Differences and Similarities: Wireline and LWD Images

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SUMMARY

Historically during the development of logging while drilling technologies, LWD, there has been a tendency to compare real time LWD data with wireline data, and expect an overlay. This simplification is in most reservoirs not favorable to any of the data acquired, this due to the differences in the technologies and physical conditions of the wellbore during the logging operations.

The physical expectation is that there will be, and should be, differences between the two logging runs, first with LWD and followed by wireline. The interpretational challenges are to understand the environment in where the data are obtained, and perform the correct analytical method to ensure that the end result will be correct.

By combining the different images from the two methods a better understanding of the interpretation phase is obtained and the utilization of the one or the other method, or both, is improving on the overall interpretation. By evaluating the same borehole, with images from LWD and wireline the interpretation methodology is developed for an improved solution of the structure.
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Both methods have challenges in going from the raw data to the end product of a “true” interpretation. By knowing the corrections to apply and the factors affecting both the measurements, the interpreted result should be of a similar nature. This paper looks into the interpretation methods used and information applied in the interpretation phase of both measurements to ensure the best possible result.

Combining images from different times in the construction of a well and applying the correct techniques will improve on the overall understanding of the borehole wall and the overall structure. By implementing time lapsed image interpretation the stability and geomechanical stability of the borehole wall will also be better understood.

The presentation will cover areas where both wireline and LWD images are run and describe the differences and similarities, and how they are handled and explained.