

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LITHOLOGIC AND GEOPHYSICAL LOGS OF 16 COAL TEST HOLES DRILLED IN
THE ROCK SPRINGS COAL FIELD, SWEETWATER COUNTY, WYOMING

By
Marvin L. Schroeder

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This report has not been edited for conformity
with U.S. Geological Survey editorial standards
or stratigraphic nomenclature.

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INTRODUCTION

During the spring and summer of 1977, the U.S. Geological Survey drilled 16 coal test holes on Federal lands in the Rock Springs coal field, Sweetwater County, Wyoming (Tps. 14, 15, and 17 N., Rs. 101-103 W.). The purpose of this project was to obtain information on the thickness and lateral extent of coal beds for the classification and evaluation of federally owned coal lands. The holes were drilled by two U.S. Geological Survey crews using truck-mounted rotary drilling rigs. Drilling fluids used were air, air-water-biodegradable foam, and mud. Cuttings, representative of each of the rock units encountered, were sampled and logged for many of the drill holes to help determine the thickness and location of the coal beds. Drill-hole locations are shown in figures 1-7.

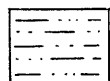
The holes were geophysically logged by U.S. Geological Survey personnel. Logs include natural gamma, gamma-gamma density, neutron, and caliper, and were all run separately. A single-point resistivity log was also run for drill-hole CR-NE-3. All coal beds are in the Upper Cretaceous Almond Formation and are shown on a strip log adjacent to the geophysical log. This strip log, at a reduced scale of 1 inch to 50 feet, represents the best information available as to the thickness and depth of coal beds, based on drill-hole cuttings and geophysical logs. Where there is disagreement between the lithologic samples and the geophysical logs, or where the logs are of poor quality, greater emphasis has been placed on

the lithologic samples for location and thickness of the coal beds. Where no lithology is shown, coal thickness is based on geophysical logs only.

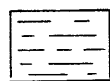
Lithologic descriptions are based on records made in the field by the sampler. In this report, shale refers to fissile rock composed primarily of the clay-sized fraction. Rock composed mostly of the silt-sized fraction is called siltstone because fissility could not be adequately recognized in the drill cuttings. Blank logs indicate no samples taken. Rock lithologies are indicated on the strip logs as follows:



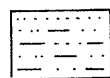
Sandstone



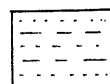
Siltstone



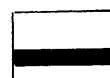
Shale



Interbedded sandstone and siltstone



Interbedded sandstone and shale



Coal

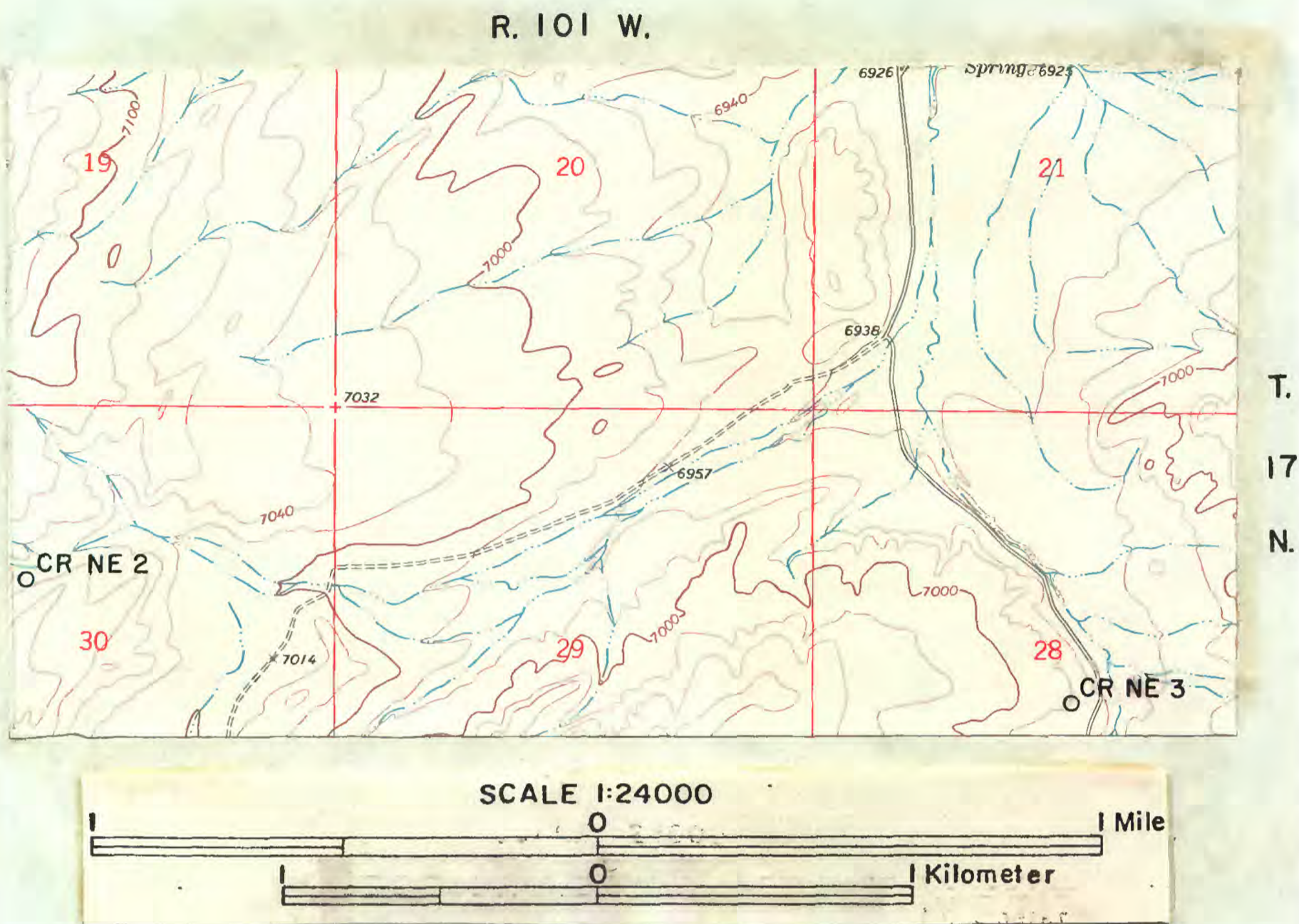


Figure 1.--Drill-hole locations in the Cooper Ridge NE quadrangle, Sweetwater County, Wyo.

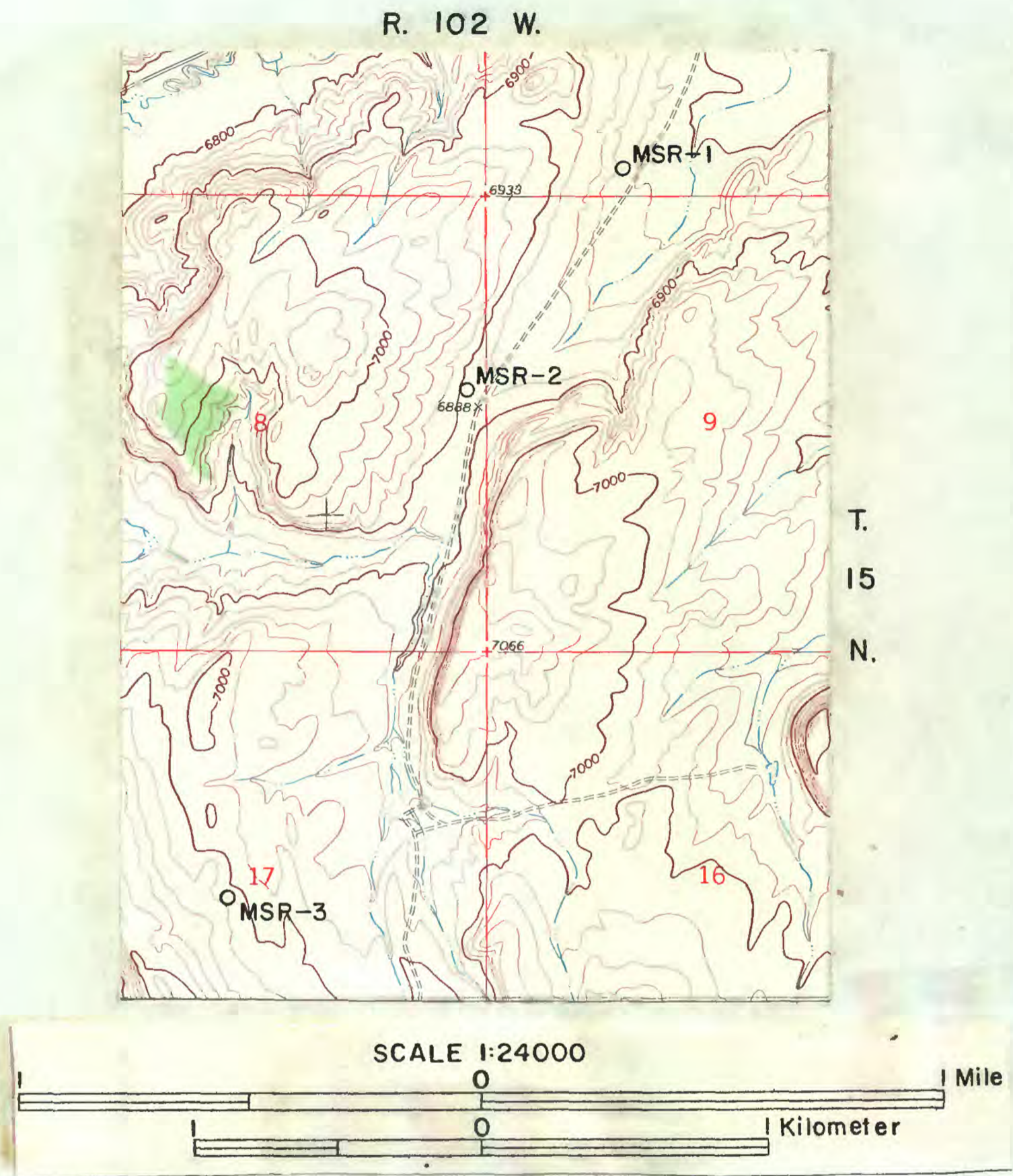


Figure 2.--Drill-hole locations in the central part of the Mud Springs Ranch quadrangle, Sweetwater County, Wyo.



Figure 3.--Drill-hole locations in the southeastern part of the Mud Springs Ranch quadrangle, Sweetwater County, Wyo.

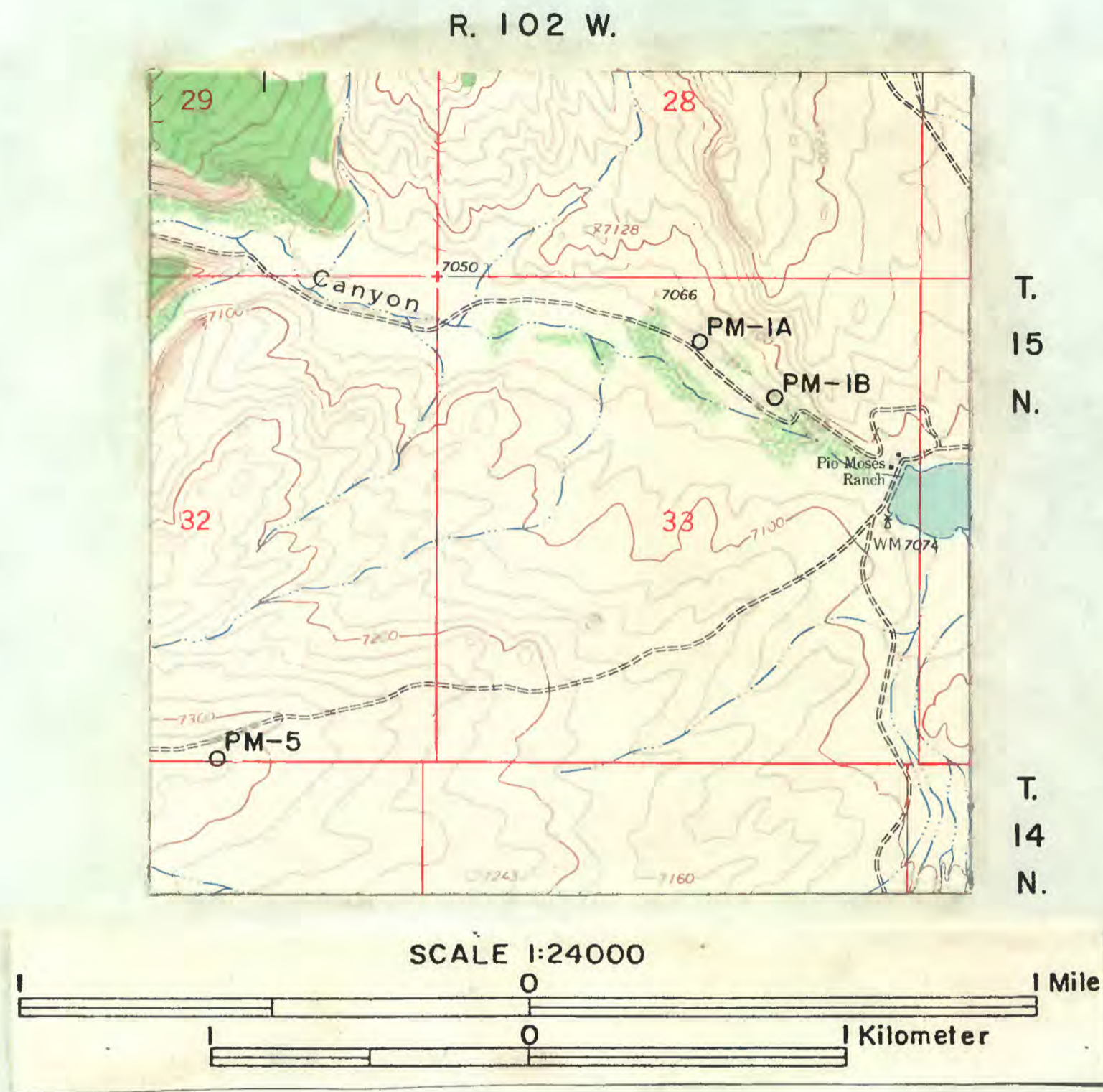


Figure 4.--Drill-hole locations in the northeast part of the Potter Mountain quadrangle, Sweetwater County, Wyo.

