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**STRATIGRAPHIC PROCESSING OF 3D SEISMIC BY
CONCURRENT ANALYSIS OF SURFACE
AND BOREHOLE DATA**

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When seismic data is available in production areas, it is often desirable to use it for stratigraphic interpretation to estimate the extent of existing reservoirs. 3D seismic data, which contains the producing wells within its volume, is particularly suitable for such an exercise. We present an interpretive processing procedure, supported by a case study, where surface and borehole data are used in cooperation to achieve maximum reliability of the final surface seismic inversion.

The study addresses a series of producing sand layers from a single well, to be analyzed for reservoir extent. The processing procedure begins with suitably processed 3D seismic and borehole data, from which are extracted: 1) a deviated trace, interpolated along the well trajectory, 2) general time surfaces, a set of mathematical surfaces approximating horizons, and 3) a corrugated section, a generalized 2D section coincident with the deviated well. It

continues with corrections and calibrations to the residual wavelet, computed using the borehole data and applied to the 3D surface seismic data along structure. The procedure concludes with a bandlimited inversion of the seismic data, calibrated by the borehole data, applied to a generalized 2D section, and extrapolated along structure away from the borehole. With the aid of the final calibrated inversion, a refined estimate of the current reservoir volume was possible.