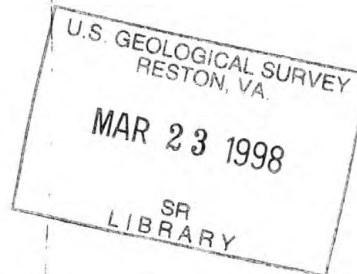


13 MG-78

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

COAL DRILLING DURING 1979 IN WILLIAMS COUNTY, NORTH DAKOTA,
AND IN BEAVERHEAD, BIG HORN, DAWSON, FALLON, GARFIELD, McCONE,
MUSSELSHELL, POWDER RIVER, PRAIRIE, ROOSEVELT, ROSEBUD,
AND WIBAUX COUNTIES, MONTANA

**PLEASE NOTE
THIS MATERIAL IS PRELIMINARY
IN NATURE AND HAS NOT BEEN
EDITED FOR TECHNICAL OR
EDITORIAL CONTENT.**



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

Open-File Report 81- 314

1981

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

CONTENTS

	Page
Introduction and acknowledgments-----	1
Geophysical logs-----	11
Coal analyses-----	589
References-----	613

ILLUSTRATIONS

Figure 1. Index map showing drilling areas in North Dakota and Montana-----	3
2-8. Drill-hole location maps:	
2. Area 1, Musselshell County, Montana-----	4
3. Area 2, Big Horn and Rosebud Counties, Montana-----	5
4. Area 3, Beaverhead County, Montana-----	6
5. Area 4, Roosevelt County, Montana, and Williams County, North Dakota-----	7
6. Area 5, Dawson, Wibaux, Prairie, and Fallon Counties, Montana-----	8
7. Area 6, Dawson, McCone, Garfield, and Prairie Counties, Montana-----	9
8. Area 7, Powder River County, Montana-----	10

COAL DRILLING DURING 1979 IN WILLIAMS COUNTY, NORTH DAKOTA,
AND IN BEAVERHEAD, BIG HORN, DAWSON, FALLON, GARFIELD, McCONE,
MUSSELSHELL, POWDER RIVER, PRAIRIE, ROOSEVELT, ROSEBUD,
AND WIBAUX COUNTIES, MONTANA

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

Introduction and acknowledgments

The Montana Bureau of Mines and Geology (MBMG), Montana College of Mineral Science and Technology, drilled 235 coal exploration holes in 1979 under Grant No. 14-08-0001-27839 from the U.S. Geological Survey (USGS). Drilling was done between April 10 and December 14, 1979, in Williams County, North Dakota, and Beaverhead, Big Horn, Dawson, Fallon, Garfield, McCone, Musselshell, Powder River, Prairie, Roosevelt, Rosebud, and Wibaux Counties, Montana (figs. 1-8). The purpose of the drilling was to evaluate and classify mineral lands in the public domain. Data were collected from the drilling program to determine the extent, correlation, recoverability of coal beds, and the petrographic characteristics of associated rocks of the Tertiary Fort Union and Wasatch Formations.

This report presents lithologic logs using a 10-foot sample interval (corrected in depth intervals to match the geophysical logs, where available) and geophysical logs of density, gamma, spontaneous potential and resistivity. All holes were logged from the bottom to the top of the drill hole. The holes were rotary drilled and, where practical, water or air was used as the drilling fluid. Core holes are identified by a "c" following the drill-hole number and the analyses from these samples are presented at the end of this report. The proximate, ultimate, Btu/lb values, and trace-element analyses were completed by the Analytical Division of the MBMG.

The location of a drill hole within a section is identified by a letter-designated tract and by distance 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 divided 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.

Fieldwork was carried out by the following Montana Bureau of Mines and Geology personnel: Robert E. Matson, Chief, Energy Division; Miller Hansen, geologist; and Russell Patterson, Jon Hansas, William Jackson, Kenneth Williams and Robert J. Pederson, technicians. Coordinators and technical guidance were provided by Robert E. Matson, MBMG, and Elmer M. Schell and Marvin L. Millgate, U.S. Geological Survey.

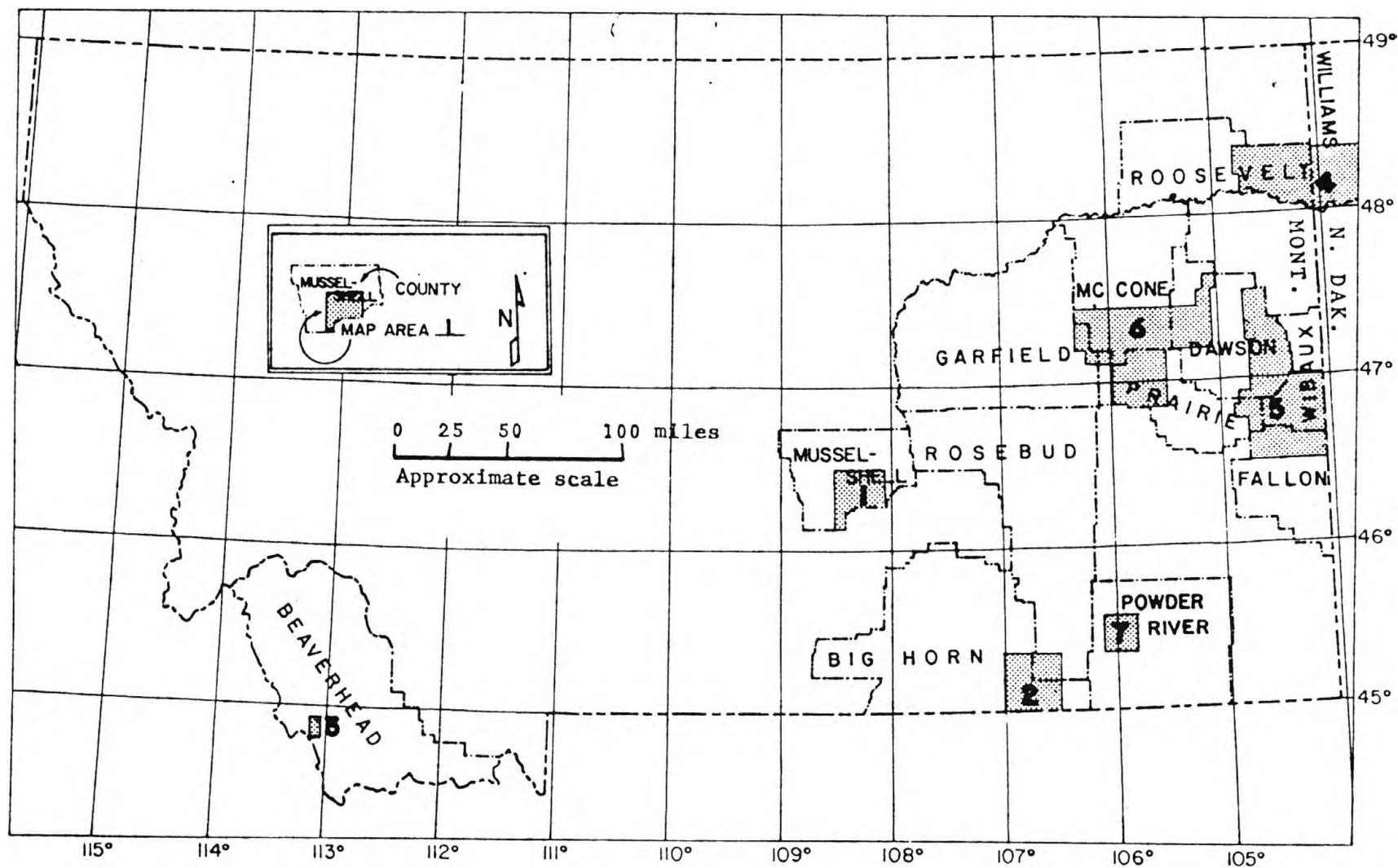


Figure 1.--Index map showing 1979 drilling areas, Montana and North Dakota.

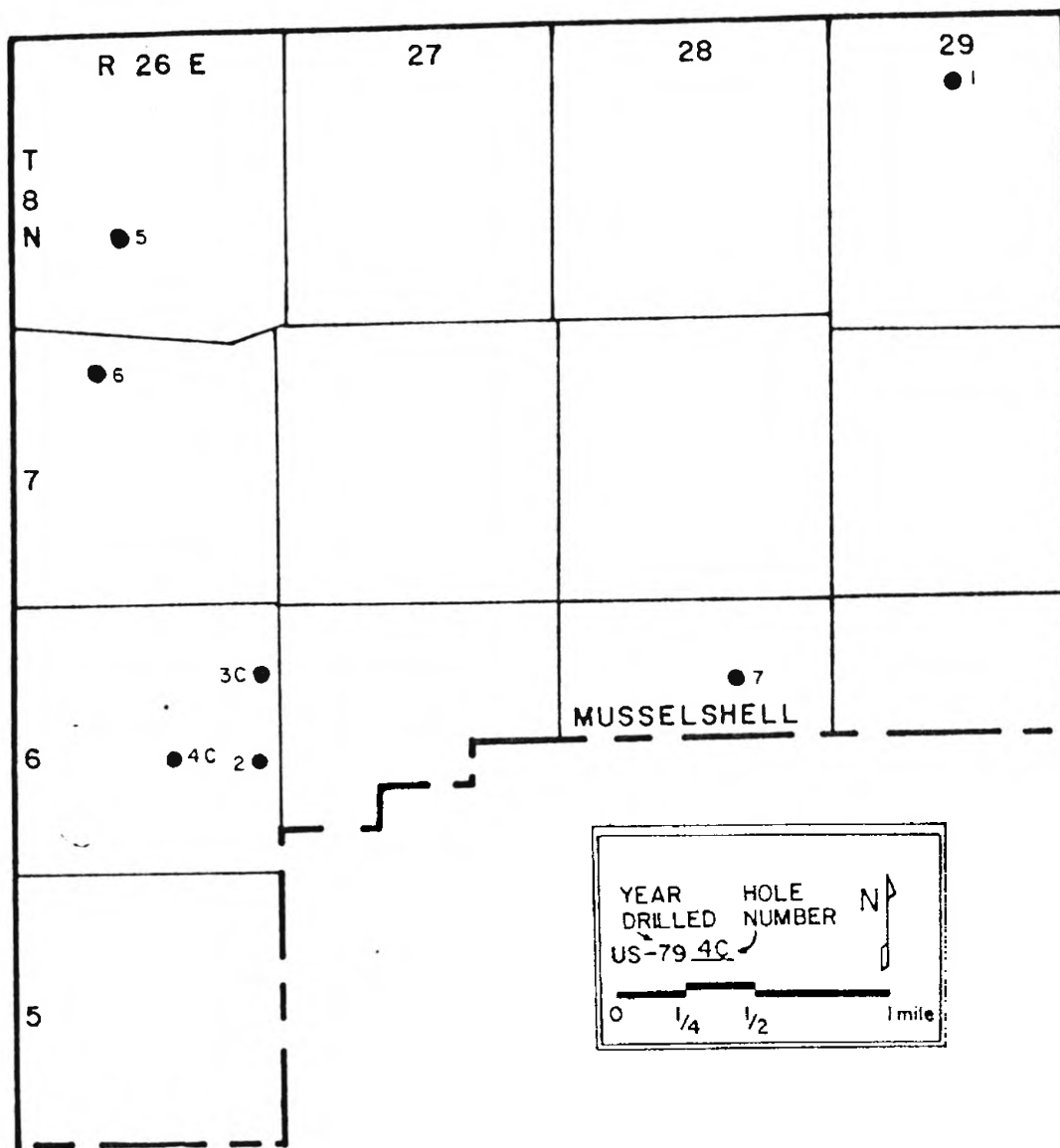


Figure 2.—Area 1, location of holes drilled in 1979, Musselshell County, Montana.

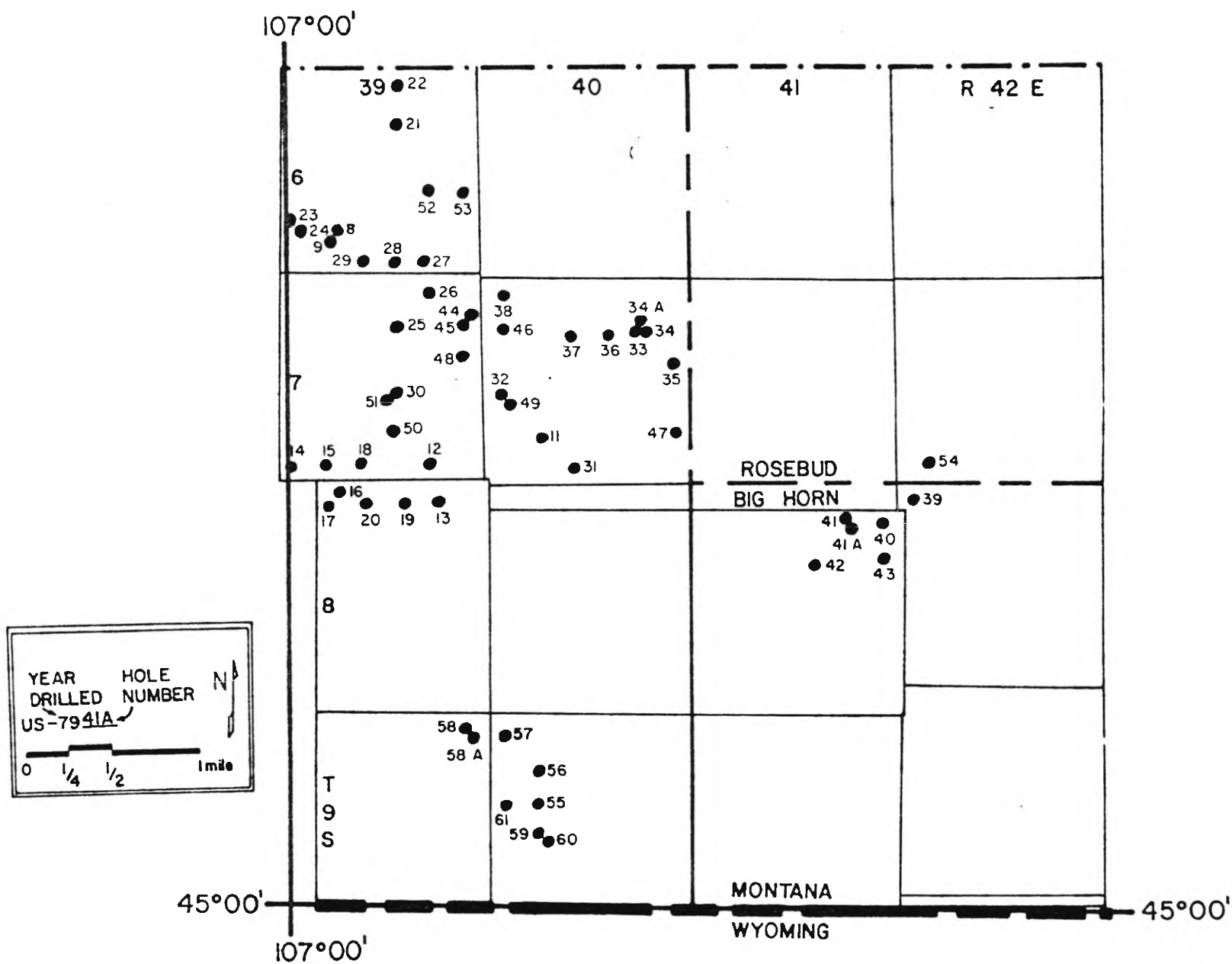


Figure 3.--Area 2, location of holes drilled in 1979, Big Horn and Rosebud Counties, Montana.

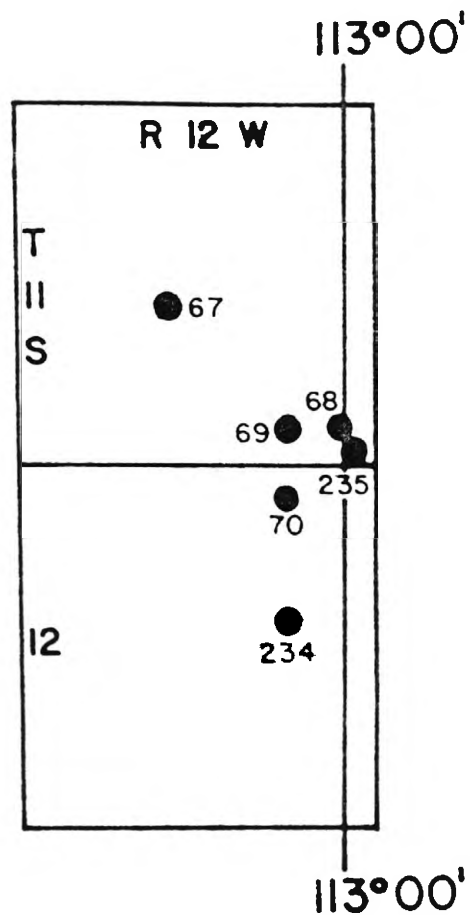
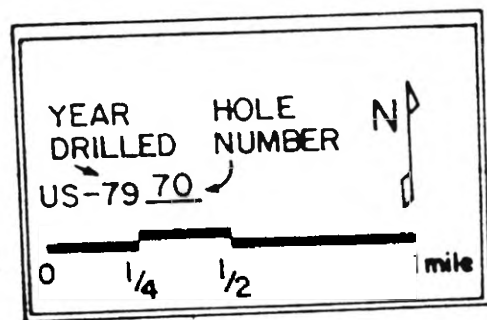


Figure 4.--Area 3, location of holes drilled in 1979, Beaverhead County, Montana.

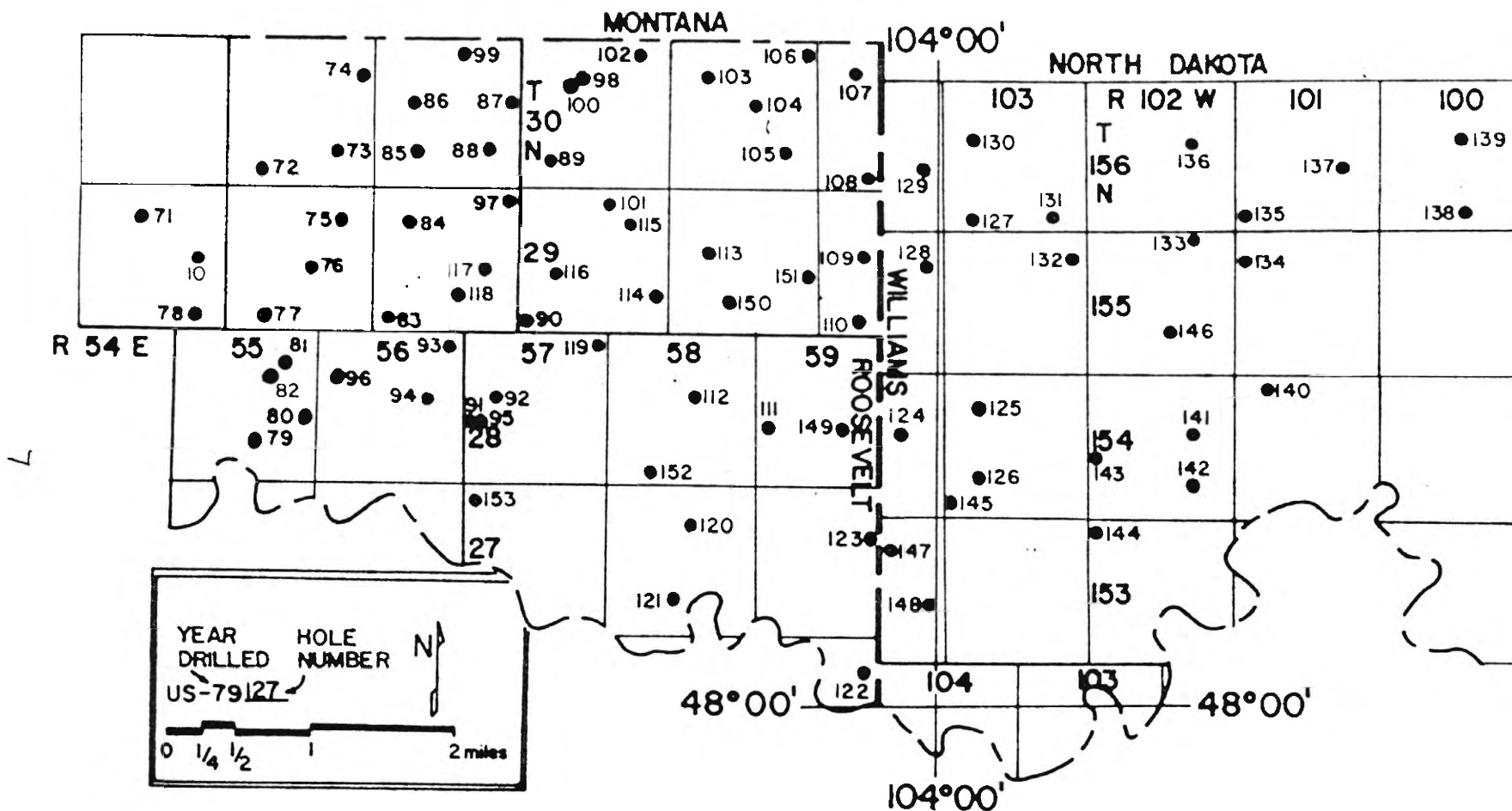


Figure 5.--Area 4, location of holes drilled in 1979, Roosevelt County, Montana, and Williams County, North Dakota.

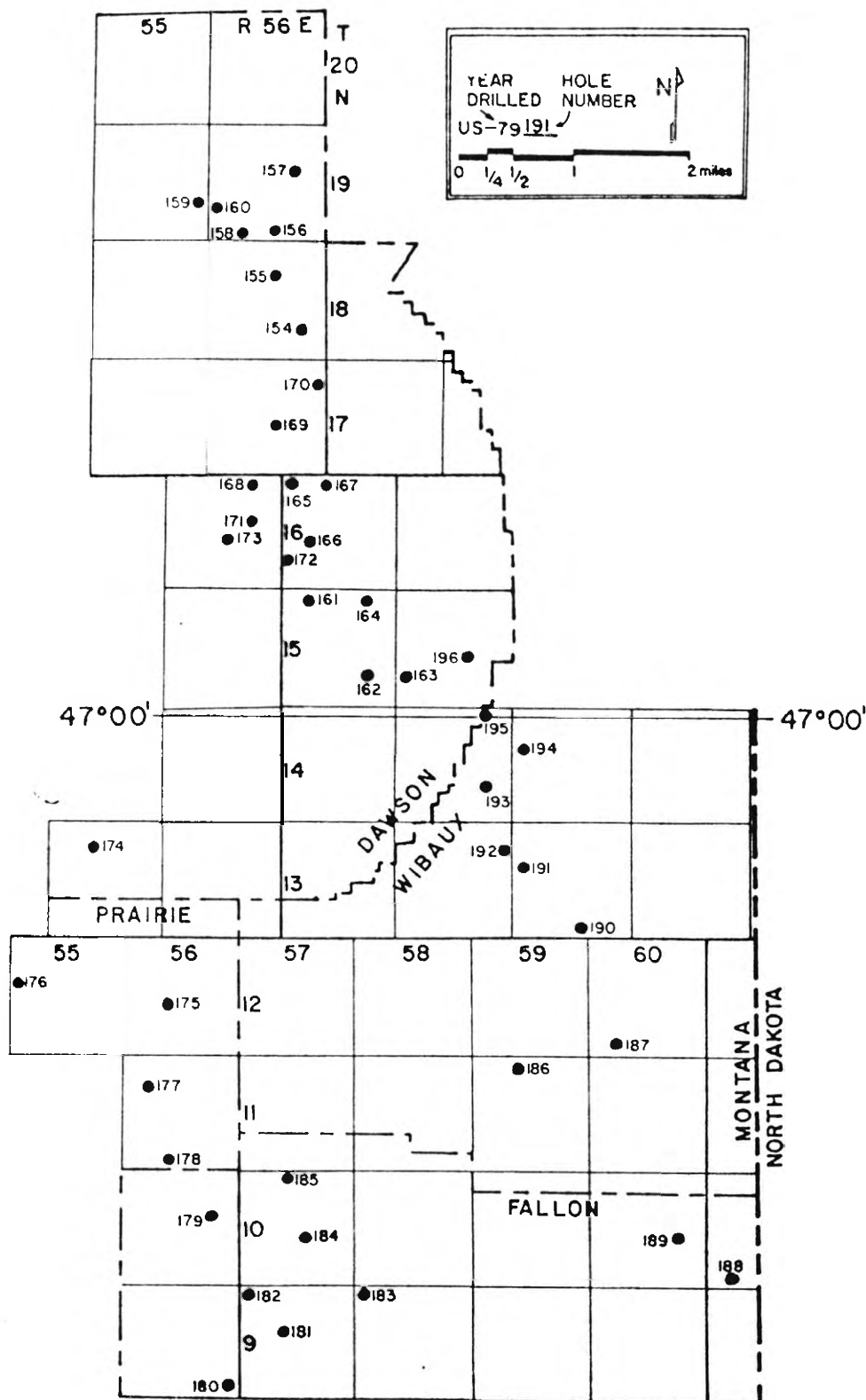
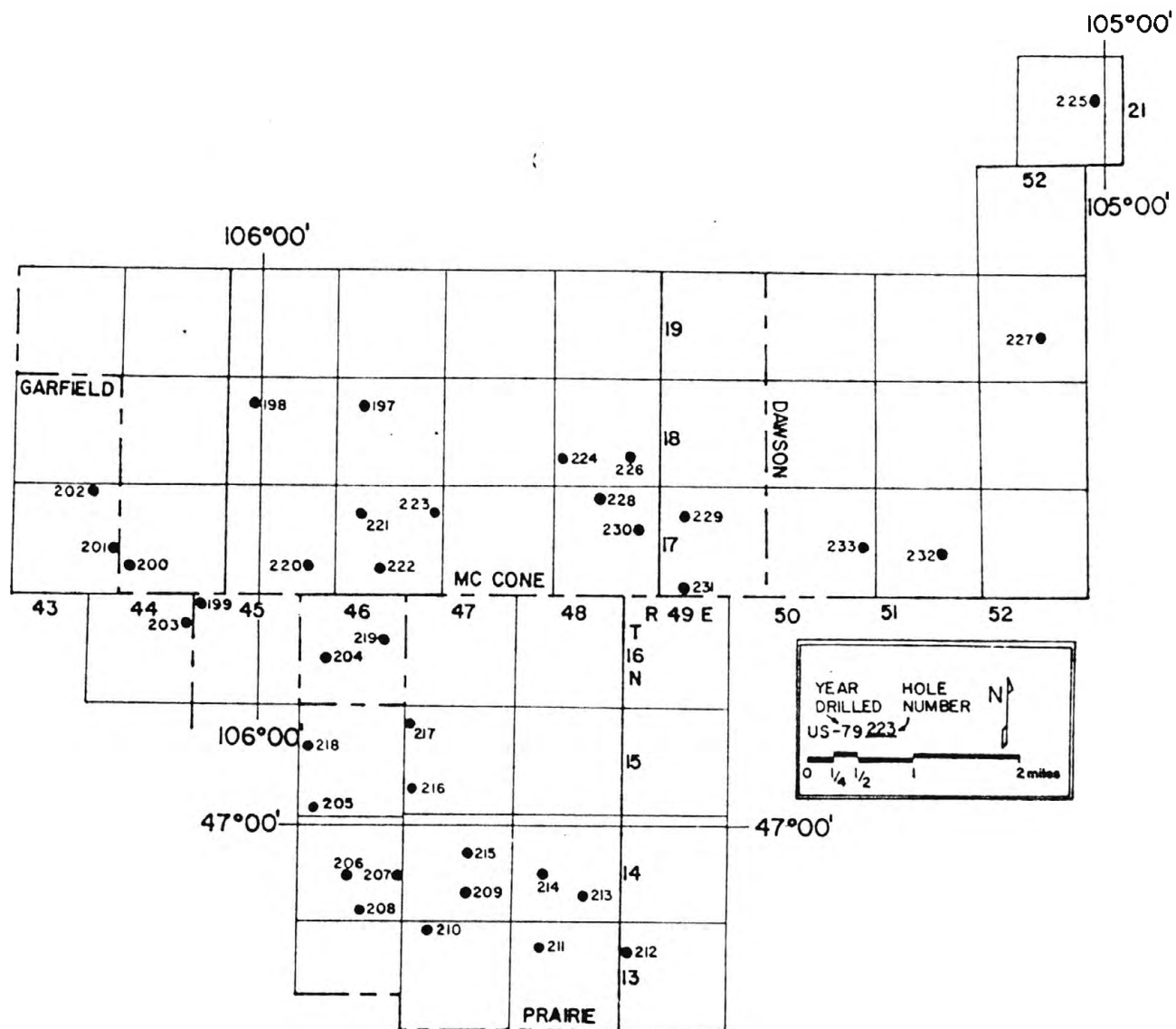


Figure 6.--Area 5, location of holes drilled in 1979, Dawson, Wibaux, Prairie, and Fallon Counties, Montana.



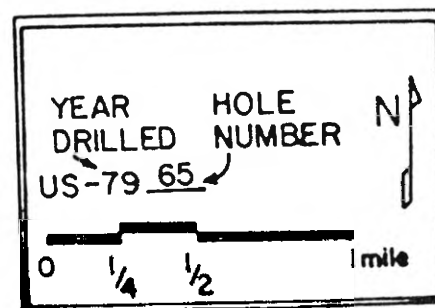
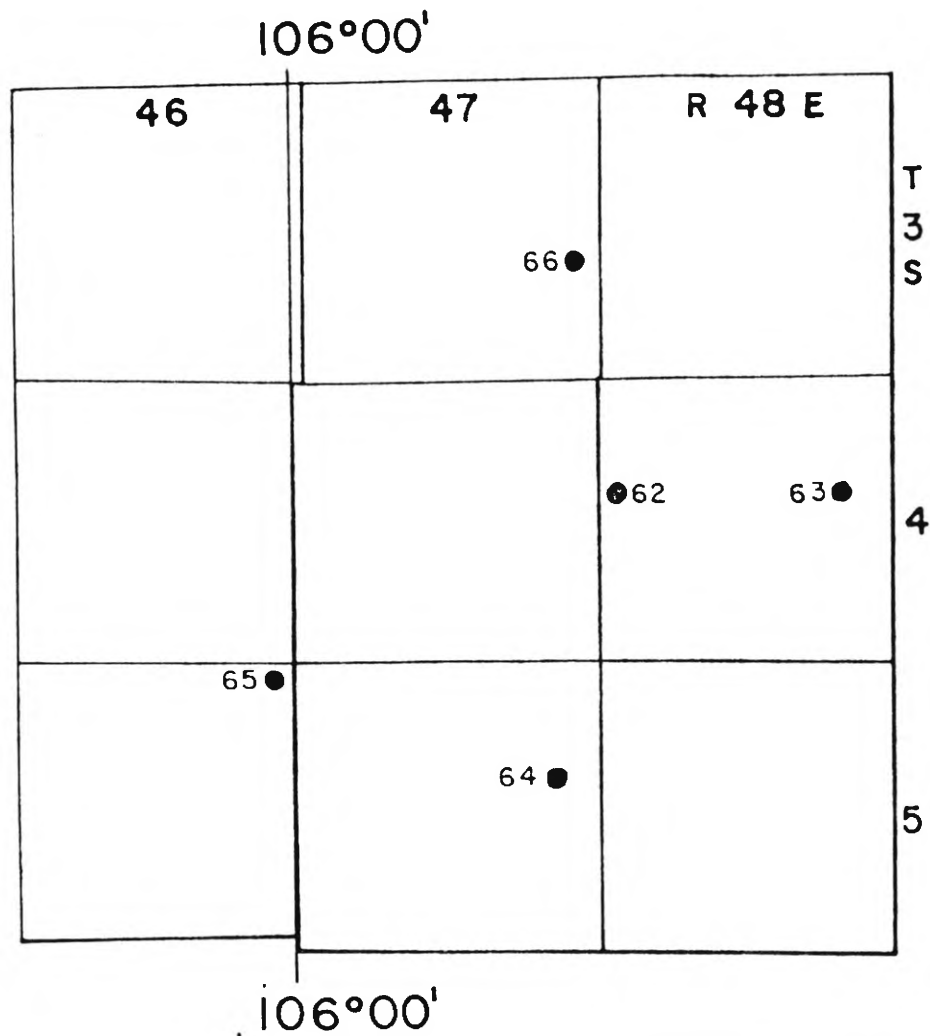


Figure 8.--Area 7, location of holes drilled in 1979, Powder River County, Montana.

Hole No: US-791 Map: Fattig 1 NE Date: 4/10/79 State: Montana County: Musselshell
 Elev: 3112 FT Location: T 8 ^N R 29 ^E W, Sec 4 Tract DDCD Drilled depth 305 FT
 Measured: 380 FT ^{XX} FSL 690 FT ^{XX} FSL FT. Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>ROBERT PEDERSON</u> GEOLOGIST ^{XX} YES		RECORDED BY <u>ROBERT PEDERSON</u>		RECORDING SPEED <u>15</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>20</u>	DEPTH	
	LOGGED DEPTHS 304 FT 304 FT.			LOGGED DEPTHS 304 FT 304 FT		FEET	METERS
	<p>Colluvium</p> <p>Sandstone, tan to gray, very fine to fine; siltstone, gray to green-gray; trace coal and claystone, gray to dark-brown, carbonaceous; trace coal</p> <p>Siltstone, green-gray; claystone, green-gray; sandstone, gray to green-gray, very fine to fine; siltstone, gray to green-gray; and claystone, gray to green-gray, carbonaceous</p> <p>Coal</p> <p>Sandstone, gray, medium to very fine; siltstone, gray; and claystone, gray to brown-gray, carbonaceous</p>						50 0 10 50 20 100 30 150 40 200 50 250 60 300 70 350

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-792 Map: Fattig 2 SW Date: 4/12/79 State: Montana County: Musselshell
 Elev.: 4075 FT Location: T 6^N R 26^E, Sec 22 Tract ADAC Drilled depth 800 FT
 Measured: 1790 FT ^{FNL} 500 FT ^{FEL} 1290 FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ ☒
 Remarks: unusable SP and resistivity logs from 0 to 80 feet

RECORDED BY ROBERT PEDERSON GEOLOGIST ^{XXX} YES RECORDED BY ROBERT PEDERSON RECORDING SPEED 15 FT. MIN
 LITHOLOGY GAMMA T.C. 2 S P SENS SETTING 2 DENSITY T.C. 2 RESISTIVITY SENS SETTING 20 DEPTH
 RANGE 200 RANGE 1K LOGGED DEPTHS 370 FT 490 FT LOGGED DEPTHS 365 FT 490 FT FEET METERS

Colluvium

Sandstone, tan to gray, very fine to medium; siltstone, tan to gray, carbonaceous; claystone, dark-gray to brown, carbonaceous; and coal

Coal

Sandstone, gray, very fine, and siltstone, gray; claystone, gray, carbonaceous; and coal

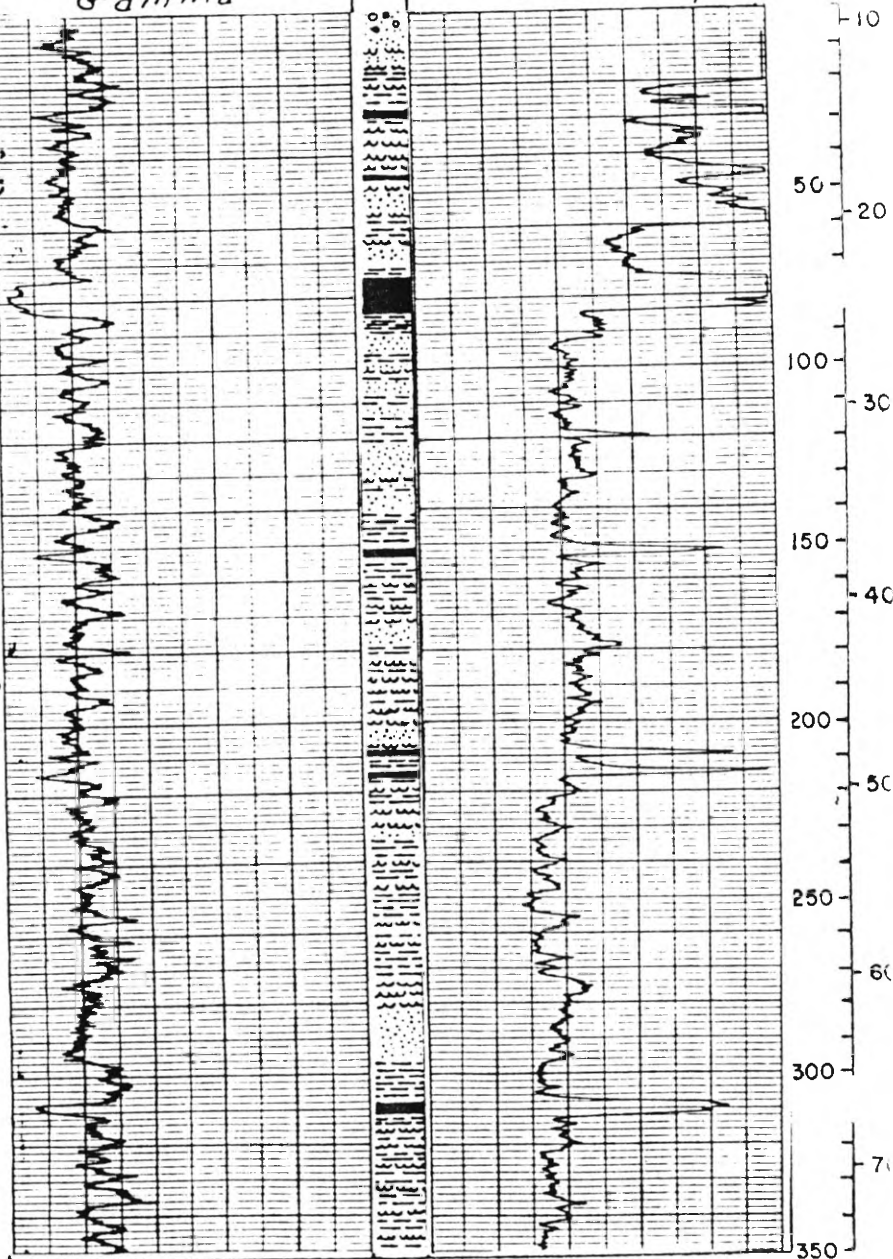
Sandstone, gray, very fine; siltstone, gray to dark-gray, and claystone, gray to brown, carbonaceous; and coal

Coal

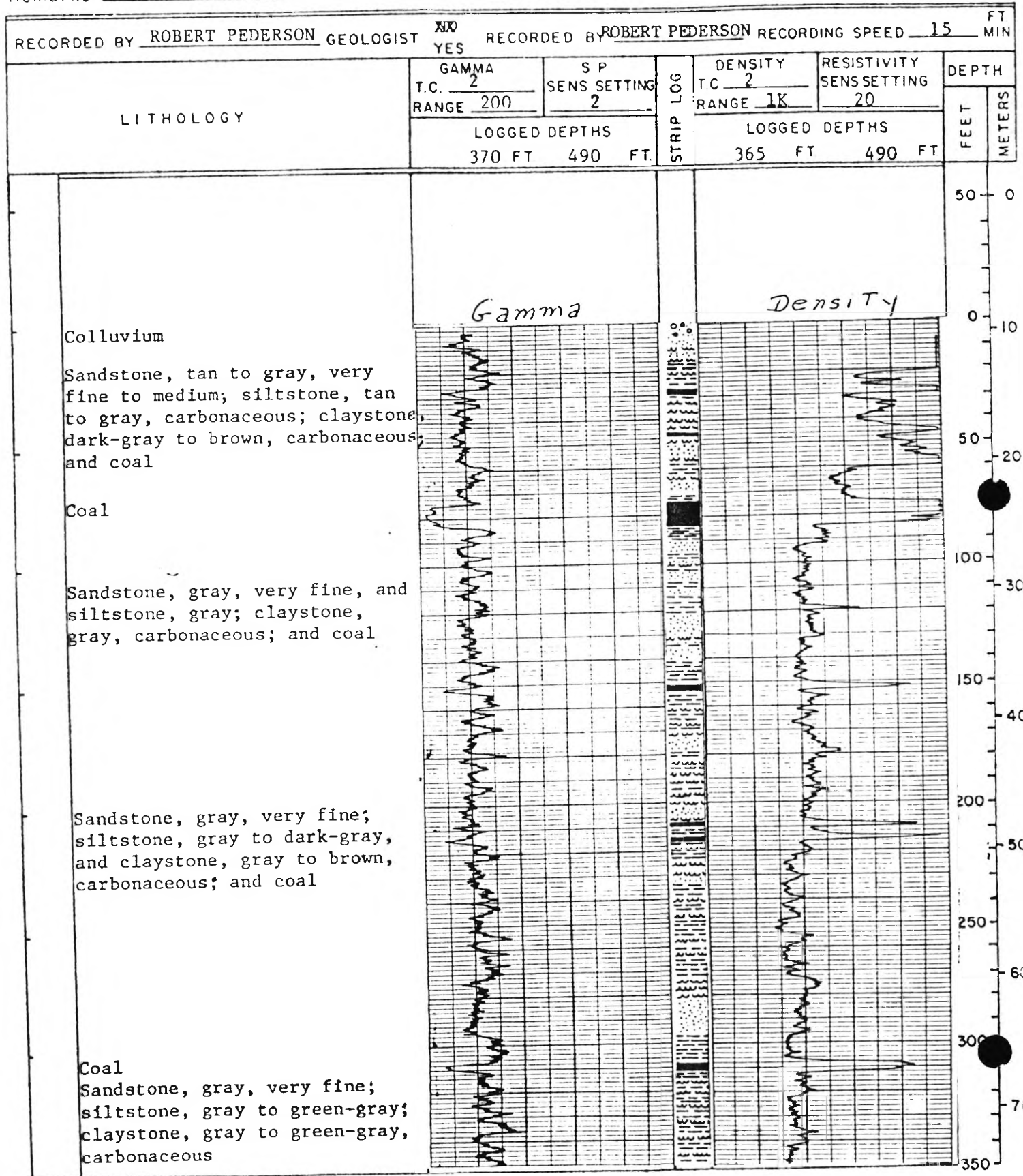
Sandstone, gray, very fine; siltstone, gray to green-gray; claystone, gray to green-gray, carbonaceous

Gamma

Dens Ty



Hole No: US-792 Map: Fattig 2 SW Date: 4/12/79 State: Montana County: Musselshell
 Elev: 4075 FT Location: T 6^N R 26^E, Sec 22 Tract ADAC Drilled depth 800 FT
 Measured: 1790 FT ^{FNL} 500 FT ^{FEL} 1290 FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐
 Remarks: unusable SP and resistivity logs from 0 to 80 feet



Hole No: US-792 Map: Fattig 2 SW Date: 4/12/79 State: Montana County: Musselshell
 Elev.: 4075 FT Location: T 6^N~~XX~~ R 26^E~~XX~~, Sec 22 Tract ADAC Drilled depth 800 FT
 Measured: 1790 FT ~~XXX~~ ^{FNL} 500 FT ~~XXX~~ ^{FEL} FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: unusable SP and resistivity logs from 0 to 80 feet

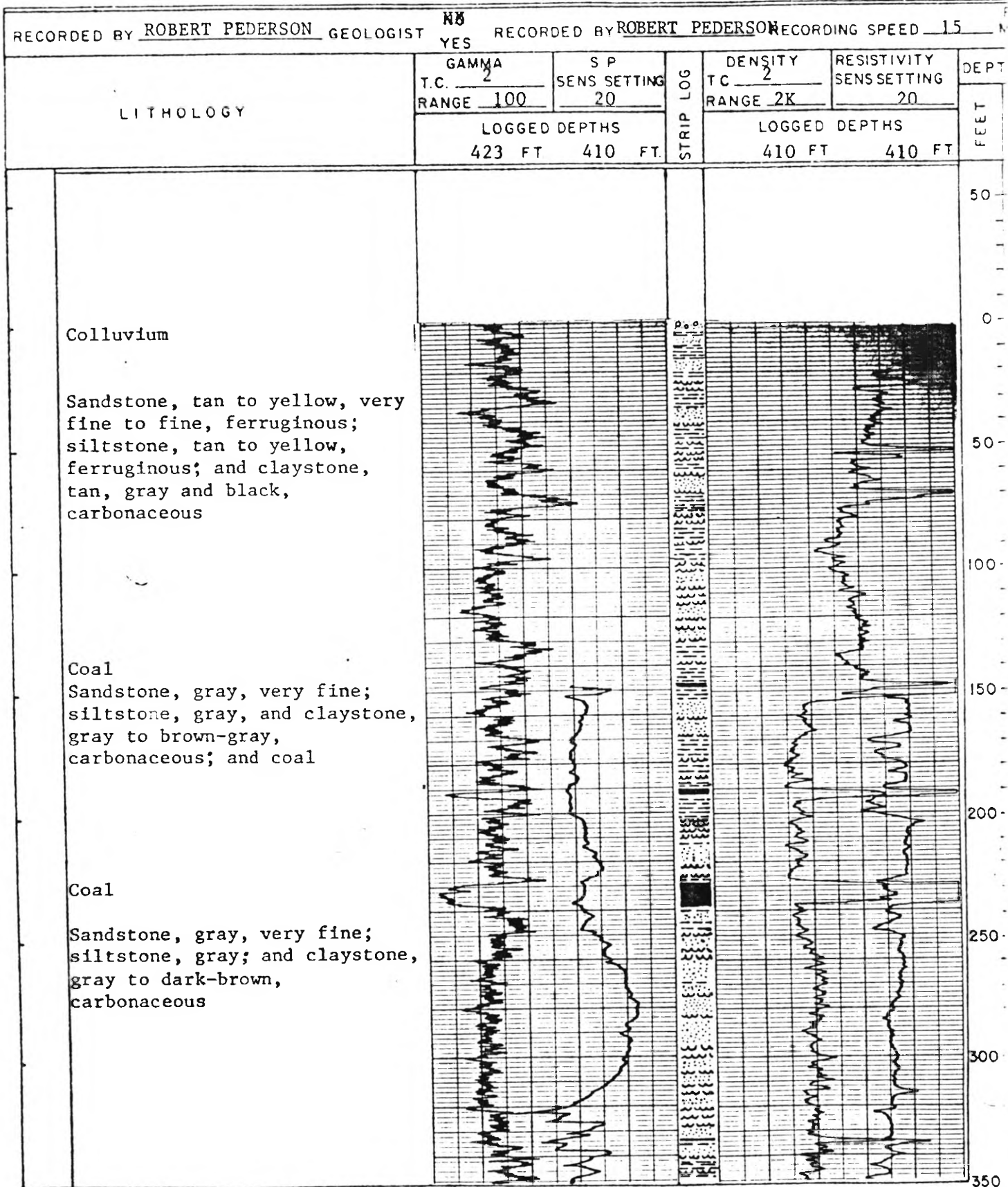
RECORDED BY <u>ROBERT PEDERSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>ROBERT PEDERSON</u> RECORDING SPEED _____ FT. MIN.					
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>2</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>1K</u>	RESISTIVITY SENS SETTING <u>20</u>	DEPTH	
	LOGGED DEPTHS 370 FT 490 FT.			LOGGED DEPTHS 365 FT 490 FT.		FEET	METERS
							50 0
							0 10
							50 20
							100 30
							150 40
							200 50
							250 60
							300 70
							350

S. P. Res.

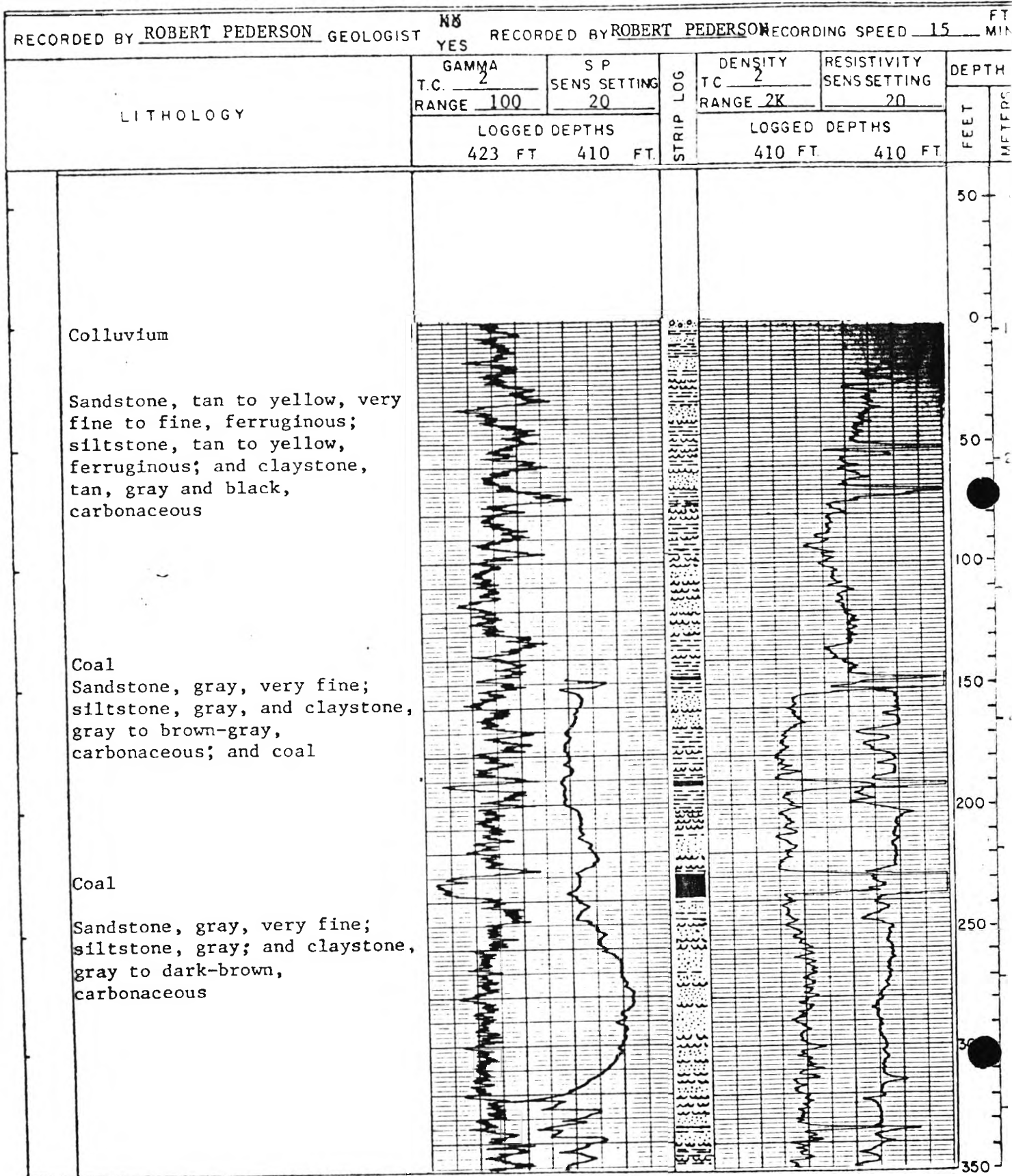
Hole No: US-792 Map: Fattig 2 SW Date: 4/12/79 State: Montana County: Musselshell
 Elev.: 4075 FT Location: T 6^N~~XX~~ R 26^E~~XX~~, Sec 22 Tract ADAC Drilled depth 800 FT
 Measured: 1790 FT ^{FNL}~~XX~~ 500 FT ^{FEL}~~XX~~ FT. Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☒
 Remarks: unusable SP and resistivity logs from 0 to 80 feet

RECORDED BY <u>ROBERT PEDERSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>ROBERT PEDERSON</u> RECORDING SPEED <u> </u> FT MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>2</u>	DENSITY T.C. <u>2</u> RANGE <u>1K</u>
	LOGGED DEPTHS 370 FT 490 FT.		RESISTIVITY SENS SETTING <u>20</u>
	LOGGED DEPTHS 365 FT 490 FT.		
		STRIP LOG	
	S.P.		Res.
			50
			50
			100
			150
			200
			250
			300
			350

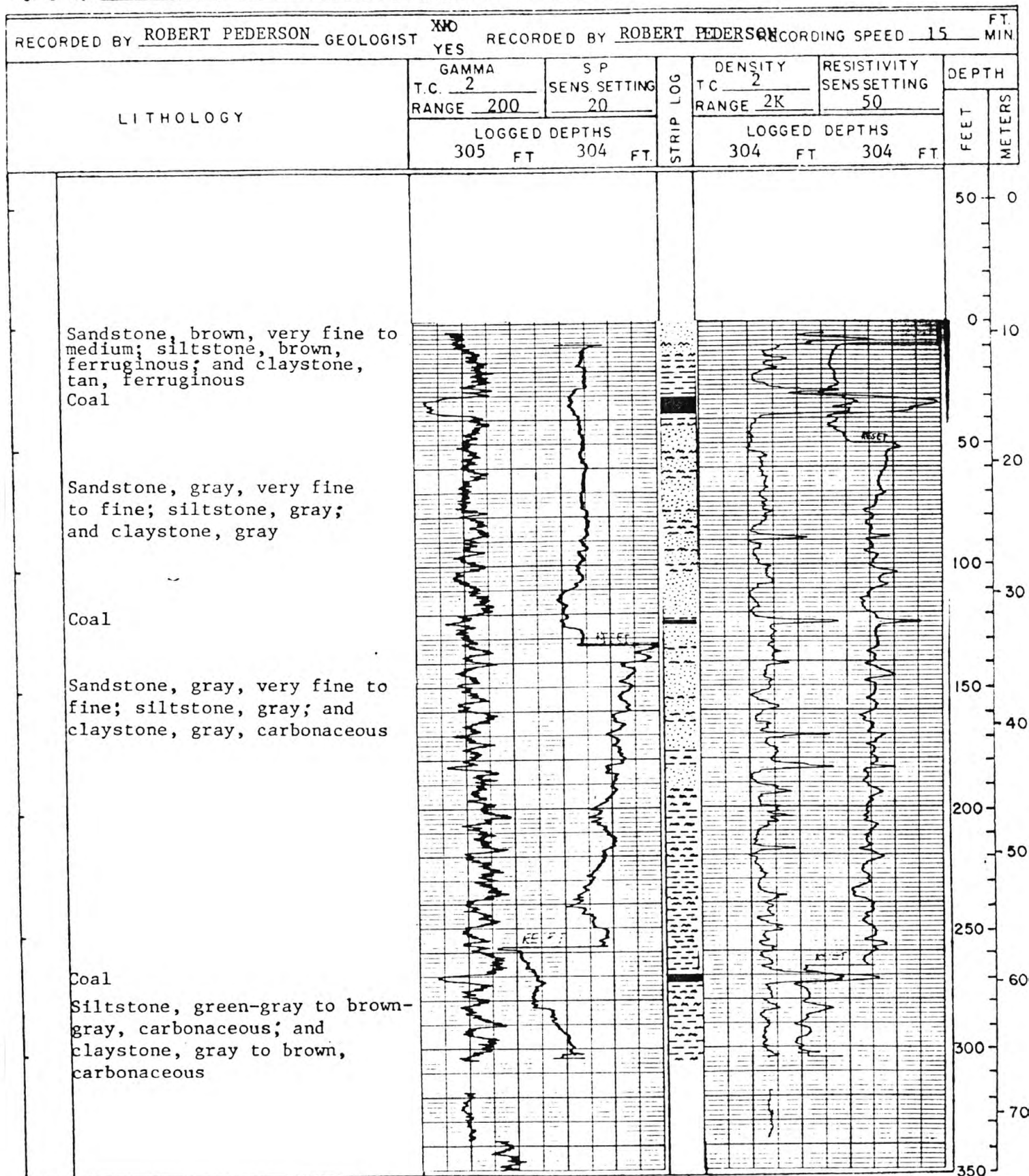
Hole No: US-793C Map: Fattig 2 SW Date: 4/16/79 State: Montana County: Musselshell
 Elev.: 4030 FT Location: T 6 ^N~~X~~ R 26 ^E~~W~~, Sec 12 Tract DDDD Drilled depth 400
 Measured: 150 FT ~~RKX~~ FSL 175 FT ~~FEL~~ ~~RKX~~ FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☒
 Remarks: Cored interval 220 feet to 237 feet.



Hole No: US-793C Map: Fattig 2 SW Date: 4/16/79 State: Montana County: Musselshell
 Elev.: 4030 FT Location: T 6 ^N R 26 ^E, Sec 12 Tract DDDD Drilled depth 400 FT
 Measured: 150 FT ^{XXX} 175 FT ^{FEL} XXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☒
 Remarks: Cored interval 220 feet to 237 feet.



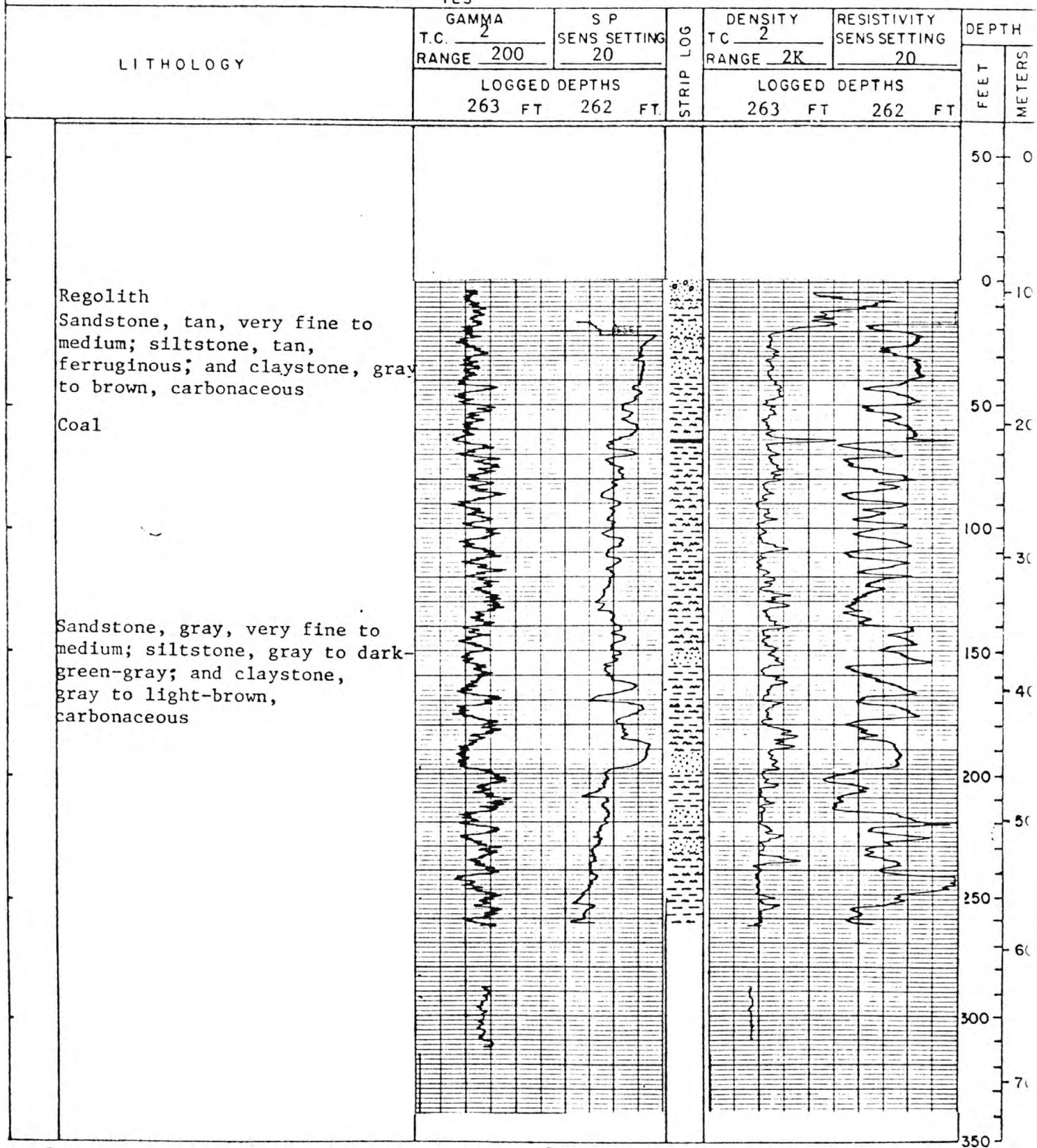
Hole No: US-794C Map: Fattig 2 SW Date: 4/25/79 State: Montana County: Musselshell
 Elev.: 3942 FT Location: T 6 ^N R 26 ^E Sec 24 Tract BADB Drilled depth 300 FT
 Measured: 780 FT ^{FNL} 1990 FT ^{FWL} 300 FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☒ No ☐
 Remarks: Cored interval 29 feet to 39 feet.



LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-795 Map: Fattig 2 NW Date: 4/26/79 State: Montana County: Musselshell
 Elev: 3430 FT Location: T 8 ^N R 26 ^E, Sec 28 Tract DACA Drilled depth 260 FT
 Measured: 1800 FT ^{KWK} FSL 620 FT ^{FEL} ~~KWK~~ FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☒ No ☐
 Remarks: Cored interval 60 feet to 69 feet.

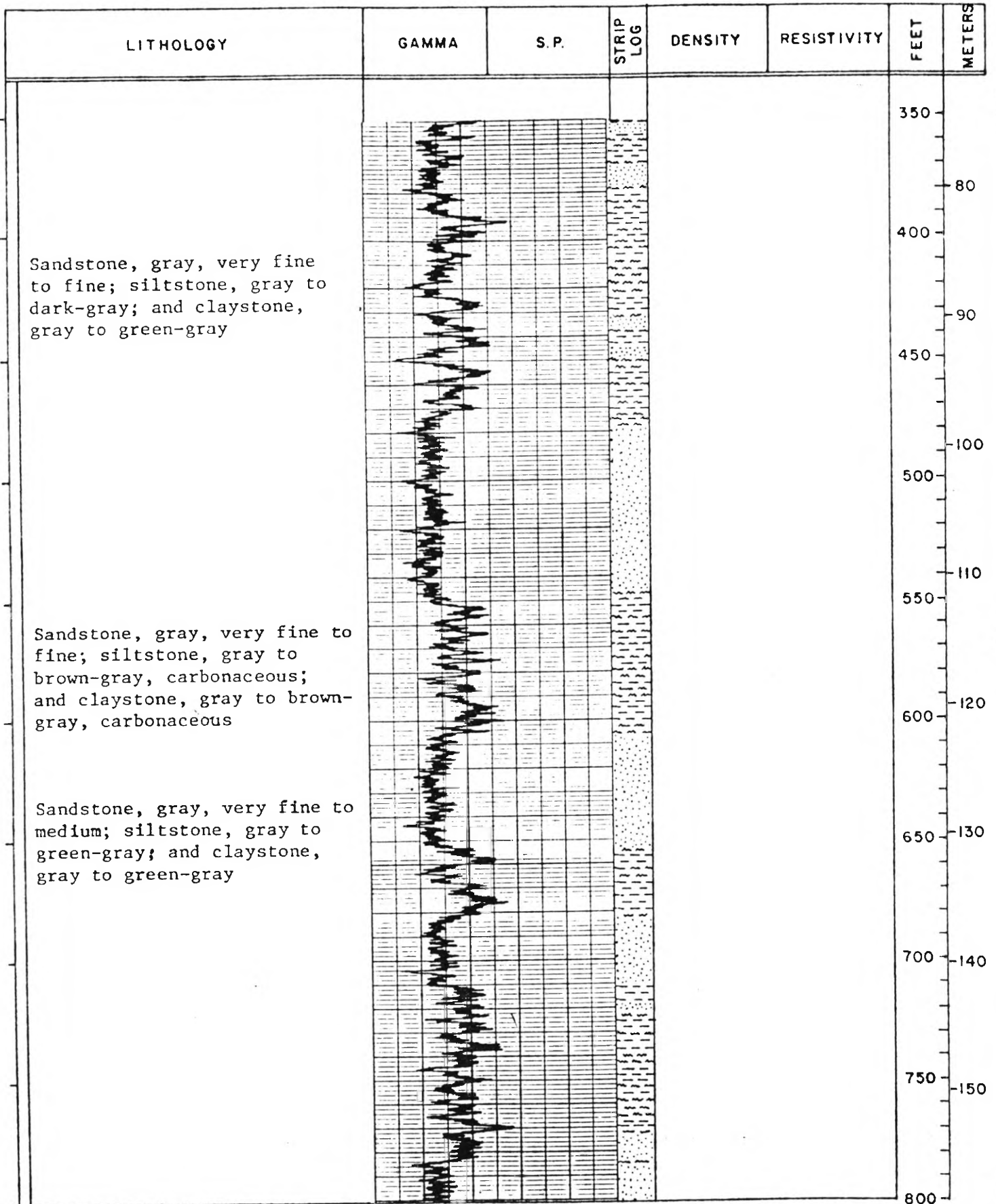
RECORDED BY ROBERT PEDERSON GEOLOGIST ^{KWK} YES RECORDED BY ROBERT PEDERSON RECORDING SPEED 15 FT MIN



LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-796 Map: Fattig 2 NW Date: 4/26/79 State: Montana County: Musselshell
 Elev: 3825 FT Location: T 7 ^N R 26 ^E, Sec 4 Tract DADC Drilled depth 860 FT
 Measured: 1610 FT FSL 475 FT FEL 1135 FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☒ No ☐
 Remarks: Cored interval 209 feet to 218 feet.

RECORDED BY <u>ROBERT PEDERSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>ROBERT PEDERSON</u> RECORDING SPEED <u>15</u> FT MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING	DENSITY T.C. _____ RANGE _____
	LOGGED DEPTHS 846 FT FT		RESISTIVITY SENS SETTING
	LOGGED DEPTHS FT FT		DEPTH FEET METERS
Colluvium			50 0
Sandstone, tan, very fine to fine; siltstone, tan to yellow-brown, ferruginous			0 10
Sandstone, gray, very fine to fine; siltstone, gray to dark-gray, carbonaceous; and claystone, gray to dark-gray, carbonaceous			50 20
Coal			100 30
Sandstone, gray, very fine to fine; siltstone, gray to green-gray; and claystone, gray			150 40
Coal, with <i>gray claystone parting</i>			200 50
Sandstone, gray, very fine to fine; siltstone, gray to dark-green-gray; and claystone, gray to green-gray			250 60
			300 70
			350



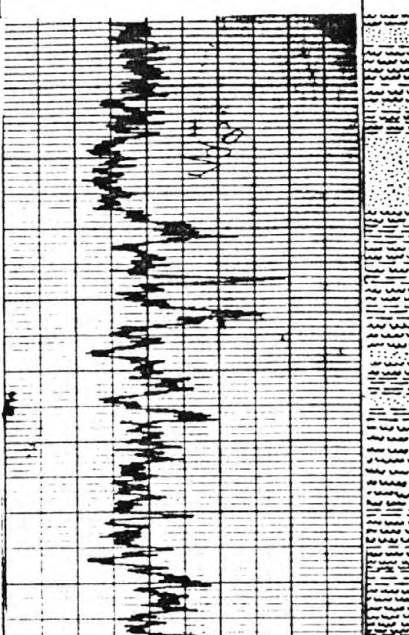
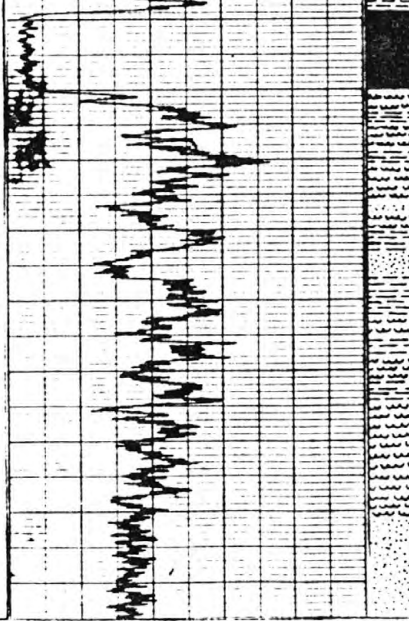

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Sandstone, gray, very fine; siltstone, gray to green-gray; and claystone, gray to brown, carbonaceous						800	
						850	
			</				

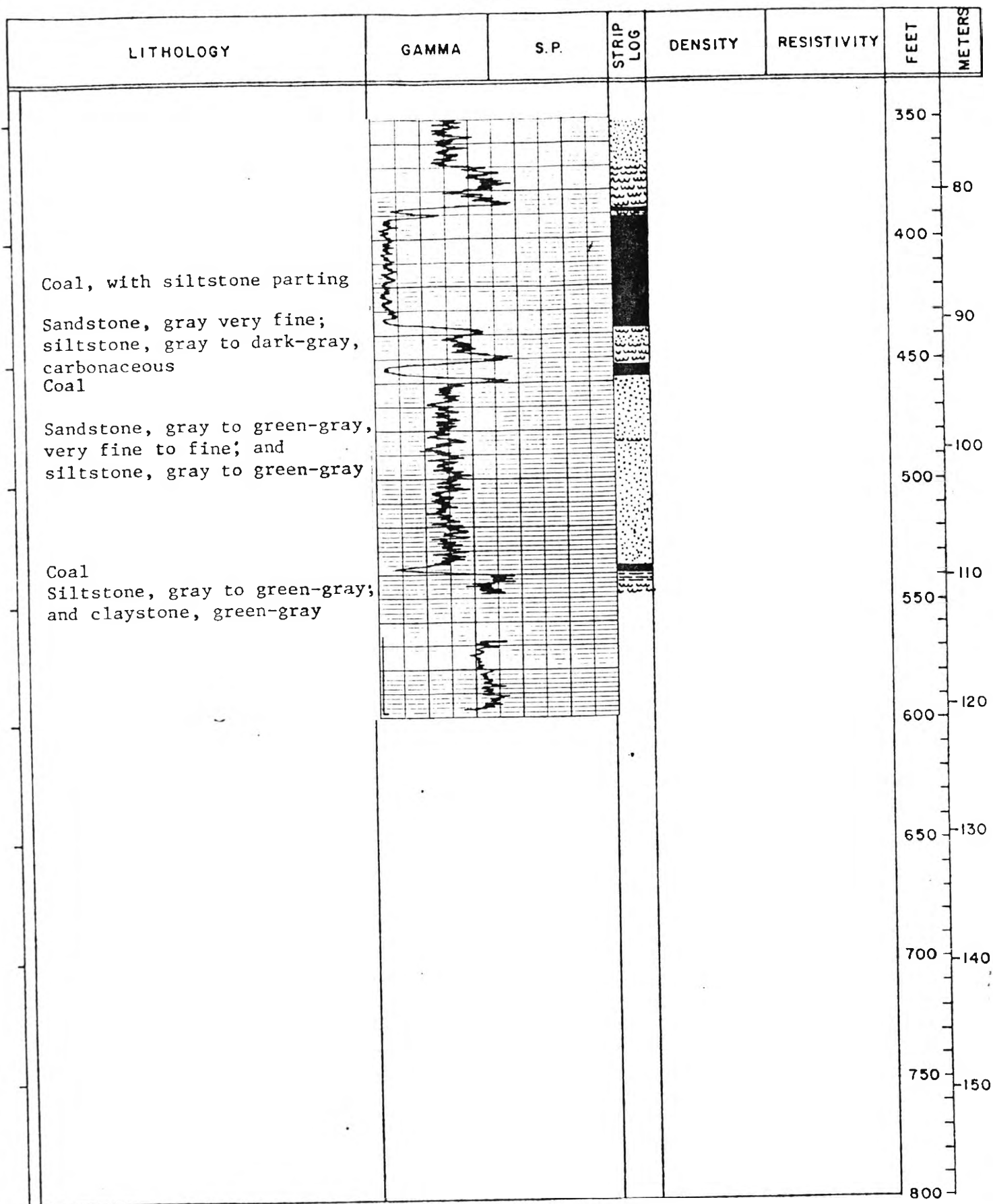
Hole No: US-797 Map: Fattig 1 SW Date: 5/10/79 State: Montana County: Musselshell
 Elev.: 4079 FT Location: T 6 ^N R 28 ^E, Sec 10 Tract BBBA Drilled depth 260 FT
 Measured: 140 FT ^{FNL} 375 FT ^{FEEL} FWL FT. Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>ROBERT PEDERSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>ROBERT PEDERSON</u> RECORDING SPEED <u>15</u> FT MIN				
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>20</u>	DENSITY TC <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>50</u>	DEPTH	
	LOGGED DEPTHS		LOGGED DEPTHS		FEET	METERS
	283 FT	282 FT	282 FT	282 FT		
Sandstone, tan to yellow, very fine to fine, ferruginous; siltstone, gray to yellow, ferruginous; and claystone, gray to tan, and coal Sandstone, gray to green-gray, very fine to fine; siltstone, gray to green-gray; and claystone, gray to green-gray Coal Sandstone, gray, very fine to fine; siltstone, gray; and claystone, gray Coal Sandstone, gray, very fine to fine; siltstone, gray; and claystone, gray to brown, carbonaceous					50	0
					0	10
					50	20
					100	30
150	40					
200	50					
250	60					
300	70					
350						

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

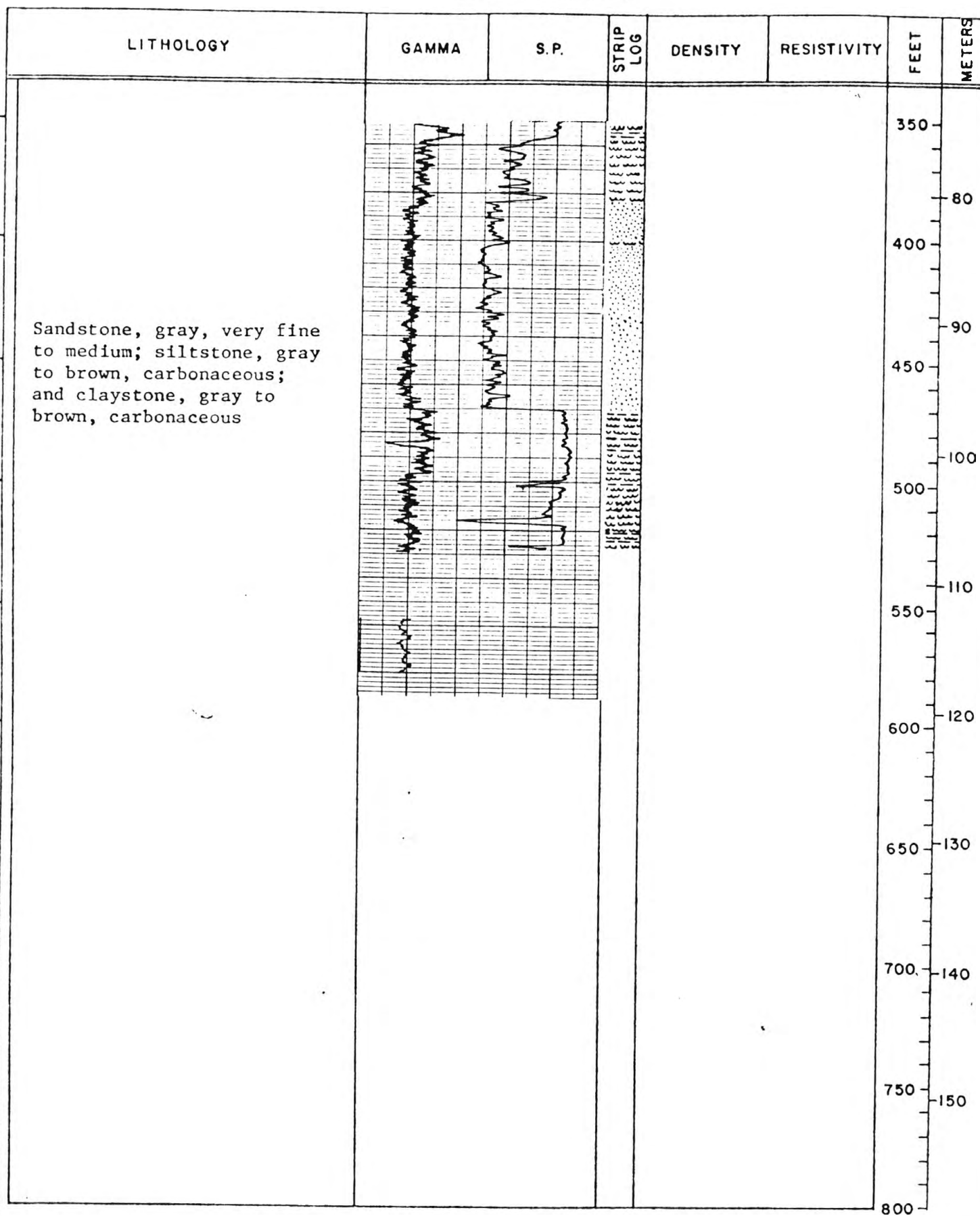
Hole No: US-798 Map: Kirby Date: 5/15/79 State: Montana County: Big Horn
 Elev.: 4360 FT Location: T 6 S R 39 E, Sec 28 Tract BAAC Drilled depth 548 FT
 Measured: 525 FT FNL 2070 FT FWL 2070 FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>ROBERT PEDERSON</u> GEOLOGIST <u>NS</u> YES		RECORDED BY <u>ROBERT PEDERSON</u> RECORDING SPEED <u>15</u> FT MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING	DENSITY T.C. _____ RANGE _____
	LOGGED DEPTHS 548 FT. FT.		RESISTIVITY SENS SETTING
	LOGGED DEPTHS FT. FT.		DEPTH FEET METERS
Sandstone, tan to yellow-brown, very fine to fine, ferruginous; siltstone, tan to yellow-brown, ferruginous; and claystone, gray to brown, carbonaceous			50 0
			0 10
Sandstone, gray, very fine to fine; siltstone, gray to yellow, ferruginous; and claystone, gray to yellow, ferruginous			50 20
			100 30
Coal			150 40
			200 50
Sandstone, gray to green-gray, very fine; siltstone, gray to dark-gray, carbonaceous			250 60
			300 70
			350



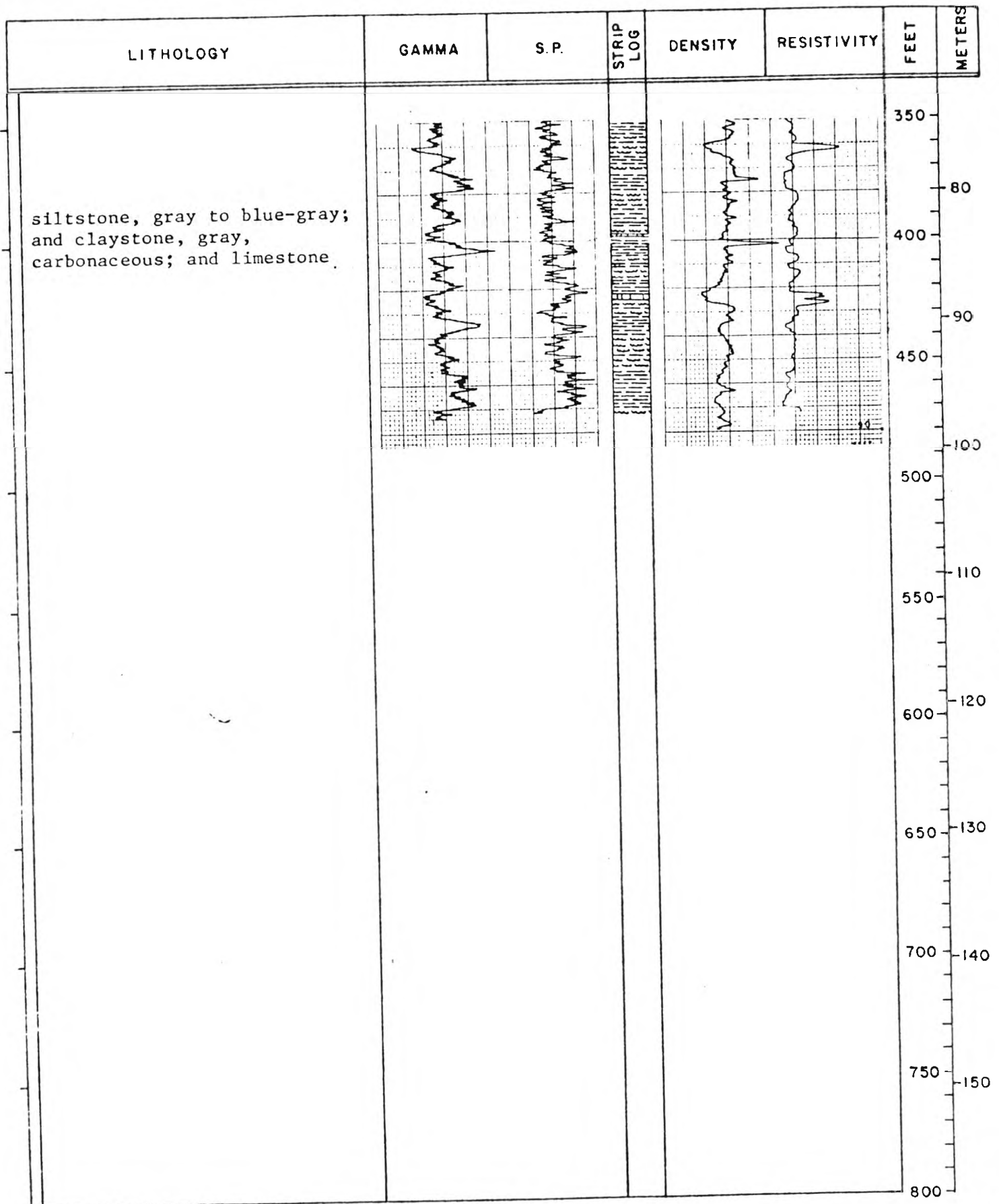
Hole No: US-799 Map: Kirby Date: 5/16/79 State: Montana County: Big Horn
 Elev: 4342 FT Location: T 6 S R 39 E, Sec 28 Tract ADAA Drilled depth 510 FT
 Measured: 1500 FT ~~XXX~~ ^{FNL} 50 FT ~~XXX~~ ^{FEL} FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>ROBERT PEDERSON</u> GEOLOGIST <input checked="" type="checkbox"/> YES		RECORDED BY <u>ROBERT PEDERSON</u> RECORDING SPEED <u>15</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING _____	DEPTH
	LOGGED DEPTHS 529 FT 527 FT.		LOGGED DEPTHS FT FT.		FEET METERS
Sandstone, gray, very fine; siltstone, tan to yellow, ferruginous; and claystone, yellow-brown to tan, ferruginous					50
					0
Coal					10
					20
					30
					40
Sandstone, gray to dark-gray, very fine to fine; siltstone, gray to brown, carbonaceous; and claystone, gray to brown, carbonaceous					50
					60
					70
					80
Coal					90
					100
					110
					120
					130
					140
					150
					160
					170
					180
					190
					200
					210
					220
					230
					240
					250
					260
					270
					280
					290
					300
					310
					320
					330
					340
					350

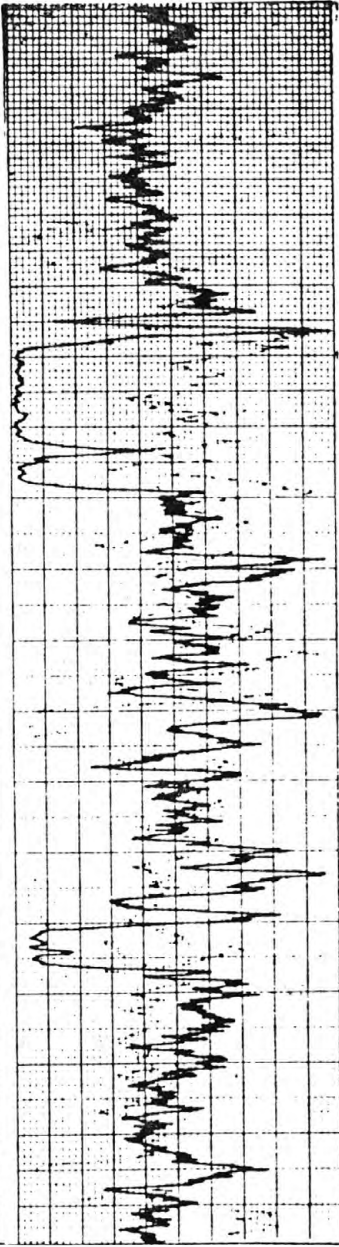
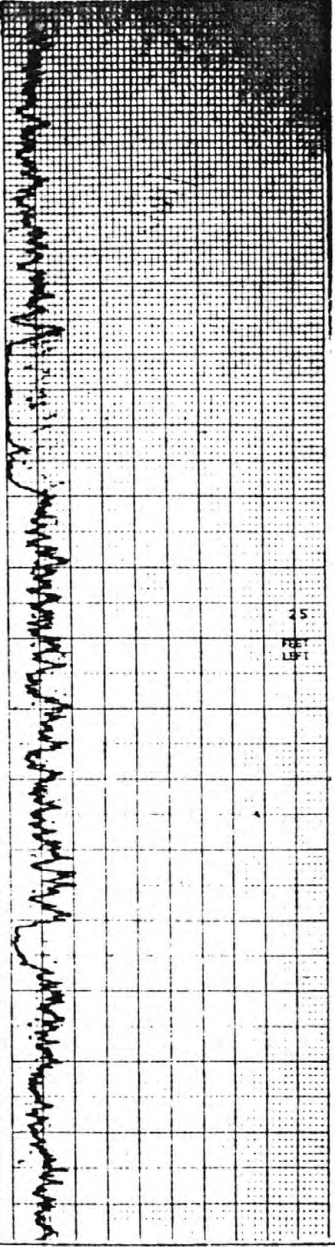
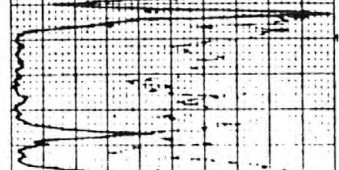
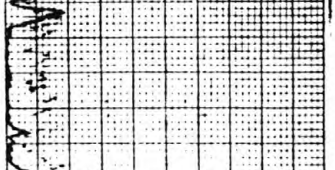
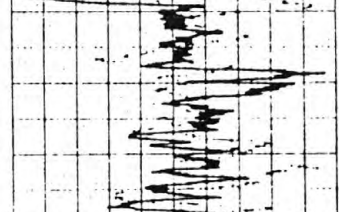
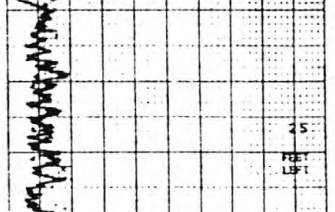
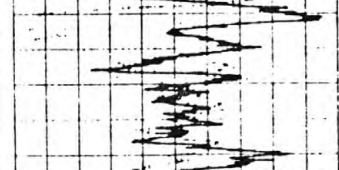
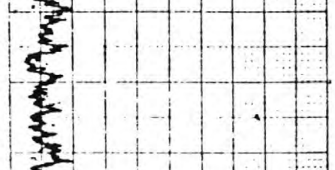
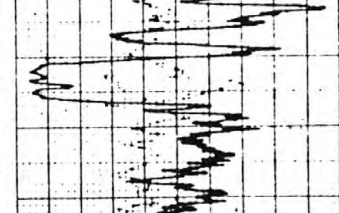
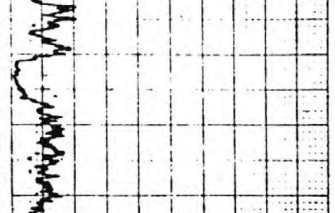
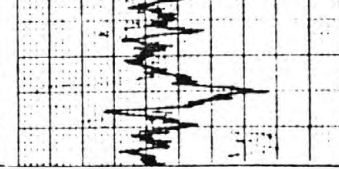



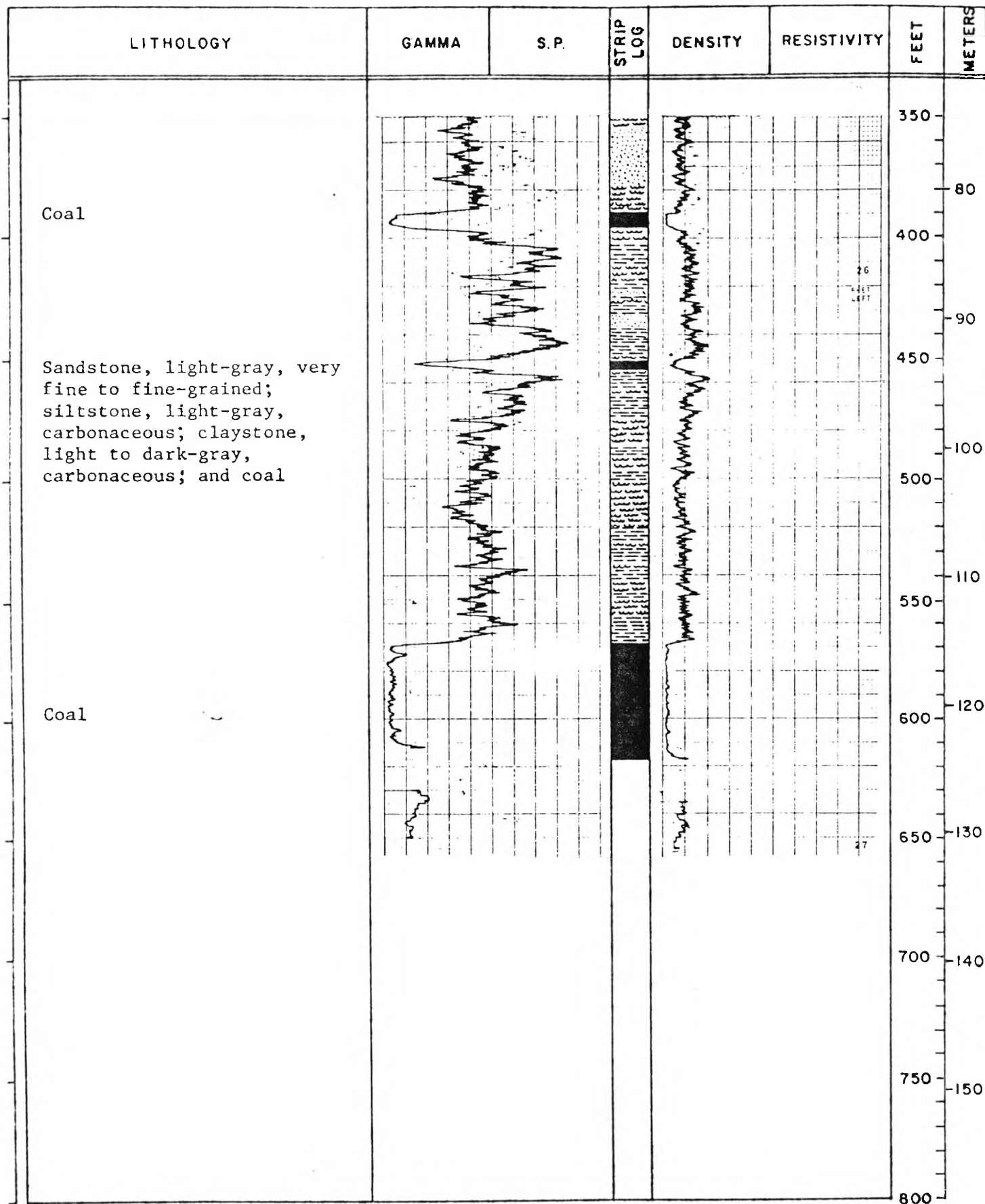
Hole No: US-7910 Map: Rocky Point Date: 5/23/79 State: Montana County: Roosevelt
 Elev.: 2185 FT Location: T 29^N R 54^E, Sec 23 Tract ACCD Drilled depth 480 FT
 Measured: 2600 FT ~~FNL~~ 2250 FT ~~FEL~~ 0 FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>K. WILLIAMS</u> GEOLOGIST		NO YES RECORDED BY <u>K. WILLIAMS</u>		RECORDING SPEED <u>20</u> FT MIN		
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>250</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>250</u>	DEPTH FEET METERS
	LOGGED DEPTHS <u>474</u> FT <u>472</u> FT			LOGGED DEPTHS <u>479</u> FT <u>472</u> FT		
till						50
siltstone, brown, ferruginous; and claystone, gray to light- brown coal						0
siltstone, gray, carbonaceous; and claystone, gray, carbonaceous						50
coal						100
siltstone, light-gray to brown, carbonaceous; and claystone, gray, carbonaceous; and limestone						150
coal						200
siltstone, gray, carbonaceous; and claystone, gray to dark- gray, carbonaceous coal						250
						300
						350

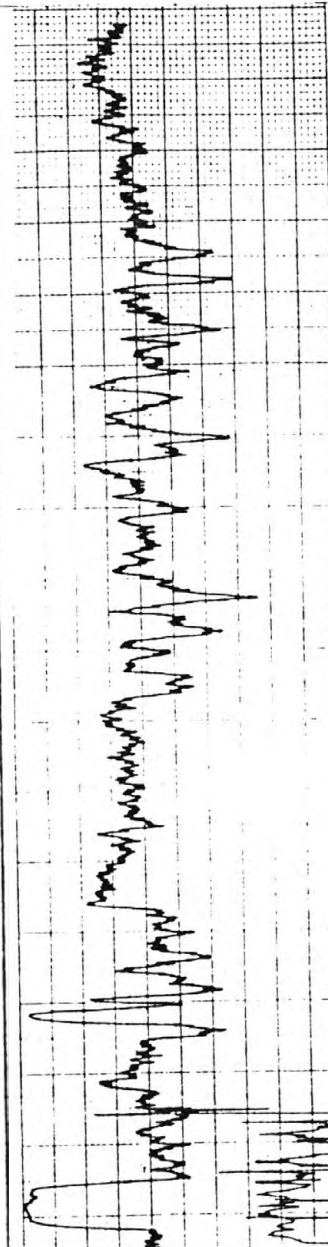
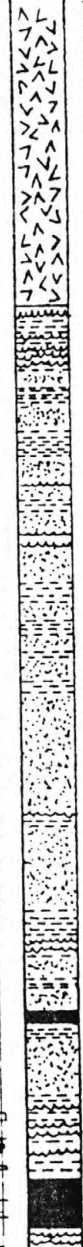
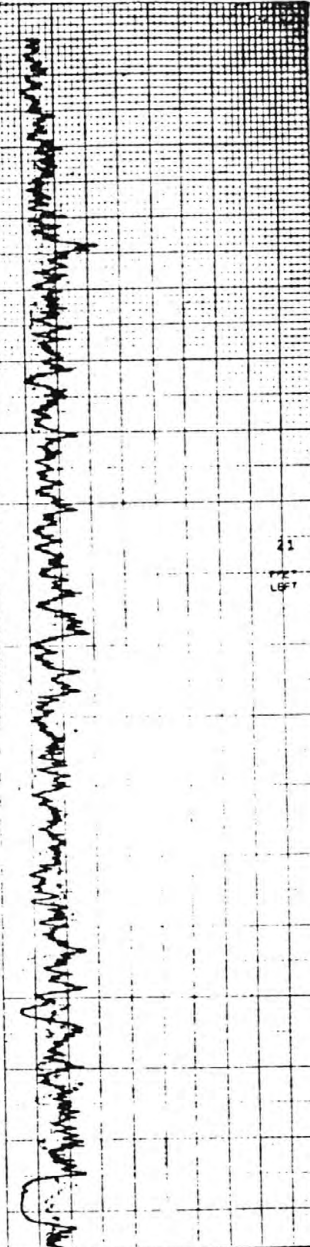
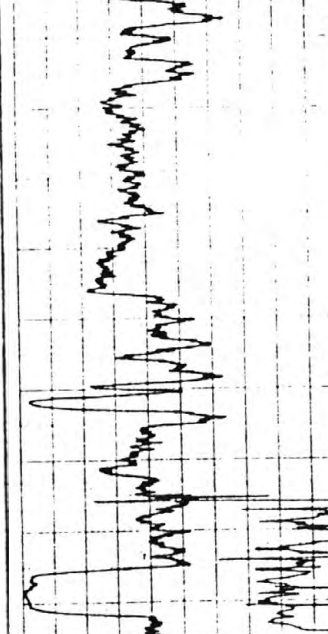
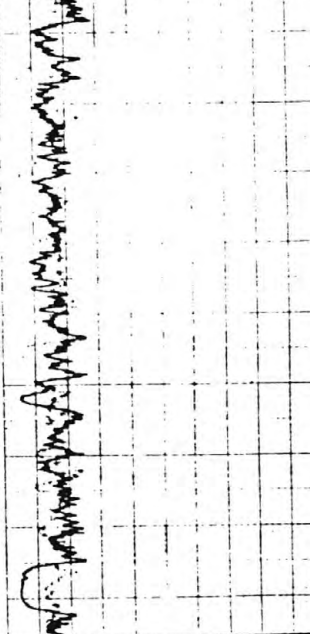
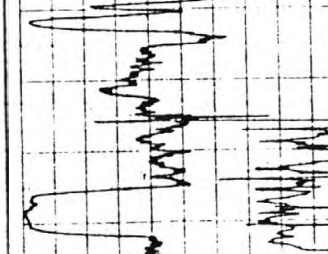
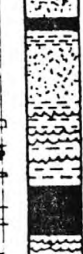
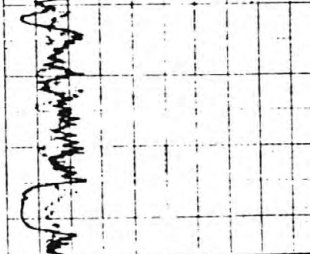


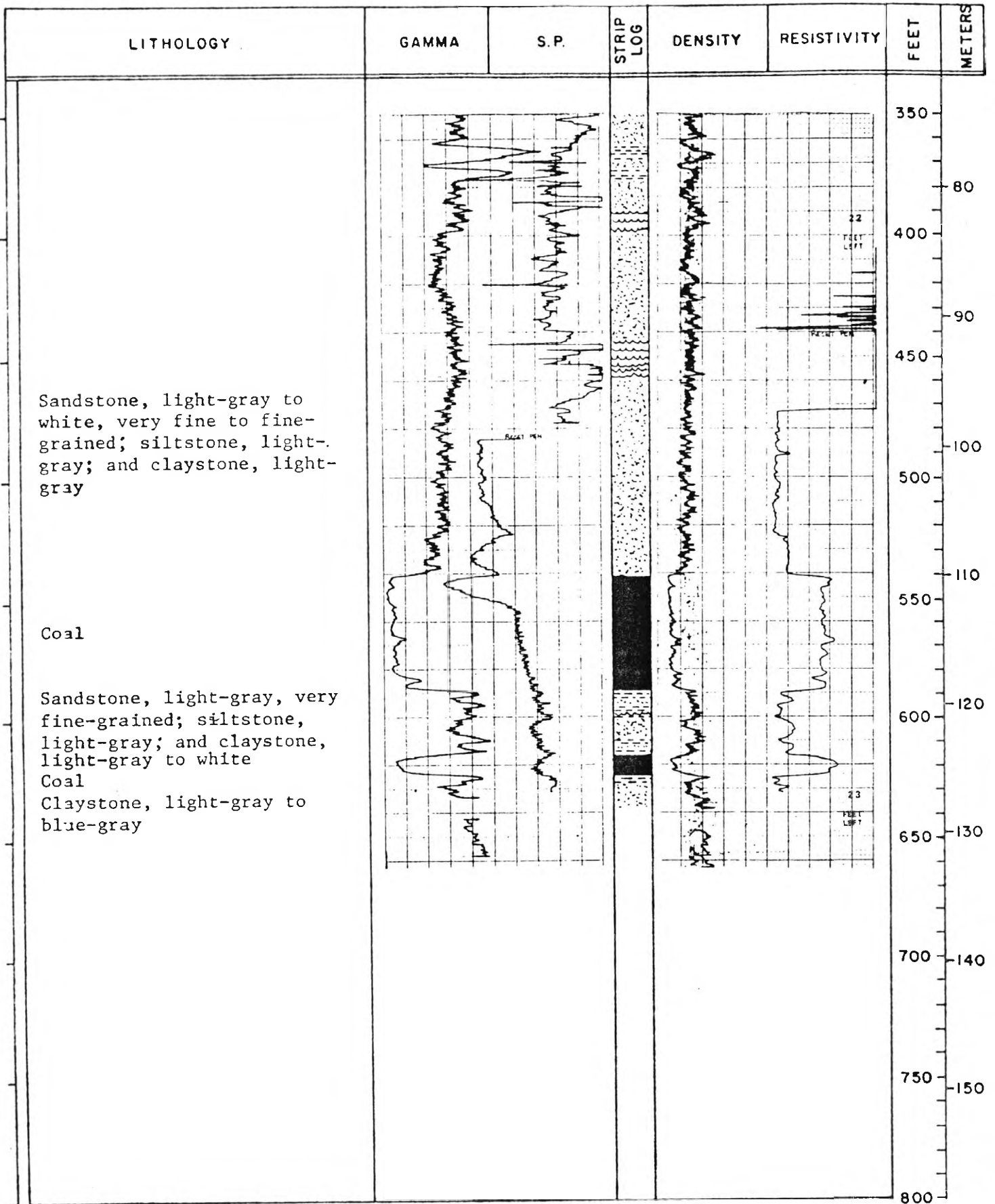
Hole No: US-7911 Map: Tongue River Dam Date: 4/10/79 State: Montana County: Big Horn
 Elev.: 4022 FT Location: T 7 ^N S R 40 ^E W, Sec 29 Tract CBCD Drilled depth 625 FT
 Measured: 1540 FT ^{RNK} FSL 360 ^{RNK} FT FWL FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☒ No ☐
 Remarks: Lost circulation at 580 to 590 ft. - no sample return. Cored interval 93 feet to 143 feet.

RECORDED BY <u>KENNETH WILLIAMS</u> GEOLOGIST		NO <u>YES</u>		RECORDED BY <u>KENNETH WILLIAMS</u>		RECORDING SPEED <u>20</u> FT MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>50</u>	RESISTIVITY SENS SETTING	DEPTH	
	LOGGED DEPTHS 612 FT FT			LOGGED DEPTHS 617 FT FT		FEET	METERS
Sandstone, tan to brown, very fine to fine-grained, ferruginous; siltstone, gray; and claystone, gray						50	0
Coal, with ^{gray} claystone, partings						0	10
Sandstone, light-gray, very fine grained; siltstone, light-gray to tan; and claystone, light-gray						50	20
Coal						100	30
Sandstone, light-gray, very fine to fine-grained; siltstone, gray, carbonaceous; and claystone, gray, carbonaceous						150	40
						200	50
						250	60
						300	70
						350	



Hole No: US-7912 Map: Half Moon Hill Date: 4/15/79 State: Montana County: Big Horn
 Elev.: 4011 FT Location: T 7 S R 39 E, Sec 35 Tract BACD Drilled depth 640 FT
 Measured: 1150 FT ^{FNL} ~~KXX~~ 1810 FT ^{FWL} ~~KXX~~ FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: First 80 ft. clinker - numerous hard zones, thereafter lost circulation.

RECORDED BY <u>KENNETH WILLIAMS</u> GEOLOGIST		NO KXX RECORDED BY <u>KENNETH WILLIAMS</u>		RECORDING SPEED <u>20</u> FT MIN		
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>250</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>50</u>	RESISTIVITY SENS SETTING <u>250</u>	DEPTH
	LOGGED DEPTHS 634 FT 631 FT			LOGGED DEPTHS 638 FT 631 FT		FEET
						METERS
Clinker						50 0
Sandstone, gray, very fine-grained; siltstone, light-gray, carbonaceous; and claystone, light-gray, carbonaceous						0 10 50 20 100 30 150 40 200 50 250 60 300 70 350 80
Coal						300 70 350 80



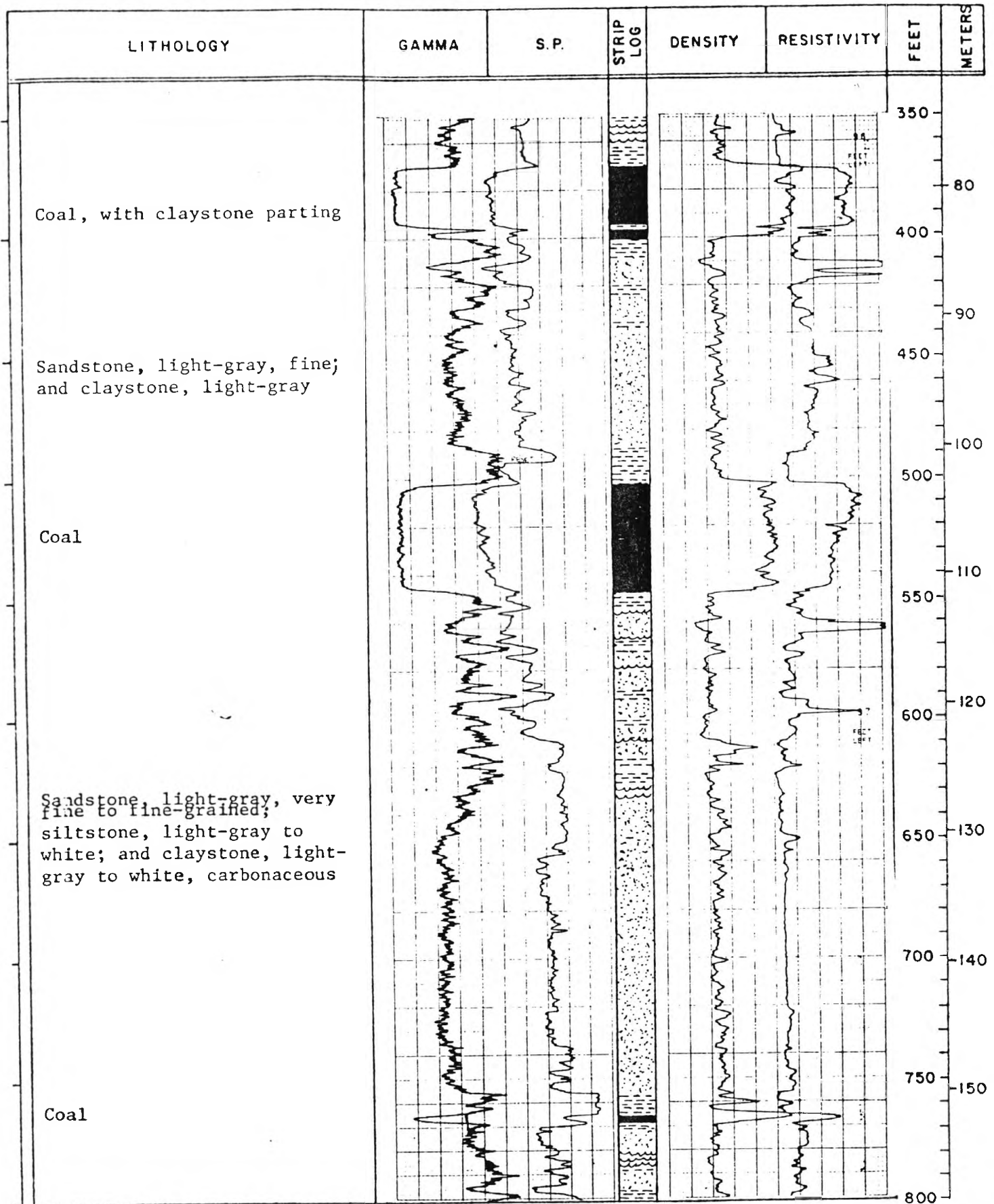
Hole No: US-7913 Map: Half Moon Hill Date: 4/16/79 State: Montana County: Big Horn
 Elev.: 3871 FT Location: T 8 ^N R 39 ^E W, Sec 2 Tract Irreg. Drilled depth 70 FT
 Measured: 4000 FT FSL 1500 FT ^{FEL} ~~XXX~~ FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Abandoned at 70 feet; lost circulation totally

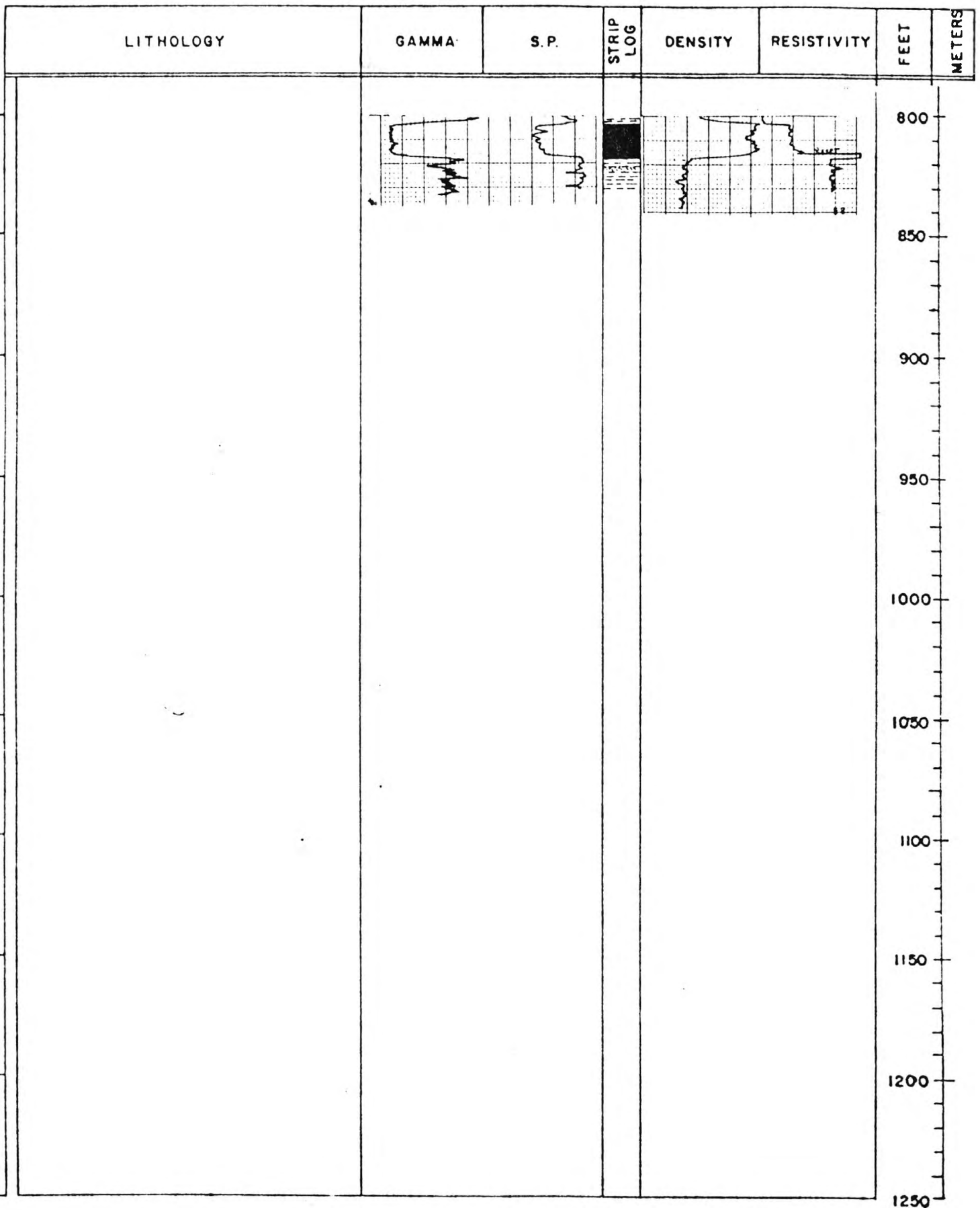
RECORDED BY <u>KENNETH WILLIAMS</u> GEOLOGIST		NO XXX RECORDED BY _____		RECORDING SPEED _____ FT MIN			
LITHOLOGY	GAMMA T.C. _____ RANGE _____	S P SENS SETTING _____	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING _____	DEPTH	
	LOGGED DEPTHS			LOGGED DEPTHS		FEET	METERS
	FT	FT		FT	FT		
Clinker						50	0
						0	10
						50	20
						100	30
						150	40
						200	50
						250	60
						300	70
						350	

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-7914 Map: Half Moon Hill Date: 4/17/79 State: Montana County: Big Horn
 Elev.: 4627 FT Location: T 7 ^N R 39 ^E, Sec 31 Tract DADC Drilled depth 840 FT
 Measured: 1375 FT ~~FSL~~ 500 FT ~~XXX~~ ^{FEL} FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

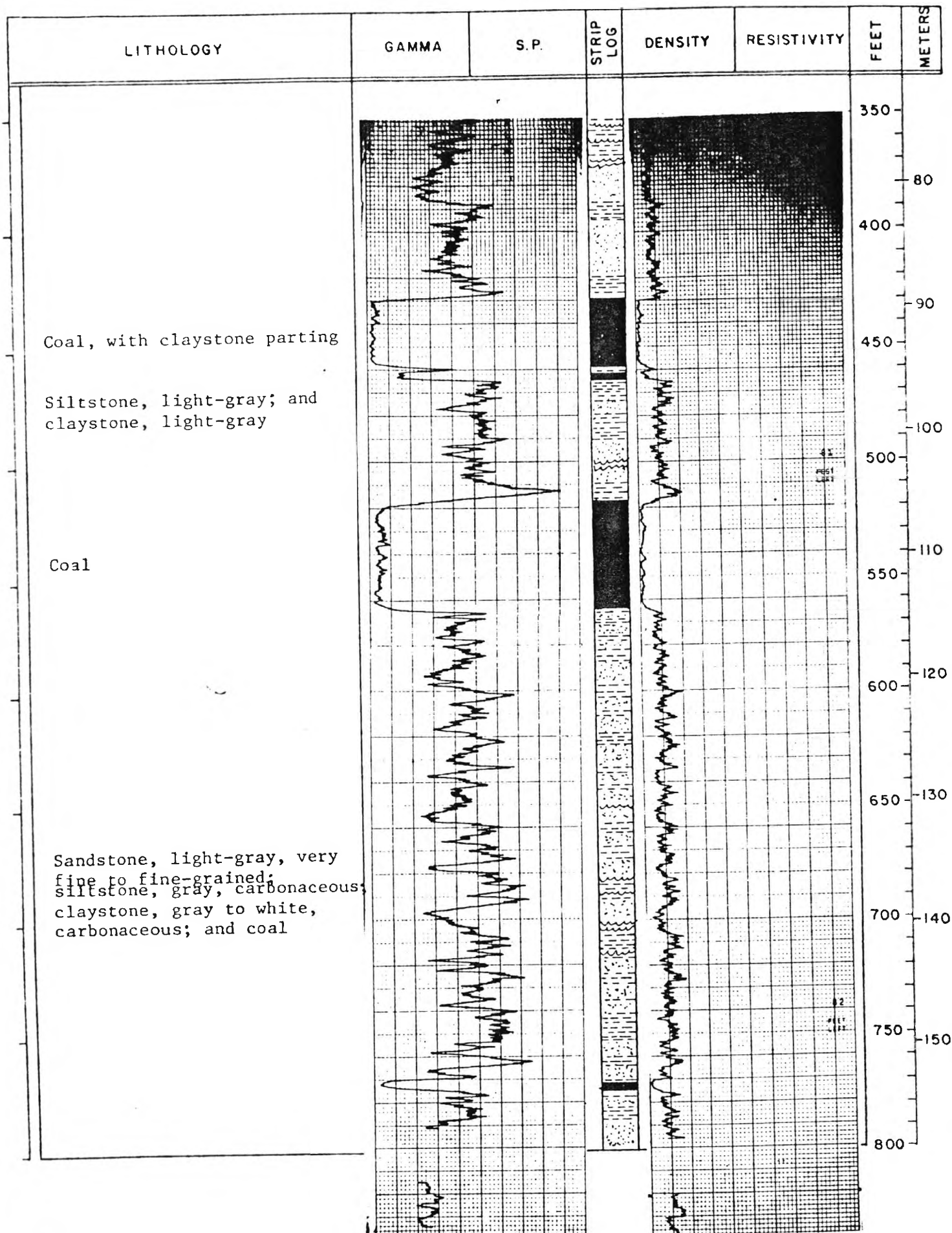
RECORDED BY <u>KENNETH WILLIAMS</u> GEOLOGIST		NO YES RECORDED BY <u>KENNETH WILLIAMS</u>		RECORDING SPEED <u>20</u> FT MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>250</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>250</u>
	LOGGED DEPTHS			LOGGED DEPTHS	
	833 FT.	831 FT.		838 FT.	831 FT.
					DEPTH FEET METERS
Sandstone, light-gray to tan, very fine-grained, ferruginous; siltstone, light-gray; and claystone, light-gray					0
Coal					10
Coal					20
Sandstone, light-gray, very fine-grained; siltstone, light-gray; and claystone, gray to dark-gray, carbonaceous					30
Coal					40
Sandstone, light-gray, very fine; and claystone, light-gray					50
Coal					60
					70
					80
					90
					100
					110
					120
					130
					140
					150
					160
					170
					180
					190
					200
					210
					220
					230
					240
					250
					260
					270
					280
					290
					300
					310
					320
					330
					340
					350
Sandstone, light-gray, very fine-grained; siltstone, light-gray; and claystone, gray to dark-gray, carbonaceous					
Coal					



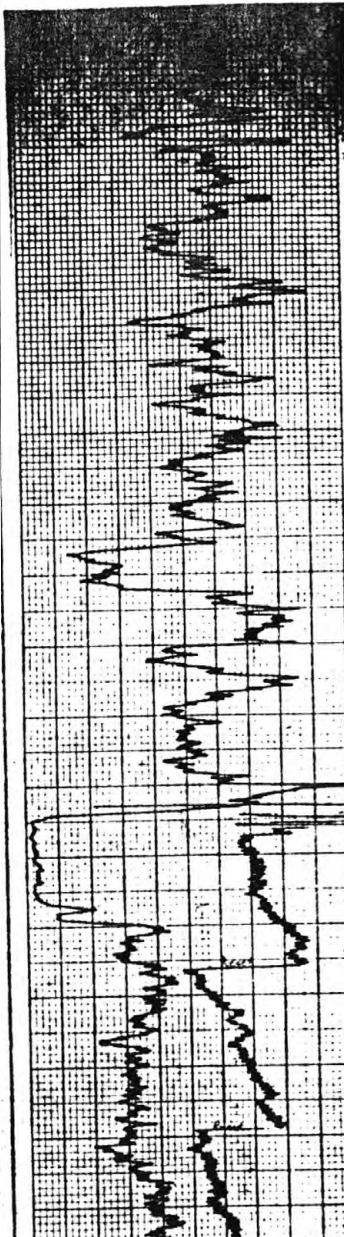

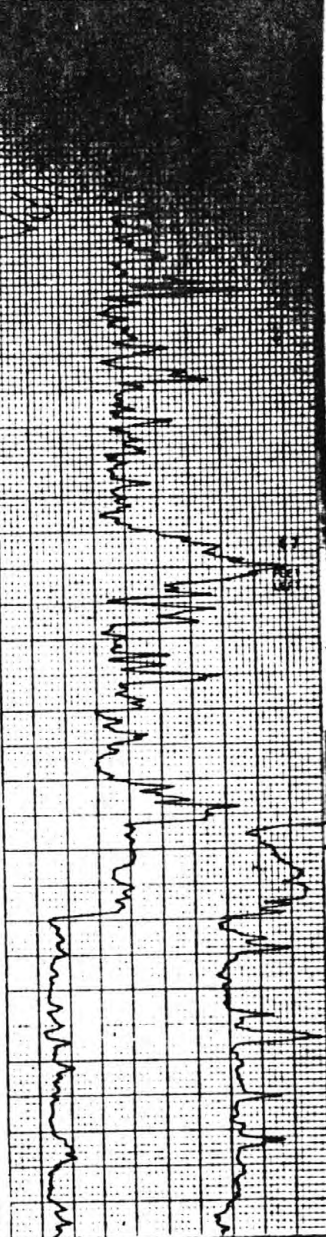
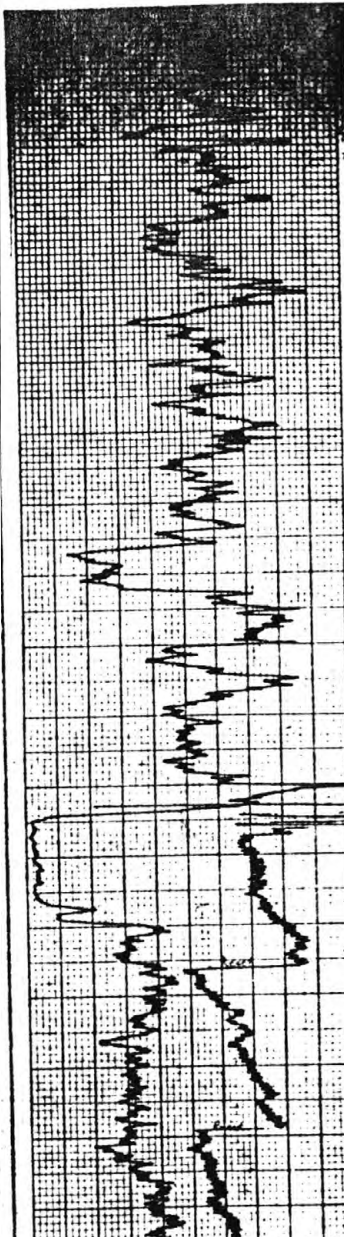

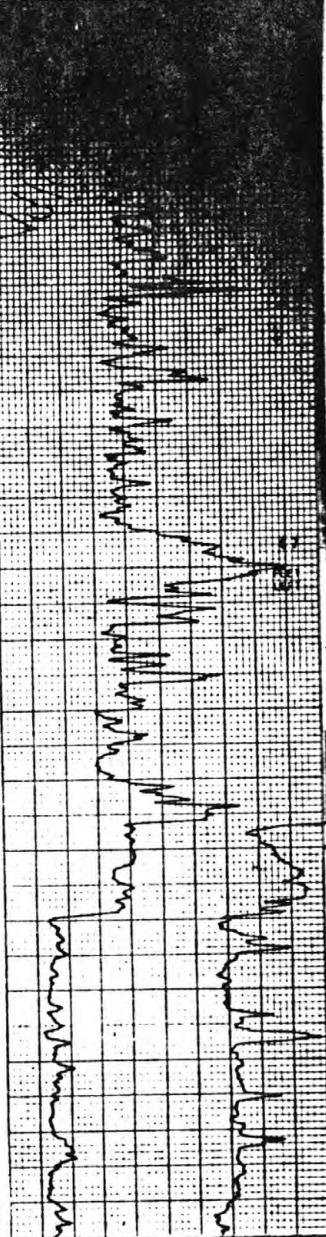
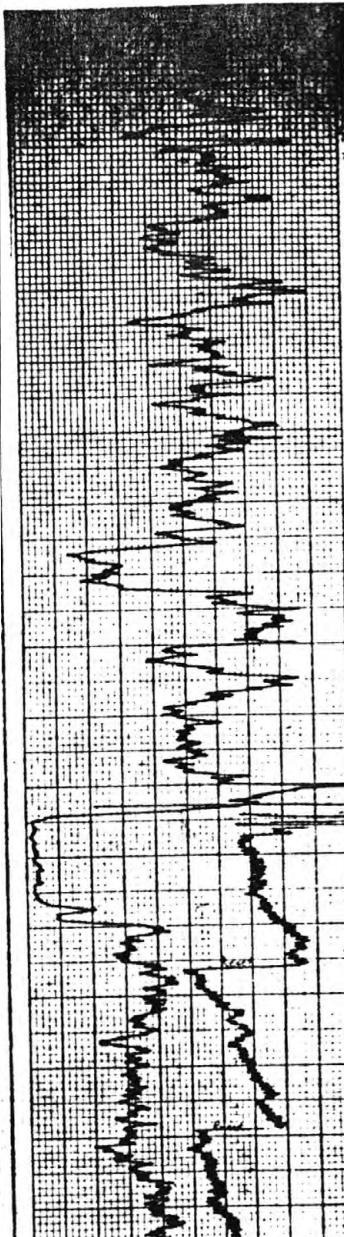

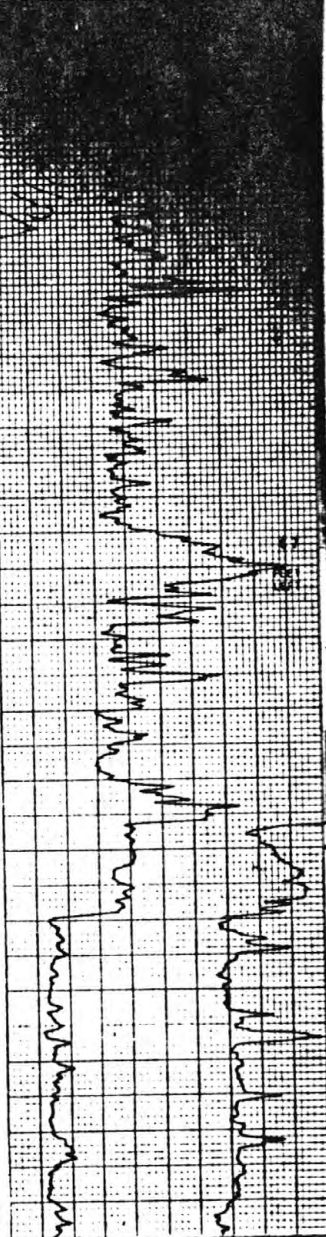


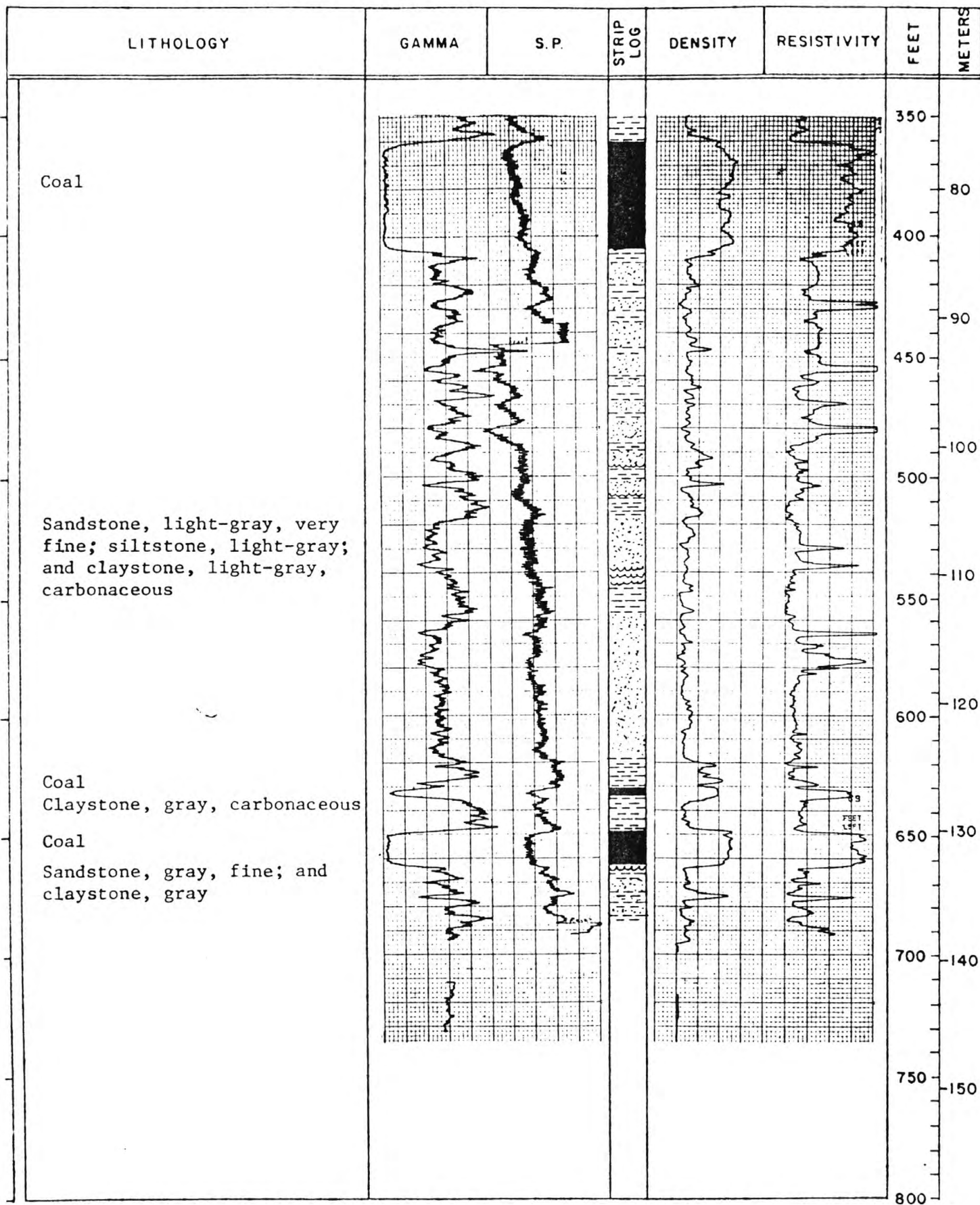
Hole No: US-7915 Map: Half Moon Hill Date: 4/18/79 State: Montana County: Big Horn
 Elev.: 4528 FT Location: T 7 S R 39 E, Sec 32 Tract DCDD Drilled depth 800 FT
 Measured: 216 FT ~~FSL~~ ^{KMK} 1360 FT ~~KMK~~ ^{FEL} FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Lost circulation, no return after 720 feet; logged through pipe. (no source on density)

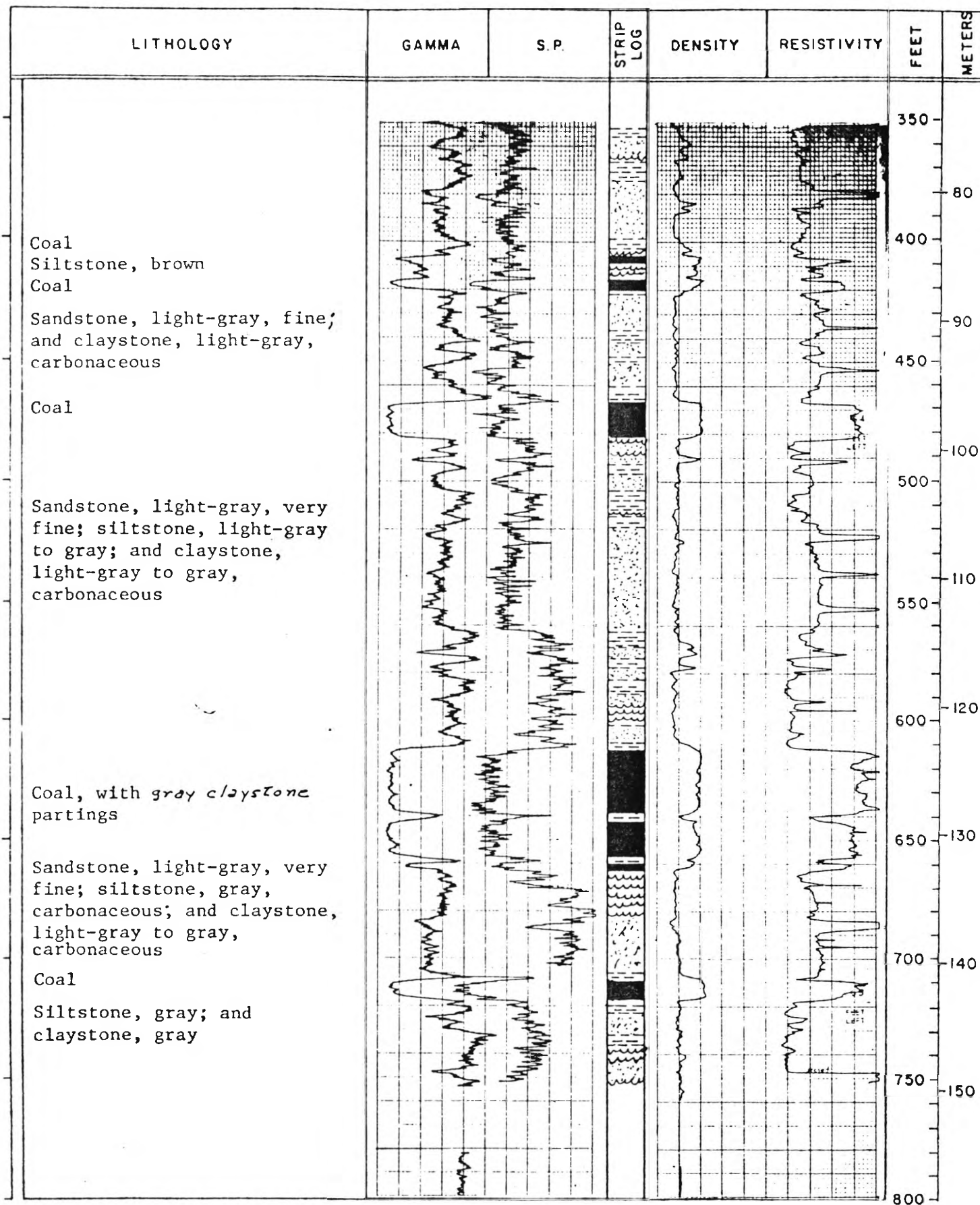
RECORDED BY <u>KENNETH WILLIAMS</u> GEOLOGIST		NO V88 RECORDED BY <u>KENNETH WILLIAMS</u>		RECORDING SPEED <u>20</u> FT MIN		
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>50</u>	RESISTIVITY SENS SETTING	DEPTH FEET METERS
	LOGGED DEPTHS 791 FT FT			LOGGED DEPTHS 796 FT FT		
Sandstone, light-gray to white, very fine; siltstone, tan to brown, ferruginous, local zones of calcareous; and claystone, gray, carbonaceous						50
Coal						0
Sandstone, light-gray, very fine and fine-grained; siltstone, light-gray; and claystone, gray, carbonaceous						50
Coal						100
Sandstone, light-gray, very fine and fine-grained; siltstone, light-gray; and claystone, gray, carbonaceous						150
Coal						200
Sandstone, light-gray, very fine and fine-grained; siltstone, light-gray; and claystone, gray, carbonaceous						250
Coal						300
Sandstone, light-gray, very fine and fine-grained; siltstone, light-gray; and claystone, gray, carbonaceous						350
Coal						



Hole No: US-7916 Map: Half Moon Hill Date: 4/26/79 State: Montana County: Big Horn
 Elev.: 4337 FT Location: T 8 S R 39 E, Sec 5 Tract Irreg. Drilled depth 720 FT
 Measured: 2150 FT ^{FNL} XXX 2175 FT ^{RKX} FWL FT. Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☒ No ☐
 Remarks: Cored interval 228 feet to 263 feet.

