

**Coalbed Methane/
Natural Gas in Coal
Public Information Sessions
Synopsis**

**Prepared for
The CBM/NGC Multi-Stakeholder Advisory Committee**

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Following are highlights of the public information sessions. A more detailed summary will be posted in the near future.

Introduction

This synopsis provides a brief overview of the Coalbed Methane (CBM)/Natural Gas in Coal (NGC) public information sessions. Prepared by consultant Sari Shernofsky for the CBM/NGC Multi-Stakeholder Advisory Committee (MAC), this synopsis does not represent government policy.

The eight sessions held across the province were generally well attended with strong interest on the part of attendees. Their questions and concerns ranged from water, well density and surface disturbances to broad environmental issues.

The CBM/NGC working groups have received a copy of the summary to help them in their work, which includes preparing draft recommendations. If you have any questions, please contact the Department of Energy Public Information Centre at (780) 427-0265, toll free: 310-0000.

Background

With recent increases in natural gas prices, maturing conventional natural gas reserves and new technologies under development, interest in NGC is increasing in Alberta. NGC is currently in the early stages of development in the province. While NGC falls under the rules and regulations for all natural gas development, there may be a need for additional amendments to the existing framework to ensure responsible development.

Alberta Energy initiated a NGC review with several other government departments and the Alberta Energy and Utilities Board (EUB) in October 2002 to ensure the regulations governing its continued development balance economic benefits for Albertans with protecting land, air and water resources. The Alberta government is proceeding cautiously – hearing from Albertans, learning from the experience of other jurisdictions, and collecting data from recently drilled NGC wells in the province.

The Consultation Initiative

In 2003, Alberta Energy initiated a multi-stakeholder consultation to gather input and determine what changes or additions, if any, might be needed to current regulations. The three-stage NGC initiative involves partnerships with other government departments, including: Alberta Environment; the EUB; Agriculture, Food and Rural Development; Innovation and Science; and Sustainable Resource Development. Stage One involved pre-consultation preparation. Stage Two involved the formation of the Advisory Committee and working groups, public information sessions and the preparation of this Session Summary. Stage Three will involve the development and submission of recommendations to government.

Stage One

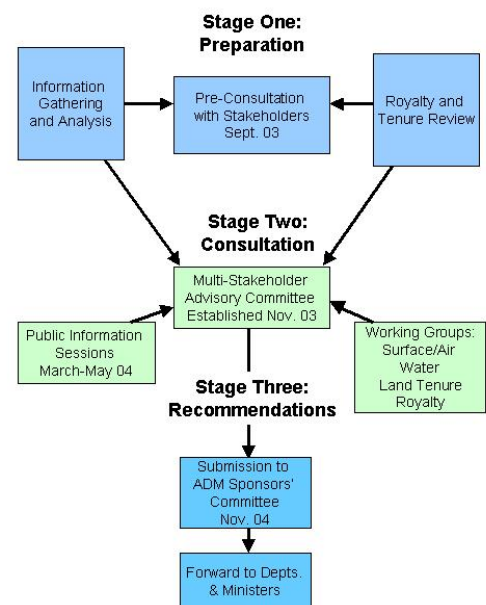
Stage One involved internal preparation, including the gathering and analysis of data and the creation of background material for the pre-consultation. An in-depth review of royalty and tenure issues was also initiated. A pre-consultation meeting was held in September 2003 with representatives from a number of stakeholder groups to identify and prioritize issues and to prepare input for the next steps. A key suggestion from the pre-consultation was the formation of a CBM/NGC Multi-Stakeholder Advisory Committee (MAC).

Stage Two

The MAC was established in November 2003. Members of the MAC represent environmental organizations, landowners, agriculture, local government, the energy industry and provincial government departments. Its mandate includes:

- ◆ Advising on the design of the consultation process and specific milestones;

NGC Consultation



- ◆ Advising on the scope of issues to be addressed;
- ◆ Keeping the consultation focused on NGC development; and
- ◆ Coordinating and consolidating possible regulatory changes.

