Legislative Environmental Policy Office

# Coal Bed Methane Water

## An overview of water right issues

Prepared for
THE WATER POLICY INTERIM COMMITTEE
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# Introduction

In an issue survey at the beginning of this interim, members of the Water Policy Interim Committee rated the use of coal bed methane (CBM) water as a high priority for study. Two bills that died in the 2009 Legislature proposed to create a temporary beneficial use permit for CBM water. Subsequently, the 2009-10 WPIC work plan identified the permitting of coal bed methane wells as one of its study areas.

The extraction of CBM is a process regulated by several agencies. This paper is intended to provide a general overview of permitting for the beneficial use of CBM water.

Speakers at the January meeting will discuss permitting for the use of CBM water and other issues. They will be available for questions.

Figure 1 is a flow chart of the permitting process for oil and gas operations, including CBM.

# Overview

Coal bed methane occurs naturally within coal seams. Evidence of CBM production exists as early as 1926, but most production has taken place in the last two decades following tax incentives approved by Congress to boost domestic exploration into alternative energy sources.[1]

The Powder River Basin in Montana and Wyoming is one of the country's major sources of coal bed methane. The vast majority of the producing wells are located in Wyoming. However, it is possible that thousands of wells could be drilled in Montana in the coming years.[2]

While there are several issues related to CBM production, the management of water produced in conjunction with the extraction of the gas is likely the topic of most controversy. To extract CBM

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[1] Coal Bed Natural Gas Handbook, 2004. U.S. Department of Energy.

[2] The Final Supplement to the Statewide Oil and Gas Environmental Impact Statement, Alternative H, predicts more than 16,00 CBM wells.
http://www.deq.state.mt.us/COALBEDMETHANE/FinalEIS/FinalSuppCBM.pdf

from a coal seam, ground water is removed to lower the pressure and release the gas. Water production is higher in the initial stages of production, decreasing as more methane is released.[3]

Putting CBM produced water to a beneficial use, such as stock watering or irrigation, presents a valuable option to landowners in arid areas where CBM is located. The beneficial use of water is one of several management options that a CBM operator may use in combination to dispose of the water.

The use of CBM water for beneficial purposes is a key part of the Final Supplement to the Statewide Oil and Gas Environmental Impact Statement, issued in 2008. The preferred alternative selected by the Bureau of Land Management (BLM) will require operators to submit water management plans that provide a rationale for using, or not using, injection, treatment, surface discharge, infiltration, storage, evaporation, or beneficial uses.

The agency prefers that beneficial uses, such as livestock watering, dust control, and managed irrigation, be utilized. The BLM estimates that 20% of produced water would be used beneficially.[4]

However, the amounts of water extracted, as well as the quality of the water, raises concerns about effects on stock and domestic supplies due to draw down, as well as impacts to surface water quality and soils from water management practices.[5]

In 2007, there were 863 Montana wells producing coal bed methane, water, or both. The average water production per well ranged from 1.7 gpm to 13 gpm, for a total of more than 1.6 million gallons of water pumped that year.[6]

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[3] This differs from conventional natural gas wells, where water production increases as the volume of gas decreases. Coal Bed Natural Gas Handbook, 2004. U.S. Department of Energy.

[4] Final Supplement to the Statewide Oil and Gas Environmental Impact Statement, Alternative H, October 2008. http://www.deq.state.mt.us/COALBEDMETHANE/FinalEIS/FinalSuppCBM.pdf

[5] 2007 Annual coal bed methane regional ground-water monitoring report: Northern portion of the Powder River Basin. Montana Bureau of Mines and Geology. A 2008 report is expected soon. http://www.mbmg.mtech.edu/mbmgcat/catMain.asp

[6] Ibid.

For the same year, the 4,658 wells in northern Wyoming produced almost 4.7 million gallons of water.[7]

## Montana Regulations

The Montana Board of Oil and Gas Conservation (MBOGC) oversees most facets of CBM development in the same way it does other oil and gas operations. A statute passed in 1961, before CBM development began in the state, speaks to the management of water produced in association with oil or gas extraction within a controlled ground water area.[8]

The production, use, or disposal of that water is under the "prior jurisdiction" of the Board of Oil and Gas Conservation, but the Department of Natural Resources and Conservation (DNRC) can petition for hearings on the operations.[9]

That statute was acknowledged in 1999 when the DNRC created the Powder River Basin Controlled Ground Water area, which deals specifically with the management of water produced from CBM extraction. The order states that water levels in targeted aquifers could be reduced near project areas for long periods of time in an area where water is scarce. It also called for extended monitoring of ground water data.[10]

However, the order said that the extraction of water, though necessary to obtain the CBM, is not a "desired product of the operation" and therefore is not a beneficial use, subject to permitting from the DNRC. But, reflecting the law, the order said that the DNRC could petition the MBOGC for hearings on matters of CBM development that could effect existing water rights.[11]

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[7] Ibid.

[8] A variety of factors may lead to the formation of a controlled ground water area to protect water quantity or quality. 85-2-506, MCA.

[9] 85-2-510, MCA.

[10] Final Order In the Matter of the Designation of the Powder River Basin Controlled Ground Water Area, 1999.
http://www.dnrc.mt.gov/wrd/water_rts/cgwa/powder_riverbasin/powder_final_order.asp

[11] Ibid.

Though a beneficial water use permit is not required in Montana to extract CBM, a permit is required if that water is put to beneficial use, in part defined as a purpose that uses "water for the benefit of the appropriator, other persons, or the public, including but not limited to agricultural, stock water, domestic, fish and wildlife, industrial, irrigation, mining, municipal, power, and recreational uses."[12]

In 2001, the Legislature passed a measure detailing the management of ground water produced during coal bed methane extraction. It requires certain management options be regulated by the DNRC and the Department of Environmental Quality (DEQ). Ground water produced in association with a coal bed methane well must be managed in any of the following ways:[13]

* used as irrigation or stock water or for other beneficial uses in compliance with Title 85, chapter 2, part 3;

* discharged to the surface or surface waters subject to the permit requirements of Title 75, chapter 5;[14]

* reinjected to an acceptable subsurface strata or aquifer pursuant to applicable law;[15] or

* managed through other methods allowed by law.

Another section of law says that the management of CBM ground water through discharge,

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[12] 85-2-102, MCA.

[13] 82-11-175, MCA.