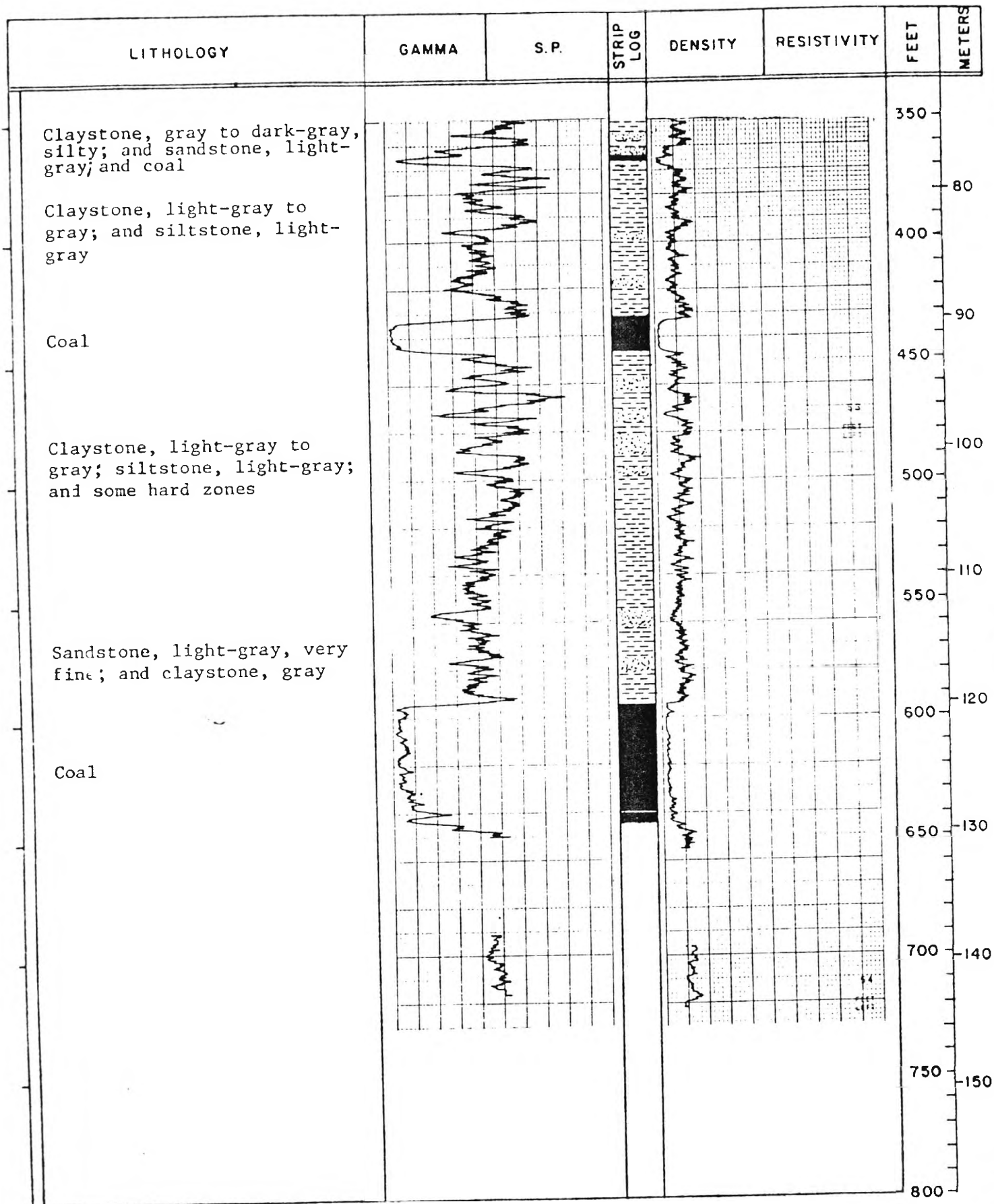
RECORDED BY <u>KENNETH WILLIAMS</u> GEOLOGIST		NO <u>XXX</u> RECORDED BY <u>KENNETH WILLIAMS</u>		RECORDING SPEED <u>20</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS. SETTING	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>5K</u>	RESISTIVITY SENS. SETTING	DEPTH	
	LOGGED DEPTHS			LOGGED DEPTHS		FEET	METERS
	694 FT.	FT.		699 FT	FT		
Sandstone, tan to brown, very fine to fine, ferruginous; siltstone, light-gray, ferruginous; and claystone, light-gray, ferruginous						50	0
Coal						0	10
Sandstone, gray, very fine; siltstone, light-gray, carbonaceous; and claystone, light to dark-gray, carbonaceous						50	20
Coal						100	3
Sandstone, light-gray, very fine; siltstone, light-gray; and claystone, light to dark-gray, carbonaceous						150	4
Coal						200	5
Sandstone, gray, very fine, locally calcareous; and claystone, gray						250	6
						300	
						350	





Hole No: US-7918 Map: Half Moon Hill Date: 4/30/79 State: Montana County: Big Horn
Elev.: 4140 FT Location: T 7 ^N R 39 ^E, Sec 33 Tract ACBA Drilled depth 660 FT
Measured: 1350 FT ^{FNL} ~~2190~~ FT ^{FEL} ~~2190~~ FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
Remarks: Lost circulation at 595 feet no returns after 590 feet - logged through pipe.

RECORDED BY		KENNETH WILLIAMS	GEOLOGIST	NO XXX	RECORDED BY		KENNETH WILLIAMS	RECORDING SPEED	20	FT MIN
LITHOLOGY			GAMMA		S P		DENSITY	RESISTIVITY	DEPTH	
			T.C.	RANGE		SENS SETTING	TC	RANGE	SENS SETTING	FEET
			650 FT		FT.		STRIP LOG		655 FT FT	
Regolith									50 - 0	
Sandstone, tan, very fine grained; and claystone, tan to red									0 - 50	
Clinker									50 - 100	
Sandstone, light-gray, very fine grained; siltstone, gray to light-gray; and claystone, dark-gray to gray									100 - 200	
Sandstone, light-gray to white, very fine grained; claystone, gray to light-gray, very silty									200 - 350	



Hole No: US-7919 Map: Half Moon Hill Date: 5/1/79 State: Montana County: Big Horn
 Elev.: 3996 FT Location: T 8 S R 39 E, Sec 3 Tract Irreg. Drilled depth 110 FT
 Measured: 3220 FT ^{FNL} ~~XXX~~ 1960 FT ^{FWL} ~~XXX~~ FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Total circulation lost, hole abandoned, no logs.

RECORDED BY <u>KENNETH WILLIAMS</u> GEOLOGIST		NO XXX		RECORDED BY <u>KENNETH WILLIAMS</u>		RECORDING SPEED <u>20</u> FT. MIN				
LITHOLOGY	GAMMA		S P		DENSITY		RESISTIVITY		DEPTH	
	T.C. _____		SENS SETTING _____		T.C. _____		SENS SETTING _____		FEET	METERS
	RANGE _____		RANGE _____		RANGE _____		RANGE _____			
LOGGED DEPTHS		LOGGED DEPTHS		STRIP LOG	LOGGED DEPTHS		LOGGED DEPTHS			
FT. FT.		FT. FT.			FT. FT.		FT. FT.			
Regolith, brown									50	0
Clinker									0	10
								50	20	
								100	30	
								150	40	
								200	50	
								250	60	
								300	70	
								350		

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

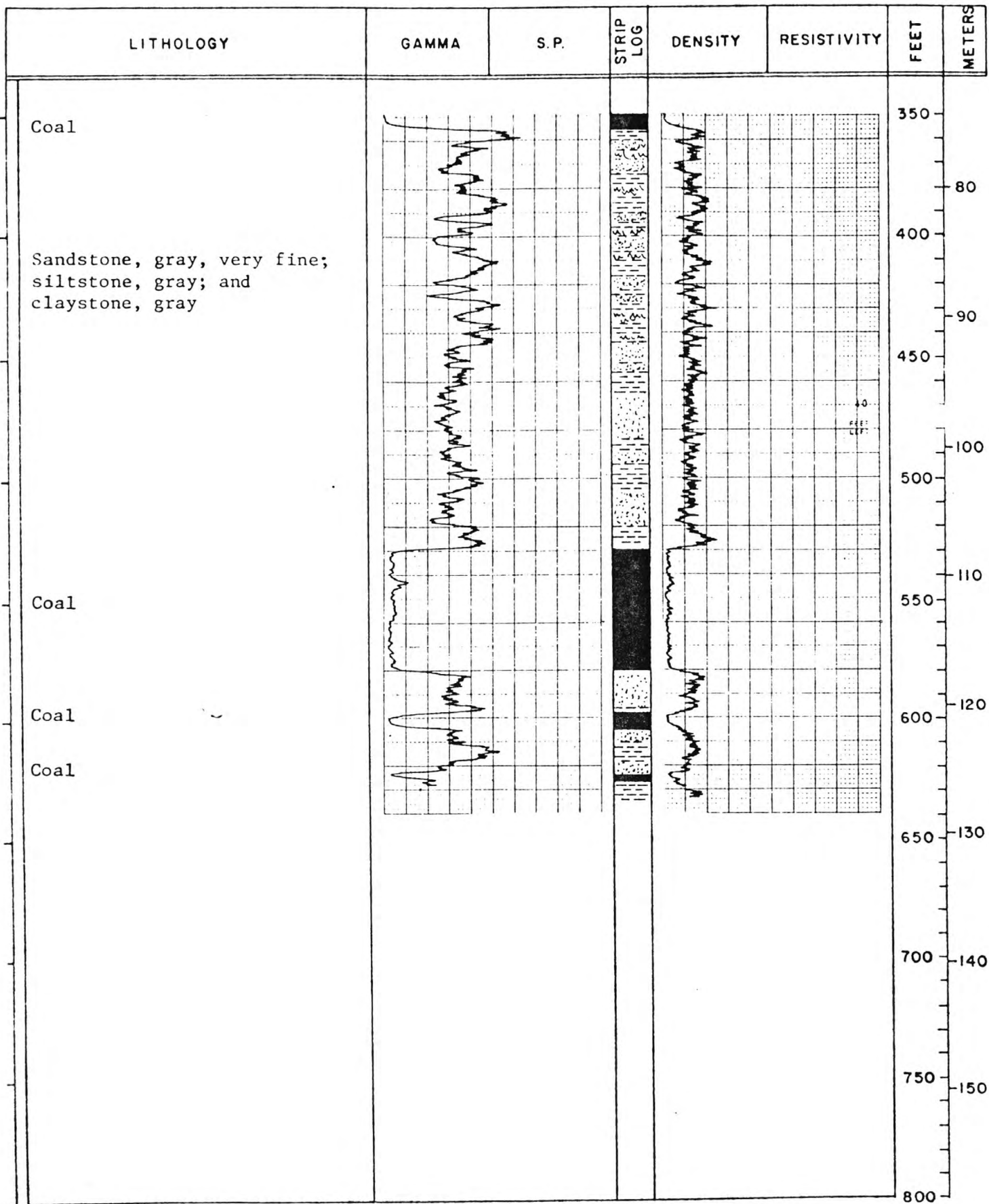
Hole No: US-7920 Map: Half Moon Hill Date: 5/10/79 State: Montana County: Big Horn
 Elev: 4163 FT Location: T 8 S R 39 W, Sec 4 Tract Irreg. Drilled depth 360 FT
 Measured: 2950 FT ~~KNK~~ FSL 825 FT ~~KNK~~ FEL KNK FT. Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Hit a void at 350 feet - total loss of circulation.

RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST NO YES		RECORDED BY <u>KENNETH WILLIAMS</u>		RECORDING SPEED <u>20</u> FT MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING	DENSITY T.C. <u>2</u> RANGE <u>5K</u>	RESISTIVITY SENS SETTING	DEPTH
	LOGGED DEPTHS 295 FT FT.		LOGGED DEPTHS 300 FT FT.		FEET METERS
Regolith					50 0
Sandstone, light-brown and gray, fine-grained, carbonaceous; and claystone, light-brown					0 10
Sandstone, light-gray, fine-to medium-grained; and claystone, gray					50 2
Coal					100 3
Sandstone, light-brown, fine-grained, altered by burn; siltstone, tan to brown; and claystone, gray					150 4
					200 5
					250 6
					300 7
					350 8

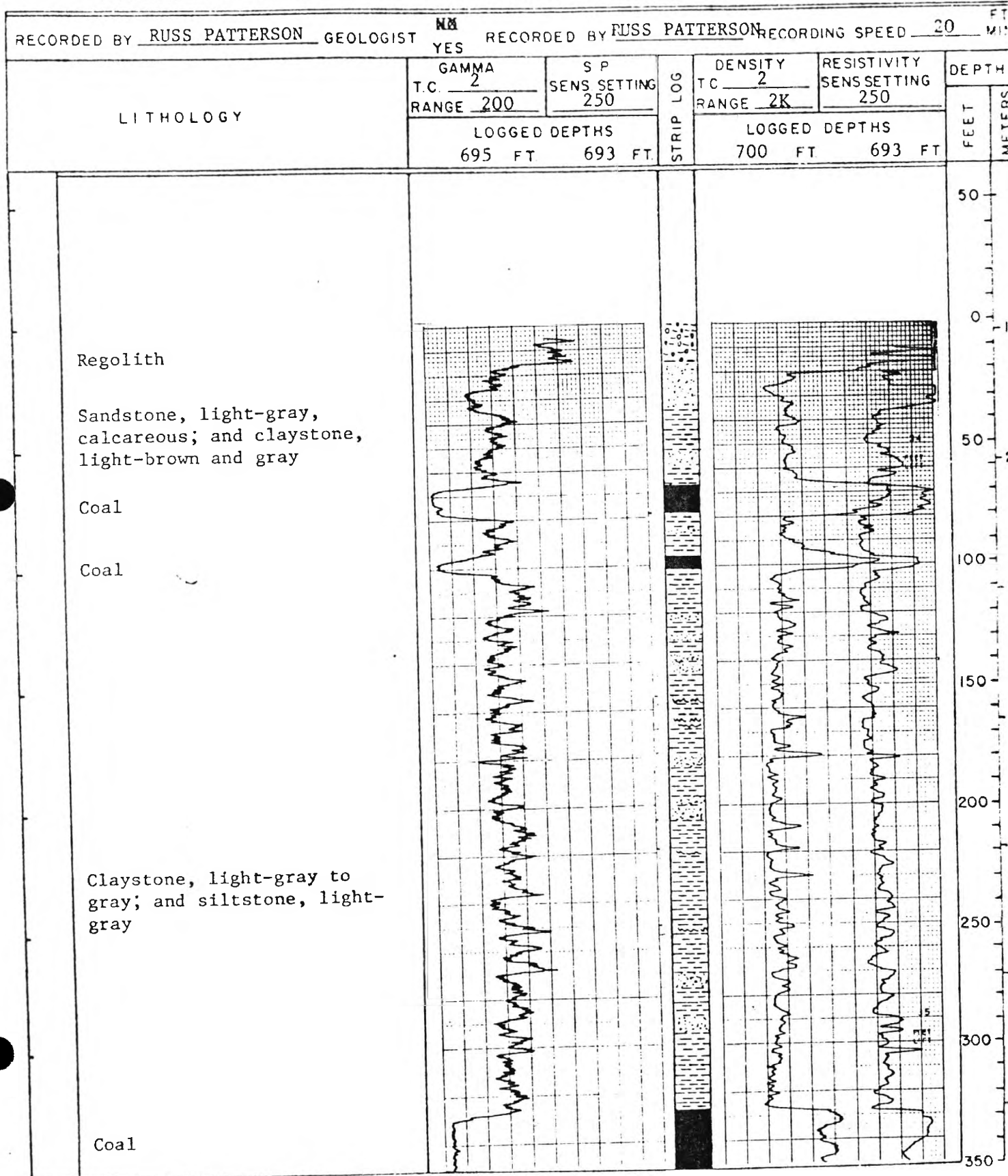
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

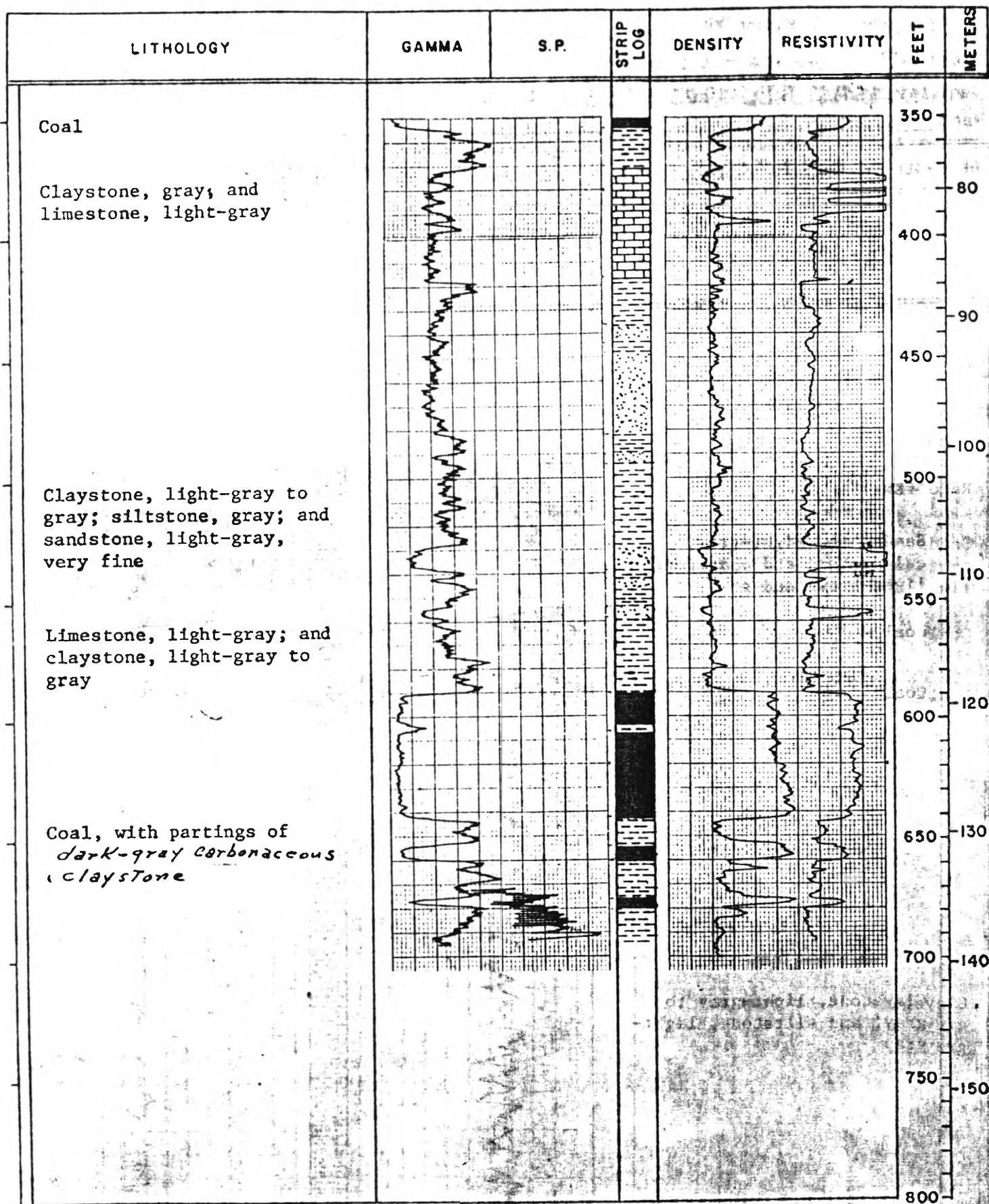
Hole No: US-7921 Map: Kirby Date: 5/11/79 State: Montana County: Big Horn
 Elev.: 4469 FT Location: T 6^N R 39^E W, Sec 10 Tract DAAA Drilled depth 640 FT
 Measured: 2335 FT FSL 240 FT ~~FEL~~ FT. Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Density probe ran without source.

RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST <input checked="" type="checkbox"/>		RECORDED BY <u>KENNETH WILLIAMS</u> <input checked="" type="checkbox"/>		RECORDING SPEED <u>20</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>50</u>	RESISTIVITY SENS SETTING	DEPTH	
	LOGGED DEPTHS 628 FT FT.			LOGGED DEPTHS 633 FT FT.		FEET	METERS
	Sandstone, light-gray, very fine; siltstone, gray; and claystone, gray						50
Coal						0	10
Coal..						50	20
Sandstone, light-gray, very fine; siltstone, gray; and claystone, gray						100	30
Coal						150	40
Sandstone, gray, very fine; and claystone, gray						200	50
						250	60
						300	70
Coal						350	

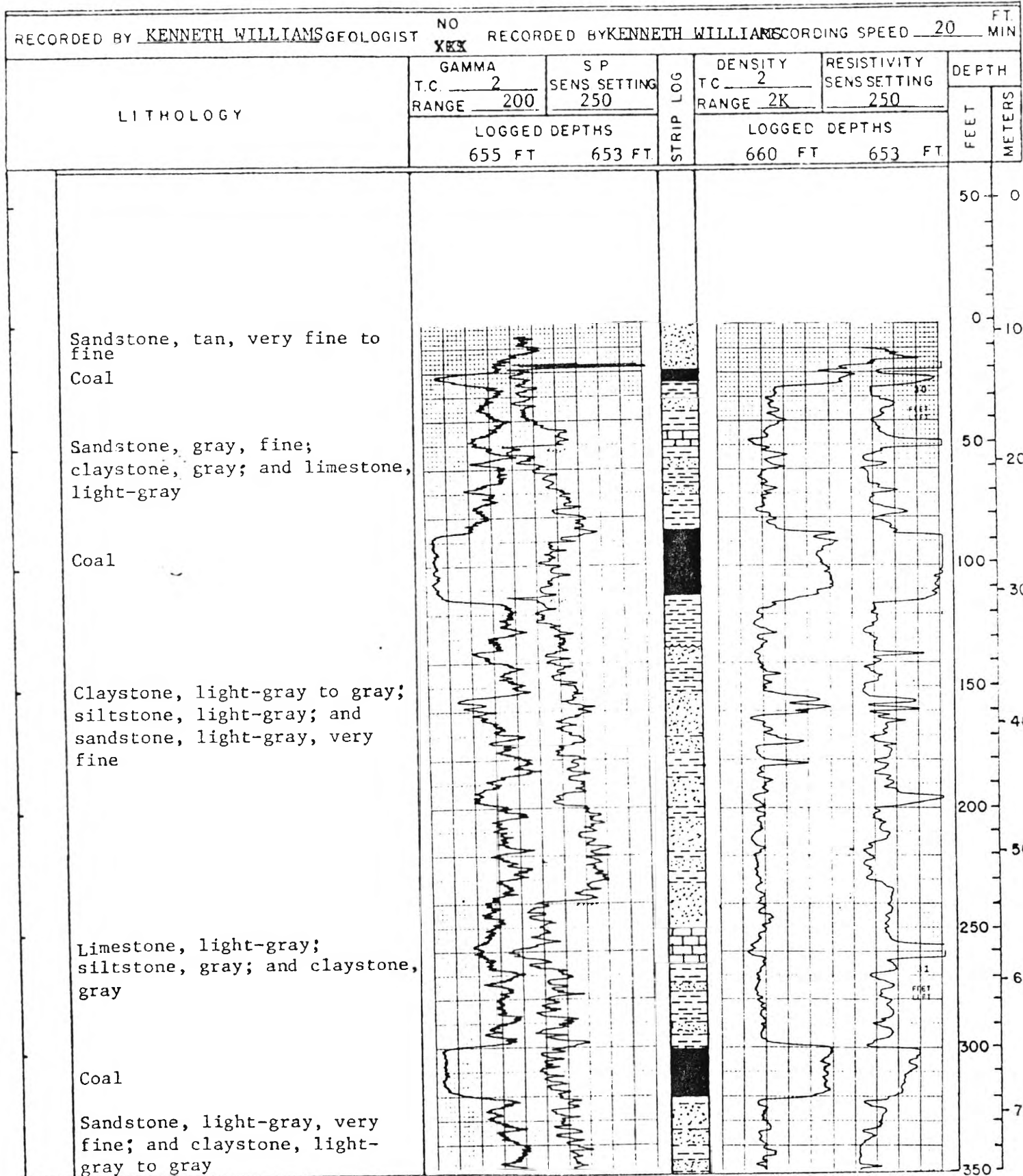


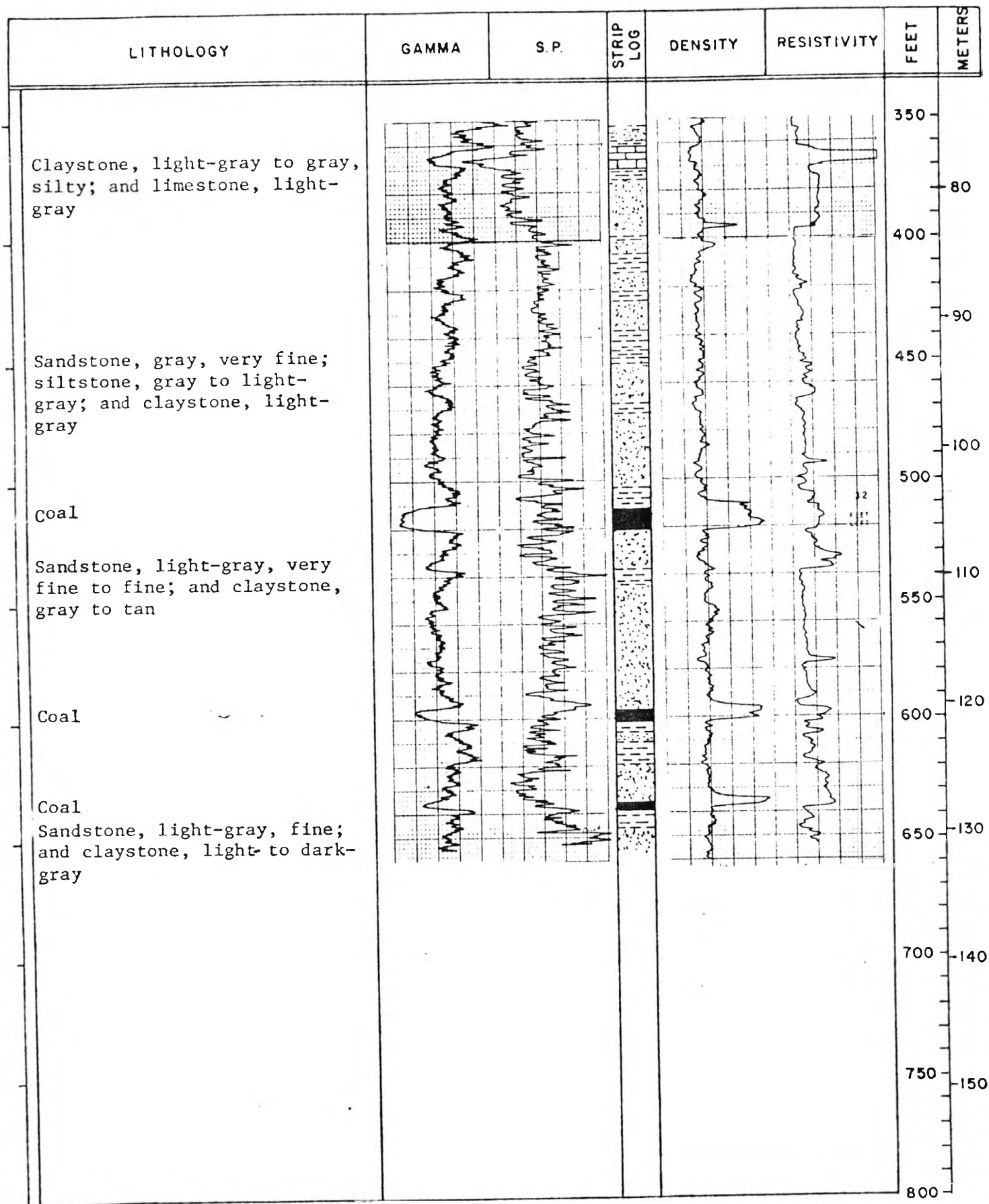
Hole No. US-7922 Map Kirby Date: 5/13/79 State: Montana County: Big Horn
 Elev.: 4477 FT Location: T 6 ^N R 39 ^E W, Sec 3 Tract CBDA Drilled depth 700 F
 Measured: 1490 FT ~~XXXX~~ FSL 1010 FT ~~XXXX~~ FWL FT. Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No
 Remarks:



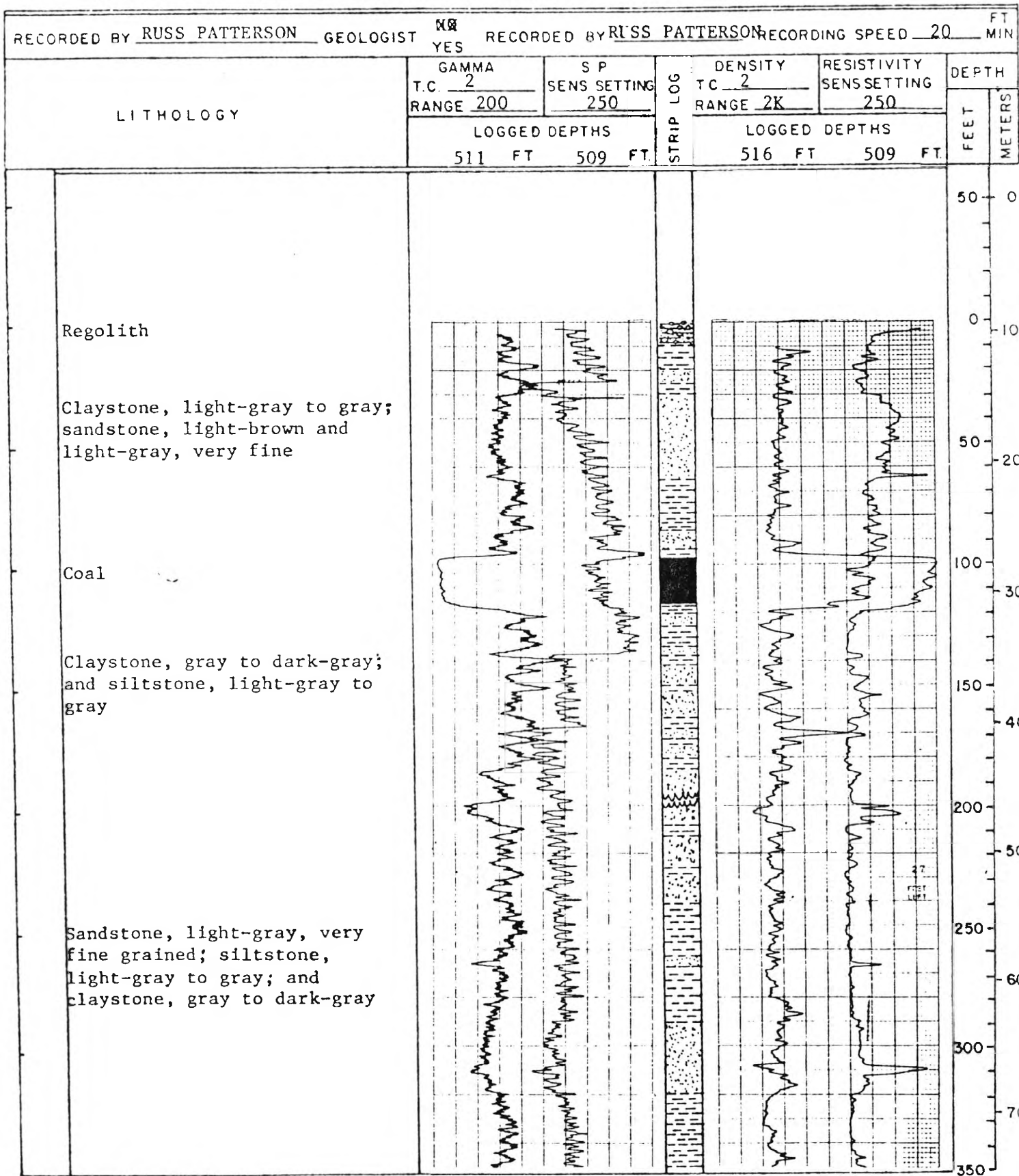


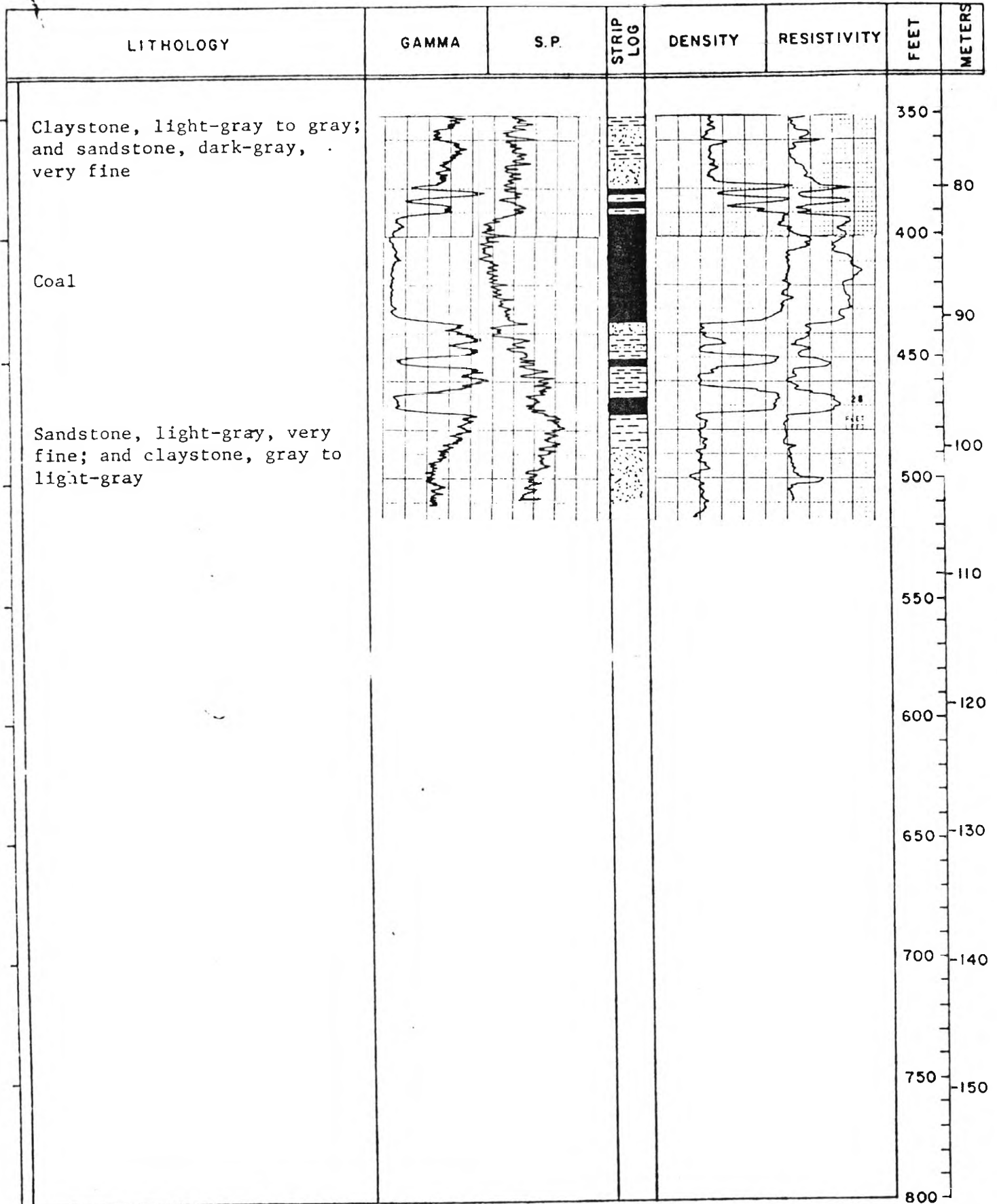
Hole No: US-7923 Map: Spring Creek Ranch Date: 5/14/79 State: Montana County: Big Horn
 Elev: 4420 FT Location: T 6 S R 39 E, Sec 30 Tract BBCA Drilled depth 660 FT
 Measured: 950 FT FNL KXX 510 FT FWL KXX FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____





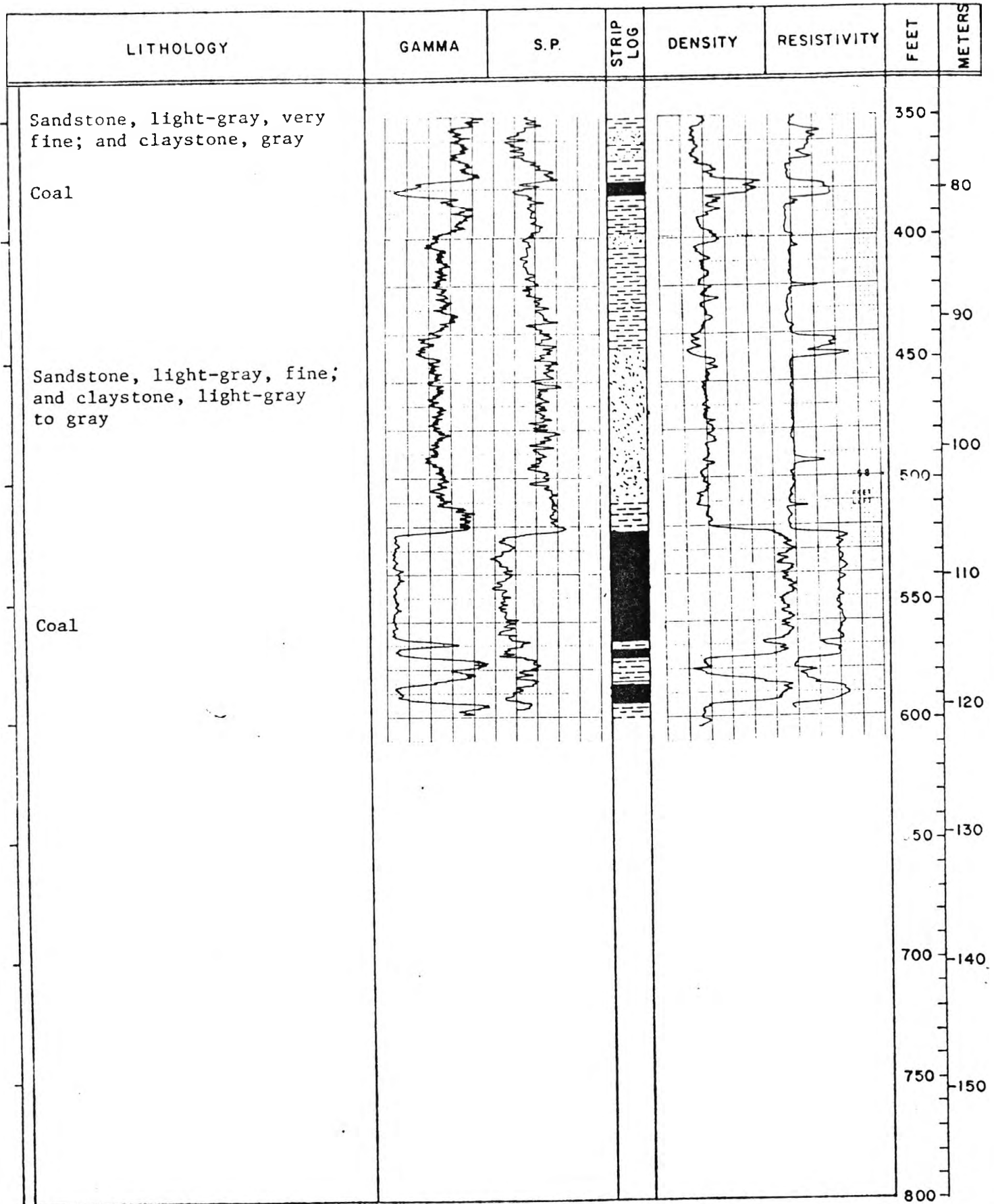
Hole No: US-7924 Map: Spring Creek Ranch Date: 5/14/79 State: Montana County: Big Horn
 Elev: 4345 FT Location: T 6 S R 39 E, Sec 30 Tract DBBB Drilled depth 520 FT
 Measured: 2625 FT ^{FNL} ~~X88~~ 2625 FT ^{RKX} ~~FWL~~ FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



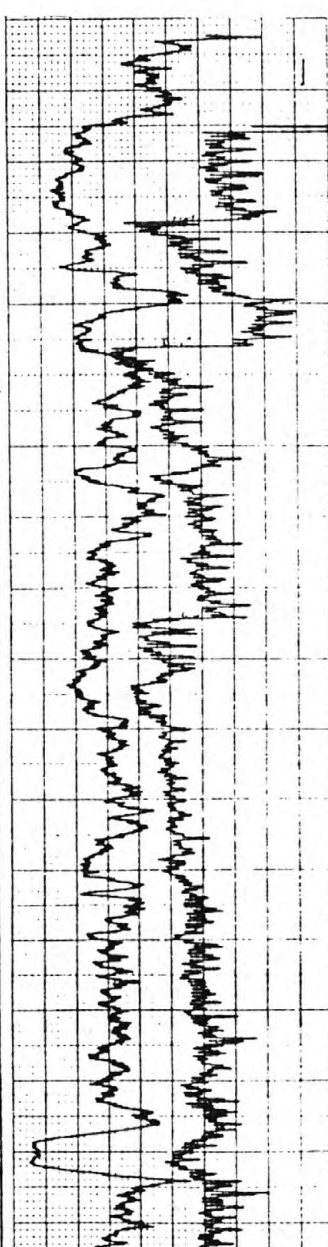
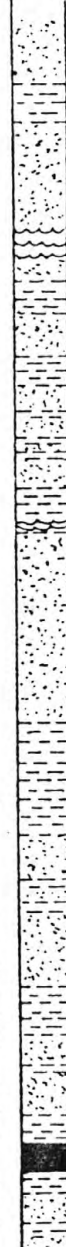
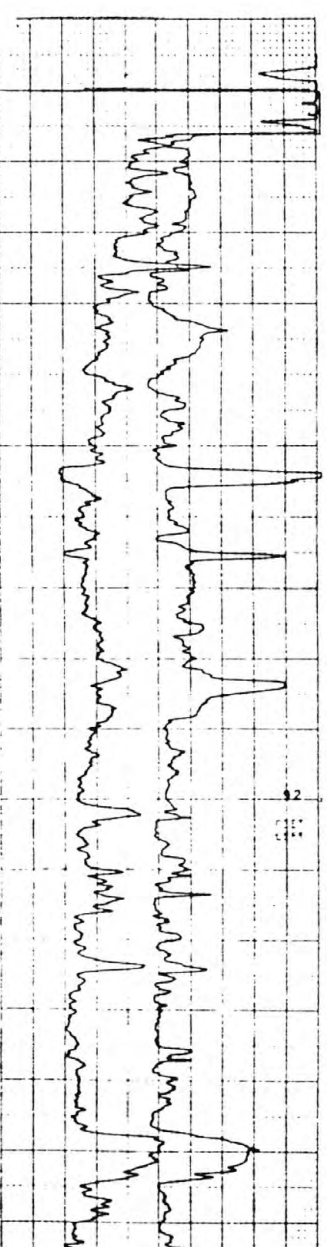


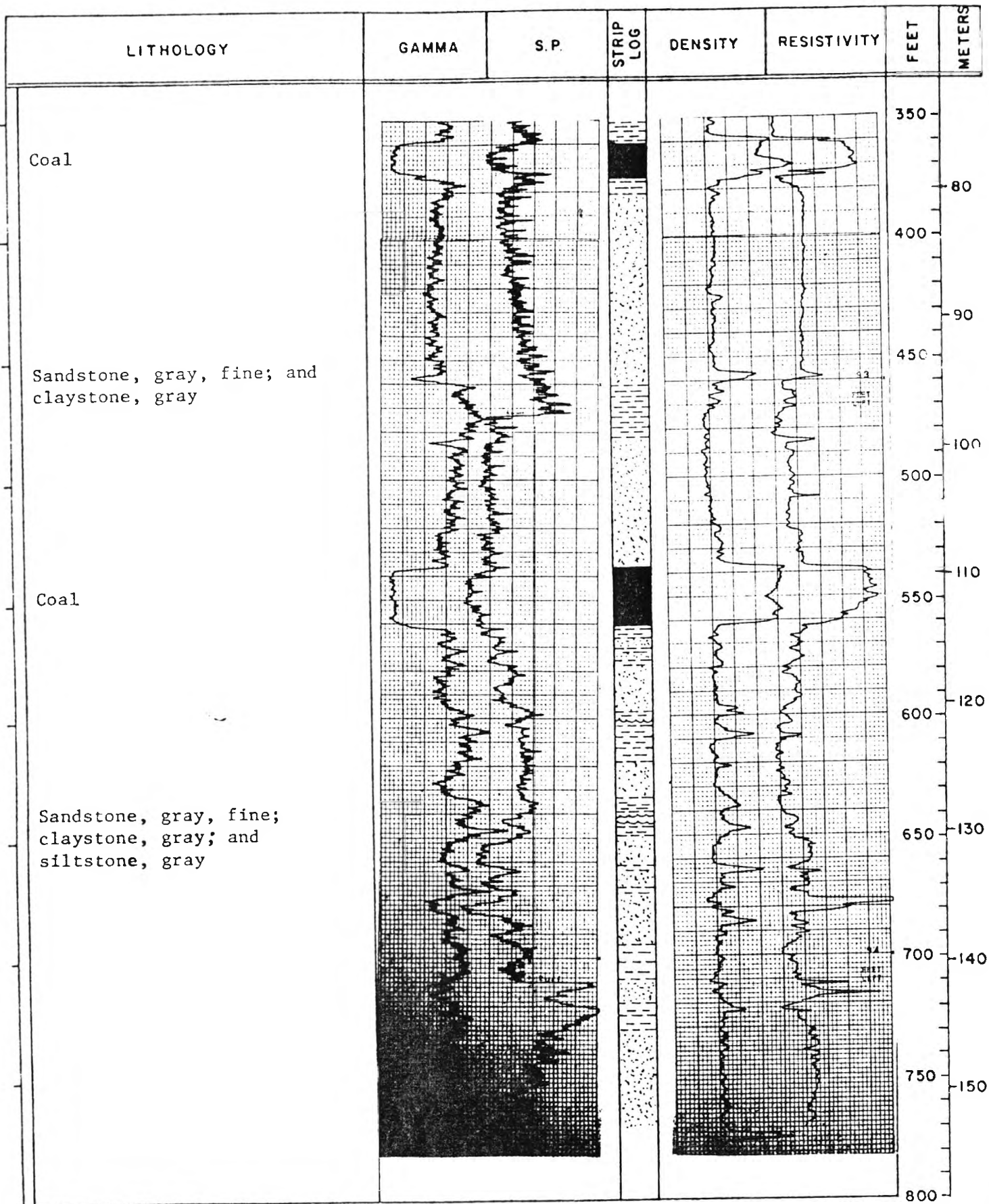
Hole No: US-7925 Map: Kirby Date: 5/15/79 State: Montana County: Big Horn
 Elev.: 4422 FT Location: T 7 S R 39 E Sec 10 Tract BBBD Drilled depth 610 FT
 Measured: 574 FT FNL 589 FT FWL 589 FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST		RECORDED BY <u>KENNETH WILLIAMS</u>		RECORDING SPEED <u>20</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>250</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>1K</u>	RESISTIVITY SENS SETTING <u>250</u>	DEPTH	
	LOGGED DEPTHS <u>599</u> FT. <u>597</u> FT.			LOGGED DEPTHS <u>604</u> FT. <u>597</u> FT.		FEET	METERS
	Sandstone, light-brown, very fine; and claystone, light-brown						50
Coal						50	20
Sandstone, light-gray, very fine; and claystone, light-gray to gray						100	30
Coal						150	40
Sandstone, light-gray, very fine; and claystone, light-gray to gray, some carbonaceous						200	50
Coal						250	60
						300	70
						350	

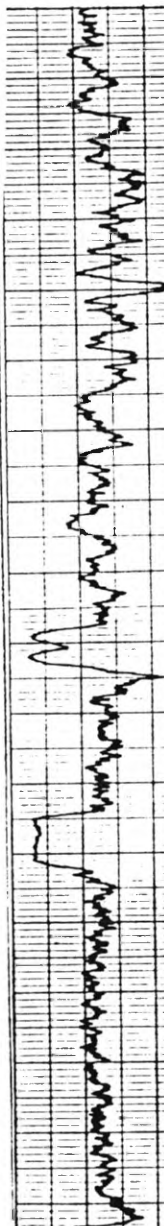
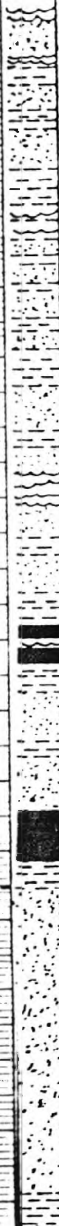
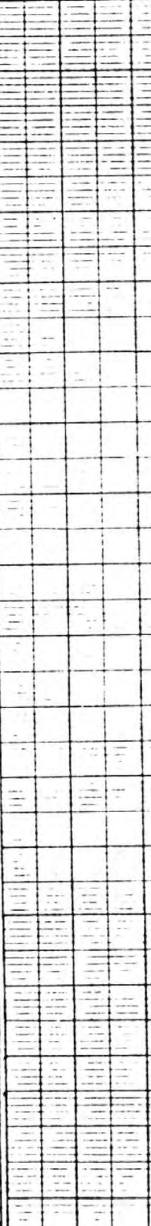
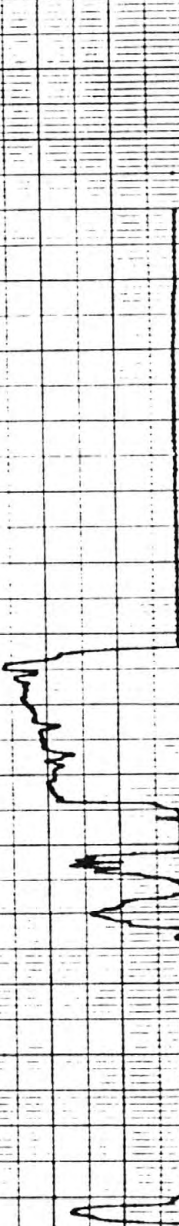

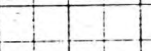
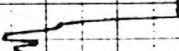


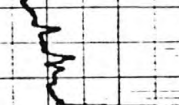
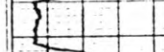
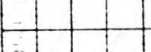






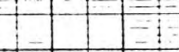
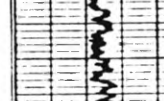



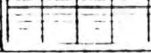
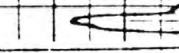
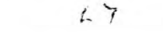




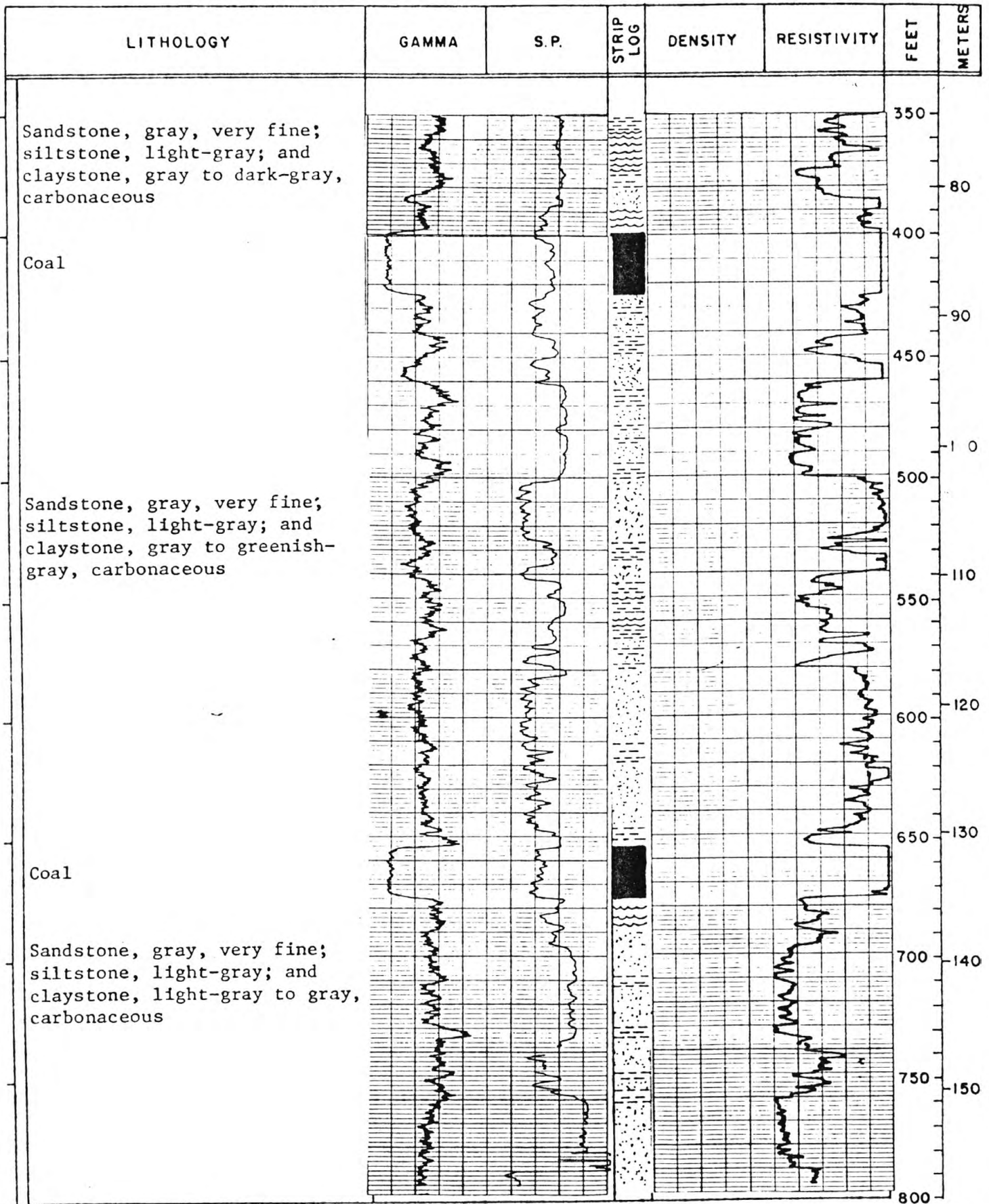
Hole No: US-7926 Map: Kirby Date: 5/16/79 State: Montana County: Big Horn
 Elev: 4608 FT Location: T 7 S R 39 E, Sec 2 Tract AAAD Drilled depth 780 FT
 Measured: 400 FT ~~FNL~~ 150 FT ~~FEL~~ RWL FT. Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NO YES		RECORDED BY <u>KENNETH WILLIAMS</u>		RECORDING SPEED <u>20</u> FT MIN		
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>250</u>	STRIP LOG	DENSITY TC <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>250</u>	DEPTH
	LOGGED DEPTHS <u>774</u> FT <u>772</u> FT.			LOGGED DEPTHS <u>779</u> FT <u>772</u> FT.		FEET METERS
Sandstone, brown, ferruginous; and siltstone, brown, ferruginous						50 0
						0 10
Sandstone, gray, very fine; siltstone, gray, carbonaceous; and claystone, gray, carbonaceous						50 20
						100 30
						150 40
						200 50
						250 60
						300 70
Coal Sandstone, gray, fine, carbonaceous; and claystone, gray, carbonaceous						350

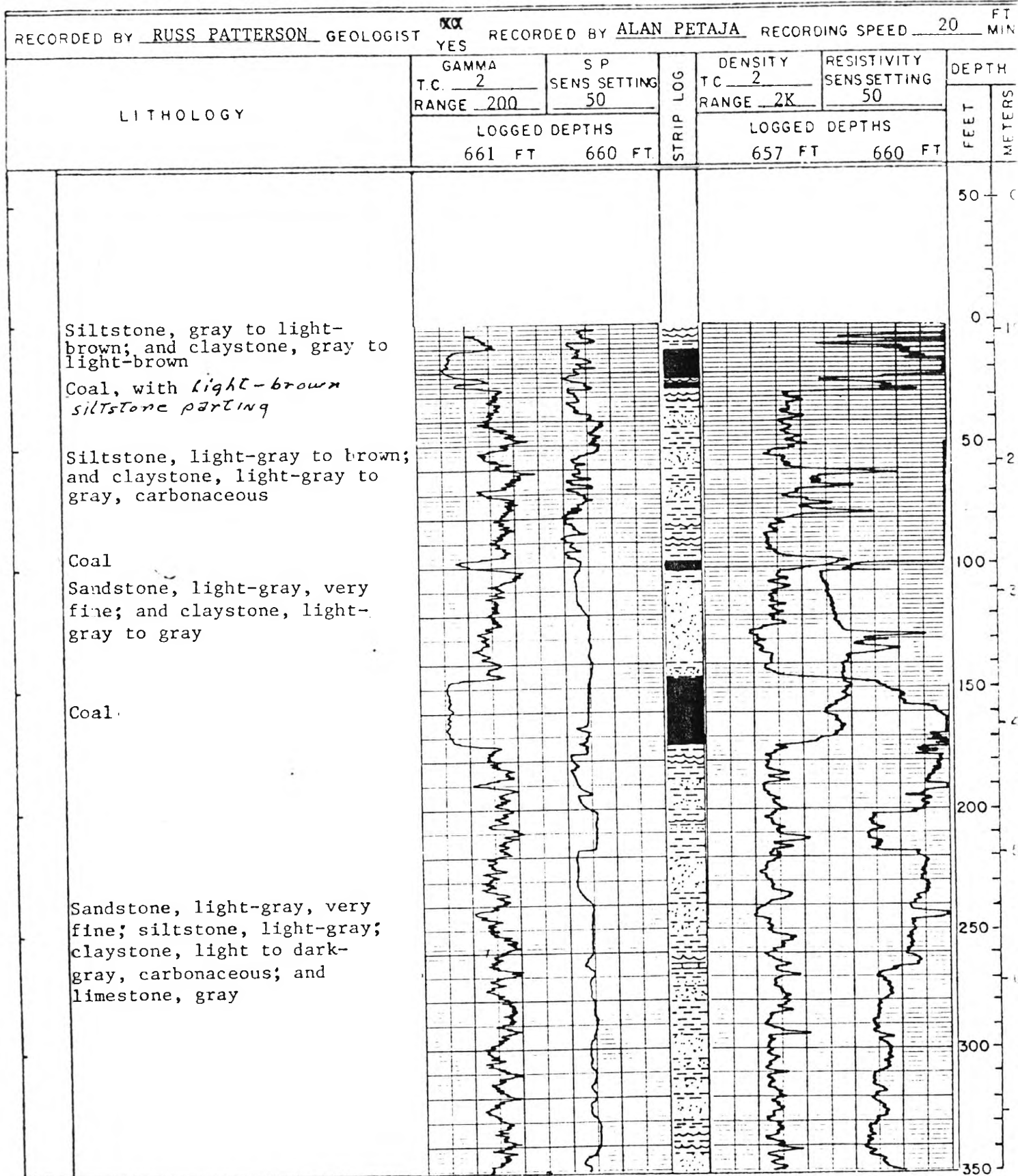


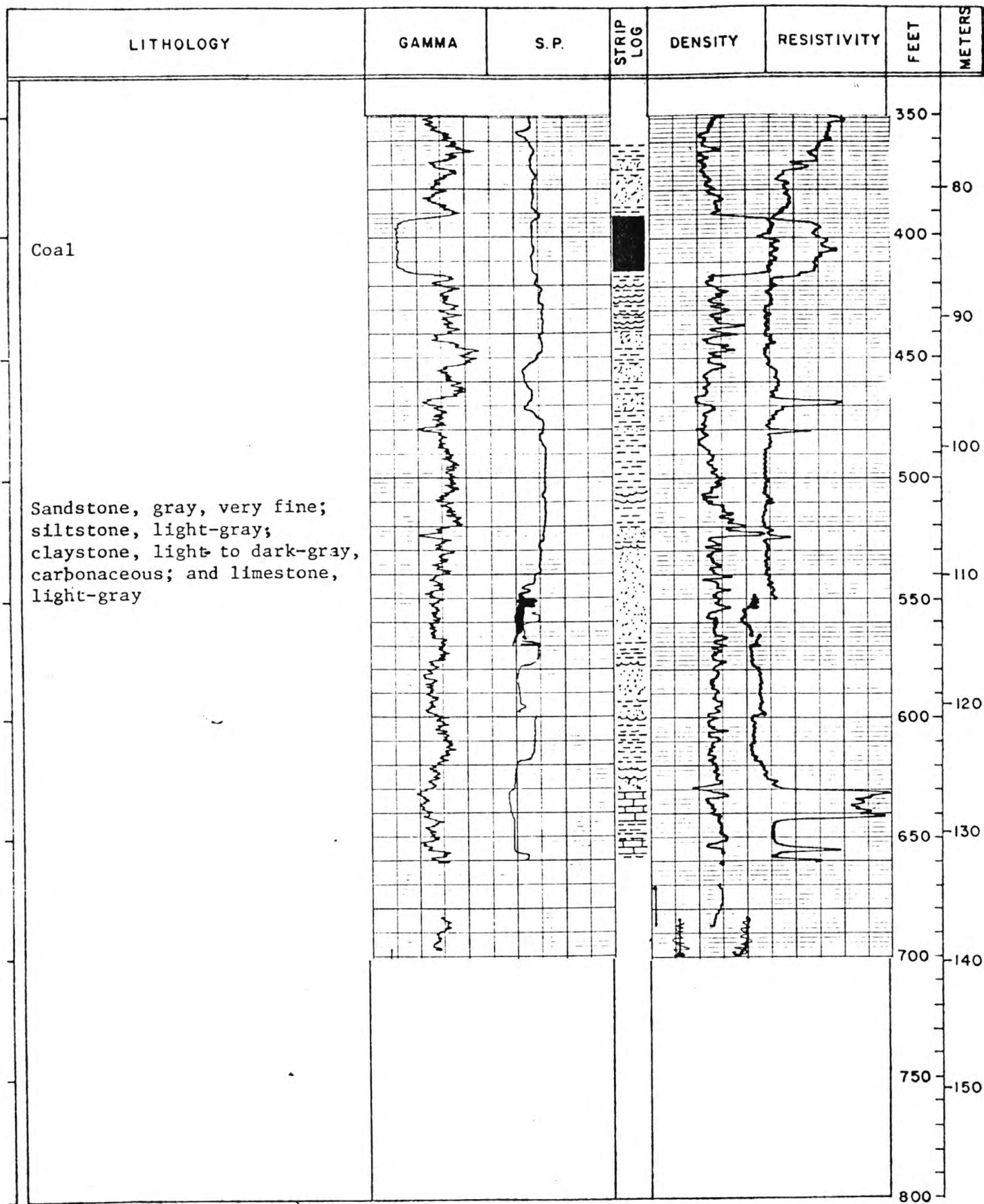
Hole No: US-7927 Map: Kirby Date: 5/22/79 State: Montana County: Big Horn
Elev: 4724 FT Location T 6 S R 39 E, Sec 35 Tract DDBD Drilled depth 780 FT
Measured: 840 FT ~~FSL~~ 796 FT ~~RWC~~ FEL FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
Remarks: _____

RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST		X10 YES		RECORDED BY <u>ALAN PETAJA</u>		RECORDING SPEED <u>20</u> MIN								
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>		S P SENS SETTING <u>50</u>		STRIP LOG	DENSITY T.C. _____ RANGE _____		RESISTIVITY SENS SETTING <u>20</u>		DEPTH				
	LOGGED DEPTHS					LOGGED DEPTHS				FEET	METERS			
	796 FT		796 FT			FT		796 FT						
Sandstone, gray, very fine; siltstone, light-gray to brown; and claystone, light- gray to brown, carbonaceous												50		
Coal, with gray siltstone parting													0	
Sandstone, light-gray, fine; and claystone, light-gray													50	2
Coal													100	
Sandstone, gray, very fine; and claystone, light-gray to gray, carbonaceous													150	
Coal												200		
												250		
Coal												300		
												350		



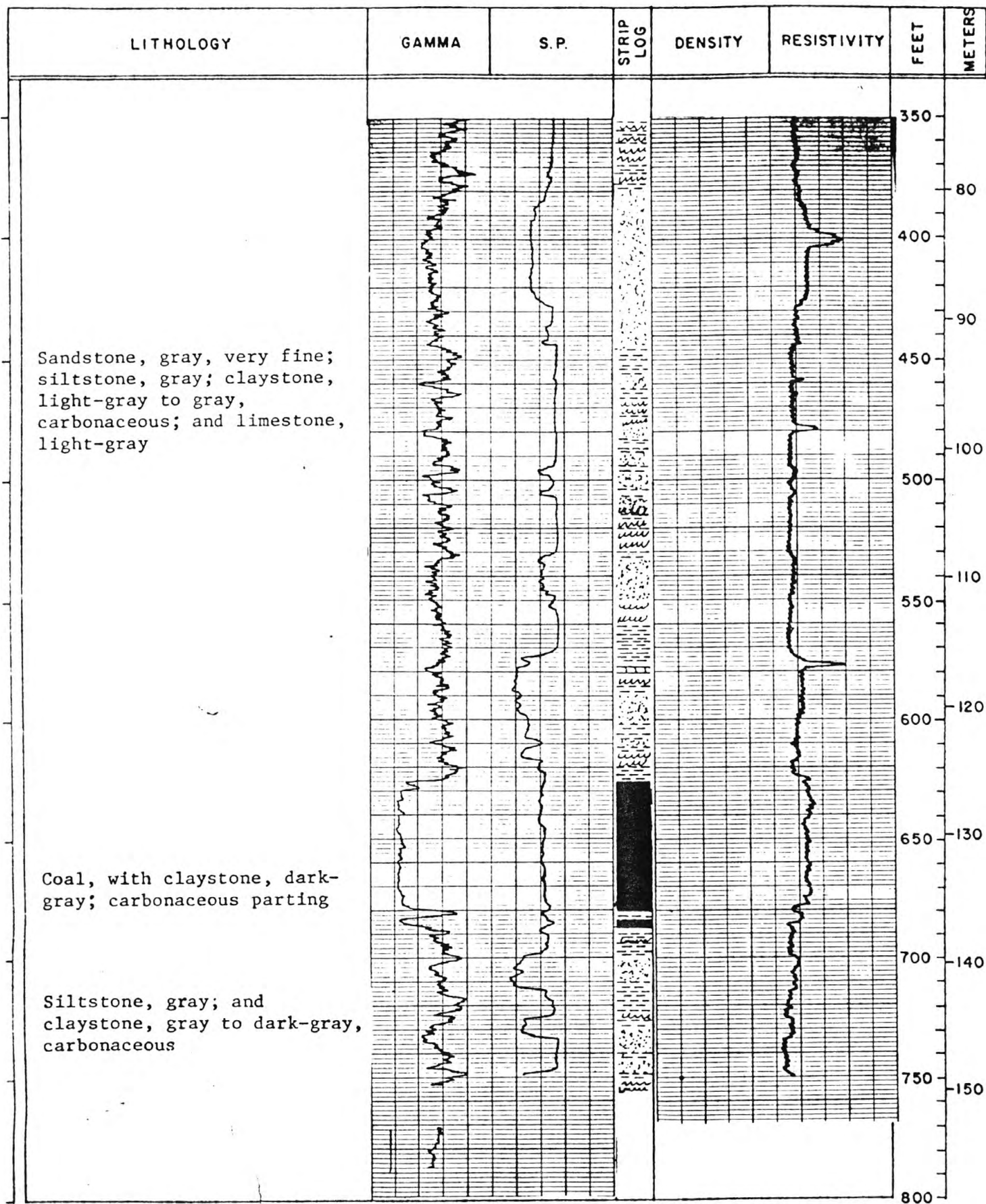
Hole No: US-7928 Map: Kirby Date: 5/23/79 State: Montana County: Big Horn
 Elev: 4492 FT Location: T 6 S R 39 E, Sec 34 Tract BDDC Drilled depth 650 FT
 Measured: 2298 FT ^{FNL} XXX 2290 FT ^{FWL} XXX FT. Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____





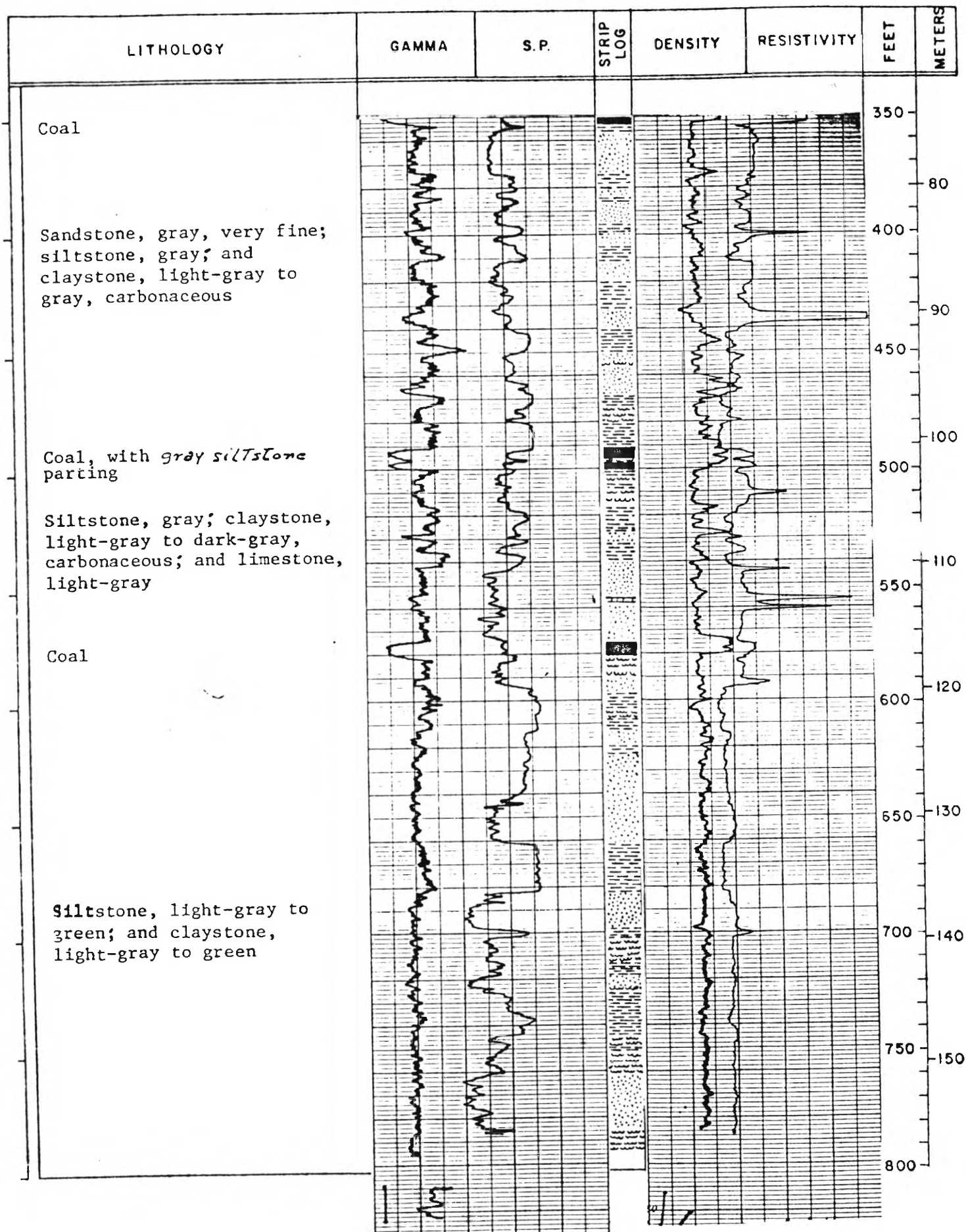
Hole No: US-7929 Map: Kirby Date: 5/24/79 State: Montana County: Big Horn
Elev: 4447 FT Location: T 6 S R 39 E, Sec 33 Tract Irreg. Drilled depth 740 FT
Measured: 1437 FT FNL 963 FT FEL FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
Remarks: _____

RECORDED BY <u>RUSS PATTESRON</u> GEOLOGIST <u>NO</u>		RECORDED BY <u>ALAN PETAJA</u>		RECORDING SPEED <u>20</u> FT MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S.P. SENS SETTING <u>50</u>	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>50</u>	DEPTH
	LOGGED DEPTHS 753 FT 749 FT.		LOGGED DEPTHS 193 FT 749 FT		FEET METERS
Sandstone, gray, very fine; siltstone, light-gray to brown; claystone, light-gray to brown, carbonaceous; and limestone, light-gray					50 0
					0 10
Coal					50 20
					100 3
					150 4
					200 5
					250 6
					300
					350

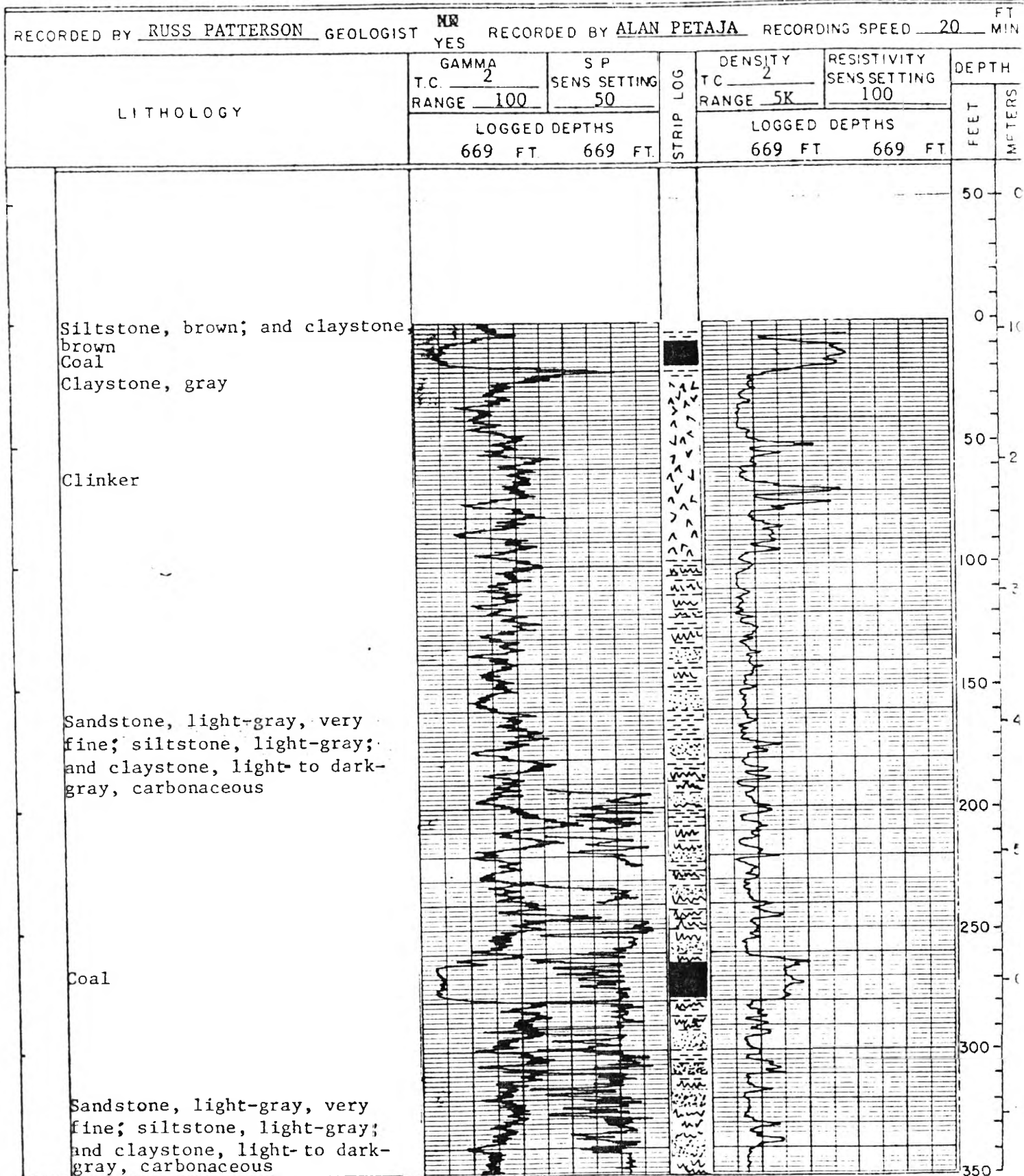


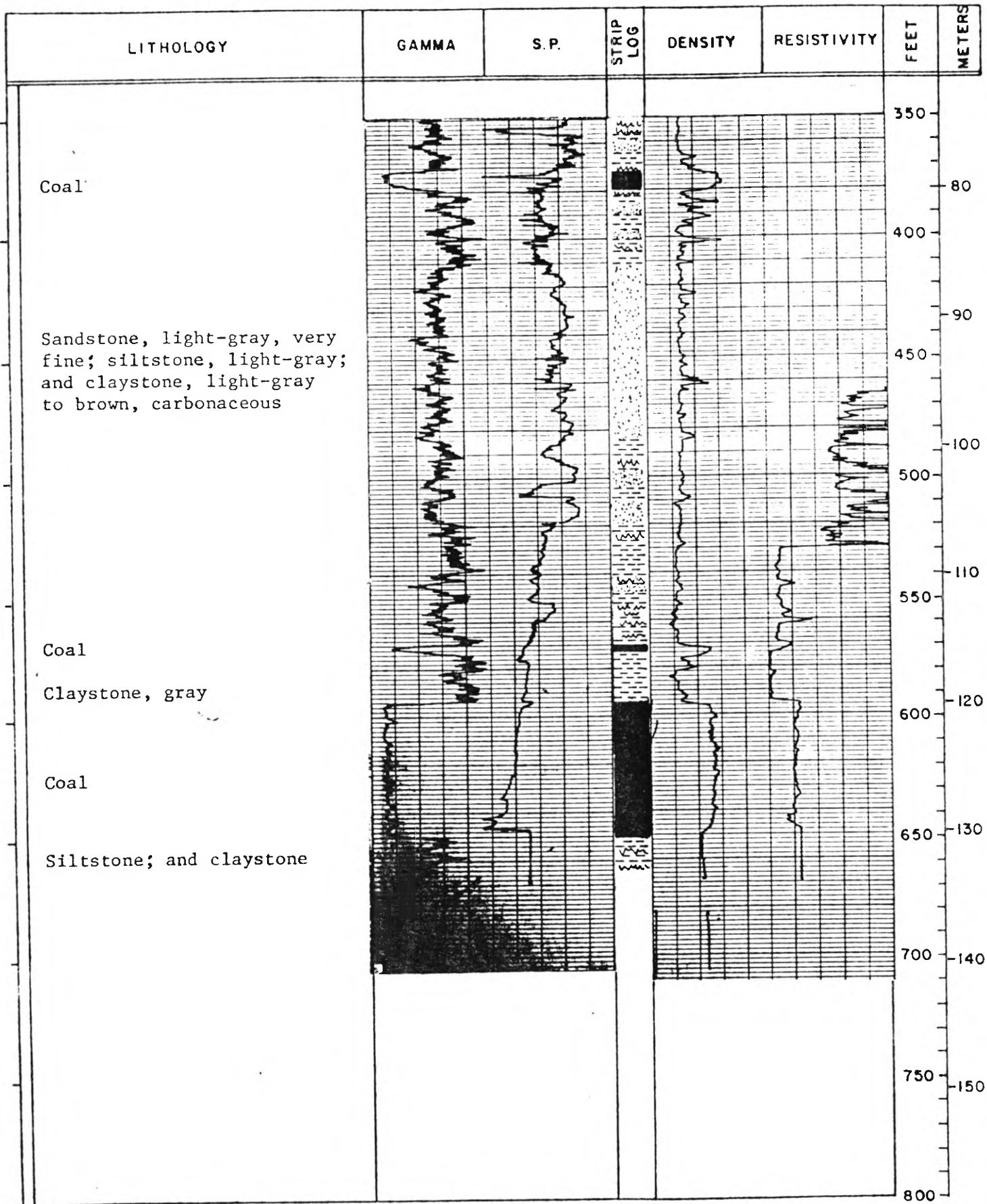
RECORDED BY RUSS PATTERSON GEOLOGIST ^{NO}_{YES} RECORDED BY ALAN PETAJA RECORDING SPEED 20 ^{FT}_{MIN}

LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>		S P SENS SETTING <u>50</u>		STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>		RESISTIVITY SENS SETTING <u>50</u>		DEPTH	
	LOGGED DEPTHS					LOGGED DEPTHS				FEET	METERS
	796 FT		787 FT.			785 FT		787 FT.			
Sandstone, light-brown, very fine grained; siltstone, gray; and claystone, gray										50	
Coal										0	
Siltstone, gray; and claystone, light-gray to gray, carbonaceous										50	
Coal										100	
Siltstone, gray, and claystone, gray										150	
Coal										200	
Sandstone, light-gray, very fine grained; siltstone, light-gray; and claystone, light-gray to gray										250	
Coal										300	
Claystone, gray to dark-gray										350	
Coal											



Hole No: US-7931 Map: Tongue River Dam Date: 5/26/79 State: Montana County: Big Horn
 Elev: 3956 FT Location: T 7 S R 40 E, Sec 33 Tract BDBB Drilled depth 660 FT
 Measured: 1398 FT ~~FNL~~ 1568 FT ~~FWL~~ FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Inaccurate total depth due to worn shimwheel on logger.





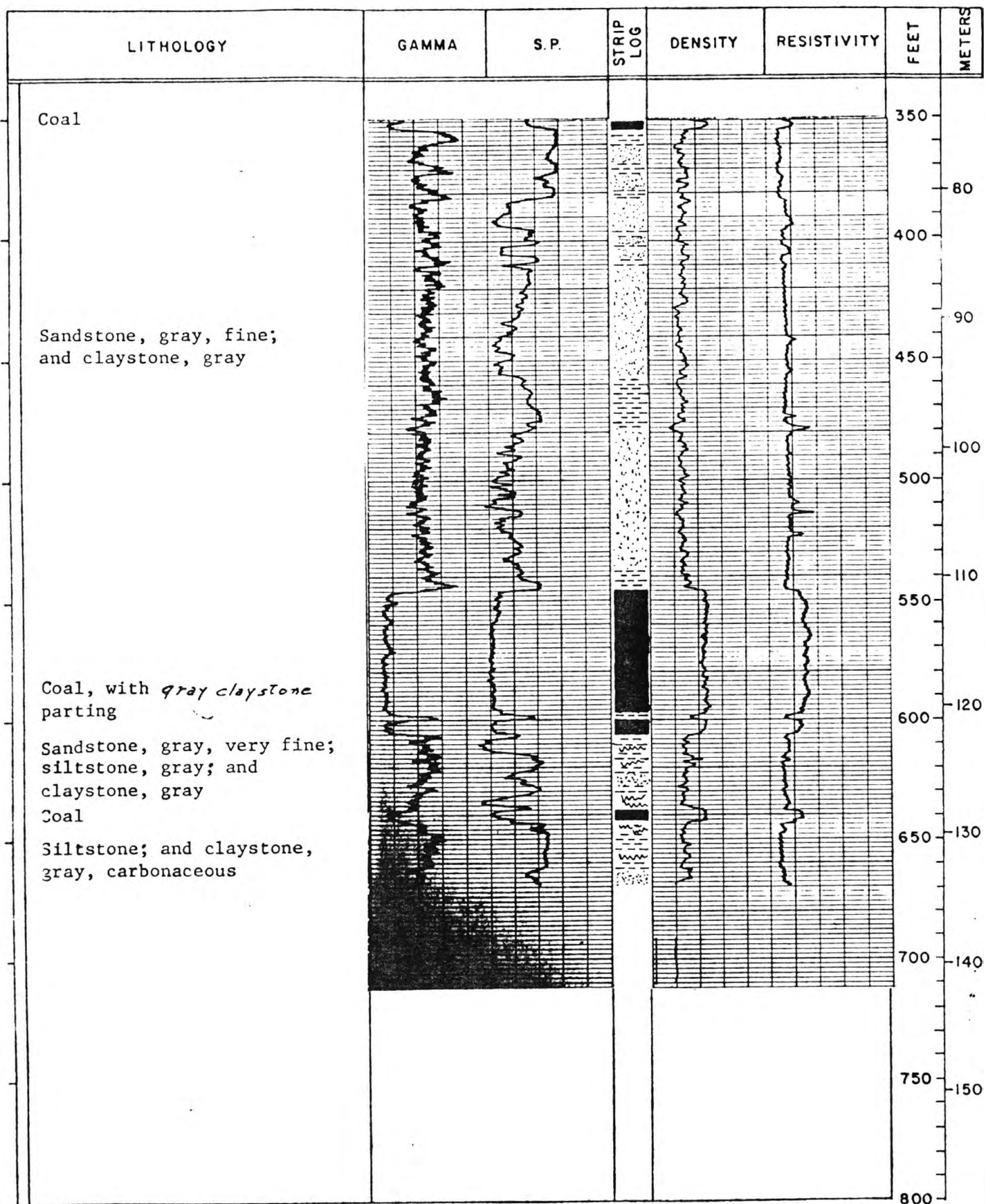
RECORDED BY RUSSELL PATTERSON GEOLOGIST ~~NO~~ YES RECORDED BY RUSSELL PATTERSON RECORDING SPEED 20 FT MIN

[illegible]

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

RECORDED BY RUSS PATTERSON GEOLOGIST ^{NO}_{YES} RECORDED BY ALAN PETAJA RECORDING SPEED 20 ^{FT.}_{MIN.}

79



RECORDED BY RUSS PATTERSON		NX YES GEOLOGIST		RECORDED BY RUSS PATTERSON		RECORDING SPEED 20		FT MIN	
LITHOLOGY		GAMMA	S P	DENSITY	RESISTIVITY	DEPTH			
		T.C.	SENS SETTING	T C	SENS SETTING				
		RANGE		RANGE					
		LOGGED DEPTHS		LOGGED DEPTHS		FEET	METERS		
		FT	FT.	FT	FT.				
						50	0		
						0	10		
						50	20		
						100	30		
						150	4		
						200	5		
						250	6		
						300	7		
						350			

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

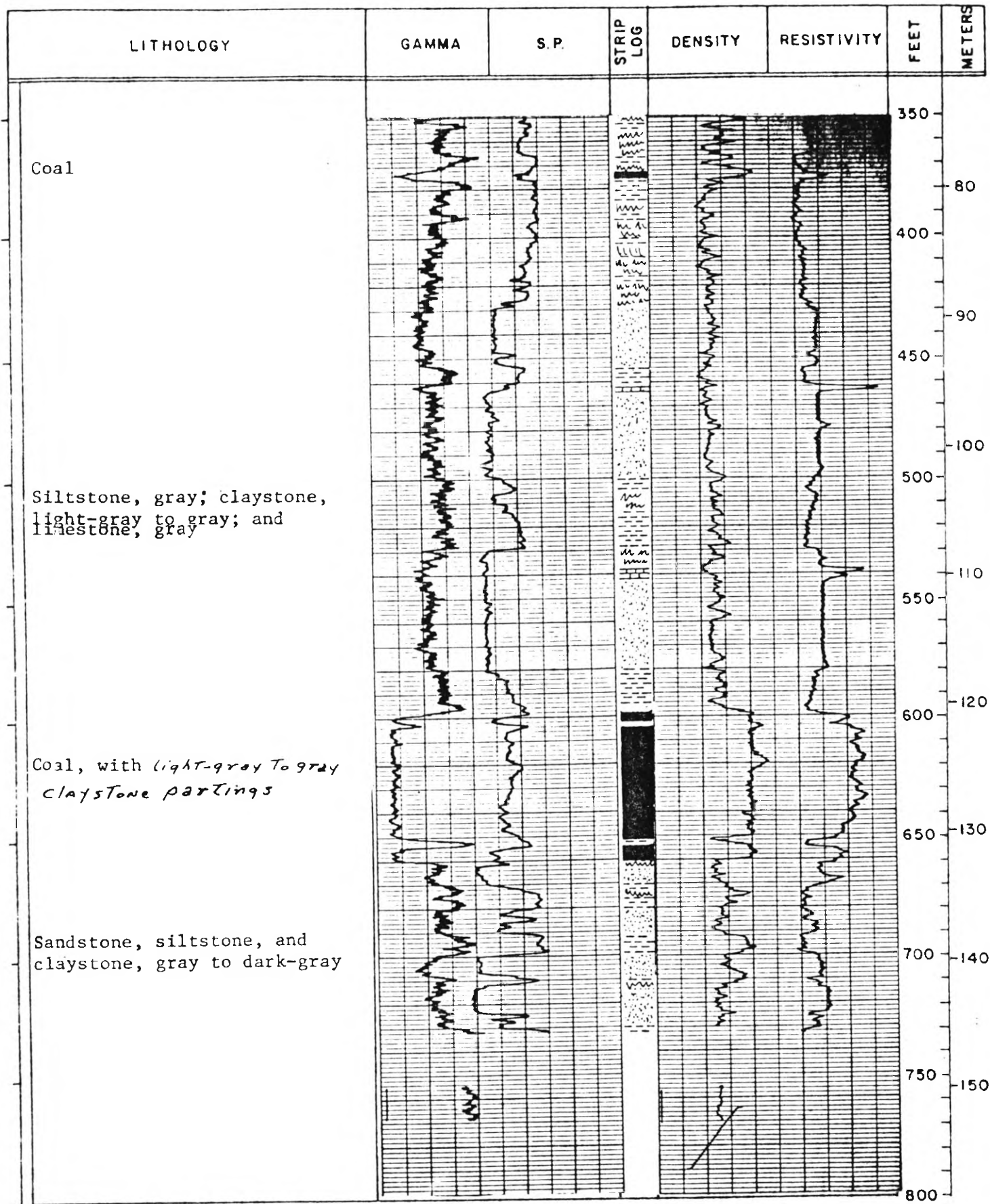
Hole No: US-7934 Map: Tongue River Dam Date: 6/5/79 State: Montana County: Big Horn
 Elev: 4062 FT Location: T 7 ^N _S R 40 ^E _W, Sec 11 Tract CAAB Drilled depth 80 FT
 Measured: 2493 FT FSL 2248 FT FWL FOOT FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Lost circulation, no samples taken.

RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST NO YES		RECORDED BY <u>RUSS PATTERSON</u> RECORDING SPEED <u>20</u> FT MIN				
LITHOLOGY	GAMMA T.C. _____ RANGE _____	S P SENS SETTING _____	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING _____	DEPTH	
	LOGGED DEPTHS		LOGGED DEPTHS		FEET	METERS
	FT	FT	FT	FT		
					50	0
					0	10
					50	20
					100	30
					150	40
					200	50
					250	60
					300	70
					350	

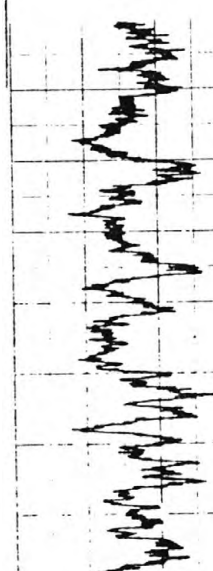
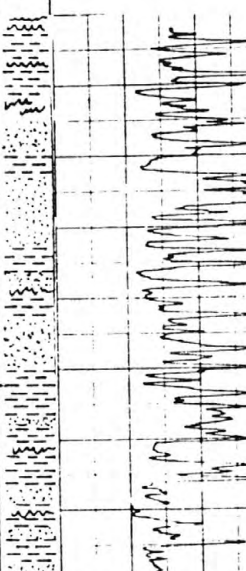
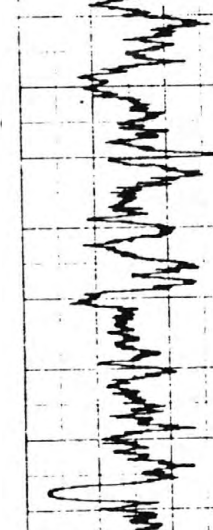
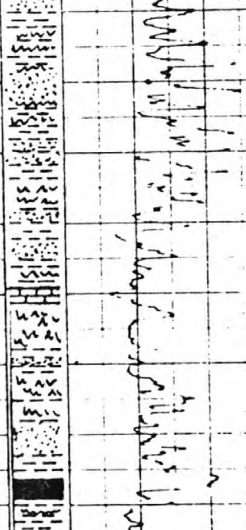
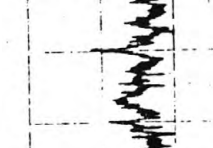
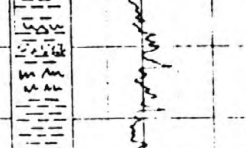

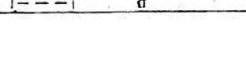
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						11	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

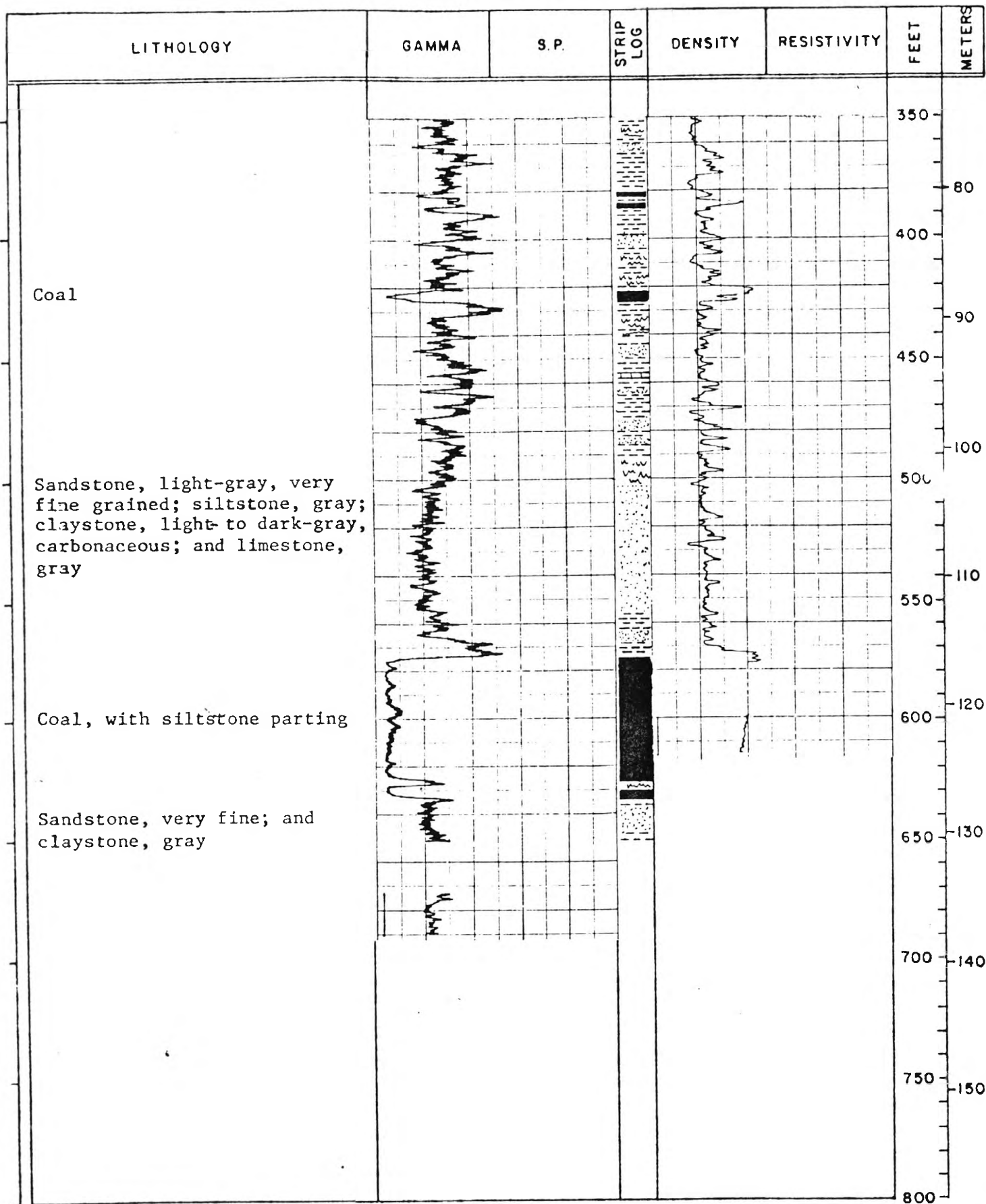
Hole No: US-7935 Map: Tongue River Dam Date: 6/6/79 State: Montana County: Big Horn
Elev: 3932 FT Location: T 7 S R 40 E, Sec 13 Tract CBAC Drilled depth 720 FT
Measured: 2296 FT ~~PSL~~ 752 FT ~~FSL~~ FWL FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
Remarks: Inaccurate total depth due to worn shimwheel on logger.

RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST <u>NO</u> YES		RECORDED BY <u>ALAN PETAJA</u>		RECORDING SPEED <u>20</u> FT MIN	
LITHOLOGY	GAMMA	S P	DENSITY	RESISTIVITY	DEPTH
	T.C. <u>2</u>	SENS SETTING	TC <u>2</u>	SENS SETTING	
	RANGE <u>200</u>	<u>50</u>	RANGE <u>2K</u>	<u>50</u>	
	LOGGED DEPTHS		LOGGED DEPTHS		
	732 FT 732 FT		730 FT 732 FT		
Sandstone, light-brown, very fine grained					50
Coal					50
Sandstone, light-gray, very fine grained; siltstone, light-brown to gray; claystone, light-gray to gray, carbonaceous; and limestone, gray					100
Coal, with claystone, gray to dark-gray; carbonaceous parting					150
Siltstone, gray; and claystone, gray to dark-gray, carbonaceous					200
					250
					300
					350



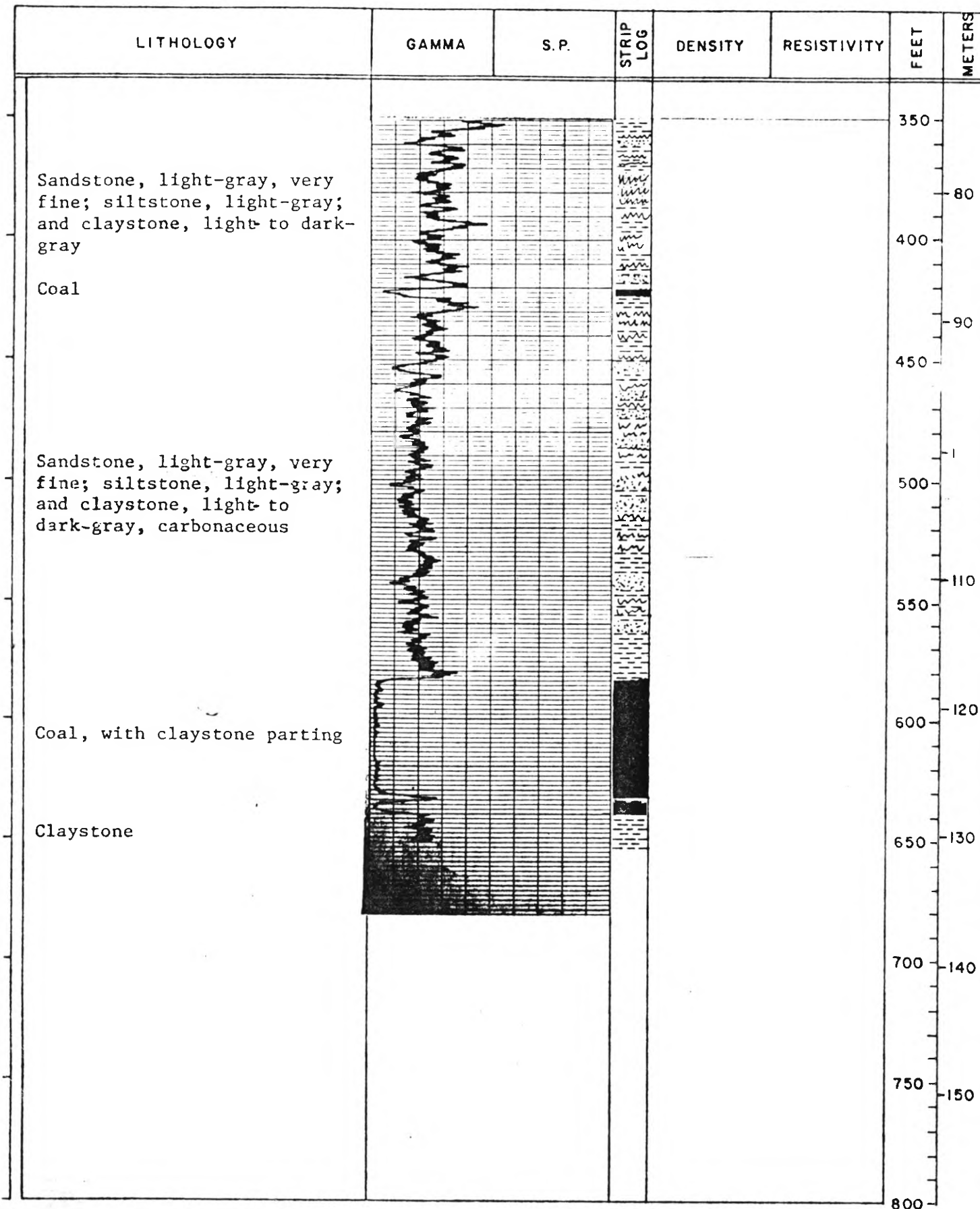
Hole No: US-7936 Map: Tongue River Dam Date: 6/8/79 State: Montana County: Big Horn
 Elev.: 4018 FT Location: T 7 S R 40 E, Sec 10 Tract ABDC Drilled depth 640 FT
 Measured: 4109 FT FSL 1926 FT FEL XXX FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Lost circulation at 80 ft.; but was reestablished, then lost again at 575 ft.

RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST <input checked="" type="checkbox"/>		RECORDED BY <u>ALAN PETAJA</u> RECORDING SPEED <u>17</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING	DENSITY TC <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING	DEPTH
	LOGGED DEPTHS 651 FT. FT.		LOGGED DEPTHS 577 FT. FT.		FEET METERS
Sandstone, light-gray, very fine; siltstone, light-brown; and claystone, gray to light-brown					50
					0
Sandstone, light-gray, very fine; siltstone, light-gray; claystone, light to dark-gray, carbonaceous; and limestone, gray					0
					10
Coal					50
					20
Sandstone, light-gray, very fine; siltstone, gray; claystone, light to dark-gray, carbonaceous; and limestone, gray; and coal					100
					30
					150
					200
					250
					300
					350

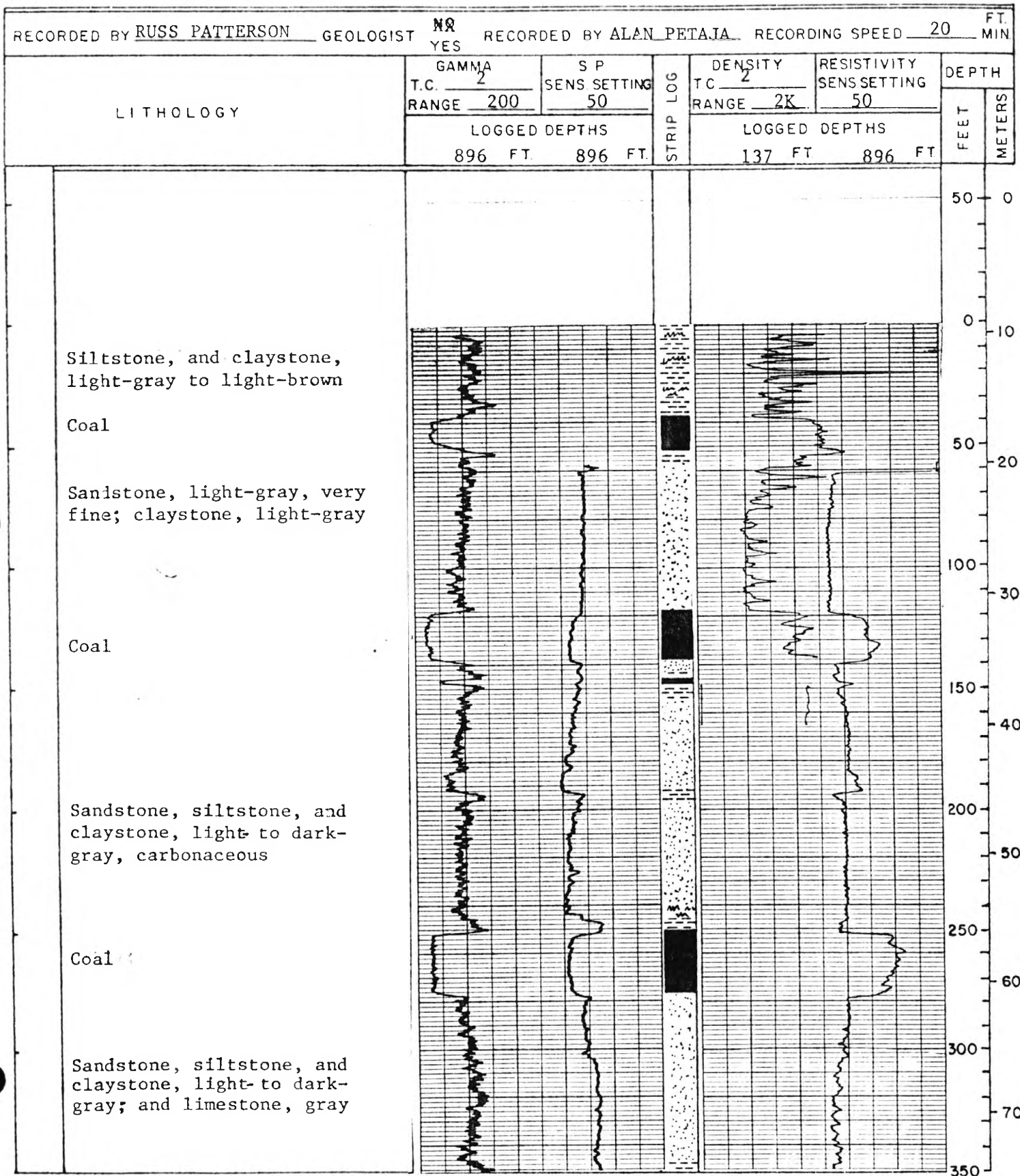


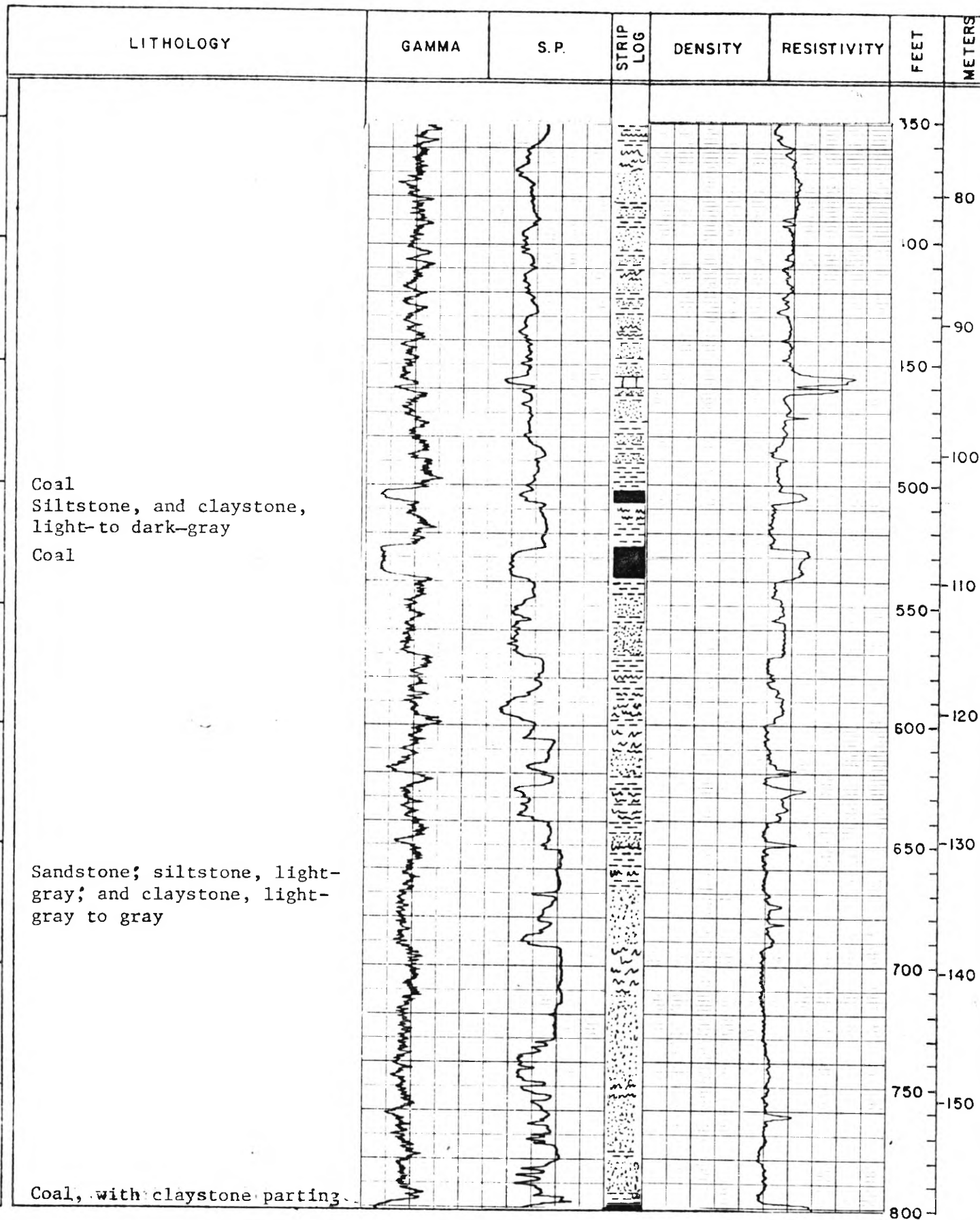
Hole No: US-7937 Map: Tongue River Dam Date: 6/8/79 State: Montana County: Rosebud
 Elev.: 4116 FT Location: T 7 S R 40 E, Sec 9 Tract ADCB Drilled depth 640 FT
 Measured: 3300 FT ~~XXX~~ FSL 1000 FT ~~XXX~~ FEL XXX FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Lost circulation at 590 ft.

