

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

GEOPHYSICAL LOGS FOR BIG HORN, FALLON, AND
POWDER RIVER COUNTIES, MONTANA

Chapter A of
Preliminary Report of 1977 Coal Drilling in
Eastern Montana and Northeastern Wyoming

By U.S. Geological Survey
and
Montana Bureau of Mines and Geology

Open-File Report 77-721-A

1977

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

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EXPLANATION OF DRILL-HOLE LOCATIONS

The location of a drill hole within a section is identified on the logs by a letter-designated tract system and by footage from section lines. Each section is subdivided into four quadrants, with the northeast quadrant designated as A, and continuing counterclockwise to D. Each quadrant is then subdivided into four equal parts with a similar letter designation. This is repeated until a section is subdivided into 256 units. Using this system, the largest subdivision in a section is listed first. For example, a tract designation of ABCD would be located in the $SE\frac{1}{4}SW\frac{1}{4}NW\frac{1}{4}NE\frac{1}{4}$ of the section.

PRELIMINARY REPORT OF 1977 COAL DRILLING IN EASTERN MONTANA AND
NORTHEASTERN WYOMING

Geophysical Logs for Big Horn, Fallon, and Powder River Counties, Montana

by U.S. Geological Survey and Montana Bureau of Mines and Geology

Introduction and acknowledgments

This is the first in a series of reports on the 1977 drilling program (hole nos. 771-7737) conducted by the Montana Bureau of Mines and Geology (MBMG) under Grant nos. 14-08-0001-G-384 and 14-08-0001-G-441 from the U.S. Geological Survey (USGS). Other chapters will follow as the data are received.

The drilling is being done as part of a USGS program to evaluate and classify mineral lands in the public domain. The program provides data on the thickness, quality, extent, correlation, and recoverability of the coal beds, and the lithologic and petrographic characteristics of the associated rocks in the Fort Union and Wasatch Formations (Tertiary) of eastern Montana and northeastern Wyoming. Similar information from 588 drill holes and approximately 200 coal samples from the same area and from western North Dakota was presented in earlier reports (USGS/MBMG 1973, 1974, 1976a, 1976b, and USGS/NDGS 1976).

This report includes only geophysical logs. Core samples from some of the holes have been submitted to the U.S. Bureau of Mines for proximate analyses and determination of Btu/lb values and form of sulfur present. Trace element analyses are being done by V.E. Swanson, USGS.

Fieldwork was carried out by the following MBMG personnel: Robert E. Matson, Chief, Energy Division; Miller Hansen and John Pinchock, geologists; and Eldon Woods and Leigh Sauer, technicians. Coordination and technical guidance were provided by Robert E. Matson, MBMG, and Elmer M. Schell, USGS.

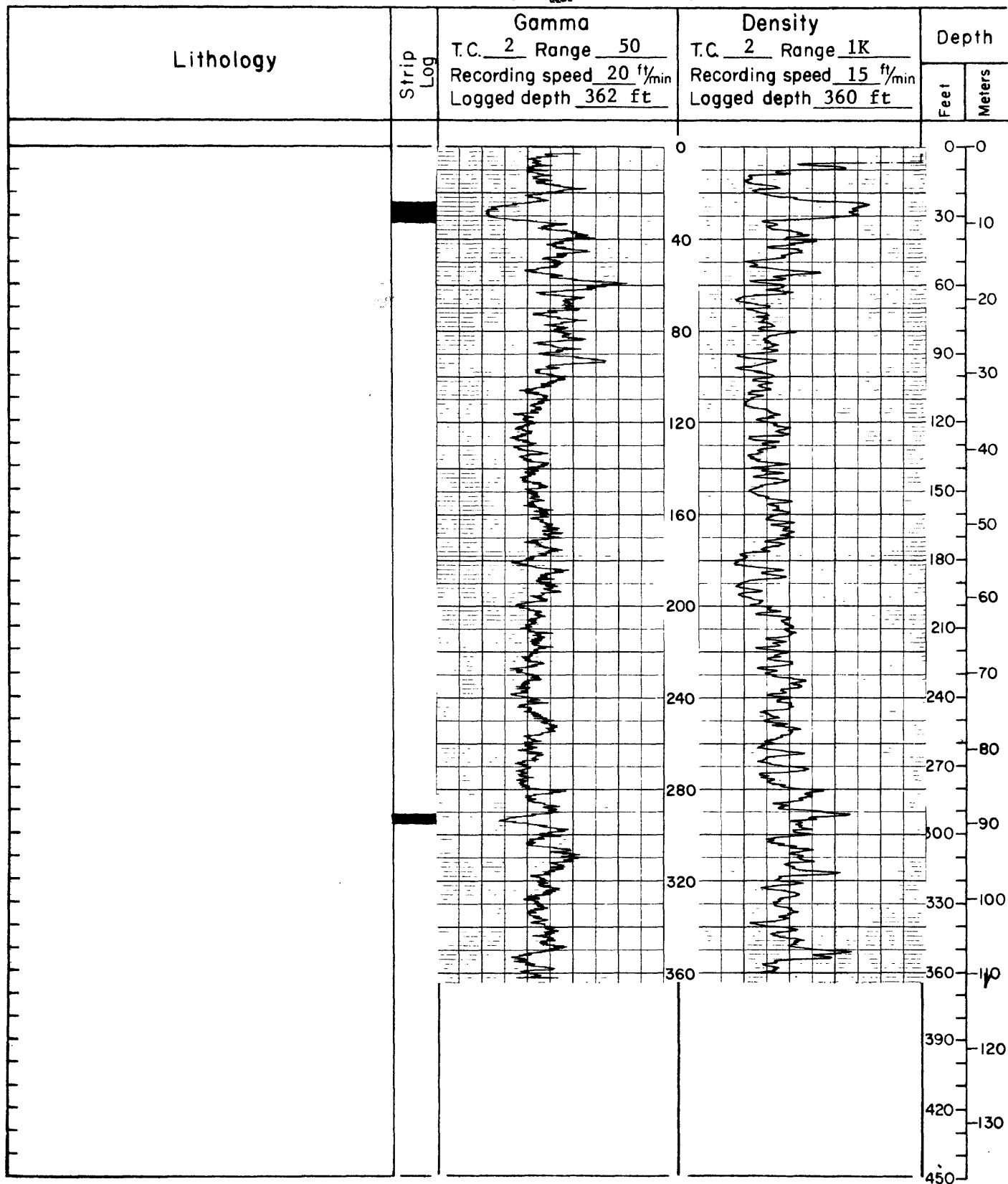
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-771 Map: BLM SE-16 Date: 4/26/77 State: Montana County: Fallon
 Elev.: 3016 ft Location: T. 5 N. 3 R. 57 E. W, Sec. 2, Tract ABDC Drilled depth: 362 ft
 Measured: 1250 ft ^{FNL} 1650 ft ^{FEL} ~~PSL~~ ~~PWL~~ Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

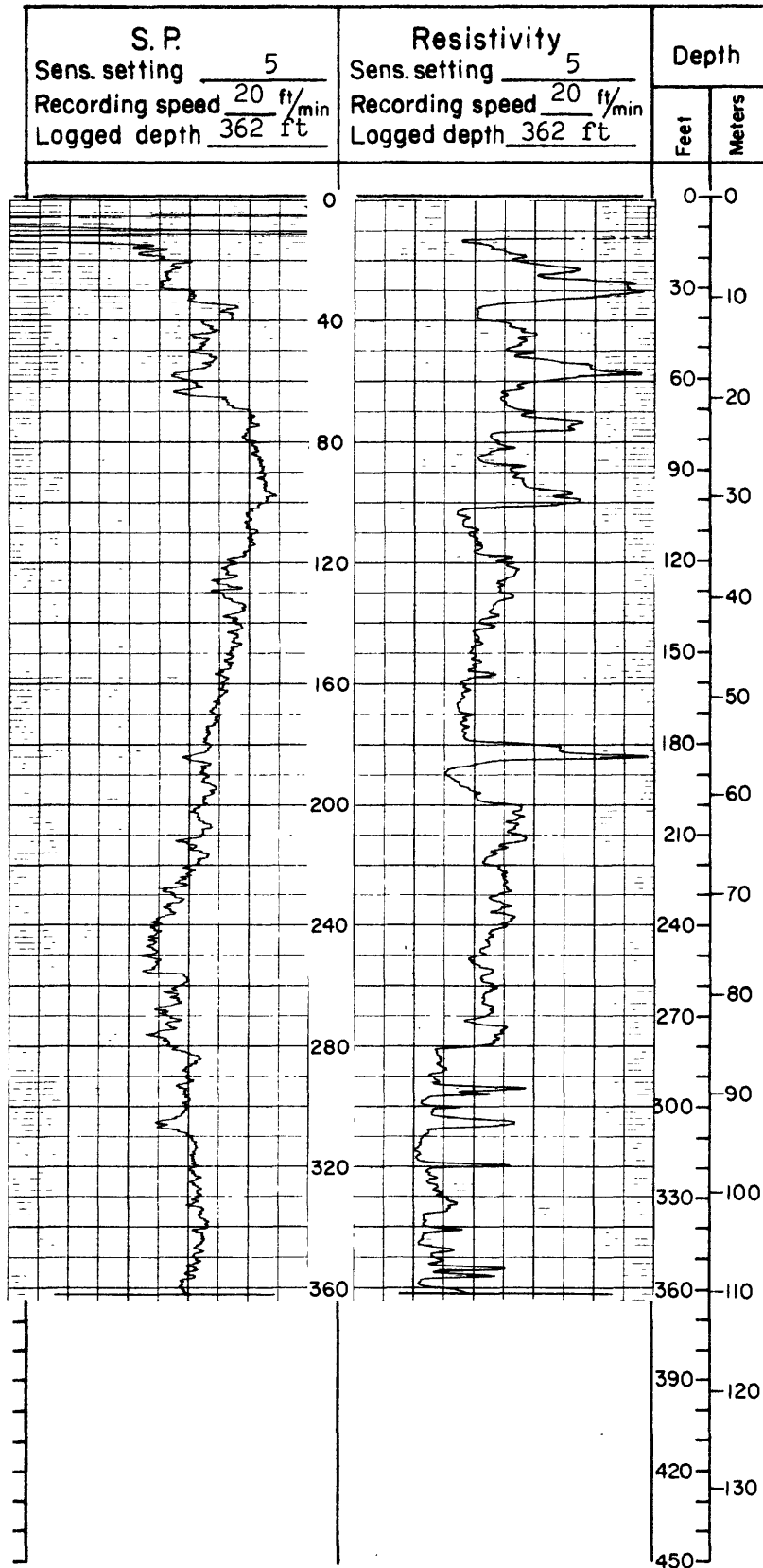
Recorded by: J. PINCHOCK

Geologist ^{Yes} ~~No~~ Recorded by: L. SAUER



Hole number (continued)

US- 771



Montana College of Mineral Science and Technology

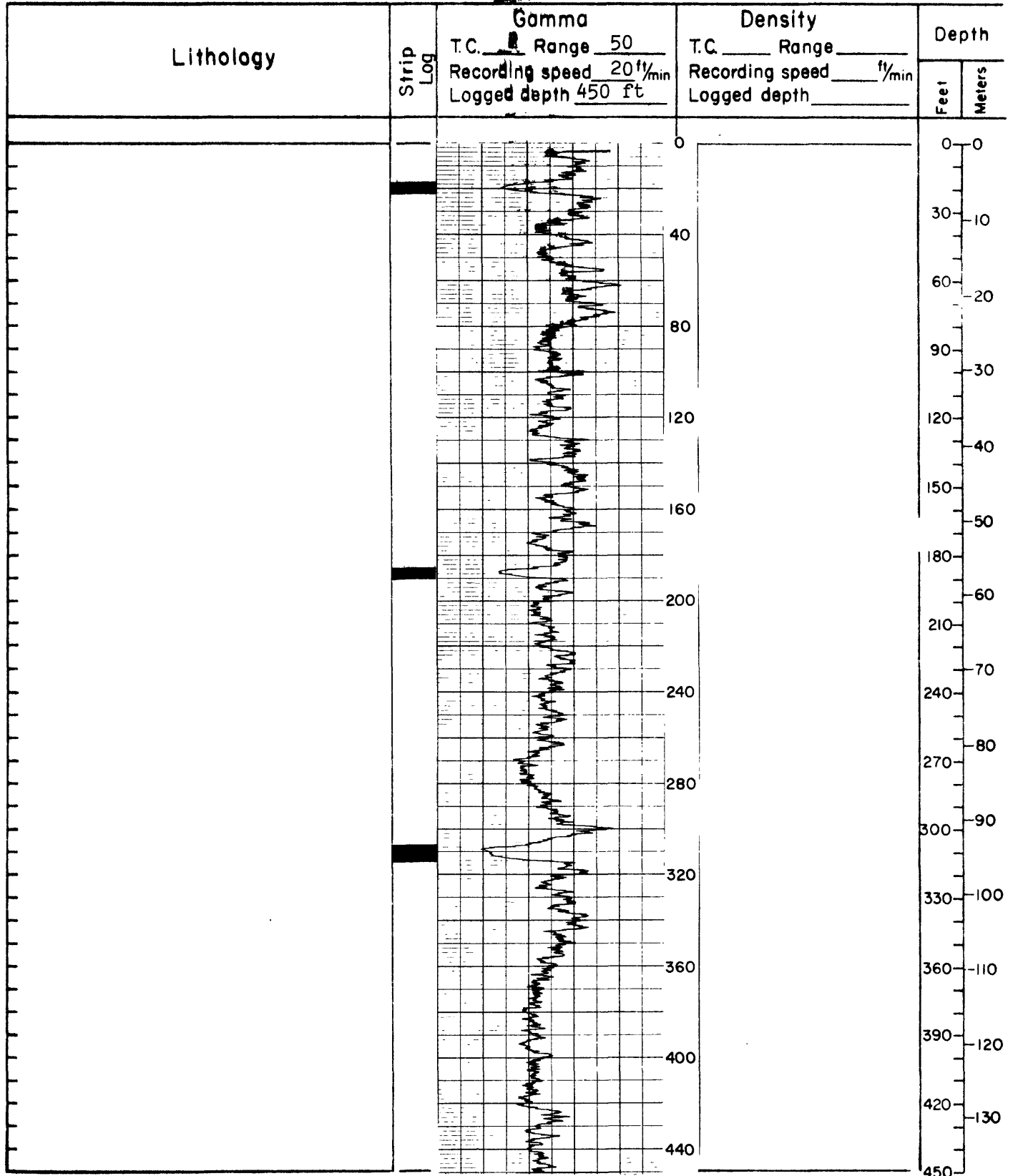
Hole no: US-772 Map: BLM SE-16 Date: 4/26/77 State: Montana County: Fallon
 Elev.: 3286 ft Location: T. 6 N. R. 58 E. Sec. 33, Tract ACCD Drilled depth: 500 ft
 Measured: 2890 ft ~~FNL~~ 2025 ft ~~FEI~~ XNB Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

Recorded by: J. PINCHOCK

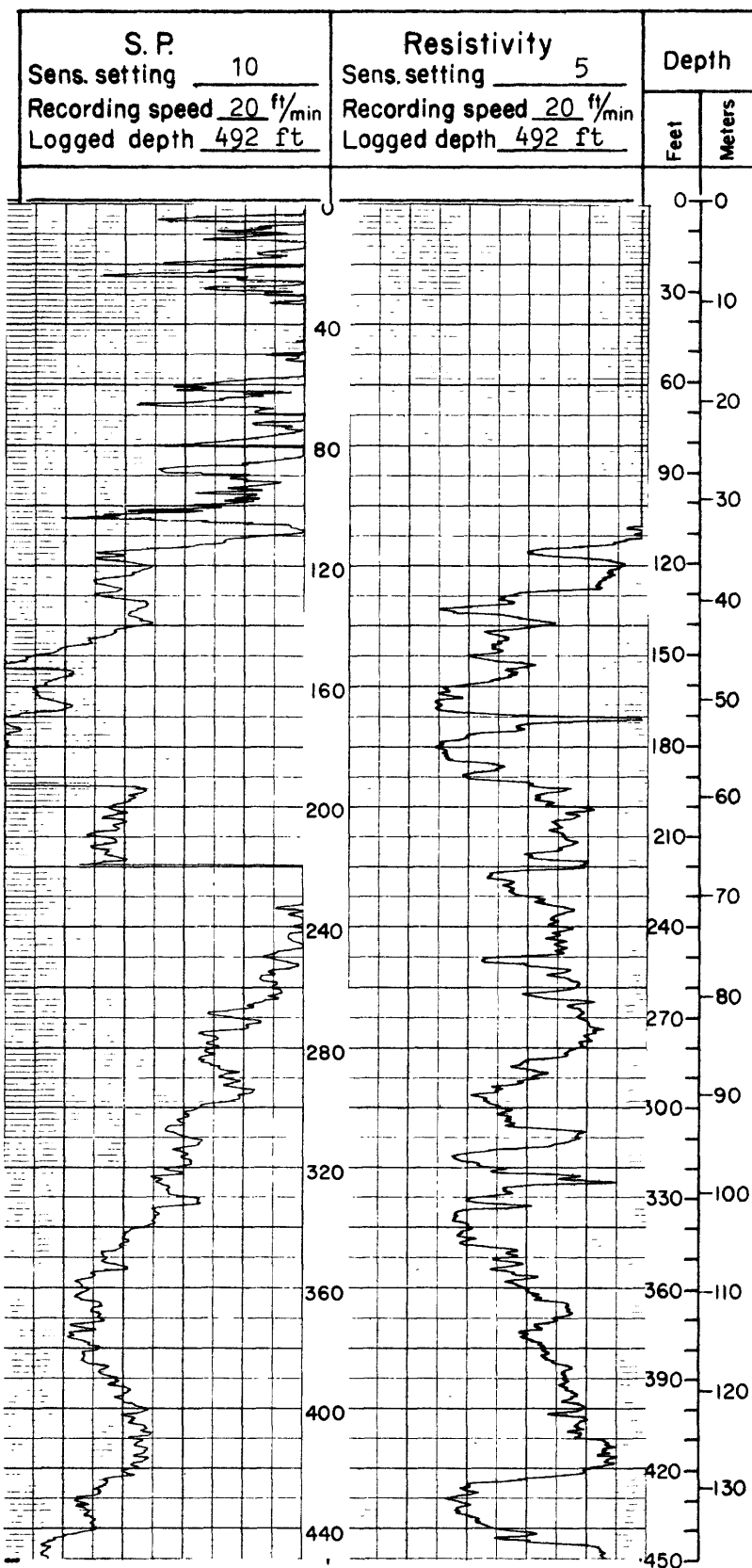
Geologist: Yes ~~No~~

Recorded by: L. SAUER



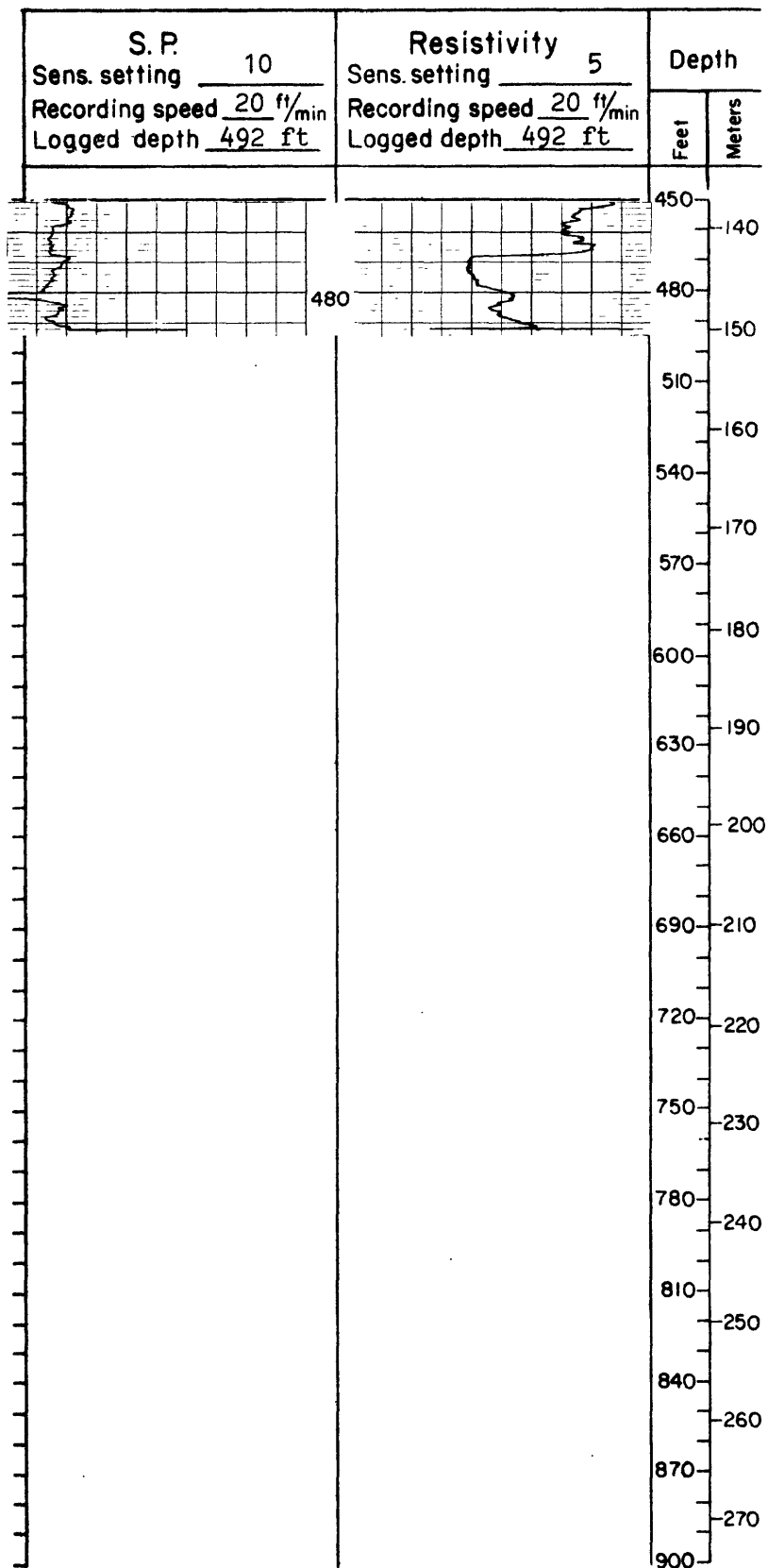
Hole number (continued)

US-772



Hole number (continued)

US - 772



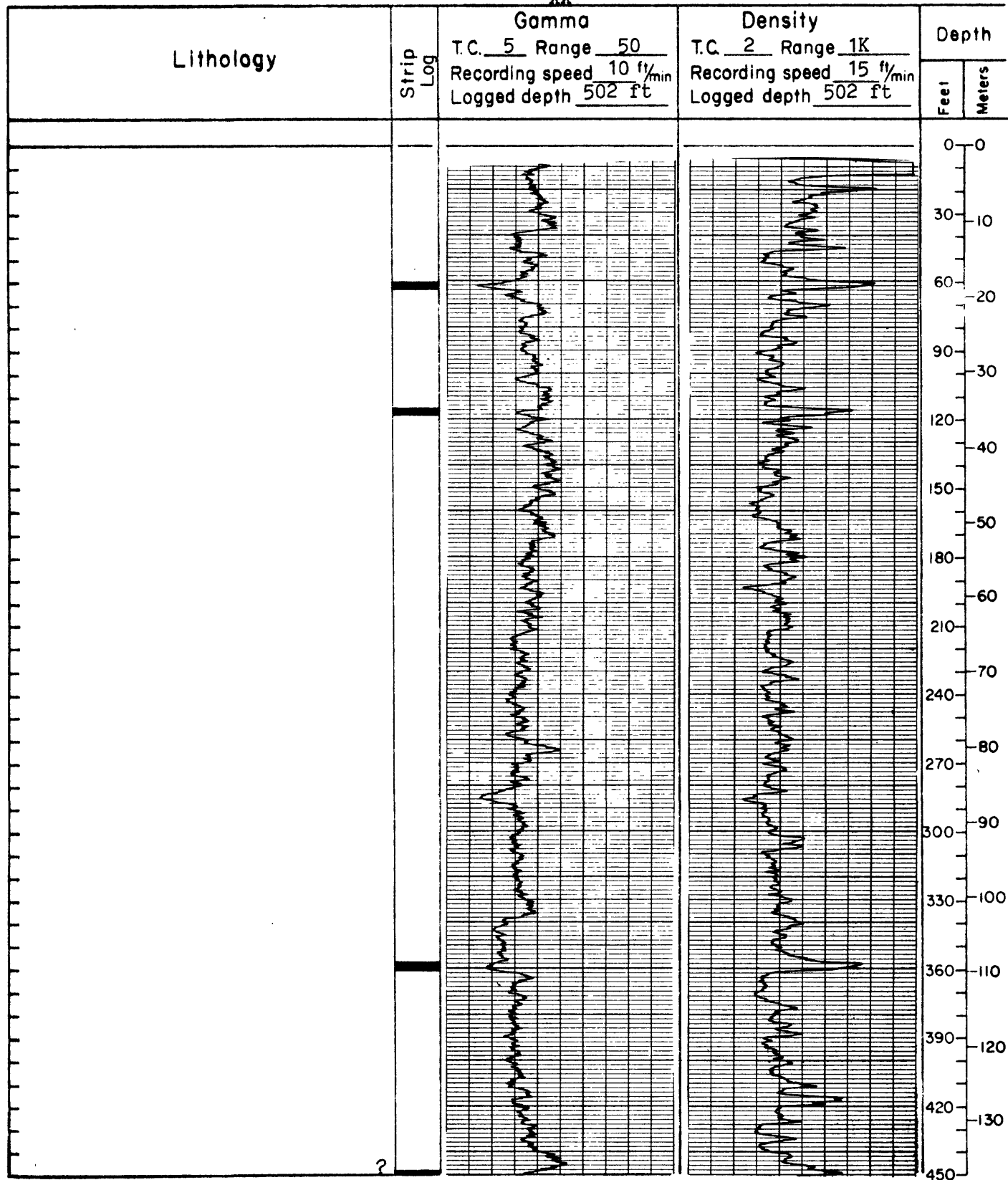
Montana College of Mineral Science and Technology

Hole no: US-773 Map: BLM SE-16 Date: 4/27/77 State: Montana County: Fallon
 Elev.: 3206 ft Location: T. 5 N. 58 E. 30 Sec. 30, Tract AAAA Drilled depth: 502 ft
 Measured: 125 ft FNL 100 ft FFL 502 ft Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

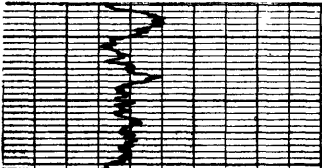
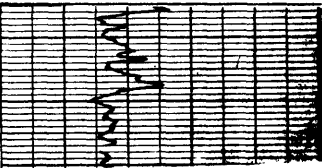
Recorded by: J. PINCHOCK

Geologist Yes ~~No~~ Recorded by: L. SAUER



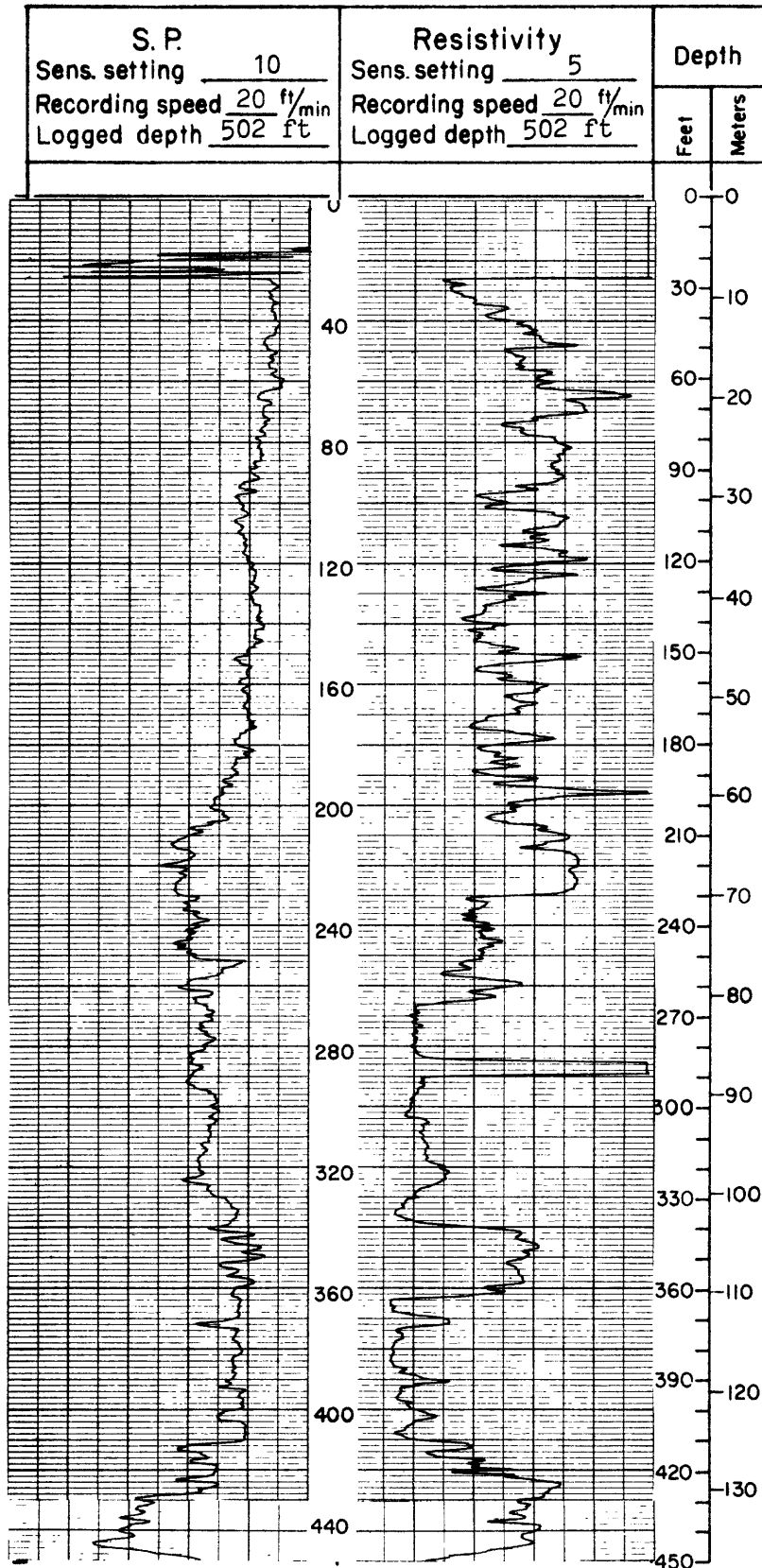
Hole number (continued)

US- 773

Lithology	Strip Log	Gamma	Density	Depth	
		T.C. <u>5</u> Range <u>50</u> Recording speed <u>10</u> ft/min Logged depth <u>502</u> ft	T.C. <u>2</u> Range <u>1K</u> Recording speed <u>15</u> ft/min Logged depth <u>502</u> ft	Feet	Meters
				450	
				140	
				480	
				150	
				510	
				160	
				540	
				170	
				570	
				180	
				600	
				190	
				630	
				200	
				660	
				210	
				690	
				220	
				720	
				230	
				750	
				240	
				780	
				250	
				810	
				260	
				840	
				270	
				870	
				900	

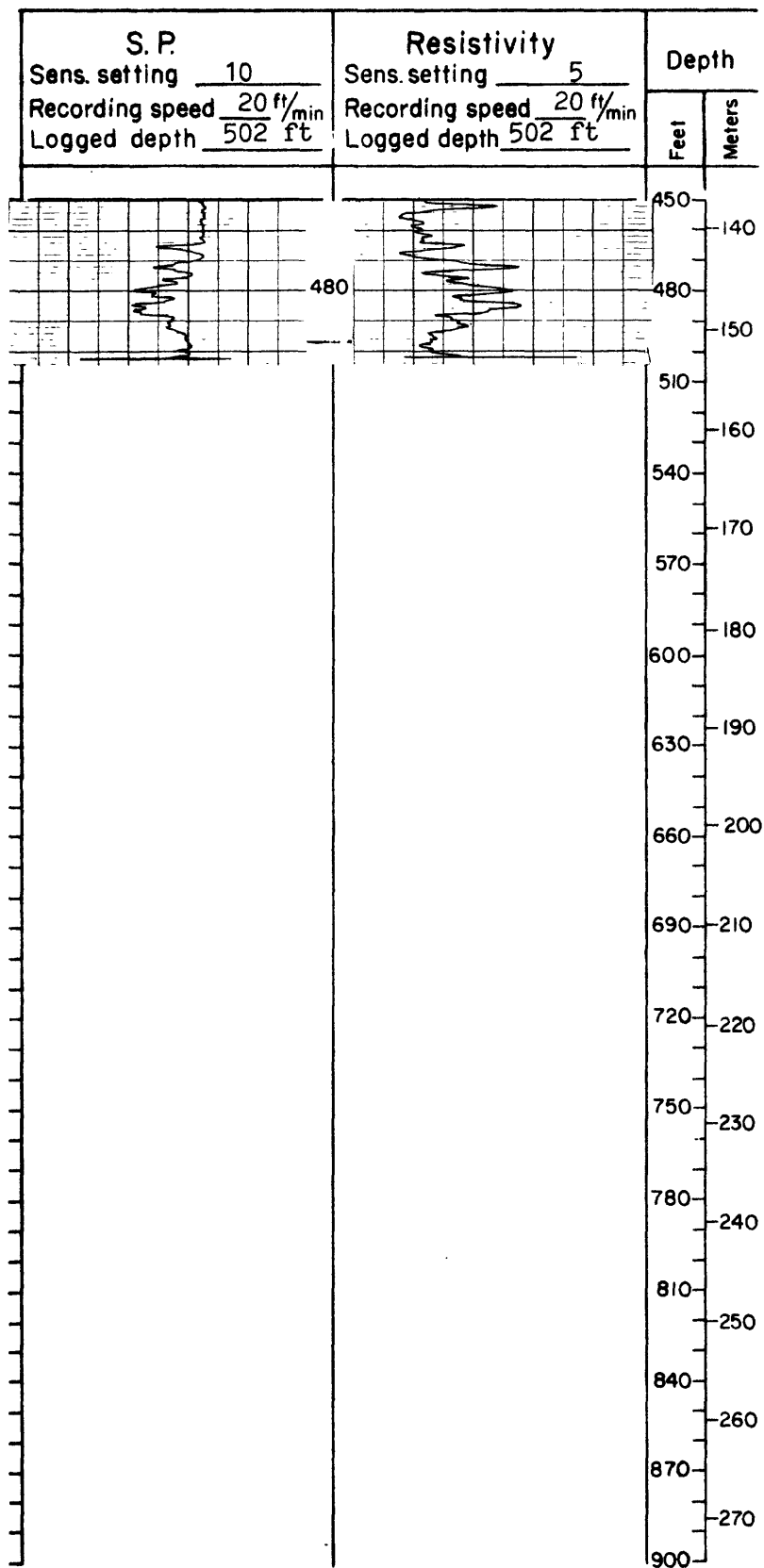
Hole number (continued)

US- 773



Hole number (continued)