[14] In 2003 and 2006, the Montana Board of Environmental Review revised water quality standards affecting discharge permits for coal bed methane in the Powder River Basin. The Environmental Protection Agency approved the standards, which were challenged. In 2008, the Montana Supreme Court upheld the rules, writing that they have a scientific basis and are consistent with, and not more stringent than, EPA policy. However, in October 2009, a U.S. District Judge in Wyoming vacated EPA approval of the standards, saying the federal agency did not consider industry's legitimate concerns about the lack of scientific basis for the 2003 standards and failed to make plain its course of inquiry, analysis, and reasoning for approving the 2006 standards. As of December 2009, it is not known what action the EPA will take.

[15] Reinjection is regulated by the MBOGC. The Record of Decision for the Final Supplement of the EIS considered, but did not fully analyze, reinjection as a management option for CBM water. It cited a study that found favorable conditions for reinjection exist in about 9% of the area. The agency said that while injection may be technically and economically feasible in some aquifers as a way of conserving water, it cannot be regarded as appropriate in all settings.

reinjection, or any other method allowed by law is not a waste of water. Other uses of water that do not constitute waste include the disposal of ground water from a mine to preserve it in good condition or the disposal of ground water used for milling, smelting, other processes involving metallic ores.[16]

These sections of law were disputed in a 2008 court case in Big Horn County. At issue were whether the Constitution and the Water Use Act (WUA) required that CBM water be put to a beneficial use and whether or not 85-2-505 and 85-11-175 provided the statutory means for the beneficial disposition of water.

In short, Judge Blair Jones ruled that "the production, use, or disposal of large quantities of CBM ground water must serve a statutorily defined beneficial use." He also wrote that the two sections of law are constitutional.[17]

In reaching those conclusions, the Judge Jones raises issues that may be of interest to the WPIC.

The DNRC argued that the extraction and disposal of CBM water is not a beneficial use requiring a water right. The agency cited examples of disposal that do not require a water right including the dewatering of a gravel pit, the removal of contaminated mine water, or the land application of sewage effluent.

"The DNRC has reasoned that it is the regulator of water rights, not the regulator of water disposal and that not all diversions of water involve a water use or require the security of a water right," Jones wrote. But he said the amount of water involved in CBM production and the fact that the area in question is a controlled ground water area are distinctions that require regulatory review to ensure mandates of the Constitution and the WUA are being met.[18]

The judge cites 85-2-510, which gives the Board of Oil and Gas Conservation prior jurisdiction in controlled ground water areas over the production of ground water related to oil and gas wells,

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[16] 85-2-505, MCA.

[17] DV-05-70, Order on Summary Judgment Motions- Diamond Cross, Et. Al. Vs. Deq, Et. Al.

[18] Ibid.

but acknowledges that the DNRC has a role. Jones said the two agencies should work together to "evaluate the management of CBM ground water for beneficial purposes under the recognized criteria of the WUA."[19]

"The WUA provides criteria to be considered when senior users may be adversely impacted by a proposed water appropriation," Jones wrote. "To the extent the WUA is applied equally to all potential appropriators of water, equal protection concerns are minimized. Moreover, the significant State interest in the management of enormous quantities of the State's ground water is advanced by appropriate State agency review."[20]

Another court decision in 2008 provided the basis for proposed legislation in 2009.

Fidelity Exploration and Production Co., which produces CBM in the Powder River Basin, applied to the DNRC for two beneficial use permits to market CBM water in Montana and Wyoming. Proposed uses included dust suppression, irrigation, fire control, and stock and wildlife watering.

In accordance with 85-2-311, the company was required to show that water is physically and legally available, the appropriation works are adequate, that there would be no adverse effect to prior appropriators, and the proposed use is beneficial. The assertions of physical availability and beneficial use were not questioned. But controversy ensued around the comparison required between the physical water supply with existing legal demands. The application said the point of diversion and the source supply was not the ground but rather the company's pipeline, which stored the water after it was pumped from the ground. Since the pipeline acted as a reservoir that no other water user could access, there could be no adverse effect.[21]

The DNRC hearing examiner concluded that the source of the water to be appropriated was not the ground, but the pipeline. Citing the Powder River Basin Controlled Ground Water Area Order and 85-2-510, MCA, the examiner wrote that the "Legislature intended (but did not expressly

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[19] Ibid.

[20] Ibid.

[21] Proposal for Decision, Application Nos. 42B-30011045 and 42B-30014358 by Fidelity Exploration.
http://www.dnrc.mt.gov/wrd/water_rts/hearing_info/significant_hearingdecisions/fidelity_exploration_pfd.pdf

state) that water produced by CBM development is to be considered something other than ground water ..."[22]

"Considering water developed through CBM development as not being a "ground water" appropriation but as an appropriation from their pipeline is more consistent with the statutory scheme of ... 82-11-175 and is eminently more practical," the examiner wrote, adding that if the company wanted to dispose of the water through other means, a beneficial use permit would not be required.

Additionally, the examiner wrote, use of the water is limited because it exists in the pipeline only when CBM is being produced.

"If Fidelity was granted a water right for ground water, then presumably when the methane runs out, Fidelity could still exercise their ground water right indefinitely," the examiner wrote. "Such a result, the Legislature most certainly did not contemplate happening."[23]

The DNRC approved the Montana permit, but denied the Wyoming permit.[24]

Both decisions were the subject of judicial review. District Judge Thomas Honzel ruled that since the source of supply is actually ground water, neither application should be approved. When the examiner ruled that the water produced was not ground water, Honzel said other water right

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[22] Order on Scope of Issues for Application Nos. 42B-30011045 and 42B-30014358 by Fidelity Exploration.
http://www.dnrc.mt.gov/wrd/water_rts/hearing_info/significant_hearingdecisions/fidelity_order-hearingexaminer.pdf

[23] Ibid. The examiner did not note that 85-2-303, MCA, provides that an unproductive oil or gas well can be converted to a water well, subject to Title 85, chapter 2.

[24] In addition to the criteria for using water in state, an out-of-state proposal must prove that the use is not contrary to water conservation in Montana and is not otherwise detrimental to the public welfare of the citizens of Montana. The DNRC concluded that the Wyoming application did not meet the necessary burden of proof.

holders were prevented from presenting any evidence on whether the proposed water use would adversely impact their water rights.[25]

Honzel said the water gets to the pipeline by being pumped from the ground through wells. He also wrote that the statutes cited by the DNRC examiner refer to ground water, meaning the application was for ground water, not pipeline water.[26]

"If the legislature intended something different, it could have said so, but did not," Honzel wrote.

