

Wayne National Forest: Steps beyond the RONI

There are compelling legal reasons for a National Forest to complete an Environmental Impact Study in consideration of leasing new parcels of forestland for future oil and gas exploration. Although there is discretion for decision making within each forest district, federal mandates to ensure compliance with federal laws require that the public have a say on any new potential industrialization on federal lands.

The Wayne National Forest received notice from the BLM that an EOI (expression of interest) had been submitted for review. In May of 2011, a response was sent from WNF to BLM stating that the 2006 WNF plan was adaptable for RFDS (Reasonable Foreseeable Development Scenario) and that any oil and gas exploration would be dealt with on a permit (State of Ohio) basis. Any site-specific analysis needed would be done at that time.

After an alarmed public outcry for no deep-shale horizontal drilling and hydraulic fracturing on forestlands, the WNF started a RONI [review of new information] to assess the situation. It is to be hoped that the RONI will clearly reveal the incompleteness of the 2006 forest plan in addressing oil and gas exploration with today's technology. The WNF decision to lease parcels in the Wayne was premature. Before a decision can be made to do any such leasing for use of the shale oil technology, which has recently made its appearance in Ohio, a complete EIS, as dictated by NEPA, must be performed.

It is apparent from reviewing the 2006 WNF plan, as well as the letter from BLM dated June 14 2011 and the ROD [record of decision] from the 2006 plan, that WNF circumvented all mandates to conduct an EIS *before* making a decision to agree to leasing parcels of the WNF.

A letter from BLM to WNF dated February 2002 verifies that BLM will cooperate with WNF to update the WNF plan. That letter directs WNF to expand oil and gas exploration on all Federal oil and gas mineral estate. In this letter, BLM states the reason to be to "expedite the processing of lease applications made under CNEPA. Presently, lease applications made under CNEPA are taking up to 2-3 years to process."

This request from BLM seems to govern the oil and gas review of the 2006 plan— to expedite leasing and rely solely on WNF stipulations and state laws. However, in the 2011 ROD to BLM announcing the availability to lease, WNF states, "If new information or circumstances requiring further environmental analysis were discovered during processing of nominated lease parcels, then such analysis would be done before nominated parcels are forwarded to the BLM."

WNF then falls back on the 2006 plan, saying that it adequately addresses all issues related to oil and gas exploration. New information and circumstances, i.e., deep-shale drilling and high volume horizontal hydraulic fracturing (HVHF), are simply ignored. Granted in 2006 this technology for oil and gas exploration was not in the eastern U.S., so the 2006 Plan would not necessarily have addressed it. But in 2011, when the WNF consented to lease, there was great awareness and interest by shale fuel extraction corporations, undoubtedly the reason for the recent EOIs to the BLM.

Throughout the WNF 2006 Plan, it is stated that horizontal drilling is not feasible. There is nothing in the 2006 plan that addresses the issues around HVHF. Everything in that plan addresses vertical and shallow well exploration. **Therefore, the Wayne's clear mandate is, at a minimum, to shelve the leases until**

further analyses and studies are completed, as clearly indicated in all legal documents, scientific studies, and field reports available on the matter. Alternatively, given the high stakes to the county's water supplies and economic viability, the WNF could choose to cancel these lease sales permanently.

We have outlined below some of the issues that cannot be addressed without an updated EIS if the WNF chooses the first of these options. This outline is based on analyses by a number of local citizens with scientific and engineering backgrounds who have researched the scientific and engineering literature, field reports, federal documents, including the WNF 2006 Plan, and Ohio laws and regulations.

As stated clearly in October 2011 in dozens of formal protests by Athens County officials, institutions, and private individuals to the BLM and WNF regarding the pending Wayne lease sales, the Wayne must evaluate potential **economic, social, and environmental impacts on the region before approving** any significant action not addressed by its NEPA-based forest plan. As detailed below, there is no question that deep-shale drilling and horizontal hydraulic fracturing comprise a significant action. As also clearly indicated below, there is no question that this industrial technology was not evaluated previously by the WNF or in fact by any federal agency to date.¹ There is therefore no question that the WNF must undertake a full NEPA analysis with a full environmental analysis and appropriate public input if it seeks to authorize use of this technology on the Wayne.