As well, two working groups, with membership from a cross-section of stakeholder organizations, were formed to study water and surface/air issues. These working groups were added to the existing groups working on royalty and tenure issues. The MAC is guiding the consultation process, with a target of submitting recommendations to the government in November 2004 (Stage Three). ***Note - since the posting of this report in July 2004, the target date of submitting recommendations has been revised to summer 2005.**

Stage Two of the process also involved public participation and related activities. The MAC approved a series of public information sessions that were held in the spring of 2004. These sessions were intended to:

- ◆ Provide information on NGC, local development, provincial regulations and the consultation process; and
- ◆ Create opportunities for members of the public and stakeholder groups to provide input on issues related to NGC development.

The input from these sessions, as well as other NGC community meetings attended by government representatives, was forwarded to the MAC and the working groups.

Stage Three

Stage Three will involve the development and submission of recommendations by the MAC to the ADM Sponsor Committee in November 2004. ***Note - since the posting of this report in July 2004, the target date of submitting recommendations has been revised to summer 2005.**

Public Information Sessions

Purpose

In the spring of 2004, public information sessions provided Albertans interested in NGC development with an opportunity to learn more about the technical aspects of NGC, local development, regulations and the consultation initiative. Attendees were also invited to share their suggestions and provide input on issues related to NGC.

Locations

The public information sessions were held in communities where NGC activity is already taking place or is expected to take place in the foreseeable future. A total of eight sessions were held in the following locations:

Public Information Session Locations		
Date	Location	# of Attendees (approx.)
March 30	Rocky Mountain House	90
March 31	Wetaskiwin	135
April 1	Stettler	140
April 6	Barrhead	60
April 7	Strathmore	170
April 8	Drayton Valley	70
April 15	Pincher Creek	90
May 19	Grande Prairie	10
TOTAL		765

Format

Representatives from Alberta Energy, Alberta Environment, Sustainable Resource Development and the EUB, as well as from the MAC, were in attendance at the public information sessions. The meetings ran from 6:30 pm to 9:30 pm.

The first part of the evening provided attendees with an opportunity to informally gather information about NGC. A number of information stations were set up on the perimeter of the room, each station representing a government group, i.e., Alberta Energy, Alberta Environment, Sustainable Resource Development, and the EUB. The MAC also hosted its own information station. Each station had posters, maps and handouts available. Technical experts were on hand to discuss NGC and answer questions.

The formal part of the evening began at 7:00 pm, with brief presentations by representatives of Alberta Energy, the EUB, Alberta Environment and the MAC. Following these presentations, the floor was opened for questions and comments. These were provided verbally by attendees, although some took advantage of the opportunity to write questions and concerns on cards that were passed to government technical experts for response. Energy department staff made notes of questions and comments by attendees.

Attendees then had additional opportunity to visit the information stations and engage the technical experts in dialogue. Attendees were also encouraged to fill out an evaluation form.

A total of approximately 765 members of the public attended the sessions.

See Appendix A for copies of the overview of the public information session, presentations, handouts, maps and posters.

Highlights of the Information Sessions

Generally, attendees were seeking more data, more studies, along with increased monitoring and enforcement of regulations. A number of attendees suggested more government staff might be required to carry out these tasks. These concerns applied across a number of issues including water quality, reclamation and aquifers. In four locations, a number of attendees requested a moratorium on NGC development until more data is available.

Water

There was interest and concern about the handling/disposal of saline water. Attendees were also concerned about the potential depletion of fresh water from the province's aquifers at a time when fresh water is already in short supply, especially in the southern part of the province. Landowners had concerns about the impact of NGC on their own water wells. They also were concerned about the testing and monitoring process that would ensure sufficient quality water continues to be available to them. Some attendees also questioned what happens to the water after it is pumped out of the aquifer. Attendees expressed concern that there was not enough information on underground aquifers and their potential for depletion, co-mingling or contamination.

