

PROCEEDINGS, INDONESIAN PETROLEUM ASSOCIATION  
Twenty-Sixth Annual Convention, May 1998

**RECENT EXPERIENCES WITH SEISMIC IMAGING AND VELOCITY ANALYSIS**

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**ABSTRACT**

This paper presents recent experiences within Chevron, of applying modern imaging technology to areas of moderate geologic complexity. In these areas, generally of extensional geology, the lateral velocity gradients are not so severe that conventional time imaging fails entirely. However, we find that those images are locally unclear and moderately distorted. By applying careful, horizon-oriented velocity analysis, anisotropic parameter estimation and iterative pre-and post-stack depth migration, we are able to significantly improve the clarity and accuracy of these images.

In the examples presented here, the application of the imaging technology is intended to assist the ongoing field development. In this development environment, our imaging methods are able to take advantage of the nearby well control. On the other hand, the accuracy demands are high, and the remaining imaging questions are often very specific (e.g. trying to resolve the possible separation of beds along a minor fault). Thus, although no single effect (such as lateral velocity gradients or anisotropy) is large enough to have required complex-imaging technologies in the earlier exploration phase, these technologies are now being regularly applied in the development phase.

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