
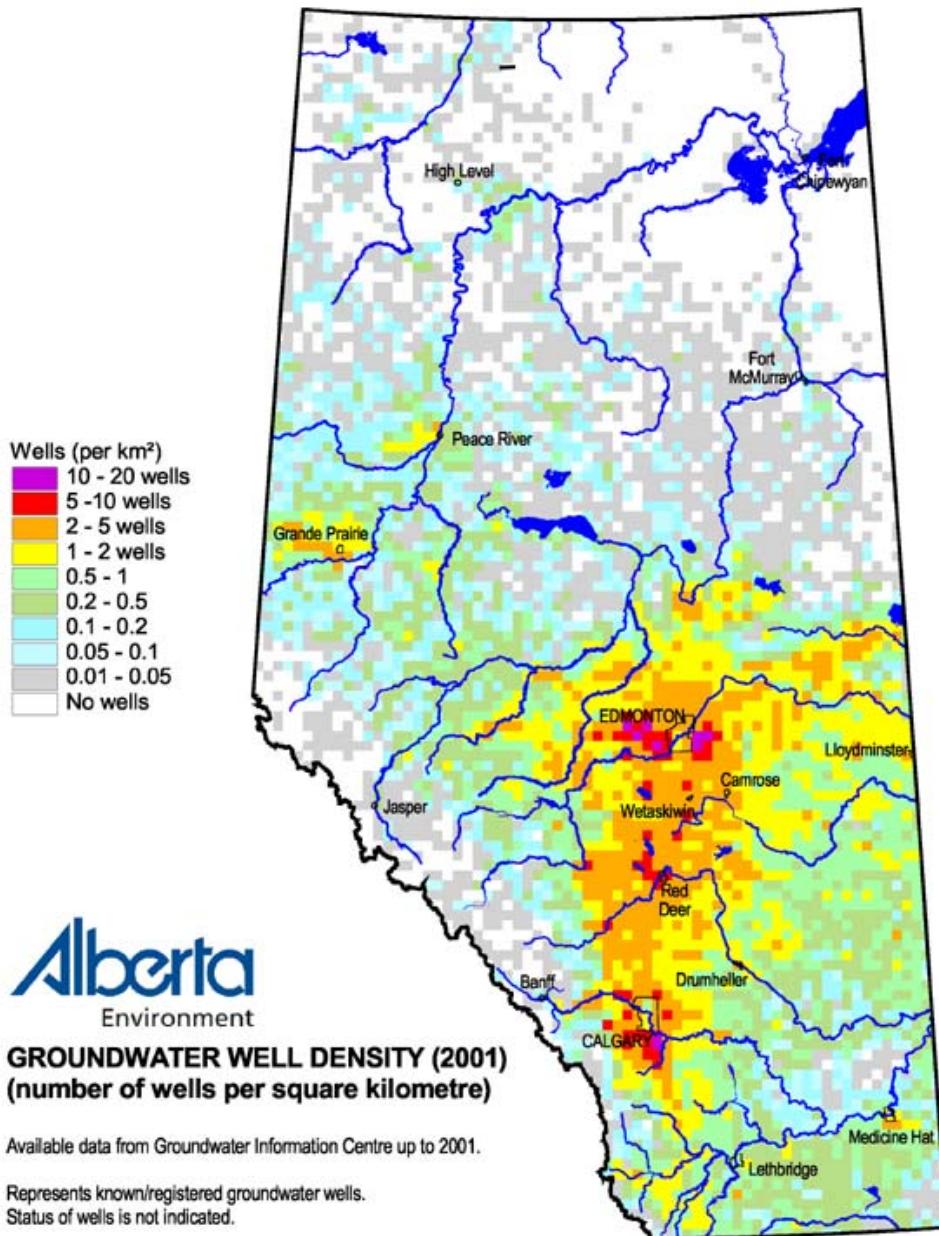


Alberta Environment update on groundwater policy development and programs

Heather von Hauff
Alberta Environment
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Outline

- Key Recommendations (Water for Life, MAC, Rosenberg Regional Workshop)
 - Groundwater Programs and Research
 - Policy update
 - Questions
- 




September 9, 2005

- Approx. 500,000 groundwater wells developed in Alberta
- Usage is greatest in the central Alberta

Water for Life

- Safe, secure drinking water supply
- Healthy aquatic ecosystems
- Reliable, quality water supplies for a sustainable economy
- Knowledge and Research
- Partnerships
 - Alberta Water Council
 - Watershed Planning & Advisory Councils
 - Watershed Stewardship Groups
- Water Conservation

Rosenberg Regional Workshop

- Improve knowledge about the resource
 - Current management tools may not meet emerging needs
 - Groundwater should not be managed the same as surface water supplies
 - Review Base of Groundwater Protection
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Multi-Stakeholder Advisory Committee on Coalbed Methane

- Improve scientific information on AB's groundwater resources through
 - Groundwater mapping and inventory work
 - Expansion of the provincial groundwater monitoring network
- Protect Groundwater Supplies
 - Improve and streamline regulations for CBM development
- Water Conservation and Beneficial Use

Base of Groundwater Protection

- Best estimate of the depth at which saline groundwater is likely to occur
- Updated March 2007
- Available online - Alberta Geological Survey

Provincial Groundwater Mapping and Inventory Program

- AENV-AGS partnership
- Improve knowledge of groundwater quantity and quality
- Develop tools to assist in sustainable management of groundwater resources
- Edmonton-Calgary Corridor is first phase


Expansion of Provincial Groundwater Monitoring Network

- Revised groundwater sampling program to respond to CBM concerns
- Sampled over 70 wells in past 1.5 years
- Added 4 new monitoring wells at 3 sites
- Plan to add additional wells as part of ECC program

