

Re DOI-BLM-Eastern States-0030-2016-0002-EA INITIAL INCOMPLETE
COMMENTS, REQUEST FOR EXTENSION OF COMMENT PERIOD BY 60 DAYS,
and REQUEST FOR PUBLIC HEARING

Dear Mr. Scardina (who is responsible for this action as Wayne National Forest Supervisor), Ms. Atkinson (who is responsible as Mr. Scardina's supervisor to see that NEPA is followed) and Mr. Wadzinski:

First of all, we need an extension of the public comment period! We need a public hearing! We have been given 30 days to comment on a 113-page document that is way too long, confusing and complicated to make sense of and comment on in 30 days. We can't expect everyone to read these confusing documents and make sense of them by themselves. We need a public hearing so that the public can share its extensive knowledge of the issue and attempts at understanding these complicated and important documents with one another and with our community and then have time to write meaningful comments.

The BLM as a federal agency is charged with involving the public in such an important decision as opening our Forest to fracking. ***Fracking was not in the 2006 Forest Plan so must be fully evaluated according to federal law with up-to-date rigorous science and full public input.***

NOTE: "Fracking" in this document refers to the entire life-cycle of the technology, including extraction, transportation, production, and waste production and disposal, and not to the narrow moment of fracturing as originally meant under industry terminology.

Mr. Scardina, it is up to you to support our request for an extension and a public hearing so that you can do due diligence in evaluating this highly significant action being proposed for our Forest under your watch!

On initial reading, the EA (environmental assessment) appears to be gobbledygook. What I've read so far (in over 8 hours of reading and re-reading) makes *no* sense.

1. For example the EA states that because climate change is a global issue, the BLM can't evaluate the potential impacts of opening the Wayne to fracking! So there are ***no numbers*** to assess the ghg from gas and oil they will make available for extraction, transportation, and burning (including the methane that will be leaked to the atmosphere) or from truck trips to haul water, silica, waste, and chemicals or from the other equipment needed for extraction, processing, and transportation (and possible liquification and export) of the fuels. These numbers cannot be determined parcel-by-parcel. They are cumulative impacts and must be evaluated on a Forest-wide basis before consent is granted. Any other route is illegal and not in compliance with USFS and NEPA regulations for Forest planning and decision-making.

2. The EA cites an *unpublished Masters' thesis* (Fletcher 2012, funded by BP) that says "small spills are more common than big spills" and then (mis)uses this meaningless

statement to say to dismiss the catastrophic risk of spills and blowouts to drinking water, air, and public health. This is absurd, not even worthy of a middle-school project let alone our federal government's product that may determine the fate of our region and National Forest.

3. Water contamination from drilling through unmapped aquifers? Well failure? Waste injection? Truck accidents? Blow-outs? Not a problem according to the document as far as I can tell so far. Citations of the literature? None as far as I can tell. I do not have time or resources (my computer failed this past weekend and I will not have access to my documents for several weeks) to provide some of the many citations on these issues, and it is NOT MY RESPONSIBILITY TO DO THE BLM's AND USFS's WORK, which is to assess the LITERATURE ON KNOWN and HIGHLY LIKELY RISKS OF FRACKING TO WATER, AIR, HUMAN and ENVIRONMENTAL HEALTH and the local ECONOMY.

4. The EA does not seem to do *any* analysis of potential air emissions. The only data it seems to include on air emissions are very general *past national trends!!* There seems to be no evaluation of the contribution of proposed activities to regional air quality, even though the authors state that the regional air quality is already often out of compliance with federal air quality standards. There are no numbers on potential VOCs per well, per frack, per truck trip, per barrel of waste venting from waste storage tanks, *per anything*.

Ohio in fact has no requirement for air permits until a well is in production but even then the permit does not cover emission from a well head, so anything in the EA citing Ohio law to adequately protect air quality is wrong. The FS and BLM cannot depend on Ohio to protect against significant impacts and are responsible to fully assess these impacts with full public input and the hard look at the science before undertaking actions that will bring them about.

5. The authors list Bamberger and Oswald in the bibliography, which is extremely important research *that documents the highly significant impacts of fracking to human and animal health*. Yet the only reference in the text to Bamberger and Oswald is in reference to the EA's estimate of how much water returns to the surface, which was NOT the subject of Bamberger and Oswald but merely *referenced* in that study. The CONCLUSIONS of Bamberger and Oswald are of course not referenced anywhere in the EA (or in the FONSI, the Finding of No Significant Impact, of course!). This is contrary to scientific protocol on citing literature as required by NEPA – this is not the up-to-date science or rigorous analysis required by NEPA, since it doesn't even comply with standards for citing scientific literature!!

This product seems to be middle-school level work or worse. I can't find any up-to-date science in it so far. It will take many, many hours of reading and research to try to determine if there's *anything* in this document that qualifies as rigorous analysis or even makes any sense.

There seems to be no connection between the EA and the FONSI (Finding of No Significant Impact). After spending 8 hours poring over these documents, it is impossible

to determine from either document how they got from one to the other. Neither one makes any sense to me, and there seems to be no relationship between them.

This does not seem to be an evaluation of anything or the "hard look" at potentially significant impacts on the environment and human environment, including the economy, from their proposed action, as required by federal environmental law (NEPA). Where are the numbers? Where is the research?

Specific concerns so far:

Re “The Proposed Action and alternatives are in compliance with the Final Revised Land and Resource Management Plan, Wayne National Forest (2006 Forest Plan) (U.S. Forest Service, 2006). The BLM was a cooperating agency in development of the 2006 Forest Plan. This EA incorporates, where appropriate, the information from that plan and associated NEPA documentation. This EA also incorporates the information from a related review effort resulting in a Supplemental Information Report (SIR) on oil and gas (U.S. Forest Service, 2012), prepared by the Forest Service in coordination with the BLM.” (p. 5) –

1. The 2006 Plan did not address fracking, so this EA cannot be in compliance with the 2006 Plan, since the consequences of future leasing will involve fracking as stated in this Draft EA.
2. The 2012 SIR was not a NEPA-based document and is not in compliance with NEPA as stated in the SIR itself (“The SIR itself is not a NEPA analysis or approval, nor is it a discrete or circumscribed agency action. It is interlocutory in nature and does not mark the consummation of a decision-making process or determine any legal rights. It simply is a review of available information, akin to a memorandum to the file, documenting assessment of the significance of new information.”)

