

WEST COAST ENVIRONMENTAL LAW

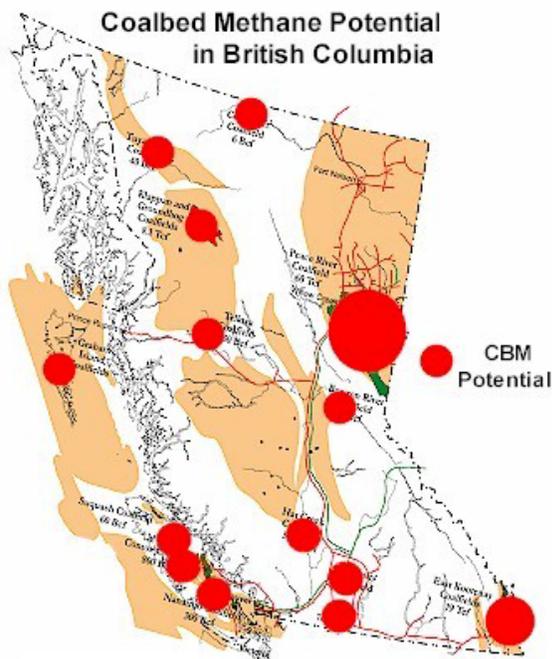


COALBED METHANE: WHAT IS IT? WHAT COULD IT MEAN FOR BC?

WHAT IS COALBED METHANE?

Coal miners fear it because it is highly explosive. In the last twenty years, coalbed methane has gone from obscurity as an energy resource, to supplying eight percent of the total US natural gas production. Along the way, it has generated a lot of public controversy, and its production has had undesirable impacts on many American landscapes.

It is the same as natural gas, mixed in the same pipelines, and sold into the same markets. It is one of the cleaner burning fossil fuels, but experience in the US indicates that the production process is fraught with risks. Primary concerns in BC relate to land fragmentation, and threats to water resources, as a result of the produced water generated in the extraction process.



COALBED METHANE IN BC

In BC, the provincial government (the 'Province') is now aggressively pursuing coalbed methane investment. The Province introduced generous new royalty incentives in March 2002, gave regulators more legislative flexibility in May 2002, and clarified regulatory requirements in October 2002.

In March 2003, the Province announced that \$50 million in drilling licenses and tenures had been sold to companies interested in coalbed methane. As a consequence, many communities across BC may soon experience coalbed methane production first hand.

According to the Ministry of Energy and Mines, at least nine experimental projects are underway — seven in the northeast, one in the southeast, and one on Vancouver Island. Most of the gas potential in the province is found in the northeast (75 percent) and the southeast (23 percent). Other coalfields exist on Vancouver Island, the south-central Interior (Hat Creek, Merritt, Princeton), Bowron River, Telkwa, and Queen Charlotte Islands. Active interest has been shown already in many of these areas.

THE BENEFITS OF COALBED METHANE

The Province and the coalbed methane industry argue that coalbed methane offers a number of formidable economic benefits in the form of capital investment, lease fees, royalties and taxes, high-paying jobs, and benefits for local communities.

Yet, in the rush to develop resources, we may not be collecting all the revenues that we could be from coalbed methane. For example, according to the Ministry of Energy and Mines, the net revenue payable to the Province for a typical coalbed methane project has been reduced from 27 to 13 percent as a result of various allowances and credits.

And, in the long term, these short-term economic benefits must be balanced against long-term costs.

ONE COUNTY'S EXPERIENCE WITH COALBED METHANE

Confronted with a large coalbed methane project, La Plata County in Colorado undertook a study in October 2002 to examine the expected impacts of the project. The study concluded:

- “The primary socioeconomic impacts ... are increased revenues to the county during the 30-year production period, primarily from property tax revenues from coalbed methane well production sales.”
- “...there would little impact to employment, per capita income, population, or housing.”
- “properties with a coalbed methane well located on them ... have had a net reduction in sales value of 22 percent.”^[1]

In La Plata County, a key advantage of the project was production tax revenue. In BC, royalties are paid to the Province, leaving communities with no apparent benefits from coalbed methane production.

