

Bulletin 2010-22

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ERCB Processes Related to Carbon Capture and Storage (CCS) Projects

The Energy Resources Conservation Board (ERCB) has been regulating the disposal, storage, and injection of fluids to underground geologic formations in Alberta for many years and with respect to carbon dioxide (CO₂) for more than 20 years. The ERCB has processes in place to provide for the effective regulation of these activities, including the more than 50 schemes involving CO₂ currently operating in Alberta.

This bulletin is to inform readers that the ERCB intends to use these existing processes when processing applications for the development and operation of carbon capture and storage (CCS) projects in Alberta.

ERCB *Directive 056: Energy Development Applications and Schedules* and *Directive 065: Resources Applications for Conventional Oil and Gas Reservoirs* set out the key application requirements for prospective developers of CCS projects with respect to transportation of CO₂ via pipelines and CO₂ disposal to underground geologic formations. Readers are reminded that they must comply with other ERCB regulations (not specifically identified in the following text), as well as legislation, laws, regulations, and requirements of other government jurisdictions, that may be applicable to CCS projects in Alberta. The ERCB will continue to evaluate the process for regulating CCS operations in Alberta and will publish updates to that process as appropriate.

1 The Right to Dispose

The right to dispose of CO₂ into an underground geological formation must be obtained from the mineral rights owner prior to submitting a well licence application in accordance with *Directive 056* and prior to submitting a CO₂ disposal scheme application in accordance with *Directive 065*.

In Alberta, the mineral rights owner is either the Alberta Crown (Alberta Energy) or Freehold (private ownership). A letter to the applicant from the mineral rights owner or lessee (as described in *Directive 065*, Section 4.2.2: Equity and Safety) authorizing the CCS operations is generally acceptable to demonstrate the right to dispose of CO₂.

2 ERCB Energy Development Application (*Directive 056*)

- *Directive 056* sets out requirements and procedures applicable to ERCB licensing of a CO₂ disposal well, including a participant involvement program (Section 2), and cites additional regulatory requirements (Appendix 2).
- In addition to the well licence procedures noted above, *Directive 056* also contains procedures and requirements applicable to licensing of pipelines for transportation of CO₂.
- Design of pipelines is based on *Canadian Standards Association (CSA) Z662-07: Oil and Gas Pipeline Systems*. Site-specific designs for CO₂ pipelines required by the ERCB are described on the *Directive 056* Web page in the FAQs: Pipelines Technical tab, CO₂ Pipelines Q/A.

3 ERCB CO₂ Disposal Scheme Application (*Directive 065*)

- *Directive 065*, Unit 4, sets out requirements and procedures for making an application to the ERCB for approval of disposal of fluids containing CO₂. Section 4.2 of *Directive 065* sets out application requirements specific to acid gas disposal (CO₂ is an acid gas). *Directive 065*, Unit 2, also covers enhanced recovery schemes, which may be connected to carbon capture facilities.
- *Directive 051: Injection and Disposal Wells* sets out well classifications, completion, logging, and testing requirements for wells injecting CO₂.

Additional site-specific or project-specific information may be required to address issues related to the public interest.

4 Monitoring, Reporting, and Safety

- The *Pipeline Regulation (AR 84/2009)* describes requirements for pipeline monitoring and reporting.
- *Directive 007: Volumetric and Infrastructure Requirements* and *Directive 017: Measurement Requirements for Upstream Oil and Gas* describe general requirements and procedures for measurement.
- The *Directive 065* application process provides the mechanism for proposing methods of monitoring and reporting injected CO₂ volumes, pressures, composition, and other pertinent data (in addition to standard volumetric reporting via the Petroleum Registry of Alberta).
- *Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry* sets out procedures and protocols that the ERCB expects operators to have in place and be able to demonstrate before commencing CCS operations.
- The majority of project-specific operating conditions, monitoring, and reporting requirements will be set out in the scheme approval documents.

5 Closure—Suspension, Abandonment, and Reclamation

- The *Pipeline Act (2008)* and *Pipeline Regulation* prescribe the requirements for pipeline discontinuation and abandonment.
- *Directive 020: Well Abandonment Guide* sets out requirements for abandonment, casing removal, zonal abandonments, and plug backs in wells.

Additional well or scheme abandonment requirements may be specified in ERCB scheme approval documents. Surface reclamation criteria, including those for CO₂ disposal schemes, are the jurisdiction of Alberta Environment.

6 Liability

Liability requirements and procedures are identified in *Directive 001: Requirements for Site-Specific Liability Assessments in Support of the EUB's Liability Management Programs* and *Directive 006: Licensee Liability Rating (LLR) Program and Licence Transfer Process*. Additional liability issues may be addressed in energy development approval or scheme approval documents.

7 Ongoing Work

The ERCB is continuing to evaluate the technical aspects of CO₂ regulation. As more knowledge is gained, the ERCB may publish updates to the regulatory process for CCS as appropriate.

Readers are again reminded that other ERCB regulations (not identified specifically above) may also be applicable to CCS projects in Alberta. Applicants are expected to adhere to all ERCB requirements and processes, as well as applicable requirements of other government jurisdictions.

8 For More Information

Inquiries regarding this bulletin may be directed to Tristan Goodman at 403-297-6902 or Herb Longworth at 403-297-7190.

<original signed by>

Dan McFadyen
Chairman