(pseudo well) for the computer analysis. The zones in the remaining five wells (those not part of the pseudo well) were later defined using mathematical functions which identify the same zones in the pseudo well. Any number of additional wells can then be processed using the saved mathematical functions and need not be subjected to the exhaustive statistical analysis which defined the mathematical functions for the zones in the pseudo well. Well-to-well correlation of zones is accomplished with this method.

The subsets of curves were then subjected to statistical analysis including cluster analysis and discriminant function analysis. These analyses allow the interpreter to evaluate the number of inherent statistically valid subpopulations that exist within the data.

The initial statistical analysis of the Bass Basin data found that only two subpopulations exist. The populations were interpreted to be the coal and the non-coal data. The analysis showed that the non-coals (sands, shales, and volcanics) are more alike in log character than are the coals and any other rock type. The non-coals formed a 'cluster'. The coals formed a second 'cluster'. In order to statistically study the non-coal population, the coal population was removed from the initial population of all rocks.

Following the removal of the coals, a second subset of curves was statistically analyzed in an attempt to separate and identify a population of an unknown rock type. This population was an obvious 'cluster' on several of the cross plots. Statistical analysis by the computer system successfully built the mathematical functions which separated this population of unknown rock type. The data points of the wells identified as this zone were then compared with the wells shown in Enclosure 23. The zones were found to correspond with the intervals interpreted to be 'hard rock' extrusive and intrusive volcanics shown in Enclosure 23. Like the coals, the 'hard rock' volcanic intervals were then removed from the dataset and the mathematical functions saved which identified the 'hard rocks'.

According to the 'key' curve, the remaining rocks in the large population were likely sands and shales. Therefore, a new subset of curves was subjected to the statistical analyses to split the sands and shales into separate populations. This was successfully done and the mathematical functions were saved.

The process was again repeated with new subsets of curves. One subset was created to further break down the sands. A second subset of curves was created to break down the shales. Three sand zones and five shale zones were identified. One of the shale zones is interpreted to be extrusive 'soft' volcanics due to its association with volcanic cutting descriptions in Enclosure 23. One shale zone is noted as a marine shale as it, in part, makes up the population found primarily in the Demon's Bluff formation.

Confidence in the validity of the subpopulation or zone assignments is supported by the near identical duplication of the 'lithologic' column in the Aroo-1 well using two different methods. The first method consisted