US - 773

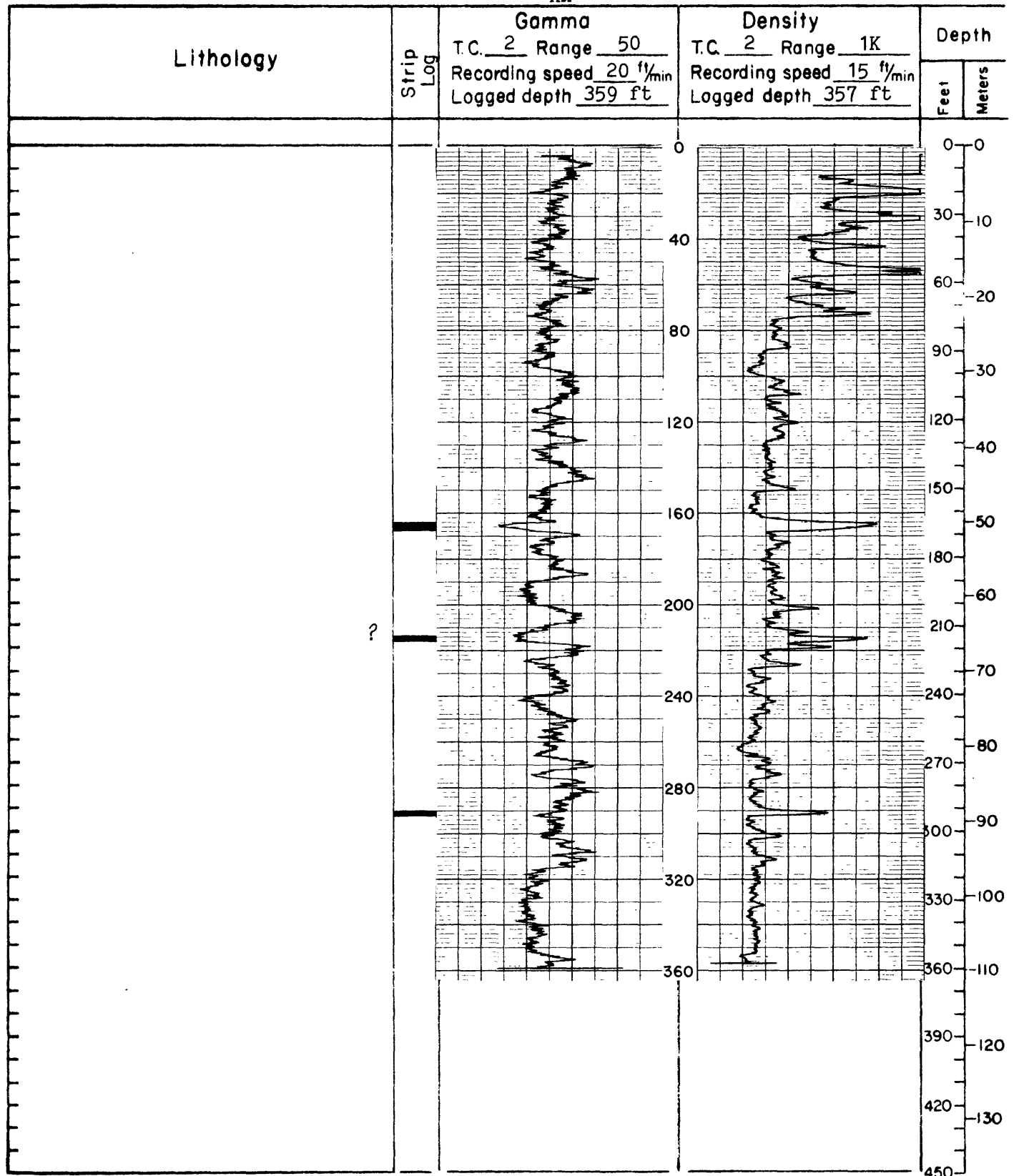


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Hole no: US-774 Map: BLM SE-16 Date: 4/27/77 State: Montana County: Fallon
 Elev.: 3286 ft Location: T. 5 N, R. 58 E, Sec. 14, Tract BBBB Drilled depth: 360 ft
 Measured: 100 ft FNL 70 ft FWL Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Installed 2 in. water-observation well

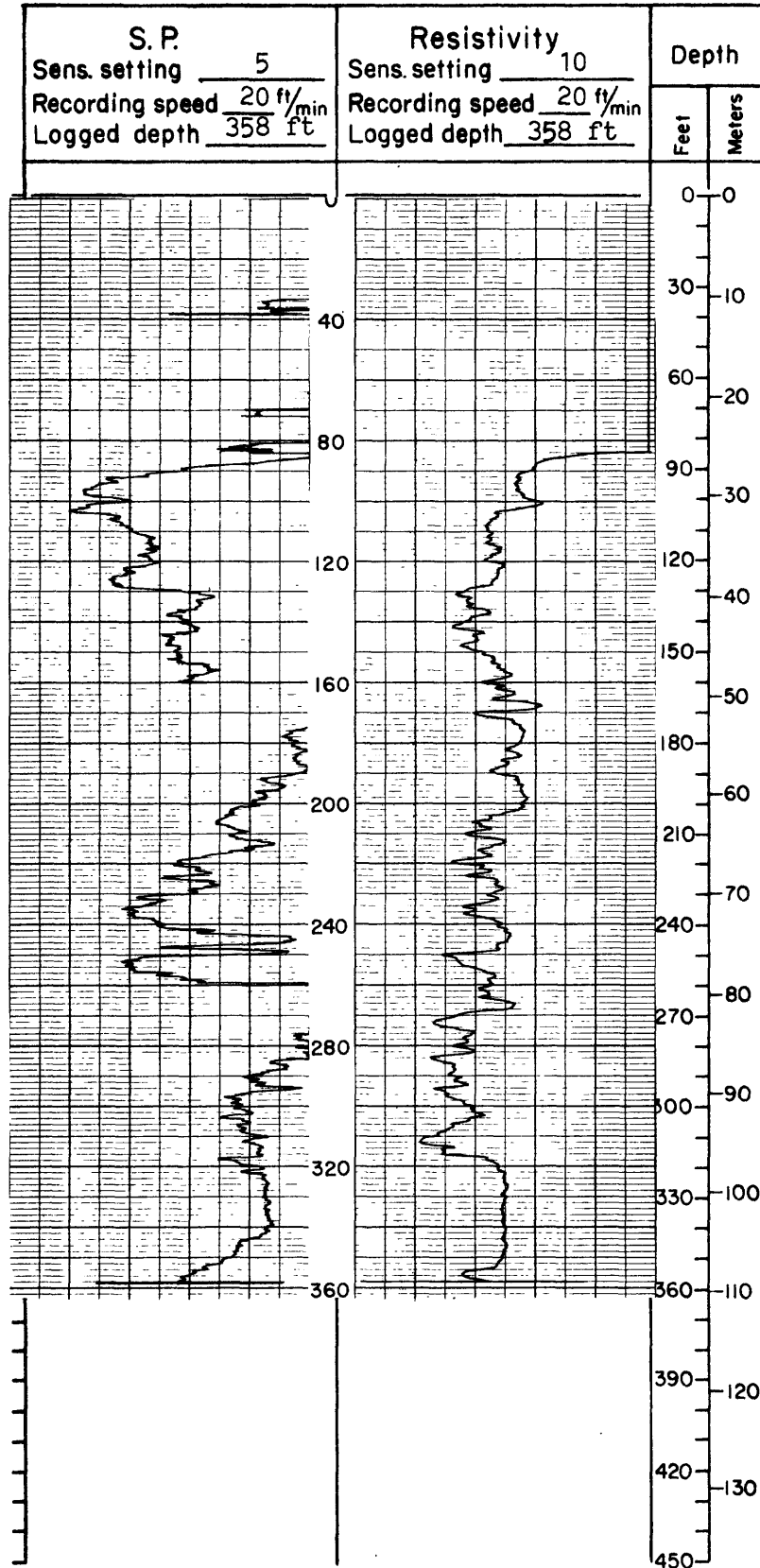
Recorded by: J. PINCHOCK

Geologist ^{Yes}_{No} Recorded by: L. SAUER



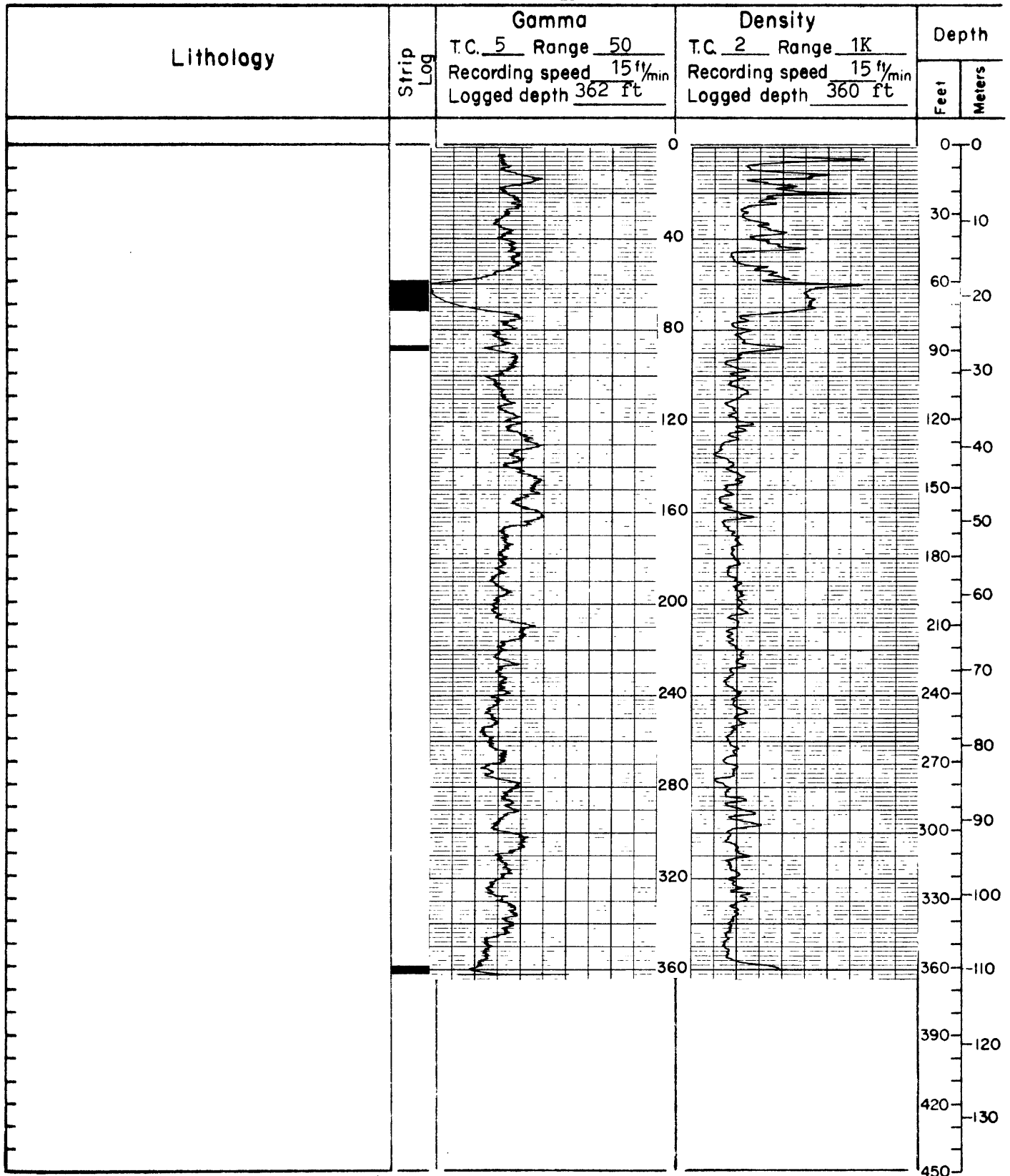
Hole number (continued)

US - 774



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Hole no: US-775 Map: BLM SE-16 Date 4/28/77 State: Montana County: Fallon
 Elev.: 3036 ft Location: T. 7 N. R. 57 E. Sec. 24, Tract BBBC Drilled depth: 362 ft
 Measured: 600 ft ~~FNL~~ 100 ft ~~KKK~~ FWL Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Installed 2 in. water-observation well; water level 230 ft.
 Recorded by: J. PINCHOCK Geologist ^{Yes}~~No~~ Recorded by: L. SAUER



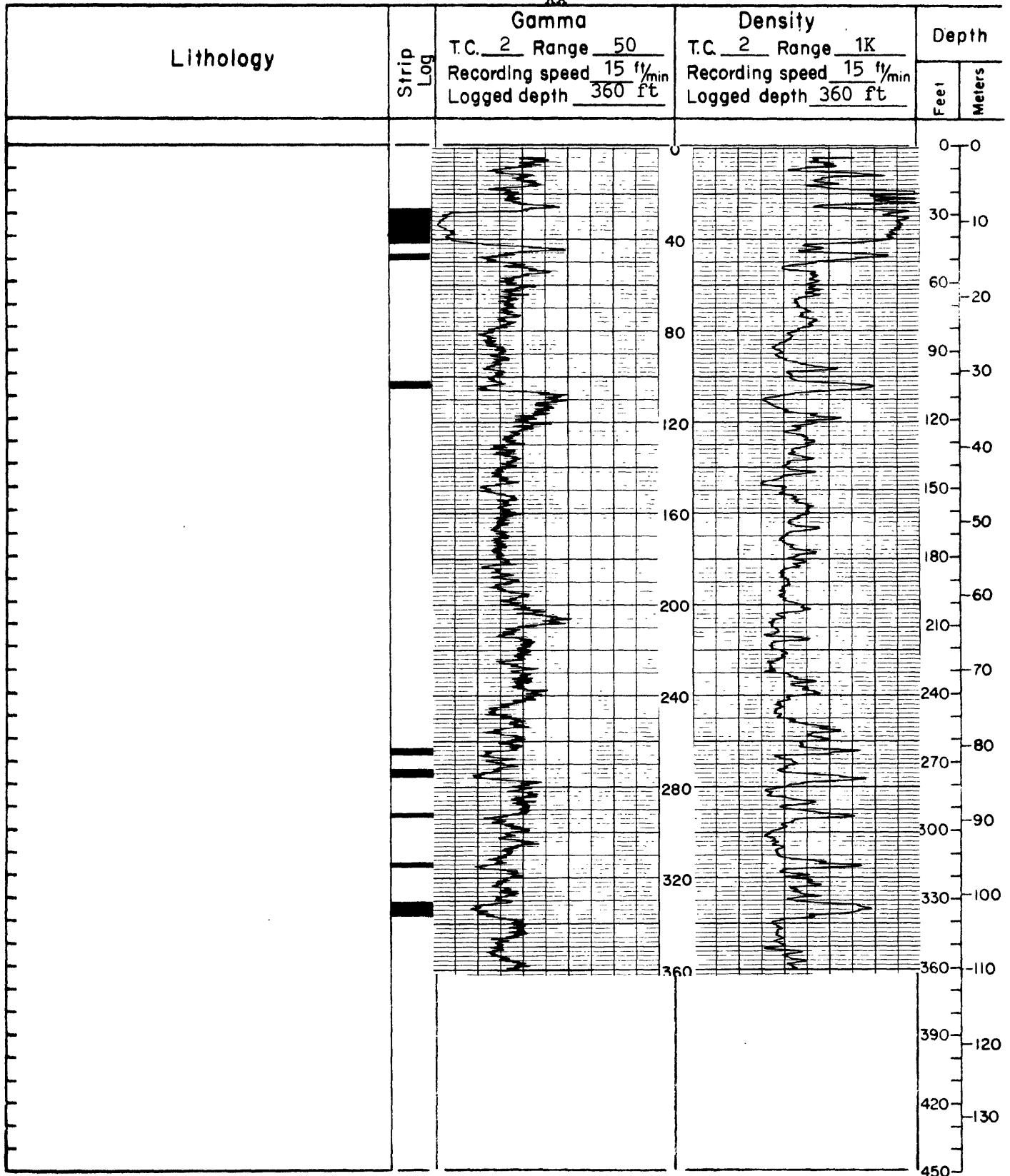
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Hole no: US-776 Map: BLM SE-16 Date: 4/28/77 State: Montana County: Fallon
 Elev.: 2937 ft Location: T. 7 N. 5 E. 57 R. 16 W. Sec. 16, Tract ACDC Drilled depth: 360 ft
 Measured: 2640 ft ^{FNL} 1900 ft ^{FEL} 200 Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

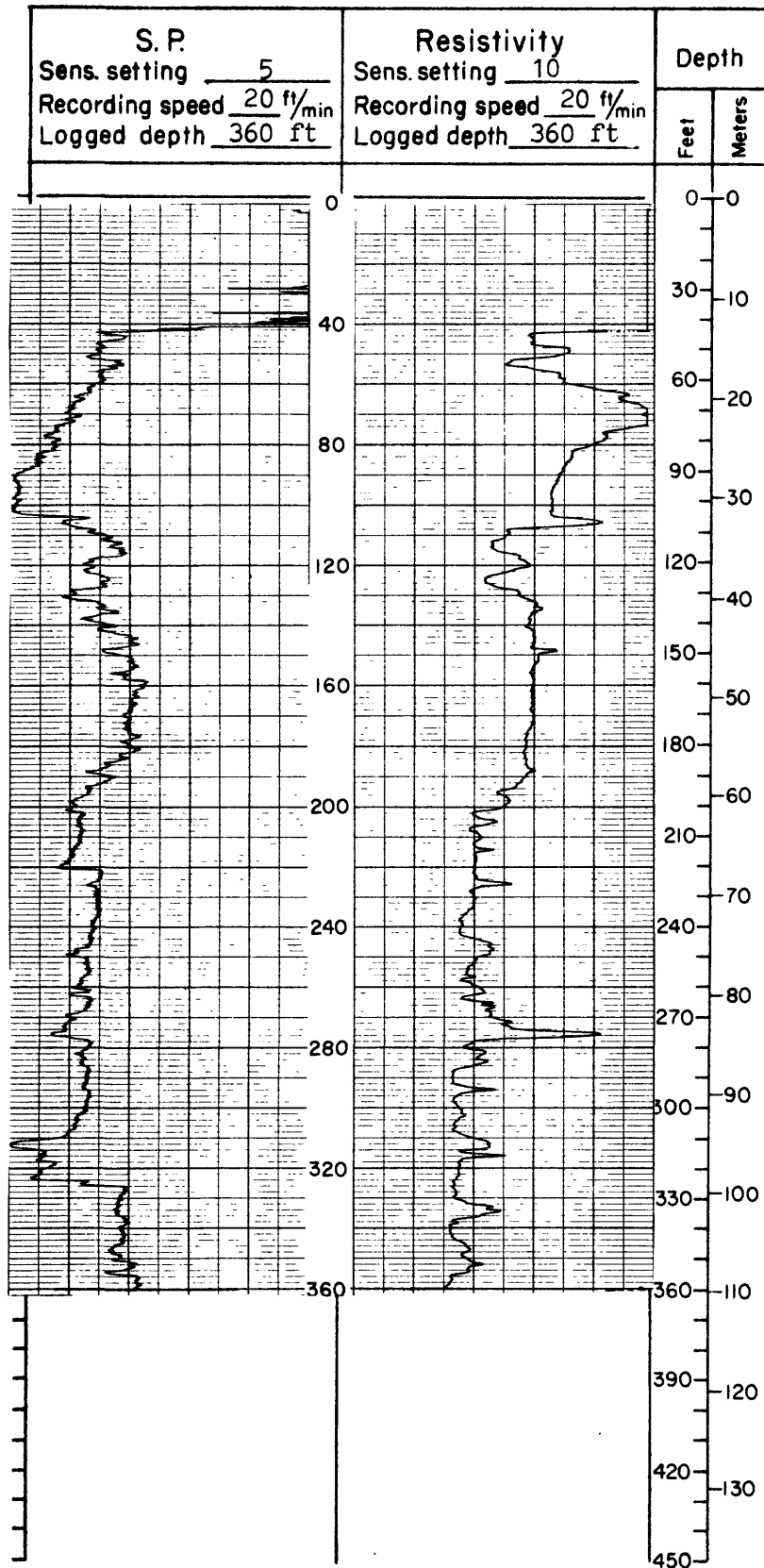
Recorded by: J. PINCHOCK

Geologist ^{Yes} ~~XX~~ Recorded by: L. SAUER



Hole number (continued)

US- 776



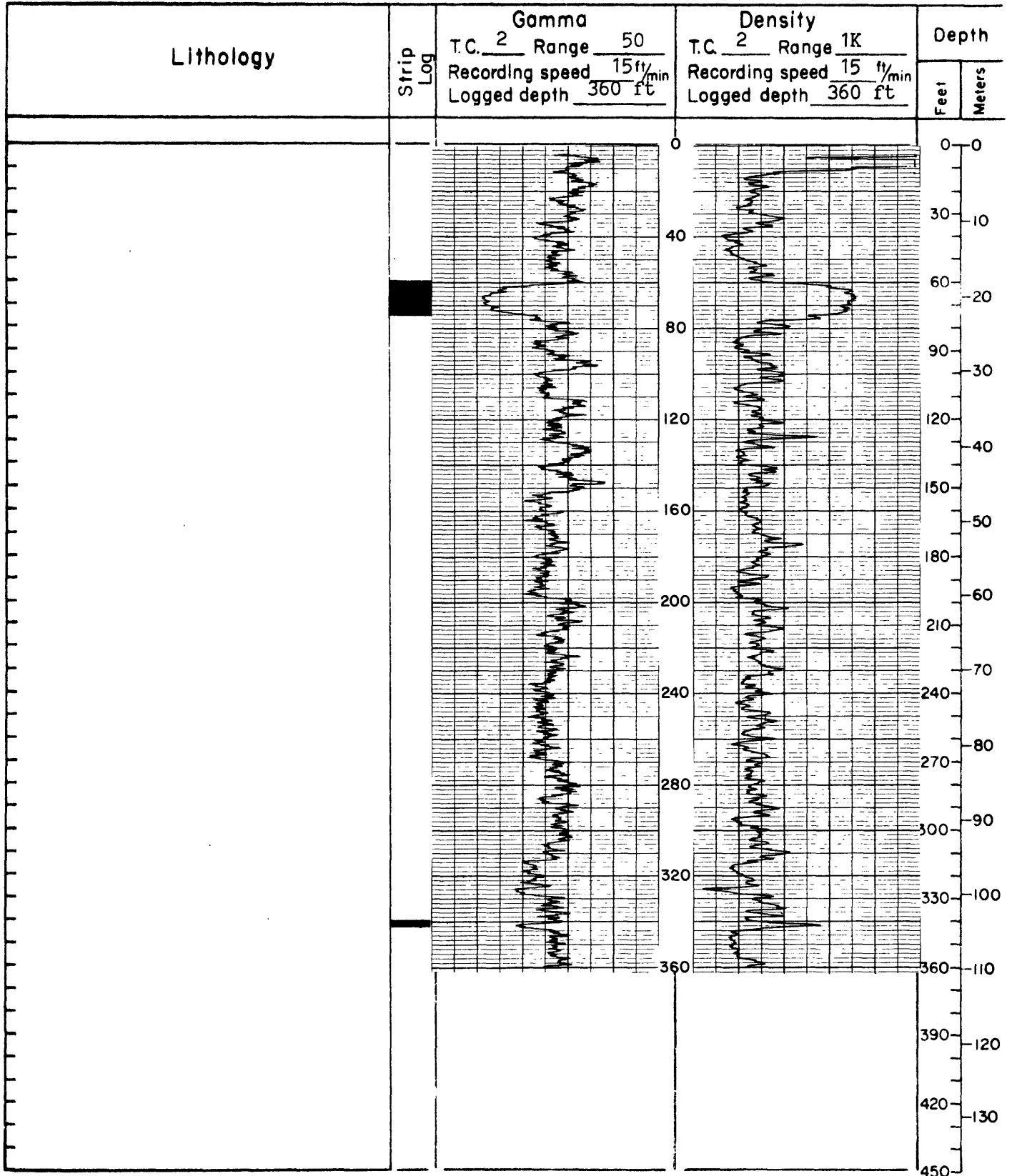
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Hole no: US-777 Map: BLM SE-16 Date: 4/28/77 State: Montana County: Fallon
 Elev.: 3046 ft Location: T. 6 N. 57 E. 8 Sec. 8, Tract BBBC Drilled depth: 360 ft
 Measured: 550 ft FNL 100 ft FWL FWL Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

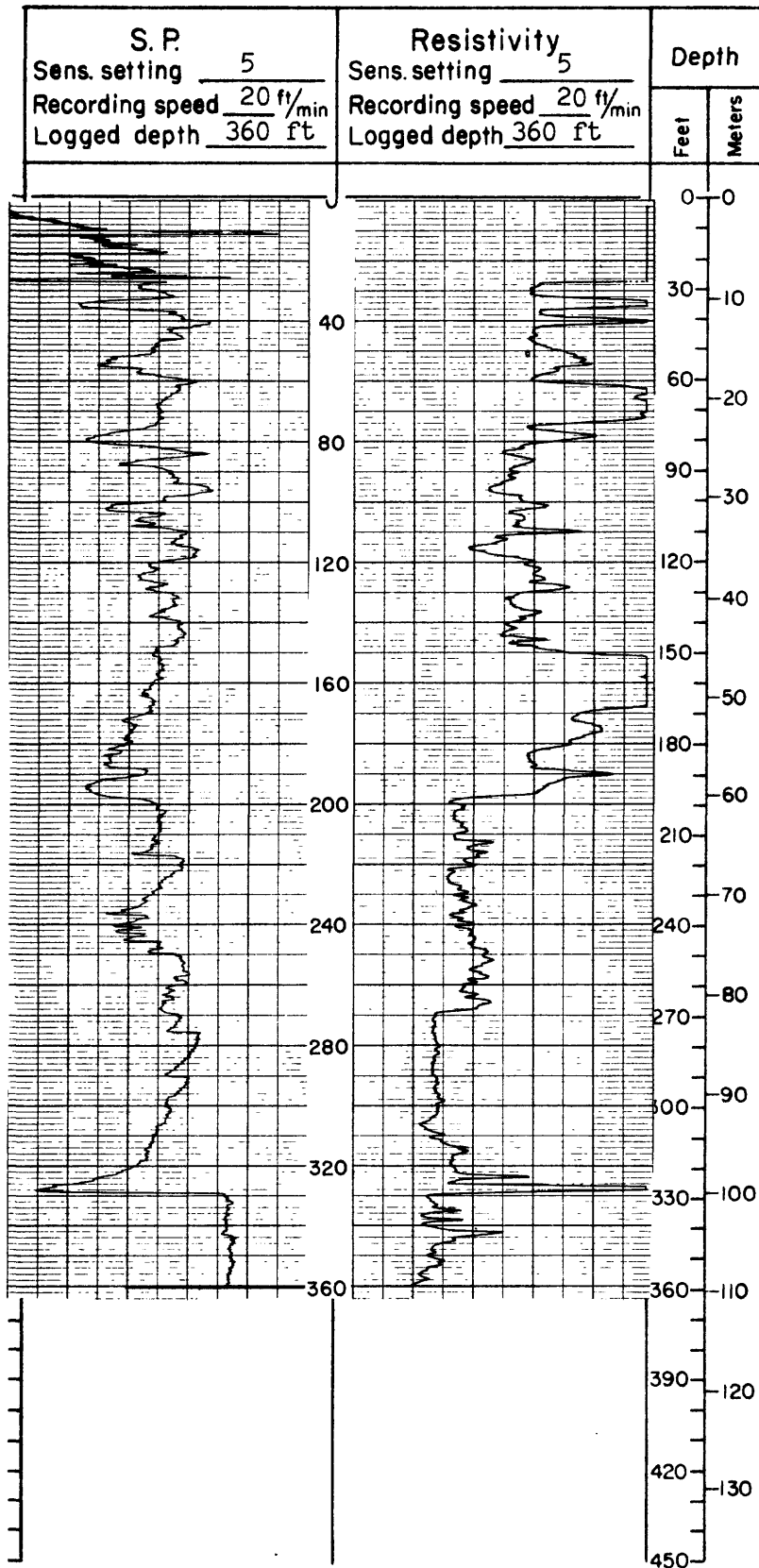
Recorded by: J. PINCHOCK

Geologist ^{Yes} _{No} Recorded by: L. SAUER



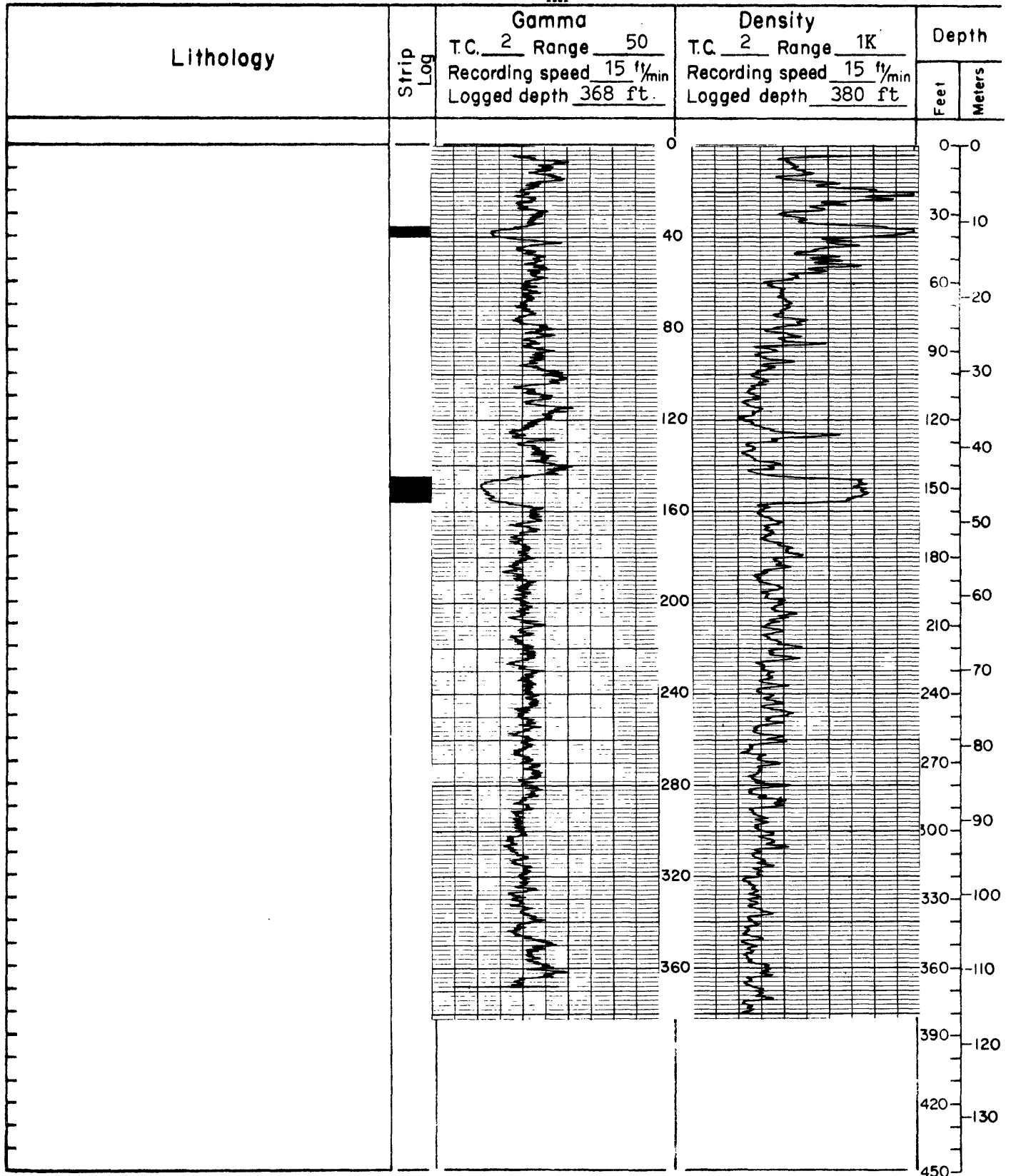
Hole number (continued)

US- 777



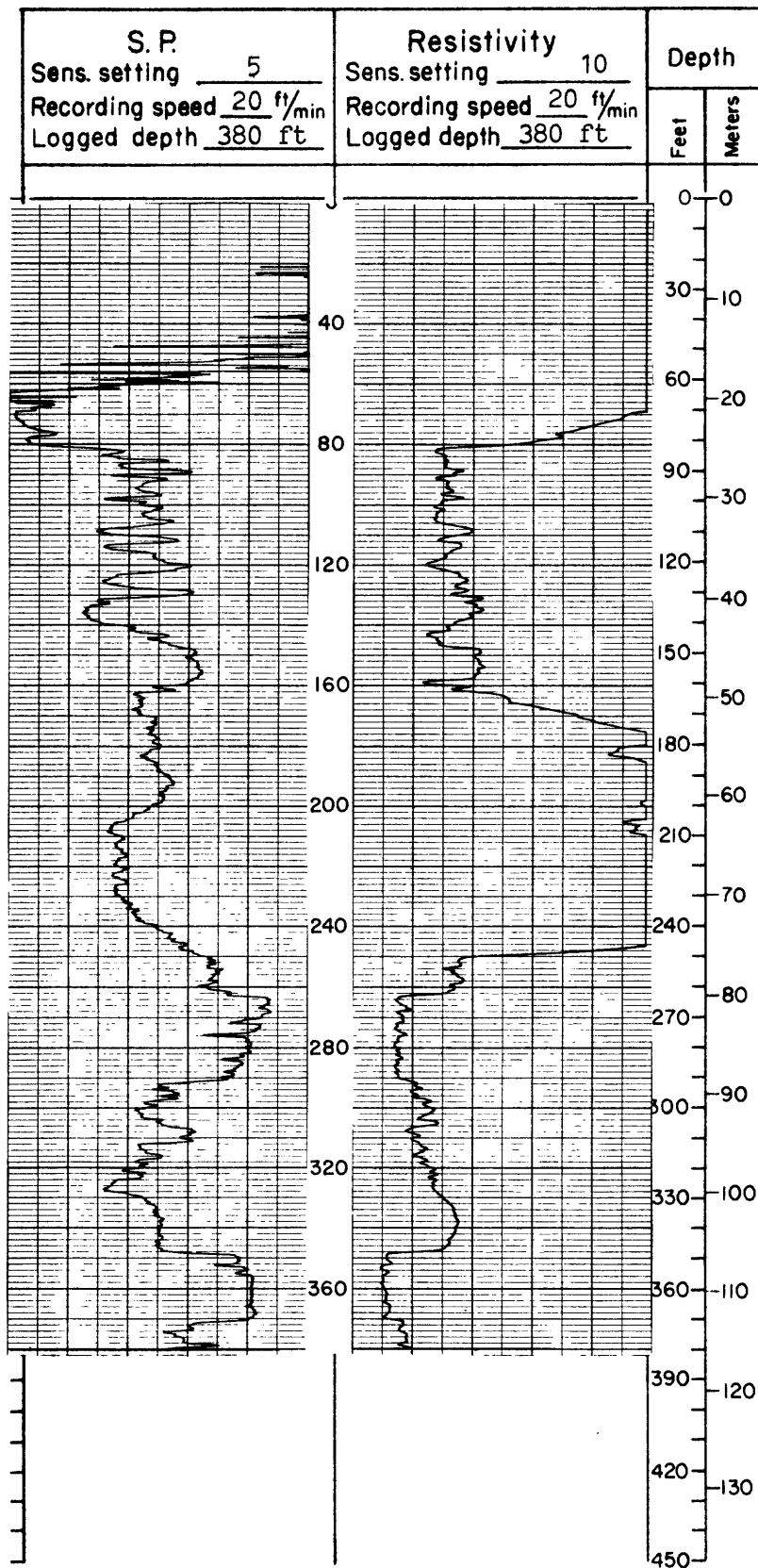
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Hole no: US-778 Map: BLM SE-16 Date: 4/29/77 State: Montana County: Fallon
 Elev: 3175 ft Location: T. 6 ^N/_S, R. 57 ^E/_W, Sec. 22, Tract CAAC Drilled depth: 380 ft
 Measured 2200 ft ^{FSL}/_{FSL}, 2000 ft ^{FSL}/_{FSL} Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Footages are visual estimates.
 Recorded by: J. PINCHOCK Geologist ^{Yes}/_{Yes} Recorded by: L. SAUER



Hole number (continued)