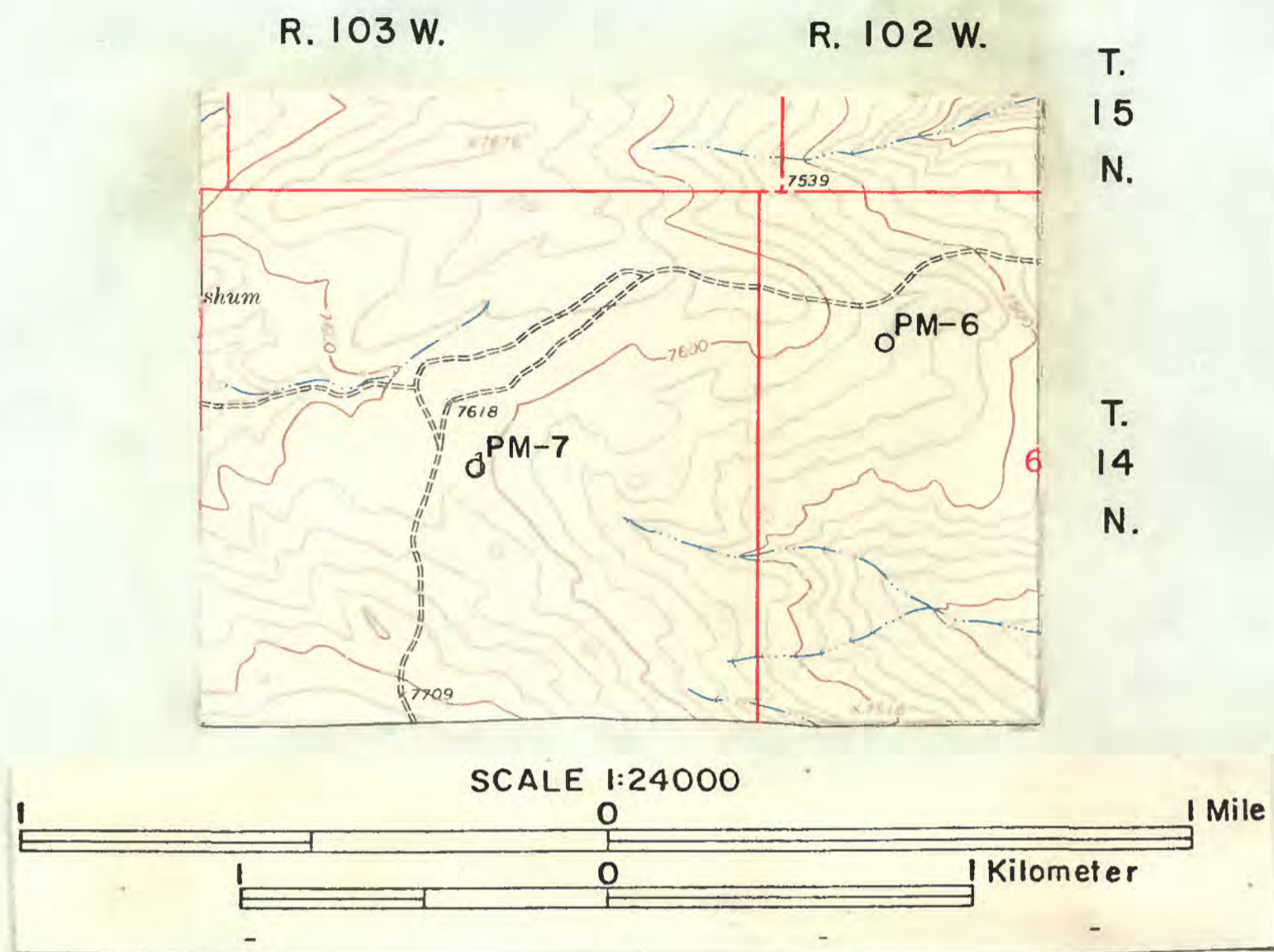


Figure 5.--Drill-hole locations in the north-central part of the Potter Mountain quadrangle, Sweetwater County, Wyo.

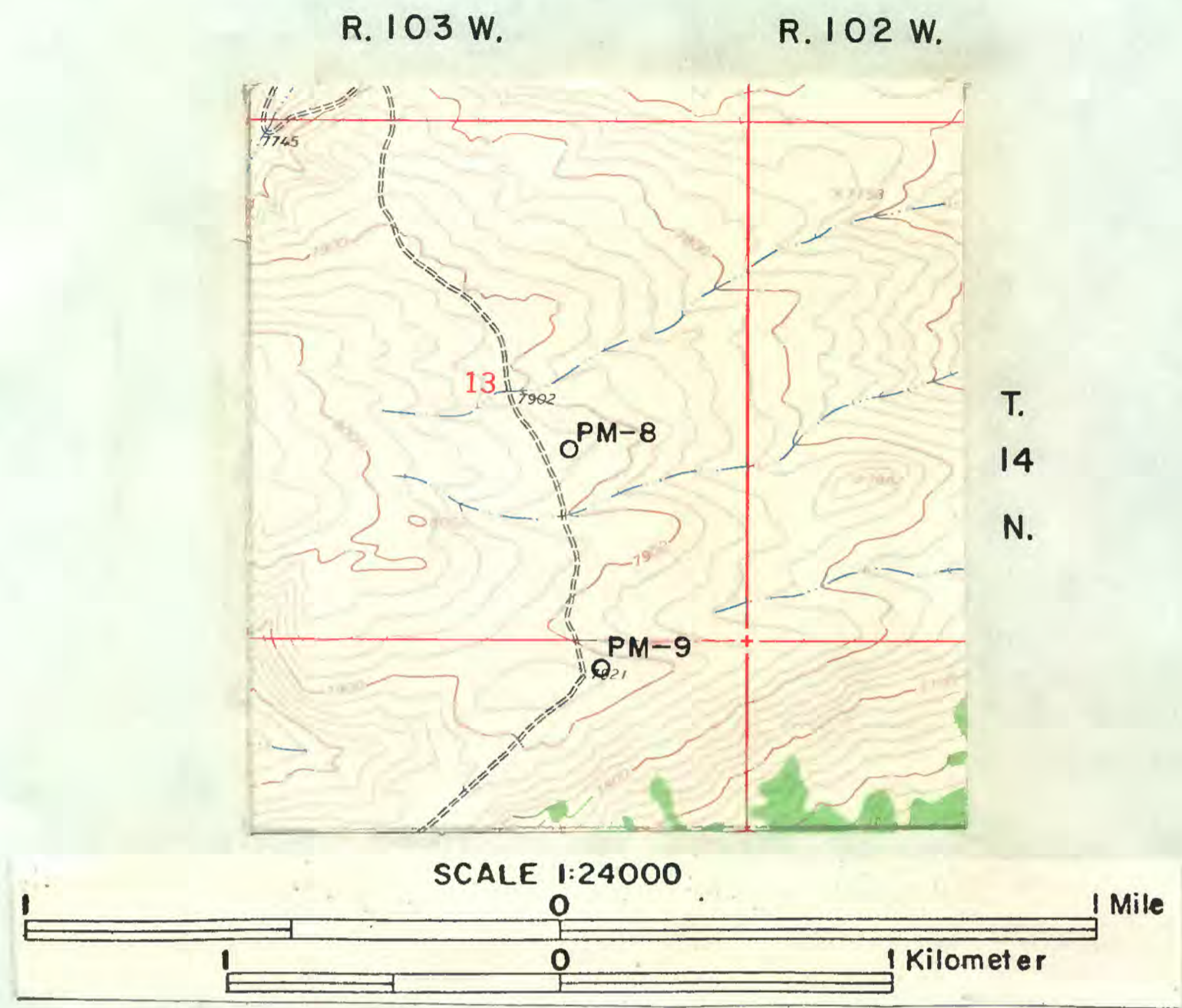


Figure 6.--Drill-hole locations in the central part of the Potter Mountain quadrangle, Sweetwater County, Wyo.

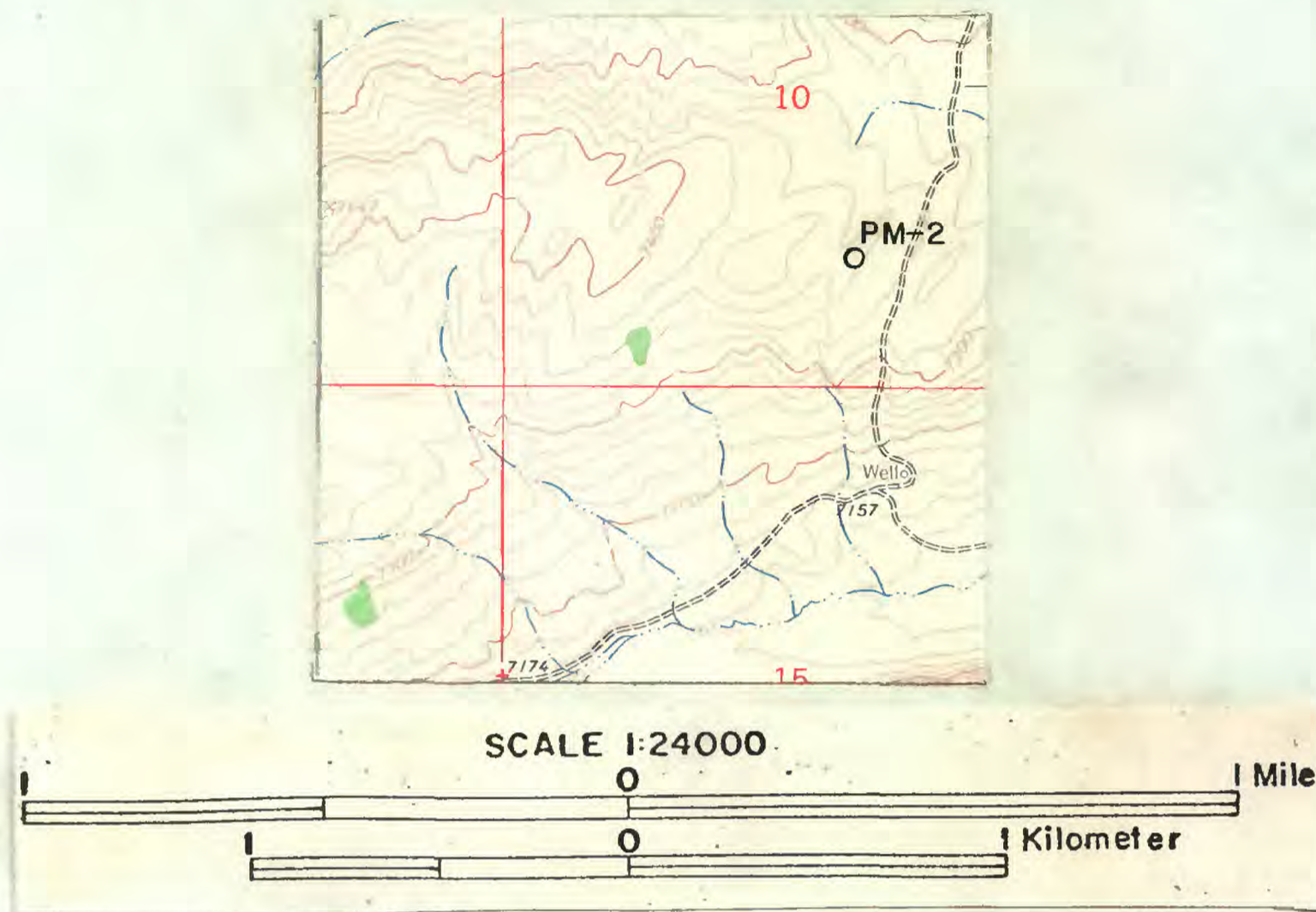


Figure 7.--Drill-hole locations in the east-central part of the Potter Mountain quadrangle, Sweetwater County, Wyo.

**U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG**

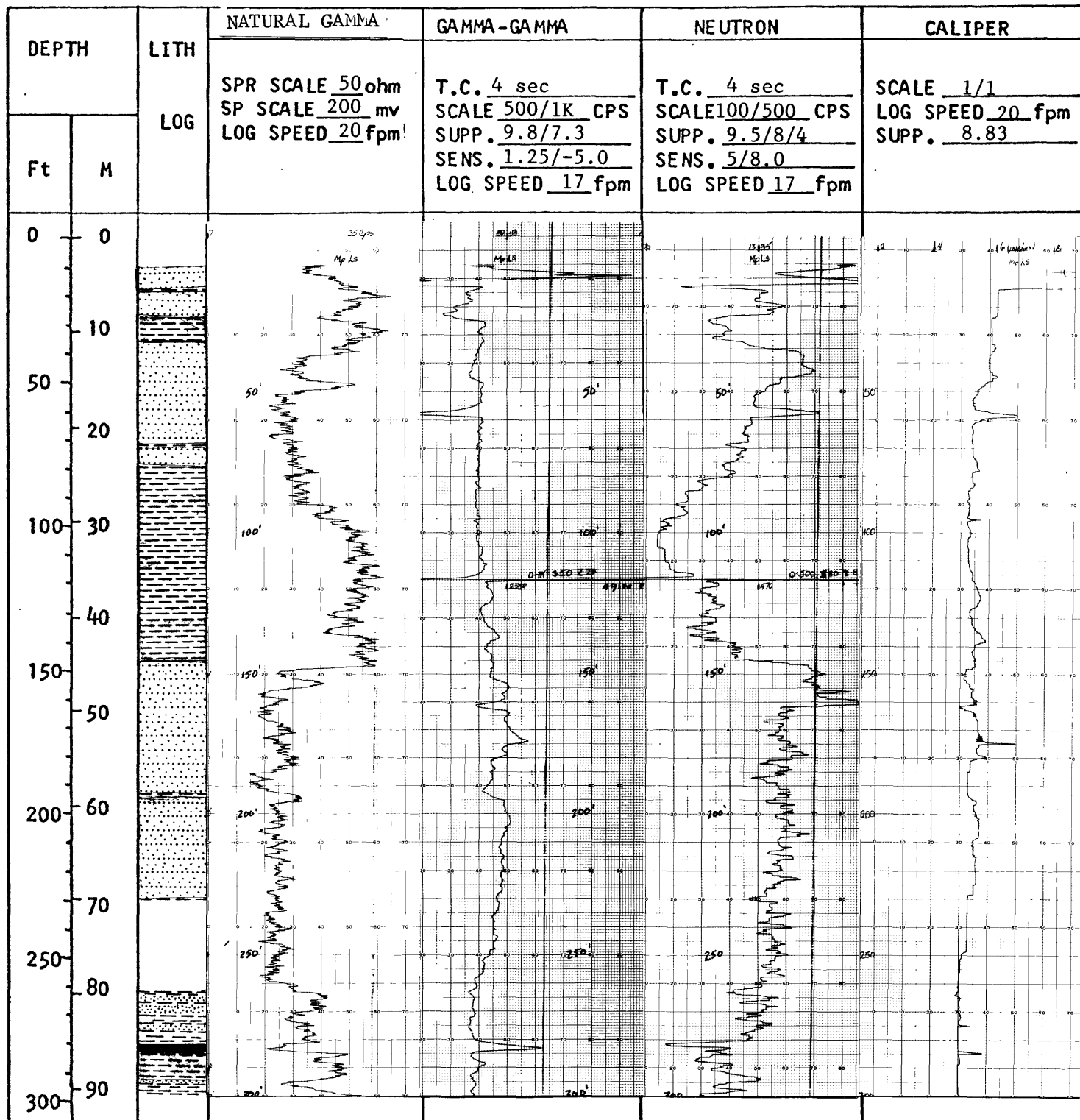
HOLE No. CR-NE-2 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/25/77 ELEV. 7,060 ft.