Given the magnitude of the costs to our environment, economy, and community social health and, even more clear, the magnitude of the risks—the extremely high stakes--of this action to our county's water supply and economic viability, we sincerely hope that the Wayne National Forest will permanently withdraw the four Hocking River watershed parcels from consideration for leasing. Any possible benefits are certainly too meager to justify either the costs or the risks to our communities and county.

Benefits must outweigh costs for NFS actions. Such is clearly not the case with lease sales on these parcels.

We furthermore contend that, due to extremely high levels of water consumption, air pollution, radioactive and toxic waste generation, water contamination, and greenhouse gas emissions from transportation, production, and waste disposal processes, HVHF has no net public economic benefit anywhere on the Wayne. Defense of that argument will be left for subsequent presentations.

¹ In an e-mail of March 8, 2012, Kevin Bailey of USDA's Office of Congressional Relations acknowledged that a new Administrative Notice (AN) clarifying the need to do more thorough NEPA was being developed by USDA: "Recent technological developments in the oil and gas industry have expanded operations to areas of the country not previously affected by mineral development for oil and gas production; **the overall environmental effects of such development have not been addressed in any NEPA document by any Federal agency.** There is substantial controversy over the extent, range, and issues associated with hydraulic fracturing (fracking) for gas in the NE region of the U.S. Approval of such leases would allow for a number of potential impacts to possibly occur which would need to be analyzed in a NEPA document that would be reviewed by the public for sufficiency. Use of a CE level for such actions places the Agency at risk of NEPA related litigation. The AN clarifies that use of a CE level for those RHS/RBCS would not be appropriate, and the actions would be likely to require a more detailed environmental document."

I. Analysis of ROD and Appendix G of 2006 Wayne National Forest Plan: Oil and Gas Management

In appendix G: Oil and Gas Management, there is reference to the 1992 Amendment #8 which refers to no change in the petroleum geology or its interpretation for Resource Management. This then further states that no horizontal drilling will be considered in the 2006 Plan. Now consider some of the issues that arise from that premise.

What follows is a review of Appendix G and the ROD for **significant differences in impacts between conventional oil and gas extraction methods and deep-shale horizontal drilling and hydraulic fracturing methods.**

Main Points

Neither Appendix G nor the ROD addresses WNF cumulative effects of oil and gas exploitation using deep shale extraction methods.

Neither Appendix G nor the ROD addresses offsite effects on public roads, private properties, surface waters and water supplies from either method of Oil and Gas Extraction.

The enhanced magnitude and duration of effects from deep shale extraction methods are not addressed for the following resources:

- Abandoned surface and underground coal mines
- Aesthetic considerations
- Air Pollution
- Archeological and cultural resources
- Forest fragmentation
- Noise
- Shallow groundwater pollution
- Socioeconomic considerations
- Surface water pollution
- Threatened and Endangered Species
- Traffic volumes as may affect accident rates, injury and deaths
- Water volumes and sources needed for hydraulic fracturing
- Surface disturbance, land clearing, earth removal, alteration of slopes, and impacts on water quality, air quality, carbon storage, habitat destruction, harm to forest biota, and opportunities created for spread of invasive pests from construction and operation of pads, empoundments, roads, utility and production pipeline rights-of-way.
- Potential for earthquakes and anthropogenic faults and fissures

Reasonably Foreseeable Development Scenario for Deep Shale Horizontal Drilling and Hydraulic Fracturing for Oil and Gas

1. A major difference between conventional shallow drilling and deep shale fracturing is the scale of operation. Conventional oil and gas production can be and historically has been conducted on a small scale, a well or two at a time by single drilling rigs and relatively small business entities. Short, narrow access roads are constructed to service 0.25 to 0.5 acre drilling pads from which 20 to 40 acres of exploitable reserve may be developed. These access roads and drilling pads may be visited by relatively few (in the range of dozens) of equipment and materials trucks on an infrequent basis,

allowing for a narrower access road. Horizontal deep shale drilling and hydraulic fracturing is a large-scale industrial exploitation conducted on a regional scale. Drill rig pad development will require access roads 2 to 3 times wider than for conventional shallow drilling, to accommodate two-way truck traffic that may number in the thousands of trips for a single well development. There may be 2 to 10 wells developed from a single pad; even more have been reported. Pads are as much as 10 acres in size. A recent lease signed in Athens County stipulated up to 20 acres for the pad. Pipeline construction is increasing drastically wherever deep-shale operations are underway with as much as 100-foot rights-of-way demanded by corporate owners.