US- 778



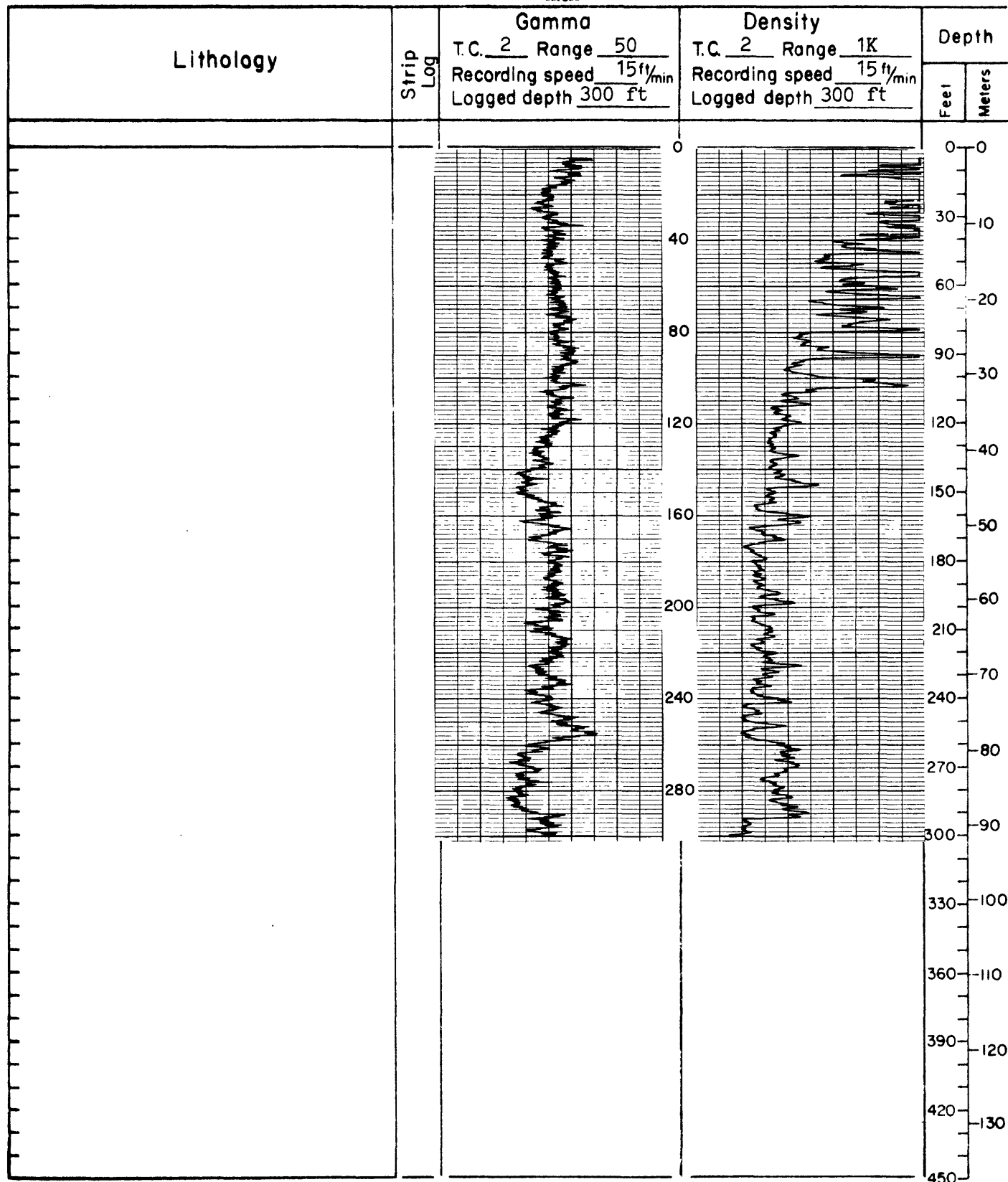
Montana College of Mineral Science and Technology

Hole no: US-779 Map: BLM SE-16 Date 4/29/77 State: Montana County: Fallon
 Elev.: 3095 ft Location: T. 6 N. 57 R. 57 E. 12 Sec. 12, Tract AAAD Drilled depth: 300 ft
 Measured: 350 ft FNL 75 ft FEL XXX Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

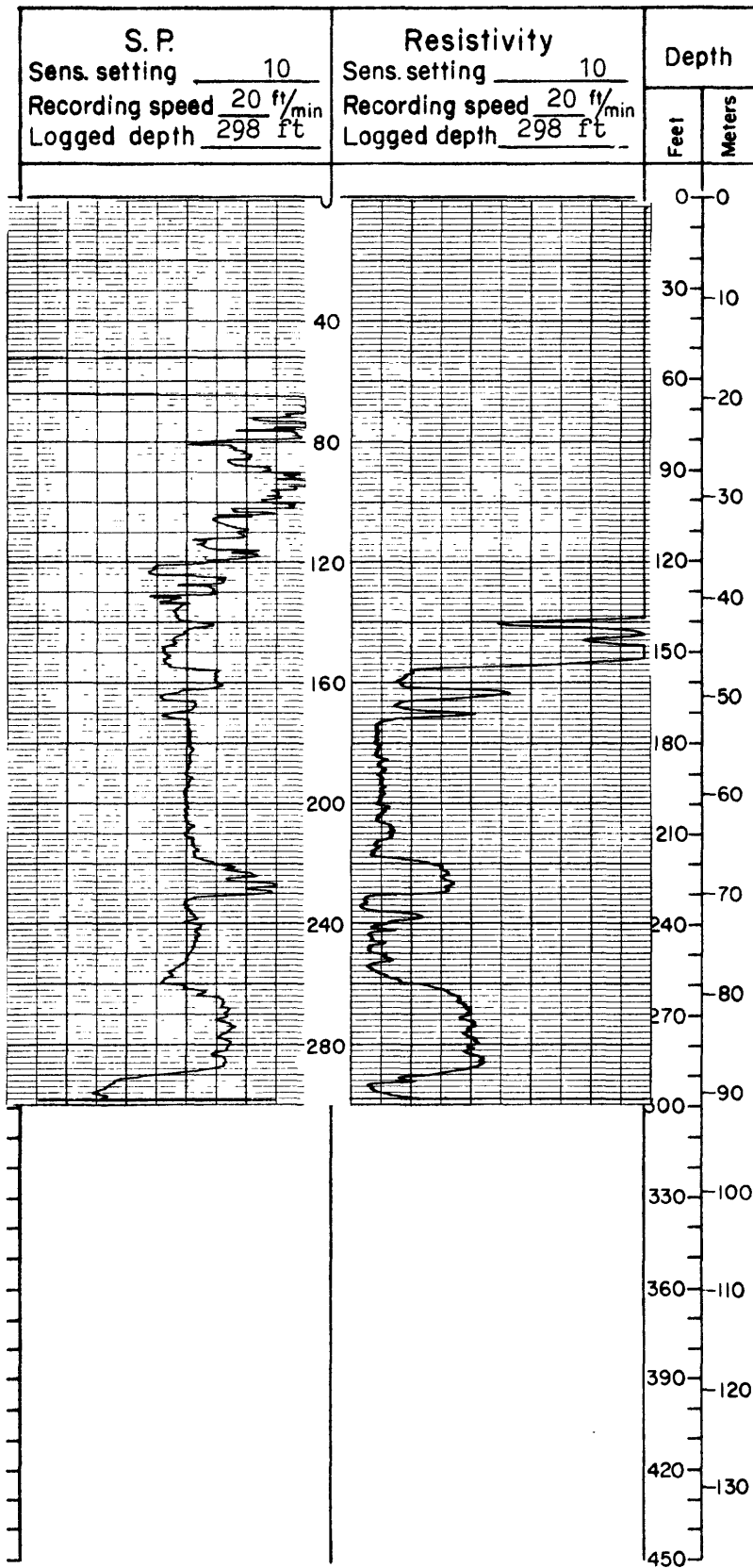
Recorded by: J. PINCHOCK

Geologist Yes ~~XXX~~ Recorded by: L. SAUER



Hole number (continued)

US - 779



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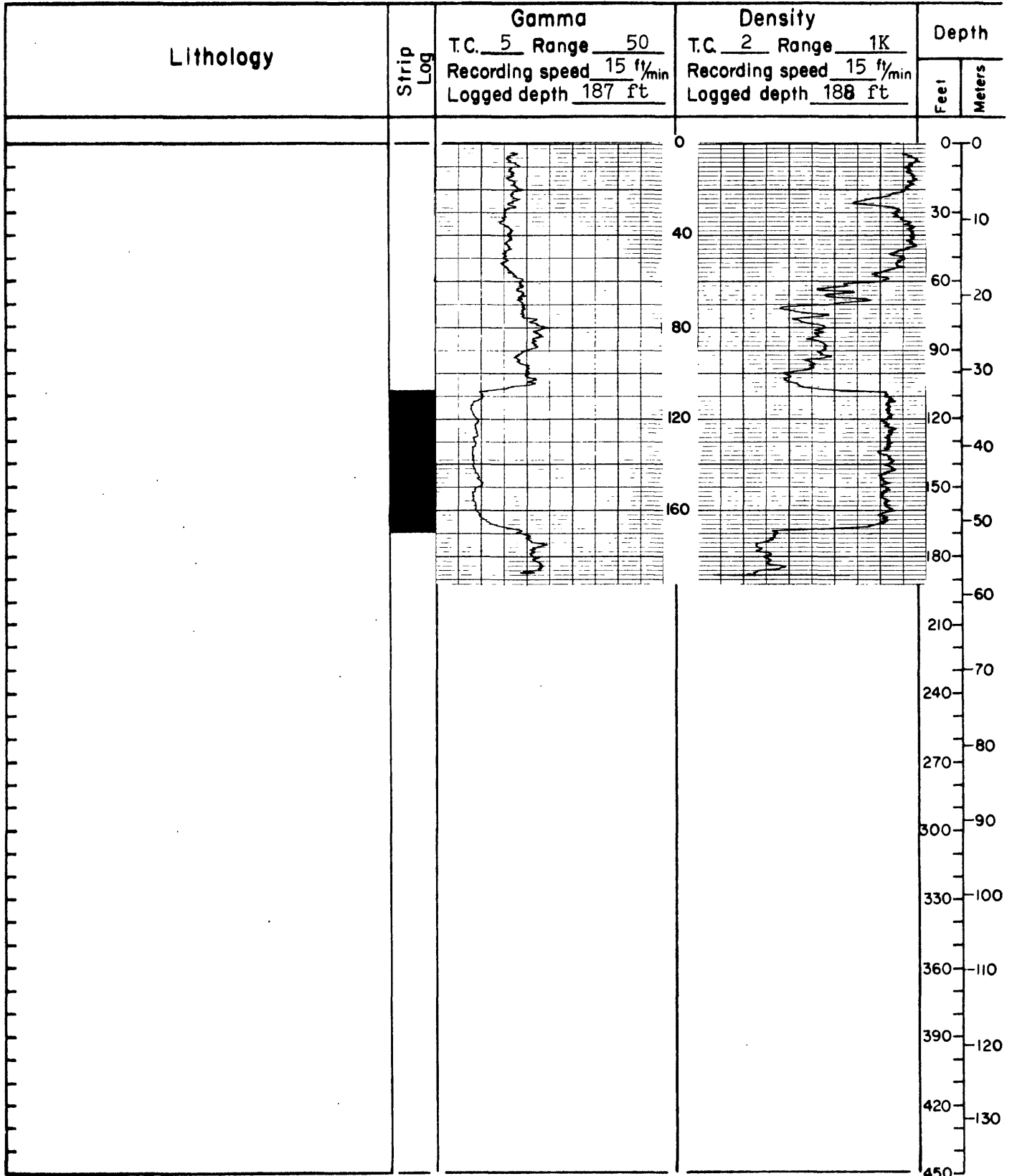
Hole no: US-7710 Map: Coleman Draw Date: 4/30/77 State: Montana County: Powder River
 Elev.: 3222 ft Location: T. 3 S., R. 46 E., Sec. 17, Tract DACA Drilled depth: 190 ft
 Measured: 1680 ft ^{FNL} 920 ft ^{FEL} ~~FSL~~ ~~FXX~~ Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

Recorded by: J. PINCHOCK

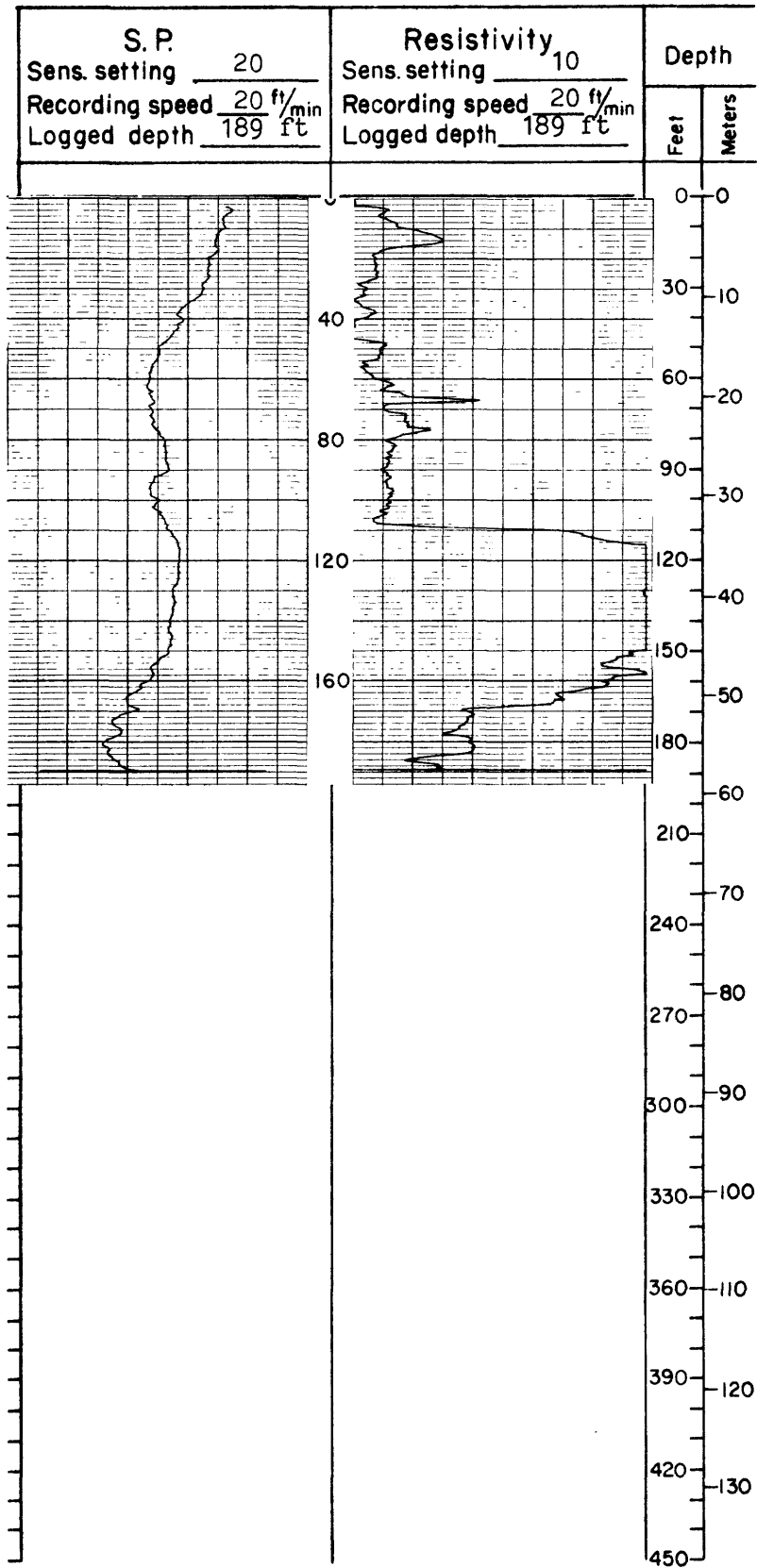
Geologist Yes ~~No~~

Recorded by: L. SAUER



Hole number (continued)

US- 7710



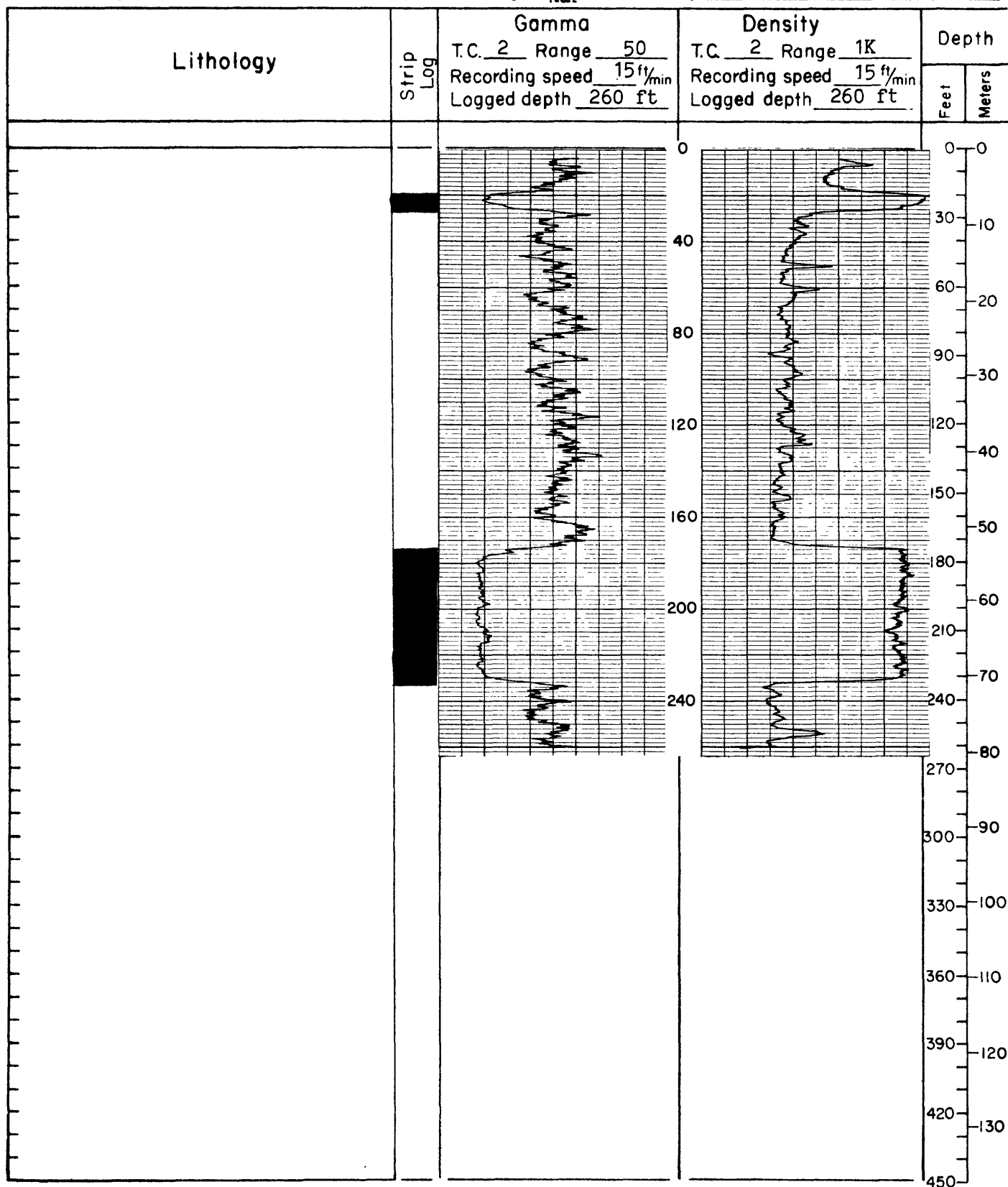
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Montana College of Mineral Science and Technology

Hole no: US-7711 Map: Coleman Draw Date: 4/30/77 State: Montana County: Powder River
 Elev: 3242 ft Location: T. 3 ^N_S, R. 46 ^E_W Sec. 7, Tract CDBD Drilled depth: 260 ft
 Measured: 675 ft ^{KMX}_{FSL}, 1900 ft ^{KMX}_{FWL} Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

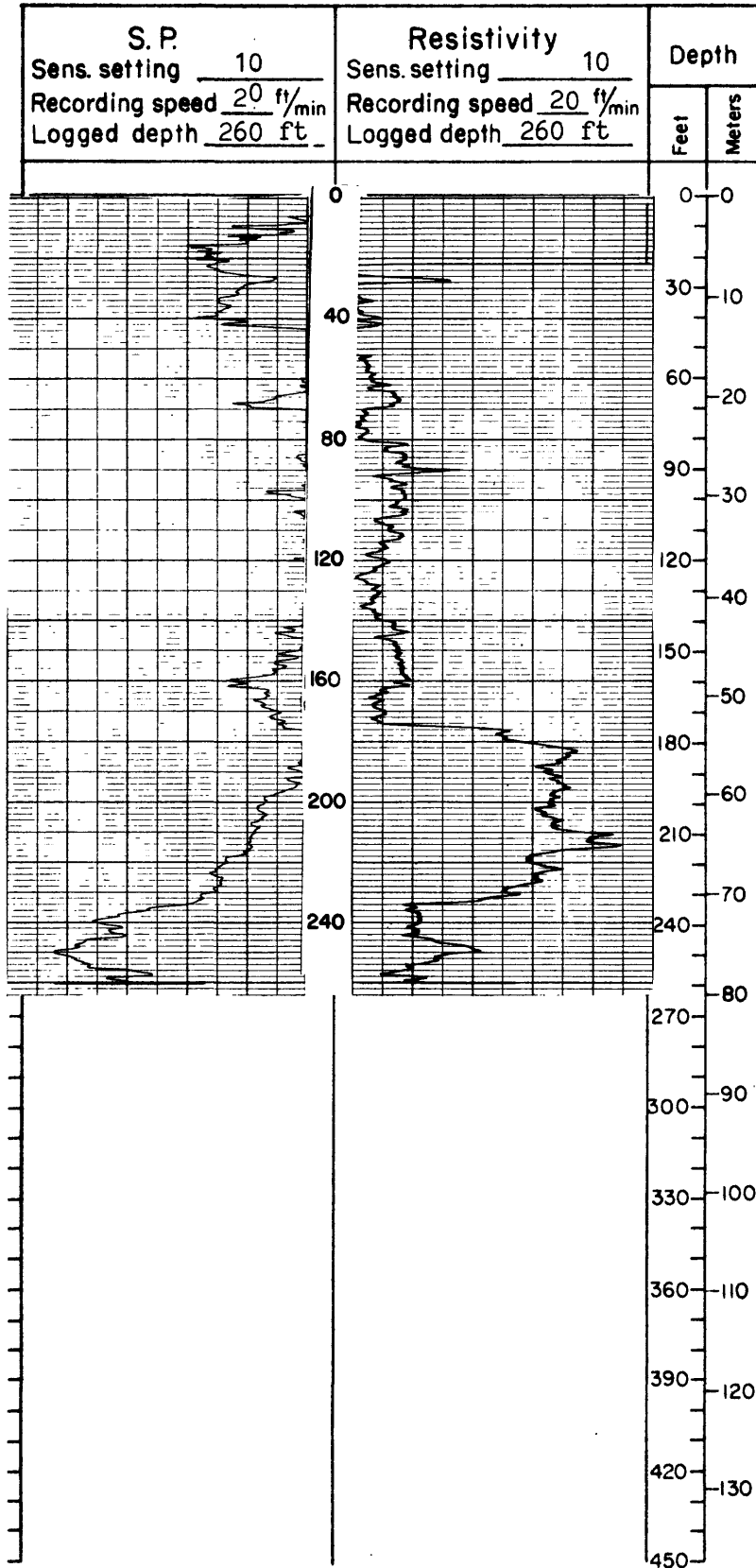
Recorded by: J. PINCHOCK

Geologist ^{Yes}_{No} Recorded by: L. SAUER



Hole number (continued)

US- 7711



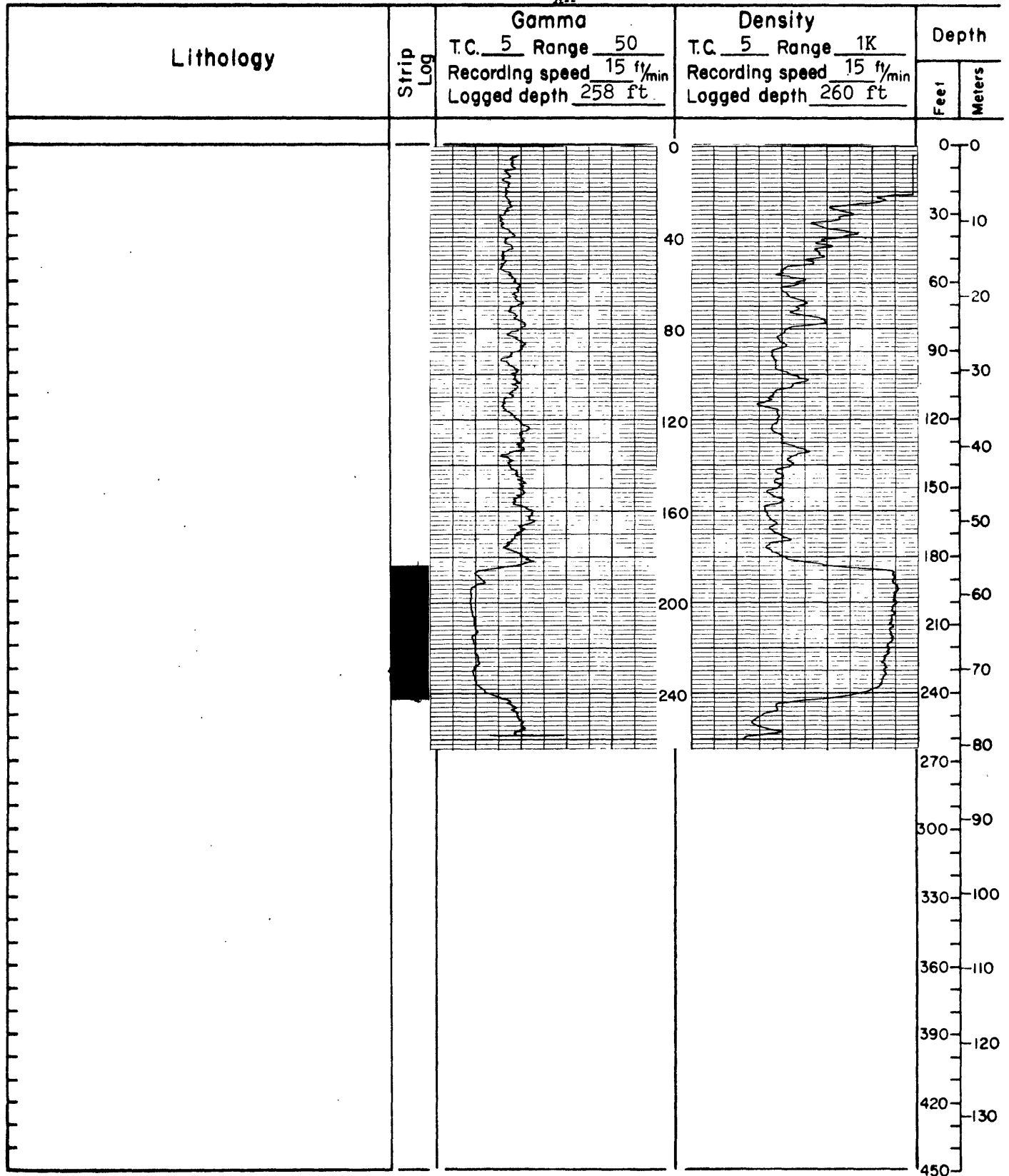
Montana College of Mineral Science and Technology

Hole no: US-7712 Map: Coleman Draw Date: 4/30/77 State: Montana County: Powder River
 Elev.: 3231 ft Location: T. 4 N. S. 46 E. W. Sec. 4, Tract CCAD Drilled depth: 260 ft
 Measured: 700 ft ~~FSL~~ 1100 ft ~~FSL~~ Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

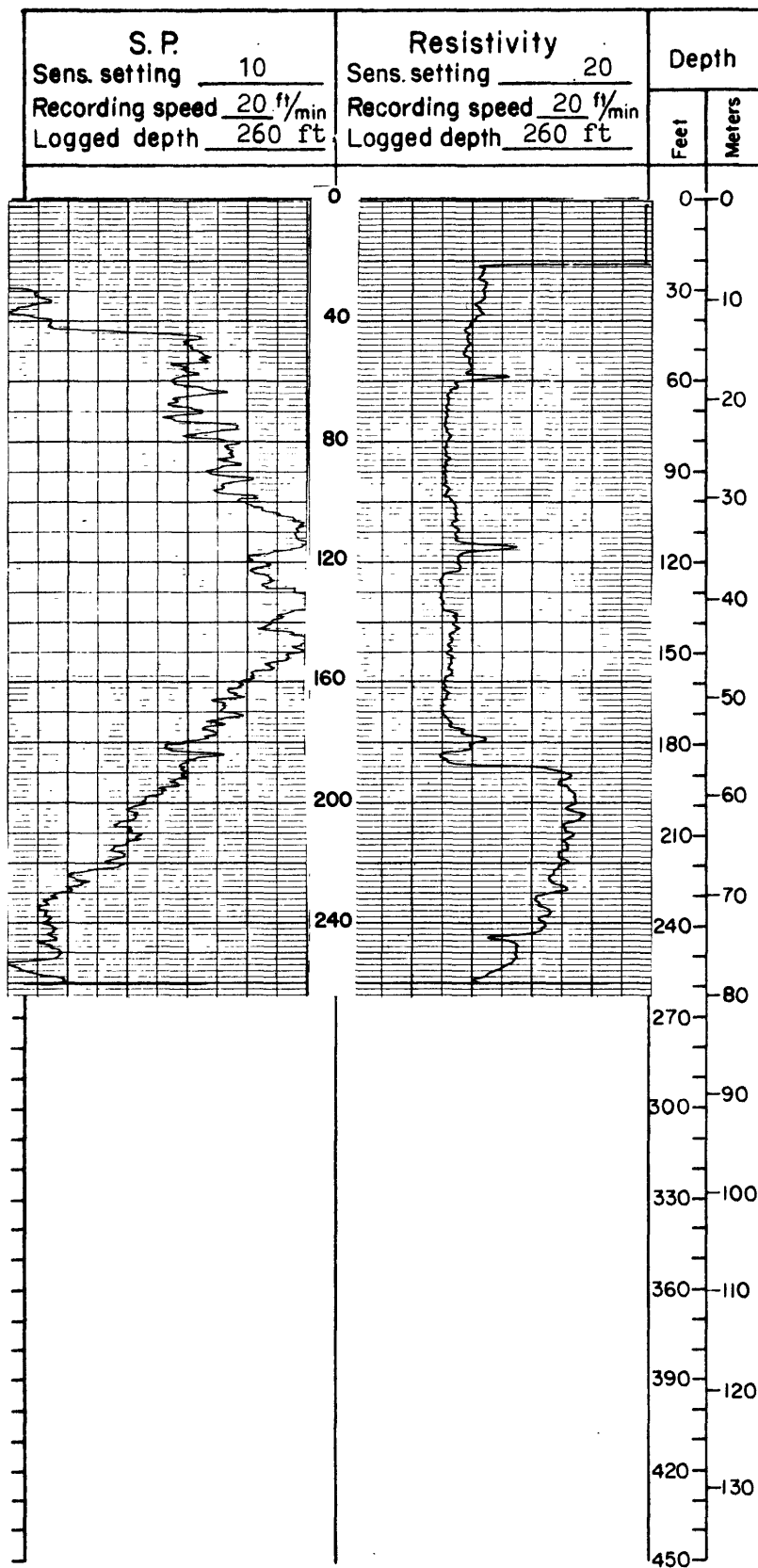
Recorded by: J. PINCHOCK

Geologist ^{Yes}_{No} ☒ Recorded by: L. SAUER



Hole number (continued)

US- 7712



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Montana College of Mineral Science and Technology

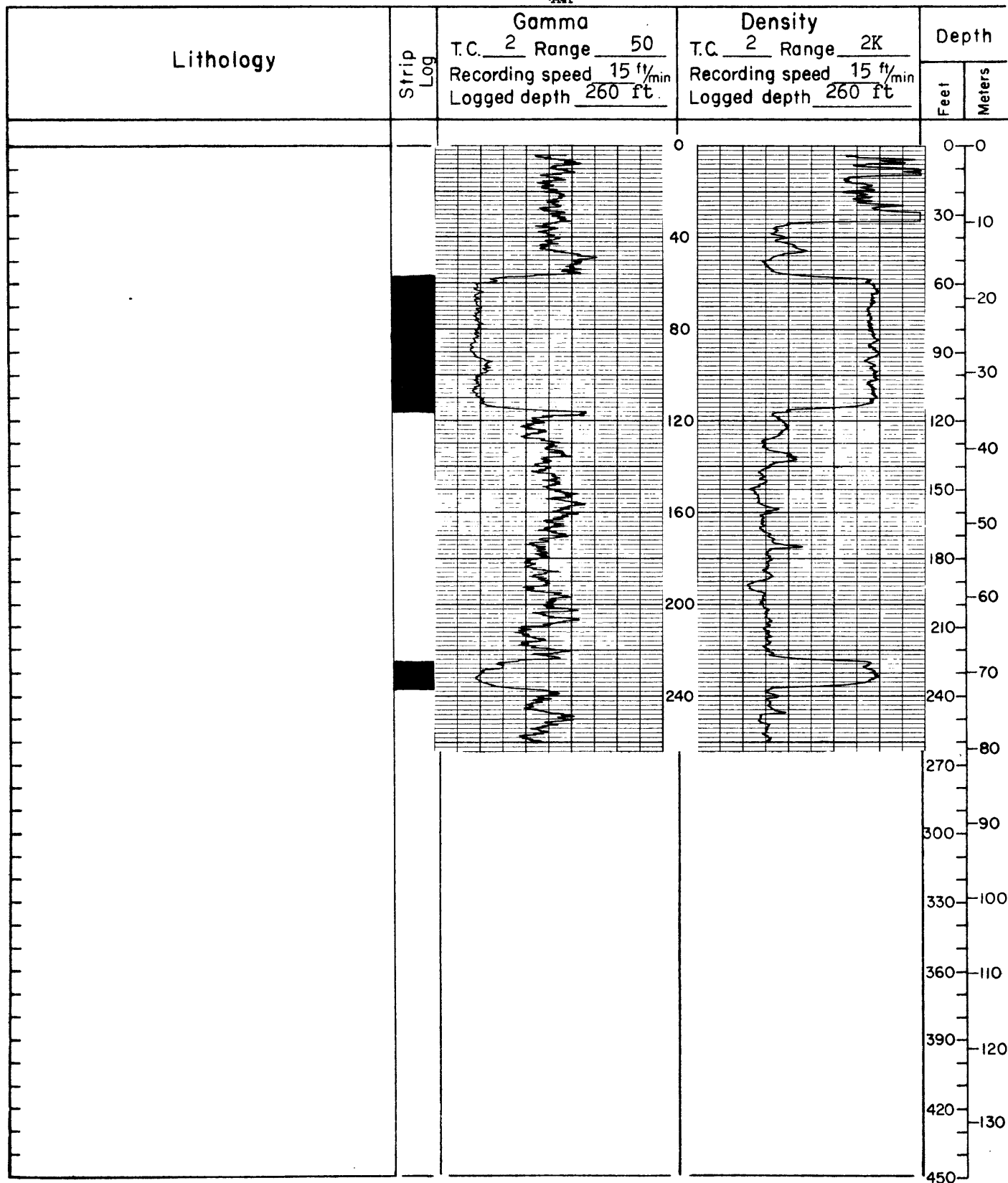
Hole no: US-7713 Map: Coleman Draw Date: 5/1/77 State: Montana County: Powder River
 Elev.: 3148 ft Location: T. 3 S, R. 45 E, Sec. 24, Tract ABDA Drilled depth: 260 ft
 Measured: 900 ft ~~FNL~~ 1650 ft ~~FEL~~ XXX Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

Recorded by: J. PINCHOCK

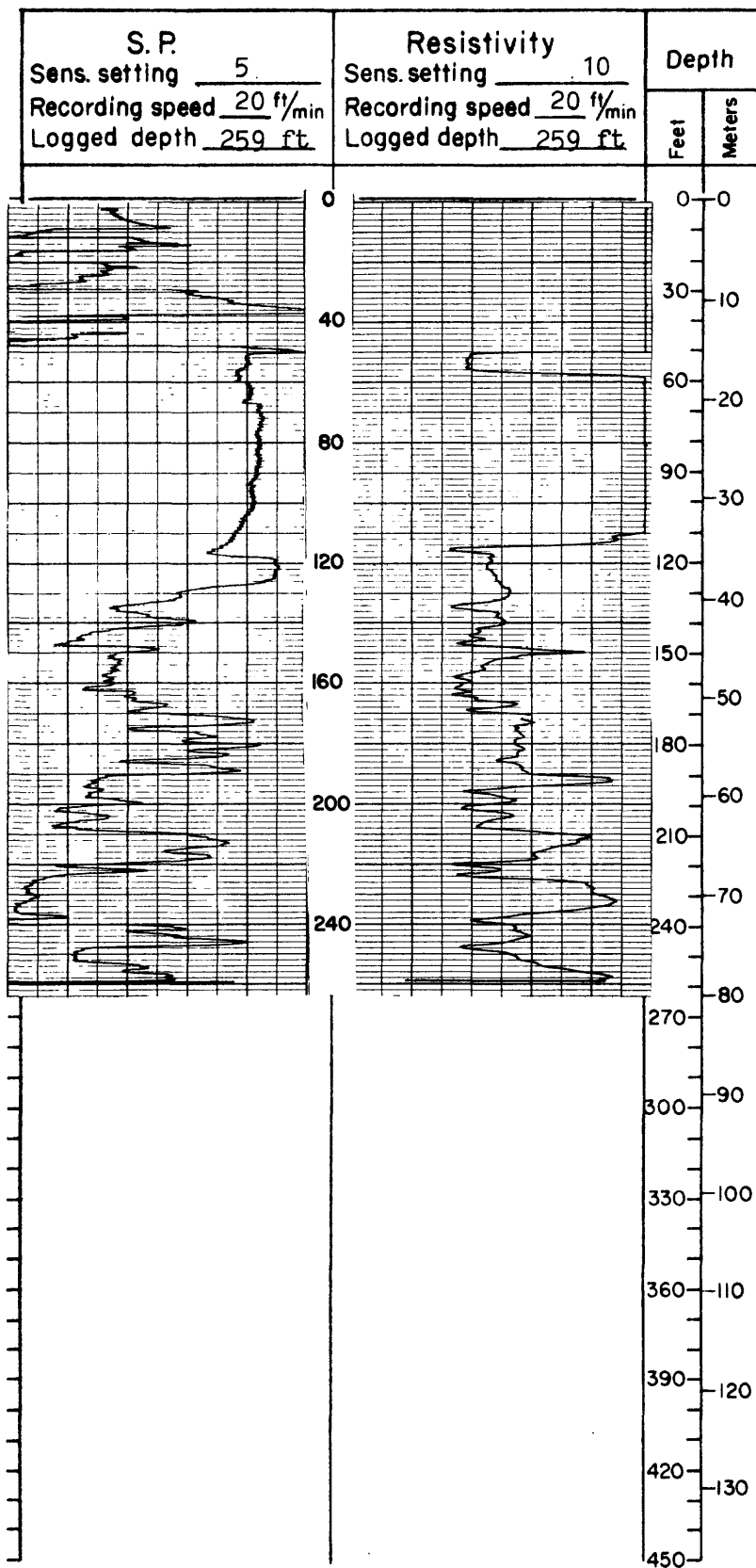
Geologist ^{Yes}
~~XXX~~

Recorded by: L. SAUER



Hole number (continued)

