

RINGKASAN

ANALISIS PEKERJAAN *REMEDIAL CEMENTING* GUNA MENINGKATKAN ASPEK *WELL INTEGRITY* PADA SUMUR OTG-03 LAPANGAN KJG

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Analisis log CBL-VDL penyemenan primer sumur “OTG-03” pada zona perforasi atau interval kedalaman 1639-1641 mMD memiliki harga amplitudo berkisar 10-39 mV, dengan harga CS rata-rata 195 psi, dan nilai bond index rata-rata 0.46. Pada kurva VDL untuk pembacaan *casing arrival* dan *formation arrival* masih dapat terlihat jelas bentuknya, menunjukkan bonding semen yang kurang baik. Dari data USIT log dan ALFA log juga menunjukkan adanya indikasi *chanelling* atau aliran belakang casing dari lapisan bawahnya menuju zona perfoasi. Dari data *production history*, dilakukan analisa *chan's diagnostic plot*, melalui pengeplotan nilai *WOR* dan *WOR derivative* dengan waktu produksi, diprediksi kemungkinan terjadi indikasi *Near Wellbore Water Channeling* sehingga diperlukan *mitigation plan* berupa operasi *squeeze cementing* guna mengatasi permasalahan tersebut.

Metodologi yang digunakan pada penulisan kali ini adalah menganalisa kurva CBL VDL baik secara kualitatif maupun kuantitatif, yang dikorelasikan dengan analisa log USIT dan log ALFA, serta melakukan analisa problem produksi melalui *chan's diagnostic plot*. Melakukan evaluasi perhitungan operasional penyemenan *squeeze*, yang meliputi perhitungan volume *slurry*, volume aditif, ketinggian kolom fluida, *Maximum Allowable Surface Pressure* (MASP) dan waktu operasi. Setelah itu hasil pekerjaan *squeeze* dianalisis secara kualitatif dan kuantitatif menggunakan analisis kurva CBL-VDL, log USIT, dan performa produksi sumur.

Total cement slurry yang dibutuhkan adalah sebanyak 5.27 bbl atau 17 sack. Berdasarkan analisa CBL-VDL secara kualitatif dan kuantitatif setelah dilakukannya *squeeze cementing* didapatkan nilai rata-rata *compressive strength* sebesar 716.6 psi dan nilai rata-rata *bond index* sebesar 0.839, yang mana sudah mencapai target cut off. Dari pembacaan USIT log juga menunjukkan good bonding cement. Lalu dari data produksi juga menunjukkan adanya peningkatan performa produksi dan penurunan harga water cut.

Kata kunci: *Squeeze Cementing*, *Well integrity*, CBL-VDL, USIT

ABSTRACT

ANALYSIS OF REMEDIAL CEMENTING JOB TO ENHANCE WELL INTEGRITY ASPECTS AT OTG-03 WELL, KJG FIELD.

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Analysis log CBL-VDL primary sealing well “OTG-03” on perforation zone or depth interval 1639-1641 mMD has an amplitude price ranging from 10-39 mV, with an average CS price of 195 psi, and an average bond index value of 0.46. On the VDL curve for the arrival case reading and arrival formation can still be clearly visible its shape, showing a poor cement bonding. From the USIT log and ALFA log data also showed indications of channelling or reverse flow of the casing from its lower layer towards the perfoase zone. From the data production history, conducted analysis of chan’s diagnostic plot, through plotting WOR and WOR derivative values with production time, predicted the possibility of Near Wellbore Water Channeling indications so that a mitigation plan such as squeeze cementing operation is needed to solve the problem.

The methodology used in this writing is to analyze the VDL CBL curves both qualitatively and quantitatively, which is correlated with the analysis of the USIT and ALFA logs, as well as conducting production problem analysis through chan's diagnostic plot. Evaluate the operational calculations of squeeze squeezing, which includes calculation of slurry volume, additive volume, fluid column height, Maximum Allowable Surface Pressure (MASP) and operating time. After that, the squeeze work results are analyzed qualitatively and quantitatively using CBL-VDL curve analysis, USIT log, and well production performance.

The total slurry cement needed was as much as 5.27 bbl or 17 sacks. Based on the qualitative and quantitative analysis of the CBL-VDL after doing the squeeze cementing obtained an average compressive strength of 716.6 psi and an average bond index of 0.839, which has reached the cut off target. USIT log readings also showed good bonding of cement. Then from production data also shows an improvement in production performance and a fall in the price of water cut.

Keywords: Squeeze Cementing, Well integrity, CBL-VDL, USIT