

# **ANALYSIS OF RESERVOIR DYNAMIC BEHAVIOUR USING 4D SEISMIC OVER THE AZERI-CHIRAG-GUNESHLI (ACG) FIELD**

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Repetitive 3D seismic surveys or “4D” remains one of the best tools to monitor reservoir dynamic behaviour between wells. BP has been implementing this technology globally for the last 20 years. It has proven to be cost-effective, protects the base production, helps to increase oil recovery and allows optimization of the depletion strategy of the field through new well delivery. Ahead of any 4D campaign, rock property and seismic modelling should be undertaken to ensure that any seismic response detected in the reservoir can be properly attributed to changes in the fluid, saturation and pressure changes in reservoir conditions as well as to identify the optimum periodicity for repeat shooting to identify these changes.

ACG has had a very successful recent history of 4D seismic acquisition. This has included repetitive data collection of ocean bottom cable (OBC) as well as towed streamer (TS) seismic surveys. In 2016, a further 4D Towed Streamer monitor survey was acquired across the Azeri and Chirag fields providing the latest monitor to the 1995 baseline survey, 2002 Chirag survey and the 2012 East Azeri survey. Through fast track processing, the seismic data was made available to interpreters 3 months after final shot. Rapid interpretation led to an optimization of the drilling campaign through fluid risk identification. It also provided information for a better understanding of fluid movement. This paper reviews some of the key observations from this information and the impact on the field’s depletion plan.