

SARI

Formasi Bekasap merupakan salah satu formasi dari bagian kelompok Sihapas yang berada di Cekungan Sumatera Tengah. Formasi Bekasap sudah diakui menjadi resevoir terbaik di Cekungan Sumatera Tengah. Daerah penelitian berada pada Lapangan “GT”, Formasi Bekasap, Kelompok Sihapas, Cekungan Sumatera Tengah. Lapangan “GT” memiliki 10 sumur yaitu GT-01, GT-02, GT-03, GT-04, GT-05, GT-06, GT-07, GT-08, GT-09, dan GT-10 yang berpotensi menyimpan hidrokarbon yang baik. Secara geografis daerah penelitian terletak pada koordinat *Universal Transverse Mercator* (UTM) X: 235100 – 236150; Y: 977550 – 978050 dengan datum WGS 84 zona 47N. Tujuan dari penelitian ini untuk mengetahui litologi penyusun litologi Formasi bekasap, mengetahui fasies dan lingkungan pengendapan pada Formasi Bekasap, menghitung nilai properti *reservoir* berupa *volume shale*, porositas, dan saturasi air dan mengetahui zona yang prospektif hidrokarbon dan ketebalannya

Penelitian ini menggunakan dua proses analisis yaitu analisis kuantitatif dan analisis kualitatif. Tahapan analisis kualitatif dimulai dari interpretasi litologi, sikuen stratigrafi, fasies, dan lingkungan pengendapan. Selanjutnya, untuk analisis kuantitatif melakukan analisis petrofisika seperti *volume shale*, porositas permeabilitas dan saturasi air, serta penentuan harga *cut-off* untuk mengetahui zona prospek yang mengandung hidrokarbon. Analisis ini divalidasi dengan data *core* dan data *sidewall core*.

Litologi penyusun Lapangan “GT” adalah batupasir dan serpih. Fasies pada Lapangan “GT” diinterpretasikan *Inner Tidal Fluvial-Channel*, *Mixed Flat*, *Mud Flat* dan *Tidal Sandbar* dengan lingkungan pengendapan *Tide Dominated Estuarine*. Perhitungan pada petrofisika didapatkan nilai *volume of shale* berkisar antara 11 – 27%, porositas efektif berkisar antara 27 – 34 %, dan saturasi air berkisar antara 41 – 66% serta total *net pay* pada semua sumur 380 *feet*. Zona yang prospektif mengandung hidrokarbon terdapat pada fasies *Inner Tidal-Fluvial Channel*, *Mixed Flat* dan *Tidal Sandbar*.

Kata Kunci: Cekungan Sumatera Tengah, Formasi Bekasap, Analisis Petrofisika, Zona Prospek Hidrokarbon

ABSTRACT

The Bekasap Formation is one of the formations from the Sihapas group in the Central Sumatra Basin. The Bekasap Formation has been recognized as the best reservoir in the Central Sumatra Basin. The research area is in the "GT" Field, Bekasap Formation, Sihapas Group, Central Sumatra Basin. The "GT" field has 10 wells, namely GT-01, GT-02, GT-03, GT-04, GT-05, GT-06, GT-07, GT-08, GT-09, and GT-10 which have potential store good hydrocarbons. Geographically, the research area is located at Universal Transverse Mercator (UTM) coordinates X: 235100 – 236150; Y: 977550 – 978050 with WGS 84 datum zone 47N. The aim of this research is to determine the lithology that makes up the Bekasap Formation, determine the facies and depositional environment of the Bekasap Formation, calculate reservoir property values in the form of shale volume, porosity and water saturation and determine prospective hydrocarbon zones and their thickness.

This research uses two analytical processes, namely quantitative analysis and qualitative analysis. The qualitative analysis stage starts from the interpretation of lithology, stratigraphic sequence, facies and depositional environment. Next, for quantitative analysis, carry out petrophysical analysis such as shale volume, porosity, permeability and water saturation, as well as determining cut-off prices to determine prospect zones that contain hydrocarbons. This analysis is validated with core data and sidewall core data.

The lithology that makes up the "GT" Field is sandstone and shale. The facies in the "GT" Field are interpreted as Inner Tidal Fluvial-Channel, Mixed Flat, Mud Flat and Tidal Sandbar with a Tide Dominated Estuarine depositional environment. Calculations in petrophysics show that volume of shale values range from 11 – 27%, effective porosity ranges from 27 – 34%, and water saturation ranges from 41 – 66% and the total net pay for all wells is 380 feet. Prospective zones containing hydrocarbons are found in the Inner Tidal-Fluvial Channel, Mixed Flat and Tidal Sandbar facies.

Keywords: Central Sumatra Basin, Bekasap Formation, Petrophysical Analysis, Hydrocarbon Prospect Zone