Re “This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969” (p. 14) –

This statement is untrue. This flawed, haphazard document is not supported by a Forest Plan or by a supplemental EIS *as it must be*, since the **2006 Wayne National Forest Plan did not evaluate fracking**, the technology that would be used, and because **fracking has highly significant impacts¹ on the human environment**. (36 CFR 219.2

¹ 40 CFR 1502.9(c): Agencies: (1) Shall prepare supplements to either draft or final environmental impact statements if: (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. See also explanation of meaning of significantly in terms of context (for example, the affected region) and intensity, for example, “2) the degree to which the action affects public health and safety,...4) The degree to which the effects on the quality of the human environment are likely to be highly controversial. 5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks, 6) The degree to which the action may establish a precedent for

and 219.5). Per NEPA, plans should be revised as necessary to “adapt to changing conditions, *including climate change, and improve management based on new information...*” As documented widely in the scientific literature (see for example the third edition of the *New York Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking (Unconventional Gas and Oil Extraction)*, published in October, 2015 (a fully referenced public open source document at concernedhealthny.org), which states:

More than 100 new studies on the impacts of fracking have appeared in the peer-reviewed literature since public health concerns so famously led to a ban on high volume fracking in New York—and since the second version of this document was released nine months ago... **Earlier scientific predictions and anecdotal evidence are now bolstered by empirical data, confirming that the public health risks from unconventional gas and oil extraction are real, the range of adverse impacts significant, and the negative economic consequences considerable. Our examination of the peer-reviewed medical and public health literature uncovered no evidence that fracking can be practiced in a manner that does not threaten human health. ... The evidence to date indicates that fracking operations pose severe threats to health, both from water contamination and from air pollution.** In the United States, more than two billion gallons of fluid are injected daily under high pressure into the earth with the purpose of enabling oil and gas extraction via fracking or, after the fracking is finished, to flush the extracted wastewater down any of the 187,570 disposal wells across the country that accept oil and gas waste. All of those two billion daily gallons of fluid is toxic, and it all passes through our nation’s groundwater aquifers on its way to the deep geological strata below where it can demonstrably raise the risk for earthquakes. In the air above drilling and fracking operations and their attendant infrastructure, researchers have measured strikingly high levels of toxic pollutants, including the potent carcinogen benzene and the chemical precursors of smog. **In some cases, concentrations of fracking-related air pollution in communities where people live and work far exceed federal safety standards. Research shows that air emissions from fracking can drift and pollute the air hundreds of miles downwind.** With more than 15 million Americans already living within a mile of a fracking well that has been drilled since 2000, and with more than 50,000 new wells fractured per year over the past 15 years, the potential for exposure and accompanying adverse impacts is significant.² [emphasis added]

Especially alarming is increasing documentation of strong associations between birth outcomes and proximity to oil and gas operations among many other serious health

future actions with significant effects or represents a decision in principle about a future consideration, and 7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.” at 40 CFR 1508.27

² *New York Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking (Unconventional Gas and Oil Extraction)*, published in October, 2015 (a fully referenced public open source document at concernedhealthny.org)

impacts.³ Just this month, a peer-reviewed review of the literature was published, concluding,

Sources of air pollution include emissions from the extraction and processing of natural gas, as well as the transportation via natural gas infrastructure components including compressor stations and pipelines. Pollutants can be emitted during venting, flaring, production and leaks from faulty casings. In addition, truck transportation of materials to and from well pads and vehicular equipment use during construction and maintenance generate air pollution from particulate matter and diesel exhaust.

These processes release numerous contaminants into the air, resulting in elevated concentrations of polycyclic aromatic hydrocarbons (PAHs), methane, ozone, NO_x and VOCs [volatile organic compounds] like benzene, formaldehyde, alkenes, alkanes, aromatic compounds, and aldehydes.

Many of these pollutant groups have been recognized by the Agency for Toxic Substances and Disease Registry, Centers for Disease Control, Environmental Protection Agency, Occupational Safety and Health Administration, and National Institutes of Health as hazardous respiratory pollutants.⁴

Re p. 17 re public meetings – The November 2015 meetings did not meet NEPA requirements, since attending officials provided few and contradictory answers to questions and since the public was not given an opportunity to be heard. This is not public input. It was a dog-and-pony show akin to the Wayne open house in 2012. This is not a public hearing allowing the public to give testimony and be heard by one another.

Re p. 18: “using the NEPA process to identify and assess reasonable alternatives to the Proposed Action that would avoid or minimize adverse effects of these actions on the quality of the human environment” (40 CFR 1500.2 (e)):

Only site-specific alternatives can be considered if leasing occurs. Site-specific analysis cannot assess impacts that are cumulative.

Re p. 20: The 2006 Plan forecasts are irrelevant because they didn’t consider fracking, which this EA states will likely be used and which industry economics indicates will definitely be used.

re p. 23: “Prior to approving an NOI or APD, the BLM identifies all potential subsurface formations that will be penetrated by the wellbore. This includes all groundwater aquifers

³ Casey et al. 2015. Unconventional Natural Gas Development and Birth Outcomes in Pennsylvania USA, *Epidemiology*, Stacy et al. Perinatal Outcomes and Unconventional Natural Gas Operations in Southwest Pennsylvania, *PLoS ONE* 10(6). See links to other research studies at stateimpact.npr.org/pennsylvania/2015/10/09/pennsylvania-study-finds-link-between-gas-drilling-and-premature-births/

⁴ Webb, E. et al. *Potential hazards of air pollutant emissions from unconventional oil and natural gas operations on the respiratory health of children and infants*, **Rev Environ Health** 2016. DOI 10.1515/reveh-2014-0070.

and any zones that would present potential safety or health risks that may need special protection during drilling.”

This is impossible since the aquifers in SE Ohio are unmapped. The EA also states that when drinking water sources are encountered in the process of drilling that they will be protected, but in Ohio, *toxic chemicals are used in drilling muds, which will contaminate the drinking water before protective measures can be applied!*

Re p. 24: “Water would normally be obtained from a well drilled on the site, however, water could be pumped to the site from a local pond, stream, river or lake through a pipe laid on the surface. Approximately 1,500 barrels of drilling mud would be typically kept on the location. If water production is expected, then processing facilities may be needed on the site. Once drilling is completed, excess fluids are pumped out of the pit and disposed of in a state authorized disposal site and the cuttings are buried.”

There is nothing in this EA to assess the direct, indirect, or cumulative impacts on the region of water withdrawals and permanent removal from the hydrologic cycle of the vast quantities of water that will be permanently contaminated and injected as a result of this BLM/FS action. *Water withdrawal quantities are not limited in any way under Ohio law* (only providing a record with the state of withdrawals is required for daily withdrawals over a certain threshold).