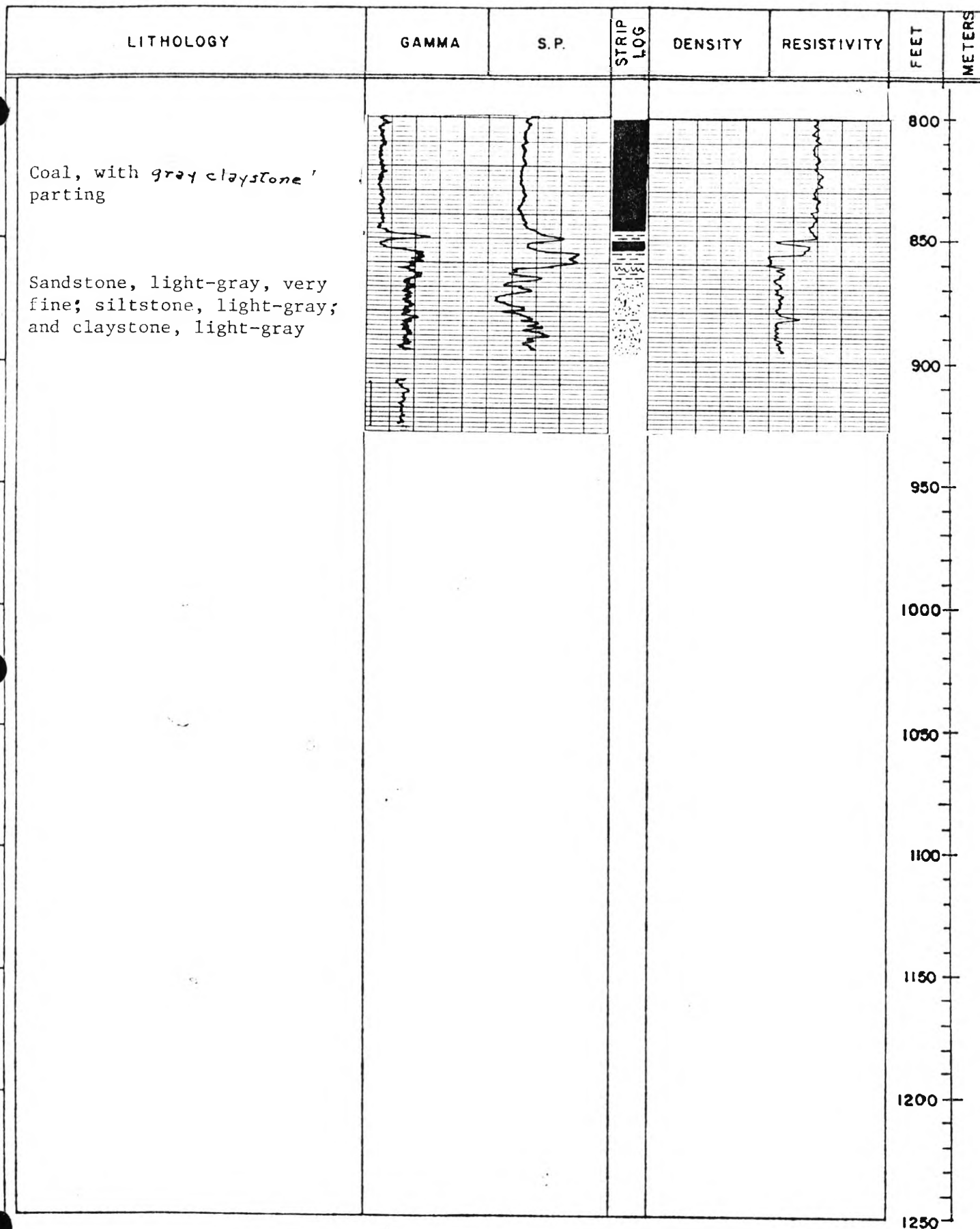
RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST NO YES		RECORDED BY <u>ALAN PETAJA</u>		RECORDING SPEED <u>20</u> FT. MIN.			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING	STRIP LOG	DENSITY TC RANGE	RESISTIVITY SENS SETTING	DEPTH	
	LOGGED DEPTHS			LOGGED DEPTHS		FEET	METERS
	651 FT.	FT.		FT.	FT.		
Sandstone, light-brown, very fine; siltstone, light-brown; and claystone, light-brown						50	0
						0	10
Clinker						50	20
						100	30
Sandstone, light-gray, very fine; siltstone, light-gray; and claystone, light to dark-gray, carbonaceous						150	40
						200	50
Coal						250	60
						300	70
Coal, with gray claystone parting						350	



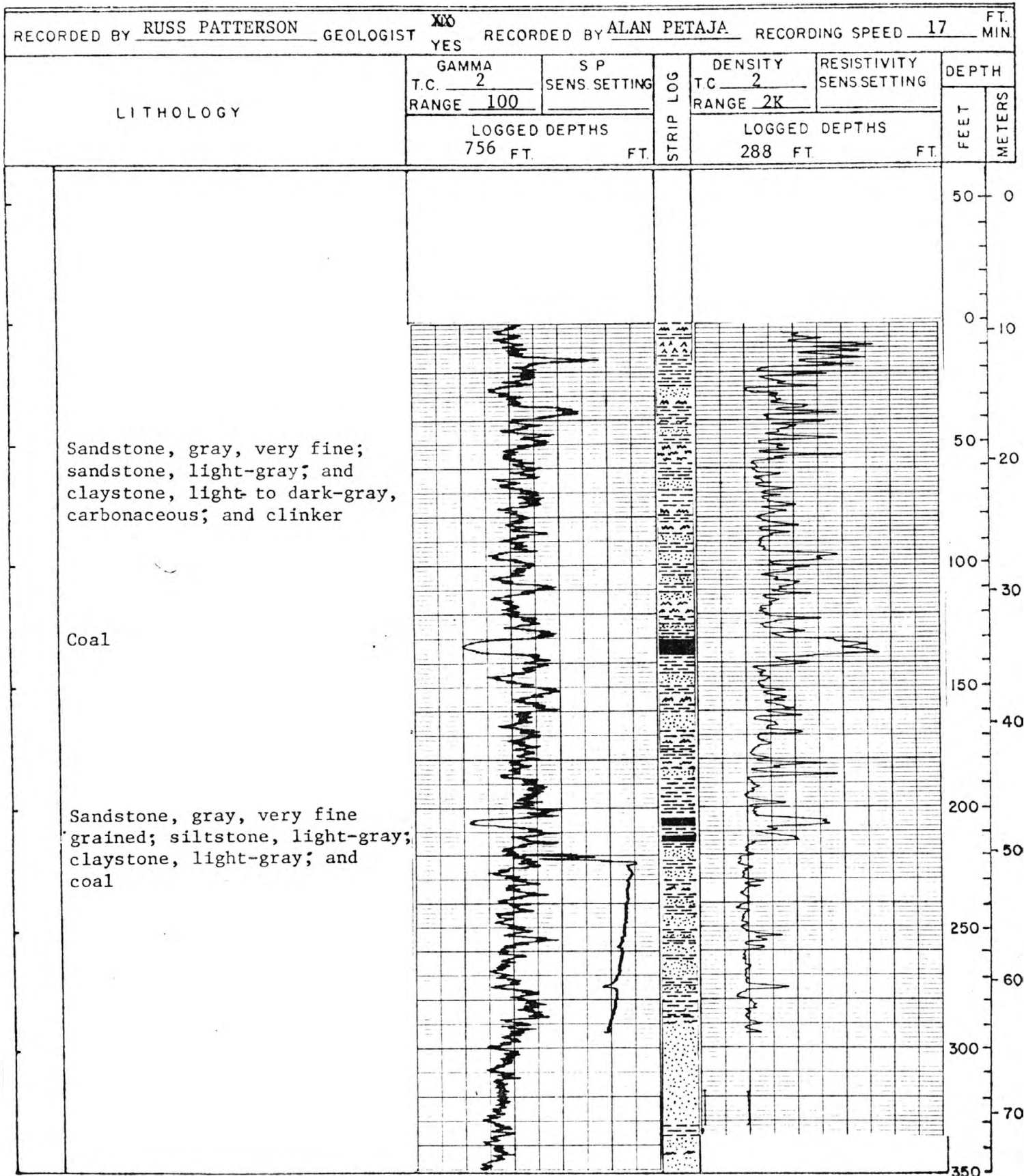
Hole No: US-7938 Map: Taintor Desert Date: 6/9/79 State: Montana County: Big Horn
 Elev.: 4250 FT Location: T 7 S R 40 E, Sec 6 Tract ddab Drilled depth 880 FT
 Measured: 1040 FT ~~XXX~~ FSL 447 FT ~~XXX~~ FEL XXX FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

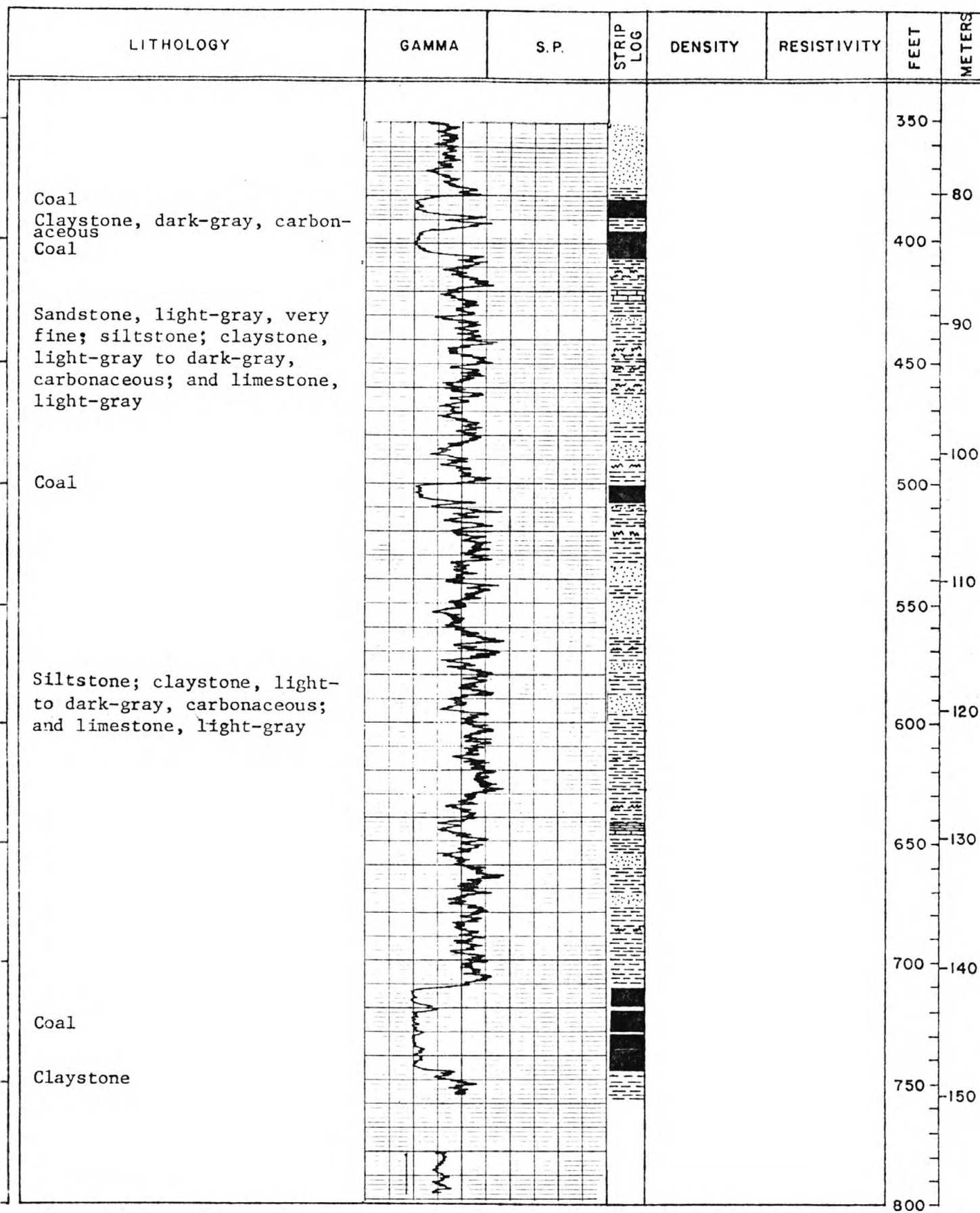






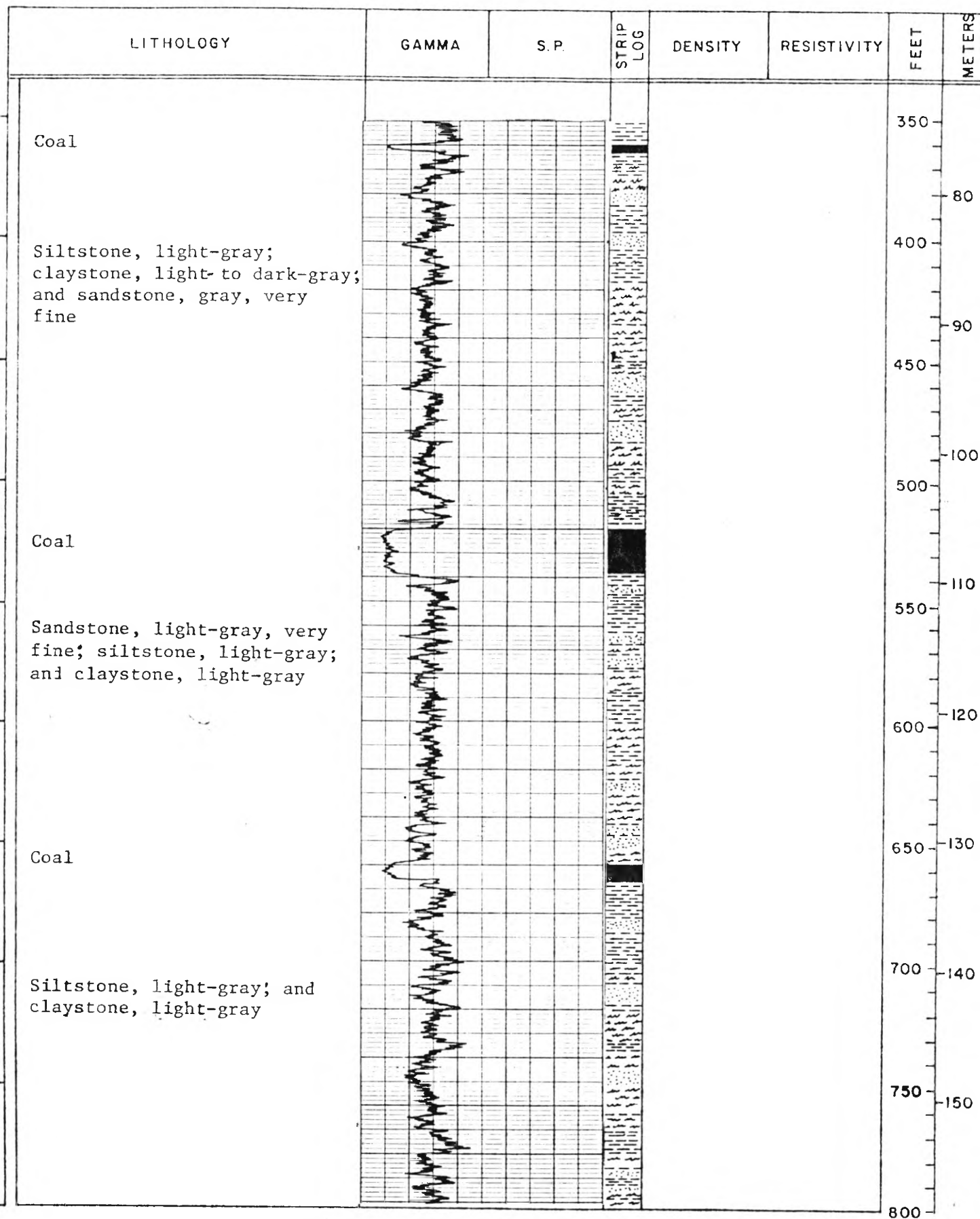
Hole No: US-7939 Map: Spring Gulch Date: 6/10/79 State: Montana County: Big Horn
 Elev.: 3755 FT Location: T 8 S R 42 E, Sec 6 Tract ACDB Drilled depth 760 FT
 Measured: 3010 FT FSL 3540 FT FWL XXXX FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____






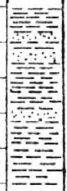
Hole No: US-7940 Map: Spring Gulch Date: 6/11/79 State: Montana County: Big Horn
 Elev.: 3864 FT Location: T 8 S R 41 E, Sec 1 Tract DACA Drilled depth 850 FT
 Measured: 1865 FT FSL 955 FT FSL FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST NO YES		RECORDED BY <u>ALAN PETAJA</u>		RECORDING SPEED <u>17</u> FT. MIN.			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>5K</u>	RESISTIVITY SENS SETTING	DEPTH	
	LOGGED DEPTHS 850 FT FT.			LOGGED DEPTHS 223 FT FT.		FEET	METERS
	<p>Sandstone, light-gray, very fine; siltstone, light-brown; claystone, light-to dark-gray, carbonaceous; and clinker</p> <p>Coal</p> <p>Siltstone, light-gray; claystone, light-gray; and sandstone, light-gray, very fine</p>				<p>50 0</p> <p>0 10</p> <p>50 20</p> <p>100 30</p> <p>150 40</p> <p>200 50</p> <p>250 60</p> <p>300 70</p> <p>350</p>		

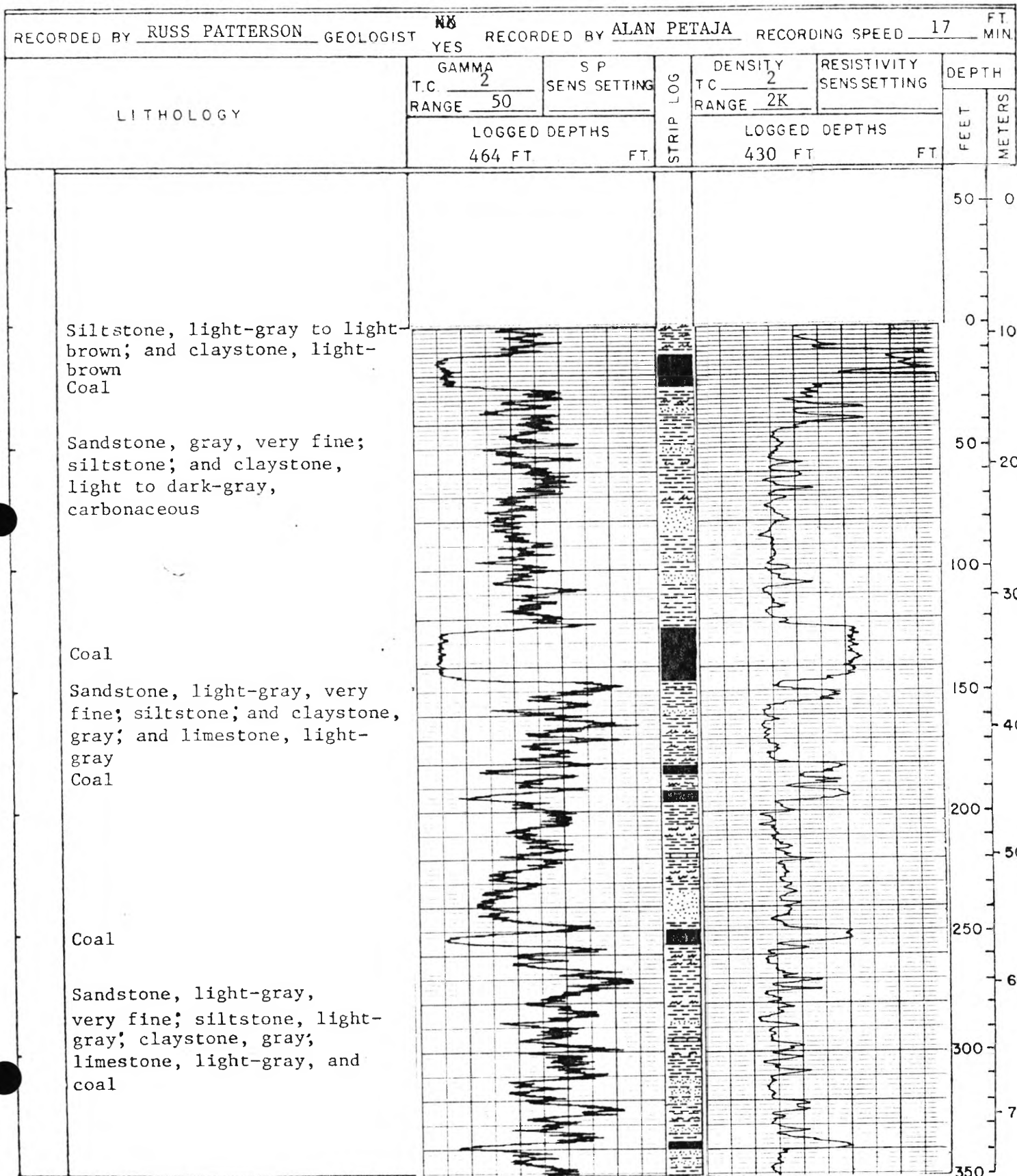


79-10

US- 7940

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						800	
						850	
						900	
						950	
						1000	
						1050	
						1100	
						1150	
						1200	
						1250	

Hole No: US-7941 Map: Spring Gulch Date: 6/13/79 State: Montana County: Big Horn
 Elev.: 3848 FT Location: T 8 ^N_S R 41 ^E_W, Sec 2 Tract Irreg. Drilled depth 530 FT
 Measured: 2105 FT ~~FSL~~ 2109 FT ~~FSL~~ FEL ~~FWL~~ FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Circulation lost and not regained.



Hole No: US-7941A Map: Spring Gulch Date: 6/21/79 State: Montana County: Big Horn

Elev.: 3853 FT Location: T 8 ^N S R 41 ^E W, Sec 2 Tract Irreg-Drilled depth 560 FT

Measured: 2175 FT ^{RXX} FSL 2100 FT ^{FEL} ~~RXX~~ FT. Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☒ No ☐

Remarks: No samples first 400 feet due to the lack of circulation and close proximity to US-7941. Cored interval 10 to 20 feet and 124 to 146.5 feet.

RECORDED BY RUSS PATTERSON GEOLOGIST ^{XNO} YES RECORDED BY ALAN PETAJA RECORDING SPEED FT. MIN

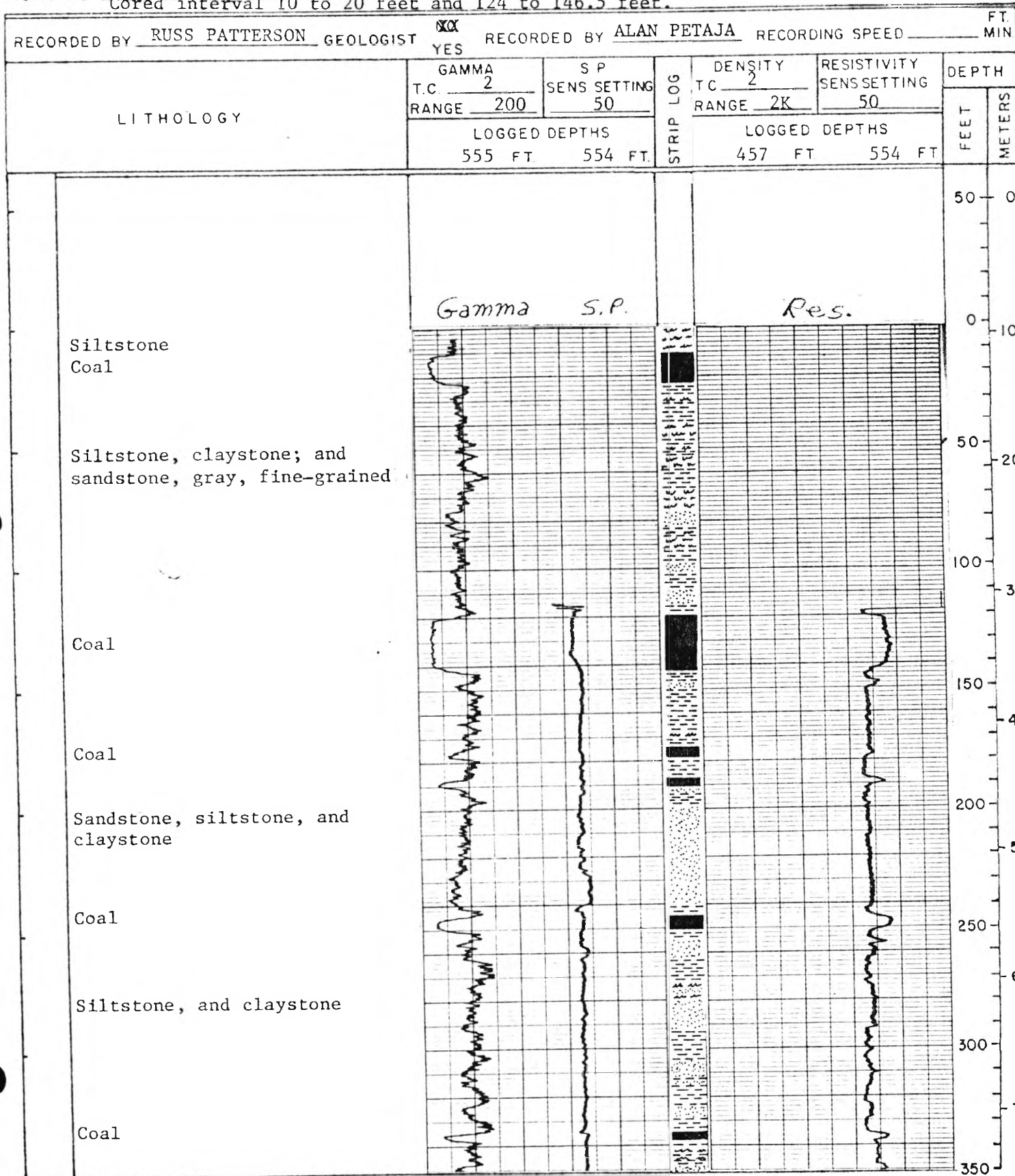
LITHOLOGY	GAMMA		STRIP LOG	DENSITY		RESISTIVITY		DEPTH	
	T.C.	RANGE		T.C.	RANGE	SENS SETTING	SENS SETTING	FEET	METERS
	<u>2</u>	<u>200</u>		<u>2</u>	<u>2K</u>	<u>50</u>	<u>50</u>		
	LOGGED DEPTHS			LOGGED DEPTHS					
	555 FT			457 FT					
	554 FT.			554 FT.					
Siltstone								50	0
Coal								0	10
								50	20
Siltstone, claystone, and sandstone, gray, fine-grained								100	30
								150	40
Coal								200	50
								250	60
Coal								300	70
Sandstone, siltstone, and claystone									
Coal									
Siltstone, and claystone									
Coal									

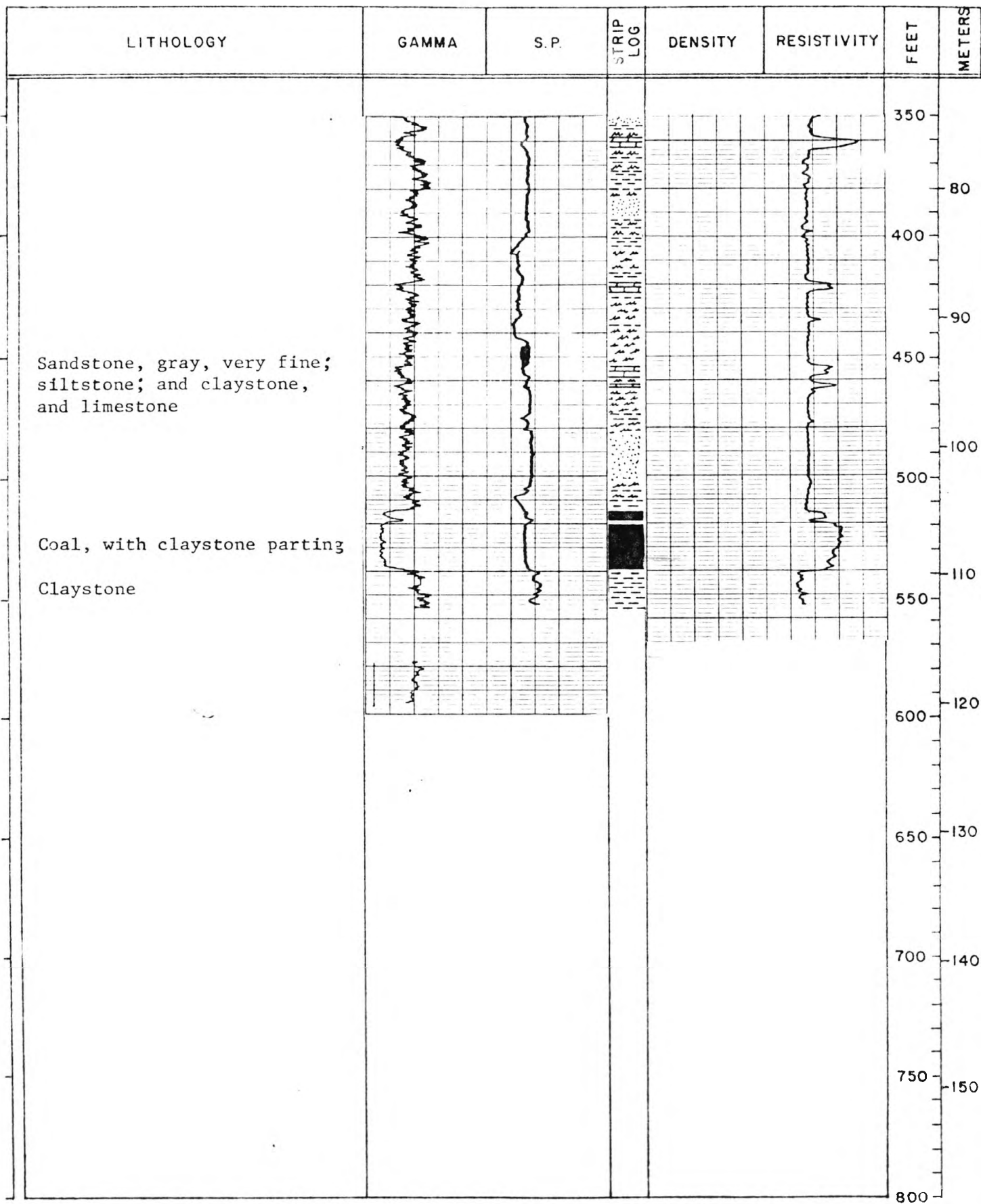
Density

350

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Sandstone, gray, very fine; siltstone; and claystone, and limestone						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
					150		
					750		
					800		

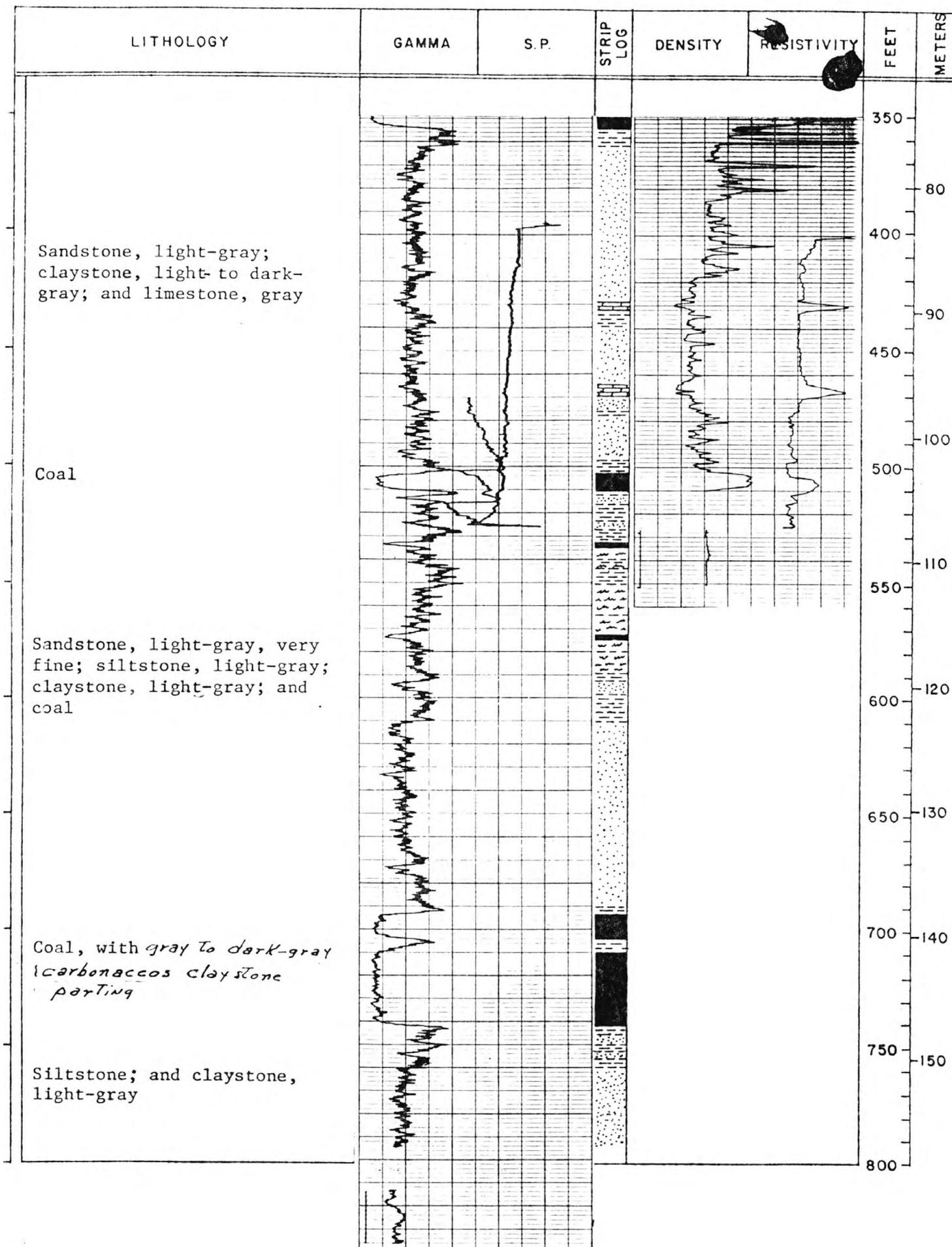
Hole No: US-7941A Map: Spring Gulch Date: 6/21/79 State: Montana County: Big Horn
 Elev.: 3853 FT Location: T 8 S R 41 W, Sec 2 Tract Irreg. Drilled depth 560 FT
 Measured: 2175 FT FSL 2100 FT FEL 2100 FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☒ No ☐
 Remarks: No samples first 400 feet due to lack of circulation and close proximity of US-7941.
Cored interval 10 to 20 feet and 124 to 146.5 feet.





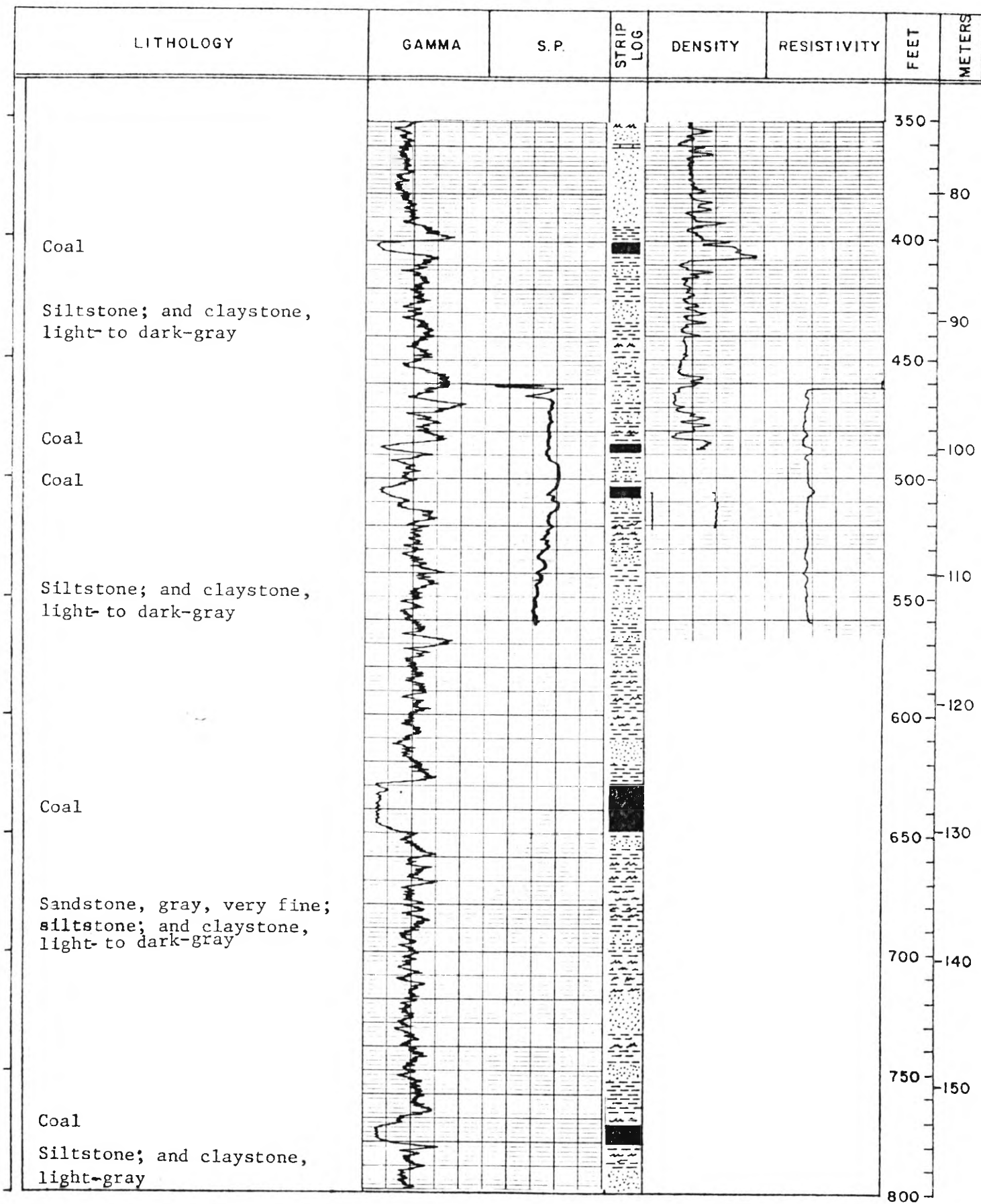
Hole No: US-7942 Map: Spring Gulch Date: 6/15/79 State: Montana County: Big Horn
 Elev.: 3855 FT Location: T 8 S R 41 W, Sec 10 Tract Irreg. Drilled depth 820 FT.
 Measured: 255 FT FNL 3110 FT FWL, FT. Hole size: 5 IN. Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

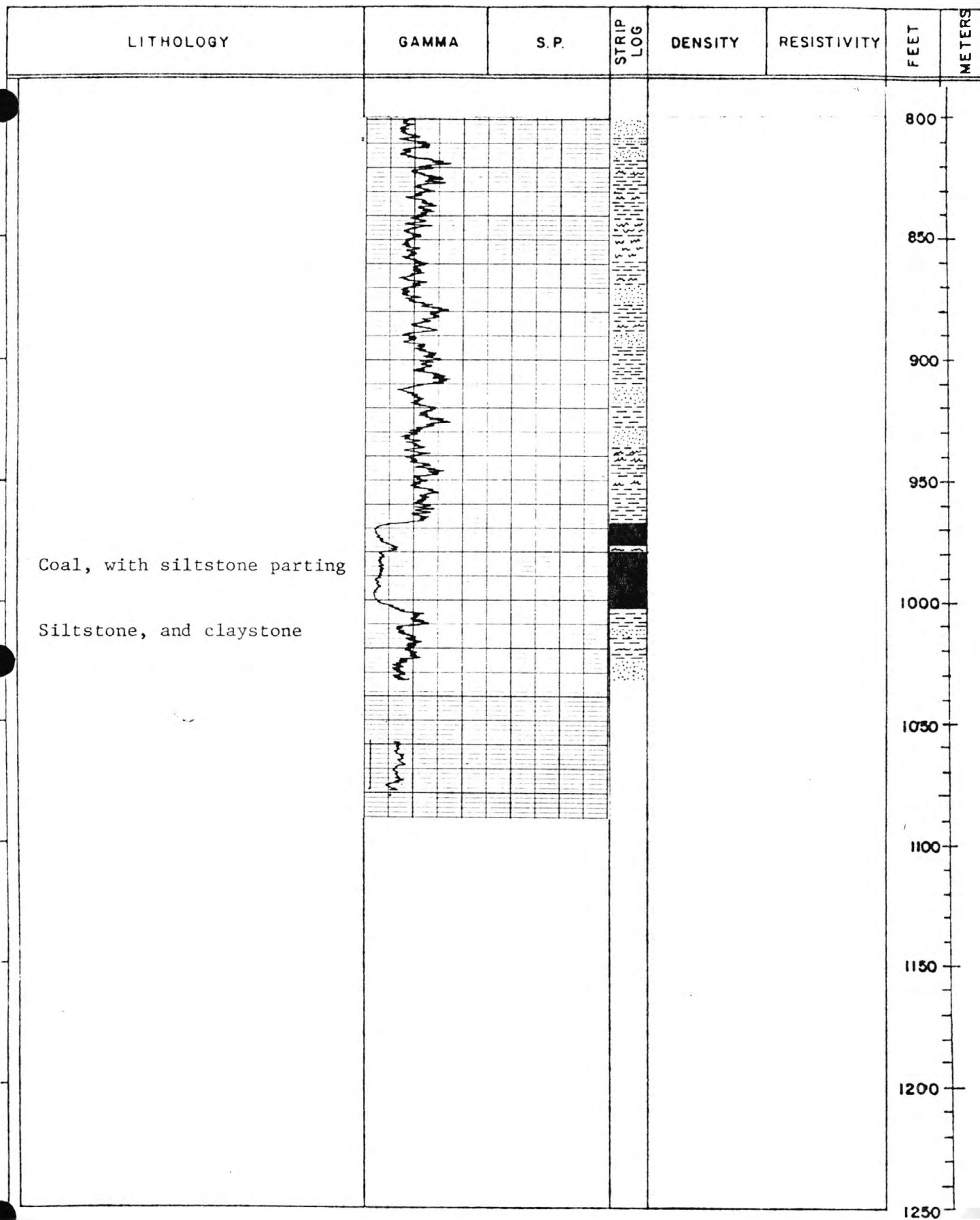
RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST <input checked="" type="checkbox"/>		RECORDED BY <u>ALAN PETAJA</u> RECORDING SPEED _____		FT. MIN.			
LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	DEPTH	
	T.C.	SENS. SETTING		T.C.	SENS. SETTING	FEET	METERS
	RANGE			RANGE			
	LOGGED DEPTHS			LOGGED DEPTHS			
	794 FT	FT.		510 FT	526 FT.		
Sandstone, gray, very fine; siltstone, light-brown; claystone, gray to dark-gray; and limestone, gray						50	0
Coal						0	10
Sandstone, gray, very fine; siltstone, gray; and claystone, gray to dark-gray, carbonaceous						50	20
Coal						100	30
Siltstone, gray; claystone, gray; and limestone, gray						150	40
Coal						200	50
Sandstone, gray, very fine; siltstone, light-gray; claystone, gray to dark-gray; and limestone, gray						250	60
Coal						300	70
						350	



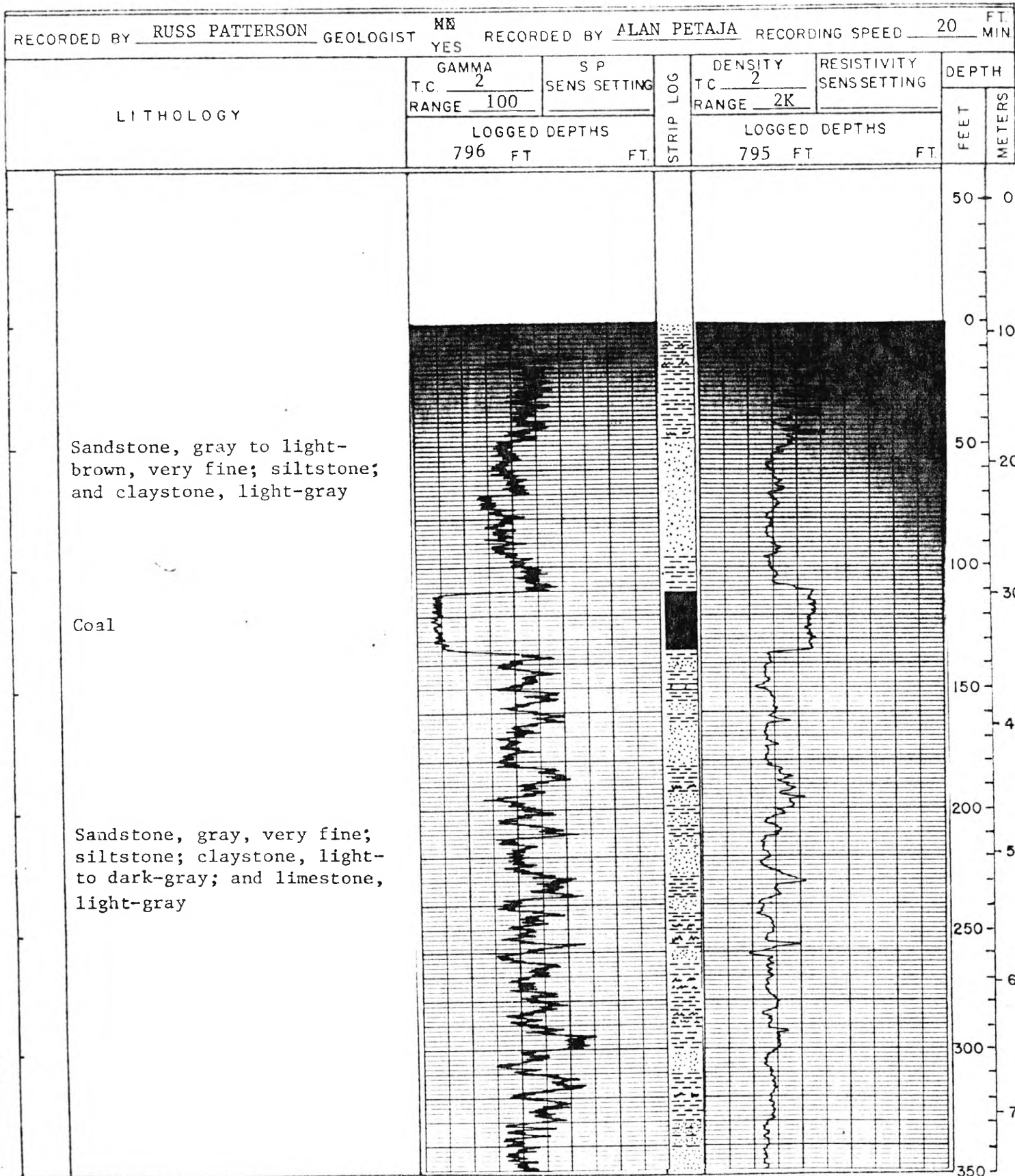
Hole No: US-7943 Map: Spring Gulch Date: 6/22/79 State: Montana County: Big Horn
 Elev.: 4064 FT Location: T 8 S R 41 W, Sec 12 Tract Irreg. Drilled depth 1040 FT
 Measured: 1710 FT ~~FNL~~ 1450 FT ~~RSE~~ ~~FWE~~ FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

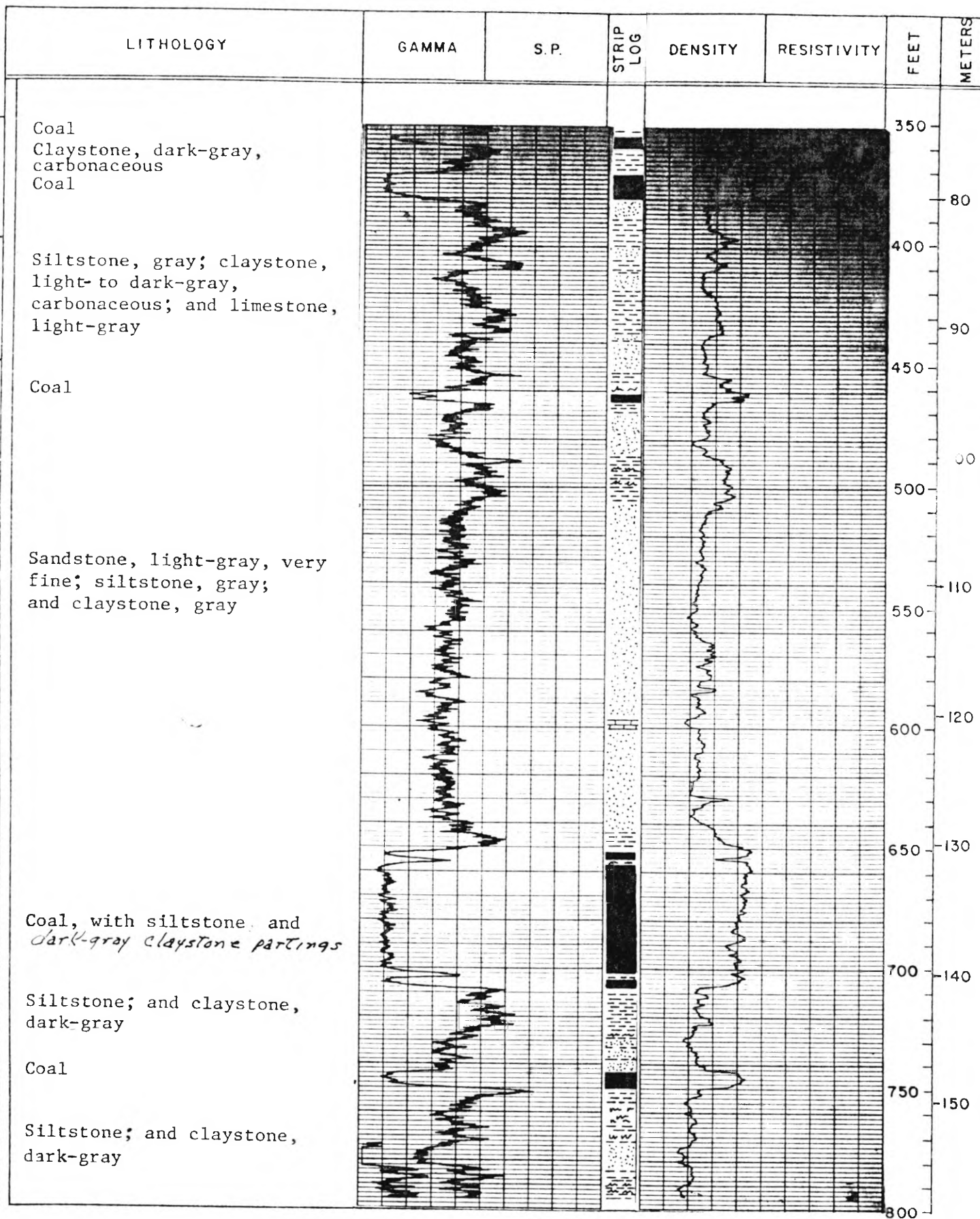
RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST YES		RECORDED BY <u>ALAN PETAJA</u>		RECORDING SPEED <u>30</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>50</u>	STRIP LOG	DENSITY TC <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>50</u>	DEPTH	
	LOGGED DEPTHS <u>1033</u> FT <u>561</u> FT			LOGGED DEPTHS <u>488</u> FT <u>561</u> FT		FEET	METERS
	Siltstone, brown; and claystone, light-to dark- gray, carbonaceous Coal Sandstone, gray, very fine; siltstone; and claystone, light-to dark-gray, carbonaceous Coal Sandstone, gray, very fine; siltstone; claystone, light- gray; and limestone, light- gray Coal Sandstone, light-gray, very fine; siltstone; claystone, light-gray; and limestone, light-gray; and coal						50 0 10 20 30 40 50 60 70 350





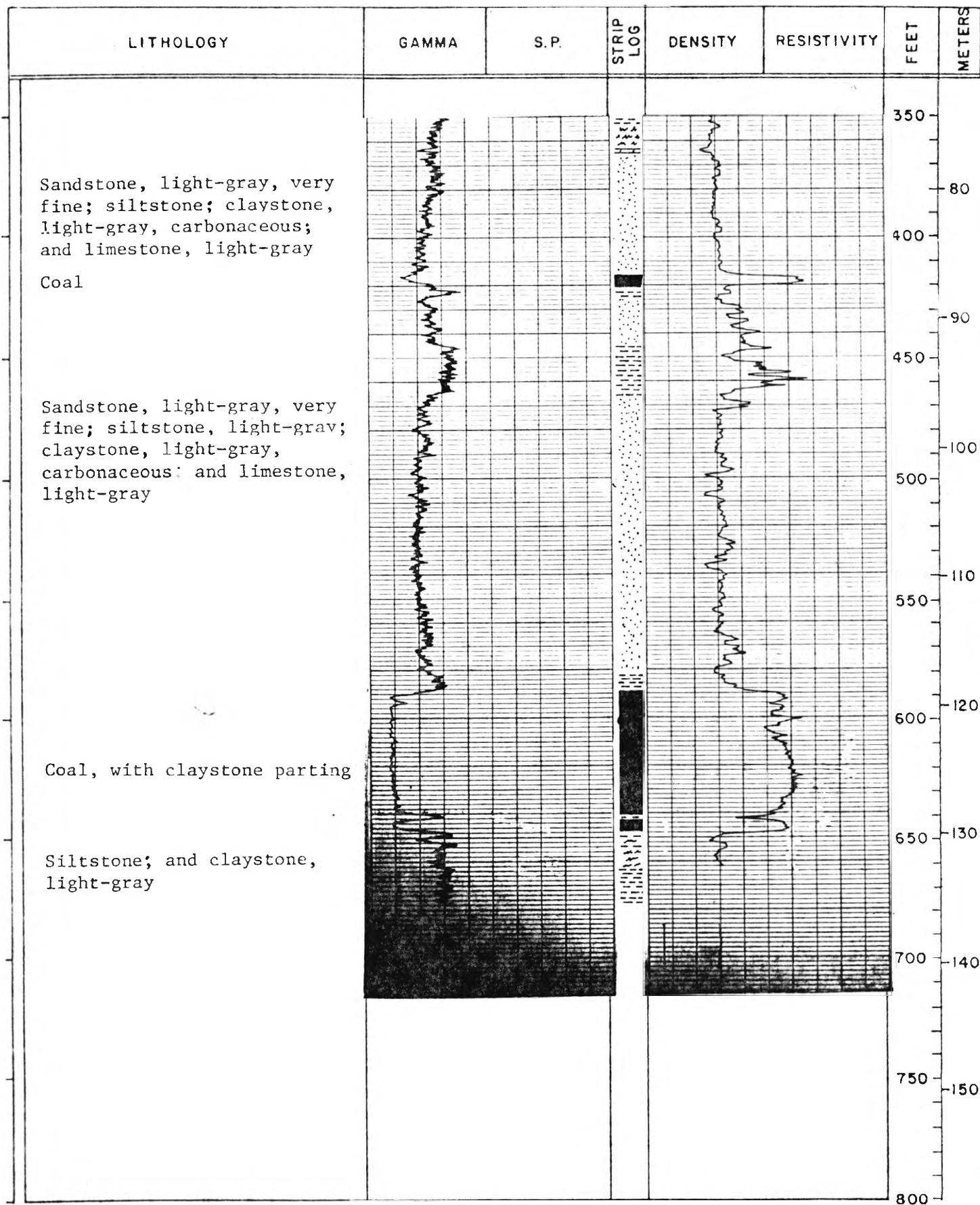
Hole No: US-7944 Map: Half Moon Hill Date: 8/23/79 State: Montana County: Big Horn
 Elev.: 4273 FT Location: T 7 N R 39 E, Sec 12 Tract DBBB Drilled depth 800 FT
 Measured: 2430 FT FSL 2520 FT ~~FEEL~~ FT Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____





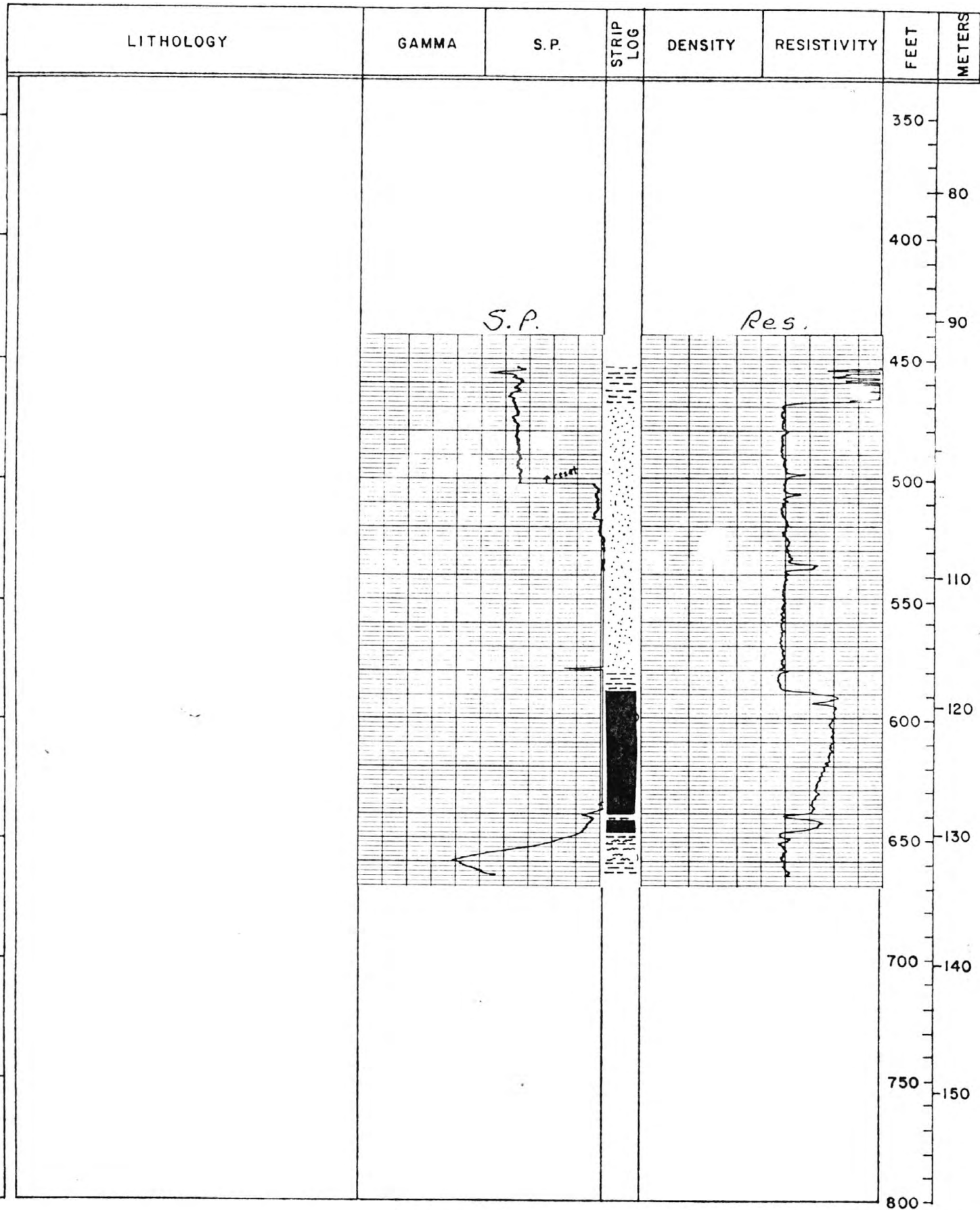
Hole No: US-7945 Map: Half Moon Hill Date: 8/26/79 State: Montana County: Big Horn
Elev: 4219 FT Location: T 7 ^N_S R 39 ^E_W, Sec 12 Tract DAAA Drilled depth 680 FT
Measured: 2480 FT ^{RKK}_{FSL} 30 FT ^{FEL}_{~~FWK~~} FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks: Drilled with foam.

RECORDED BY RUSS PATTERSON		GEOLOGIST	NO	RECORDED BY ALAN PETAJA		RECORDING SPEED 20	FT. MIN.
LITHOLOGY		GAMMA T.C. 2 RANGE 200		S P SENS SETTING 50	DENSITY TC 2 RANGE 2K	RESISTIVITY SENS SETTING 50	DEPTH FEET METERS
		LOGGED DEPTHS 677 FT		666 FT.	LOGGED DEPTHS 662 FT 666 FT		
Alluvium		<i>Gamma</i>			<i>Density</i>		50 0
Siltstone, light-brown							0 10
Coal							50 20
							100 30
Sandstone, light-gray, very fine; siltstone, light-gray; claystone, light-gray; and limestone, light-gray							150 40
							200 50
							250 60
Coal							300 70
Siltstone, gray; and claystone, gray							350
Coal							

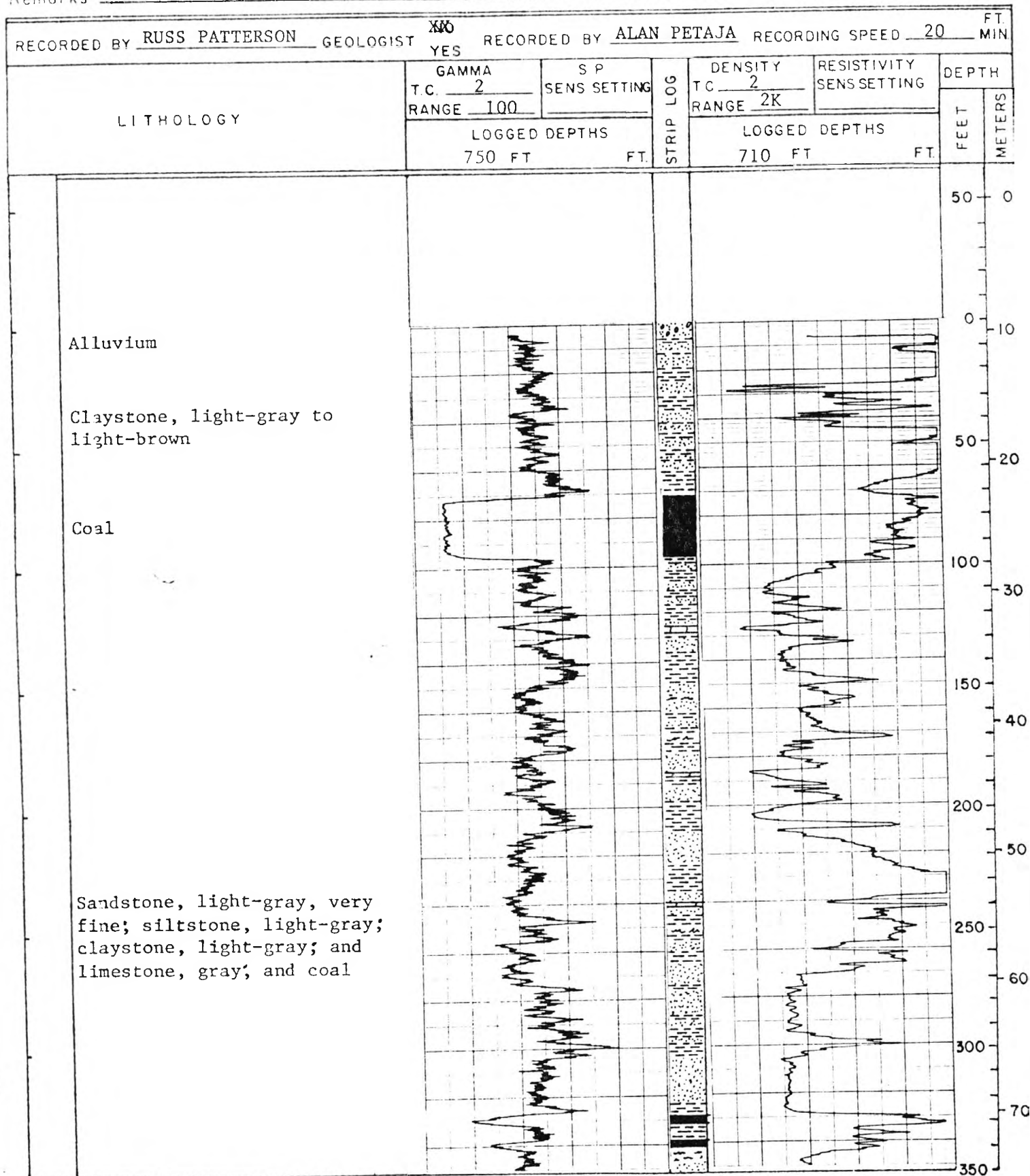


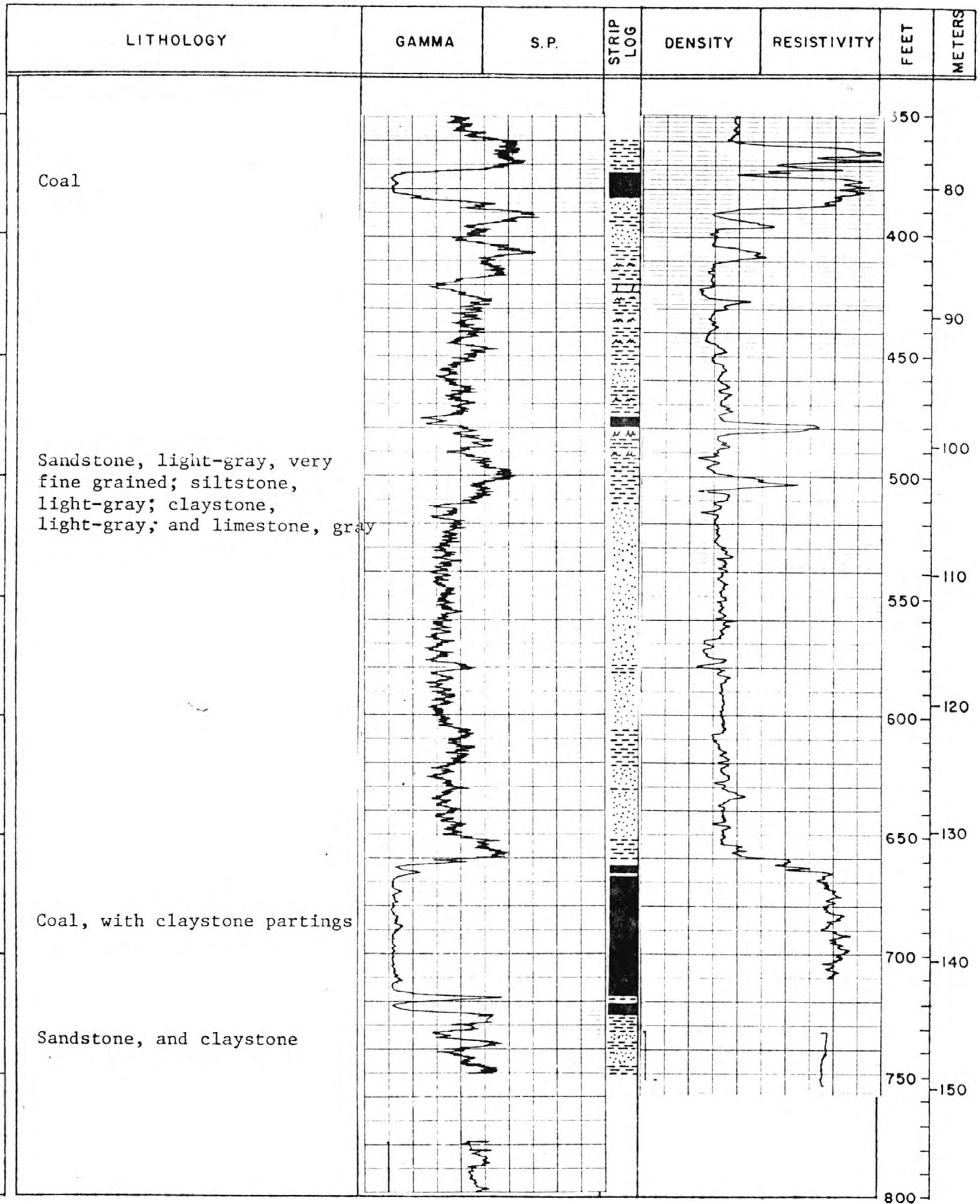
Hole No: US-7945 Map: Half Moon Hill Date: 8/26/79 State: Montana County: Big Horn
 Elev.: 4219 FT Location: T 7 S R 39 W, Sec 12 Tract DAAA Drilled depth 680 FT
 Measured: 2480 FT ~~XXX~~ FSL 30 FT ~~XXX~~ FEL ~~XXX~~ FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Drilled with foam.

RECORDED BY <u>RUSS PATTERSON</u> GEOLOGIST NO YES		RECORDED BY <u>ALAN PETAJA</u>		RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>50</u>	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>50</u>	DEPTH
	LOGGED DEPTHS <u>677</u> FT. <u>666</u> FT.		LOGGED DEPTHS <u>662</u> FT. <u>666</u> FT.		FEET
					METERS
					50 0
					0 10
					50 20
					100 30
					150 40
					200 50
					250 60
					300 70
					350

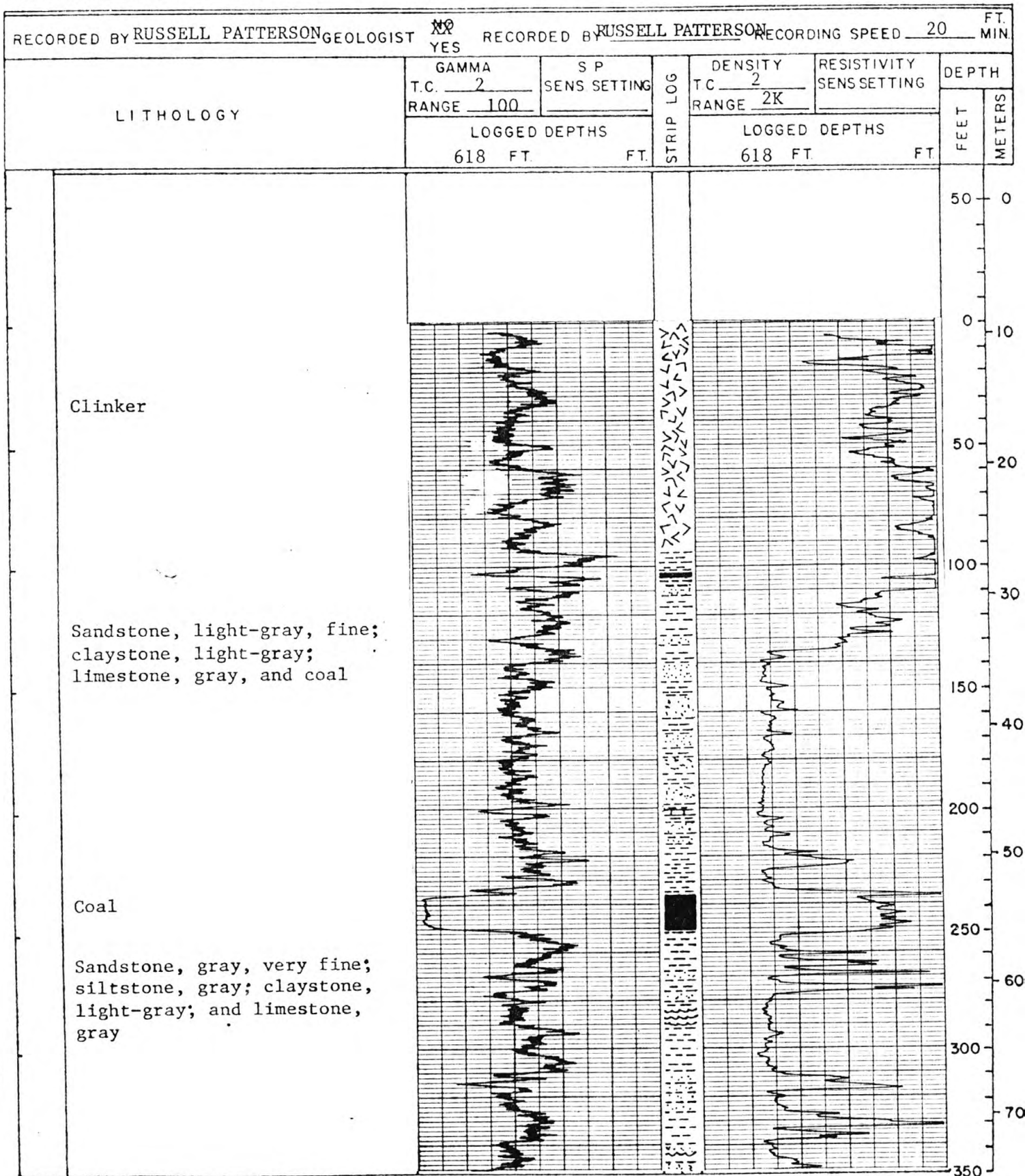


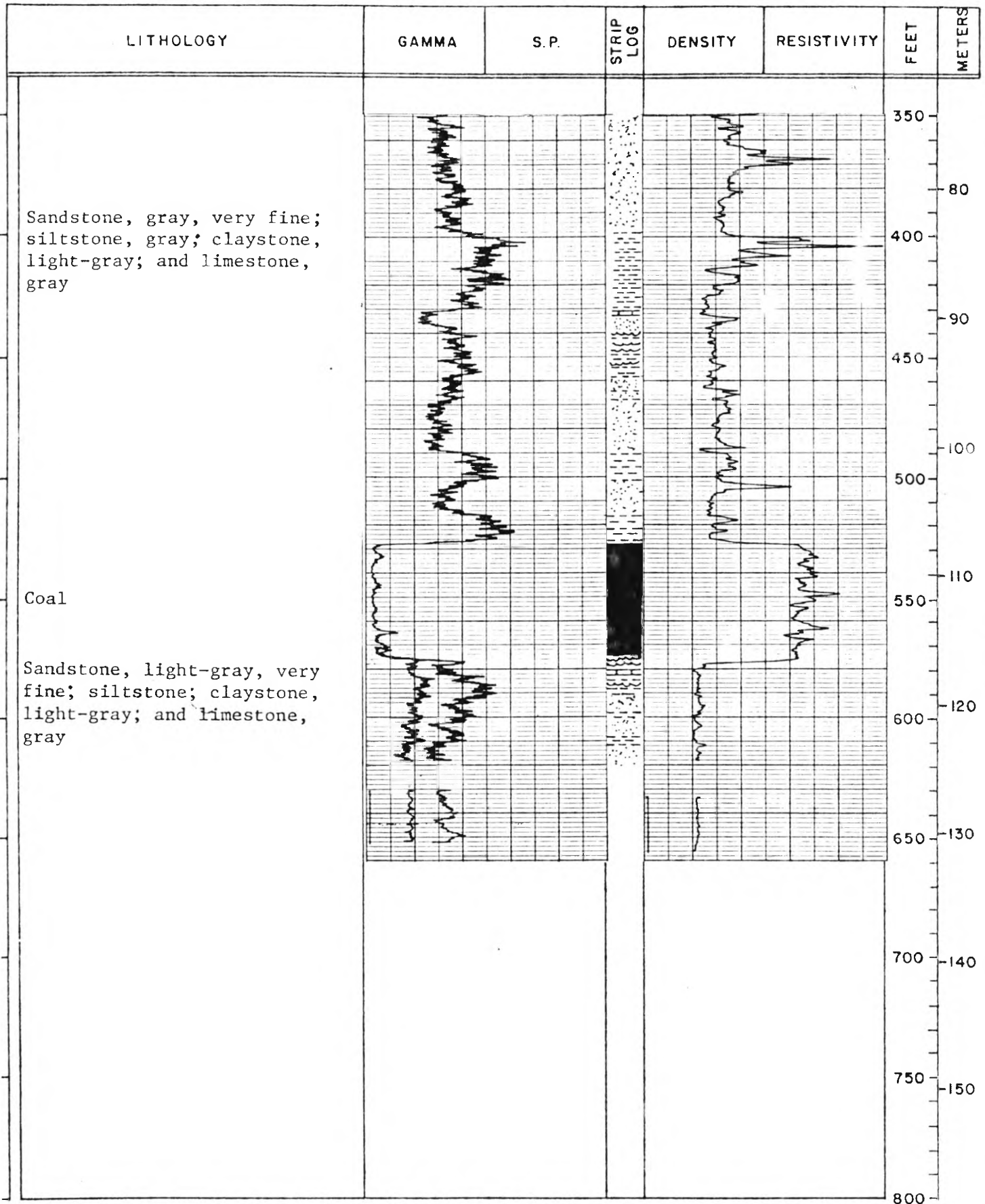
Hole No: US-7946 Map: Half Moon Hill Date: 8/27/79 State: Montana County: Big Horn
 Elev.: 4126 FT Location: T 7 ^N S R 40 ^E W, Sec 7 Tract DBBD Drilled depth 760 FT
 Measured: 2246 FT ^{FSL} 2983 FT ^{FWL} XXXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☒ No ☐
 Remarks: Drilled with foam





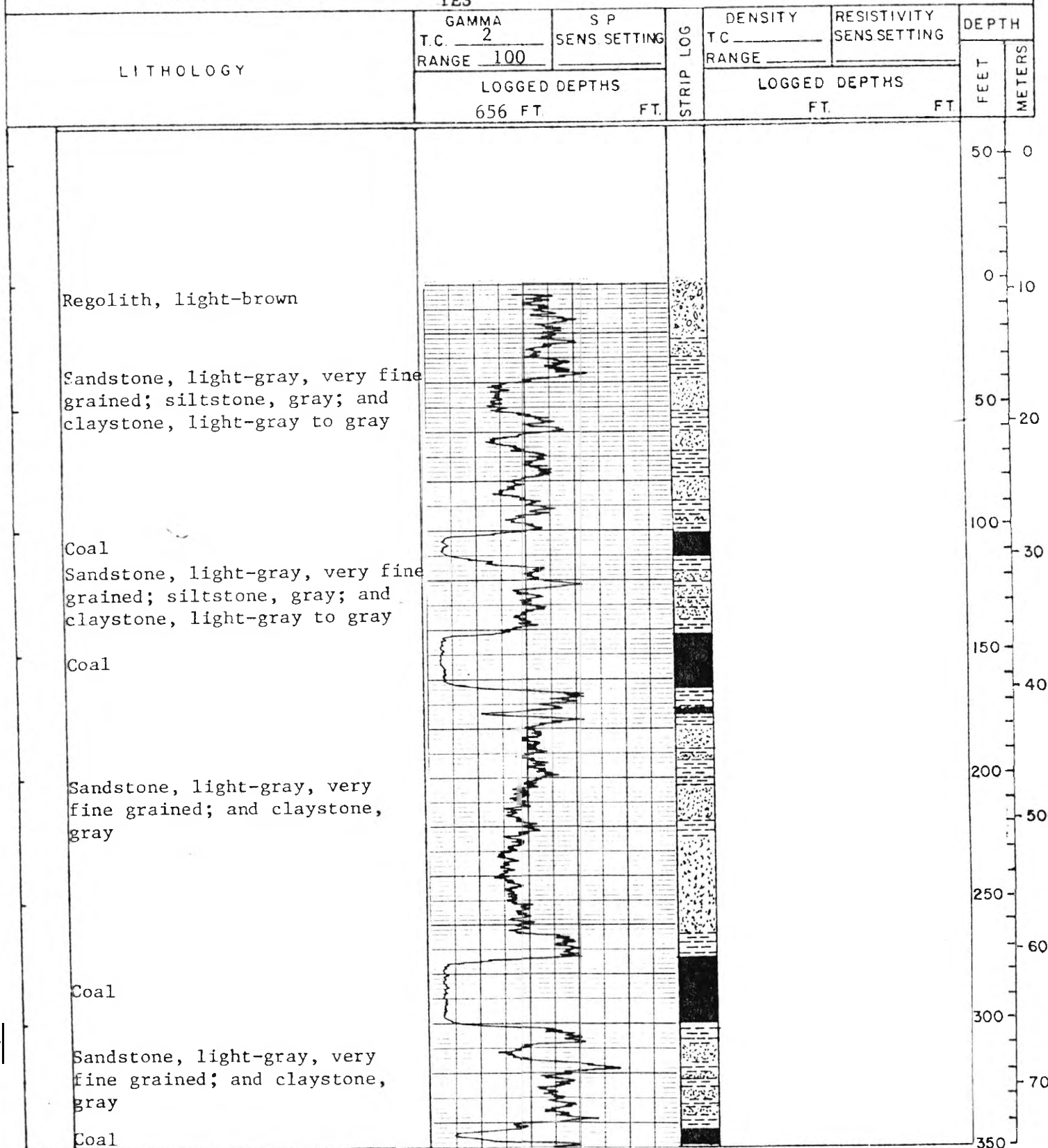
Hole No: US-7947 Map: Tongue River Dam Date: 8/30/79 State: Montana County: Big Horn
 Elev.: 3982 FT Location: T 7 S R 40 E, Sec 25 Tract BBCB Drilled depth 620 FT
 Measured: 838 FT ~~FNL~~ 48 FT ~~FWL~~ FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Drilled with foam.

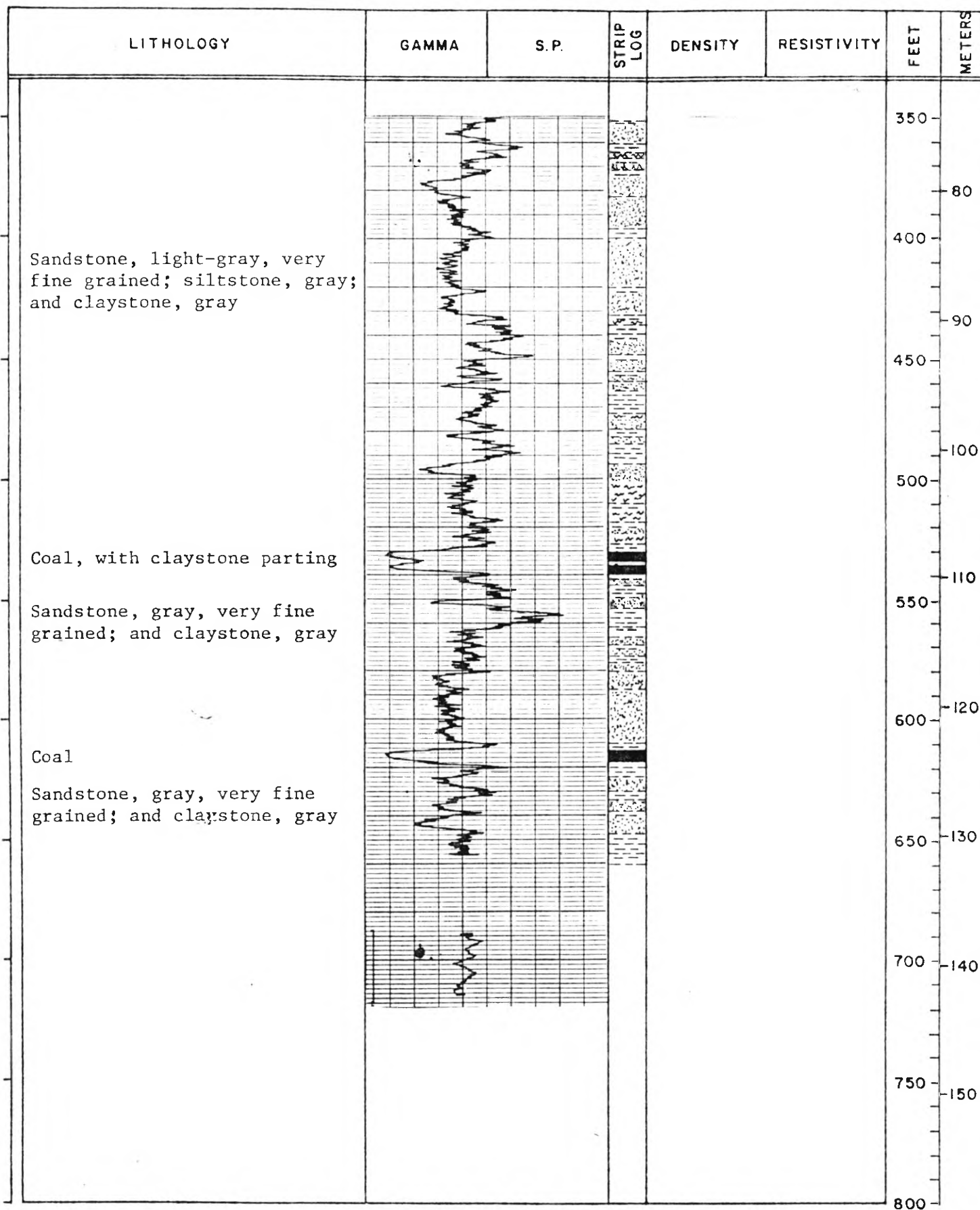




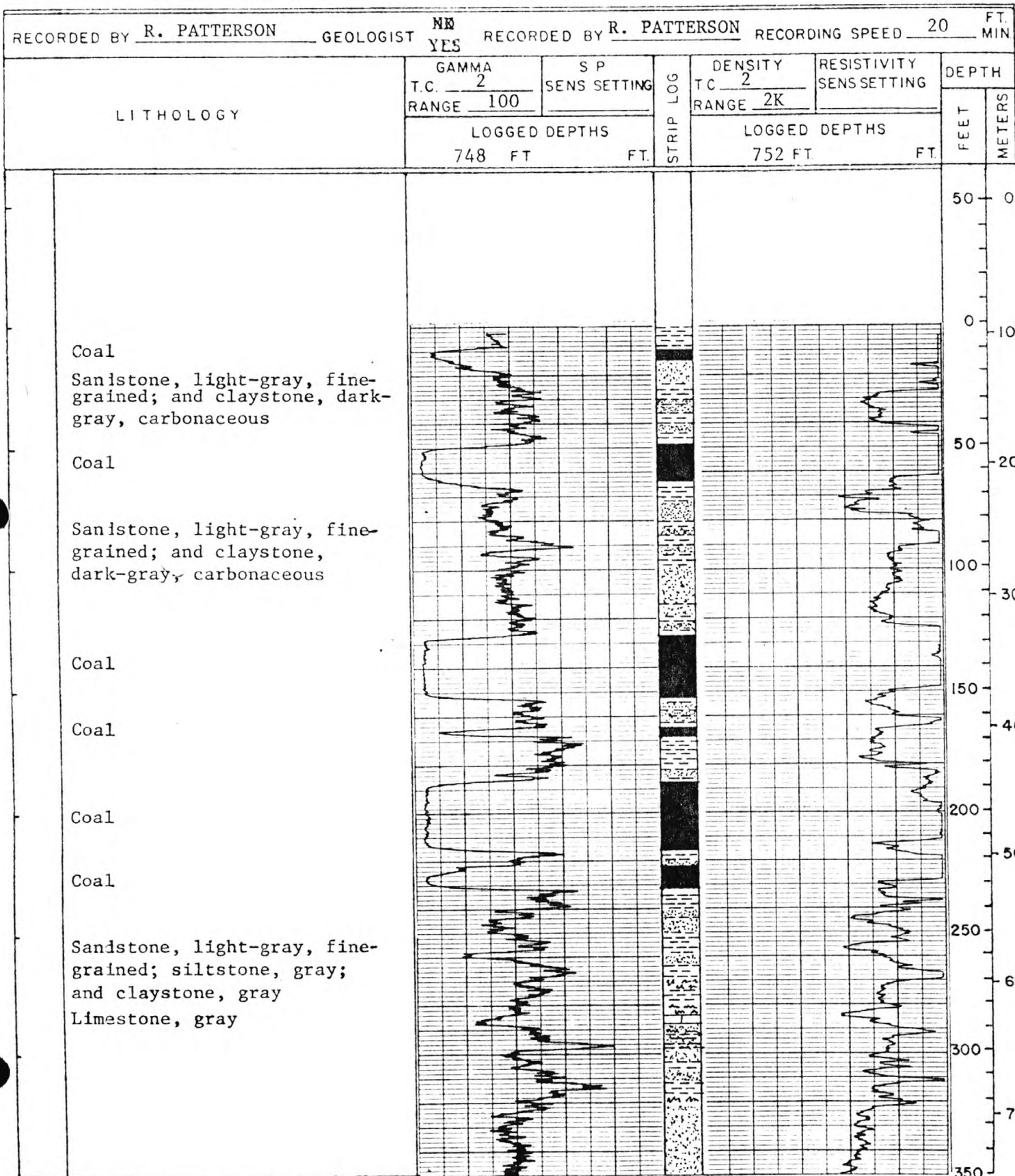
Hole No: US-7948 Map: Half Moon Hill Date: 9/18/79 State: Montana County: Big Horn
 Elev: 4436 FT Location: T 7 S R 39 E, Sec 13 Tract CCAC Drilled depth 940 FT
 Measured: 780 FT ~~EST~~ 963 FT ~~FWL~~ FT. Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☐
 Remarks: Gamma would only go to 656', density was stuck at 720', but spring slackened and probe was retrieved. (Poor hole)

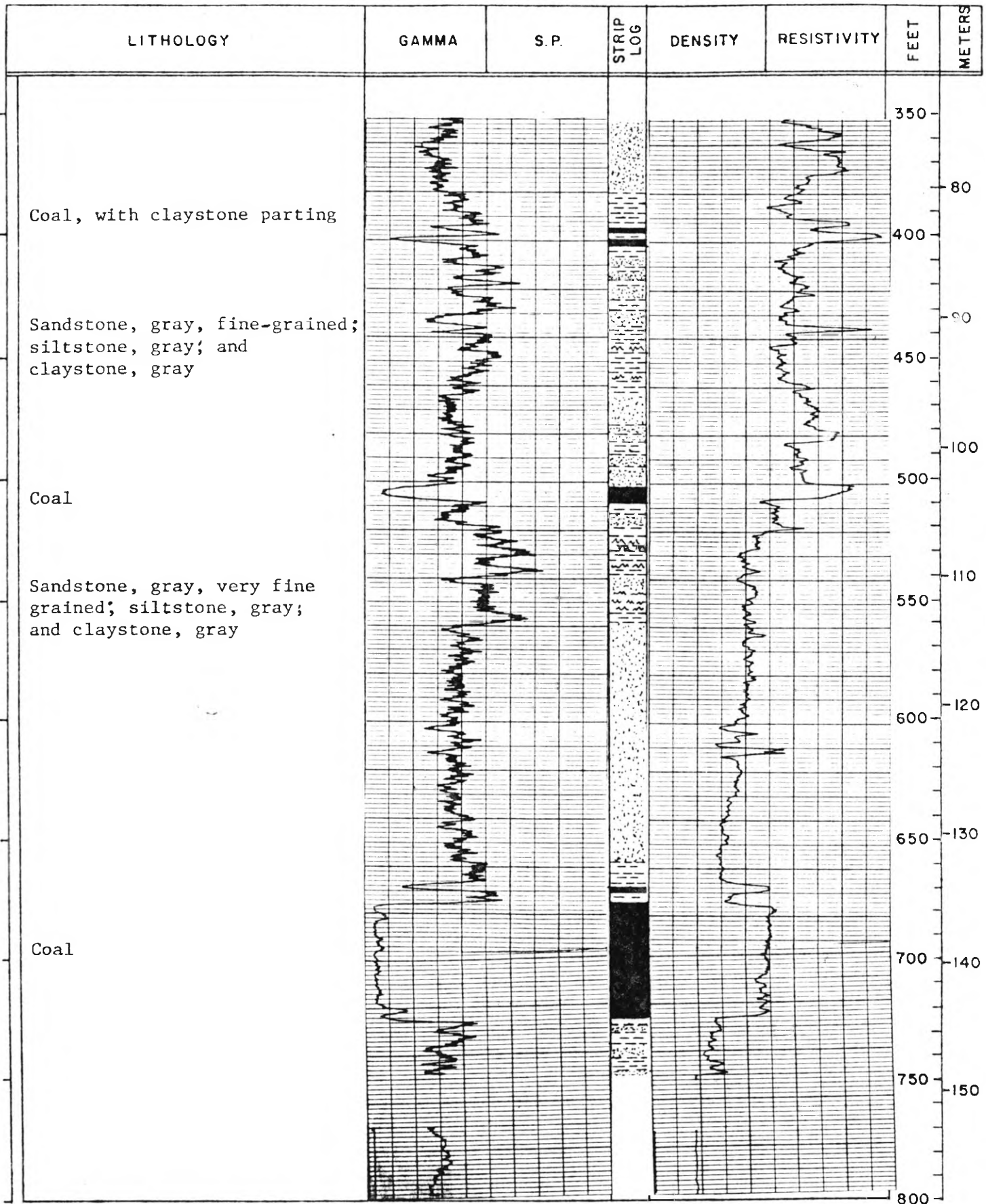
RECORDED BY R. PATTERSON GEOLOGIST ~~XX~~ YES RECORDED BY R. PATTERSON RECORDING SPEED 20 FT. MIN.



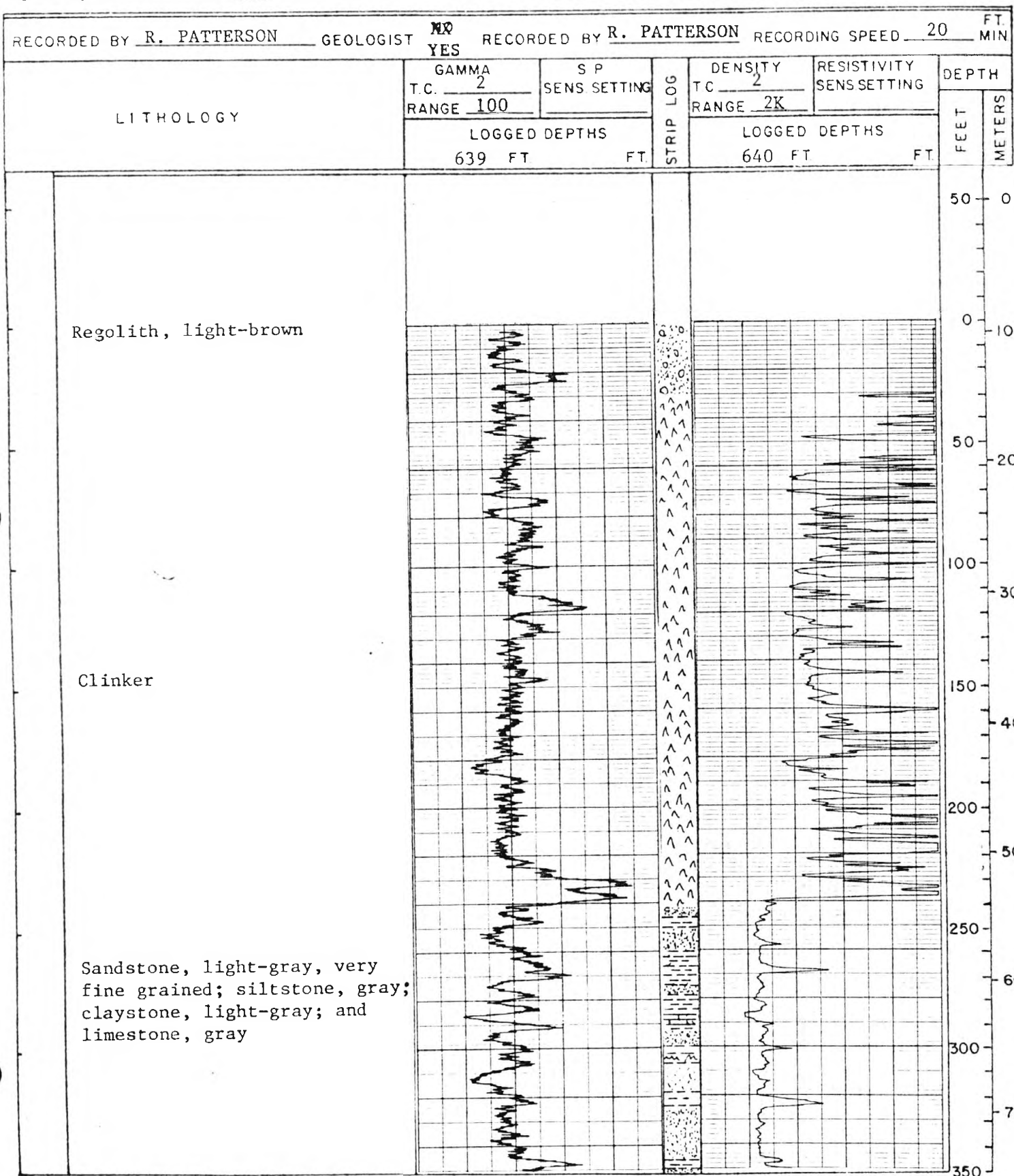


Hole No: US-7949 Map: Half Moon Hill Date: 9/21/79 State: Montana County: Big Horn
 Elev.: 4208 FT Location: T 7 S R 40 W, Sec 19 Tract CDCC Drilled depth 760 FT
 Measured: 285 FT FSL 1128 FT FWL FEW FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☐
 Remarks: Drilled with foam; no water in hole.

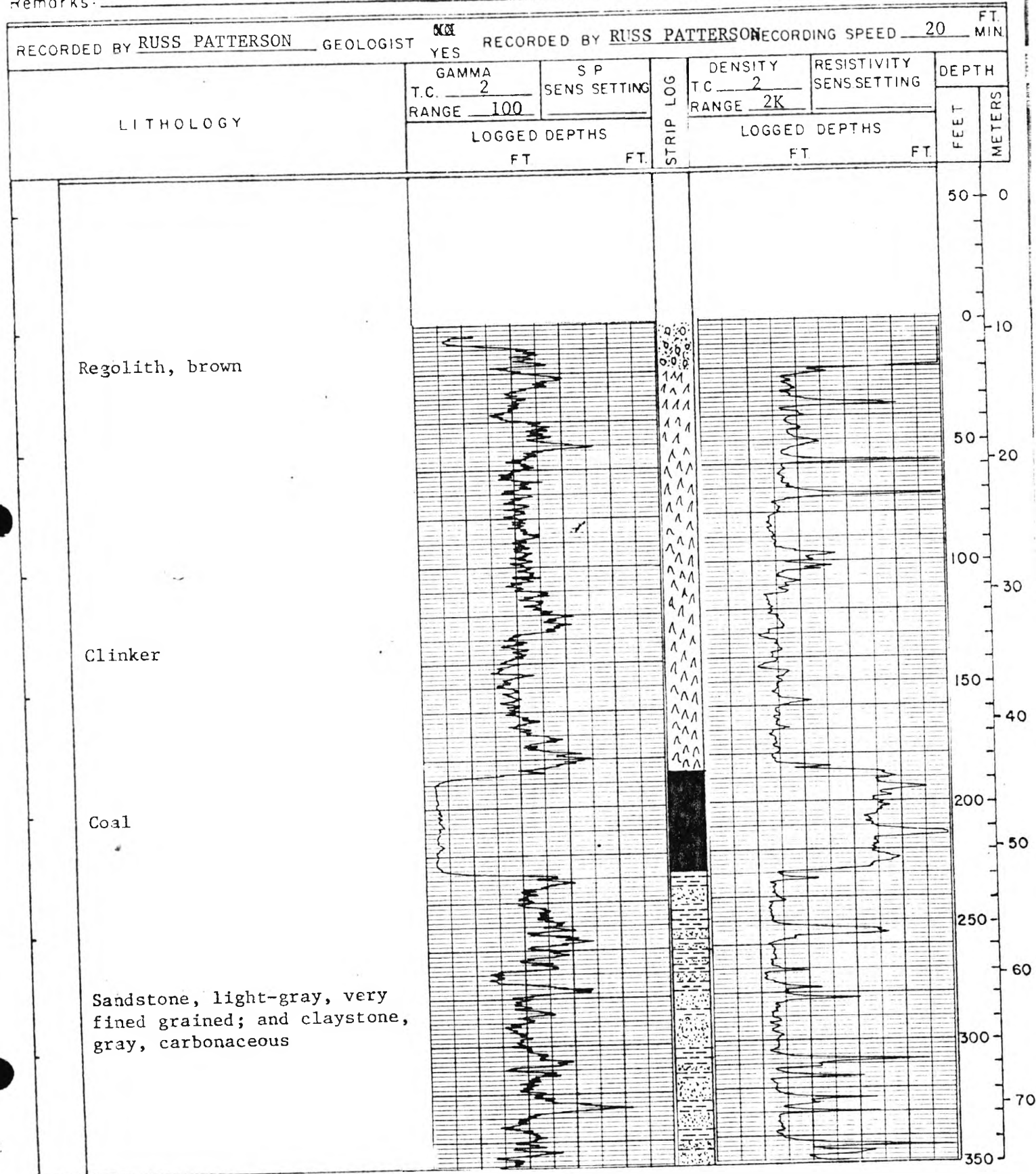


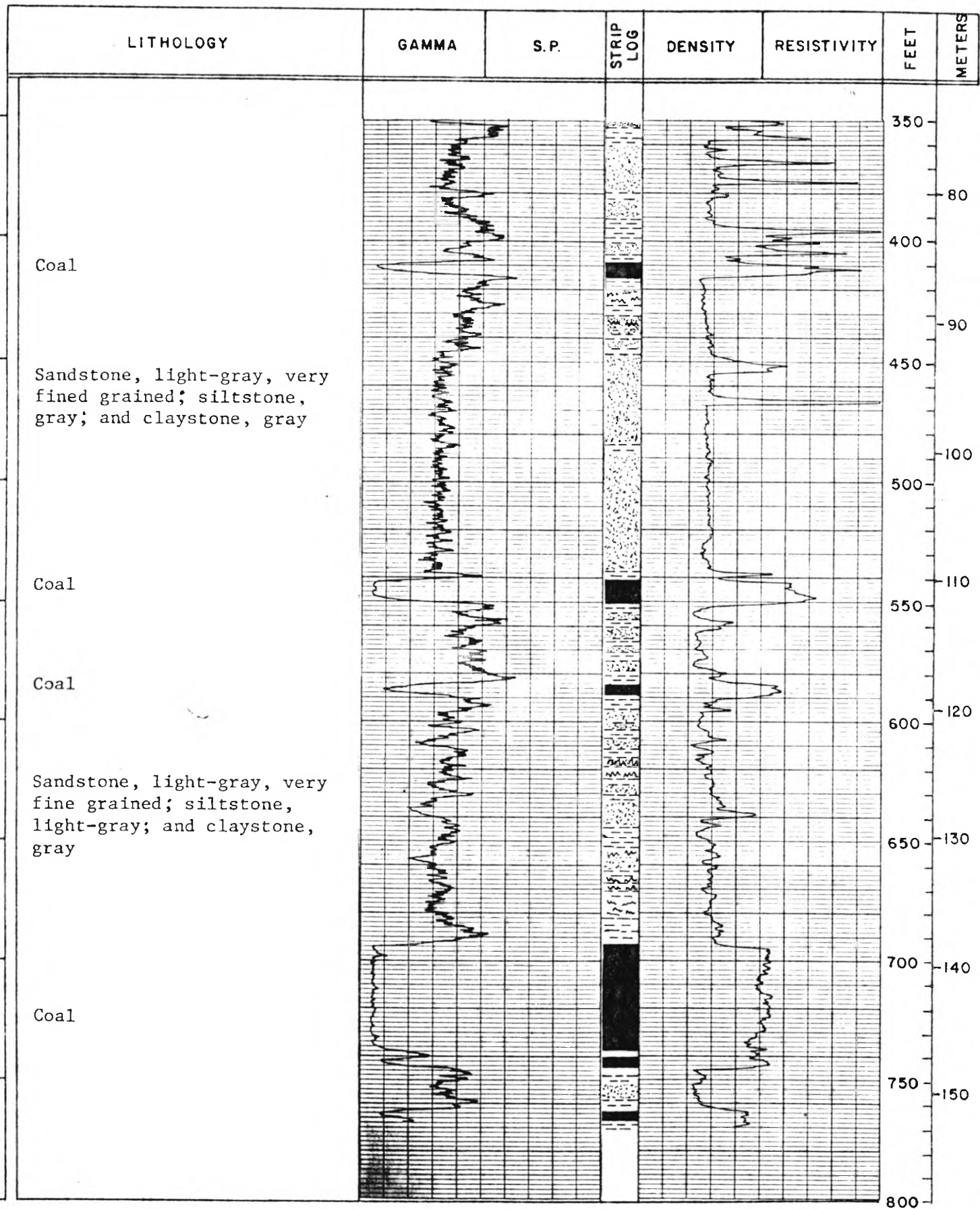


Hole No: US-7950 Map: Half Moon Hill Date: 9/23/79 State: Montana County: Big Horn
 Elev.: 4265 FT Location: T 7 S R 39 E, Sec 27 Tract CACA Drilled depth 660 FT
 Measured: 852 FT ~~PNL~~ ~~XXX~~ 1800 FT ~~FWL~~ FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

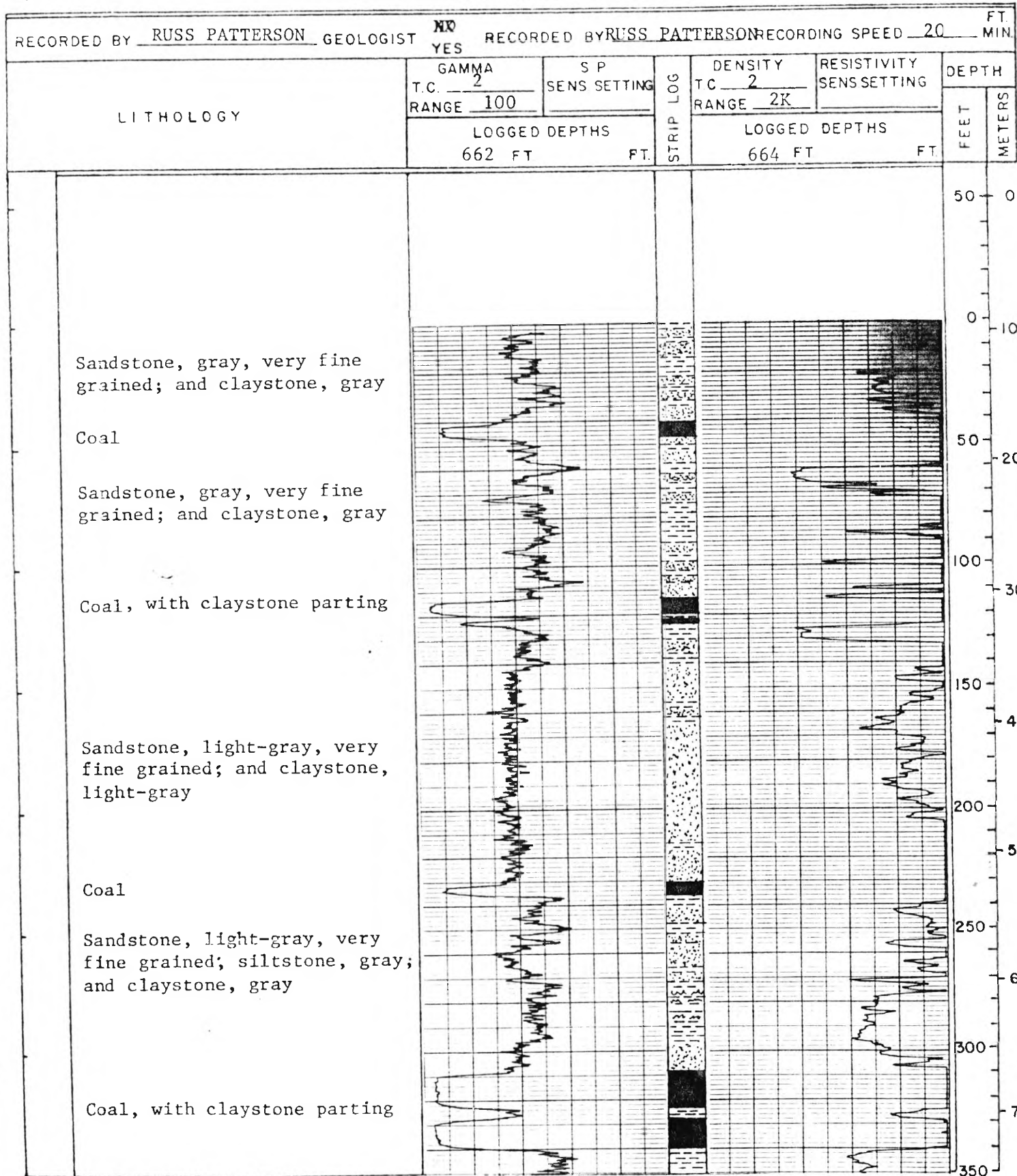


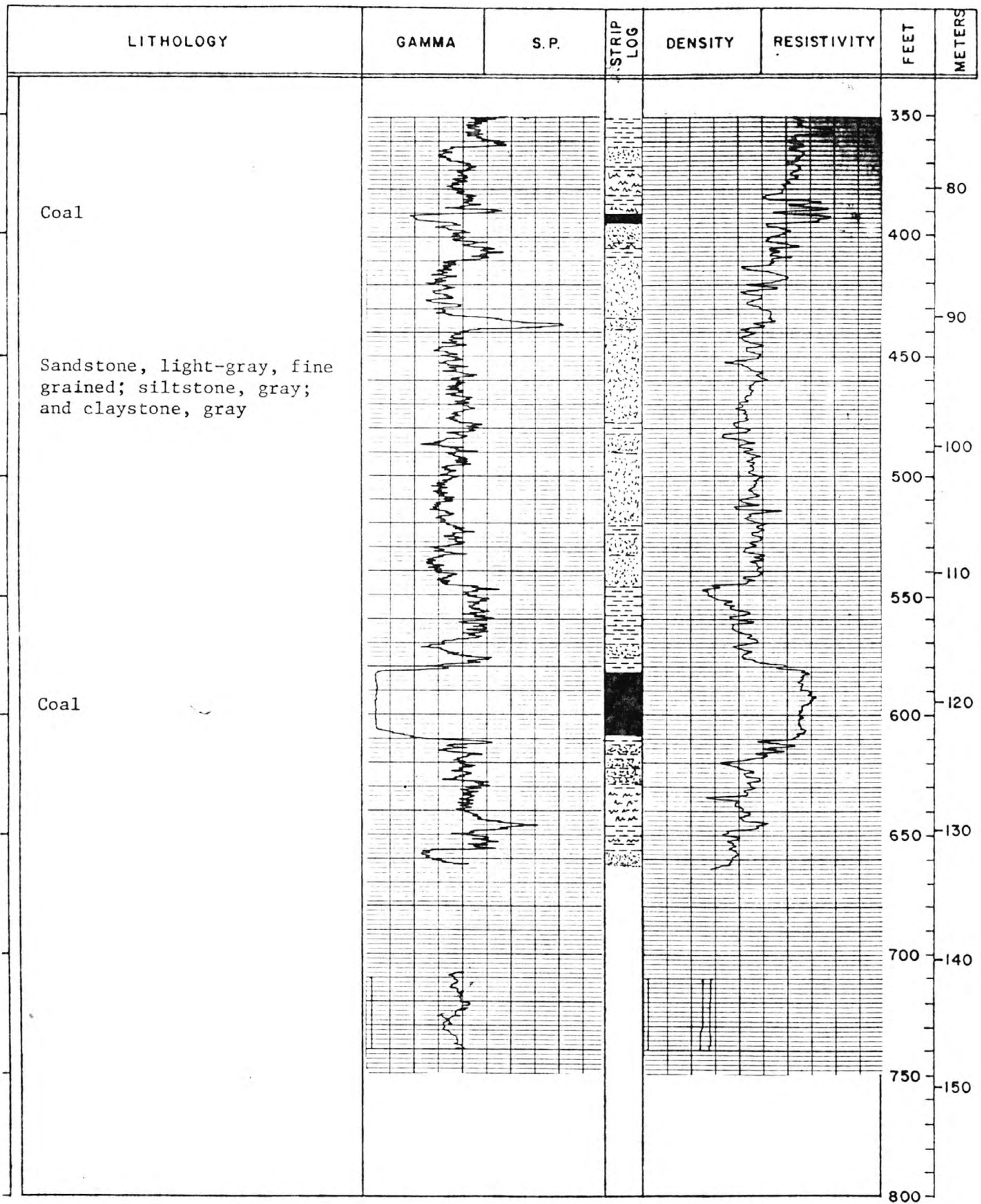
Hole No: US-7951 Map: Half Moon Hill Date: 9/23/79 State: Montana County: Big Horn
 Elev.: 4306 FT Location: T 7 S R 39 E, Sec 22 Tract CCDA Drilled depth 770 FT
 Measured: 362 FT FSL 1165 FT FWL FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks:





Hole No: US-7952 Map: Kirby Date: 9/25/79 State: Montana County: Big Horn
 Elev: 4672 FT Location: T 6 S R 39 E, Sec 24 Tract CBBB Drilled depth 680 FT
 Measured: 2260 FT FSL 50 FT FWL 650 FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

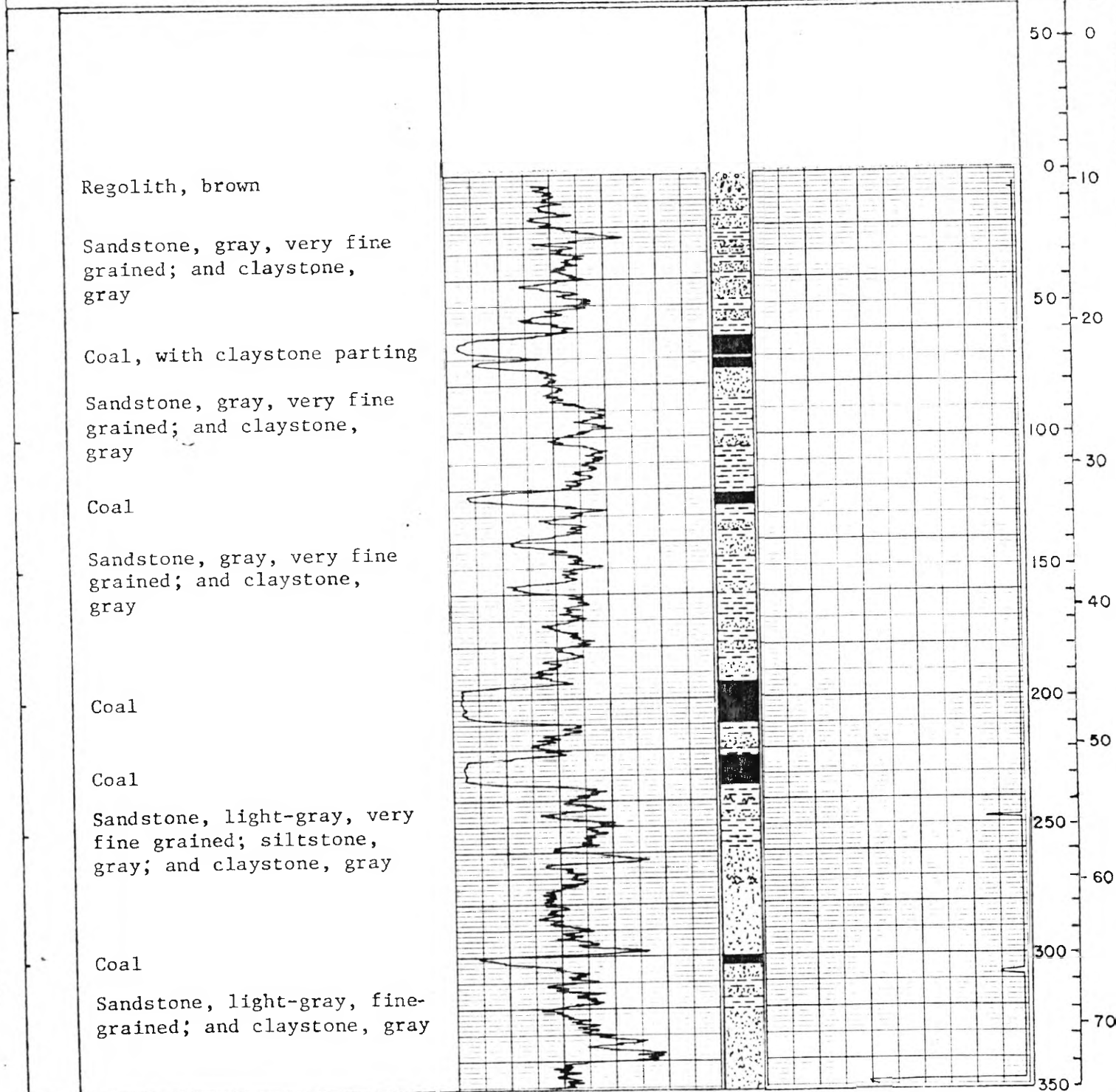


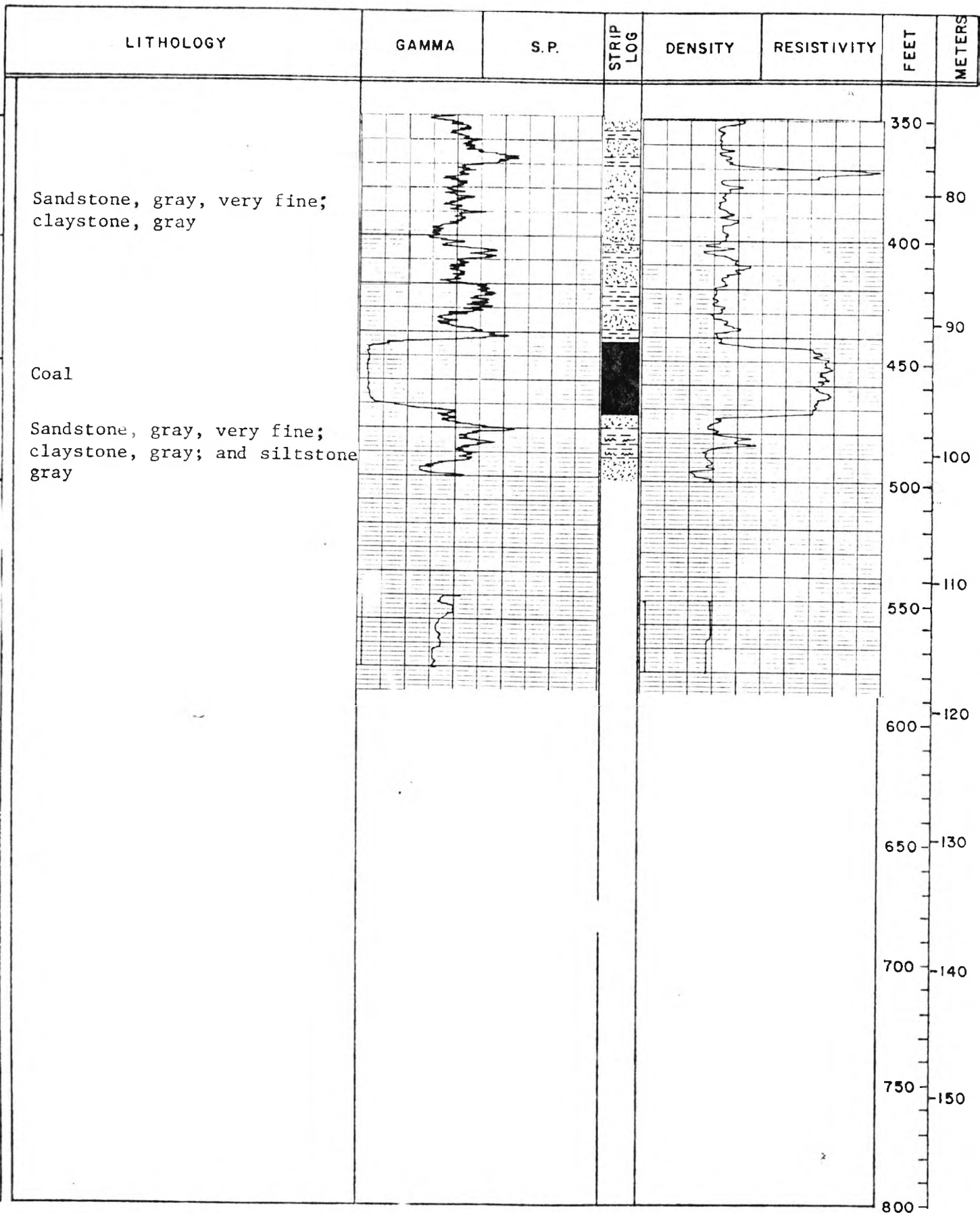


Hole No: US-7953 Map: Kirby Date: 9/26/79 State: Montana County: Big Horn
 Elev: 4522 FT Location: T 6 S R 39 W, Sec 23 Tract BADA Drilled depth 540 FT
 Measured: 782 FT ~~FWL~~ 2452 FT ~~FWL~~ FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY RUSS PATTERSON GEOLOGIST ~~NO~~ YES RECORDED BY RUSS PATTERSON RECORDING SPEED 20 FT. MIN

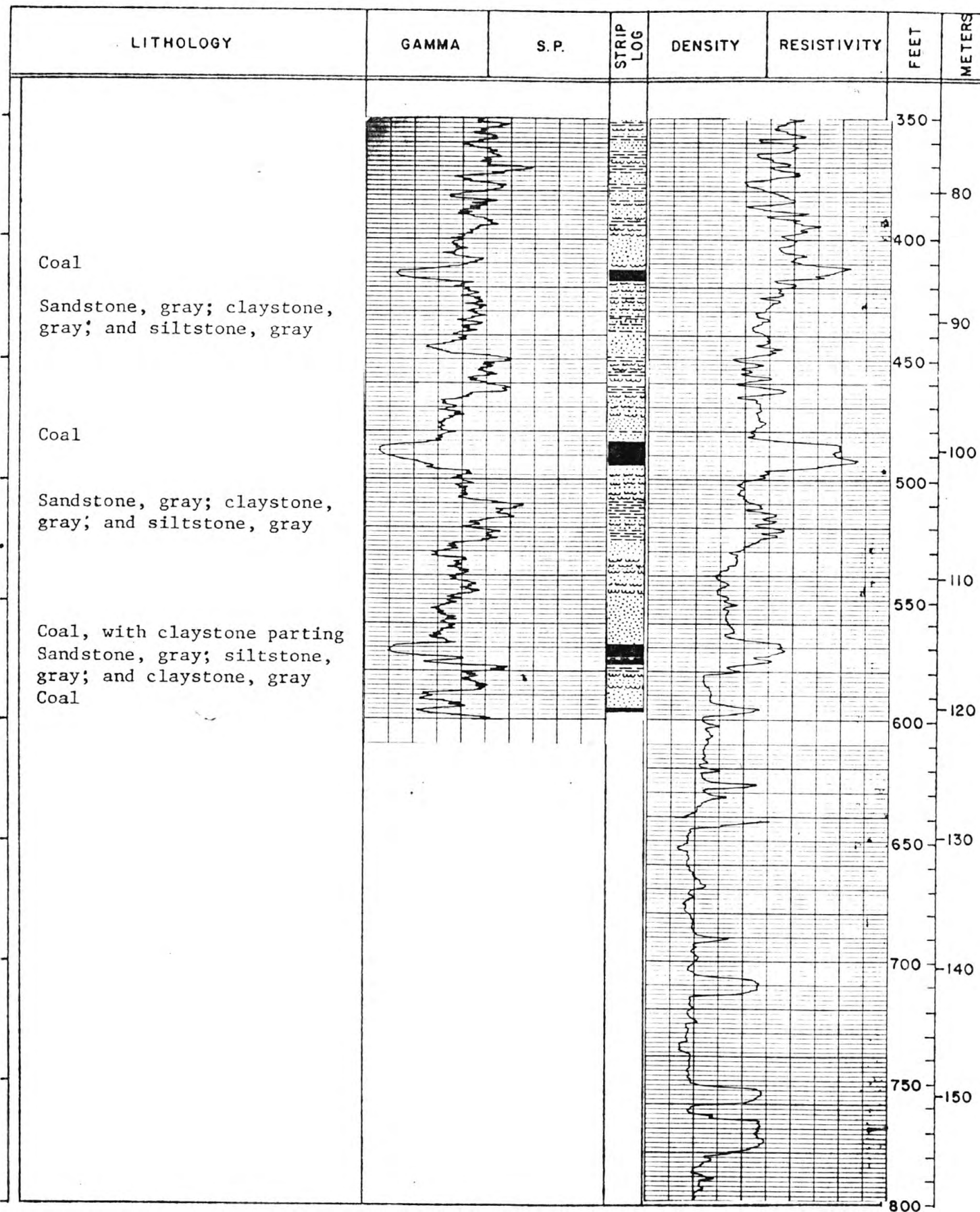
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING	STRIP LOG	DENSITY TC <u>2</u> RANGE <u>500</u>	RESISTIVITY SENS SETTING	DEPTH	
	LOGGED DEPTHS 500 FT FT.			LOGGED DEPTHS 500 FT FT.		FEET	METERS



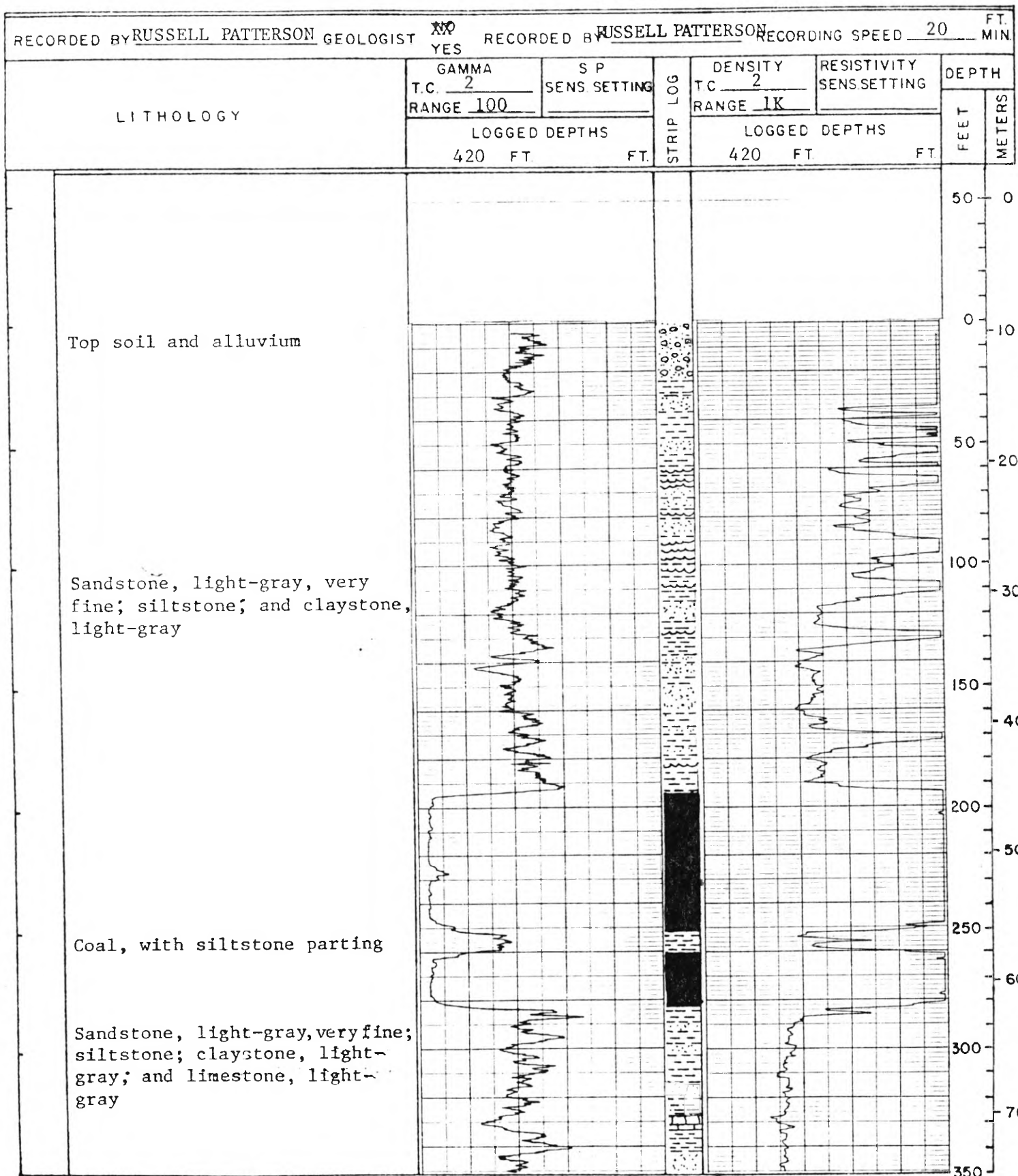


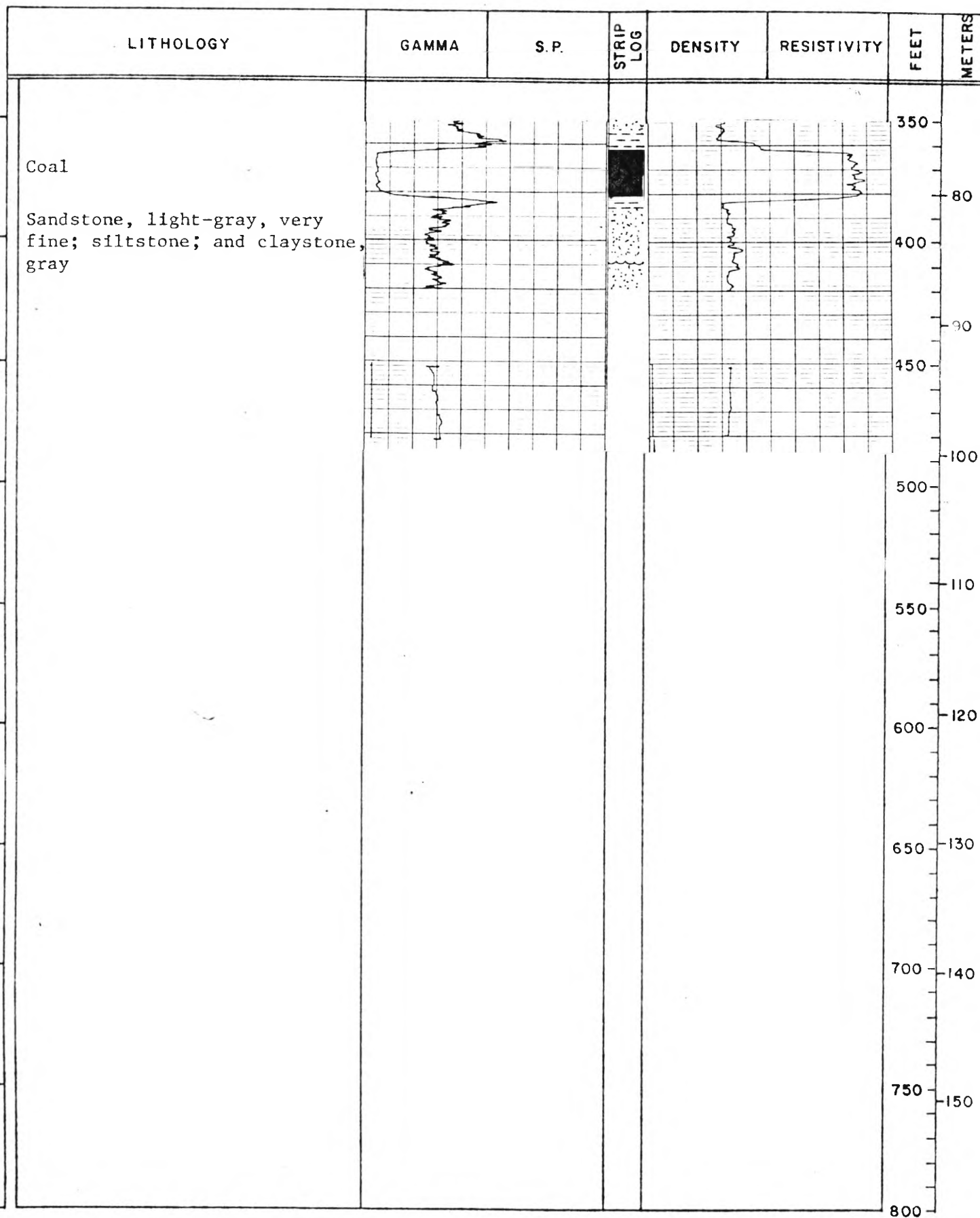
Hole No: US-7954 Map: Lacey Gulch Date: 10/2/79 State: Montana County: Rosebud
Elev.: 3912 FT Location: T 7 S R 42 E, Sec 32 Tract ABBC Drilled depth 1040 FT
Measured: 340 FT ~~KXX~~ ^{FNL} 1160 FT ~~KXX~~ ^{FEL} FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks: _____

RECORDED BY		GEOLOGIST		RECORDED BY		FT.	
RUSSELL PATTERSON				RUSSELL PATTERSON		MIN.	
LITHOLOGY		GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING	DENSITY TC <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING	DEPTH	
		LOGGED DEPTHS 600 FT		LOGGED DEPTHS 1020 FT		FEET	METERS
Sand, brown; silt, brown; clay, brown, and alluvial						50	0
Clinker						0	10
Sandstone, gray; claystone, gray; and siltstone, gray						50	20
Coal, with gray claystone parting						100	30
						150	40
						200	50
						250	60
						300	70
						350	80

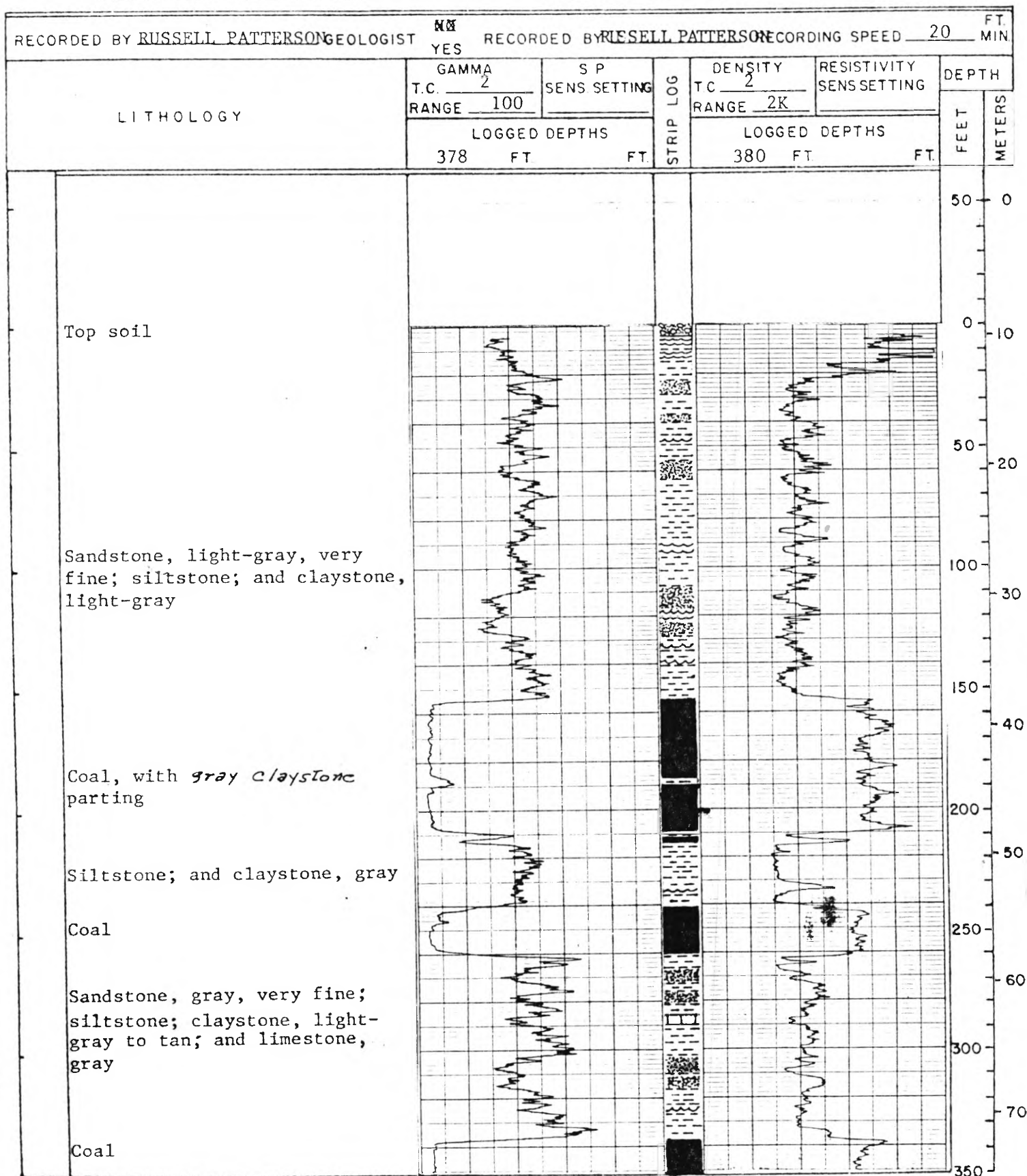


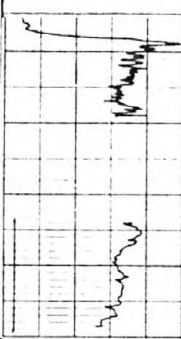
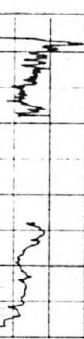

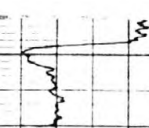
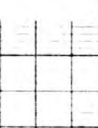
Hole No: US-7955 Map: Decker Date: 10/4/79 State: Montana County: Big Horn
 Elev.: 3621 FT Location: T 9 ^N R 40 ^E W, Sec 17 Tract BBCA Drilled depth 420 FT
 Measured: 896 FT ^{FNL} ~~894~~ 332 FT ^{FWL} ~~XXX~~ FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____





Hole No: US-7956 Map: Decker Date: 10/5/79 State: Montana County: Big Horn
 Elev.: 3617 FT Location: T 9 S R 40 E, Sec 8 Tract CDDB Drilled depth 380 FT
 Measured: 450 FT FSL 2086 FT FWL XXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Gas flowing into hole.



LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Coal						350	
Sandstone, light-gray, very fine; and claystone, gray						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

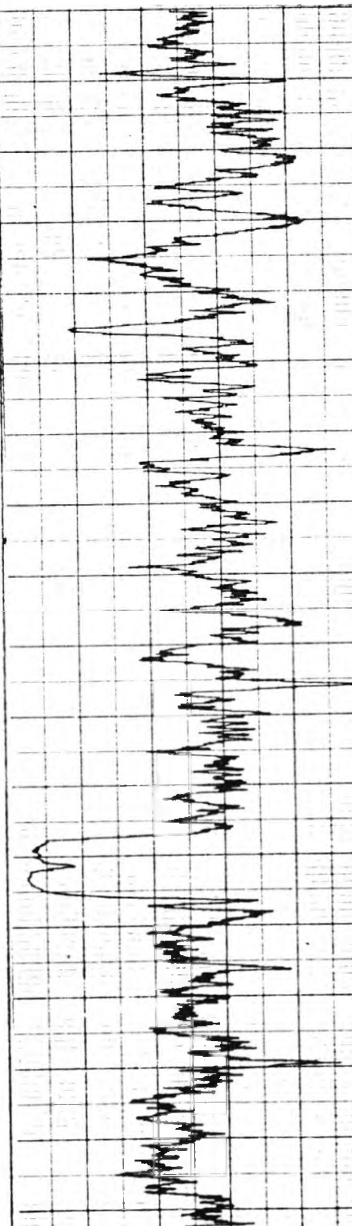

Hole No: US-7957 Map: Decker Date: 10/5/79 State: Montana County: Big Horn
 Elev: 3644 FT Location: T 9^N R 40^E W, Sec 6 Tract AACB Drilled depth 320 FT
 Measured: 840 FT ^{FNL} ~~FSL~~ 1270 FT ^{FEL} ~~FWL~~ FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☒ No ☐
 Remarks: _____

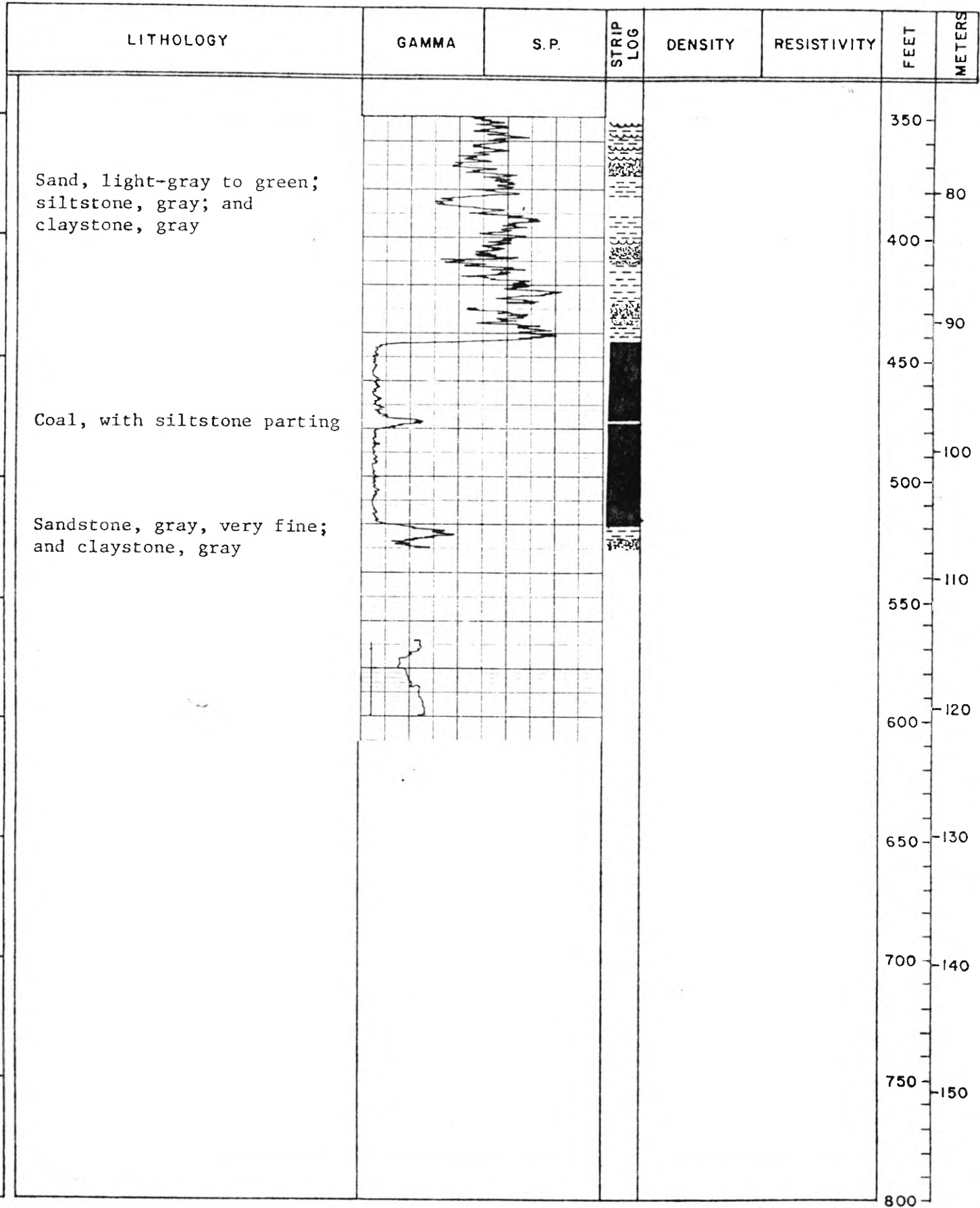
RECORDED BY <u>RUSSELL PATTERSON</u> GEOLOGIST <input checked="" type="checkbox"/> YES		RECORDED BY <u>RUSSELL PATTERSON</u> <input checked="" type="checkbox"/> NO		RECORDING SPEED <u>20</u> FT. MIN.			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING	DEPTH	
	LOGGED DEPTHS 320 FT FT.			LOGGED DEPTHS FT. FT.		FEET	METERS
Top soil						50	0
Sandstone, gray, fine; siltstone, light-gray to light-brown; and claystone, light-gray						0	10
						50	20
Coal, with claystone partings						100	30
						150	40
Sandstone, light-gray, very fine; siltstone; and claystone, light-gray						200	50
						250	60
Limestone, gray						300	70
Coal						350	
Sandstone, light-gray, very fine; siltstone; and claystone, gray							

LITHOLOGY	GAMMA	S.P.	STRIP, LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

LITHOLOGY	GAMMA	S. P.	STRIP, LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

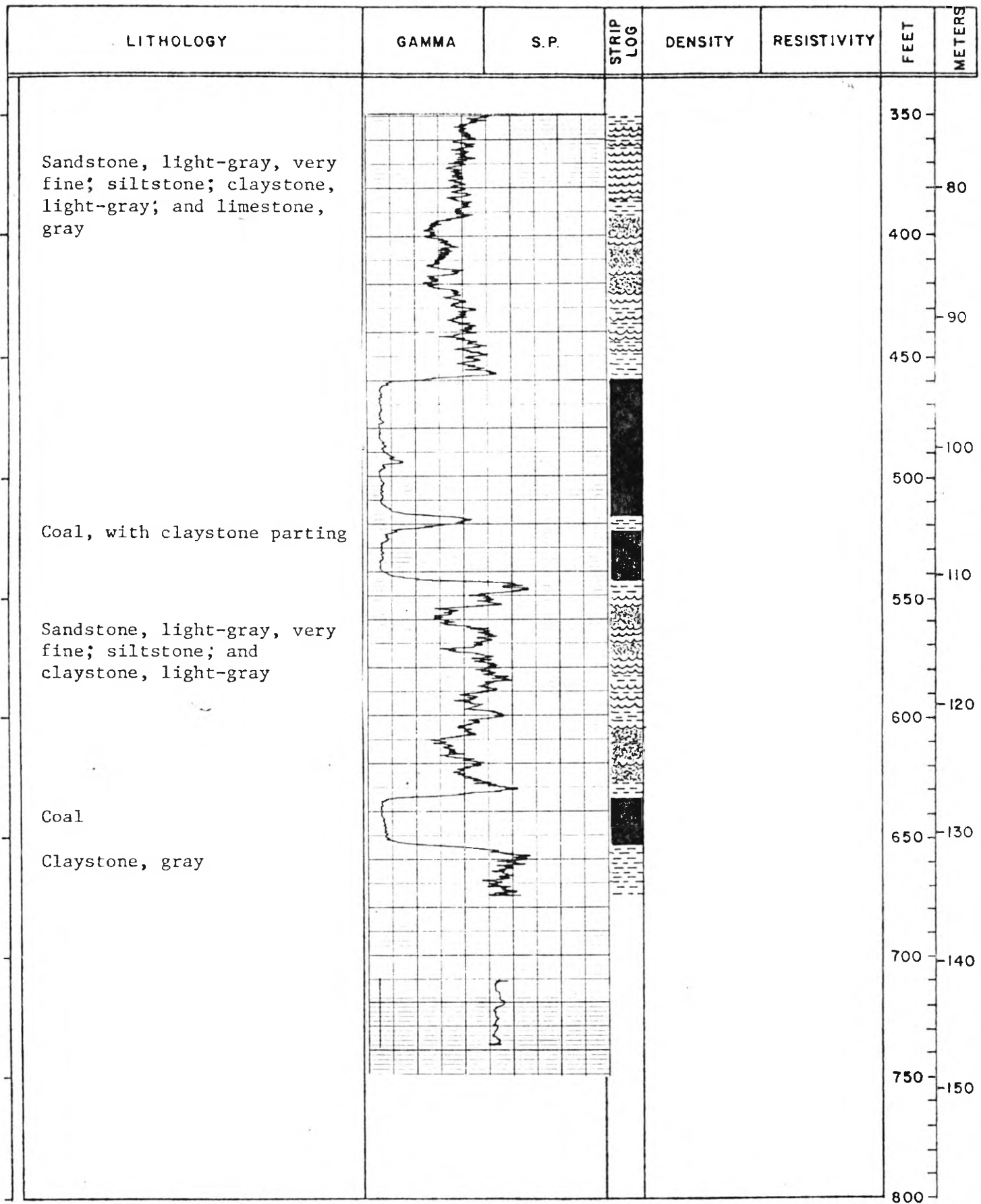
Hole No: US-7958A Map: Pearl School Date: 10/11/79 State: Montana County: Big Horn
 Elev.: 3967 FT Location: T 9 N E S R 39 W, Sec 1 Tract CADD Drilled depth 540 FT
 Measured: 2230 FT ~~FSL~~ 2290 FT ~~FWL~~ FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>RUSSELL PATTERSON</u> GEOLOGIST NO YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>25</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>50</u>	S P SENS SETTING	STRIP LOG	DENSITY TC _____ RANGE _____	RESISTIVITY SENS SETTING	DEPTH	
	LOGGED DEPTHS 529 FT FT.			LOGGED DEPTHS FT FT.		FEET	METERS
Siltstone, tan						50	0
						0	10
						50	20
						100	30
Siltstone, gray to brown, carbonaceous; and claystone, gray to brown, carbonaceous						150	40
Coal						200	50
						250	60
Sand, light-gray to green; siltstone, gray; and claystone, gray						300	70
						350	

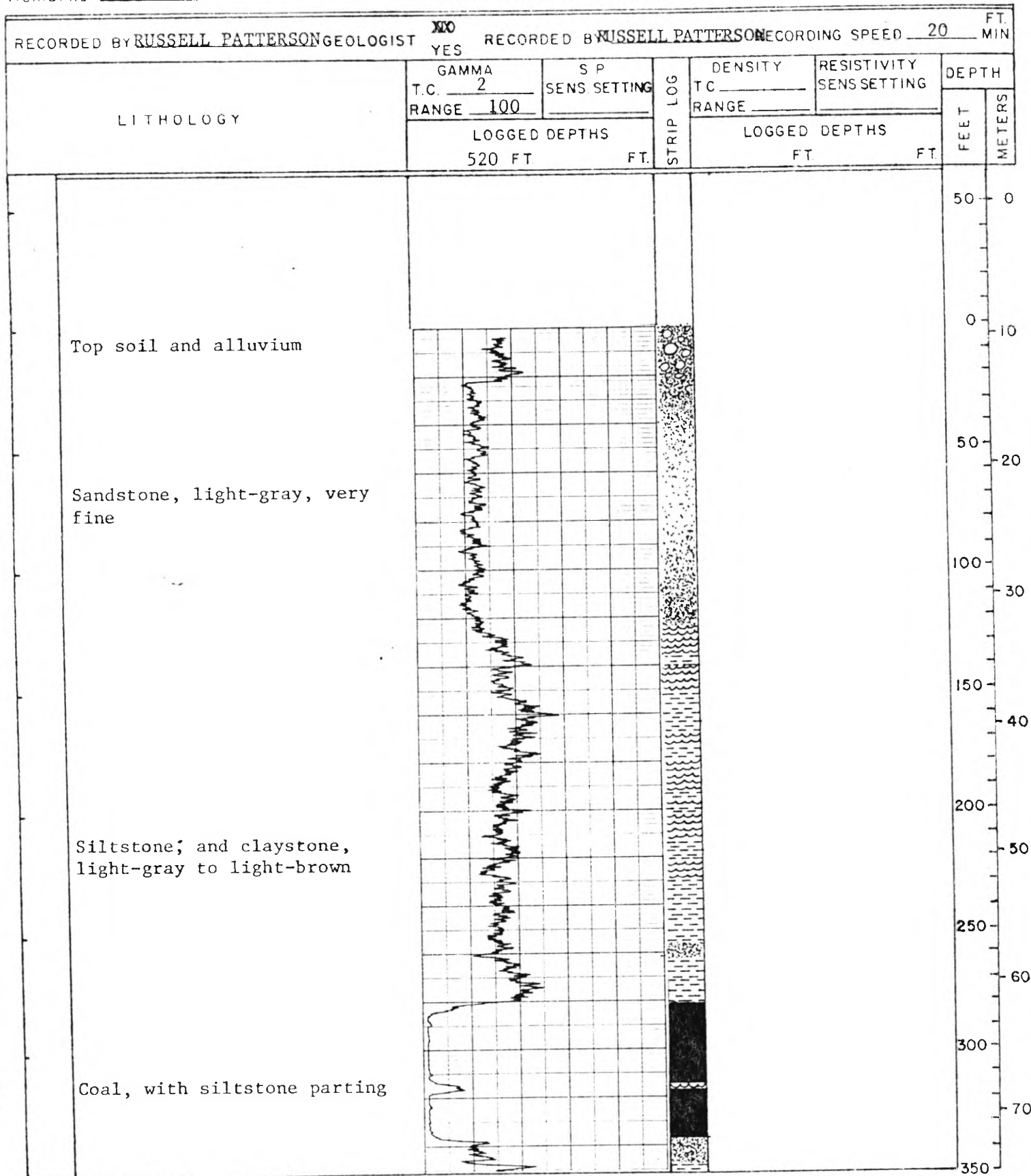


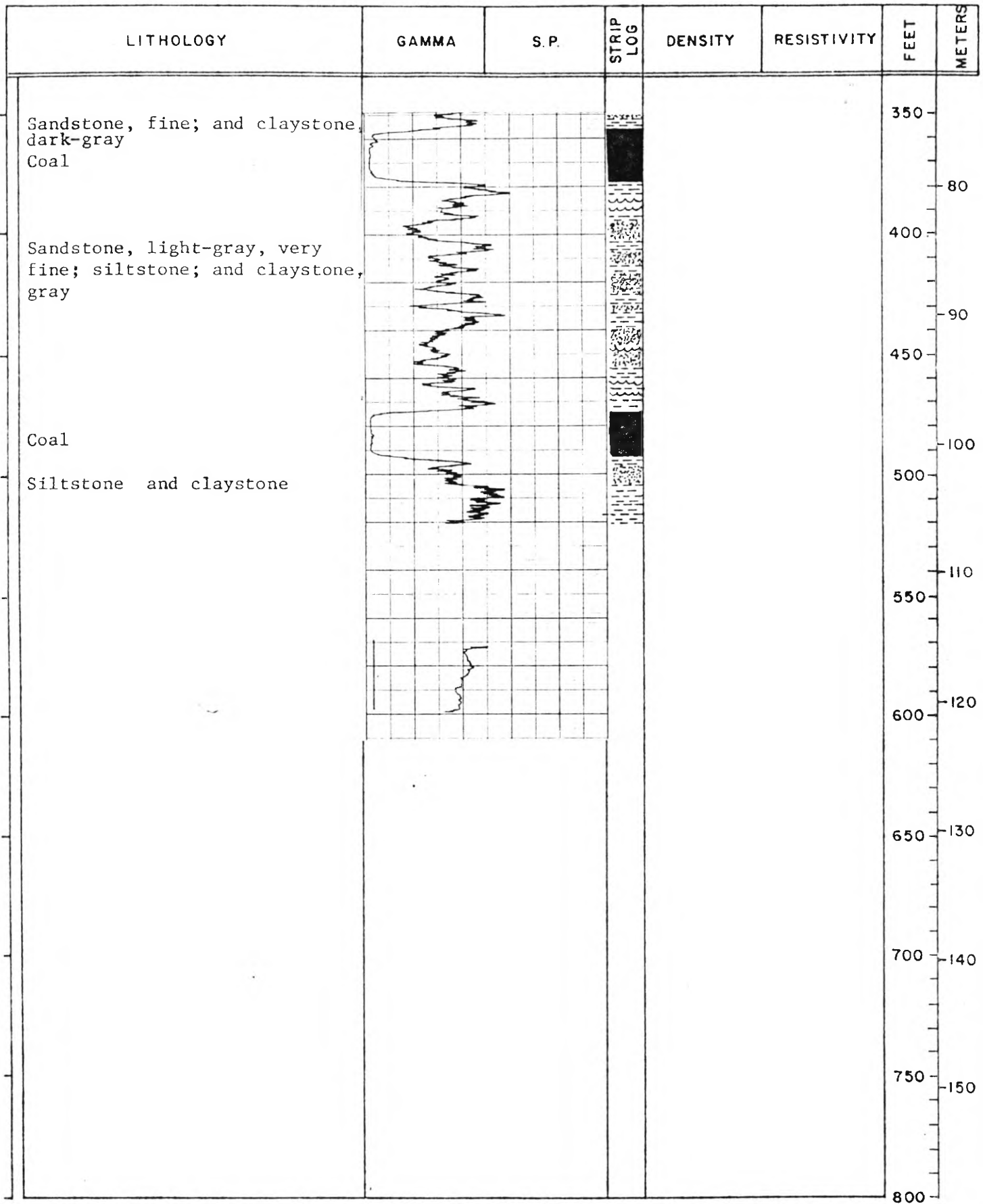
Hole No: US-7959 Map: Decker Date: 10/8/79 State: Montana County: Big Horn
 Elev.: 3788 FT Location: T 9^N R 40^E W, Sec 20 Tract BBBC Drilled depth 680 FT
 Measured: 595 FT ^{FNL} XXX 152 FT ^{KXX} FWL FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>RUSSELL PATTERSON</u> GEOLOGIST ^{NR} YES		RECORDED BY <u>RUSSELL PATTERSON</u> RECORDING SPEED <u>25</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING	DENSITY T.C. _____ RANGE _____
	RESISTIVITY SENS SETTING		DEPTH
	LOGGED DEPTHS 675 FT FT.		LOGGED DEPTHS FT FT
	STRIP LOG		FEET METERS
Claystone, light-brown			50 0
Coal			0 10
Sandstone, light-gray, very fine; siltstone; and claystone, light-gray			50 20
Coal			100 30
			150 40
Sandstone, light-gray, very fine; siltstone; and claystone, light-gray; and limestone, gray			200 50
			250 60
			300 70
			350



Hole No: US-7960 Map: Decker Date: 10/8/79 State: Montana County: Big Horn
 Elev.: 3647 FT Location: T 9 S R 40 E, Sec 20 Tract BDAC Drilled depth 520 FT
 Measured: 1845 FT FNL XXX 2362 FT FWL XXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____





Hole No: US-7961 Map: Pearl School Date: 10/17/79 State: Montana County: Big Horn
 Elev.: 3870 FT Location: T 9^N R 40^E, Sec 18 Tract CCAB Drilled depth 380 FT
 Measured: 1000 FT ^{XXX} FSL 700 FT ^{XXX} FWL FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks:

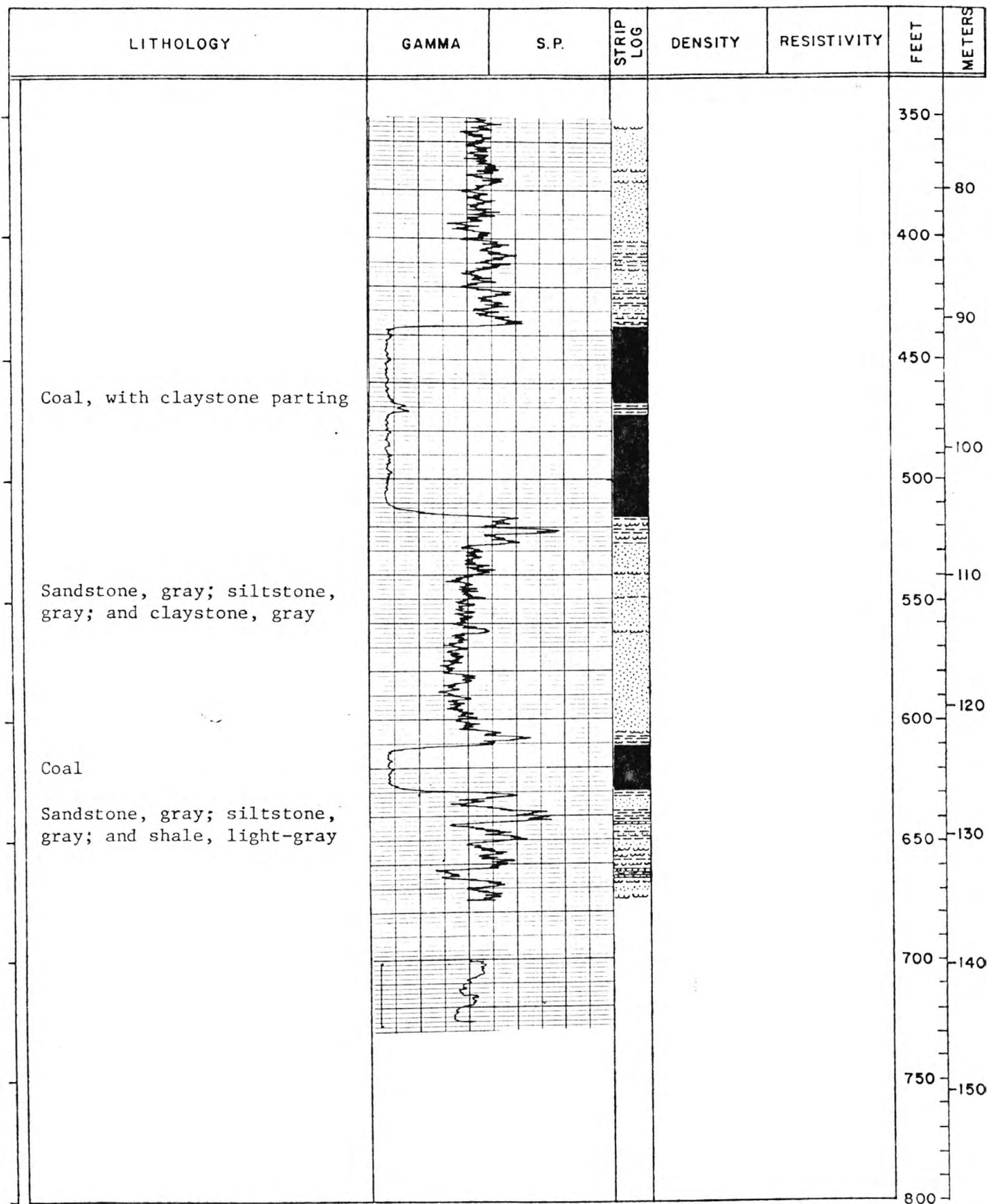
RECORDED BY <u>JON HANGAS</u> GEOLOGIST ^{XXX} YES		RECORDED BY <u>JON HANGAS</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u> </u>	DENSITY TC <u> </u> RANGE <u> </u>
	LOGGED DEPTHS 675 FT FT.		RESISTIVITY SENS SETTING <u> </u> LOGGED DEPTHS FT FT.
DEPTH	STRIP LOG		FEET METERS
50			0
10			50
20			100
30			150
40			200
50			250
60			300
70			350
80			
90			
100			
110			
120			
130			
140			
150			
160			
170			
180			
190			
200			
210			
220			
230			
240			
250			
260			
270			
280			
290			
300			
310			
320			
330			
340			
350			

Siltstone, reddish-brown; and
 claystone, dark-brown
 Coal

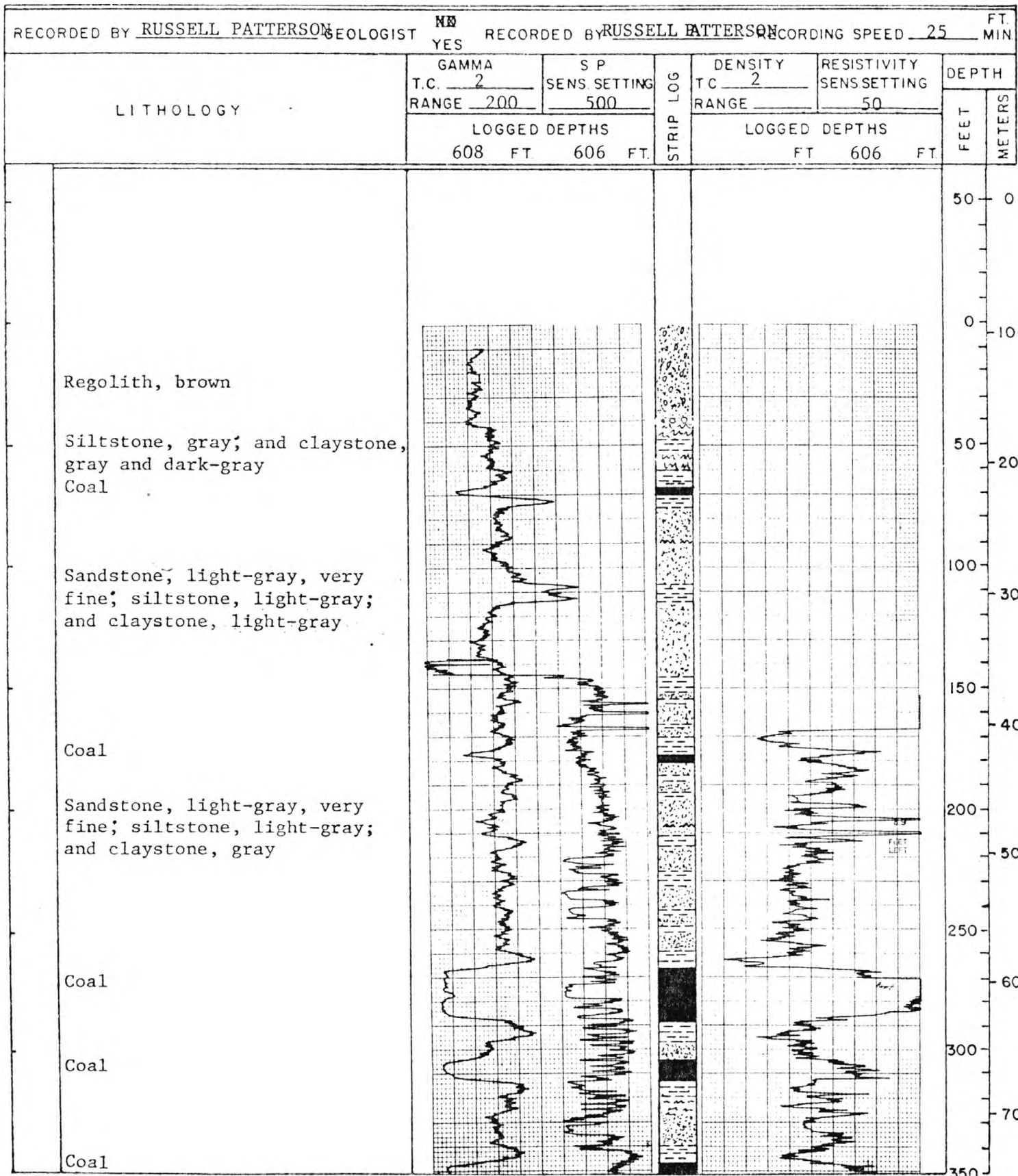
Sandstone, gray; siltstone,
 gray; and claystone, gray

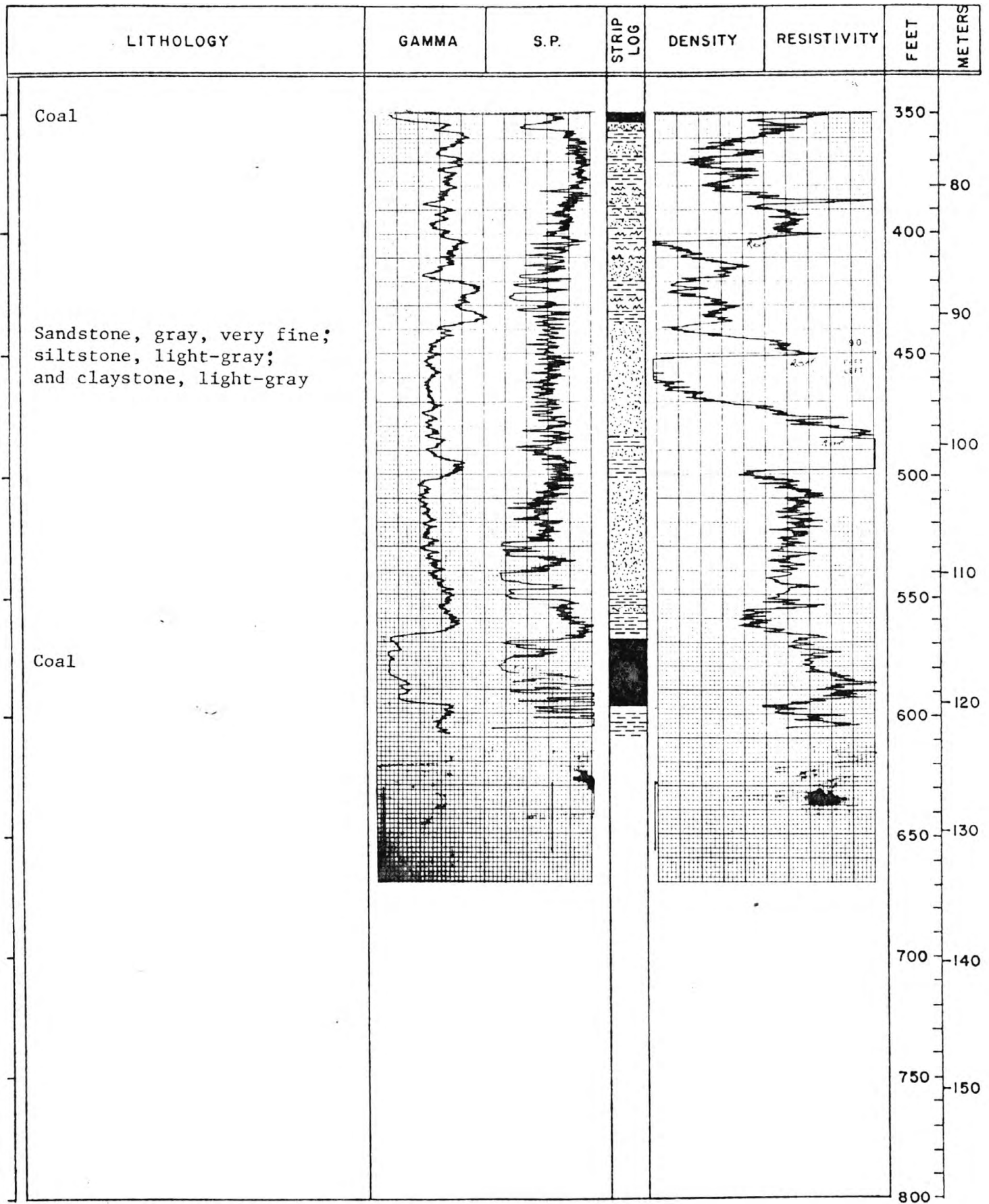
Coal, with claystone parting

Sandstone, gray; siltstone,
 gray; claystone, gray; and
 limestone, gray

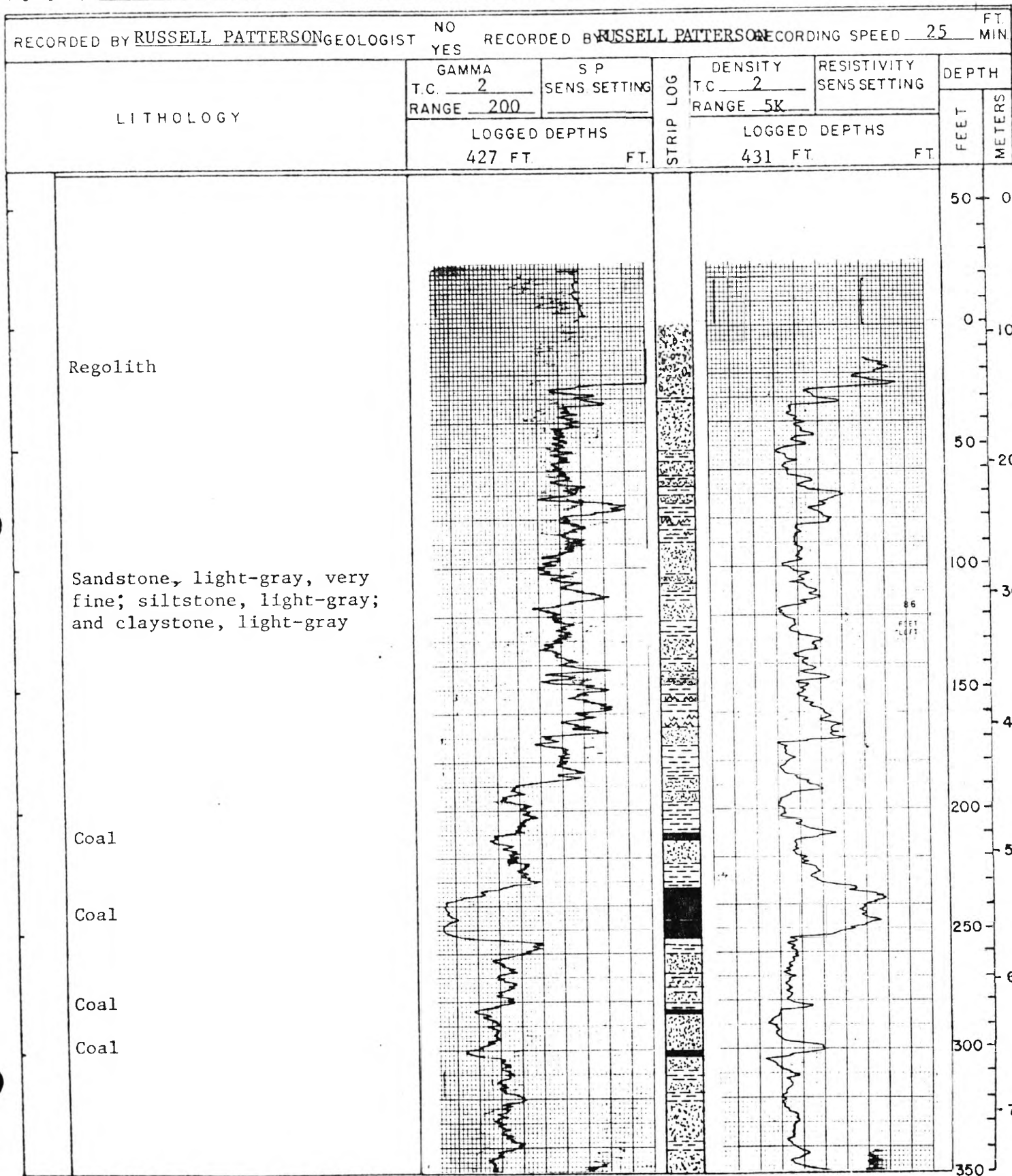


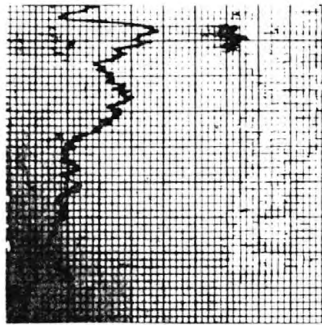
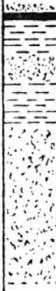
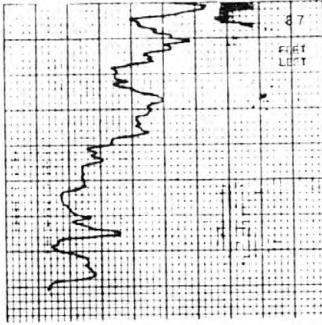
Hole No: US-7962 Map: Sonnette Date: 10/15/79 State: Montana County: Powder River
 Elev: 3560 FT Location: T 4 S R 48 E, Sec 18 Tract BCBA Drilled depth 620 FT
 Measured: 1600 FT ~~FNL~~ 750 FT ~~FWL~~ FWL FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Hole caving and washing out, so only drilled to 620 feet,





Hole No: US-7963 Map: Sonnette Date: 10/19/79 State: Montana County: Powder River
 Elev.: 3638 FT Location: T 4 ^N R 48 ^E W, Sec 14 Tract BAAC Drilled depth 720 FT
 Measured: 445 FT ^{FNL} ~~XXX~~ 2090 FT ^{FWL} ~~XXX~~ FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____



LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Coal Sandstone, light-gray, very fine; and claystone, gray						350 80 400 90 450 100 500 110 550 120 600 130 650 140 700 150 750 800	

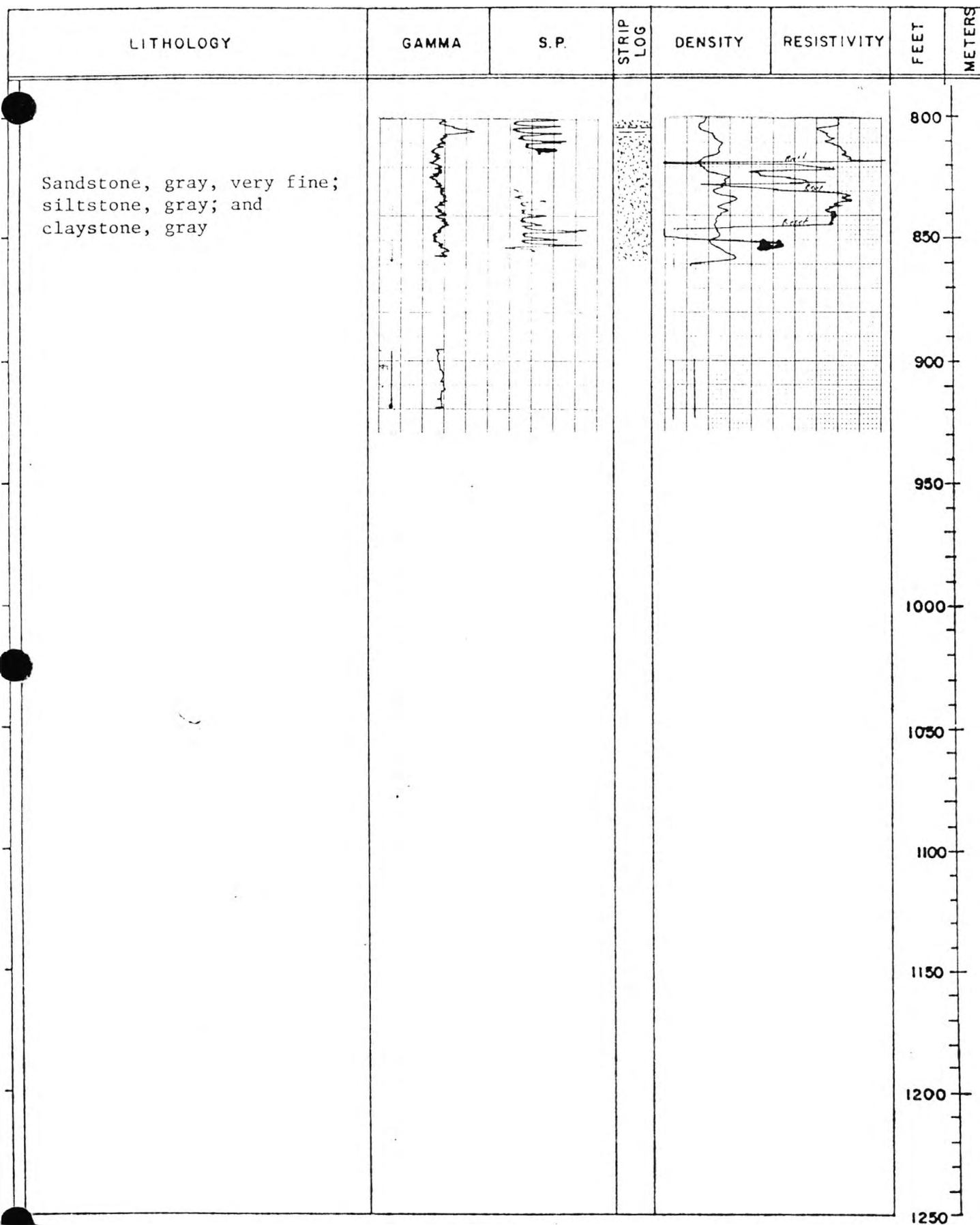
Remarks:

Regolith

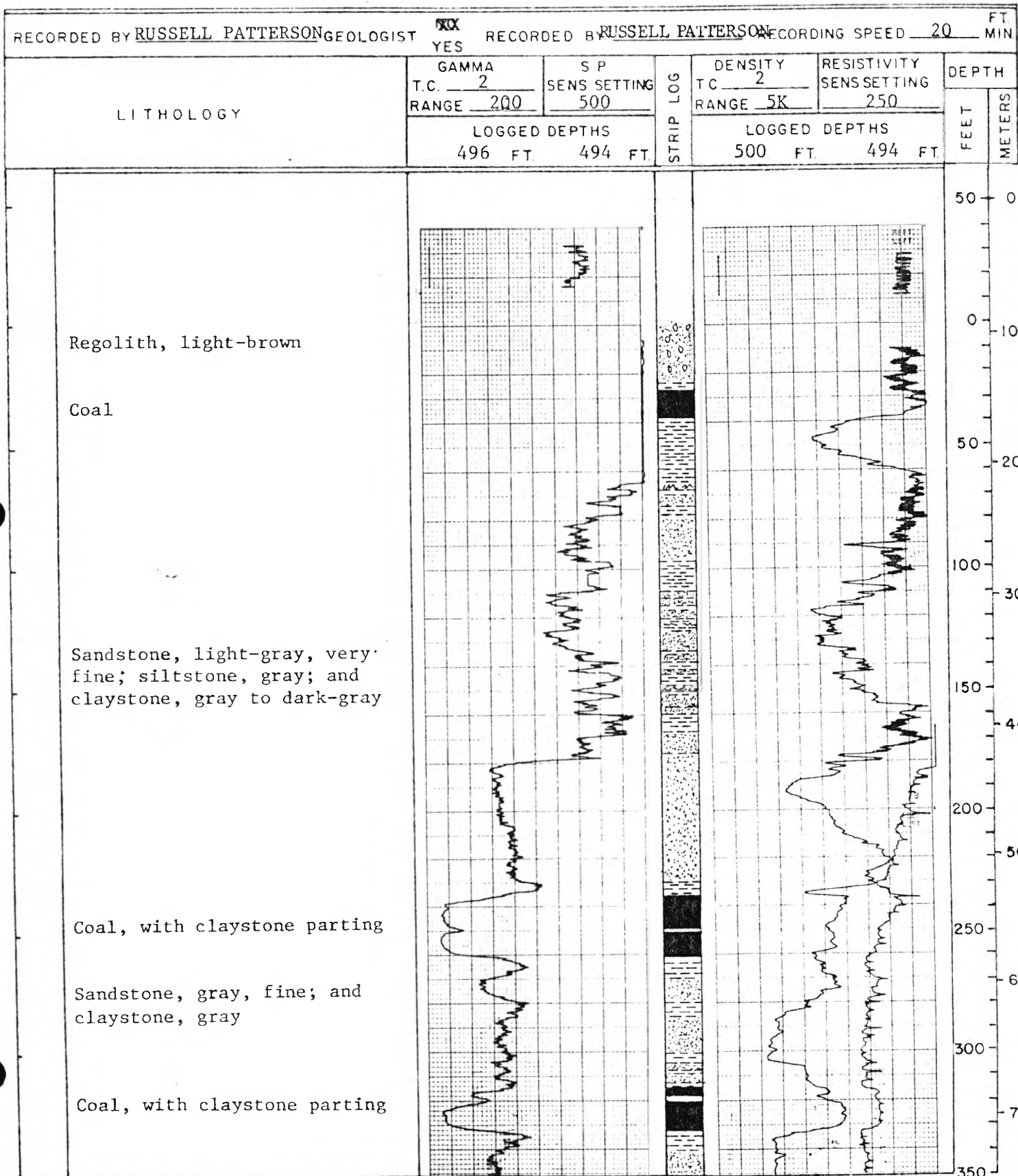
Sandstone, light-gray, very fine; siltstone, gray; and claystone, gray

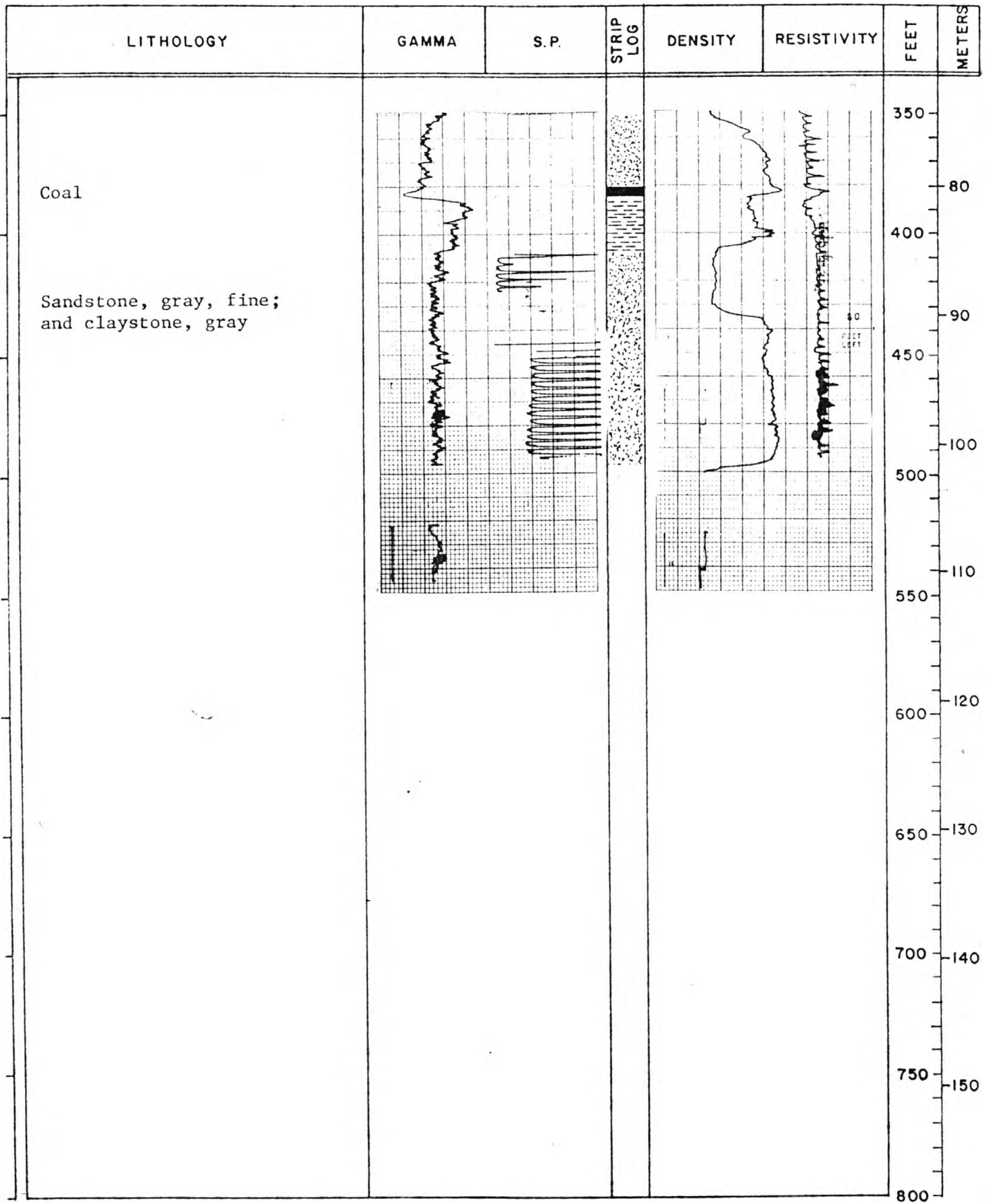
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350

FEET



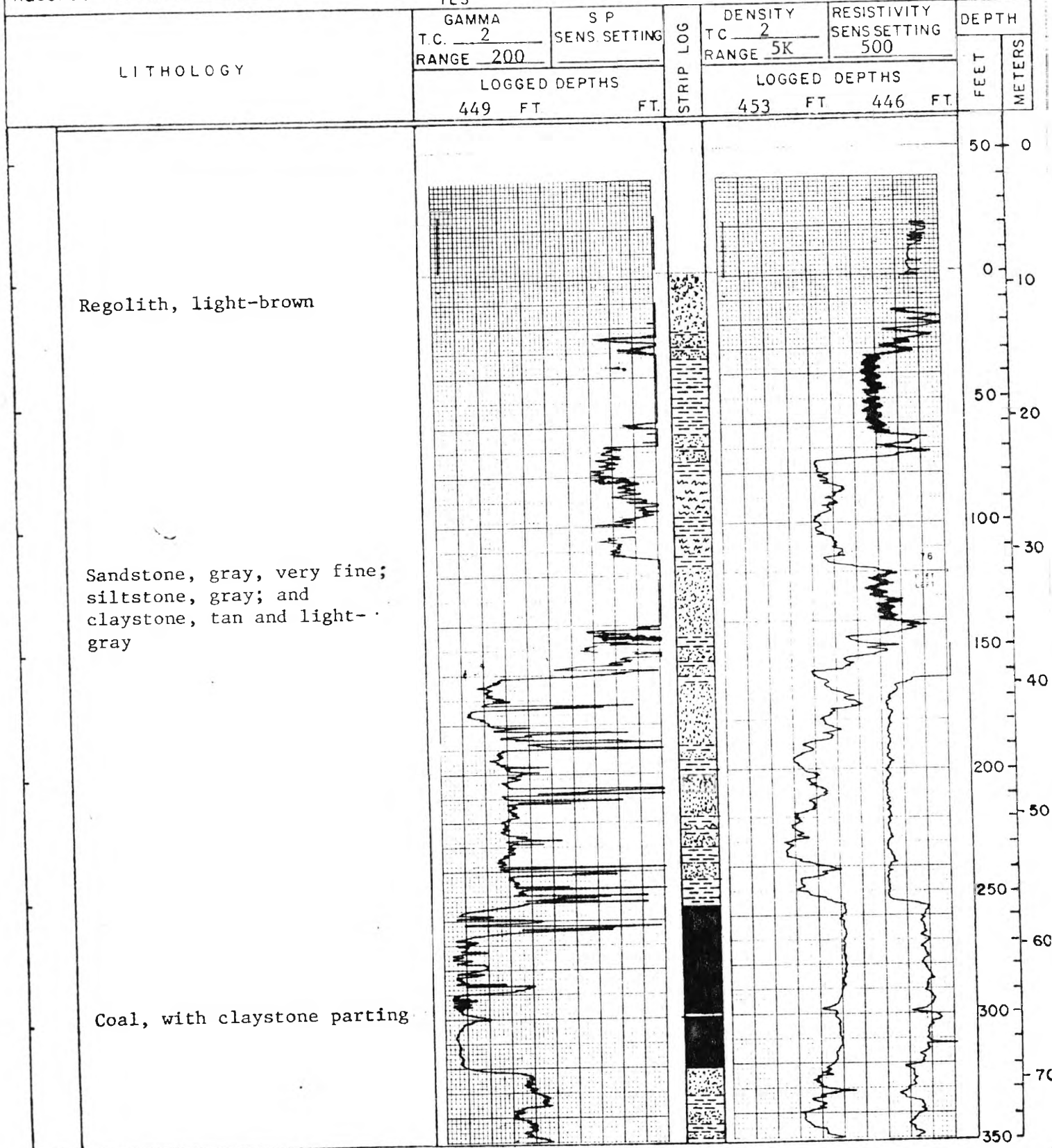
Hole No: US-7965 Map: Yager Butte Date: 10/21/79 State: Montana County: Powder River
 Elev.: 3438 FT Location: T 5 ^N S R 46 ^E W, Sec 1 Tract BBA Drilled depth 500 FT
 Measured: 380 FT ^{FNL} ~~XXX~~ 1240 FT ^{XXX} ~~FWL~~ FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____





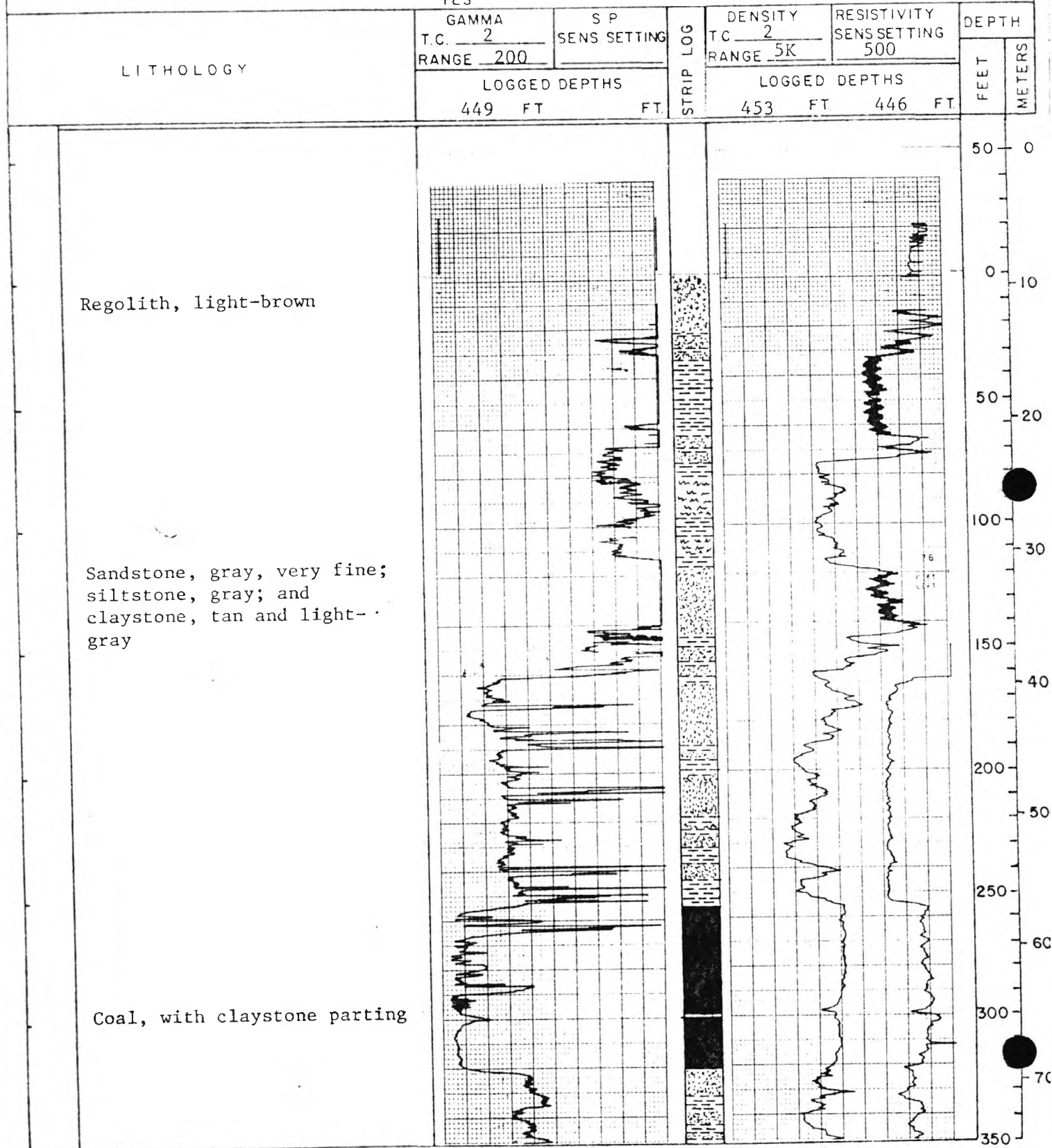
Hole No: US-7966 Map: Home Creek Butte Date: 10/22/79 State: Montana County: Powder River
 Elev.: 3382 FT Location: T 3 S R 47 E, Sec 24 Tract BAAB Drilled depth 450 FT
 Measured: 30 FT ~~FNL~~ 3000 FT ~~FEL~~ XXX FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☒ No ☐
 Remarks: _____

RECORDED BY RUSSELL PATTERSON GEOLOGIST ~~NR~~ YES RECORDED BY RUSSELL PATTERSON RECORDING SPEED 20 FT. MIN



Hole No: US-7966 Map: Home Creek Butte Date: 10/22/79 State: Montana County: Powder River
 Elev.: 3382 FT Location: T 3 ^N S R 47 ^E Sec 24 Tract BAAB Drilled depth 450 FT
 Measured: 30 FT ^{FNL} ~~XXX~~ 3000 FT ^{FEL} ~~XXX~~ FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☒ No ☐
 Remarks: _____

RECORDED BY RUSSELL PATTERSON GEOLOGIST ^{NO} YES RECORDED BY RUSSELL PATTERSON RECORDING SPEED 20 FT. MIN

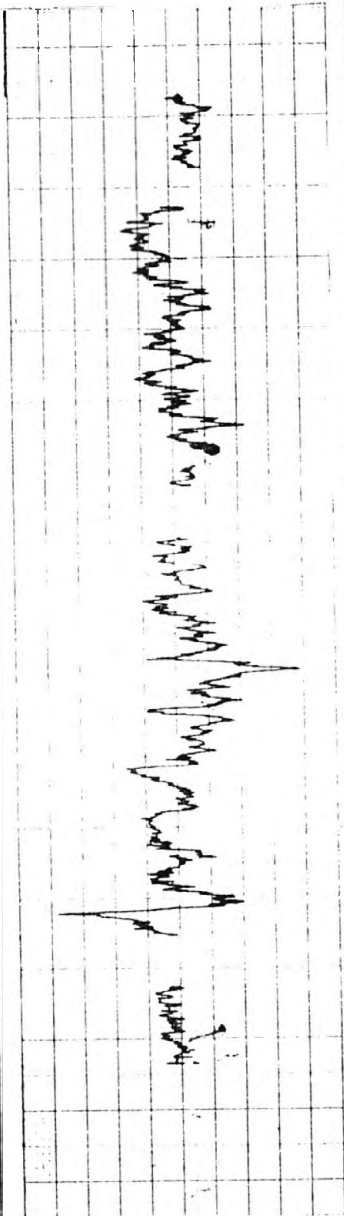
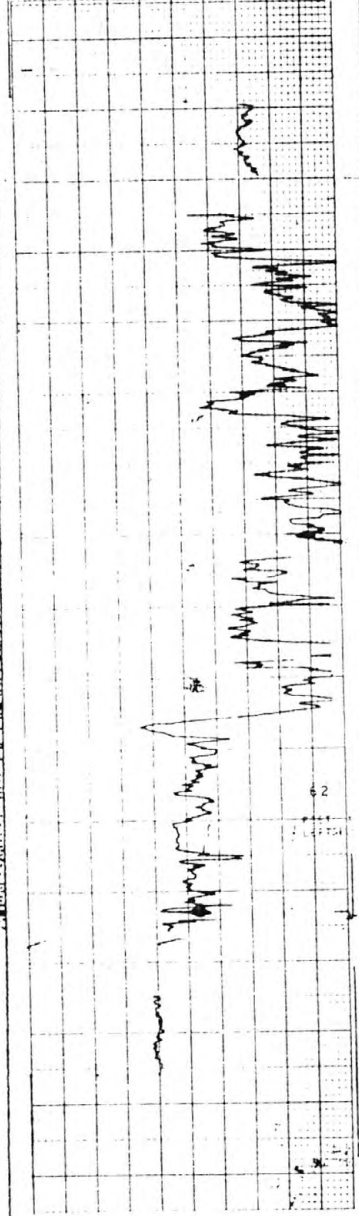


Hole No: US-7967 Map: Medicine Lodge Peak Date: 10/31/79 State: Montana County: Beaverhead
 Elev.: 6720 FT Location: T 11S R 12W, Sec 21 Tract DAAC Drilled depth 400 FT
 Measured: 2000 FT ~~RNK~~ 750 FT ~~FEL~~ XXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☒ No ☐
 Remarks: US-7967A cored 195-215, hole collapsed at 260 feet.

RECORDED BY <u>RUSSELL PATTERSON</u> GEOLOGIST NO YES		RECORDED BY <u>RUSSELL PATTERSON</u>		RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING
	LOGGED DEPTHS <u>258</u> FT			LOGGED DEPTHS <u>262</u> FT	
	FEET	METERS		FEET	METERS
Siltstone, brown; sandstone, brown; and claystone, brown					
Claystone, gray; siltstone, gray; and sandstone, gray					
Coal					
Sandstone, gray					

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-7967A Map: Medicine Lodge Peak Date: 10/31/79 State: Montana County: Beaverhead
 Elev: 6720 FT Location: T 11S R 12W, Sec 21 Tract DAAC Drilled depth 215 FT
 Measured: 2000 FT RXX FSL 750 FT FEL RXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Cored 195-215 feet.

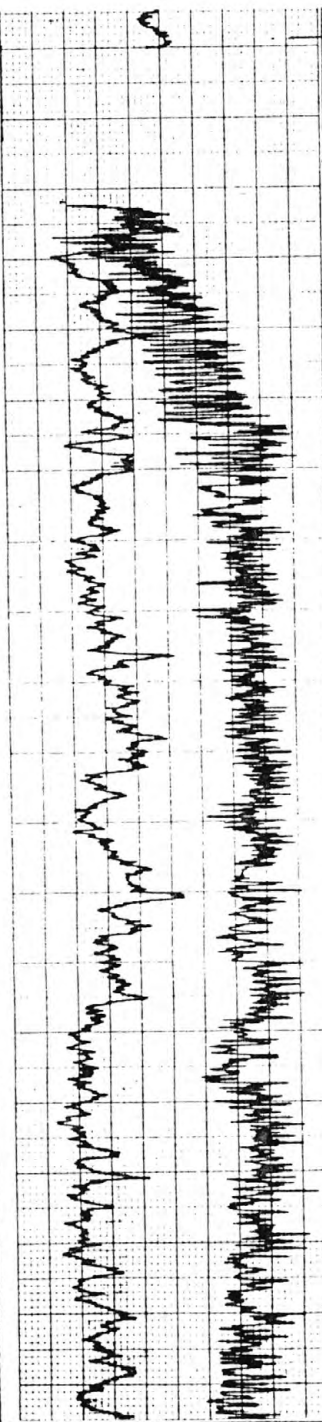
RECORDED BY <u>RUSSELL PATTERSON</u> GEOLOGIST <u>YES</u>		RECORDED BY <u>RUSSELL PATTERSON</u>		RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING	DEPTH
	LOGGED DEPTHS <u>212</u> FT FT.		LOGGED DEPTHS <u>216</u> FT FT.		FEET METERS
Sandstone, gray; claystone, gray; and siltstone, gray					50
					0
Claystone, gray; and sandstone, gray					10
Coal					20
Coal					30
Sandstone, gray; claystone, gray; and siltstone, gray					40
Coal					50
					60
					70
					80
					90
					100
					110
					120
					130
					140
					150
					160
					170
					180
					190
					200
					210
					220
					230
					240
					250
					260
					270
					280
					290
					300
					310
					320
					330
					340
					350

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

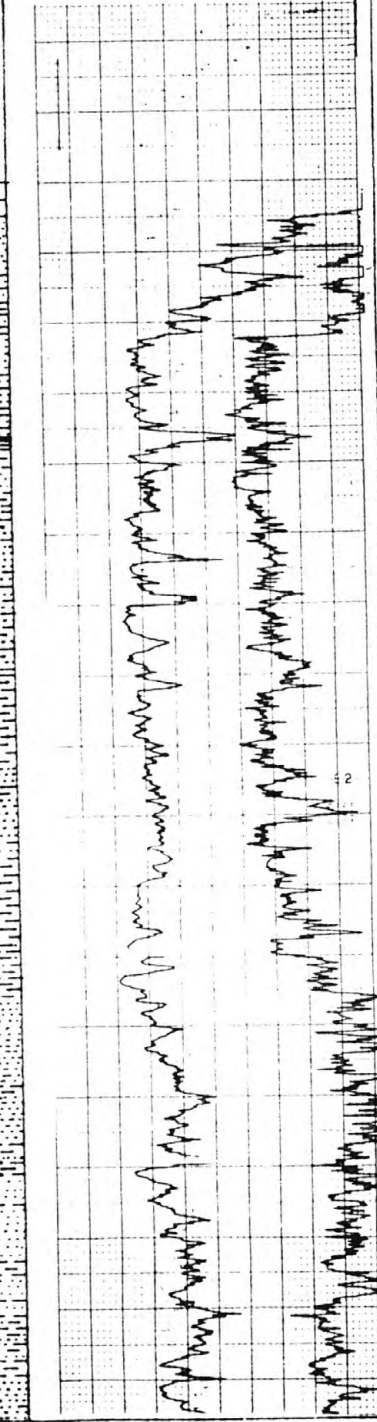
RECORDED BY JON HANGAS GEOLOGIST ☒ NO YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN

LITHOLOGY	GAMMA T.C. <u>2</u>	S P SENS SETTING	STRIP LOG	DENSITY T.C. <u>2</u>	RESISTIVITY SENS SETTING	DEPTH	
	RANGE <u>200</u>	<u>1K</u>		RANGE <u>2K</u>	<u>500</u>	FEET	METERS
	LOGGED DEPTHS 991 FT. 989 FT.			LOGGED DEPTHS 996 FT. 989 FT.			

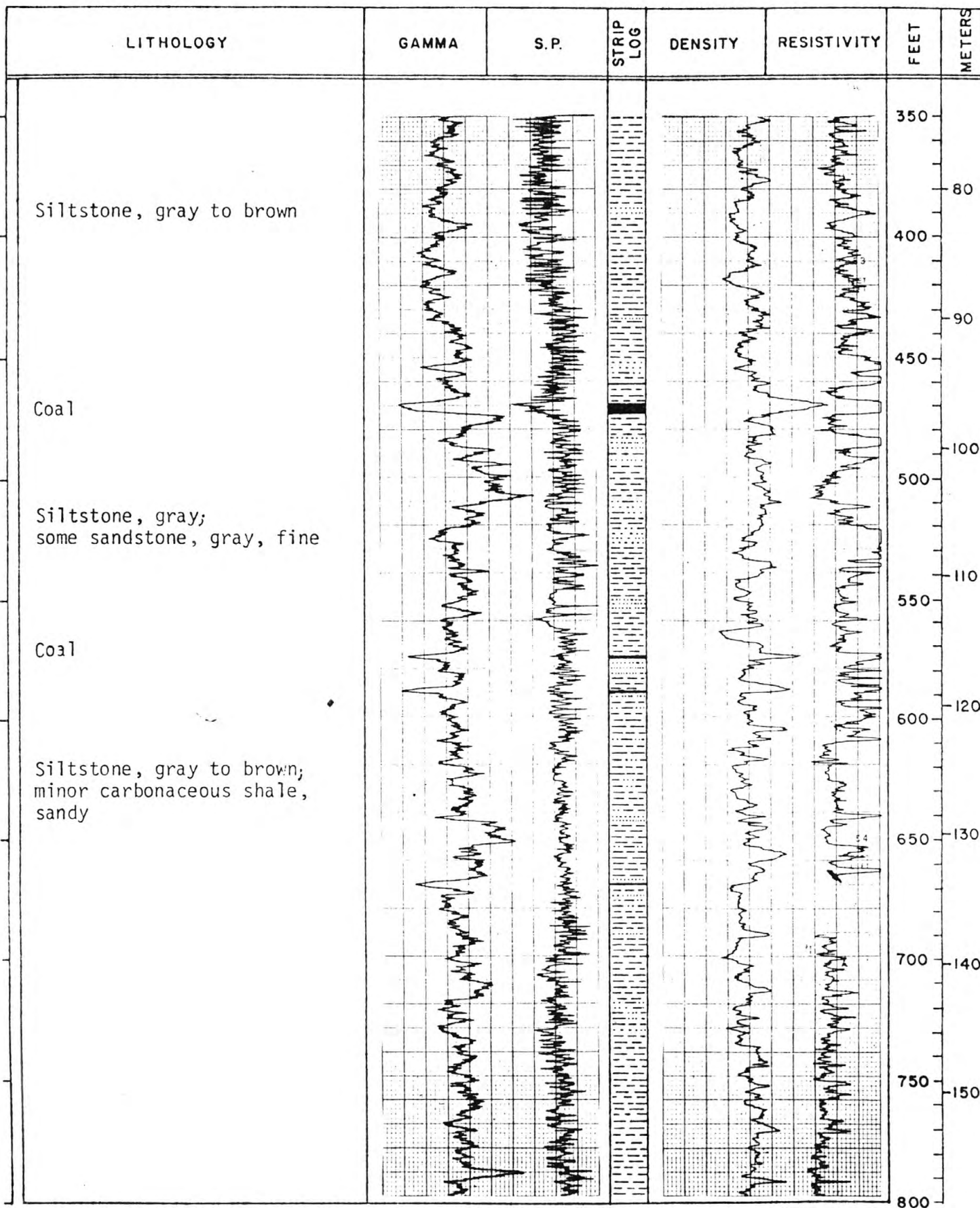
Siltstone, brown to gray



STRIP LOG

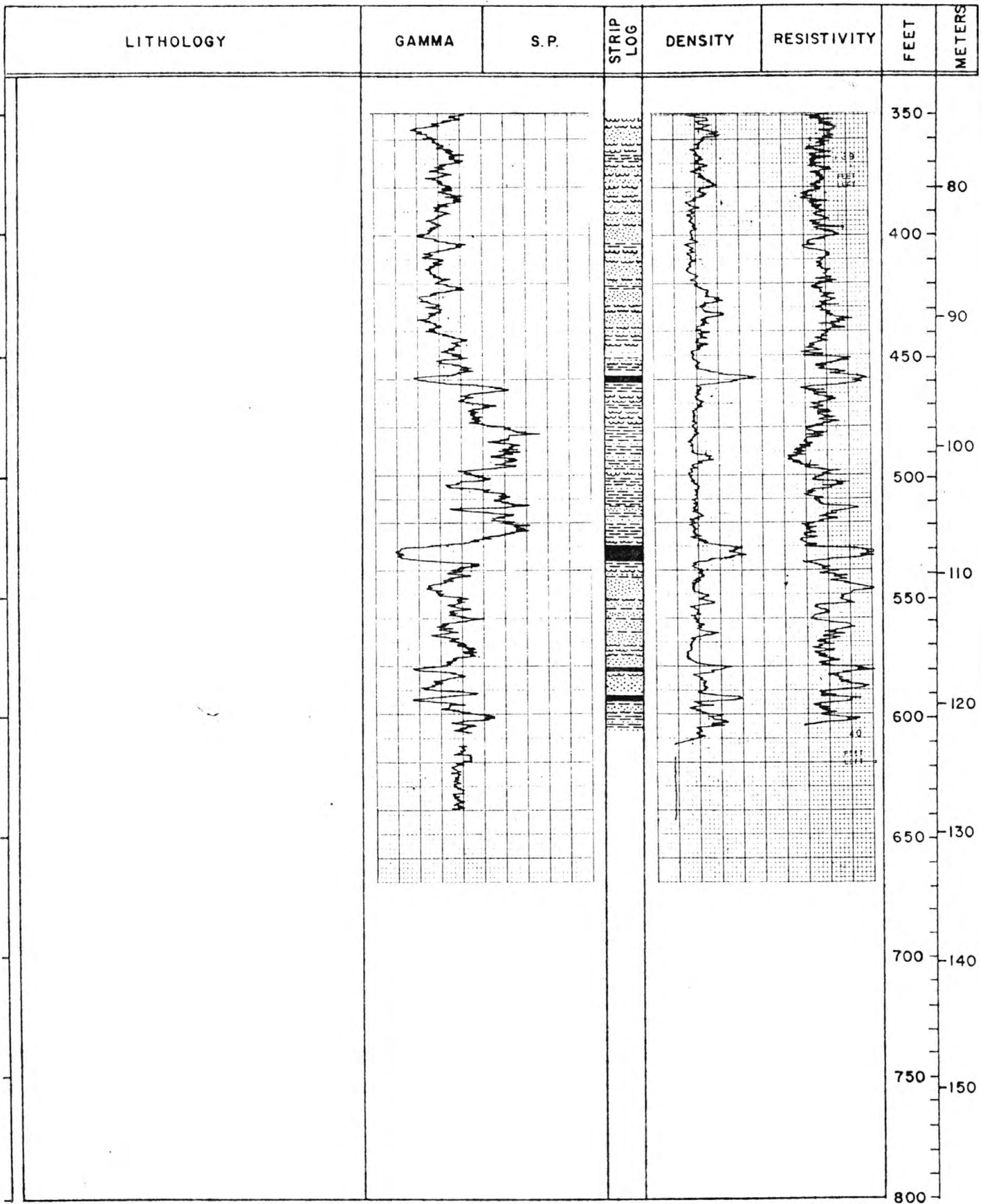


DEPTH	
FEET	METERS



Hole No: US-7969 Map: Medicine Lodge Peak Date: 11/4/79 State: Montana County: Beaverhead
Elev.: 612 FT Location: T 11 S R 12 W, Sec 35 Tract ADAD Drilled depth 720 FT
Measured: 2100 FT ^{FNL} ~~XXX~~ 100 FT. ^{FEL} ~~XXX~~ FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☒ No ☐
Remarks: _____

RECORDED BY <u>JON HANGAS</u>		GEOLOGIST <u>YES</u>		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u>		FT. MIN			
LITHOLOGY	GAMMA		S P		STRIP LOG	DENSITY		RESISTIVITY		DEPTH	
	T.C. <u>2</u>		SENS SETTING			T.C. <u>2</u>		SENS SETTING		FEET	METERS
	RANGE <u>200</u>					RANGE <u>5K</u>		<u>100</u>			
LOGGED DEPTHS					LOGGED DEPTHS						
608 FT					612 FT 605 FT						
<div style="display: flex; justify-content: space-between;"> <div style="width: 35%;"> <p>Sand, light-brown; siltstone, light-brown</p> <p>Sandstone, gray; siltstone, gray; and claystone, gray</p> <p>Siltstone, brown, carbonaceous; claystone, gray; and sandstone, gray</p> <p>Bentonite, light-gray; shale, dark-brown, carbonaceous</p> <p>Sandstone, gray; siltstone, gray; and claystone, gray</p> </div> <div style="width: 60%;"> </div> </div>											



Remarks:

RECORDED BY RUSSELL PATTERSON GEOLOGIST ~~NO~~ YES RECORDED BY _____ RECORDING SPEED 20 FT. MIN

LITHOLOGY

GAMMA
T.C. 2
RANGE 200

SP
SENS. SETTING

STRIP LOG

DENSITY
T.C. 2
RANGE 5K

RESISTIVITY
SENS SETTING

DEPTH

LOGGED DEPTHS

489 FT

FT

LOGGED DEPTHS

494 FT.

FT.

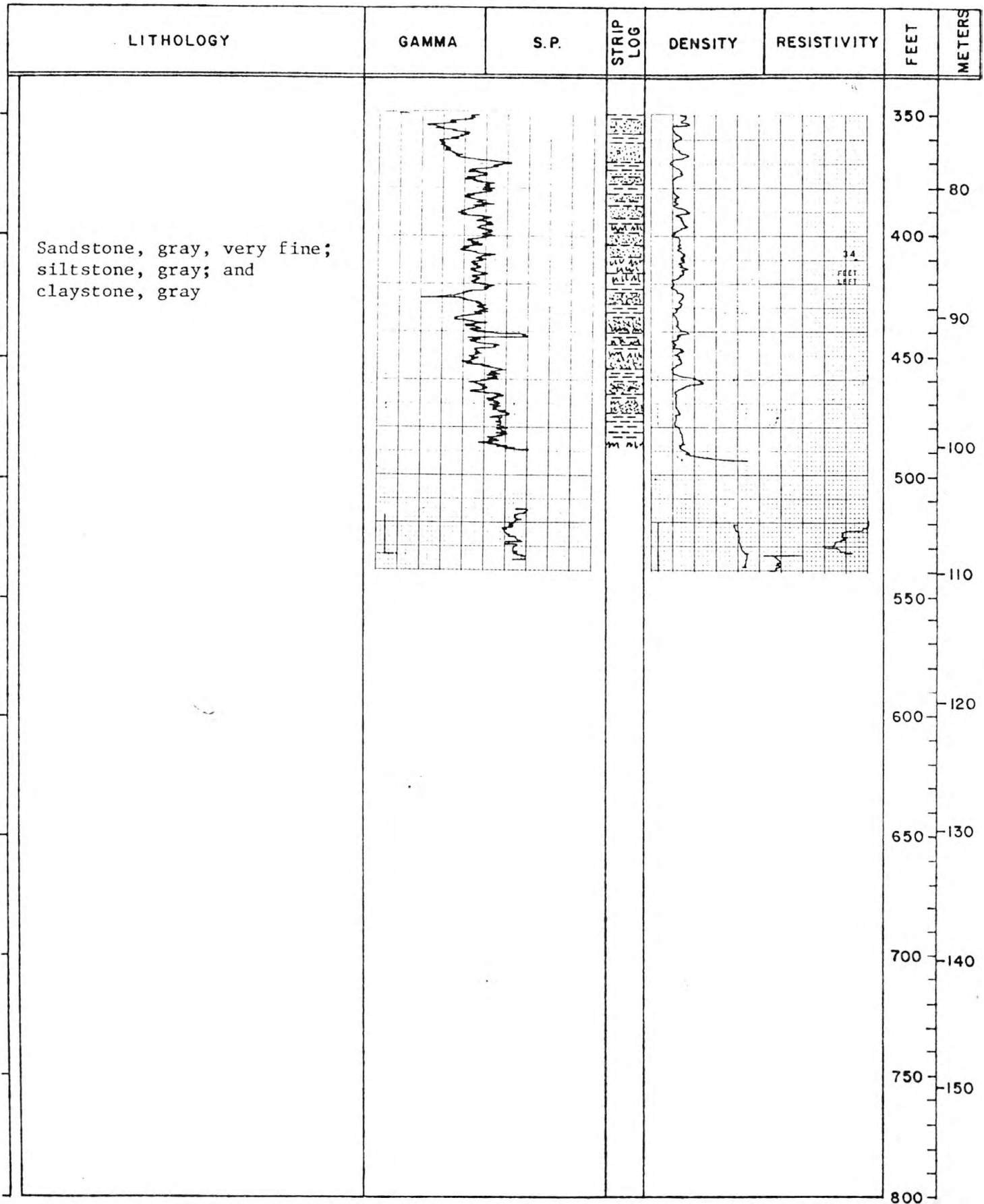
133T

METERS

Regolith, brown

Sandstone, light-gray,
medium to fine; siltstone,
gray; and claystone, gray

33
FOR
LIFE



Hole No: US-7971 Map: Rocky Point Date: 5/23/79 State: Montana County: Roosevelt
 Elev.: 2087 FT Location: T 29 ^N R 54 ^E W, Sec 9 Tract DDDD Drilled depth 480 FT
 Measured: 30 FT ~~FSL~~ 35 FT ~~FEL~~ FWX FT. Hole size: 5 IN. Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY WILLIAM JACKSON GEOLOGIST ~~XO~~ YES RECORDED BY KENNETH WILLIAMS RECORDING SPEED 20 FT. MIN.

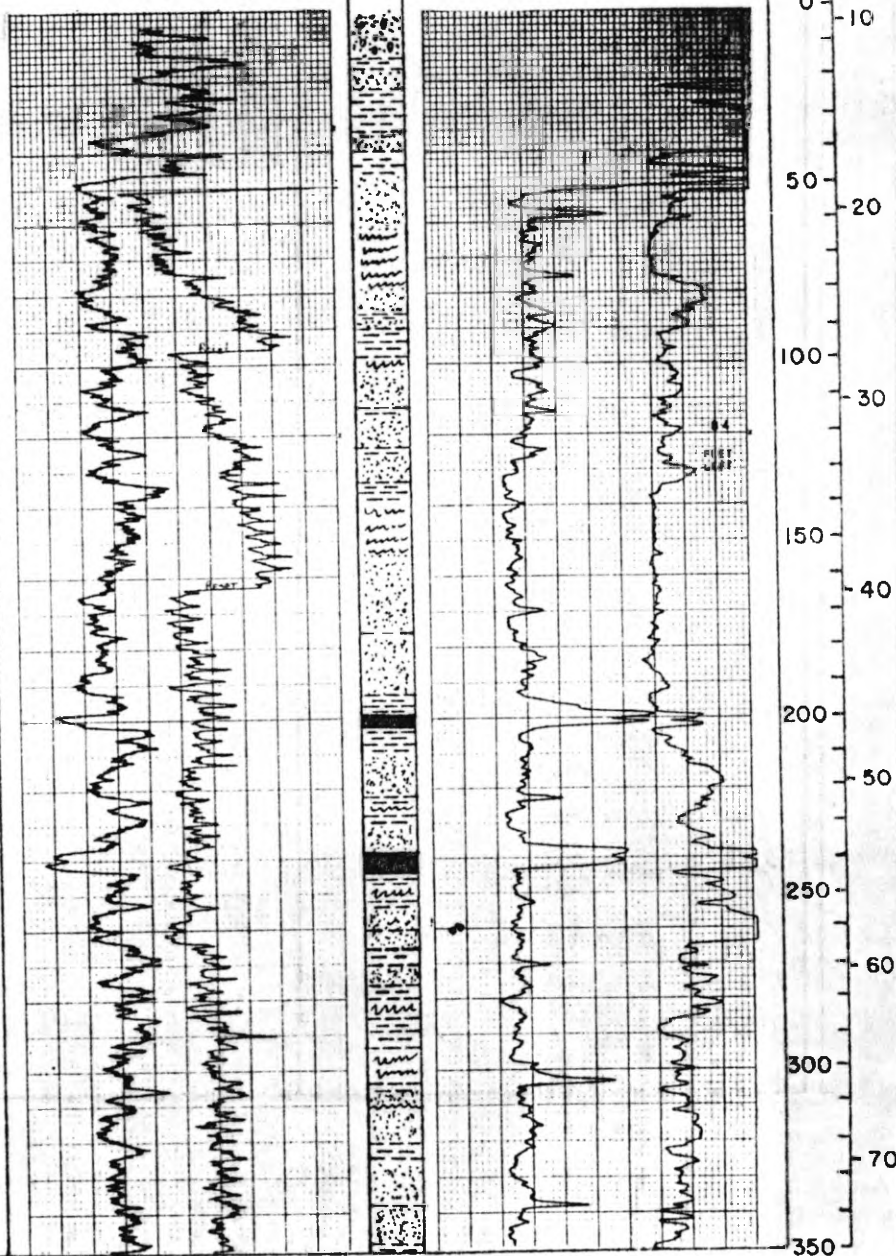
LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	DEPTH	
	T.C. <u>2</u>	SENS SETTING		T.C. <u>2</u>	SENS SETTING	FEET	METERS
	RANGE <u>200</u>	<u>250</u>		RANGE <u>2K</u>	<u>100</u>		
	LOGGED DEPTHS			LOGGED DEPTHS			
	424 FT. 472 FT.			479 FT. 472 FT.			

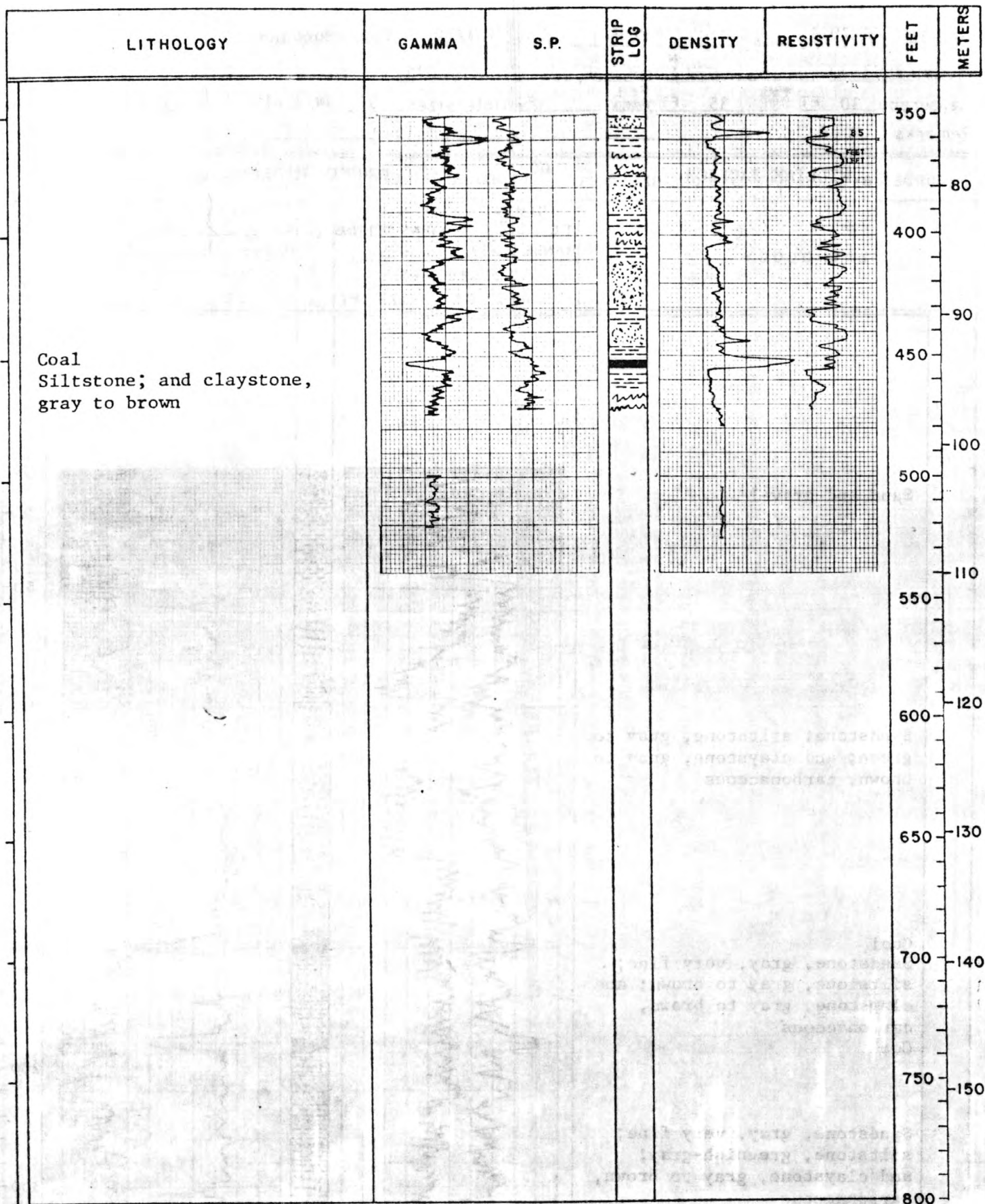
Sand and gravel

Sandstone; siltstone, gray to green; and claystone, gray to brown, carbonaceous

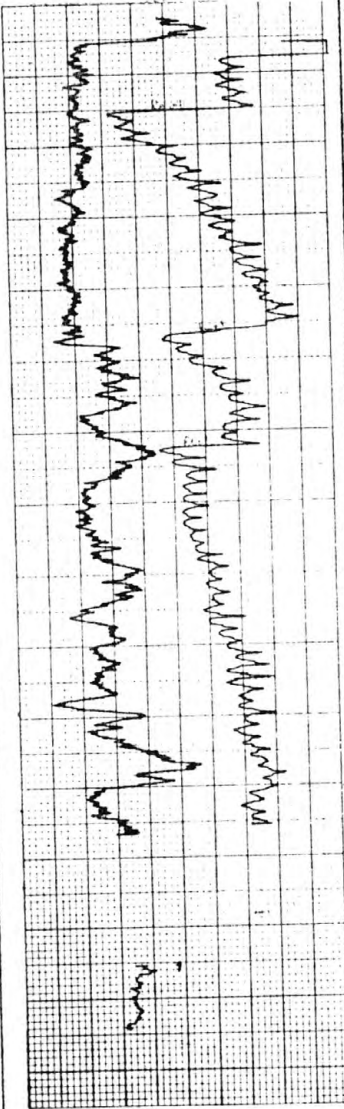

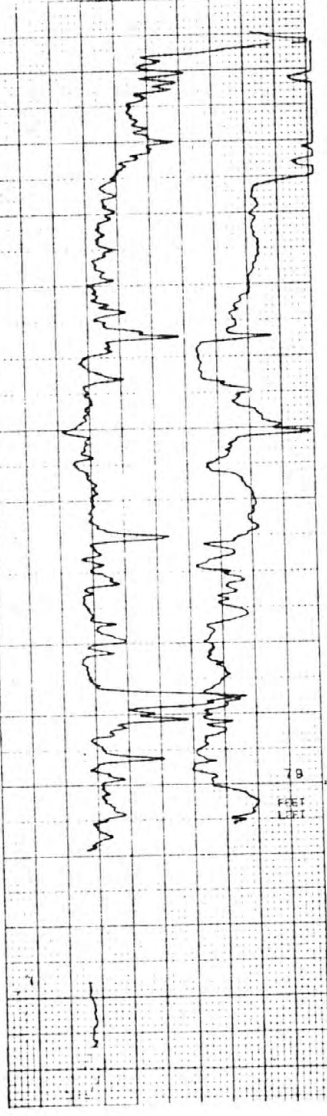
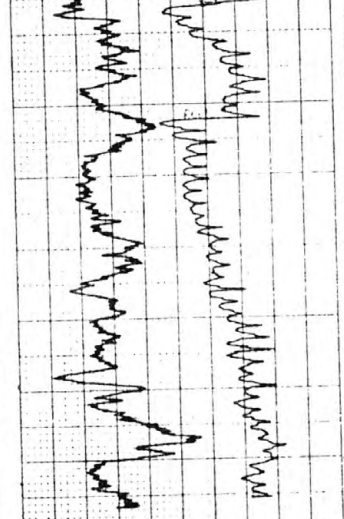

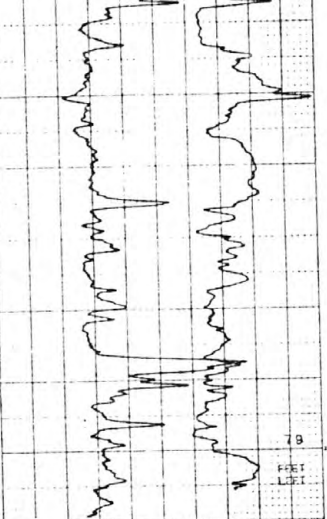
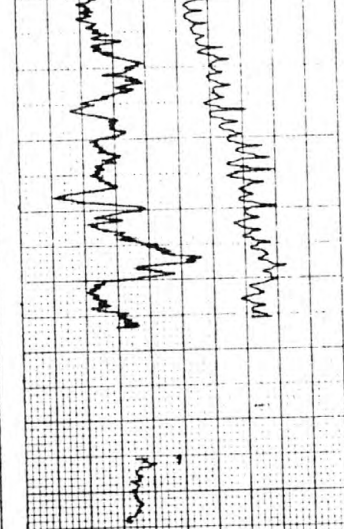
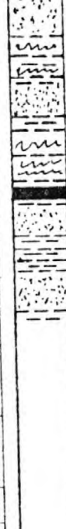
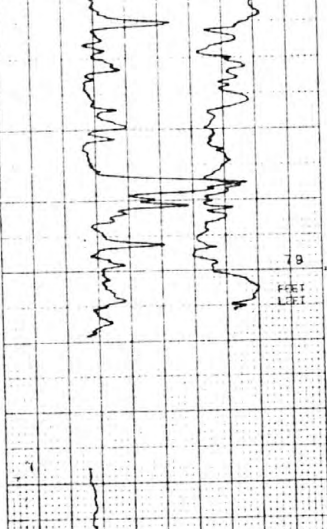
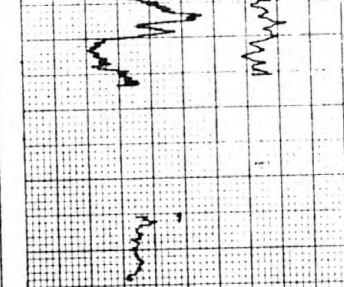
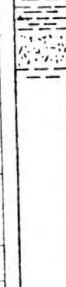
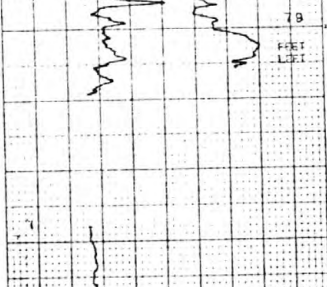
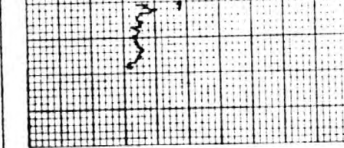

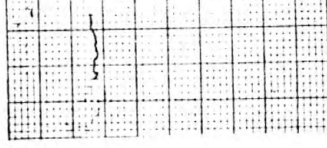
Coal
 Sandstone, gray, very fine; siltstone, gray to brown; and claystone, gray to brown, carbonaceous
 Coal

Sandstone, gray, very fine; siltstone, greenish-gray; and claystone, gray to brown, carbonaceous





Hole No: US-7972 Map: Johnson Lake Date: 5/23/79 State: Montana County: Roosevelt
 Elev.: 2038 FT Location: T 30^N R 55^E, Sec 32 Tract CDDD Drilled depth 240 FT
 Measured: 45 FT ~~XXX~~ FSL 2600 FT ~~XXX~~ FWL FT. Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <input checked="" type="checkbox"/>		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.		
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>250</u>	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	
	RESISTIVITY SENS SETTING <u>100</u>		DEPTH	
	LOGGED DEPTHS <u>233</u> FT <u>231</u> FT.		FEET METERS	
Sandstone, brown, fine				50
				0
Coal				10
50				
Sandstone, light-gray, very fine; siltstone, gray to green; claystone, gray; and limestone,				20
100				
Coal				30
150				
Sandstone, gray, fine; and claystone, gray				40
200				
				50
				60
				70
				80
				90
				100
				110
				120
				130
				140
				150
				160
				170
				180
				190
				200
				210
				220
				230
				240

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-7973 Map: Johnson Lake Date: 5/24/79 State: Montana County: Roosevelt
 Elev.: 2073 FT Location: T 30^N R 55^E W, Sec 26 Tract CCCC Drilled depth 260 FT
 Measured: 66 FT FSL 48 FT FWL XXX FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <input checked="" type="checkbox"/> YES		RECORDED BY <u>KENNETH WILLIAMS</u>		RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS. SETTING <u>250</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS. SETTING <u>100</u>
	LOGGED DEPTHS <u>253</u> FT <u>251</u> FT.			LOGGED DEPTHS <u>250</u> FT <u>251</u> FT	
	FEET	METERS			
<p>Till</p> <p>Sandstone, fine; siltstone, gray; claystone, gray to greenish-gray, carbonaceous; and limestone</p> <p>Coal</p> <p>Siltstone; and claystone, gray</p> <p>Coal</p> <p>Sandstone, gray, fine; siltstone; and claystone, gray</p>					

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						10	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-7974 Map: Johnson Lake Date: 5/24/79 State: Montana County: Roosevelt
 Elev: 2012 FT Location: T 30^N R 55^E W, Sec 12 Tract CDCD Drilled depth 260 FT
 Measured: 150 FT ~~KMX~~ FSL 1820 FT ~~KMX~~ FWL FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: No source on density - gravel hole.

RECORDED BY KENNETH WILLIAMS GEOLOGIST NO YES RECORDED BY KENNETH WILLIAMS RECORDING SPEED 20 FT. MIN

LITHOLOGY	GAMMA		S P		STRIP LOG	DENSITY		RESISTIVITY		DEPTH	
	T.C. 2		SENS SETTING			TC 2		SENS SETTING		FEET	METERS
	RANGE 200		250			RANGE 50		100			
	LOGGED DEPTHS					LOGGED DEPTHS					
	252 FT		250 FT			257 FT		250 FT			

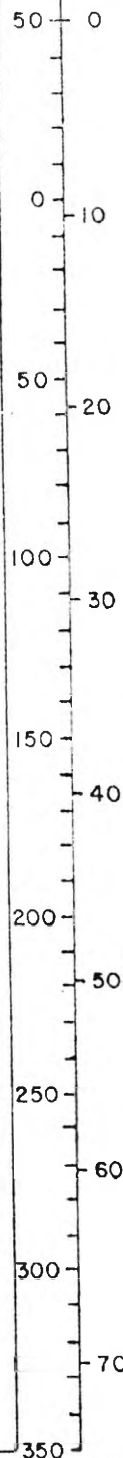
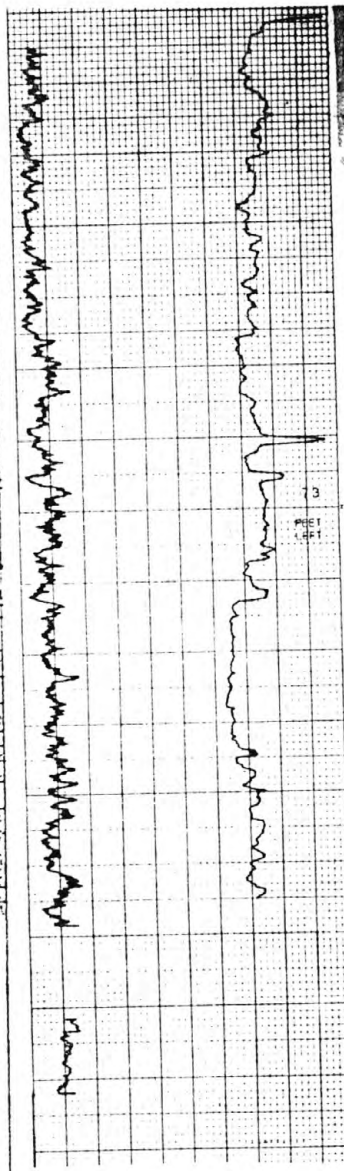
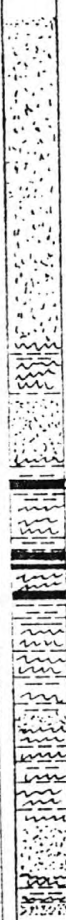
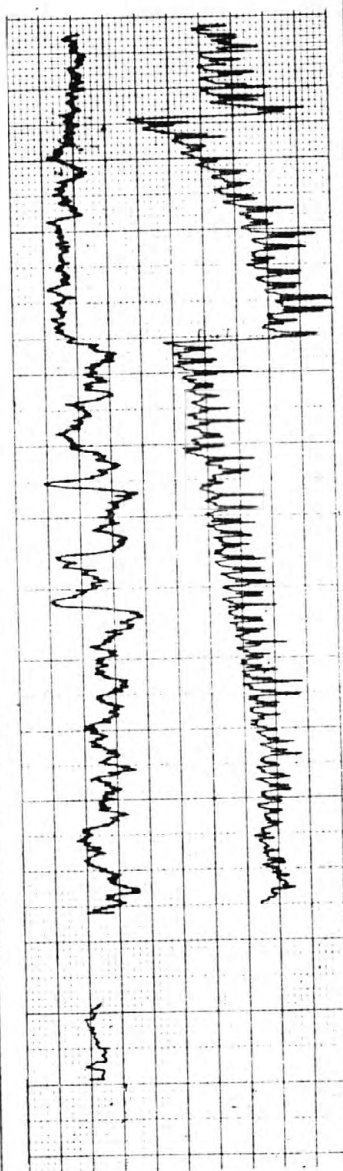
Till; sandstone, brown,
medium to coarse; and gravel

Siltstone, gray, calcareous;
and claystone, gray to green-
gray, carbonaceous
Coal

Siltstone; and claystone, gray


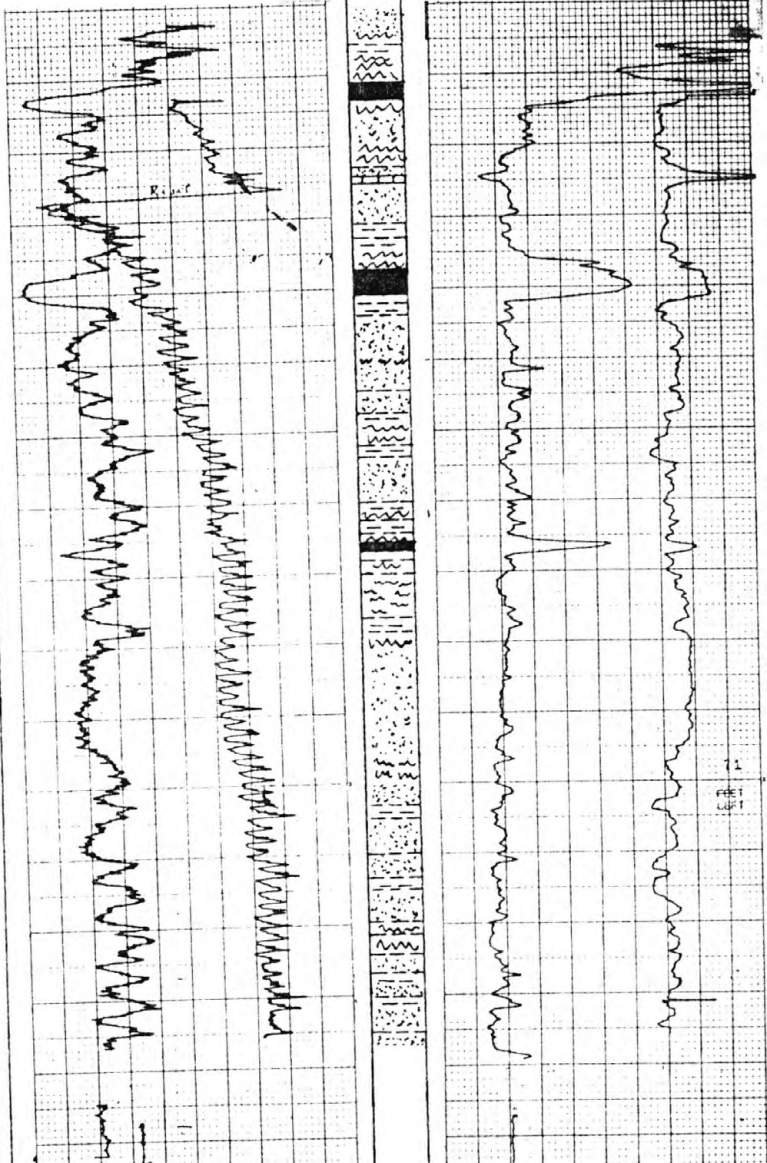
Coal, with siltstone parting

Sandstone, gray, very fine;
siltstone; and claystone,
gray to dark-gray



LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

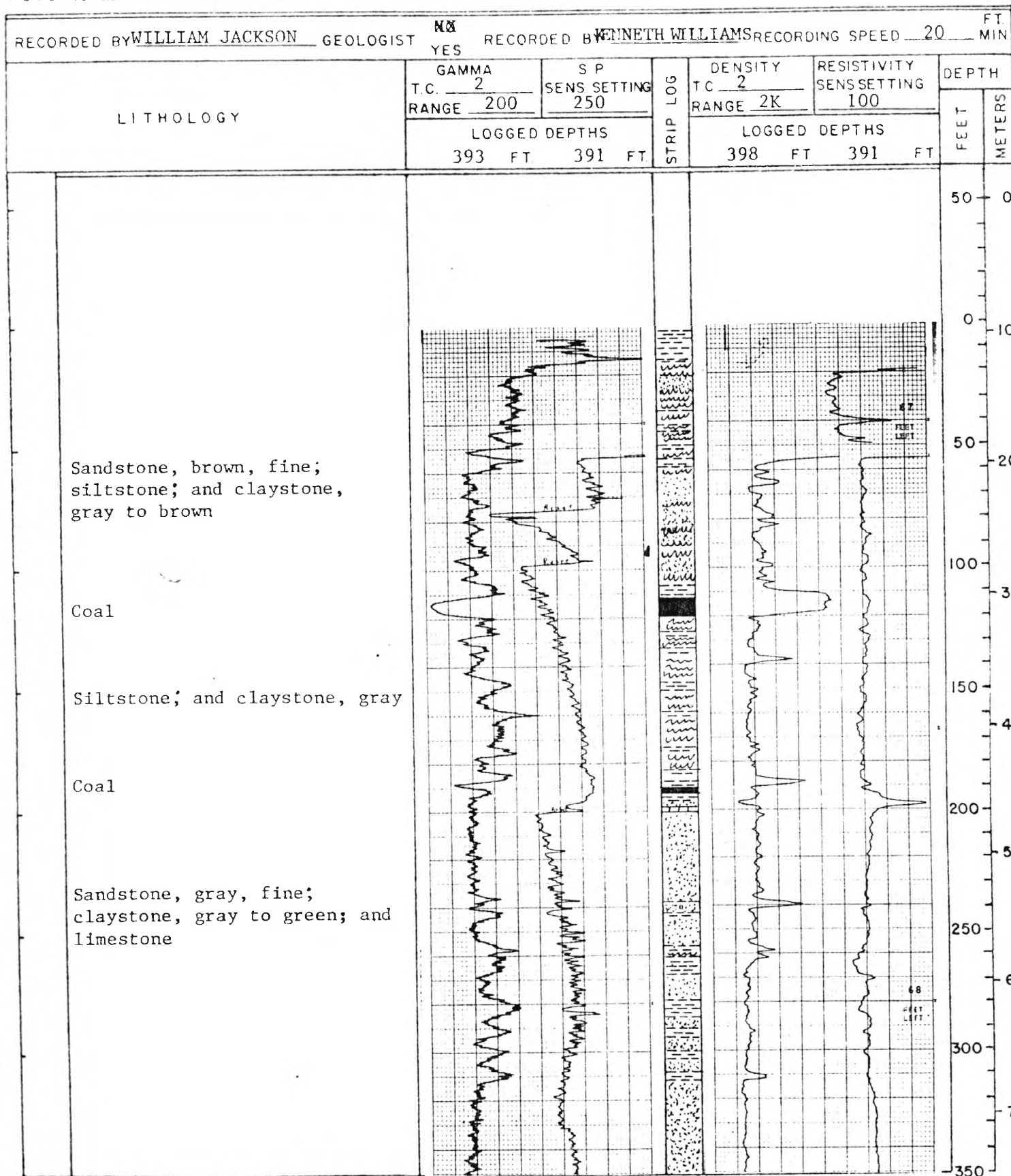
Hole No: US-7975 Map: Johnson Lake Date: 5/24/79 State: Montana County: Roosevelt
 Elev: 2241 FT Location: T 29^N R 55^E Sec 11 Tract CCCC Drilled depth 300 FT
 Measured: 15 FT FSL 40 FT FWL XXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <u>YES</u>		RECORDED BY <u>KENNETH WILLIAMS</u> <u>RECORDING SPEED 20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>250</u>	DENSITY TC <u>2</u> RANGE <u>2K</u>
	RESISTIVITY SENS SETTING <u>100</u>		DEPTH
	LOGGED DEPTHS <u>294</u> FT <u>291</u> FT		LOGGED DEPTHS <u>298</u> FT <u>291</u> FT
	STRIP LOG		FEET METERS
Sandstone, brown, fine; siltstone; and claystone, gray, carbonaceous Coal			50 0
Siltstone; claystone, gray, and limestone, gray			0 10
Coal			50 20
Siltstone; and claystone, gray, carbonaceous			100 30
Coal			150 40
Sandstone; siltstone; and claystone, gray to greenish- gray, carbonaceous			200 50
			250 60
			300 70
			350

US- 7975

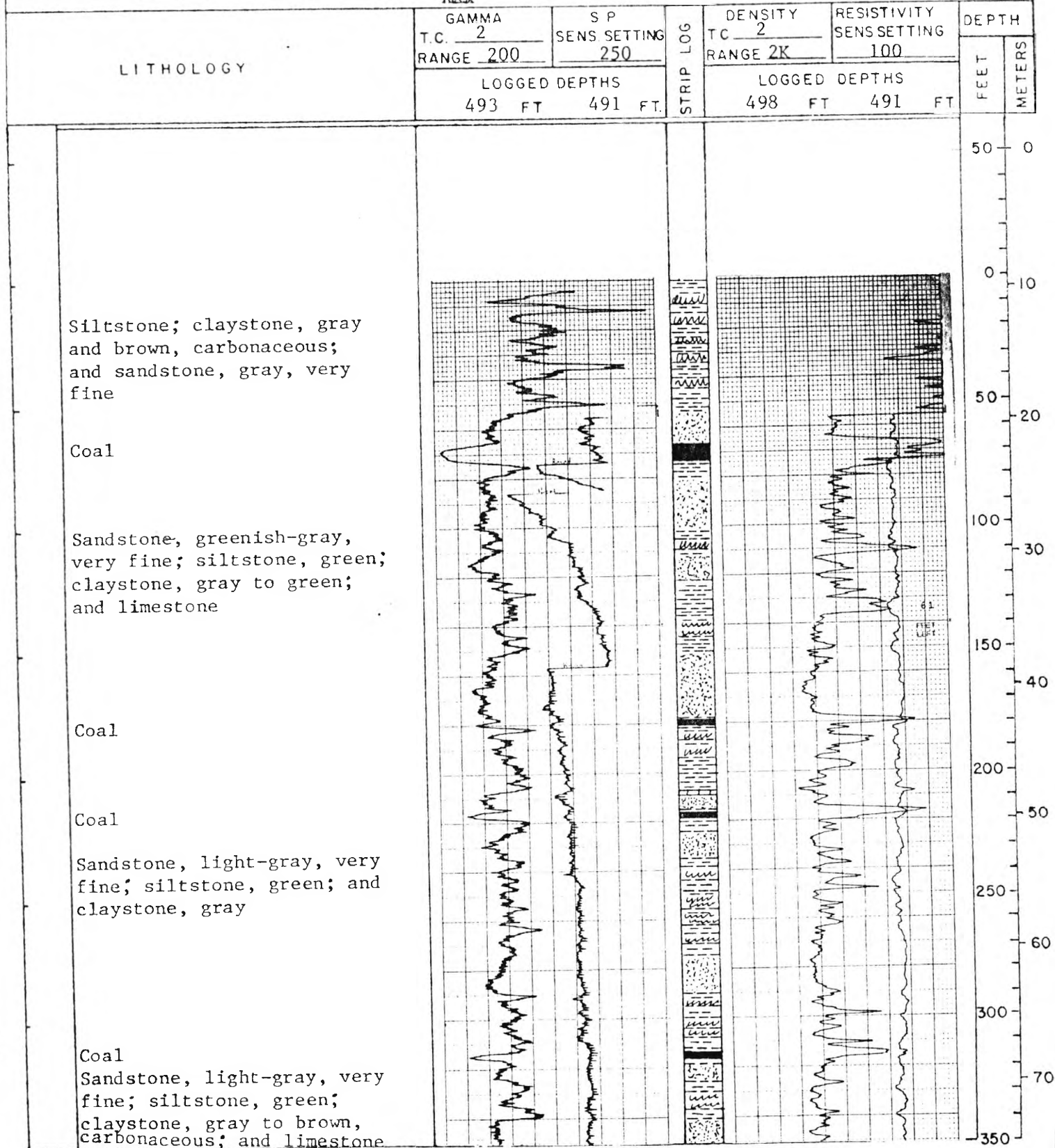
LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

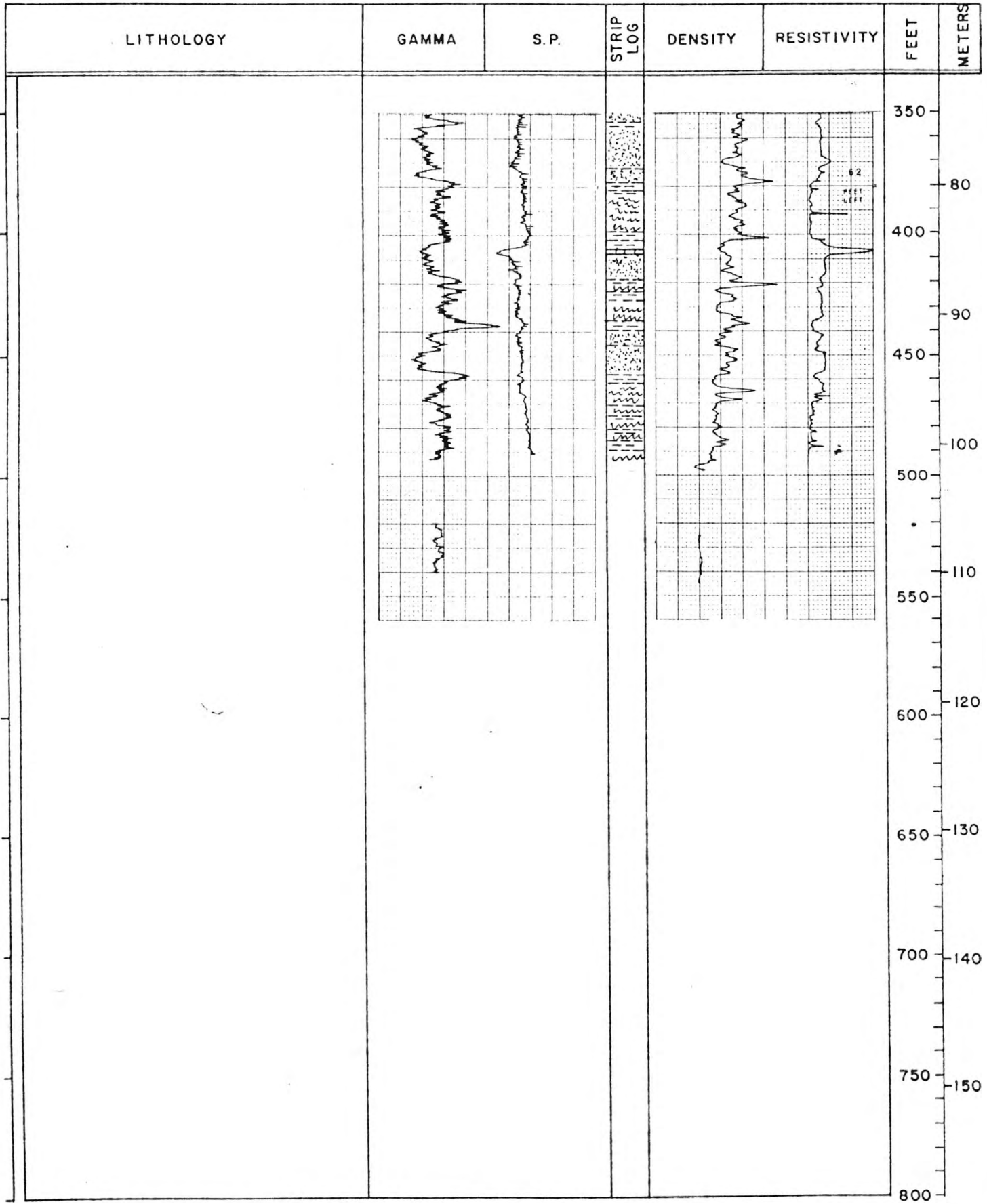
Hole No: US-7976 Map: Johnson Lake Date: 5/25/79 State: Montana County: Roosevelt
 Elev.: 2296 FT Location: T29 ^N ~~A~~ ^E R 55 ~~W~~, Sec 22 Tract CBBB Drilled depth 400 FT
 Measured: 2640 FT ^{FNL} ~~RXX~~ 45 FT ^{BRX} ~~FWL~~ FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



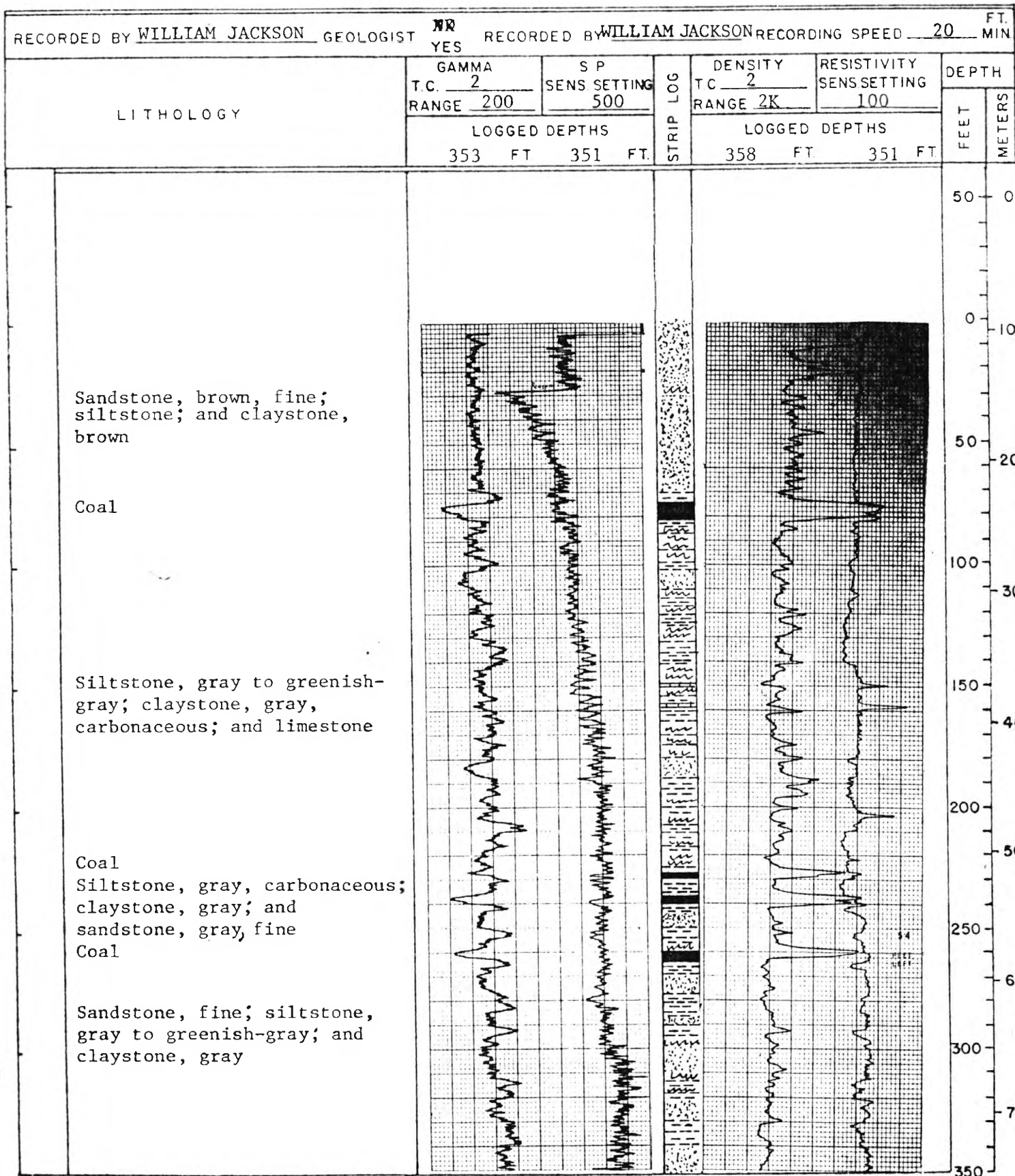
Hole No: US-7977 Map: Culbertson Date: 5/25/79 State: Montana County: Roosevelt
 Elev.: 2285 FT Location: T 29 ^N R 55 ^E, Sec 32 Tract BBBB Drilled depth 500 FT
 Measured: 36 FT ^{FNL} ~~XXX~~ 10 FT ^{FWL} ~~XXX~~ FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Logged with pit over hole.

