabwe and Tanzania through Fulbright and Rotary International fellowships. Since retirement in 2007, her third learning/teaching career first focused on health care for all; since 2010, she's learning and teaching others about unconventional shale drilling.

**Bernard D. Goldstein, MD,** Emeritus Professor and Dean, Graduate School of Public Health, University of Pittsburgh

**Presentation: *The Potential Public Health Impacts of Shale Gas Drilling: An Overview***

The rapid development of hydraulic fracturing technology to obtain natural gas has outpaced the gathering of information needed to ensure that we minimize the risk while maximizing the benefits. Public concern is evident - approximately two-thirds of those opposed to drilling cite health concerns as a reason. Far too little is known about potential adverse consequences of hydrofracturing chemicals, and hydrocarbon byproducts brought to the surface as a result of the process. Other concerns include worker and community safety; air and water pollution; noise and psychosocial impacts. There is a lack of transparency and misinformation about the potential risks. The long term legacies of shale gas drilling need careful consideration. It is time to confront the potential for adverse public health impacts from drilling, rather than keeping our heads in the shale.

**Don Hollister,** Ohio League of Conservation Voters

**Presentation: *Supersized Oil and Gas Requires a Higher Level of Social Response. How can we help our communities and regions avoid the worst of the fracking boom?***

Fracking is the oil and gas industry on steroids. The risks and possible benefits are similarly oversized. Successful management of the physical, economic and social impacts of this new supersized oil and gas industry requires an unusual level of communication and cooperation among stakeholders. How might that be accomplished? We will review examples of how communities and regions have coped with boom - bust economies and environmental threats. Most impacts of this oil and gas extraction are related activities including truck traffic, well pad construction, chemical storage, water withdrawal, waste water, pipeline construction, social impacts, economic change and emergency preparedness. We can learn from what others have tried.

**Nathan Johnson,** Buckeye Forest Council

**Panel Discussion: *What do we know in a fracking emergency?***

**Bio:** Nathan Johnson is the Staff Attorney for the Buckeye Forest Council, a statewide, grassroots organization dedicated to the protection of Ohio's public lands. As attorney for the Council, Nathan has focused on many of the legal and environmental issues surrounding unconventional oil and gas drilling in Ohio. Nathan graduated from Denison University in 2004 with a dual degree in History and Philosophy. He received his law degree from the University of Virginia School of Law in 2007.

**Dr. Andrew Kear,** Assistant Professor, Bowling Green State University

**Presentation: *Unconventional Politics of Unconventional Gas: Environmental Reframing and Policy Change***

The present Rocky Mountain West natural gas boom, enabled by historic pro-resource-development political, institutional, economic, and cultural structures, is a politically contested battle over values. Volatile political action, unconventional coalitions, and unconventional politics engulf this unconventional gas boom - especially at the state level. In this comparative case study of natural gas policy in Wyoming, Colorado, and New Mexico, I

measure and compare these values, expressed as frames, through textual analysis of interest group public documents and state legislative bills and statutes from 1999-2008. By developing a new measure of state legislative framing, I test the relationship between interest group and institutional framing and also provide a viable measure of policy change useful to the Narrative Policy Framework (NPF). Results show that competing interest group and state legislative framing efforts are dynamic, measurably different, and periodically correlative. Competing interest groups rarely engage each other, except as the conflict matures when status-quo-supporters break their silence and engage the challengers' frames that have gained legislative traction. Environmental and land-use counter-framing ensues, but status-quo-supporters remain vigilant in their economic framing. Economic frames retain their institutional privilege within Wyoming and New Mexico, but natural gas policy undergoes a complete environmental reframe in the Colorado state legislature.