Re p. 24 (“[2.3. No Action Alternative](#) Under the No Action Alternative, the BLM would not offer the proposed parcels for oil and gas leasing, nor would any future federal minerals be made available in the Marietta Unit. Ongoing oil and gas development would, however, likely continue on surrounding areas and it is likely that the same or nearly the same amount of development as described under the Proposed Action would occur on the adjacent private lands whether or not the federal minerals are accessed. The difference between the Proposed Action and No Action Alternative is that without the lease (No Action Alternative), the operators would not be authorized to access the federal minerals at the time of development but could continue to develop the adjacent privately owned minerals resulting in drainage of federal minerals without any benefit to the government. Not leasing the parcel would not meet the purpose of and need for the Proposed Action.”)

1. If the private landowners can access their minerals equally well without leasing of Wayne land, why are they so hot about getting access to Wayne land? They CAN'T get HVHF done on their land because companies don't want to bother unless they can access federal minerals.

2. There is no net financial benefit to the public from leasing. Costs in ghg emissions, degradation of forest, water, and air are much greater than any benefit accrued to the agency.

3. There is no established “purpose and need” for the Proposed Action. The statement of “need” to access minerals is not in keeping with President Obama’s or the world’s stated

need to reduce ghg emissions and move away from fossil fuels. Furthermore, the FS “multiple use” mandate includes a mandate *that other uses not prioritized by the action are not degraded by the action*. The use prioritized must allow *other uses to remain sustainable*. As these comments and the extensive scientific literature on fracking demonstrate, this *EA’s proposed action will irrevocably and irretrievably degrade more important uses and values provided by the Forest*.

p. 25 Impacts from oil and gas development on federal surface would be minimized by the leasing stipulations provided in the 2006 Forest Plan.

Untrue. See above. The 2006 Plan does not address impacts of fracking. Period.

p. 27-28 (discussion of “improvements in air quality” nationally): Totally irrelevant. *Winter ozone levels in Utah’s rural Uinta Basin are higher than in Los Angeles in the summer, thanks to fracking. THIS is the data that’s relevant!* See also E. A. Kort et al., *Fugitive emissions from the Bakken shale illustrate role of shale production in global ethane shift*, **Geophysical Research Letters**, April 2016 (DOI: 10.1002/2016GL068703).⁵ Local fracking affects global ghg emissions. Do the math. Do your research. *Stop trying to hoodwink the public with irrelevant and sloppy claims*. This is not science. This is not adequate or legal per FEDERAL LAW, which requires up-to-date SCIENCE. Did you really think the public would fall for this shoddy work?

p. 29 Irrelevant because o&g activities are exempted from major source pollution rules and *are not monitored or regulated* in Ohio. BLM staff must know this and just be trying to pull the wool over people’s eyes by making it sound as if people will be protected. They will NOT!!

p. 32 Presents data on non-attainment but does not acknowledge that fracking will make ozone even worse!

According to the most recent OEPA air toxics report, Washington County had an ambient air cancer risk of more than 10⁻⁴, which is 1 in 10,000 people can get cancer from the ambient air. The high level of VOCs and particulate emissions from fracking activities, including extraction, transportation, silica use, and equipment must be assessed with this already compromised regional air quality taken into account as well.

p. 37 Oak-Hickory is not “primeval,” and natural succession with maple is not an “invasion”!

p. 39 Re “Louisiana waterthrush is listed as a Stewardship Species in the Partners in Flight North American Landbird Conservation Plan with a goal of maintaining its current population, and the species is considered stable on the WNF.”:

Louisiana water thrushes have been documented to be affected by fracking with

⁵ onlinelibrary.wiley.com/doi/10.1002/2016GL068703/full

*accumulation of heavy metals in their feathers and will therefore likely be impacted by any leasing for fracking on the Wayne.*⁶

Re p. 41: This is an outrageous dismissal of threats to Northern long-eared bat population: (3.3.8.1.2. Northern long-eared bat: “Northern long-eared bats live in forested areas during the summer, where they forage on flying insects and roost in trees with exfoliating bark and other natural or artificial crevices. This species was listed as threatened in April 2015 and, as such, was not addressed in the 2006 Forest Plan or its related BO. The primary threat to this species is a widespread disease, called white-nose syndrome, which is related to a fungal infection that is highly contagious between communally hibernating bats. White-nose syndrome is caused by the fungus *Pseudogymnoascus destructans* and generally inflicts hibernating bats, resulting in up to 100 percent mortality in hibernacula. Because the primary threat to this species is a disease and not anthropogenic activities, the FWS has instituted a rule, known as a 4(d) rule, which permits take of this species under certain circumstances. The FWS has drafted a BO for this 4(d) rule (U.S. Fish and Wildlife Service, 2016), and the BLM’s Section 7 consultation for this EA includes the determination that the proposed leasing activities would not result in any take that is not exempted by the 4(d) rule.”)

This is outrageous! *The proposed action will likely have impacts, whether or not the Forest can prevent other impacts. Under NEPA, significant potential impacts must be assessed.*

p. 63: Re “The Proposed Action of leasing parcels would, by itself, have no direct impact on any resources in the lease area since there would be no surface disturbing activities.”

Not true. *Groundwater contamination can happen without surface-disturbing activities.*

pp. 64-66: Re [4.2.1. Air quality](#): “All proposed activities including, but not limited to,

⁶ Steven C. Latta et al., Evidence from two shale regions that a riparian songbird accumulates metals associated with hydraulic fracturing. *Ecosphere*, September 2015 Volume 6(9). From abstract: “The risk of contamination of surface waters from hydraulic fracturing activities (i.e., fracking) to extract gas from underground shale formations has been viewed primarily in the context of localized point-source events such as spills with no evidence of contaminants entering food chains. We showed that in watersheds where hydraulic fracturing occurs, an obligate riparian songbird and top predator in headwater systems, the Louisiana Waterthrush (*Parkesia motacilla*), accumulated metals associated with the fracking process. In both the Marcellus and Fayetteville shale regions, barium and strontium were found at significantly higher levels in feathers of birds in sites with fracking activity than at sites without fracking. The question of what pathway these metals followed from the shale layers to enter the food chain was not resolved by this study, but our data suggested a recent origin for these metals in the riparian systems we studied because levels of barium and strontium in feather samples from reference sites in the Marcellus Region without fracking activity did not differ from historical samples of waterthrush feathers gathered prior to any fracking in the region. Our finding of similarly elevated levels of metals associated with fracking in two geographically distant shale formations suggests hydraulic fracturing may be contaminating surface waters...”

exploratory drilling activities would be subject to applicable local, State, and Federal air quality laws and regulations.”

