

# A New Coring Technology to Quantify Hydrocarbon Content and Saturation

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## **Abstract**

*The industry is challenged to accurately determine the total hydrocarbon composition and saturations in both conventional and unconventional reservoirs. Several attempts have been employed in the past with limited success. These attempts include methods to collect expelled pore space fluids for further analysis. The attempts have resulted in technologies that provide limited core in terms of length and diameter, low recoveries, poor success ratios, and complicated core processing. Pressure coring itself has been viewed as a solution but has been unreliable and introduces inherent safety concerns by bringing high-pressure systems to the surface. The combination of poor reliability and safety risks has resulted in infrequent use of the various technologies and methods to analyze pore fluids. A new tool has been developed to overcome the safety concerns, simplify core processing, and provide the means for quantitative answers.*

*The technology is a pseudo pressure core in that the core and associated pore space fluids are cut at reservoir conditions and brought to surface in a closed, variable volume system. The primary objective is to provide quality core while retaining all pore space fluids for analysis. The variable volume characteristic allows gas and fluids to expand while coming out of the hole without creating pressure build up resulting in unnecessary safety risks. The tool, named QuickCapture, delivers core up to 10 ft in length and diameters up to 4". After the core is cut and prior to tripping out of the hole, the core barrel is closed and sealed. Collection chambers are positioned in the assembly to capture expelled gases and liquids for further analysis. The tool is configured such that overpressure is maintained on the core to prevent complete escape of the pore space fluids until bleeding can be accomplished in a controlled manner.*

*This presentation describes the design and functionality of the QuickCapture technology including operating, core handling and fluids collection procedures. The technology has been used in various sediments across multiple geographies. A shale gas case history will be presented to highlight the application of the technology.*

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**Matt Bjorum** is Global Product Line Manager for Corpro's QuickCapture Services based in Denver, Colorado USA. He is involved in the research and development of the tool to improve industry understanding on a global basis. He has over 10 years of experience in the oil and gas industry with focus on emerging unconventional markets and specialized in core analysis and well testing services in both the Eastern and Western Hemispheres. Matt holds a Bachelor of Arts in Business Administration from Chadron State College (Chadron, Nebraska).