

Paper 16**Borehole gravimetry survey in Central Luconia carbonate reservoirs**

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A borehole gravimetry log (BHGM) was run in four wells during the MLNG-2 Appraisal Campaign in 1992. The gravimetry tool is a wireline logging tool that records formation density far away from the wellbore. Its investigation depth is dependent on the density contrast as well as the size of the structure which has to be resolved. Density differences from large structures can be detected several thousand feet away from the borehole compared to a conventional density log which only measures the immediate surrounding of the wellbore. The objective of running BHGM in the wells was to determine lateral continuity of the gas-bearing carbonate reservoirs.

General performance of the tool was good. An accurate BHGM density profile was obtained for each well without major operational difficulty. The BHGM density showed an overall agreement with wireline density log indicating a good lateral continuity of the reservoirs. Small scale differences between wireline density log and BHGM can be explained by local variations in porosity. In one of the wells, the BHGM confirmed that a tight layer observed on the density log is a localised feature. BHGM measurement is non-directional; integration between wireline density log, BHGM and geological/seismic data would be required to produce a geometrical reservoir model.

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