In 2009, the Legislature passed a bill that addressed Honzel's ruling, but it was vetoed by the governor. House Bill No. 575 would have created a temporary permit that the DNRC could issue for the beneficial use of water produced in conjunction with CBM production.[27]

The only uses allowed under the permit were stock water, managed irrigation with no return flow to surface water, dust suppression, industrial uses, and domestic use. The permits were limited to 2,000 acre feet annually and expired when CBM production ceased.[28]

Just like any application for an appropriation of ground water, a proposal for the temporary permit would need to meet the permitting criteria, including proving the water is physically and legally available, the appropriation works are adequate, that there would be no adverse effect to prior appropriators, and the proposed use is beneficial.

However, unlike other permit applications, the proposed law stipulated that the source of appropriation for a CBM temporary permit is surface water in a pipeline, pond, pit, or other

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[25] Memorandum and Order on Petition for Judicial Review, CDV-2007-425, 12/15/2008. http://www.northernplains.org/news/past-news-room-articles/2008-news-items/2008-court-cases/Honzel%20decision%20on%20water%20rights%2012-16-08.pdf

[26] Ibid.

[27] http://data.opi.mt.gov/bills/2009/billhtml/HB0575.htm

[28] Senate Bill No. 505 contained similar provisions. It passed the Senate but died in the House.http://data.opi.mt.gov/bills/2009/billhtml/SB0505.htm

structure approved by the MBOGC. Additionally, the bill stated that the DNRC must consider the point of diversion to be the place were the water is diverted from the pipeline, pond, pit, or other structure.

The bill passed the House 56-44 and the Senate 30-20. However, in vetoing the bill, the governor said the measure reversed long-standing water law by not protecting senior water right holders.[29]

The governor wrote, "Ultimately, the bill fails to reconcile the substantive conflict between the extraction of water in the CBM process and senior water rights."

## Mitigation

What role, if any, senior water right holders play in the permitting of CBM water for beneficial uses is debatable. But prior appropriators are addressed in Montana law and are included in the permitting by the MBOGC and the BLM.

When submitting a plan of development with a density of more than one well per 640 acres, a CBM developer must notify ground water right holders whose spring or well is within the development area or within one mile of the exterior boundary of the development area.[30]

State law provides a measure of protection for water right holders. Coal bed methane developers must notify and offer a "reasonable mitigation agreement" to appropriators of ground water for which the point of diversion is within 1 mile of the CBM well or within a half mile of a well adversely effected by a CBM well.[31]

The mitigation agreement must provide for prompt supplementation or replacement of water from any natural spring or water well adversely affected by the coal bed methane well.

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[29] http://data.opi.mt.gov/bills/2009/AmdHtmH/hb0575govveto.HTM

[30] MBOGC Order 151-2008, http://bogc.dnrc.mt.gov/PDF/May2008Orders.pdf

[31] 82-11-175, MCA.

For development of federal minerals, the BLM will require operators to certify that mitigation agreements have been offered in accordance with state law. The agreements also must explain how the operator will respond to wells that are unusable due to methane migration and how health and safety impacts will be monitored and mitigated.[32]

The Legislature also created the Coal Bed Methane Protection Program to compensate landowners or water right holders who demonstrate that a CBM operator who caused damage is unlikely to pay.[33]

In its findings and declarations, the Legislature said clean burning energy is a priority and Montana possesses a plentiful reserve of clean-burning CBM. But the Legislature noted that the extraction of CBM may adversely impact water quality and availability.

Under the law, a landowner or water right holder may apply for compensation if there is:

* a loss of agricultural production or a loss in the value of land,

* a reduction in the quantity or quality of water available from a surface water or ground water source that affects the beneficial use of water, or

* the contamination of surface water or ground water that prevents its beneficial use.

A landowner may be compensated for loss of agricultural production and income, lost land value, and lost value of improvements caused by CBM development if the land is directly affected by CBM development.

A water right holder may be compensated for damages caused by the contamination, diminution, or interruption of surface water or ground water.

Compensation is limited to $50,000 or 75% of the damages, whichever is less.

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[32] Record of Decision for the Final Statewide Oil and Gas Environmental Impact Statement and Proposed Amendment of the Powder River and Billings Resource Management Plans, December 2008. http://www.deq.state.mt.us/COALBEDMETHANE/FinalEIS/RODforRMPs.pdf

[33] 76-15-901, MCA through 76-15-905, MCA.

Compensation comes from an account funded by oil and natural gas production taxes. Money in the account is dispersed to conservation districts, which will handle claims. Money for emergencies became available in 2005, but no claims have been filed. Other claims may be filed after June 30, 2011.

By July 2011, it is estimated the account will contain almost $10 million.

In the supplement to the oil and gas environmental impact statement, the BLM states that CBM production could result in reduced yields for wells and springs that obtain water from the developed coal seams. However, the agency said, impacts would be mitigated by agreements with operators and the provisions of the CBM Protection Program.[34]

The mitigation criteria were amended by HB575, which was vetoed. Under the measure, the money would have become available immediately upon passage and approval and the maximum compensation would have been $150,000.

## Prior Proposals

Past Legislatures considered the beneficial use of CBM water.

In 2007, Senate Bill No. 223 proposed to create an exemption for the beneficial use of CBM water. The water had to be used on land owned or leased by the appropriator and the amount of water could not exceed 750 acre feet a year. It died in the Senate.[35]

Also during that session, the Legislature passed Senate Bill No. 407. It required the DEQ to issue a general permit for discharges of CBM water into existing impoundments to water for livestock and wildlife. The discharge for a single impoundment could not exceed 25 acre-feet of water or 75% of the capacity of the impoundment, whichever is less. The governor vetoed the measure,

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[34] Chapter 4, The Final Supplement to the Statewide Oil and Gas Environmental Impact Statement. http://www.deq.state.mt.us/COALBEDMETHANE/FinalEIS/FinalSuppCBM.pdf

[35] http://data.opi.mt.gov/bills/2007/billhtml/SB0223.htm

saying that the discharges to unlined ponds could violate water quality standards and threatened downstream agriculture.[36]

Senate Bill No. 437 in 2003 would have exempted the beneficial use of water produced by CBM extraction from the DNRC permitting requirements. It also would have doubled the distances where CBM operators must offer mitigation agreements. It died in the Senate.[37]

## Other States

Western states vary in the approach taken to produced water and whether or not it is subject to permitting under the prior appropriation doctrine.