LOCATION: T. 17 N., R. 101 W., SEC. 30; 1,900 FNL; 1950 FWL; DATE DRILLED 6/24/77

DRILLED DEPTH 499' LOGGED DEPTH 495' DRILLING MEDIUM water FLUID LEVEL 117'

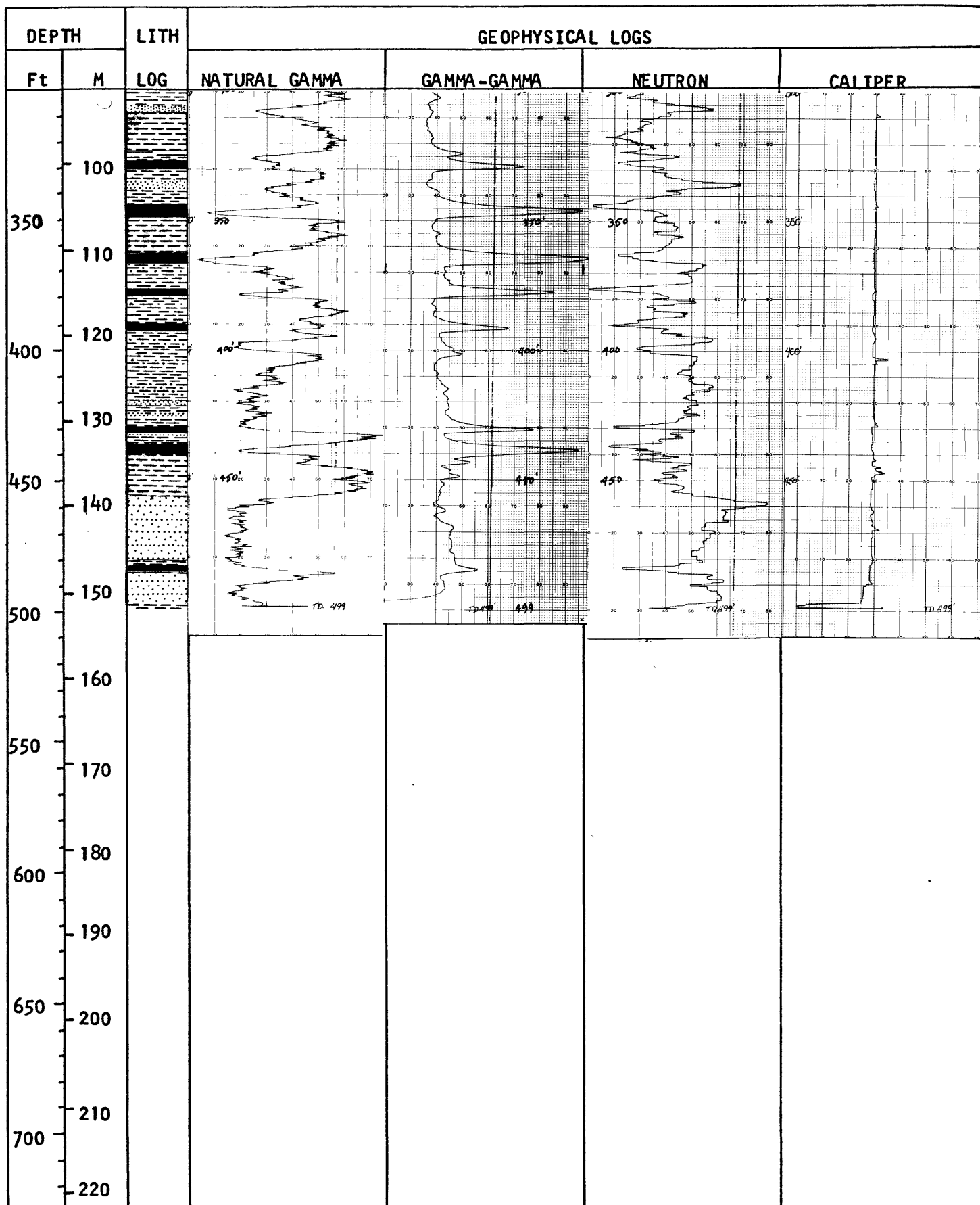
HOLE SIZE 5-1/8"

REMARKS: Logged by McCullough



U.S. GEOLOGICAL SURVEY

HOLE No. CR-Ne-2 continued



U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG

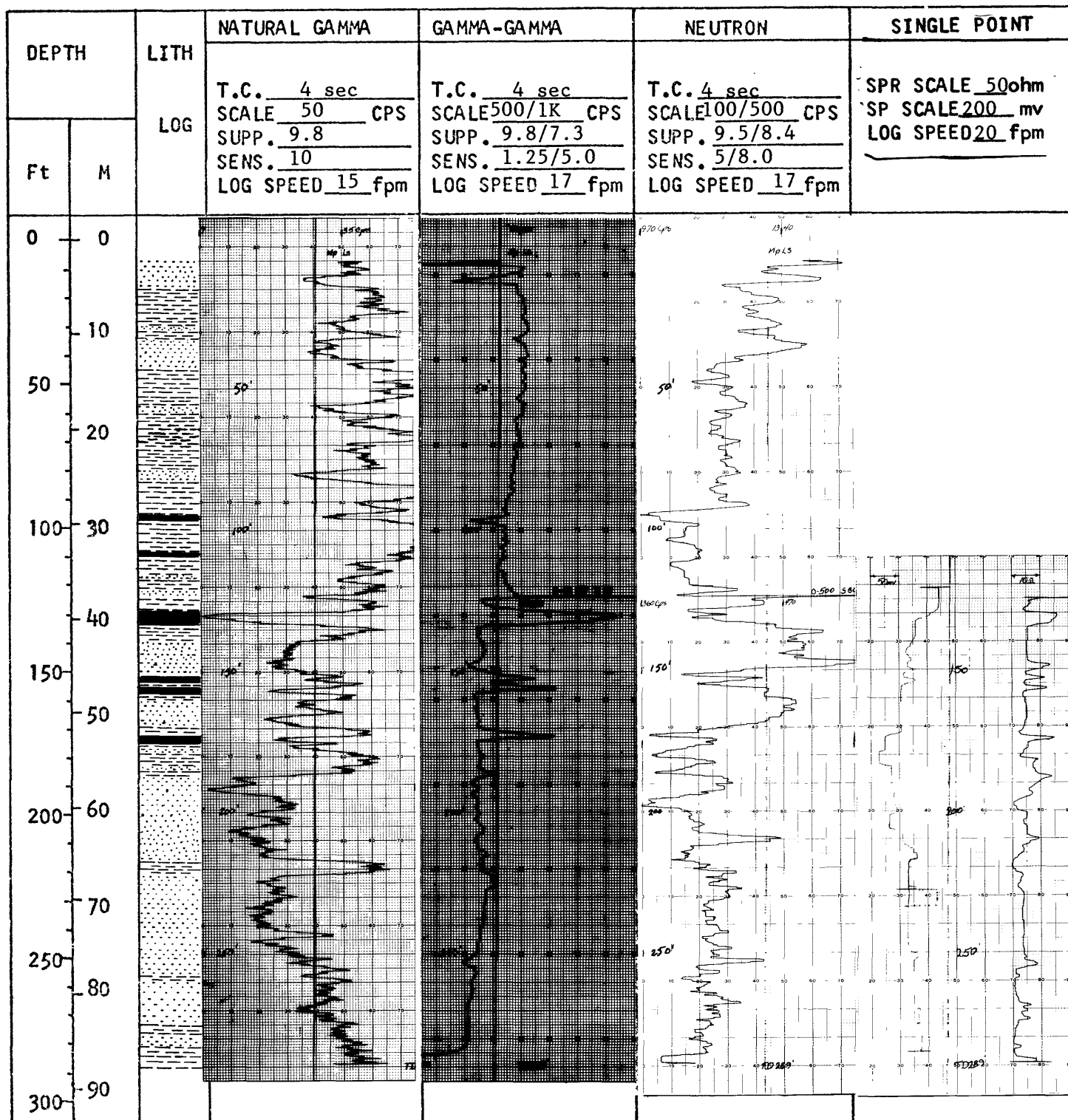
HOLE No. CR-NE-3 STATE Wyoming COUNTY Sweetwater DATE LOGGED 7/25/77 ELEV. 6980 ft.

LOCATION: T. 17 N., R. 101 W., SEC. 28 ; 2200 FSL; 2380 FEL; DATE DRILLED 6/22/77

DRILLED DEPTH 290' LOGGED DEPTH 289' DRILLING MEDIUM water FLUID LEVEL 124'

HOLE SIZE 5-1/8"

REMARKS: Logged by McCullough



**U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG**

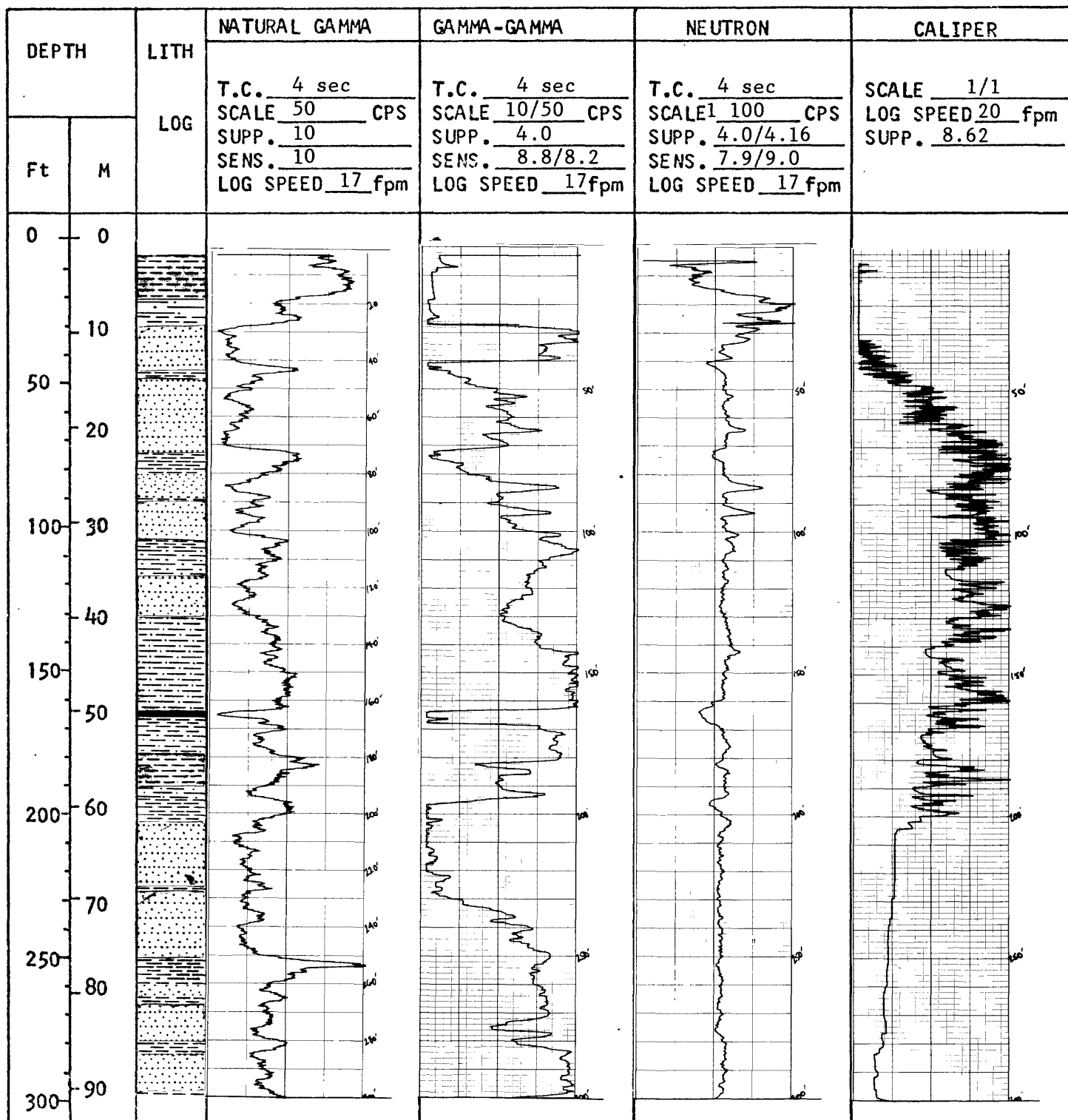
HOLE No. MSR-1 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/16/77 ELEV. 6830 ft.