^[1] La Plata County Impact Report, October 2002;
http://co.laplata.co.us/pdf/plan_doc/final_impactrpt/final_ir1.pdf



Compressor stations (inset), and a cattle watering tank that is now bubbling methane, not just water, in Wyoming.

CONCERNS ABOUT COALBED METHANE PRODUCTION

Coalbed methane development raises a number of unique environmental issues. Examples are *concentrated* land use disruptions (coalbed methane wells are spaced closer than conventional wells), considerable volumes of ‘waste’ water, and the risk of methane migration into water supplies and soils.

The industrial nature of coalbed methane production has a profound impact on the land. Each well will be connected to an extensive infrastructure of roads,

pipelines (for gas and water), compressors, and other equipment. Each new well, road, pipeline and compressor will bring a change to the landscape and number of ecological risks for wildlife, streams, and farms. Traffic, drilling, noise and dust is continuous in some communities in the US.

West Coast is tracking legal and policy developments regarding coalbed methane, and remains concerned about the manner in which the Province proposes to regulate coalbed methane activity. Two commonly asked questions are:

- What can we learn from the US that will help us ask questions in BC?
- Given recent cutbacks, does the Province have capacity to design and enforce effective environmental laws?

COALBED METHANE ACTIVITY IN THE US

Coalbed methane activity is well established in Wyoming, Montana, northern New Mexico, southern Colorado, eastern Utah, and Alabama. Many of the written reports in the US originate from an area near Wyoming and Montana called the Powder River Basin.

Given their experiences to date, many US citizens and landowners question the local economic benefits of coalbed methane, and regret the environmental costs associated with it. Where there are real economic gains, many feel they are not worth it in light of environmental costs. As a consequence, many US landowners are joining together to protect their land, and are looking to the courts for relief.

It is not clear how much or which parts of the US experience will translate to BC given differences in geology and geography. No two coalfields are alike. The common experience in the US, however, has not been positive. British Columbians have an opportunity to ensure that the US experience is not repeated here.

COALBED METHANE ISSUES

Most landowners cannot say no to coalbed methane development

The Province owns most of the subsurface rights to natural gas, including coalbed methane. There are exceptions on Vancouver Island, and in some areas where subsurface rights were granted along with early land grants to private landowners in the late 1800s and early 1900s. Where the Province owns the resource, the *Land Act* reserves the right to enter any part of the land to 'raise and get out' oil and gas. Some landowners learn of this only when a company representative arrives to negotiate terms of access.

The *Petroleum and Natural Gas Act* requires a company which has leased subsurface rights from the Province to obtain a landowner's consent or provide adequate compensation before entering onto private land. If negotiation fails to produce a surface lease that is 'satisfactory' to the company, the company can apply to the Mediation and Arbitration Board for an 'entry order.' The Board cannot issue an entry order without requiring a deposit from the company and fixing amounts for compensation and/or rent for the landowner. Landowners can apply to the Board for suffering or damage to land caused by the entry onto land.

Concentrated development and experimental schemes

Coalbed methane projects can involve hundreds of wells, with each well requiring individual road access.

Wells are spaced closer together than a typical natural gas project, which are restricted to one well every 640 acres. State governments in Colorado and Wyoming have permitted well density as low as one every 40 acres; Wyoming's current rule is one every 80 acres in the Powder River Basin.

Coalbed methane projects in BC are presently deemed to be "experimental schemes", which allows for well spacing "to any density", and ensures that well data will be kept confidential for 3 years.

The Minister of Mines recently indicated the well spacing for coalbed methane projects on private land would be one per 160 acres, but has not indicated a limit for Crown lands. After December 31, 2003, the Province intends to regulate coalbed methane projects under conventional schemes for the development of natural gas. Draft policy indicates that the Oil and

Gas Commission intends to continue to waive well-spacing requirements for coalbed methane projects.