Like Montana, a water right is not required to extract minerals in Utah. A water right is required to put the produced water to a beneficial use.[38]

Wyoming has required permitting of water uses for more than a century on the basis of the prior appropriation doctrine. The state does not require a water permit for conventional oil and gas operations, but does for CBM. "The intentional production, or appropriation, of ground water for the CBM production led to the designation of CBM as a beneficial use of water and subsequently, to a requirement for a permit to appropriate the ground water," according to the state engineer.[39]

Wyoming law also states that well permits are generally granted as a "matter of course, if the proposed use is beneficial, and if the state engineer finds that the proposed means of diversion and construction are adequate." If the application is not in the public's water interest, then it may be denied and subject to review by the state board of control.[40]

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[36] http://data.opi.mt.gov/bills/2007/billhtml/SB0407.htm
http://data.opi.mt.gov/bills/2007/AmdHtmS/SB0407GovVeto.HTM

[37] http://data.opi.mt.gov/bills/2003/billhtml/SB0437.htm

[38] Personal correspondence, Dec. 16, 2009, John Mann, Utah Assistant State Engineer.

[39] Guidance, CBM/Groundwater permits, State Engineer.
http://seo.state.wy.us/PDF/GW_CBM%20Guidance.pdf

[40] 41-3-931, Wyoming Code.

In New Mexico, the Oil Conservation Division regulates the disposition of water produced or used in connection with the drilling for, or producing of, oil or gas. No permit is required from the state engineer for the disposition of the water.[41] For oil and gas wells drilled in aquifers of non-potable water more than 2,500 feet deep, the law requires information submitted to the state engineer, but it is not considered as an application for a water right. The law provides that anyone who claims impairment of existing water rights from such a well may file a claim in district court.[42]

Though it has not been applied to oil and gas operations, New Mexico does require a water right to extract minerals under the Mine Dewatering Act. [43]

The Colorado Supreme Court recently declared that the extraction of CBM, which involves pumping of ground water, is a beneficial use of the water. The court said a CBM developer should obtain a ground water well permit, and where necessary, provide an augmentation plan.[44]

In light of the court decision, Colorado is considering administrative rules to address the permitting of ground water withdrawals for water produced by oil and gas production. Referring to the court case, the state engineer said oil and gas wells must be in compliance with well permitting regulations and the operation of the wells cannot injure vested water rights. The rules seek to define areas where water withdrawals are "non-tributary," meaning the withdrawal of ground water will not within 100 years deplete the flow of a natural stream at an annual rate of greater than one-tenth of one percent of the annual rate of withdrawal.[45]

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[41] 70-2-12 and 70-2-12.1 NMSA.

[42] 72-12-25 to 72-12-28 NMSA

[43] The state engineer evaluates applications under regulations governing ground water appropriations. If existing water rights are not impaired, the permit is issued. The applicant may appeal or file a plan of replacement New Mexico Mine Dewatering Act. Section 72-12A-7. http://law.justia.com/newmexico/codes/nmrc/jd_72-12a-7-19a95.html

[44] No. 07SA293, Vance v. Wolfe
http://www.courts.state.co.us/Courts/Supreme_Court/opinions/2007/07SA293.pdf

[45] Rulemaking for produced, non-tributary ground water,
http://water.state.co.us/wateradmin/NontribGw.asp

# Additional Reading

Throughout this paper are several footnotes that contain links to documents cited that provide more information. Following are three with brief descriptions of the contents.

* The Final Supplement to the Statewide Oil and Gas Environmental Impact Statement.

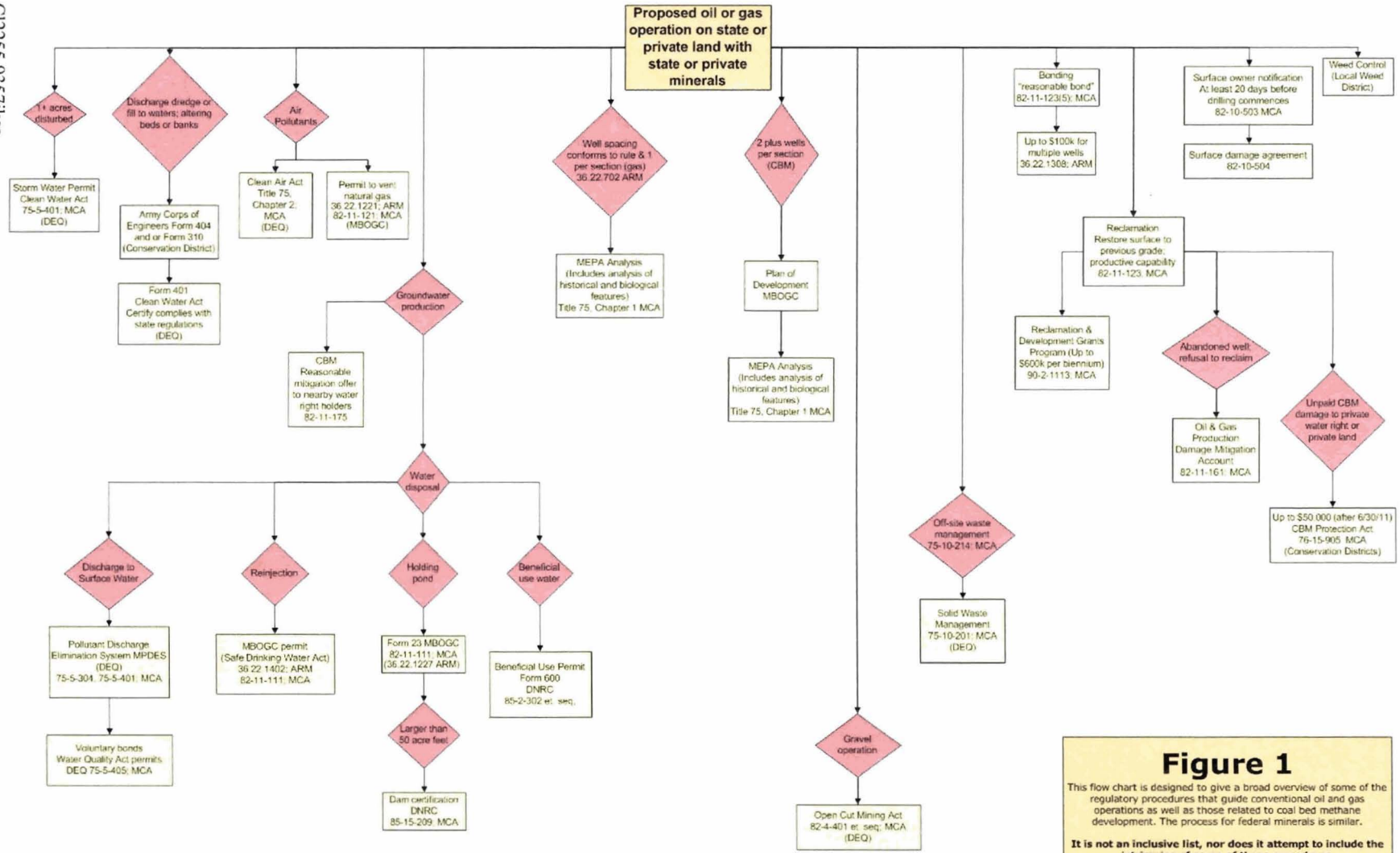
The Final Supplement to the Montana Statewide Oil and Gas Environmental Impact Statement and Proposed Amendment of the Powder River and Billings Resource Management Plans (FSEIS) is a result of U.S. District Court issued-orders dated February 25, 2005, and April 5, 2005. These orders require BLM to prepare a Supplemental EIS to evaluate a phased development alternative for coal bed natural gas production.

