Michele M. Papai Athens City Councilperson, 3rd Ward Natural Gas-America's New Energy Opportunity: Creating Jobs, Energy and Community Growth". February 24, 2012

Committee Members, thank you for allowing me to speak today. I am here as an elected official for the City of Athens, located in Athens, Ohio and home to the main campus of Ohio University. Our city's population is about 24,000 with university enrollment of about 20,000. The county of Athens has a population of about

65,000 with 506 sq. miles. Almost 78% of that area is forested.

You may be wondering, why am I speaking today? In October, our community quickly rallied and responded to the notification of pending lease sales of over 3200 acres of Wayne National Forest land for gas and oil drilling, which could include deep shale drilling and high volume horizontal hydraulic fracturing. The Athens City Council sent a formal letter asking that the BLM halt the sales, stating, "Athens City Council, Athens City, Ohio is a statutory city that relies upon a riparian aquifer as the sole source for its municipal water system...We are concerned that the leasing, drilling, and operation of the potential wells in the Utica Shale will have a deleterious effect on our sole source municipal water supply. It must be noted that we have a meager water supply in general in unglaciated Ohio, and our water source is inextricably bound to the health of the Hocking River (http://ohioline.osu.edu/aex-fact/0480_05.html). We are also concerned that the leasing and drilling of these parcels could negatively impact wildlife, habitat, and human health and recreational enjoyment." The letter concludes, "We request the withdrawal of the lease sale until the proper environmental analysis is conducted and our water supply is protected."

The BLM also received letters from the President of Ohio University, Athens County Commissioners, Burr Oak Regional Water District, Athens City Wellhead Protection Team, the Athens City administration, and 42 other official bodies and individuals (blm.gov/es/st/en/prog/minerals/protests_information.html), a record number, indicating the level of concern and the severity of the threat to our water supply, economic and public health, and quality of life,.

Athens City administration's letter states,

The City of Athens is filing this action because our city's sole source riparian aquifer drinking water supplies will be severely impacted by these sales and because it is our duty by law to protect our drinking water supply. We are concerned that the stipulations in your lease do not protect the Hocking River and the aquifer, on which our City's water supply depend.

The City of Athens has an interest in these sales because our city's water supply, economy, safety, and public health will all be severely harmed by the sales. We will not be able to fulfill our duty to protect our water supply if these sales go through.

Athens Drinking Water Supply will be severely threatened by this sale

The City of Athens drinking water supply is a sole source aquifer continuous with the aquifer under and nearby--downhill and downstream of--the Wayne parcels to be sold. It is also adjacent to and recharged by the Hocking River, which will be deleteriously impacted by these sales.

The water table in our well fields ranges from surface level to 20' below the surface throughout the year. The aquifer that feeds Athens' water supply is shallow, averaging a maximum of 60 feet below ground level. It is therefore especially susceptible to pollution from surface level and near-surface level contamination.

Water withdrawals will threaten our water supply

According to the Atlas of Reported Withdrawals by County for Athens County, Ohio, the county's public water systems already use 99% of total withdrawals for public use daily.

Athens City currently draws close to 5 million gallons a day, which is sometimes close to the capacity of the aquifer to recharge. Diminished water in the river has historically resulted in diminished availability in city wells. The city is already withdrawing close to the total water available per day on many days of the year.

Significant water withdrawals from the aquifer and/or from the Hocking River are expected to occur and are currently allowed by Ohio law for deep shale horizontal hydraulic fracturing. According to the USEPA, each Marcellus well requires 2-10 million gallons of water per well (Kargbo et al., Natural Gas Plays in the Marcellus Shale, *Environ. Sci. Technol.*, 2010, 44 (15), pp 5679–5684). Utica wells, often twice as deep, generally require greater volumes than do Marcellus wells.