RECORDED BY WILLIAM JACKSON GEOLOGIST NO ~~YES~~ RECORDED BY KENNETH WILLIAMS RECORDING SPEED 20 FT. MIN





Hole No: US-7978 Map: Fort Kipp Date: 5/26/79 State: Montana County: Roosevelt
 Elev.: 2109 FT Location: T 29^N R 54^E W, Sec 35 Tract DDDD Drilled depth 360 FT
 Measured: 20 FT ~~RNX~~ 35 FT ~~FEL~~ RXX FT. Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



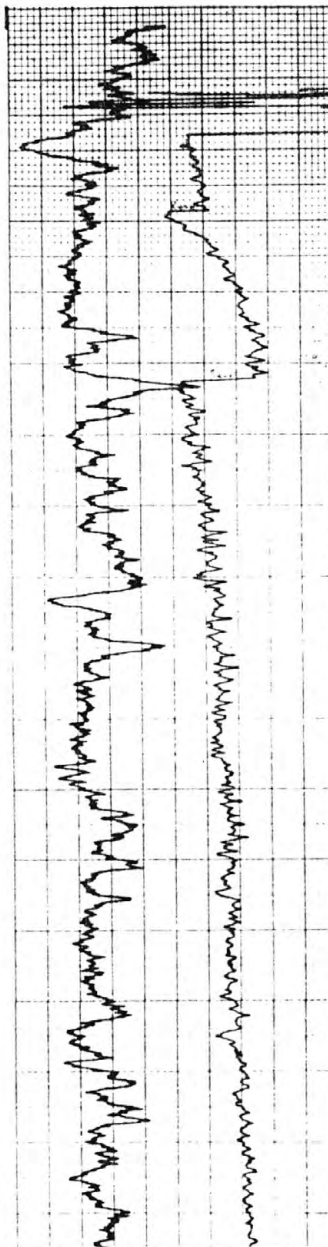
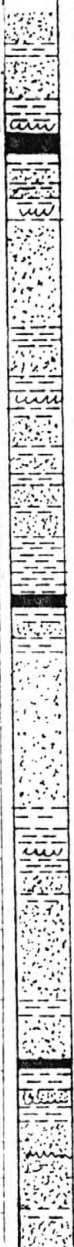
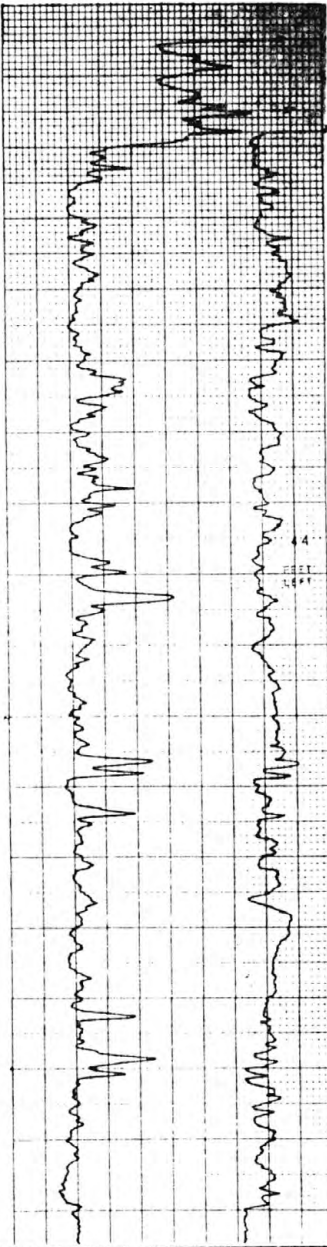
LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

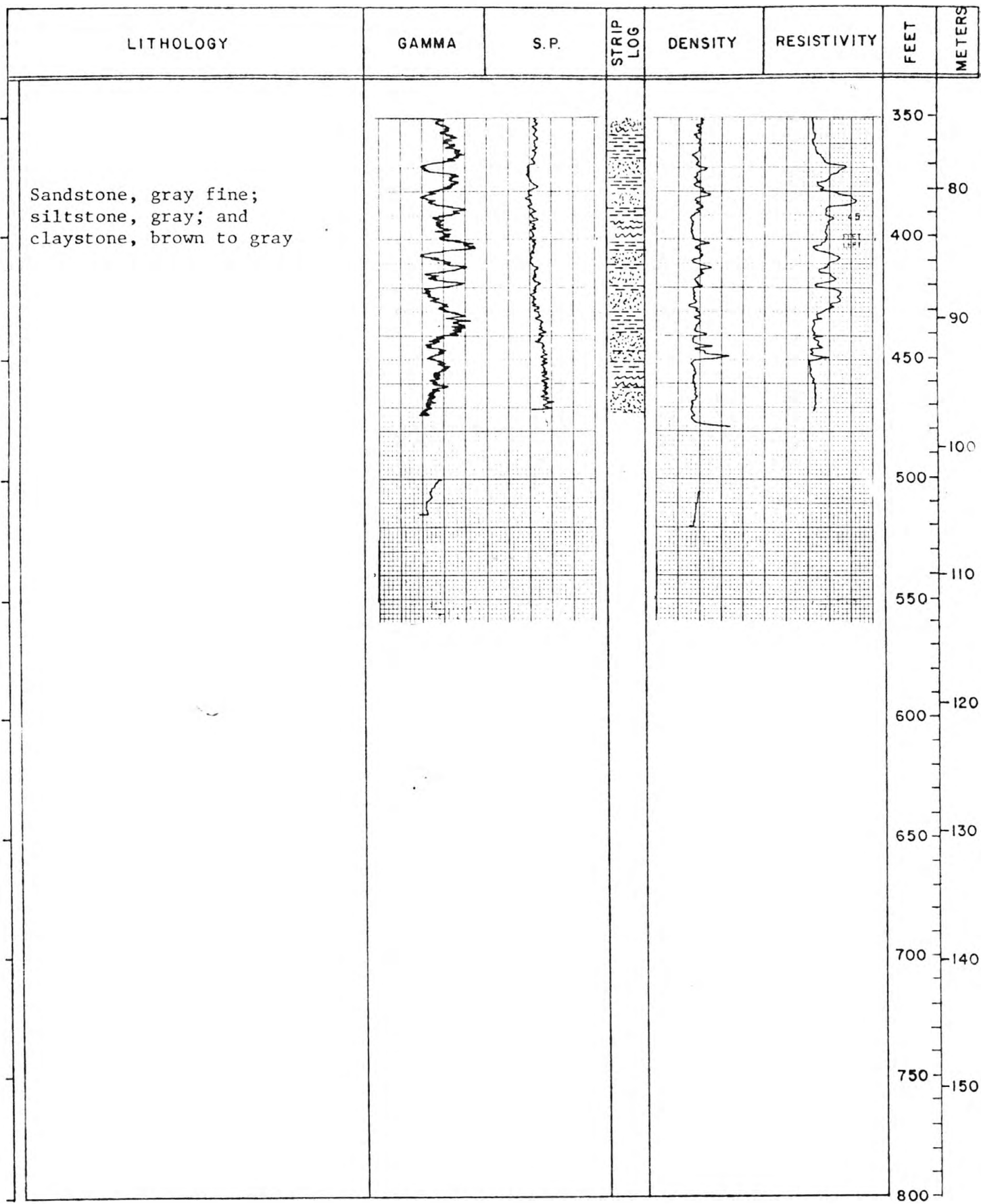
Hole No: US-7979 Map: Culbertson Date: 5/27/79 State: Montana County: Roosevelt
 Elev.: 2160 FT Location: T 28^N R 55^E, Sec 27 Tract AAAA Drilled depth 280 FT
 Measured: 100 FT ^{FNL} XSS 150 FT ^{FEL} XW FT. Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>KENNETH WILLIAMS</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>WILLIAM JACKSON</u>		RECORDING SPEED <u>20</u> FT MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>100</u>	DEPTH	
	LOGGED DEPTHS <u>273 FT</u> <u>271 FT</u>			LOGGED DEPTHS <u>278 FT</u> <u>271 FT</u>		FEET	METERS
	<p>Till</p> <p>Siltstone, light-tan, ferruginous; and claystone, gray to light-tan, carbonaceous</p> <p>Coal</p> <p>Sandstone, gray, carbonaceous; and claystone, light-gray, carbonaceous</p> <p>Coal</p> <p>Siltstone; and claystone, light-gray to brown</p> <p>Coal, with gray to dark-gray, carbonaceous claystone partings</p> <p>Sandstone, gray, very fine; siltstone; and claystone, gray to dark-gray, carbonaceous</p>						50 0 10 50 20 100 30 150 40 200 50 250 60 300 70 350

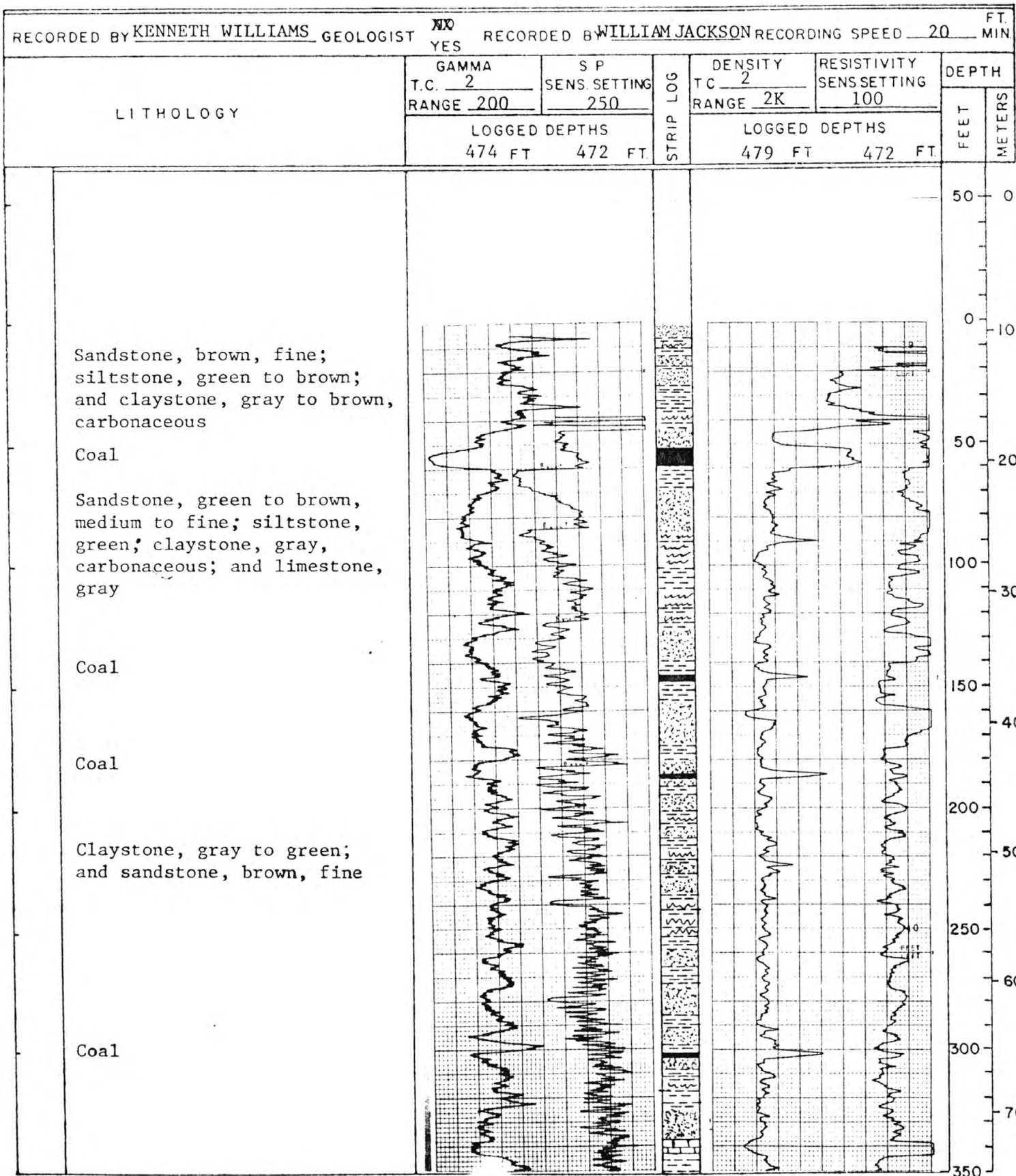
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

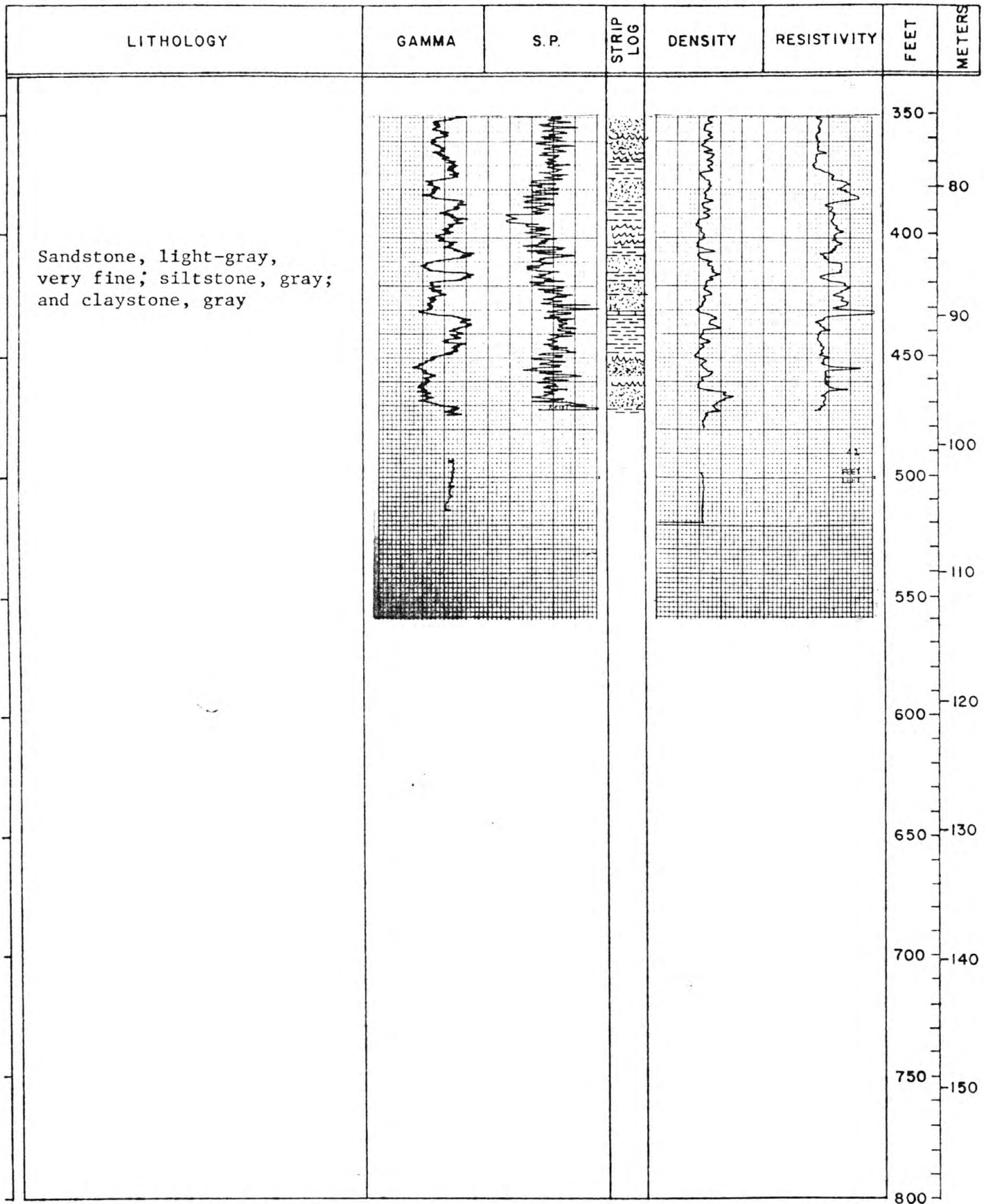
Hole No: US-7980 Map: Culbertson Date: 5/27/79 State: Montana County: Roosevelt
 Elev.: 2212 FT Location: T28 ^N ~~S~~ R55 ^E ~~W~~, Sec 24 Tract BAAD Drilled depth 480 FT
 Measured: 460 FT ^{FNL} ~~XSK~~ 2720 FT ^{FEL} ~~XXX~~ FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Density statistical staken at 478 feet.

RECORDED BY <u>KENNETH WILLIAMS</u> GEOLOGIST XX YES		RECORDED BY <u>WILLIAM JACKSON</u>		RECORDING SPEED <u>20</u> FT MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>100</u>	DEPTH	
	LOGGED DEPTHS <u>473</u> FT <u>471</u> FT			LOGGED DEPTHS <u>478</u> FT <u>471</u> FT		FEET	METERS
	Sandstone, brown, fine; siltstone; and claystone, brown to black, carbonaceous Coal Sandstone, brown, fine; siltstone; and claystone, gray to blackish-brown, carbonaceous Coal Sandstone, gray, fine; siltstone, gray to green; and claystone, gray to brown, carbonaceous Coal						50 0 50 100 150 200 250 300 350

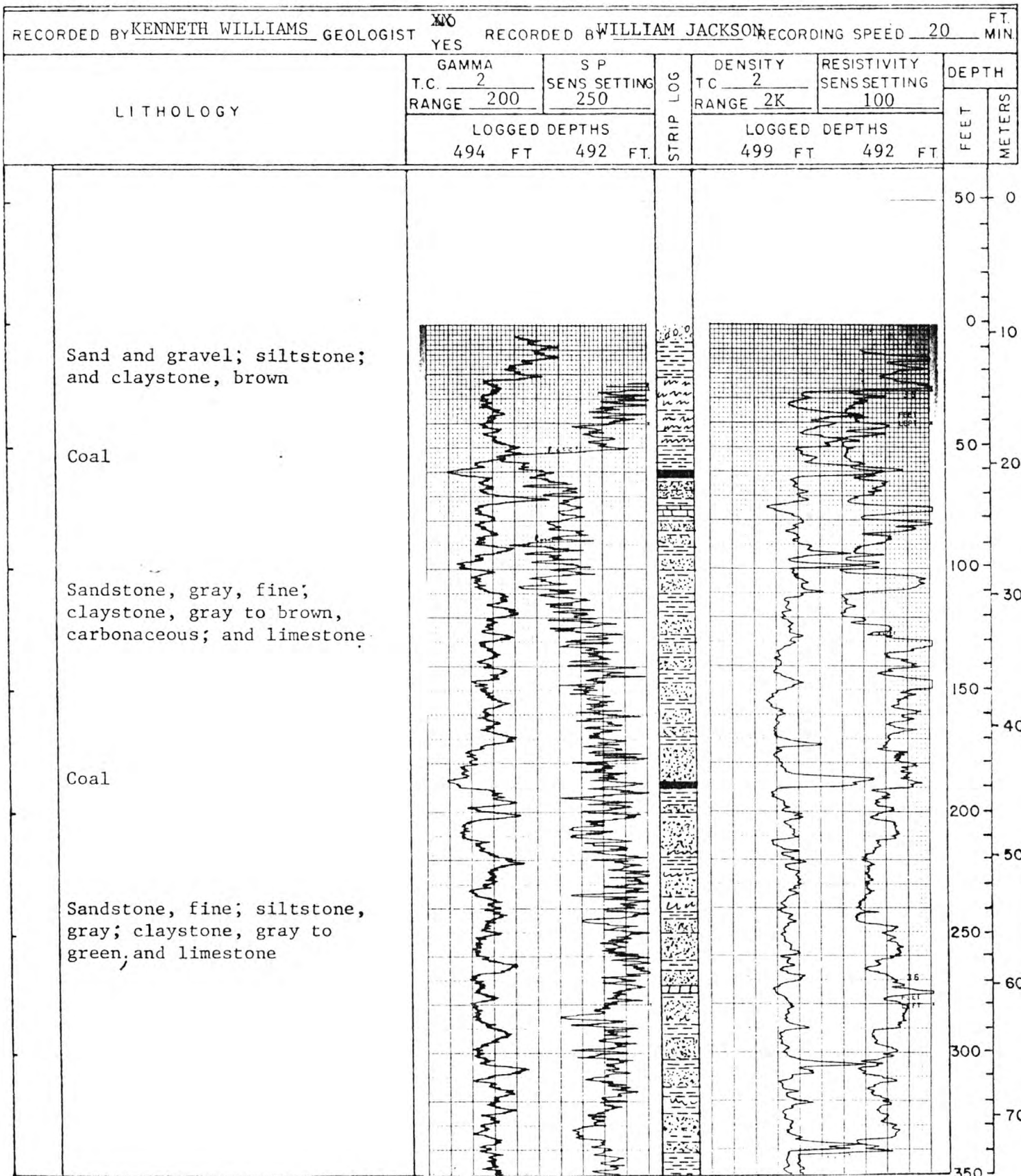


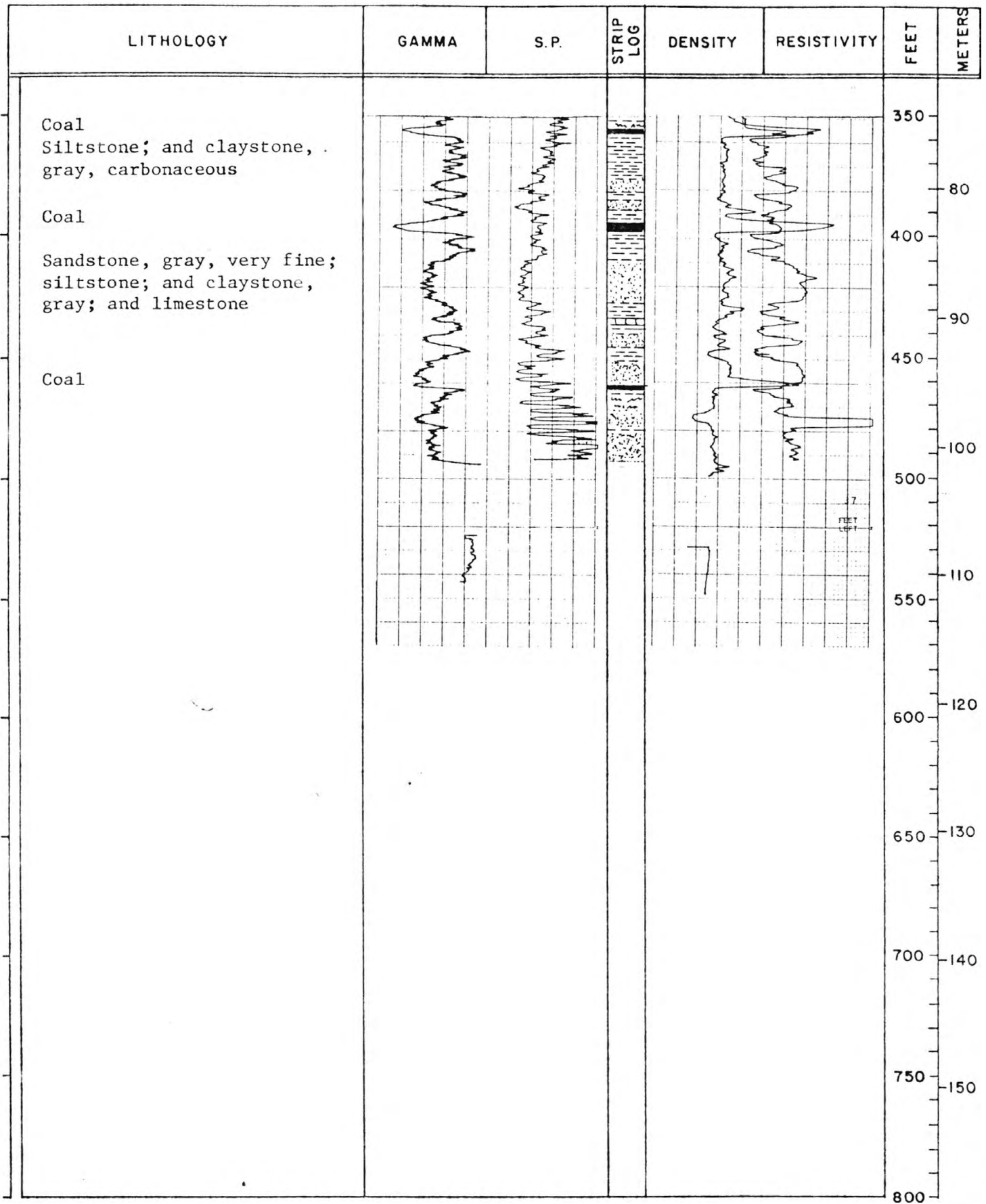
Hole No: US-7981 Map: Culbertson Date: 5/28/79 State: Montana County: Roosevelt
 Elev.: 2240 FT Location: T 28^N R 55^E, Sec 11 Tract DDCD Drilled depth 480 FT
 Measured: 15 FT ^{FNL} ~~XXX~~ 925 FT ^{FEL} ~~XXX~~ FT. Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Cored interval 51 feet to 61 feet.



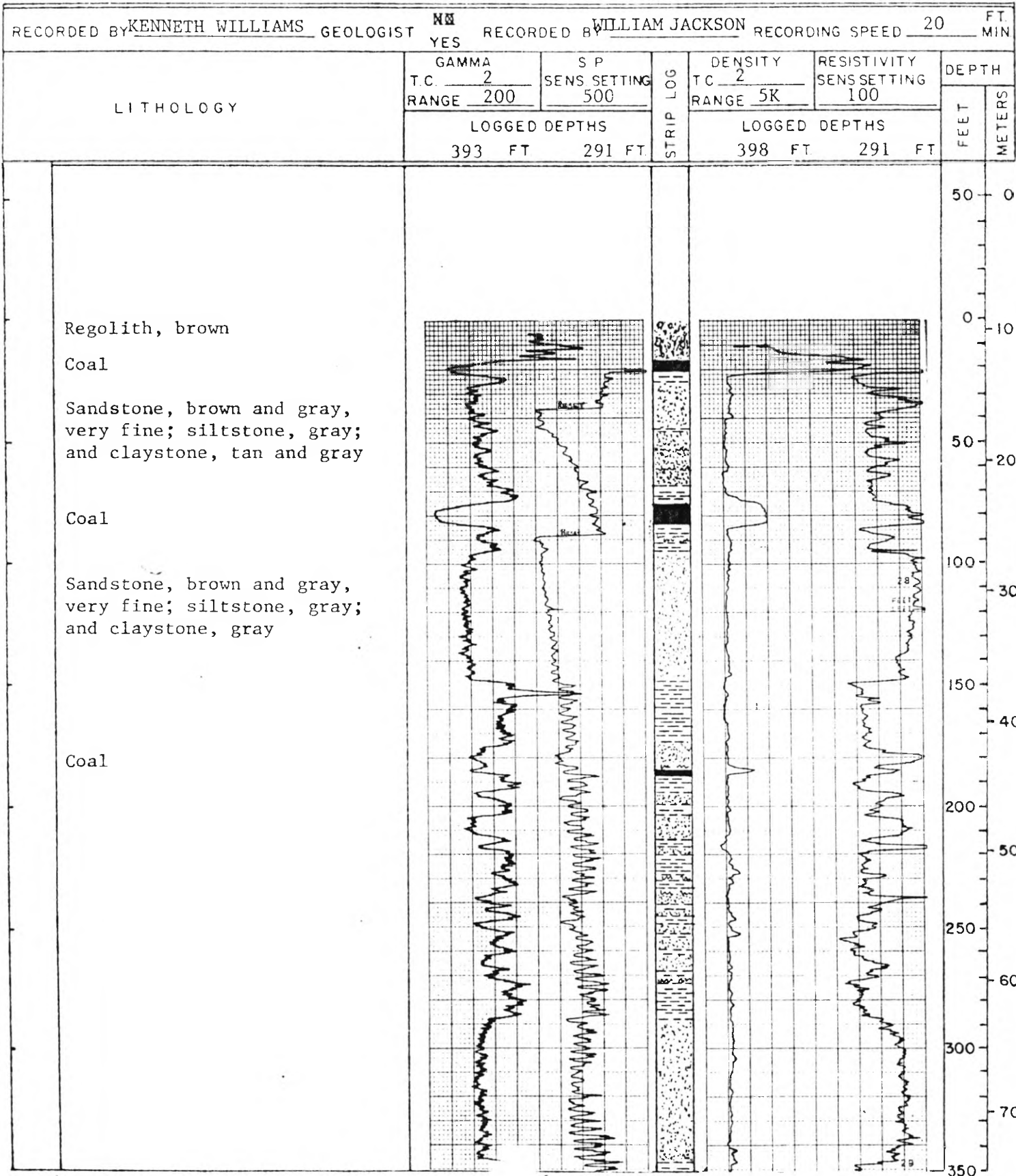


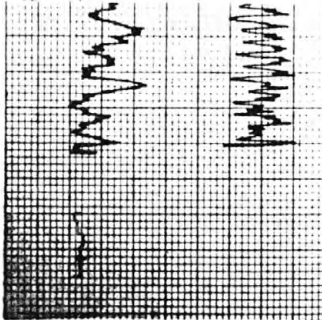
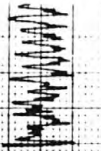
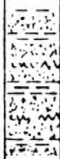
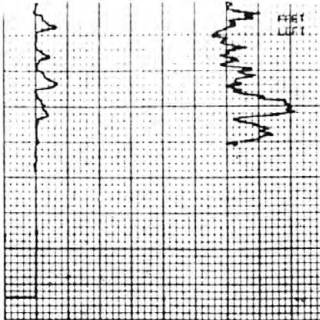
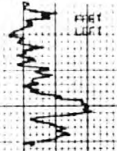
Hole No: US-7982 Map: Culbertson Date: 5/28/79 State: Montana County: Roosevelt
 Elev.: 2176 FT Location: T 28 ^N R 55 ^E Sec 15 Tract BACB Drilled depth 500 FT
 Measured: 940 FT ^{FNL} ~~XXX~~ 1420 FT ^{FWL} ~~XXXL~~ FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____





Hole No: US-7983 Map: Bainville 3 NW Date: 5/30/79 State: Montana County: Roosevelt
 Elev.: 2201 FT Location: T 29^N R 56^E W, Sec 31 Tract ABBB Drilled depth 400 FT
 Measured: 72 FT ~~FNL~~ 2960 FT ~~FWL~~ FWL FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350 80 400 90 450 100 500 110 550 120 600 130 650 140 700 150 750 800	

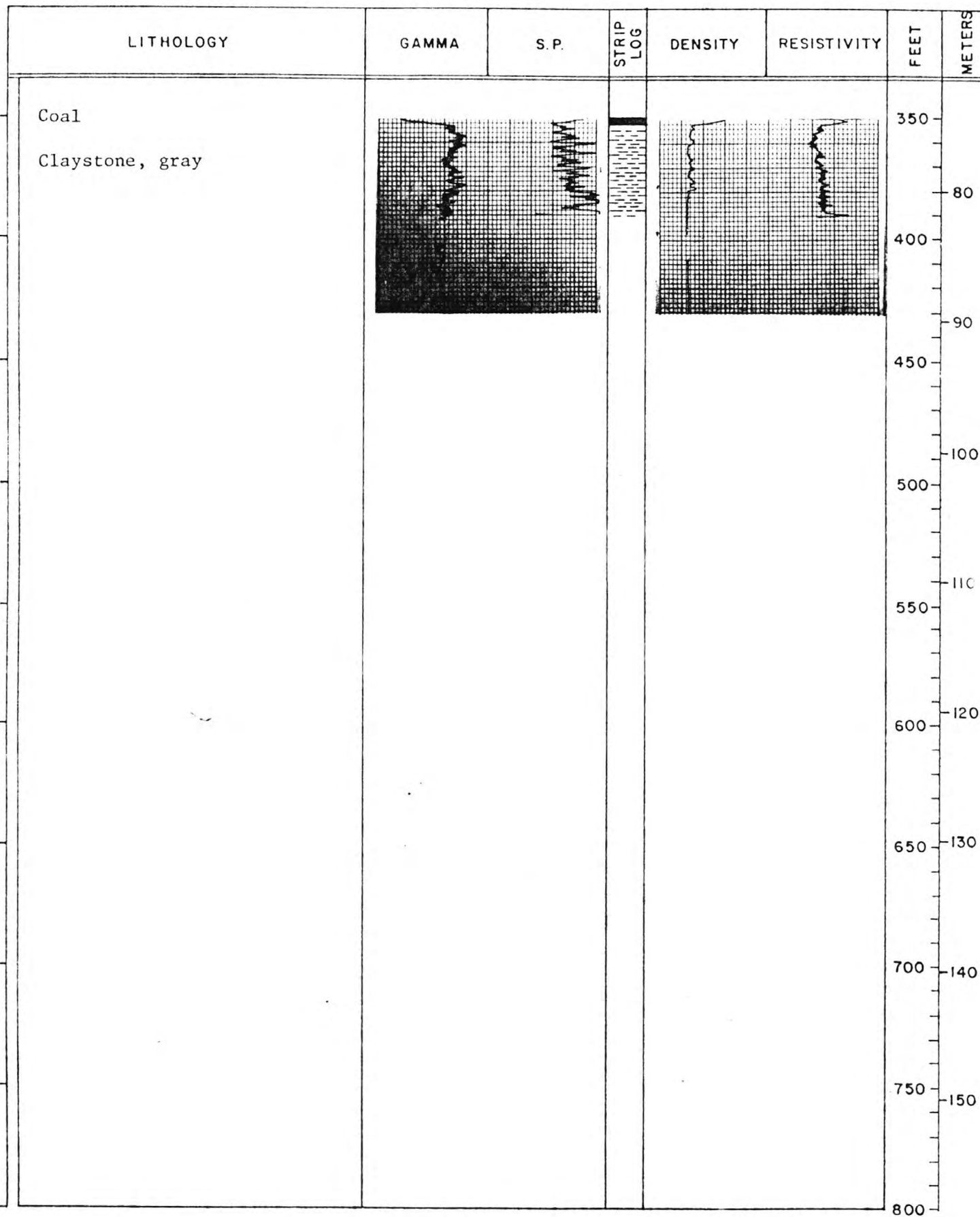
Hole No: US-7984 Map: Bainville 2 SW Date: 5/30/79 State: Montana County: Roosevelt
 Elev: 2084 FT Location: T 29^N R 56^E Sec 8 Tract ADDC Drilled depth 320 FT
 Measured: 2550 FT FNL XXX 350 FT FEL KXX FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <u>NO</u> YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>	DENSITY TC <u>2</u> RANGE <u>2K</u>
	LOGGED DEPTHS <u>312</u> FT <u>311</u> FT		RESISTIVITY SENS SETTING <u>100</u>
	LOGGED DEPTHS <u>318</u> FT <u>311</u> FT		
		STRIP LOG	DEPTH FEET METERS
Sandstone, brown, fine; siltstone, gray; and claystone, brown and gray			50 0
			0 10
Coal			50 20
			100 30
Sandstone, gray, very fine; siltstone, gray; and claystone, brown and gray			150 40
			200 50
			250 60
			300 70
			350 7C

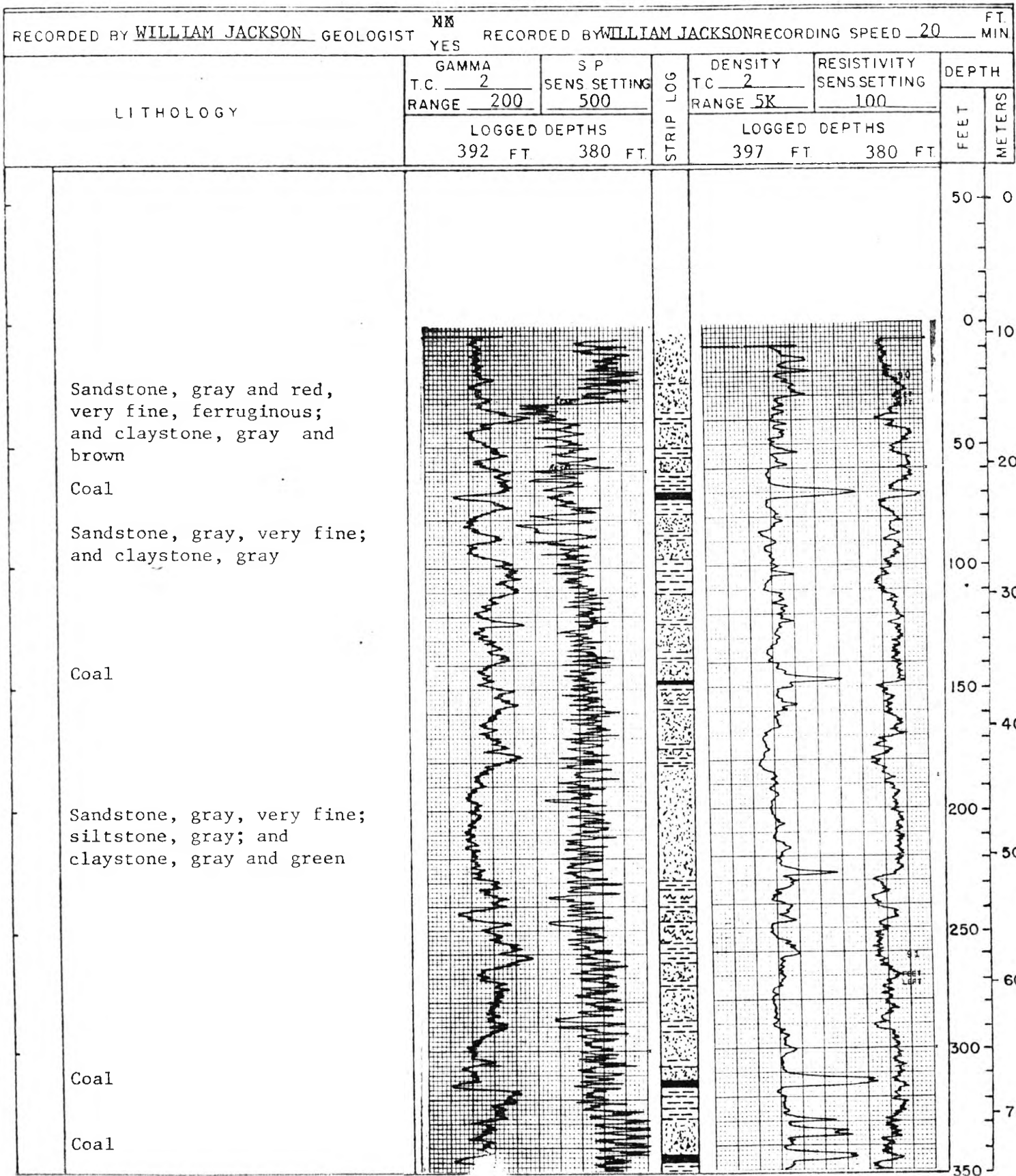
LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

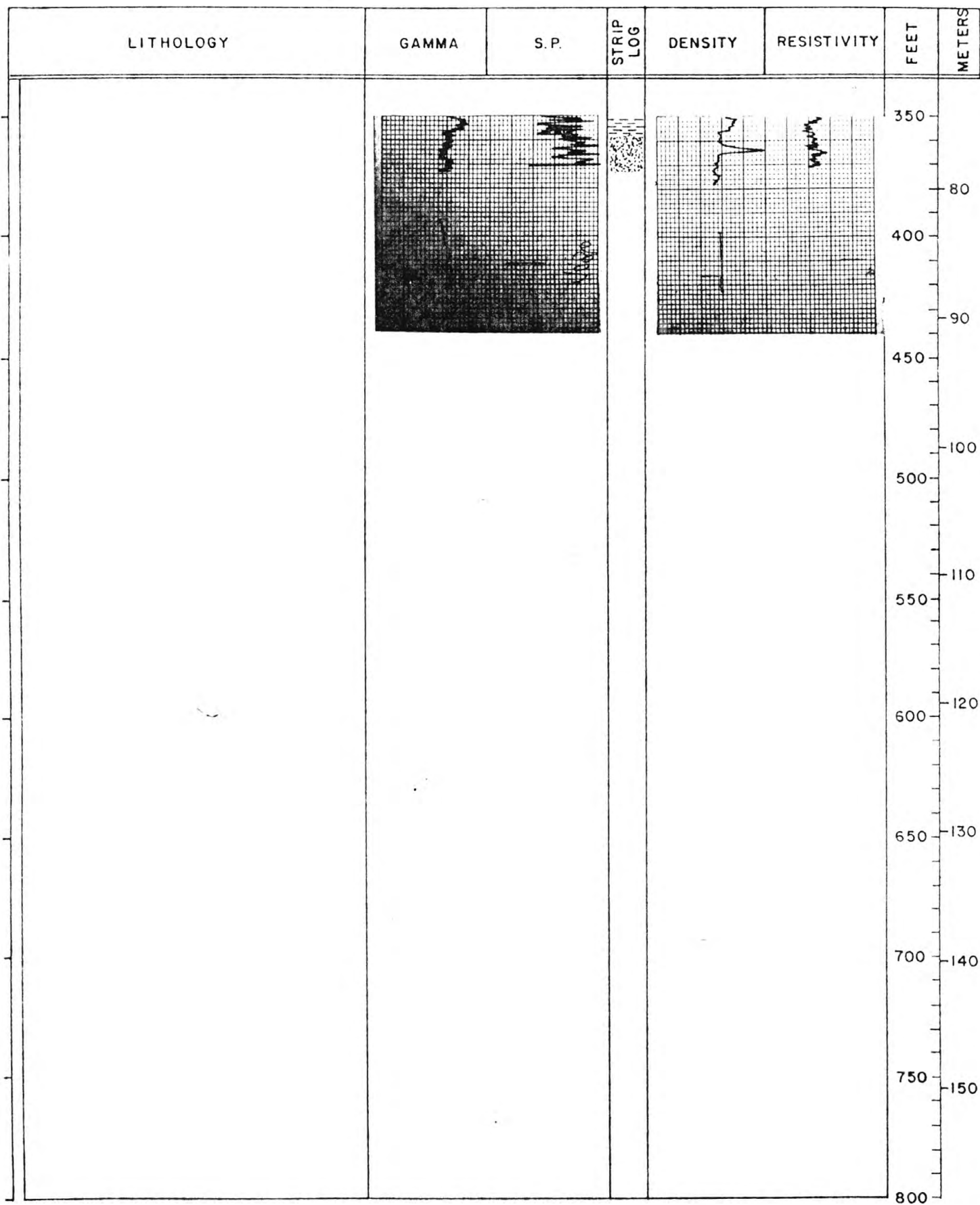
Hole No: US-7985 Map: Bainville 2 SW Date: 5/31/79 State: Montana County: Roosevelt
 Elev.: 2102 FT Location: T 30 ^N R 56 ^E, Sec 29 Tract CDDD Drilled depth 400 FT
 Measured: 15 FT ~~KKK~~ FSL 2549 FT ~~KKK~~ FWL FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{MM} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS. SETTING <u>500</u>	DENSITY T.C. <u>2</u> RANGE <u>2K</u>
	RESISTIVITY SENS. SETTING <u>100</u>		DEPTH
	LOGGED DEPTHS <u>373</u> FT <u>371</u> FT		LOGGED DEPTHS <u>378</u> FT <u>371</u> FT
STRIP LOG			
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>Sandstone, gray, fine; siltstone, gray; and claystone, gray and brown</p> <p>Coal</p> <p>Sandstone, gray, fine; siltstone, gray; and claystone, gray</p> <p>Coal</p> <p>Coal</p> </div> <div style="width: 40%; text-align: center;"> </div> <div style="width: 20%; text-align: right;"> <p>50 0</p> <p>0 10</p> <p>50 20</p> <p>100 30</p> <p>150 40</p> <p>200 50</p> <p>250 60</p> <p>300 70</p> <p>350</p> </div> </div>			

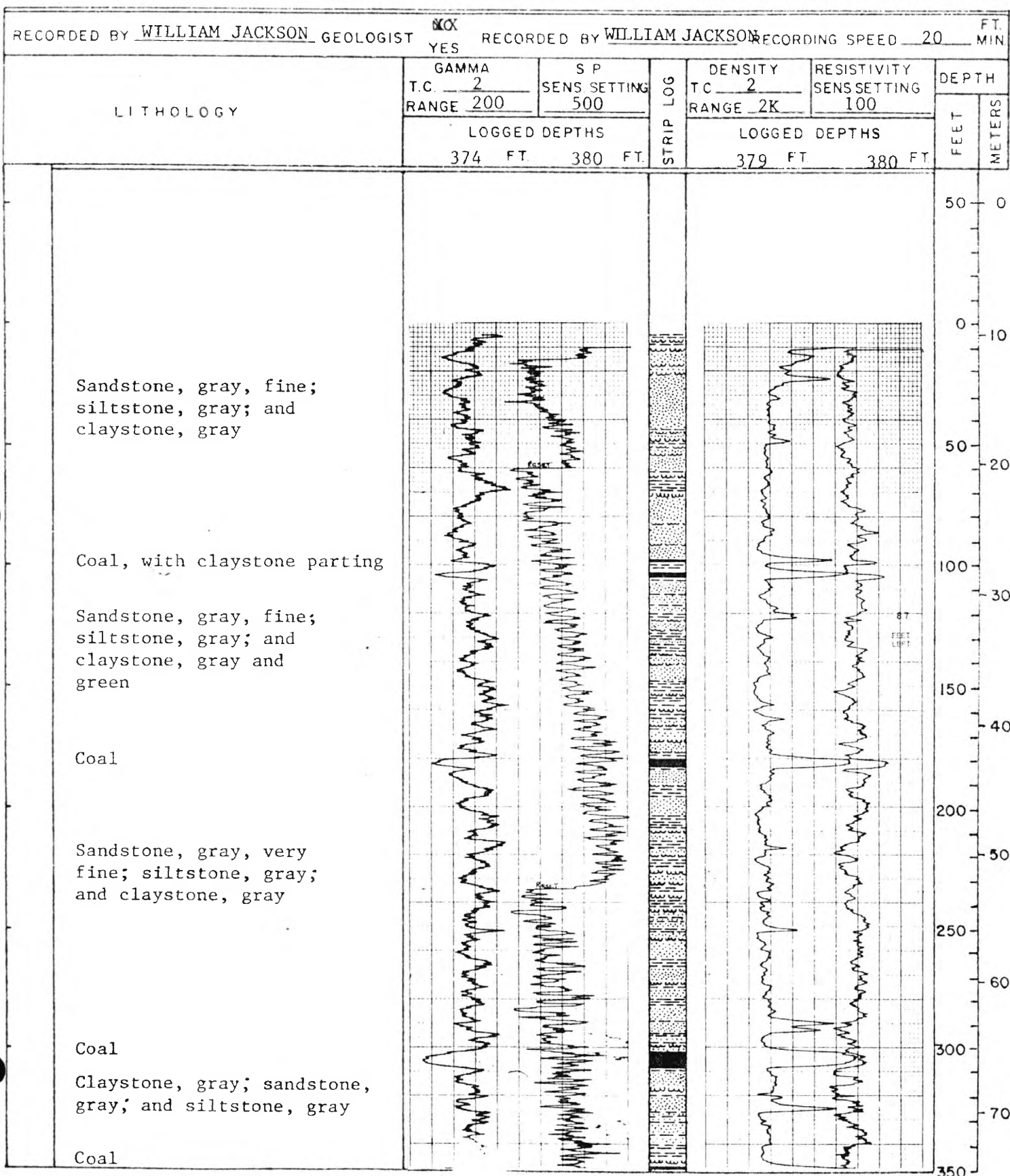


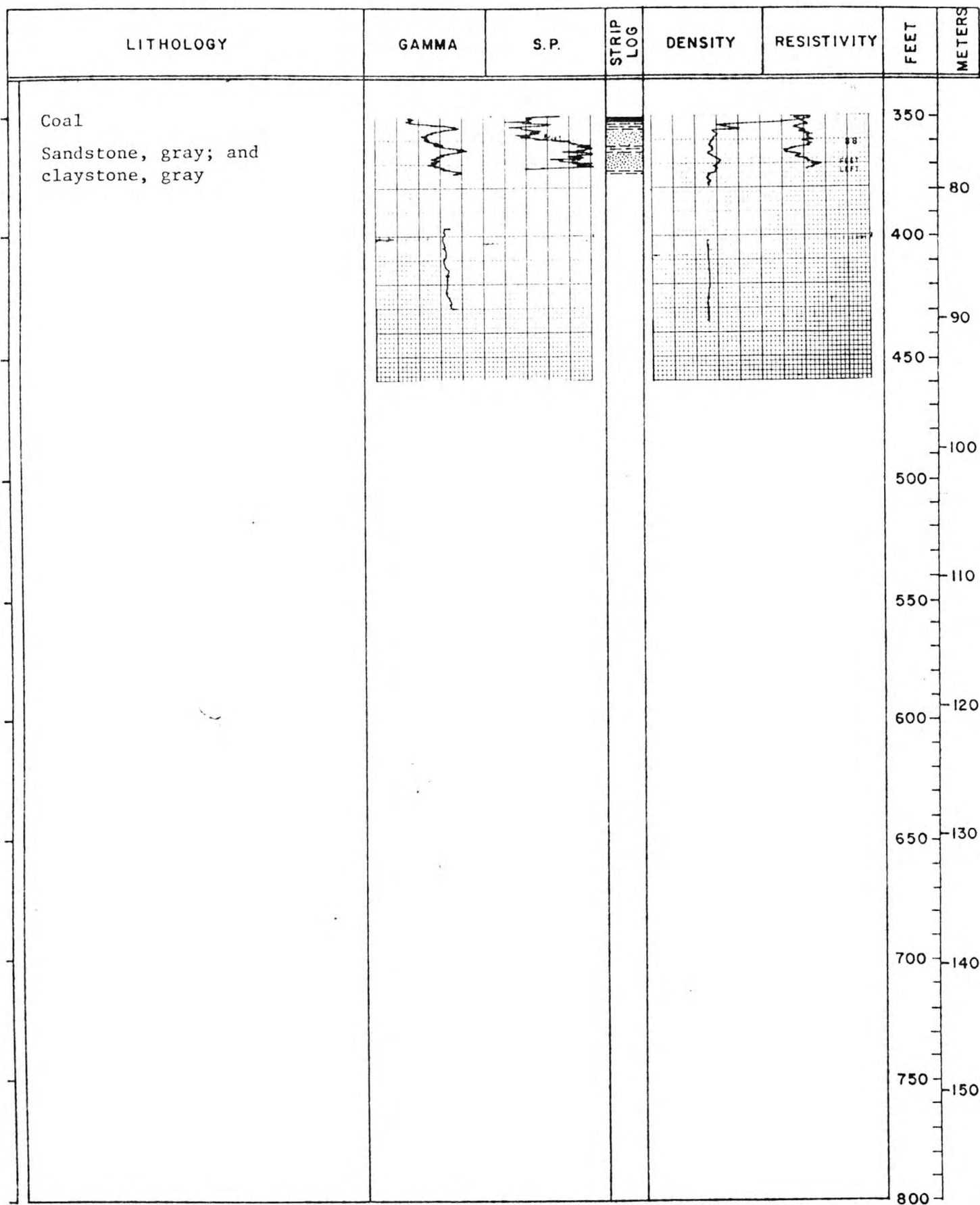
Hole No: US-7986 Map: Bainville 2 SW Date: 5/31/79 State: Montana County: Roosevelt
 Elev: 2102 FT Location: T 30^N R 56^E Sec 17 Tract ADDD Drilled depth 380 FT
 Measured: 2560 FT ^{FNL} XXX 18 FT ^{FEL} XXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



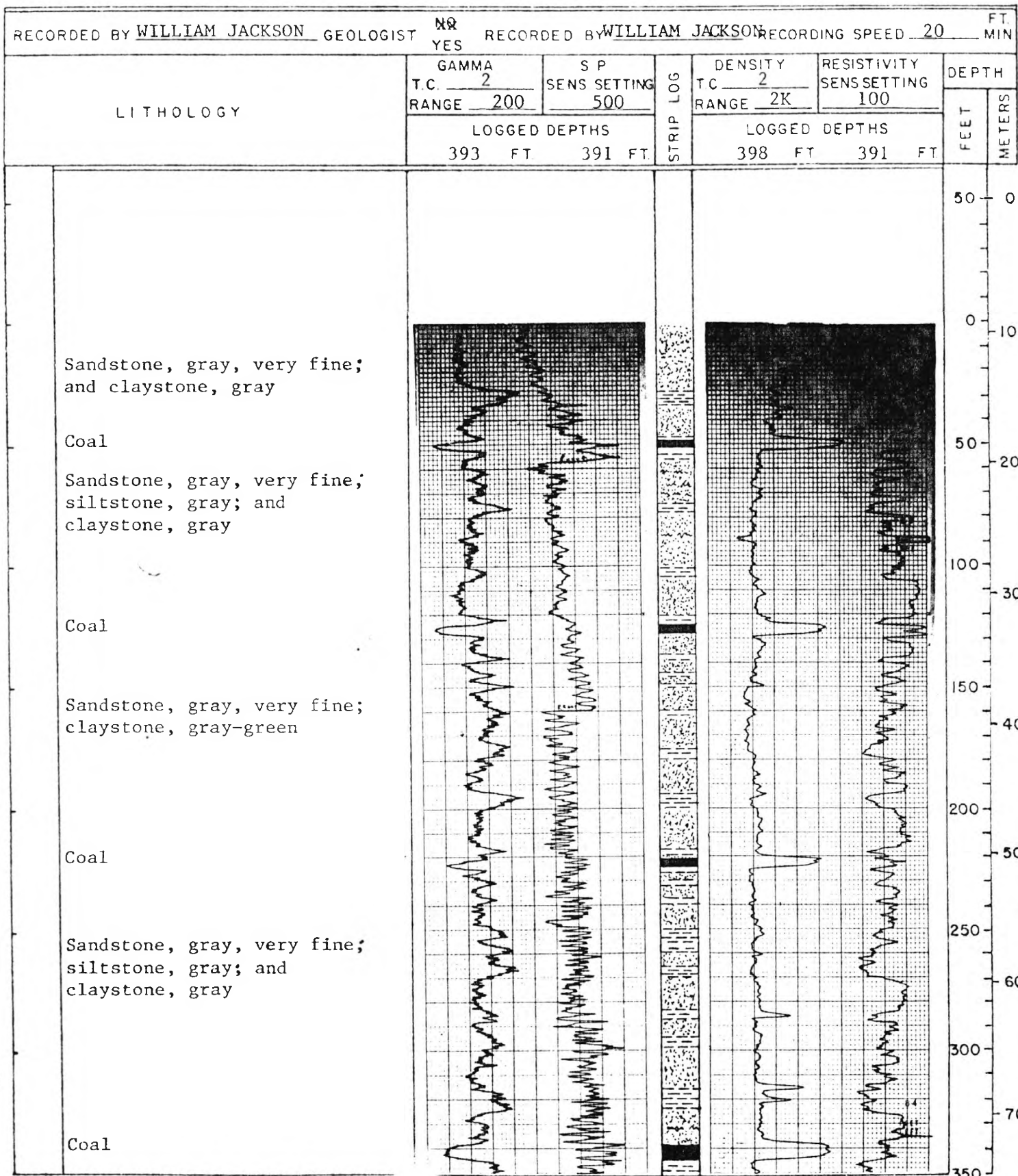


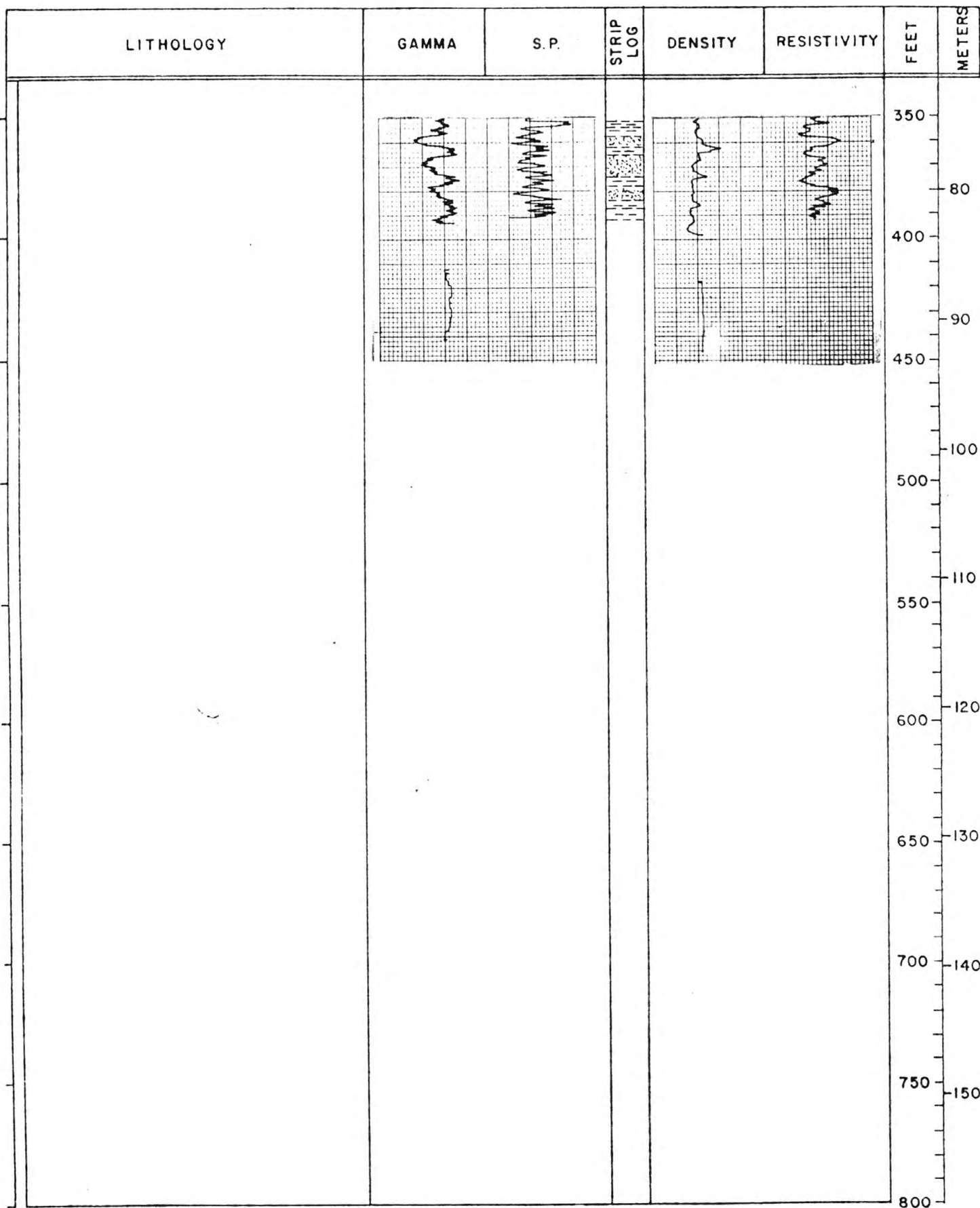
Hole No: US-7987 Map: Bainville 2 SW Date: 6/1/79 State: Montana County: Roosevelt
 Elev: 2150 FT Location: T 30 ^N R 56 ^E Sec 13 Tract BBBB Drilled depth 380 FT
 Measured: 60 FT ^{FNL} ~~R&K~~ 15 FT ^{FWL} ~~R&K~~ FT. Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____





Hole No: US-7988 Map: Bainville 2 SW Date: 6/1/79 State: Montana County: Roosevelt
 Elev.: 2197 FT Location: T 30^N R 56^E Sec 26 Tract BCCC Drilled depth 400 FT
 Measured: 2680 FT FSL 90 FT FWL FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks:





RECORDED BY WILLIAM JACKSON GEOLOGIST ☒ NO
YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT.
MIN

GAMMA T.C. <u>2</u>	S P SENS SETTING <u>500</u>
RANGE <u>200</u>	
LOGGED DEPTHS	
513 FT.	511 FT.

STRIP LOG	DENSITY	RESISTIVITY
	T.C. <u>2</u>	SENS SETTING
	RANGE <u>2K</u>	<u>100</u>
LOGGED DEPTHS		
	518 FT	511 FT

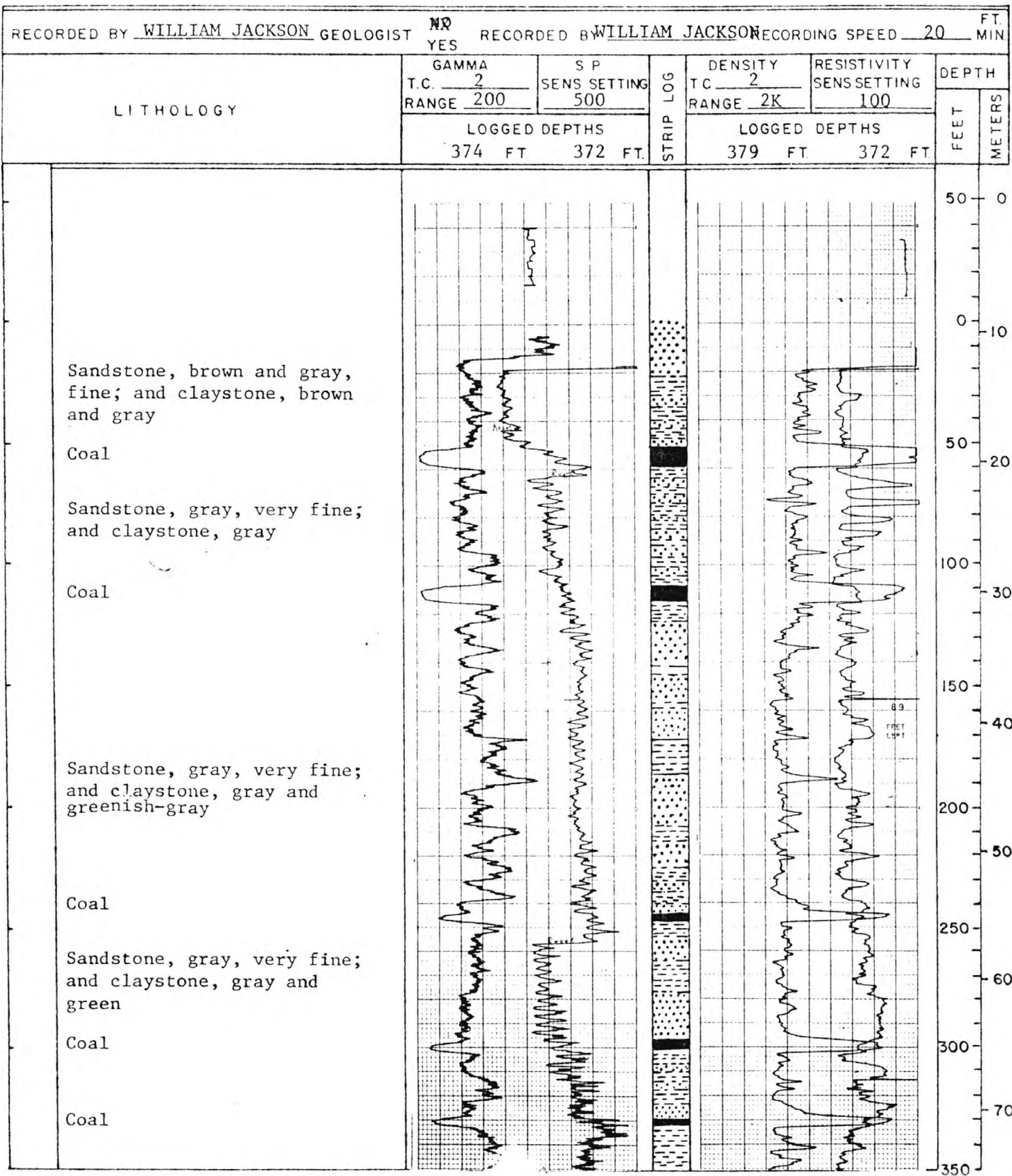
DEPTH	
FEET	METERS

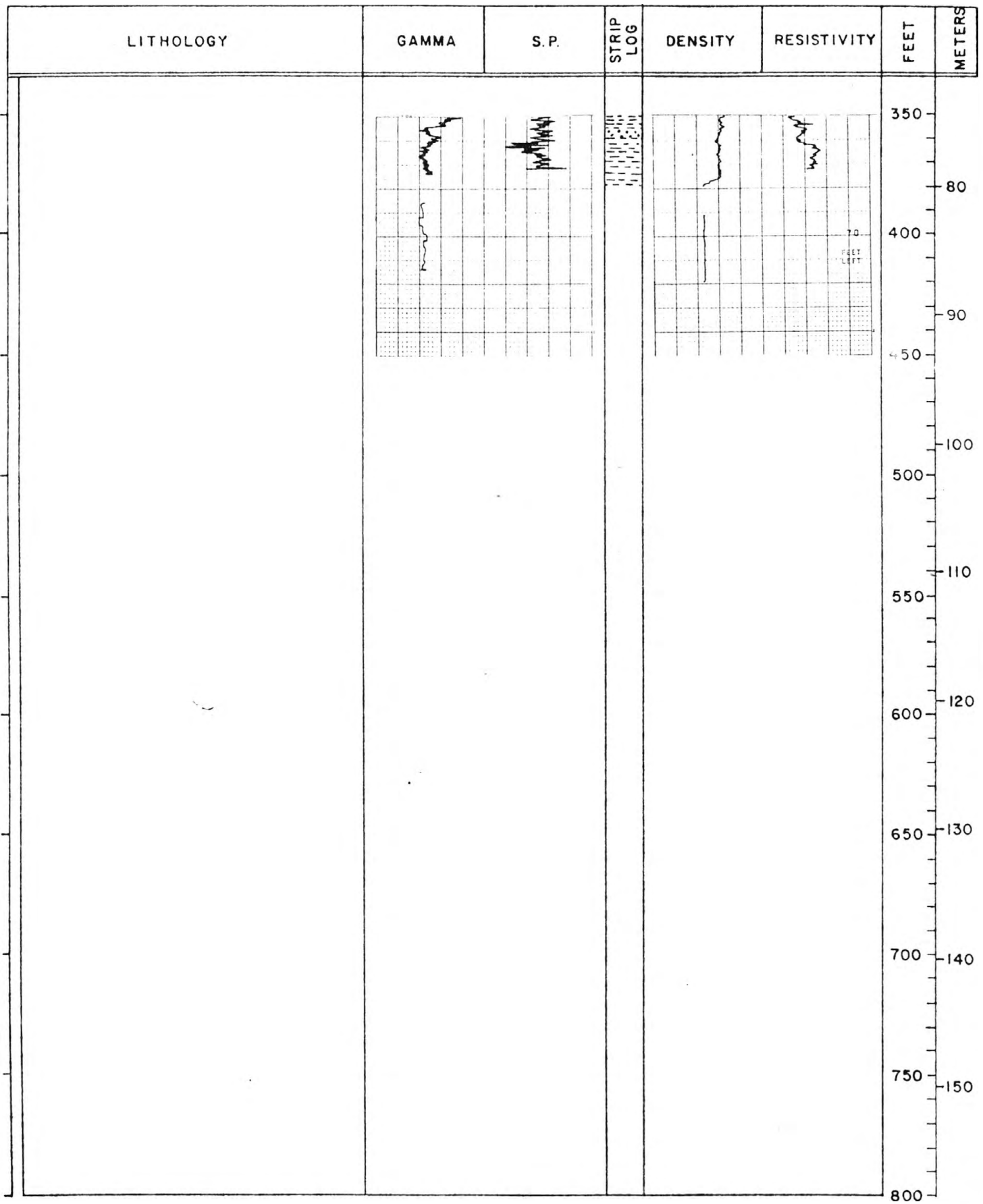
Coal

Coal

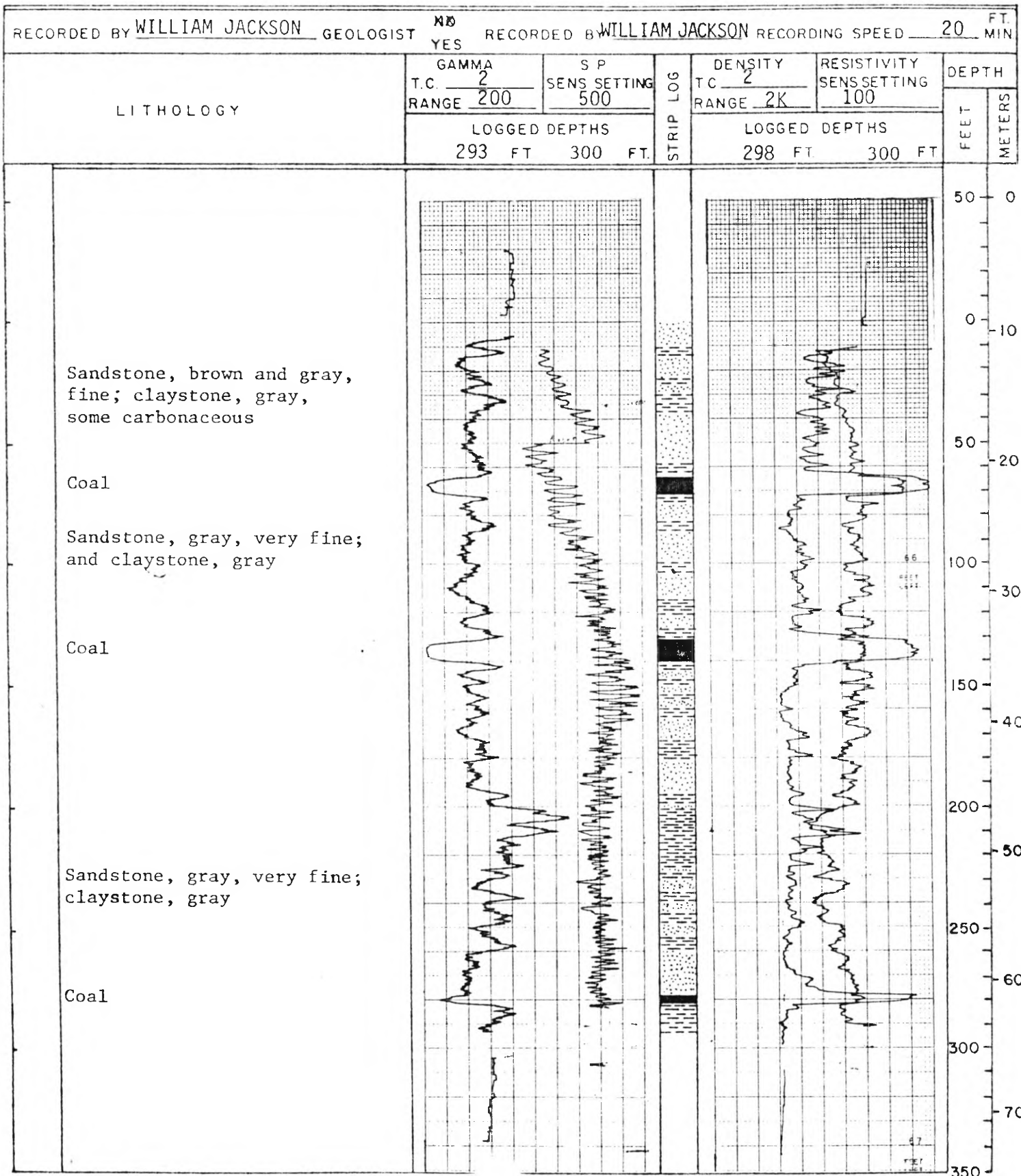
LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-7991 Map: Bainville 3 NW Date: 6/6/79 State: Montana County: Roosevelt
 Elev: 2110 FT Location: T 28 ^N R 57 ^E Sec 19 Tract DDDD Drilled depth 380 FT
 Measured: 590 FT FSL 12 FT FEL FWL FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Lost circulation at 260 feet, returned at 320 feet, lost at 340 feet.



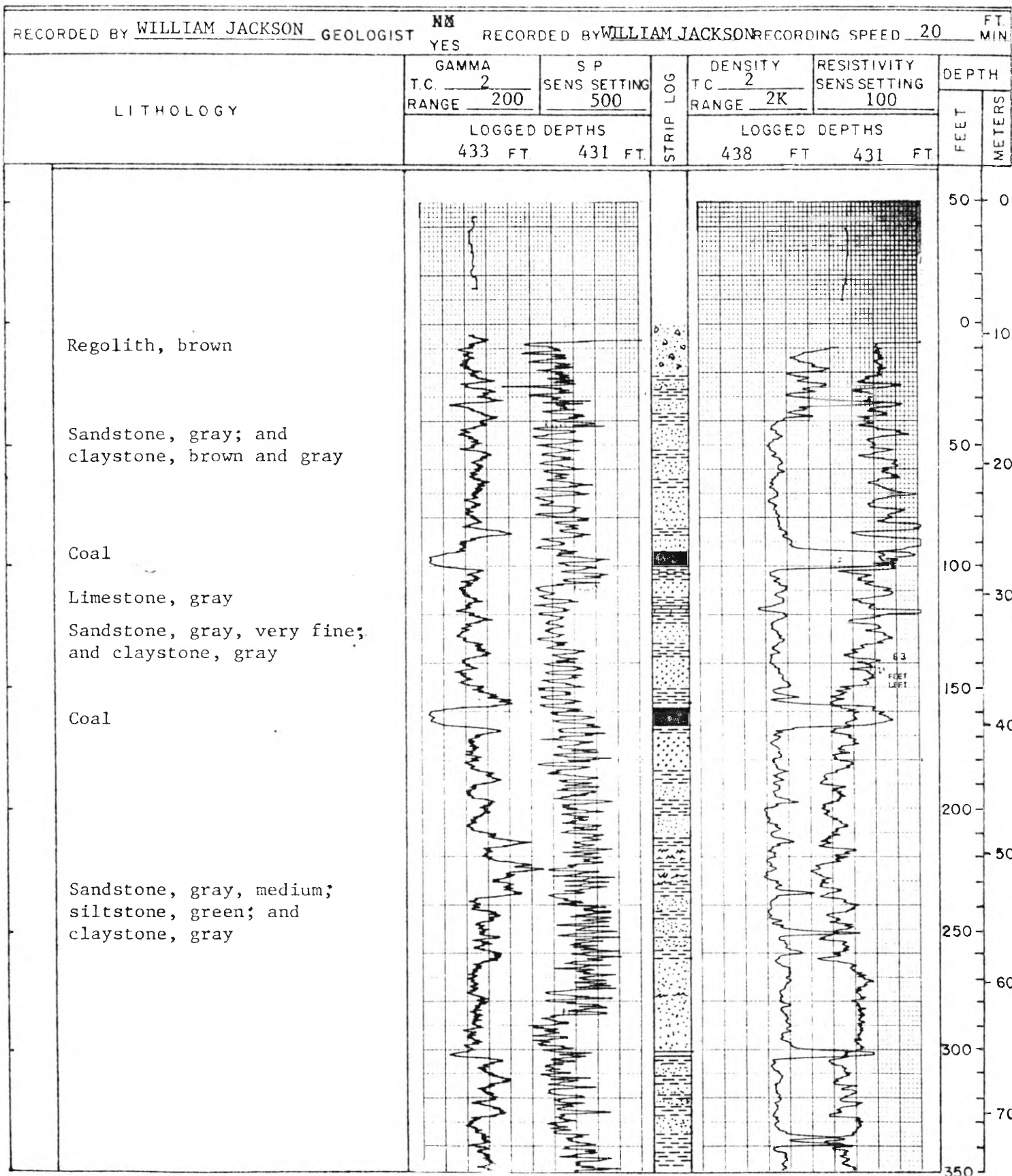


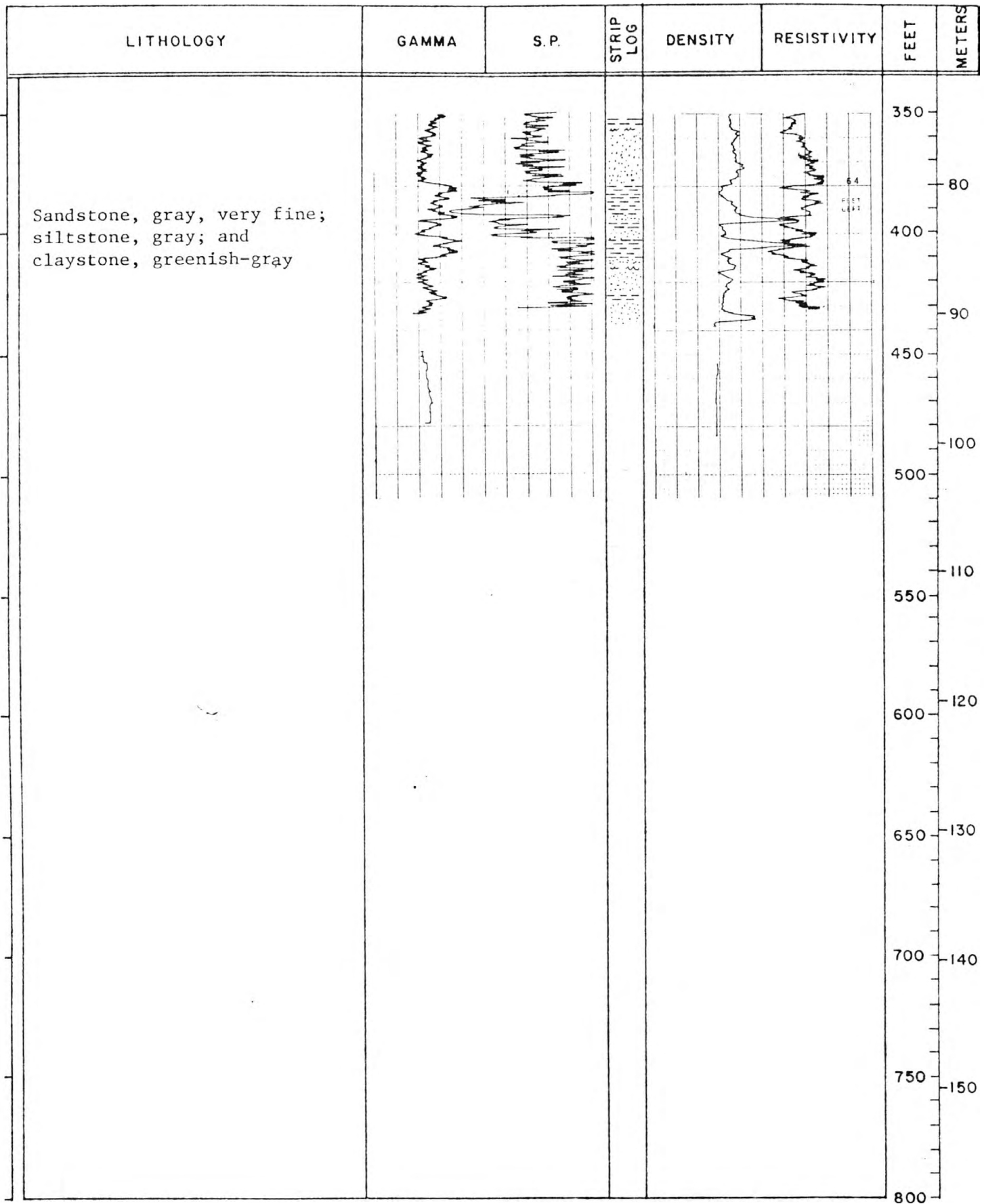
Hole No: US-7992 Map: Bainville 3 NE Date: 6/6/79 State: Montana County: Roosevelt
 Elev: 2114 FT Location: T 28^N R 57^E, Sec 17 Tract DDDD Drilled depth 300 FT
 Measured: 12 FT FSL 105 FT ~~XXX~~ ^{FEL} ~~XXX~~ FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

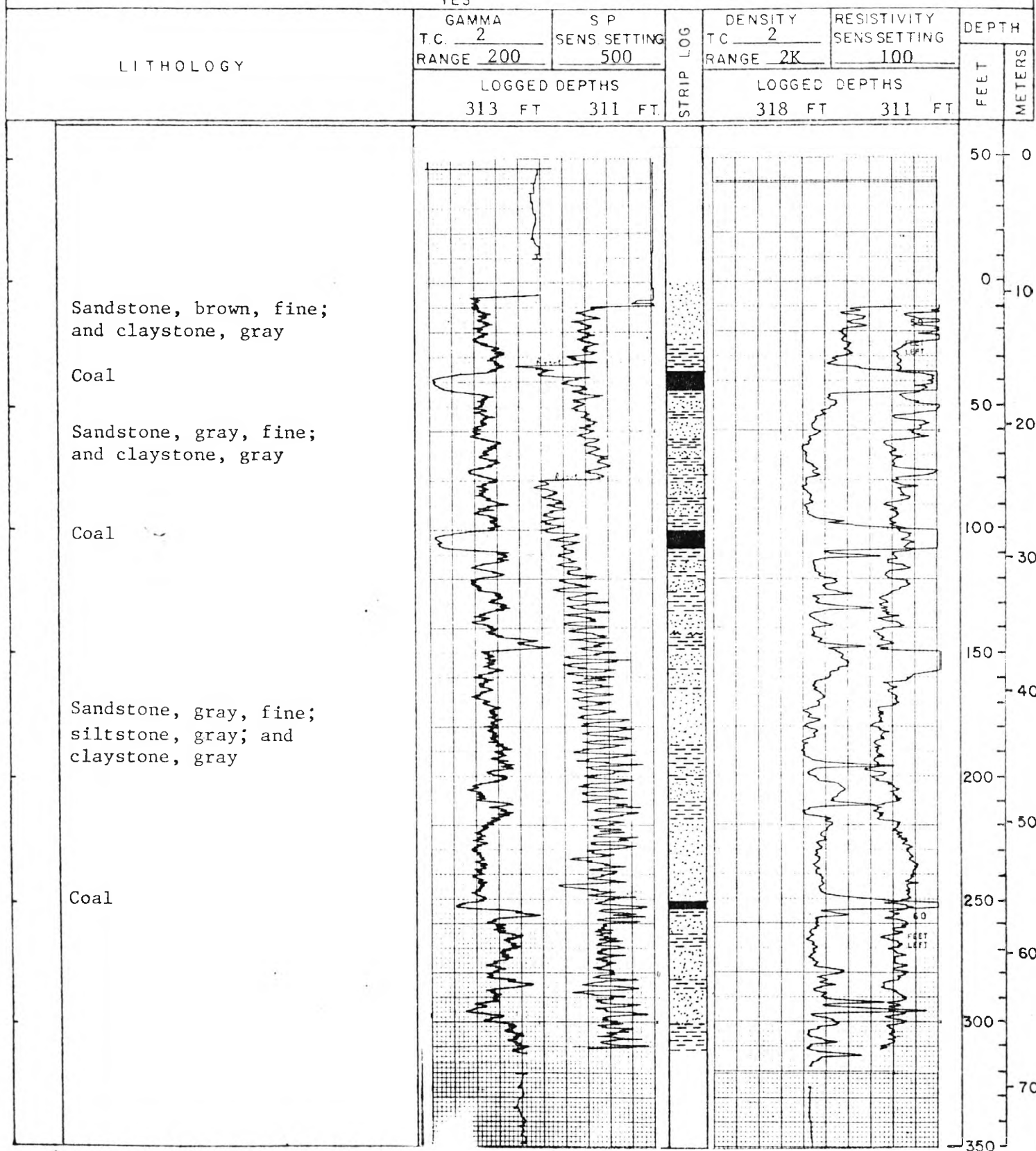
Hole No: US-7993 Map: Bainville 3 NW Date: 6/6/79 State: Montana County: Roosevelt
 Elev.: 2230 FT Location: T 28^N R 56^E Sec 1 Tract CDDD Drilled depth 440 FT
 Measured: 25 FT FSL 2530 FT FWL 88K FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____





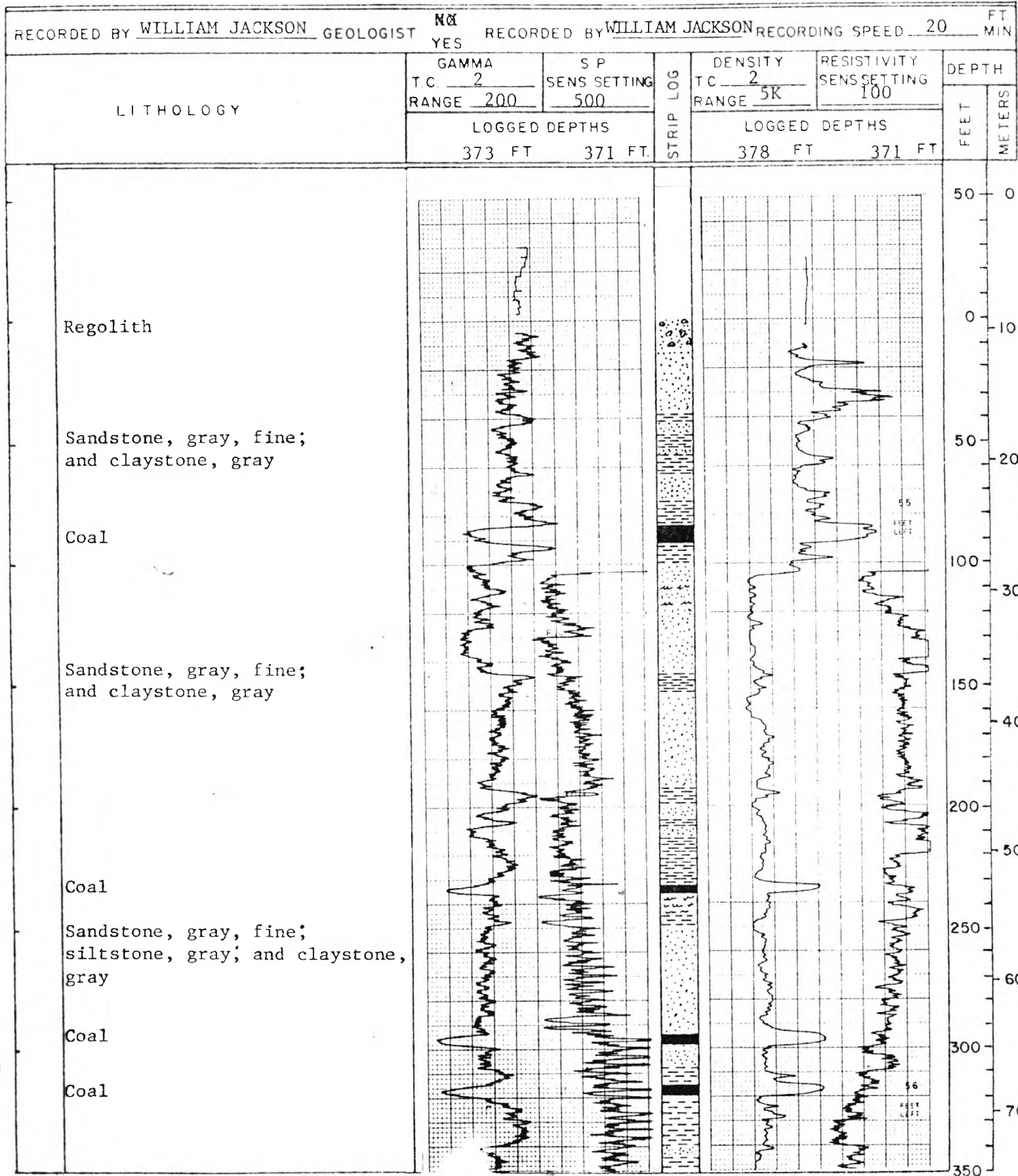
Hole No: US-7994 Map: Bainville 3 NW Date: 6/7/79 State: Montana County: Roosevelt
 Elev: 2190 FT Location: T 28^N R 56^E, Sec 14 Tract BBCA Drilled depth 320 FT
 Measured: 680 FT ~~FNL~~ 320 FT ~~FWL~~ XXXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

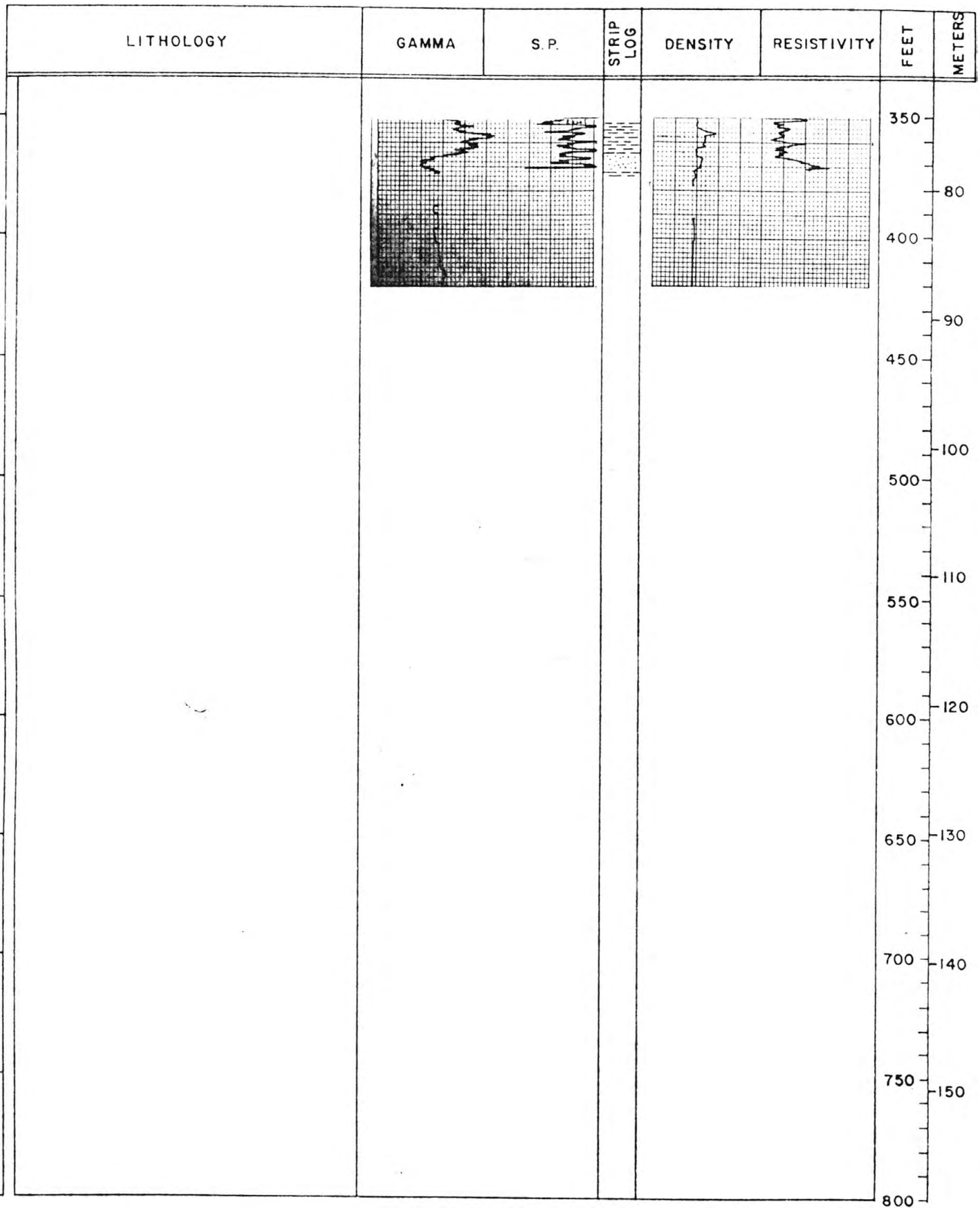
RECORDED BY WILLIAM JACKSON GEOLOGIST ~~MM~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN



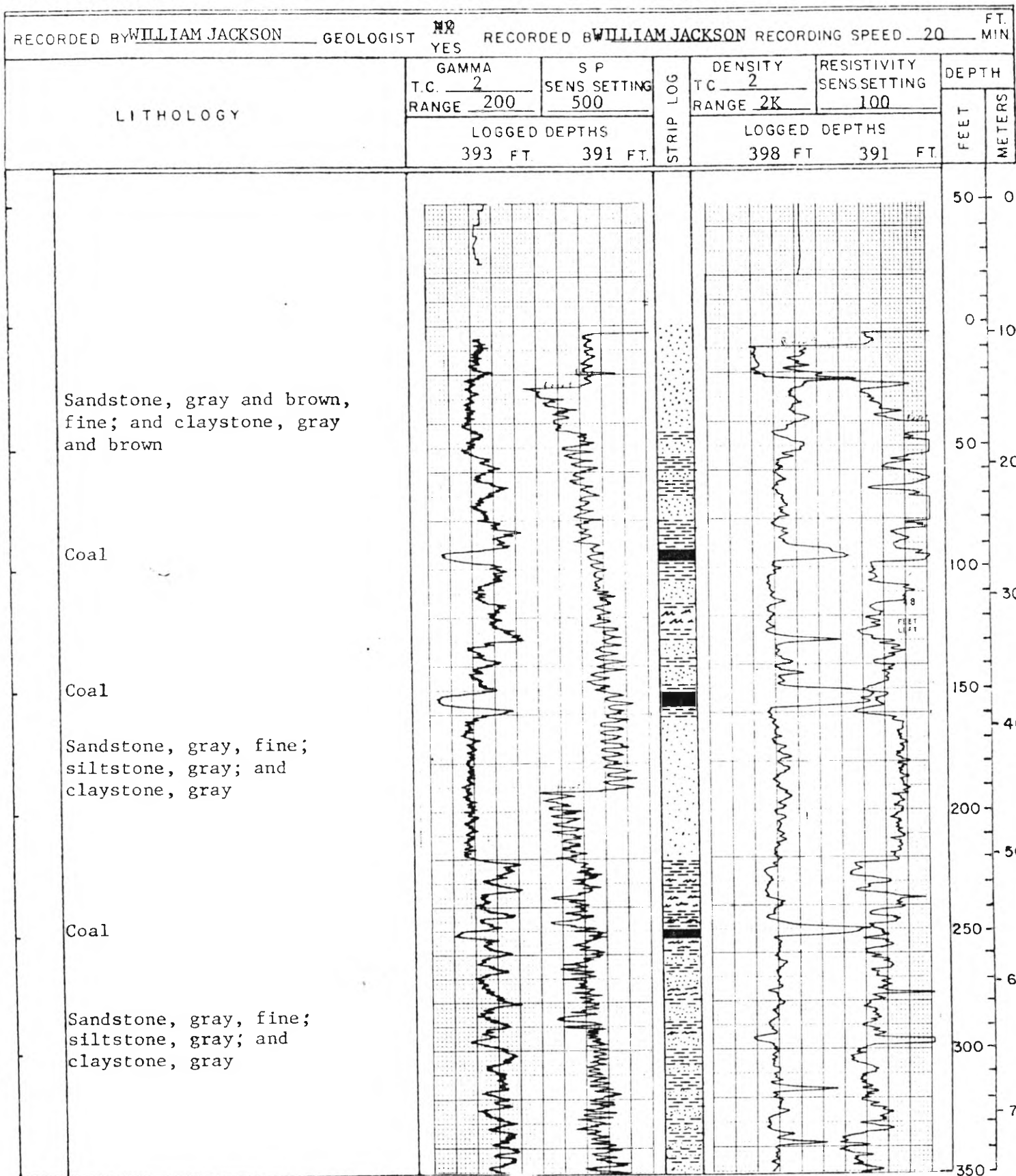
LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

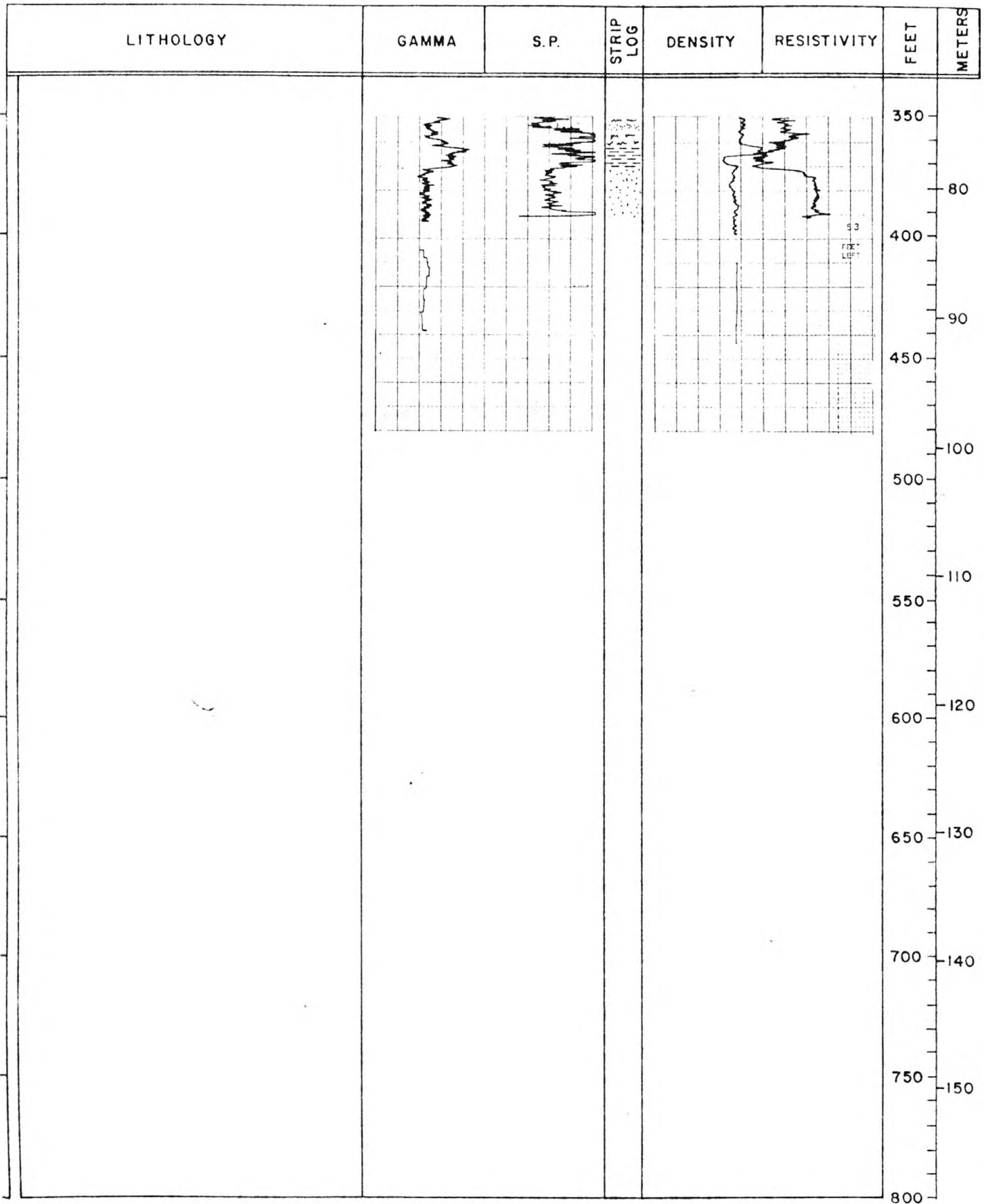
Hole No: US-7995 Map: Bainville 3 NW Date: 6/7/79 State: Montana County: Roosevelt
 Elev: 2131 FT Location: T 28^N R 57^E W, Sec 19 Tract BCBB Drilled depth 380 FT
 Measured: 1345 FT FNL XXX 745 FT FWL XXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



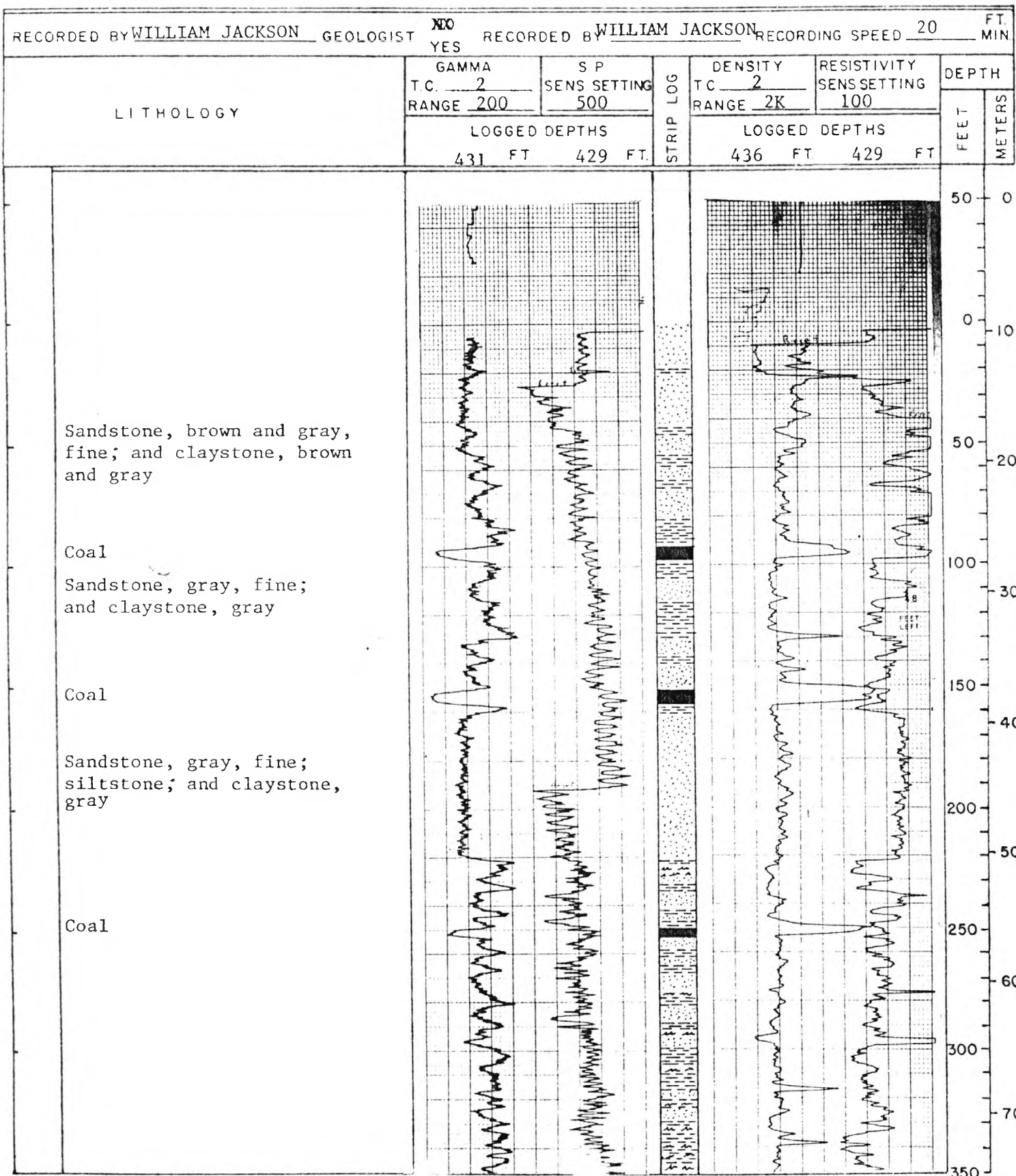


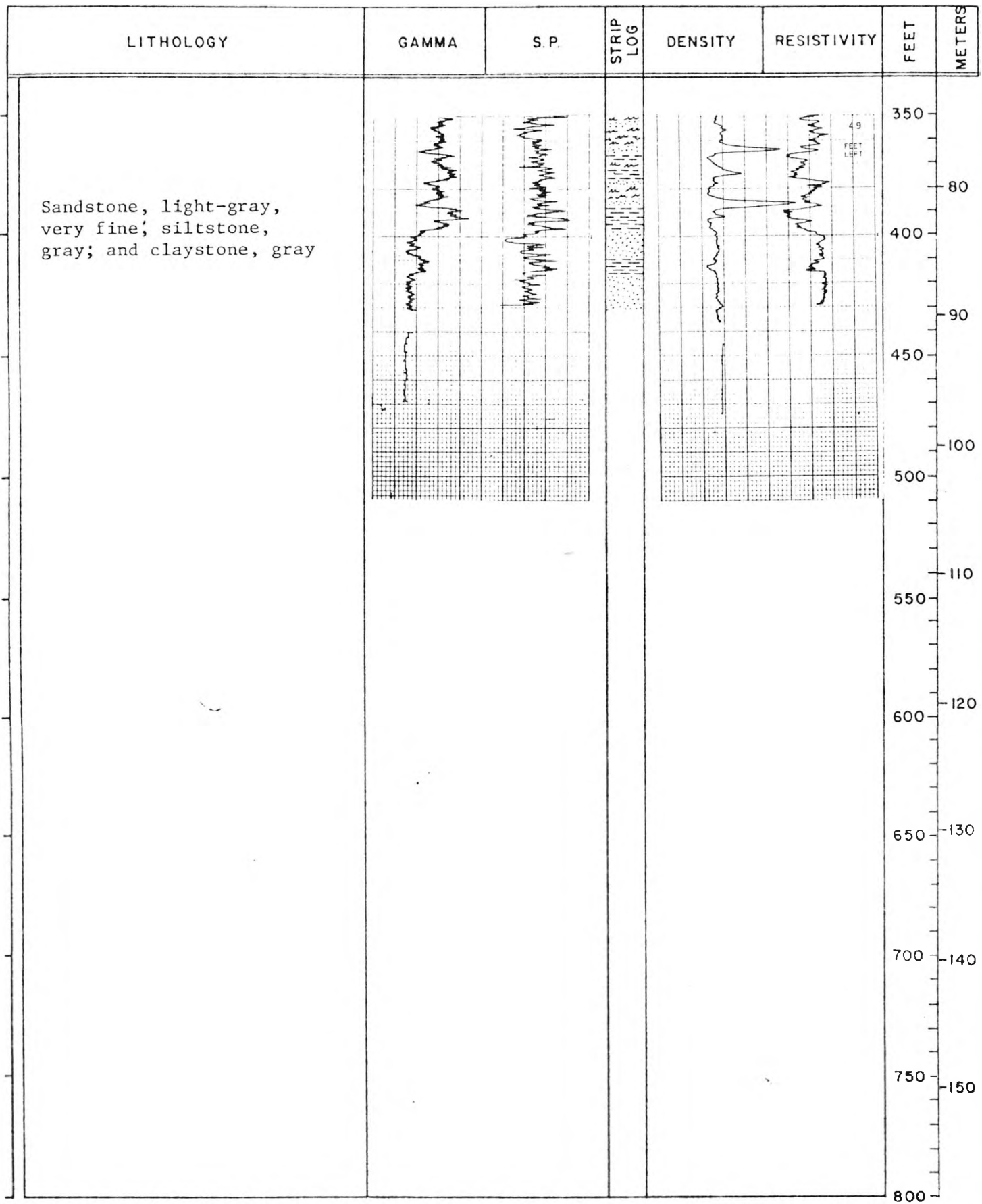
Hole No: US-7996 Map: Culbertson Date: 6/8/79 State: Montana County: Roosevelt
 Elev: 2299 FT Location: T 28^N R 56^E W, Sec 7 Tract DDAC Drilled depth 400 FT
 Measured: 855 FT RXX FSL 370 FT RXX FEL RXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____





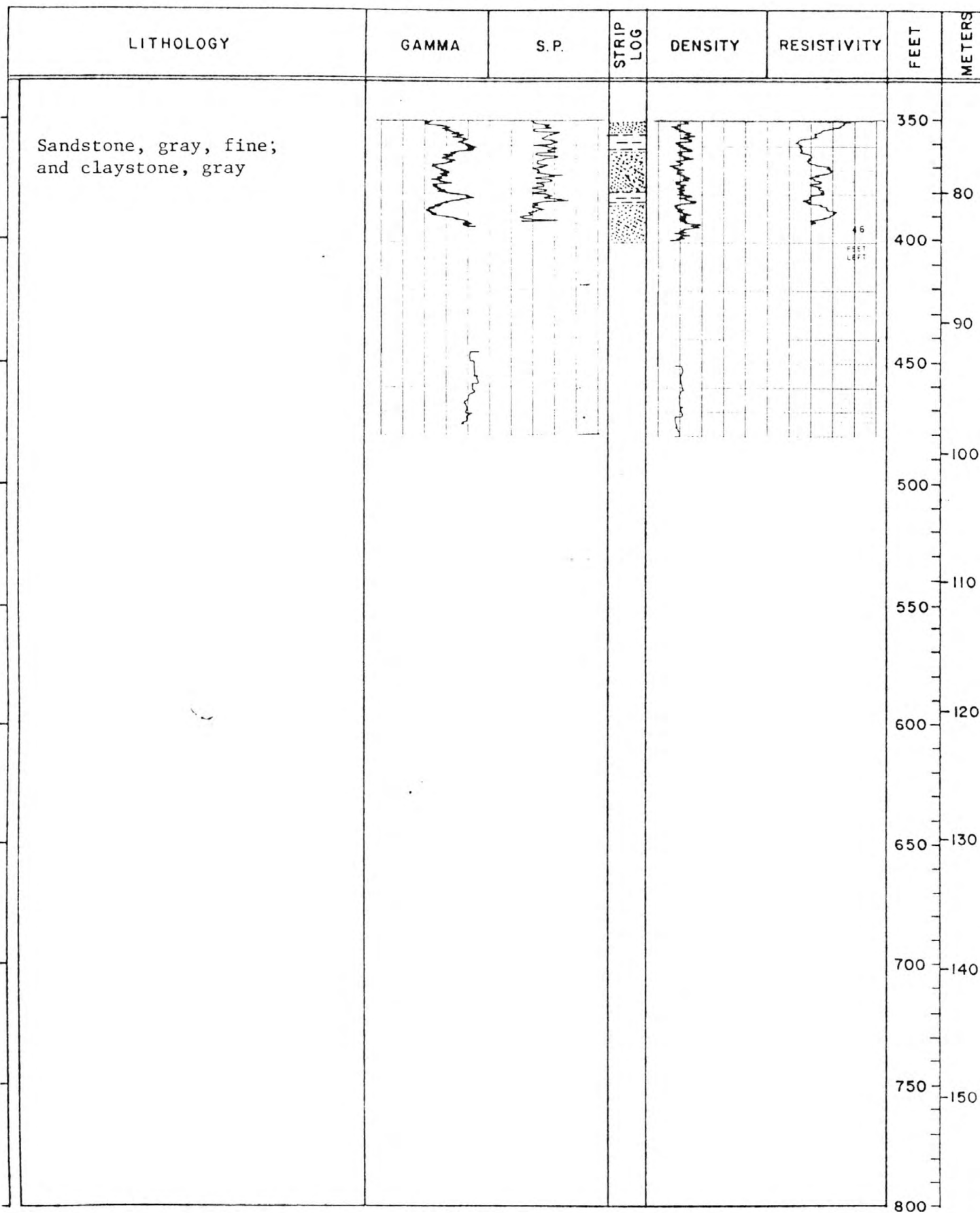
Hole No: US-7997 Map: Bainville 2 SW Date: 6/8/79 State: Montana County: Roosevelt
 Elev.: 2235 FT Location: T 29^N R 56^E Sec 1 Tract CCCC Drilled depth 440 FT
 Measured: 24 FT ~~KNX~~ FSL 185 FT ~~RRX~~ FWL FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



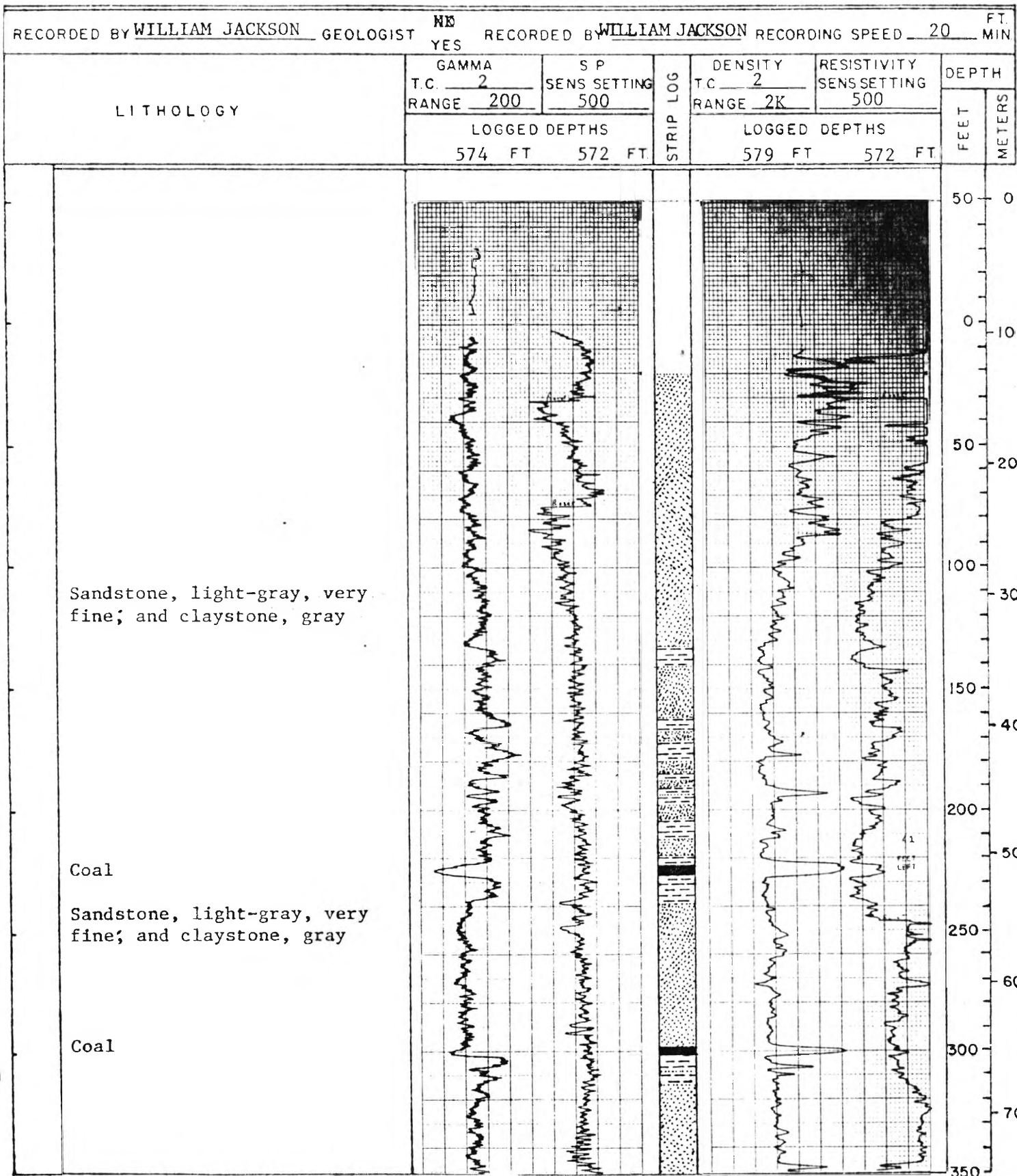


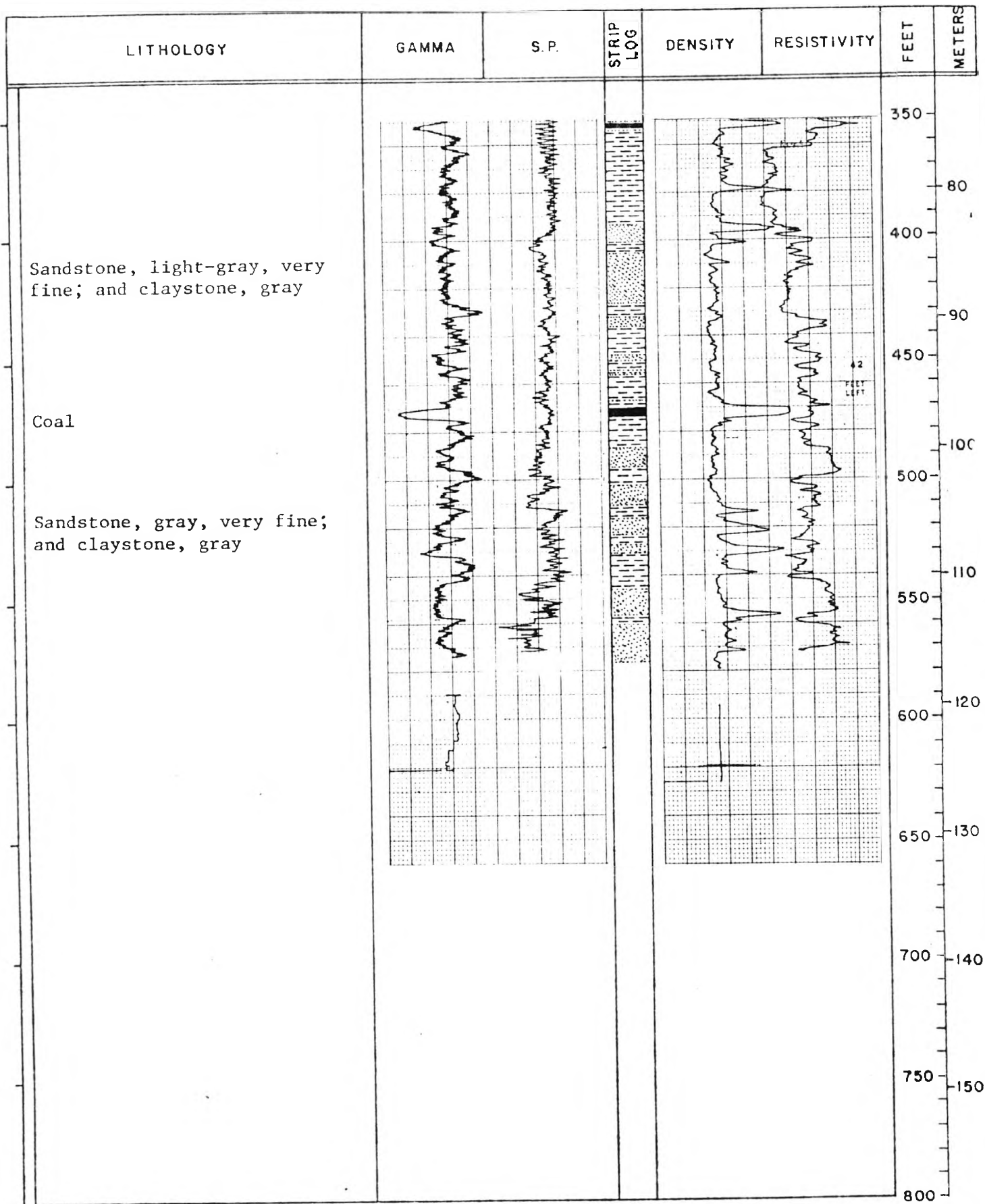
Hole No: US-7998 Map: Bainville 2 SE Date: 6/9/79 State: Montana County: Roosevelt
Elev: 2237 FT Location: T 30 ^N R 57 ^E W, Sec 9 Tract CCCC Drilled depth 400 FT
Measured: 54 FT ^{ENK} PSL 297 FT ^{RXX} FWL FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
Remarks: Logged over pit without source.