**http://www.deq.state.mt.us/COALBEDMETHANE/FinalEIS/FinalSuppCBM.pdf**

* Record of Decision for the Final Statewide Oil and Gas Environmental Impact Statement and Proposed Amendment of the Powder River and Billings Resource Management Plans, December 2008.

**http://www.deq.state.mt.us/COALBEDMETHANE/FinalEIS/RODforRMPs.pdf**

* 2007 Annual coal bed methane regional ground-water monitoring report: Northern portion of the Powder River Basin. Montana Bureau of Mines and Geology.
**http://www.mbmg.mtech.edu/pdf-open-files/mbmg-576-CBM_AnnualReport2007.pdf**



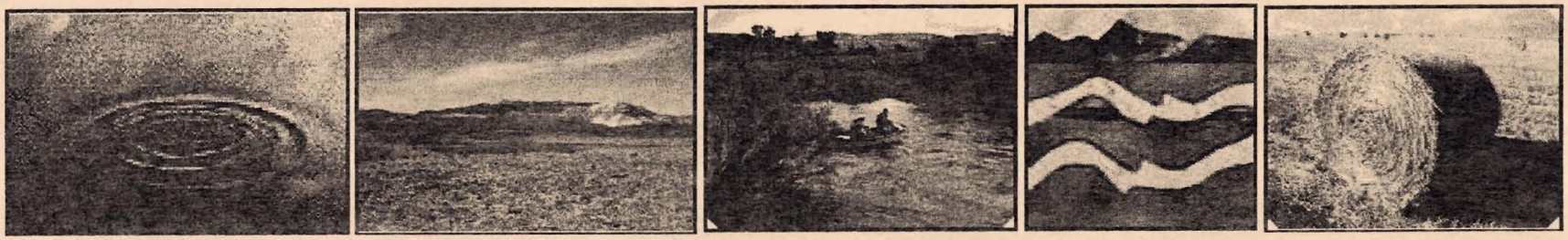

# Figure 1

This flow chart is designed to give a broad overview of some of the regulatory procedures that guide conventional oil and gas operations as well as those related to coal bed methane development. The process for federal minerals is similar.

**It is not an inclusive list, nor does it attempt to include the intricacies of some of these procedures.**
- Joe Kolman, Legislative research analyst

# Coal Bed Methane and Water Policy in Montana

# 2002



## Report to the 58th Legislature of the State of Montana

Environmental Quality Council

October 2002

# Coal Bed Methane and Water Policy in Montana 2002

October 2002

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# Introduction

## The Coal Bed Methane/Water Policy Subcommittee and the EQC

The Environmental Quality Council (EQC) is a 17-member, bipartisan interim committee of the Montana Legislature. The EQC appointed a Coal Bed Methane/Water Policy Subcommittee to address coal bed methane issues and the EQC's statutory and other water policy responsibilities during the 2001-2002 interim.

The Coal Bed Methane/Water Policy Subcommittee members are:
Senator Mack Cole, Chair
Senator Jon Tester, Vice Chair
Senator Pete Ekegren
Senator Bea McCarthy
Mr. Tom Ebzery
Ms. Julia Page

## Review of the Interim

To carry out the responsibilities assigned to them by the EQC and House Joint Resolution No. 27 (2001), the Coal Bed Methane/Water Policy Subcommittee adopted a study work plan that outlined their goals and tasks. The Subcommittee's work plan was presented to and approved by the full EQC. The work plan provided direction to the Subcommittee throughout the interim. Outlined below are the goals identified by the Subcommittee and adopted by the EQC.

## Coal Bed Methane Goals

Become informed about water policy issues related to coal bed methane development in Montana and Wyoming.

- Analyze selected water policy issues related to coal bed methane development in Montana and Wyoming.

- Promote the preparation of a timely, cost-effective, and adequate environmental impact statement (EIS) for coal bed methane development in Montana.
- Foster economic development that is environmentally and socially sound.
- Encourage public participation in coal bed methane policy development in a way that fosters productive harmony among various interests.

In partial fulfillment of the purpose of the Montana Environmental Policy Act (MEPA) pursuant to 75-1-102, MCA, facilitate state water policies that will encourage productive and enjoyable harmony between humans and their environment, protect the right to use and enjoy private property free of undue government regulation, promote efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humans, and enrich the understanding of the ecological systems and natural resources important to the state.

## Water Policy Goal

- Become informed and gain a better understanding of critical water policy issues occurring in Montana.

## Environmental Impact Statement

Monitoring the preparation of an EIS analyzing the impacts of coal bed methane development was a major focus of the Coal Bed Methane/Water Policy Subcommittee's activities. House Joint Resolution No. 27 (2001) requested that the EQC provide oversight for the state's preparation of or involvement in the EIS. The EIS was a joint project of the federal Bureau of Land Management (BLM), the Montana Department of Environmental Quality (DEQ), and the Montana Board of Oil and Gas Conservation (BOGC). New development of coal bed methane resources in Montana was on hold pending the completion of the EIS.

The Subcommittee was briefed on the status of the EIS and supplemental studies during meetings held on the following dates:

- September 10, 2001;
- December 10, 2001;
- February 7, 2002; and
  May 9, 2002.