LOCATION: T. 15 N., R. 102 W., SEC. 4 ; 325 FSL; 1550 FWL; DATE DRILLED 6/12/77

DRILLED DEPTH 650' LOGGED DEPTH 640' DRILLING MEDIUM water FLUID LEVEL 26'

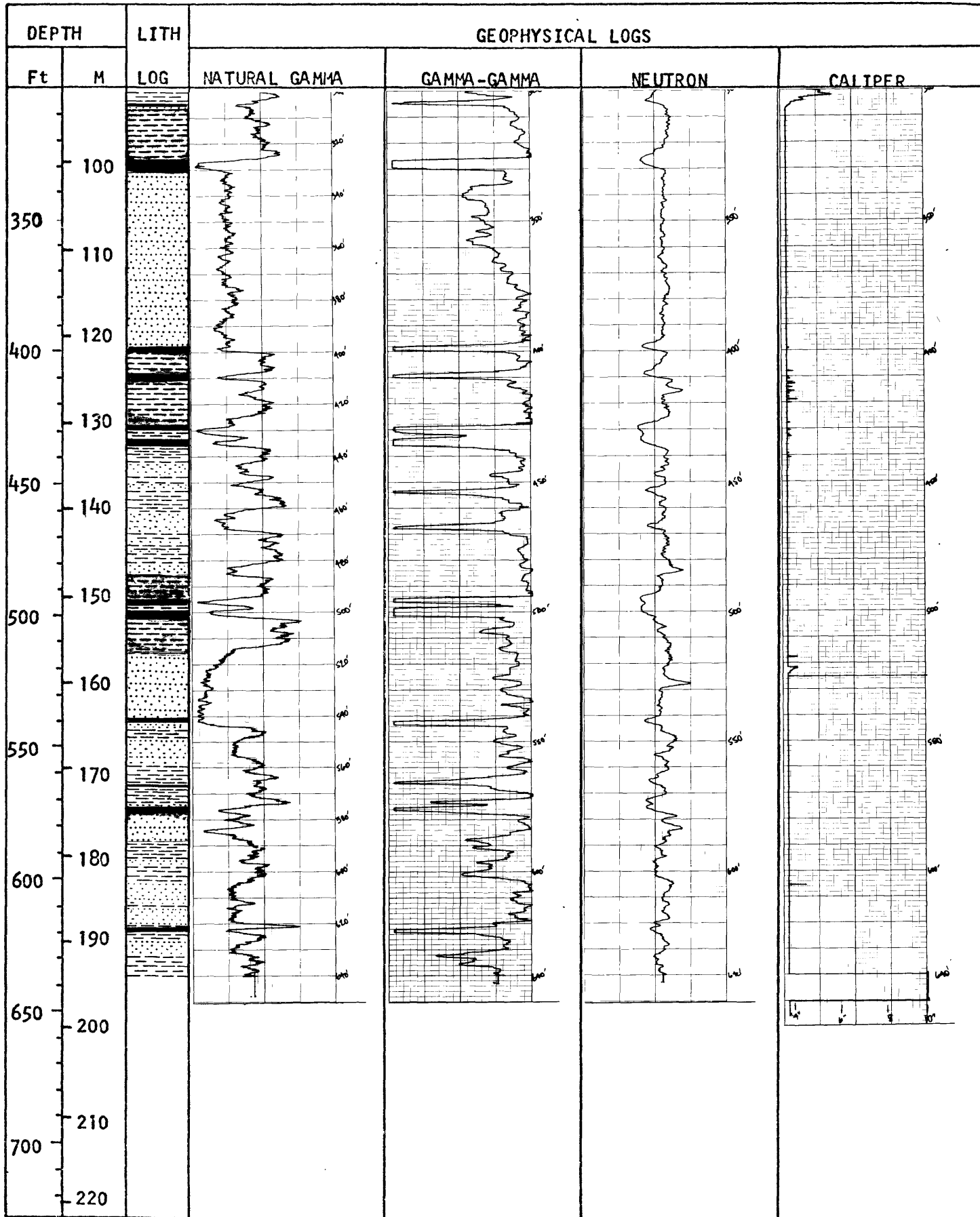
HOLE SIZE 5-1/8"

REMARKS: Logged by Cathcart



U.S. GEOLOGICAL SURVEY

HOLE No. MSR-1 continued



**U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG**

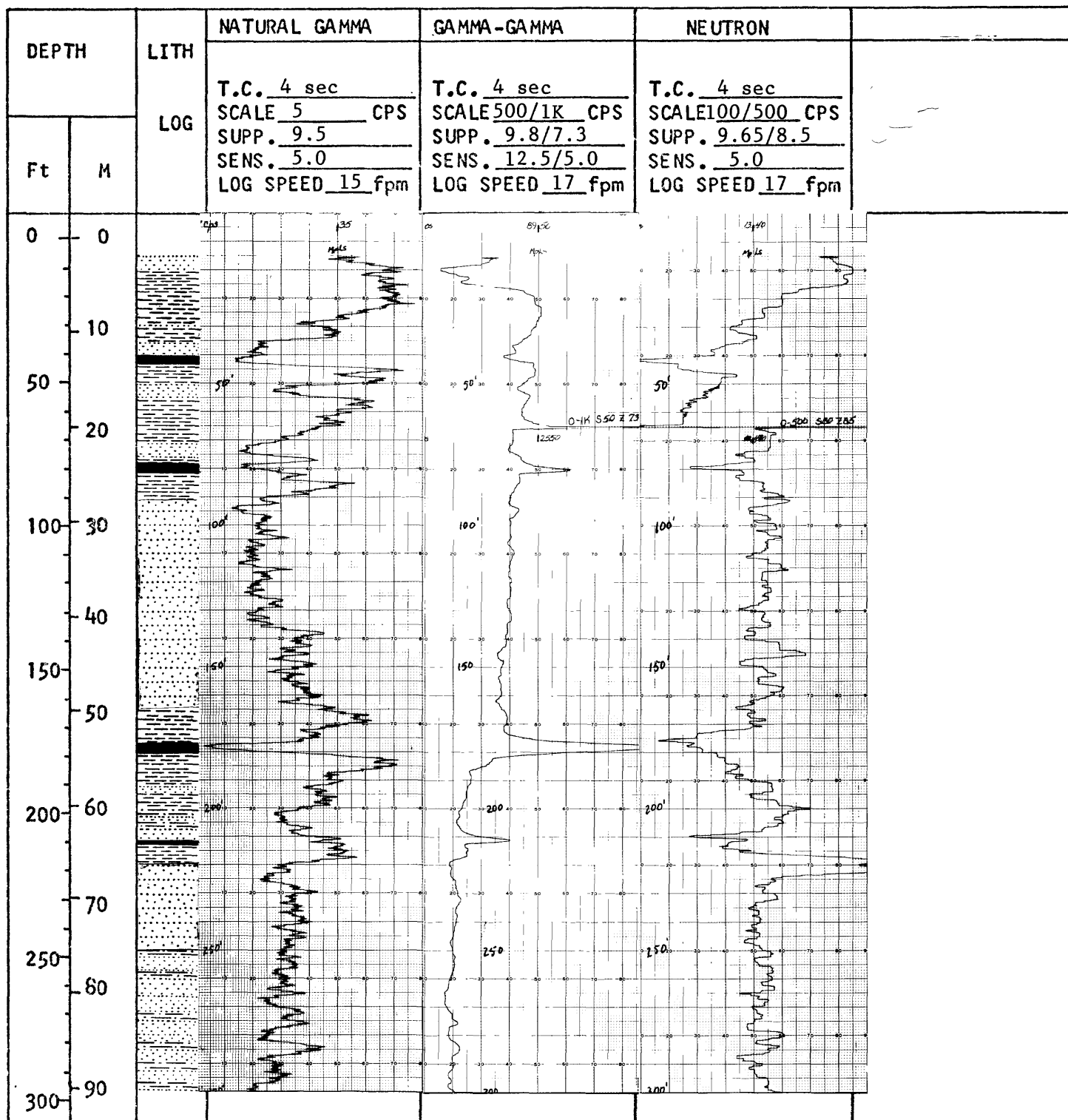
HOLE No. MSR-2 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/26/77 ELEV. 6900 ft.

LOCATION: T. 15 N., R. 102 W., SEC. 8 ; 2200 FNL; 150 FEL; DATE DRILLED 6/25/77

DRILLED DEPTH 545' LOGGED DEPTH 542' DRILLING MEDIUM water FLUID LEVEL 66'

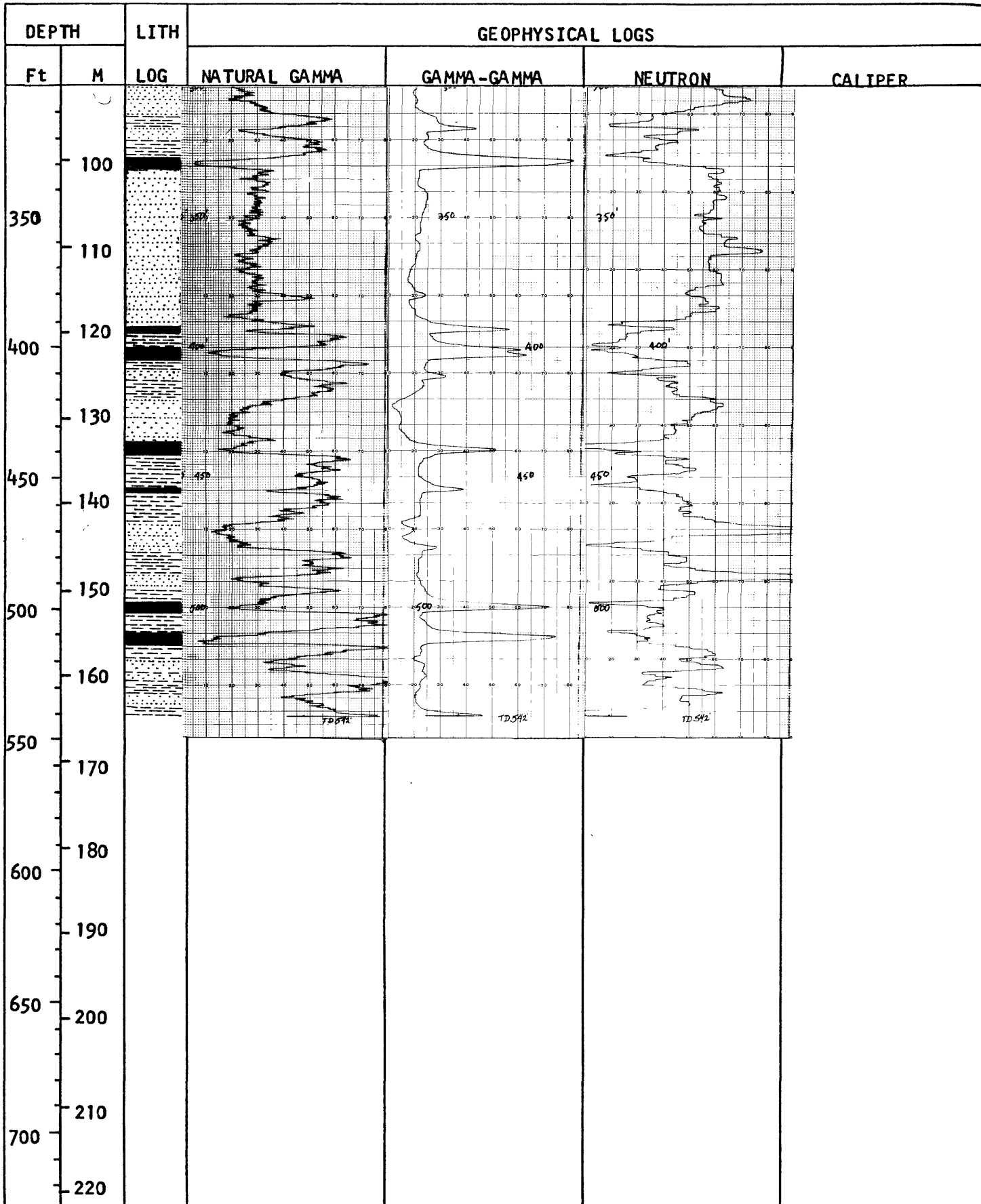
HOLE SIZE 5-1/8"

REMARKS: Logged by McCullough



U.S. GEOLOGICAL SURVEY

HOLE No. MSR-2 continued



**U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG**

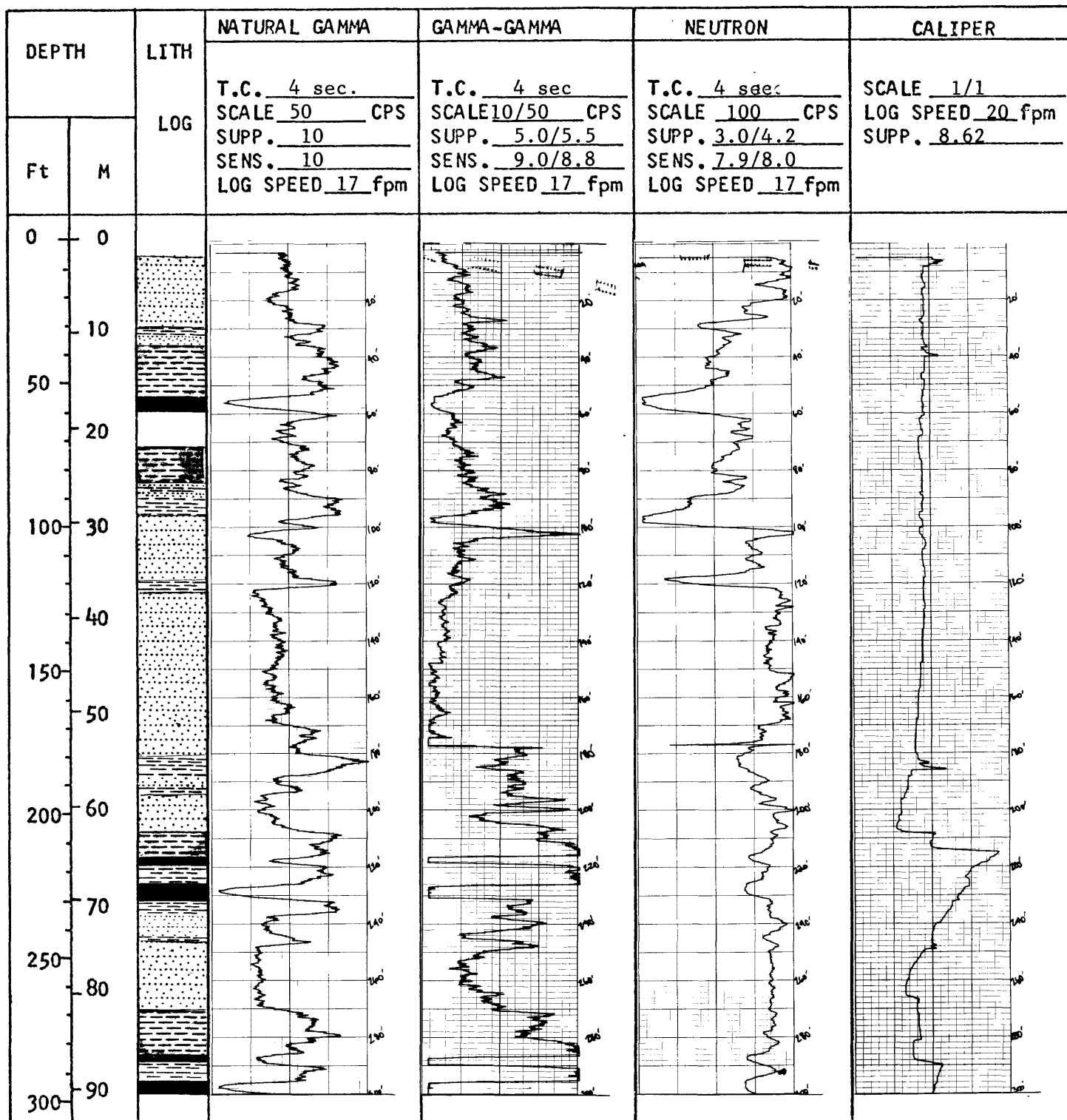
HOLE No. MSR-3 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/17/77 ELEV. 7020 ft.

