

Advanced Cutting Analysis to define reservoir Geochemistry (TOC, Thermal Maturity, etc.) and Elemental Analysis to determine Brittleness Index, and Wellbore Placement with Geo-steering

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ABSTRACT

In the exploration and exploitation of Unconventional reservoirs, advanced cuttings analysis at the wellsite is fast becoming one of the most important means of assessing each well that is drilled and delivers a greater understanding of overall quality of the resource play. By utilizing techniques and analytical measurements with a Source Rock Analyzer, X-ray Diffraction, and X-ray Florescence at the wellsite, we can accurately determine the desired target of the wellbore with near lab quality results. Each of these analytical processes delivers a unique data set that gives a near real time assessment of the optimal path of where we want to be in the formation (in the lateral). The SRA will give us the organic content (TOC, thermal maturity) we need to understand the hydrocarbon accumulation and the XRD and XRF will give us the inorganic information for in-depth understanding of the rock and chemostratigraphy. Much like the renowned fable of Hansel and Gretel who left a trail of bread crumbs to find their way home; there is a trail of organic and inorganic signatures that show us the way home in the wellbore. This presentation will give the general knowledge of the advanced cutting analysis deliverables and will focus on two important data sets of the Brittleness Index and using elements and trace elements that aid in Geo-steering.