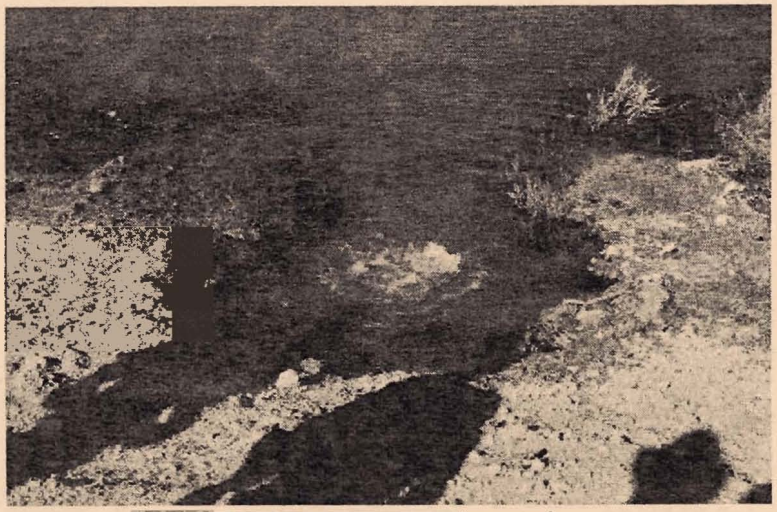
Staff from the lead agencies answered questions from members concerning the alternatives considered and the data analyzed.

A draft EIS was distributed for public comment in February 2002. Six public meetings were held and comments were due May 15, 2002. As of August 2002, the final EIS was scheduled to be completed by the end of 2002.

## Onsite Tour

The EQC visited coal bed methane facilities near Decker, Montana, and Arvada, Wyoming, on September 11, 2002. The tour was open to the public.

## Understanding the Science of Water and Soils in Relation to Coal Bed Methane Development



Discharge water entering pond
http://www.deq.mt.gov/coalbedmethane

The production of coal bed methane requires withdrawal of ground water in order to lower the pressure in the coal bed so methane can flow out of the coal. The withdrawal of ground water affects the quantity and quality of Montana's water resources. The Subcommittee and the full EQC were briefed on important scientific concepts and data related to the effect of coal bed methane development on the amount of water available, the quality of the water, and the effect of coal bed methane product water on soils. The topics covered during these presentations are summarized below.

**Soils and irrigation.** Water discharged from coal bed methane wells has the potential to adversely affect irrigation. Montana State University professor Jim Bauder explained concepts that are key to understanding the effect of coal bed methane product water on soils and crops to the Subcommittee (meeting minutes, December 10, 2001) and the full EQC (meeting minutes, February 8, 2002). Dr. Bauder discussed variables that affect the use of the water for irrigation, including salinity and sodicity, soil type, and crop type. He also discussed the importance of the relationship between salinity and the sodium adsorption ratio (SAR).

**Water quality.** Art Compton, administrator of the Planning, Prevention, and Assistance Division of the Montana DEQ also discussed water quality issues and water quality monitoring (Subcommittee meeting minutes, December 10, 2001).

- **Water quantity.** Montana Bureau of Mines and Geology hydrogeologist John Wheaton described the production of coal bed methane and the effect of coal bed methane development on ground water resources (Subcommittee meeting minutes, February 7, 2002; EQC meeting minutes, February 8, 2002). Wheaton discussed the rate of production of water from coal bed methane wells, the distance from a well or field that ground water drawdown may occur, the effect of the reduction of pressure in the aquifer on the yield from wells and springs, and the recovery of the aquifer through ground water recharge after production ceases. Wheaton emphasized that effects vary from site to site.

  Russell Levens, a hydrogeologist with the Department of Natural Resources and Conservation (DNRC) and presiding officer of the Technical Advisory Committee for the Powder River Controlled Ground Water Area discussed the need to monitor ground water levels and spring flows in and around the area of coal bed methane development (Subcommittee meeting

minutes, February 7, 2002). The Technical Advisory Committee serves as a forum for coordinating the monitoring activities of various entities.

## Water Rights

A panel of experts on water rights presented their views on mechanisms to protect existing water rights in areas of coal bed methane development (Subcommittee meeting minutes, February 7, 2002). Mechanisms discussed include establishment of a controlled ground water area, water mitigation requirements, water monitoring, and the Coal Bed Methane Protection Act (Chapter 531, Laws of 2001), which established a program to compensate landowners and water right holders for uncompensated damage caused by the development of coal bed methane. In response to questions that were raised, Subcommittee staff prepared a memorandum regarding water mitigation agreements.

## Perspectives on Coal Bed Methane Development

The Subcommittee and the full EQC heard presentations from several points of view on coal bed methane development. The topics covered during these presentations are summarized below.

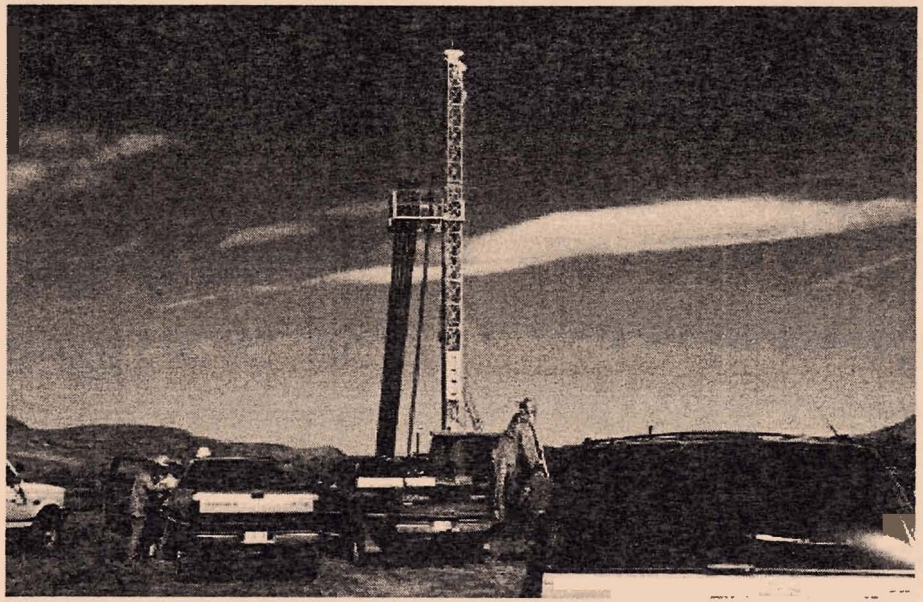
- **Landowners.** On its tour of coal bed methane sites in Wyoming, the full EQC heard from a landowner who discussed the benefits of coal bed methane development. The EQC also heard a presentation from a Montana landowner who had concerns about coal bed methane development (EQC meeting minutes, February 8, 2002).

- **Water management.** The Subcommittee heard presentations regarding the management of water produced from coal bed methane wells from an industry perspective and an environmental perspective (Subcommittee meeting minutes, December 10, 2001).