Although the historically dominant economy frame based on "Old West" values remains largely intact, the respective state legislatures partially reframe policy (within 4 years) using environment, alternative land-uses, and democracy frames based on "New West" and long-extant but previously marginalized status-quo-challenger definitions. This reframing is not a strictly partisan issue, but rather it is influenced by political context, policy diffusion, and long-term interest group advocacy and framing efforts. A policy punctuation is observed in state legislative reframing and by the passage of three status-quo-challenging statutes in Wyoming (2005), four in Colorado (2007), and one in New Mexico (2007). Policy reframing, although rare in most policy areas, is common during this natural gas policy punctuation. The politics of successful reframing is the politics of punctuation.

**Bio:** Dr. Andrew Kear earned his Ph.D. in Political Science from Colorado State University and started as an Assistant Professor at BGSU in the fall of 2011. His research focuses on energy politics and policy and the role that competing interests play in state and federal policymaking. Dr. Kear's dissertation, "Unconventional Politics of Unconventional Gas: Environmental Reframing and Policy Change," examines the contentious politics surrounding the natural gas boom in the Rocky Mountain West. Insights gained from this western U.S. natural gas political conflict are increasingly relevant as mid-west and eastern states experience their own booms. Currently, Dr. Kear is co-authoring several papers on state and federal politics and policies surrounding natural gas hydraulic fracturing and development. Additionally, he continues to research and write about the complex relationships between competing interests and state legislative framing as it relates to narrative policy framework and policy change theory. As a dual appointment between the Department of Political Science and the Department of the Environment and Sustainability, Dr. Kear combines his educational and professional experience as a geologist with his knowledge of environmental and energy policy to teach a variety of graduate and undergraduate classes.



Adam Keck,  
Mahoning Valley  
Organizing  
Collaborative

***Welcome to the Mahoning Valley***

Jill Kriesky,  
Southwest  
Pennsylvania  
Environmental Health  
Project

***Presentation: Addressing Health Concerns in the Face of Fracking  
Uncertainties Now***

**Bio:** Jill Kriesky was named the Associate Director of the Southwest Pennsylvania Environmental Health Project in February 2013. Immediately prior to that, she served as the Senior Project Coordinator at the Center for Healthy Environments and Communities at the University of Pittsburgh School of Public Health where her community outreach and research focused on the potential health impacts of natural gas extraction. Kriesky has also worked in university-community partnerships in West Virginia, Oregon, and Alabama. She holds a Ph.D. in Economics from the University of New Hampshire.

Terry Lodge

***Panel Discussion: What do we know in a fracking emergency?***

- Details above –

Dr. Peter Nara, M.Sc.,  
D.V.M., Ph.D.,  
F.A.A.A.S.  
President / CEO,  
Biological Mimetics Inc.

***Presentation: A One Health Perspective: Impacts of Unconventional Deep  
Horizontal Fracking on Human and Animal Health - What is unique to Ohio  
and what we do not yet know?***

Conventional hydraulic fracturing has proven its viability as an energy source for industry, a revenue generator and short-term job creator. However, long-term environmental impact studies are lacking. Its newer unconventional, horizontal deep drilling, slick-water technology counterpart (UDHF) is still in early development. Its rapid deployment throughout US shale plays, in the backdrop of poor federal and state regulation and exemptions for water and air standards, leaves humans, animals, and ecosystem health vulnerable. Even in sparsely populated regions of the west (e.g. Wyoming, Colorado and Texas) cause-effect relationships on humans and animals are still being established. As the practice of UDHF has moved east, a number of health and environmental concerns are being raised due to increased population densities.

Ohio's health ranking has slowly declined relative to other states. Smoking, air pollution and a high rate of preventable hospitalizations are major health challenges. Ohio also ranks among the worst states in infant mortality, cancer, infectious diseases and cardiovascular deaths. Why and what are the sources for poorer health? The talk will focus on the history and distribution of oil and gas wells, coal mines, and injection wells and how existing conditions may relate to and/or contribute to the higher rates of diseases.

