

EPMI'S USE OF THE HP-41C FOR WELLSITE LOG ANALYSIS

DON M. MURDOCK, Esso Production Malaysia Inc.

Esso Production Malaysia Inc. explorationists utilize Hewlett Packard's HP-41C hand calculators for on-site log analysis on both exploration and development wells. Over the past year this calculator has proven to be highly reliable and has gained widespread acceptance by wellsite geologists because of its versatility and ease of use.

The main advantages of the HP-41C over other models are its continuous memory and its ability to display alpha characters. With the continuous memory, requisite long analysis programs can be loaded by the geologists in the office prior to departure to the wellsite. The alpha capabilities enable all input data to be prompted so that the user is not required to remember in what order to enter data or where data is to be stored. These features mean that less is required of the wellsite geologist and there are fewer chances for error.

Esso's standard Malay Basin log analysis technique EPMILOG, has been modified to run on the HP-41C as well as on the S-130 Eclipse Mini Computer. To convert EPMILOG to the HP-41C, the porosity calculator

method which utilized density-neutron crossplot has been simplified and allows analysis of only the sand-silt limb of the litho-porosity model. The water saturation calculation technique, which employs the Waxman-Smitz equation, has not been altered except to cut down the number of iterations to speed up processing.

Research will continue as more data is accumulated. Future improvements will be directed towards developing a standard set of parameters for each field so that the calculator can be programmed in advance with the correct parameters for the well to be evaluated.