This will not prevent cumulative impacts on human health and greenhouse gas emissions that will occur from this proposed action, legal or not, and which are highly significant and must be adequately assessed, *clearly not done here!* Ohio and federal law have not kept up with the industry, thanks in part to legal exemptions for hundreds of carcinogenic and neurotoxic chemicals used by the fracking industry in law promulgated by the head of Halliburton when he was in the federal government. The hazards and toxicity of these chemicals and their known impacts on public health remain *real and significant*, whether or not they are legally permitted due to government corruption. They must therefore be considered, under NEPA. *NEPA does not ask whether a substance is legal to use. It asks whether the substance has the potential to cause significant harm.* The hazards and significance of your proposed action cannot be written away, no matter what legal exemptions, spin, or manipulation of the data a corrupt government creates and perpetrates. The violation of the public trust and the threats to the viability of our climate that will occur with your willful pollution constitute a crime against humanity, no matter how you try to spin them or how “legal” you try to claim them are.

Re “4.2.3 Possible Future Best Management Practices, Standard Operating Procedures, and/or Mitigation Measures The BLM encourages industry to incorporate and implement Best Management Practices (BMPs) designed to reduce impacts to air quality by reducing emissions, surface disturbances, and dust from field production and operations....Additionally, the BLM encourages oil and natural gas companies to adopt proven, cost-effective technologies and practices that improve operational efficiency and reduce natural gas emissions.”

BLM “encouragement” of best practices does not satisfy NEPA’s requirement to fully evaluate and weigh impacts under an appropriate planning process before an action is approved. It is certainly not protective of the public good, given the intensity and severity of the poisoning and climate change impacts that will ensue. Given the extreme intensity and severity of likely public health and climate impacts that will be a consequence of approving fracking in our National Forest, only an Environmental Impact Statement can satisfy NEPA’s requirements for up-to-date, scientific evaluation of impacts, which you have given no indication of having even considered to date.

These pages constitute the only discussion of air quality and non-attainment of air quality standards, which you document as already a problem in Washington County. *How can they lead you to the conclusion that there are no impacts, direct, indirect, or cumulative, from your proposal to lease?*

p. 67: “There would be no direct impacts on fish and wildlife or vegetation communities from leasing, since there would be no surface disturbance at this stage. Future development of the proposed lease parcels could potentially result in the clearing of land, which may include either forested or open habitat.”

But site-specific analyses later cannot assess forest-wide and cumulative impacts so are

useless to protect the Forest and human community from the impacts of this decision as required by NEPA be fully assessed using up-t-date science.

“Fragmentation and edge effects have greater implications in a mature interior forest than in oak-hickory forests or early-successional habitat, which depend on periodic disturbance. In a mature interior forest, a the loss of a few acres of canopy can result in the loss of suitability of hundreds of acres of habitat for a wildlife species, such as Cerulean warbler, that depends on the presence of large blocks of unbroken forest.”

This statement is ignored and never referenced again. It cannot support the conclusion of no significant potential impact stated in the FONSI.

p. 71Re: “4.3.8.2. **Regional forester sensitive species** The 2006 Forest Plan’s BE details that oil and gas activities have the potential to impact water quality, which may therefore impact aquatic species (mussels, aquatic insects, amphibians, and fishes). Water quality impacts may affect also bats and other mammals that drink from contaminated water sources or bald eagles that hunt from them. Such impacts to bald eagles are unlikely, since eagles in the area likely hunt from large waterways, where the volume of water would quickly dilute *minor* spills that may occur from oil and gas activities.” [emphasis mine]

What about major spills??? Document the science and state records from around the shale plays on the SIZE and impacts of major spills, whether or not “small spills are more common,” which is IRRELEVANT and MEANINGLESS.

Re p. 74: “4.6.1.1. **Surface water quality**: While the act of leasing federal minerals would produce no impacts to surface water quality, subsequent exploration and development of the lease parcels have the potential to produce impacts. For example, road development poses a risk to surface water because of runoff due to soil compaction. Runoff that is not being absorbed by topsoil can carry toxic chemicals, sediment, or debris into nearby streams or lakes. Drilling does pose the potential for accidental spills of toxic chemicals and water that contains trace amounts of HF fluids. Areas with increased rates of water runoff may contain a steep slope; however, stipulation #8 set in place by the 2006 Forest Plan prevents development of slopes in excess of 55%. Stipulation #16 indicates that development on slopes between 35-55% will be analyzed on a case- by-case basis and road construction will be planned to have minimal surface disturbance.

The act of consent is inextricably tied to impacts of the technology to be permitted by this illegal action. Furthermore, this issue does not seem to be referenced again. The FONSI completely ignores these potential impacts!!

Re “4.6.1.2. **Surface water quantity**: Drilling and completion operations use anywhere from 4,000,000-8,000,000 gallons per well. Because HF technology is continuously evolving it is difficult to isolate an exact quantity of water that would be needed. There is not enough surface water in the Marietta Unit for water to be withdrawn and used so HF water would either need to be brought into the area or potentially withdrawn from the

Ohio River. Large withdrawals have to be registered with the state and the Forest Service. The BLM and Forest Service would not approve any APDs that would result in adverse impacts on aquatic life associated with water withdrawal.

The EA does not evaluate cumulative impacts of large water withdrawals or the ghg and air pollution impacts of the transportation of this material. Nor does it acknowledge that the FS and BLM cannot control where the water can be withdrawn. This is a serious deficiency of this document.

RE “4.6.2.2. Groundwater quality: Future mineral development activities would pose some risk of accidental spills of drilling fluids, produced water, and other chemicals. This risk would be minimized in part by the requirement, described in the 2012 SIR, for operators to use tanks, instead of open pits, to hold all fluids other than fresh water. Since tanks are smaller than typical open pits, a spill from a tank would most likely produce less of a hazard than an accidental discharge from a pit.

The only areas where a spill would pose an unacceptable risk to groundwater quality are designated wellhead protection areas or certain locations within the Ohio River and Little Muskingum River floodplains (Thompson, 2012). Other locations throughout the Marietta Unit tend to have low groundwater pollution potential due to low hydraulic conductivity and greater depths to groundwater.

Drilling to a production zone that is below a potable water-bearing formation poses the risk of allowing brine and other chemicals to migrate up into a potable water zone. This risk is mitigated in federal wells by casing and cementing requirements in Onshore Oil and Gas Order Number 2. The Ohio DNR, Division of Oil and Gas Resources Management (DOGMR) also requires cementing and casing in all wells as well as sampling of all water wells within 1,500 of a proposed horizontal well prior to a permit being issued.”