Toxic chemicals used in drilling, fracking, and production will threaten our water supply

Many hundreds of highly toxic chemicals are injected into wells for deep shale drilling and horizontal fracturing, including known carcinogens and neurotoxins, at rates of tens of thousands of gallons per well. Flowback water and sludge contain high levels of toxic chemicals, according to EPA documents published by the New York Times: "Diesel is not the only component of fracturing fluid that contains high levels of BTEX and other toxic materials. Indeed, companies have disclosed to the authorities in NY and PA that they use other types of petroleum

¹ EPA/600/D-11/001/Feb 2011water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm 19-24

distillates that contain high levels of benzene, a human carcinogen that is considered unsafe in drinking water at levels above five parts per billion, the equivalent of a few drops in a swimming pool. Some of these petroleum distillates that the industry uses include kerosene, mineral spirits, petroleum naphtha and Stoddard solvent. According to scientific literature, these additives can contain up to 93 times the amount of benzene contained in diesel."²

EPA testing of brine in the Pennsylvania Brine Treatment--Franklin plant recorded benzene at 26 times federal drinking water standards.³

Because chemicals used by the gas and oil industry for drilling, fracturing, and production are exempted from regulation by the SDWA, Clean Water Act, and RCCRA, these levels are neither monitored nor reported.

Radioactivity will threaten our water supply

Flowback waters and sludge can also contain high levels of radioactivity, according to documents submitted to New York State and Pennsylvania authorities. One Pa. report cites levels of radium 400 times the federal drinking water standard. New York State's Department of Environmental Conservation analyzed 13 samples of wastewater brought thousands of feet to the surface from drilling and found levels of radium 226, a derivative of uranium, as high as 267 times the limit considered safe for discharge into the environment and thousands of times federal drinking water standards. 5

University of Buffalo researchers report the tendency of high-pressure, high-volume injections to facilitate release of uranium into flowback water and to bind it to chemicals in the water.⁶

Athens authorities are particularly concerned because southeast Ohio's deep shales are reported to have high levels of uranium, possibly especially in the deeper Utica shale.

Our city's water treatment facility can neither monitor nor adequately remediate these radioactive pollutants."

The report also states, "Deep shale drilling and horizontal fracturing spills, explosions, and leaks have caused high levels of radioactive and chemical pollution of waters. For example, the New York Times published a test sample taken Sept. 2, 2009 by the Pennsylvania Department of Environmental Protection of spilled drilling wastewater, which showed "radium levels of 6,540 pCi/L, or

 $^{^2\, \}underline{\text{nvtimes.com/interactive/2011/02/27/us/natural-gas-documents-1.html\#document/p391/a9939}}$

 $^{^3\,}ny times. com/interactive/2011/02/27/us/natural-gas-documents-1. html \# document/p416/a9943$

⁴ op. cit. p. 646.

 $^{^{5}\} scientificamerican.com/article.cfm?id=marcellus-shale-natural-gas-drilling-radioactive-wastewater$

⁶ upi.com/Science_News/2010/10/25/Tapping-natural-gas-could-unleash-uranium/UPI-62061288048109/

more than 1,000 times the drinking water standard."⁷

Numerous other reports by Pennsylvania authorities discuss large volumes of discharge into creeks, ⁸ including a tributary of the Susquehanna that resulted in filing of a lawsuit against Chesapeake Energy by the State of Maryland. ⁹

Below surface migration is widespread and well documented. A Colorado creek, contaminated by benzene from a deep underground migration of injected chemicals in 2004 which resulted in fines to Encana by the Colorado Oil and Gas Conservation Commission, still had high levels of benzene in groundwater monitoring wells sampled near the creek in mid-2011. The *Proceedings of the National Academy of Sciences* recently documented methane migration into drinking water supplies. ¹¹

The Denver Post reports that just three companies reported 350 spills since January 2010, including releases of benzene and other carcinogens three times in one month into surface waters in one county. ¹²

The City's letter concludes that the sales will "irreparably impair the drinking water supplies and economy of the City of Athens, Ohio." ¹³

Ohio University's letter to the BLM, signed by Dr. Roderick McDavis, states; *Statement of Reasons:* It is our duty as an institution of higher education to lead and support our campus and greater community as we seek safe living conditions, healthy economies and fertile lands where we live and work. The potential December 7, 2011 sale of the publicly owned lands referenced above poses a threat to a healthy living and learning environment at Ohio University.

Ohio University is currently unable to support a practice that is not strictly regulated and highly accountable. We request the withdrawal of the lease sale until a comprehensive, objective environmental and economic analysis is conducted and the absence of risk to our water supply, community health, and local economy can be assured.

⁸ op. cit, multiple documents

⁷ op. cit. p. 644 ff.