Although the industry claims that horizontal drilling operations concentrate the development area, as if this will mean decreased impacts, this is not the case. The industrial scale operations of deep-shale drilling and production sites ensure highly significant impacts, overriding any significance of possibly reduced square footage. Whether or not square footage is less over the Forest as a whole is irrelevant to the overall level of impacts of these possibly fewer but heavy-industry scale sites. Land clearing, earth removal and valley filling to obtain adequate areas for flat sites also have serious potential impacts on water quality, forest biota, habitat, carbon sequestration, and scenery management, which are not considered in either Appendix G nor the ROD.

2. The time frame for deep-shale horizontal drilling and completion is potentially 150-200 days per well or more, with pad occupation for condensate tanks and heater treaters and steady truck traffic for water removal continuing for the life of the well. A single well in West Virginia is going on five years in production. With ten or more wells per pad and development of these sometimes years apart, pad activity may last decades.
3. Water needs, storage, transportation, and potential risks: Water consumption and waste generation for horizontal fracturing are magnitudes greater than for conventional and vertical wells (as much as 10 million gallons per frack. Wells can be fracked numerous times). Withdrawals from rivers, streams, or groundwater or large-scale piping or hauling of water into the site from elsewhere; storage in tanks or open impoundments with likely additions of toxic biocides to prevent algal growth; waste production, storage, and transportation from the site and ultimate disposal are all highly significant issues not addressed by the 2006 Plan or ROD. 10-90% of water returns to the surface over the life of the operation. The magnitude of contaminated water released in accidents, including truck accidents and equipment failures causing blowouts, spills, and leaks, is not considered in WNF documents. The increased likelihood of highly significant accidents due to high truck volume, high water pressures, and high volumes of chemicals and radioactive waste is likewise not evaluated by the Wayne. Hideous roadside piping of water for many miles is also occurring where local water or trucking of water is not possible.² Neither these potential impacts nor those on public and private water supplies, river, streamside, and aquatic species health are considered in the 2006 documents or 2011 ROD.

Compare this to Appendix G (p. G-8), for example: “Producing wells in the WNF typically produce only small amounts of brine.”

The 2007 USFS Technical Guide for Managing Groundwater Resources clearly mandates evaluation and protection of water resources in all FS planning. Protection of public aquifers and drinking water supplies must receive special attention.³

² See Wetzel County trip report, attached

³ *Technical Guide to Managing Groundwater Resources*, FS 881, May 2007, pp. 4-6: Land Management Planning: Protection and sustainable development of ground water resources are appropriate components of land and resource

4. Chemicals used—both volume and range of chemicals—are not considered in the 2006 Plan. The quantities and kinds of chemicals used with this technology differ significantly from other well operations' usages due to the depths and pressures involved. Potential migration underground with resulting contamination of surface and ground water, increasingly documented by USEPA and state authorities, as well as frequently documented spills and leaks from storage tanks, ponds, and trucks all indicate significantly larger risks and potential impacts that must be analyzed prior to adoption of this new strategy on the Wayne. Regional as well as onsite impacts must be assessed as per USFS 2007 *Technical Guide to Managing Groundwater Resources*. Illegal dumping has been documented in Ohio and other states and suggests additional potential impacts of this technology on the Wayne's biota as well as to Athens County drinking water supplies, intimately tied to the four parcels in question.
5. Vastly greater pressures of this technology differentiate it in its potential for significantly greater impacts on well integrity, underground migration of gas and chemicals, and potential for blowouts, and contamination of ground water, surface water, and drinking water.
6. Because of the magnitude of industrialization needed to carry out a deep-shale operation, the surface and mineral leased areas of the WNF will most likely be exploited as part of a larger operation that

management planning for NFS lands. Ground water inventories and monitoring data shall be integrated into the land and resource management process. When evaluating project alternatives or revising national forest plans, use the best available science, technology, models, information, and expertise to determine the location, extent, depths, amounts, flow paths, quality, and recharge and discharge areas of ground water resources and their hydrological connections with surface water.