Coalbed methane-produced water

Drilling into a coal seam will not by itself cause the methane to flow. The methane is held in the coal by the enormous pressure of water, and a company must first decrease the water pressure by 'de-watering' or pumping out the water. Months or even a couple of years of pumping may be necessary before the pressure is reduced enough for the methane to "desorb" from the coal.



Aerial view of coalbed methane project in Wyoming's Powder River Basin.

This "produced" water is often saline, and may be toxic. It can be disposed of in a number of ways: allowed to flow into surface drainage, or run directly into streams, collected in holding ponds for future disposal, sprayed into the air, or even re-injected into the ground. In BC, the Province has spent two years been refining a 'Code of Practice' for coalbed methane-produced water.

In the US, pumping out considerable quantities of water has raised concerns about depleted aquifers and the ability of those aquifers to fully recharge.

The disposal of produced water has also attracted significant controversy in the US. Surface disposal has already changed the composition and structure of soils and vegetation, because of high sodium levels. Toxic metals such as arsenic and barium are sometimes present in the water. Water volumes can cause erosion and flooding.

Reinjection of the water may well be the most environmentally benign method of disposal, yet it is also the most costly to implement. Surface disposal is the other option; it would be subject to the *Waste Management Act*.

Fracturing the coal seam to allow coalbed methane or water to flow easier

To allow water or coalbed methane to flow more easily, coalbed methane companies will sometimes inject into the well a high-pressure compound of sand and chemicals to fracture or 'frac' the coal seam. US groups believe 'fracking' chemicals are toxic to the environment and to human health. Some believe fracking fluid can travel along the cracks they create and reach drinking water.

Flaring

Coalbed methane that comes up to the surface during de-watering is usually ignited or 'flared'. Flaring may be also necessary during work to maintain or improve production levels. Coalbed methane wells are likely to be flared for longer periods than conventional gas wells. Flaring fossil fuels results in several air emissions, many of which can damage human health.

Provincial climate change policy

Coalbed methane projects will add to BC's greenhouse gas emissions and contribute to climate change, in its production, and certainly in its combustion. Like conventional oil and gas, coalbed methane is a fossil fuel. Even though it burns cleaner than other fossil fuels, when it is burned, it will release greenhouse gases. Fossil fuels will also likely be burned to get it out of the ground (for pumping, compression, etc.).

The Province is developing a provincial climate change plan. It will in some way tie in with the province's energy policy which states "Future plans include ... examining opportunities for linking coalbed methane development and CO2 disposal." by which may be meant plans to inject CO2 and thereby displace coalbed methane.

WHAT YOU CAN DO

Learn your rights, and learn from others who have experience with coalbed methane. If you are a landowner or a concerned resident where a coalbed methane project is being proposed, familiarize

yourself with the regulations that apply in your situation, and read about coalbed methane experiences elsewhere. Check out these key contacts:

- West Coast Environmental Law's *Citizen's Guide to Coalbed Methane*
<http://www.wcel.org/wcelpub/2003/14027.pdf>
- Powder River Basin Resources Council
(www.powderriverbasin.org)
- Oil & Gas Accountability Project
(www.ogap.org)
- Ministry of Energy & Mines
<http://www.em.gov.bc.ca/subwebs/oilandgas/resource/cbg/cbg.htm>

Ask for a careful, risk-reducing approach to development. Before development occurs, insist on:

- Baseline studies (at the company's expense);
- Clear information on disposal plans for produced water; and
- An environmental assessment or review being conducted to understand the potential for long-term impacts. Currently, BC's Environmental Assessment Act does not apply to coalbed methane. Adequate consultation in advance of any approvals being obtained.

Ask your municipality for help with information and advice. You are probably not the only landowner affected in your area, and your municipality has an interest in ensuring that if coalbed methane development takes place, it is done right.

Ask the OGC to exercise its powers under section 10 of the *Oil and Gas Commission Act* to conduct an investigation into the long-term ecological impacts of projected development.

Review and talk to OGC about its draft coalbed methane guidelines.

<http://www.ogc.gov.bc.ca/documents/guidelines/Coalbed%20Methane%20Guidelines.pdf>.

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