Second, correction for amplitude losses was made. These losses are due to the spherical spreading of the wavefront as it passes downward through the earth and is reflected back to the surface and is also a non-linear function with time or depth. Thus, as the amplitude of the recorded trace varies inversely with the radius of the advancing wavefront, each trace was multiplied by a function 'VT/2', where V is the seismic wave velocity and T is the two-way time.

Third, compensation for amplitude losses as a result of inelastic attenuation was also made. Each trace was multiplied by an exponential gain function expressed in Db/second.

For this survey, an exponential gain function of 4 Db/second was applied from 0.4 to 4.4 seconds and thereafter remained constant.

3.6 F-K FILTERING

When a two-dimensional fourier transform is applied to a seismic record, it is transformed from the time-offset (T-X) domain to the frequency-wavenumber (F-K) domain.

Seismic events in the T-X domain map to events radiating from the origin in the F-K domain and reach the wavenumber, or alias frequency, at a frequency given by the relationship: alias frequency = 500/dip ;where "dip" is the dip, in milliseconds per trace, of the event in the T-X domain.

Some coherent noise trains which appear at various times on the shot records can be isolated to some extent in the F-K domain.

In this data the main difference between the seismic signal and noise was one of apparent dip. Once the location of the noise in the F-K domain was established it was muted out prior to reverse transformation into the T-X domain for subsequent processing. For this data, an F-K filter was designed to preserve data in the dip range of -3.125 ms/trace to 2.273 ms/trace in the T-X domain (-4.0km/sec to 5.5km/sec).

3.8 SIGNATURE DECONVOLUTION

Digicon's preferred shot averaged deconvolution routine is DEFLAT. It designs and applies either a single operator, or a user specified number of offset dependent operators per input record. The routine is part deterministic and part statistical.

A source wavelet is estimated using manufacturer's instrument phase and amplitude response characteristics for given