Water Development: Conduct appropriate National Environmental Policy Act (NEPA) analyses when evaluating applications for water wells or other activities that propose to test, study, monitor, modify, remediate, withdraw, or inject into ground water on NFS lands (see also FSH 2509).

Always assume that hydrological connections exist between ground water and surface water in each watershed, unless it can be reasonably shown none exist in a local situation...

Delineate and evaluate both ground water itself and ground water-dependent ecosystems before implementing any project activity with the potential to adversely affect those resources. Determine geographic boundaries of ground water-dependent ecosystems based on site-specific characteristics of water, geology, flora, and fauna...

Design inventory and monitoring programs to (1) gather enough information to develop management alternatives that will protect ground water resources, and (2) evaluate management concerns and issues expressed by the general public. Assign high priorities for survey, inventory, analysis, and monitoring to municipal water-supply aquifers, sensitive aquifers, unique ground water-dependent ecosystems, and high-value or intensively managed watersheds. Develop estimates of the usable quantity of ground water in aquifers while protecting important NFS resources and monitor to detect excessive water withdrawal. Define the present situation and detect spatial or temporal changes or trends in ground water quality or quantity and health of ground water-dependent ecosystems; detect impacts or changes over time and space, and quantify likely effects from human activities."

simultaneously includes adjacent private lands and subsurface rights. From an operational standpoint, the surface ownership will likely have less bearing on the nature and extent of surface impacts than will topographic and surface access issues.

7. Because the WNF leases include access to the surface for the setup of drilling pads, and some private lands mineral leases may not include surface drilling rights, the WNF lands may be favored for use to access lateral drilling reserves that are otherwise inaccessible. Assumptions concerning surface impacts to WNF lands will likely be significantly greater than one drilling pad per square mile (typical for deep-shale horizontal drilling and fracturing operations). WNF surface impacts must then be estimated based on the use for accessibility to adjacent and subjacent leased private lands.

Table G-1 should be reconsidered to account for the foregoing differences in magnitude of operations between conventional shallow wells and deep shale exploitation methods.

G2: Petroleum Geology of the WNF: The petroleum geology discussion is limited to exclude exploitation of the deep Marcellus and Utica Shales. All assumptions concerning numbers of wells, well densities, pressures and radioactivity of waste and attendant risks must be recalculated based on characteristics of and methods used for exploitation of these deeper strata.

G4, Table G-2: Well Spacing: Well spacing assumptions need to be reconsidered based on 640-acre operable units used for deep shale exploitation must be reevaluated in consideration of assumptions numbers 3 and 4, above.

G5: Directional/Horizontal Drilling: This discussion indicates that horizontal drilling technology is not fully worked out and that this technique would not be economically feasible within the foreseeable future. It is now believed that horizontal drilling may be the major technology used within the WNF for the reasonably foreseeable future. This is the crux of the matter, since the technology was clearly not considered in the 2006 assessment, which states that it relies on 1992 data and finds no changes to consider!

G-5: Typical Road Disturbance

Road length: Access road assumptions should be lengthened to account for the need for a large drilling pad. A larger drilling pad will require a larger relatively flat area, which in these hills is found only on ridge tops and wide alluvial bottoms. Access roads would likely need to be longer to find larger set up locations.

Road Width: Because of the high numbers of truck trips (thousands) needed to service a deep-shale operation with water, silica, chemicals, other materials and equipment, constant two-way large truck (of 20-40 tons if not overloaded) will need to be accommodated. Road-width impacts should be at least doubled.

G-6: Well Pads/Production Facilities: Assumptions concerning well pad size need to be multiplied by a factor of 10 to 20 to accommodate deep-shale production technology.

Typical Oil and Gas Operations

G-6: Drilling Operations-Timing:

Development timing for deep shale operations will require 150-200 days per well, rather than the assumed 3-5 days for conventional wells.

The sizes and capacity assumptions need to include the equipment used in deep shale development.

The numbers and sizing of storage tanks needs to be revised upward for deep-shale industrial-scale drilling, extraction and production to account for the orders of magnitude greater volumes of water, chemicals, silica, and drilling mud involved.

Since multiple (ten or more) wells may be developed on a single deep shale pad, assumptions concern storage pond size, re-use and reclamation scheduling must be revised.

