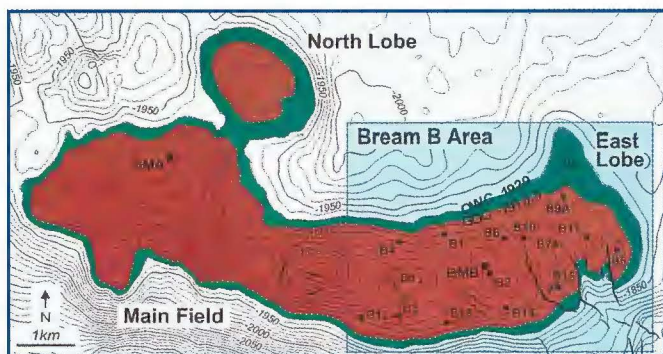


Bass Strait's Bream B Reservoir Development

By Andrew McKerron, Esso Australia Ltd

Members attending the Victoria / Tasmania PESA monthly meeting to be held on September 16 will hear Andrew McKerron (Esso Australia) present "Bream B Case History". Here follows an abstract of his presentation.



Bream Field TCC structure Map



The effective development of thin oil legs in areas of complex stratigraphy, sparse well control and offset from an existing development, presents a unique challenge. The success of the Bream B reservoir development can be attributed to a multi-functional development team and the pre-development planning processes and analysis tools implemented to meet the challenges of one such complex development.

The Bream Field consists of a 13.5m oil column with a large gas cap and strong aquifer drive. The Bream A platform was installed in 1988 and developed the western and northern lobes of the field. The 18-slot Bream B concrete gravity structure was installed in October 1996 to develop the eastern half of the field. Minimal topside facilities are contained on the remotely operated Bream B platform with full wellstream transfer via pipeline to Bream A, where basic fluid processing occurs. First production commenced in December 1996

and by August 1997, 15 development wells (and one sidetrack) had been drilled and placed on production.

The Bream B development area consists of an east-west oriented anticline that plunges to form the eastern closure of the field. Northwest - southeast oriented faulting and igneous intrusions have further modified the structure. The reservoir section consists of a series of transgressively stacked clastic sequences deposited in a marginal marine/coastal plain setting. The best reservoir quality is found in the fluvio-estuarine and shoreface facies. Seismic coverage is provided by a 1992 3D seismic survey and seismic modelling of reservoir net to gross was used to manage reserve issues despite sparse well control. A DHI provided control to aid in depth conversion over the western half of the development area.

Individual development wells were aimed to intersect the oil column with perforations targeted to provide ultimate gas and water closure, in sufficient quality rock to provide

attractive production rates. Prior to drilling however, the detailed reservoir distribution across the field and structure of the eastern extension of the field was poorly constrained. These uncertainties and the anticipated pace of the drilling program required the development of detailed contingency and well sequencing plans, the quantification of pre-drill technical uncertainties and the implementation of fully interactive remapping capabilities. During the program, application of geophysical modelling, DHI analysis, sequence stratigraphy, petrophysics and reservoir simulation were all used to interpret results and optimise the placement of remaining development wells.

The success of the multi-functional pre-development planning processes and analysis tools are demonstrated by the requirement of only one geological sidetrack during the drilling program and production at 35,000 bopd (August 1997).