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <u>YES</u>		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN				
LITHOLOGY	GAMMA	S P	LOG	DENSITY	RESISTIVITY	DEPTH
	T.C. <u>2</u>	SENS SETTING		TC <u>2</u>	SENS SETTING	
	RANGE <u>200</u>	<u>500</u>		RANGE <u>50</u>	<u>100</u>	
	LOGGED DEPTHS			LOGGED DEPTHS		
	394 FT	392 FT		399 FT	392 FT	
Sandstone, gray, fine; siltstone, gray; and claystone, brownish-gray and gray						50
						0
						10
						20
						30
						40
						50
						60
						70
						80
						90
						100
						110
						120
						130
						140
						150
						160
						170
						180
						190
						200
						210
						220
						230
						240
						250
						260
						270
						280
						290
						300
						310
						320
						330
						340
						350
Coal						360

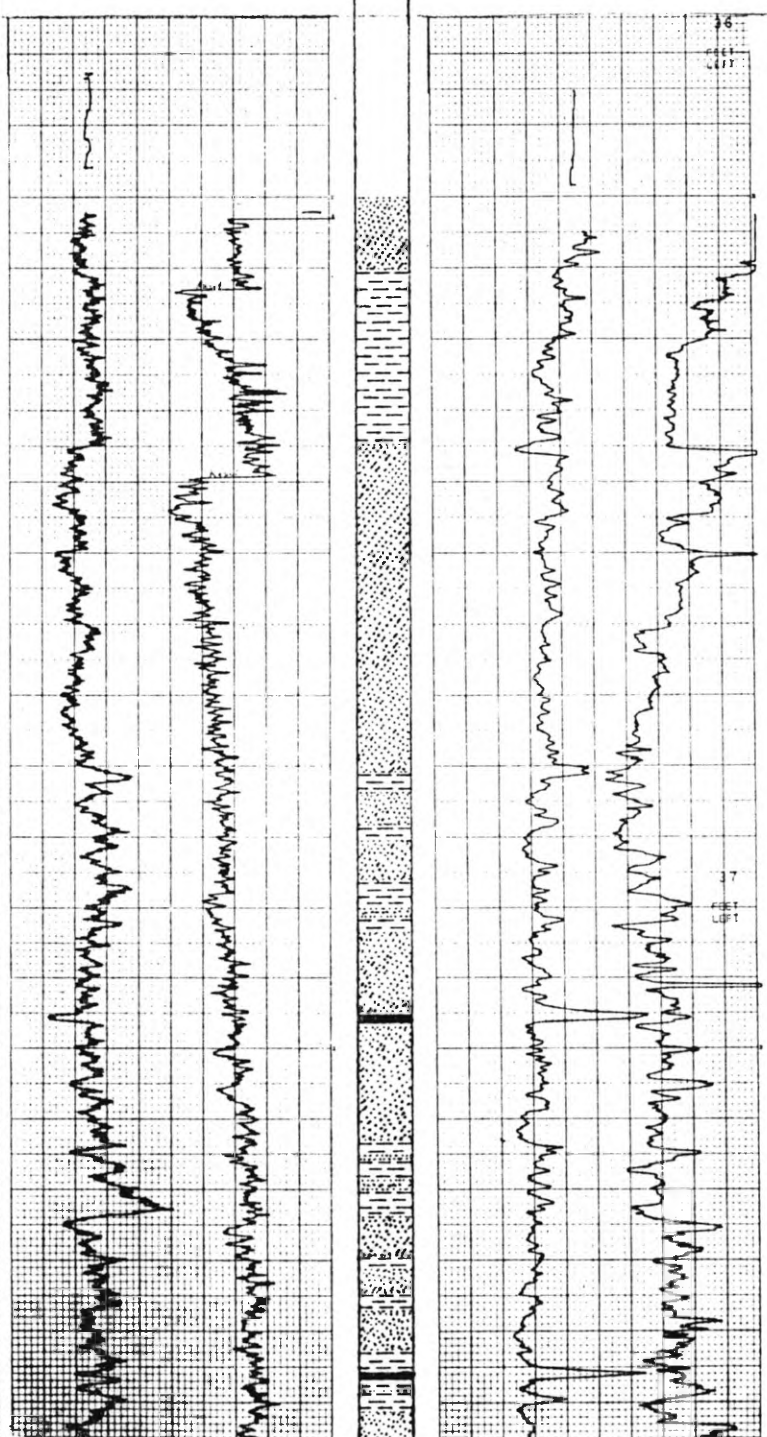


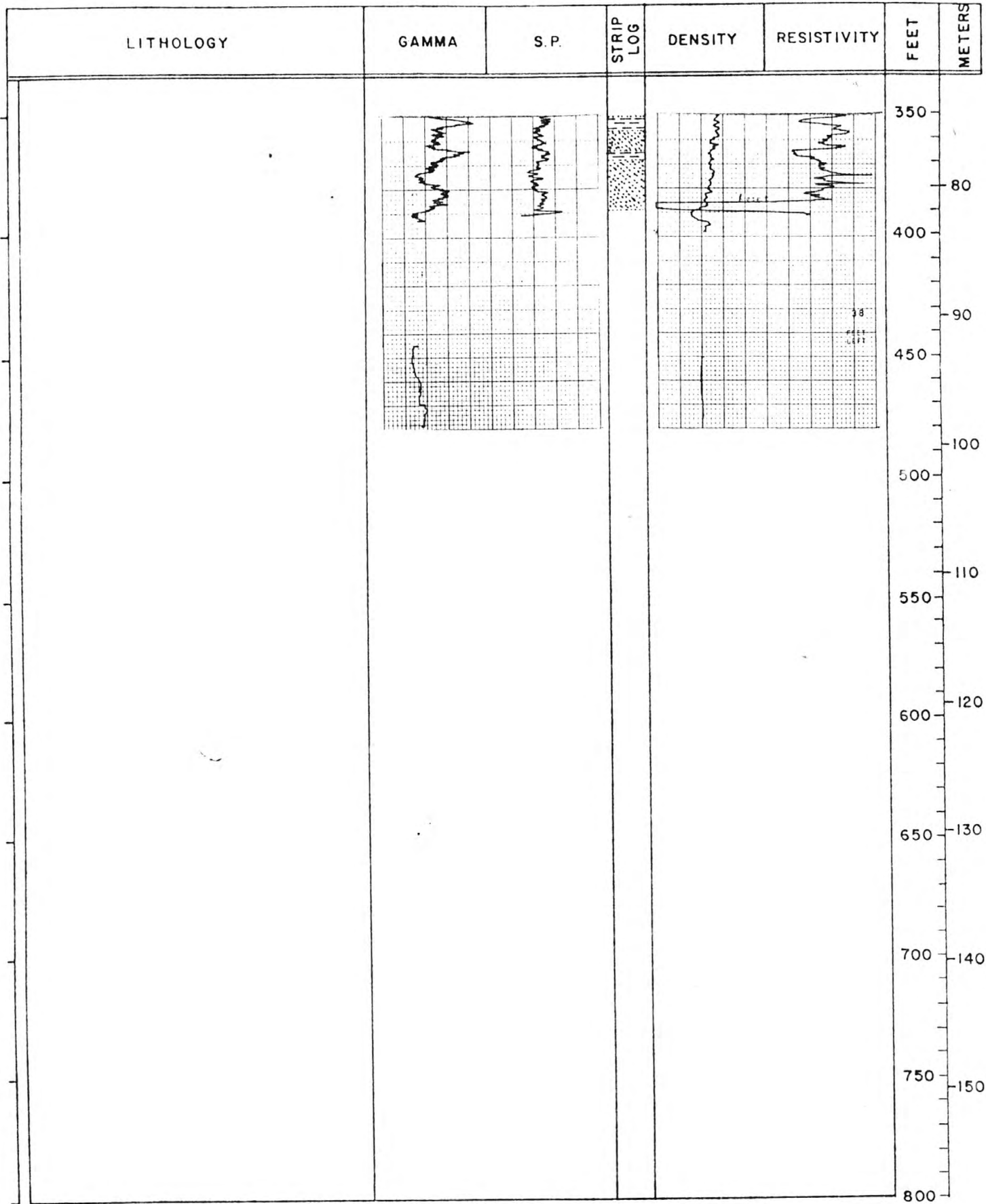
Hole No: US-7999 Map: Medicine Lake Date: 6/9/79 State: Montana County: Roosevelt
 Elev: 2141 FT Location: T 30 ^N R 56 ^E, Sec 3 Tract BCCC Drilled depth 580 FT
 Measured: 2530 FT ^{FNL} ~~KIX~~ 125 FT ^{FEW} ~~FEW~~ FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



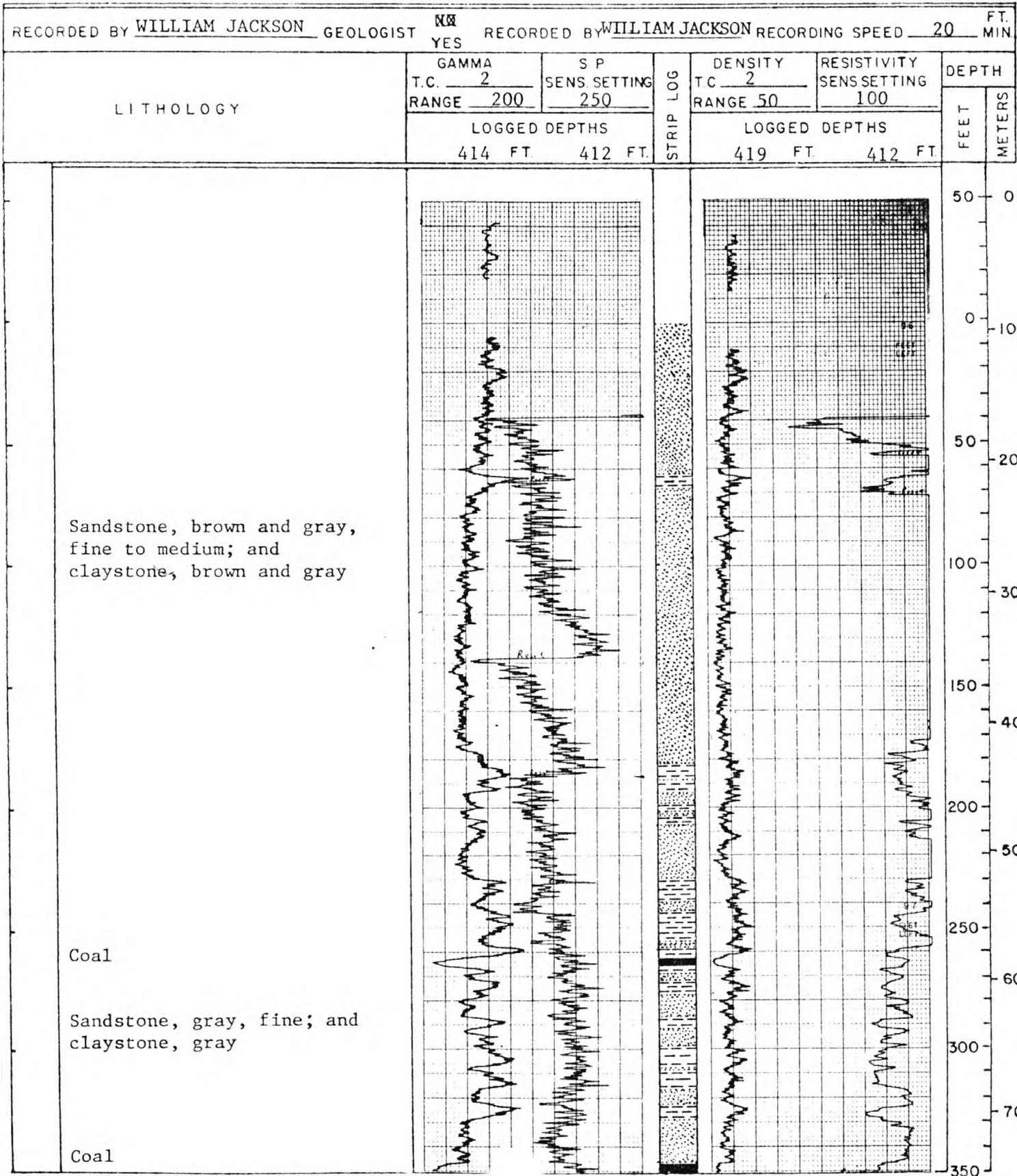


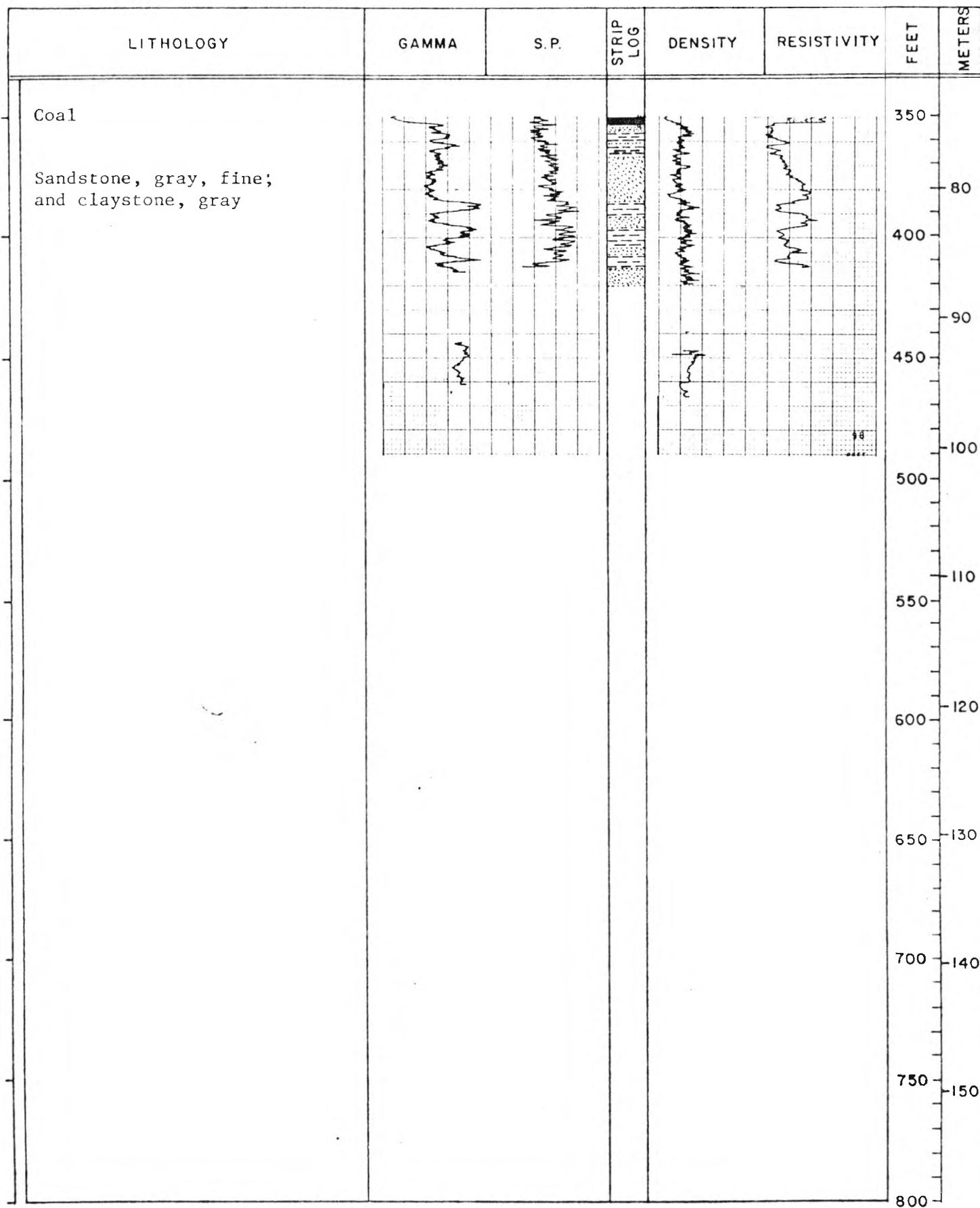
●





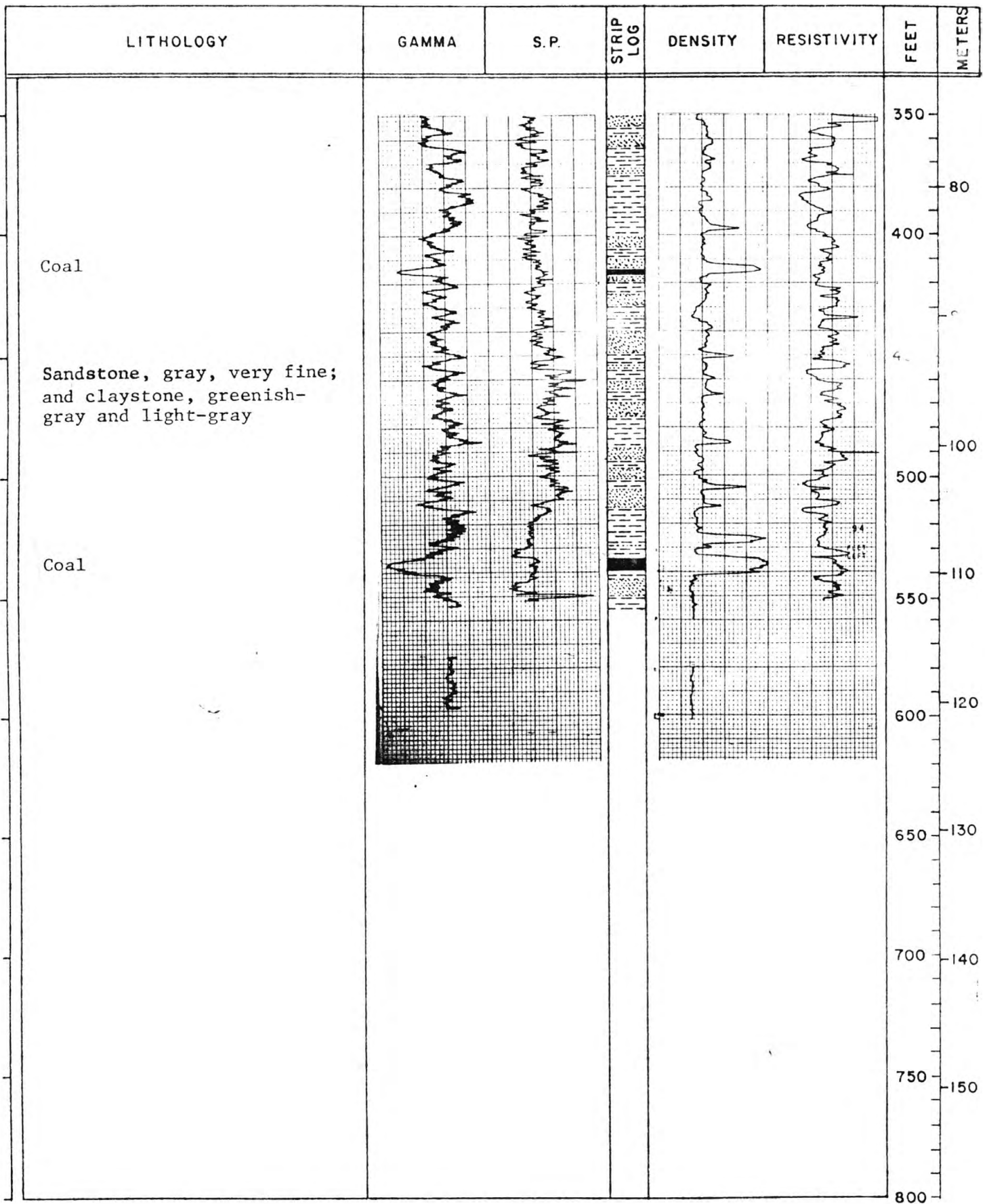
Hole No: US-79101 Map: Bainville 2 SE Date: 6/10/79 State: Montana County: Roosevelt
 Elev: 2304 FT Location: T 29^N R 57^E, Sec 3 Tract AAAA Drilled depth 520 FT
 Measured: 190 FT ^{FNL} ~~XXX~~ 220 FT ^{FEL} ~~XXX~~ FT Hole size: 5 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Logged in pit, no source.



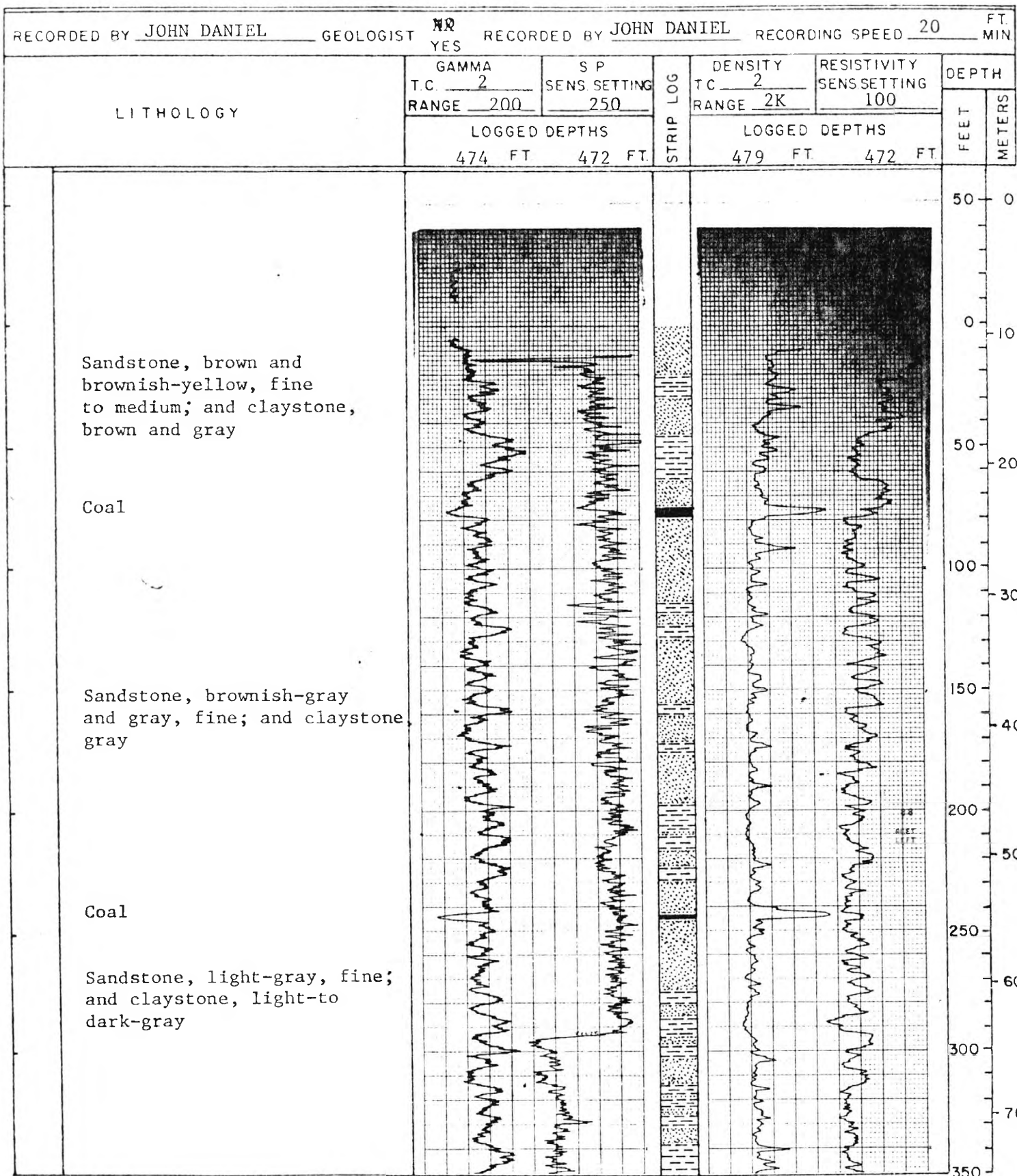


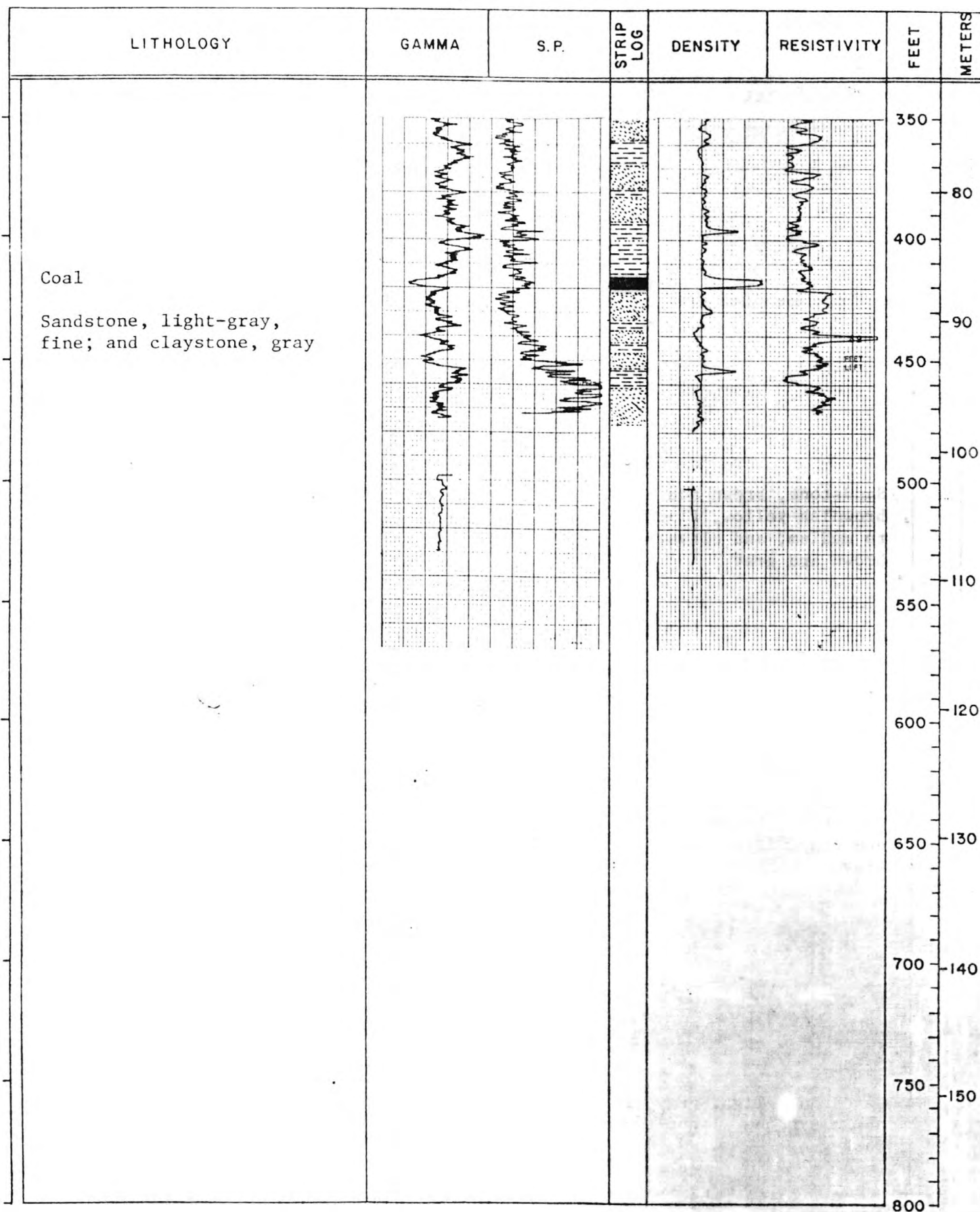
Hole No: US-79102 Map: Capeney's Lake Date: 6/11/79 State: Montana County: Roosevelt
 Elev.: 2260 FT Location: T 30^N R 57^E, Sec 2 Tract ADDD Drilled depth 560 FT
 Measured: 2480 FT FNL 6 FT FEL XXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>JOHN DANIEL</u> GEOLOGIST <u>NO</u> YES		RECORDED BY <u>JOHN DANIEL</u> RECORDING SPEED <u>20</u> FT. MIN						
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>250</u>	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>100</u>	DEPTH			
	LOGGED DEPTHS <u>554</u> FT. <u>552</u> FT.		LOGGED DEPTHS <u>559</u> FT. <u>552</u> FT.		FEET	METERS		
Sandstone, brownish-gray and gray, fine to coarse; and claystone, gray to dark-gray							50	0
							0	10
Coal							50	20
							100	30
Sandstone, gray, fine to very fine; and claystone, gray							150	40
							200	50
							250	60
							300	70
							350	



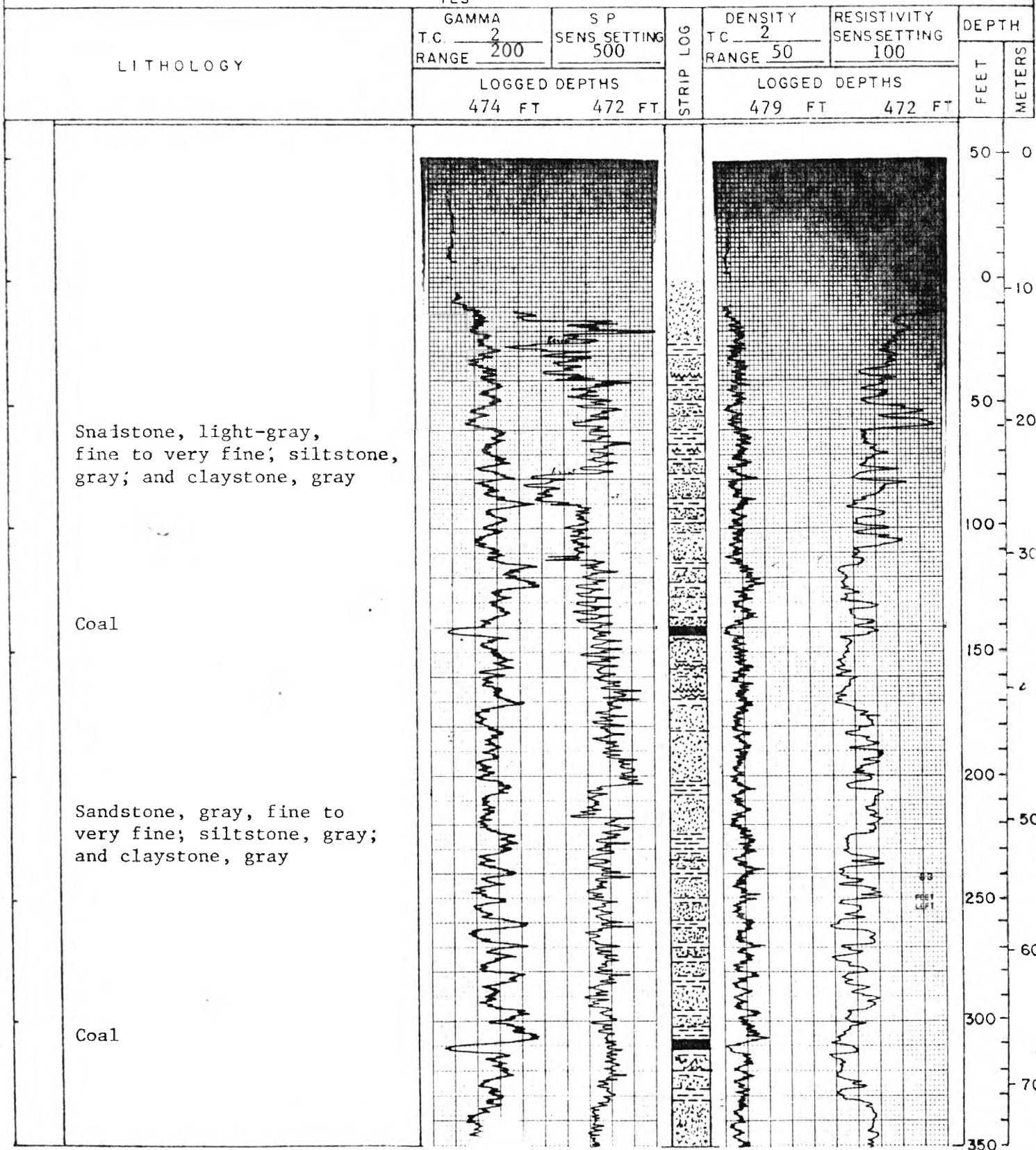
Hole No: US-79103 Map: Bainville 1 SW Date: 6/11/79 State: Montana County: Roosevelt
 Elev.: 2165 FT Location: T 30 ^N R 58 ^E W, Sec 8 Tract ACCC Drilled depth 480 FT
 Measured: 890 FT ^{FNL} ~~XXX~~ 2620 FT ^{FEL} ~~XXX~~ FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

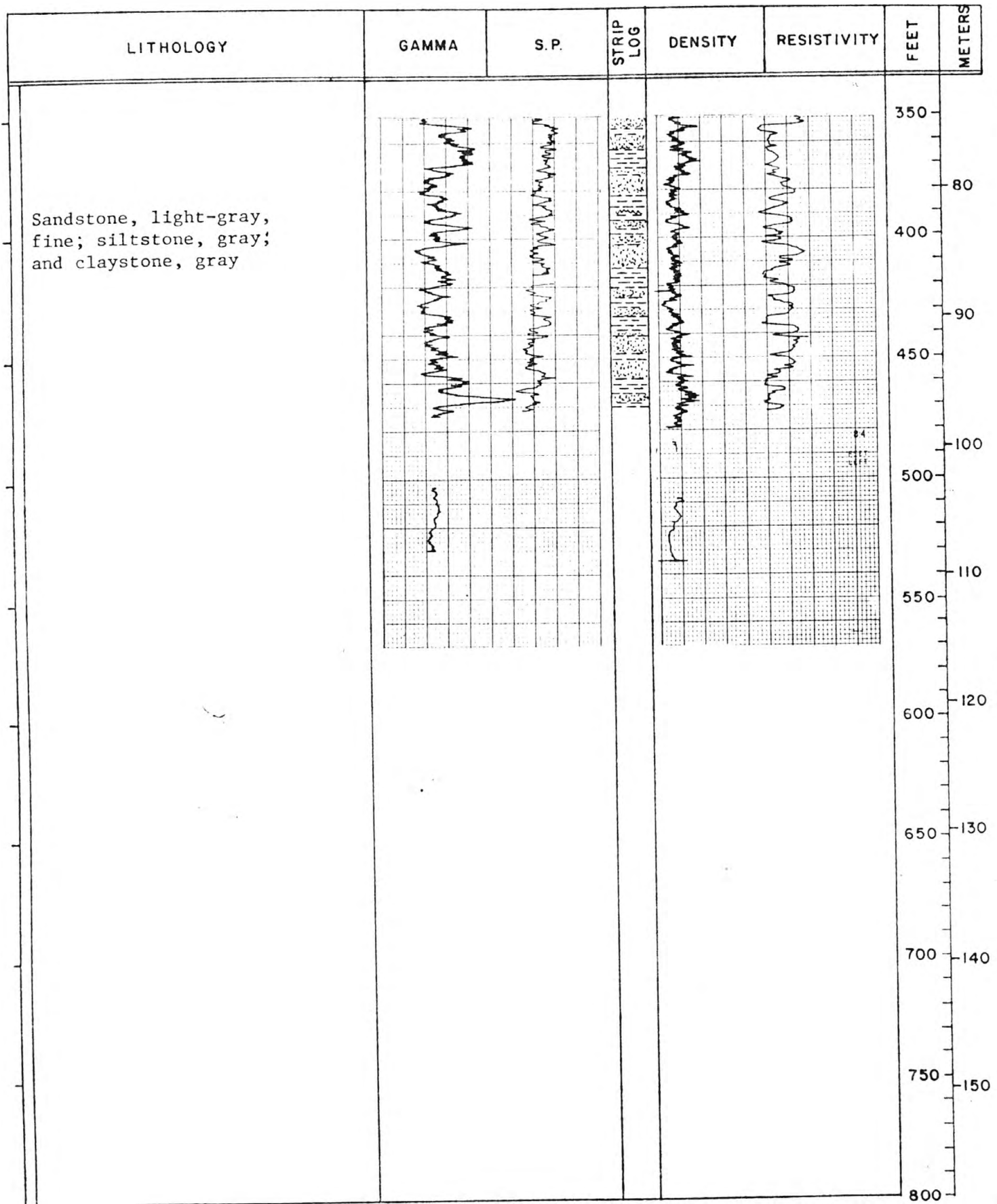




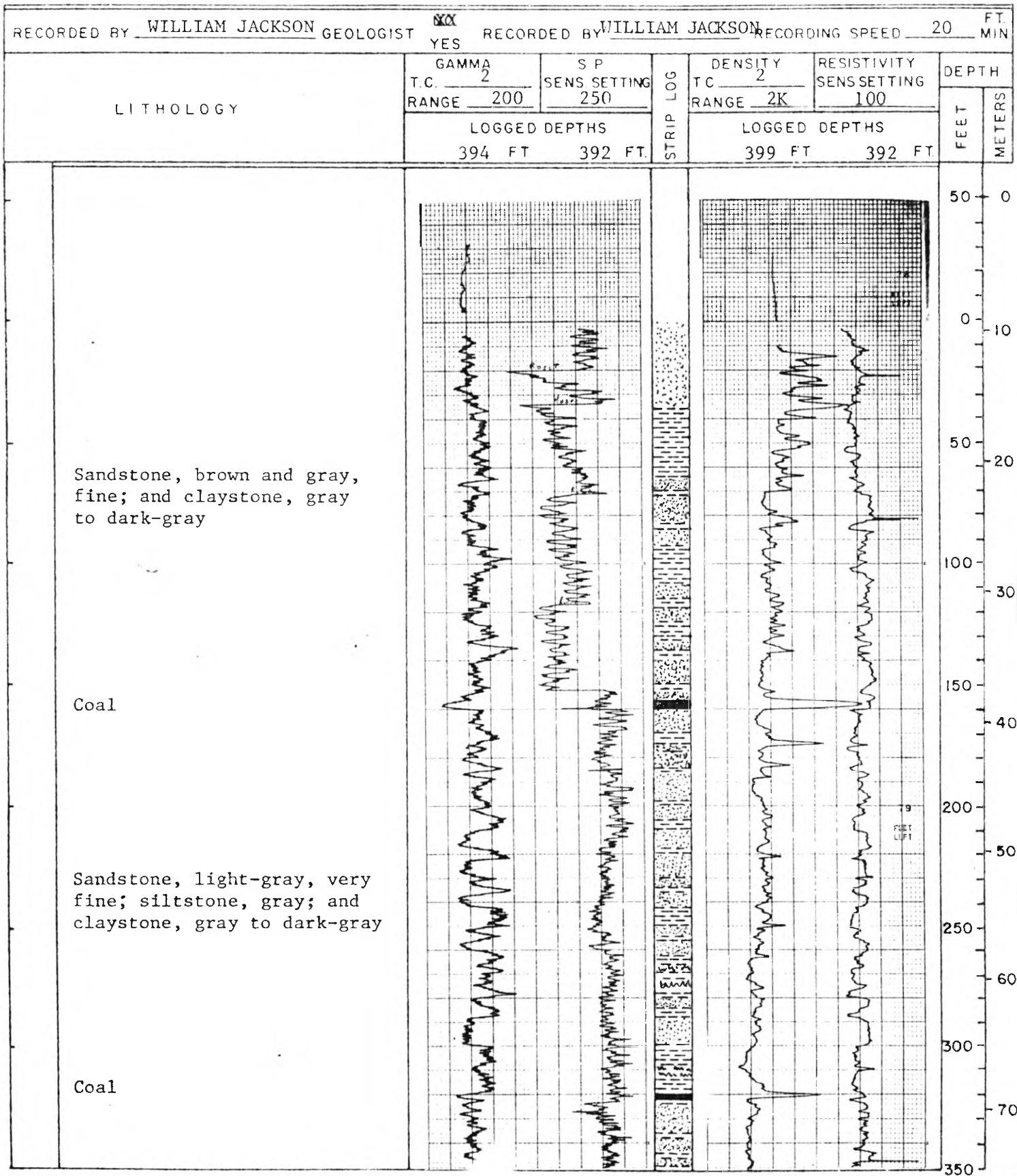
Hole No: US-79104 Map: Bainville 1 SW Date: 6/12/79 State: Montana County: Roosevelt
 Elev: 2210 FT Location: T 30^N R 58^E, Sec 15 Tract CDCD Drilled depth 480 FT
 Measured: 105 FT FSL 1880 FT FWL XXXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Logged through pit, no source.

RECORDED BY WILLIAM JACKSON GEOLOGIST ☒ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT MIN

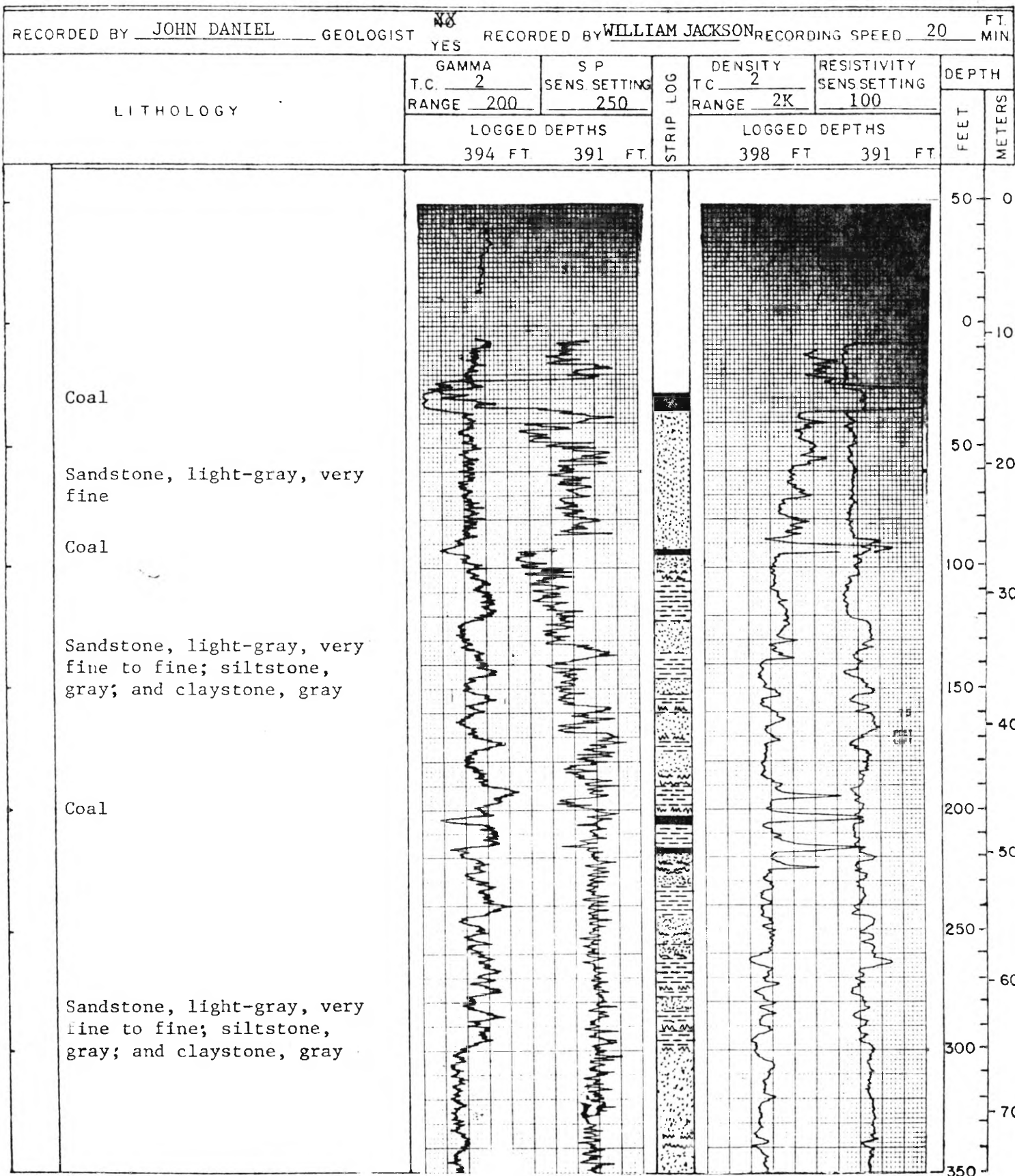


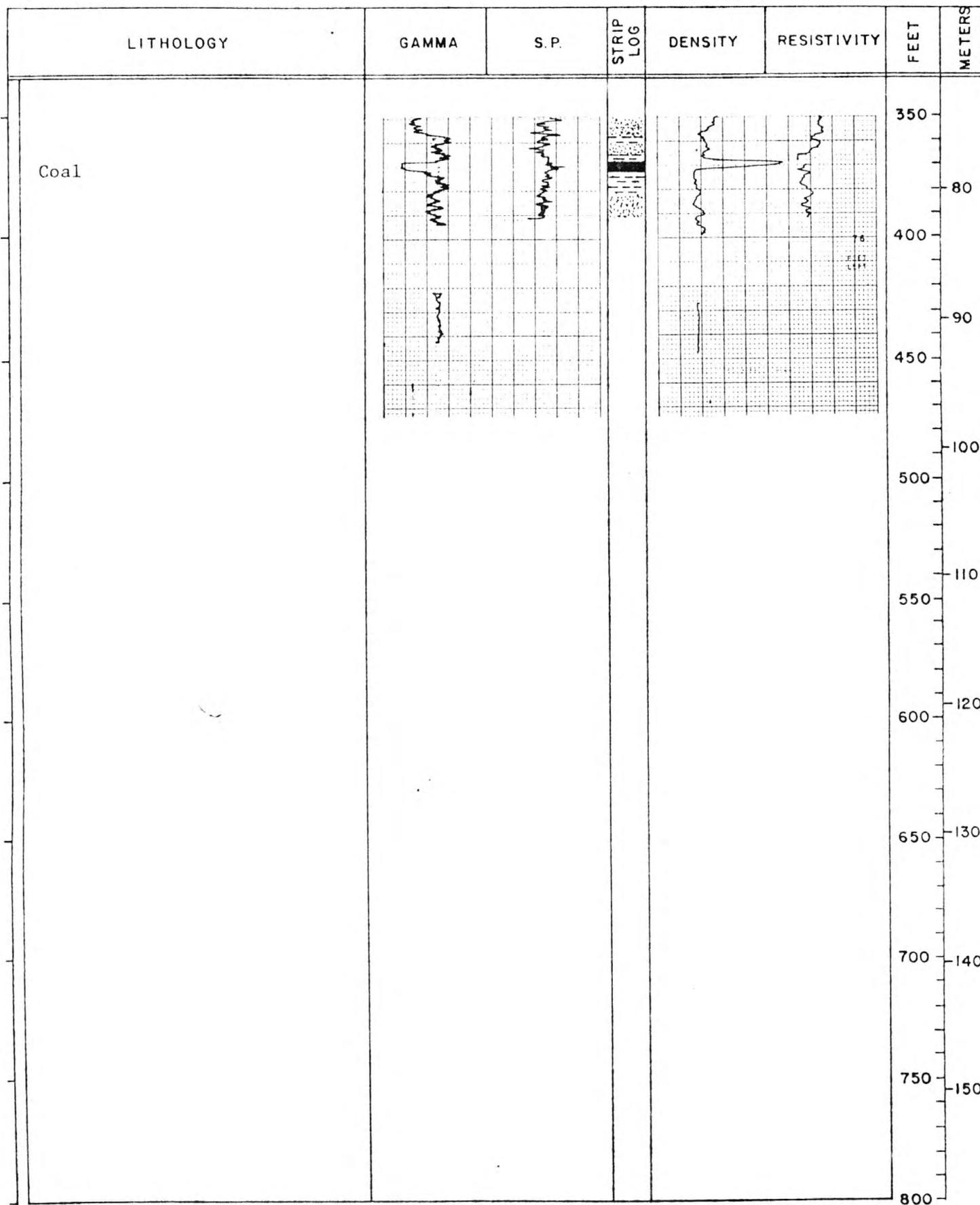


Hole No: US-79105 Map: Bainville 1 SW Date: 6/13/79 State: Montana County: Roosevelt
 Elev.: 2247 FT Location: T 30^N R 58^E, Sec 26 Tract DDDD Drilled depth 400 FT
 Measured: 77 FT FSL 66 FT FEL RXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Logged in pit.



Hole No. US-79106 Map: Brush Date: 6/13/79 State: Montana County: Roosevelt
 Elev.: 2240 FT Location: T 30^N R 58^E, Sec 1 Tract DBBA Drilled depth 400 FT
 Measured: 2640 FT ~~BKK~~ FSL 2040 FT ~~FEL~~ ~~RXX~~ FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☒ No ☐
 Remarks: Cored interval 25.6 feet to 36.85 feet.





RECORDED BY WILLIAM JACKSON GEOLOGIST ^{N8}
YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 ^{FT.} MIN.

GAMMA	S P
T.C. <u>2</u>	SENS. SETTING
RANGE 200	500

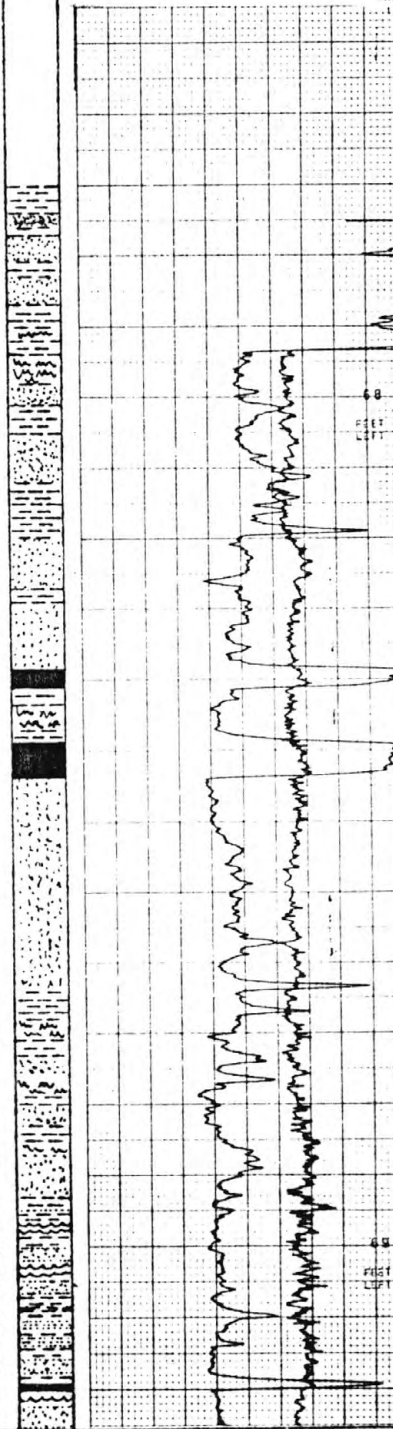
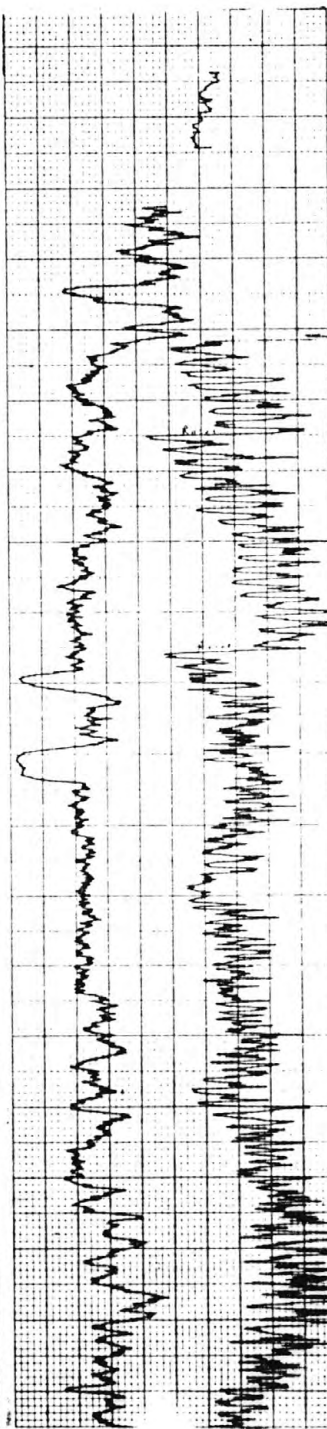
DENSITY	RESISTIVITY
TC <u>2</u>	SENS SETTING
RANGE <u>2K</u>	<u>100</u>

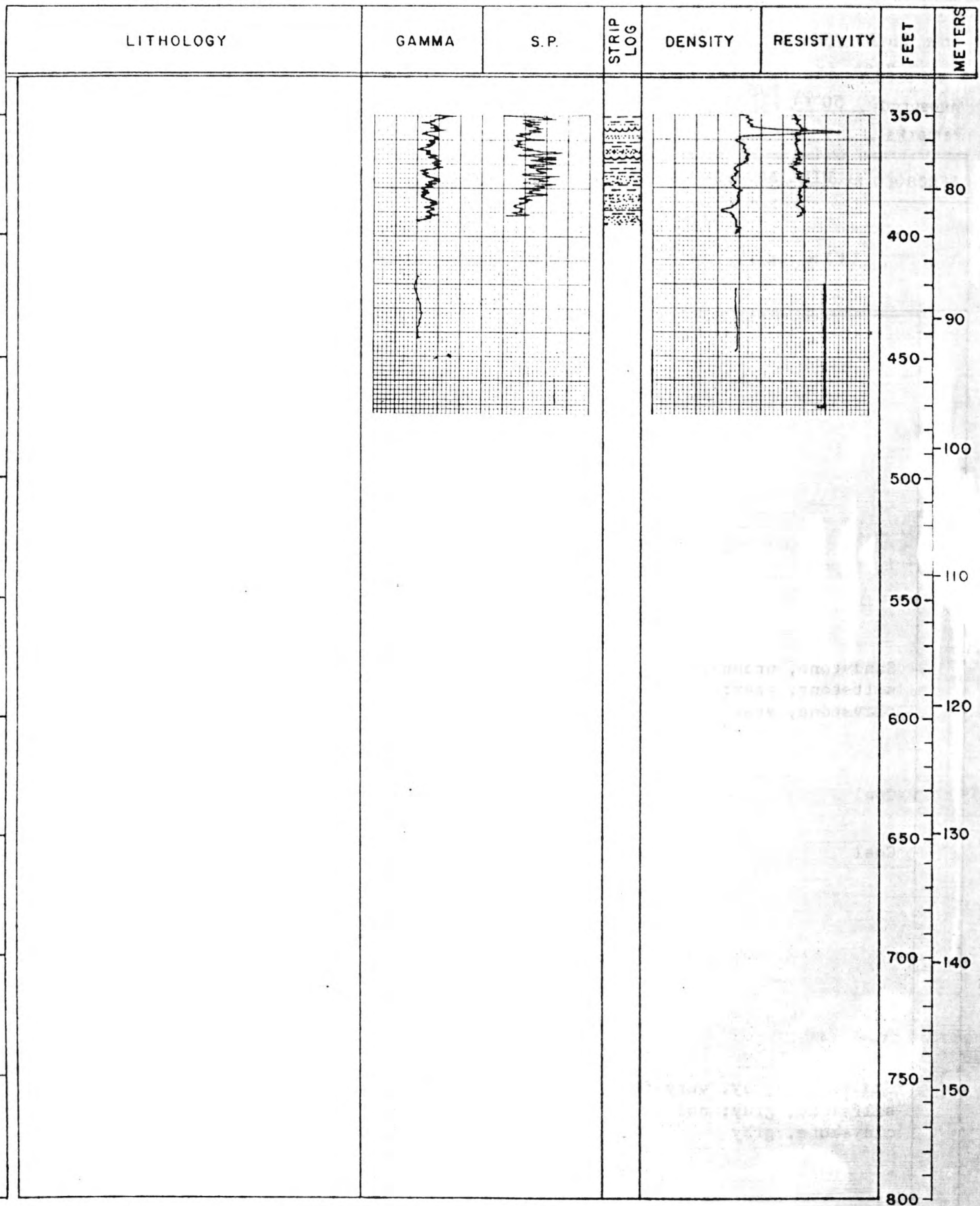
FEET	METERS
------	--------

394 FT 392 FT

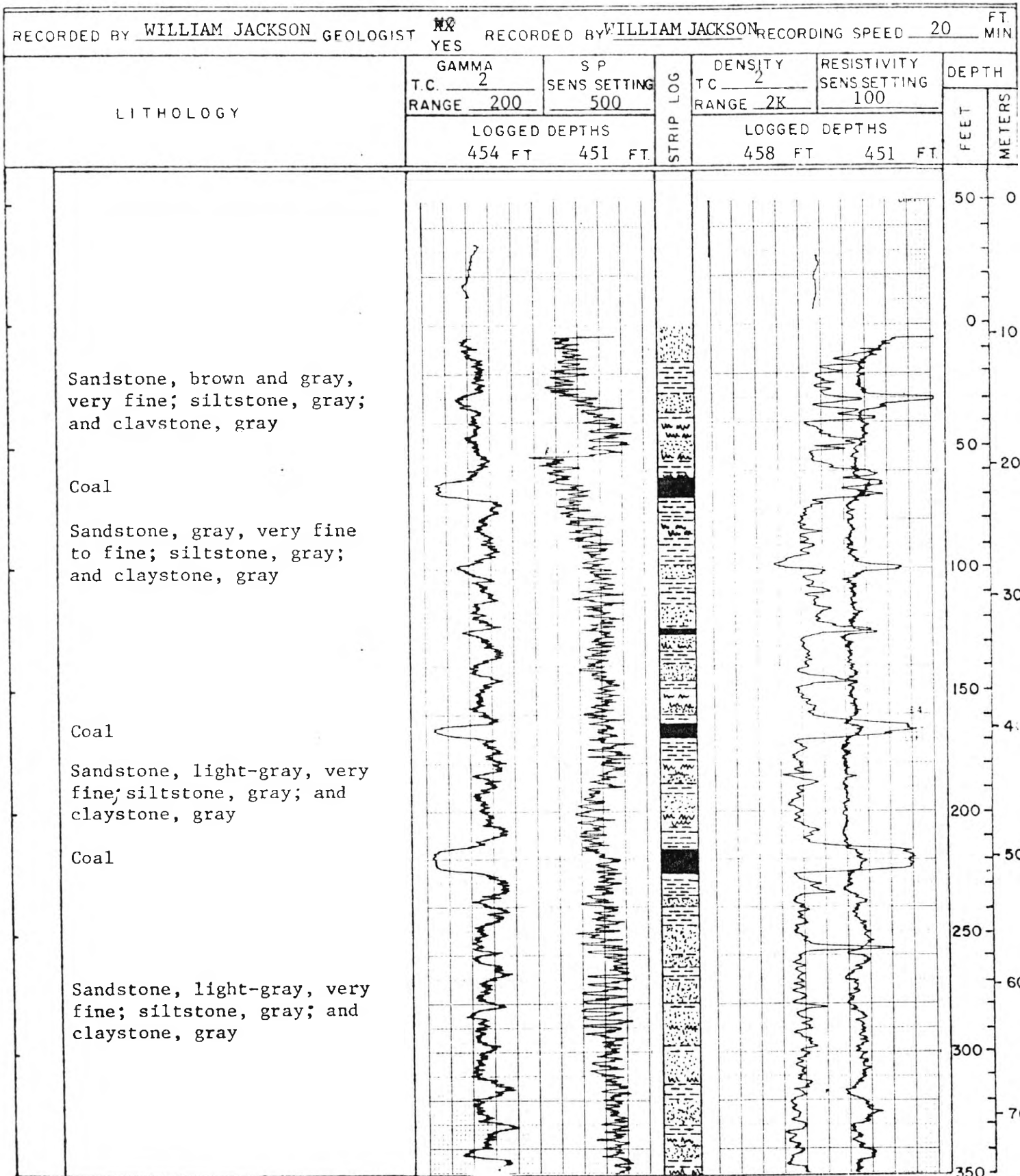
398 FT 392 FT

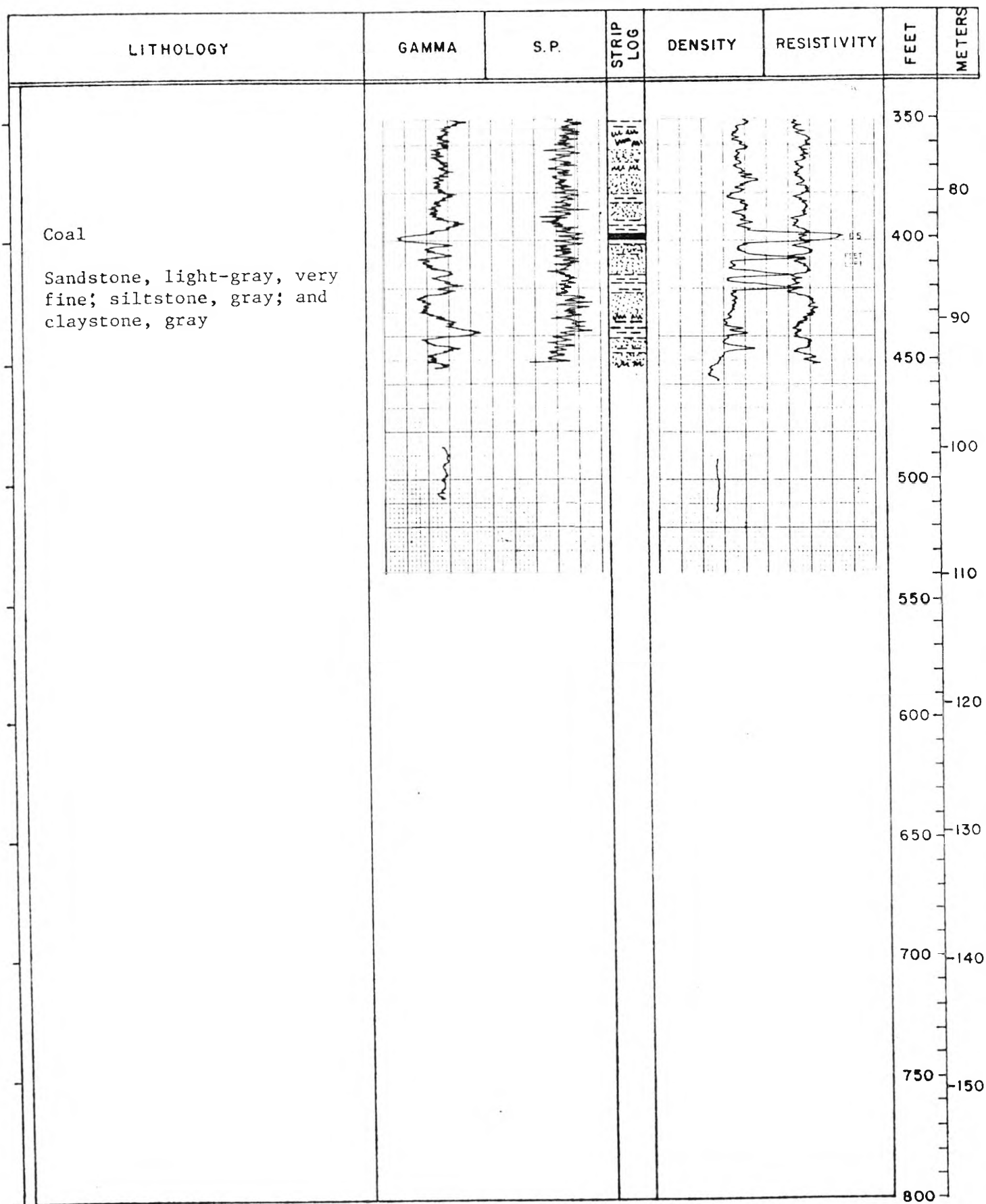
Sandstone, gray, very fine;
siltstone, gray; and
claystone, gray



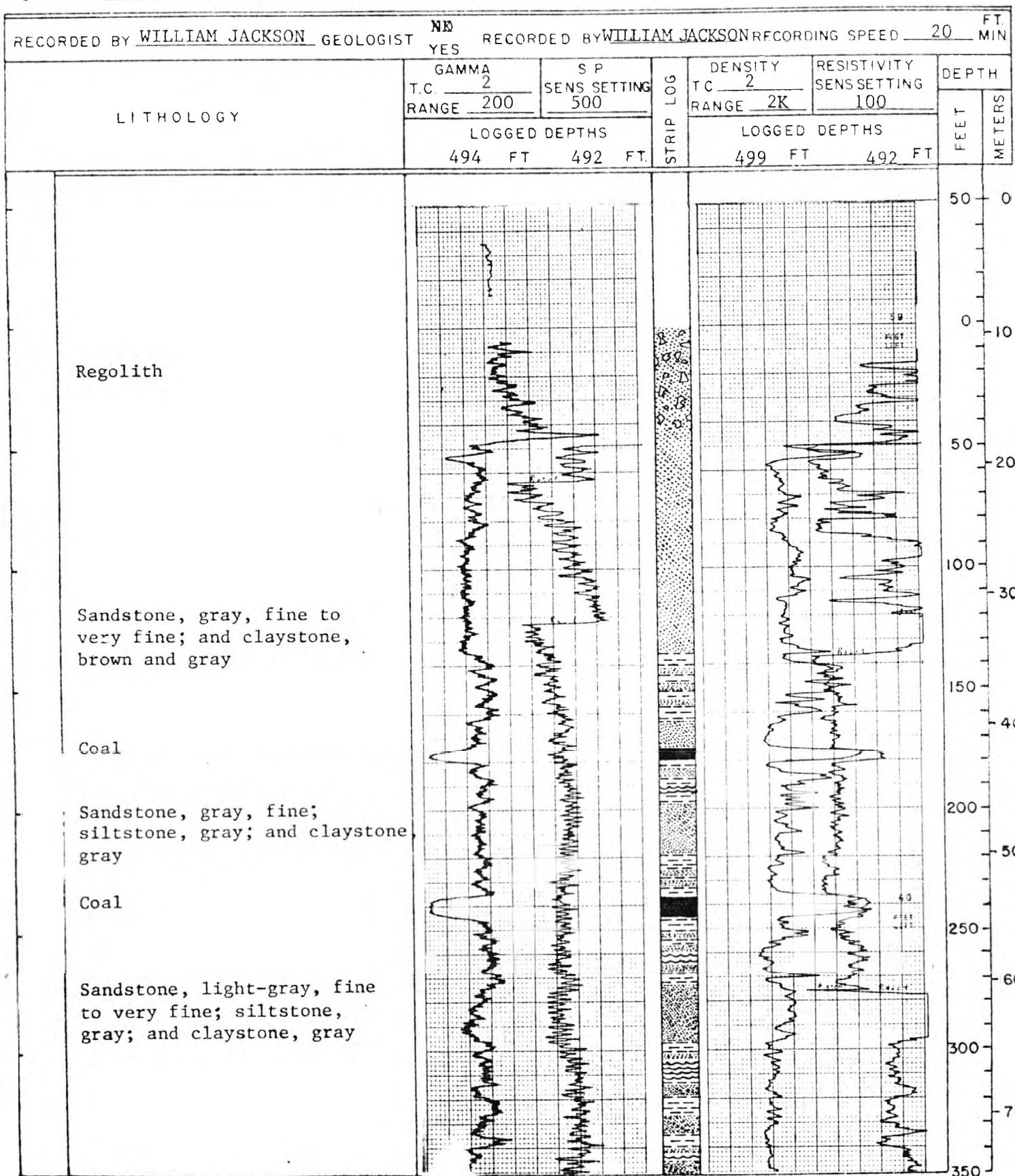


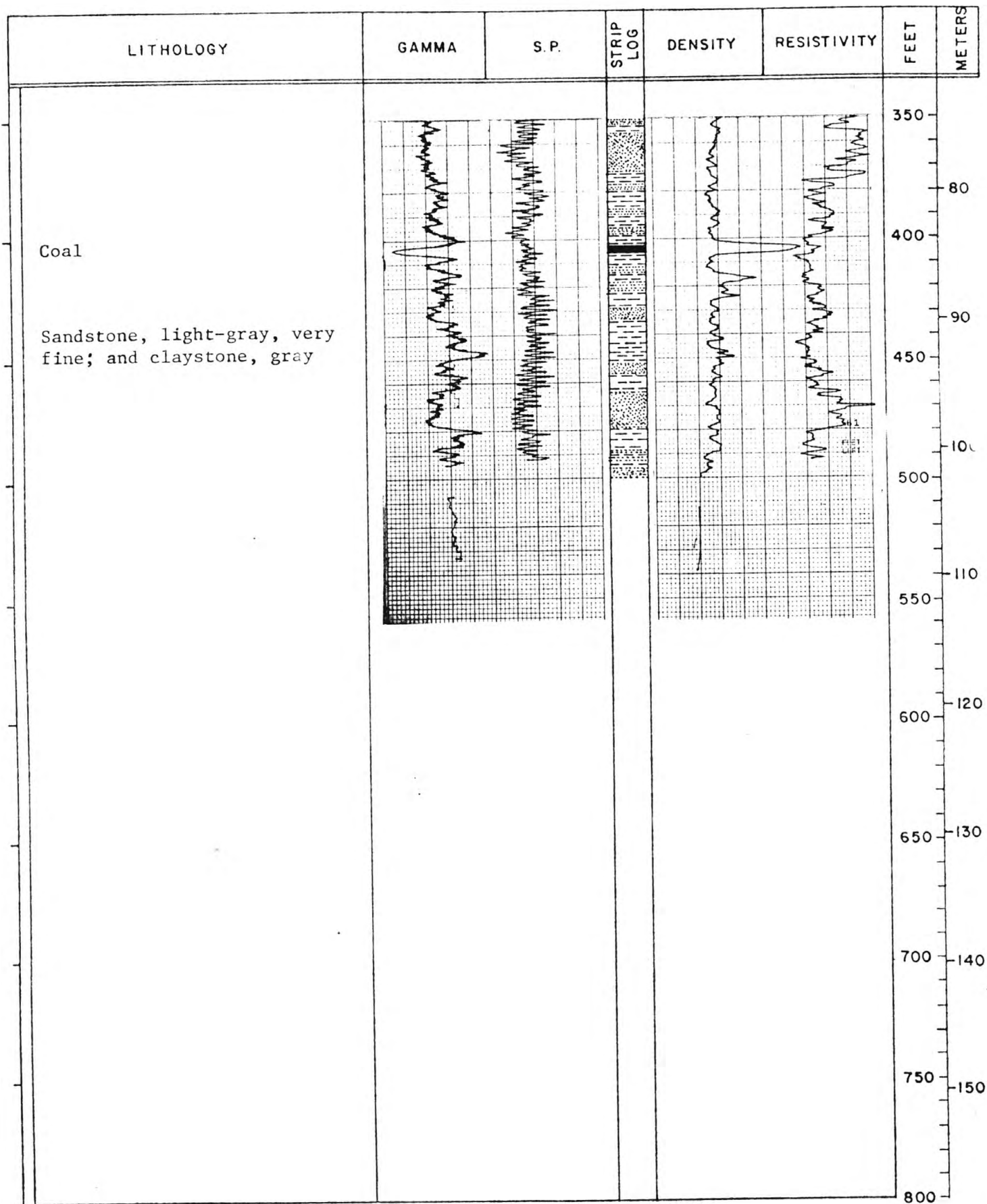
Hole No: US-79108 Map: Bull Butte Date: 6/15/79 State: Montana County: Roosevelt
 Elev: 2381 FT Location: T 30^N R 59^E W, Sec 33 Tract BBBB Drilled depth 460 FT
 Measured: 170 FT FNL 110 FT ~~FWL~~ FWL FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



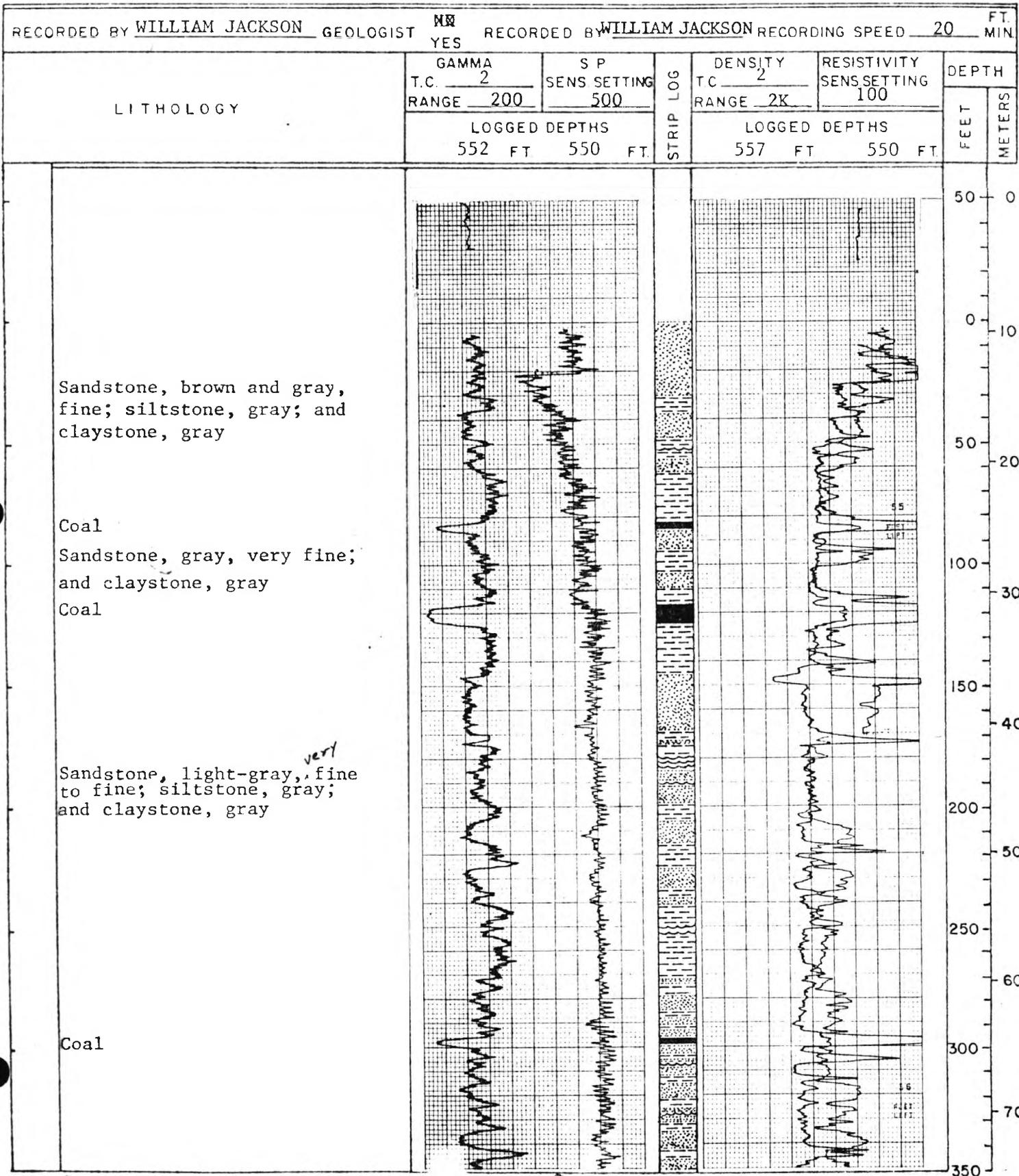


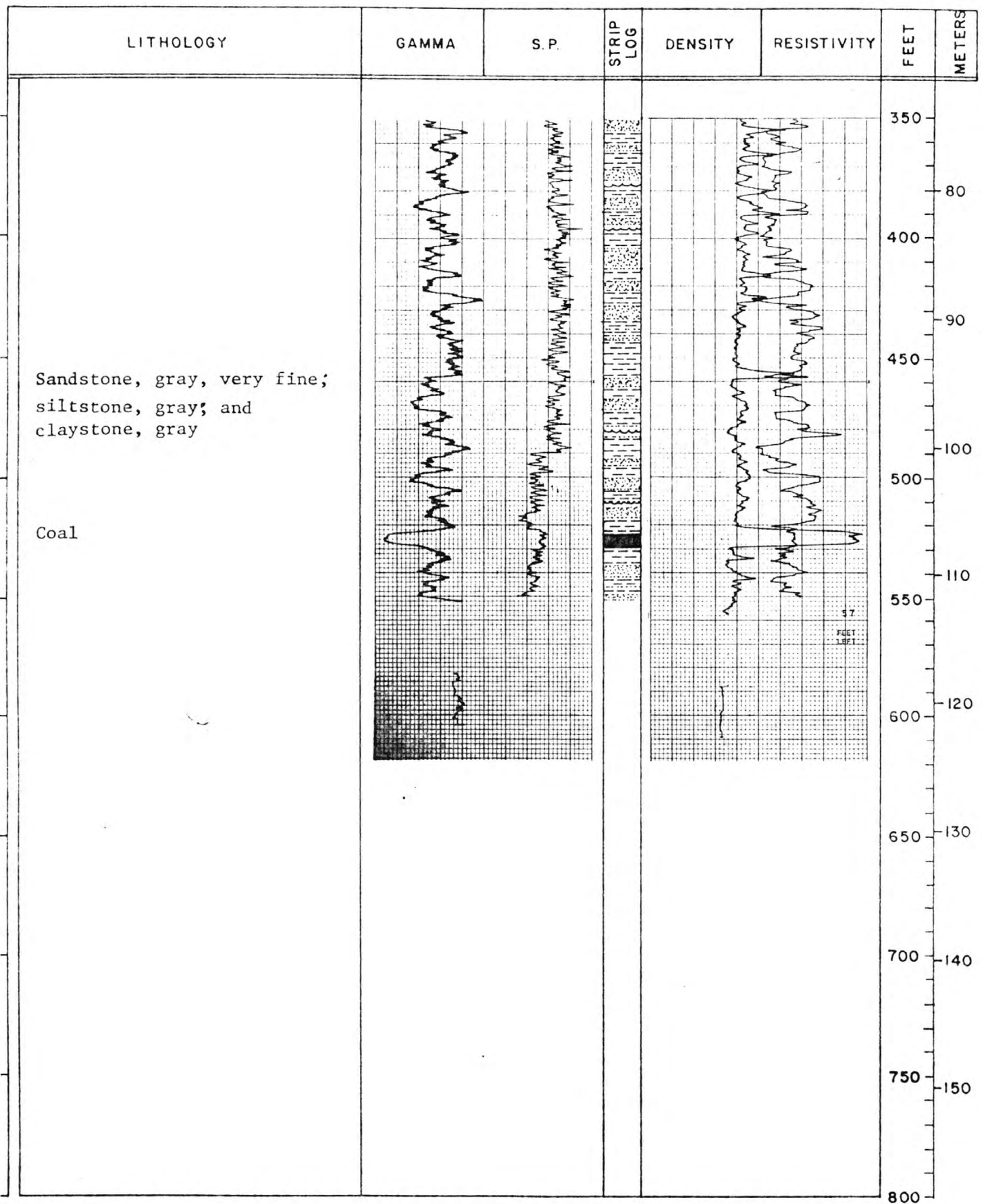
Hole No: US-79109 Map: Bull Butte Date: 6/16/79 State: Montana County: Roosevelt
 Elev.: 2458 FT Location: T 29 ^N R 59 ^E, Sec 17 Tract CCCD Drilled depth 500 FT
 Measured: 55 FT ~~XXX~~ FSL 2190 FT ~~XXX~~ FEL XXX FT. Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Lost circulation from 60-140 feet and 200-220 feet.





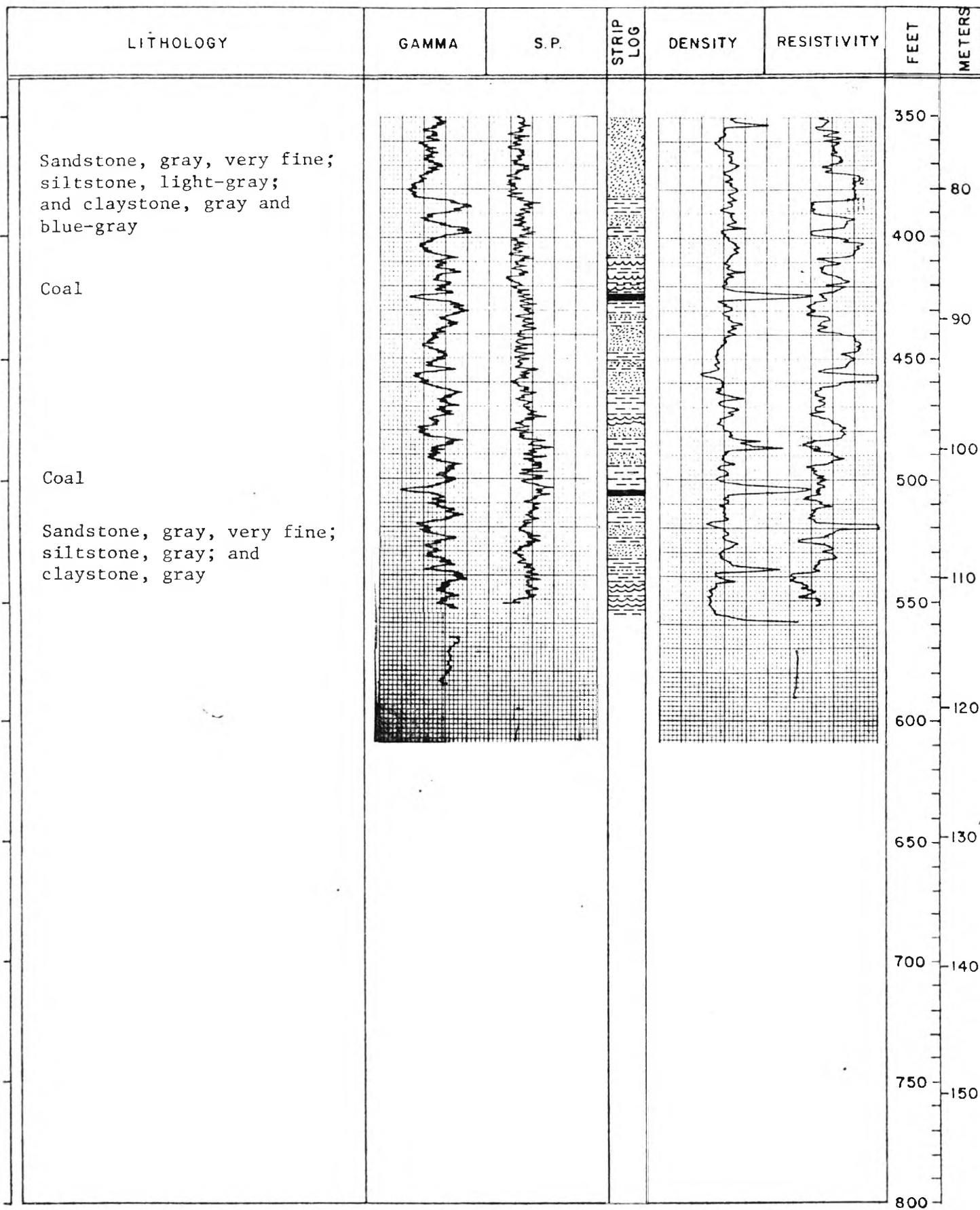
Hole No: US-79110 Map: Red Bank Creek Date: 6/17/79 State: Montana County: Roosevelt
 Elev.: 2309 FT Location: T 29^N R 59^E, Sec 32 Tract DDCD Drilled depth 560 FT
 Measured: 30 FT ~~FSL~~ 1200 FT ~~FEL~~ FW FT. Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Logged through pit.





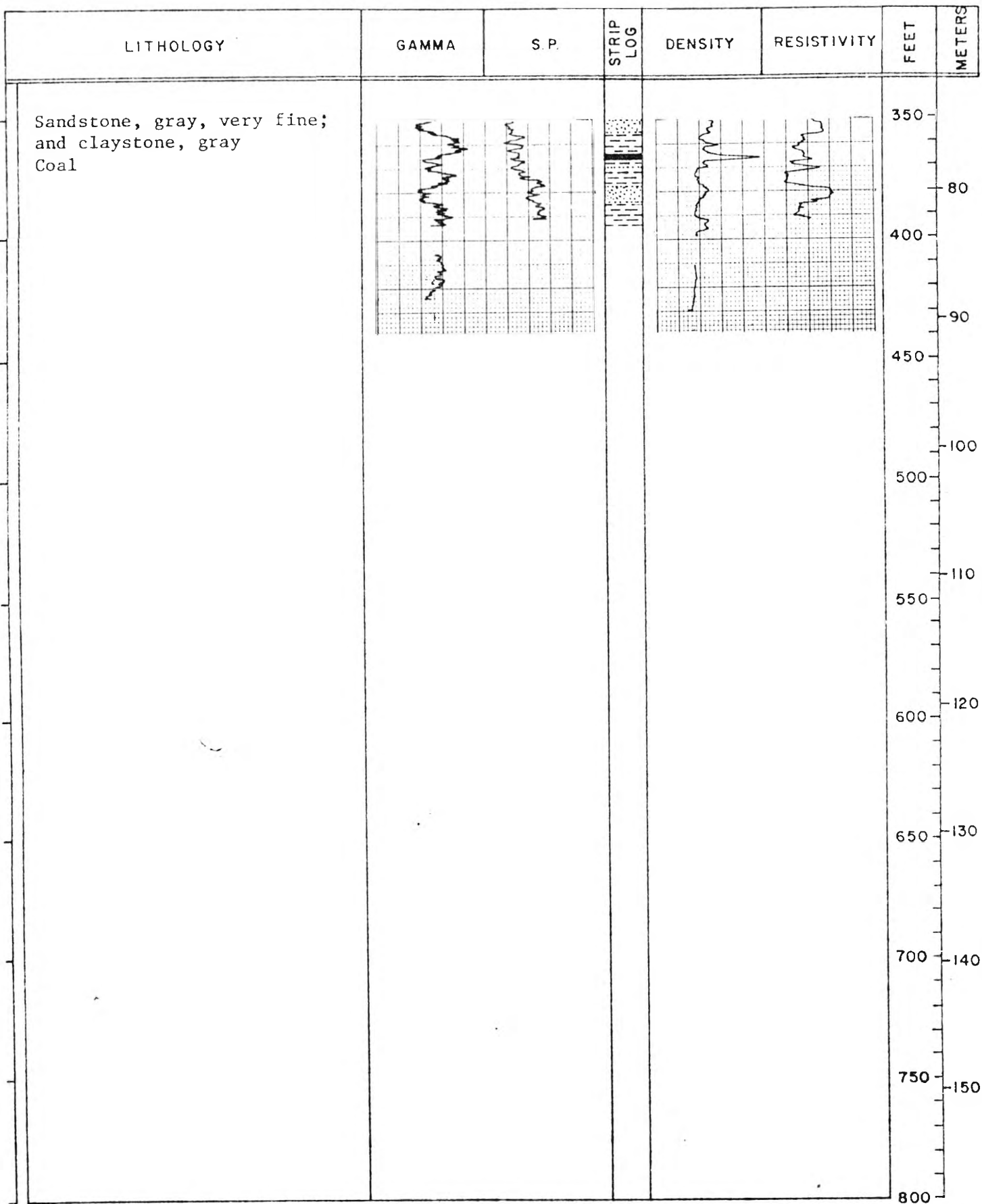
Hole No: US-79111 Map: Bainville 4 NW Date: 6/19/79 State: Montana County: Roosevelt
 Elev.: 2199 FT Location: T 28^N R 59^E, Sec 19 Tract DDDD Drilled depth 560 FT
 Measured: 72 FT FSL 52 FT FEL XXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <input checked="" type="checkbox"/>		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>	DENSITY T.C. <u>2</u> RANGE <u>2K</u>
	LOGGED DEPTHS <u>554</u> FT <u>552</u> FT		RESISTIVITY SENS SETTING <u>100</u>
	LOGGED DEPTHS <u>558</u> FT <u>552</u> FT		
Sandstone, gray, fine; siltstone, gray; and claystone, gray and brown			DEPTH FEET METERS
Coal			50 0
			0 10
			50 20
			100 30
Sandstone, gray, very fine; siltstone, gray; and claystone, gray		150 40	
		200 50	
		250 60	
Coal		300 70	
Sandstone, gray, fine; and claystone, gray			
Coal		350	

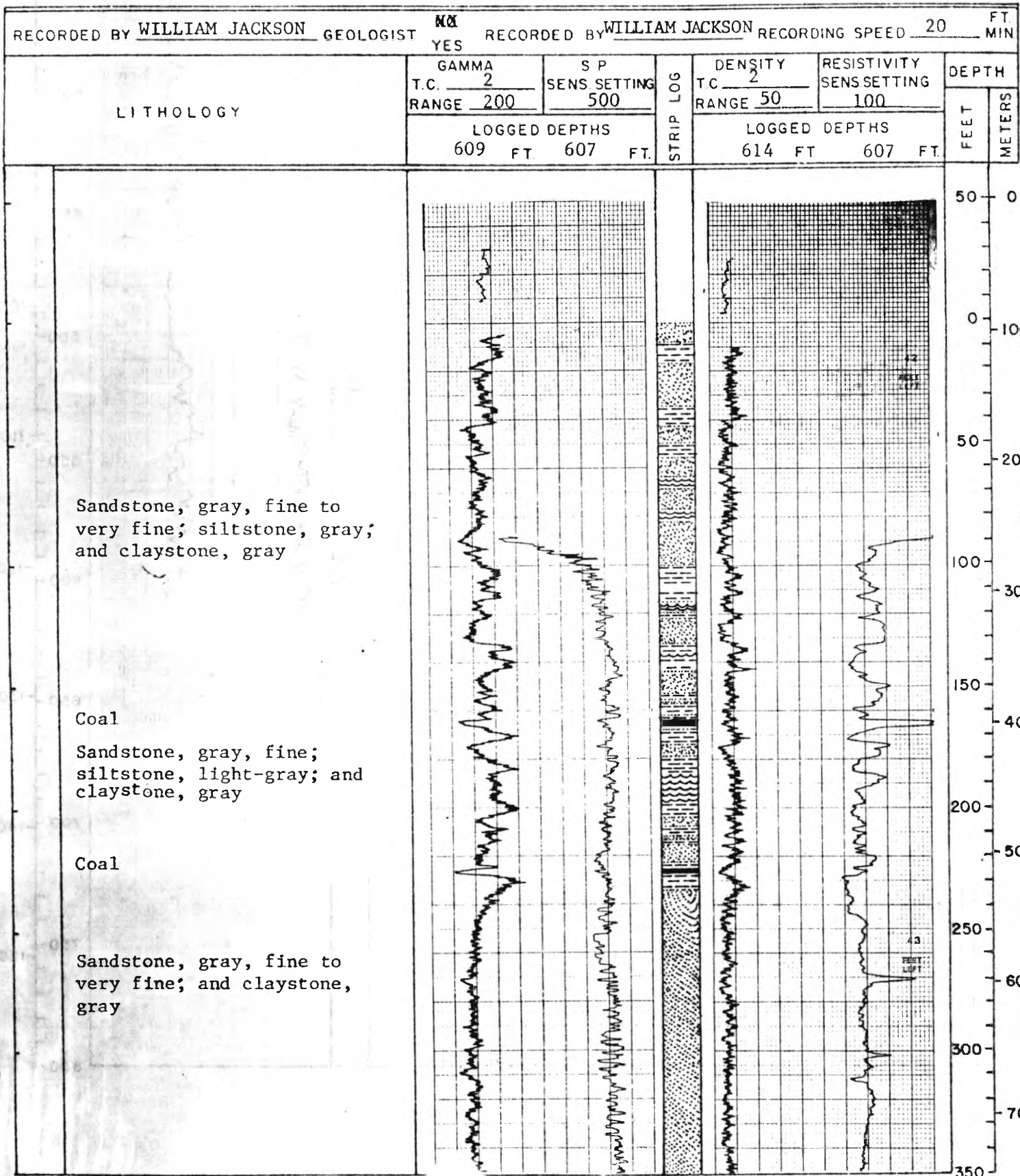


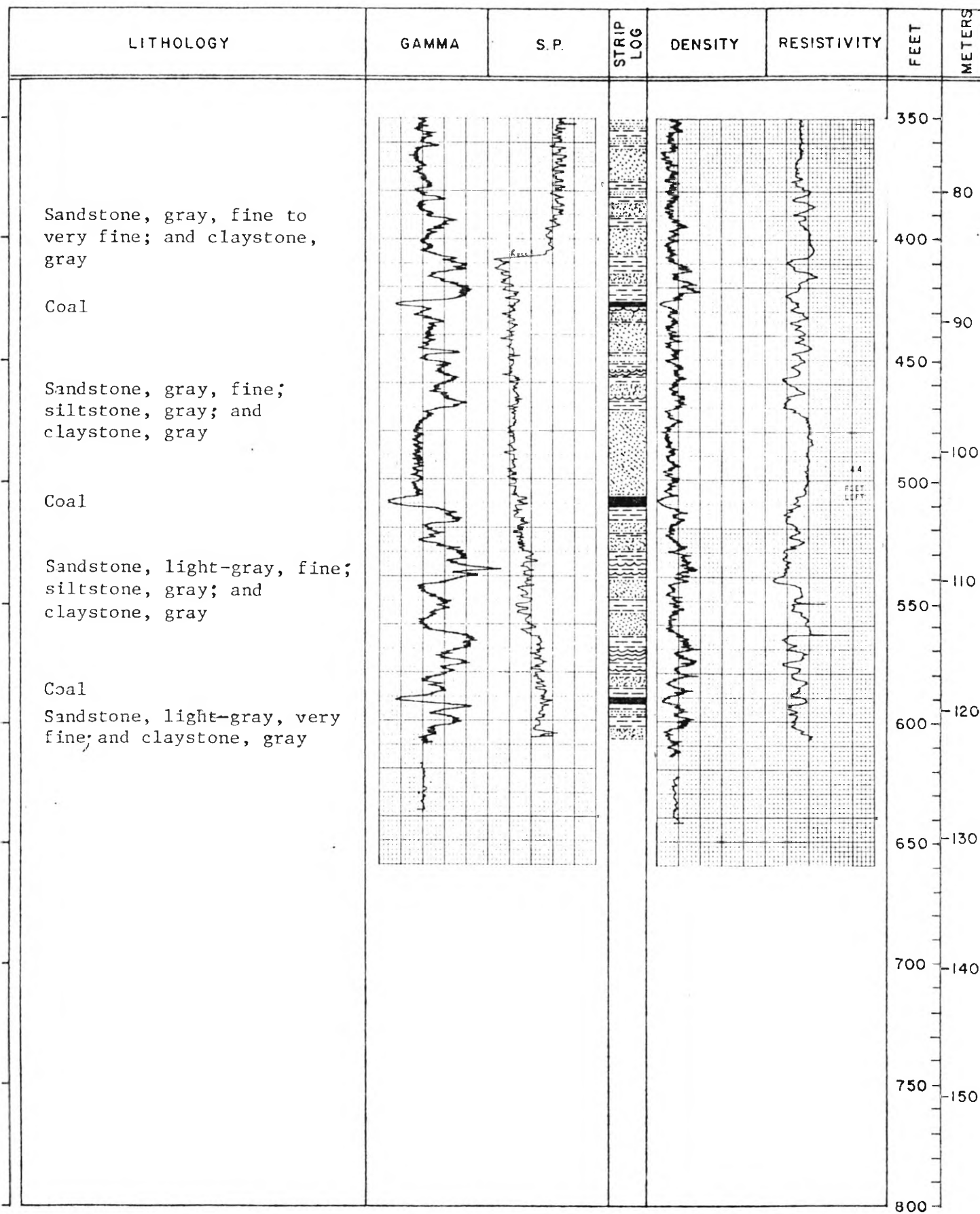
Hole No: US-79112 Map: Bainville 4 NW Date: 6/19/79 State: Montana County: Roosevelt
 Elev.: 2084 FT Location: T 28^N R 58^E, Sec 15 Tract DDDD Drilled depth 400 FT
 Measured: 95 FT FSL 80 FT FEL XXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST		NO YES		RECORDED BY <u>WILLIAM JACKSON</u>		RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>		STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>100</u>	DEPTH
	LOGGED DEPTHS 394 FT 391 FT		LOGGED DEPTHS 398 FT 391 FT		FEET	METERS	
Sandstone, gray, fine to very fine; and claystone, gray and brown							50
Coal							0
Sandstone, gray, fine to very fine; and claystone, light-gray to gray							10
Coal							50
							20
	100						
	30						
	150						
	40						
	200						
	50						
	250						
Sandstone, light-gray, very fine; and claystone, gray							
	60						
	300						
	70						
Coal							
	350						



Hole No: US-79113 Map: Bainville 1 SW Date: 6/21/79 State: Montana County: Roosevelt
 Elev: 2403 FT Location: T 29^N R 58^E, Sec 17 Tract DDAA Drilled depth 615 FT
 Measured: 1230 FT ~~XXX~~ FSL 95 FT ~~XXX~~ FEL XXX FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Logged with pit and without source.



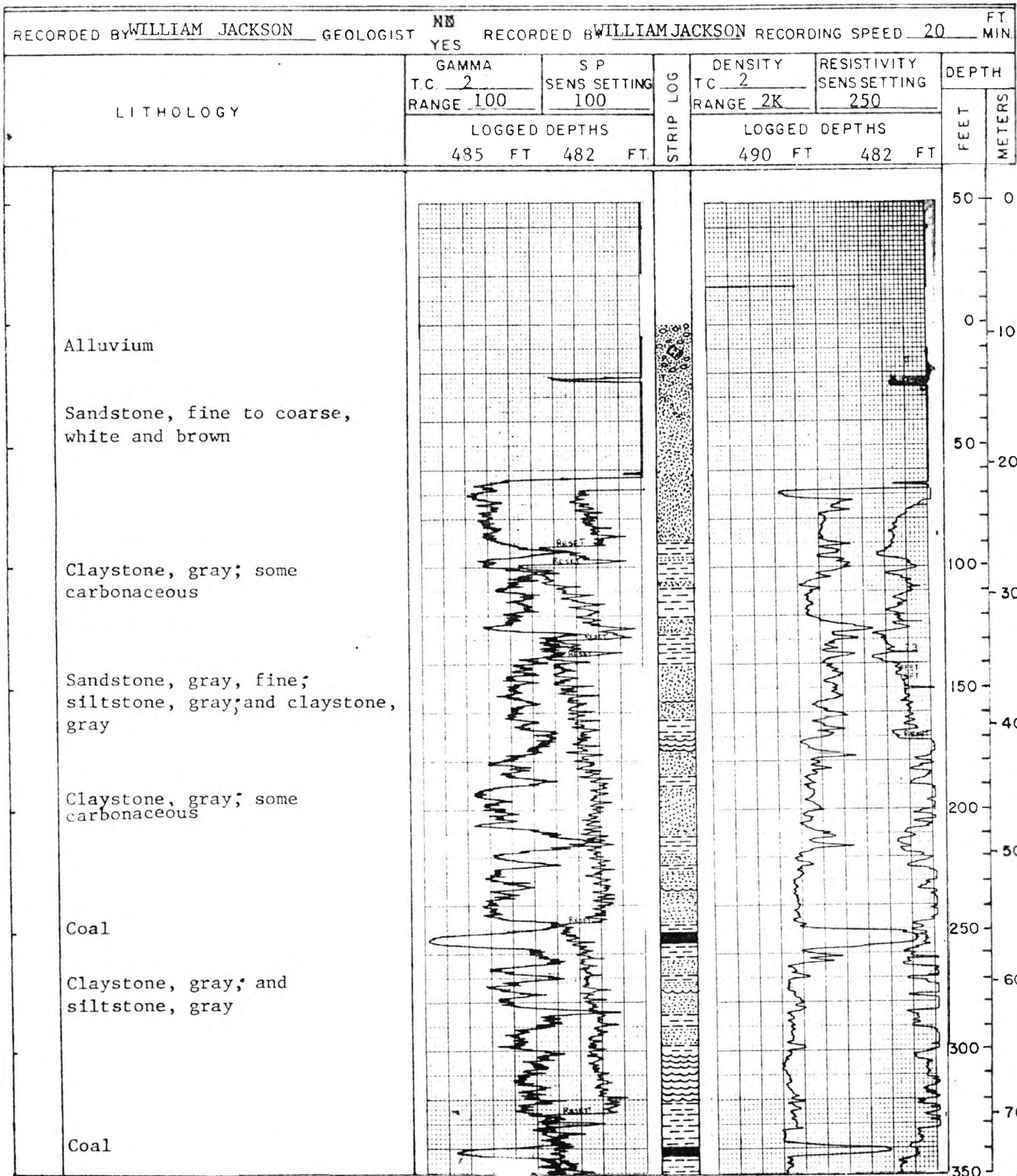


RECORDED BY MARY ALICE SPENCER GEOLOGIST ~~NO~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN.

LITHOLOGY	GAMMA T.C. 2 RANGE 200		S P SENS SETTING 500		STRIP LOG	DENSITY TC 2 RANGE 2K		RESISTIVITY SENS SETTING 100		DEPTH	
	LOGGED DEPTHS					LOGGED DEPTHS				FEET	METERS
	274 FT		272 FT			279 FT		272 FT			
Sandstone, light-gray, very fine; siltstone, gray; and claystone, gray										50	0
Coal										0	10
Sandstone, gray, very fine; siltstone, gray; and claystone, gray										50	20
Coal										100	30
Sandstone, gray, fine; and claystone, gray										150	40
										200	50
										250	60
										300	70
										350	

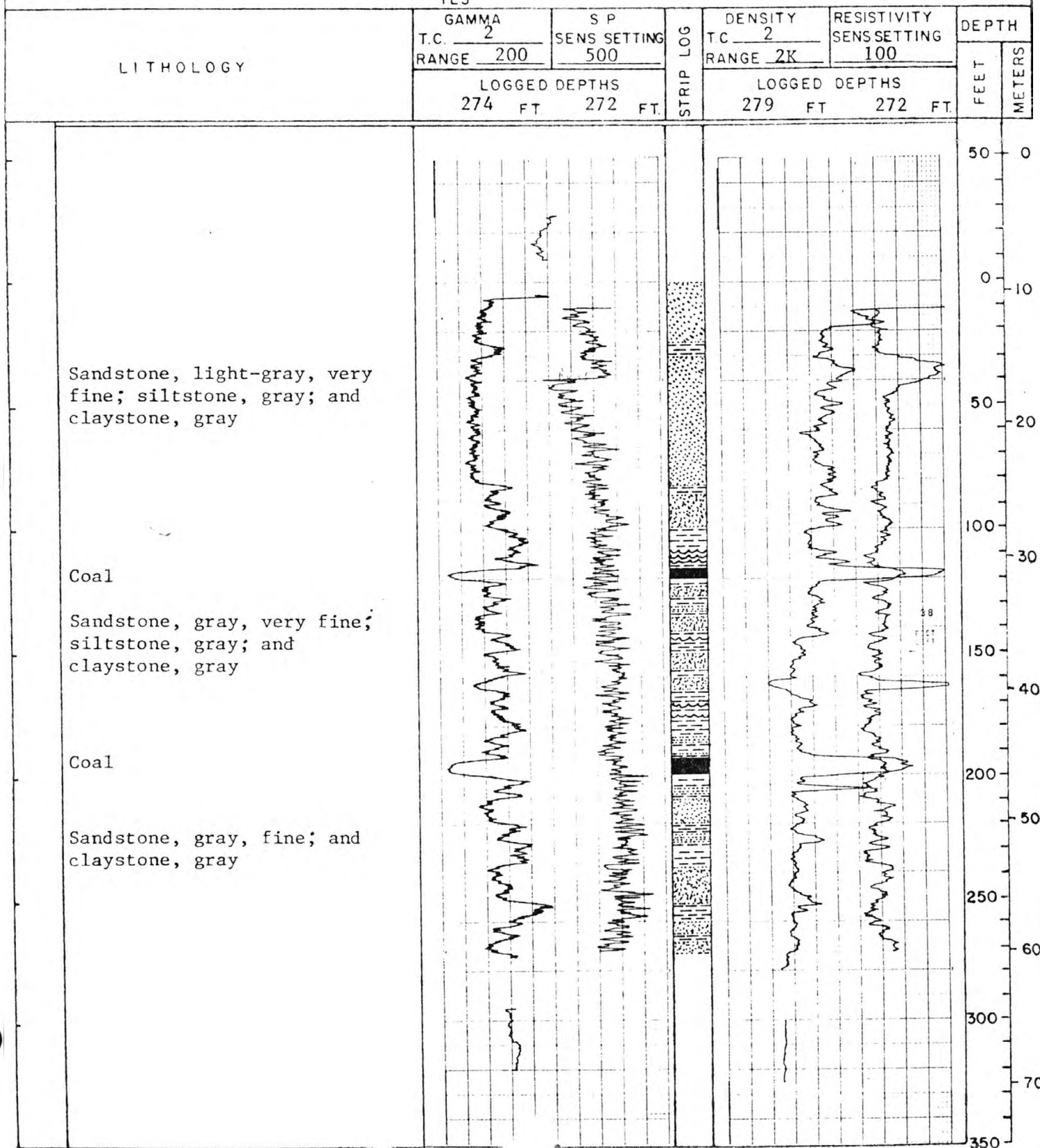
LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79115 Map: Bainville 2 SE Date: 7/28/79 State: Montana County: Roosevelt
 Elev: 2187 FT Location: T 29 ^N R 57 ^E, Sec 11 Tract DDDD Drilled depth 500 FT
 Measured: 90 FT ^{KXX} FSL 85 FT ^{FEL} ~~KXX~~ FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____



Hole No: US-79114 Map: Bainville 3 NE Date: 6/21/79 State: Montana County: Roosevelt
 Elev: 2139 FT Location: T 29 ^N R 57 ^E, Sec 25 Tract BBBB Drilled depth 280 FT
 Measured: 65 FT ^{FNL} ~~XXX~~ 226 FT ^{KXX} ~~FWL~~ FT Hole size: 4 3/4 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

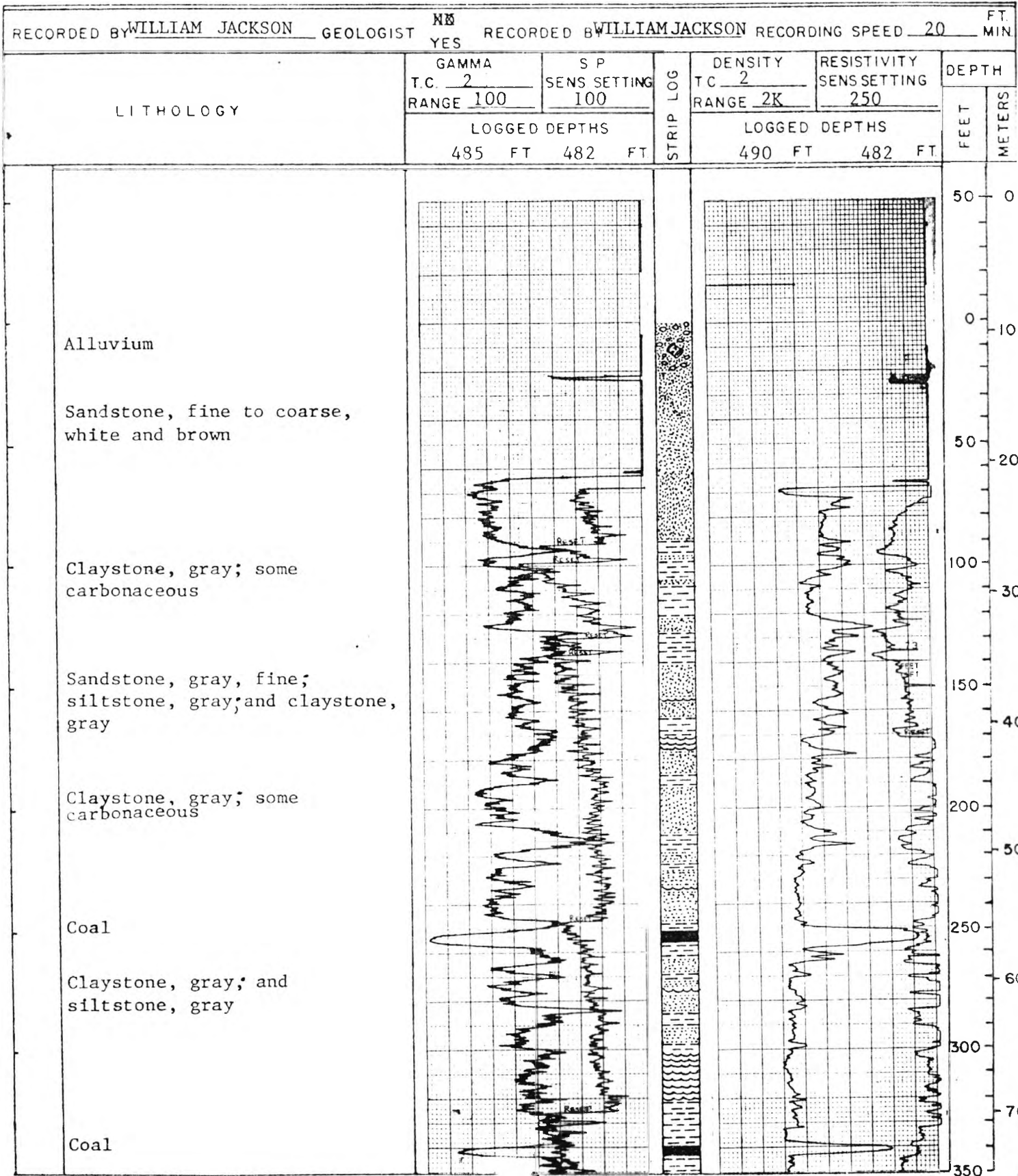
RECORDED BY MARY ALICE SPENCER GEOLOGIST ^{XNO} YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN

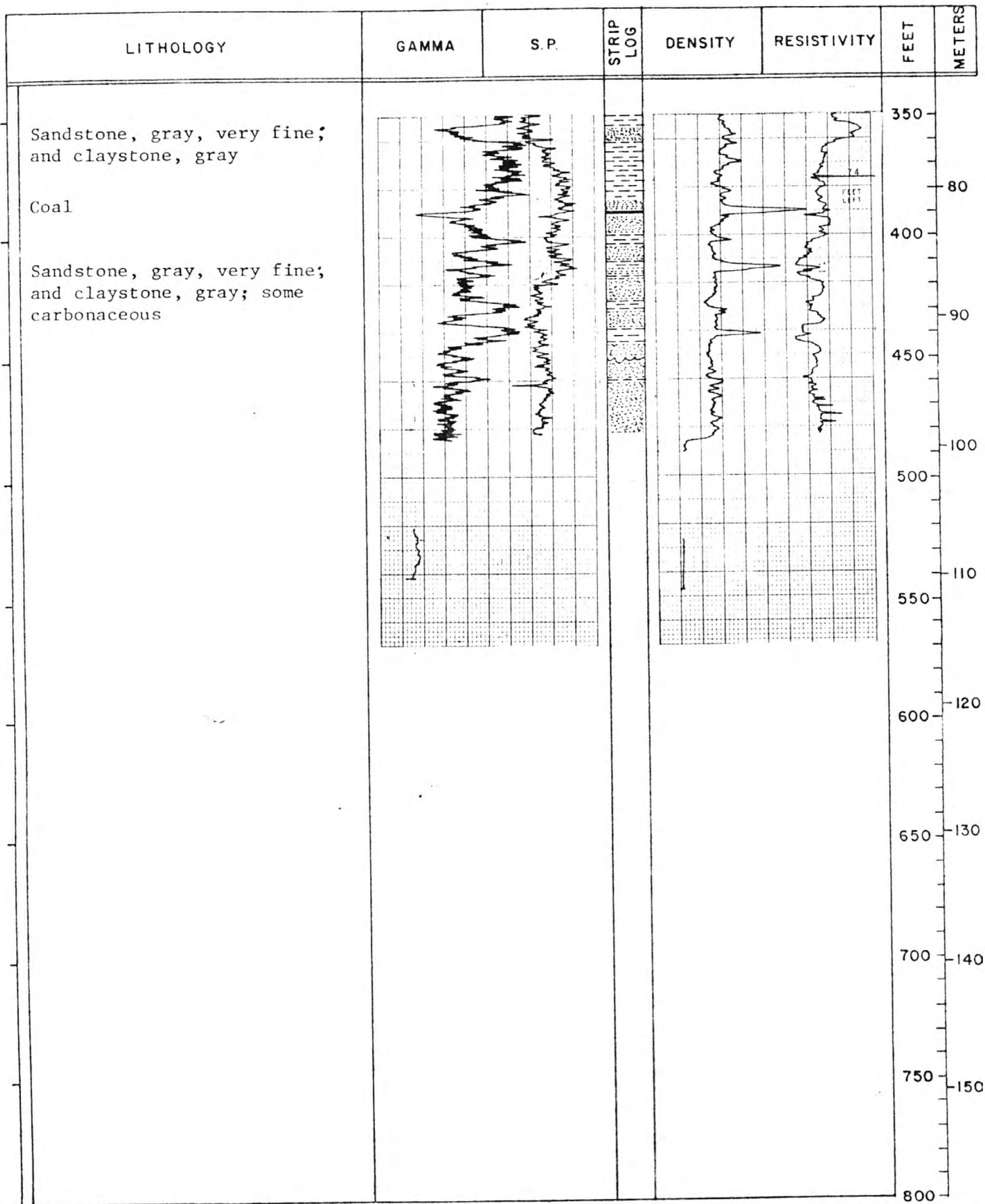


US- 79114

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79115 Map: Bainville 2 SE Date: 7/28/79 State: Montana County: Roosevelt
 Elev.: 2187 FT Location: T29 ^N R 57 ^E W, Sec 11 Tract DDDD Drilled depth 500 FT
 Measured: 90 FT ^{RXX} FSL 85 FT ^{FEL} ~~RXX~~ FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____



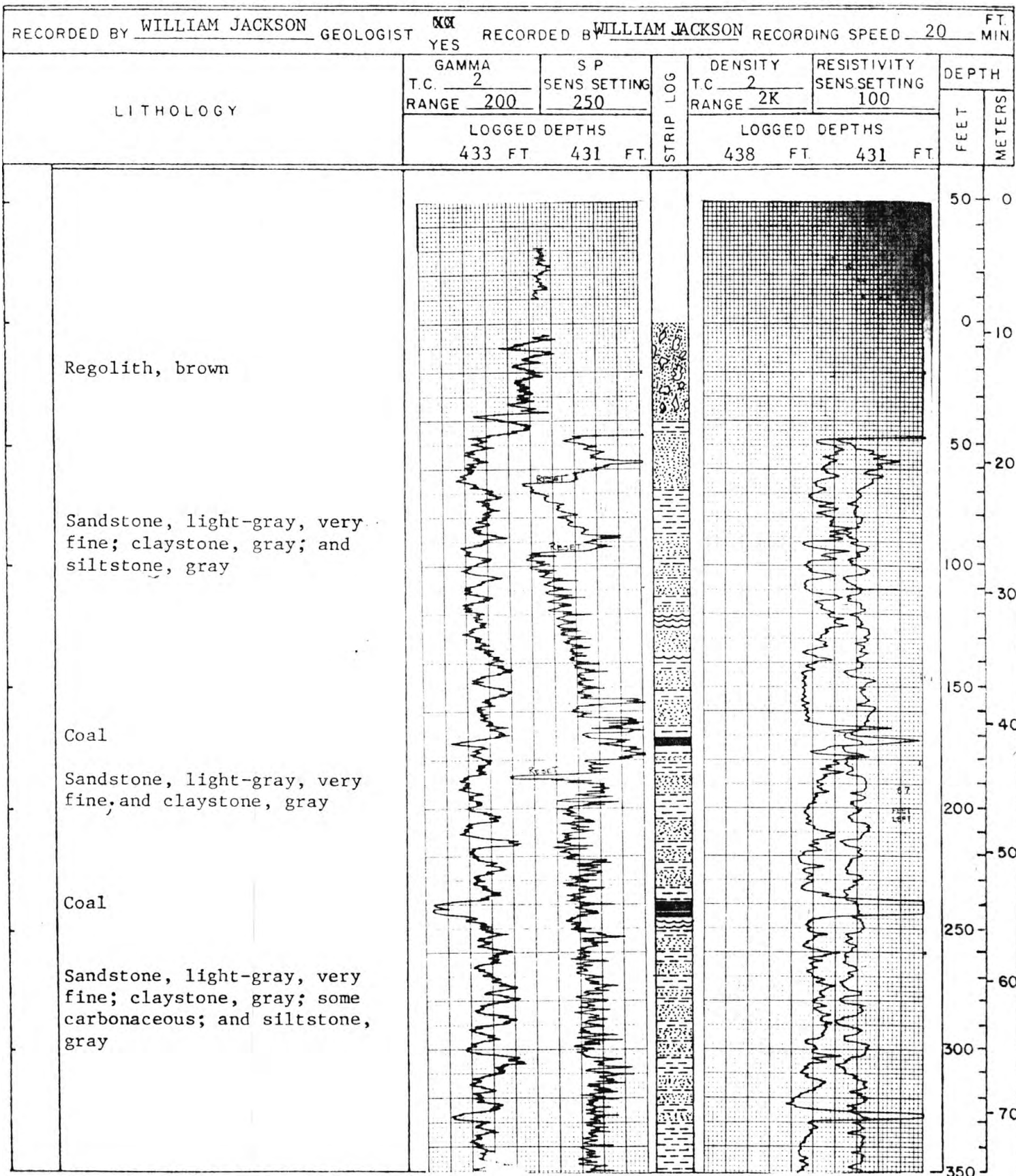


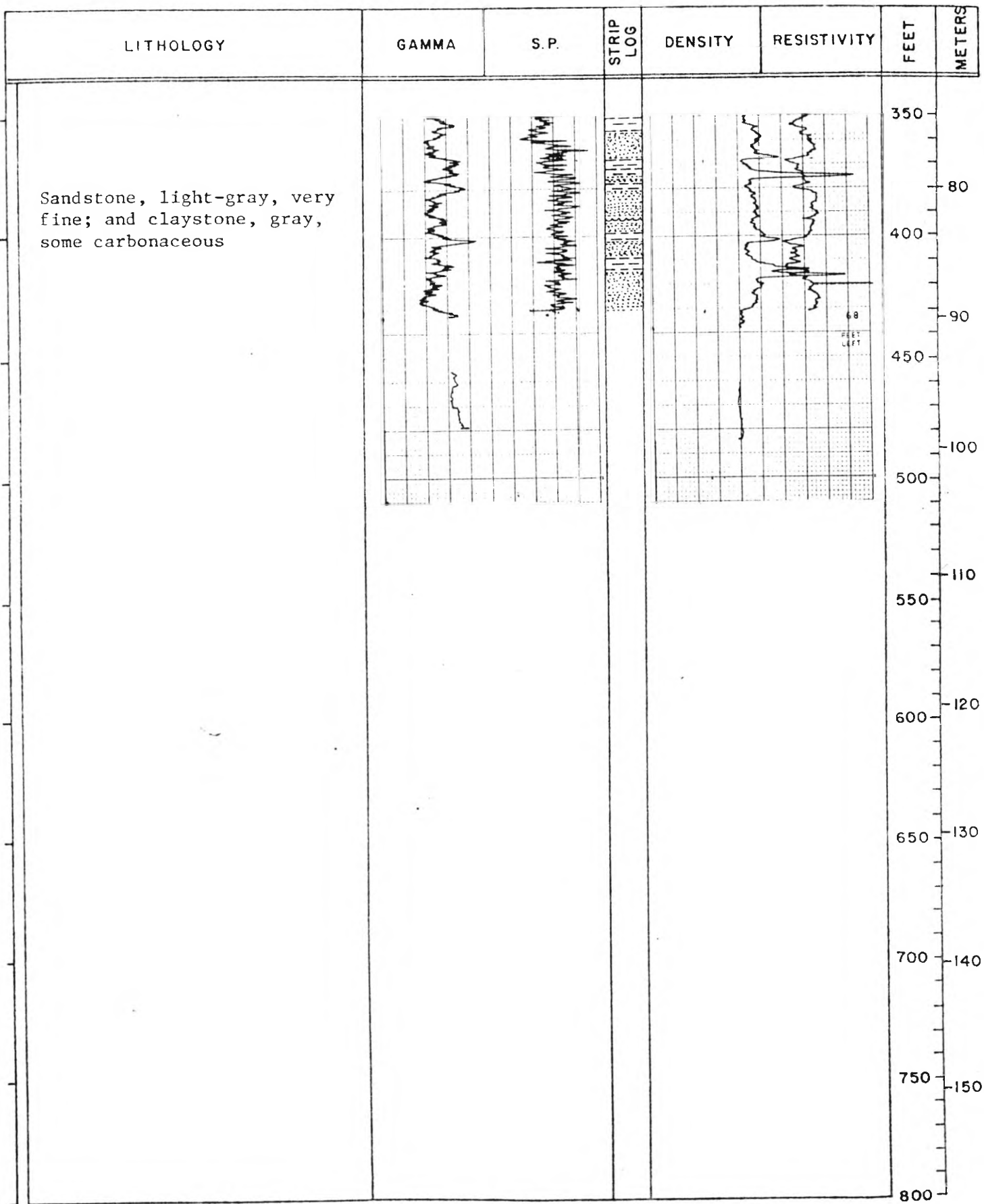
Hole No: US-79115 Map: Bainville 2 SE Date: 7/28/79 State: Montana County: Roosevelt
 Elev.: 2187 FT Location: T 29^N R 57^E W, Sec 11 Tract DDDD Drilled depth 500 FT
 Measured: 90 FT ~~FSL~~ ^{XNK} 85 FT ~~XXX~~ ^{FEL} FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NO YES		RECORDED BY <u>WILLIAM JACKSON</u>		RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>100</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>250</u>
	LOGGED DEPTHS <u>485</u> FT <u>482</u> FT.			LOGGED DEPTHS <u>490</u> FT <u>482</u> FT.	
	FEET	METERS			
<div style="position: relative; width: 100%; height: 100%;"> <div style="position: absolute; top: 0; right: 0; text-align: right;"> 50 0 0 10 50 20 100 30 150 40 200 50 250 60 300 70 350 </div> <div style="position: absolute; top: 10%; left: 10%; width: 80%; height: 80%;"> <p style="font-size: 2em; transform: rotate(-15deg); opacity: 0.5;">Caliper</p> </div> </div>					

