

The Case of Range Resources

by Mario Loyola
Director, Center for Tenth
Amendment Studies

Key Points

- An innovative combination of horizontal drilling and “hydraulic fracturing” has opened up vast new stores of oil and natural gas to commercial exploitation.
- Environmentalists have responded with an often mendacious campaign to expose the “dangers” of hydraulic fracturing, which was safely developed more than 60 years ago.
- On December 7, 2010, the Environmental Protection Agency’s regional office announced that Range Resources had been hit with an endangerment finding.
- However, it quickly became apparent that EPA had no idea how the company could have caused the contamination; then, that the company had not caused it; and then, that the cause was something else entirely.

On December 7, 2010, the Environmental Protection Agency’s regional office for the south-central U.S., announced that Range Resources Corporation, a Texas based natural gas company, had been hit with an endangerment finding and remedial order for contaminating the drinking water in Parker County, Texas. The order asserted that the company “caused or contributed to the endangerment identified herein.”

However, it quickly became apparent that EPA had no idea how the company could have caused the contamination; then, that the company had not caused it; and then, that the cause was something else entirely. Nonetheless, EPA has continued to proceed against Range Resources, demonstrating the toxicity of the principles and authorities that guide today’s environmental regulation.

The trouble began in December 2009, when Parker county resident Steven Lipsky noticed problems with his well water. He had drilled a water well on his property in 2005, but only noticed the problem when he began using the water for domestic purposes after moving into his new, and much larger, home in 2009. He suspected that the source was a nearby natural gas well that Range Resources had built and “fracked” earlier that year to exploit a part of the massive Barnett Shale nearly a mile underground.

An innovative combination of horizontal drilling and “hydraulic fracturing” has opened up vast new stores of oil and natural gas to commercial exploitation. Hydraulic fracturing, or “fracking,” uses pressurized water, sand, and

small amounts of household surfactants to create micro-fissures several hundred feet into impermeable formations deep underground, such as shale rock, to allow the oil or gas contained therein to flow into a well. The new technology has vastly increased the country’s recoverable reserves of energy. In the last year, the federal government has *doubled* its estimate of the recoverable natural gas in the U.S., and a single new find, the Marcellus Shale in Pennsylvania and New York, is thought to contain more total energy than all of Saudi Arabia.

Environmentalists have responded with an often mendacious campaign to expose the “dangers” of hydraulic fracturing, the basic technology of which was safely developed more than 60 years ago and has been used in hundreds of thousands of wells. Environmental activists soon made contact with Mr. Lipsky. They encouraged him to watch a largely fraudulent documentary called *Gasland*, and to bring EPA into the action quickly. Mr. Lipsky duly filed a complaint with both the Texas regulatory authorities and the EPA.

Testing soon showed that there were traces of methane in his drinking water, and that, like the methane deep in the Barnett Shale, it was “thermogenic” rather than “biogenic.” All that proved was that both samples had come from deep underground, which was obvious anyway. But that was all the EPA needed to “conclude” that Range Resources “caused or contributed to” the methane in Mr. Lipsky’s well. “We know they’ve polluted the well,” Al Armendariz, EPA’s regional administrator, explained in a television interview at the time the order was issued. “We know they’re getting natural gas in there.”

In fact, Mr. Armendariz had no basis for any such conclusion. A week after the EPA order, EPA staff met with the company, which wanted to find out just how EPA thought it had polluted the well. The gas from the company's well could only have infiltrated Mr. Lipsky's well in one of two ways: either it migrated vertically over 5,000 feet up to the Trinity Aquifer as a result of 10 days of fracking the new well, or it migrated into the aquifer from a mechanical integrity failure in the well pipe. EPA staff agreed that fracking could not have caused the contamination, because there were no faults extensive enough to permit migration of gas over such a great distance. And they did not dispute the veracity of the pressure-testing that confirmed the mechanical integrity of the well. In fact, they couldn't propose a single theory as to how the gas had contaminated the well.

