

Best Practice Guide to Optimizing Multizone Coalbed Natural Gas Well Completions

Lead Organization: WellDog, Inc.

Key Contact: Bret Noecker

(307) 721-8875, bnoecker@welldog.com

SWC Co-funding: \$200,000

The purpose of this study is to provide assistance with multizone completions by using spectroscopic analysis of coalbed reservoir geochemistry to measure critical desorption pressure (CDP), gas content (GC) and percent saturation in coalbed natural gas (CBNG) wells from existing leases in the Powder River Basin (T52N R77W, Sec. 20, Johnson County, Wyoming). Results for these key reservoir parameters will be economically feasible and available in less than one week, rather than several months using conventional coring techniques, allowing the producer the ability to directly compare and predict each seam's performance prior to substantial water production. The study objectives are:

- Use WellDog's proprietary technology to measure CDP, GC, and percent saturation in up to 27 seams, from twelve wells with both single zone and multizone completions.
- Use CDP, GC, and percent saturation to evaluate the production potential of several seams in nine wells. Having the ability to identify a seam with low GC, CDP and high potential for water contribution, a producer can choose to isolate such a seam and reduce water production without sacrificing economic gas production.
- Compare the gas and water production of off-set wells, completed by the PRB industry standard practice of single zone, under-reamed completion method, to the gas and water production of the wells with multizone completion to determine effectiveness in providing enhanced gas production.

Of the 17,000 CBNG wells in the PRB, over 9,600 produce less than 30 mcf/day. While multizone completions should enhance economic gas production, reservoir variability in the PRB have not allowed for broad success. In order to induce increased production from these wells, it is necessary to employ WellDog's technology and identify re-entry zones that contain economic gas.