

different quadrants of the F-K domain. By zeroing the "multiple" quadrant, inverse transforming the data and removing the overcorrection velocity, the multiples are attenuated. Velocity analyses can be considerably improved by the application of this process.

3.12 DIP MOVEOUT CORRECTION (DMO)

The data was processed through Digicon's DIPCOGLX F-K domain Dip moveout routine which utilizes a logarithmic transformation of the time axis such that the DMO operator remains temporally as well as spatially stationary. The impulse response of the DIPCOGLX operator has been shown to be comparable to Hale's published algorithm. For further details refer to, "Dip moveout in the frequency-wavenumber domain", GEOPHYSICS VOL 52, No 12 (Dec 1987), pp 1718-1721.

The main benefits of including DMO in the processing sequence are;

1. Dip-independent stacking velocities

Stacking velocities after DMO are dip-independent, allowing both horizontal and dipping reflectors to be stacked with the same RMS velocity, ie. the RMS velocity associated with the horizontal event. Thus flat dip primary reflectors and steep dip events (such as fault plane reflections and diffraction limbs) may be optimumally stacked at the same time.

2. Removal of reflection point smear

Data recorded at a finite offset is transformed to zero offset thus eliminating reflection point smear.

Time varying multi-channel filters applied in the common-offset domain laterally shift the reflection points to their zero-offset position.

Improved signal/noise ratio results, as more signal energy may be stacked within a single velocity panel and reflector point dispersal for non-zero off set traces is removed. It was noted that the fault plane reflections and diffraction events were enhanced on the DMO stack.

3.13 SECOND PASS VELOCITY ANALYSIS

A second pass of velocity analyses were spaced at an average of 1.0 Km intervals, again with due regard to the geology. The better data quality at this stage produced more accurate picks and were used for the final stack.