LOCATION: T. 15 N., R. 102 W., SEC. 17 ; 2400 FS L; 2250 FW L; DATE DRILLED 6/15/77

DRILLED DEPTH 330' LOGGED DEPTH 320' DRILLING MEDIUM water FLUID LEVEL 177'

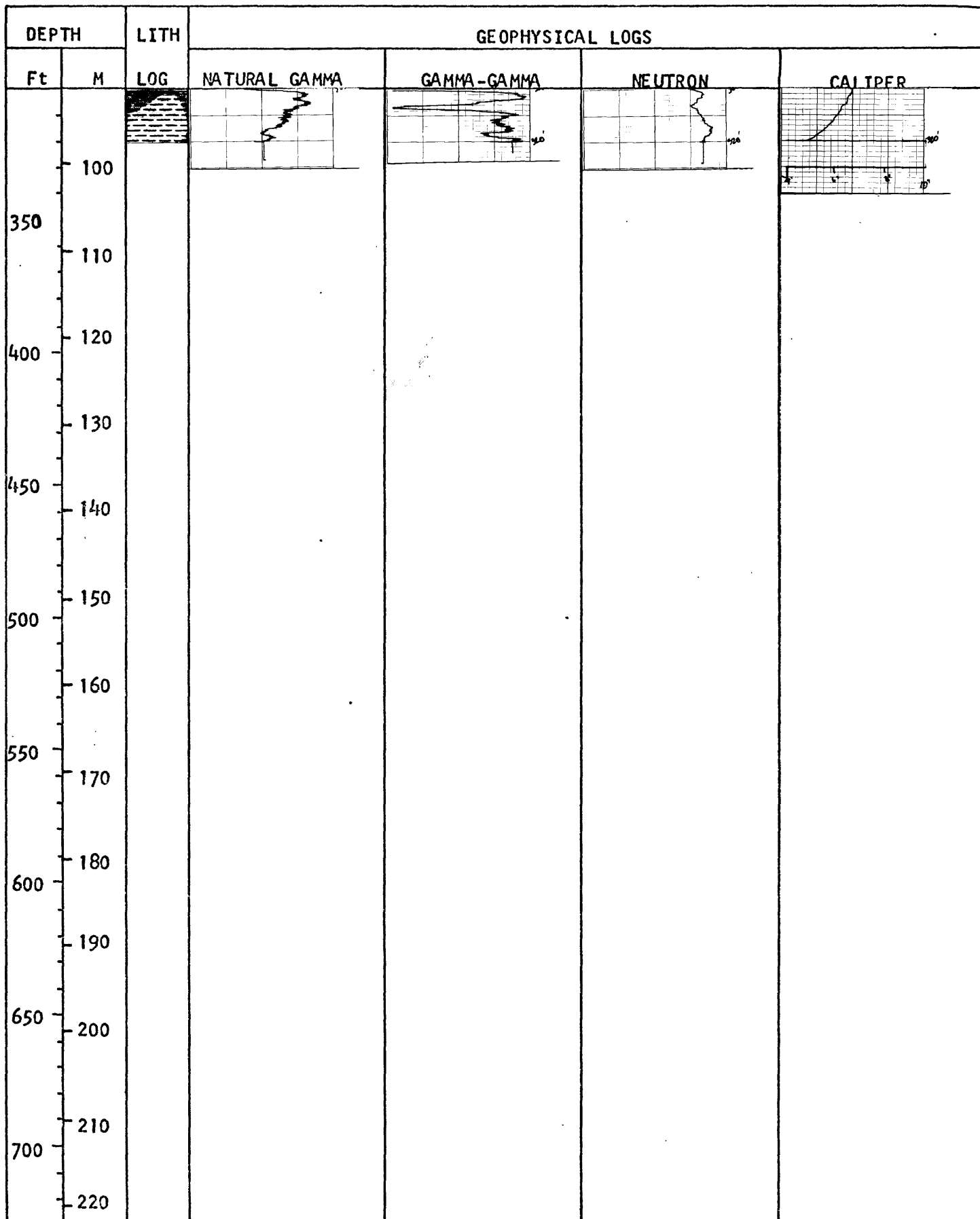
HOLE SIZE 5-1/8"

REMARKS: Logged by Cathcart



U.S. GEOLOGICAL SURVEY

HOLE No. MSR-3 continued



**U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG**

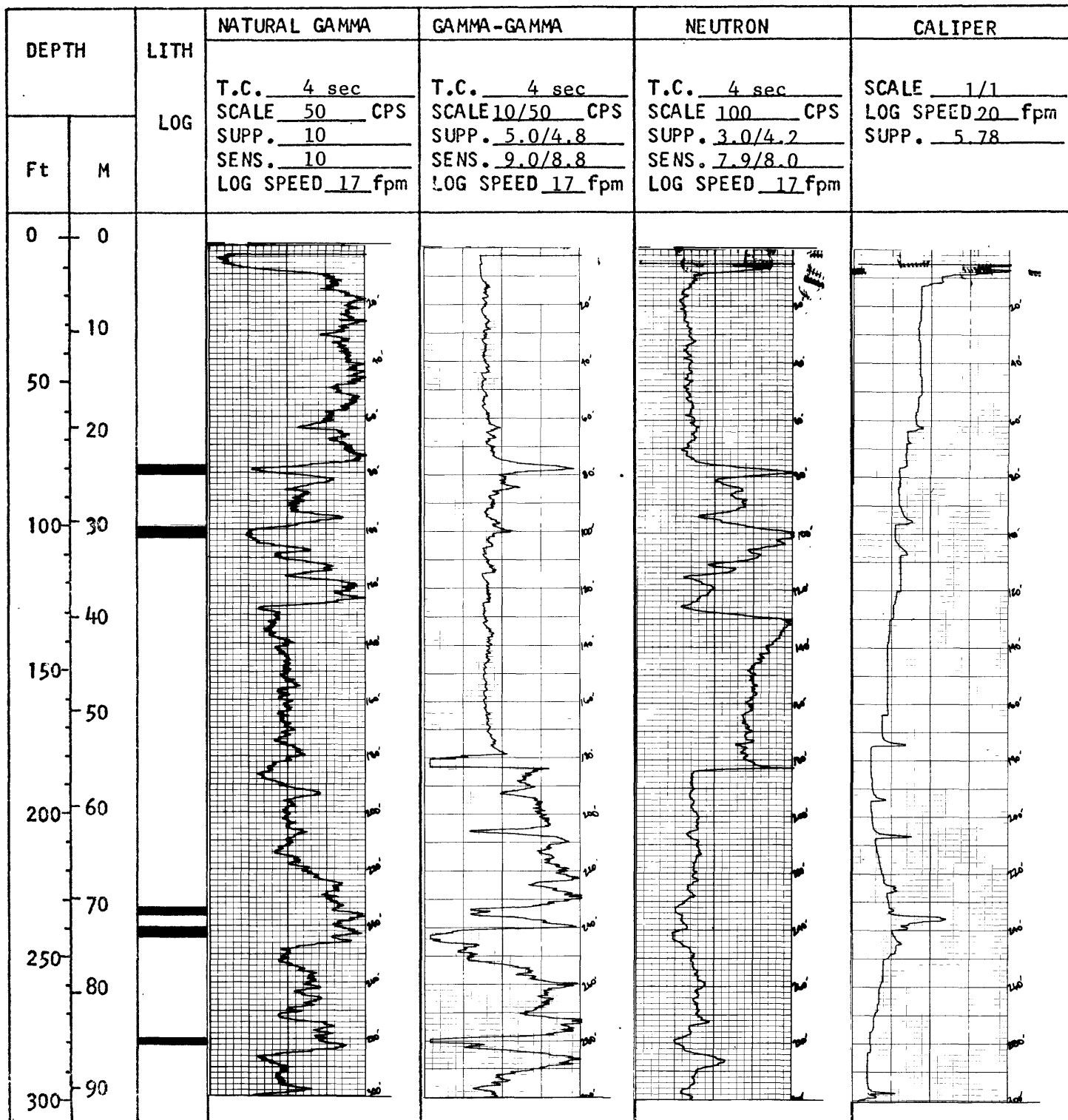
HOLE No. MSR-4 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/17/77 ELEV. 7070 ft.

LOCATION: T. 15 N., R. 102 W., SEC. 21 ; 1600 F.M.; 500 F.W.L.; DATE DRILLED 6/14/77

DRILLED DEPTH 430' LOGGED DEPTH 420' DRILLING MEDIUM water FLUID LEVEL 183'

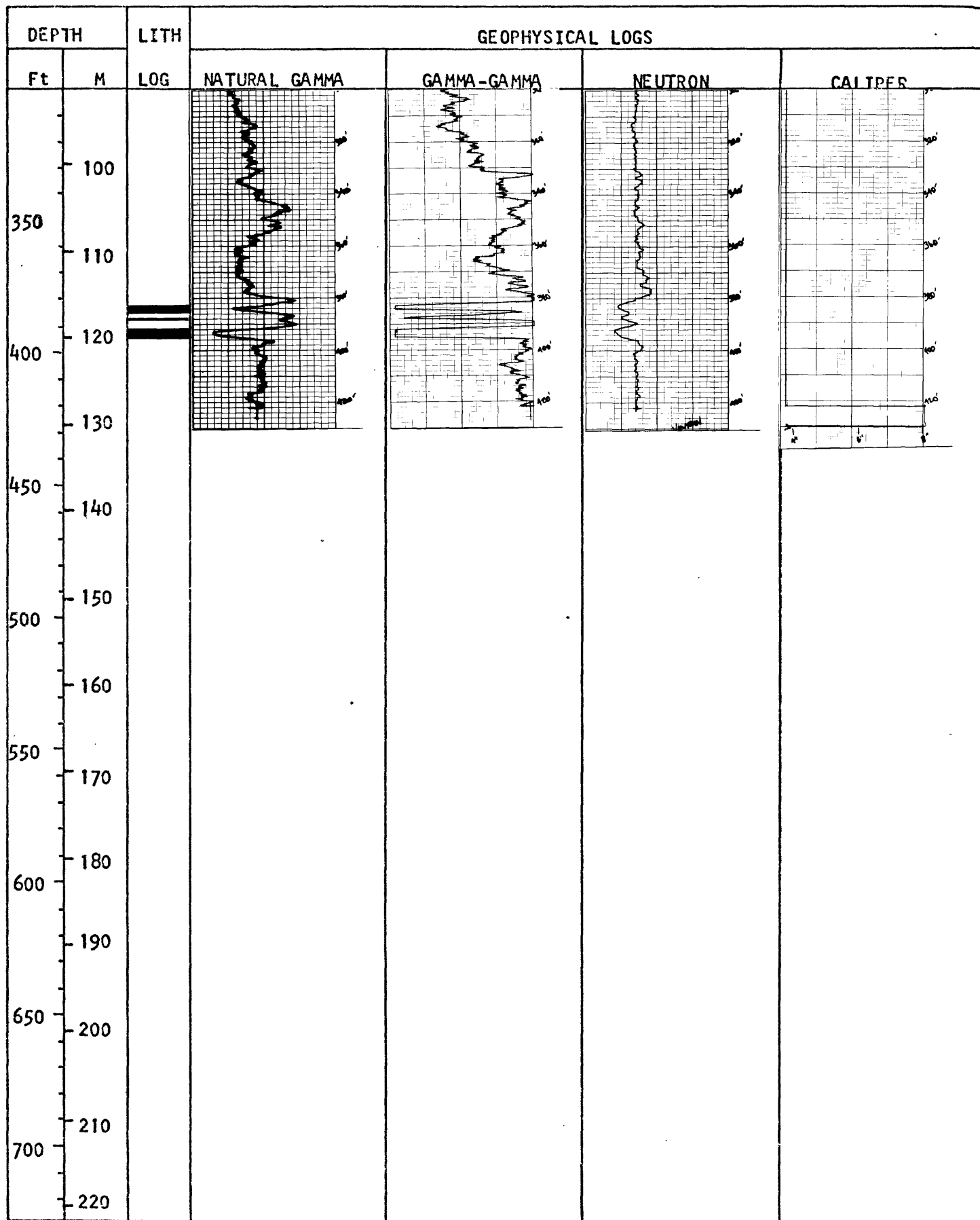
HOLE SIZE 5-1/8"

REMARKS: Equipment malfunction., logged by Cathcart



U.S. GEOLOGICAL SURVEY

HOLE No. MSR-4 continued



U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG

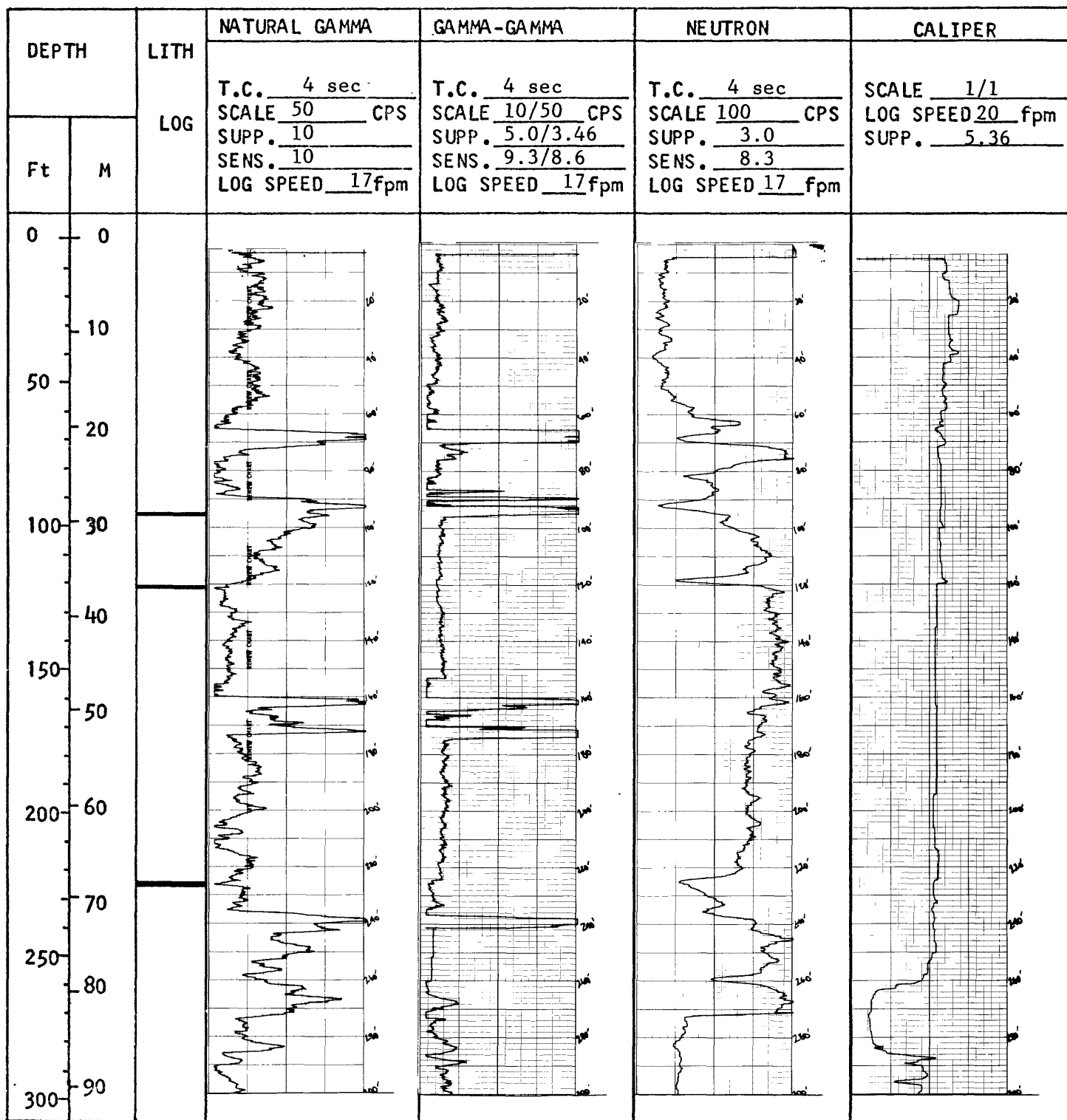
HOLE No. MSR-5 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/17/77 ELEV. 7180 ft.

