

CANADIAN GEOSCIENCE SUCCESS STORIES

MANITOBA

Shallow Unconventional Cretaceous Shale Gas Project, southwestern Manitoba

HEADLINE:

The Manitoba Geological Survey's research on gas-bearing shale puts Manitoba on Canada's unconventional gas map.

DESCRIPTION OF SUCCESS:

- Collection of basic geological information by the Manitoba Geological Survey has provided energy companies the framework they need to explore Manitoba's shale gas resource, by filling in a major knowledge gap and providing a point of contact for industry to answer questions about shale gas potential in the province.
- Several land leases have been acquired to explore for shale gas outside of the traditional oil producing area, adding to provincial revenue.

DESCRIPTION OF GEOSCIENCE PROJECT:

- The Shallow Unconventional Cretaceous Shale Gas Project was born from a response to industry demand for information on this topic.
- It is a multi-year investigation, which started in 2008, of the shale gas potential of the Cretaceous shale sequence in southwest Manitoba. The goal of the project is to summarize the shallow shale gas prospects for Manitoba using a multi-faceted approach.
- MGS activities included updated bedrock mapping along the entire length of the Manitoba Escarpment.
- A large shale database has been compiled, complete with organic and inorganic geochemistry and bulk mineralogy data, for each shale horizon. Encouraging results include the total organic carbon of a potential gas reservoir has been measured at 10 wt. %.
- Groundwater and gas sampling and analyses of domestic water wells and old gas wells had indicated the gas is dry and biogenic in origin.

- Scanning electron microscopy (SEM) was used to characterize the pores in an organic siltstone, and was found to be comparable to those of other shale gas plays.
- Detailed subsurface correlations and mapping allows the shallow gas shows in the east to be extrapolated deeper in the subsurface towards the west, where gas wells are more likely to be economic.
- Log analysis has identified potential porous gas-bearing intervals in the subsurface.

TESTIMONIAL:

"I have found the shale gas papers have brought me up the learning curve very quickly. It would have taken me a year or two to have researched what I could read in a couple of hours. Currently I am using the work to assist my review of the shale gas opportunities in the SW corner of Manitoba. I would appreciate you notifying me of any additional work you are doing in shale gas."

- Dale Timmons, Senior Geologist, PennWest Energy, November 2010

PREPARED BY: Michelle P.B. Nicolas, P. Geo., Petroleum and Phanerozoic Geologist, 204-945-6571

DATE: March 3, 2011