 $^{^9}$ see for example NY Times,, op.cit., p. 1056 ff.; $\frac{\text{reuters.com/article/2011/04/20/us-chesapeake-spill-idUSTRE73J6D820110420}, \\ \frac{\text{newsworks.org/index.php/local/item/18791-02spfrack}}{\text{newsworks.org/index.php/local/item/18791-02spfrack}}$

¹⁰ Chakrabarty, Gargi. Commission Oks Record Fine for Natural Gas Seep, Rocky Mountain News, 8-18-04; Olsson Associates, West Divide Seep Area Second Quarter Monitoring Status Report for June 2011, Table 1 cogcc.state.co.us
¹¹ Stephen G. Osborn, et al., "Methane contamination of drinking water accompanying gas-well drilling and hydraulic

Stephen G. Osborn, et al., "Methane contamination of drinking water accompanying gas-well drilling and hydraulic fracturing," *PNAS*, May 17, 2011, 108 (20), pp. 8172-8176

denverpost.com/breakingnews/ci_18880544, 9/12/11

¹³ Athens City formal protest letter, October 7, 2011, RE: Protest of the Bureau of Land Management's Notice of Competitive Oil and Gas Lease Sale Concerning Parcels in Perry, Gallia, and Athens Counties, Ohio

The city of Athens is located south and west of "The Wayne" as we locals call it. The Hocking River runs from the Northwest to the Southeast corners of the county where it empties into the Ohio River at Hockingport. The Hocking River and its aquifer is the origin of most of the counties drinking water. Our county uses several water systems due to prior contamination from coal mining and past gas extraction. Athens County has several Class II injection wells, and waste is delivered from out of state everyday. We have recently experienced serious water contamination from industrial processes. About eight years ago, it was determined that the chemical C-8 had been found in the water systems in the Eastern part of the county. A class action lawsuit was settled with Dupont, which had been releasing the chemical into the Ohio River for 30+ years. This county has suffered from the effects of resource extraction and chemical industrialization. Many of you may know that a few months ago a transfer gas pipeline exploded in Northern Athens County causing serious damage and destroying homes.

As a resident of this county for 18 years, I have become very fond of the natural beauty, as have many others who travel to our area on a regular basis for tourist activity and for those who want to attend university in a beautiful non-urban setting. Prior to my election I was aware of hydraulic fracturing, but only from a distance. With 'the Wayne issues' and subsequent appearance of landmen feverishly signing up private landowners in the county, my knowledge base and understanding had to increase. In November I traveled to Golden, CO and received an earful from friends who have lived through the 'gas boom' there. In January, I traveled with nine other Athens county residents to Wetzel County, W. Va, to see hydraulic fracturing gas extraction first hand. Having grown up in industrial communities, I wasn't shocked by the industrial character of the operation. The sheer scale of the operations, the drastic changes to the landscape, and the loss of farmers and rural landowners way of life was what shocked me the most. Listening to residents describe the changes to their lives was extremely difficult. Many thought they were helping their families. What they've since learned after 4 years of drilling is that they aren't better off, and their way of life has changed drastically. The degradation of the landscape, changes in the topography, and loss of previously good water wells was significant. It was fortunate that we were able to see before and after photographs. I quickly began to think of "The Wayne" and other areas of Athens County were leases have been signed. The stories are not new to the members of this committee. They are the same no matter what community you travel to that has experienced this type of drilling. Some are better than others, but the changes are profound.

The questions began to arise: Can this be process be carried out without making such a huge footprint to the land? How does a community handle the increased traffic, and toxic substances traveling on its roads? How do we protect our water and air from surface damage? What is happening thousands of feet below the surface? Can the method ever be safe? Even if fracking, ideally carried out *can be* perfectly safe, in practice mistakes happen, and corners are cut because of human error, and the consequences of such mistakes are potentially extremely serious and, in the case of aquifer contamination, irreversible and certain to destroy our entire community.

Where will the vast amounts of water required come from? Our river? As a city councilperson looking into the Ohio Revised Code and municipality rights, one quickly learns that our protections are extremely limited. Where are the checks and balances? Oh yes, and where are the jobs? Community after community reports insignificant increase in local employment. All the studies show less employment than what was initially promised. Property values decline, often drastically

A recent Pennsylvania economic analysis states that reports of job growth from Marcellus activity are greatly overstated. Rather than the purported 48,000 jobs, "Actual jobs data tell a different story. This briefing paper demonstrates that Marcellus Shale drilling has created no more than 10,000 jobs...The number of jobs created by Marcellus industries is small — less than 10% — compared to the 111,400 increase in jobs in all state industries since Pennsylvania's recent employment trough in February 2010." The report concludes, "The modest contribution of the Marcellus Shale to job growth must also be balanced against the impact of drilling on other industries, such as tourism and the Pennsylvania hardwoods industry. It is also important to balance the contribution of the Marcellus Shale to job growth against the so-far unfunded environmental liability of the industry." 14