LOCATION: T. 15 N., R. 102 W., SEC. 21; 700 FSL; 2300 FW; DATE DRILLED 6/10/77

DRILLED DEPTH 480 LOGGED DEPTH 472 DRILLING MEDIUM water FLUID LEVEL 241

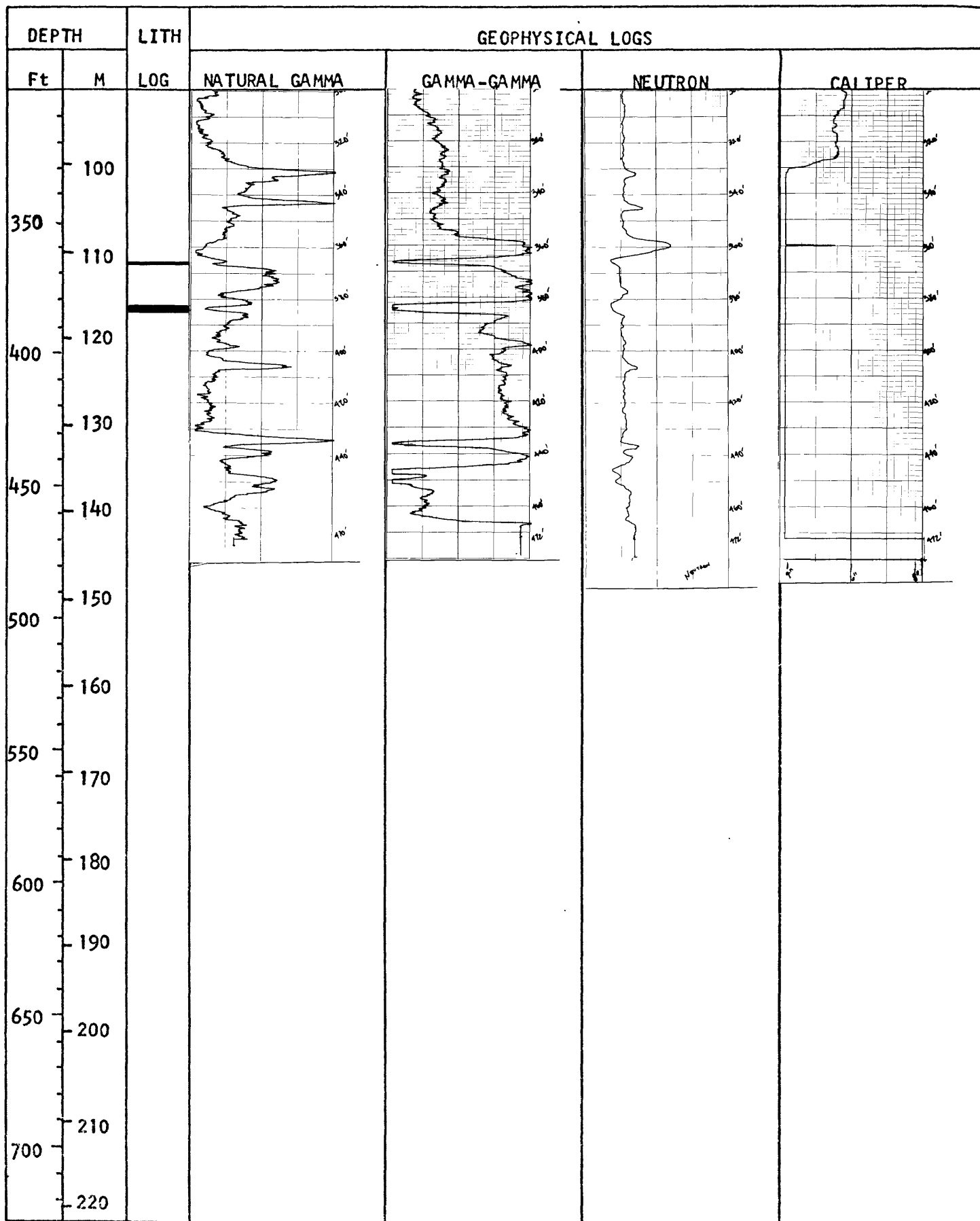
HOLE SIZE 5-1/8"

REMARKS: Equipment malfunction; logged by Cathcart



U.S. GEOLOGICAL SURVEY

HOLE No. MSR-5 continued



U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG

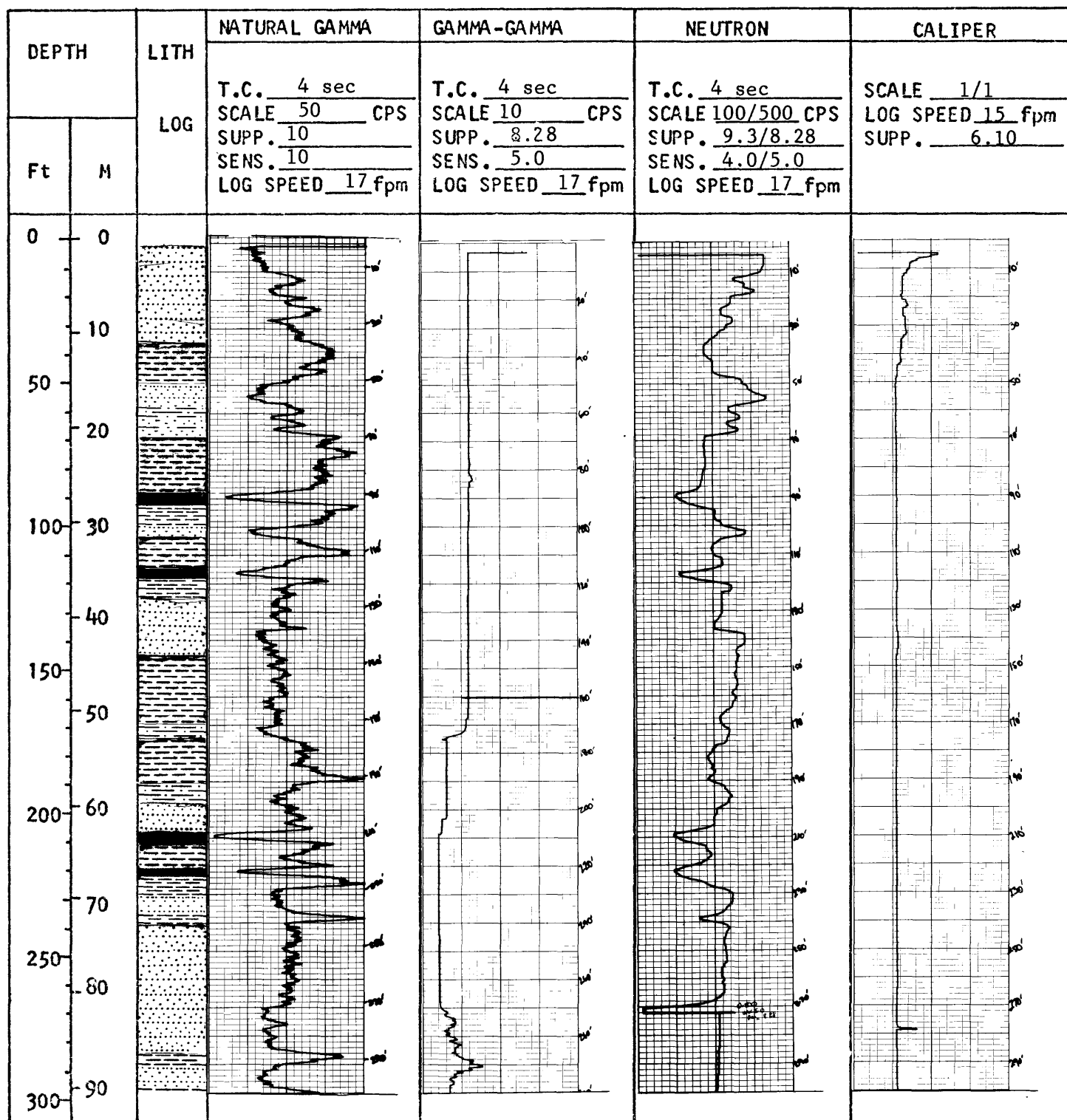
HOLE No. MSR-6 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/11/77 ELEV. 7240 ft.

LOCATION: T. 15 N., R. 102 W., SEC. 28; 1950 F.N.; 2090 F.E.L.; DATE DRILLED 6/8/77

DRILLED DEPTH 380 LOGGED DEPTH 376 DRILLING MEDIUM water FLUID LEVEL 272

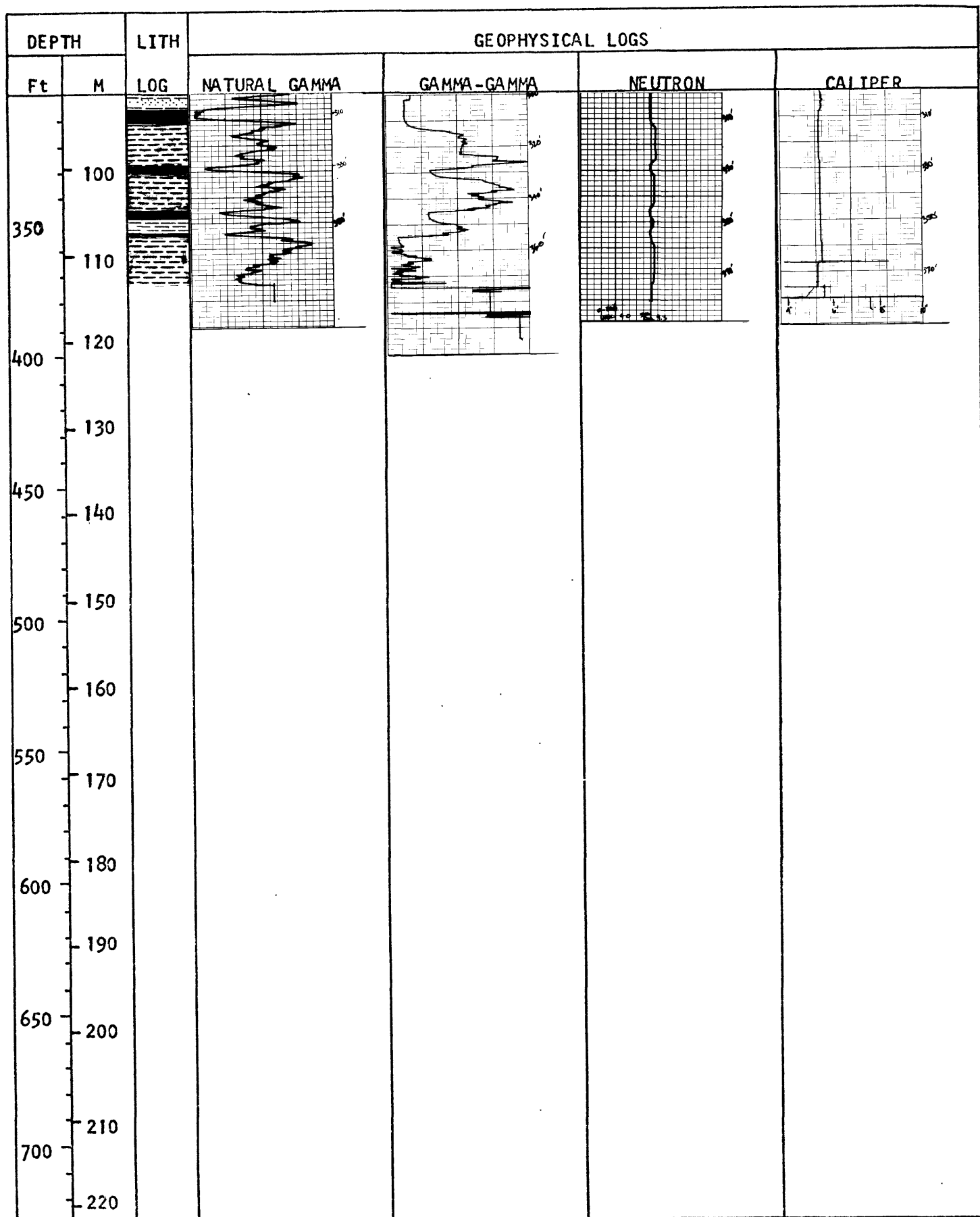
HOLE SIZE 5-1/8"

REMARKS: Logged by Cathcart



U.S. GEOLOGICAL SURVEY


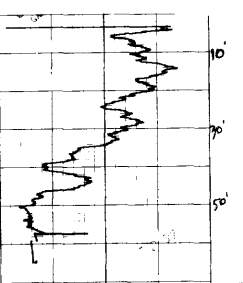
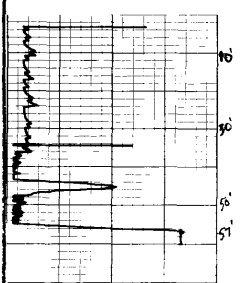
HOLE No. MSR-6 continued



U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG

HOLE No. PM-1A STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/12/77 ELEV. 7060 ft.
 LOCATION: T. 15 N., R. 102 W., SEC. 33; 550 FN L; 2400 FE L; DATE DRILLED 6/10/77
 DRILLED DEPTH 190' LOGGED DEPTH 57' DRILLING MEDIUM water FLUID LEVEL 34'
 HOLE SIZE 5-1/8"

REMARKS: Hole blocked at 57 feet, logged by Cathcart

DEPTH		LITH LOG	NATURAL GAMMA	GAMMA-GAMMA		
Ft	M		T.C. <u>4</u> sec SCALE <u>50</u> CPS SUPP. <u>10</u> SENS. <u>10</u> LOG SPEED <u>17</u> fpm	T.C. <u>4</u> sec SCALE <u>10/50</u> CPS SUPP. <u>10/10</u> SENS. <u>10/4.66</u> LOG SPEED <u>17</u> fpm		
0	0					
10						
50						
20						
100	30					
40						
150						
50						
200	60					
70						
250						
80						
300	90					