**Bio:** Dr. Nara currently holds the Endowed Eugene Lloyd Chair, Professor in Vaccinology, Director for the Center for Advanced Host Defense, Immunobiotics, and Translational Comparative Medicine in the Department of Biomedical Sciences, College of Veterinary Medicine at Iowa State

University, and is also the CEO and President of Biological Mimetics, Inc. He holds an MS in Immuno-pharmacology, Doctor of Veterinary Medicine and PhD from The Ohio State University, and combined residency in Comparative Pathology and NIH post-doctoral Fellowship at the Armed Forces Institute of Pathology and National Institute of Health. He has published over 200 scientific papers, reviews, book chapters and books. Additionally, he serves as advisor and expert as a national and international member of numerous leading health organizations.

**Matt Nisenoff,**  
Ohio League of  
Conservation Voters

**Presentation: *On Advocacy***

Various ways exist to pursue conservation goals. One way is through governmental and political structures. Starting in the 5<sup>th</sup> grade, Ohioans learn we have three levels of government each with three branches. Interaction between citizens and elected officials, or candidates, remains untaught. As the advocacy option remains unused the perception of an inability to interact reinforces itself. Why does Ohio matter? Ohio has a budget of \$27 Billion dollars a year which is larger than the budget in 160 countries around the globe. The state's budget and legislation has an influence on you, your community, and our conservation goals. The Ohio League of Conservation Voters educates Ohioans how local issue advocacy moves us towards achieving conservation goals at the state level of government. Please join us to learn about knowing when to organize, be active, and communicate with those in the political and governmental sectors.

**Tish O'Dell,**  
Community  
Environmental Legal  
Defense Fund (CELDF) -  
Ohio

**Presentation: *Building sustainable communities by assisting people to assert their right to local self-government and the rights of nature. Why this?***

We believe that we are in the midst of an escalating ecological crisis, and that the crisis is the result of decisions made by a relatively few people who run corporations and government. We believe that sustainability will never be achieved by leaving those decisions in the hands of a few – both because of their belief in limitless economic production and because their decisions are made at a distance from the communities experiencing the impact. Therefore, we believe that to attain sustainability, a right to local self-government must be asserted that places decisions affecting communities in the hands of those closest to impacts. Right to local self-government must enable communities to reject unsustainable economic and environmental policies, and construct legal frameworks for charting a future toward sustainable energy production, sustainable land development, and sustainable water use. In doing so, communities must challenge and overturn legal doctrines that have been concocted to eliminate the right to self-government. Inseparable from the right to local self government - and its sole limitation - are the rights of human and natural communities.

**Bio:** Tish co-founded Mothers Against Drilling In Our Neighborhoods (MADION) in Broadview Heights, OH. They successfully campaigned to adopt a Home Rule Charter amendment creating a Community Bill of Rights

banning gas drilling, fracking and injection wells. She is currently working with Community Environmental Legal Defense Fund, as Community Organizer. CELDF assists other Ohio communities to organize rights-based initiatives.

**Rumi Shammin, MD,**  
Environmental Studies,  
Oberlin College

**Presentation: *Life cycle and triple-bottom-line analysis: An ecological economics approach to assessing the impact of fracking***

Resource extraction and delivery involve impacts at all stages of the exploration, production and distribution cycle. These impacts often fall under the three pillars of sustainability: economic vitality, ecological integrity and social equity. This is true for hydraulic fracturing of natural gas as well. An ecological economics approach to analyzing the impacts of fracking considers life cycle monetary and non-monetary socio-economic and ecological impacts. It is critically important to take a holistic approach to make informed decisions in the US energy future.