US- 7713



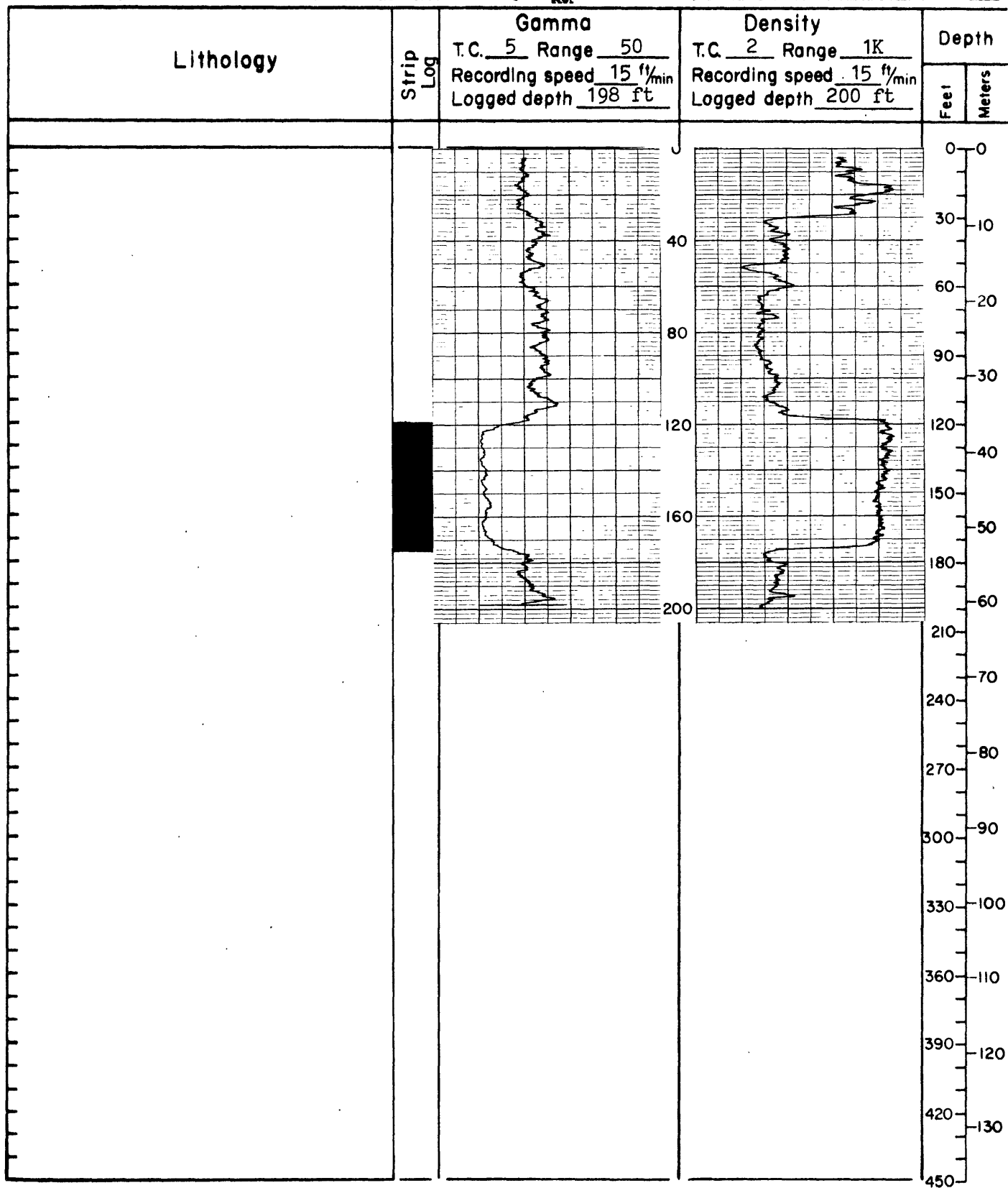
Montana College of Mineral Science and Technology

Hole no: US-7714 Map: Coleman Draw Date: 5/1/77 State: Montana County: Powder River
 Elev.: 3242 ft Location: T. 3 ^N_S, R. 46 ^E_W, Sec. 6, Tract BDDD Drilled depth: 200 ft
 Measured 2720 ft ^{FSL}_{FEL}, 2740 ft ^{FSL}_{FEL} Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

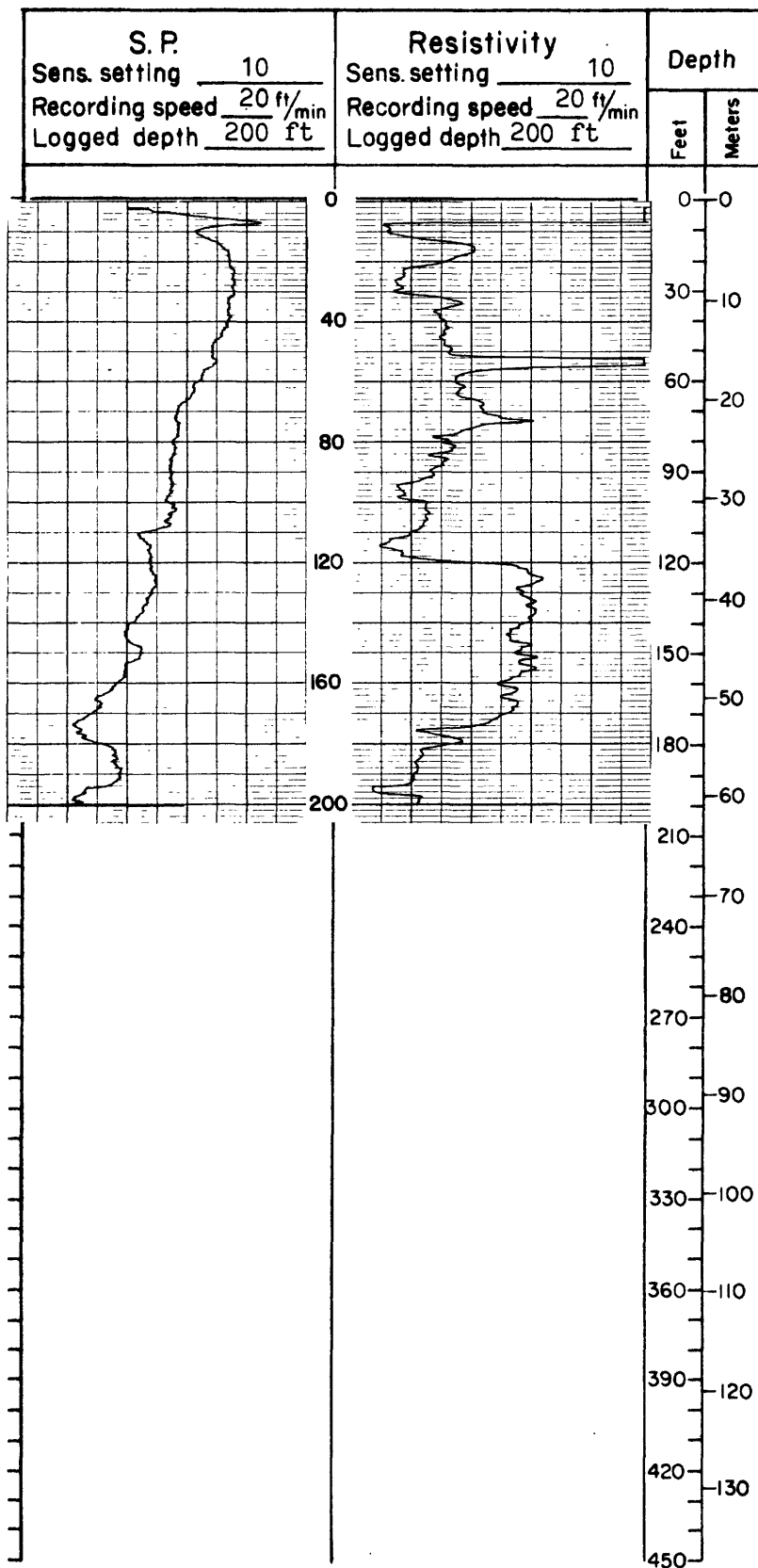
Recorded by: J. PINCHOCK

Geologist ^{Yes}_{No} Recorded by: L. SAUER



Hole number (continued)

US - 7714



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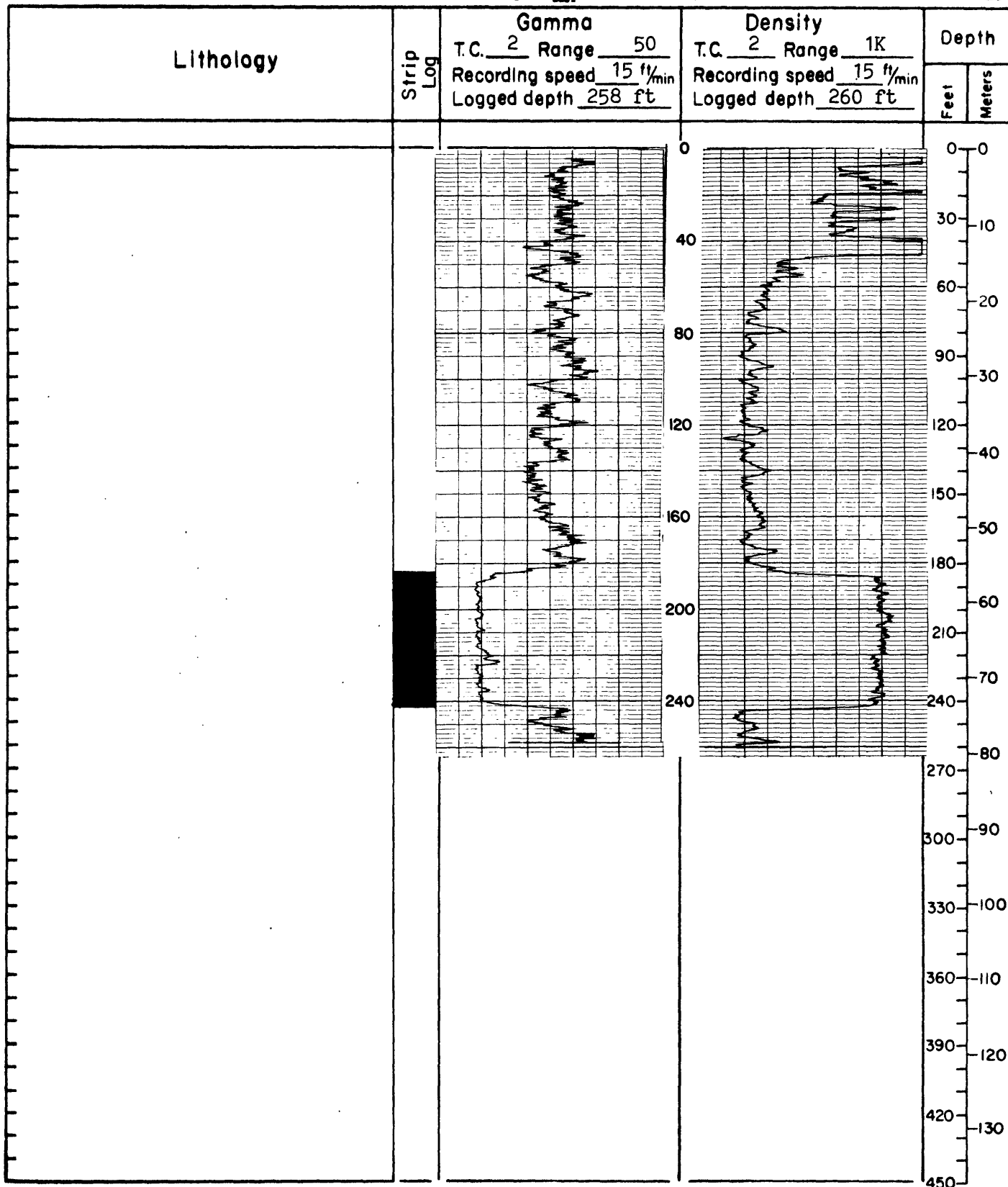
Hole no: US-7715 Map: Coleman Draw Date: 5/1/77 State: Montana County: Powder River
 Elev: 3322 ft Location: T. 3 ^N S, R. 46 ^E W, Sec. 5, Tract ABBC Drilled depth: 260 ft
 Measured: 500 ft ^{FNL} ~~FWL~~, 2640 ft ^{FEL} ~~FWL~~ Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

Recorded by: J. PINCHOCK

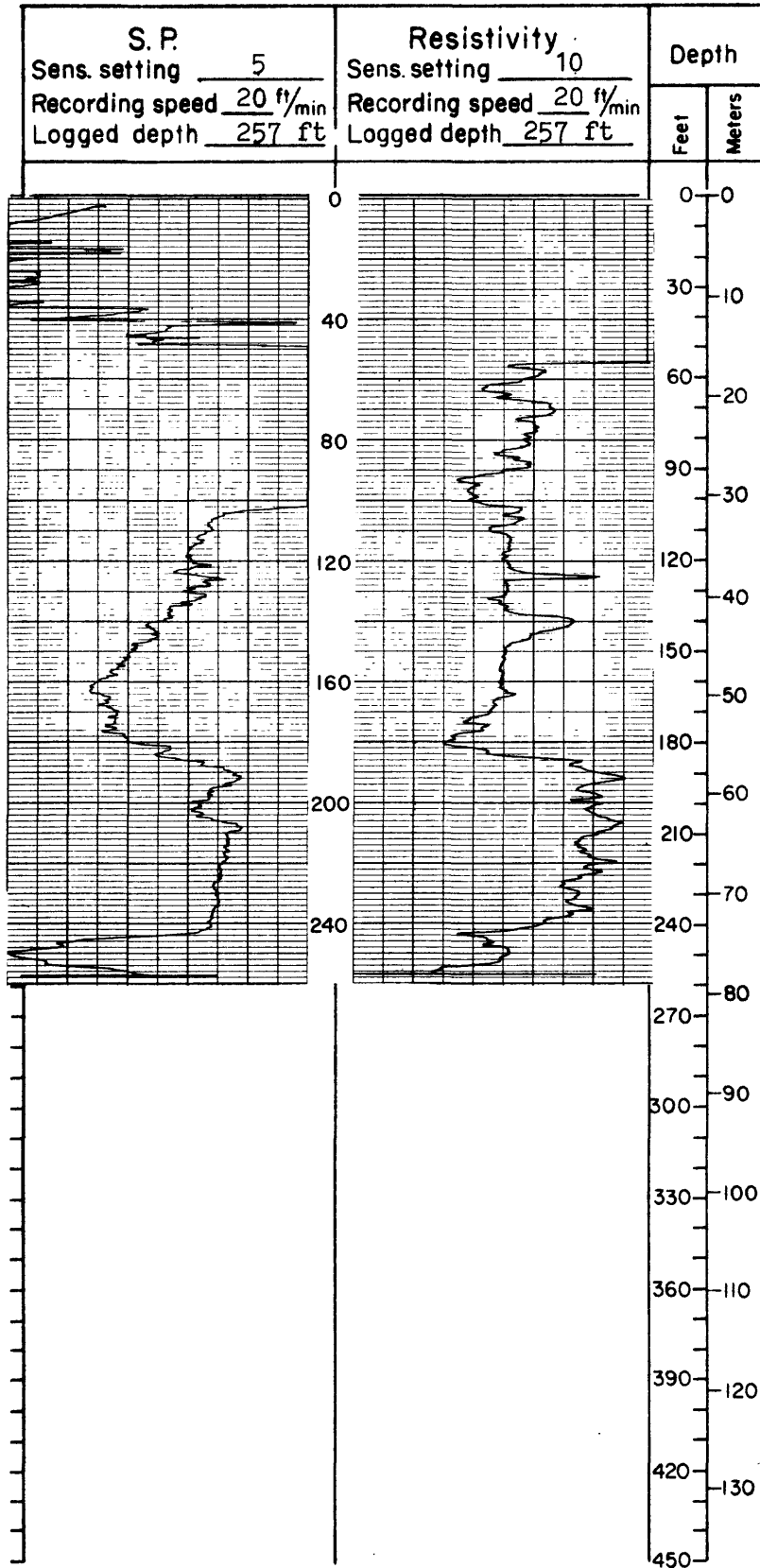
Geologist ^{Yes} ~~No~~

Recorded by: L. SAUER



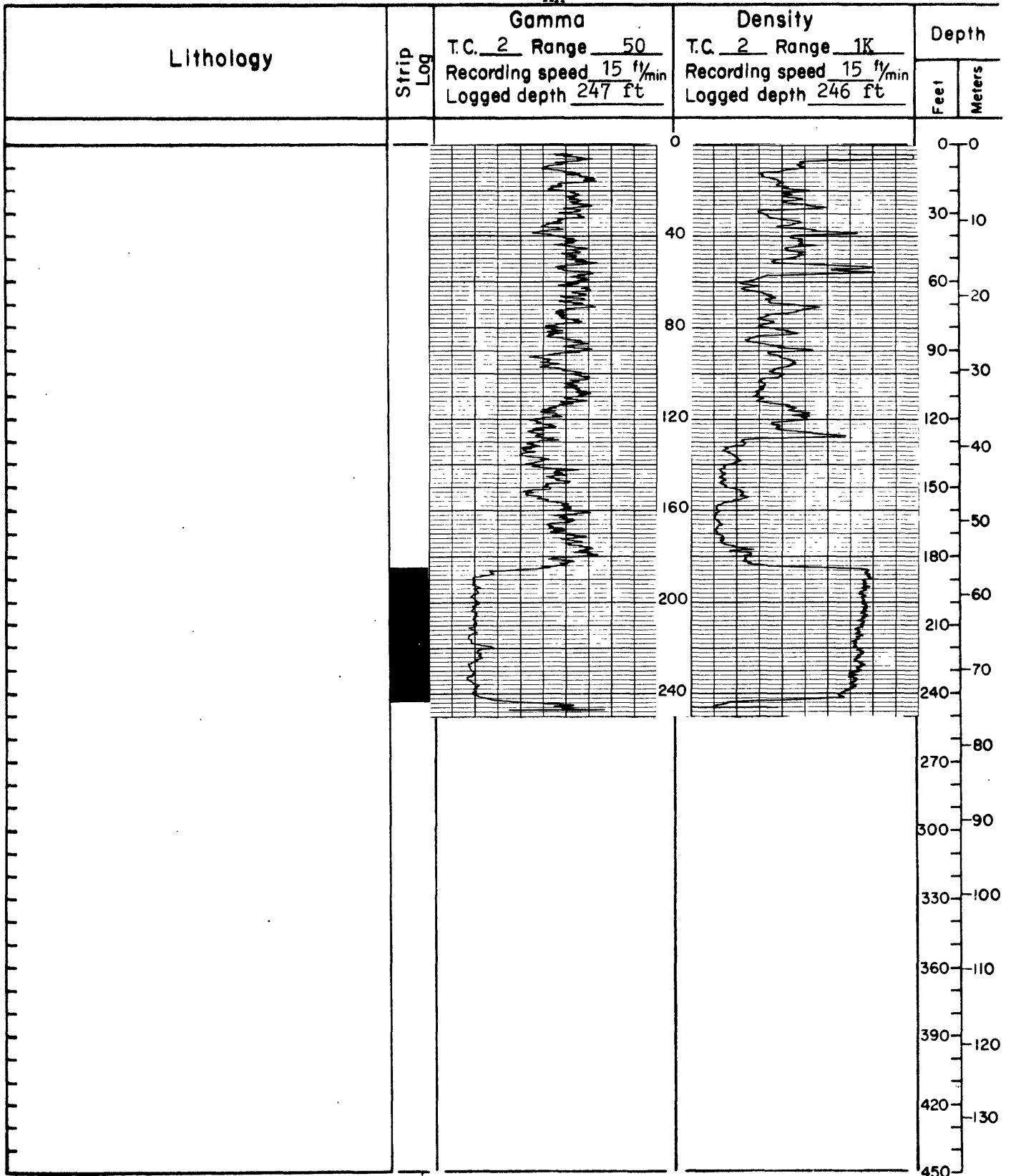
Hole number (continued)

US - 7715



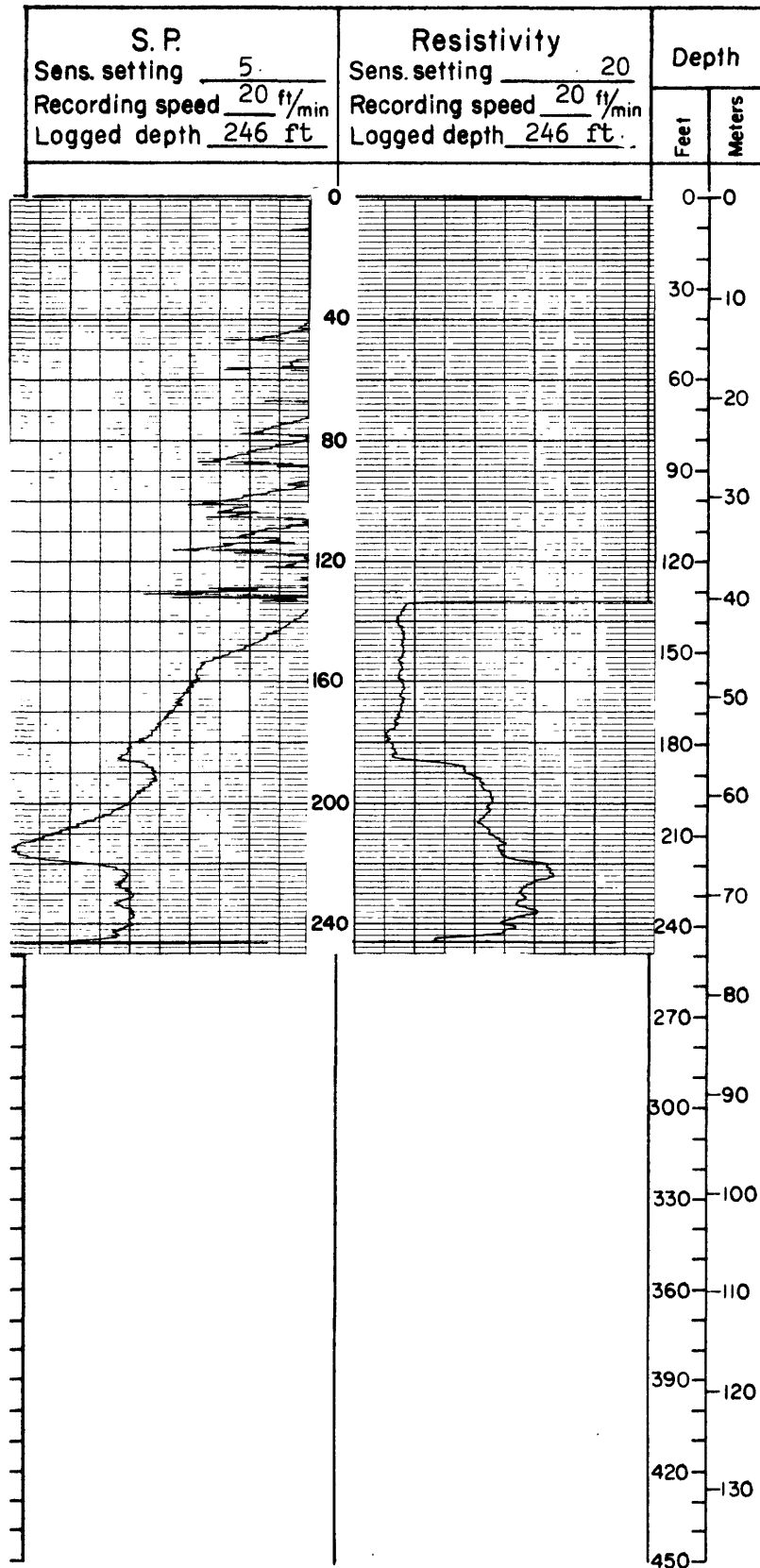
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Hole no: US-7716 Map: Willow Crossing Date: 5/1/77 State: Montana County: Powder River
 Elev.: 3230 ft Location: T. 3 N. S. R. 45 E. Sec. 8, Tract CDDD Drilled depth: 260 ft
 Measured: 215 ft ~~BSL~~ 2400 ft ~~FSL~~ FWL Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: 134 ft water level after 24 hours.
 Recorded by: J. PINCHOCK Geologist ~~Yes~~ No Recorded by: L. SAUER



Hole number (continued)

US - 7716



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Hole no: US-7717 Map: Willow Crossing Date: 5/2/77 State: Montana County: Powder River
 Elev.: 3265 ft Location: T. 3 ^N S, R. 45 ^E W, Sec. 6, Tract CCAB Drilled depth: 90 ft
 Measured: 1130 ft ^{KMY} FSL, 850 ft ^{KMY} FWL Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: No geophysical logs; clinker hole.

Recorded by: J. PINCHOCK

Geologist ^{Yes} ~~No~~ Recorded by: L. SAUER

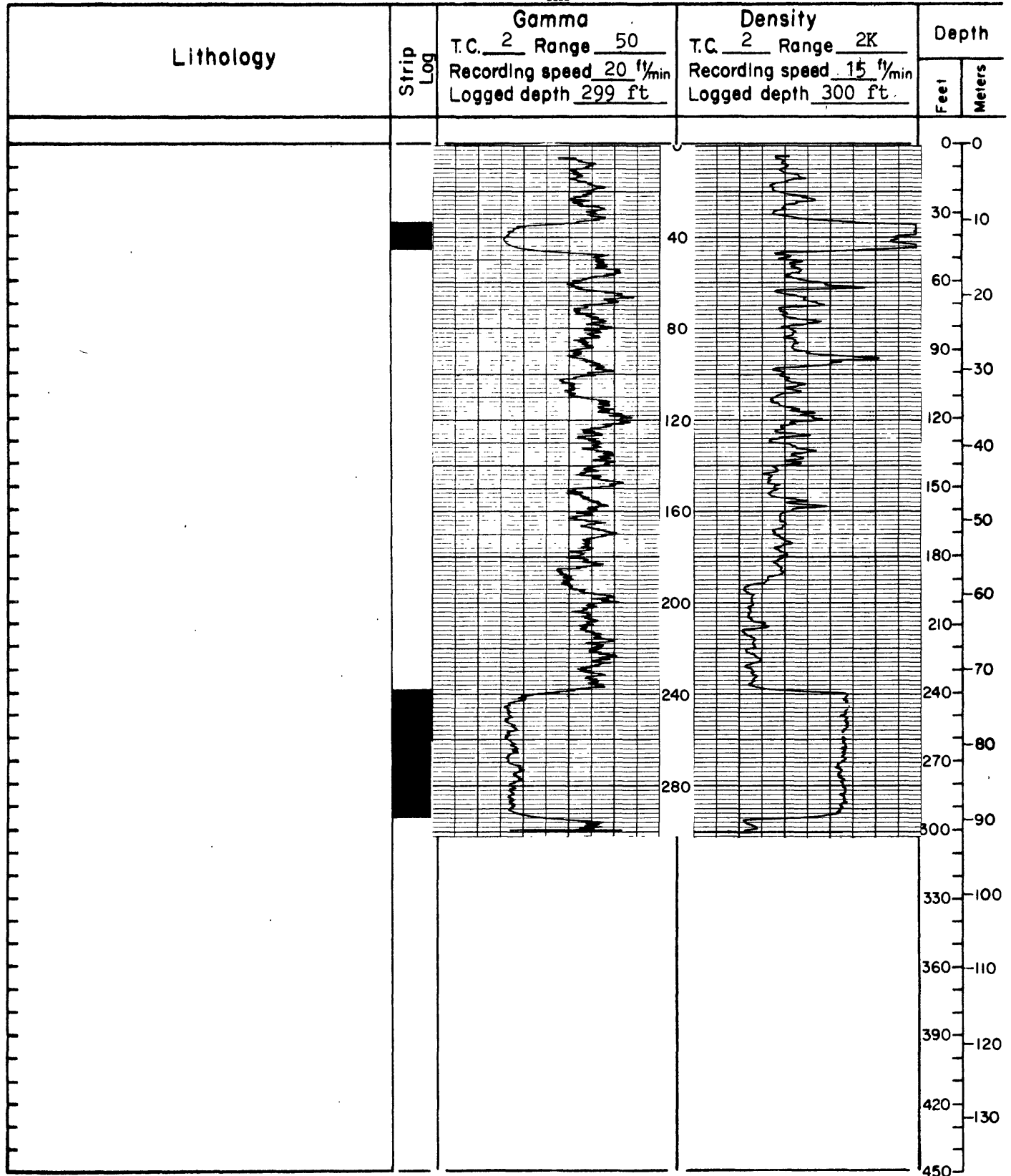
Lithology	Strip Log	Gamma	Density	Depth	
		T.C. _____ Range _____ Recording speed _____ ft/min Logged depth _____	T.C. _____ Range _____ Recording speed _____ ft/min Logged depth _____	Feet	Meters
Clinker				0	0
					30
				60	
				90	
				120	
				150	
				180	
				210	
				240	
				270	
				300	
				330	
				360	
				390	
				420	
				450	

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Hole no: US-7718 Map: Willow Crossing Date: 5/3/77 State: Montana County: Powder River
 Elev.: 3360 ft. Location: T. 3 N, R. 45 E, Sec. 4, Tract BDAB Drilled depth: 300 ft.
 Measured: 1450 ft ^{FNL}~~50~~, 2150 ft ^{SEL}~~FWL~~ Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Lost circulation at 300 ft; no Er-Sp log.

Recorded by: J. PINCHOCK

Geologist ^{Yes}~~NA~~ Recorded by: J. PINCHOCK



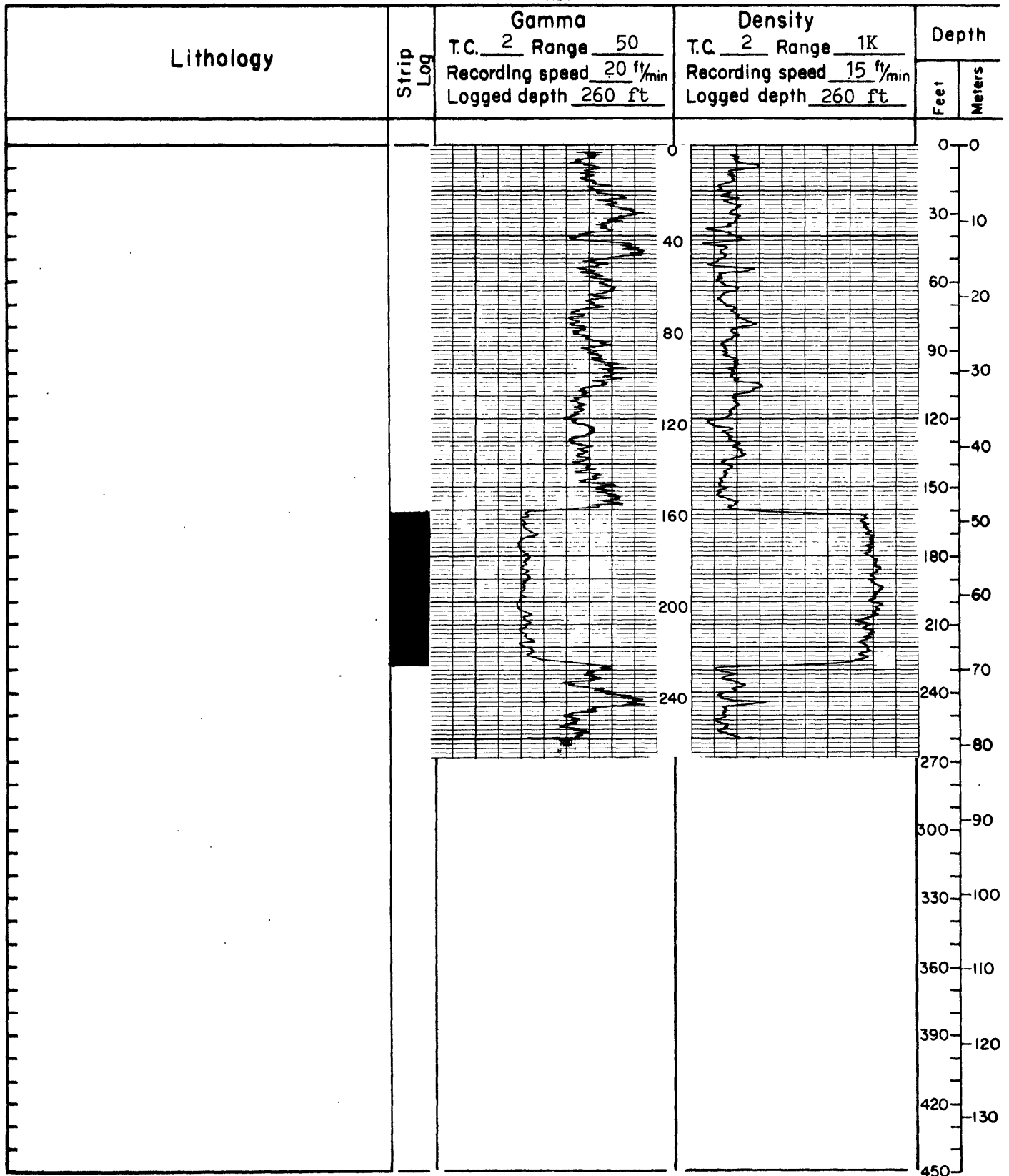
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Hole no: US-7719 Map: Willow Crossing Date: 5/3/77 State: Montana County: Powder River
 Elev.: 3180 ft Location: T. 4 ^K_S, R. 45 ^K_W, Sec. 10, Tract DADA Drilled depth: 260 ft
 Measured 3330 ft FNL 20 ft FEL 20 ft Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