U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG

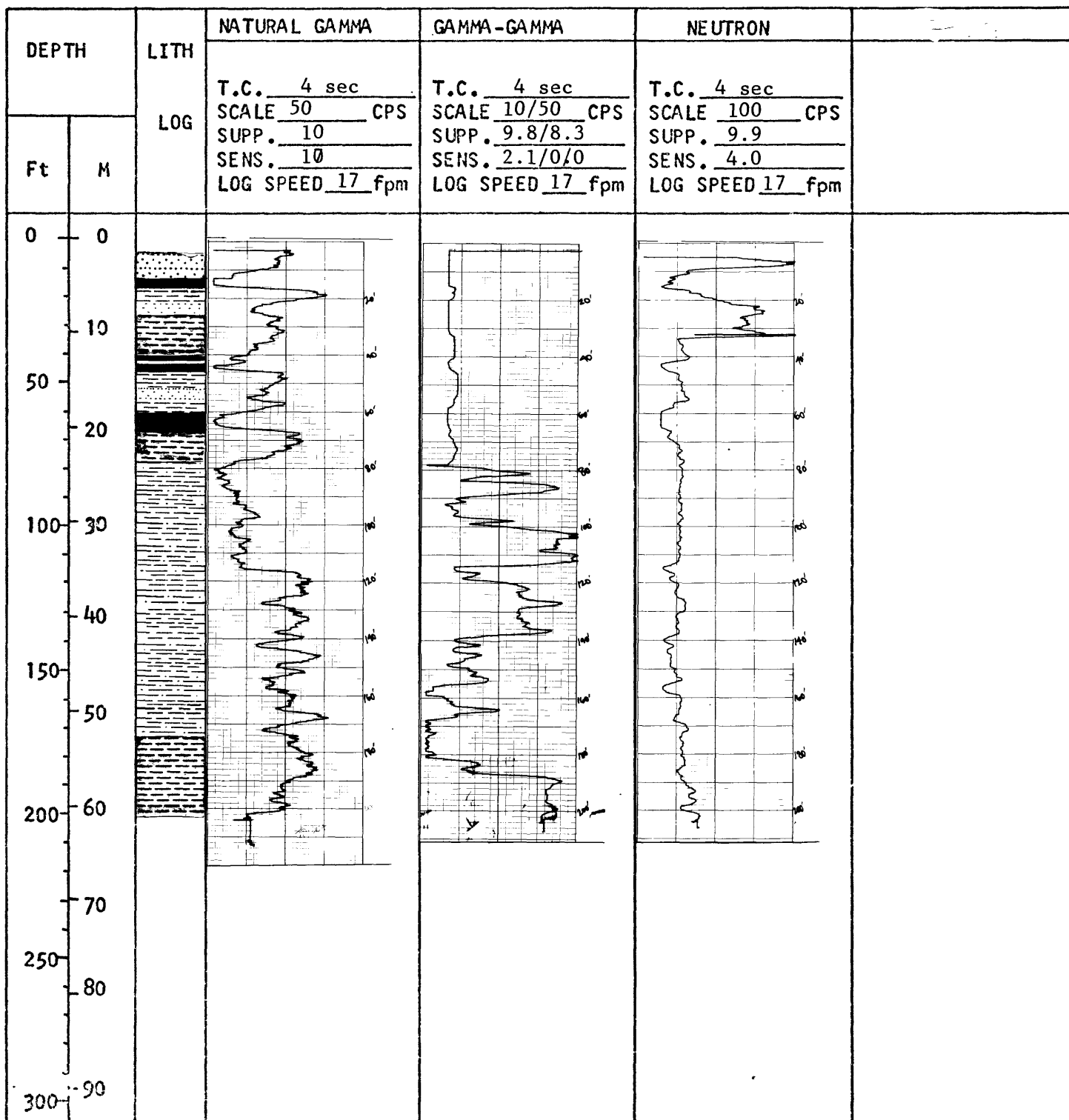
HOLE No. PM-1B STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/12/77 ELEV. 7060 ft.

LOCATION: T. 15 N., R. 102 W., SEC. 33; 1300 FNL; 1550 FL; DATE DRILLED 6/1/77

DRILLED DEPTH 215' LOGGED DEPTH 204' DRILLING MEDIUM water FLUID LEVEL 78.5'

HOLE SIZE 5-1/8"

REMARKS: Logged by Cathcart



**U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG**

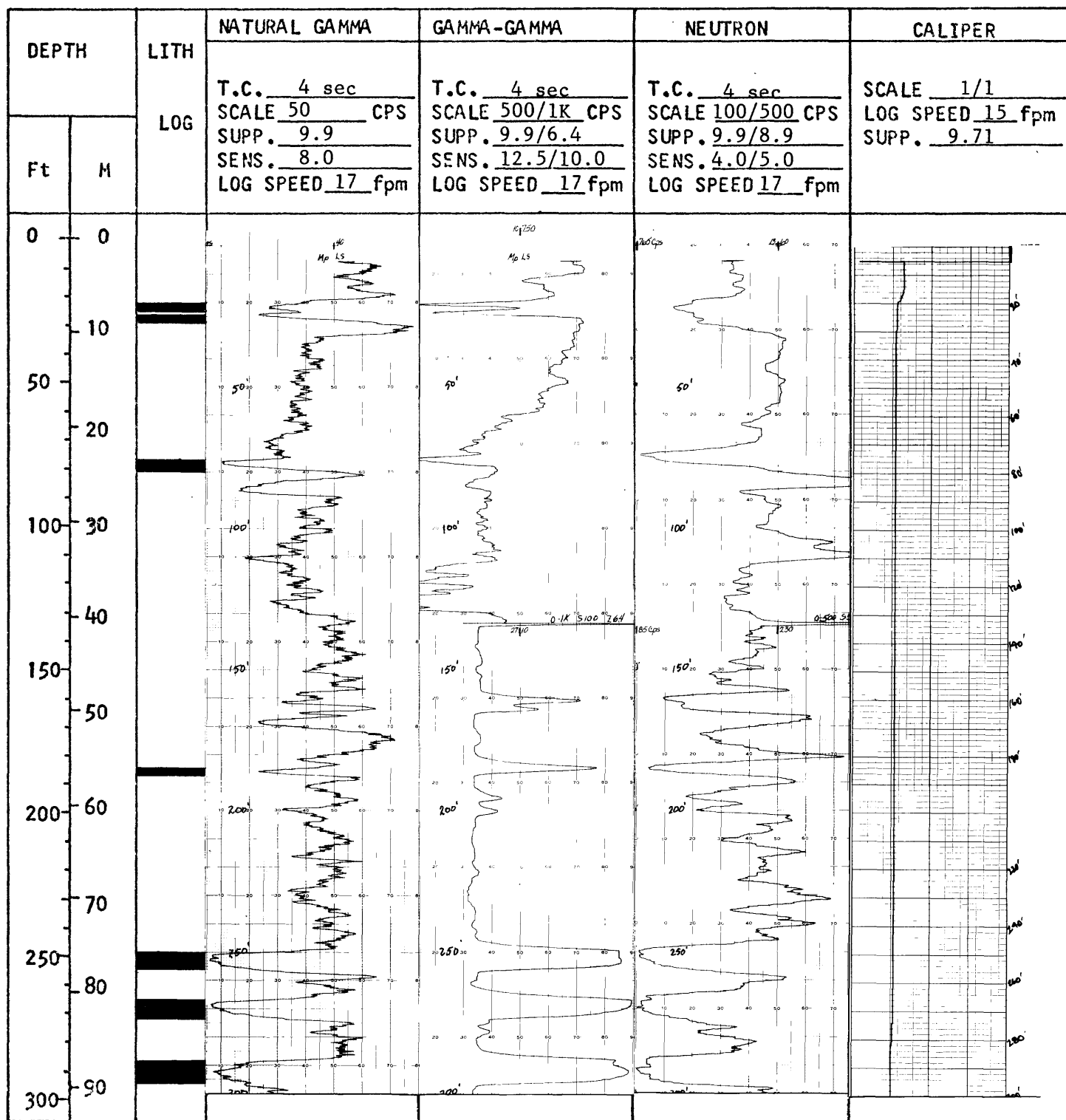
HOLE No. PM-2 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/2/77 ELEV. 7360 ft.

LOCATION: T. 14 N., R. 102 W., SEC. 10 ; 1140 FS 1275 FE; DATE DRILLED 5/29/77

DRILLED DEPTH 355' LOGGED DEPTH 332' DRILLING MEDIUM water FLUID LEVEL 134'

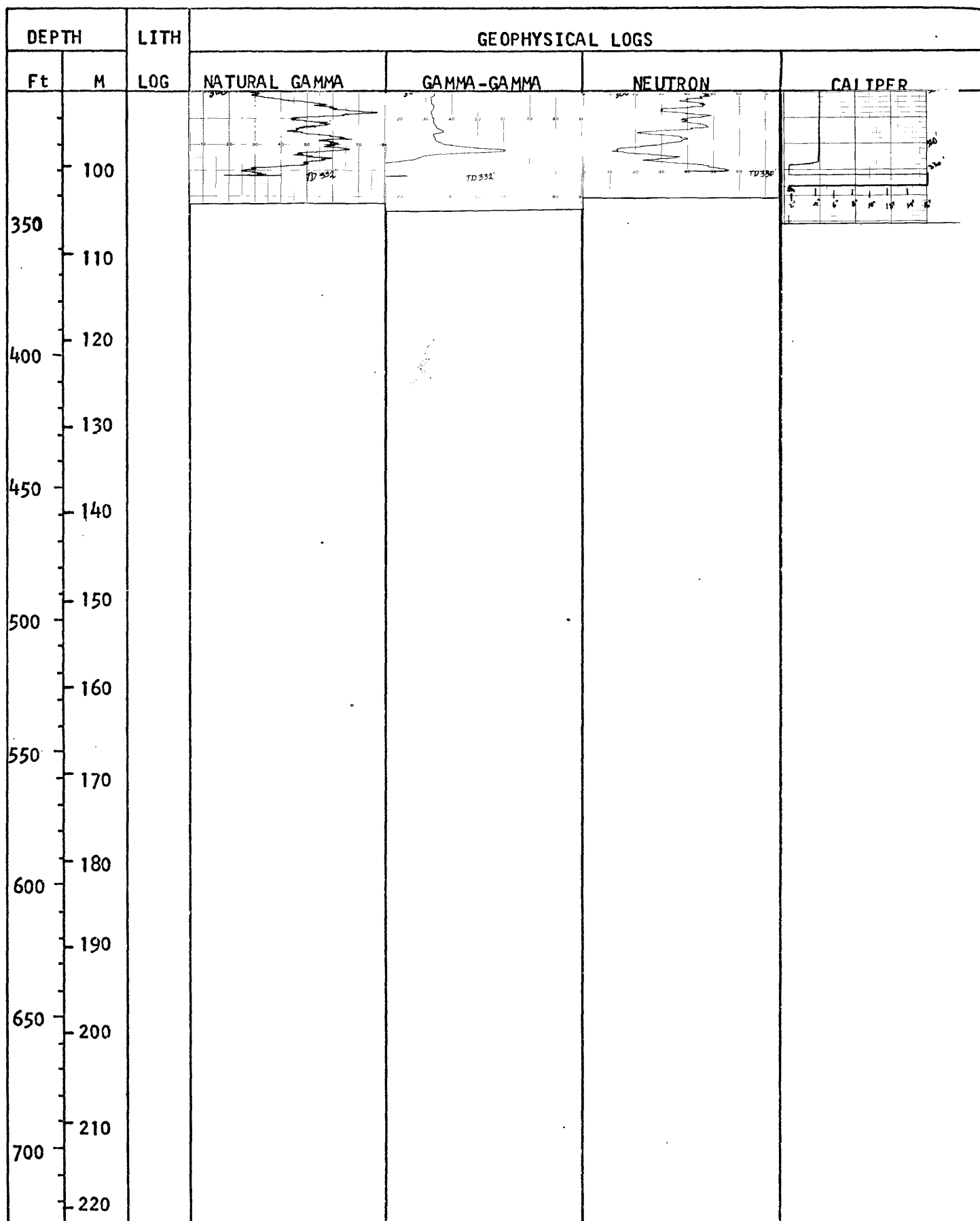
HOLE SIZE 5-1/8"

REMARKS: Logged by Cathcart



U.S. GEOLOGICAL SURVEY

HOLE No. PM-2 continued



U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG

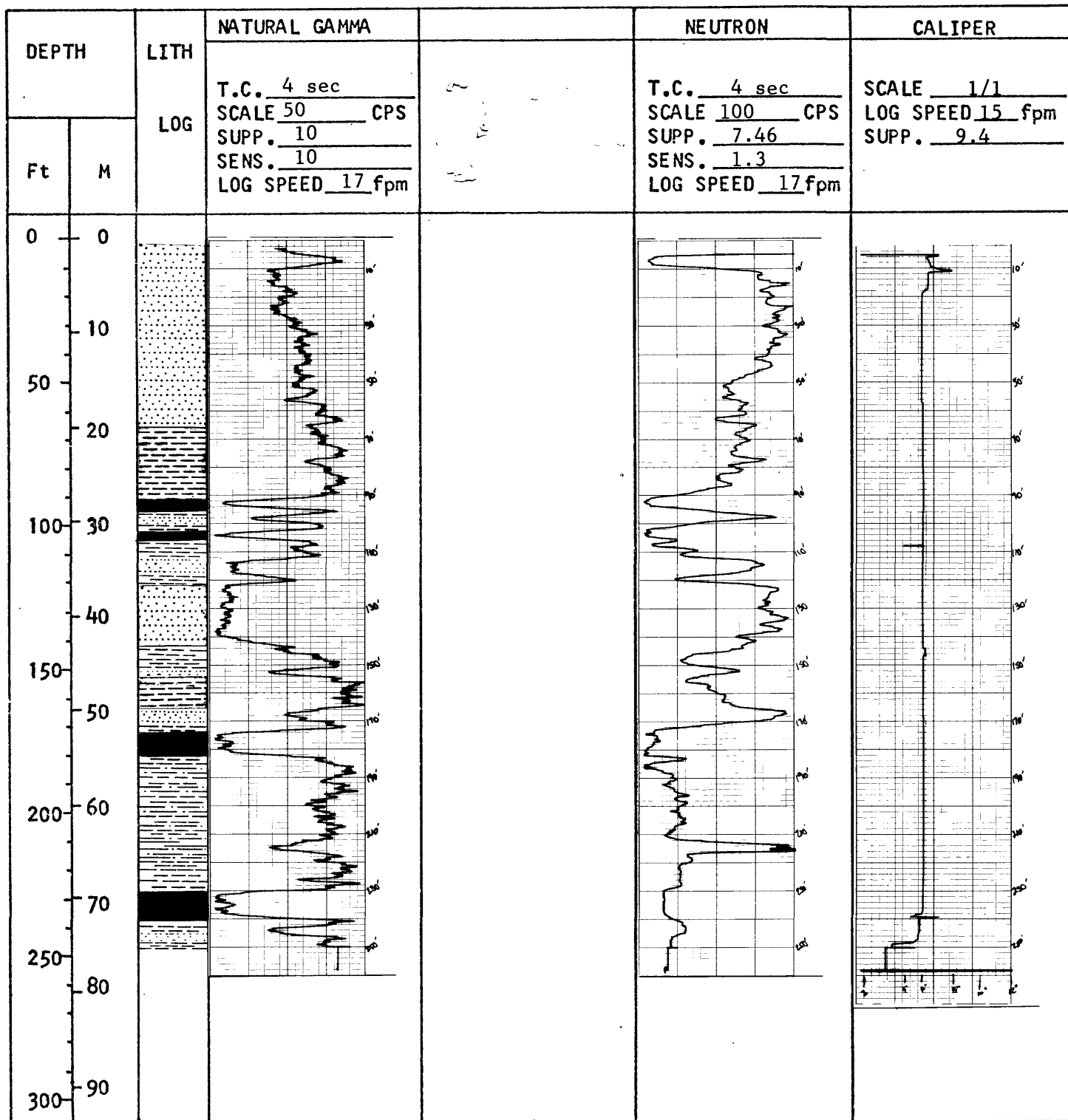
HOLE No. PM-5 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/7/77 ELEV. 7325 ft.