  **Public.** The Subcommittee heard comments from members of the audience after nearly every agenda item.

## Permitting and Leasing

Staff representing boards and agencies with the authority to lease coal bed natural gas or to permit production-related activities made presentations to the Subcommittee about their processes and requirements, including bonding requirements (Subcommittee meeting minutes, December 10, 2001). Agencies and boards represented included the Montana DEQ, the Montana BOGC, the BLM, the U.S. Environmental Protection Agency (EPA), and the DNRC. Subcommittee staff presented a general overview of the primary permits required for coal bed methane development in Wyoming that are administered by the State of Wyoming.



Coal bed methane drilling rig
http://www.deq.mt.gov/coalbedmethane/

Bruce Williams, representing the Montana Coal Bed Natural Gas Alliance, provided an industry perspective on permitting and leasing processes and requirements.

Tom Reid, supervisor of the Water Quality Discharge Permits section of the Montana DEQ Water Protection Bureau, discussed a draft general permit for coal bed methane product water. The DEQ issued the draft permit for public review in February 2002. Five public hearings were held and the deadline for written comments was May 15, 2002. A final permit will not be issued until the statewide programmatic EIS for coal bed methane development in Montana is completed and the record of decision has been signed.

The proposed general permit would only address discharges of coal bed methane water to off-drainage impoundments for the purpose of livestock or wildlife watering. Other discharges of coal bed methane water to state waters would be regulated through a different permit. The permit does not authorize the drilling of coal bed methane wells or the construction of impoundments. These activities are regulated by the Montana BOGC.

## Litigation

In September 2001, the Subcommittee was provided with a list of nine lawsuits related to coal bed methane development in Montana (Subcommittee meeting minutes, September 10, 2001, Attachment #15). The Subcommittee was updated on the status of litigation in July 2002.

## Mineral Rights

The Agency Oversight and MEPA Subcommittee of the EQC was informed about the process for identifying the owners of severed mineral rights (Oversight/MEPA Subcommittee meeting minutes, May 8, 2002). The panel included Monte Mason, DNRC; former Senator Tom Keating; Russ Gowen, Helena Abstract and Title; and Bonnie Ramey, Jefferson County Clerk and Recorder.

## Other Activities

The Subcommittee was informed of the following activities.

### Wyoming-Montana Water Quality Agreement

In September 2001, the directors of the environmental quality departments for Wyoming and Montana signed an interim memorandum of cooperation regarding coal bed methane development and water quality in the Powder and Little Powder Rivers. The agreement entails monitoring of water quality and regulatory action when identified thresholds are exceeded. The Subcommittee heard a brief report on this agreement on September 10, 2001.

### Water Quality Standards and Effluent Limitations

The Northern Cheyenne Tribe proposed numeric water quality standards for electrical conductivity (EC) and SAR. The Board of Environmental Review decided to initiate the rulemaking process to establish numeric water quality standards for EC and SAR.

Region 8 of the EPA was in the process of making a best professional judgment determination of effluent limitations that represent best available technology economically achievable for coal bed methane product waters. The determination will be used by the EPA to write permits in Indian Country. The analysis will also be available to inform the states in the implementation of delegated permit programs. (The Montana DEQ has been delegated the authority to issue permits outside of Indian Country in Montana.)

Total maximum daily loads (TMDLs) are required for some of the water bodies in the geographic area where coal bed methane development is occurring. The Montana DEQ announced that it was proposing to accelerate the schedule for development of TMDLs for the Powder and Tongue River watersheds and was intending to complete these TMDLs by 2002 (Subcommittee meeting minutes, February 7, 2002).

### Flathead Lake Biological Station Study

The Flathead Lake Biological Station, located at Yellow Bay, was conducting a scientific study of the ecological integrity of streams and rivers in light of coal bed methane development. A white paper based on the scientific research was to be prepared for the 2003 Legislature.

## Status of Drought in Montana

### Governor's Drought Advisory Committee

The EQC was briefed by Lieutenant Governor Karl Ohs on Montana's drought status during the May 23, 2001, meeting. Lieutenant Governor Ohs gave an update on the Governor's Drought Advisory Committee and gave EQC members a copy of the Governor's report on "The Potential for Drought in Montana for 2001" (EQC meeting minutes, May 23, 2001, Exhibit #5). The EQC members discussed various issues with the Lieutenant Governor, including the possibility of opening up Conservation Reserve Program (CRP) acreages to haying and grazing, the status of reservoir levels, the determination of the severity of the drought, the drought and recreational uses of Montana's public lands, and drought management plans for wildlife.

### Montana Natural Resource Information System (NRIS)

EQC members were given a presentation by NRIS staff on available online resources related to drought monitoring. Members were shown various web pages on the NRIS website that may prove valuable to them in judging the severity of the drought in their particular areas, as well as statewide.

# Total Maximum Daily Loads (TMDLs)

## Status of Statewide Program

Art Compton, administrator of the Planning, Prevention, and Assistance Division of the DEQ gave a brief overview to the Coal Bed Methane/Water Policy Subcommittee discussing the status of TMDLs in Montana (Subcommittee meeting minutes, February 7, 2002). The State is operating under a federal district court order[1] that states that all of the waters that were listed on the 1996 303(d) list must have TMDLs completed for them by May 5, 2007. The DEQ has prioritized the listed waters by watershed and has assigned a year of completion to each watershed. There were approximately 800 stream reaches on the 1996 303(d) list. The DEQ met the first deadline for the submittal of four watersheds by December 2001. There are eight watersheds to be completed and submitted to the EPA by December 2002. Any waters that have been added to the 303(d) list since the completion of the 1996 list will have 10 years from their listing date to have TMDLs completed.

A spring flush at Sage Creek
Photo courtesy of the Liberty County Conservation District

## Sage Creek TMDL -- A Learning Process

The Sage Creek TMDL was one of the first TMDLs completed in Montana and was submitted by DEQ to the EPA in December 2001. Local representatives of the Sage Creek Watershed Alliance expressed concern about the process and procedures used by DEQ when developing the TMDL. The EQC felt that these issues should be discussed with the DEQ to try to improve the TMDL process and

[1] Friends of the Wild Swan, Inc. v. U.S. Environmental Protection Agency; Judge Donald W. Molloy, United States District Court, District of Montana, Missoula Division, Order, Cause No. CV 97-35-M-DWM. June 21, 2000.

make it as smooth and productive as possible. A group of EQC members met with both the Sage Creek Watershed Alliance and the DEQ in separate meetings to try to determine if there were issues with the TMDL development process that may have statewide impacts (Subcommittee meeting minutes, March 25, 2002). The EQC members who attended the meetings felt it was important to discuss the issues that had been raised in an effort to make the TMDL development process better in the future and in other watersheds.