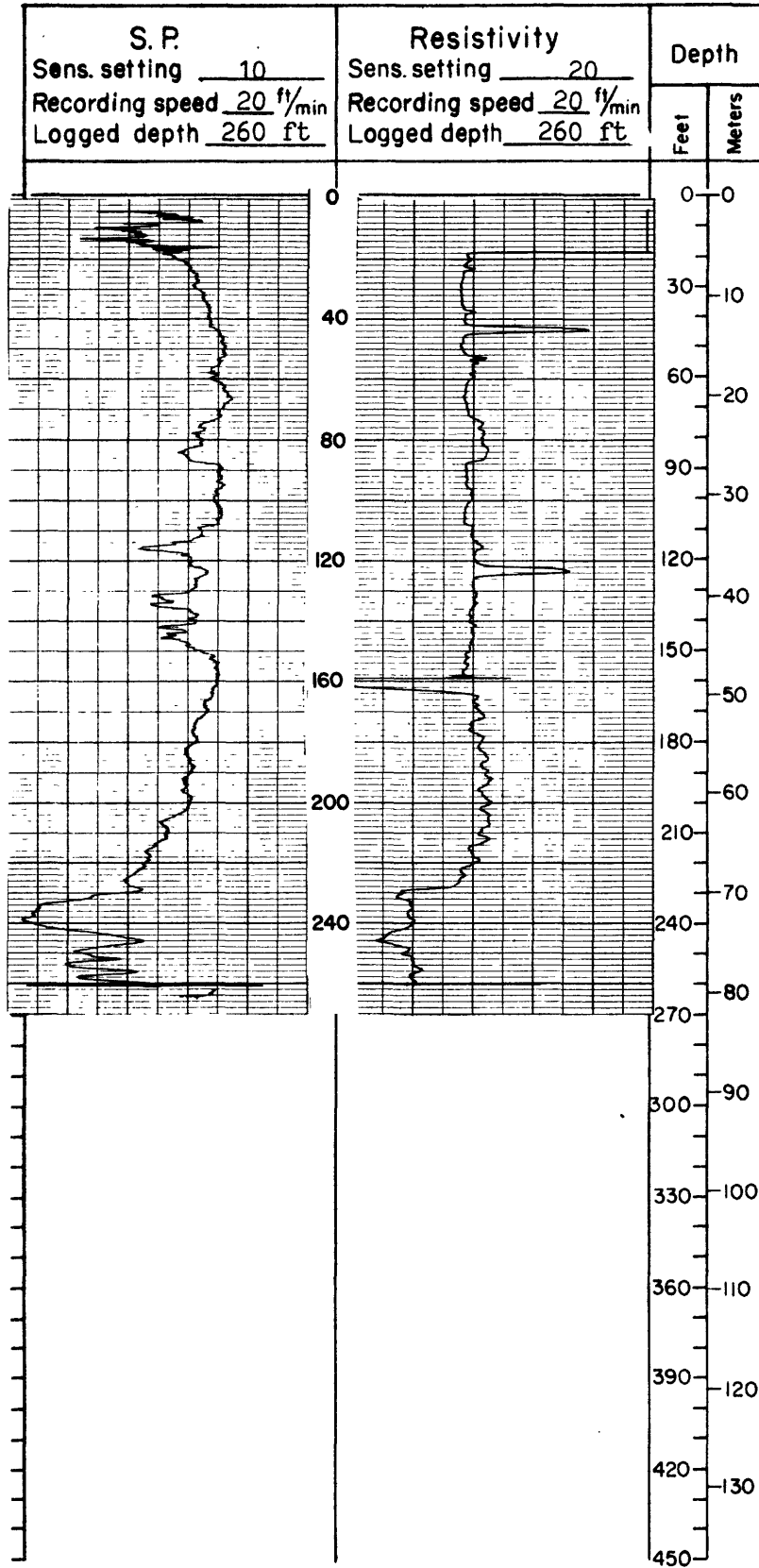
Recorded by: J. PINCHOCK

Geologist ^{Yes}_{No} Recorded by: J. PINCHOCK



Hole number (continued)

US- 7719



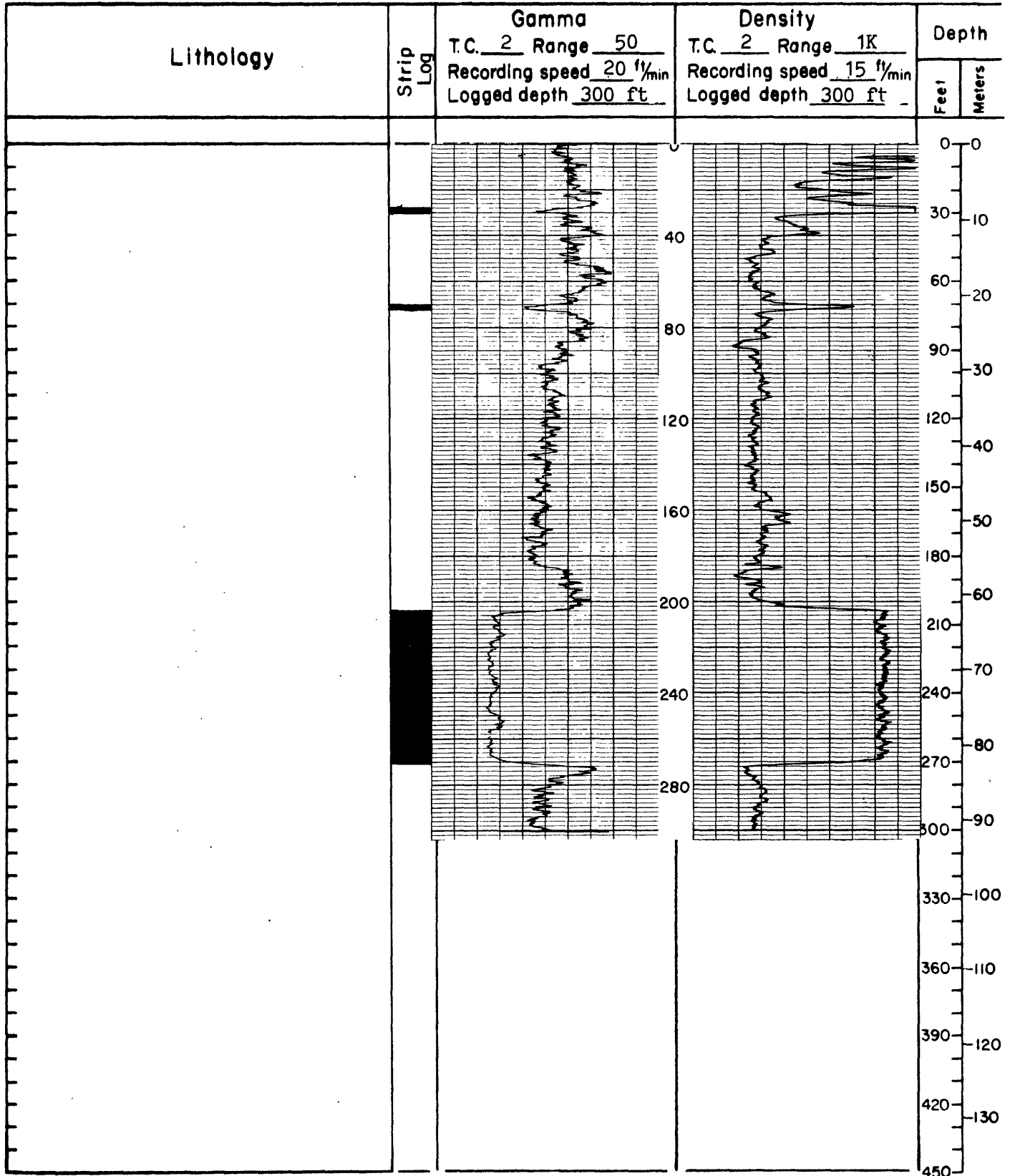
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Hole no: US-7720 Map: Coleman Draw Date: 5/3/77 State: Montana County: Powder River
 Elev.: 3245 ft Location: T. 4 S, R. 45 E, Sec. 12, Tract CAAB Drilled depth: 300 ft.
 Measured 2950 ft ^{FNL} _{PSX}, 3175 ft ^{FEL} _{FNL} Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

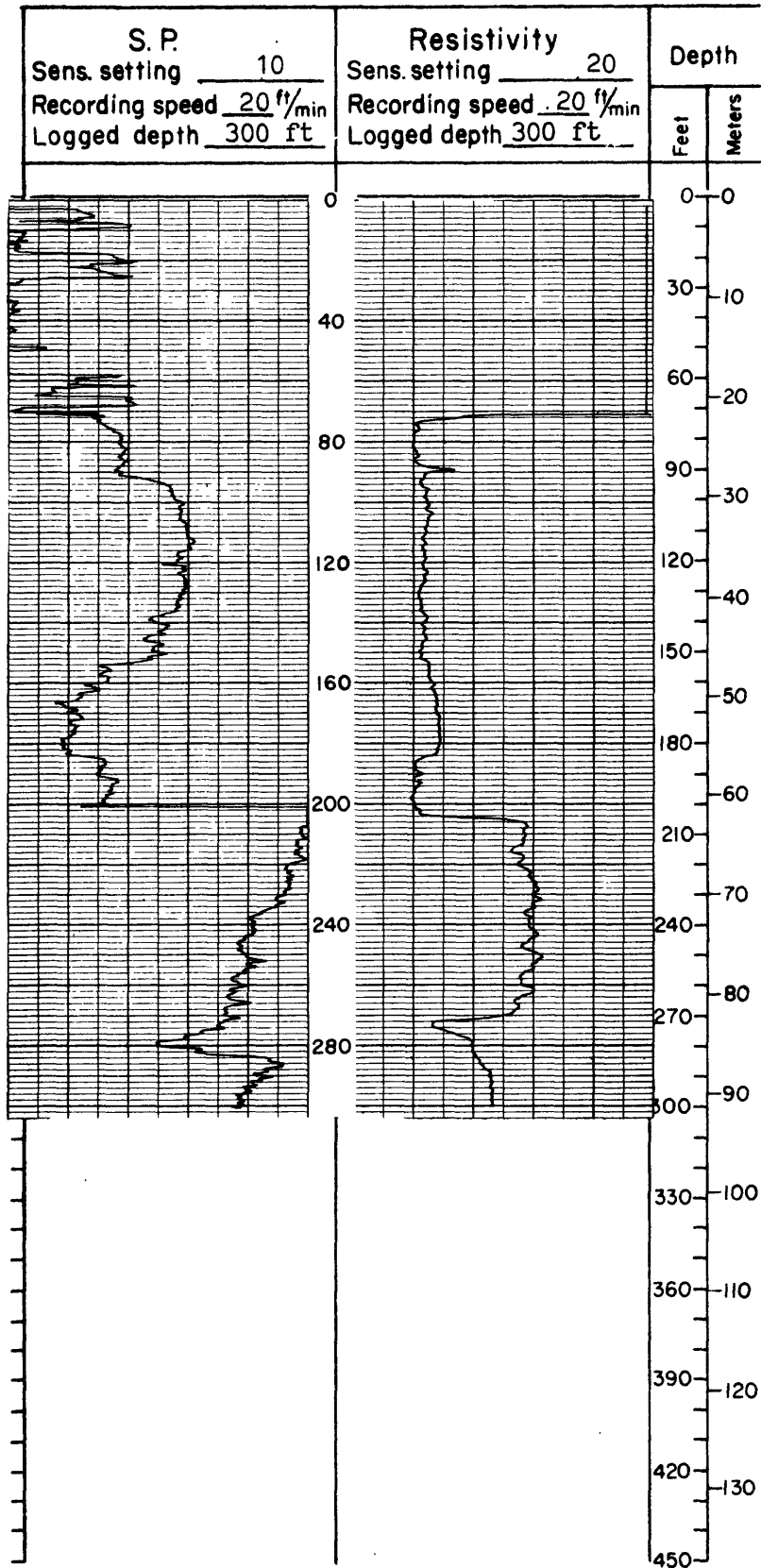
Recorded by: J. PINCHOCK

Geologist ^{Yes} _{No} Recorded by: J. PINCHOCK



Hole number (continued)

US- 7720



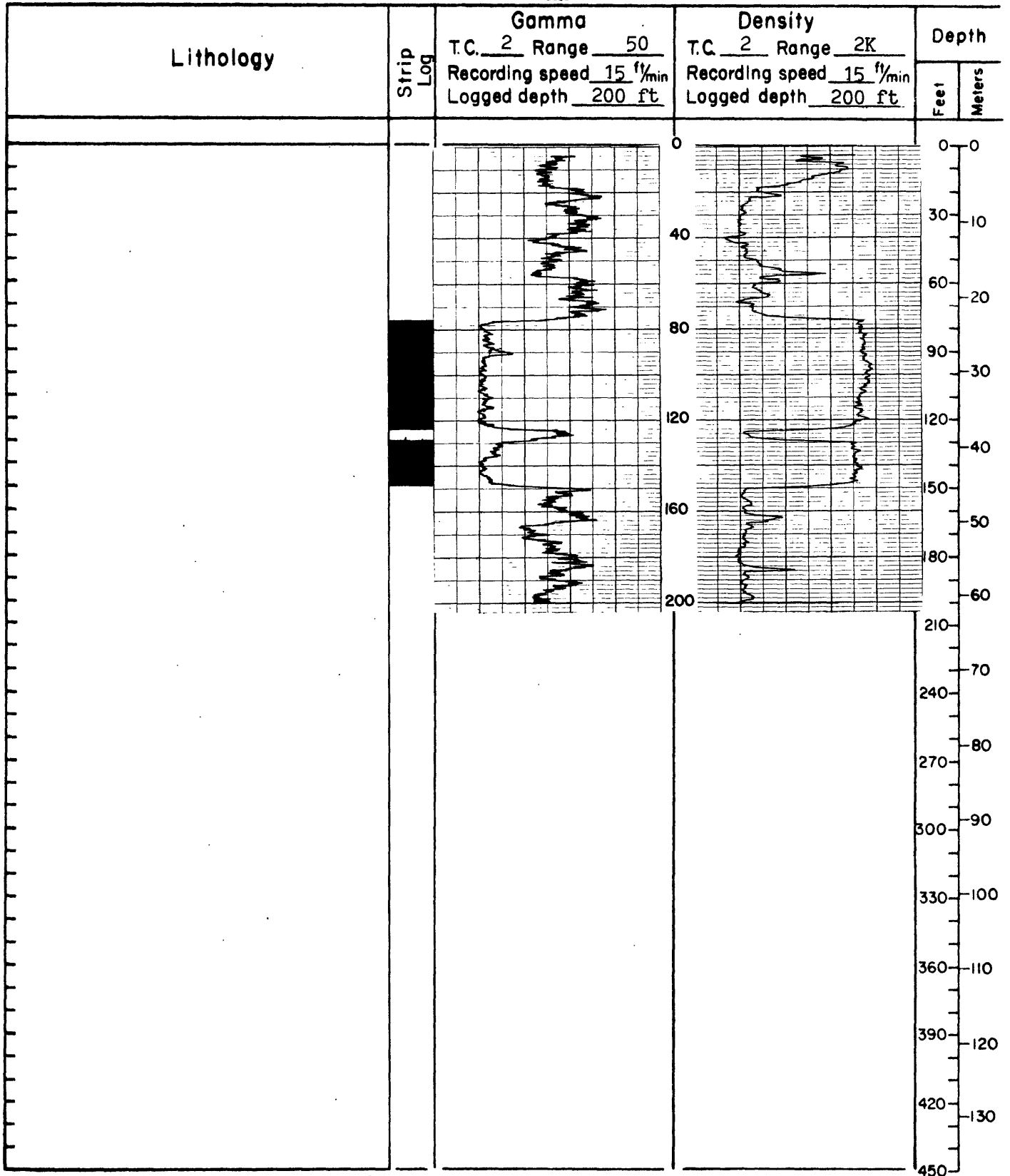
Montana College of Mineral Science and Technology

Hole no: US-7721 Map: King Mountain Date: 5/4/77 State: Montana County: Powder River
 Elev.: 3095 ft Location: T. 4 S., R. 45 E., Sec. 22, Tract BCBC Drilled depth: 200 ft
 Measured: 1975 ft ^{FNL} _{FWL}, 250 ft ^{FNL} _{FWL} Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☒ No ☐

Remarks: _____

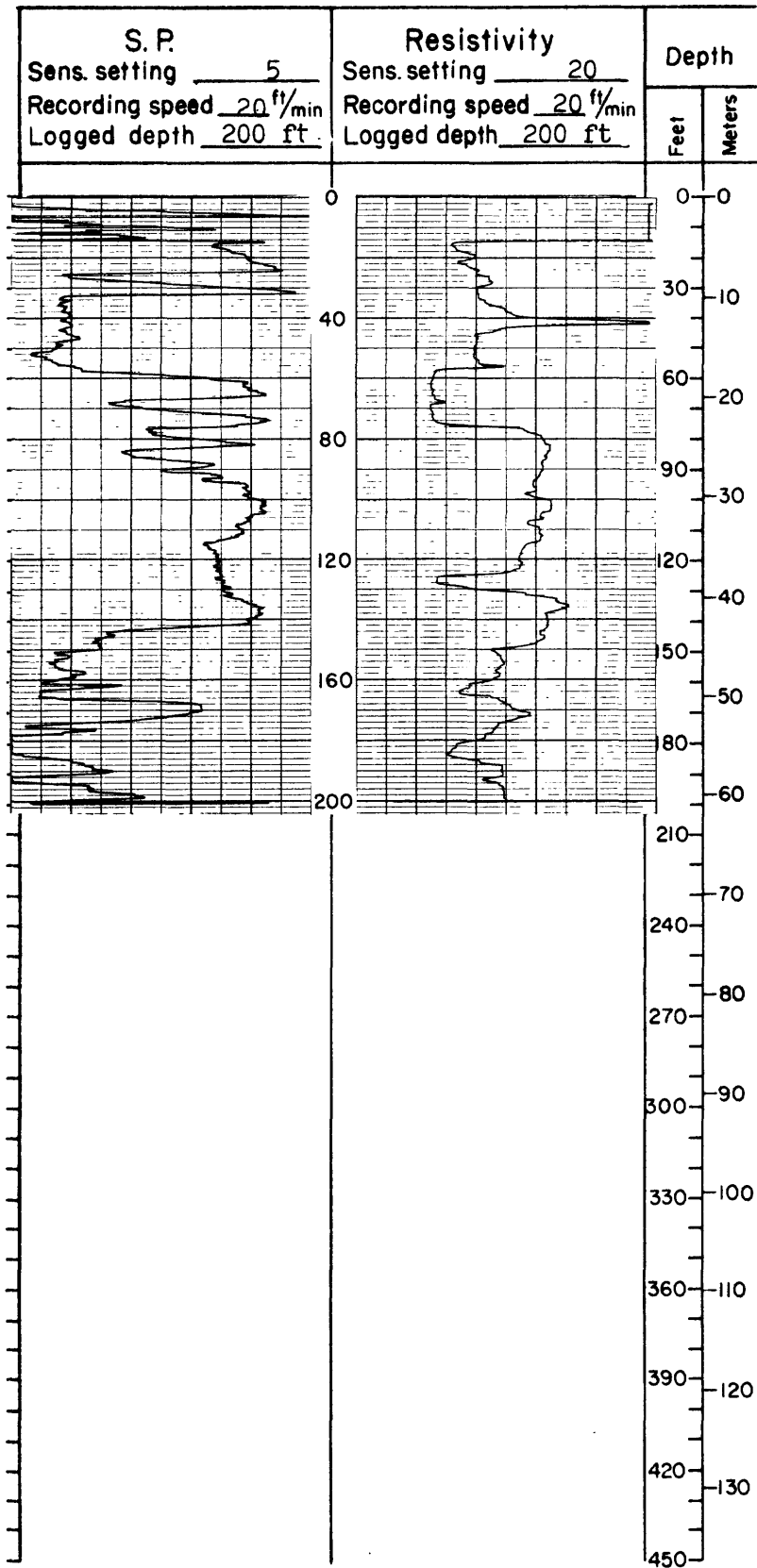
Recorded by: J. PINCHOCK

Geologist ^{Yes} _{No} Recorded by: L. SAUER



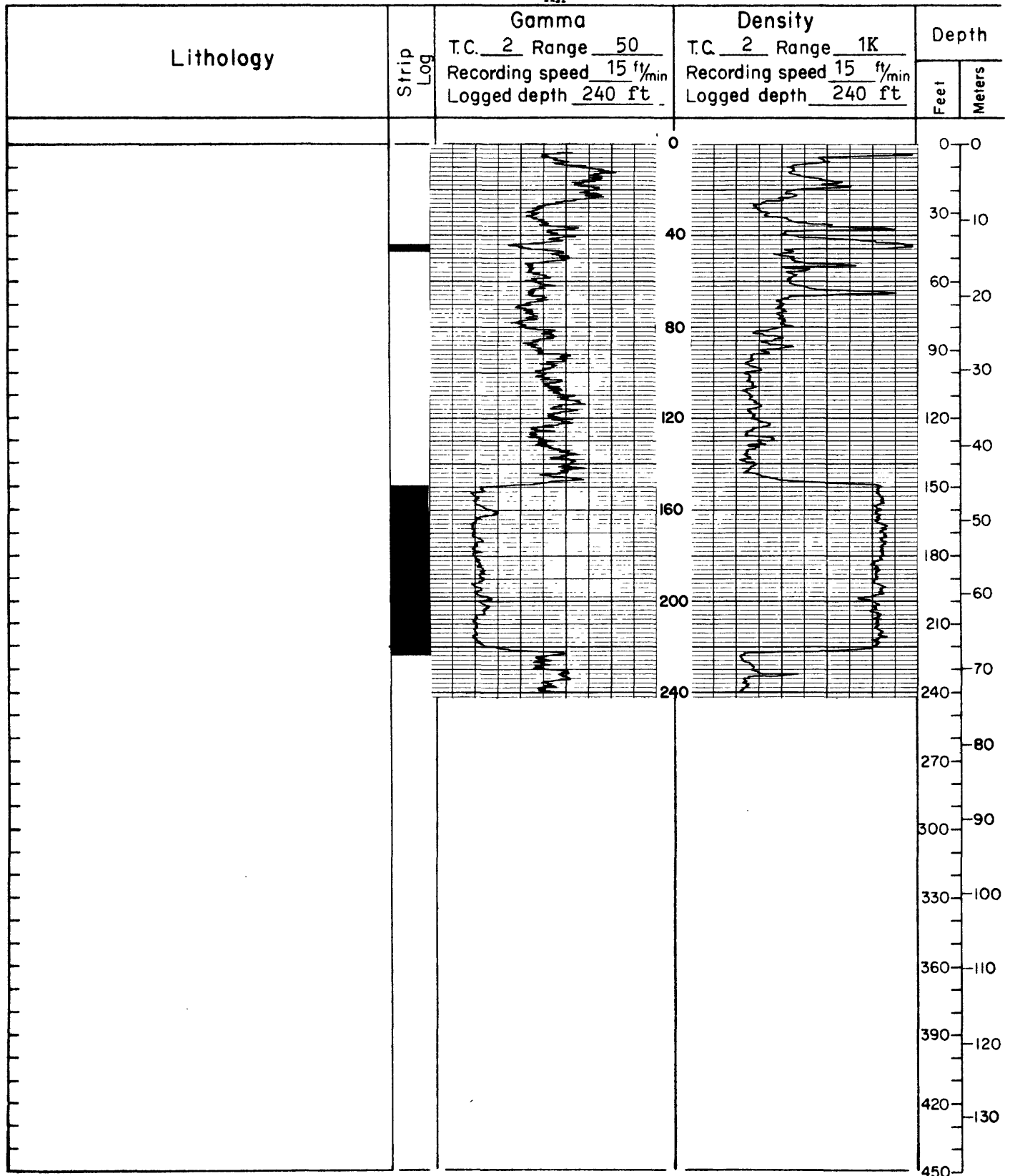
Hole number (continued)

US - 7721



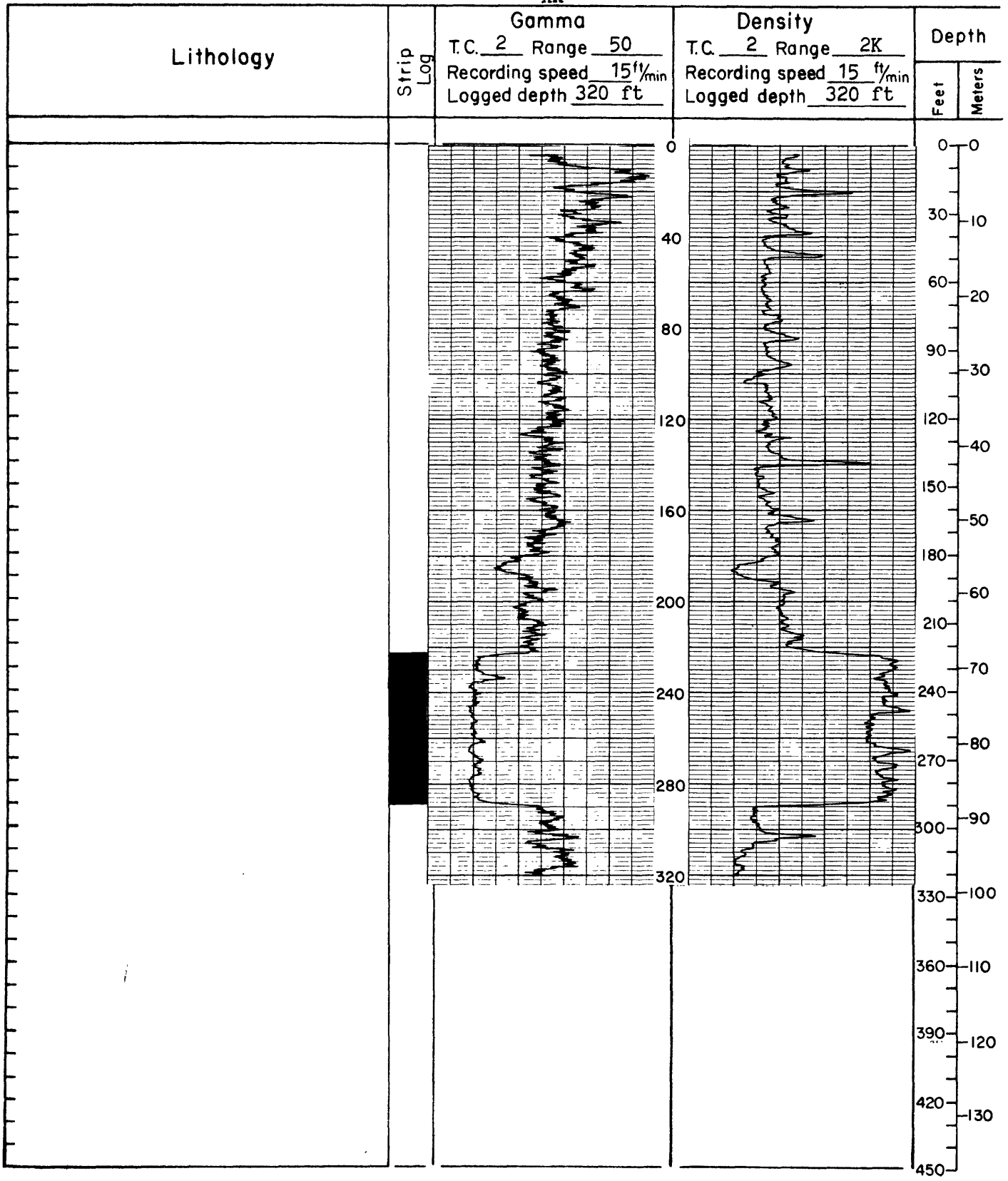
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7722 Map: King Mountain Date: 5/10/77 State: Montana County: Powder River
 Elev.: 3144 ft Location: T. 4 S, R. 45 E, Sec. 14, Tract CCBD Drilled depth: 240 ft
 Measured: 690 ft ~~FSL~~, 640 ft ~~FWL~~ Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Lost circulation at 240 ft, no Er-Sp log.
 Recorded by: J. PINCHOCK Geologist ^{Yes} ~~XX~~ Recorded by: L. SAUER



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Hole no: US-7723 Map: Willow Crossing Date: 5/10/77 State: Montana County: Powder River
 Elev. 3255 ft Location: T. 4 ^N_S, R. 45 ^E_W, Sec. 6, Tract DBDB Drilled depth: 320 ft
 Measured: 1875 ft ^{XXX}_{FSL}, 1750 ft ^{FEL}_{XXX} Hole size: 4 3/4 in Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Set 4 in. casing for U.S. Geological Survey.
 Recorded by: J. PINCHOCK Geologist ^{Yes}_{XXX} Recorded by: L. SAUER



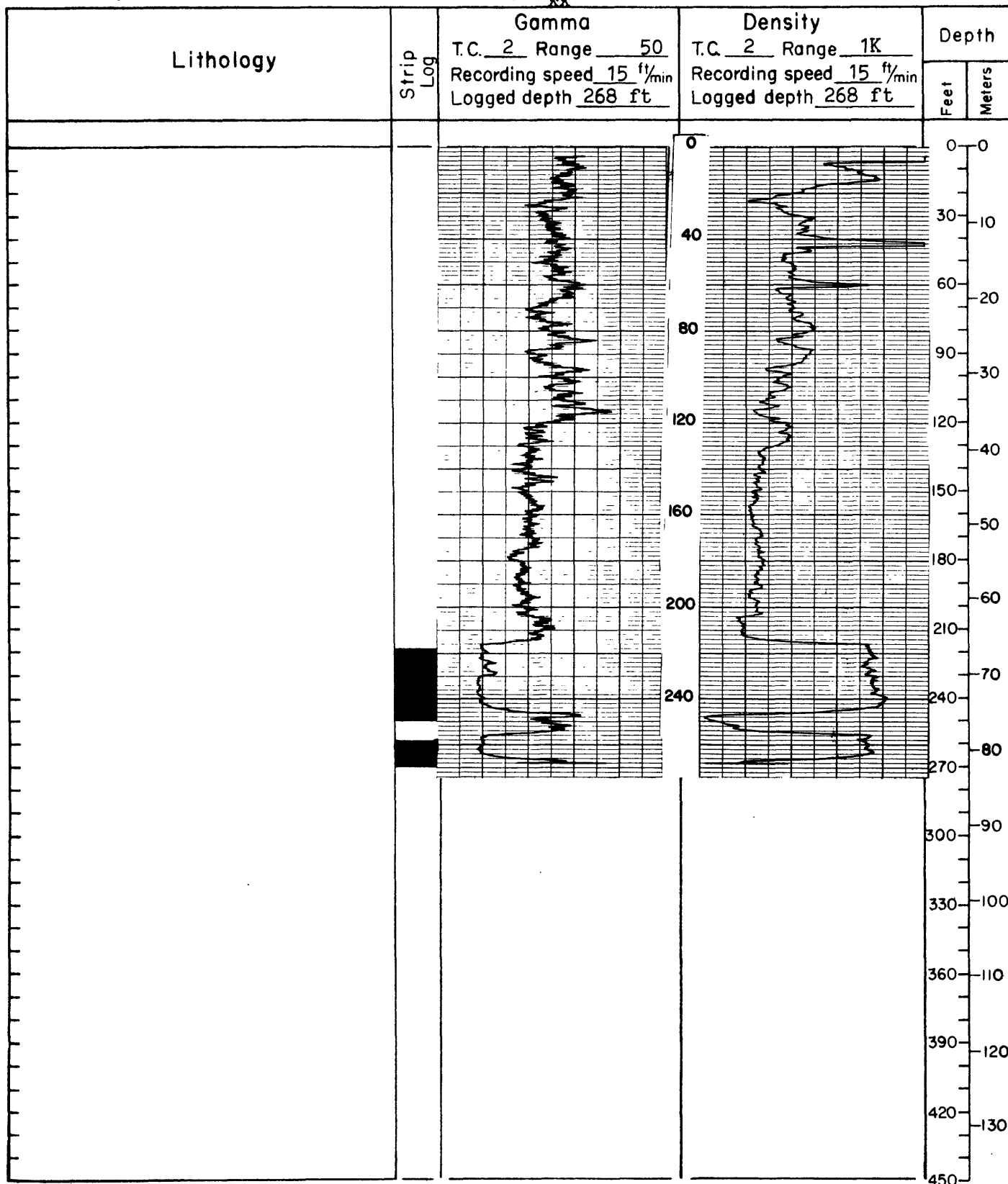
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7724 Map: Willow Crossing Date: 5/11/77 State: Montana County: Powder River
 Elev.: 3252 ft Location: T. 3 ^N_S, R. 45 ^E_W, Sec. 32, Tract CCBA Drilled depth: 45 ft
 Measured: 1275 ft ^{NL}_{SL}, 400 ft ^{NL}_{FWL} Hole size: 4 3/4 in. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Knobloch was burned, so hole was abandoned; no logs.
 Recorded by: J. PINCHOCK Geologist ^{Yes}_{No} Recorded by: _____

Lithology	Strip Log	Gamma	Density	Depth	
		T.C. _____ Range _____ Recording speed _____ ft/min Logged depth _____	T.C. _____ Range _____ Recording speed _____ ft/min Logged depth _____	Feet	Meters
Clinker				0	0
				30	10
				60	20
				90	30
				120	40
				150	50
				180	60
				210	70
				240	80
				270	90
				300	100
				330	110
				360	120
				390	130
				420	130
				450	

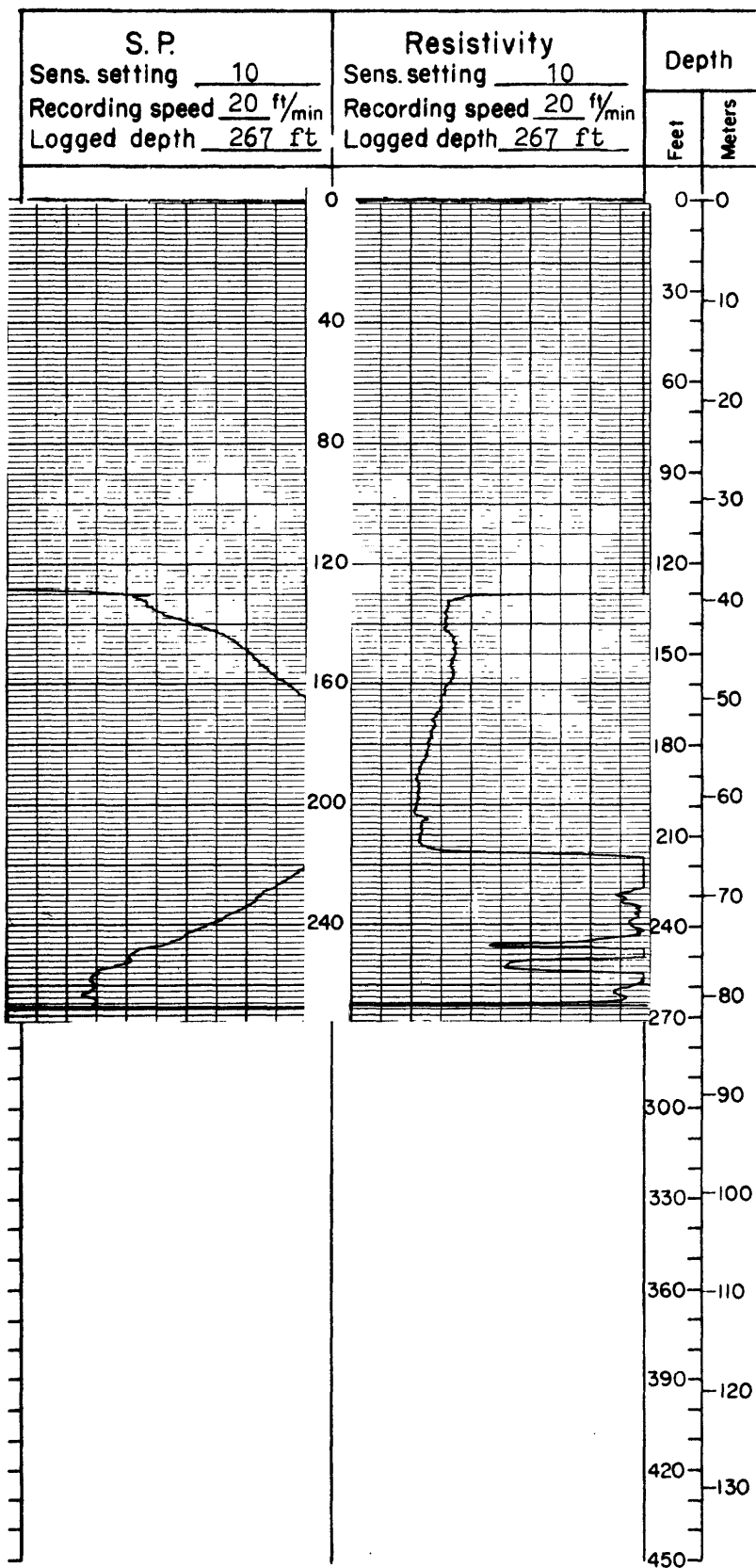
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7725 Map: King Mountain Date: 5/11/77 State: Montana County: Powder River
 Elev.: 3240 ft Location: T. 4 ^{N.} S., R. 45 ^{E.} W., Sec. 28, Tract BDDA Drilled depth: 270 ft
 Measured: 2885 ft ^{FWL} ~~FWL~~, 2400 ft ^{FWL} ~~FWL~~ Hole size: 4 3/4 in. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Completed as 4 in. water-observation well.
 Recorded by: J. PINCHOCK Geologist ^{Yes} ~~No~~ Recorded by: L. SAUER