LOCATION: T. 15 N., R. 102 W., SEC. 32; 25 FS L; 2480 FEL; DATE DRILLED 6/7/77

DRILLED DEPTH 250' LOGGED DEPTH 250' DRILLING MEDIUM air/water FLUID LEVEL dry

HOLE SIZE 5-1/8"

REMARKS: Logged by Cathcart



**U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG**

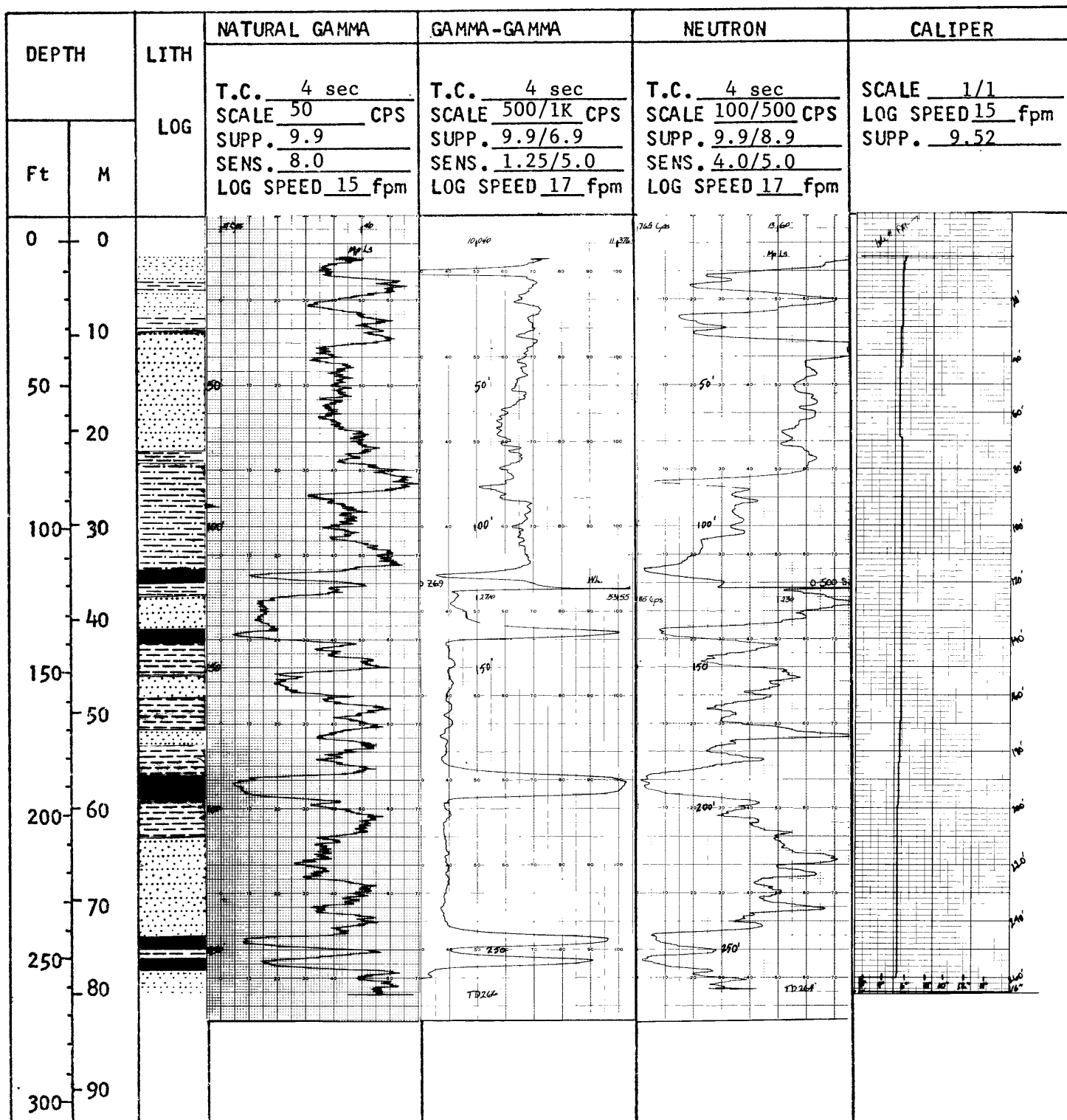
HOLE No. PM-6 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/2/77 ELEV. 7560 ft.

LOCATION: T. 14 N., R. 102 W., SEC. 6 ; 1350 FWL; 1150 FWL; DATE DRILLED 5/29/77

DRILLED DEPTH 270' LOGGED DEPTH 266' DRILLING MEDIUM water FLUID LEVEL 122'

HOLE SIZE 5-1/8"

REMARKS: Logged by McCullough



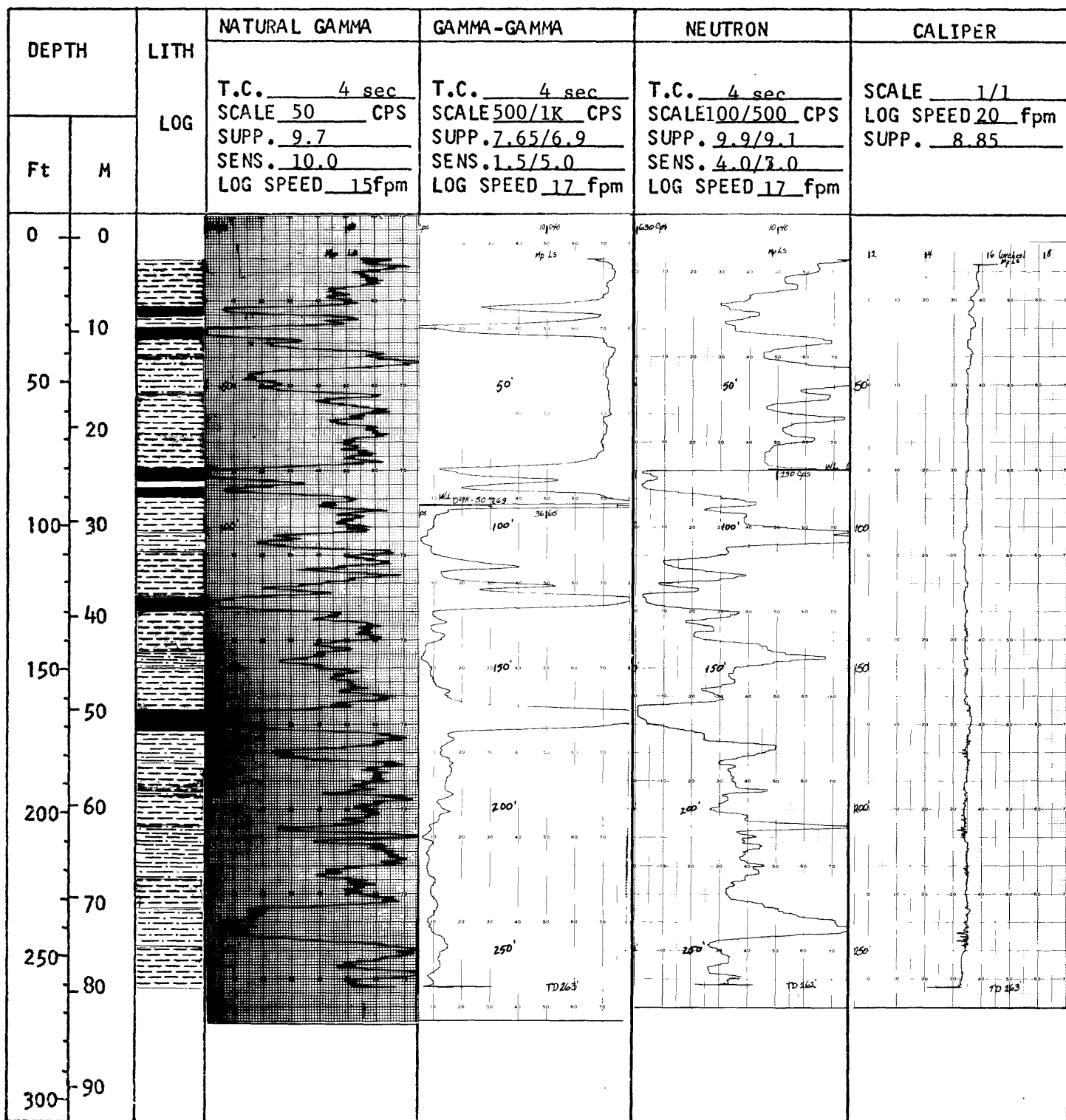
U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG

HOLE No. PM-7 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/2/77 ELEV. 7605 ft.

LOCATION: T. 14 N., R. 103 W., SEC. 1; 2490 FSL; 2600 FWL; DATE DRILLED 6/1/77

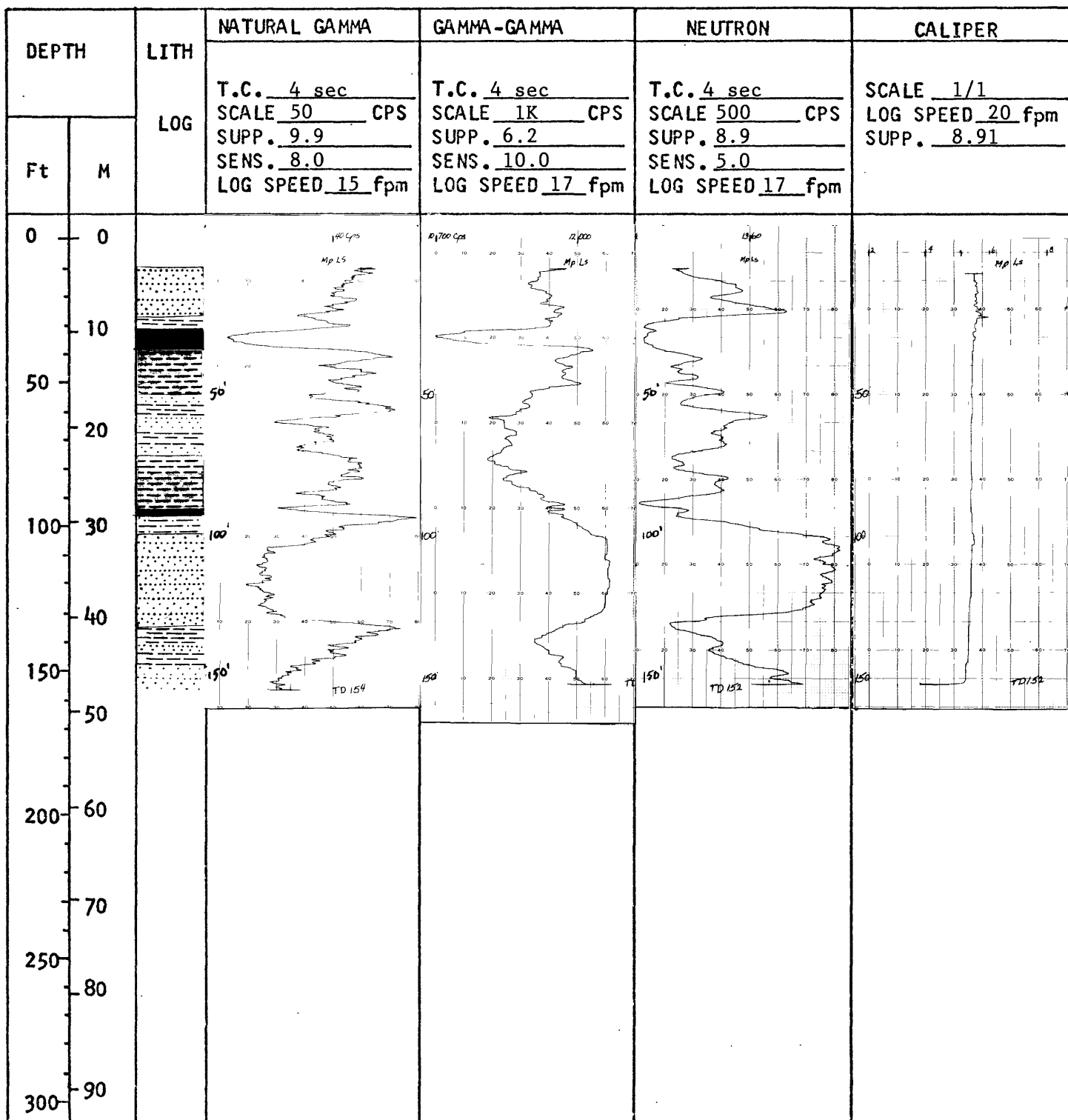
DRILLED DEPTH 265' LOGGED DEPTH 263' DRILLING MEDIUM water FLUID LEVEL 93'

HOLE SIZE 5-1/8"

REMARKS: Logged by McCullough

**U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG**

HOLE No. PM-8 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/2/77 ELEV. 7925 ft.
 LOCATION: T. 14 N., R. 103 W., SEC. 13, 1930 SL; 1825 EL; DATE DRILLED 5/28/77
 DRILLED DEPTH 155' LOGGED DEPTH 154' DRILLING MEDIUM air FLUID LEVEL dry
 HOLE SIZE 501/8"
 REMARKS: Logged by McCullough



**U.S. GEOLOGICAL SURVEY
DRILL-HOLE LOG**

HOLE No. PM-9 STATE Wyoming COUNTY Sweetwater DATE LOGGED 6/2/77 ELEV. 7920 ft.

LOCATION: T. 14 N., R. 103 W., SEC. 24 ; 350 AN L; 1500 RE L; DATE DRILLED 5/27/77

DRILLED DEPTH 155' LOGGED DEPTH 146' DRILLING MEDIUM mud FLUID LEVEL 120'

HOLE SIZE 5-1/8"

REMARKS: Logged by McCullough

