

Game Changing Sampling Technology

Tribor Rakela*

Schlumberger Product Center, Sugarland, Texas, United States

rakelat@sugar-land.oilfield.slb.com

Abstract

A fundamental problem in wireline sampling of open hole formation analysis is uncertainty due to contamination of the sample fluid with drilling fluid filtrate. During a conventional sampling operation, fluid withdrawn from the reservoir shows continuously diminished contamination with some filtrate always entering the perimeter of the sampling zone. The achievement of zero contamination in fluid samples is theoretically impossible with the older technique. Pumping times can be excessive at each depth of interest while contamination levels diminish enough to acquire a representative sample.

With knowledge of the reservoir physics, an innovative tool design, and a technique known as focused sampling, it is finally possible to achieve negligibly low sample contamination levels with shorter pump out times per depth. Near zero contamination levels reduce the uncertainties in laboratory analysis and has a direct impact in the completion design, reserves estimation, flow assurance and future production facilities.

A comparison of conventional and focused sampling will be shown to illustrate the new, innovative focused sampling technology.