Guidelines for Canadian Drinking Water Quality set a limit of 500 milligrams per litre total dissolved solids (mg/l TDS) for human consumption, meaning that beyond this level, there are usually taste and odour concerns, but not necessarily health related concerns. Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses set a limit of 3,000 mg/l TDS for livestock water.

The following is a compilation of the more common questions asked by attendees over the course of the eight information sessions. The detailed answers reflect input from a number of government departments and may be slightly different from the verbal answers provided at the sessions.

Q. What is the difference between saline and non-saline groundwater?

A. *The Water Act defines saline groundwater as having greater than 4,000 milligrams per litre of total dissolved solids (mg/l TDS). Water with less than or equal to 4,000 mg/l TDS can be used for a variety of purposes, depending on the specific quality, but only a portion of this water is considered to be "fresh water" and is suitable for human consumption.*

Q. How do you dispose of saline water that may be produced along with oil and gas?

A. *To ensure the environment and farmland is protected, saline water must be deep well injected. The EUB regulates produced water disposal and there are technical standards and testing requirements to ensure wellbore integrity, sound disposal operations and that the water stays where it is disposed.*

Q. After years of drilling and dewatering coal seams, will the pressure be drawn down, thereby affecting my water well? Won't long term dewatering have huge impacts?

A. *In Alberta, there are three types of NGC operations; dry with little or no water, saline water and non-saline water.*

Unless the NGC and domestic water wells are in the same zone and close together or are hydraulically connected, little or no impact is expected. If doubts exist, a water diversion authorization can require observation wells to be established to show early detection of problems before it impacts the public. Companies must respond to all water well concerns. They must investigate and report the results of their investigation to the stakeholder and to government agencies.

Moreover, the potential for impact depends on site-specific conditions. Alberta Environment has the obligation to protect existing users. Long-term dewatering will likely have more impact. Monitoring is key to early detection of any potential impact.

Q. Shouldn't industry be responsible for testing water wells, rather than the landowner?

A. *Applicants for an EUB well license are required to notify potentially affected landowners and fully disclose its plans, identify potential impacts, discuss development options and ways to minimize impacts. This includes offset domestic water wells. Applicants are encouraged to conduct a water well test to establish baseline data before drilling activities start. This protects both the landowner and the company. The parties should discuss how the test is conducted, who runs the test and how the results are to be communicated. Landowners may refuse access to their wells but the EUB and Alberta Environment strongly encourages all parties to cooperate.*

If a water well dispute subsequently occurs, the well owner can either raise concerns directly with the company, Alberta Environment or through the Farmers' Advocate. An initial screening will occur for all complaints. Last year over 95% of public water well complaints were determined to have non-energy related causes. If reasons exist to suggest an energy cause, then the energy company will be required to conduct a full hydrogeology study and make the results public.

Additional information may be found at Office of the Farmers' Advocate #305, 7000 - 113 Street, J G O'Donoghue Building, Edmonton AB T6H 5T6, Telephone (780) 427-2433.

Q. What happens to the water that is pumped out of the NGC well?

A. *While most NGC activity is currently directed towards developing coals without water production or with saline water production, some NGC development may involve non-saline water production of varying quantities and qualities. Any production of non-saline water, after a 30-day test to confirm the situation, must be authorized by Alberta Environment. Disposal or re-use of this water must have the approval of both Alberta Environment and EUB.*

Non-saline groundwater may be used for any suitable purpose, subject to approval. In some instances, the non-saline water pumped from a NGC well could be re-injected into the same aquifer. Public notice is required in all cases.