Production Operations

All assumptions page G-2 through G-16 need to be revised to account for the significant market-driven, methodological, duration and timing differences between conventional drilling, and deep-shale drilling, fracturing, production, waste creation, and product and waste transportation, both at the scale of individual wellheads and as part of the cumulative impact of deep-shale horizontal drilling and fracturing industrialization of the region, as would be expected should the WNF and adjacent lands be exploited for oil and gas reserves.

All discussions concerning predictions and development likelihood must be revised based on statistics for deep-shale development.

II. Socioeconomic analysis of 2004 assessment referenced in 2006 WNF FEIS, Appendix B, in relation to deep-shale drilling and horizontal hydraulic fracturing potential impacts

Re 2004 Assessment, Section 3: The Role of Natural Resource Industries in Local Economies

The introduction to this section provides excerpts of public comments on the role that federal “mineral resources” are expected to play in the economy of the region. Compare these comments, some in favor of extraction and others that refer only generally to environmental, public health, and economic costs of extraction, to the thirty-eight formal protests to the BLM of Oct. 1-5, 2011, all greatly concerned and specific about potential negative public health, economic, and environmental impacts of potential gas and oil activity on the Wayne. These letters are quoted at the end of this analysis.

The 2004 report’s assessment of mineral extraction does not make ANY reference, other than quoting two public comments, to the public health, recreation, local food industry, or other socioeconomic COSTS of past or future industrialization of the forest. The section on ALL “mining” impacts is all of 3 pages of the 130-page document. NO discussion of economic COSTS of mining to the region is included in the entire report. The subject of acid mine drainage is mentioned just once in the report, getting a nod as apparently a matter for remediation by the Wayne: “Comprehensive ecosystem management on a large scale is made more difficult by the existing ownership pattern. Remediating the problem of acid mine drainage on the National Forest, for example, is complicated by acid mine drainage sources on private lands.” End of subject.

Section 3 of the 2004 socioeconomic assessment does acknowledge the economic importance to the local economy of recreation, “including boating, hunting, fishing, hiking, biking, visiting historic sites or auto/bus tours,” on national forests (“In one survey, 91 percent of respondents rated as extremely important, very important or somewhat important that National Forests provided ‘a place to go for fishing, boating and other outdoor recreation activities.’”) It also states, “When focus is placed on outdoor recreation, the top five activities for Americans usually revolve around being **low-impact**, relaxing, and pleasurable, as well as having a **positive scenic quality**.” People of the Midwest show a particularly high interest in such activities, according to the report. It also states, “Results indicated that stakeholders overwhelmingly see recreation as having a major role in supporting tourism development. Most stakeholders indicated that recreation was very important to the area...”

The report discusses WNF’s strategic initiative to assess potential development of such opportunities. It acknowledges the challenges to this development from the “highly segmented” nature of the Wayne. Nowhere does the document discuss costs of minerals extraction to such economic investment and recreational development opportunities. It is particularly striking that the Hockhocking Adena Bikeway, which goes through the Wayne and is one of the top two

generators of tourism in the county, is not even mentioned in this document. Nor are potential economic costs to the county of a lease sale of Wayne land traversed by this essential economic generator.

Clearly, deep-shale drilling and horizontal hydraulic fracturing in the Wayne National Forest are likely to have large socioeconomic costs as they have had elsewhere. These include costs⁴ to

- public health (dozens of reports, some attached, document illnesses in CO, PA, and TX)
- public infrastructure, including drinking and agricultural water supplies, water monitoring and remediation, roads, bridges, and emergency services
- viability of Ohio University and Hocking College, including potential to recruit students and faculty
- local food economy and reputation, especially of dairies,⁵ organic growers and food suppliers, including farmers' markets, restaurants and retail shops
- recreation and tourism, including Nelsonville Public Square shops, galleries, and Stuart's Opera House, Hockhocking Adena Bikeway, and Hocking Valley Scenic Railroad, and the Wayne itself as well as the city of Athens and Athens County businesses
- housing, property values, insurance, and taxes
- greenhouse gas levels, carbon storage, and climate change
- ecosystem services, including water and air quality, forest health, and biodiversity
- quality of life and emotional/social wellbeing of community impacts: noise due to 24/7 equipment, including high-decibel compressors, flaring, and truck traffic; air quality from truck traffic, venting, flaring, and equipment leakage and explosions; traffic, resulting in commute times in rural areas of PA and WV increased by a factor of ten; aesthetics of industrial operations, leveled-off hills, and heavy truck traffic; social well-being related to large influx of transient male workers, shifts in community character, increased crime and pressures on rental housing prices (both reported most notably from the Bakken oil field in N. Dakota), and increased discrepancies in both disposable income and assumption of costs vs. "benefits" among residents.⁶

⁴ Documentation attached. See for example Buckeye Forest Council Economic Impacts summary.