So what does sampling water wells prior to drilling do for those who will be harmed later?? ***This section does not acknowledge that frack wells – and injection wells -- are known to contaminate water drinking water. Who pays? Who benefits? At what cost to the public welfare? These are known risks and costs and must be assessed with documentation from the scientific literature.***

This sham document does nothing to evaluate the impacts of groundwater pollution on the region. Mitigation is not prevention. Mitigation cannot clean up poisoned groundwater. Mitigation cannot negate or address the highly significant consequences of groundwater contamination. Where is the documentation of this absurd proposal to address extremely significant and known risks? And for so little benefit to so few people! [There is very recently published research on this issue, which I cannot currently access due to computer problems but which is YOUR responsibility to access and cite!]

Re p. 76: “The potential for fluids to migrate from the hydraulic fracture zone is considered very low, since the thousands of feet separating likely production formations consist of very-low-permeability rocks. Fractures at these depths have been filled in by

pressure and mineral deposits.”

Frack wells are known to lead to migration of gas and frack chemicals up to miles from injection. Geological formations in the Wayne are often highly fractured and permeable. The above statement by the BLM is garbage. Where’s the science, folks? It certainly isn’t in this document as far as I can tell, as it must be to satisfy NEPA.

RE: “When a new well is hydraulically fractured, the pressurized fluids seek existing fractures in or conduits through the bedrock. These could include orphaned wells or improperly sealed production wells that penetrate the fracture zone. The DOGRM addresses these types of situations in the permitting process, and federal lessees are liable to plug and abandon orphan wells on their leases.

A recent U.S. Office of the Inspector General (Report No. 2015-EAU-057) documents the severe mismanagement and lack of oversight of orphaned wells on public lands, including the Wayne. This claim by the BLM to adequately be able to address this huge pathway for contamination has *no* basis in fact.

p. 77: “The vast majority of operations do not incur reportable spills (5 gallons or more), indicating that the fluid management process can be, and usually is, managed safely and effectively (Fletcher, 2012).”

This is nonsense. The beginning of the sentence has no relation to the conclusion. The BLM here cites an unpublished Masters thesis (funded by BP), not peer-reviewed research and misrepresents it at that. Fletcher 2012 does not provide scientific research to back up this absurd statement. This is not science!!!

Even so, Fletcher 2012 also states, “[S]ignificant risk for spill exists at several stages in the extraction process,” and “spills also have the potential to infiltrate groundwater aquifers.” Its abstract states, “This thesis concludes that while the vast majority of shale gas operations do not result in large spills, the worst-case potential for groundwater contamination is high enough to warrant further attention; it also recommends increased inclusion of community stakeholders in both industry and government risk management strategies.” [emphasis added]

Considering the known results of actual spills – 70,000 fish killed in Monroe County Ohio, drinking water supplies shut down in WV, streams and rivers contaminated by spills in Colorado, West Virginia, Pennsylvania, Ohio (most recently in Belmont County), and elsewhere – any conclusion by BLM and the Forest Service that just because “most spills” are minor, the risk of spills is insignificant is absurd, bad science, and unethical. How insulting to the public that our federal government attempts to mislead and misgovern based on such flawed, shoddy work!

re p. 90: “The Forest Service’s Social and Economic Assessment (Arbogast, 2004) states that federal ownership of lands comprising the WNF is beneficial to local, rural economies for several reasons. First, the federal government supports the counties through various types of payments and cost-share programs. Second, the federal government maintains

the roads and other infrastructure on NFS lands. Finally, the presence of the National Forest stimulates local economies as visitors to the national forest contribute money that they spend for outdoor gear, lodging, food, and other expenses.”

This report has NO discussion of direct or cumulative socio-economic costs to our region of a degraded Forest, increased truck traffic, potential water contamination, increased waste disposal, increased air pollution. There is NOTHING of a “socio-economic” analysis other than these so-called “positives” of industrializing the landscape!!

Please interview the people of Torch Ohio who live next to the state’s largest injection well facility, which spews toxic air into their neighborhood 24 hours a day and threatens to contaminate their drinking water, devalue their properties (which it certainly already has) and distress them with truck traffic, fumes, and noise, and anxiety about illness and economic impacts on their families. The Wayne’s decision to lease will lead to more waste and more impacts on the Ohio communities that will receive these wastes. **THESE IMPACTS OF THE WAYNE’S DECISION TO LEASE LAND FOR FRACKING MUST BE EVALUATED. THEY ARE REAL, SIGNIFICANT, INTENSE, AND WIDESPREAD.**

Re p. 85 “The cumulative effects analysis does not consider potential leasing in other areas of the WNF, such as the Athens Unit or Ironton District. This is because any impacts associated with leasing in these areas would be separated sufficiently in time and location from the Proposed Action that cumulative impacts would not be expected.”

This is garbage. As you state, ghg emissions have global impacts. Air pollution is also cumulative, as are socio-economic impacts, such as decreased tourism, which generalize to a region if one part of a region gains a bad reputation for industrial pollution, truck traffic, bad water and air, and unsightliness.

Re p. 86 “The BLM does not have the ability to associate a BLM action’s contribution to climate change with impacts in any particular area. The science to be able to do so is not yet available. Inconsistencies in the results of scientific models designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts of decisions made at this level and determining the significance of any discrete amount of GHG emissions is beyond the limits of existing science. When further information on the impact to climate change is known, such information would be incorporated in the BLM’s planning and NEPA documents as appropriate but an assessment of impacts on climate change from the release of GHGs is outside the scope of this document because it is a global phenomenon.”

This is perhaps the most outrageous, flagrant example of this document’s absurdity, inadequacy, and *total lack of science, logic, and responsible writing and management of federal lands*. I cannot address the scientific and logical absurdity of the statement here given the time frame you have so far imposed. But I will state here that the world’s nations, our president, and the Forest Service have all stated a commitment to reduce greenhouse gas emissions. The BLM and Forest Service have an obligation to do all they can to decrease emissions, which means **LEAVING FOSSIL FUELS IN THE GROUND.**

There should be NO NEW LEASES of federal minerals, which will contribute way more than a livable planet can support.

This section is an outrage to the people of this region and the nation.

Re p. 86: “The ability to accurately assess potential cumulative impacts in this EA is limited due to the lack of site- specific information for potential future oil and gas development activities.”

That’s why you need to do the work now, because it’s the cumulative impacts that will be significant!!

RE p. 87: “Guidelines for estimating project-specific GHG emissions are available (URS Corporation, 2010), but some additional data, including the volume of oil produced and the number of wells, are not available for the Proposed Action. Uncertainties regarding the numbers of wells and other factors make it impractical to project amounts of GHG that the Proposed Action would emit. At the APD stage, more site-specific information on oil and gas activities resulting in GHG impacts would be described in detail. Also at the APD stage, the BLM would evaluate operations, require mitigation measures, and encourage operators to participate in the voluntary STAR program.”

It will be too late then!

The EA also has NO discussion of cumulative air quality impacts from VOCs, sulfur dioxide, and other HAPs.