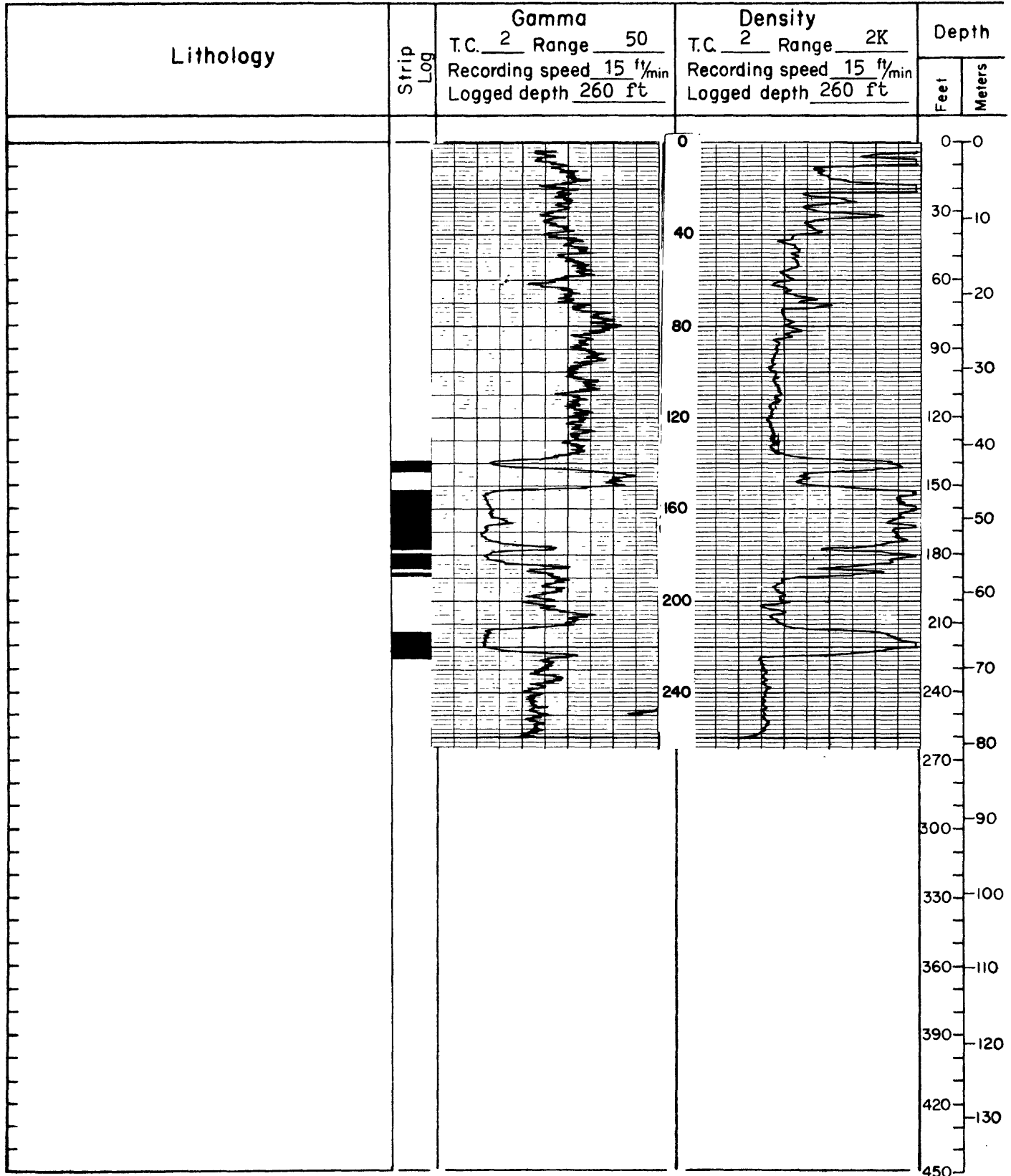
Hole number (continued)

US - 7725



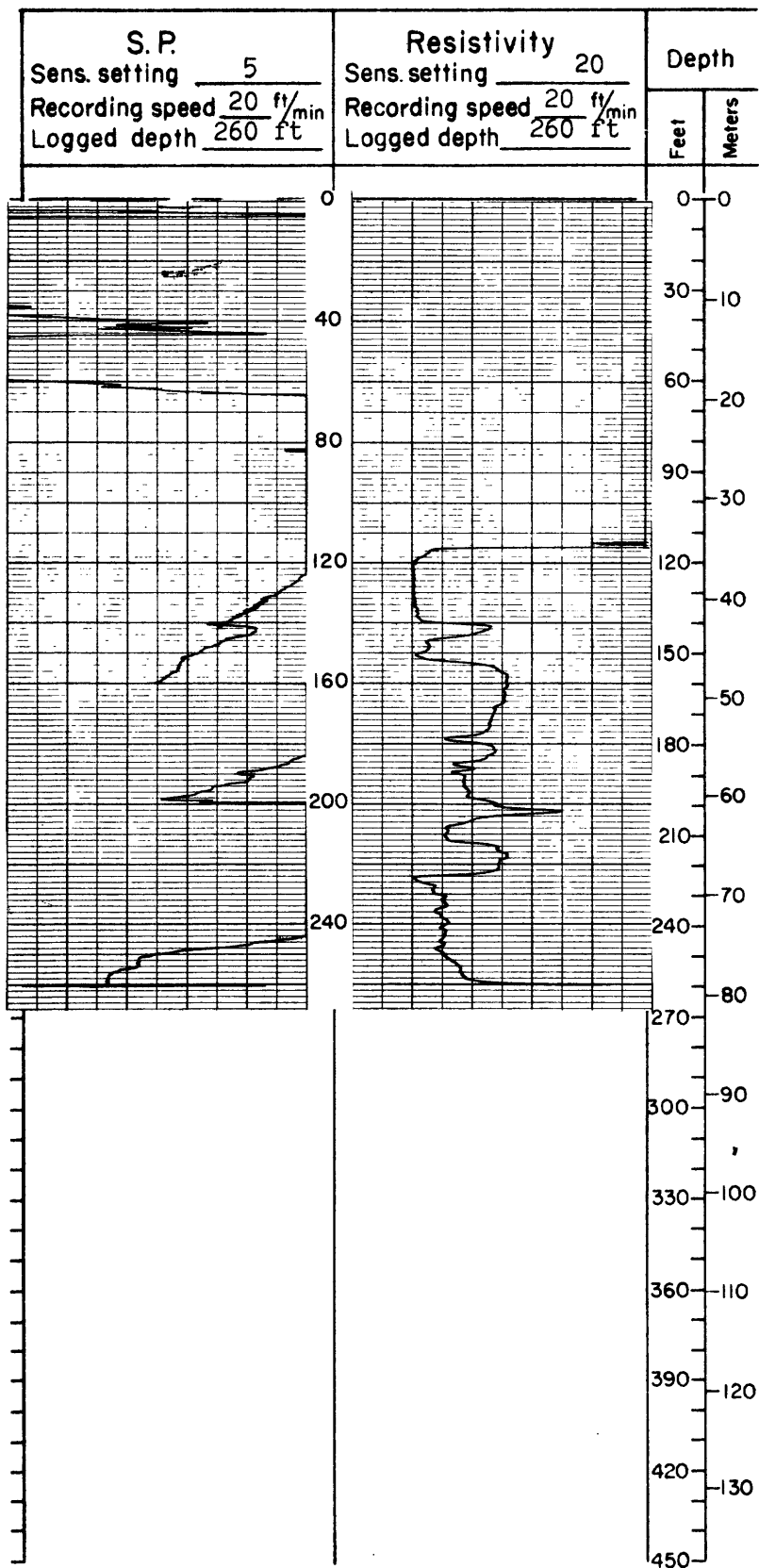
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7726 Map: King Mountain Date: 5/11/77 State: Montana County: Powder River
 Elev.: 3280 ft Location: T. 5 ^N S, R. 45 ^E W, Sec. 4, Tract BADD Drilled depth: 260 ft
 Measured: 1200 ft ^{FNL} ~~58%~~, 2600 ft ^{FWL} ~~58%~~ Hole size: 4 3/4 in Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Completed as 4 in. water-observation well.
 Recorded by: J. PINCHOCK Geologist ^{Yes} ~~No~~ Recorded by: L. SAUER



Hole number (continued)

US- 7726



MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

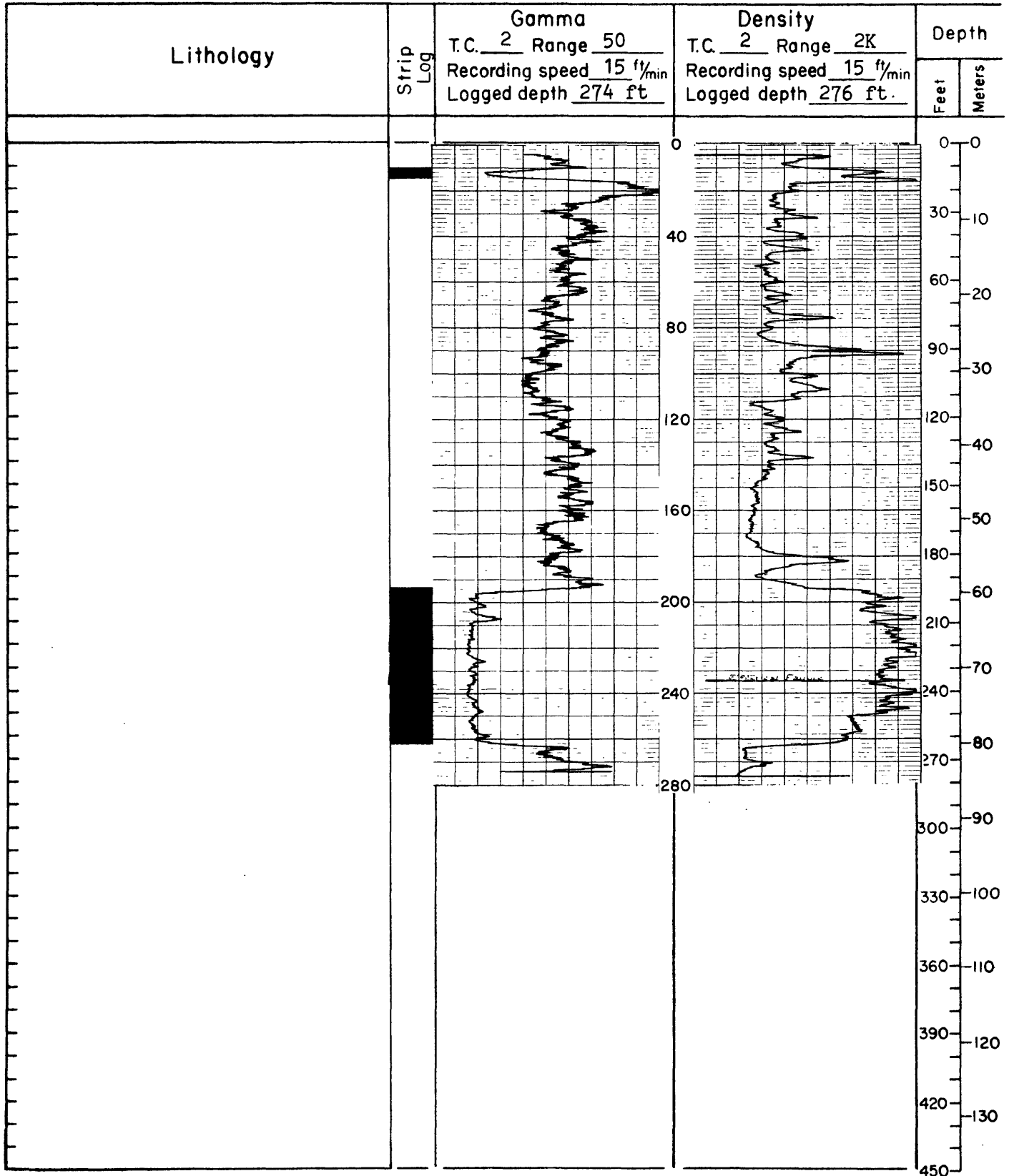
Hole no: US-7727 Map: Willow Crossing Date: 5/12/77 State: Montana County: Powder River
 Elev.: 3217 ft Location: T. 4 S., R. 45 E., Sec. 8, Tract ACBC Drilled depth: 280 ft.
 Measured: 1920 ft ^{FNL} ~~PSX~~, 2390 ft ^{FEL} ~~FWL~~ Hole size: 4 3/4 in. Air ☒ Water ☐ Cored: Yes ☐ No ☒

Remarks: _____

Recorded by: L. SAUER

Geologist ^{XX} ~~No~~

Recorded by: L. SAUER



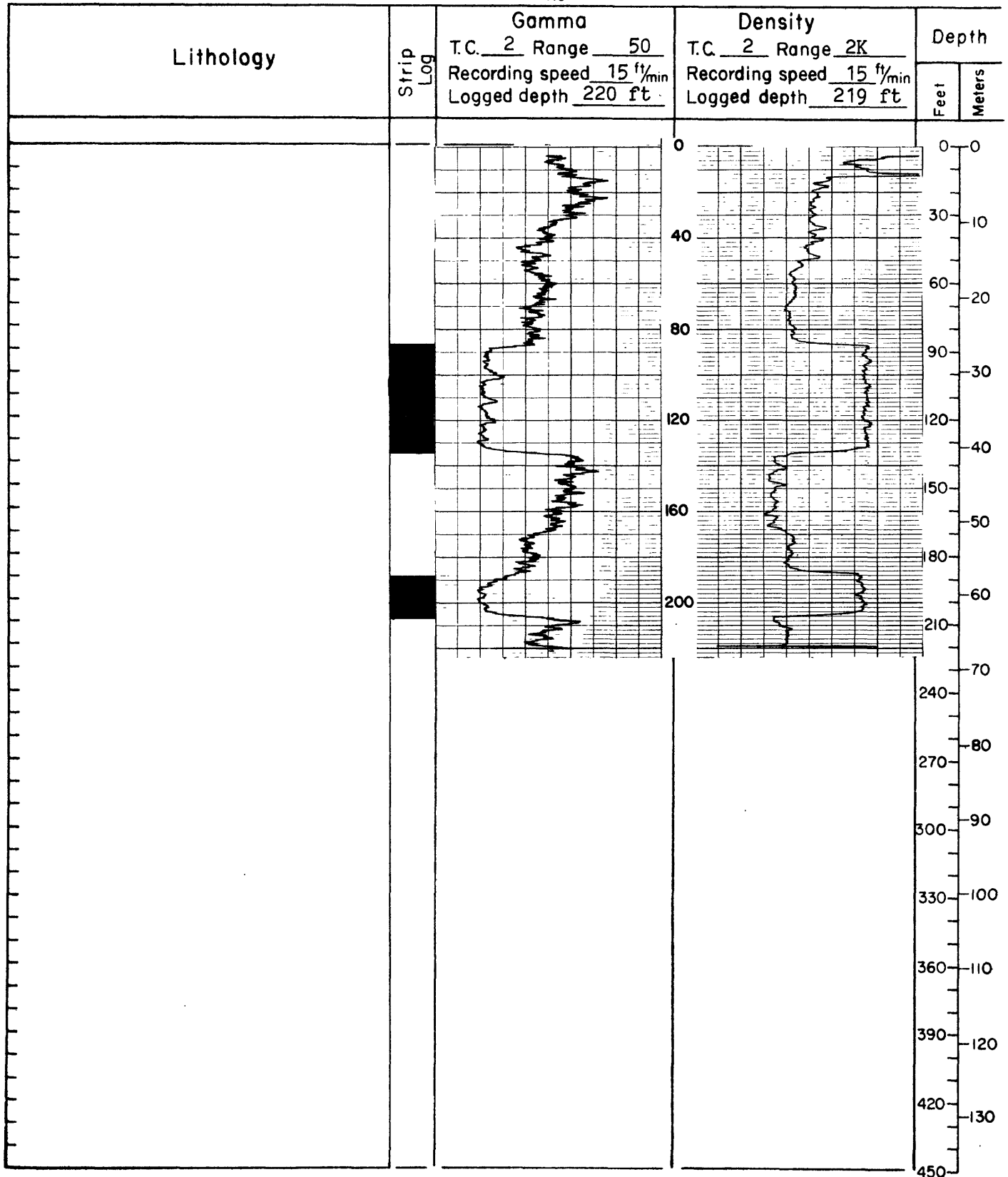
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7728 Map: King Mountain Date 5/12/77 State: Montana County: Powder River
 Elev.: 3142 ft Location: T. 4 ^N_S, R. 45 ^E_W Sec. 26, Tract BDDD Drilled depth: 220 ft
 Measured: 2480 ft ^{FNL}~~XXX~~ 2550 ft ^{FWL}~~XXX~~ Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

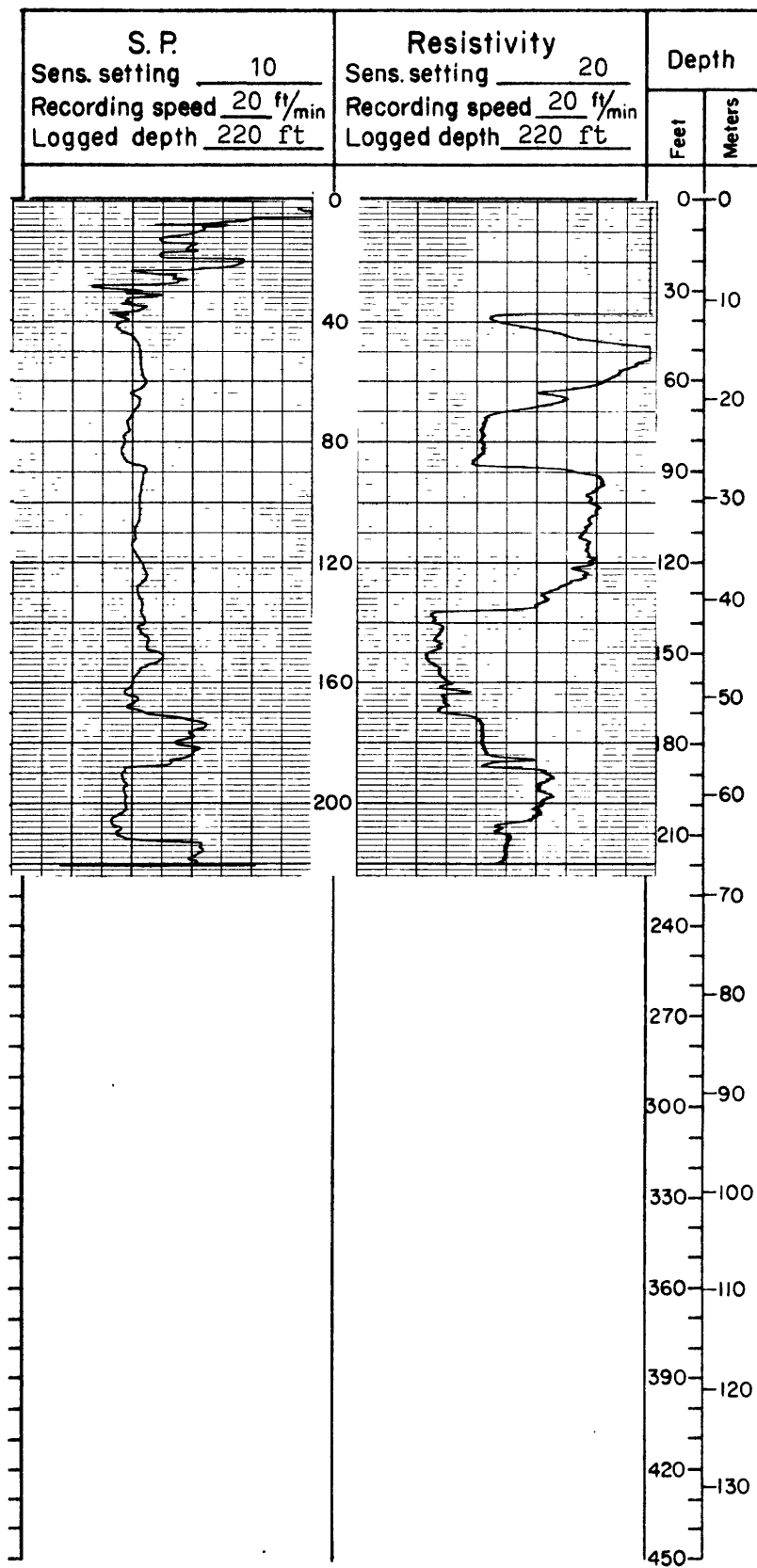
Recorded by: L. SAUER

Geologist ^{XY}~~No~~ Recorded by: L. SAUER



Hole number (continued)

US- 7728



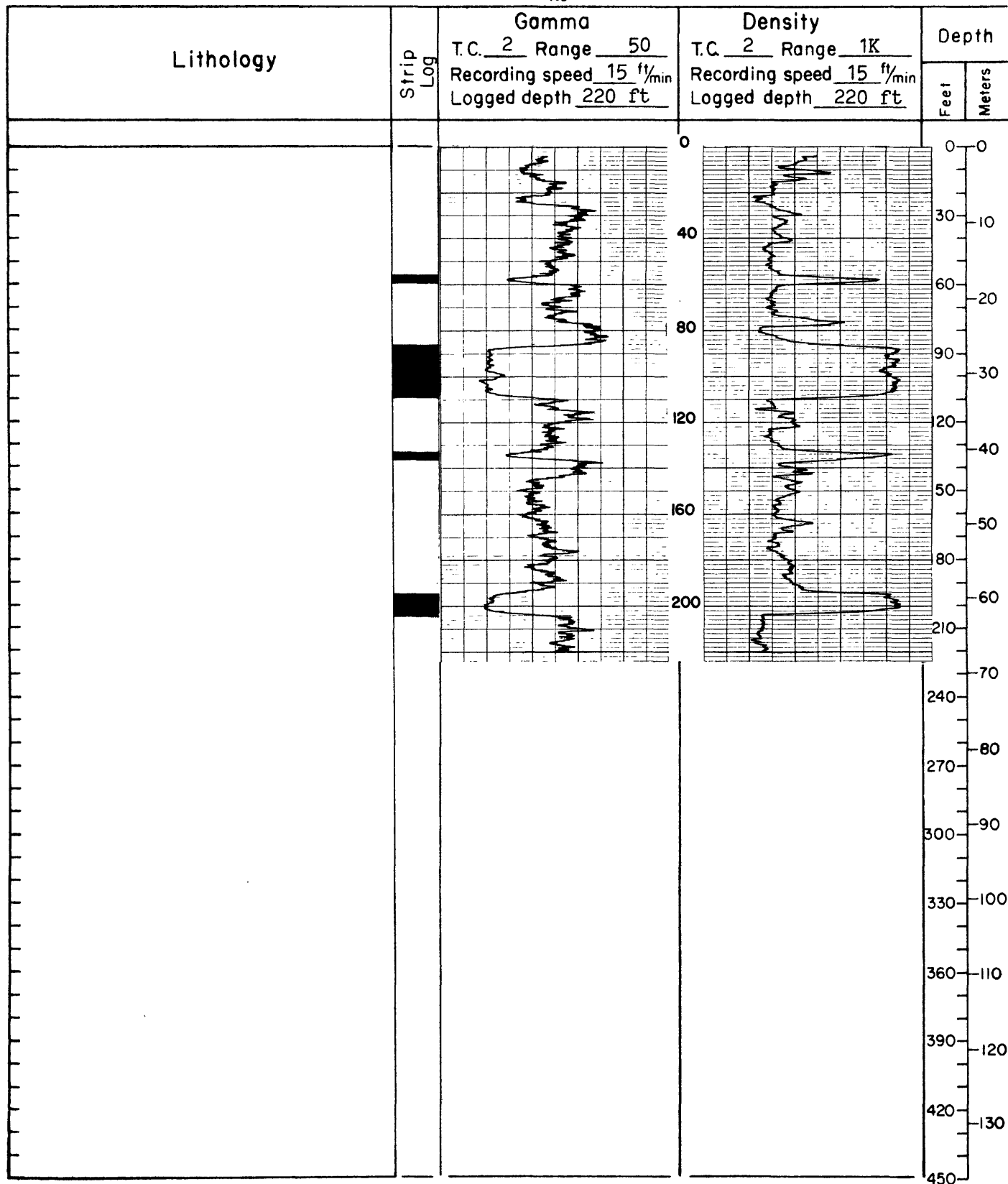
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7729 Map: King Mountain Date: 5/12/77 State: Montana County: Powder River
 Elev.: 3297 ft Location: T. 5 ^N S, R. 45 ^E W, Sec. 12, Tract CABB Drilled depth: 220 ft
 Measured 2790 ft ^{FNL} ~~PSL~~, 1480 ft ^{SEL} ~~FWL~~ Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

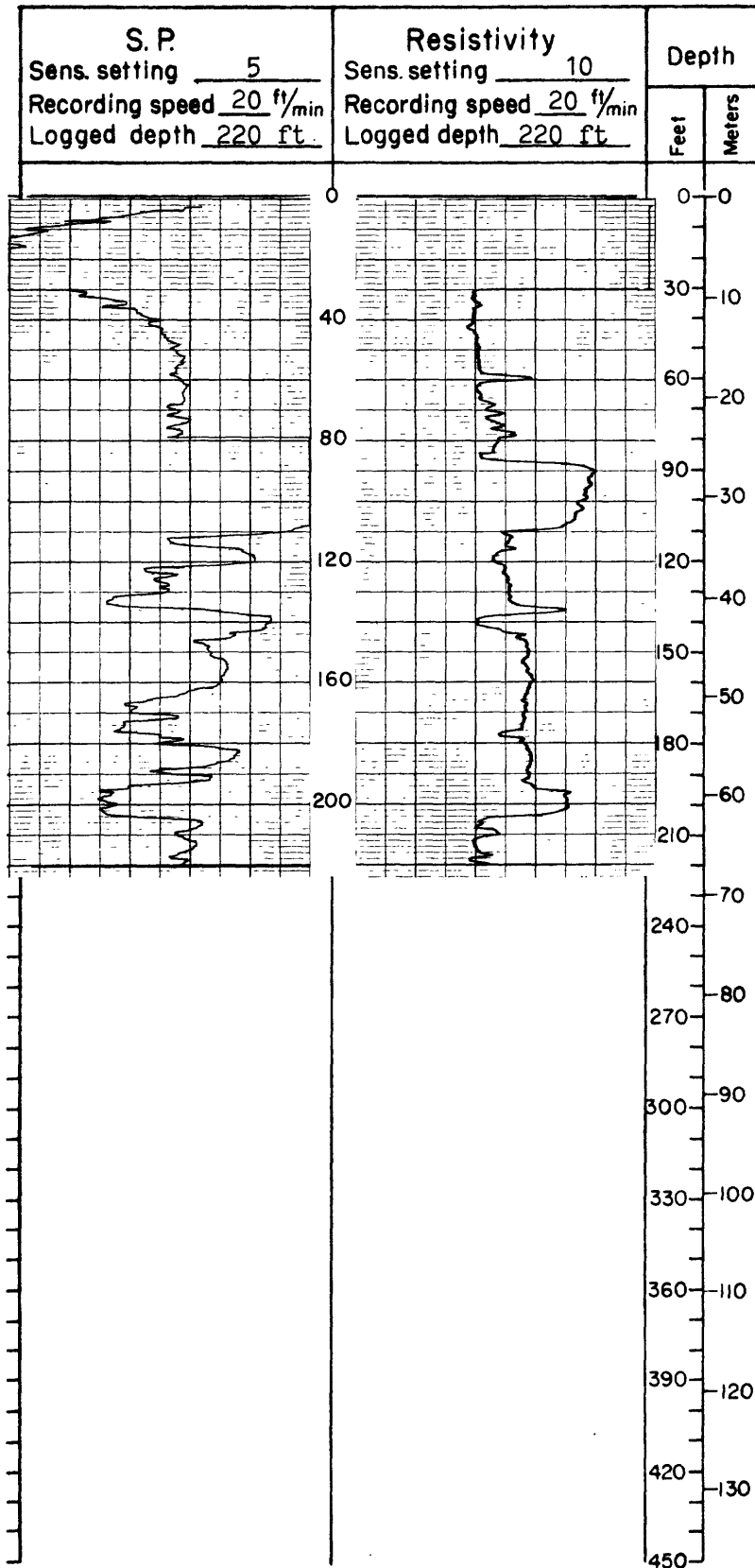
Recorded by: L. SAUER

Geologist ^{Yes} ~~No~~ Recorded by: L. SAUER



Hole number (continued)

US- 7729

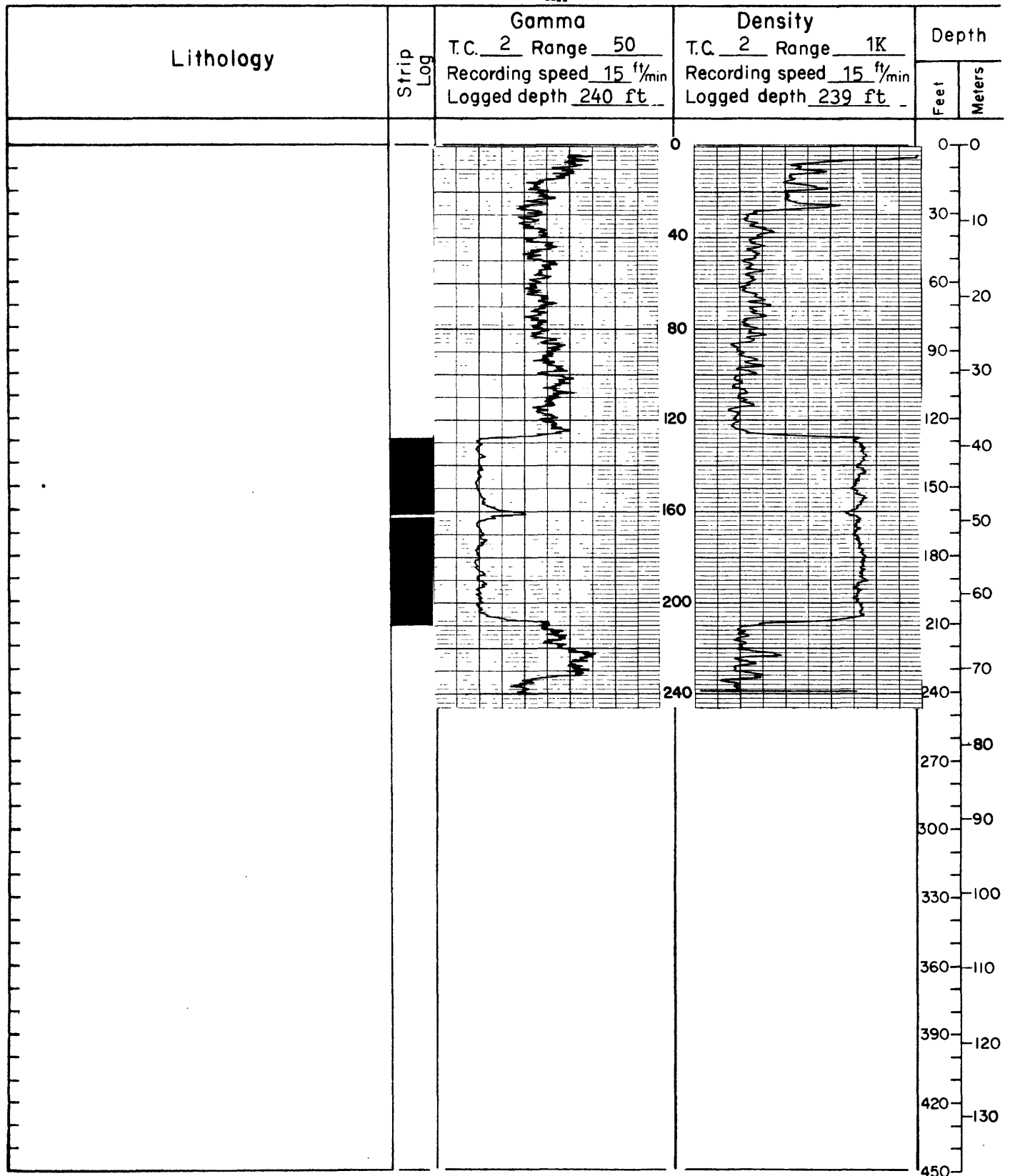


MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7730 Map: Pearl School Date: 5/14/78 State: Montana County: Big Horn
 Elev.: 3802 ft Location: T. 8 ^N_S, R. 39 ^E_W, Sec. 26, Tract BDCD Drilled depth: 240 ft
 Measured 2630 ft ^{FNL}_{PSX}, 1970 ft ^{PSX}_{FWL} Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☒ No ☐
 Remarks: Stopped core at 201 ft due to bent barrel.

