

Expro Excellence

Expro's RAS tool helps customer gain 100% increase in oil production from well

Well Intervention



Objectives and background

- The main challenge of running the tool in the Llanos Basin was to obtain precise hydrocarbon saturation and porosity data of the sandy deposits interbedded within carbon layers. This can mask the true oil saturation and with NaCl salinities of less than 2K ppm it also represented a challenge
- The customer wanted to optimise the production of fluids from the well. The requirement was to measure the actual hydrocarbon saturations in the reservoir, allowing them to make an informed decision on whether to convert the well into an injector or to perforate new intervals to improve production
- The geological conditions in the Llanos Basin make it a prolific reservoir, with thin layers of sand and porosities of up to 22% accompanied by interbedding of carbon and formation water

Expro Excellence

- Expro presented the Reservoir Analysis System (RAS) tool to the customer, offering saturation monitoring, contact movement identification, recognition of bypassed gas/oil. This technology is also able to identify flow behind the casing
- Expro recommended the RAS tool to measure the current saturation conditions of the reservoir and to provide the customer with an accurate response

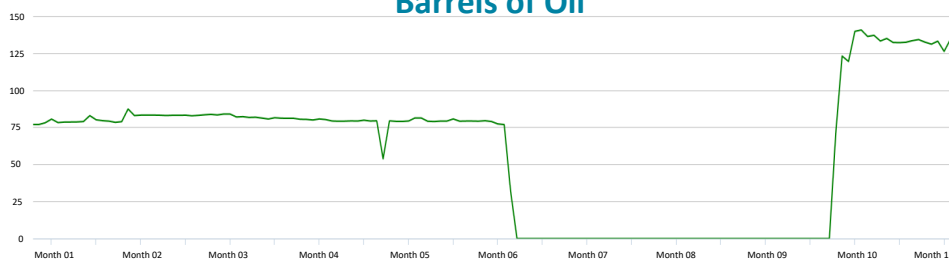
- As part of pre-job planning, petro physical modelling was performed, taking the open hole and cementation logs to help estimate the clay volume and porosity of the rock. This helped to serve as input for the calibration of the information supplied by the RAS tool
- The tool was initially run in sigma mode, then three subsequent runs in carbon-oxygen (C/O) mode were performed which helped determine the statistical certainty of the curves. This served as a basis for highlighting areas of carbon and gas for which special processing of the information was conducted. The porosity curves from the tool were compared with those from the OH log to obtain an x-plot of the ratio C/O vs PhiT to finally obtain sufficient data to determine the saturation curve

Value to the client

- From the initial data interpretation, it was evident that there were oil zones being bypassed by the open hole logs that were pessimistic. The customer decided to perforate the interval, which resulted in a 100% increase in oil production from the well
- The result generated from this project has led Expro to extend RAS technology into other wells in the basin and in other fields within Colombia



Barrels of Oil



Contact

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