

Paul Wiehl  
Mayor

Paula Horan-Moseley  
Service-Safety Director



City of Athens  
8 East Washington Street  
Athens, Ohio 45701  
(740) 592-3338  
(740) 592-3340  
(740) 592-3341 fax

Dr. John Lyon  
Eastern States Office Director  
United States Department of the Interior  
Bureau of Land Management, Eastern States  
7450 Boston Boulevard  
Springfield, Virginia 22153

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**

Dear Dr. Lyon:

The City of Athens, Ohio, hereby protests the agency's planned offering of ES-043-12/11, OHES 57246 ACQ (264.93 acres, Athens County); ES-045-12/11, OHES 57247 ACQ (1,238.06 acres, Athens County); ES-044-12/11, OHES 57248 ACQ (1,120.58 acres, Athens County), and ES-041-12/11, OHES 57244 ACQ (528.15 acres, Perry County) at the December 7, 2011 lease sale in accordance with 43 CFR 3120.1-3. The four parcels are publicly owned lands of the Wayne National Forest.

Attached to this summary find the full elaboration and documentation of this protest.

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.

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. The 2-10 million gallons of water per well used for this method of drilling and production will severely jeopardize our water supply.

City of Athens • 8 East Washington Street • Athens, Ohio 45701

Toxic and radioactive chemicals used in drilling, fracking, production, and waste storage will threaten our water supply: Many hundreds of highly toxic chemicals 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, threaten our water supply from underground migration, flowback spills, leaks, and waste storage. Flowback water and sludge also will likely contain high levels radioactivity, which our city's water treatment facility can neither monitor nor adequately remediate.

Any waste storage will be adjacent to or immediately above the riparian aquifer. 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.

Any accident would cause rapid and irremediable harm due to proximity to the surface and porous sand and gravel that overlies our aquifer.

The City of Athens opposes these sales because they violate NEPA, NFPA NFMA, and Ohio Revised Code 743.25.

The City of Athens requests that BLM withdraw the protested parcels from the December 2011 Competitive Oil and Gas Lease Sale because this sale will violate ORC 743.25, NEPA, and NFMA and will irreparably impair the drinking water supplies and economy of the City of Athens, Ohio.

Sincerely,



Paul Wiehl, Mayor City of Athens

Dr. John Lyon  
Eastern States Office Director  
United States Department of the Interior  
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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.<sup>1</sup> 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 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."<sup>2</sup>

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

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.

<sup>1</sup> EPA/600/D-11/001/Feb 2011 [water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm](http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm) 19-24

<sup>2</sup> [nytimes.com/interactive/2011/02/27/us/natural-gas-documents-1.html#document/p391/a9939](http://nytimes.com/interactive/2011/02/27/us/natural-gas-documents-1.html#document/p391/a9939)

<sup>3</sup> [nytimes.com/interactive/2011/02/27/us/natural-gas-documents-1.html#document/p416/a9943](http://nytimes.com/interactive/2011/02/27/us/natural-gas-documents-1.html#document/p416/a9943)

### **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.<sup>4</sup> 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.<sup>5</sup>

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.<sup>6</sup>

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.

### **Waste storage will threaten our water supply**

Waste from drilling and fracturing is permitted by Ohio law to be stored in open pits throughout the production phase and for ninety days following and then re-injected, with the dewatered sludge buried on site.

Any waste storage will be adjacent to or immediately above the riparian aquifer. This waste will likely be both highly chemically toxic and radioactive.

Any accident would cause rapid and irremediable harm due to proximity to the surface and porous sand and gravel that overlie our aquifer.

### **USEPA and state authorities report likely contamination and widespread documentation of chemical and radioactive contamination of surface and groundwater**

USEPA's 2002 draft Fracturing Report reported violations of water quality standards by fracking chemicals, and the 2004 Final report states that fracturing chemicals are "likely to be transported by groundwater supplies."<sup>7</sup>

Deep shale drilling and horizontal fracturing spills, explosions, and leaks have caused

<sup>4</sup> op. cit p. 646.

<sup>5</sup> [scientificamerican.com/article.cfm?id=marcellus-shale-natural-gas-drilling-radioactive-wastewater](http://scientificamerican.com/article.cfm?id=marcellus-shale-natural-gas-drilling-radioactive-wastewater)

<sup>6</sup> [upi.com/Science\\_News/2010/10/25/Tapping-natural-gas-could-unleash-uranium/UPI-62061288048109/](http://upi.com/Science_News/2010/10/25/Tapping-natural-gas-could-unleash-uranium/UPI-62061288048109/)

<sup>7</sup> [water.epa.gov/type/groundwater/nlc/class2/hydraulicfracturing/wells\\_coalbedmethanestudy.cfm](http://water.epa.gov/type/groundwater/nlc/class2/hydraulicfracturing/wells_coalbedmethanestudy.cfm)  
emphasis mine

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 more than 1,000 times the drinking water standard.”<sup>8</sup>

Numerous other reports by Pennsylvania authorities discuss large volumes of discharge into creeks,<sup>9</sup> including a tributary of the Susquehanna that resulted in filing of a lawsuit against Chesapeake Energy by the State of Maryland.<sup>10</sup>

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.<sup>11</sup> *The Proceedings of the National Academy of Sciences* recently documented methane migration into drinking water supplies.<sup>12</sup>

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.<sup>13</sup>

### **The City of Athens also opposes these sales because they violate the National Environmental Policy Act and the National Forest Policy Act**

The FS (and BLM) are relying on the analysis contained in the 2006 Wayne NF LRMP, Record of Decision and Final EIS for the site-specific preleasing NEPA analysis necessary to assess the impacts arising from oil and gas exploration and development on these leases. However, none of these documents contain the site-specific analysis necessary to satisfy NEPA’s requirements, especially that for a “hard look” at the impacts. Moreover, circumstances have changed and new information has arisen since the 2006 FEIS was completed, necessitating further analysis. See 40 C.F.R. § 1502.9(c)(1) (supplemental EIS must be prepared when there are significant new circumstances or information).