Improving Access to Information

- Groundwater maps and reports
- CBM Baseline Testing Database
- Alberta Water Information Centre

Public Education

- “Train the trainer”
 - Develop FAQs and improve website
 - Water well maintenance sessions
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Beneficial Use of Water

Recent studies supported or initiated by AENV:

- Cost-benefit analysis of treating saline water (AMEC, 2007)
- Produced Water Beneficial Re-Use (Fossil Water, 2007)
- Review of monthly water production data from CBM wells above the Base of Groundwater Protection (2007)

Beneficial Use – Cost Benefit Analysis

Key Areas Explored:

- How the use and protection of groundwater is undertaken in other jurisdictions
- Overview of available technologies to treat water between 4,000- 10,000 mg/L

Key Findings:

- USEPA recognizes groundwater with a concentration of total dissolved solids less than 10,000 mg/L as a potential source of drinking water
- Many jurisdictions around the world treat saline water economically
- Water treatment may be more economical than disposal

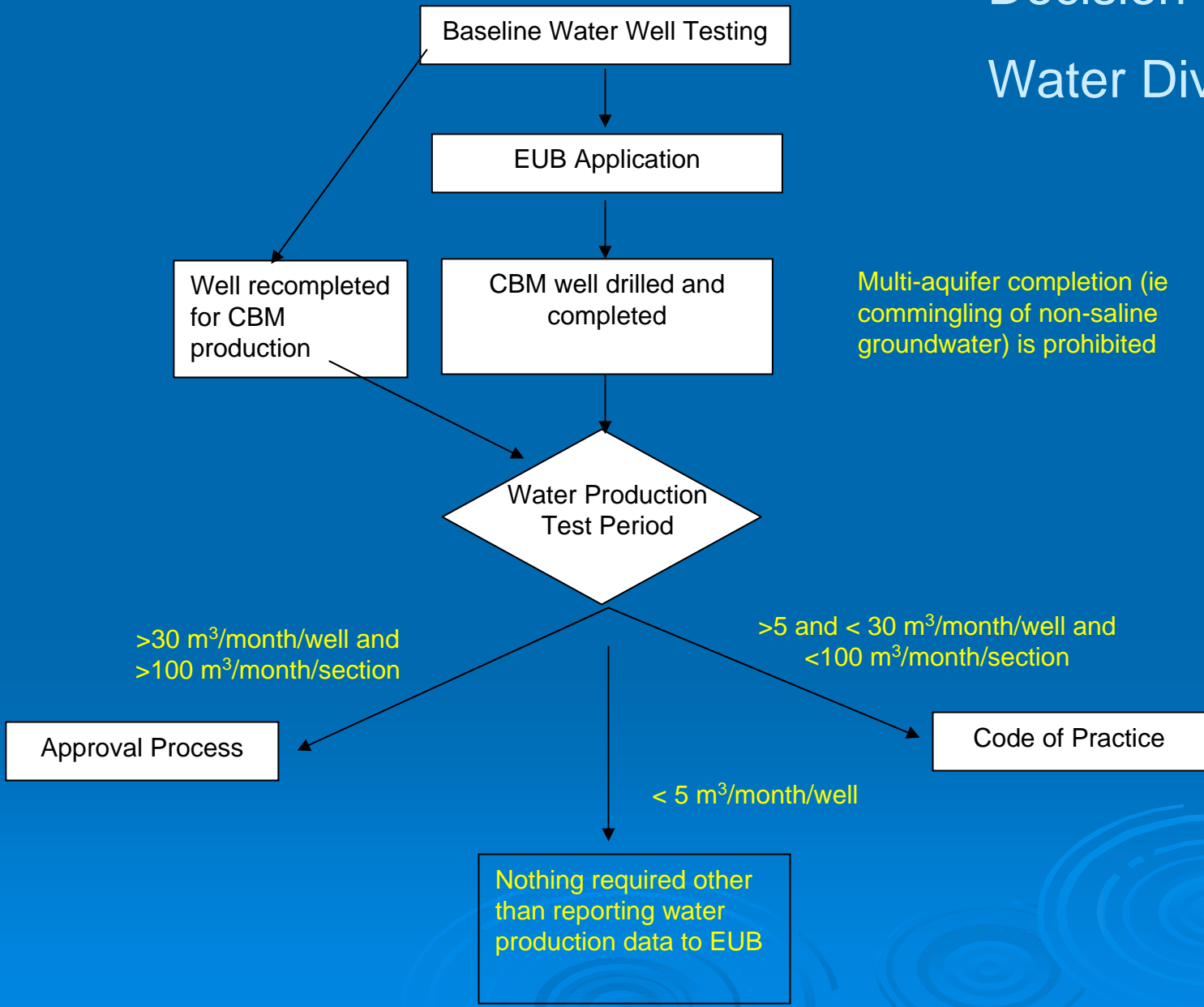
CBM Related Science and Research

- Report on Dissolved and Free Gas Sampling Techniques (Summer 2007)
- AGS Ardley Coal Zone Risk Assessment
 - to evaluate potential for gas migration into overlying aquifers and head loss in water wells from CBM production in Ardley (Spring 2008)
- Potential Gas Migration due to CBM Development (Spring 2008)

Review of Baseline Water Well Testing Standard

- AENV commitment to review Standard after 6 months and 12 months with report at 18 months
- Review slowed by issues related to data loading and database development
- Next science panel meeting in December
- Expect report in early new year
- May be changes to standard
- Template will be revised following report
- AENV working toward online submission of results

Decision Tree – Water Diversions



Multi-aquifer completion (ie commingling of non-saline groundwater) is prohibited

Conclusions

- Albertans are concerned about sustainable groundwater management
- New investment in groundwater mapping and science
- AENV is committed to the goals of Water for Life and continuing to work with Stakeholders