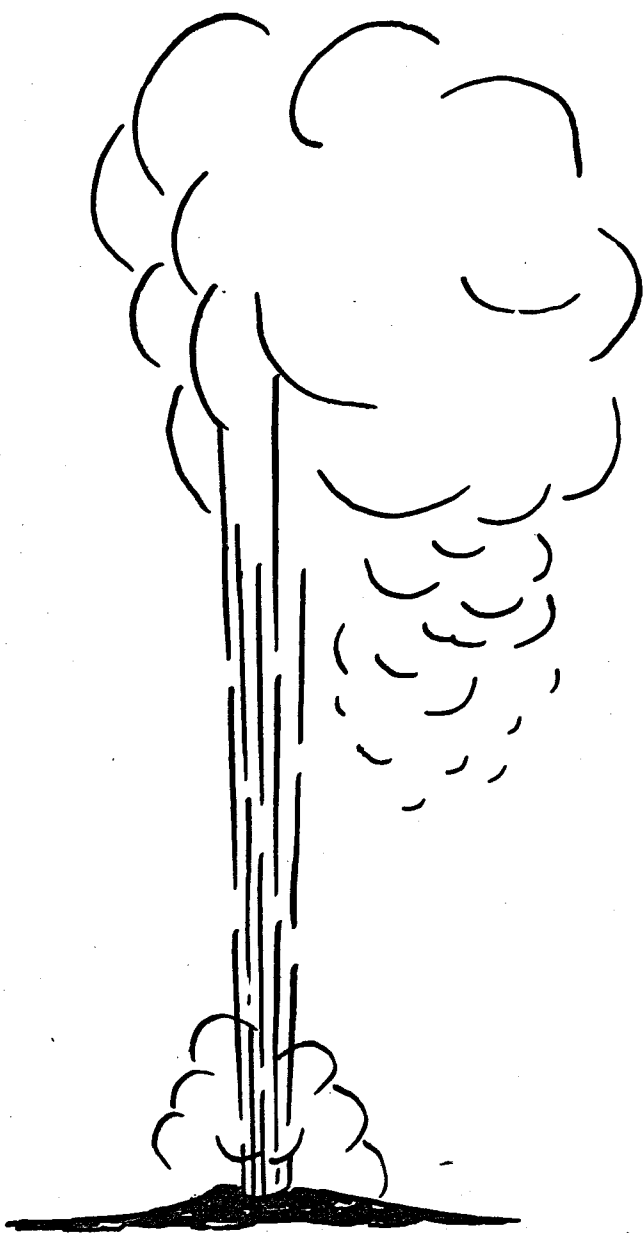


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**EVALUATION AND TARGETING OF GEOTHERMAL  
ENERGY RESOURCES IN THE SOUTHEASTERN  
UNITED STATES**

Progress Report, October 1, 1978—March 30, 1979

By  
John K. Costain  
Lynn Glover III  
A. Krishna Sinha

Work Performed Under Contract No. ET-78-C-05-5648

Virginia Polytechnic Institute and State University  
Blacksburg, Virginia



**U. S. DEPARTMENT OF ENERGY  
Geothermal Energy**

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IN THE SOUTHEASTERN UNITED STATES**

**Progress Report**

**John K. Costain, Lynn Glover III, and A. Krishna Sinha**

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**Blacksburg, VA 24061**

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## Lithologic Analysis of Sediment Samples from the Intermediate Drilling Program

Michael Svetlichny

During the period October 1, 1978 - March 15, 1979, 32 holes were completed as part of the Atlantic Coastal Plain drilling program. In each of the 300 m deep holes, drill cuttings were collected at 3.0 m intervals and sealed in airtight plastic bags to prevent sediments from drying out.

At least two attempts were made to recover core in each hole. A minimum of 15 m was cored. Recovery of unconsolidated, clean sand frequently was poor because material tends to be washed away by the coring process, and sediments were not always retained in the core barrel by the core catcher. In an effort to maximize core recovery and minimize drilling costs, one coring interval was selected to be within a thick (15 m) sequence of clayey, silty, or consolidated sediments, and the other coring attempt was made near the maximum depth of 300 m. Detailed analyses of the cores has begun, but there are no results to report as yet.

Lithologic descriptions of the drill cuttings have been completed for each hole; the results are presented as a table following this text. The descriptions are based on Folk's (1974) classification. Each category reflects the proportion of gravel, sand, and silt plus clay in that sample. In cases where well-sorted gravel was present, a distinction was made between granules, pebbles, and cobbles. Similarly, the sand fraction was subdivided into very fine, fine, medium, coarse, and very coarse sand. If silt and clay occurred in equal proportion, they were collectively referred to as mud. Whole and fragmented macrofossils were reported as shells.

Selected samples from each hole are being wet sieved with a number 230 U.S. standard sieve to determine the proportion of sediment that is finer than 4.0 phi. This work began recently so that the data set is incomplete. The results to date are included in the table that follows this text.

### ACKNOWLEDGEMENT

The following Gruy Federal Personnel assisted in sample descriptions and sieving: Kenneth Hurst, Ronald Herzick, Paul Caprio, Michael Hoffman, and Donald Hostvedt.

NO. 57 Atlantic, VA

INTERVAL (METERS)	FORMATION-AGE	DESCRIPTION	COMMENTS	SAMPLES SIEVED	RATIO COARSE/FINE	PERCENT FINES
0-3	5	Very fine-fine clean sand, well sorted.				
30.5-36.6		Clay, some fine sand and gravel	Shells			
36.6-39.6		Clay, sand and gravel	Shells			
39.6-45.7		Fine sandy clay	Shells			
45.7-85.3		Silty fine-coarse glauconitic sand and gravel	Abundant shells			
85.3-91.4		Silty fine glauconitic sand	Abundant shells			
91.4-97.5		Very coarse glauconitic sand	Abundant shells			
97.5-109.7		Medium-coarse glauconitic sand with minor clay	Abundant shells			
109.7-112.8		Clay with some fine glauconitic sand	Shells			
112.8-118.9		Muddy fine-coarse glauconitic sand	Abundant shells			
118.9-121.9		Clay with some coarse glauconitic sand and gravel	Shells			
121.9-131.0		Muddy fine glauconitic sand	Abundant shells			
131.0-140.2		Fine sandy clay	Abundant shells			
140.2-152.4		Silty fine sand, slightly glauconitic	Abundant shells			
152.4-161.5		Clay with some fine coarse sand	Shells			
161.5-170.7		Very fine sandy clay with some gravel	Shells			

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170.7-175.3	Limy clay	Shells
175.3-189.0	Cored	Recovery from 175.3-184.4
189.0-201.2	Limy silt	Shells
201.2-204.2	Silty-very fine sandy limy clay	Abundant shells
204.2-219.5	Limy silt	Shells
219.5-222.5	Limy silty clay	Shells
222.5-243.8	Limy silty very fine sand	Abundant shells
243.8-259.1	Fine sandy silt. Sand increases in size and amount toward end of interval. Small pebbles decreasing in amount through- out the interval.	Decreasing amount of shells toward end of interval
259.1-274.3	Silty fine-medium sand	Decreasing size of shells throughout interval
274.3-277.4	Fine sandy silt, slightly granular	Shells
277.4-289.6	Fine-medium silty sand. Minor silt at top of interval	Shells
289.6-298.7	Limy clay	Shells
298.7-307.8	Cored	No recovery.