It seems to include no discussion of cumulative impacts of water withdrawals, water consumption, and water contamination potential from fracking up to 40,000 acres of the Wayne!

I have found no discussion of cumulative impacts of waste production, dismissed with: “As noted in the Proposed Action description, impacts from waste storage, handling, and disposal would be minimized through the use of BMPs, SOPs, and COAs at the APD stage, should federal minerals be proposed for development. Other mineral development, agriculture, and timber management activities in the area would need to comply with all required laws and regulations with regard to wastes. Therefore, cumulative effects from wastes are not anticipated.” (p. 89) !!!

The consent to lease is itself an irreversible and irremediable commitment of resources NOT even mentioned let alone considered in 4.14. Irreversible and Irretrievable Commitments of Resources

There is NO discussion of ghg emissions, water contamination that happens in spite of BMPs, and socio-economic costs to communities from industrialization, since no cumulative impacts are assessed for widespread oil and gas extraction, transportation, and waste disposal operations.

Re p. 91: *There is NO discussion of avoided costs with the No Action alternative, including avoided ghg emissions, forest degradation, air pollution, water contamination threats, permanent water consumption, waste production and disposal risks and impacts.*

The Forest Service needs to do a legally sufficient Environmental Impact Statement performed at the programmatic level. Neither the BLM nor the FS can credibly maintain that “oil and gas leasing of the specific lands has been adequately addressed in a NEPA document, and is consistent with the Forest land and resource management plan,” which is the requirement of 30 C.F.R. § 228.102(e)(1). The regulations mandate that:

If NEPA has not been adequately addressed, or if there is significant new information or circumstances as defined by 40 C.F.R. § 1502.9⁷ requiring further environmental analysis, additional environment analysis shall be done before a leasing decision for specific lands will be made. If there is inconsistency with the Forest land and resource management plan, no authorization for leasing shall be given unless the plan is amended or revised.

But, the 2006 FEIS/LRMP provides no standards and guidelines to bound exploitation of oil and gas in the Wayne. The 2006 FEIS/LRMP dismissed the need to provide deep analysis of the environmental effects from fracking with the conclusory, unverified statement that “[w]ith current technology, most remaining oil and gas deposits in Ohio, and particularly on the Wayne, are considered to be economically recoverable only where surface occupancy is permitted.” FEIS p. 1-22 (p. 30/416 of pdf)(emphasis supplied). The FS further opined in 2006 that since “only 12 wells out of 1,704 permitted during the 10 year period were directional wells, . . . that this type of technology is still not yet economically feasible within the WNF.” The rapid expansion of directionally-drilled fracking on private and public lands elsewhere in southeast Ohio since 2006 contradicts these unreflective observations about the state of the art of hydraulic fracturing.

Regulatory and situational changes in the Ohio fracking picture, along with the accumulation of significant new information since 2006, remain unaddressed, either by a supplemental FEIS, or in the 2011-2012 SIR reconsideration of fracking. Indeed, the SIR violated NEPA and likely breached the federal assurance to the public in the 2006 FEIS that there would be site-specific examination of environmental effects before leases. This BLM admission that the SIR was a legally meaningless document only further bolsters public suspicions that there is no intention to explore the downside of fracking under NEPA:

⁷ Where significant new circumstances or information arise after the completion of an EIS, NEPA requires the preparation of a supplemental EIS. See 40 C.F.R. § 1502.9(c)(1). An agency must prepare a supplemental EIS when “[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” Id. § 1502.9(c)(1)(ii).

The SIR itself is not a NEPA analysis or approval, nor is it a discrete or circumscribed agency action. It is interlocutory in nature and does not mark the consummation of a decision-making process or determine any legal rights. It simply is a review of available information, akin to a memorandum to the file, documenting assessment of the significance of new information. SIR p. 6. (Emphasis supplied).

The changing circumstances and new information since 2006, some of which continued to be trivialized or misunderstood by the agencies in the SIR include:

- The presumed acreage requirements for access to and operation of contemporary multiple well pads is significantly underestimated in both the FEIS and in the BLM's May 3, 2012 letter and the SIR. Dense well development is readily permitted at each drilling pad by the Ohio Department of Natural Resources. The concentration of wells in one spot greatly affects profitability to the drillers, so there will be a significant imperative to impose dense industrial activity in vast clearings across the forest. Larger forest clearings, access roads to the expanded drilling sites, and accompanying waste holding ponds or pits, will necessitate clear-cutting of 20 acre and larger forest breaks. The waste holding ponds will attract and poison migratory birds and other wildlife. All such ponds leak, even when lined and properly-constructed, which will place groundwater chronically at risk;
- The 2006 FEIS and the May 3, 2012 BLM letter neither mention nor account for the prospective presence of orphan wells relative to the proposed loci for drilling activities. The capping and identification of orphaned wells occurs at taxpayer expense and provides important geological clues that must be considered in the selection of areas for fracking, since fracking wells must not be allowed to connect to uncontrolled pathways to the surface;
- Fracking causes considerable induced environmental damage and corresponding public health threats across Ohio. Deregulation of Ohio air and water quality regulations which formerly restricted fracking-related processes that have become effective since 2006 has fostered creation of dozens of new injection wells, the so-called "beneficial use" of radioactive and chemically-toxic drilling wastes for such purposes as landfill cover, fill for industrial parks, agricultural fertilizer, access roads to drilling pads, highway de-icing sprays, road dust-control sprays, disposal of radioactive wastes in conventional sanitary landfills, and disposal of radium-bearing water reclaimed from fracking operations through municipal water treatment systems that are incapable of removing the radioactivity and hence a cause of water pollution downstream of such plants. The damaging and lasting effects of the very large waste stream from fracking, such as the absurdity of converting sanitary landfills across Ohio into low-level radioactive waste dumps that are incapable, by definition, of containing Ra-226, Th-232 and other daughter elements, are neither identified nor discussed in the FEIS. Nor are the public health and environmental threats from downstream distribution of chemically- and radiotoxic natural gas via mega-pipeline projects and permitted leaks via compressor stations and associated infrastructure of those pipelines;

