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COAL BED METHANE: SHORT-TERM BOOM, LONG-TERM BUST

The Issue:

In 1999, Montana embarked on a journey to develop what is touted as “the clean fuel of the twenty-first century”-- Coal Bed Methane (CBM). Found in conjunction with coal deposits, methane has been released in the atmosphere as a by-product of strip mining coal for years. CBM is trapped by naturally occurring water seams or aquifers within coal beds. The technology to extract this energy source was initiated in Alabama and Southern Colorado in the late 1980’s and currently supplies about 5% of the nation’s natural gas. To release the gas, wells are drilled, pumping large quantities of water from the aquifer and reducing water pressure. CBM is recovered at the well head, pumped through a web of pipelines to compressor stations, and then on into the natural gas pipeline system. Wells were first drilled in Montana’s Powder River Basin near Decker, but CBM development could occur in many areas of Montana where coal beds occur.

On the surface, development of this latest source of energy appears to offer a long-awaited economic boon to the communities of the high plains in Montana and Wyoming, but the long-term impacts to our agriculture and our diverse fish and wildlife legacy, hunting, fishing, and wildlife-related recreation must be seriously considered. Some of the most serious issues for wildlife proponents are: 1) impacts on fish and wildlife health; 2) impacts on public recreation; 3) water quality; 4) dewatering of local and regional aquifers; 5) mineral rights; 6) surface disturbance and habitat fragmentation; 7) noise; and 8) local social and economic issues.

The Facts:

- One well can produce 12 to 20 gallons of water per minute (gpm) -- 17,000 to 29,000 gallons per day, which requires disposal in some manner. The proposed CBM wells in Montana are expected to produce 480 billion gallons of water.
- CBM discharged water can contain high levels of ammonia, selenium, boron, iron, radium, and fluoride, as well as the most significant problem - sodium salts. ***Sodium levels in discharged water render it unsuitable for irrigation. Increased sodium bicarbonate levels in water are lethal to fish and all aquatic and riparian vegetation.***
- ***“Virtually all species of wildlife will be impacted by CBM development with sensitive species impacted the most.” (CBM-DEIS quote)*** Seven species of big game, 34 species of small mammals, 17 species of predators, and 250 species of birds will be affected.
- More than 50 species of fish will be impacted by CBM development, including sensitive species such as paddlefish and pallid sturgeon.
- No study exists to document the long-term effects of discharged saline water on livestock, fish, and wildlife health.
- Between 10,000 to 26,000 wells, with the accompanying roads and pipelines, are anticipated in the next 20 years. Habitat fragmentation will seriously deteriorate wildlife habitat -- antelope and sage grouse, a sensitive species considered for listing under the Endangered Species Act, are particularly sensitive to roads. Conservative estimates indicate at least 27,000 to 83,000 miles of utility corridors and pipelines are to be built to accommodate CBM development.
- Increased predation of sage grouse by aerial predators could result from the new powerline perches.
- Noise pollution from pipeline compressors will interfere with sage grouse “booming” (their mating calls). Reduced reproduction, nesting success, and recruitment to sage grouse populations can be anticipated.
- Aquifers will be lowered drastically in an already water poor area, drying up springs and seeps. Centuries

will pass before these water tables are restored to pre-development levels.

- Unlined storage ponds can leach undesirable elements into groundwater and nearby rivers and streams, rendering them unable to support diverse plant and aquatic life.

Wyoming as an Indicator of Our Future:

In Wyoming's first three years of CBM development, 10,000 wells tapped the earth, resulting in widespread degradation of wildlife habitat and water quality. This is only the beginning! Already, domestic and stock water wells are drying up or becoming contaminated with gas or other substances as some water tables drop as much as 200 feet. Studies document a 50% reduction in songbirds within 100 meters of CBM roads. Based on BLM estimates, the entire Powder River Basin within Montana and Wyoming could see as many as 175,000 wells in the next ten years withdrawing up to 1.4 trillion gallons of subsurface water. The decline in the frequency and diversity of macro-invertebrates, (i.e. caddis, stoneflies, and mayflies) in Montana's portion of the Tongue River is attributed to CBM development upstream in Wyoming. Riverine ecosystem health can be measured by the health of this bio-community. Montana's rivers are already impacted at the source by lack of standards in Wyoming. Surely we can do better. Montana sportsmen and sportswomen must take steps to protect our aquatic resources from further degradation.

Reducing Wildlife Impacts:

Wildlife-related recreation has grown to be the second largest industry for Montana. Big game hunting, bird hunting, and fishing generate millions of dollars in associated license fees -- \$58,533,640 in 2002 alone. Millions of dollars are contributed to Montana's economy through hunting, fishing, and wildlife-related recreation. Unless steps are taken to mitigate the environmental degradation from CBM development, our wildlife heritage will be in jeopardy. Here are some needed mitigation measures:

1. Reinject discharge water into deep aquifers. Industry spokespeople decry this as too expensive.
2. Store CBM product water in lined holding reservoirs. Accumulated salts will remain after time needing disposal.
3. Use filters and reverse osmosis techniques. Usable clean water is produced and there may be a market in the chemical industry for the by-product concentrates of sodium carbonates and sodium sulfates.
4. Install multiple-head, multi-directional, and clustered wells to concentrate activity.
5. Take measures to reduce the many miles of transportation corridors.

6. Bury power lines to eliminate the threat to sage grouse.

The Players:

Board of Oil and Gas Conservation: state board charged with oversight of the industry.

Department of Environmental Quality: state agency authorized to enforce clean air and water laws. Permit agency.

Bureau of Land Management: US Department of Interior agency charged with managing subsurface minerals. Prepares Environmental Impact Statements on mineral extraction in conjunction with state agencies.

Montana Fish Wildlife and Parks: state agency charged with protecting fish and wildlife resources in trust for the public.

Montana Wildlife Federation: grassroots, membership-based organization of almost 7,000 hunters and anglers that work for diverse, healthy wildlife populations. MWF supports sustainable, multiple-use management of public lands that conserves habitat and recreational areas. MWF opposes the privatization of public lands and public wildlife.

Northern Plains Resource Council: grassroots organization of farmers and ranchers. Allied with MWF and other conservation organizations to produce the publication and video *Doing It Right* available from NPRC and MWF.

What You Can Do:

Get involved with the decision making process.

1. Attend public meetings and testify on Environmental Impact Statements and future environmental reviews.
2. Follow-up by sending written comment.
3. Write letters to the editor expressing your feelings.
4. Contact your local, state and federal elected officials.
5. Get involved with your local hunting, fishing or other conservation organization. Encourage them to become involved. Consider a charitable contribution to their cause.

An "Issues and Answer" paper prepared by the
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