

Fayetteville Shale Forum Q & A Exchange between Audience and Panelists:

Lawrence Bengal, Director of Arkansas Oil and Gas Commission

- 1. Can frac water be reused for fracturing rock at new drillings to reduce the total water requirement and the amount of contaminated water to be disposed of?**

Yes, frac water is being reused under certain circumstances. Approximately, 40-60% of the water used is recovered and depending if the chloride content of the recovered water is less than 30,000 ppm chlorides, the water can be reused for frac treatments in other wells.

- 2. Is it true that the gas and oil industry is exempt from EPA rules and regulations?**

Yes, the oil and gas industry is exempt from certain USEPA regulations, such as storm water runoff permit requirements and certain RCRA requirements.

- 3. I would like to hear about the “rat hole”. How deep is it, when is it closed and how?**

The “rat hole” is from 10 to 50 feet deep depending on the height of the drilling floor above the ground and the type of drilling rig used to drill the well. The “rat hole” is used to store drilling pipe during the drilling process. The “rat hole” is filled with soil after the completion of drilling.

- 4. It was stated that heavily leased areas in eastern Arkansas, such as southern Jackson and Woodruff counties, would not see much exploration/production. What is the reasoning behind this and this change?**

The exploratory drilling in the eastern part of the State indicated the geology of the Fayetteville Shale was not economically productive of natural gas.

James Bradbury – Attorney working with landowners in the Bartlett Shale

- 1. What kinds of laws (such as NEPA) exist at the state level? For private land? Surely it depends on the State, but is there a Federal requirement for such laws (maybe a min. /max level)?**

Answer: While there have been calls for environmental impact studies on the impact of particular sites and the overall effect here in Texas, there are in reality no legal requirements to compel this. One of the difficulties of this process is that all of the elements-water, contaminants, air emissions are not treated in any one statute in Texas and as far as I am aware Arkansas. I hate to be the one to bear this news, but because the gas shall play is new and entirely different, effort needs to be made to make a comprehensive study of these effects. In Arkansas there are fewer counties involved, so it can be done. In the interim, questions, participation and numerous voices calling for study and analysis of the water supply and disposal elements should be made.

2. In a case where the landowner has none of the mineral rights on the occupied property, can the landowner prevent drilling by mineral rights holder and can States or companies dictate when and where they will drill, regardless of landowner's desire?

Answer: This is a scenario that comes up again and again and seems to fly in the face of reason. But the short answer to your question is No, the surface owner cannot prevent the drilling company who has leased from the mineral owner from coming on to the property and drilling one or more wells. Arkansas, like Texas permits mineral rights to be severed and bought and sold independent of who owns the surface. Both states recognize legally that the mineral interest is dominant to the surface, and grant mineral interest owners and their lessees' reasonable use of the surface to extract minerals. This means well locations, roads, pipelines etc. All of that being said, there is one doctrine known as the "reasonable accommodation doctrine" that can limit the mineral interest owners use of the surface. It has not been well developed in Texas or Arkansas. The concept is that if the surface owner has a pre-existing use that will be significantly impacted by wells, and the mineral interest producer has other reasonable alternatives to produce the minerals, the law may require the driller to use other means. I caution that this doctrine make very good sense but has not been well developed-yet.

- [Nation's Most Comprehensive Landowner Protection Law Took Effect July 1st in New Mexico.](http://www.earthworksaction.org/PR_OGAP_SOPA.cfm)

http://www.earthworksaction.org/PR_OGAP_SOPA.cfm

- [Colorado Surface Owner Protection Act Took Effect September 1st.](http://www.earthworksaction.org/cosopa2.cfm)

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3. With the amount of area being taken out underground, does it cause the ground to sink above ground? Was this a problem in Texas?

Answer: Some have raised this question here in Texas but there have not been any incidents and to my knowledge there has not been any study of the risks associated with subsidence. Good question, but sorry I don't know that here is a firm answer to it.

- 4. Could you direct me to information on the “substantial increase in haze” which has a study is being done? Also, to my question about how many tons of nitrous oxide is emitted from the compressor stations, you responded that you had “a lawyerly answer” that I wouldn’t like very much. Please enlighten me.**

Answer: The reference to substantial increase in haze was really a reference to my own observation here since drilling started. While I cannot obviously attach that to the increased drilling, I very much think that it needs to be studied. It is my understanding that there is a study underway and there were efforts here to require lower emission equipment but that failed. <http://www.earthworksaction.org/oilgasairpollution.cfm>
My “lawyerly” answer was really a way of saying that I do not have information on total NOX emissions from compressors. You might check on line with the Oil and Gas Accountability Project- http://www.earthworksaction.org/oil_and_gas.cfm. They have some very good information.

Amy Mall - Sr. Analyst for the Natural Resources Defense Council

- 1. What kind of laws (such as NEPA) exists at the state level? For private land? Surely it depends on the State, but is there a Federal requirement for such laws (maybe a min. /max level)?**

Answer: The federal laws provide a floor for regulation, but in some cases that floor might be no regulation at all. States, counties and cities have their own authorities to regulate activities that are not covered by federal law or, in some cases, to go farther than federal law.

- 2. How much more global warming emissions are released "upstream" (before the natural gas is burned) with gas from shale as compared with conventional gas extraction from wells?**

Answer: I do not have any information on the global warming emissions released with gas from shale as compared with conventional gas extraction, but it is possible that the emissions from shale would be greater due to the extensive hydraulic fracturing required. If this would entail more engines, equipment, and activities, this could mean more greenhouse gas emissions and potentially more venting.

- 3. Also, how big are the "upstream" emissions as compared with "downstream" (during burning – CO₂ release)?**

Answer: Greenhouse gas inventories in the Rockies indicate that downstream consumer gas use releases more CO₂ than upstream production operations.