- The Bureau of Land Management's May 3, 2012 assessment of the state of fracking in the Wayne, the SIR, and the 2016 Draft EA contain no accounting for the large volumes of volatile organic chemicals (VOCs) and poly-aromatic hydrocarbons (PAH), which threaten to pollute groundwater and will continually emanate from drilling sites adding to diminish already poor air quality in the Ohio River watershed region, which the EA documents as being already out of compliance with federal standards;
- An average 1,800 heavy truckloads of materials, chemicals, and wastes are delivered to/taken from the wellhead of every typical fracking well, yet there is neither mention of, nor quantification of, the damage from copious diesel air pollution that thousands of truckloads to and from the well pads will cause to the Forest. There will be unforeseen additional damage to Forest Service and public roadways and bridges as well as many more wildlife kills through vehicular accidents, none of which are accounted for either in the FEIS nor the SIR. Drilling wastes might be used to construct roadbeds to drilling pads, as happens elsewhere in Ohio, which would spread radium-laced shale wastes around the land surface, where it will be prone to leach into groundwater;
- A paramount misunderstanding of fracking by the BLM is reflected in the Table 2 comparison of vertical and fracking wells in the May 3, 2012 letter. This Table contains a category entitled "Water that returns to the surface and is available for reuse" which suggests that all water contaminated by fracking chemicals and radiation will be "reused" indefinitely. The fact is, essentially 100% of all water associated with fracking is permanently polluted from the chemistry used to extract oil and gas and is radioactively contaminated with Ra-226 and Th-232. The flowback and other "water" from fracking is permanently impaired. While some of it may be reused to extract gas and oil, all of it will ultimately be left in the ground, or disposed of as drilling wastes. Fracking garbage is not economically amenable to conventional water treatment processes and must be permanently removed from the biosphere. That is precisely why Ohio has experienced a profusion of injection wells. The BLM has completely ignored the reality that some water sacrificed for fracking may have limited reuse potential but in the end, is irredeemable;
- The U.S. Environmental Protection Agency recently published a long-awaited study that proves water resources are threatened, and sometimes actually harmed, by poor oversight of fracking schemes; and
- The global warming implications of promoting the development of fracking on public lands have not been examined for the Wayne. Methane is 86 times more effective than carbon dioxide at trapping heat and accelerating anthropogenic warming of the planet. No serious analysis of environmental effects can overlook the constant releases of methane that accompany drilling and transport of the fracked methane from the wells, but that's exactly what the BLM and FS have achieved since 2006.
- The SIR cannot provide useful information to guide a NEPA-based evaluation because it is out-of-date and wholly inadequate in assessing even the environmental and

economic risks to the surrounding community known in 2012, as a NEPA-based analysis must do.⁸ Further examples of its inadequacy:

- a. It dismisses the significance of **water consumption** because it claims that water withdrawals would not come from the Wayne, ignoring that water withdrawals would come from the region's rivers and thereby potentially jeopardize water supplies, including drinking water supplies, throughout the county. It also hugely underestimates the amount of water used per well and *conflates "per well" and "per frack."*
- b. The SIR disregards the **impacts of highly toxic⁹, radioactive waste on the surrounding community**, which already receives burdensome amounts of waste without sufficient geologic evaluation of the ability of the receiving land to protect local water supplies (*Ohio does not require proof of any confining zone*) and *with no monitoring of groundwater or drinking water* by ODNR to determine the extent of contamination that may already be occurring from injection, dumping, and documented spills at industrial frackwaste receiving facilities in the region.
- c. It dismisses the potential environmental risks of **frackwaste stored in tanks, completely disregarding known risks of explosions**, which have caused large, long-lasting and highly toxic fires in Ohio (Monroe County, June 2014, where the fire lasted a week and killed over 70,000 fish alone) and around the nation, apparently triggered by lightning or mechanical, electrical problems, or "human error."
- d. The SIR relies on Ohio law to protect the environment and human environment without basis. Ohio law is completely inadequate to protect against the hazards of fracking and frackwaste. For example, *Ohio law does not limit water withdrawals from rivers, lakes, and streams; it does not require a Class 2 injection well to have aquifer mapping or proof of a confinement zone before a permit is granted. Ohio does not require green completion or capture of VOCs from frackwaste storage tanks at fracking or injection sites. Ohio does not penalize injection well operators for violations, including failure of the well to meet periodic pressure tests. Spills of frackwaste at Athens County injection well operations are routinely not reported to Ohio EPA nor known frackwaste chemicals assessed in soil after spills, nor "clean-up" evaluated for adequacy. ODNR has no clean-up standards and only seems to test for chlorides!*
- e. Like the 2006 Plan, the SIR and the draft EA **do not evaluate socio-economic costs** to the community of becoming an industrial extraction and waste-receiving zone as a result of Forest Service actions. Documentation of economic impacts, including loss of real estate value, denial of insurance protection and mortgages, loss of tourism and of the ability of our institutions of higher learning to attract faculty and student,

⁸ 40 CFR 1508.8 Effects Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. ...Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, **economic, social, or health, whether direct, indirect, or cumulative.** [emphasis added]

⁹ See among dozens of studies, E. Elliott et al, 2016. A systematic evaluation of chemicals in hydraulic \-fracturing fluids and wastewater [sic] for reproductive and developmental toxicity, *Journal of Exposure Science and Environmental Epidemiology*, pp 1-10; Yao, Y. et al, 2015. Malignant human cell transformation of Marcellus Shale gas drilling flow back water, *Toxicology and Applied Pharmacology* 288 (2015) 121–130.

and of social impacts on communities and individuals who live with fracking, is readily available¹⁰ and must be evaluated.¹¹ See for example the Ohio University Mineral Rights Committee report and recommendations to the OU Board of Trustees, adopted in spring 2012 and provided to Ms. Carey but not considered in the 2012 SIR or the 2016 Draft EA.

- f. It does not evaluate the **extensive known incidence of frack fluid and frackwaste migration into drinking water supplies** and claims that there is none. This inaccuracy alone is reprehensible, since much of this data was available in 2012. Much additional data, including the recent USEPA draft study (the data, not the misstatements about that data, now critiqued by the SAB) and the 2016 Burton et al. study¹² among many reports, are now available and must be taken into account by the FS before any further consideration of this dangerous project takes place.
- g. Neither the 2006 Plan nor the non-NEPA-based 2012 SIR considers **climate impacts** of fracking, which are hugely significant.¹³ With the greenhouse gas equivalent of methane 87-100 times that of CO₂ and methane leakage rates being close to 20% of gas extracted¹⁴, any increase in gas and oil extraction will have significant ghg impacts. Lifecycle CO₂ emissions of fracked gas and oil are also highly significant as well as significantly greater than emissions from conventional extraction and were not considered in the 2006 Plan or SIR. At a time when the nation and the world have committed to reducing ghg emissions, promoting fracking on our public forest is simply and clearly immoral.
- h. Neither the 2006 FEIS nor the SIR accounts for the prospective presence of **orphan wells**, which according to a December 2015 Report of the Office of the Inspector General (#2015-EAU-057), are being highly mismanaged in the Wayne. These unmapped, uncapped, and often leaking wells provide uncontrolled pathways for methane and toxic radioactive frack waste to the surface and to drinking water supplies.
- i. Neither the 2006 Plan nor the SIR evaluated the **cumulative impacts of toxic air emissions** from frack sites and other fracking infrastructure that are an indirect effect of increased fracking. Air emissions of toxic compounds are significant from all stages of extraction, production, transportation, and waste handling.¹⁵

¹⁰ Cosgrove, B. et al. 2015. The Economic Impact of Shale Gas Development: A Natural Experiment along the New York / Pennsylvania Border, *Agricultural and Resource Economics Review* 44/2 (August 2015) 20–39; D. McCubbin, B.K. Sovacool. 2013. Quantifying the health and environmental benefits of wind power to natural gas, *Energy Policy* 53 (2013) 429–441; Perry, S. 2012. Development, Land Use, and Collective Trauma: The Marcellus Shale Gas Boom in Rural Pennsylvania, *Culture, Agriculture, Food and Environment* Vol. 34, Issue 1 pp. 81–92,

¹¹ 40 CFR 1508.14 Human environment: When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment.