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

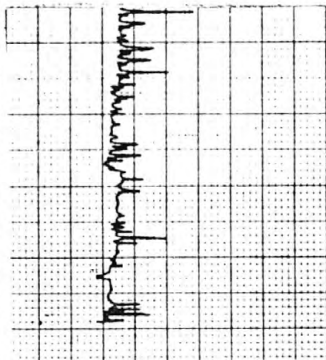
Hole No: US-79116 Map: Bainville 2 SE Date: 7/29/79 State: Montana County: Roosevelt
 Elev: 2239 FT Location: T 29 ^N R 57 ^E, Sec 20 Tract AAAA Drilled depth 440 FT
 Measured: 190 FT ^{FNL} KKK 20 FT ^{FEL} XXXX FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



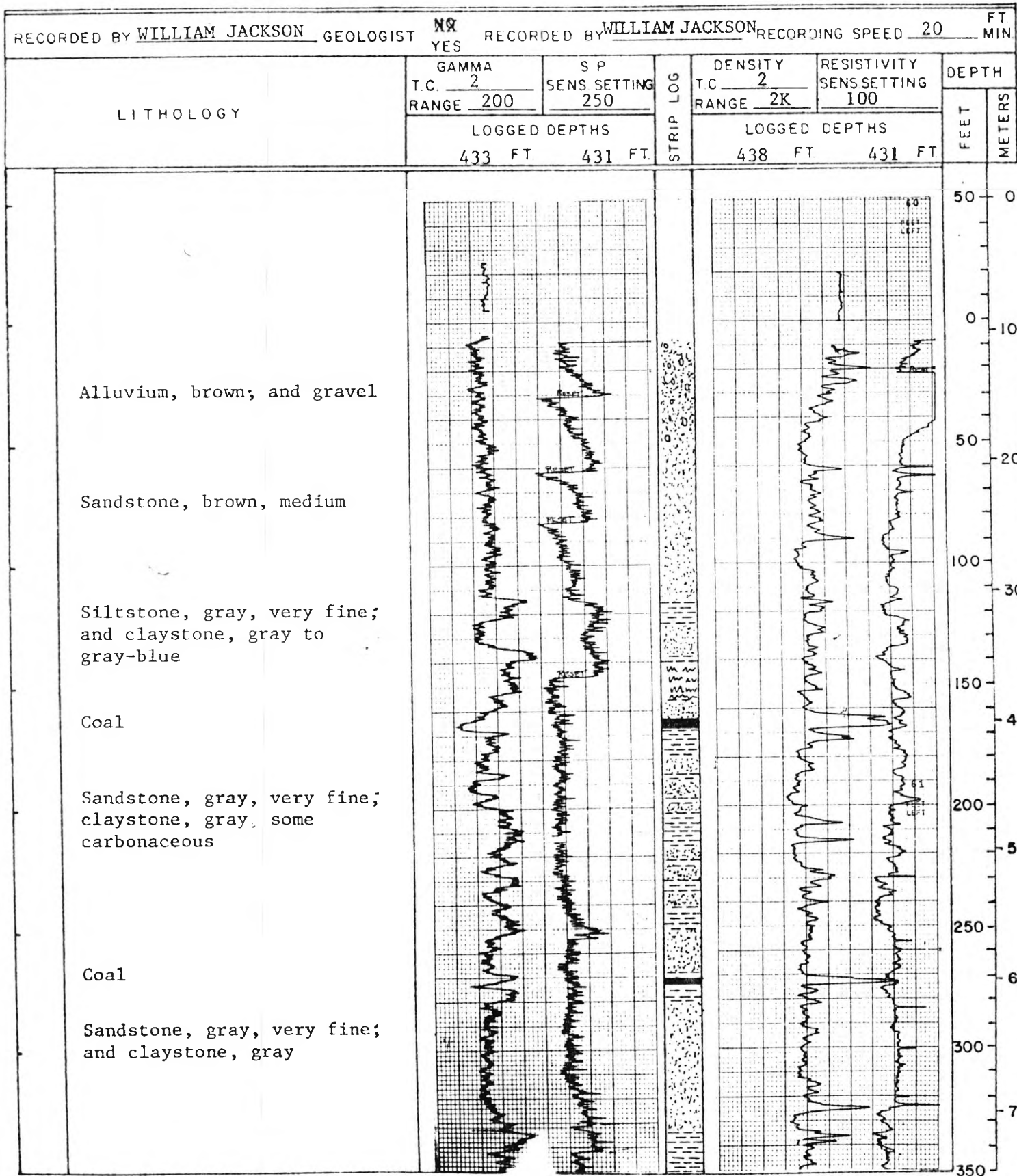


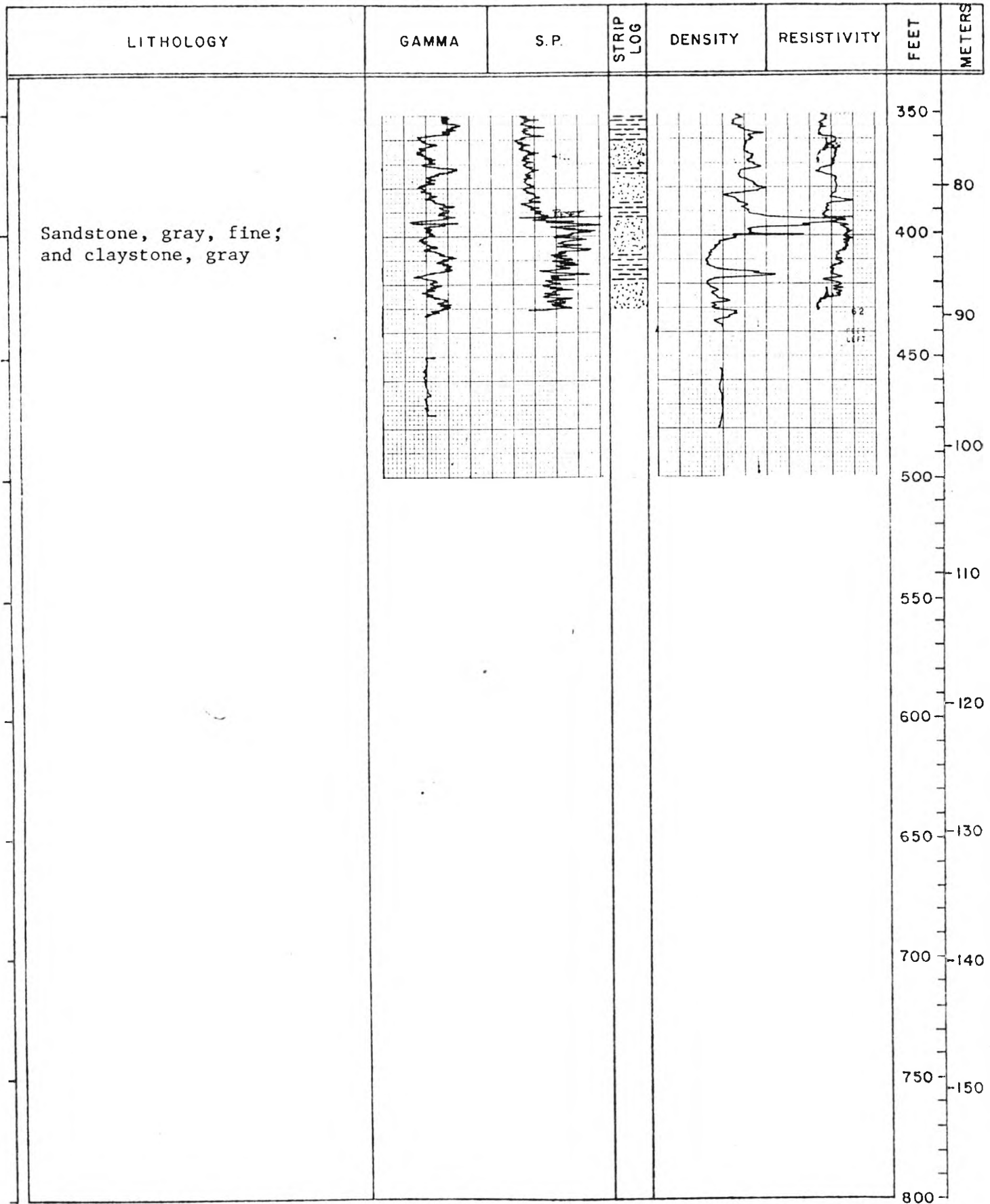
Hole No: US-79116 Map: Bainville 2 SE Date: 7/29/79 State: Montana County: Roosevelt
 Elev.: 2239 FT Location: T 29 ^N R 57 ^E W, Sec 20 Tract AAAA Drilled depth 440 FT
 Measured: 190 FT ^{FNL} ~~XXX~~ 20 FT ^{FEL} ~~XXX~~ FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NO YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS. SETTING <u>250</u>	DENSITY T.C. <u>2</u> RANGE <u>2K</u>
	RESISTIVITY SENS. SETTING <u>100</u>		DEPTH
	LOGGED DEPTHS <u>433</u> FT <u>431</u> FT.		LOGGED DEPTHS <u>438</u> FT <u>431</u> FT
STRIP LOG			
		<p style="text-align: center;"><i>Caliper</i></p>	

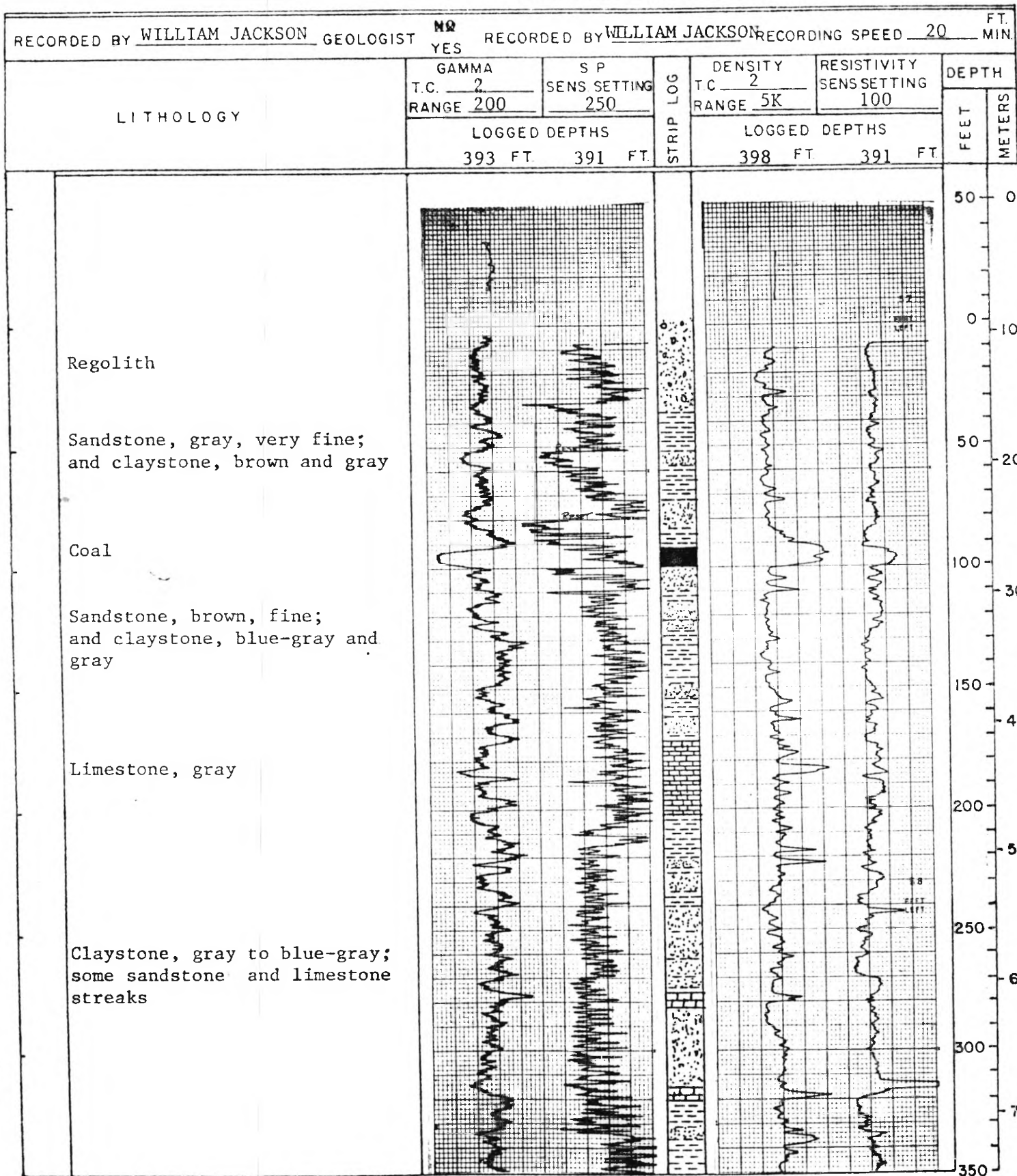
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350 80 400 90 450 100 500 110 550 120 600 130 650 140 700 150 750 800	

Hole No: US-79117 Map: Bainville 2 SW Date: 7/30/79 State: Montana County: Roosevelt
 Elev.: 2170 FT Location: T 29^N R 56^E, Sec 23 Tract BAAA Drilled depth 440 FT
 Measured: 5 FT ~~FNL~~ 2570 FT ~~FEL~~ XXX FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

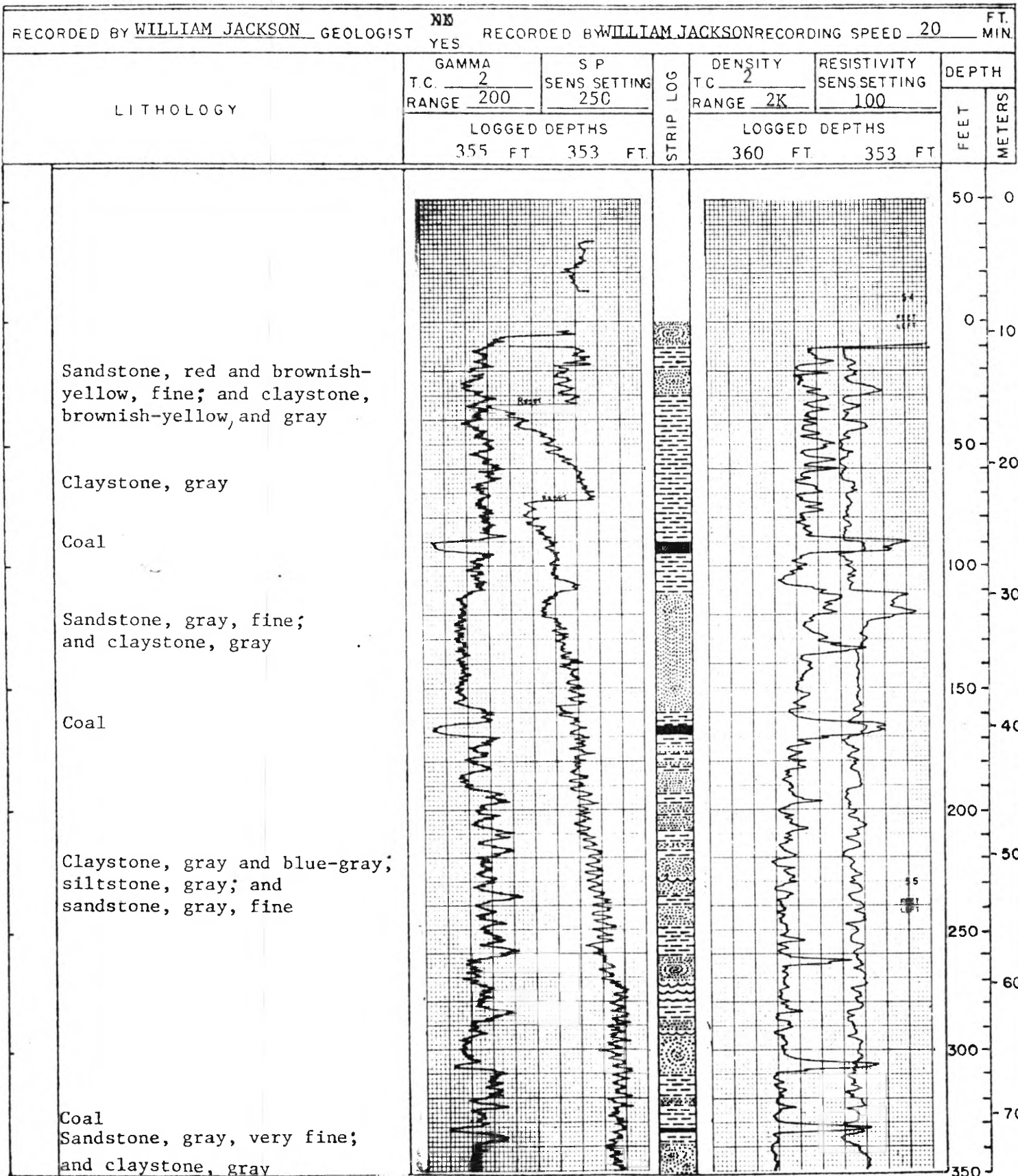


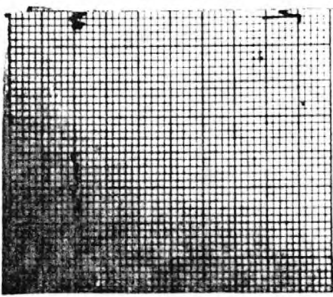

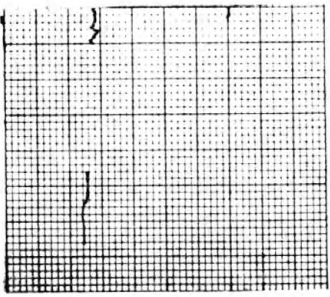


19.18
 Hole No: US-79118 Map: Bainville 3 NW Date: 7/30/79 State: Montana County: Roosevelt
 Elev.: 2163 FT Location: T 29 ^N R 56 ^E, Sec 27 Tract ABBB Drilled depth 400 FT
 Measured: 42 FT ^{FNL} ~~XXX~~ 2450 FT ^{FWL} ~~XXX~~ FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



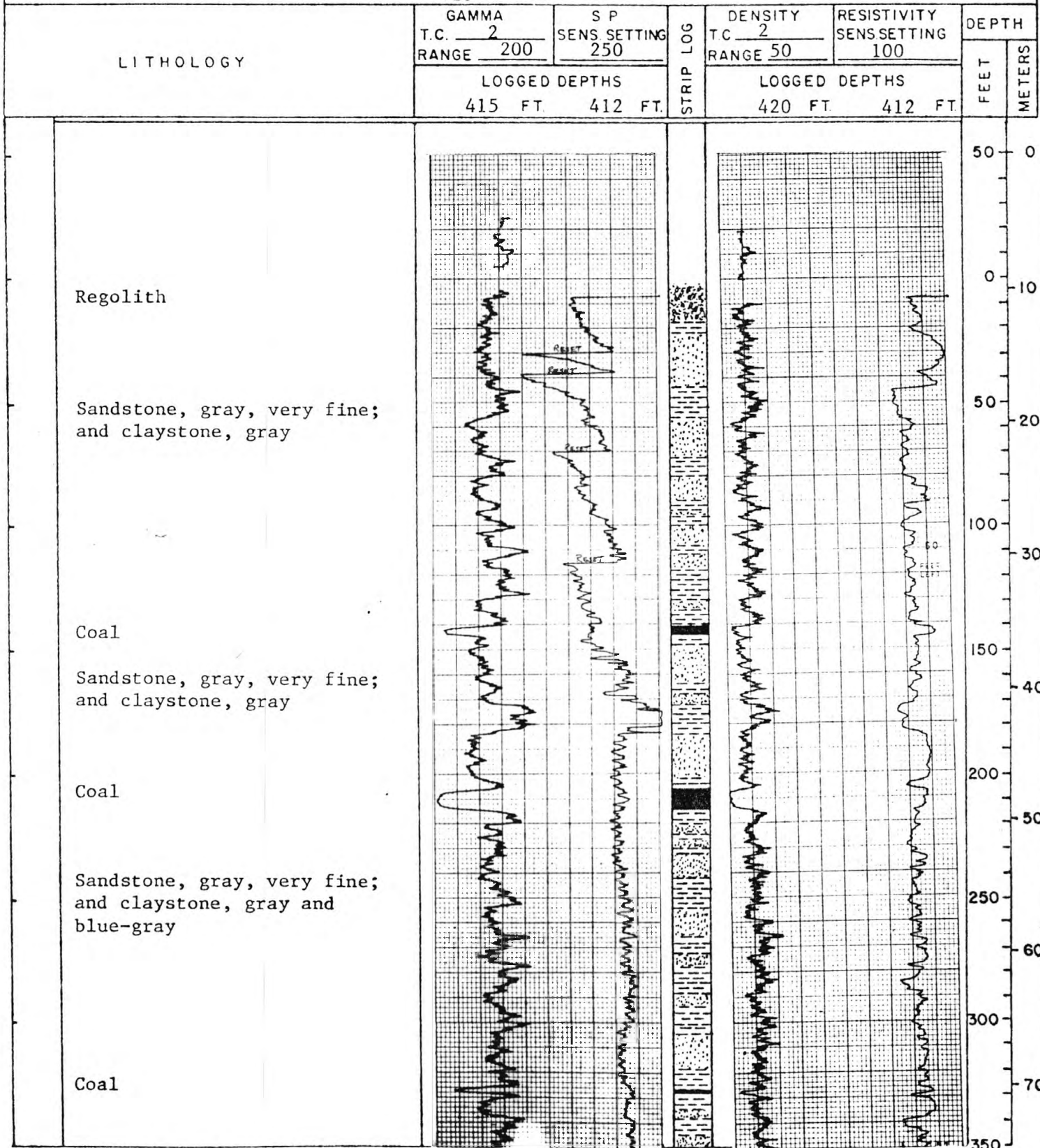
9119
 Hole No: US-79119 Map: Bainville 3 NE Date: 7/31/79 State: Montana County: Roosevelt
 Elev: 2136 FT Location: T 28^N R 57^E, Sec 1 Tract ABBB Drilled depth 360 FT
 Measured: 22 FT ~~FNL~~ 2580 FT ~~FEL~~ XXX FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Claystone, gray						350 80 400 90 450 100 500 110 550 120 600 130 650 140 700 150 750 800	

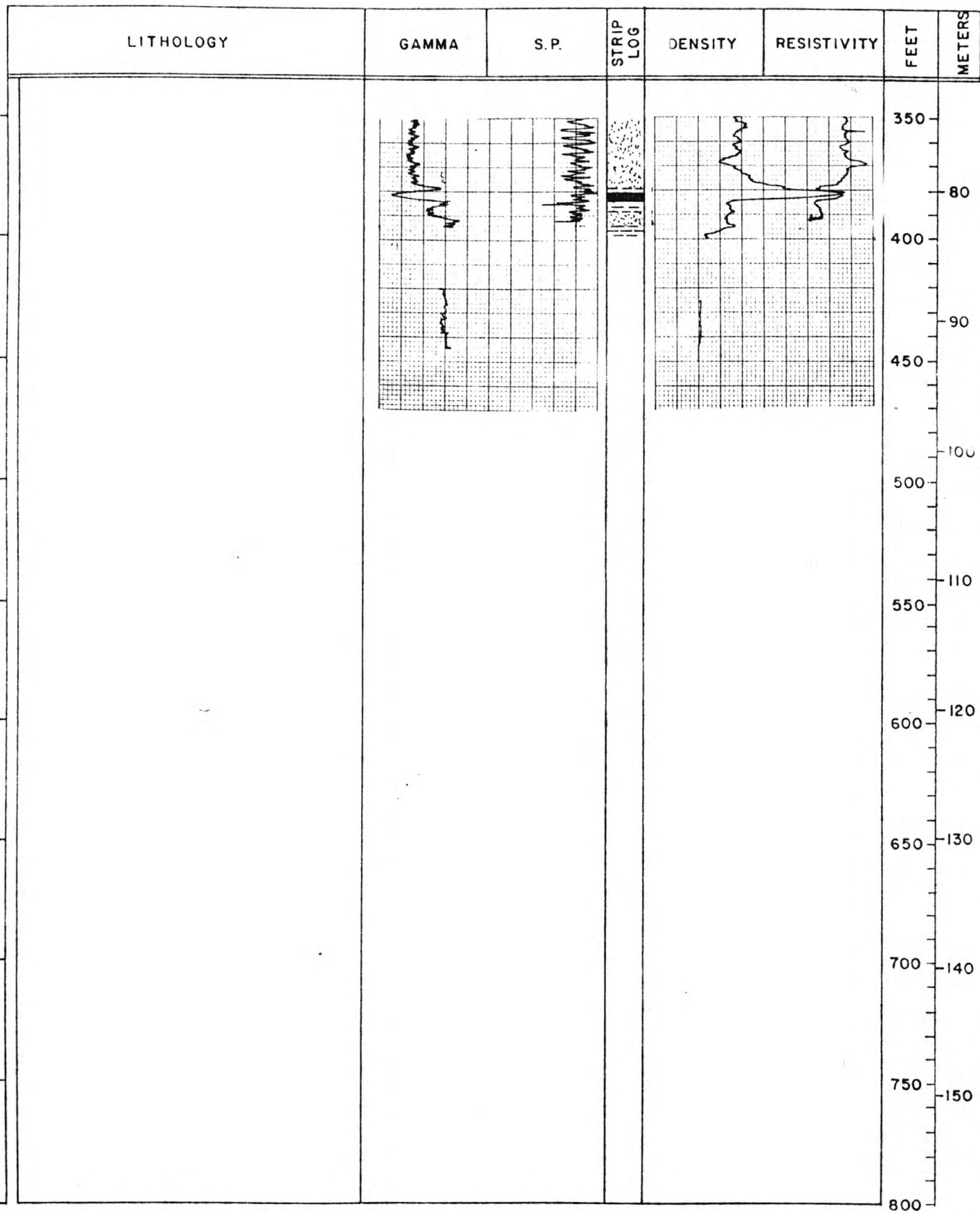
Hole No: US-79120 Map: Bainville SW Date: 7/31/79 State: Montana County: Roosevelt
 Elev.: 2024 FT Location: T 27 ^N R 58 ^E, Sec 10 Tract ADCC Drilled depth 42- FT
 Measured: 2580 FT ^{FNL} 1316 FT ^{FEL} XXX FT. Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY RUSSELL PATTERSON GEOLOGIST ^{NO} YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN



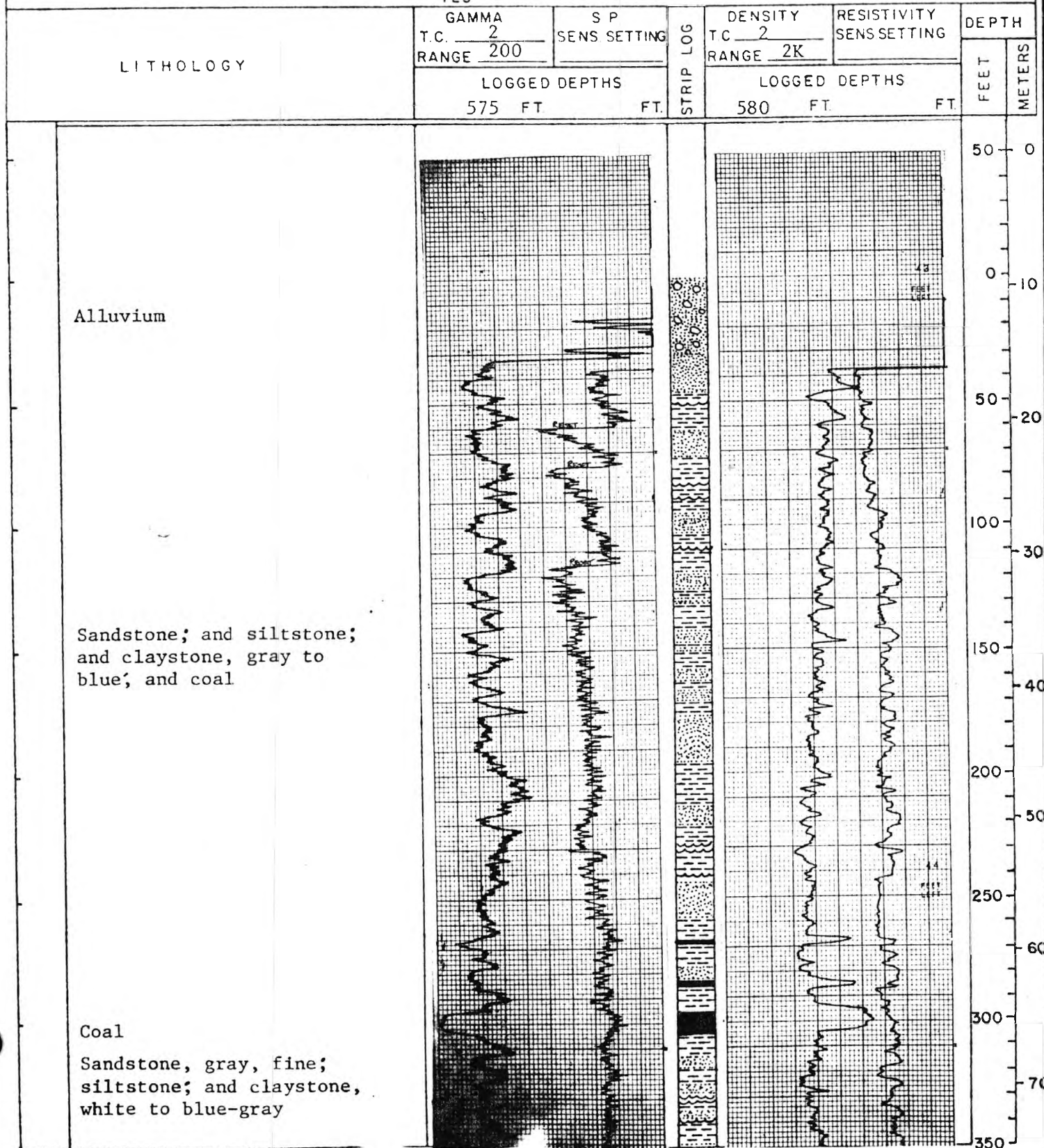
9121

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST		NO YES		RECORDED BY <u>WILLIAM JACKSON</u>		RECORDING SPEED <u>20</u>		FT. MIN.			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>		S P SENS. SETTING <u>250</u>		STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>		RESISTIVITY SENS. SETTING <u>100</u>		DEPTH	
	LOGGED DEPTHS					LOGGED DEPTHS				FEET	METERS
	395	FT.	392	FT.		400	FT.	392	FT.		
Regolith										50	0
Sandstone, brown, fine; and claystone, brown										0	10
Coal										50	20
Sandstone, gray, fine; and claystone, gray and blue-gray, some carbonaceous										100	30
Coal, with claystone parting										150	40
Sandstone, gray, fine; and claystone, blue-gray										200	50
										250	60
										300	70
										350	



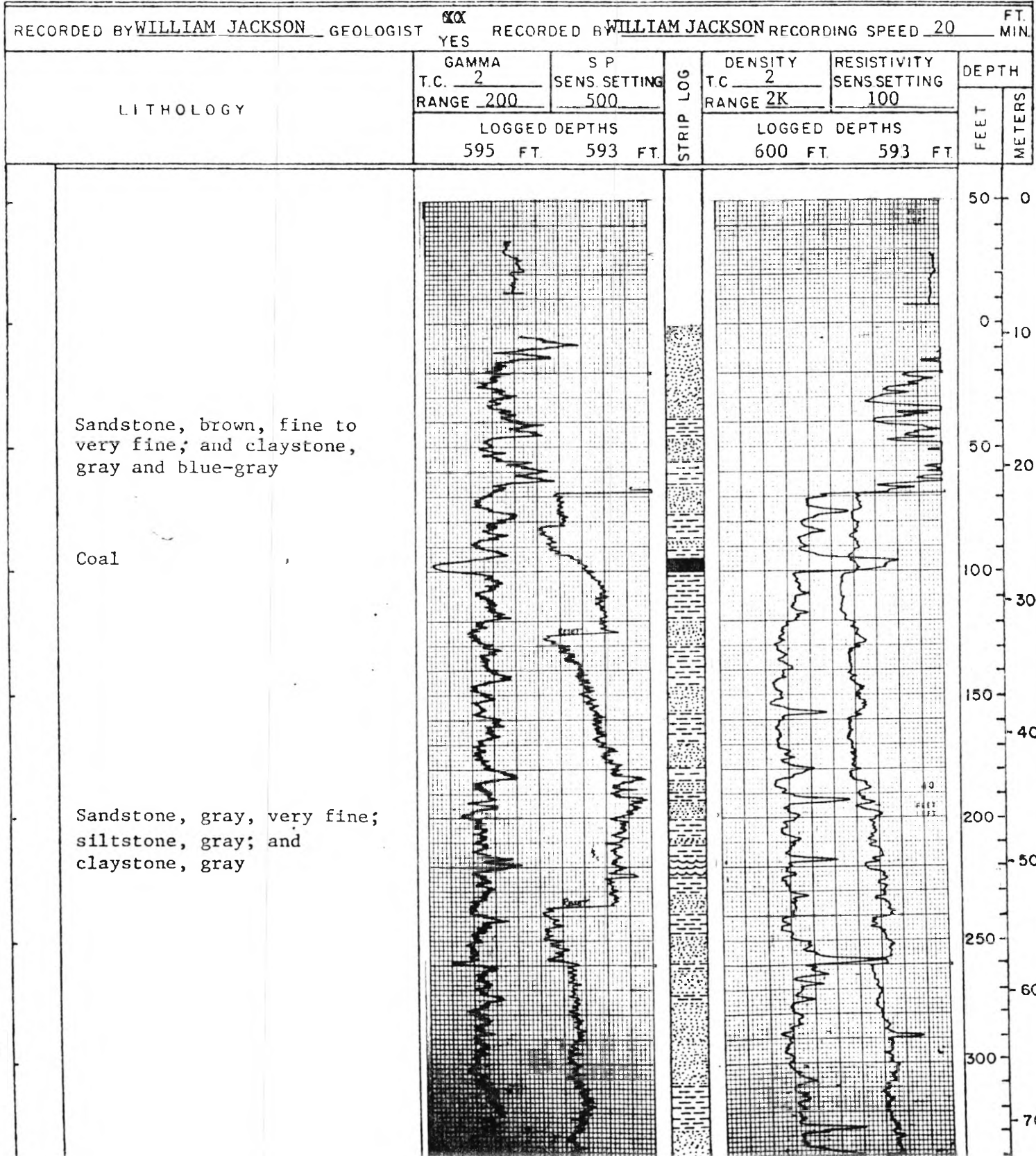
Hole No: US-79122 Map: Bainville SE Date: 8/1/79 State: Montana County: Roosevelt
 Elev: 2020 FT Location: T 26^N R 59^E, Sec 11 Tract DDCC Drilled depth 580 FT
 Measured: 1020 FT ~~FNL~~ 710 FT ~~FEL~~ FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

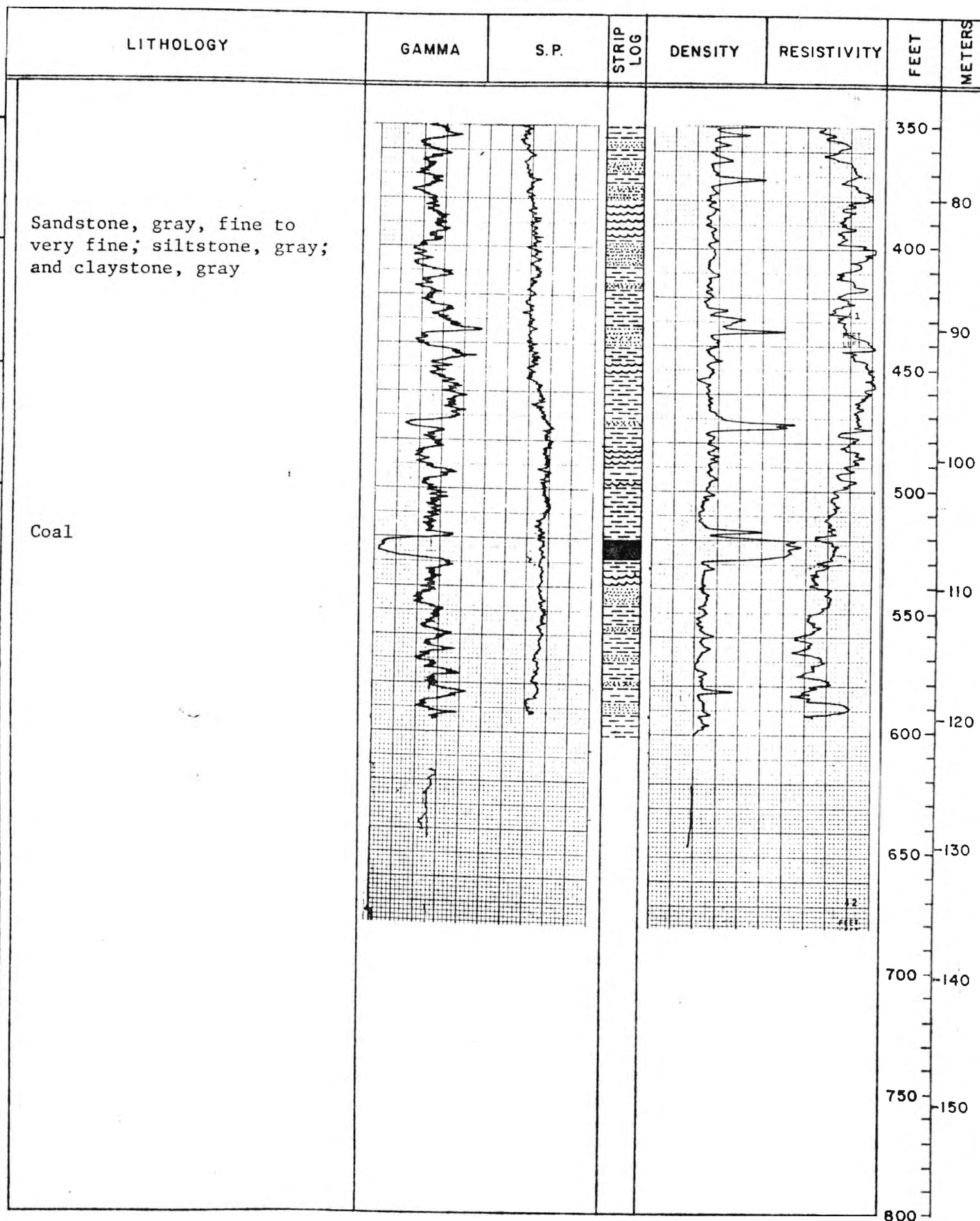
RECORDED BY WILLIAM JACKSON GEOLOGIST ~~NO~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN.



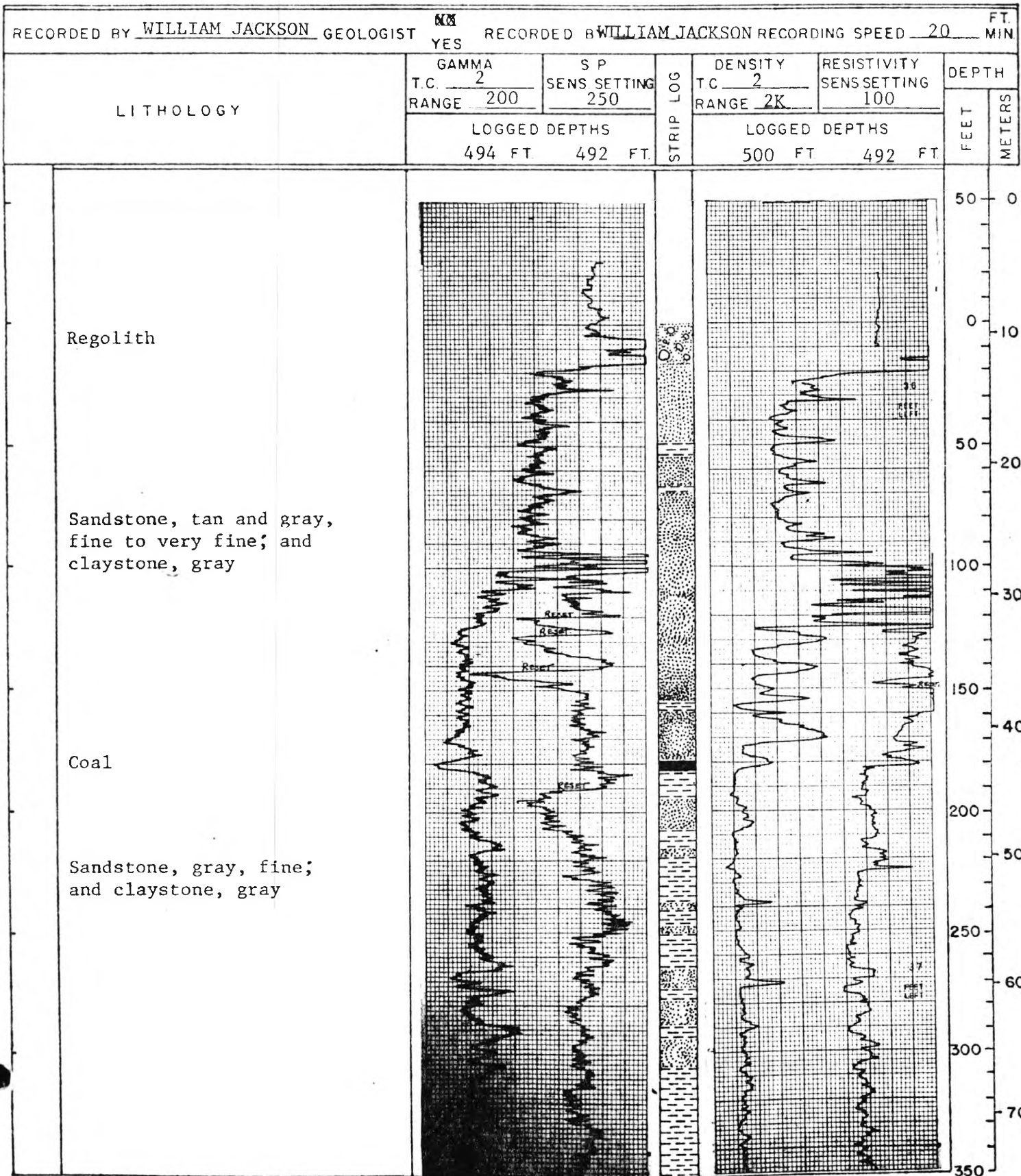
23

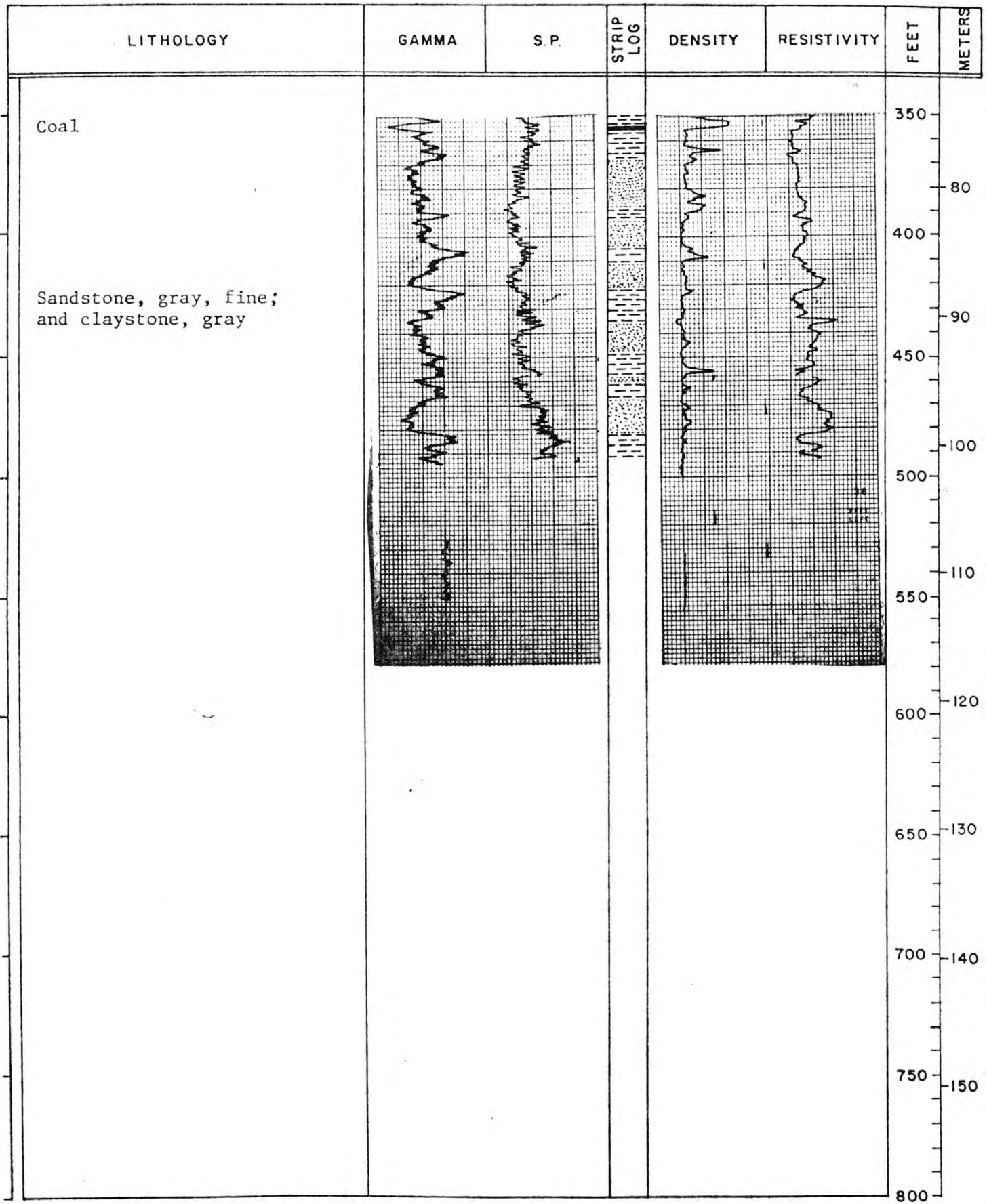
Hole No: US-79123 Map: Bainville SE Date: 8/2/79 State: Montana County: Roosevelt
Elev.: 2216 FT Location: T 27 ^N R 59 ^E W, Sec 11 Tract CCCC Drilled depth 600 FT
Measured: 65 FT ^{FSL} 15 FT ^{FEL} XXXX FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
Remarks: _____



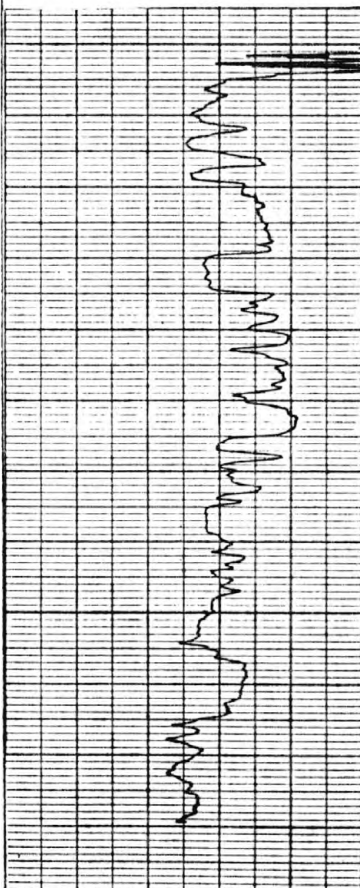



Hole No: US-79124 Map: Red Bank Creek Date: 8/7/79 State: North Dakota County: Williams
 Elev.: 2269 FT Location: T 154^N R 104^W, Sec 14 Tract DDDD Drilled depth 500 FT
 Measured: 124 FT ~~KNK~~ FSL 34 FT ~~RXX~~ FEL RXX FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____



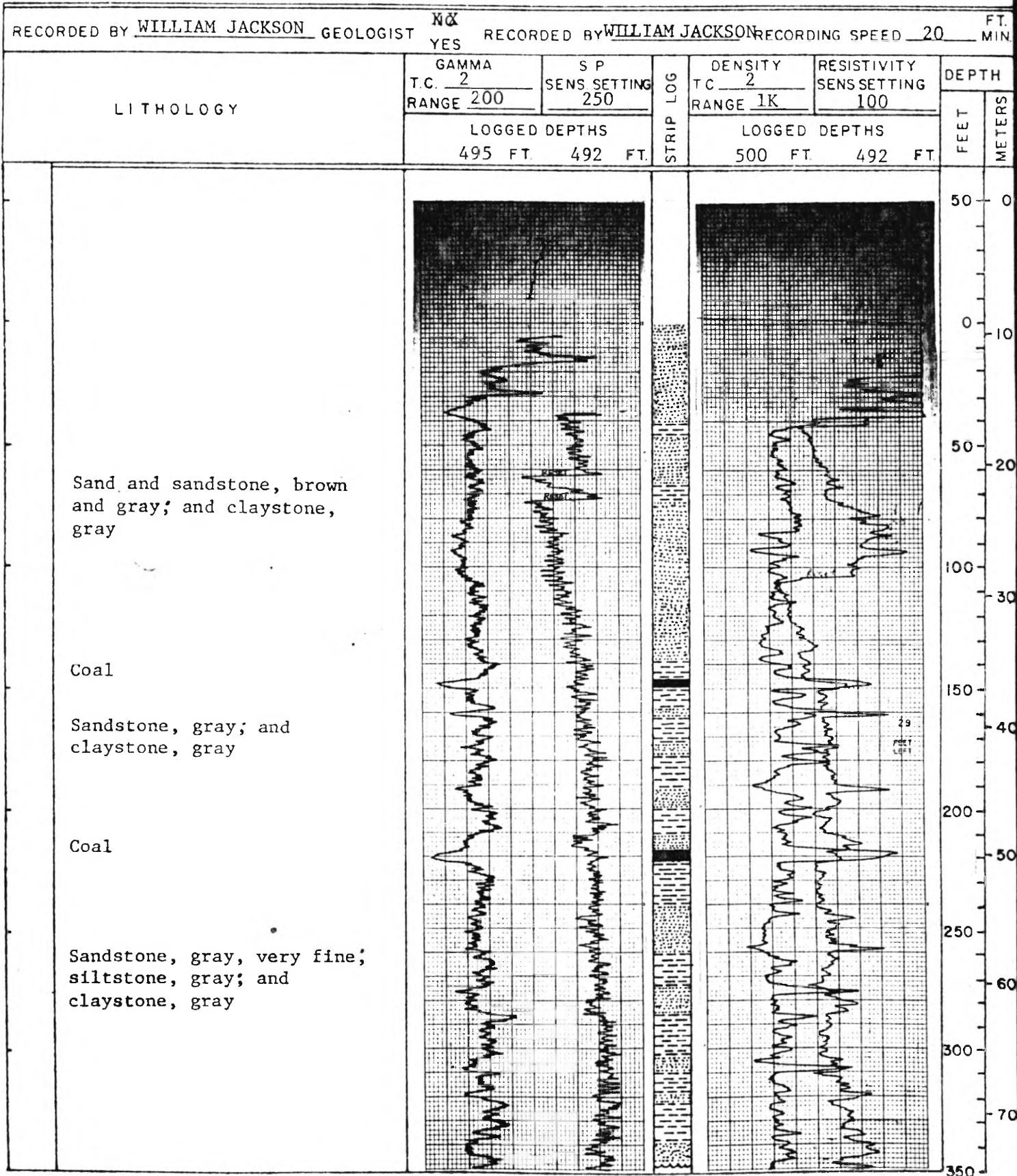


Hole No: US-79125 Map: Trenton NW Date: 8/7/79 State: North Dakota County: Williams
 Elev.: 2247 FT Location: T154^N R103^E, Sec 8 Tract DDDD Drilled depth 500 FT
 Measured: 97 FT ~~FSL~~ 50 FT ~~FEL~~ ~~FW~~ FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NO YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS. SETTING <u>250</u>	DENSITY T.C. <u>2</u> RANGE <u>1K</u>
	LOGGED DEPTHS <u>495</u> FT. <u>492</u> FT.		RESISTIVITY SENS. SETTING <u>100</u>
	LOGGED DEPTHS <u>500</u> FT. <u>492</u> FT.		
	STRIP LOG		DEPTH FEET METERS
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>S.P.</p>  </div> <div style="text-align: center;"> <p>Res.</p>  </div> </div>		50 0 0 10 50 20 100 30 150 40 200 50 250 60 300 70 350

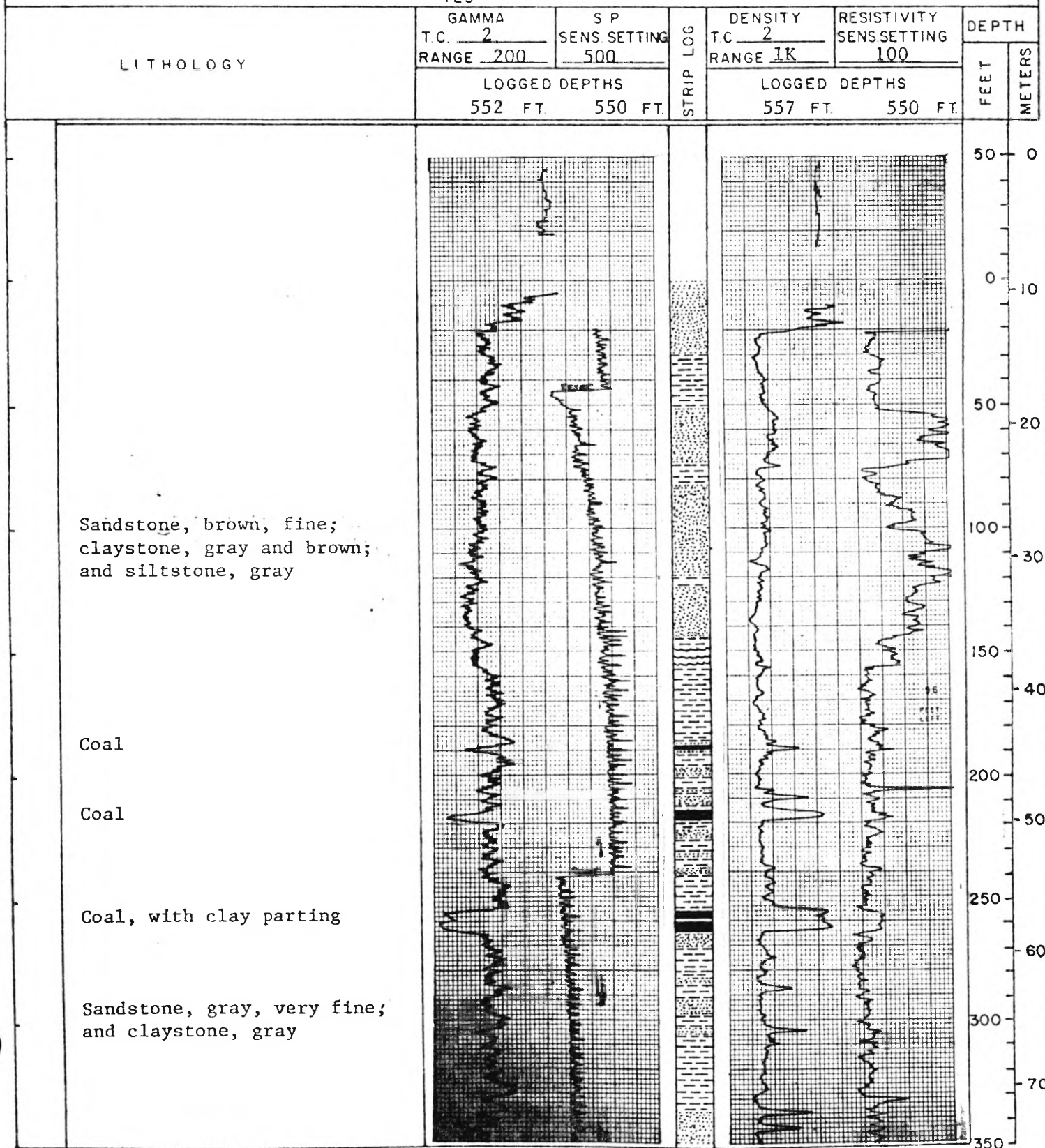
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

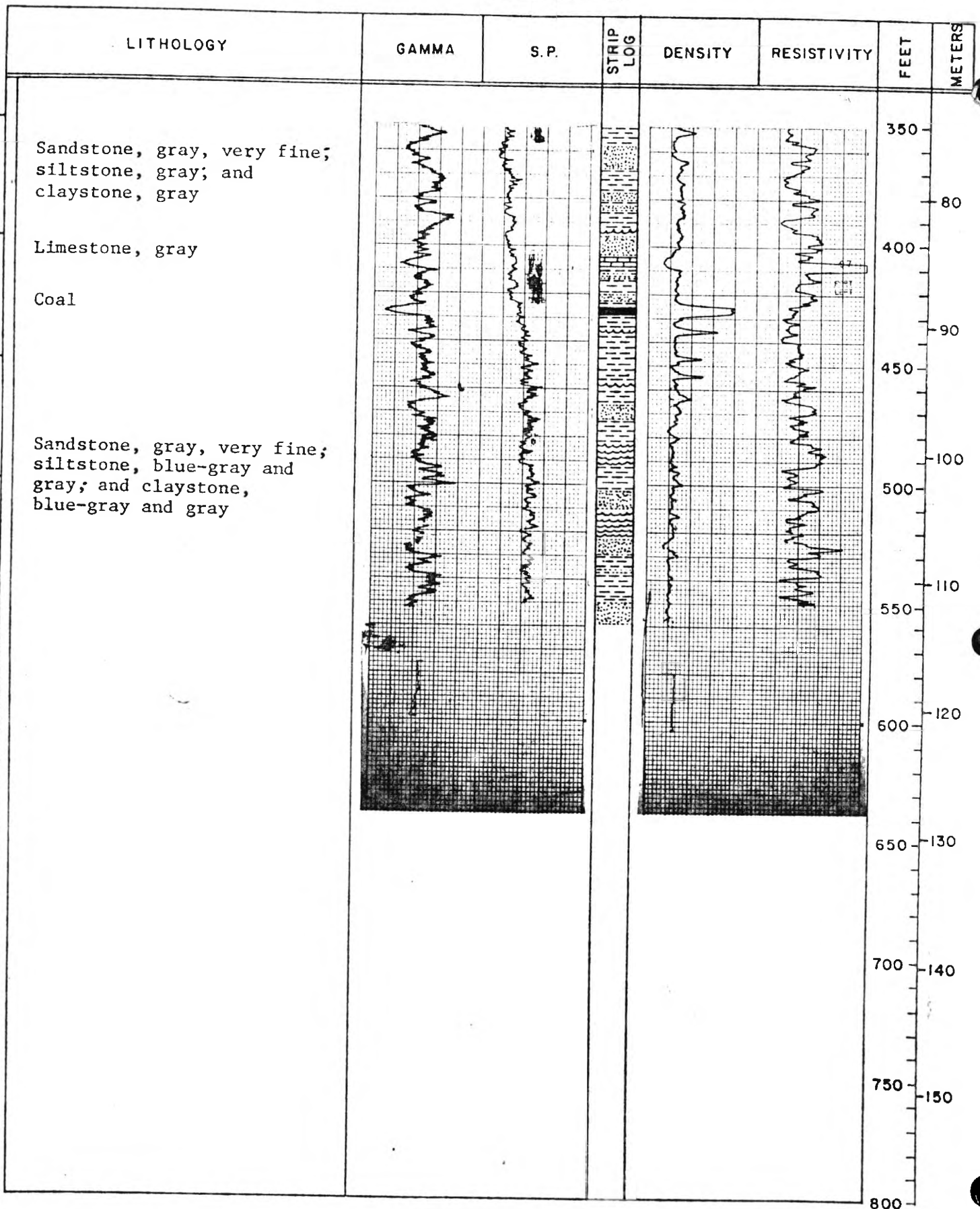
Hole No: US-79125 Map: Trenton NW Date: 8/7/79 State: North Dakota County: Williams
 Elev.: 2247 FT Location: T154^N~~X~~ R103^W~~X~~, Sec 8 Tract DDDD Drilled depth 500 FT
 Measured: 97 FT. ~~FSL~~ ^{FNL} 50 FT. ~~FEL~~ ^{FNL} FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



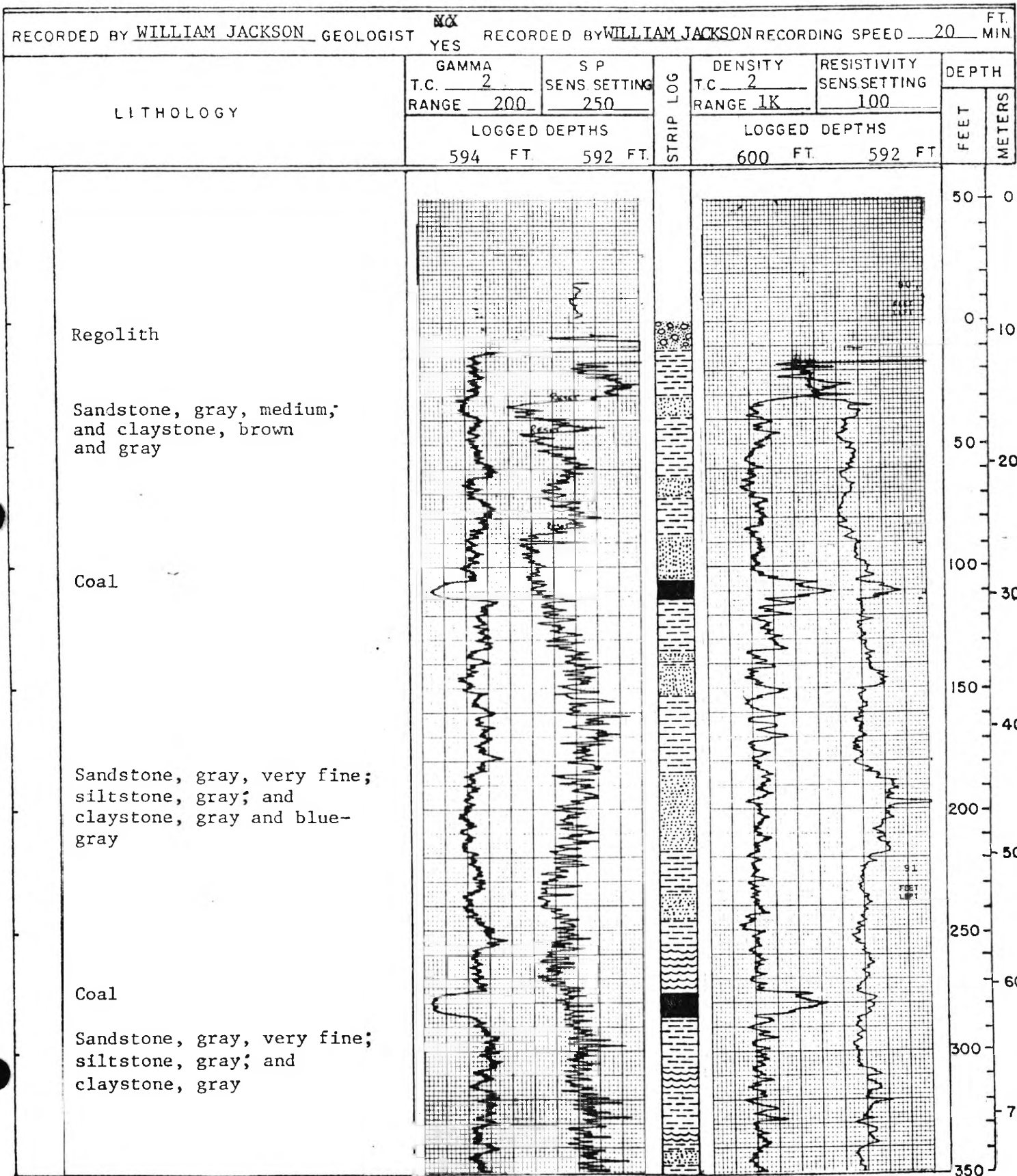
Hole No: US-79126 Map: Trenton NW Date: 8/8/79 State North Dakota County: Williams
 Elev: 2369 FT Location: T154 ^N~~X~~ R103 ^E~~W~~, Sec 29 Tract AAAA Drilled depth 560 FT
 Measured: 312 FT ^{FNL}~~XXX~~ 65 FT ^{FEL}~~RXX~~ FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY CHRIS MURPHY GEOLOGIST ^{NO}~~YES~~ RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN.

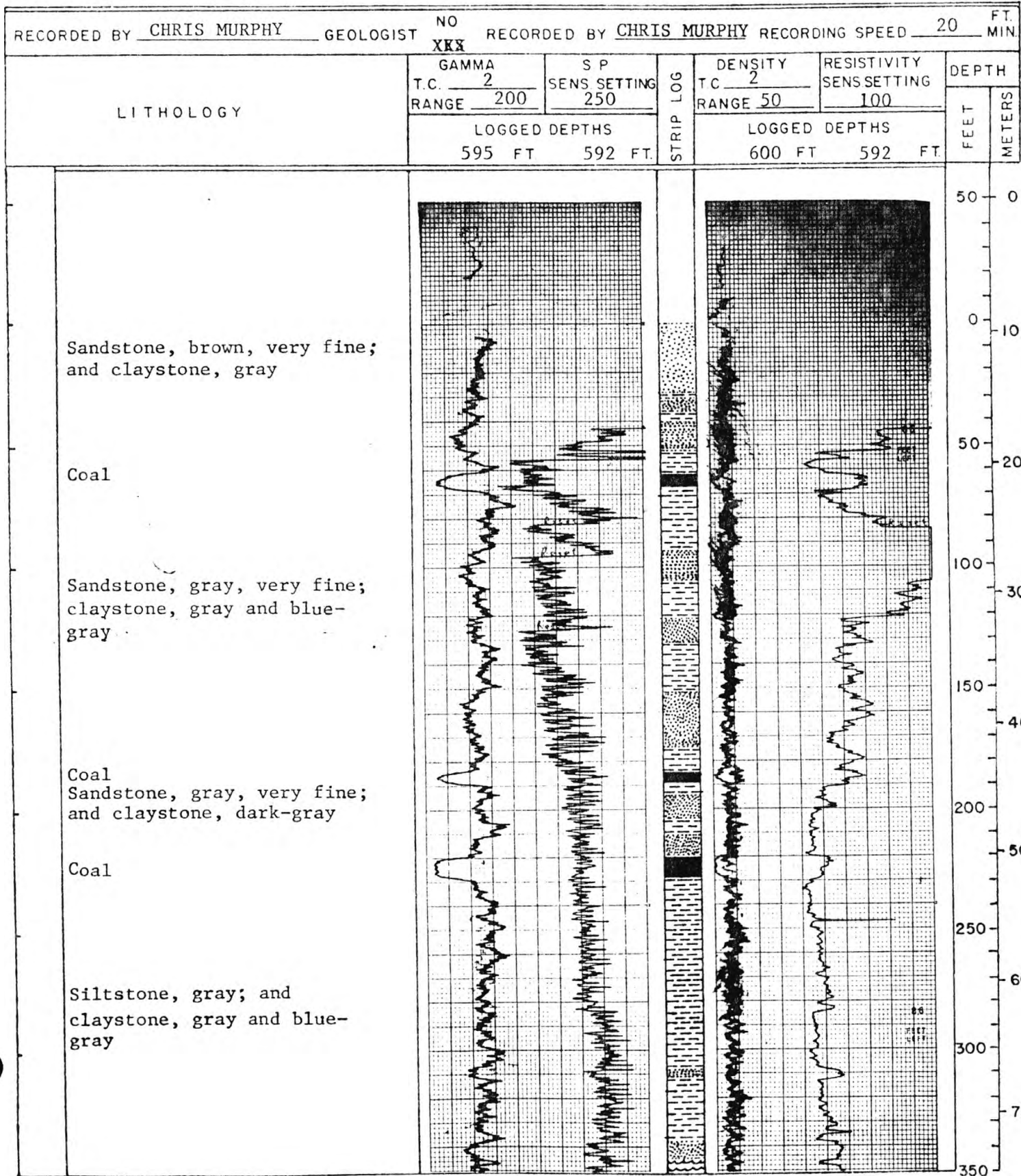




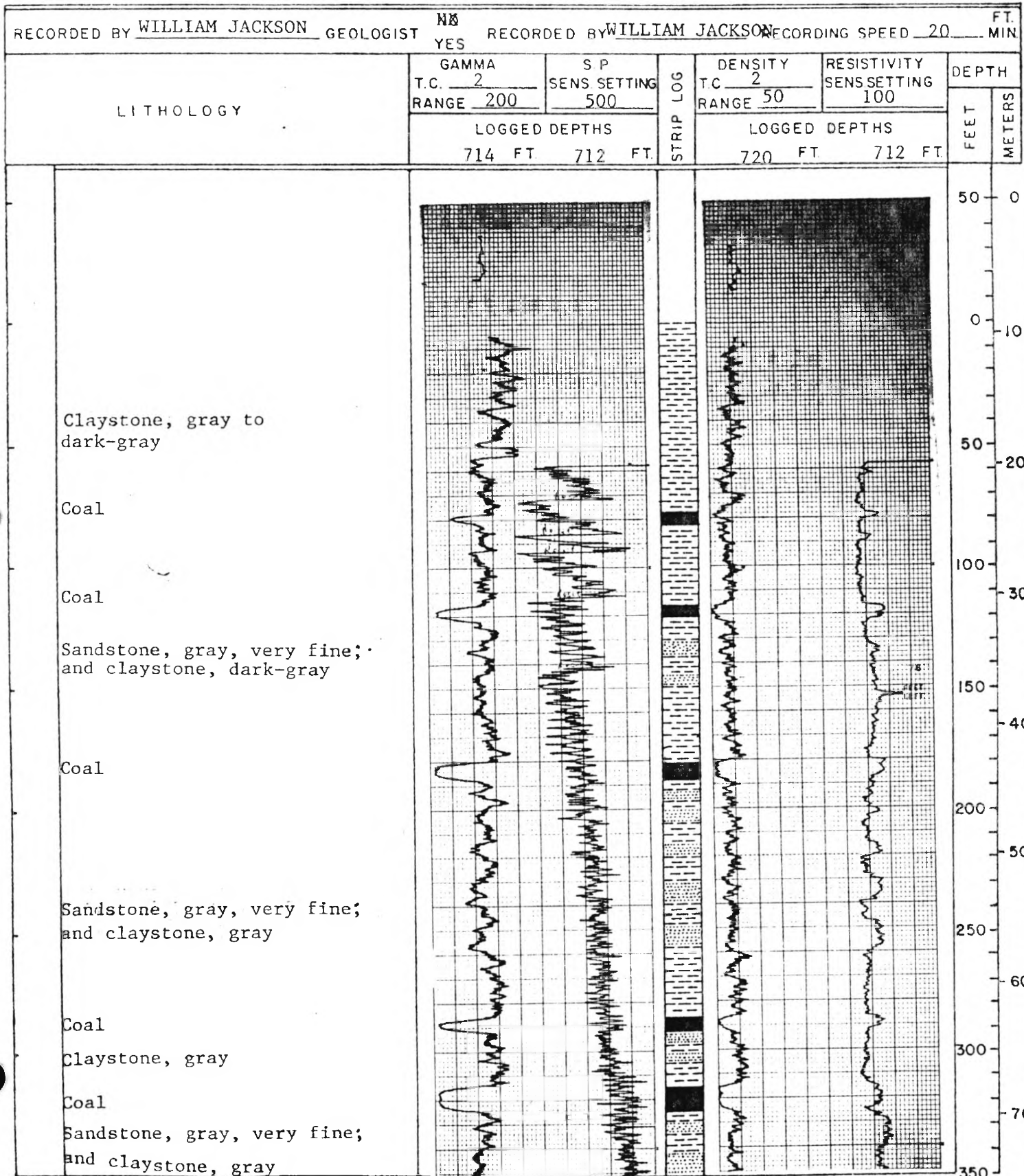
Hole No: US-79127 Map: Bone Trail SW Date: 8/9/79 State North Dakota County: Williams
 Elev.: 2426 FT Location: T156^N R103^W, Sec 32 Tract CCCC Drilled depth 600 FT.
 Measured: 29 FT. ^{FNL} ~~XXX~~ 57 FT. ^{FXX} ~~FWL~~ FT. Hole size: 5 1/8 IN. Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



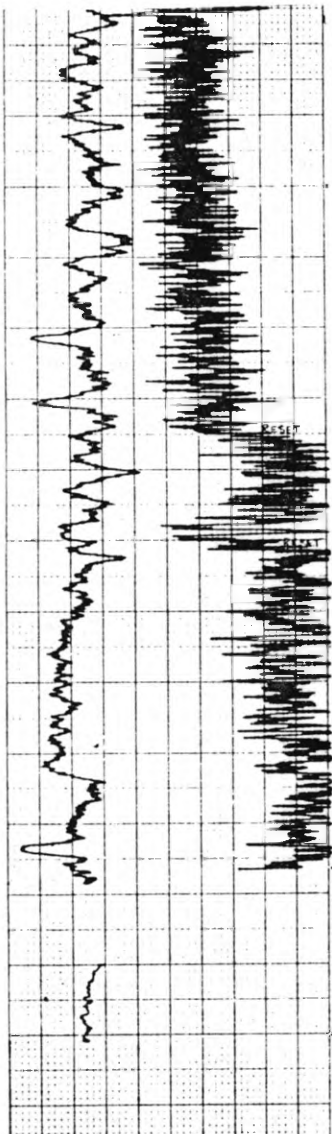
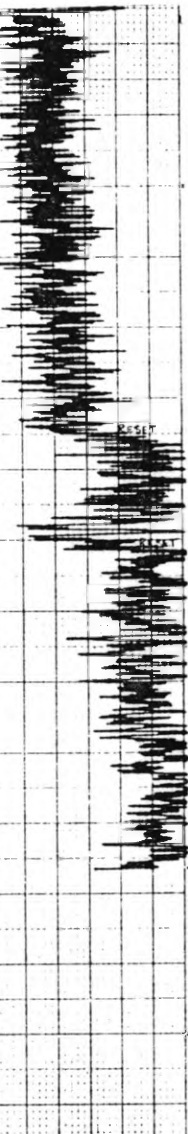
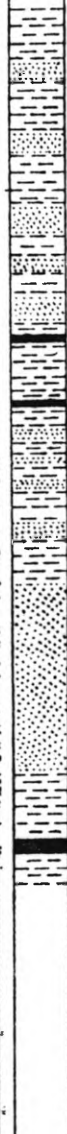
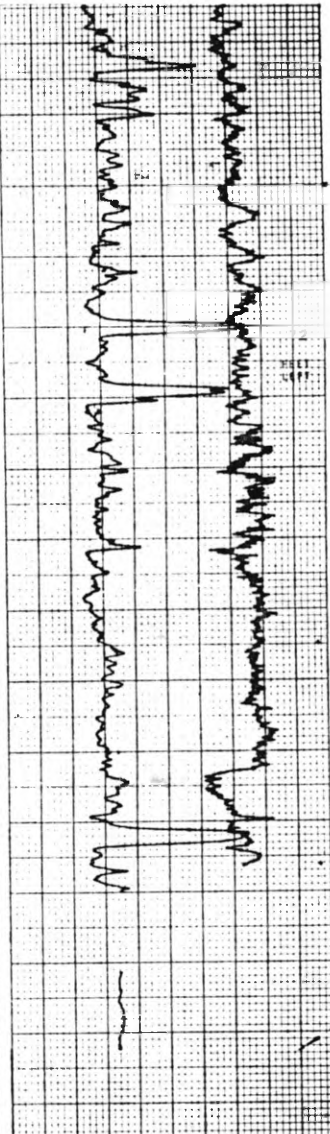
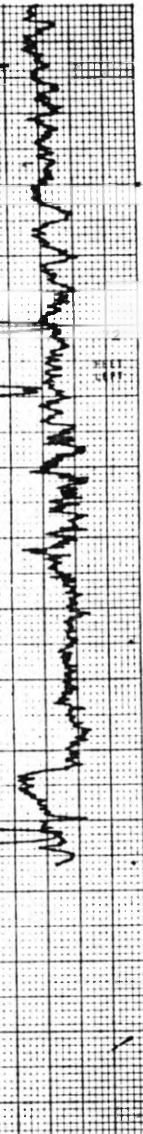
Hole No: US-79128 Map: Bull Butte Date: 8/9/79 State: North Dakota County: Williams
 Elev: 2379 FT Location: T155^N R104^W, Sec 12 Tract BBBB Drilled depth 600 FT
 Measured: 78 FT ^{FNL} XXX 30 FT ^{RXX} FWL FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Denisty logged without source



Hole No: US-79129 Map: Bull Butte Date: 8/12/79 State North Dakota County: Williams
 Elev.: 2515 FT Location: T156^N R104^W, Sec 24 Tract BBBB Drilled depth 720 FT
 Measured: 23 FT ^{KNK}FSL 80 FT ^{R&X}FWL FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Density logged without source.

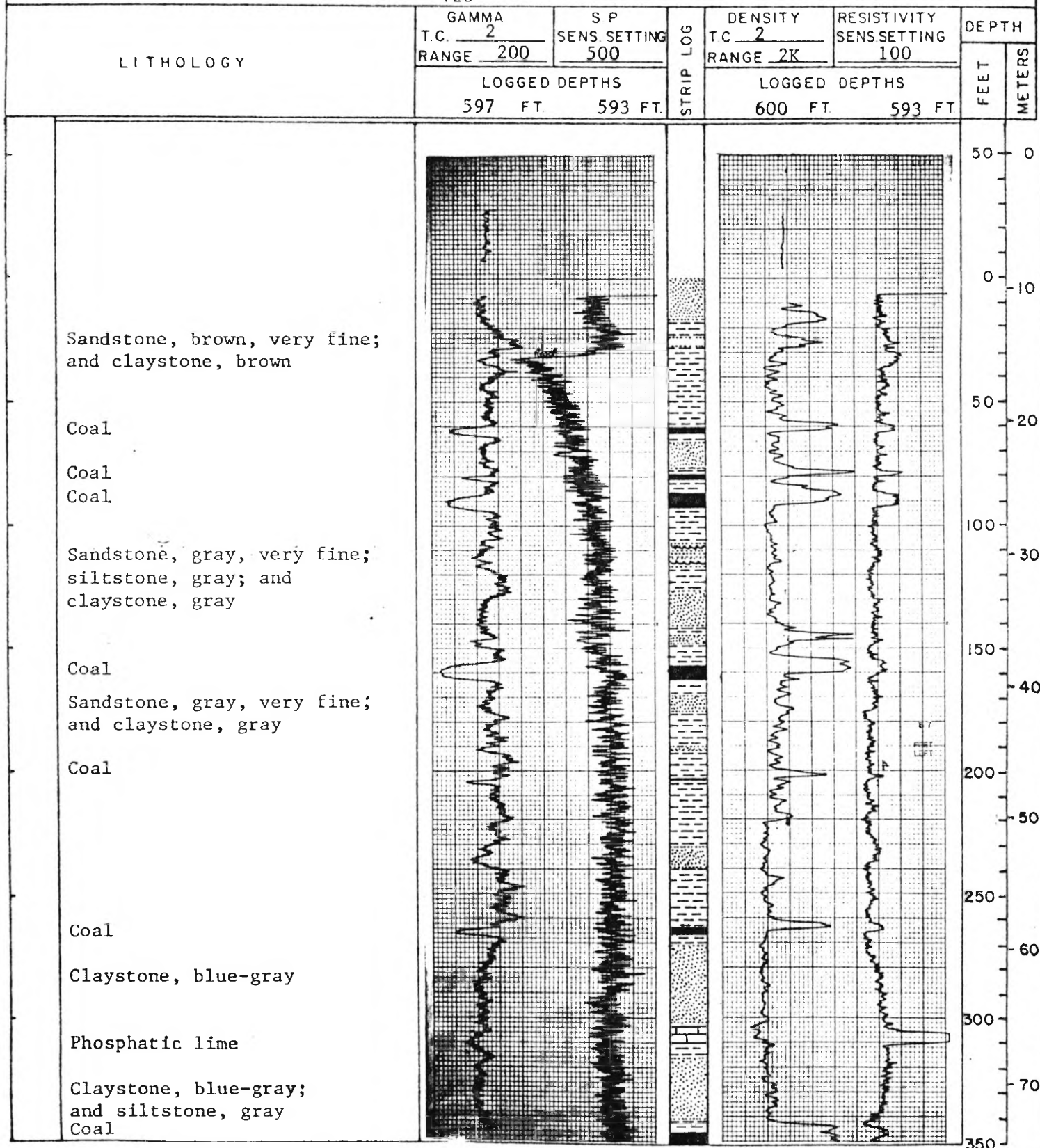


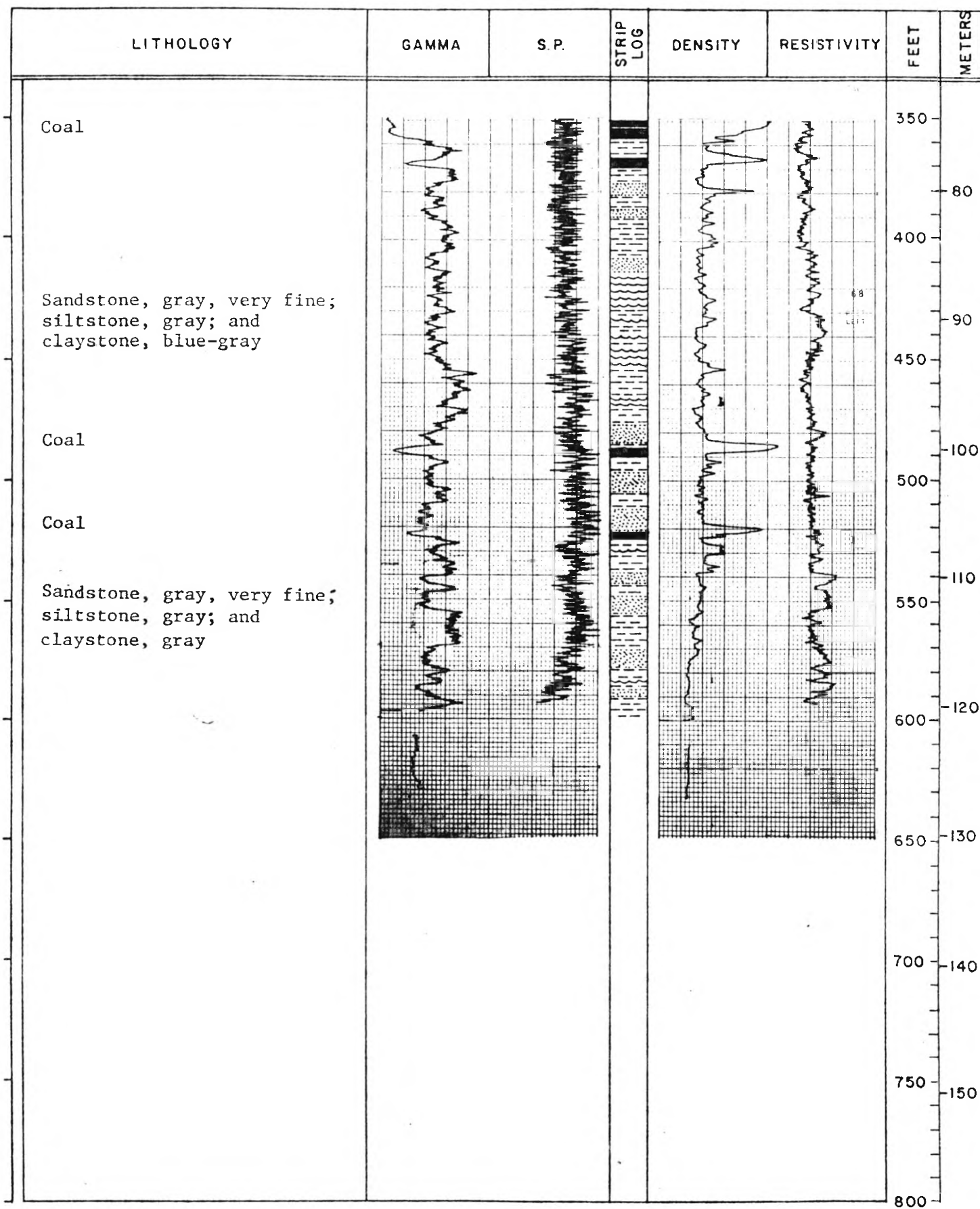


LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Claystone, blue-gray; and siltstone, gray						350	
						80	
						400	
Coal						90	
Claystone, blue-gray						450	
Coal						100	
						500	
Sandstone, gray, very fine; and claystone, blue-gray						110	
						550	
						120	
Coal						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US=79131 Map: Bone Trail SW Date: 8/14/79 State: North Dakota County: Williams
 Elev.: 2401 FT Location: T 156^N R 103^W, Sec 35 Tract BBBB Drilled depth 600 FT
 Measured: 10 FT ^{FNL} ~~KXX~~ 12 FT ^{KXX} ~~FWL~~ FT. Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

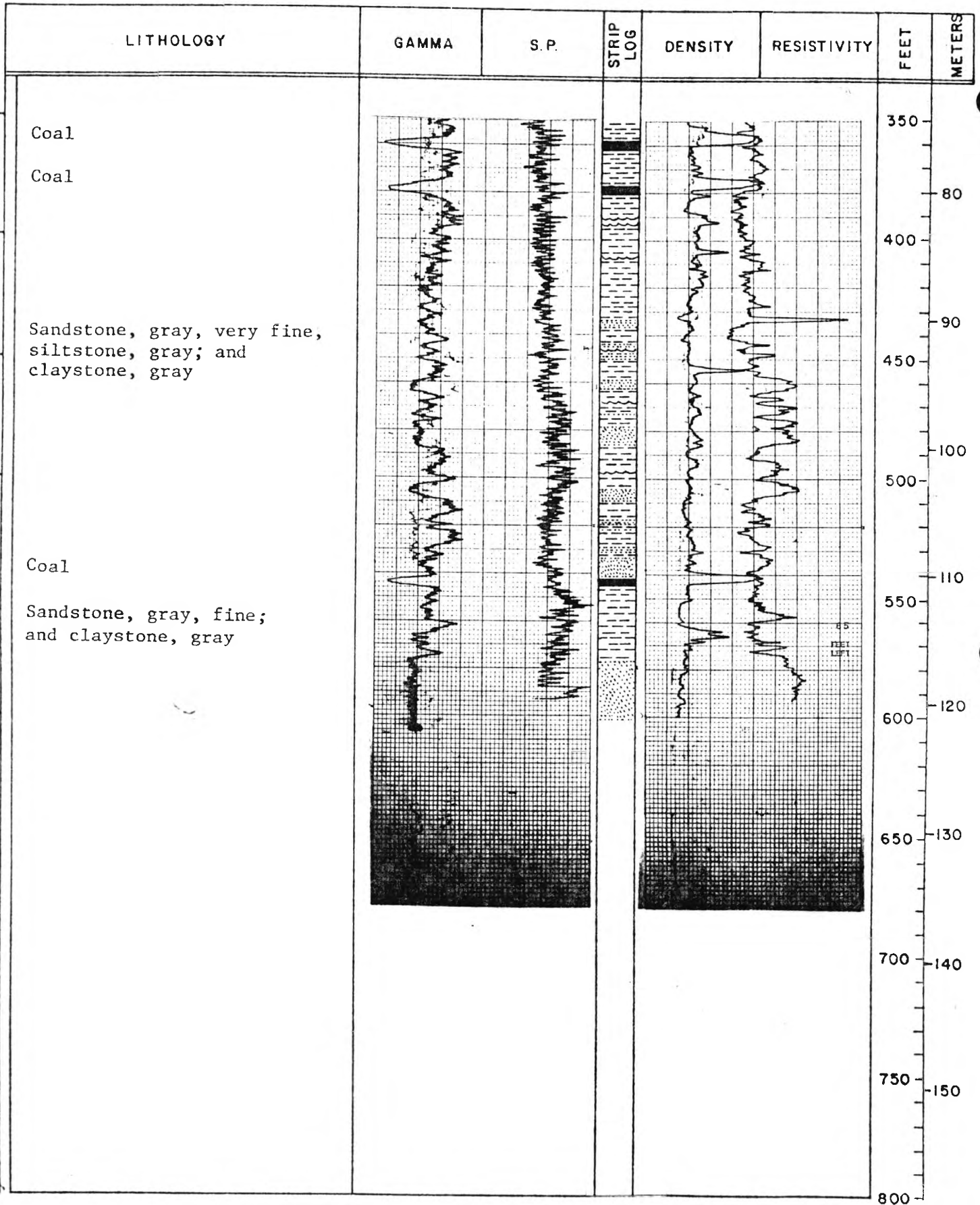
RECORDED BY CHRIS MURPHY GEOLOGIST ~~XNO~~ YES RECORDED BY CHRIS MURPHY RECORDING SPEED 20 FT. MIN.



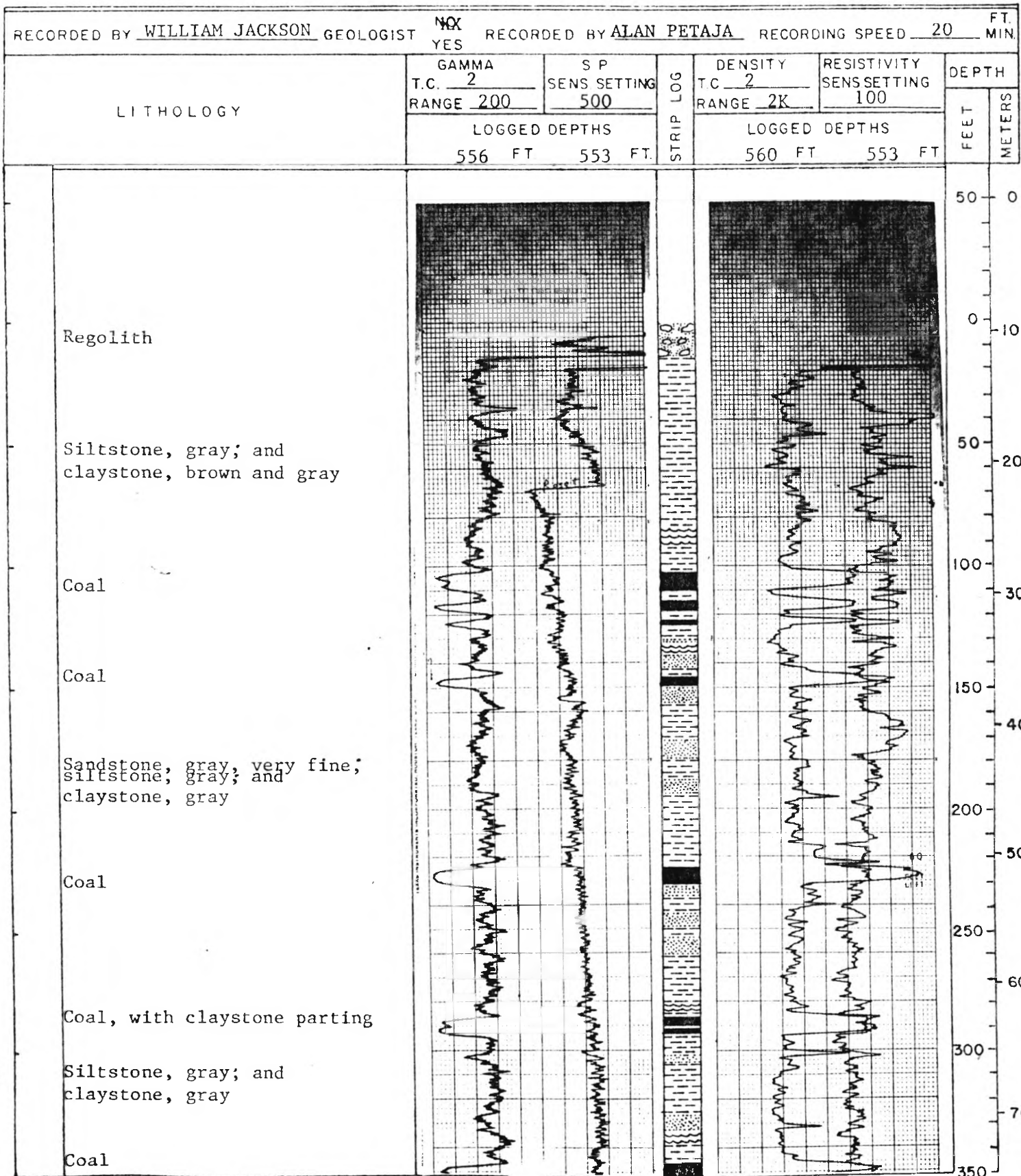


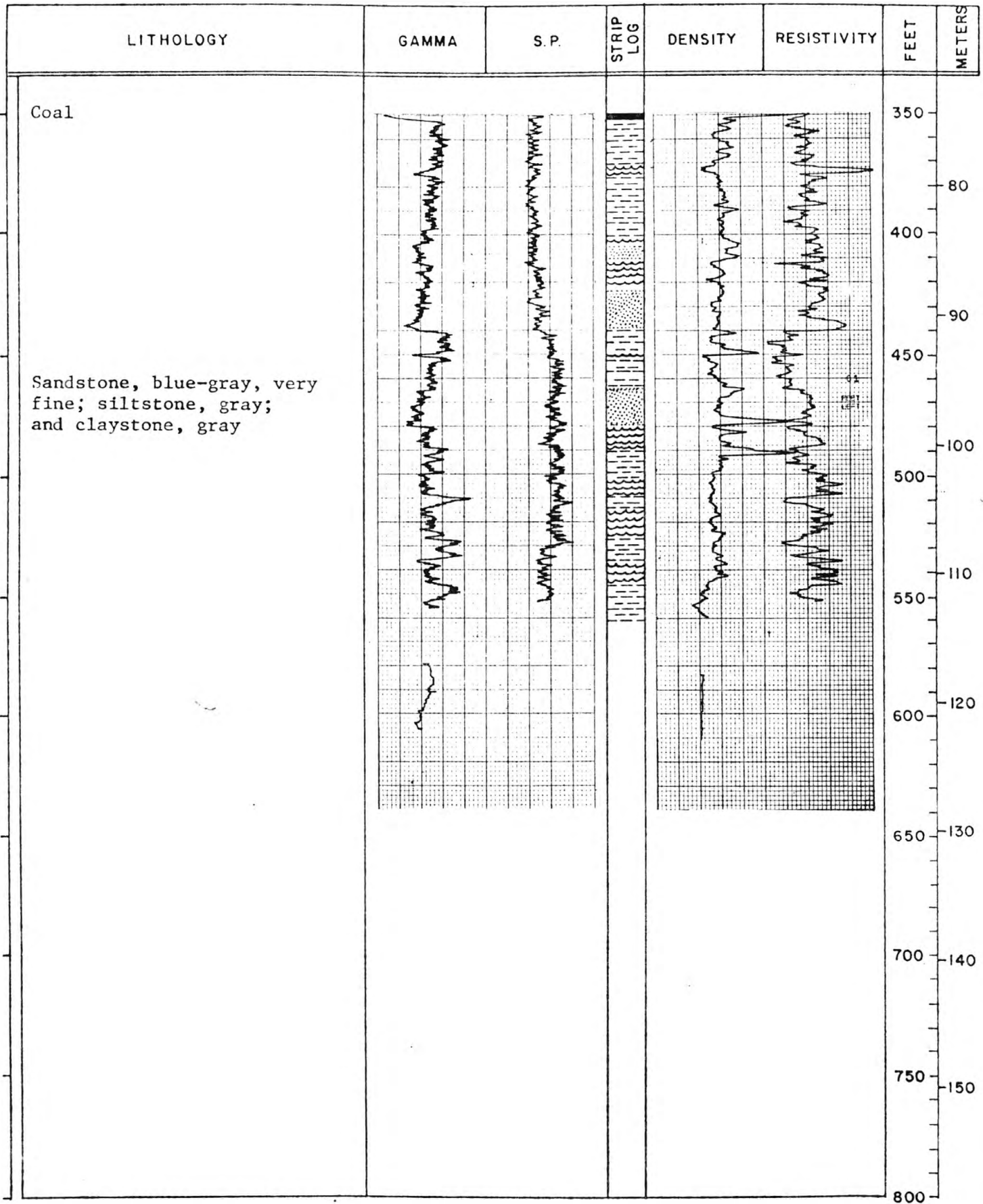
Hole No: US-79132 Map: Bone Trail SE Date: 8/15/79 State North Dakota County: Williams
 Elev.: 2361 FT Location: T 155^N R 103^W, Sec 12 Tract DDDD Drilled depth 600 FT
 Measured: 10 FT FSL 100 FT FSL FW FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <u>XNO</u> YES		RECORDED BY <u>ALAN PETAJA</u> RECORDING SPEED _____ FT. MIN.				
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	SP SENS SETTING <u>500</u>	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>100</u>	DEPTH	
	LOGGED DEPTHS 596 FT 593 FT		LOGGED DEPTHS 600 FT 593 FT		FEET	METERS
Regolith; some brown clay					50	0
					0	10
Claystone, gray					50	20
Coal					100	30
Coal					150	40
Sandstone, gray; and claystone, gray					200	50
Coal					250	60
Limestone					300	70
Claystone, gray					350	70
Coal					400	80
Claystone, gray; and sandstone, gray, fine					450	80
Coal					500	90
Claystone, gray; and sandstone, gray, very fine					550	90
					600	100

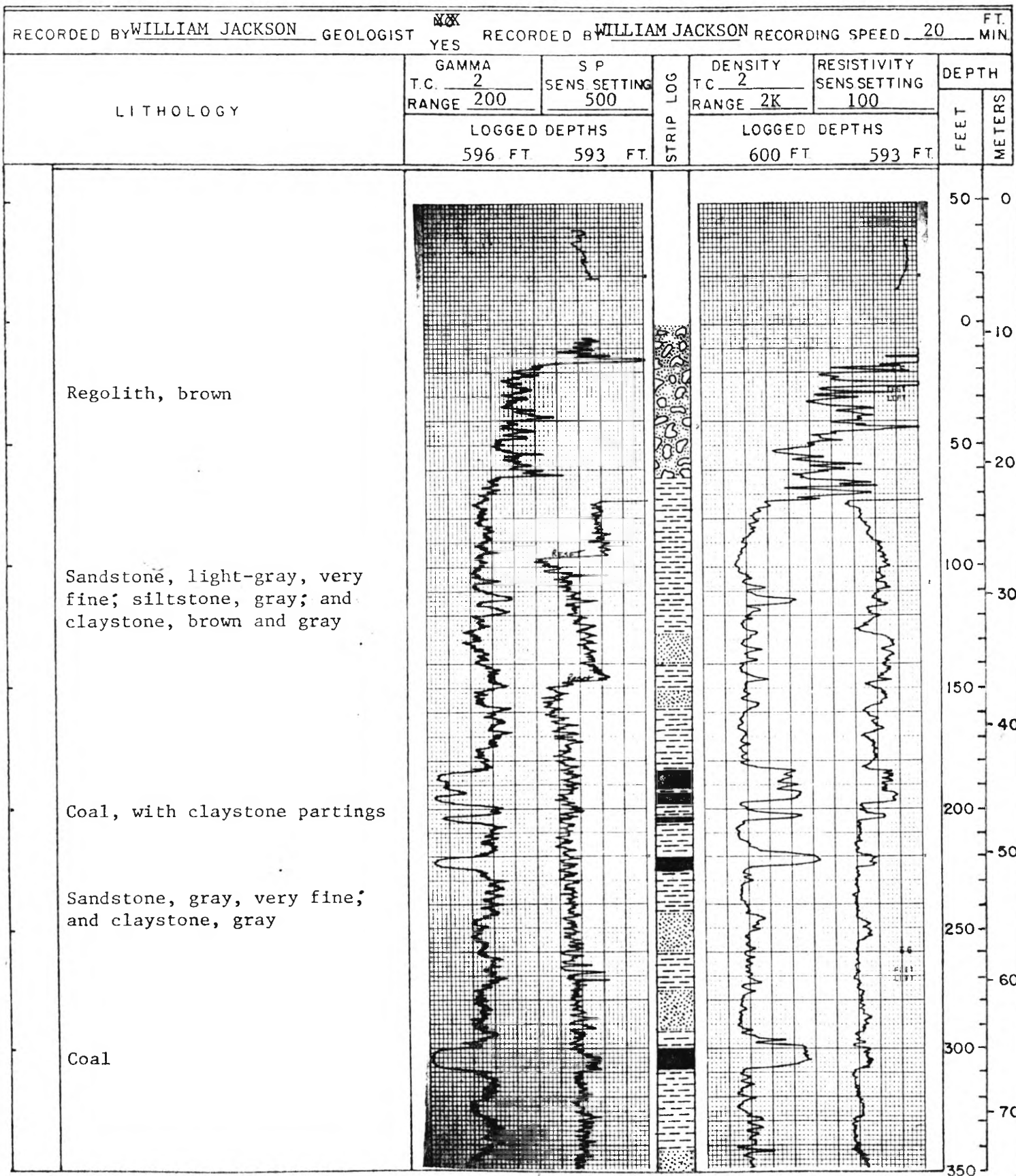


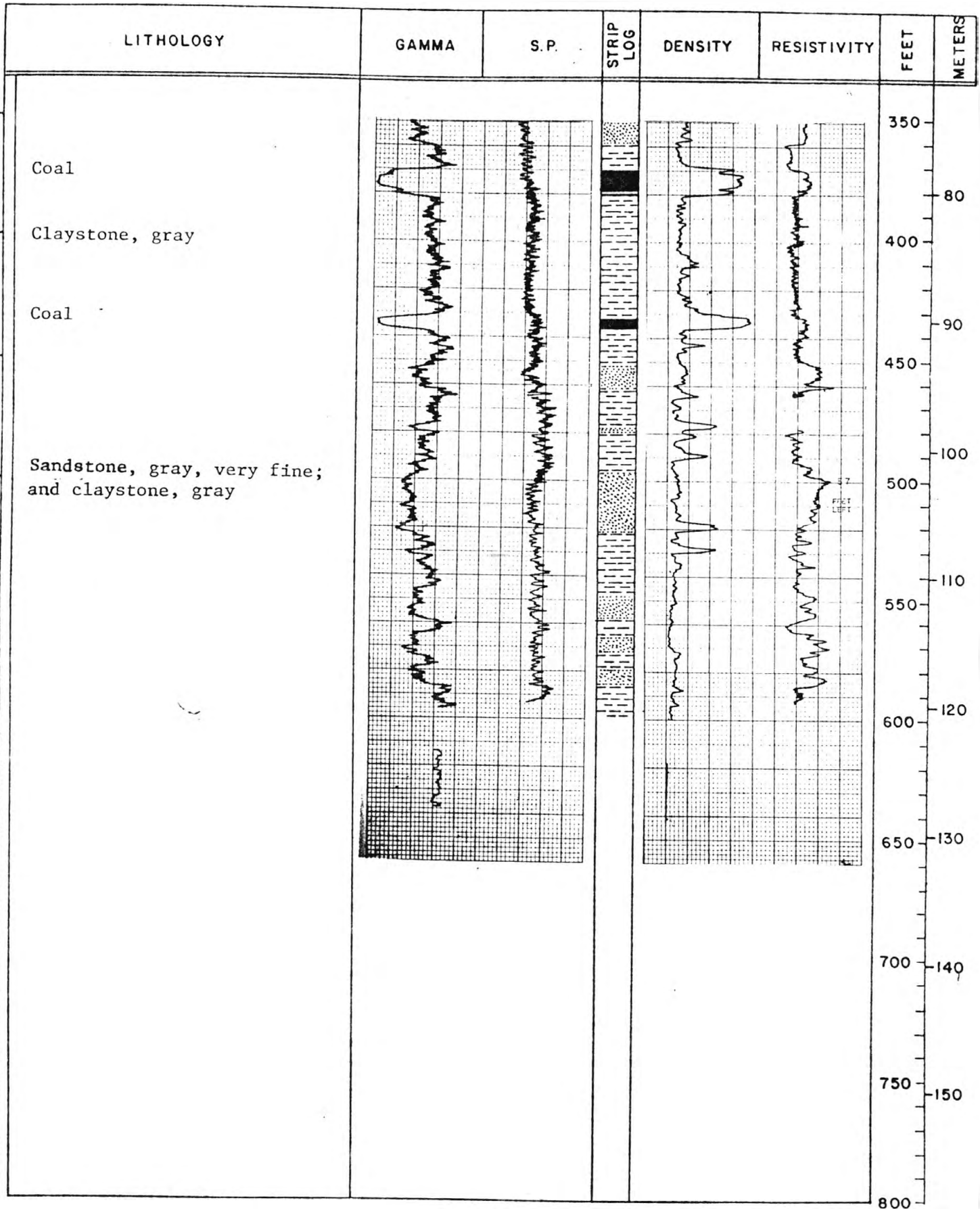
Hole No: US-79133 Map: Bone Trail SE Date: 8/15/79 State: North Dakota County: Williams
 Elev: 2340 FT Location: T 155^N R 102^R, Sec 2 Tract CCCC Drilled depth 560 FT
 Measured: 10 FT FNL 12 FT FEL FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____



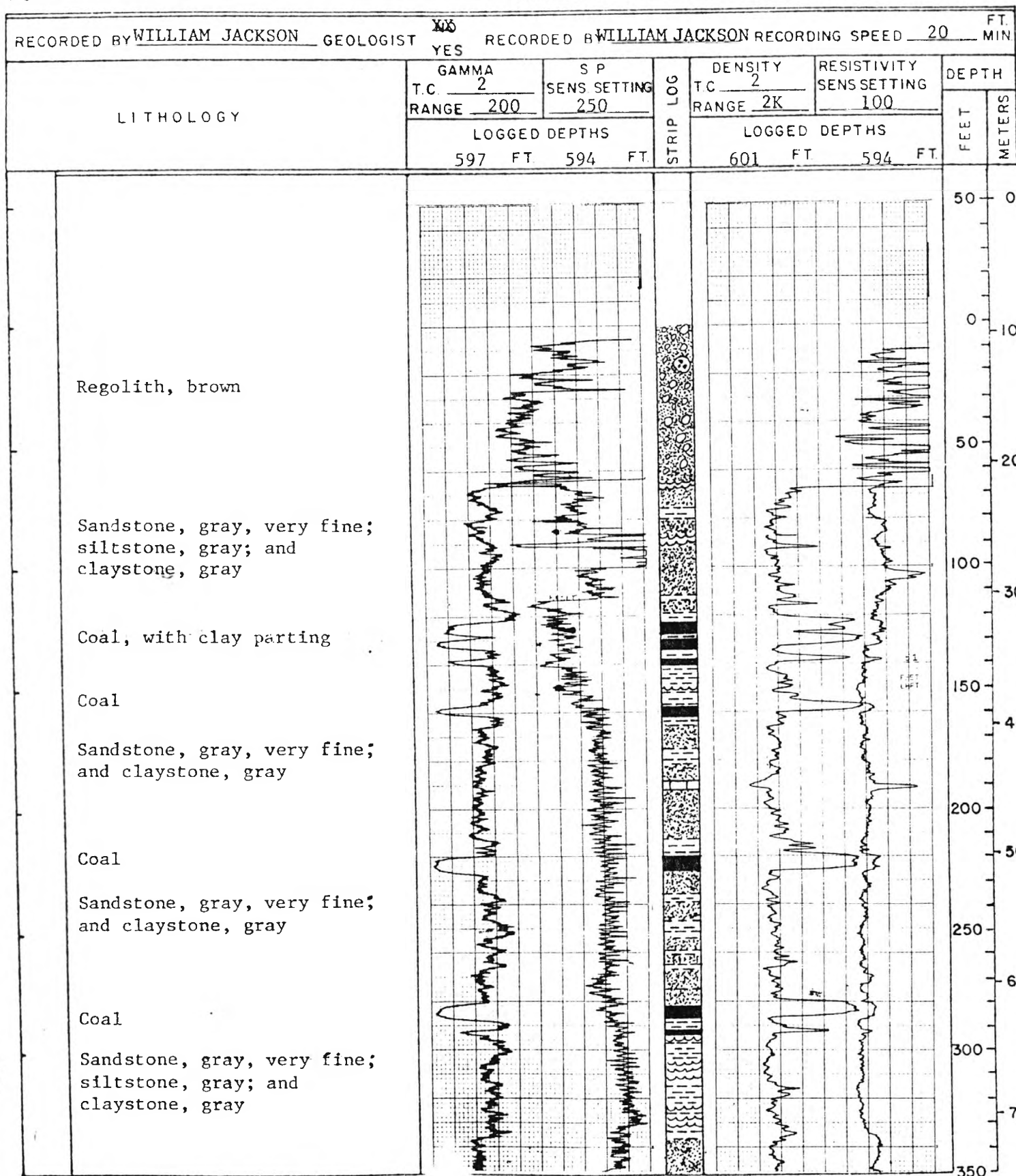


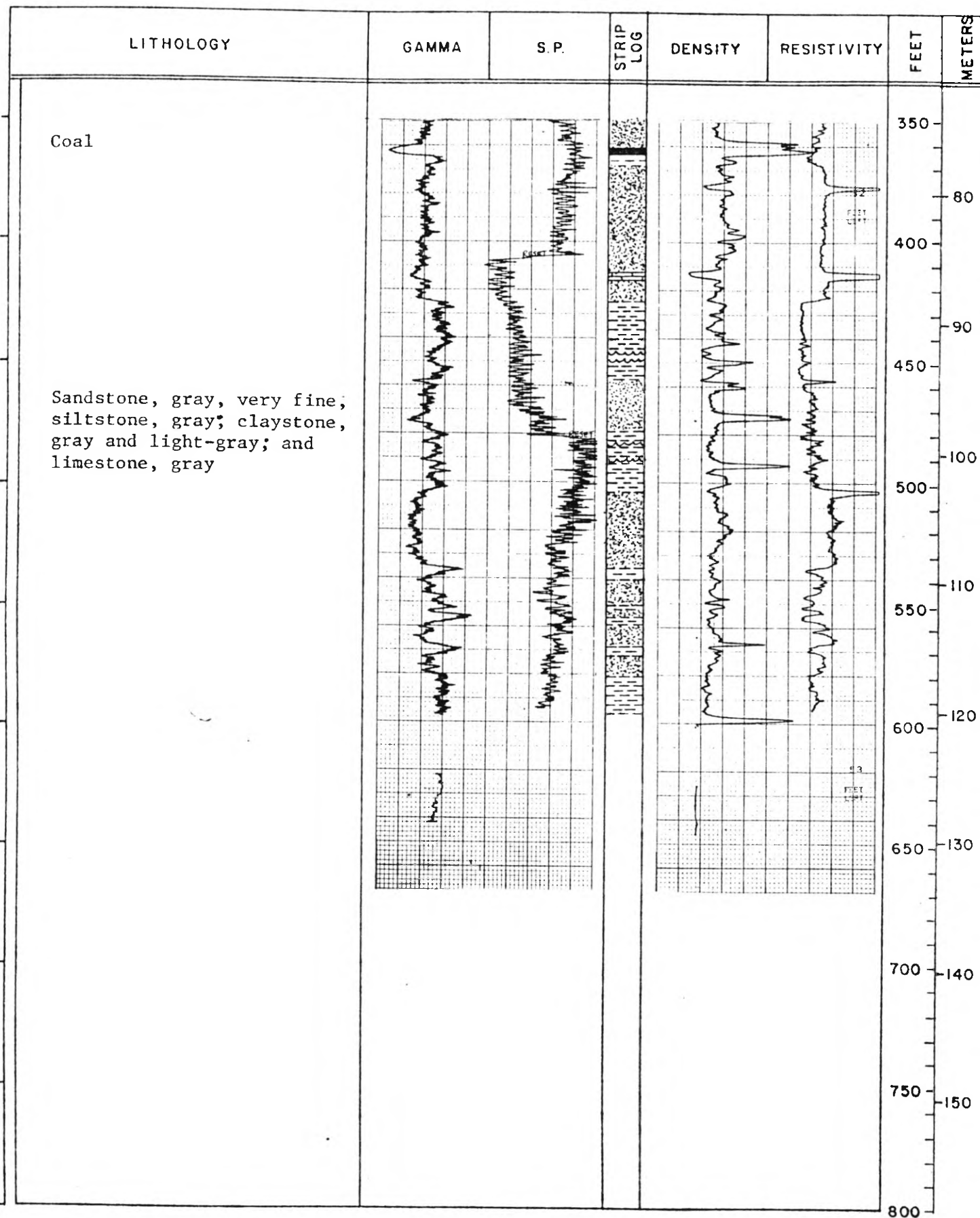
Hole No: US-79134 Map: Otter Tail Creek Date: 8/16/79 State: North Dakota County: Williams
 Elev.: 2315 FT Location: T 155^N R 101^E W, Sec 7 Tract DDDD Drilled depth 600 FT
 Measured: 117 FT ~~FXX~~ 28 FT ~~FEL~~ KWX FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____





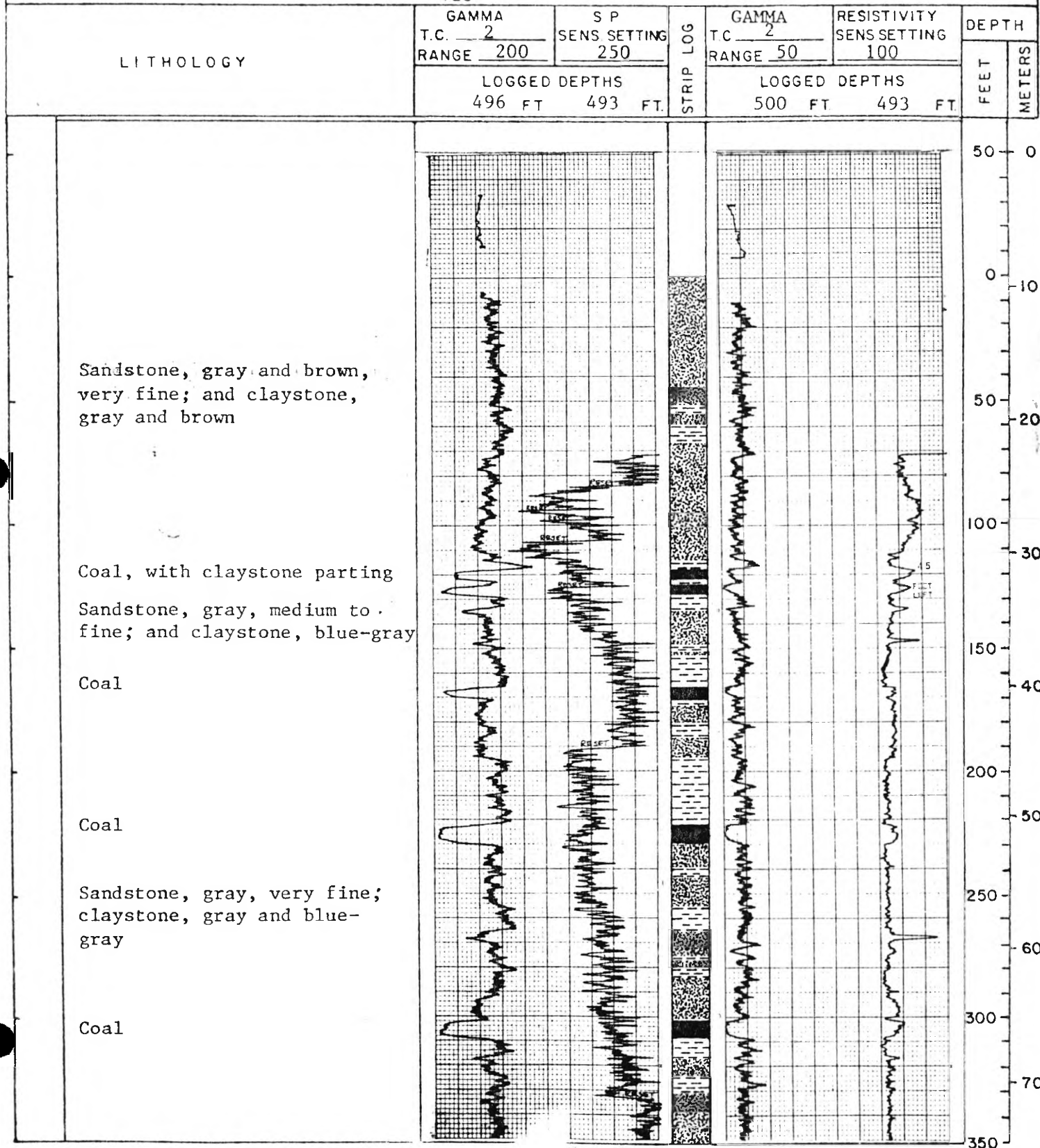
Hole No: US-79135 Map: Otter Tail Creek Date: 8/21/79 State: North Dakota County: Williams
 Elev.: 2292 FT Location: T 156^N R 101^W, Sec 31 Tract CCCC Drilled depth 600 FT
 Measured: 54 FT ^{FNL} 172 FT ^{XXX} FWL FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks:

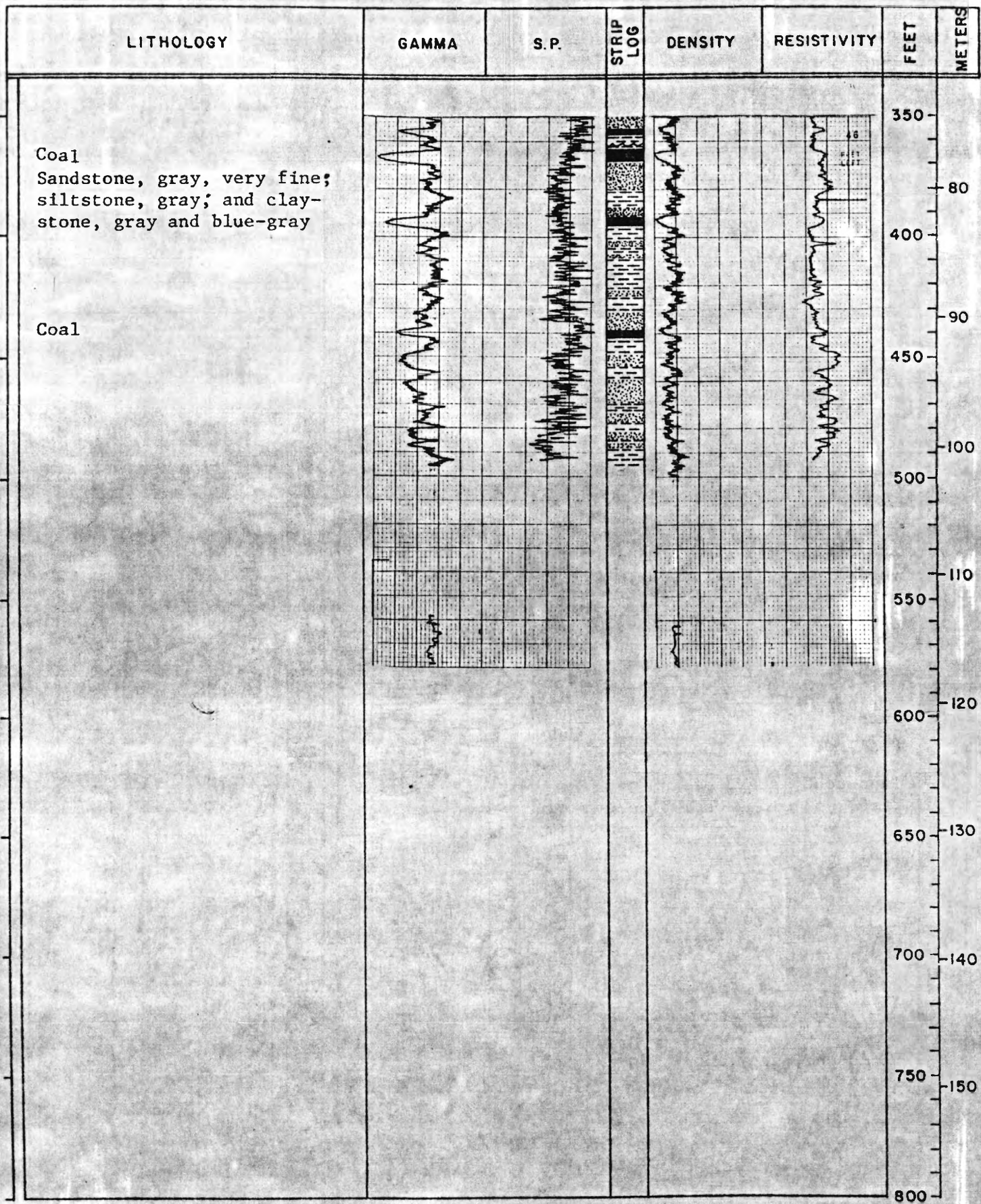




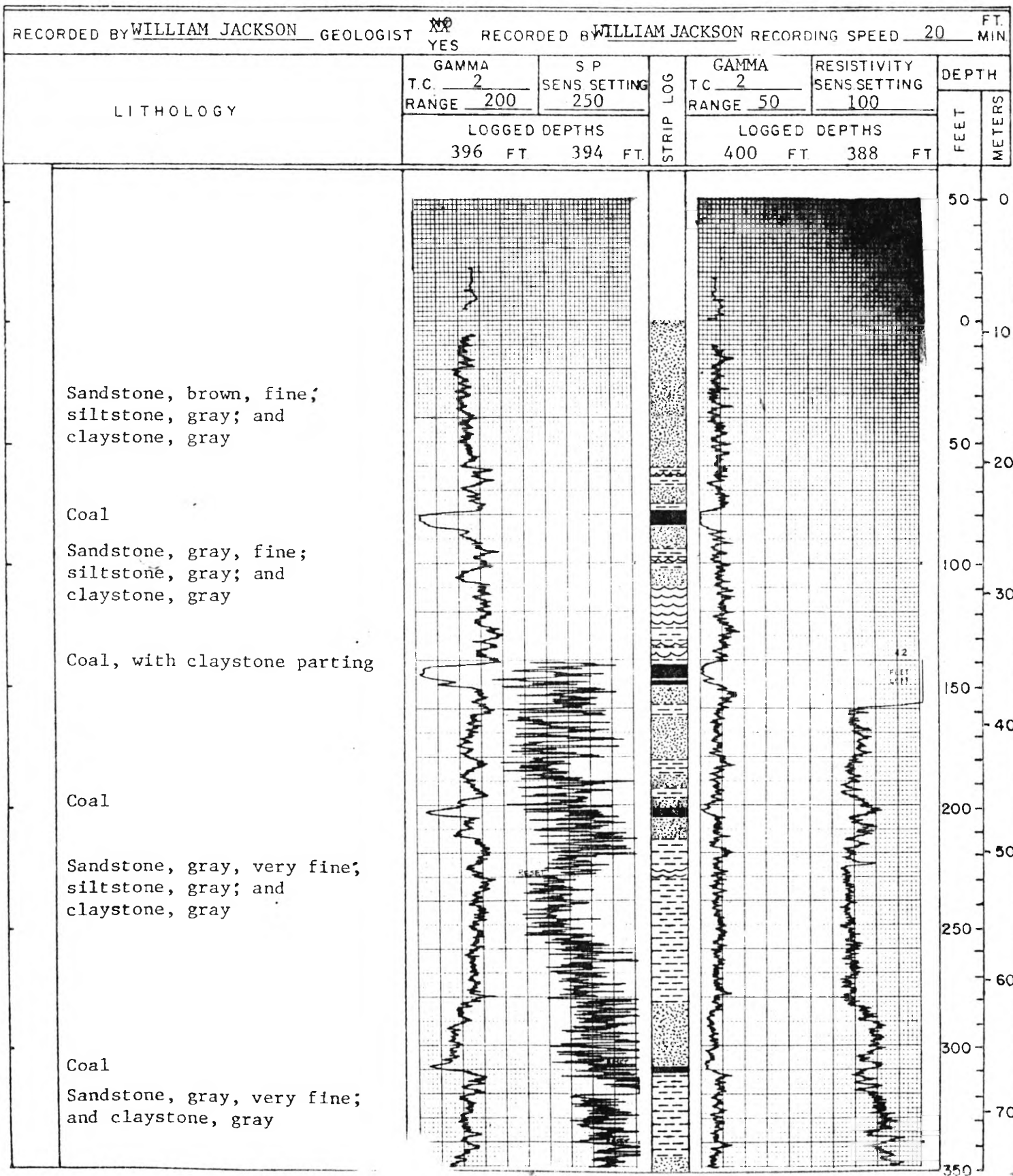
Hole No: US-79136 Map: Bone Traille SW Date: 8/22/79 State: North Dakota County: Williams
 Elev.: 2308 FT Location: T 156^N R 102^W, Sec 14 Tract CCCC Drilled depth 500 FT
 Measured: 155 FT ~~FSL~~ ^{RXX} 10 FT ~~FWL~~ ^{RXX} FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Denisty ran without source, logged through pipe.