Q. Does Alberta Environment know the amount and quality of aquifers in Alberta?

A. *Through the provincial water strategy (Water for Life), Alberta Environment has identified the need for more complete information about groundwater (aquifers) in Alberta. Obtaining this information will be a key aspect of this strategy.*

Aquifers are not uniform everywhere, thus the amount and quality of groundwater present at any particular place is dependent on the aquifer characteristics and the occurrence of permeable deposits. Field investigations are required to confirm published information. Additional information on groundwater and aquifers in Alberta can be found at: <http://www3.gov.ab.ca/env/water/GWSW/quantity/index.cfm>.

Maximizing, cataloguing and cross-referencing the information obtained about aquifers as a result of oil and gas exploration and development activity is one way that information about groundwater and aquifers will be enhanced.

In the Plains area – the main bedrock aquifers are sandstones belonging to the Milk River, Paskapoo and Belly River Formations. Sandstone and coal units above 150 metres of the Horseshoe Canyon Formation contain groundwater of varying quality and quantity. Groundwater may also be obtained from sand and/or gravel units within the overlying bedrock and in the buried valleys (e.g. Beverly and Helina Channels).

Q. Who monitors the water to ensure the water table is not reduced?

A. *Where necessary, the companies can be required, as a condition of their water diversion authorizations, to monitor conditions and assess the impact during the course of their operations.*

Well Density and Surface Impact

Attendees asked for clarification on spacing between the wells, the number of wells that would be allowed per section, and the potential impact of a large number of wells. Several landowners believe an increased number of wells per section will mean increased infrastructure such as roads and pipelines, increased traffic and noise, and that any increased inconvenience should be reflected in the compensation they receive.

The following is a compilation of the more common questions asked by attendees over the course of the eight information sessions. The detailed answers reflect input from a number of government departments and may be slightly different from the verbal answers provided at the sessions.

Q. How many wells are allowed per section?

A. *NGC may require greater well density than conventional gas wells in order to optimize gas recovery from the coals. Each situation is addressed individually by application to the EUB. Standard natural gas well density for much of Alberta starts at one well per pool per section, with provisions for greater density. A significant portion of the province, notably in areas of shallower natural gas development, has common density of two to four wells per pool per section. By comparison, most oil development requires four to eight wells per pool per section with heavy oil or bitumen*

needing 16 or 32 or more wells per pool per section. NGC operators have generally expressed interest in between two to eight NGC wells per section.

The EUB regulates the number of wells that can be produced from the same pool at the same time. As a well's ability to effectively drain the hydrocarbons reflects both rock and fluid properties, the number of wells can vary considerably through the province. Application to reduce spacing and increase well density may be made in accordance with the Oil and Gas Conservation Regulations. Such applications address energy conservation needs, impact on offset mineral owners and potential impact on the environment and the public.

It is important to understand any reference to the number of wells in EUB spacing orders reflects the number of subsurface drainage points required to effectively recover the resource and not the number of surface locations that may ultimately be approved. Surface impacts can be significantly reduced by applying good land use management practices and consulting with the landowner. Where appropriate, use of pad drilling, directionally drilling from lower value/lower impact sites, use of common roads and use of pipeline corridors can reduce the surface impact.

Q. Are companies required to notify landowners when the well is a NGC well? Are they required to indicate the total number of wells they will be drilling?

A. A company is required to fully disclose its proposed application, including the nature of the development and potential impacts. This allows landowners to understand what is being proposed and provide input. EUB Guide 56 includes a written description of the purpose of a proposed well and a code specific for NGC. A landowner should know if a NGC well is being proposed. Applicants are also expected to disclose future plans to the extent they are known. An initial NGC well is often a test to assess local performance with only conceptual plans at best. Where there are multi-year, multi well drilling plans, these companies are expected to disclose more details.

In response to numerous public comments on this issue, the EUB is considering issuing a clarification document to industry to ensure full disclosure of a NGC well.

Q. Why can a well be approved before an adjacent landowner is notified? There are probably many instances when a well is closer to an adjacent landowner.