⁵ Two PA farmers visiting Athens County in March 2012 reported skin diseases on their milk cows. Their state Department of Agriculture refuses to test the cows' milk for contamination. See also Bamberger report attached.

⁶ For example, Dr. Simona L. Perry, of Rensselaer Polytechnic Institute, in *'It's like we're losing our love: Bradford County social impacts from shale boom* (Nov 2011), reports on her study of social impacts of HVHF development in Bradford Co. PA. She described them as similar to the trauma of abusive relationships and a cycle of abuse. The rapid transformation of the landscape from rural, agricultural to industrial with greatly increased truck traffic and more dangerous and inconvenient travel, as well as dust, diesel fumes, and noise, led to aggravation, stress and fear. Perry stated that many residents who were interviewed have experienced irreversible changes in connections with family history, childhood memories, land and neighbors, as well as the present and future. The fear of losing their land, health, and children's future gave focus group members a "death" feeling. One 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**. Others spoke of broken hearts. Perry tells the story of a man protesting use of his land as a HVHF truck staging ground who was arrested, incarcerated for five days and given a diagnosis of bipolar disorder and a bill for roadwork for hampering workers. chec.pitt.edu/mediasite.cidde.pitt.edu/mediasite/SilverlightPlayer/Default.aspx?peid=689293c50f404f12b8c628b8f2285780

III. Statements (excerpts) of Athens County officials and public organizations

The October formal protests to the BLM regarding the potential Wayne lease sales highlight all of these concerns by Ohio University, the City of Athens, Athens City Council, Burr Oak Regional Water District, Hocking River Commission, Athens Conservancy, Athens County Commissioners, and others, totalling 48 individuals, organizations, and official bodies. Some excerpts follow.

From Burr Oak Regional Water District letter: “The Burr Oak Regional Water District (BORWD) is a regional water system that supplies potable water to 25,000 households, small and mid-size businesses and school districts in parts of four Ohio counties, including Athens, Hocking, Perry, and Morgan. The BORWD—at an expense exceeding \$15 million—recently converted its raw water supply from surface water to groundwater, by developing a well field near the Hocking River and constructing a ‘state-of-the-art’ groundwater treatment facility. We are extremely concerned about the potential for contamination to the aquifer that the BORWD is now totally dependent on for its raw water supply if oil and gas drilling is permitted. The parcels of the Wayne in Athens County in question are located directly along this aquifer. The BORWD believes there would be a serious and catastrophic health risk to the people and communities that depend on this water source if contamination occurs.”

The Hocking River Commission (“linking Fairfield, Hocking and Athens Counties through stewardship, education, and recreation”) letter of Oct. 6, 2011 states, “The Hocking River Commission has worked to improve the water quality of the Hocking River by addressing both non-point and point sources of pollution entering the river and is now protesting the oil and gas leases based on the potential negative environmental consequences of drilling and attendant activities and processes. As the above referenced parcels are adjacent to the Hocking River or its tributaries and the drilling technology known as hydraulic fracturing may have multiple deleterious consequences, such as potential pollution of the Hocking River and its underlying aquifer, extremely large withdrawals of water required for drilling, large retention ponds which may contain chemicals of a proprietary nature whose make-up is known only to the operator, surface runoff and erosion from drilling and attendant activities. HRC believes the drilling and use of chemical slurry in the fracturing process is a potential risk to the public, health, safety and welfare. HRC is also concerned about the vast quantities of water necessary for hydraulic fracturing and the potential consequences of overdrawing water from the aquifer and/or Hocking River. The freshwater aquifer under the Hocking River is the sole water source for the cities of Nelsonville and Athens and the Le-Ax Rural water district, which serves the Village of Albany plus 6750 rural customers in 17 townships in 4 counties. Over 40,000 citizens rely on this aquifer as their primary water source.”