Economic impact studies by researchers independent of industry, cited by economist Janette Barth (3/4/11), document the negative economic impacts of extractive industries historically and dispute the glowing picture painted by industry:

"Fossil Fuel Extraction as a County Economic Development Strategy: Are Energy-Focusing Counties Benefiting?", Headwaters Economics, September 2008. (http://headwaterseconomics.org) concluded that counties that were not focused on fossil fuel extraction experienced higher growth rates, more diverse economies, better-educated populations, a smaller gap between high and low income households, and more retirement and investment income.

Another study, "Mining the Data: Analyzing the Economic Implications of Mining for Nonmetropolitan Regions" (W.R. Freudenberg and L. Wilson, *Sociological Inquiry*, 72, 4: 549-75), concluded that unemployment and poverty worsened in mining counties in non-metropolitan regions. It found that the highest levels of long-term poverty are in places where there was once a thriving extractive industry.

Why doesn't the industry disclose the contents of fracking waste? Perhaps this is the most disturbing feature of the entire undertaking – if the method is safe and established what possible justification could there be for excluding the industry from almost all of the federal laws that protect public health?

Our community is very concerned about air emissions from this extractive industrial process. Our state laws barely regulate emissions, permitting virtually unrestricted open venting and flaring. Because the industry is exempted from aggregation standards of other industries, tons of volatile organic compounds will be emitted without reporting, let alone any restriction. U.S. EPA reports that hydraulic fracturing of one well creates

¹⁴ Digging Deeper into Job Claims, Keystone Research Center, June 2011

approximately 23 tons of volatile organic compounds (VOCs) emissions, roughly 200 times more than if the well was not hydraulically fractured. 15

The *New York Times* report on risks of deep-shale drilling and horizontal hydraulic fracturing documents air pollution issues: "Air pollution caused by natural-gas drilling is a growing threat.... Wyoming, for example, failed in 2009 to meet federal standards for air quality for the first time in its history partly because of the fumes containing benzene and toluene from roughly 27,000 wells, the vast majority drilled in the past five years...In Texas, which now has about 93,000 natural-gas wells, up from around 58,000 a dozen years ago, a hospital system in six counties with some of the heaviest drilling said in 2010 that it found a 25 percent asthma rate for young children, more than three times the state rate of about 7 percent." ¹⁶

The USEPA¹⁷ documents air emissions (p. 55): "One of the largest potential sources of air emissions from hydraulic fracturing operations is the off-gassing of methane from flowback before the well is put into production. The NYS dSGEIS [Draft Supplemental Generic Environmental Impact Statement] estimated that 10,200 mcf of methane is off gassed per well." The document reports up to 24,000 mcf of methane released per well (Armendariz, 2009). "This gas is typically vented or flared, although reduced emissions completion methods can capture up to 90 percent of the gas. High concentrations of methane could also pose an explosion threat. On-site fuel tanks and impoundment pits containing flowback may also be sources of VOC and hydrogen sulfide emissions (ICF International, 2009a). The VOCs found in flowback may include acetone, benzene, ammonia, ethylbenzene, phenol, toluene, and methyl chloride (NYSDEC, 2009)." The EPA report continues, "Truck traffic is also a potential major source of air emissions. ...the National Park Service estimated that total truck traffic of between 300 and 1,300 trucks per well would occur in the Marcellus Shale production areas. The NPS estimated that this could have a significant effect on regional nitrogen oxides levels (NPS, 2008)." USEPA also states, "Reports from Texas have linked pollutant emissions from natural gas drilling in the Barnett Shale to substantial reductions in air quality (Michaels et al., 2010). Additionally, areas of highly concentrated natural gas development in southwest Wyoming and eastern Utah have experienced episodes of degraded air quality (e.g., high levels of winter time ozone concentrations). Diesel engines used to run compressors, generators, drill rigs, and pumps may also create significant emissions." ¹⁸

Theo Colborn and colleagues¹⁹ state: "In addition to the land and water contamination issues, at each stage of production and delivery tons of toxic volatile compounds (VOCs), including BETX, other hydrocarbons, and fugitive natural gas (methane), can escape and

