

ABSTRAK

ANALISIS POTENSI CADANGAN DAN PRODUKSI UNTUK PEMILIHAN LAPISAN TARGET KUPL SERTA EVALUASI STRATEGI *COMMINGLE COMPLETION* PADA SUMUR S LAPANGAN DP

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Lapangan DP yang terletak di Cekungan Tarakan merupakan lapangan tua dengan karakteristik *water drive* dominan, di mana Sumur “S” mengalami penurunan produksi akibat peningkatan *water cut* hingga 98% dan laju alir minyak mendekati batas keekonomian. Untuk mengatasi hal tersebut, dilakukan kajian strategi kerja ulang pindah lapisan (KUPL) dengan metode *commingle completion* pada Lapisan A-1 dan A-2 yang teridentifikasi memiliki potensi petrofisika dan tekanan reservoir yang layak. Metode penelitian meliputi evaluasi produksi Lapisan A-0, interpretasi *lumping log* dan PTFA, estimasi OOIP dan *reserves* dengan pendekatan volumetrik, serta simulasi performa produksi menggunakan IPR, VLP, dan DCA. Selanjutnya dilakukan evaluasi keekonomian menggunakan parameter NPV, IRR, dan POT dalam skema *PSC cost recovery*. Hasil studi menunjukkan OOIP sebesar 106,71 MSTB, *reserves* 42,82 MSTB, dan laju awal produksi 78,84194 BOPD dengan *remaining reserve* 8,65 MSTB serta umur produksi 0,71 tahun. Evaluasi keekonomian memberikan nilai NPV sebesar USD 190.445, IRR 191%, dan waktu balik modal 0,36 tahun. Berdasarkan hasil teknis dan keekonomian tersebut, strategi kerja ulang Sumur “S” dengan *commingle completion* dinilai layak untuk diimplementasikan.

Kata kunci: Cadangan, *Commingle Completion*, Evaluasi Keekonomian, Kerja Ulang Pindah Lapisan, Simulasi Produksi

ABSTRACT

ANALYSIS OF RESERVE POTENTIAL AND PRODUCTION FOR SELECTION OF KUPL TARGET LAYERS AND EVALUATION OF COMMINGLE COMPLETION STRATEGY AT WELL S DP FIELD

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DP Field, located in the Tarakan Basin, is a mature oil field characterized by a dominant water drive mechanism. Well “S” has experienced a production decline due to increasing water cut reaching 98% and oil flow rate approaching the economic limit. To address this issue, a workover strategy in the form of Layer Recompletion (Kerja Ulang Pindah Lapisan or KUPL) using the commingle completion method was proposed on Layers A-1 and A-2, which were identified as having favorable petrophysical properties and reservoir pressure. The study method includes performance evaluation of Layer A-0, interpretation of lumped log and Pressure Test Fluid Analysis (PTFA), estimation of Original Oil in Place (OOIP) and recoverable reserves using the volumetric approach, and production performance simulation using Inflow Performance Relationship (IPR), Vertical Lift Performance (VLP), and Decline Curve Analysis (DCA). The economic feasibility was evaluated using Net Present Value (NPV), Internal Rate of Return (IRR), and Pay Out Time (POT) under a PSC cost recovery scheme. The results showed OOIP of 106.71 MSTB, recoverable reserves of 42.82 MSTB, and an initial oil production rate of 78.84194 BOPD with a remaining reserve of 8.65 MSTB and a productive life of 0.71 years. Economic indicators yielded an NPV of USD 190,445, IRR of 191%, and a payback period of 0.36 years. Based on technical and economic evaluations, the proposed commingle completion strategy for Well “S” is considered feasible for implementation.

Keywords: *Commingle Completion, Economic Evaluation, Layer Recompletion, Production Simulation, Reserves.*