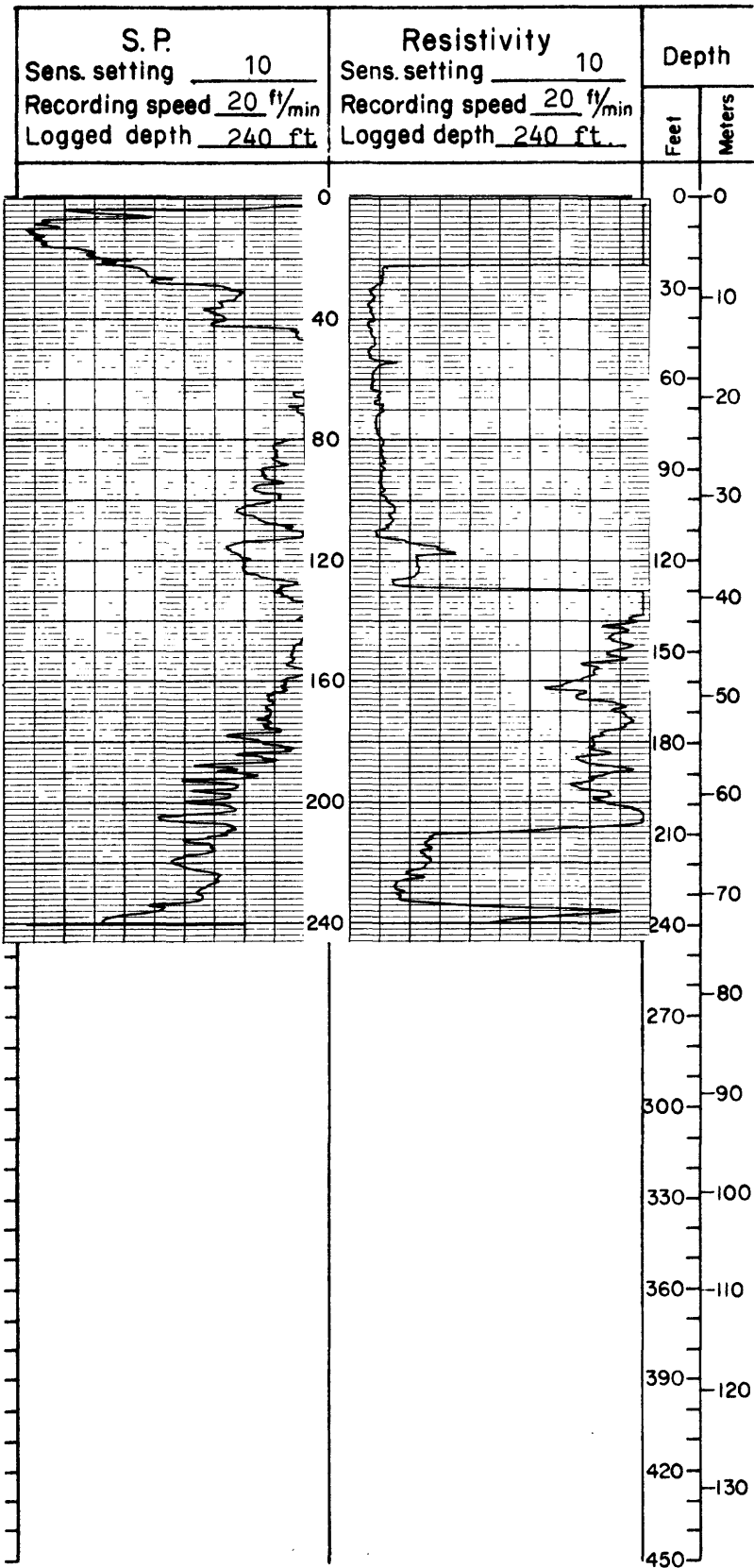
Recorded by: J. PINCHOCK

Geologist ^{Yes}_{No} Recorded by: L. SAUER



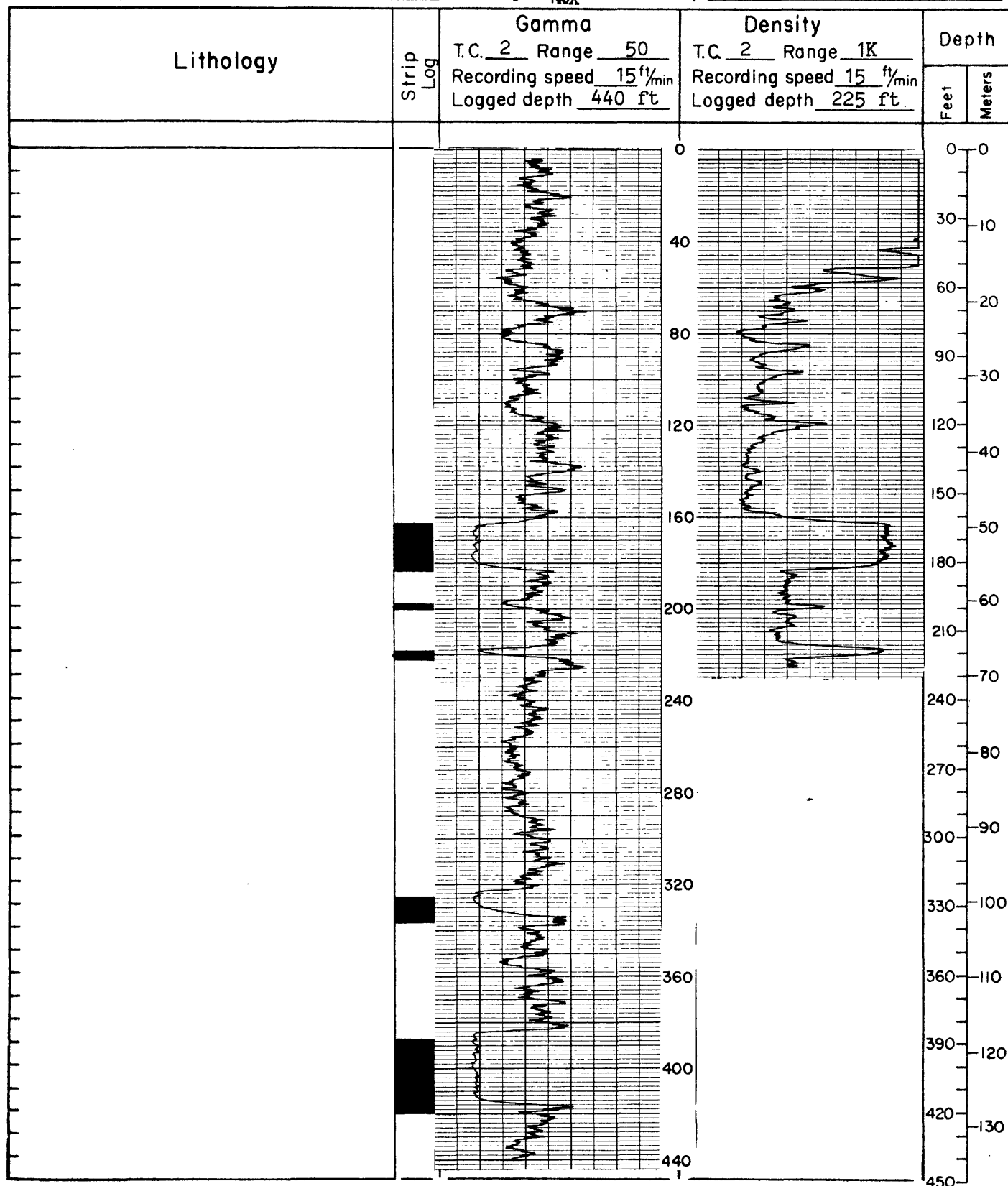
Hole number (continued)

US- 7730



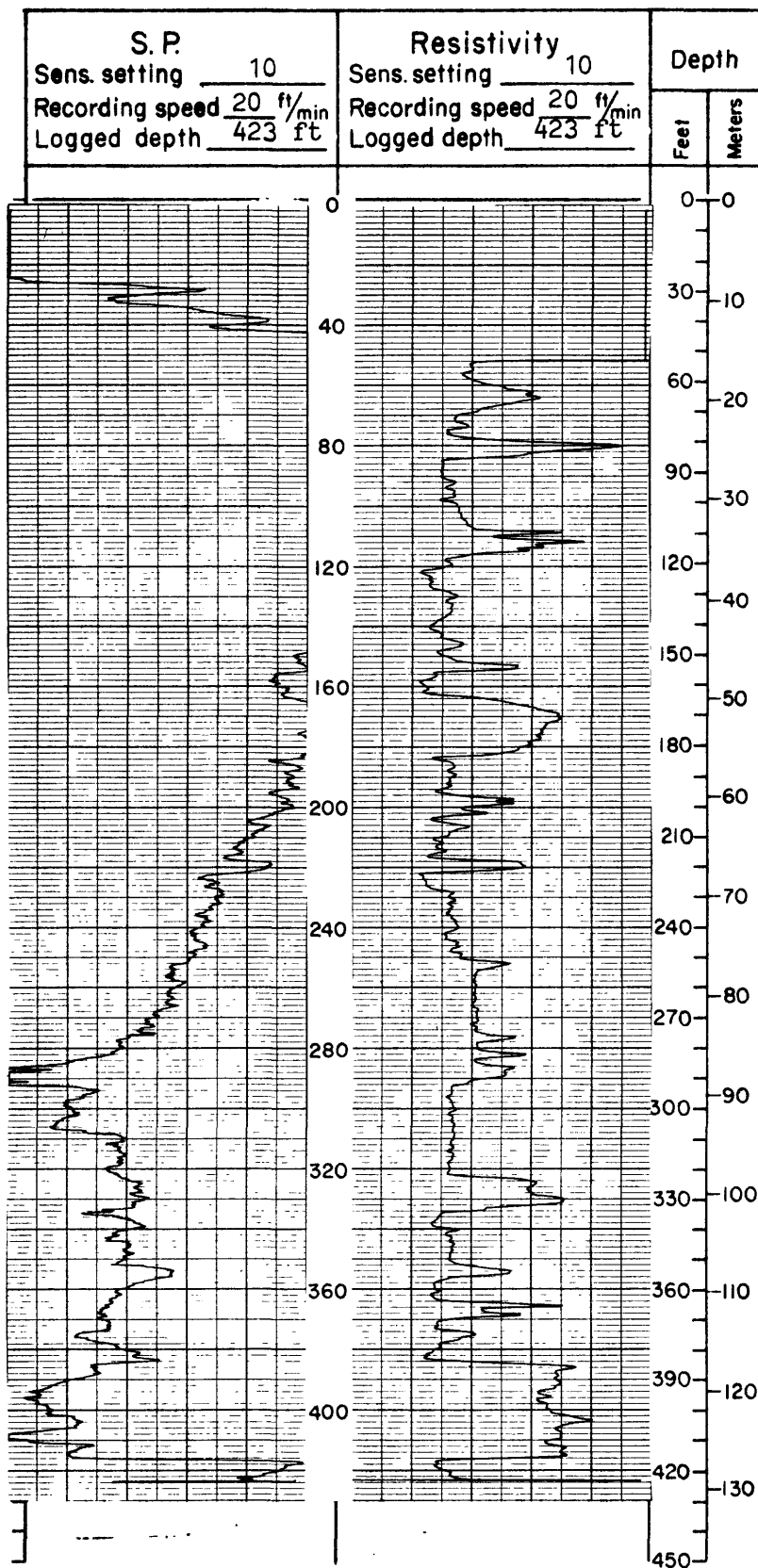
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7731 Map: Decker Date 5/16/77 State: Montana County: Big Horn
 Elev.: 3500 ft Location: T. 8 ^N R. 40 ^E Sec. 27, Tract BCAC Drilled depth: 440 ft
 Measured: 1800 ft ^{FNL} 700 ft ^{KKK} ~~K91%~~ ~~FWL~~ Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Hole caved on density probe; had to use overshot to free it.
 Recorded by: J. PINCHOCK Geologist ^{Yes} ~~No~~ Recorded by: L. SAUER



Hole number (continued)

US- 7731



Montana College of Mineral Science and Technology

Hole no: US-7732 Map: Decker Date: 5/16/77 State: Montana County: Big Horn
 Elev.: 3600 ft Location: T. 9 ^N S, R. 40 ^E W, Sec. 5, Tract BDCD Drilled depth: 150 ft
 Measured: 2675 ft ^{FNL} FSL, 1650 ft ^{FSL} WL Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: No geophysical logs.

Recorded by: J. PINCHOCK

Geologist ^{Yes} ~~No~~ Recorded by: L. SAUER

Lithology	Strip Log	Gamma	Density	Depth	
		T.C. _____ Range _____ Recording speed _____ ft/min Logged depth _____	T.C. _____ Range _____ Recording speed _____ ft/min Logged depth _____	Feet	Meters
				0	0
Alluvium, Brown				30	10
Clinker				60	20
Clinker				90	30
Clinker				120	40
Clinker				150	50
				180	60
				210	70
				240	80
				270	90
				300	100
				330	110
				360	120
				390	130
				420	
				450	

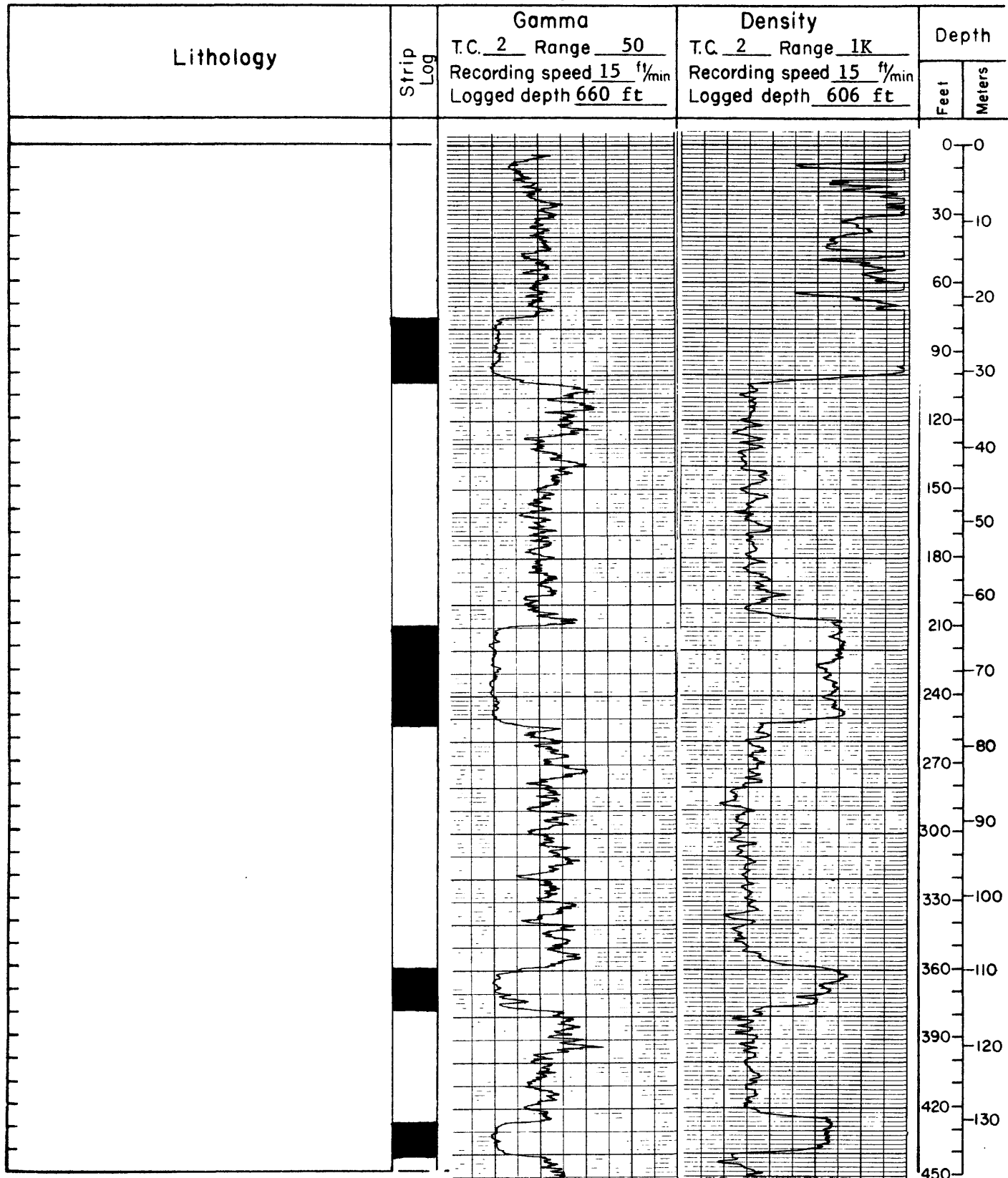
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7733 Map: Pearl School Date 5/25/77 State: Montana County: Big Horn
 Elev.: 3965 ft Location: T. 8 S., R. 39 E., Sec. 21, Tract CADC Drilled depth: 660 ft
 Measured: 1370 ft ^{RSL} 2225 ft ^{RSL} ^{FSL} ^{FWL} Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

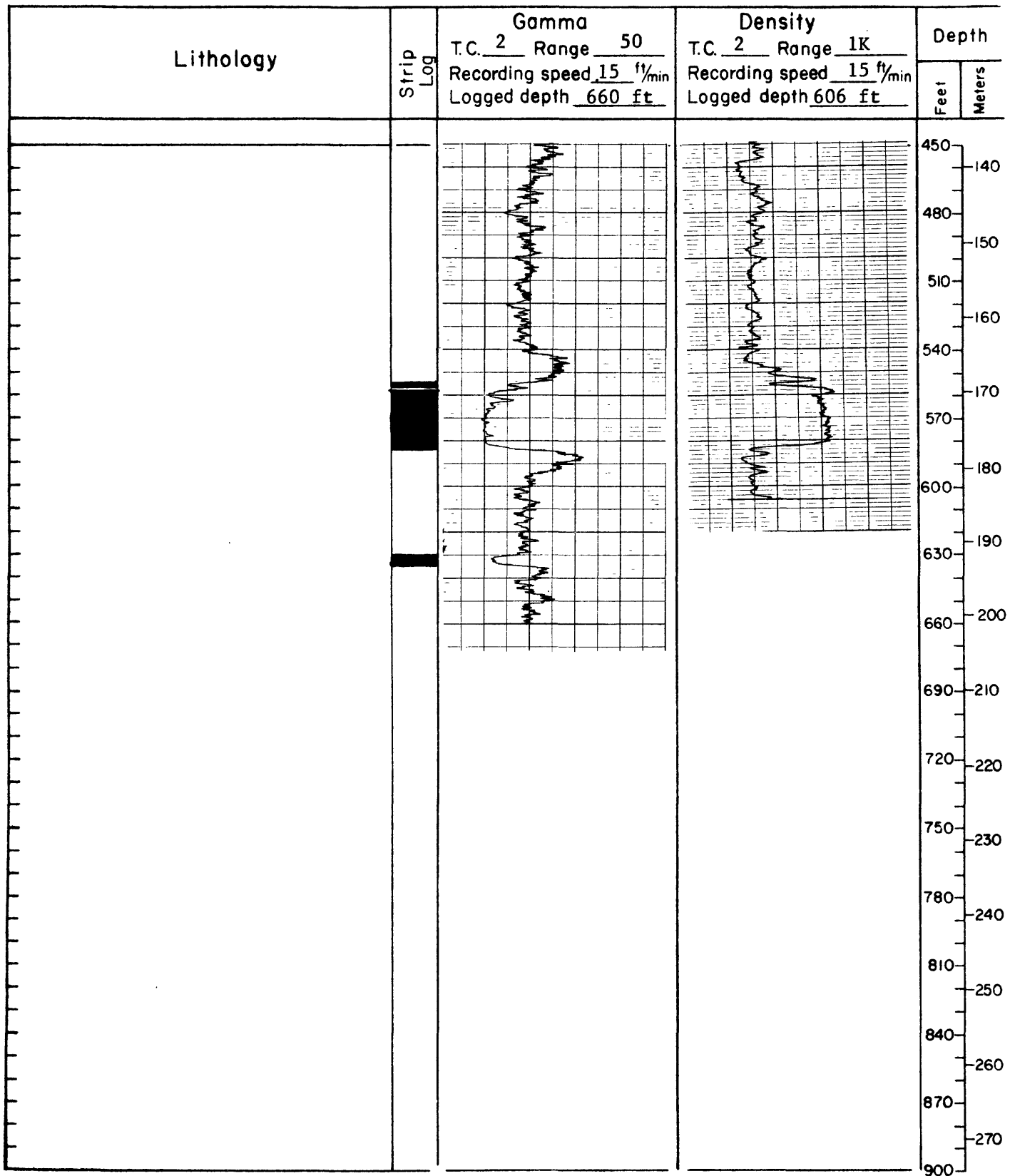
Recorded by: J. PINCHOCK

Geologist: ^{Yes} ~~No~~ Recorded by: L. SAUER



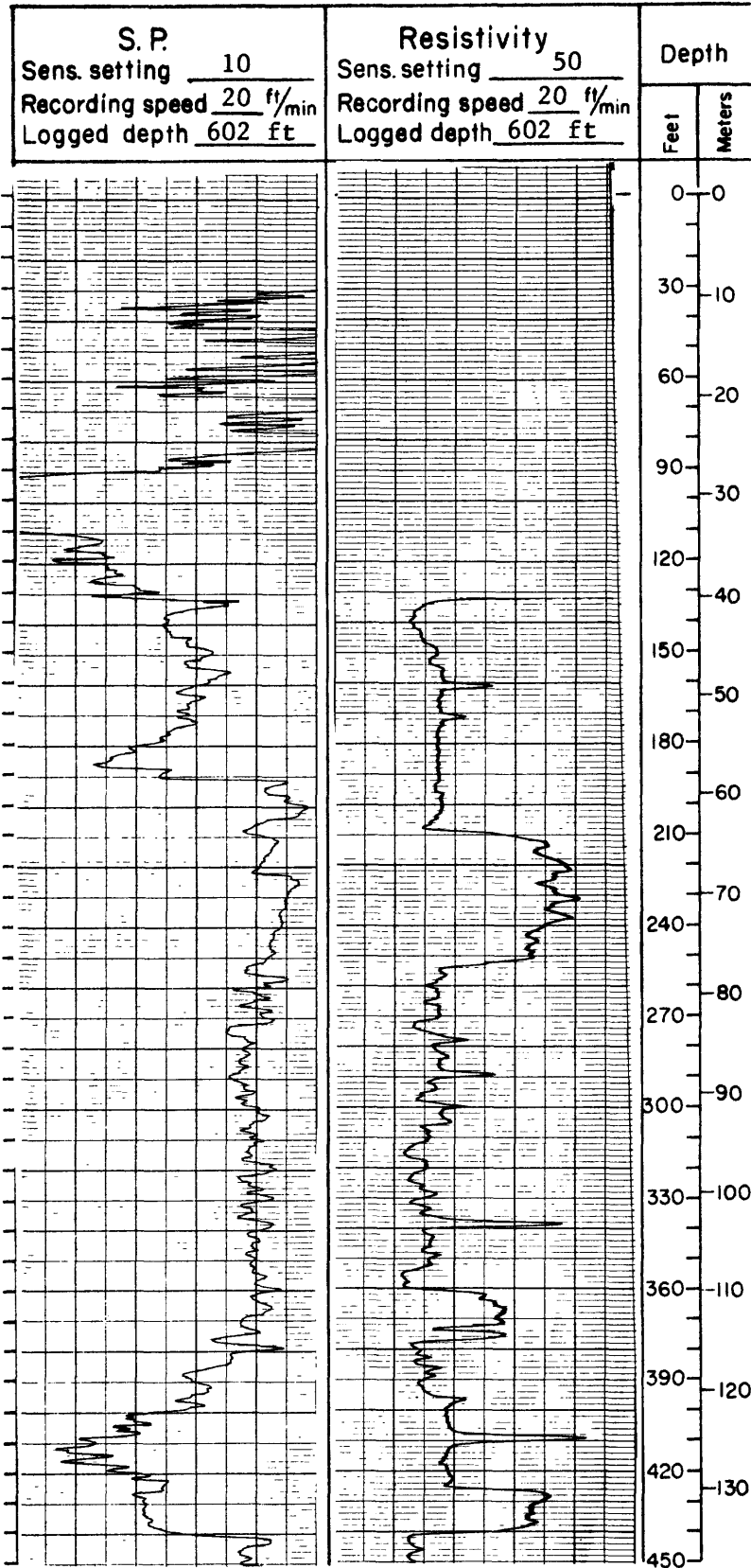
Hole number (continued)

US - 7733



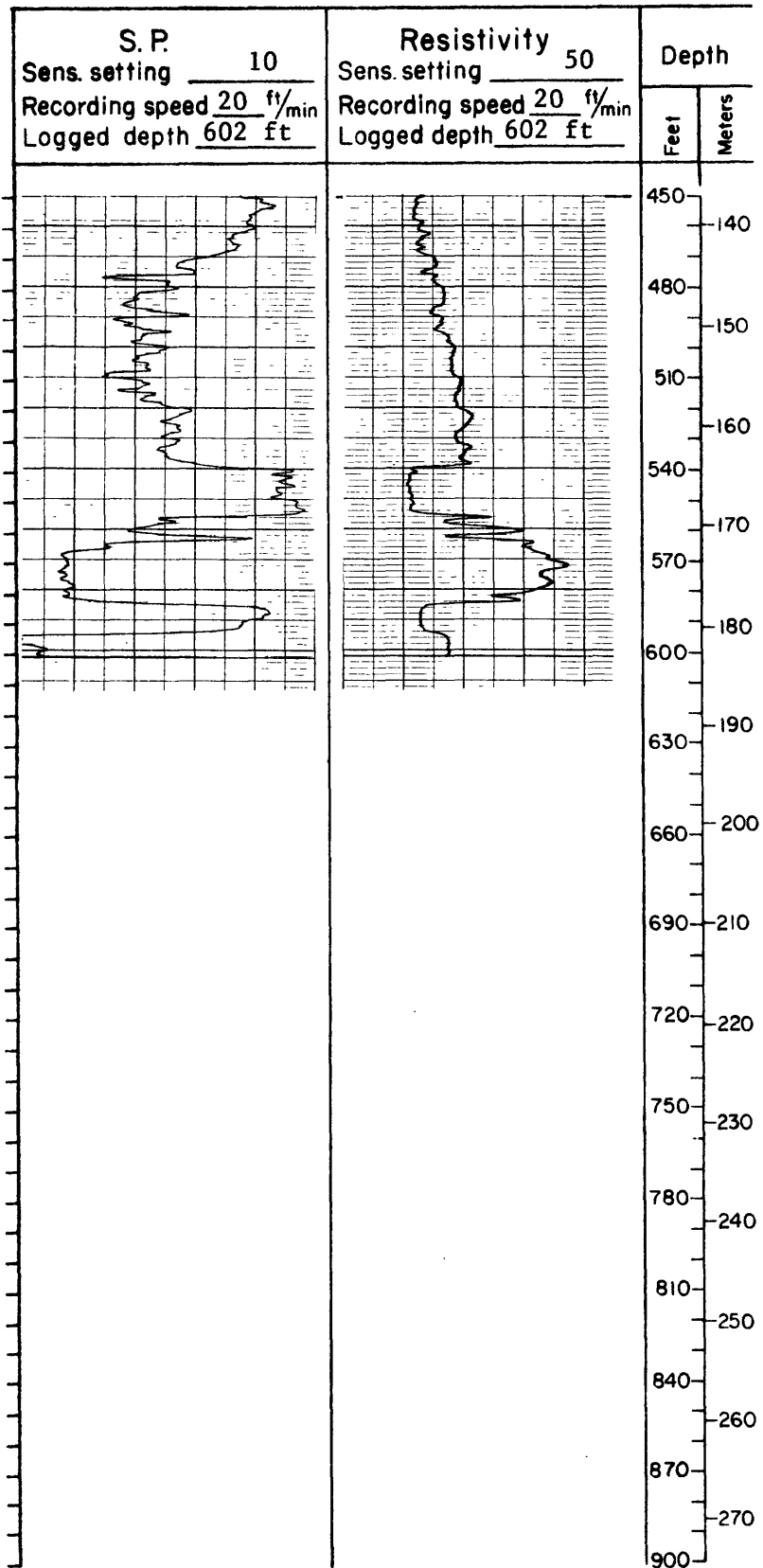
Hole number (continued)

US - 7733



Hole number (continued)

US- 7733



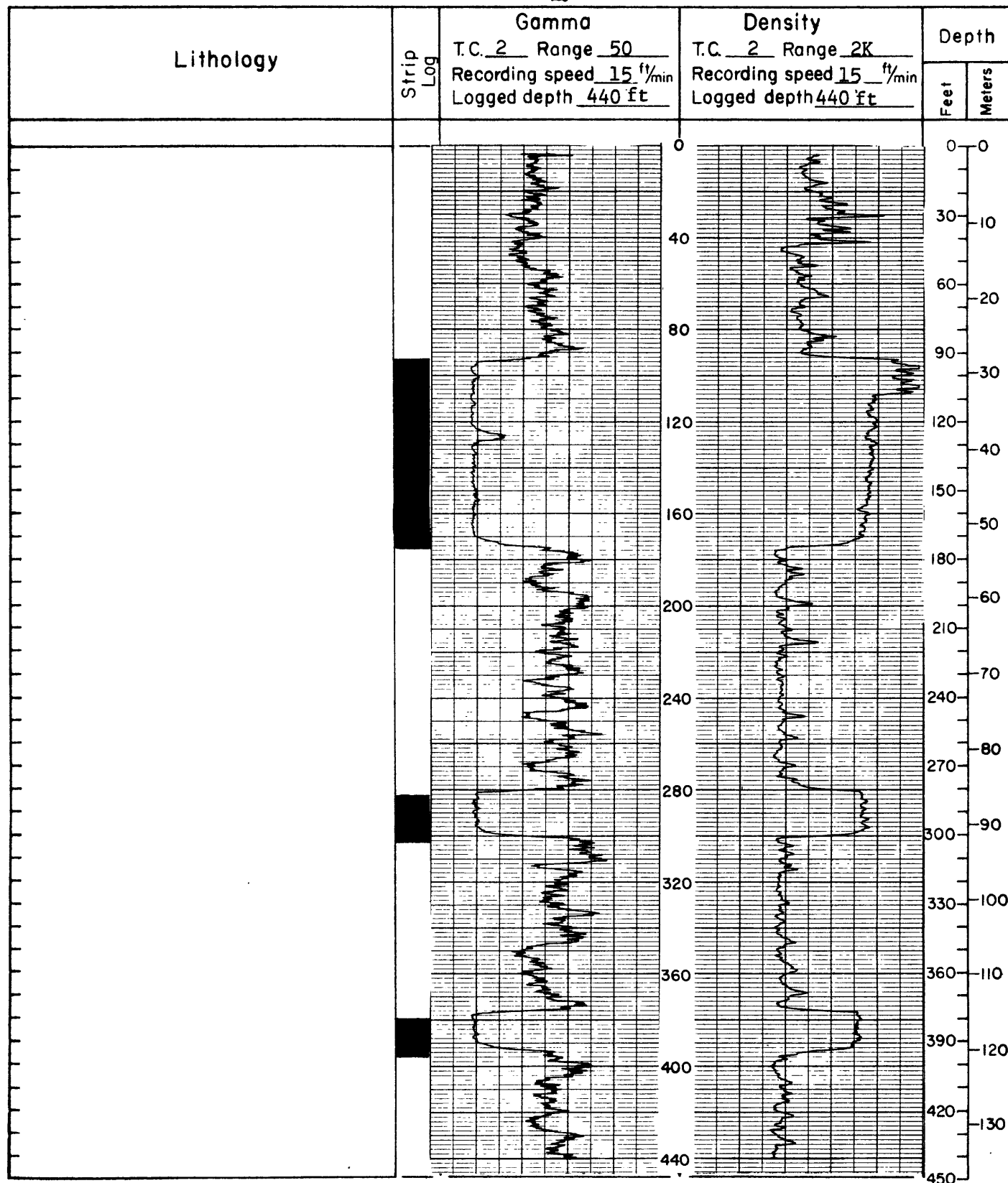
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7734 Map: Pearl School Date: 5/26/78 State: Montana County: Big Horn
 Elev.: 3687 ft. Location: T. 8 N. R. 40 E. Sec. 30, Tract CADD Drilled depth: 440 ft
 Measured: 1525 ft FSL, 2325 ft FWL Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

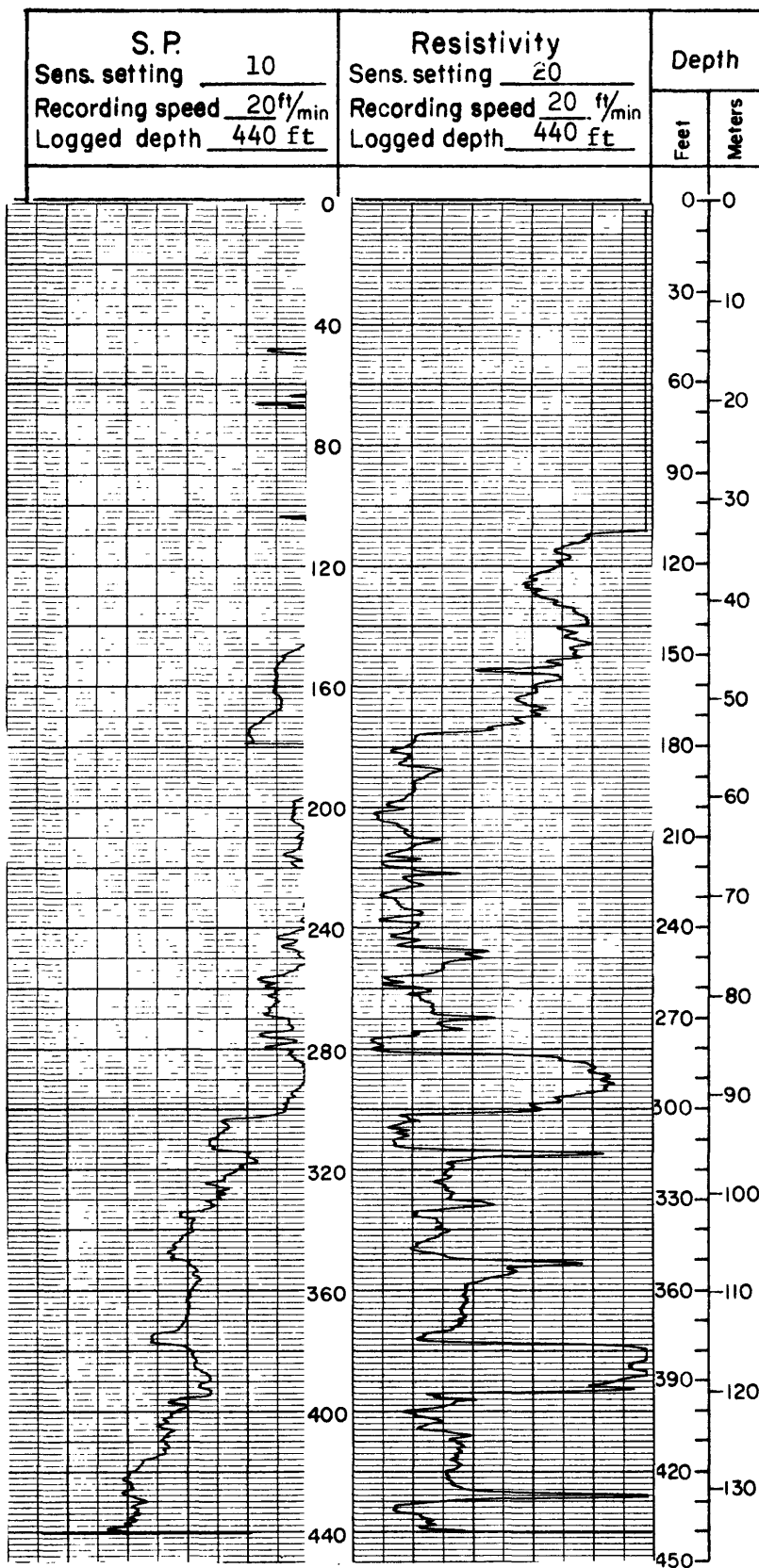
Recorded by: J. Pinchock

Geologist ^{Yes}_{No} Recorded by: L. Sauer



Hole number (continued)

US- 7734



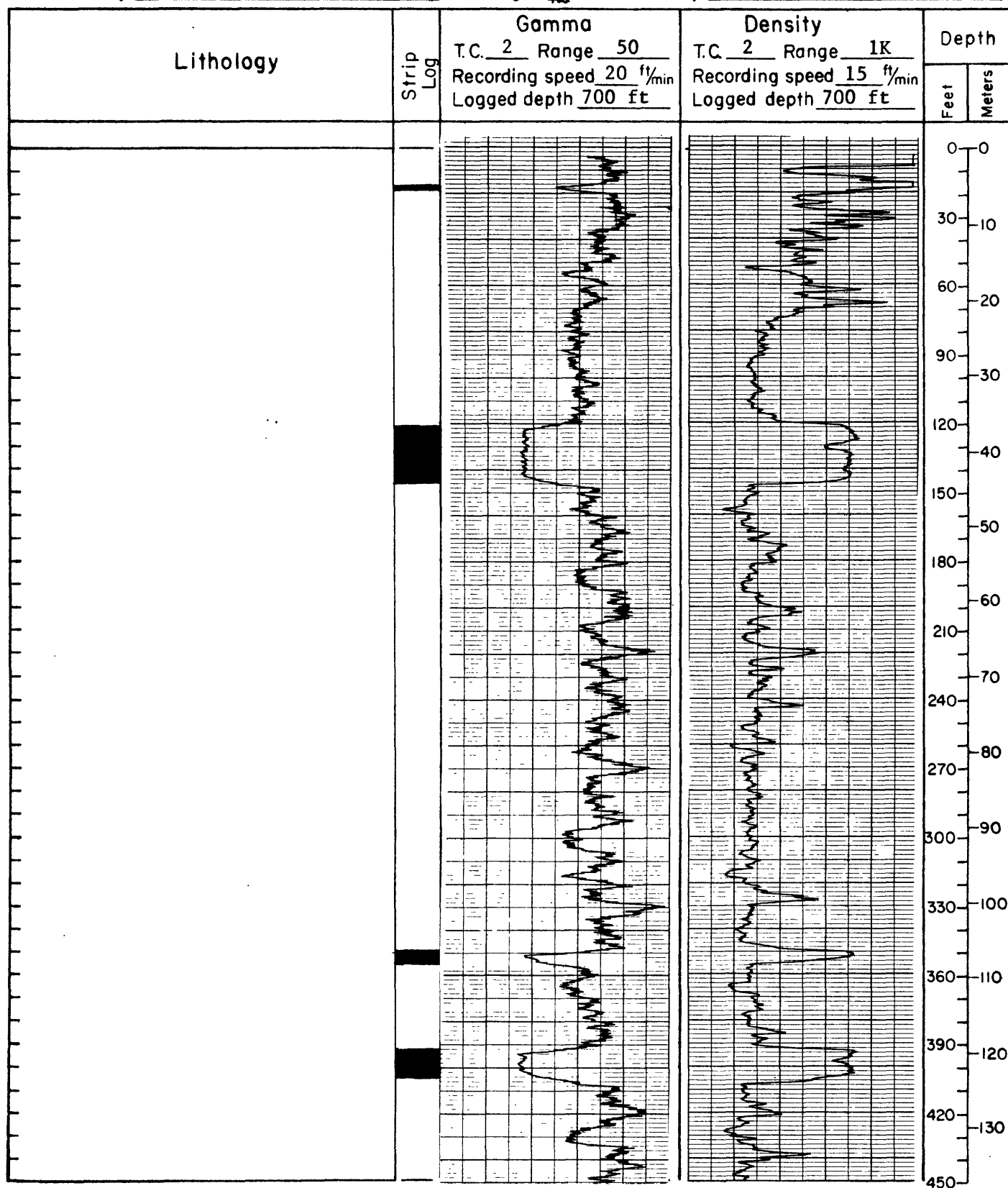
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7735 Map: Taintor Desert Date: 5/26/77 State: Montana County: Big Horn
 Elev.: 4100 ft Location: T. 7 S., R. 40 E., Sec. 5, Tract ABAC Drilled depth: 700 ft
 Measured: 600 ft ^{FNL} 1700 ft ^{FEL} Hole size: 4 3/4 in Air ☐ Water ☒ Cored: Yes ☐ No ☒