¹⁵ USEPA Proposed Rule, "oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews," Federal Register /Vol. 76, No. 163 at 52757, http://www.gpo.gov/fdsys/pkg/FR-2011-08-23/pdf/2011-19899.pdf

¹⁶ nytimes.com/2011/02/27/us/27gas.html? r=4&scp=5&sq=natural%20gas&st=cse

¹⁷ EPA/600/D-11/001/Feb 2011water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm

¹⁸ EPA/600/D-11/001/February 2011

¹⁹ Theo Colborn, C. Kwiatkowski, K.Schultz, and M. Bachran, "Natural Gas Operations from a Public Health Perspective," *International Journal of Human and Ecological Risk Assessment*, 17(5) Sept 2011

mix with nitrogen oxides (NOx) from the exhaust of diesel-fueled, mobile, and stationary equipment, to produce ground-level ozone (CH2MHILL 2007; Colorado Department of Public Health and Environment [CDPHE] 2007; URS 2008; U.S. Congress, Office of Technology Assessment 1989). One highly reactive molecule of ground level ozone can burn the deep alveolar tissue in the lungs, causing it to age prematurely. Chronic exposure can lead to asthma and chronic obstructive pulmonary diseases (COPD), and is particularly damaging to children, active young adults who spend time outdoors, and the aged (Islam et al. 2007; Tager et al. 2005; Triche et al. 2006). Ozone combined with particulate matter less than 2.5 micrometers produces smog (haze) that has been demonstrated to be harmful to humans as measured by emergency room admissions during periods of elevation (Peng et al 2009). Gas field ozone has created a previously unrecognized air pollution problem in rural areas, similar to that found in large urban areas, and can spread up to 200 miles beyond the immediate region where gas is being produced (U.S. Congress, Office of Technology Assessment 1989; Roberts 2008). Ozone not only causes irreversible damage to the lungs, it is similarly damaging to conifers, aspen, forage, alfalfa, and other crops commonly grown in the western U.S. (Booker et al. 2009; Reich 1987; U.S. Congress, Office of Technology Assessment 1989). Adding to this air pollution is the dust created by fleets of diesel trucks working around the clock hauling the constantly accumulating condensate and produced water to large waste facility evaporation pits on unpaved roads. Trucks are also used to haul the millions of gallons of water from the source to the well pad."

So again as an elected official, I ask: "what does our Athens Community gain"? Increased tourism in the Wayne? Unlikely. Better hunting? Not likely if we look at the results of the West Virginia US Forest Service study on the effect of spilled fracking fluids on forests²⁰ or the new study on animal impacts²¹. Congested roadways? I think of schools that are situated close to the National Forest. In Wetzel County, the school buses have to be escorted on narrow winding county roads when the industry is operating their vehicles, which is almost continuous. The associated infrastructure and building transfer lines through forests leave an extensive footprint.

Reports from North Dakota and Pennsylvania on social impacts paint an ugly portrait of increased crime, including rapes and other assaults, suicides, people displaced from housing due to outrageous increased housing prices due to the influx of temporary workers, and other negative impacts on the quality of life.

Dr. Simona Perry documents the social impacts of the so-called shale boom in Bradford County PA. ²² She compares the impacts to the trauma of abusive relationships. Rapid transformation of landscape from rural, agricultural to industrial with greatly increased

²⁰ 56% of trees in the fluid application area were dead within two years. Mary Beth Adams, *Land Application of Hydrofracturing Fluids Damages a Deciduous Forest Stand in West Virginia, J. Environ. Qual.* 40:1340–1344 (2011) http://www.nrs.fs.fed.us/pubs/jrnl/2011/nrs 2011 adams 001.pdf

²¹ Bamberger, M. and Oswald, R., "Impacts of gas drilling on human and animal health," New Solutions, 22(1) 51-77, 2012, in press.

