

1985 Luncheon Meetings

MATHEWS, GEOFFREY, Terrasciences Inc.

The Microcomputer Geologic Workstation: A Powerful Exploration Tool

Microcomputer-based geologic workstations are effective and efficient tools in exploration. They allow an explorationist to interactively produce many different types of maps, to try new and innovative ways of depicting data, and to formulate and test multiple geologic models. Maps can be updated and reproduced rapidly with the addition of data points. The workstation lets the geologist determine optimum data sets.

To illustrate the power and versatility of microcomputer workstations, data from the Ute field were used to generate several sequences of maps. Each map sequence is based on a progressively larger number of data points and simulates the increasing number of wells available through time. The map sequences, generated on the microcomputer workstation, bring out early the nature of the Ute field, even with fewer data points than one might expect.

Sequences of several different maps were made for this study. These include structural contour, isopachous, and trend and residual maps of the Muddy. Lithofacies parameters, net sand thickness, percent sand, sand shale ratios, and a measure of intra-Muddy variance were also mapped. Perspective block diagrams were made as aids in visualizing many of these maps.

These maps, cross sections and diagrams, and the changes in them brought about by sequentially adding data through time, show how an explorationist can rapidly formulate, test and refine logical, workable geologic and exploration models. The speed, versatility and interactivity of the workstation lets him do this in minimal time.