

## RINGKASAN

### **ANALISIS PERFORMA DAN *FEASIBILITY SOLVENT SYSTEM TREATMENT* UNTUK PENANGANAN ORGANIC DEPOSIT *PARAFFIN WAX* PADA SUMUR *HIGH POUR POINT OIL* “ASH-127” LAPANGAN “TNT”**

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Sumur ASH-127 merupakan sumur dengan karakteristik *high pour point oil* (HPPO) yang diproduksi dengan *artificial lift gaslift* dengan komponen hidrokarbonnya didominasi oleh komponen berat  $C_{20+}$  mencapai 11% *mol fraction* sehingga menjadi salah satu sumur dengan kecenderungan tinggi terbentuk endapan *paraffin*. Setelah dilakukan *surfactant stimulation*, laju produksi minyak turun dari 18.8 BOPD menjadi 7.79 BOPD akibat penyumbatan oleh endapan *paraffin* pada *near wellbore*. Oleh karena itu, diperlukan upaya lebih lanjut untuk mengatasi *formation damage* dan meningkatkan produktivitas sumur. Penelitian ini bertujuan untuk mengevaluasi efektivitas *solvent system treatment* dalam mengatasi *formation damage* akibat *paraffin wax* serta meningkatkan kinerja produksi sumur, dan mengetahui *feasibility* dari proyek ini.

Penelitian ini menggunakan metode kombinasi kuantitatif dan kualitatif. Pendekatan kualitatif dilakukan dengan studi literatur untuk analisis *fluid properties*, SARA, dan analisis hasil dari simulasi termodinamika menggunakan Multiflash, serta kuantitatif dengan evaluasi produksi melalui sensitivitas *skin* menggunakan *nodal analysis* di *prosper* untuk menentukan perubahan *skin factor*, *productivity index* (PI), dan membandingkan nilai *nominal decline* (Di) dengan *decline curve analysis* (DCA) sebelum dan sesudah *treatment*, serta *feasibility study* berdasarkan parameter keekonomian,

Hasil analisis menunjukkan bahwa *solvent system treatment* berhasil menurunkan nilai *skin* dari 5 menjadi 3.52, meningkatkan *productivity index* (PI) sebesar 15.07%, dan penurunan *nominal decline* (Di). Dari analisis keekonomian, metode ini terbukti layak dengan Net Present Value (NPV) yang bernilai positif dan *Payout Time* (POT) yang cepat yaitu selama 37 hari.

**Kata kunci:** *paraffin wax, solvent treatment, productivity index, Pipesim, Multiflash, keekonomian.*

## ABSTRACT

### PERFORMANCE AND FEASIBILITY ANALYSIS OF SOLVENT SYSTEM TREATMENT FOR RESOLVING ORGANIC DEPOSIT PARAFFIN WAX IN HIGH POUR POINT WELL “ASH-127” FIELD “TNT”

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*The ASH-127 well is a well with high pour point oil (HPPO) characteristics produced by artificial lift gaslift with hydrocarbon components dominated by heavy components  $C_{20+}$  reaching 11% mol fraction, hence it is one of the wells with a high tendency to form paraffin deposits. After surfactant stimulation, the oil production rate declined from 18.8 BOPD to 7.79 BOPD due to blockage by paraffin deposits in the near wellbore. Therefore, further efforts are required to resolve formation damage and increase well productivity. This study aims to evaluate the effectiveness of solvent system treatment in mitigating formation damage caused by paraffin wax and improving well production performance, and to determine the feasibility of this project.*

*This research utilised a combination of quantitative and qualitative methods. The qualitative approach is carried out with literature studies for fluid properties analysis, SARA, and analysis of results from thermodynamic simulations using Multiflash, and quantitative with production evaluation through nodal analysis in prosper to determine changes in skin factor, productivity index (PI), and Comparing the nominal decline rate (Di) with the decline curve analysis (DCA) before and after treatment, as well as a feasibility study based on economic parameters,*

*based on economic parameters, the analysis results showed that the solvent system treatment succeeded in reducing the skin value from 5 to 3.52, as well as increasing the productivity index (PI) by 22.8%, and decreasing the nominal decline (Di). From the economic analysis, this method proved to be feasible with a positive Net Present Value (NPV) and a fast Payout Time (POT) of 37 days.*

**Keywords:** *paraffin wax, solvent treatment, productivity index, Pipesim, Multiflash, feasibility.*