RINGKASAN

OPTIMASI KINERJA *ELECTRIC SUBMERSIBLE PUMP* (ESP) SUMUR PRODUKSI "IM-01" PADA LAPANGAN "CZA"

Oleh
Ilham Mahendra
NIM: 113190051
(Program Studi Sarjana Teknik Perminyakan)

Sumur IM-01 pada Lapangan "CZA" telah terpasang *Electric Submersible Pump*, yaitu pompa dengan tipe TD460. Dari evaluasi pompa, saat ini ESP TD460 pada Sumur IM-01 dioperasikan secara *downthrust* dan dapat di tingkatkan laju produksinya.

Optimasi ESP dimulai dengan pemilihan tipe pompa yang sesuai dengan *Recommended Optimum Range* (ROR), yang telah disesuaikan laju produksi optimum dan *pump setting depth* optimum. Optimasi dilakukan dengan melakukan sensitivitas frekuensi, merubah kedalaman pompa, dan tingkatan pompa. Dilakukan juga pemilihan peralatan pendukung ESP yang diperlukan.

Hasil pemilihan pompa yang sesuai dengan *rate* optimum Sumur IM-01 adalah tipe TD460/36 Hz/238 *stages*. PSD Sumur IM-01 berada pada kedalaman 3305,4 ft. motor yang dipilih adalah REDA Maximus 456 *Motor Series* dengan daya 45 HP, tegangan 438 volts, dan arus 67 ampere. Untuk kabel digunakan REDA Max ETBE-F 100726429 #1/7 C/S ETBE G5F W/ 4/1 GND. Tipe Transformer yang di pilih ialah Three Phase, Dual Wound, OISC Type, 75 kVA 7200/12470Y Primary.

Kata kunci: *Electric Submersible Pump*, optimasi, tipe pompa

ABSTRACT

OPTIMIZATION ELECTRIC SUBMERSIBLE PUMP (ESP) PERFORMANCE PRODUCTION WELL "IM-01" AT "CZA" FIELD

By
Ilham Mahendra
NIM: 113190051
(*Petroleum Engineering Undergraduated Program*)

Well IM-01 in "CZA" Field has been installed with an Electric Submersible Pump, pump with TD460 type. From the pump evaluation, currently ESP TD460 in Well IM-01 is operated downthrust and its production rate can be increased.

ESP optimization begins with selecting a pump type that is in accordance with the Recommended Optimum Range (ROR), which has been adjusted to the optimal production rate and optimal pump depth settings. Optimization is done by performing frequency sensitivity, changing the pump depth, and pump level. The selection of the necessary ESP supporting equipment is also carried out.

The results of selecting a pump that corresponds to the optimum rate for Well IM-01 Well is the TD460/36 Hz/238 stage type. The PSD of the IM-01 well is at a depth of 3305.4 ft. The motor chosen was the REDA Maximus 456 Motor Series with a power of 45 HP, a voltage of 438 volts and a current of 67 amperes. For cables used REDA Max ETBE-F 100726429 #1/7 C/S ETBE G5F W/ 4/1 GND. The type of transformer chosen includes Three Phase, Dual Wound, OISC Type, 75 kVA 7200/12470Y Primary.

Keywords: Electric Submersible Pump, optimization, pump type