GEOPHYSICAL LOGS FROM A GEOLOGIC TEST HOLE NEAR CHARLESTON, SOUTH CAROLINA

BY

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On March 2, 1975, the U.S. Geological Survey completed a series of geophysical well logs in the Charleston Project Deep Core Hole No. 1 located at Latitude 32° 53.2'N and Longitude 80° 21.5'W in Dorchester County near Charleston, South Carolina. The land surface is at an elevation of 5.4 m (18 ft) above mean sea level. The total depth of the test hole is 793 m (2,600 ft) and the geophysical logs were recorded through fresh barite mud to the bottom. The deep geologic test hole penetrated the entire section of Atlantic Coastal Plain sediments and extended about 40 m (130 ft) into basement rock composed of basalt flows.

The purpose of the logging is to assist in the interpretation of the depositional environments, stratigraphy, structural, and geological history of the onshore and offshore areas surrounding Charleston, S.C. The purpose of this report is to make the uninterpretated geophysical recordings of the entire log suite publicly available.

The logs available are shown in table 1, along with the operating depth intervals, total footage, scale, units of measure, combination log, and other pertinent data.

UNITED STATES GOVERNMENT

Memorandum

: USGS Library, Reston, Va.

DATE: May 21, 1975

: Office of Scientific Publications

T: USGS open-file report, Geophysical logs from a geologic test hole near Charleston, South Carolina, by Edward C. Rhodehamel

Copies of the principal logs and combination (companion) logs can be obtained by contacting:

Appalachian Log Service
3033 Banksville Road
Pittsburgh, Pennsylvania
or by mailing address:
P.O. Box 13239
Pittsburgh, Pa. 15243

Table 1. -- Geophysical well log suite and basic data for the Charleston Project Deep Core Hole No. 1

Principle Log Type	Operating-Depth Interval (feet)	Total Footage	Units of Measure	Scale (ft/in)	Combination (Companion) Log	Logging Date
Dual Induction Laterolog	63 to 2526	2463	Resistivity (ohms m^2/m conductivity (millimhos, M= $\frac{1000}{\text{ohms } m^2/m}$	50 ft/in and 20 ft/in	SP (5 millivolts)	Run 3/1/75
Dual Laterolog	62 to 2490	2428	Resistivity (ohms. m^2/m)	50 ft/in and 20 ft/in	------	Run 3/1/75
Microlaterolog-Microlog	62 - 2566	2504	Resistivity (ohms. m^2/m)	50 ft/in and 20 ft/in	Microcaliper (inches diameter)	Run 3/1/75
Sidewall Neutron Porosity Log	0 - 2553	2553	Porosity Index (in percent)	50 ft/in and 20 ft/in	Natural Gamma Ray (API units) and Caliper (inches diameter)	Run 3/1/75
Gamma-Gamma (Density) Log	0 - 2554	2554	Bulk Density (grams/cc.)	50 ft/in and 20 ft/in	Natural Gamma Ray (API units) and caliper (inches diameter)	Run 3/1/75
Acoustic log-(Borehole) Compensated Sonic Log) With Variable Density Display	63 - 2550	2487	Interval transit time (sec/ft)	50 ft/in and 20 ft/in	Caliper (inches diameter). Contains an intergrated sonic travel time display	Run 3/2/75
Temperature Log	62 - 2515	2452	Degrees fahrenheit	50 ft/in and 20 ft/in	---	Run 3/2/75