²²chec.pitt.edu/mediasite.cidde.pitt.edu/mediasite/SilverlightPlayer/Default.aspx?peid=689293c50f404f12b8c628b8f22 85780, Dr. Simona L. Perry, Rennselaer Polytechnic Institute, "It's like we're losing our love": Bradford County social impacts from shale boom. 11/11

truck traffic and more dangerous and inconvenient travel as well as dust, diesel fumes, and noise are major sources of aggravation, stress and fear. The people she studied have experienced irreversible changes in connections they had with families' history, childhood memories, land, and neighbors, as well as with present and future. The fear of losing land, health, and children's future gave members of a focus group a "death" feeling. One member described it as a dread in the pit of her stomach. "It feels like we're losing our love. The things we love the most may be taken away." One resident described the situation as **deception desecration, and denial.** They talk repeatedly of broken hearts. Dr. Perry tells the story of a man arrested and incarcerated for 5 days and given a diagnosis of bipolar disorder as well as a bill for roadwork for hampering workers using his land as a staging ground. Dr. Perry uses the term, cycle of abuse, to describe the impacts of this industrialization on their community, lives, land, and loved ones.

Athens County is a uniquely valuable region for its ecotourism, the presence of a major university, and a National Forest. Soon we will have the US Rt 33 corridor completed, which happens to go thru "the Wayne". What an ironic twist if all the careful environmental engineering that went into constructing the new highway goes to the wayside for hydraulic fracturing development. And even more, what a tragedy if our viable local economy and community with its vibrant tourism, arts, green technologies, and local and organic foods industries are destroyed in the rush to exploit our region for shale gas and oil.

To come back to the risks to water: The risk of damaging and extracting vast amounts of water from our supply could be a game changer for this area. Will we become like Arizona where we have to have controlled use? Our area has gone through significant water cleanups from the coal tailings in our creeks and from underwater mine flooding. In Wetzel County, after the industry extracted water from the streams and local sources, they began to ship it in by tanker truck and also in pipelines that stretch for miles along the county roads as water is pumped from the Ohio River. Will this happen to the Hocking River? A salient discussion point: How is it that 5% of landowners, (a very generous estimate of landowners choosing to lease) can determine the course of public policy in Athens County?

While one should not neglect the energy needs of the country and region, it is imperative to our region that we develop sources of energy that do not destroy our economy, health, and environment. And it is essential that these sources are developed on a level playing field, where dangerous forms of extraction are not encouraged by industry misinformation, government ties to industry, and shady deals. Already there have been evidence of unethical dealings on the part of landmen²³, and the Ohio Attorney General feels strongly that additional oversight is needed in the process of land leasing and in state and federal regulation of the industry. New laws are required to overturn such

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²³ http://ecowatch.org/2012/as-fracking-boom-hits-ohio-deceptive-industry-practices-squeeze-landowners/ provides links to an audio tape and transcript of a leasing session in which a Cunningham Energy representative states that only water is used in the drilling and fracturing process in addition to making other statements that conflict with the lease stipulations and industry practices. Recorded in Athens, Ohio, October 7, 2011.

bizarre measures as the "Halliburton Loophole", and the companies that carry out hydraulic fracturing must be accountable for their impacts on communities.

Our County Commissioners, Democrat and Republican, recently unanimously passed a resolution calling on the U.S. Congress to pass the FRAC Act, which would repeal the exemptions from the Safe Drinking Water Act and require disclosure of chemicals used in fracking. Additionally, the Commissioners' resolution states, "We call upon the state of Ohio and the Ohio Department of Natural Resources to

- Increase the number of state inspectors commensurate with the planned increase in drilling activities
- Conduct geotechnical investigations of soil and rock stability prior to any drilling or surface impoundments such as dams or holding ponds
- Require full disclosure of the chemical constituents used during deep shale drilling and hydraulic fracturing and the disposal methods for deep shale drilling and hydraulic fracturing waste
- To update regulations on the use of class 2 injection wells to reflect the increased volume and known content of deep shale drilling and hydraulic fracturing waste
- Regulate water withdrawal from public waters for hydraulic fracturing operations
- Prevent installation of wells in source water protection areas
- Increase the bond required to cover for deep shale drilling and hydraulic fracturing operations
- Increase the severance tax to pay for county-level remediation."

Like Attorney General Dewine's recent statements, this call speaks to the inadequacy of Ohio law and enforcement capabilities to protect our air, water, and local economic health from the impacts of this industrial process.

On this particular date as an elected official and one who has to answer to many constituencies, I do not believe the necessary safety regulations are in place to begin drilling in the Wayne National Forest in Athens, County, Ohio.

As national leaders and policymakers, I implore you to stop kicking the can down the road to the next state, region or community. This is no different than the gas drillers who pick up and move their operations to a new locality after imparting damage. These issues demand thoughtful regulation at the *national* level. There are tens of thousands of voters who are negatively impacted everyday. Is the return worth the demonstrated risks?