Environmental Studies 442: Case Study

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Not in my back yard: Coalbed methane mining in the Powder River Basin

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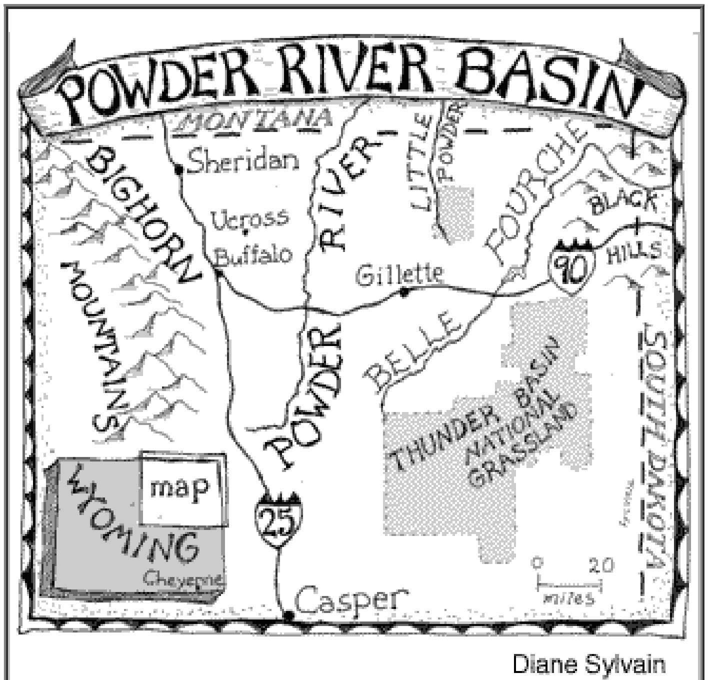
George Norman went to answer a knock on his door.* He and his wife Ramona have lived on their 500-acre ranch near Gillette, Wyoming for over 25 years. "Hello," said the man standing there, "I'm from Blue Sky Development Company, and we're here to drill for methane." The Normans stood there speechless, before mustering a protest: "but we live here!" Ten days later, Blue Sky began to build a natural gas extraction operation.

> *Although George & Ramona are fictional characters, they are drawn from real personalities based on news accounts.



Source: November 5, 2001 High Country News

Due to the split nature of land ownership in much of the West, mineral rights are owned separately from surface rights. Farmers and ranchers settled more than 30 million acres of the West under the Stock Raising Homestead Act of 1916. But in an effort to distribute the wealth more evenly, the act allowed the federal government to retain the subsurface mineral rights.

Methane, also known as natural gas, heats about 59 million homes annually. One of the larger reserves of methane is in the Rocky Mountain West, where the gas lies fairly close to the surface, in coal seams, trapped under huge aquifers. Simply called coalbed methane (CBM), its extraction has become a prosperous venture for private oil companies.

The Powder River Basin, in northeastern Wyoming, is underlaid by multiple coal seams in the rough shape of a bowl. Although estimates vary widely, some geologists estimate that the recoverable coalbed methane is as much as 39 trillion cubic feet, or more than a year's gas supply for the entire country.

The Oil Companies

Companies such as Blue Sky lease their mining and extraction rights from the Bureau of Land Management, and have unfettered access to the natural gas. This happens despite the private ownership of the surface land. Federal law allows the companies to build roads, pipelines, power lines, compressor stations, and well pads, even without landowner consent.

In an interview, Keith Warner, the Vice President of Blue Sky said this: "we live in an energy-dependent state. Unless we're willing to give up flipping a switch and having the power come on, turning a dial and having the house warm up, and going outside and starting our cars, then there's an element of hypocrisy to those who say they don't want methane development."

As of August 2001, private companies had drilled 10,538 coalbed methane wells in the Powder River Basin. The BLM projects that by the year 2010 the industry may develop an additional 80,000 wells. With each well, the oil companies build roads, well pads, and other accoutrements related to mining.

Typically, drillers pay a one-time or annual fee of a few hundred dollars per well pad, plus fees, based on their length, for roads and pipelines. If landowners don't want to deal, drilling companies can get a court order to force access. Except for these nominal access fees, most homeowners will get little financial benefit from the hundreds of millions of dollars in gas revenue generated beneath their land. The rough estimate for a "typical" well is about $390 per acre disturbed. But many earn far less, and compounded with the environmental damage that often results, the Normans find this unfair: "Everybody knows they (drilling companies) are going to make a million dollars a year per well. Landowners should get at least 5 percent of the gross so they can do reclamation work themselves if the drilling companies don't."

The Local Residents

Residents such as George and Ramona Norman are outraged, and feel little outlet for recourse. In many places, there is no water supply. The Normans' 83-year old neighbor (as it were, five miles down the road) hauls water in from Gillette, and drives to town to do laundry and bathe. Many people who bought retirement or investment properties have seen their property values plummet tremendously.

Not all residents are opposed to CBM mining: John Clark, a retired rancher in the area supports the development. "I think anything you can develop in the country is good if it doesn't damage the country. The people who are against it are the people who don't own any of it, and the goddamn do-gooders."

Environmentalists

Critics of CBM mining recite the negative environmental effects - a well typically disturbs four acres on each 80-acre parcel. The well pumps and compressors are noisy, described by one of George's neighbors as "a 747 flying overhead 24 hours a day." They, along with the heavy vehicles spew pollutants such nitrous oxides into the air. Although many officials recognize that they may violate air quality standards, Wyoming's lax environmental standards mean that there is little enforcement.

Ironically, the most devastating byproduct to CBM mining is water, an otherwise precious resource in the arid West. To reduce the pressure on the gas, the water is removed from underground. In the Powder River Basin, drillers are expected to pump out 3.2 million acre-feet of water, an amount that would take New York City two and a half years to use. Although in neighboring Colorado, where the water is reinjected, Wyoming has no such state law. In a ranching community, this water could be a blessing, except that it is too salty for cattle. Besides causing damaging erosion as well, too much water can sharply lower water tables, sometimes for decades, while drying up nearby wells and ruining natural springs used by wildlife. As the drilling operations on the Normans' ranch commenced, their wells began to bubble like champagne, rendering it toxic and unpotable. His tap water looks like milk and fizzes like Alka-Seltzer.

Wyoming

The state of Wyoming has a strong economic stake in CBM mining; it earns 40 percent of its revenue from energy production. Since the state has no income tax, this figure is substantial. In 2000, the state was $183 million in debt. Thanks greatly to increased energy production and gas prices, Wyoming ran an estimated $695 million surplus. CBM now accounts for 12 percent of natural gas production in the state, worth about $26 million in state revenue.

The Feds

On January 18, 2003 the Bureau of Land Management released its Final Environmental Impact Statement on the development of 40,000 new coalbed methane wells to be drilled throughout the Powder River Basin, Wyoming. Eight million acres of land will be open for drilling, with over three-quarters of the development taking place on privately-owned surface lands. The BLM controls the minerals beneath the surface, and under current law, the mineral lessee rights are greater than those of the surface owners.

Discussion Questions

- What recourse do the Normans have?
- Describe the goals of the State of Wyoming. Do they differ from those of the BLM?
- Although ranchers and environmentalists have often been at odds, they have become allies in the area. Why? Describe their ideal outcome.
- What are the barriers to passing federal law enjoining CBM mining?

Sources

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