

## **ABSTRACT**

### **“V” FIELD DEVELOPMENT SCENARIO WITH ADDITION OF INFILL WELLS USING TNAVIGATOR RESERVOIR SIMULATION**

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*Oil field "V" began production from October 1957 to early June 2023. At the end of production the "V" oil field consists of 58 active production wells, 2 shut in water injection wells, and 13 shut in production wells. From the initialization results, originally in place data was obtained at 64.62 MMSTB and cumulative production in June 2023 was 6,003 MMSTB with an RF value of 9,29%. So that the amount of remaining reserves is still a lot of basis for the need for further development to increase oil recovery in Reservoir Oil field "V".*

*This reservoir simulation study is carried out according to the flow chart with the aim of determining the point and effect of adding infill wells that can increase the recovery factor in the "V" Oil Field using reservoir simulation (tNavigator). The planned scenario is to produce basecases and infill wells. Where the candidate location points of these infill wells are selected based on the Oil Producing Potential (OPP) distribution map combined with Oil per Unit Area (OPU) parameters and Flowrate Capability and the use of assisted history matching using particle swarm optimization algorithm calculations.*

*In the context of Field 'V', the use of total objection function oil to produce (Basecase + 7 infill wells) is proven to be more appropriate than using objection function recovery per well. The use of total objection function oil resulted in an increase in RF of 22.06% (an addition of 3.96%) with an accumulated oil production of 14.25 MMSTB (an addition of 2.56 MMSTB). These results indicate that by applying the total oil objection function, field development with the addition of 7 infill wells can result in a more significant increase in overall oil recovery than the objection function recovery per well.*

*Keywords: Field Development, Infill Well, Assisted History Matching, Particle Swarm Optimalization Algorithm.*