Weeks later, in a sworn deposition, regional EPA enforcement chief John Blevins was questioned about internal emails in which an EPA engineer warned that the simple methane isotope test EPA had conducted was not "conclusive" proof. The company's lawyers asked Mr. Blevins whether he was aware that many of the water wells in the area had contained natural gas long before any drilling. He was. Had he seen the email from an outside scientist telling EPA that it had to "evaluate the potential for other sources that would be thermogenic and the geology or structures that would store or transmit the gas from origin to aquifer?" He had. Had EPA had considered other possible geological sources of the gas in the Lipsky well? It had not. Mr. Blevins had indeed heard of the Strawn formation, although he was unaware of both its exact nature and whereabouts. No one at EPA had considered the Strawn formation as a source of gas, either.

The freshwater Trinity Aquifer, from which the Lipsky well drew its water, extends about 200 feet underground. Just beneath that is a rock strata laden with natural gas and salt water called the Strawn formation, which extends down to about 400 feet underground. Over 5,000 feet below that is the Barnett Shale, from which Range was extracting natural gas.

The Trinity Aquifer and Strawn formation overlap in places, which allows gas and salty water to migrate from the Strawn to the aquifer—particularly when increased use of the water leads to a loss of aquifer pressure and a concomitant drawing in of gas and salt water from the formation underneath the aquifer. The migration pathways have been increased as a result of drilling of water wells through the Trinity into the Strawn—sometimes by as much as 50 feet.

Not surprisingly, with the EPA now under oath, Blevins backed away from the original order. He would not affirm that the company had "caused or contributed to" the endangerment; only that the company "may have" done so.

A complex battery of chemical finger-print testing, focused particularly on nitrogen content, quickly and irrefutably demonstrated that the gas in the Lipsky well was the same as that in the Strawn formation, and different than that in the Barnett Shale. That explained why area residents had found natural gas in their water wells years before any drilling. Some water wells were even "flared" for days after drilling, to release dangerous levels of methane. One area subdivision's water tanks warn, "Danger: Flammable Gas."

With this information, EPA's case completely fell apart. Yet even now it is suing Range Resources for refusing to obey its original order, and asking a federal district court to levy perhaps \$15 million in fines.

Stripped of any factual basis, EPA's legal position has continued to evolve. Having abandoned the categorical assertion that Range Resources "caused or contributed to" the endangerment, it now backs away even from the assertion that it "may have" done so. EPA now claims that the law does not require it even to allege a possible causal link between the target of the order and the endangerment.

Agencies are not required to establish causation prior to issuing an emergency order; due process requires only a speedy determination of the facts. But was EPA required to make any factual inquiry at all?

Under Sec. 1431 of the Safe Water Drinking Act, the EPA administrator may "take such actions as he may deem necessary in order to protect" public health when he knows of a possible contamination of drinking water. "The action which the Administrator may take may include (but shall not be limited to) issuing such orders as may be necessary to protect the health of persons [...] including orders requiring the provision of alternative water supplies by persons who caused or contributed to the endangerment."

In its brief before the federal appeals court where Range is challenging the order, EPA makes the argument that even if its order were held to some standard of proof that the target had "caused or contributed to" the endangerment, that stan-

dard applies only to orders requiring the provision of drinking water. The other parts of its order would still be valid, the EPA claims, even without alleging that the targets of the order had anything to do with the endangerment.

EPA is essentially claiming the authority to commandeer anybody at random and force him to clean up, at his own expense, a contamination that he could prove he'd had nothing to do with. Nobody doubts that EPA can take action to protect public health, but can it force totally unrelated third parties to do so? Isn't there at least an "arbitrary and capricious" standard?

The Administrative Procedures Act allows federal courts to quash agency actions that are "arbitrary and capricious" but the standard requires only that the agency action have a rational basis in law.¹ If the Safe Water Drinking Act specifically gives EPA the authority to act arbitrarily and capriciously, it can hardly be assailed for doing so.

