



Horn River Basin Aquifer Assessment Project

PETROGRAPHIC CHARACTERIZATION OF DRILL CUTTINGS

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.

DRILL CUTTINGS PETROGRAPHY PROJECT

Core data are sparse in the aquifer zones of the Horn River Basin, and well data are concentrated on the basin margins. Petrographic characterization of potential aquifer zones is thus seen as an important component of mapping and understanding depositional and diagenetic processes, and ultimately reservoir quality distribution. Suitable aquifer potential has been identified primarily in Mississippian carbonate ramp facies, 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.

The attached spreadsheet lists wells and intervals which require detailed petrographic characterization. This work will include:

- Screen samples to ensure they are of good quality, and representative of the strata present
- Describe petrography, including:
 - Lithological / mineralogical description
 - Grain morphology / fossil description
 - Depositional facies interpretation
 - Diagenetic alteration interpretation
 - Semi-quantitative porosity / permeability assessment

- Sample selected intervals for thin section preparation. Thin sections will be described to augment chip sample descriptions. Other analytical methods (X-ray diffraction analysis, SEM analysis) may be undertaken very selectively if required. Take photographs to document key features.

DELIVERABLES

For each well:

- Graphic log summarizing sample cutting descriptions vs depth
- Summary of the logged section, broken out by formation if applicable, describing overall geology and general reservoir characteristics

A summary report should be generated addressing overall reservoir characteristics and distribution of each interval, commenting upon regional trends in depositional facies, grain size / particle type trends, and diagenesis.

Respondents are expected to use reasonable geological judgment in focusing efforts upon potential reservoir intervals, while treating less prospective intervals in less detail.

PROPOSAL SPECIFICATIONS

Respondents to this RFP should provide:

- Details of relevant expertise and experience
- Timetable for commencement and completion of work
- Detailed description of deliverables
- Project cost estimate

Proposals should be submitted by April 20 2009 to:

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