



Horn River Basin Aquifer Assessment Project

HYDROGEOLOGIC CHARACTERIZATION OF HORN RIVER BASIN AQUIFERS

REQUEST FOR PROPOSALS

INTRODUCTION

New shale gas developments in the Horn River Basin of northeastern British Columbia require water sources and disposal zones, in support of drilling and completions operations. Geoscience BC is working with the Horn River Basin Producer's Group (HRBPG) to characterize subsurface aquifers throughout the area. Geoscience BC and the HRBPG are jointly funding specific aquifer geoscience projects, the results of which will be shared initially amongst the entire group and ultimately made publicly available. Project management and overall data compilation / interpretation have been assigned to Petrel Robertson Consulting Ltd. (PRCL).

HYDROGEOLOGIC CHARACTERIZATION PROJECT

Aquifer potential has been identified primarily in Mississippian carbonate ramp strata, generally called the Debolt Formation. Mattson Formation sandstones along the western flank of the Basin, and basal Cretaceous sandstones along the southern and eastern flanks may provide more local source / disposal zones. PRCL is currently mapping these aquifers, and characterizing their reservoir quality across the region.

Shallow Quaternary (glacial) channels may also offer aquifer potential, but have not been systematically mapped. To avoid use of surface or shallow subsurface potable water sources the first priority is to evaluate deeper saline sources where waste fluid disposal can also be an option.

Development plans call for operators to drill up to 16 horizontal wells from each drilling pad, and to perform >10 large fracs in each well. Each drilling pad will require water production capacity of at least 20,000 BWPD during development operations. High injection capacity is also required, as 35-50% of the frac water will be re-injected. Water production and injection should take place as close to the drillsites as possible, as operators wish to avoid long-range transportation of large water volumes.

The ultimate goal of the project is to map out aquifer hydrogeology, focusing on production and injection potential across the producing area of the Horn River Basin.

AVAILABLE DATA

Most wells drilled to data are situated around the margins of the Horn River Basin; well control is very poor near the planned developments. A number of drillstem tests, and some production and injection data are available, primarily from wells around the basin margin. Geoscience BC has conditionally approved funding pump / injectivity testing and water analyses for several new aquifer wells drilled by the producers in their development areas. These new data should be available for the hydrogeologic characterization project.

PROPOSAL SPECIFICATIONS

Respondents to this RFP should provide:

- Details of relevant expertise and experience
- Detailed workplan for hydrogeologic characterization, addressing:
 - Use of available data
 - Integration with PRCL stratigraphic framework and reservoir quality assessment
 - Specific methods to be employed
 - Focus should be on Cretaceous and older aquifers, but we need direction on evaluation of Quaternary aquifer potential as well
- Detailed description of deliverables
- Timetable for commencement and completion of work
- Project cost estimate

Proposals should be submitted by April 20 2009 to:

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