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# Laboratory Measurements Of Coals For Coal Bed Methane Production

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## ABSTRACT

Within the past decade methane production from coal seams has progressed from demonstration phase to exploration phase and currently to economic production phase. Although large reserves of coal exist in Alberta, commercial CBM production has only just begun.

Our research encompasses a laboratory evaluation of some parameters important to CBM production from Alberta coals, enhanced coal bed methane (ECBM) production, and greenhouse gas disposal. The possibility of using waste gases ($CO_2$, flue gas) for ECBM and simultaneously disposing of these gases is seriously taken under consideration. Coal permeability and gas storage capacity for different gases are two of the most crucial parameters in CBM and ECBM development. For this reason, much of the focus when assessing CBM reservoirs in Canada is on understanding cleats and natural fractures, both in outcrop and in core taken from well bores.

Different gases adsorb on coal to different degrees. Swelling and shrinkage caused by adsorption and desorption of different gases or by displacement of one gas by another, are expected to affect coal permeability. We are planning to conduct core flood experiments in coal to measure the permeability to different gases under equilibrium conditions and during the displacement of methane by other gases ($CO_2$, flue gas). Data on equilibrium adsorption properties (adsorption isotherms) are independently obtained for comparison with flow experiments.

In this project, we will present preliminary data on our experimental work.