

# **The development of conventional gas logging data interpretation method**

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## **Abstract:**

The hydrocarbon detecting methods of Mud logging are the geochemical principle applications on the hydrocarbon detection while drilling. The components of gas logging include C1, C2, C3, iC4, nC4, iC5 and nC5. The Pixler chart and triangular chart, which establish the basement of gas logging data application and are applied for a long time, have had a huge contribution to the oil and gas reservoir evaluation.

Based on the previous technique methods, the purpose of this article is to discuss the application method of gas logging data while drilling to evaluate the oil/gas reservoir, to make a further application for the traditional method. From Pixler chart, the  $I_p$  was defined as the hydrocarbon index, and from triangular chart, the  $I_{\Delta}$  was defined as the fluid type index. These two indexes can be made a plot according to the drilling depth which can directly show gas data characteristics for the whole well hydrocarbon evaluation, and it is a new way for gas logging data application.

Through a case study of gas logging data, it shows the difference among hydrocarbon zones, water zones, oil-bearing water zones and coal zones, and emphasizes the importance of comprehensive mud logging analysis. The light hydrocarbon ratio from gas logging can be used not only for the oil/gas layers evaluation, but also for the reservoir comprehensive evaluation.