The letter goes on to question the legality of the sales, based on the 2006 LRMP, ROD and FEIS and states, “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,” differs significantly in many respects from conventional oil and gas drilling and the hydraulic fracturing, which was used in previous years. The 2006 LRMP FEIS touches only very briefly on directional drilling and fails to provide any analysis of the potential environmental impacts of directional drilling. Moreover, the more specific practice of high volume directional (or “horizontal”) hydraulic drilling/fracturing is nowhere mentioned in the FEIS” The letter concludes, “More study is needed and protections for the public health, safety, and welfare need to be in place before the practice is allowed to negatively impact irreplaceable public resources. For these reasons, the Hocking River Commission is protesting the leasing of Parcels 41, 42, 43, 44, and 45 in the Wayne National Forest.”

The Athens Conservancy letter addresses potential economic impacts of lease sales: “Tract A-8103 also borders on the Hockhocking-Adena Bikeway, which is the second biggest tourist attraction in Athens County. Siting of drilling equipment within view of the bikeway, or any accident that resulted in pollution of the water or soil along the bikeway, could have a serious economic impact on a region in which tourism is a major source of income. Even if the drilling equipment were located out of view of the bikeway, the noise it produced could decrease the desirability of the bikeway for recreation and thus its ability to attract tourists to the county. Furthermore, water or air pollution resulting from hydraulic fracturing in any of the Athens County tracts, all of which are close to the Hocking River upstream from Athens, could have a major negative effect on the local economy. This in turn would impact the Athens Conservancy since the effectiveness of the Athens Conservancy as an organization is dependent on a healthy local economy. We rely heavily on private donations from local residents in order to continue to acquire open space land for preservation and manage the preserves we already own. The threat to the water supply for the city of Athens is a grave concern. The only aquifers suitable for public water supplies in our area are the highly permeable glacial outwash deposits along the Hocking River. The clay soils in the surrounding hills cannot produce anywhere near the flow volume needed. Consequently, any drill site near the Hocking River is especially dangerous because a spill of hydrofracturing fluid could quickly find its way into the public water supply for the city of Athens and Ohio University.”

The Athens Conservancy discusses the lack of protection provided by Ohio law and then the issue of accidents: “Furthermore, accidents have occurred in the course of drilling and hydrofracturing in other states that have exposed people and natural biotic communities to toxic chemicals. There is no reason to assume that accidents would not happen here if horizontal hydrofracturing is permitted.

“In an experimental study conducted by a US Forest Service soil scientist in West Virginia, recently reported in a peer-reviewed scientific journal (*Journal of Environmental Quality* 40:1340-1344 [2011]), it was demonstrated that hydrofracturing fluid can cause severe damage

to forest vegetation. ‘During application [of hydrofracturing fluid], severe damage and mortality of ground vegetation was observed, followed about 10 d[ays] later by premature leaf drop by the overstory trees. Two years after fluid application, 56% of the trees within the fluid application area were dead.’ In a separate study of a drilling operation in West Virginia, severe damage to trees and understory vegetation was observed as a result of accidental aerial release of fluids due to loss of control of the drill bore (USFS Technical Report NRS-76). If such an accident were to occur in tract A-8103, it could devastate the Athens Conservancy’s Bluebell Preserve.”

Ohio University President Roderick McDavis’ letter states, “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.”

And the City of Athens cover letter (details and references also submitted) states, “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...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.

“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 overlie our aquifer.

“**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.”

Finally, Athens City Council's letter, in addition to stating concerns expressed by others excerpted here, states, “BLM's and Forest Service's reliance on the 2006 Forest Plan FEIS in the leasing for this new technology does not live up to the letter and spirit of the National Environmental Policy Act (NEPA) that all major federal actions assess the impact of the actions on the environment. We are concerned that the proposed technology and in fact the Utica Shale exploitation are so new that the negative impacts on our water source are real and must be considered...The required NEPA work and potential mitigation must be completed before the leasing process. We trust that you will see that the 2006 FEIS is inadequate to protect our water. We request the withdrawal of the lease sale until the proper environmental analysis is conducted and our water supply is protected.”

Submitted by Heather Cantino and Roxanne Groff on behalf of hundreds of Athens County residents, April 9, 2012