**Dr. Julie Weatherington-Rice,**  
Sr. Scientist at Bennett  
and Williams  
Environmental  
Consultants, Inc.,  
Westerville, OH;  
Adjunct Assistant  
Professor, The Ohio  
State University,  
Department of Food,  
Agricultural, and  
Biological Engineering

**Friday's Presentation: *Oil & Gas Exploration and Extraction in Public Water Well Fields: an Ohio Legal & Public Policy Perspective***

Since Federal water laws preclude siting requirements for oil & gas wells, we are left with Ohio mineral extraction laws and Ohio Supreme Court decisions related to "takings" cases to shape the limitations that ODNR has in the placement of shale gas wellheads in source water protection areas (SWPAs). Until 2004, local communities could zone out these land uses in their SWPAs, but legislation has removed local controls, leaving ODNR with a 300-foot sanitary buffer for water wells. In 2010, SB 165 set a 50-foot setback from water's edge. SB 315, passed in 2012, allows the chief to place wellheads outside 100-year flood plains and 1-year time-of-travel for SWPAs, the first time water protection is ever mentioned in an Ohio mineral extraction bill. However, if the mineral rights owners do not want to cooperate, they can sue ODNR for takings.

**Saturday's Presentation: *Shale Gas Wastes: Ohio Public Policy & Potential Impacts to Water Supplies***

Currently, Ohio is importing more shale gas wastes than we create. Most of these imported wastes are from the highly radioactive Marcellus Shale in PA and WV, but these waste streams are expected to expand. Some recycling of the waste is occurring but Ohio does not track it, what is recycled or where it's disposed. Ohio permits the injection of brines, production fluids and spent fracking fluids into Class II injection wells. While the safest of all disposal methods, injection wells still have problems with leaks, spills and earthquakes. Radioactive and toxic brines can also be spread on roads for ice and dust control where they are washed into the surrounding environment or become airborne dust. Rock cuttings, drilling muds and other related drilling wastes are trucked to solid waste landfills where they are incorporated into the working face or used as daily cover. Also, brines and drilling fluids are being dumped into Ohio's rivers and streams and underground coal mines. The State appears to be unable to control these

“unauthorized” activities, creating toxic and radiological sacrifice zones.

**Bio:** Julie Weatherington-Rice holds a BS in Earth Sciences Education, an MS in Geology, and a PhD in Soil Science, from Ohio State University. She has been working in the field of water contamination from oil and gas drilling since the early 1980s. She was appointed to the Governor’s Oil and Gas Regulatory Review Commission in 1986 by then Governor Celeste. In the intervening years she has studied contamination sites from the spreading of brines for deicing on roads and leaking Class II injection wells. Dr. Rice traveled all over Ohio in 2012 lecturing to public water supply purveyors and general public on oil and gas exploration in source water protection areas in light of Ohio Mineral Resources Management laws. Her focus for 2013 is to look beyond production to waste management considerations.

**Amanda Woodrun,**  
Policy Matters

**Presentation: *Costs and Benefits of Shale Gas Development for Local Communities***

Amanda will share some preliminary findings from a multi-state shale policy research project. One goal of this collaboration is to improve the public and policymakers understanding of the size and character of social impacts of drilling at the local level and increase their capacity to factor actual costs and impacts into decision-making about the value or the pace of drilling. The other overarching goal is to counter an industry narrative which exaggerates economic benefits of shale development—encouraging unrestrained development and preventing enactment of meaningful regulatory and tax policies—by disseminating credible documentation about actual employment and revenue effects, and considering both benefits and costs of shale gas development. Together they will produce a report documenting the impact and cost of hydrofracking on human and social services, analyze trends to help officials predict and plan for human service impacts, and put together a toolkit for local officials of likely impacts and successful mitigation strategies.

**Bio:** Amanda is currently the lead researcher for Policy Matters Ohio, a progressive economic think tank focused on issues facing working families in Ohio. Policy Matters is working on a multi-state shale policy collaboration designed to assist local governments experiencing or expecting to experience rapid development of shale gas and oil resources. Amanda has a law degree and a master’s in economics, and has been researching and writing about energy issues for Policy Matters Ohio for the past six years.

**Thank you being here.**

- NOTES -

- NOTES -