SARI

Formasi Bampo dan Peutu pada Cekungan Sumatera Utara terkenal sebagai komponen dari *Neogen hydrocarbon play*, dimana Formasi Bampo berperan sebagai *source rock* dan Formasi Peutu sebagai reservoirnya. Kajian mengenai fasies dan lingkungan pengendapan, akan membantu mengetahui karakteristik litologi pada interval tertentu yang berpotensi sebagai reservoir dan *source rock*. Analisis fasies yang dilakukan meliputi identifikasi fasies, asosiasi fasies, dan suksesi fasies, kemudian dilanjutkan dengan analisis sikuen stratigrafi dan interpretasi lingkungan pengendapan. Dalam proses analisis dan interpretasi, pengintegrasian data yang meliputi data *log* sumur, data biostratigrafi dan petrografi, data batu inti, serta data seismik dilakukan untuk mendapatkan kesimpulan yang komprehensif yang akan membantu merekonstruksi lingkungan pengendapan dalam bentuk peta *Gross Depositional Environment* (GDE) dan model 3D. Dalam membuat peta GDE, diperlukan atribut seismik berupa peta *isochore* dan peta struktur waktu. Hasil penelitian ini menunjukkan bahwa pada Formasi Bampo berkembang fasies *shale* dan *shaly sand*, sementara pada Formasi Peutu berkembang fasies *sandstone, limestone*, dan *shaly sand*. Asosiasi fasies pada Formasi Bampo didominasi oleh asosiasi fasies *shale* dan asosiasi fasies *shale-shaly sand*, sementara pada Formasi Peutu didominasi oleh asosiasi fasies perselingan *sandstone* dan *shaly sand*, asosiasi fasies *shaly sand* sisipan *limestone*, dan asosiasi fasies *limestone* sisipan *sandstone* atau *shaly sand*. Kemudian, interpretasi lingkungan pengendapan total secara lateral pada Formasi Bampo berupa lingkungan terestrial, *inner shelf, outer shelf*, dan *deep marine slope*, sedangkan pada Formasi Peutu lingkungan secara lateral sudah menjadi laut sepenuhnya yang terdiri dari *inner shelf, outer shelf,* dan *deep marine slope*. Untuk proses pengendapannya, pada Formasi Bampo terjadi tiga kali pendalaman yang terepresentasikan oleh dua *flooding surface* dan puncak pendalaman terjadi pada *maximum flooding surface* (MFS), sementara pada Formasi Peutu terjadi dua kali pendalaman yang terepresentasikan oleh dua *flooding surface.*

Kata kunci: Formasi Bampo dan Peutu, Fasies, Sikuen Stratigrafi, Lingkungan Pengendapan, GDE, Lingkungan Laut.

ABSTRACT

The Bampo and Peutu Formations in North Sumatra Basin is adequately known as components of the Neogen hydrocarbon play, where the Bampo Formation as the source rock and the Peutu Formation as the reservoir. The study of the facies and depositional environment will help to determine the lithological characteristics at certain intervals that have potential as reservoir dan source rock. The facies analysis carried out includes facies identification, facies associations, and facies succession, followed by sequence stratigraphic analysis and interpretation of the depositional environment. In the process of analysis and interpretation, data integration includes well log data, biostratigraphic and petrographic data, core data, and seismic data, are needed to obtain comprehensive conclusions that will help reconstruct the depositional environment i.e Gross Depositional Environment (GDE) maps and 3D models. In GDE map reconstruction, seismic attributes are needed, there are isochore maps and time structure maps. The results of this study indicate that the Bampo Formation develops shale and shaly sand facies, while the Peutu Formation develops sandstone, limestone, and shaly sand facies. The Facies associations in the Bampo Formation dominated by shale facies associations and shale-shaly sand facies associations, while in the Peutu Formation dominated by intercalation of sandstone and shaly sand facies associations, shaly sand with thin limestone insert facies associations, and limestone with thin sandstone or shaly sand inserts facies associations. Then, interpretation of the Gross Depositional Environment laterally in the Bampo Formation consist of terrestrial environment, inner shelf, outer shelf, and deep marine slope, while in the Peutu Formation, the environment laterally has become completely marine, consisting of inner shelf, outer shelf, and deep marine slope. For the deposition process, the Bampo Formation deepens three times which is represented by two flooding surfaces and the peak of deepening occurs at the maximum flooding surface (MFS), while in the Peutu Formation it deepens twice which is represented by two flooding surfaces. and deep marine slopes. For the deposition process, the Bampo Formation deepens three times which is represented by two flooding surfaces and the peak of deepening occurs at the maximum flooding surface (MFS), while in the Peutu Formation it deepens twice which is represented by two flooding surfaces. and deep marine slopes. For the deposition process, the Bampo Formation deepens three times which is represented by two flooding surfaces and the peak of deepening occurs at the maximum flooding surface (MFS), while in the Peutu Formation it deepens twice which is represented by two flooding surfaces.

Keyword: Bampo and Peutu Formations, Facies, Sequence Stratigraphy, Depositional Environment, GDE, Marine Environment.