High volume horizontal hydraulic fracturing, or “fracking,” is a recently developed process of natural gas drilling that differs significantly in many respects from conventional oil and gas drilling. The 2006 LRMP FEIS touches only very briefly on directional drilling, and fails to provide any analysis of the potential environmental

<sup>8</sup> op. cit. p. 644 ff.

<sup>9</sup> op. cit, multiple documents

<sup>10</sup> see for example NY Times, op.cit, p. 1056 ff.; [reuters.com/article/2011/04/20/us-chesapeake-spill-idUSTRE73J6D820110420](http://reuters.com/article/2011/04/20/us-chesapeake-spill-idUSTRE73J6D820110420), [newsworks.org/index.php/local/item/18791-02spfrack](http://newsworks.org/index.php/local/item/18791-02spfrack)

<sup>11</sup> 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

<sup>12</sup> 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

<sup>13</sup> [denverpost.com/breakingnews/ci\\_18880544](http://denverpost.com/breakingnews/ci_18880544), 9/12/11

impacts of directional drilling. Moreover, the more specific practice of high volume directional (or "horizontal") hydraulic drilling/fracturing is nowhere mentioned in the FEIS. This is perhaps not surprising, as the high volume directional hydraulic fracturing of shale formations such as the Utica and Marcellus began only after the 2006 FEIS was completed. Appendix G to the 2006 LRMP FEIS, which projected the future development of oil and gas on the Wayne, specifically stated that directional drilling technology was not economically feasible on the Wayne:

[O]perator feedback coupled with the fact that only 12 wells out of 1,704 permitted during the 10 year period were directional wells, suggest that this type of technology is still not yet economically feasible within the WNF.

2006 FEIS, page G-5, "Directional/Horizontal Drilling." Since that time, the practice has become widespread in neighboring states such as Pennsylvania. The practice is now rapidly expanding across Ohio.

### **BLM and FS Will Violate NFMA If They Offer These Leases For Sale**

The BLM and FS would also violate the National Forest Management Act (NFMA) were they to offer these leases for sale. Under the NFMA, "Resource plans and permits, contracts and other instruments for the use and occupancy of National Forest System lands shall be consistent with the land management plans." 16 U.S.C. § 1604(i). All oil and gas development activities and other site-specific projects must be consistent with the Forest Plan. Id. Courts uniformly enforce this consistency requirement. See *Northwoods Wilderness Recovery, Inc. v. USFS*, 323 F.3d 405, 407 (6th Cir. 2003) ("Implementation of the forest plan is achieved through individual site-specific projects, and all projects must be consistent with the forest plan."); see also *Cherokee Forest Voices v. USFS*, Case No. 05-6570, 2006 U.S. App. LEXIS 13214, \* 11-12 (6th Cir. May 25, 2006) (unpublished); *Sierra Club v. Martin*, 168 F.3d 1, 4-5 (11th Cir. 1999); *Friends of Southeast's Future v. Morrison*, 153 F.3d 1059, 1068 (9th Cir. 1998); *National Audubon Society v. Hoffman*, 132 F.3d 7, 19 (2nd Cir. 1997).

### **Precedence in FS prohibiting horizontal drilling based on risks**

The George Washington National Forest in Virginia is evaluating horizontal shale drilling as part of its forest plan revision process, and the GW's Draft Revised LRMP prohibits horizontal drilling in the forest due to water quality-related environmental concerns:

Horizontal drilling and the associated hydrofracturing of the Marcellus shale formation may impact water quality. Given the questionable nature of the development potential on the Forest, along with the high level of concern for water quality, the Plan does not allow horizontal drilling.<sup>14</sup>

<sup>14</sup> GW Draft Revised LRMP, page 3-15, [fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5297819.pdf](http://fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5297819.pdf)

**The sales would violate Ohio Revised Code 743.25**

ORC 743.25 states:

No person shall pollute a running stream, the water of which is used for domestic purposes by a municipal corporation, by putting therein a putrid or offensive substance, injurious to health. The director of public service of a city or board of trustees of public affairs of a village shall enforce this section. The jurisdiction of a municipal corporation to prevent the pollution of its water supply and to provide a penalty therefor shall extend twenty miles beyond the municipal corporation limits.

The cities in Athens County that will be affected by the likely pollution thereby have the authority to prohibit these sales in order to prevent likely and irreparable harm. Deep shale drilling and horizontal fracturing on these parcels will pollute our drinking water. Our city will have no ability or resources to prevent, monitor, or remediate pollution if the wells are constructed and therefore call for an immediate cancellation of these sales.

**The City of Athens** requests that BLM withdraw the protested parcels from the December 2011 Competitive Oil and Gas Lease Sale because this sale will violate ORC 743.25, NEPA, and NFMA and will irreparably impair the drinking water supplies and economy of the City of Athens, Ohio.

Sincerely,



Paul Wiehl, Mayor City of Athens