Some of the issues addressed were:

- the difference between eastern Montana and western Montana watersheds; the lack of available data for many watersheds;
- DEQ staff changes and shortages;
- data collected and baseline conditions established in drought conditions vs. normal precipitation periods;
- monitoring requirements of the TMDLs -- whether there is DEQ staff available to complete this requirement or whether local watershed groups are going to be expected to complete the monitoring;
- because DEQ staff experience is mainly in the western Montana watersheds, whether training can be done on eastern Montana watersheds; and
- contracting with private industry to complete the TMDLs.

(Subcommittee meeting minutes, March 25, 2002)

## Reserved Water Rights Compact Commission

The Reserved Water Rights Compact Commission (Commission) can trace its existence to the 1972 Constitution, which created an obligation on the part of the state to keep a central record of all water rights in the state. Between 1972 and 1979, there were several attempts to implement the

central recordkeeping requirement. Those efforts culminated in the Water Use Act of 1979. Montana undertook a fairly burdensome and extensive process of trying to quantify all the water rights in Montana. When the Water Use Act was being written, it was pointed out that a special provision for federal and Indian water rights was needed. Those rights are fundamentally different than water rights under state law. In an effort to establish a system to deal with those rights, the Legislature created the Commission. The idea was that the Commission would attempt to negotiate water rights settlements without having to litigate those rights in court. This is unique to Montana; most other states have had to resort to costly and lengthy legal battles.

### Compacts That Have Been Ratified By Congress

Since the Commission began in the 1980s, they have completed the following compacts:

- Northern Cheyenne Tribe;
- Chippewa Cree Tribe;
- All national parks in Montana; and
- Many federal agencies' water rights, e.g., U.S. Fish and Wildlife Service

### Compacts That Are Waiting for Congressional Ratification

- Fort Peck; and
- Crow Tribe.

### Compacts Yet to be Completed

- Flathead Reservation;

Blackfeet Reservation;
Turtle Mountain Chippewa Tribe allotments; and
National Forest Service lands.

## Litigation Related to Water Policy Issues

Throughout the interim, the Subcommittee reviewed various court decisions that addressed water policy issues. These decisions were reviewed and discussed in an effort to keep well-informed about how water policy laws are being implemented and challenged. The cases that they reviewed are:

### Montana Supreme Court

- Cape-France Enterprises v. The Estate of Lola H. Peed, 2001 MT 139
  (Subcommittee meeting minutes, September 10, 2001, Attachment #3)
  - Clean and healthful environment.

- Jeanne Gaudreau and Jerry Montelius v. Clinton Irrigation District, 2001 MT 164
  (Subcommittee meeting minutes, September 10, 2001, Attachments #4 and #5)
  - Negligence and trespass as they apply to accidental flooding, due to ice jams, of neighboring property by an irrigation district canal.

- Bitterroot River Protection Association, Inc. v. Bitterroot Conservation District, 2002 MT 66
  (Subcommittee meeting minutes, May 8, 2002, Exhibit #3)
  - Who can make the initial determination of whether a body of water constitutes a "stream" as defined in statute.

In the Matter of: The Estate of Antoinette Hobbs, Deceased, 2002 MT 85
(Subcommittee meeting minutes, July 29, 2002, Exhibit #5)

- Transfer of land between high-water mark and meander line to heirs.

### Other Court Decisions

Friends of the Marias and Missouri River Citizens, Inc. v. DNRC and Sunny Brook Colony, Inc.
Montana First Judicial Court, County of Lewis and Clark, Cause No. CDV-2001-390
(Subcommittee meeting minutes, December 10, 2001)

- Challenging DNRC's issuance of a beneficial use permit on the Marias River.
- This case was dismissed in District Court.

## EQC Statutory Responsibilities With Regard to Water Policy

The EQC is required by statute, 85-2-105, MCA, to analyze and comment on various water policy programs. The programs that the EQC addressed this interim were:

Natural Resource Information System, 90-15-305, MCA (EQC meeting minutes, May 23, 2001)

- Water Leasing Study, 85-2-436, MCA (Sent to Council)
- Renewable Resource Grant and Loan Program, 85-1-621, MCA (EQC meeting minutes, July 30, 2002)

# Abbreviations

| | |
|---|---|
| BOGC | Montana Board of Oil and Gas Conservation |
| BLM | U.S. Bureau of Land Management |
| CRP | Conservation Reserve Program |
| DEQ | Montana Department of Environmental Quality |
| DNRC | Montana Department of Natural Resources and Conservation |
| EIS | Environmental Impact Statement |
| EC | Electrical Conductivity |
| EPA | U.S. Environmental Protection Agency |
| EQC | Environmental Quality Council |
| MEPA | Montana Environmental Policy Act |
| NRIS | Montana Natural Resource Information System |
| SAR | Sodium Adsorption Ratio |
| TMDL | Total Maximum Daily Load |

# Information Resources

## Environmental Quality Council

### Coal Bed Methane/Water Policy Subcommittee

- Krista Lee Evans (kevans@mt.gov)
  Mary Vandenbosch (mvandenbosch@mt.gov)
  Legislative Environmental Policy Office
  P.O. Box 201704
  Helena, MT 59620-1704
  (406) 444-3742

### Environmental Quality Council

- Legislative Environmental Policy Office
  P.O. Box 201704
  Helena, MT 59620-1704
  (406) 444-3742

# Coal Bed Methane

## General Information

http://www.deq.mt.gov/coalbedmethane/index.asp

## Environmental Impact Statement

- Mary Bloom
  Coal Bed Methane Program Manager
  Bureau of Land Management
  111 Garryowen Road
  Miles City, Montana 59301
  (406) 233-3649

  Greg Hallsten
  Coal Bed Methane Project Manager
  Montana Department of Environmental Quality
  Permitting and Compliance Division
  P.O. Box 200901
  Helena, MT 59620-0901
  (406) 444-3276

- Tom Richmond, Administrator
  Montana Board of Oil and Gas Conservation
  2535 St. John's Avenue
  Billings, MT 59102
  (406) 656-0040

- http://www.deq.mt.gov/coalbedmethane/EIS.asp

### Water Rights

- Mary Vandenbosch, Resource Policy Analyst, Legislative Environmental Policy Office, memorandum re: *Water Mitigation Agreements for Coal Bed Methane Development*, February 28, 2002.

### EPA Best Professional Judgment Determination

- Mike Reed
  U.S. Environmental Protection Agency
  Region 8
  999 18th Street, Suite 300
  Denver, CO 80202-2466
  (303) 312-6132

- http://www.epa.gov/region08/water/wastewater/npdeshome/cbm/cbm.html