¹² T.G. Burton et al. 2016. Elucidating hydraulic fracturing impacts on groundwater quality using a regional geospatial statistical modeling approach, *Science of the Total Environment* Vol. 545–546, pp.114–126

¹³ Howarth, R. 2014. A bridge to nowhere: methane emissions and the greenhouse gas footprint of natural gas, *Energy Science & Engineering*. Caulton, D. et al. 2014. Toward a better understanding and quantification of methane emissions from shale gas development, *PNAS*.

¹⁴ Schneising, O., J. et al. 2014, Remote sensing of fugitive methane emissions from oil and gas production in North American tight geologic formations, *Earth's Future*, 2, 548–558; Ingraffea, A. et al. 2014. Assessment and risk analysis of casing and cement impairment in oil and gas wells in Pennsylvania, 2000–2012. *PNAS*.

¹⁵ See for example, Macey et al. 2014. Air concentrations of volatile compounds near oil and gas production: a community-based exploratory study. *Environmental Health*, Vol. 13:82. <http://www.ehjournal.net/content/13/1/82>; Helmig, et al. 2014. Highly Elevated Atmospheric Levels of Volatile Organic Compounds in the Uintah Basin, Utah, *Environmental Science & Technology*, 48 (9), pp 4707–4715; Gilman, J.B., et al. 2013. Source Signature of Volatile

- The BLM/FS “public meetings” held in SE Ohio in November 2015 were likewise shameful charades of the public engagement requirement under NEPA and a waste of attendees’ time. One questioner in Marietta had to ask eight different officials where the water for fracking would come from before getting the certainly unprotective answer that it was up to the operator. This response alone shows that the FS is not following NEPA and has not evaluated significant potential effects of its actions on the human community: Our water is not renewable and is not for private industry to consume for profit by fracking our public lands!
- Luckily, our federal government has a legal obligation to abide by the National Environmental Policy Act and must therefore evaluate significant potential effects of any action on the Forest and human environment, including on the economy of the surrounding community, before taking such action. **Consent is an action that will have significant effects and must be guided by a Plan or by an SEIS.**
- Congress’s original mandate to the FS requires that National Forests provide long-term economic *benefit* to the public. The FS must evaluate how fracking our National Forest will cost (and benefit if there is any) the American public and the region in which it exists before considering consenting to the irremediable action of Consent, given that natural gas and oil extraction is most likely largely destined for export and places huge burdens on irreplaceable fresh water, causes climate-destroying ghg emissions that make gas worse for the climate than coal, and devastates health, roads, tourism and local economies. Where is the data of your assessment of these net costs (and benefits if there are any)? How can giving away leases for pennies benefit the American people when the costs to the public and to the future of our nation and planet are so outlandishly high, Mr. Scardina? Have you studied the relative economics and environmental impacts of clean renewable energy, Mr. Scardina? Have you read the Jacobson studies of the viability of these technologies to meet America’s energy needs?
- There have been reports that Mr. Scardina claims it is not his job to grant consent. While it is correct that the Regional Forester must *inform* the BLM of the availability of lands to lease, this formal announcement must follow a thorough analysis at the Forest level, which “**shall be conducted by the authorized Forest officer** in accordance with the requirements of 36 CFR part 219 (Forest land and resource management planning) and/or, as appropriate, through preparation of NEPA documents.” (36 CFR 228.102 (c)) Since the project is a Forest-level project, the Forest Supervisor is, by law, the default Forest officer.

Organic Compounds from Oil and Natural Gas Operations in Northeastern Colorado, *Environ. Sci. Technol.*, 47 (3), pp 1297–1305.; D. Brown, et al. 2014. Understanding exposure from natural gas drilling puts current air standards to the test, *Rev Environ Health*.

- The Forest Supervisor, further, must evaluate the proposed action under NEPA in a way that “reflects the unit's expected distinctive roles and contributions to the local area, region, and Nation, and the roles for which the plan area is best suited, considering the Agency's mission, the unit's unique capabilities, and the resources and management of other lands in the vicinity. (36 CFR 219.2(b)(1))

The Wayne National Forest Supervisor clearly cannot consider granting consent to authorize the BLM to proceed with this dangerous and illegal plan to consider fracking our state's only National Forest and our region's lungs and economic lifeblood. A Forest-wide EIS – *not a District-wide or site-specific EA* – is the only legal and moral action that can be taken, and Mr. Scardina is in charge of making this happen. The Wayne is *his* responsibility. And, per CFR 36 and 40, it is his responsibility to see that the Wayne acts in ways to protect long-term environmental and economic sustainability of our community. We, the people who live here and who will live here long after you all leave your posts expect you to do your legal and ethical duty as stewards of our National Forest.

The significant new information and circumstances since 2006 warrant a far more probing environmental inquest than has happened before. The agencies' identification and comprehension of fracking's direct and indirect environmental effects are severely deficient.

NOTE: My letter constitutes an incomplete assessment of this EA. I need more time to do an adequate review of this extremely confusing document, which does not seem to be an up-to-date, scientifically grounded assessment of *any* of the significant impacts that are highly likely from fracking under and near the Wayne. I will have more comments on the EA when I have more fully reviewed it. I request more time, equivalent to the 3 months that your agency took to complete this. Since I apparently have a much higher standard of scientific rigor than seems to be contained here, I request at least 60 more days. Your writers got paid for this work. I am a volunteer with limited time to put into such a mammoth task as evaluating this convoluted and confusing document with its many internal contradictions, serious omissions and flaws, and lack of relationship to the attendant FONSI.

I also request a public hearing so the public can share our community's knowledge of this complex and extremely important issue that will affect the future of our community.

Heather Cantino, Athens, Ohio May 25, 2016