Remarks: _____

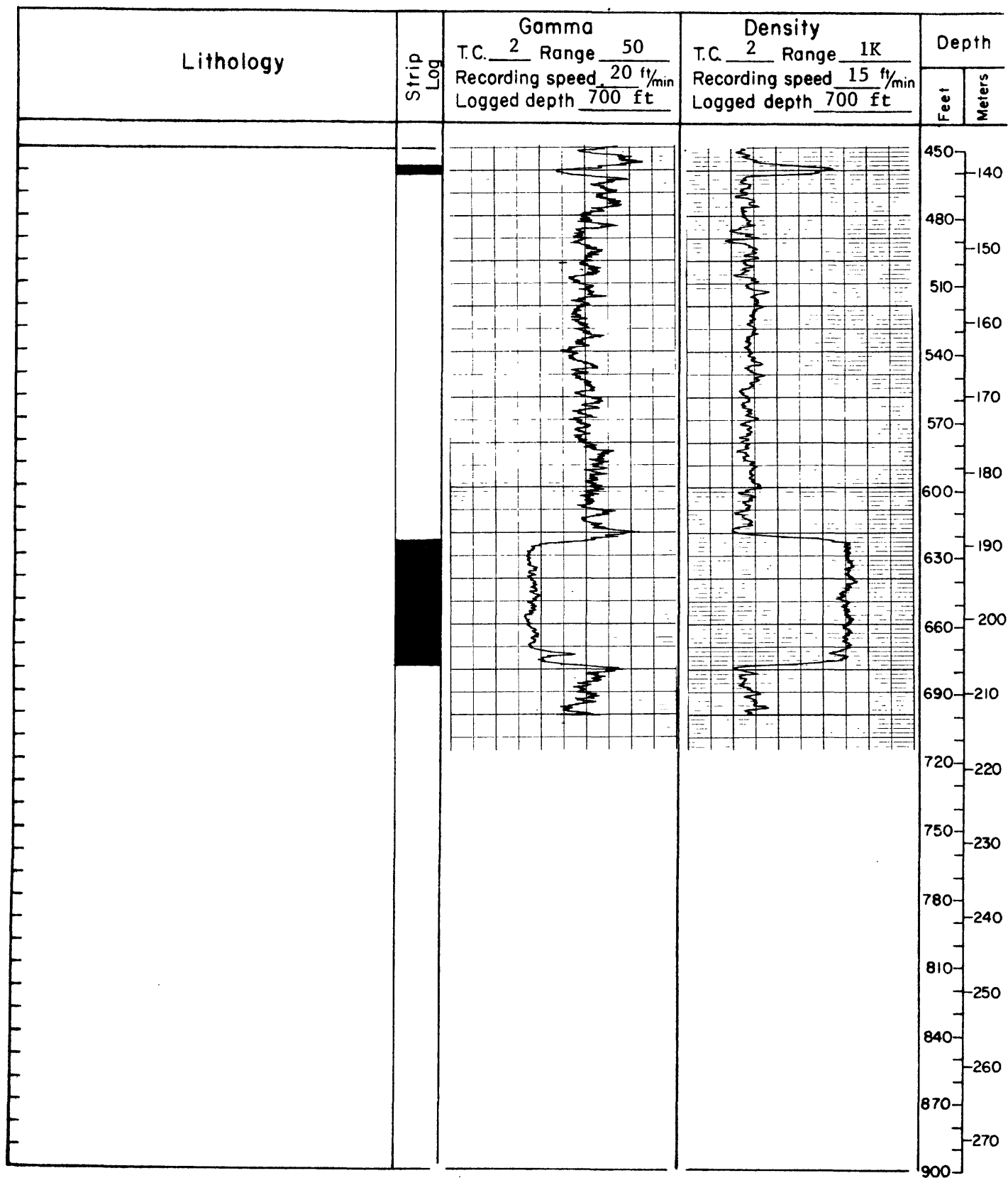
Recorded by: J. PINCHOCK

Geologist ^{Yes} ~~No~~ Recorded by: J. PINCHOCK



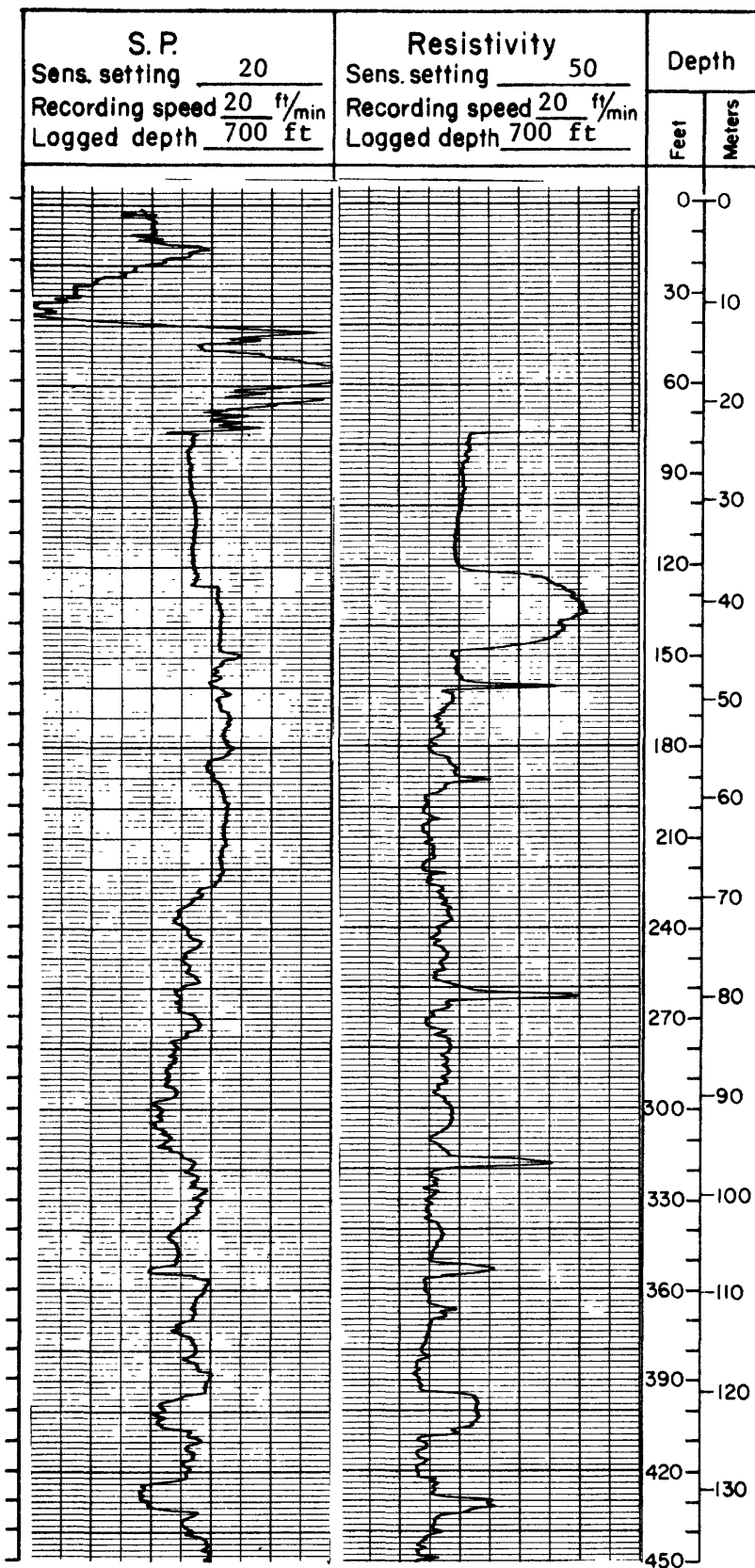
Hole number (continued)

US- 7735



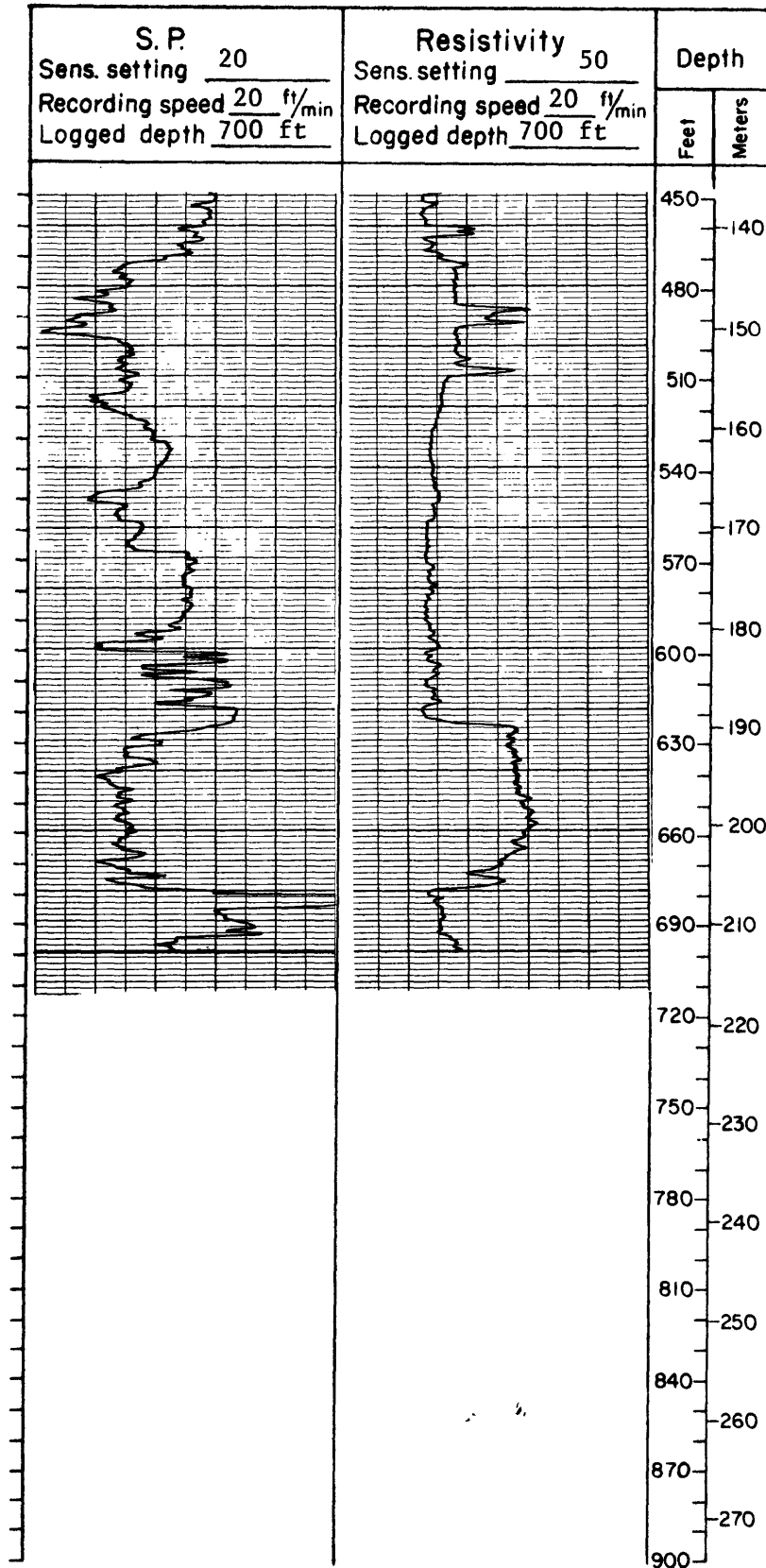
Hole number (continued)

US- 7735



Hole number (continued)

US - 7735



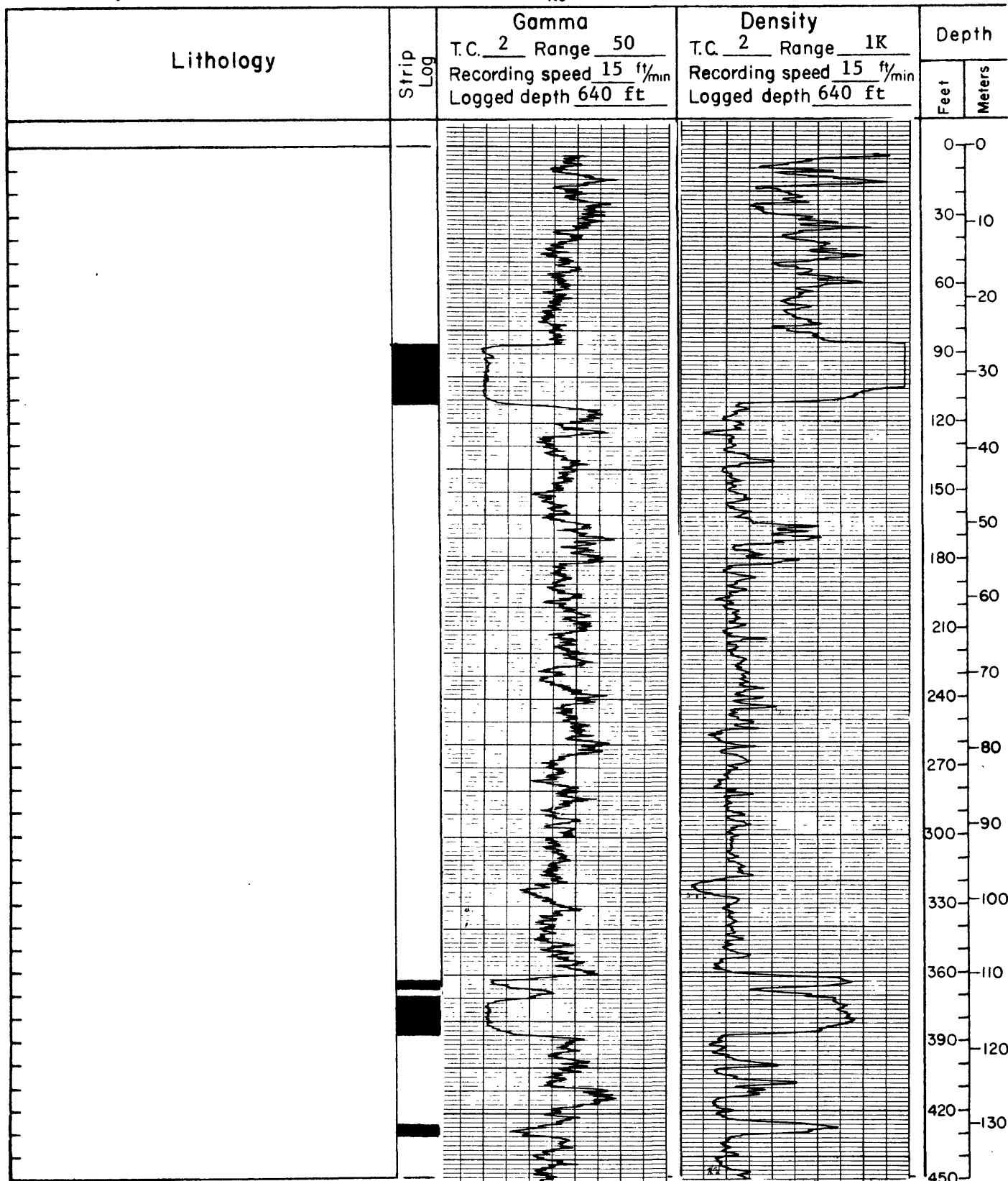
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7736 Map: Taintor Desert Date: 5/28/77 State: Montana County: Big Horn
 Elev.: 4258 ft Location: T. 6 ^{NXX} S, R. 40 ^{WXX} E, Sec. 32, Tract CBCA Drilled depth: 640 ft
 Measured: 1750 ft ^{BHSL} FSL, 500 ft ^{BHSL} FWL Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☒ No ☐

Remarks: Cored the Anderson blind.

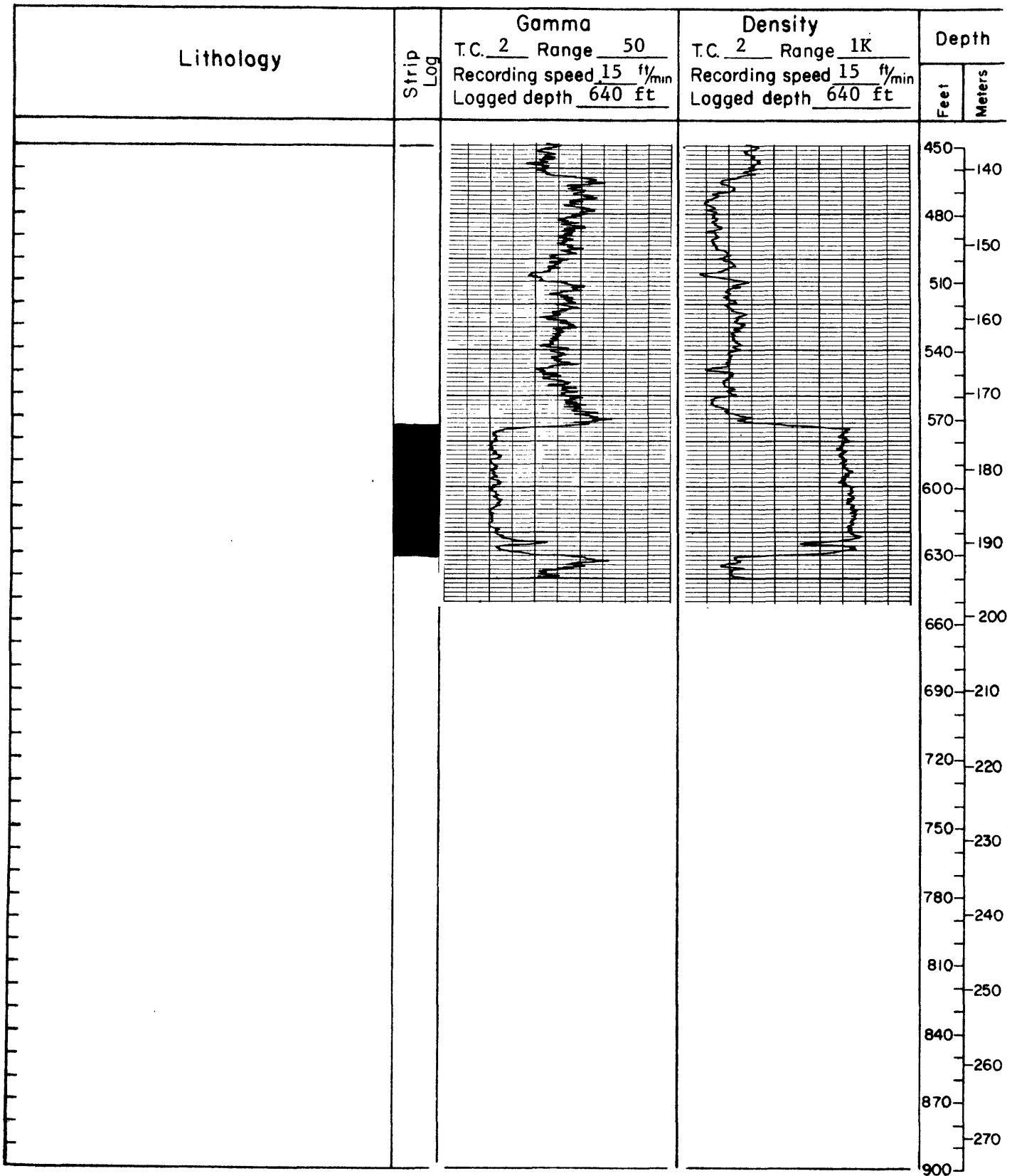
Recorded by: J. PINCHOCK

Geologist ^{Yes} ~~XXX~~ Recorded by: L. SAUER



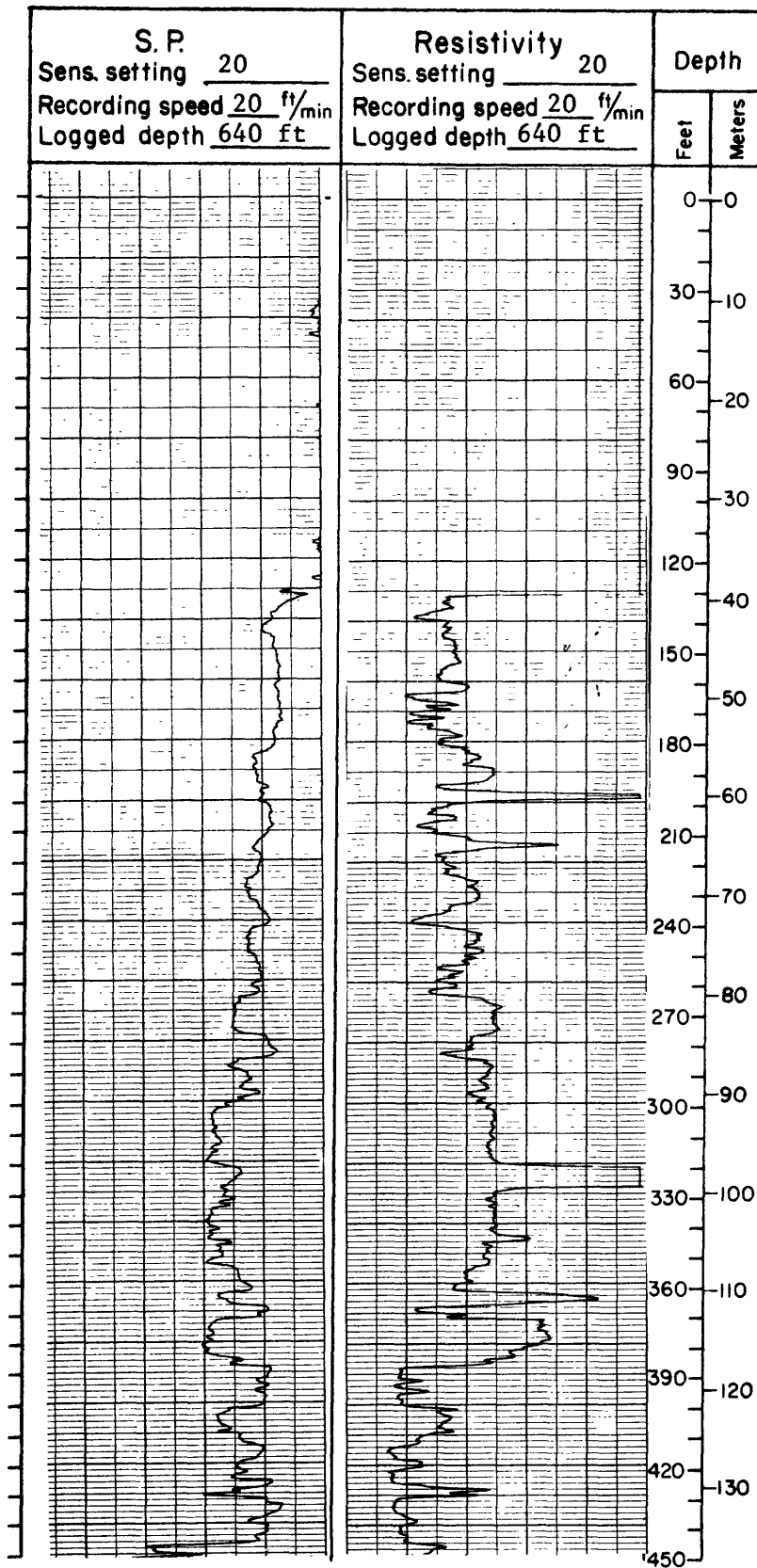
Hole number (continued)

US - 7736



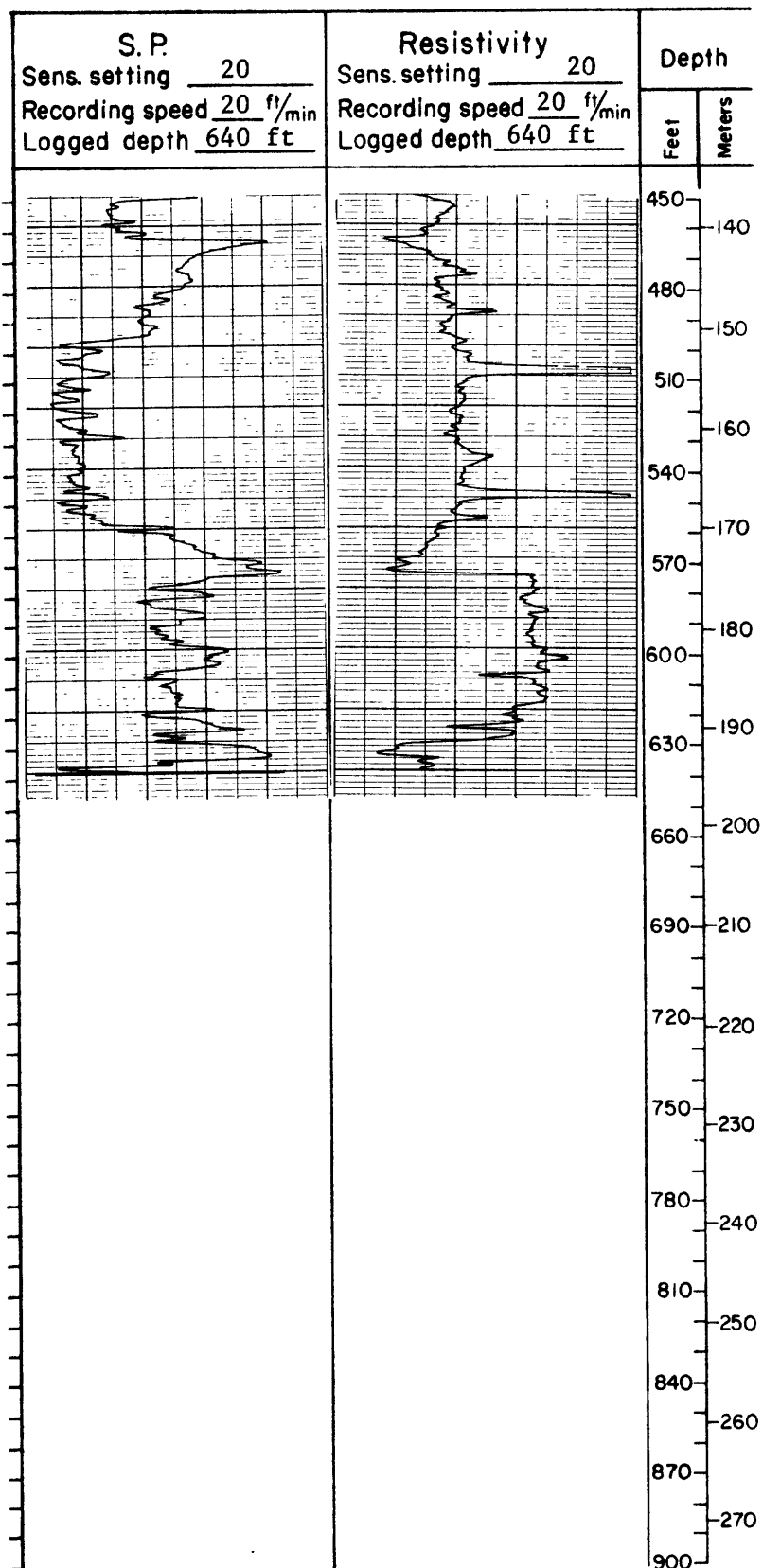
Hole number (continued)

US - 7736



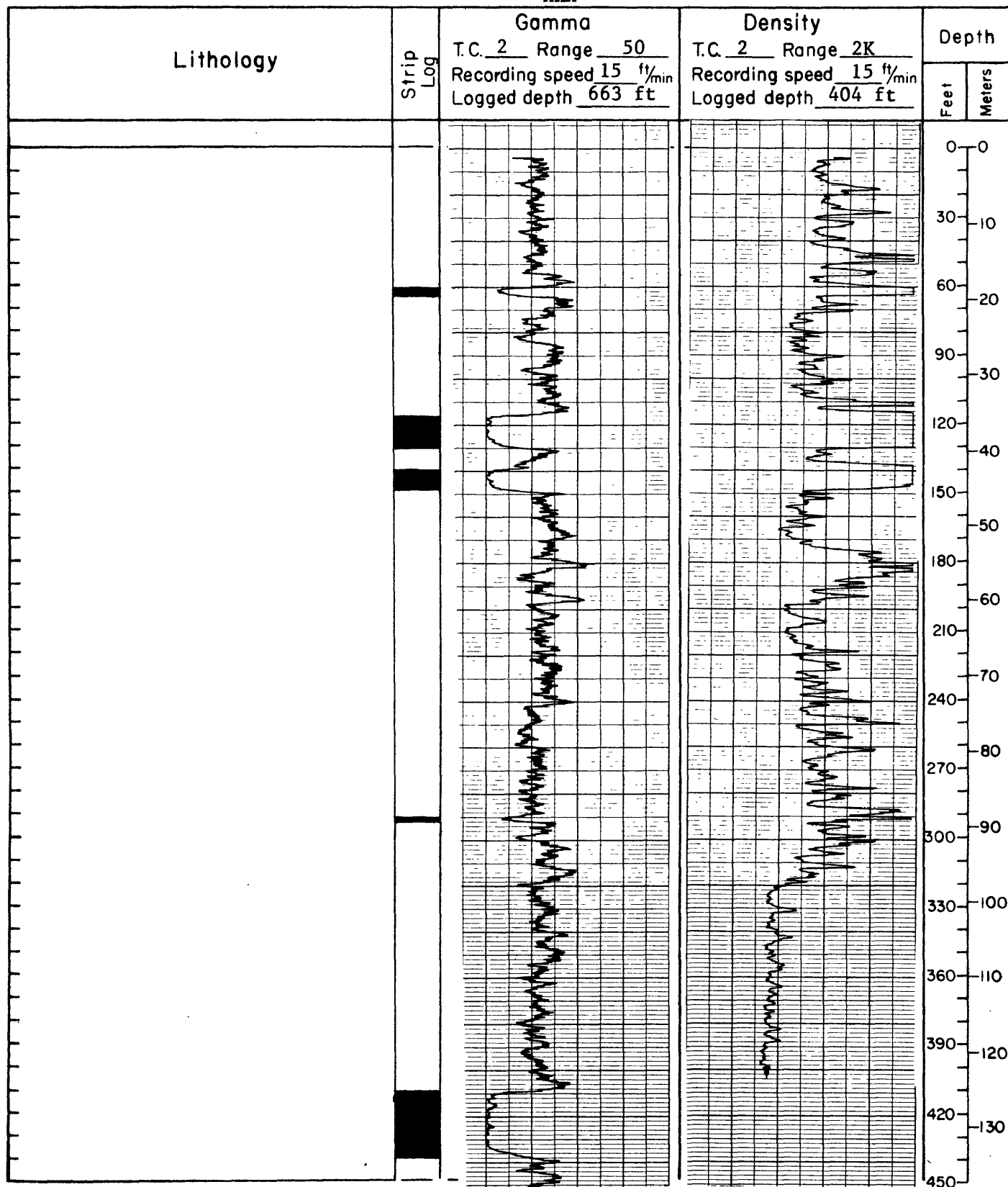
Hole number (continued)

US - 7736



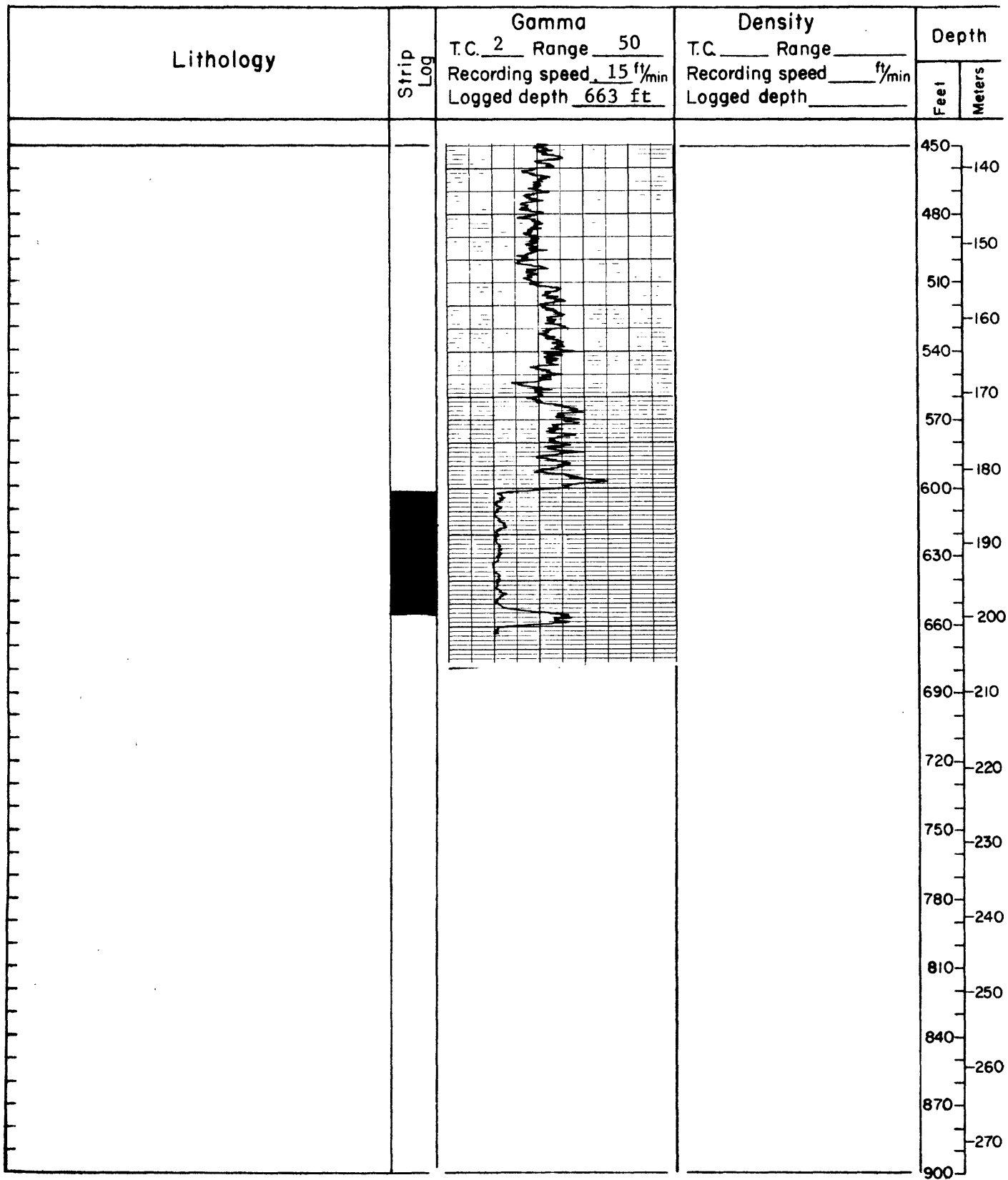
MONTANA BUREAU OF MINES AND GEOLOGY
Montana College of Mineral Science and Technology

Hole no: US-7737 Map: Taintor Desert Date 5/28/77 State: Montana County: Big Horn
 Elev.: 4392 ft. Location: T. 6 ~~XXX~~ S, R. 40 ~~XXX~~ E, Sec. 20, Tract BDCC Drilled depth: 663 ft
 Measured: 2400 ft ~~FNL~~ 1570 ft ~~FWL~~ Hole size: 4 3/4 in. Air ☐ Water ☒ Cored: Yes ☒ No ☐
 Remarks: Bit plugged and lost circulation; logged through pipe; no Sp-Er.
 Recorded by: J. PINCHOCK Geologist: Yes ~~XXX~~ Recorded by: L. SAUER



Hole number (continued)

US- 7737



References

- U. S. Geological Survey and Montana Bureau of Mines and Geology, 1973, Preliminary report of coal drill-hole data and chemical analyses of coal beds in Sheridan and Campbell Counties, Wyoming; and Big Horn County, Montana: U.S. Geol. Survey open-file report, 57 p.
- _____, 1974, Preliminary report of coal drill-hole data and chemical analyses of coal beds in Campbell County, Wyoming: U.S. Geol. Survey Open-File Report 74-97, 241 p., 1 fig., 3 tables.
- _____, 1976a, Preliminary report of coal drillhole data and chemical analyses of coal beds in Campbell and Sheridan Counties, Wyoming; Custer, Prairie, and Garfield Counties, Montana; and Mercer County, North Dakota: U.S. Geol. Survey Open-File Report 76-319, 377 p., 4 figs., 3 tables.
- _____, 1976b, Preliminary report of coal drill-hole data and chemical analyses of coal beds in Campbell, Converse, and Sheridan Counties, Wyoming; and Big Horn, Richland, and Dawson Counties, Montana: U.S. Geol. Survey Open-File Report 76-450, 382 p., 4 figs.
- _____, 1977, Preliminary report of 1976 drilling of coals in Campbell and Sheridan Counties, Wyoming; and Big Horn, Dawson, McCone, Richland, Roosevelt, Rosebud, Sheridan and Wibaux Counties, Montana: U.S. Geol. Survey Open-File Report 77-283, 403 p., 6 figs.
- U. S. Geological Survey and North Dakota Geological Survey, 1976, Preliminary report on 1975 drilling of lignites in western North Dakota: Adams, Bowman, Dunn, Hettinger, McLean, Mercer, Oliver, Slope and Williams Counties: U.S. Geol. Survey Open-File Report 76-869, 144 p., 5 figs.