A. The EUB regulates minimum public notification distances and provides explanations of situations where additional public contact is required to satisfy legislative requirements. Notification distances usually reflect the risk nature of the development, sensitivity of the environment and impact of setbacks. Each application can be different. Applicants must conduct the minimum requirements and review the situation to see if additional public contacts are required. Local authorities and synergy groups can assist an applicant to understand local needs. Applicants must respond to all requests for information and notify the EUB of any outstanding concerns. Public notice requirements are subject to audit and operations can be suspended if deficiencies are found.

For a NGC well with low pressure, sweet gas production with no non-saline water and no setbacks outside of the surface lease, the current minimum public notification is 100 m.

Broad Environmental Impacts

A number of attendees were concerned about the potential of environmental impact on the area and requested cumulative impact studies. They wanted to know how an Environmental Impact Assessment (EIA) would be triggered and believed EIA's should be done on a regional basis.

The following is a compilation of the more common questions asked by attendees over the course of the eight information sessions. The detailed answers reflect input from a number of government departments and may be slightly different from the verbal answers provided at the sessions.

Q. What monitoring programs are in place and who is responsible to ensure the environment is protected?

A. The EUB, as the lead energy regulator, conducts field inspections of all energy development approved under its various Acts and regulations. The EUB field staff applies a ranking system to prioritize inspections. The inherent risk of the activity, operator performance and sensitivity of the area are all factors. The EUB field staff responds to all public complaints.

An annual report is published summarizing inspection work and enforcement actions taken. In addition, field inspection reports are available to landowners for energy development on their lands.

On public lands, Sustainable Resource Development staff also checks for compliance with its surface leases. Environment problems, especially if they are off lease or threaten surface bodies of water, are noted immediately to Alberta Environment for additional work or remediation. License and approval holders under the Water Act and Environmental Protection and Enhancement Act are required to report the results of their monitoring programs to Alberta Environment.

Q. When will the EUB put an end to the practice of flaring and venting?

A. This is a government priority. We have been working with the Clean Air Strategic Alliance (CASA) and solution gas flaring has been reduced by over 70% when compared to a 1996 baseline. Alberta Environment and CASA have introduced clear guidelines for industry. Alberta Environment has established ambient air quality standards that, if exceeded are in violation of the Environmental Protection & Enhancement Act and subject to heavy fines. Within this framework, industry is working to capture gas, rather than vent or flare it and further reductions in flaring and venting are anticipated.

Q. Cumulative impacts are a concern. It is not clear how such a development would impact a particular area. At what point would the development be large enough to trigger an EIA? Will there be cumulative land impact studies undertaken that include the impact of NGC on land values, as well as socioeconomic and recreational impacts? Will this kind of analysis take into account conventional oil and gas development as well? Will you consider setting thresholds?

A. All companies must assess the impact of its development as it relates to the specifics of its proposal and the type and use of the potentially affected land. For select energy activity, usually very large scale or high risk, formal EIA's are required. The extent and nature of the supporting information for NGC development is determined on a case-by-case application basis. The Surface/Air Issues Working Group is currently reviewing this issue.

Q. Shouldn't we stop all NGC development until November when the MAC recommendations are in, or at least stop fresh water development?

A. NGC is in the early stages of development in Alberta. It is important to continue to collect and analyze information from NGC developments and respond with appropriate policy changes where necessary. It is also important to remember that an extensive regulatory framework for natural gas development, including the protection of groundwater, exists in Alberta and is being applied to all NGC development.

Other Issues

Issues such as noise, ownership and royalty were also raised, but not to the same degree as the previous issues identified. For example, some concerns were expressed about noise and location of compressors. As well, with regard to mineral rights ownership and royalties, landowners wanted information about ownership and suggested that a portion of the royalties should be used to mitigate local impacts. The need for an examination of the potential impacts of NGC development on specific areas prior to leasing the natural gas rights was also raised at some sessions.

The above are highlights of the public information sessions. A more detailed summary will be posted in the near future.