changes in facies. In either case, these relationships indicate that basement linears were active during deposition or influenced diagenetic fluid movement through the reservoir system at a later time in the Greater Green River basin.

[1] Orion International Ltd.

[2] LSSI
Denver, CO

[3] Pearson Technologies, Inc.
Lakewood, CO

AN INTEGRATED ANALYSIS OF THE MADISON FORMATION: MADDEN FIELD, FREMONT COUNTY, WYOMING

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ABSTRACT

The ultra deep and ultra expensive drilling occurring in the Madden field of the Wind River basin commands a lot of preparation and analysis. This 25,000-foot reservoir possesses multiple trillion cubic feet capabilities from no less than four wellbores to as many as 11. Daily production rates per wellbore range from 40 to 50 MMCF. These rates are constrained due to processing capacity. Wells are capable of substantially higher rates since calculated Absolute Open Flows of more than 150 MMCF have been recorded.

The gas being produced is extremely sour and dirty. The hydrogen sulfide content hovers around 12% and is coupled with a carbon dioxide content of 21%. This leaves a hydrocarbon content of only 67%, which is basically all methane. Expensive gas plant facilities are required to treat and process this gas. The current daily inlet volume is 130 MMCF but construction is underway to increase this to 310 MMCF at a cost of about 1.5 MM$ per million cubic feet.

The productive reservoir is fractured, dolomitized limestone situated on an immense structural closure. The structural closure is bounded on all sides by thrust faults with vertical displacements as high as 5,000'. A gas column at least 1,200' thick has been proven.

The justification of this project has been achieved through thorough investigation of the geology, geophysics, and reservoir engineering. The latest technologies have been employed to maximize success. Risk analysis, reservoir simulation, three dimensional seismic interpretation, core analysis, outcrop analysis, and subsurface e-log analysis are the tools that have been utilized to generate a collective evaluation of this world class gas reserve.

[1] Burlington Resources, Inc.
Midland, TX