THE GEOLOGY AND DEVELOPMENT OF THE BEKOK FIELD - OFFSHORE PENINSULAR MALAYSIA

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Bekok is the third commercial oil field to be developed offshore Peninsular Malaysia by Esso Production Malaysia Inc. The field was discovered in August 1971 by the Bekok No. 1 well. Five more exploration/delineation wells were drilled between December 1971 and April 1975 prior to installation of the first platform on the northern flank of the field in July, 1978. Bekok No. 7 was drilled on the western flank at about the same time the second platform was installed on the eastern flank of the field in July, 1979 and Bekok No. 8 was drilled in September, 1980 on the southern flank. The third platform was recently installed on the western end of the field and development drilling has just commenced. Twenty-one wells are currently producing and the field's cumulative production through August, 1981 was 17.6 million barrels.

The Bekok structure is an east-west trending anticline with a small subsidiary northern culmination. The structure has nineteen square miles of areal closure and nine hundred and fifty feet of vertical relief. The field is cut by a number of north-south trending faults on the western end in addition to an east-west trending reverse fault on its southern flank. The primary oi-producing reservoirs in Bekok are the sandstones of Group J (Tapis Formation) in which a rim type oil accumulation occurs in the J-18/20 sandstone, the most significant reservoir. The Group J sandstones are of Miocene age and interpreted to be of shallow marine origin. These sandstones are of two main facies, a bar facies which forms good quality reservoir rocks and a bioturbated shoreface facies which forms poorer quality reservoir rocks. The secondary reservoir rocks in Bekok are the sandstones of Group K in which a sheet oil accumulation occurs in K-50/60 and K-70/90 sandstones. These sandstones are of Miocene age and are interpreted to be of fluvial-alluvial origin. Although these K sands appear to have fair to good reservoir quality, to-date production has generally been disappointing.

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