EPA lawyers are arguing *in a federal appellate court brief* that the law grants them essentially unlimited authority when somebody's drinking water is threatened. The brief does not even allege a rational basis for targeting Range Resources as the cause of the contamination—not even the superficial correlation of physical proximity. It is impossible to imagine a better argument than that which holds that the law violates the Constitution's guarantees of due process.

The case is in fact a perfect demonstration of why we need due process: it turns out that the Lipsky well wasn't even contaminated to start with. The methane measured in water from Lipsky's well, 2.3 parts per million, was well within the typical range for wells in that area, and well below the federal endangerment threshold of 10 parts per million. According to the Department of Interior, water wells bearing methane below that threshold pose no endangerment if properly monitored and vented. Many area residents use their wells exclusively for landscaping and irrigation, electing to truck fresh water in for domestic use—not because the well water is contaminated, but because it's just poor quality water.

When the original order came down, Mr. Armendariz explained he had to act fast because "Natural gas could be building up in the homes ... There's a danger of fire or explosion." In fact, Mr. Lipsky had disconnected his well from the house months before, and the other residential well mentioned in

the order had been configured so that the gas never reached the resident's house at all.

State regulators were fully capable of handling any possible endangerment from gas in the Lipsky well. They knew the area, they knew that there had always been gas in the water wells there, and they knew where the gas was coming from. They knew that Lipsky's house was not in imminent danger, and their thorough investigation quickly exonerated Range Resources and established the true origin of the gas in the water wells. EPA, by contrast, had no similar capability. Its staff resources in Texas are tiny compared to those of state authorities. They don't know the area, and they have no experience with oil and gas operations: thus, they jumped to conclusions based merely on uneducated guesses.

The case demonstrates the wisdom of the model arrangement originally envisioned in the environmental protection laws, whereby the EPA provides guidance on national environmental quality standards while the states implement those standards themselves.

It also demonstrates the fatal problem with the "precautionary principle" that has become the guiding light of environmental policy. In 1998, the seminal Wingspread conference of environmental scientists adopted a consensus statement of the precautionary principle:

When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. In this context the proponent of an activity, rather than the public, should bear the burden of proof.

The purpose of this statement was to escape the limitations of rational cost-benefit analysis. In *U.S. v. Carroll Towing Co.*,² a seminal case in the law of private torts, Judge Learned Hand articulated the duty of taking precautionary measures in terms of a simple formula: precautionary measures are appropriate when $C < PL$ (where C is the cost of precautionary measures, P is the probability of loss, and L is the potential gravity of loss). Where the cost of precautionary measures is greater than the potential for loss, victims should recover after the fact, when the loss has actually occurred. It is a net social loss to apply precautionary principle when the costs outweigh the potential damage.

To be sure, the Hand Formula has its shortcomings, the most important being the difficulty of accurately quantifying either the probability or the potential gravity of loss, especially with new and inherently risky activities, the effects of which may not be fully known.

But because the precautionary principle eschews the need to establish even a theory of possible cause and effect, it rejects the requirement for any factual basis at all. In fact, like much of current environmental advocacy, it rejects scientific method. And the costs of these unfounded precautionary measures are not absorbed by society, but rather imposed upon private parties with no established connection to the possible

endangerment. The only inquiry is whether the activity raises a threat, and the inquiry is satisfied by mere speculation.

The potential for arbitrary abuse of government power in this whole scheme is obvious.

Congress will soon discover that tinkering at the margins of the Clean Air Act is not enough to restore the balance of power both between the federal government and the states and between public health and economic growth. Both the Clean Air Act and the EPA should be scrapped and replaced with a scheme more conducive to rational environmental policy choices—and constitutional government. ★

Endnotes

¹ See, e.g., *Hurley v United States*, 575 F.2d 792 (10th Cir. 1978).

² 159 F.2d 169 (2d Cir. 1947).