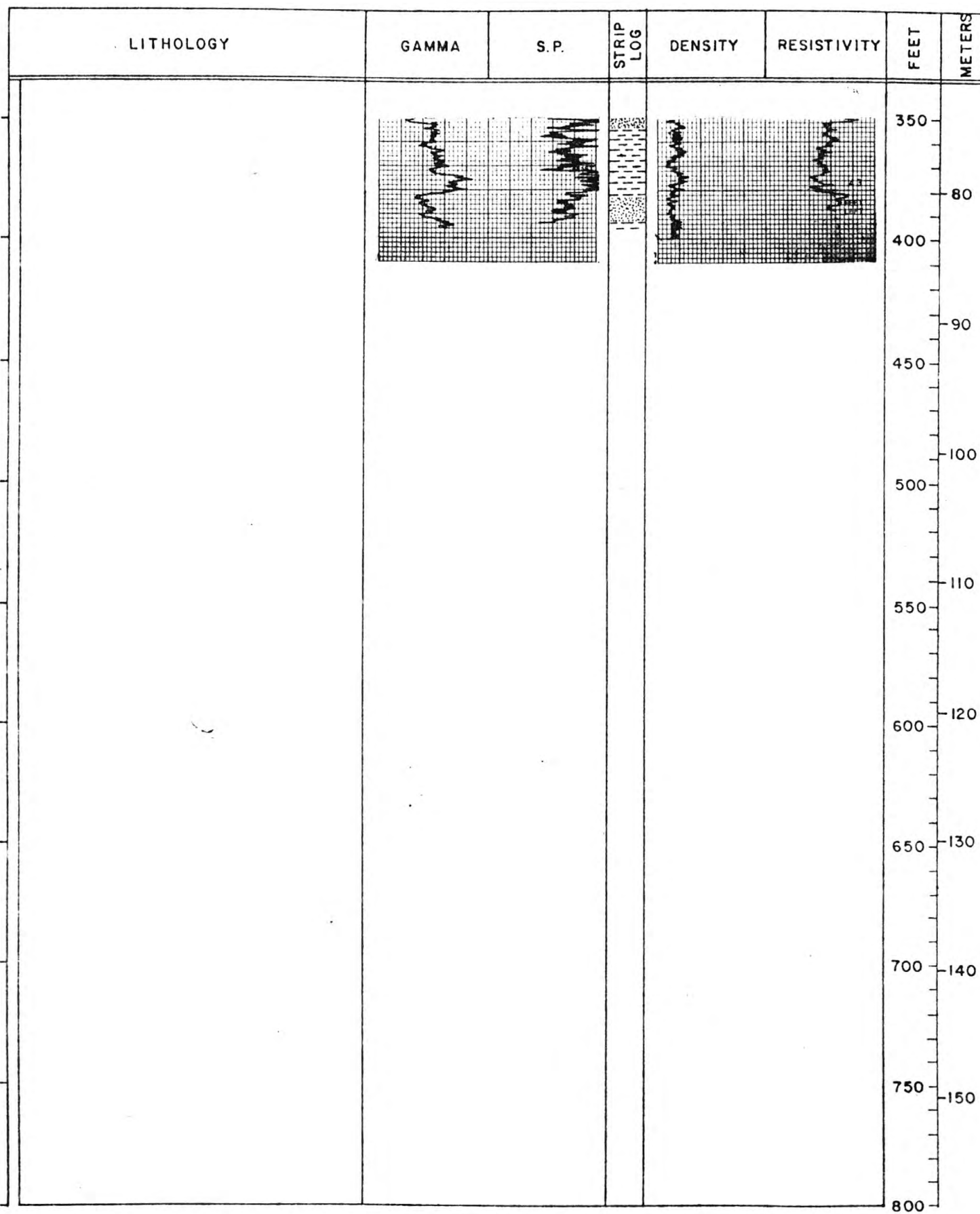
RECORDED BY WILLIAM JACKSON GEOLOGIST ~~NR~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN





Hole No: US-79137 Map: Otter Tail Creek Date: 8/23/79 State: North Dakota County: Williams
 Elev.: 2054 FT Location: T156^N R101^W, Sec 23 Tract DDDD Drilled depth 400 FT
 Measured: 10 FT RXX FSL 215 FT FEL FW FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____



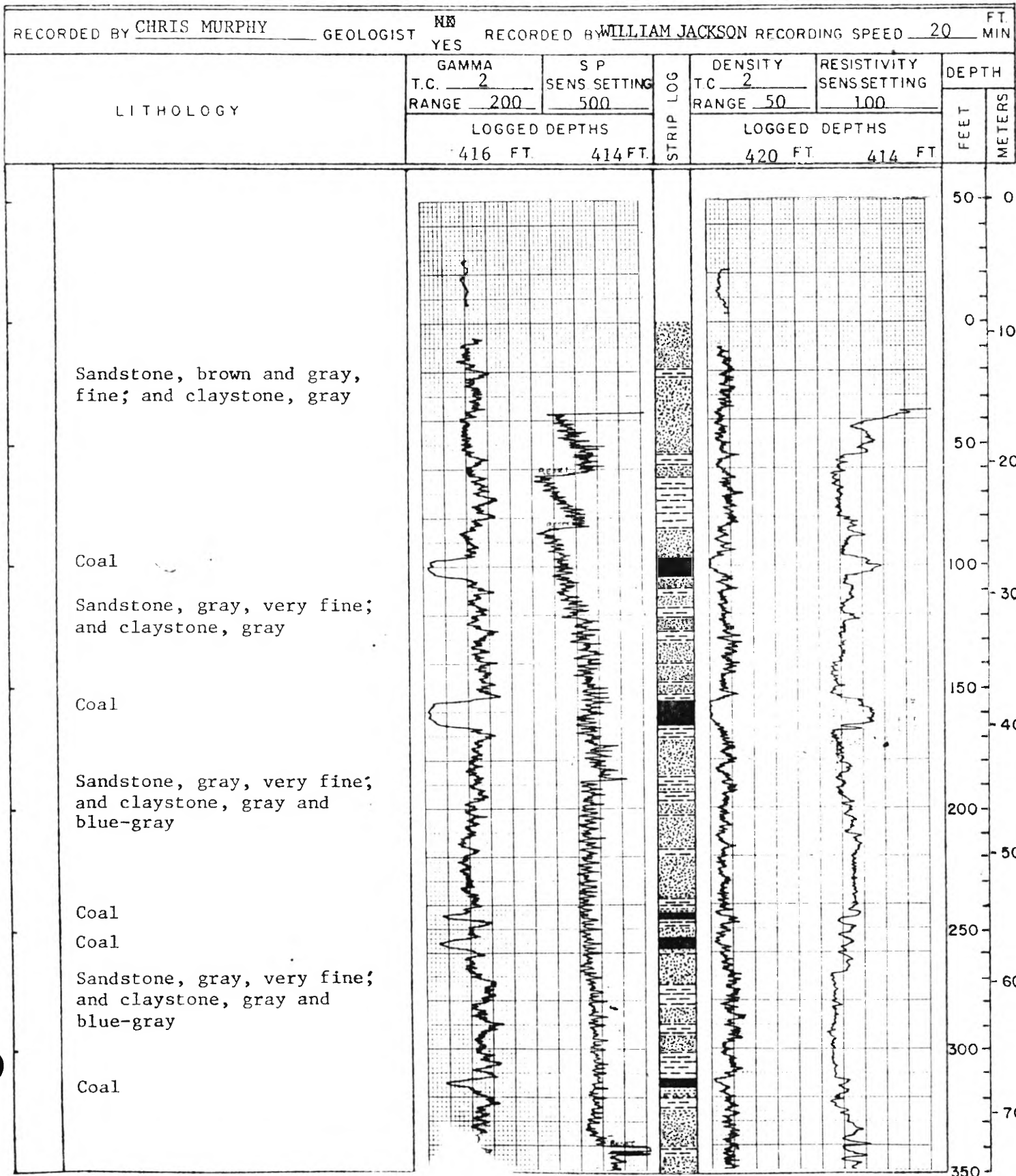


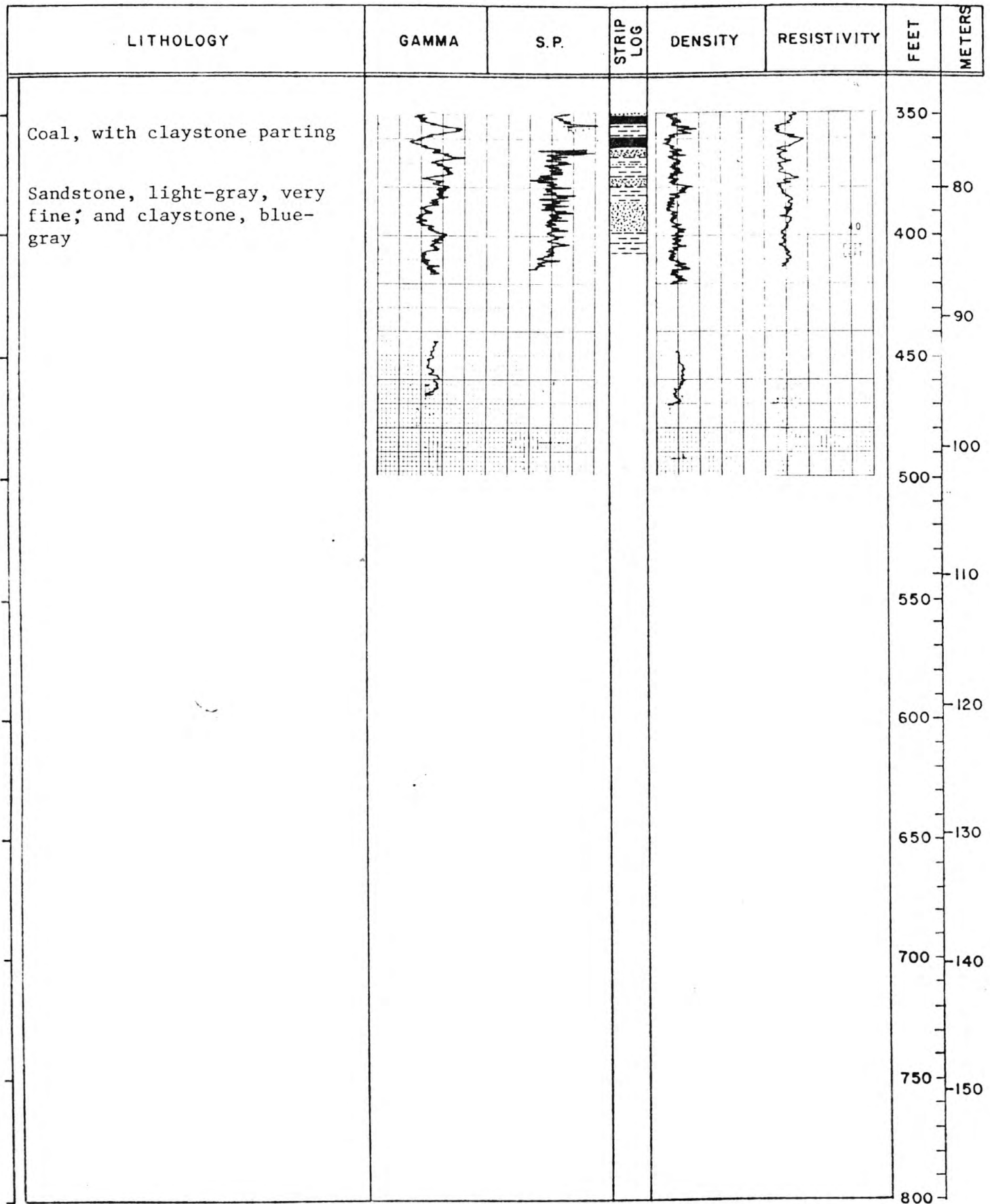
Hole No: US-79138 Map: Marmon SE Date: 8/23/79 State: North Dakota County: Williams
 Elev.: 2170 FT Location: T 156 ^N R 100 ^W, Sec 34 Tract DCCC Drilled depth 350 FT
 Measured: 300 FT ~~FSL~~ 1600 FT ~~FSL~~ FT. Hole size: 5 1/8 IN. Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Hole cave-in, no log taken.

RECORDED BY <u>CHRIS MURPHY</u> GEOLOGIST <u>XNO</u> YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED _____ FT. MIN.			
LITHOLOGY	GAMMA	S P	DENSITY	RESISTIVITY	DEPTH
	T.C. _____	SENS. SETTING	T.C. _____	SENS. SETTING	
	RANGE _____		RANGE _____		
	LOGGED DEPTHS		LOGGED DEPTHS		
	FT.	FT.	FT.	FT.	FEET
Sandstone, brown, fine to coarse; and claystone, brown Coal Sandstone, gray, fine; and gravel Coal Claystone, gray Coal Claystone, gray Coal Claystone, gray Coal Claystone, gray Coal Claystone, gray					50 0 0 10 50 20 100 30 150 40 200 50 250 60 300 70 350

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

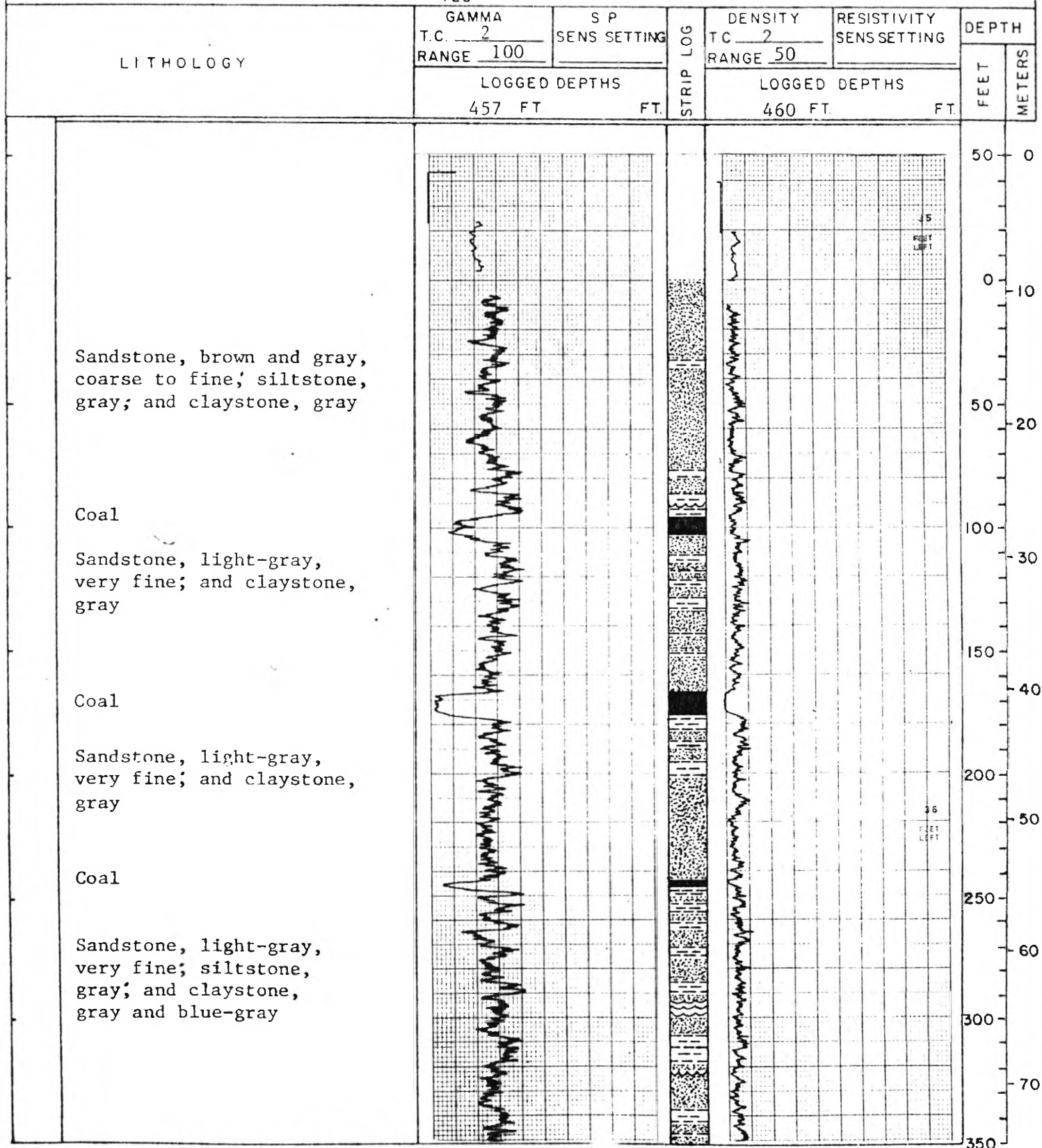
Hole No: US-79139 Map: Marmon SE Date: 8/23/79 State: North Dakota County: Williams
 Elev: 2095 FT Location: T156^N R100^W, Sec 15 Tract CBBB Drilled depth 420 FT
 Measured: 750 FT FSL 20 FT FWL XXX FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Density logged without source: logged through pipe.

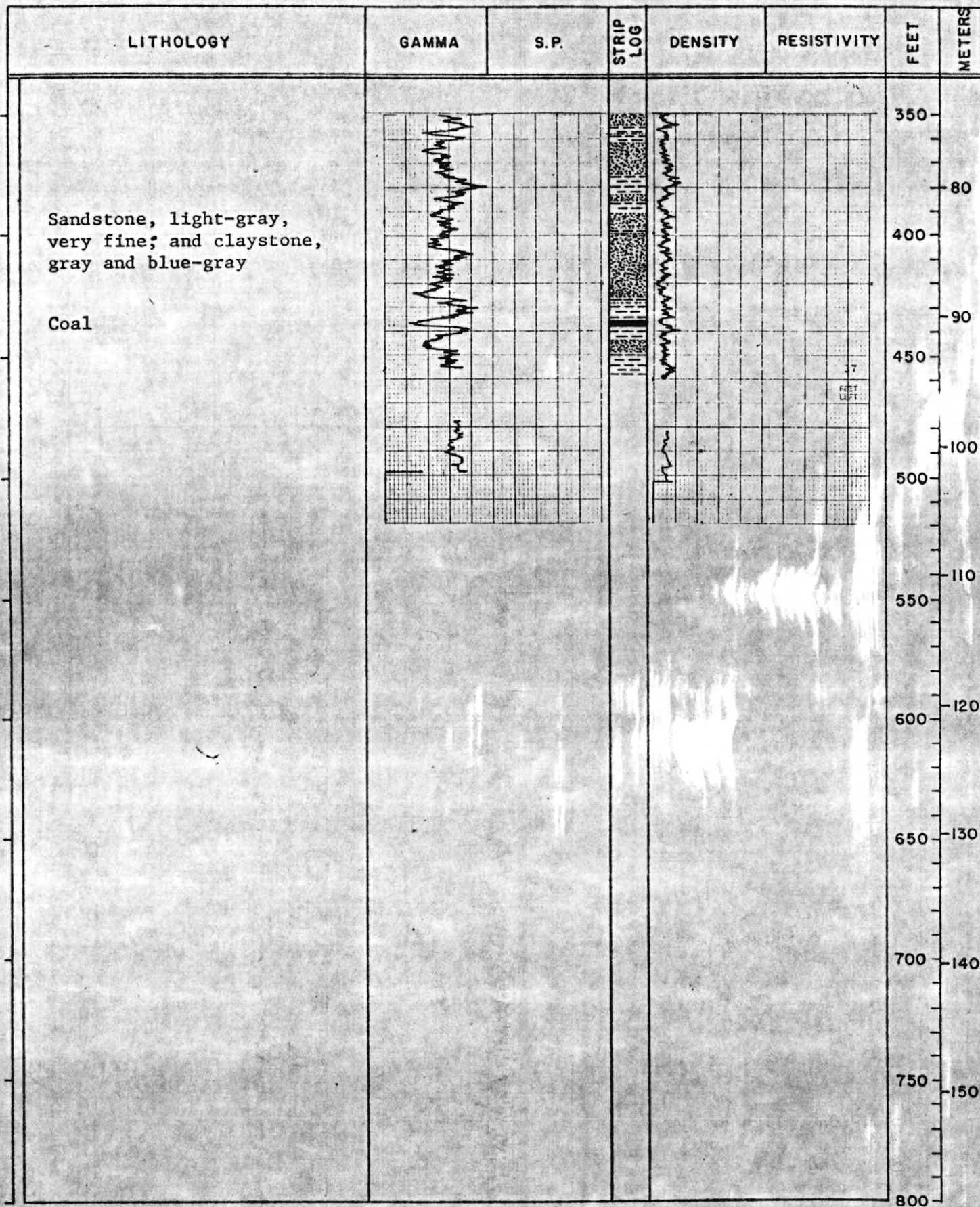




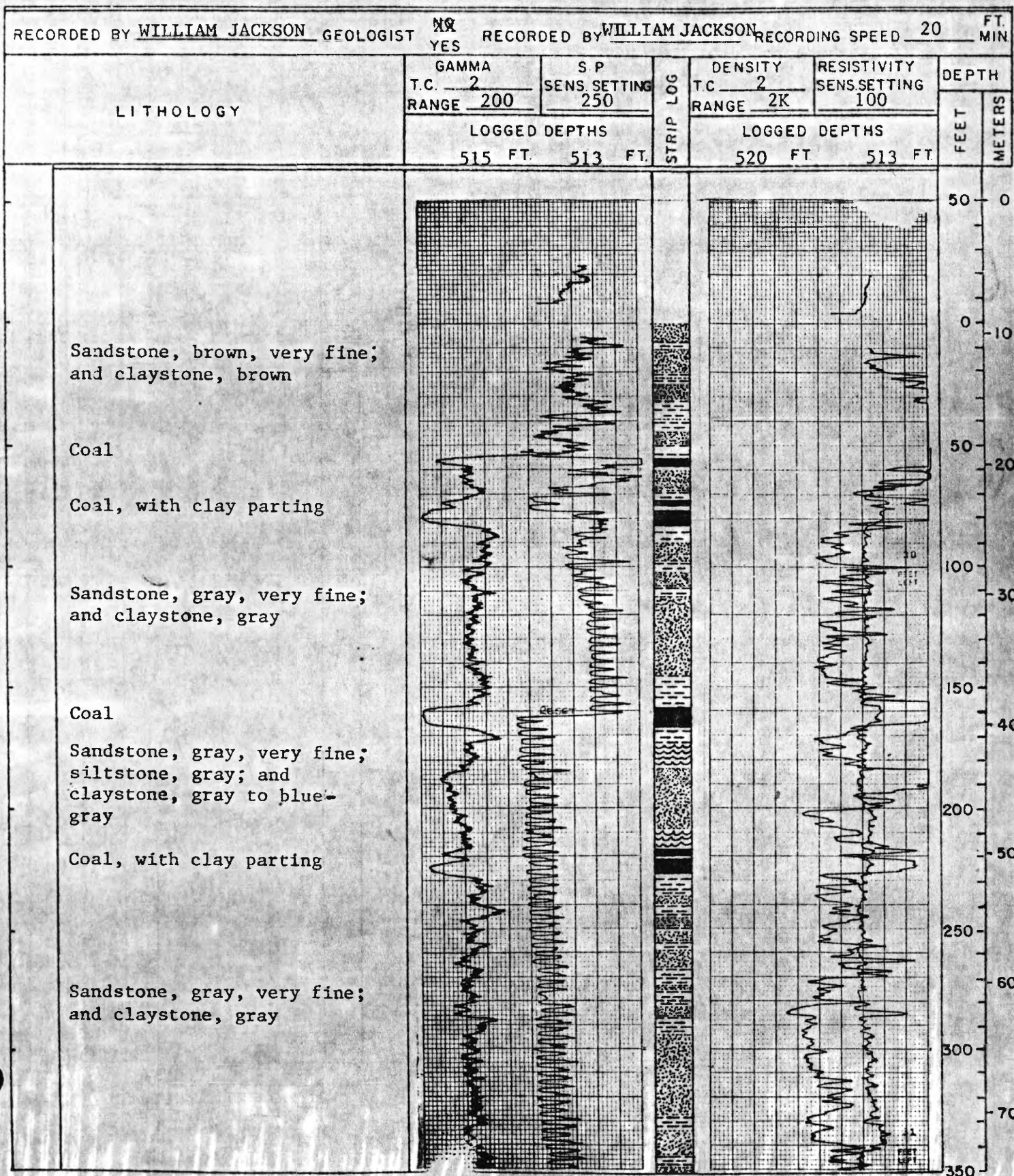
Hole No: US-79140 Map: Williston West Date: 8/24/79 State: North Dakota County: Williams
 Elev: 2144 FT Location: T 154^N R 101^W, Sec 5 Tract AAAA Drilled depth 460 FT
 Measured: 57 FT ^{FNL} 34 FT ^{FEL} XXX FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Density logged without source.

RECORDED BY CHRIS MURPHY GEOLOGIST ^{XXX} YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN

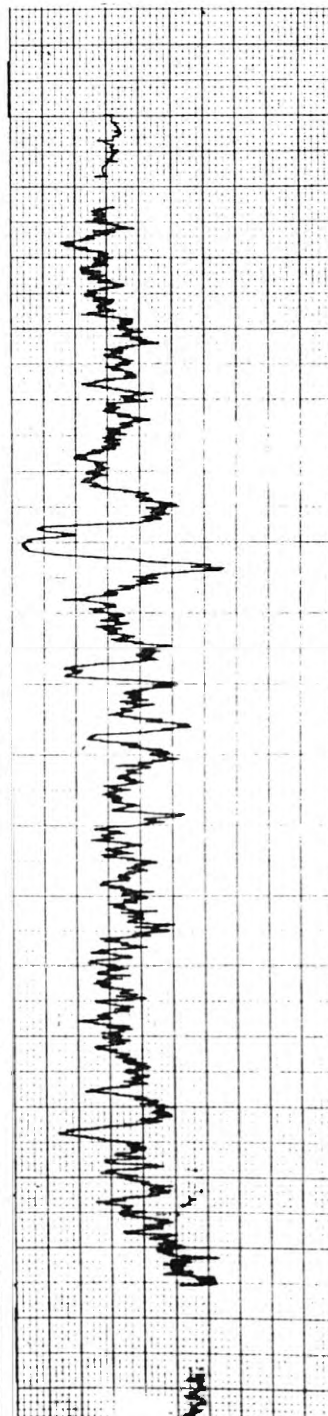

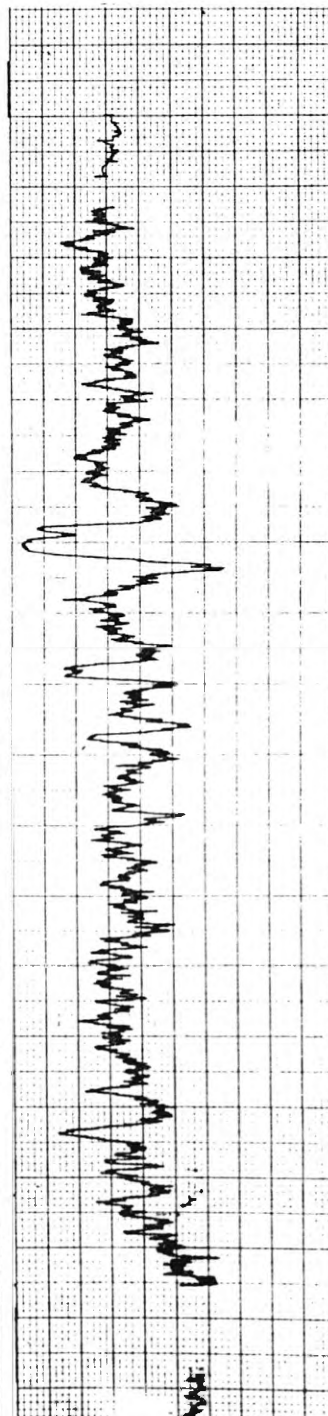

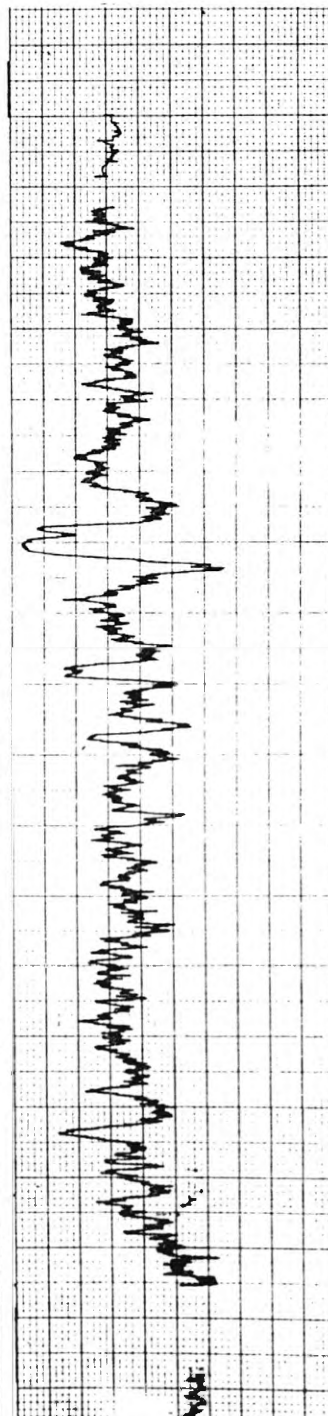

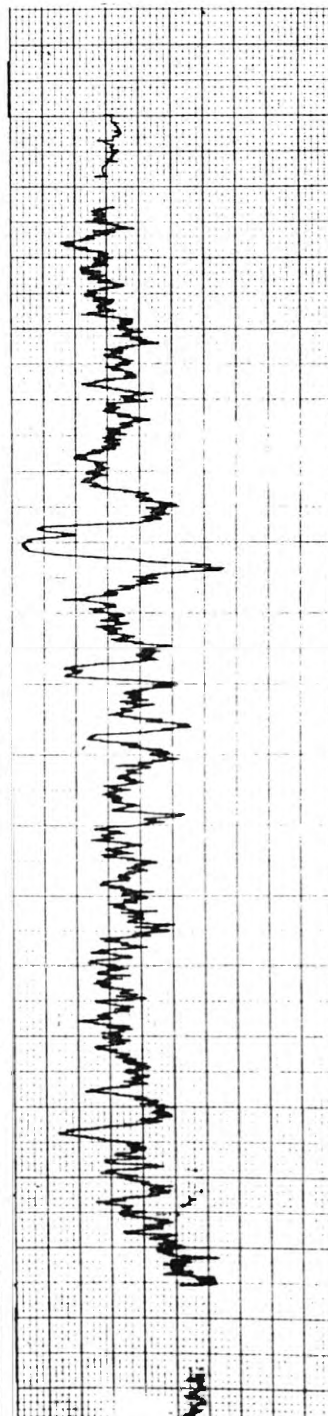

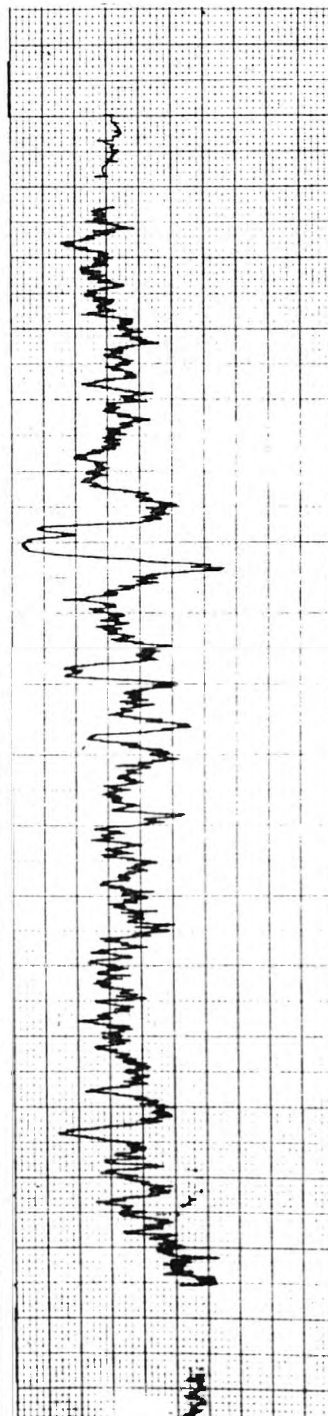

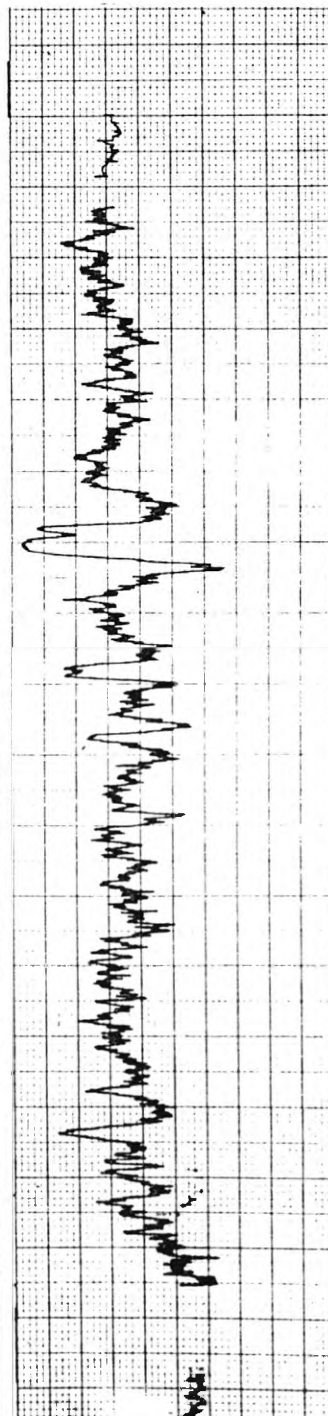





Hole No: US-79141 Map: Trenton NE Date: 8/26/79 State: North Dakota County: Williams
 Elev.: 2247 FT Location: T154^N R102^W, Sec 14 Tract BBBC Drilled depth 520 FT
 Measured: 200 FT FNL 10 FT KKX FWL FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____



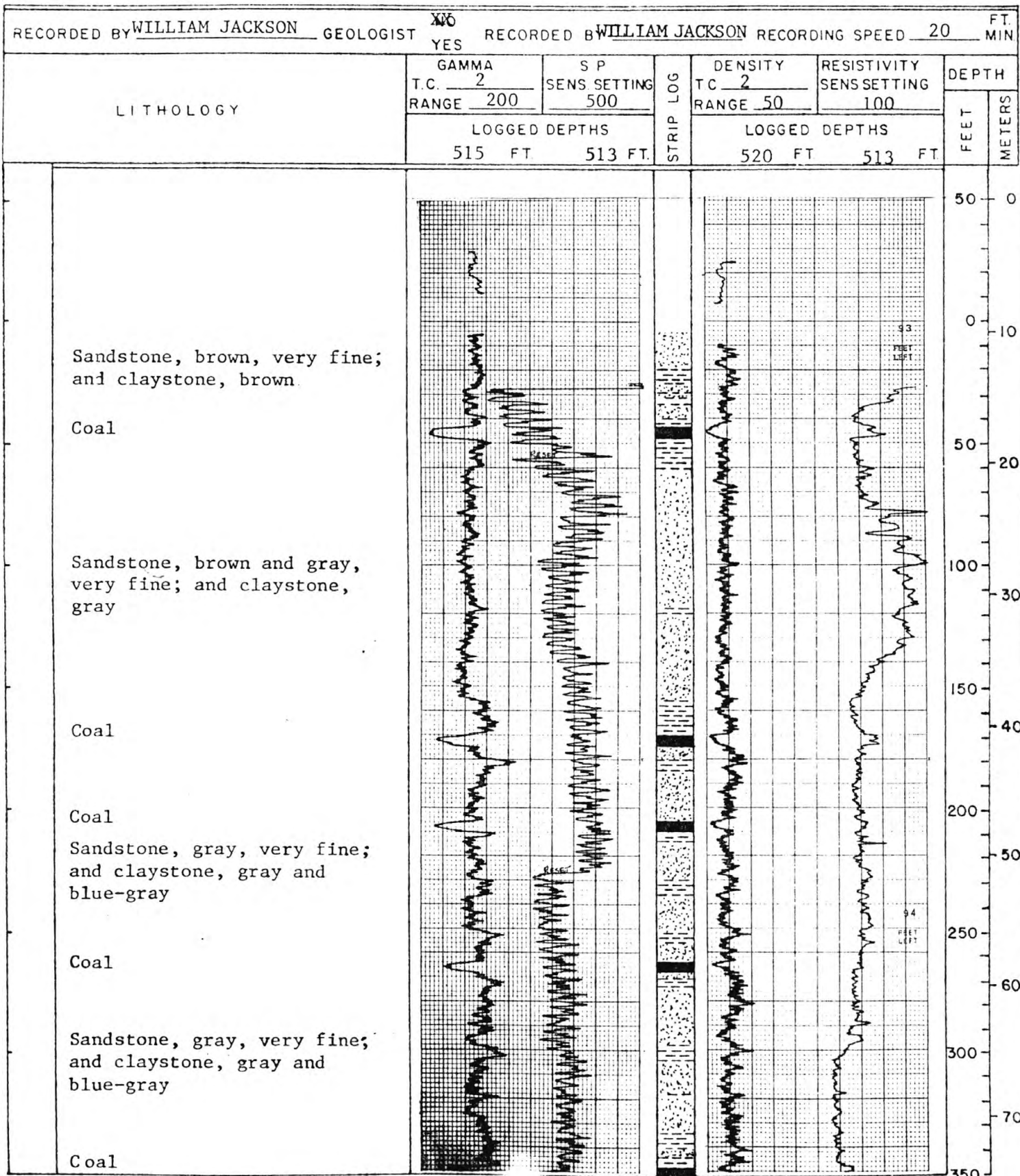
Hole No: US-79142 Map: Trenton NE Date: 8/26/79 State: North Dakota County: Williams
 Elev.: 2105 FT Location: T154^N R102^W, Sec 26 Tract DADD Drilled depth 320 FT
 Measured: 1760 FT ^{XXX} 10 FT ^{FEL} XXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Density logged without source, logged through pipe.

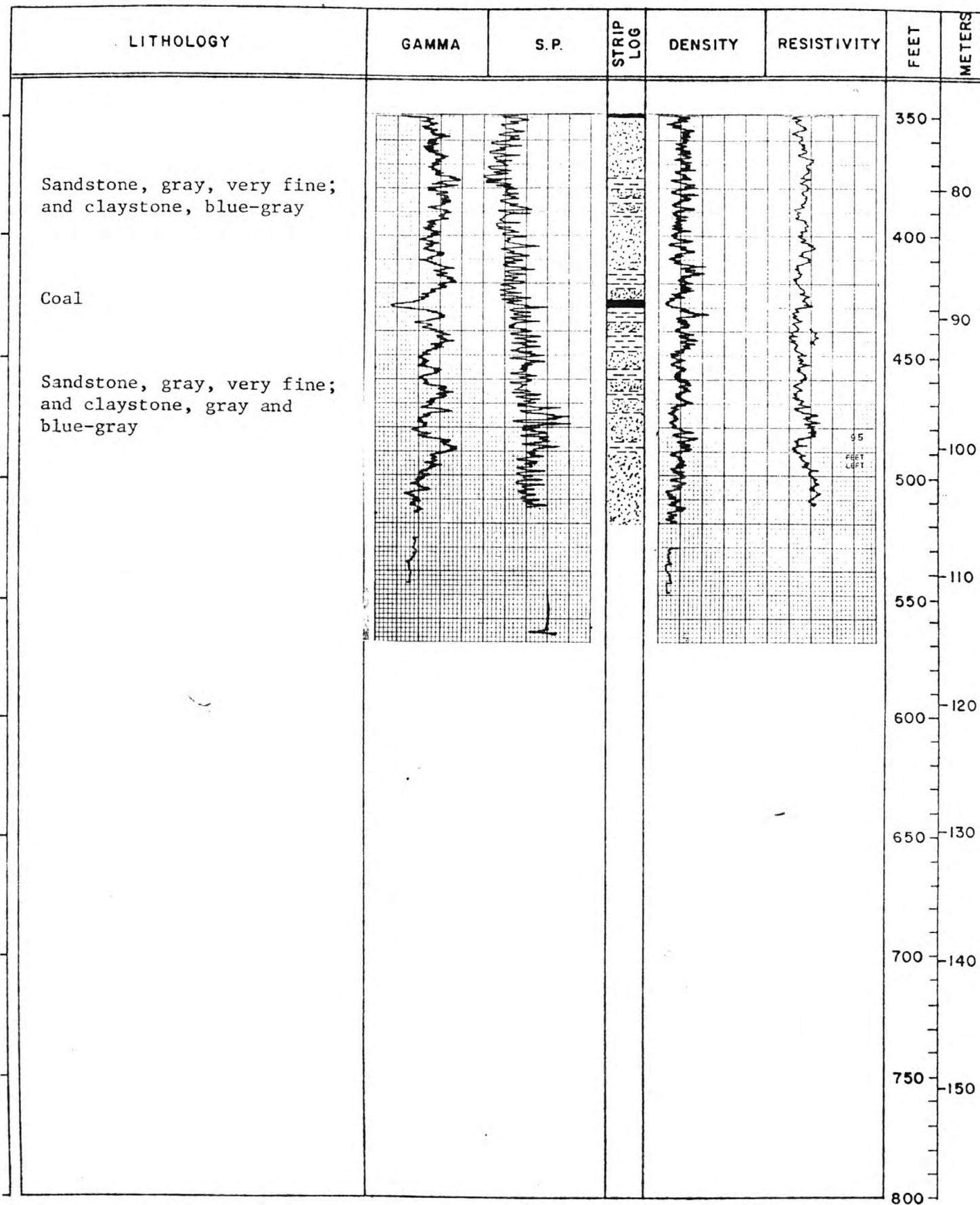
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{XXX} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING	DENSITY T.C. <u>2</u> RANGE <u>50</u>
	LOGGED DEPTHS 311 FT FT.		RESISTIVITY SENS SETTING
	LOGGED DEPTHS 315 FT FT.		
Sandstone, brown, fine; and claystone, gray			
Coal, with claystone parting Sandstone, gray, very fine; and claystone, gray			
Coal			
Sandstone, gray, very fine; and claystone, gray			
Coal			
Coal			

50 0
0 10
50 20
100 30
150 40
200 50
250 60
300 70
350

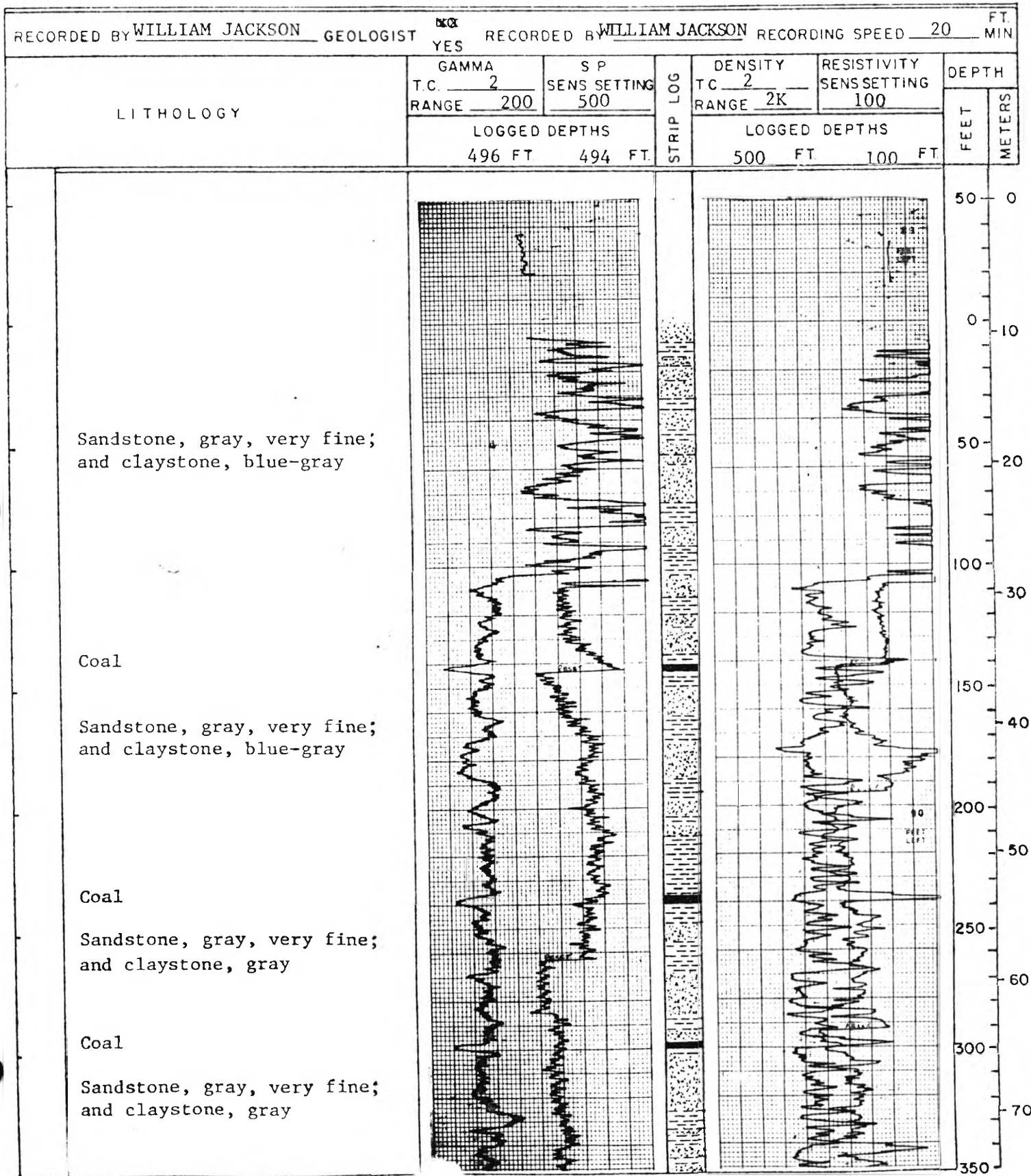
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

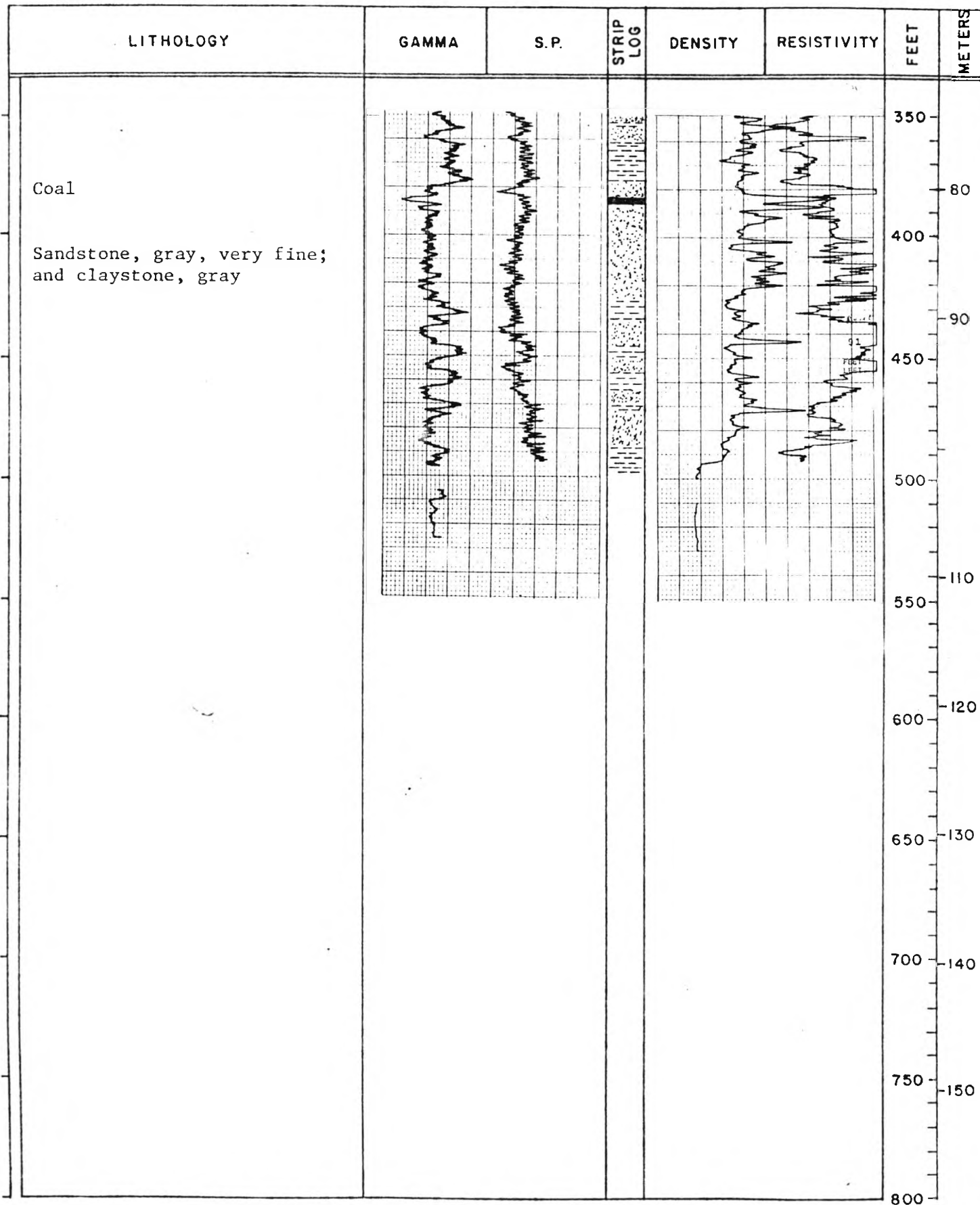
Hole No: US-79143 Map: Trenton NE Date: 8/27/79 State: North Dakota County: Williams
 Elev.: 2260 FT Location: T154^N R102^W, Sec 19 Tract CCCC Drilled depth 520 FT
 Measured: 250 FT ~~KNX~~ FSL 5 FT ~~PRX~~ FWL FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Density logged without source.



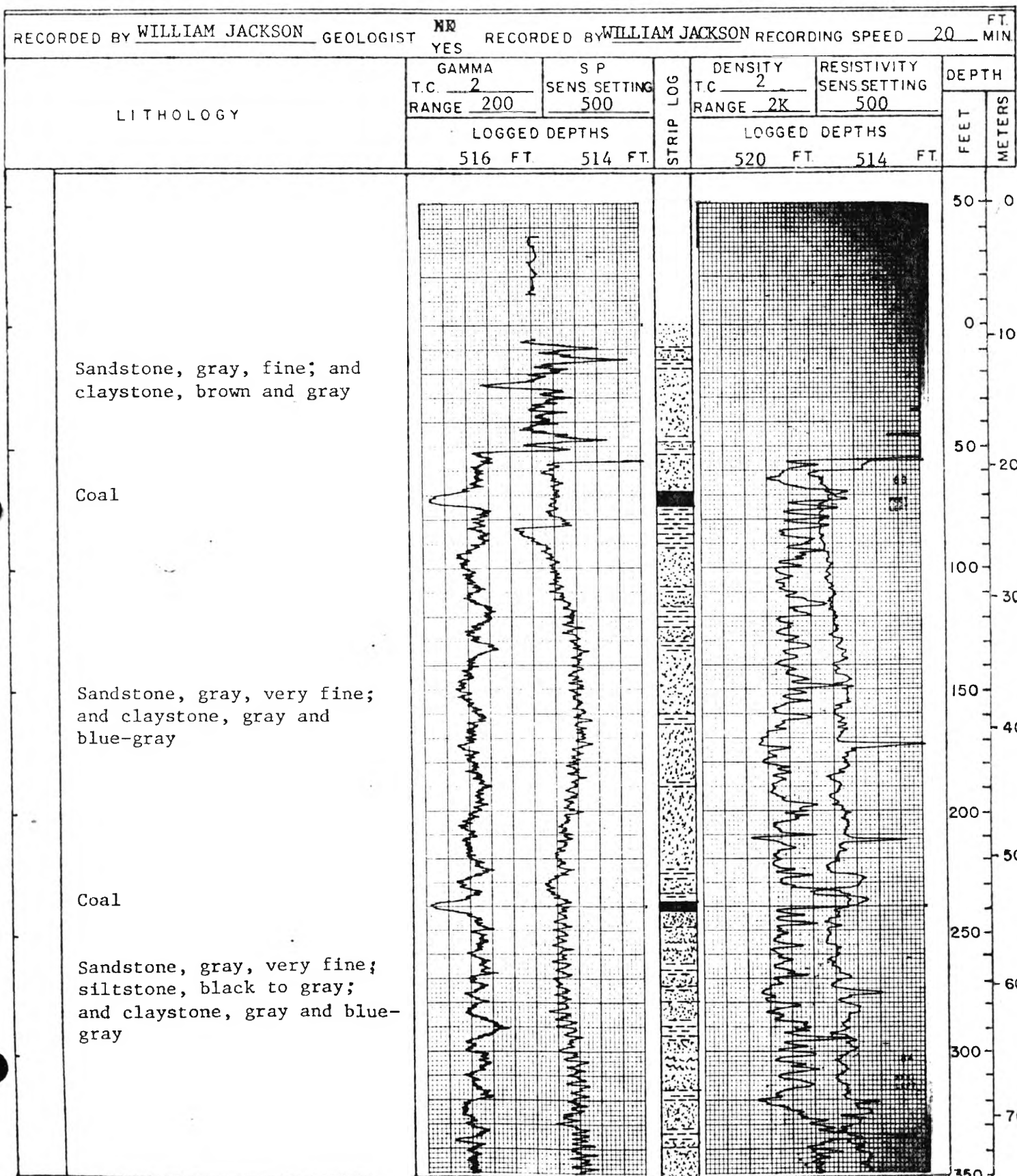


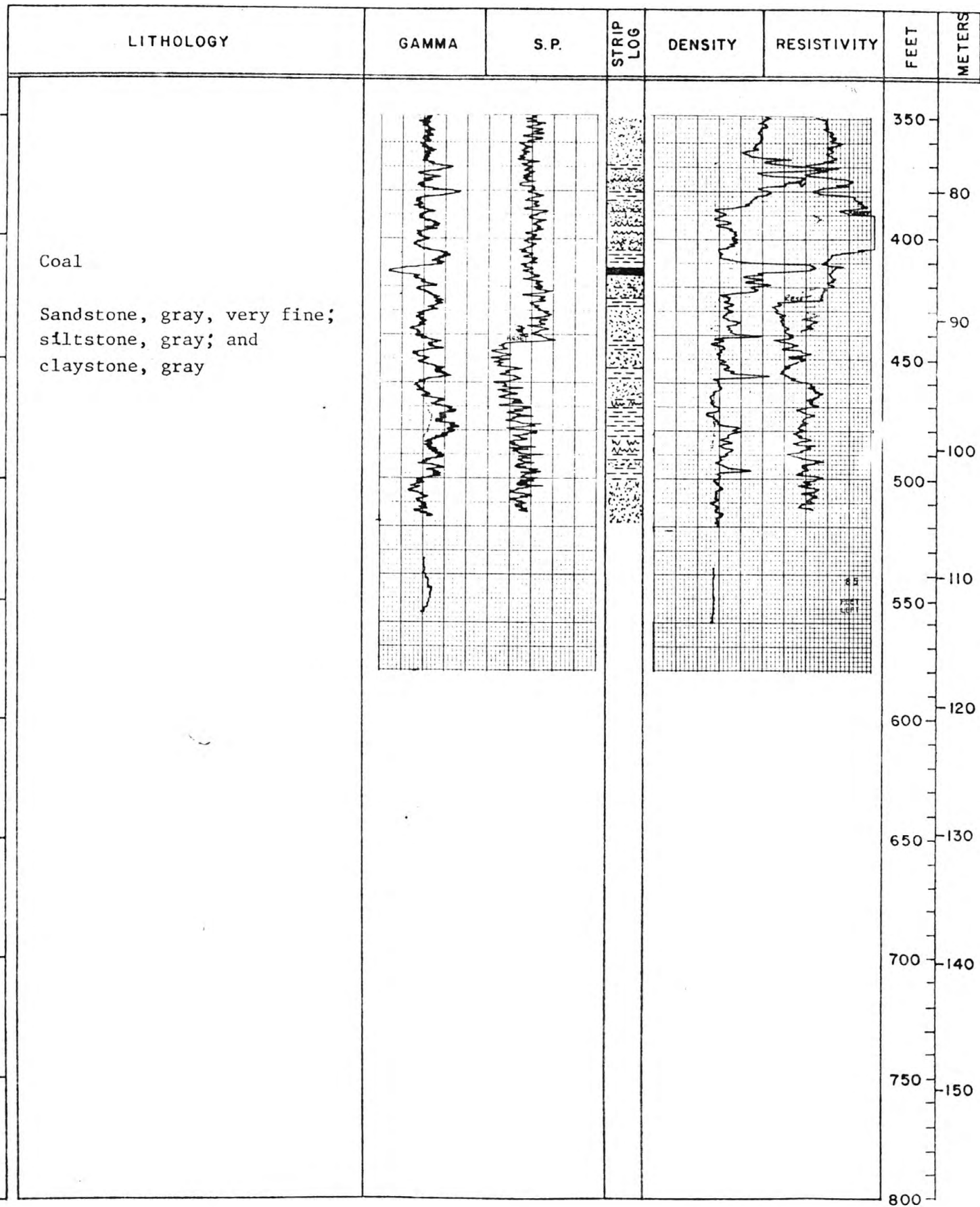
Hole No: US-79144 Map: Trenton NW Date: 8/28/79 State: North Dakota County: Williams
 Elev.: 2160 FT Location: T153^N R 102^E W, Sec 6 Tract CCCC Drilled depth 500 FT
 Measured: 600 FT PSL 50 FT FWL FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Caliper log missing.





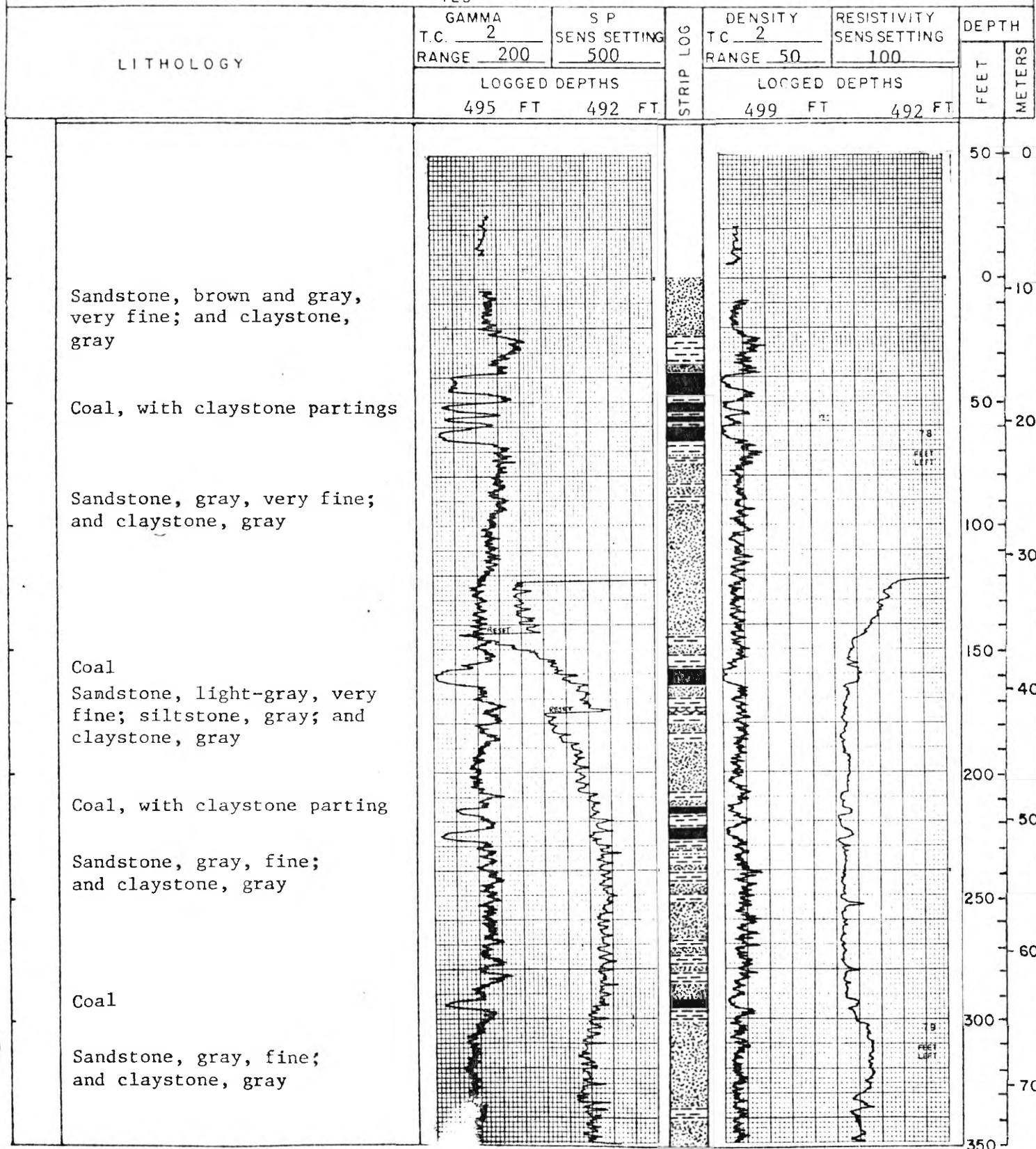
Hole No: US-79145 Map: Trenton NW Date: 8/28/79 State: North Dakota County: Williams
 Elev.: 2335 FT Location: T154^N R103^W, Sec 31 Tract AAAA Drilled depth 520 FT
 Measured: 12 FT FNL XSK 30 FT FEL RXX FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

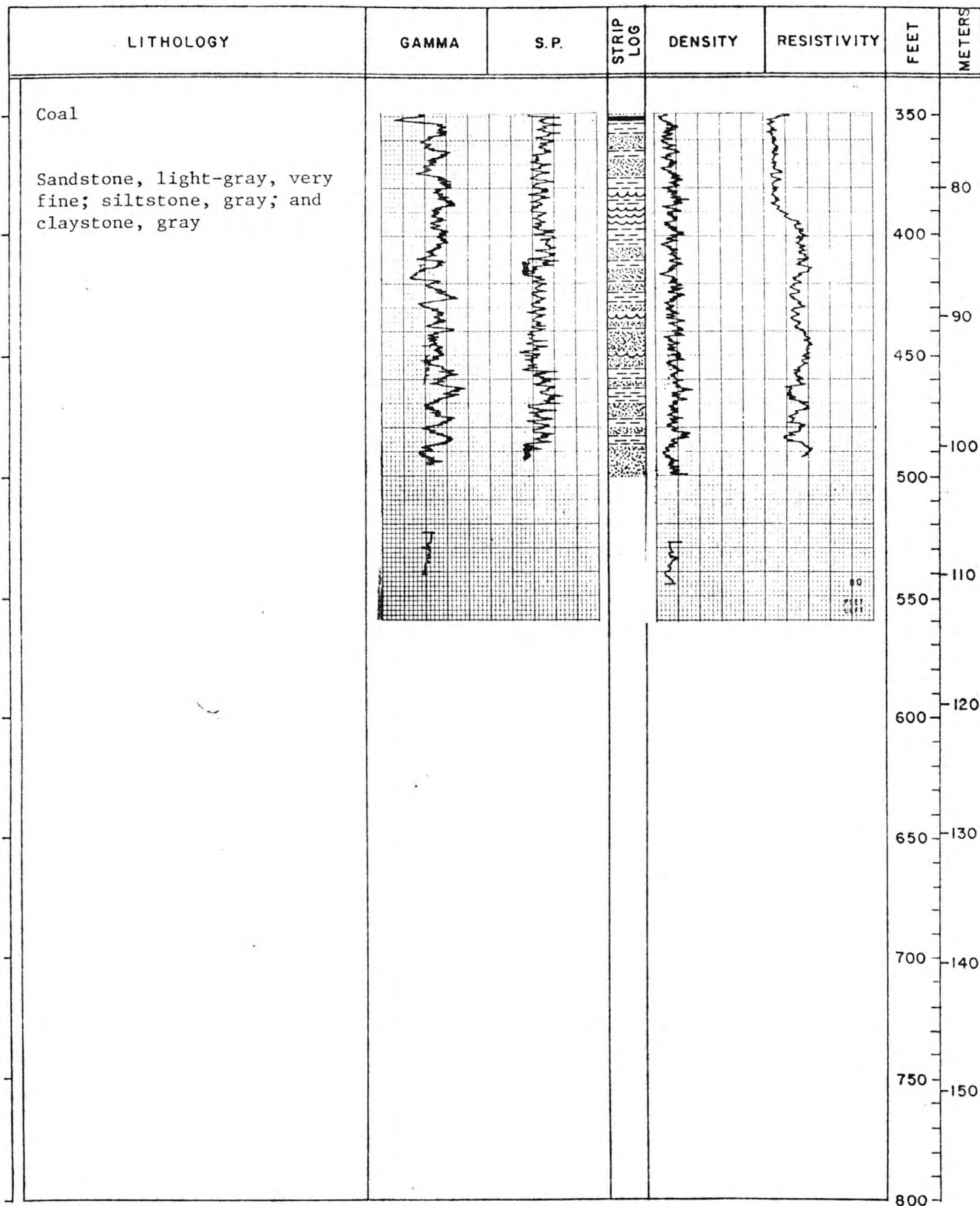




Hole No: US-79146 Map: Trenton NE Date: 8/29/79 State: North Dakota County: Williams
 Elev: 2300 FT Location: T 155^N R 102^W, Sec 27 Tract BCCC Drilled depth 500 FT
 Measured: 2500 FT FNL 10 FT FWL XXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Density logged without source.

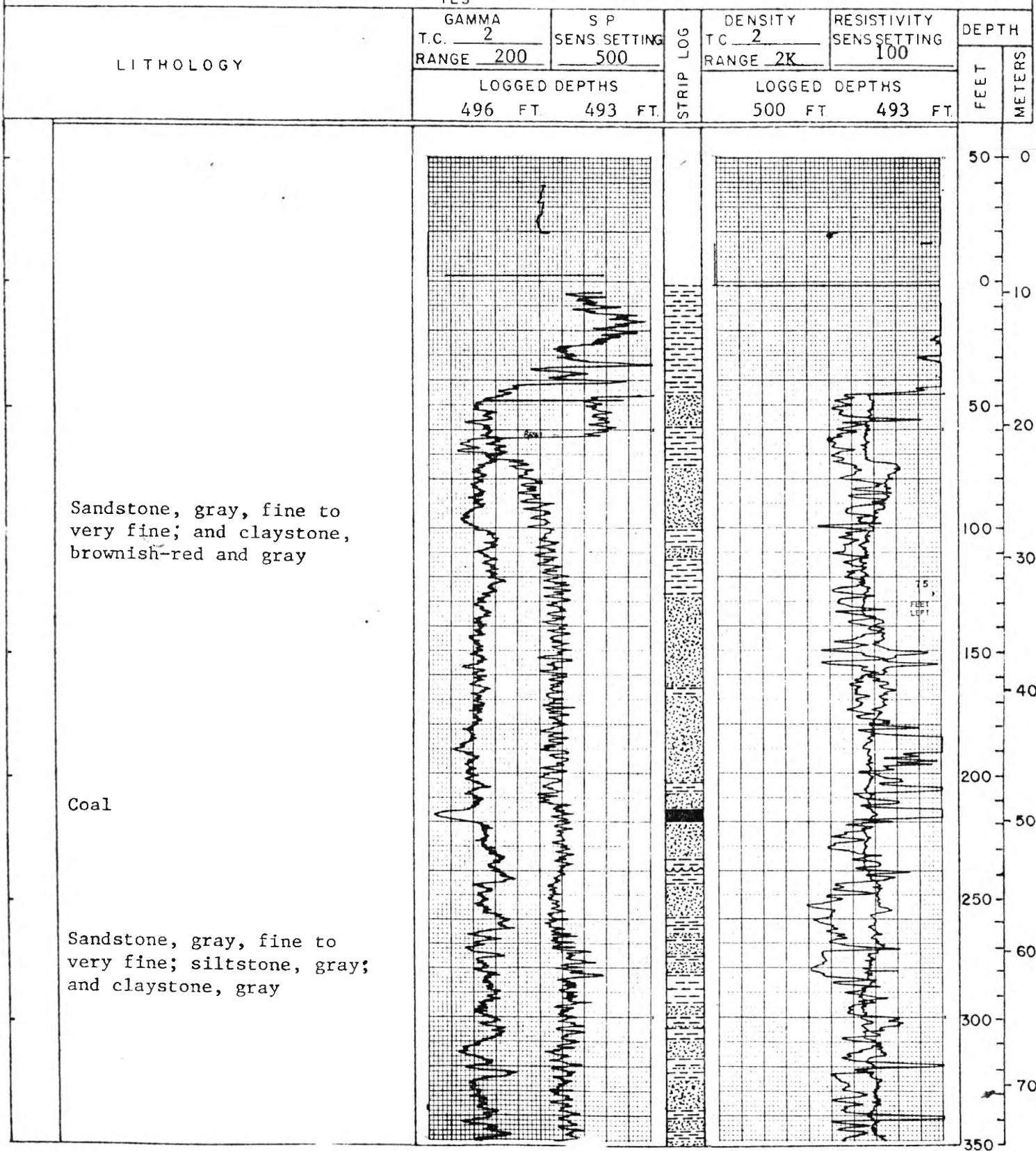
RECORDED BY WILLIAM JACKSON GEOLOGIST ☒ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN

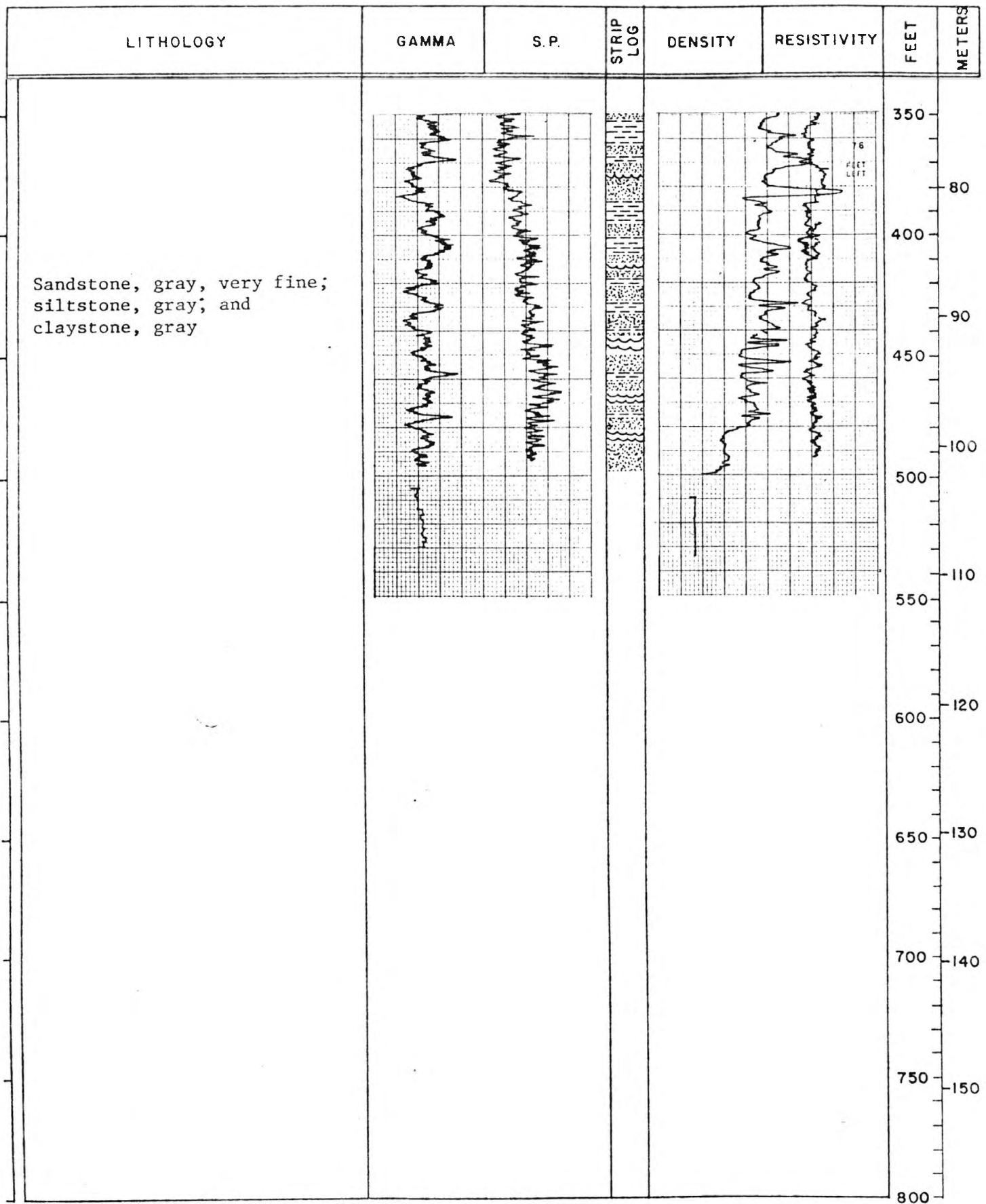




Hole No: US-79147 Map: Bainville SE Date: 8/29/79 State North Dakota County: Williams
 Elev: 2298 FT Location: T153^N R104^W, Sec 10 Tract CBBB Drilled depth 500 FT
 Measured: 2400 FT ^{BNX} PSL 10 FT ^{FEL} RWX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

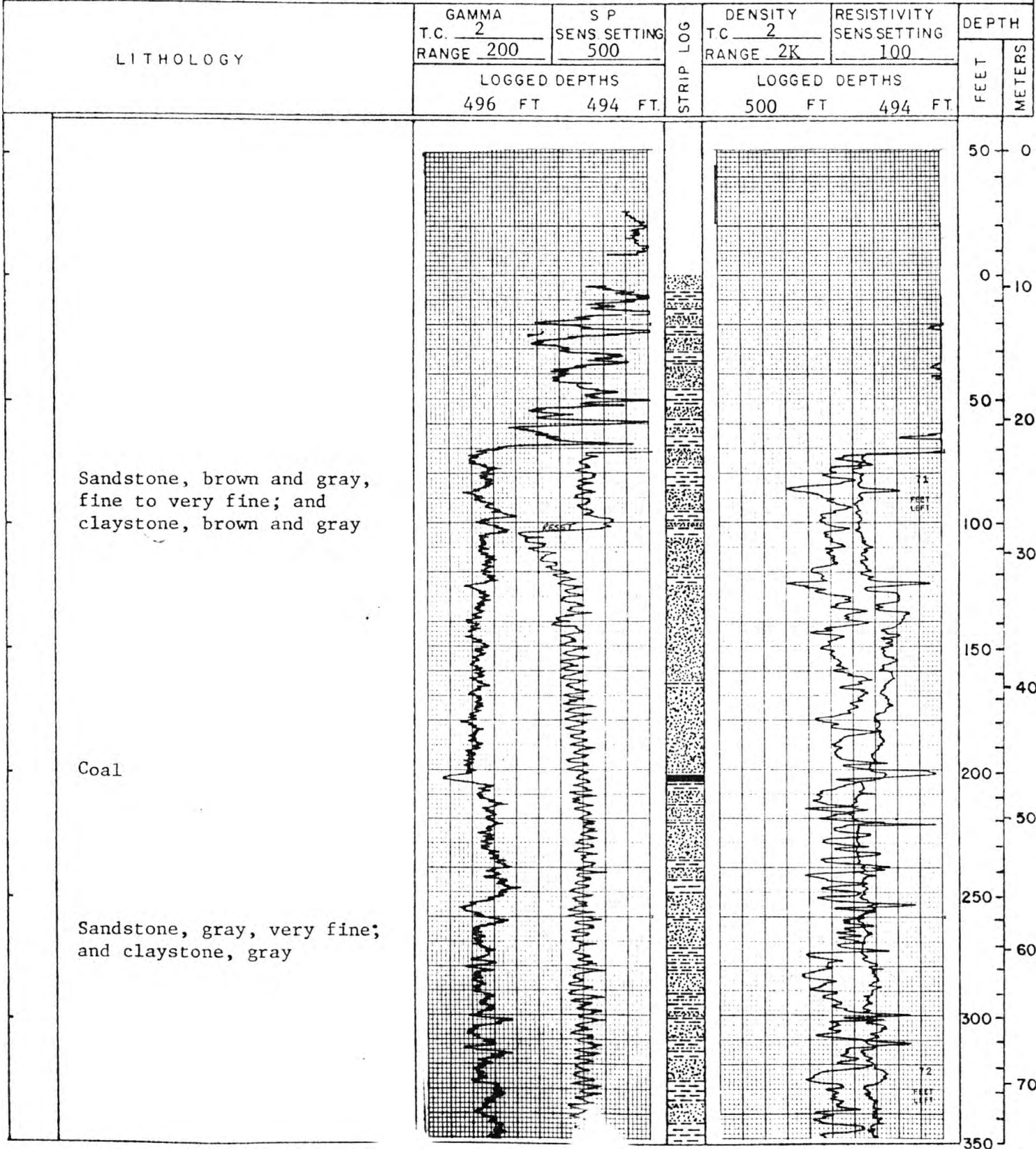
RECORDED BY WILLIAM JACKSON GEOLOGIST ^{NR} YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN

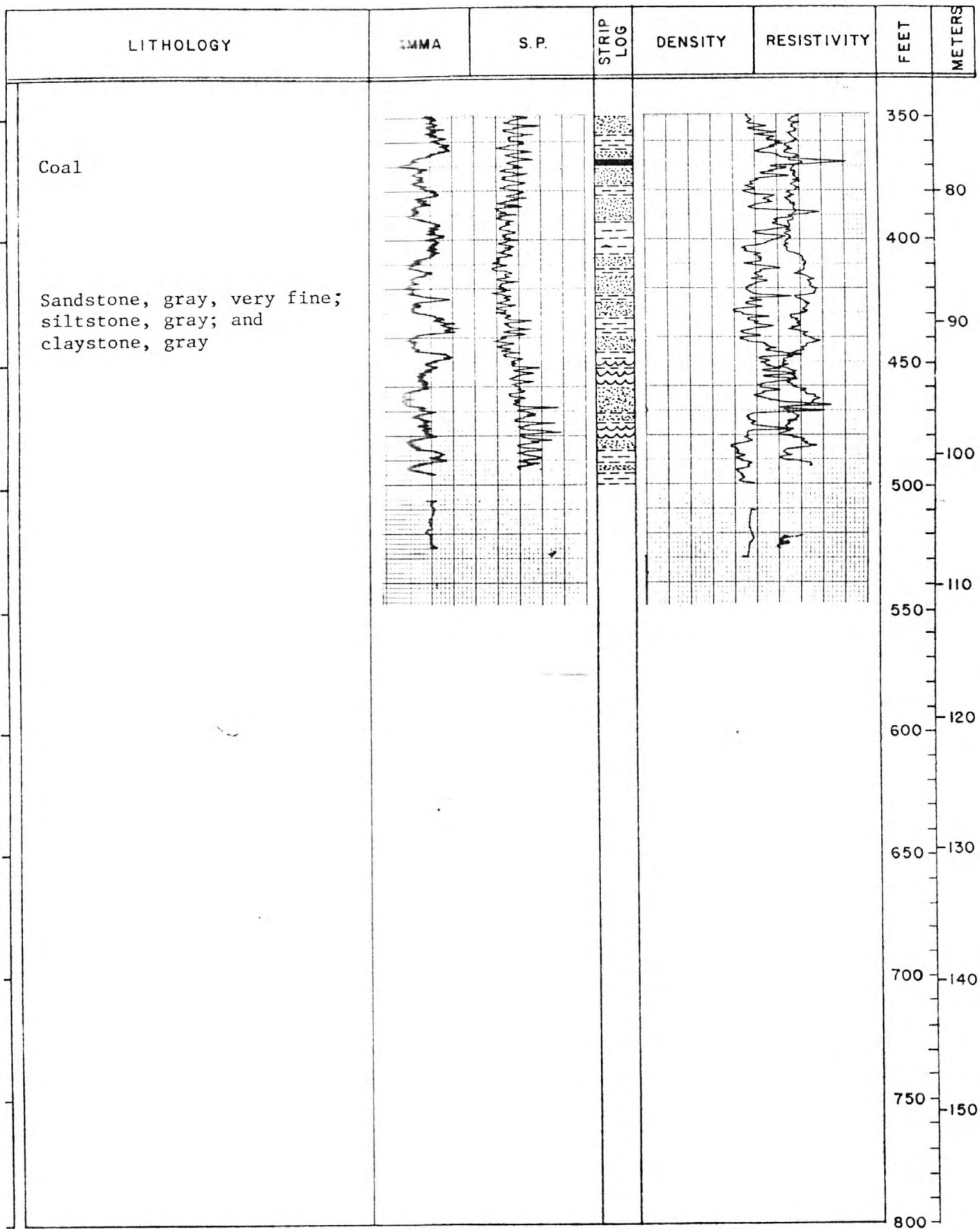




Hole No: US-79148 Map: Trenton SW Date: 8/30/79 State: North Dakota County: Williams
 Elev.: 2298 FT Location: T 153^N R 104^W, Sec 25 Tract DABB Drilled depth 500 FT
 Measured: 2300 FT ~~FSL~~ 1300 FT ~~FEL~~ XXX FT. Hole size: 5 3/4 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

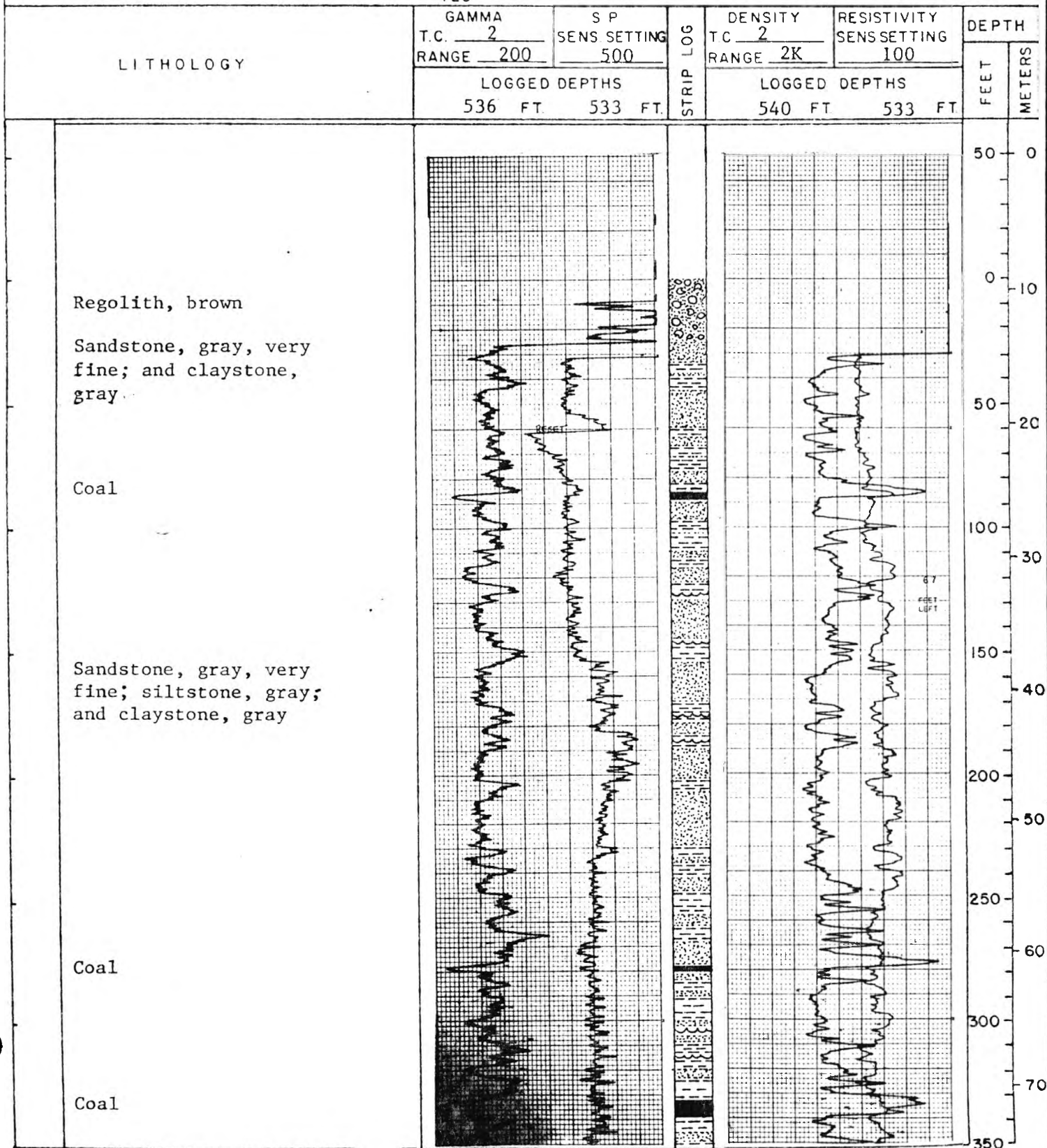
RECORDED BY WILLIAM JACKSON ~~XX~~ ^{YES} GEOLOGIST RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN





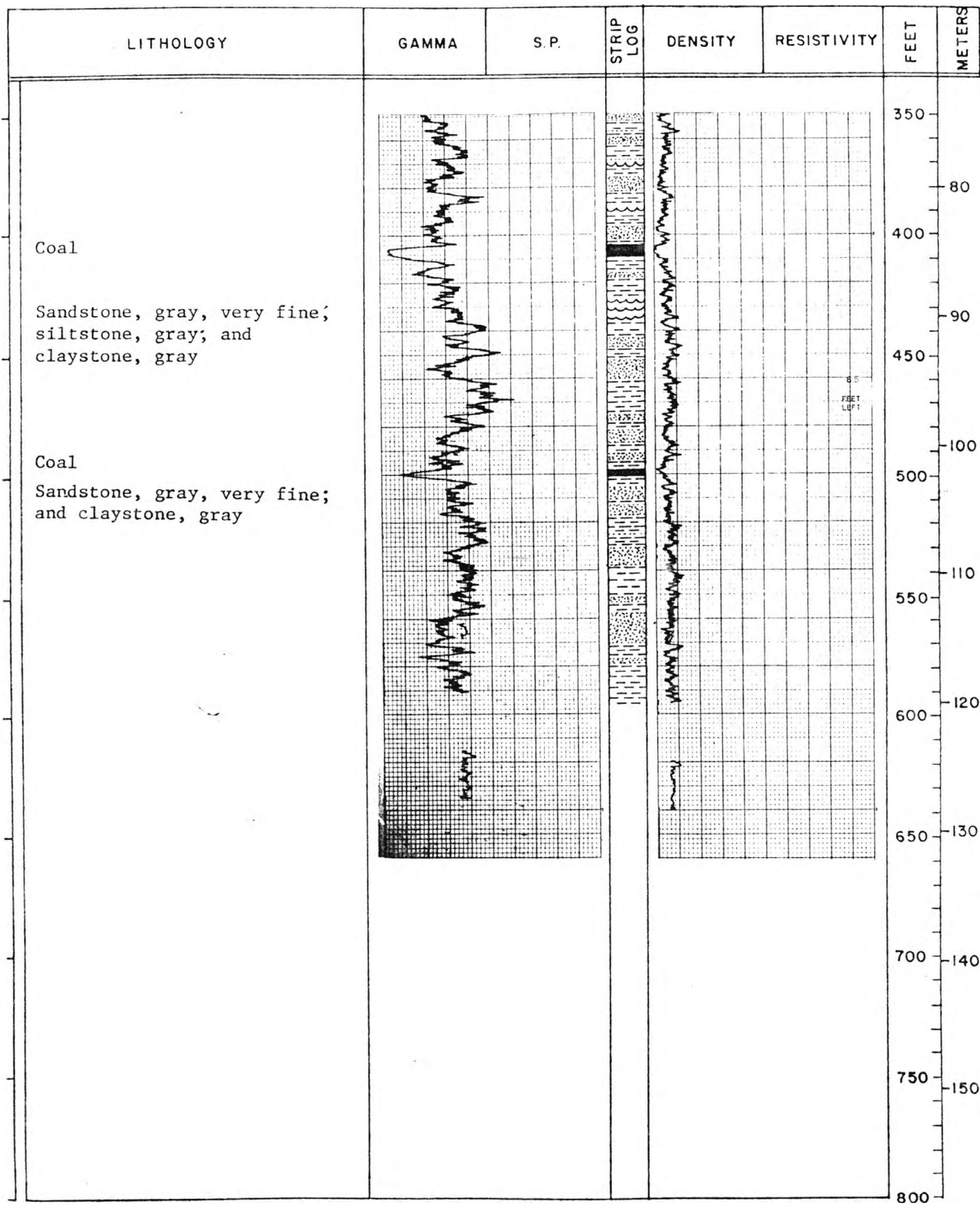
Hole No. US-79149 Map: Red Bank Creek Date: 9/5/79 State: Montana County: Roosevelt
 Elev.: 2104 FT Location: T 28 ^N R 59 ^E, Sec 22 Tract BBBB Drilled depth 540 FT
 Measured: 400 FT ^{FNL} 4 FT ^{FWL} 888 FT Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY WILLIAM JACKSON GEOLOGIST ^{NOX} YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN.



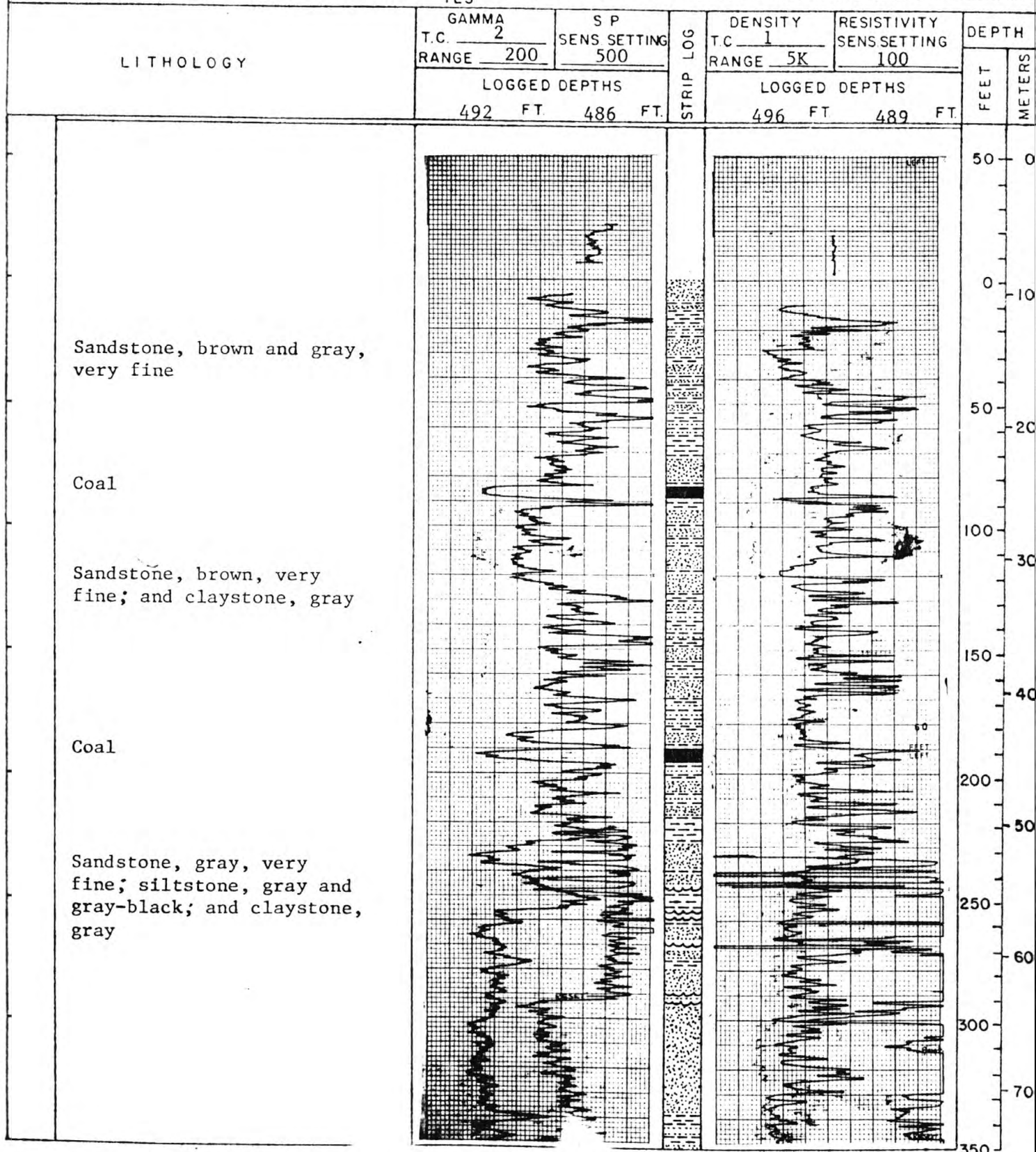
Hole No: US-79150 Map: Bainville 4 NW Date: 9/6/79 State: Montana County: Roosevelt
Elev: 2281 FT Location: T 29^N R 58^E W, Sec 28 Tract DACC Drilled depth 600 FT
Measured: 1340 FT ~~FSL~~ 2300 FT ~~FSL~~ FT Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
Remarks: Density logged without source.

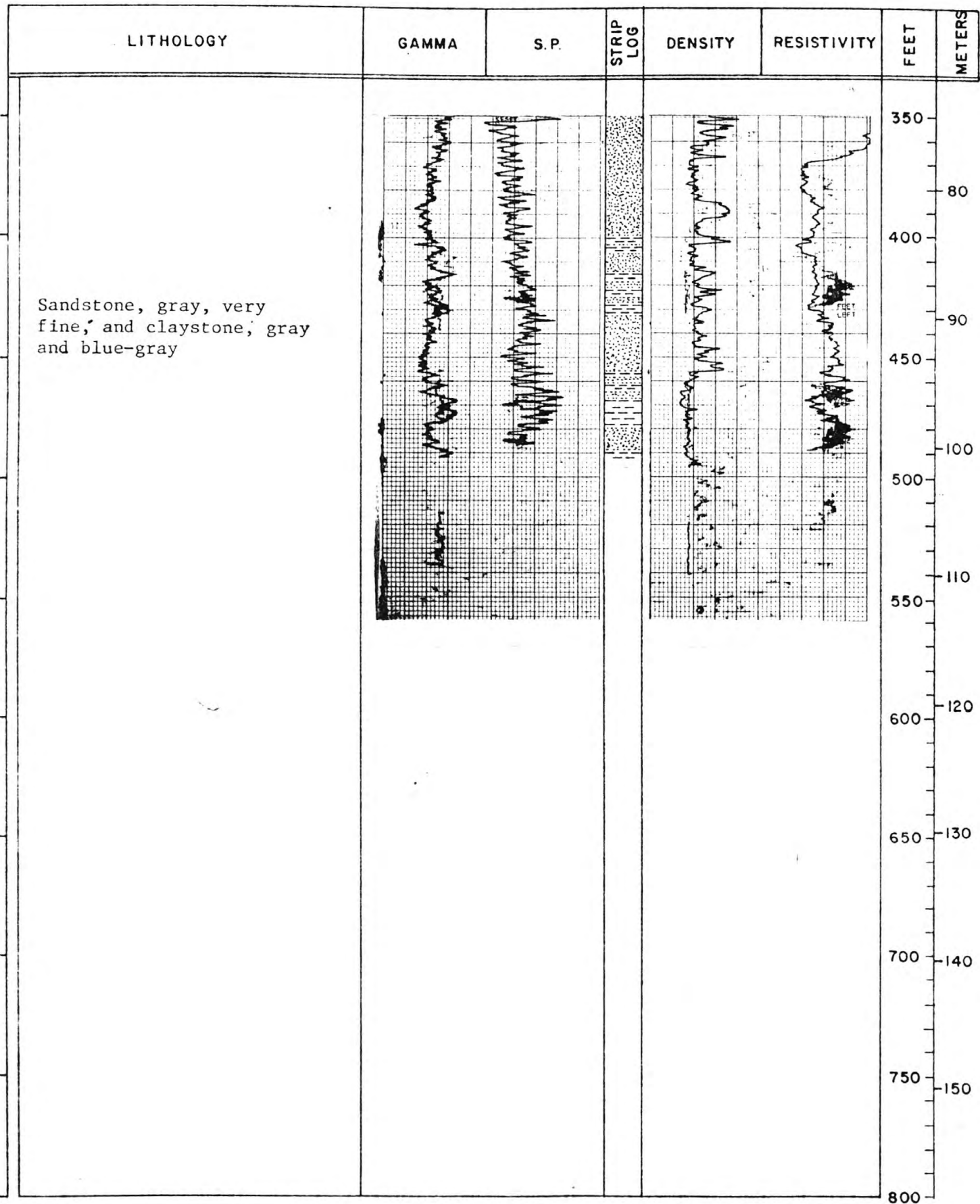
RECORDED BY WILLIMA JACKSON GEOLOGIST		YES		RECORDED BY WILLIAM JACKSON		RECORDING SPEED 20		FT. MIN.	
LITHOLOGY		GAMMA T.C. 2 RANGE 100	S P SENS SETTING	DENSITY T.C. 2 RANGE 50	RESISTIVITY SENS SETTING	DEPTH			
		LOGGED DEPTHS		LOGGED DEPTHS		FEET		METERS	
		591 FT		595 FT		FT			
Sandstone, gray, medium-fine to very fine; and siltstone, gray; and claystone, gray								50 0	
								0 10	
								50 20	
								100 30	
								150 40	
								200 50	
								250 60	
								300 70	
Coal								350 80	



Hole No: US 79151 Map: Bainville 1 SW Date: 9/7/79 State: Montana County: Roosevelt
 Elev.: 2501 FT Location: T 29^N R 58^E, Sec 24 Tract BBBB Drilled depth 500 FT
 Measured: 60 FT FNL XXX 60 FT FWL XXX FT. Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

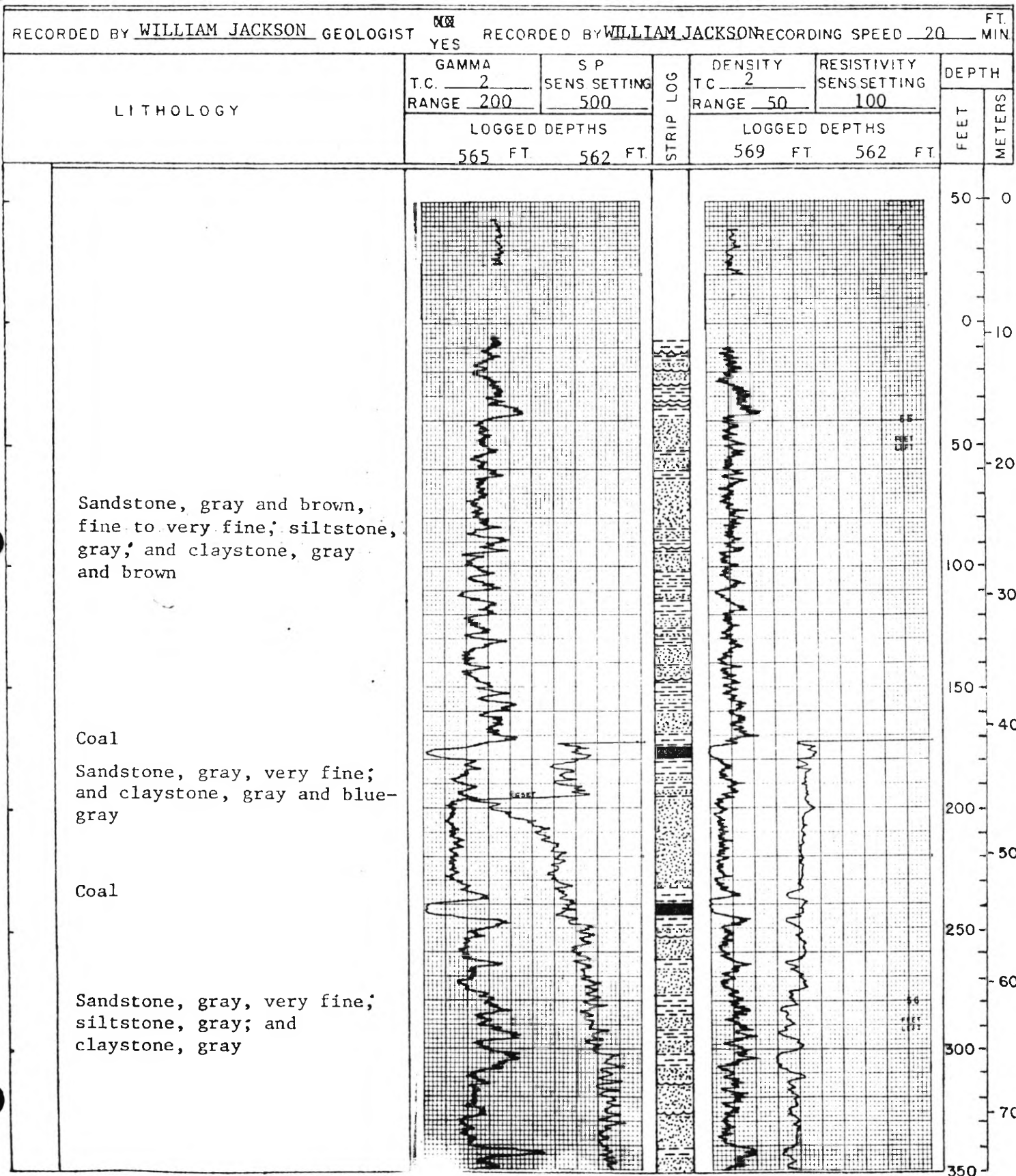
RECORDED BY WILLIAM JACKSON GEOLOGIST NO YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN





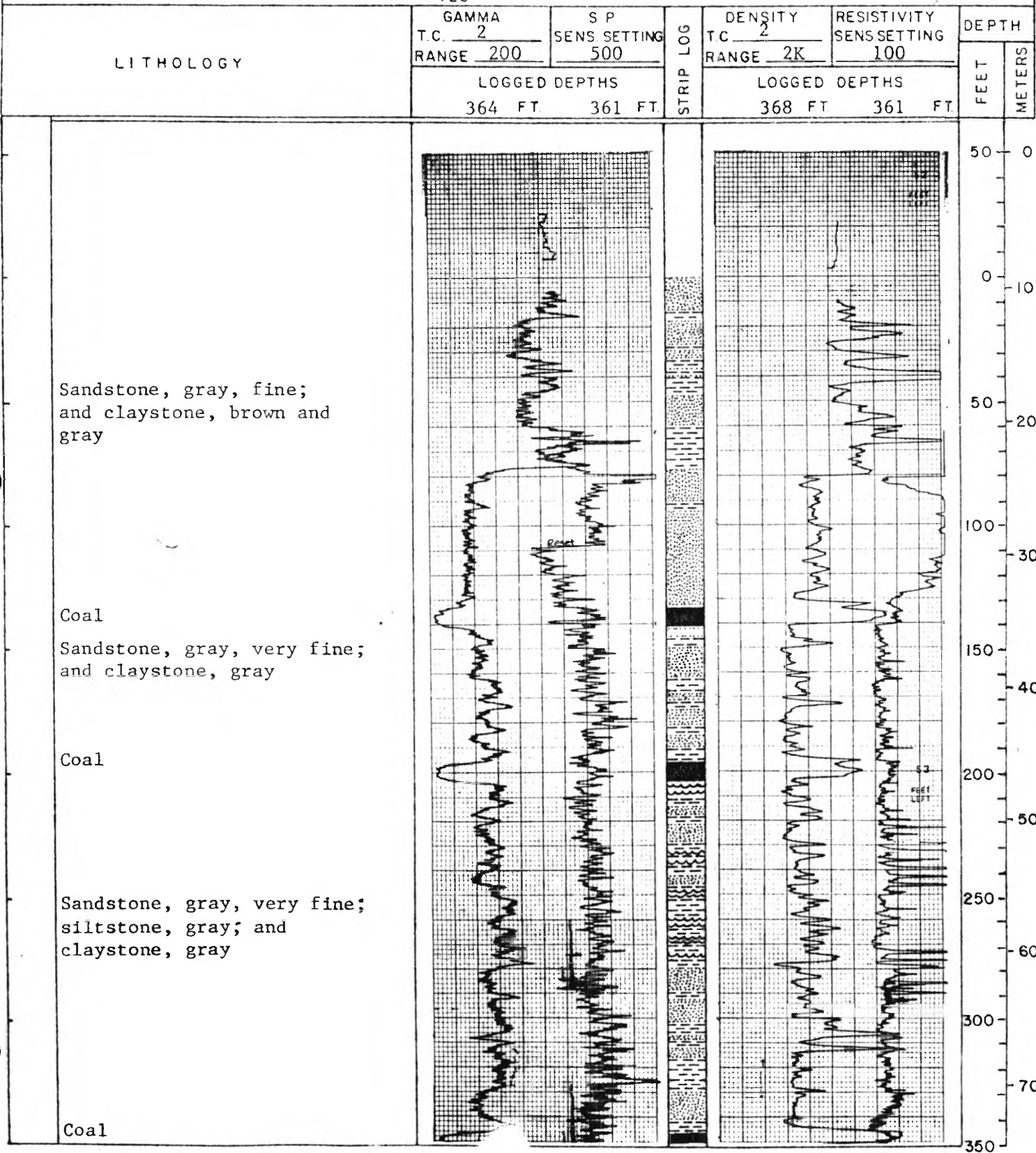
Measured: ^{BSX}10 FT. FSL ^{BSX}2300 FT. FWL _____ FT. Hole size: 5 5/8 IN. Air ☐ Water ☒ Cored: Yes ☐ No ☒

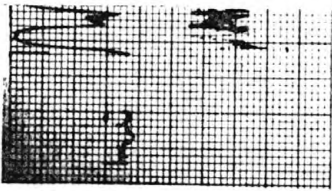

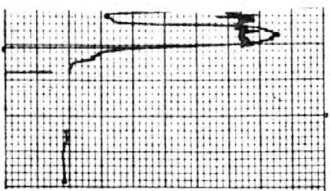
Remarks:



Hole No: US-79153 Map: Three Buttes Date: 9/8/79 State: Montana County: Roosevelt
 Elev.: 2225 FT Location: T 27^N R 57^E, Sec 6 Tract ACCC Drilled depth 380 FT
 Measured: 2575 FT ^{XXX} FSL 2290 FT ^{FEL} RXX FT. Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

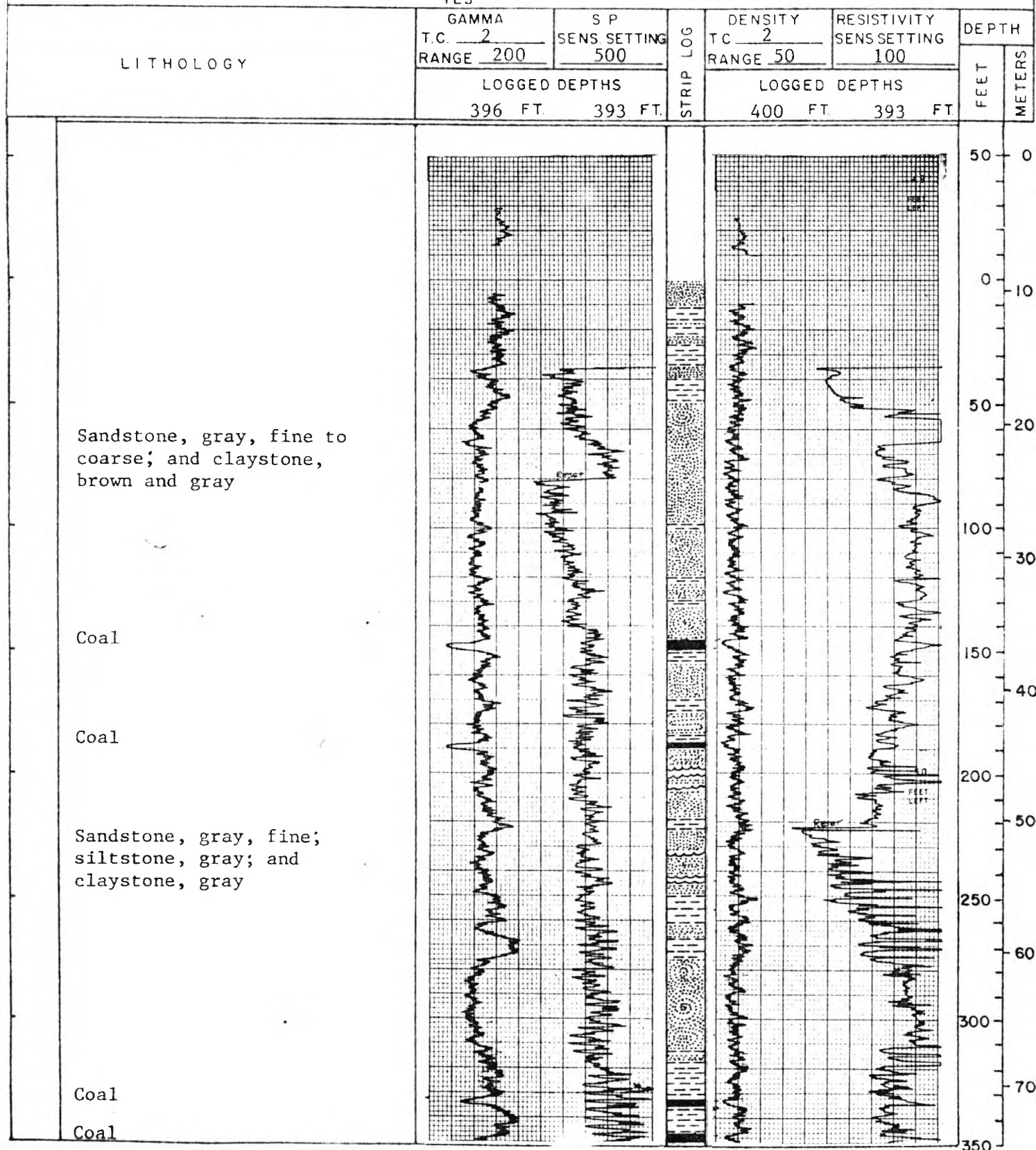
RECORDED BY WILLIAM JACKSON GEOLOGIST ^{NO} YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN

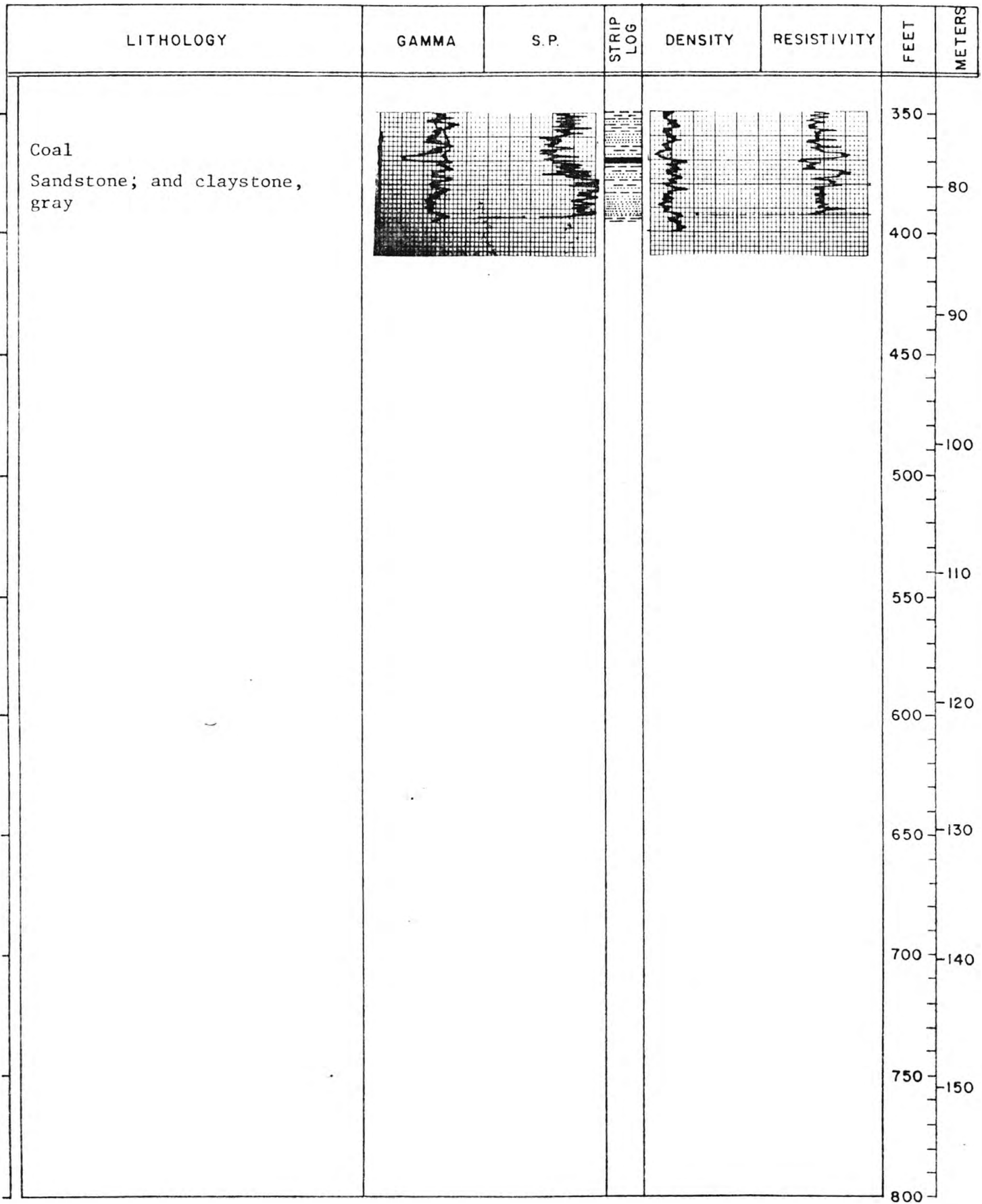


LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Coal						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

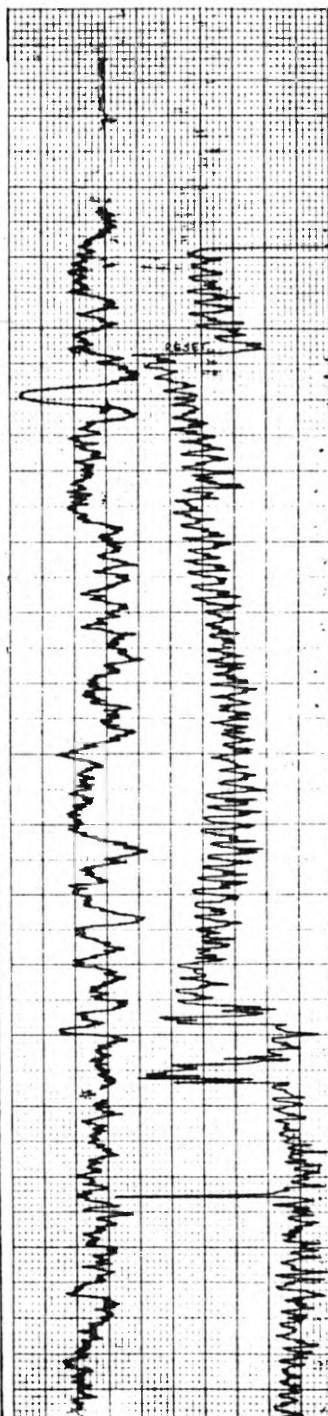
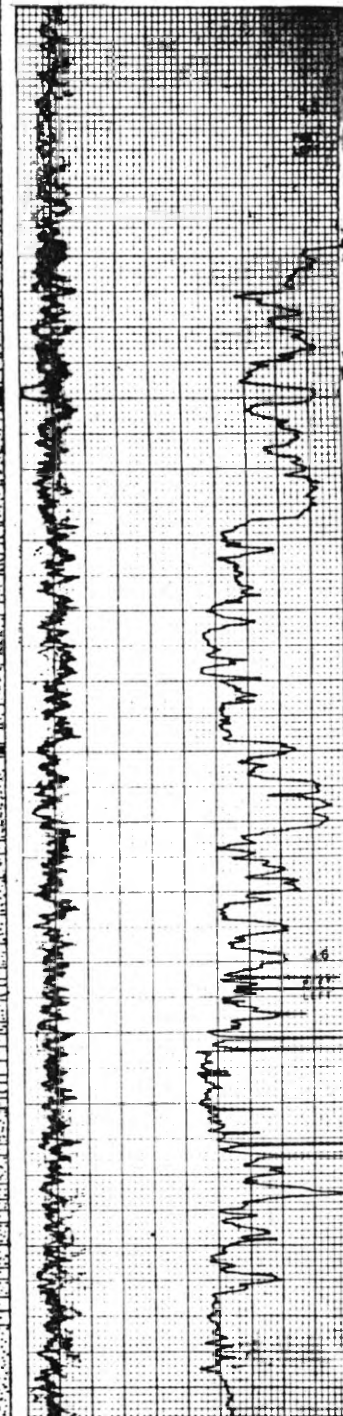
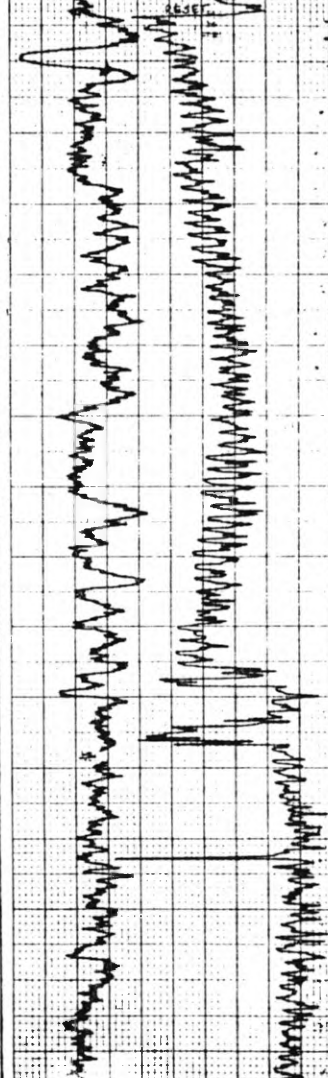
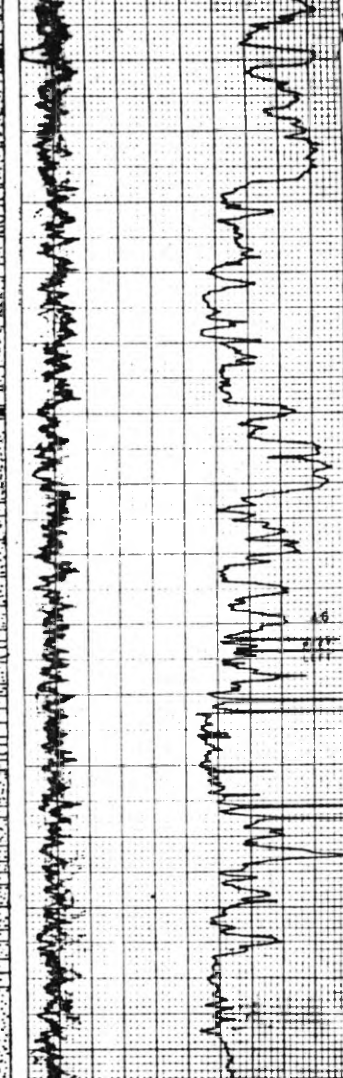
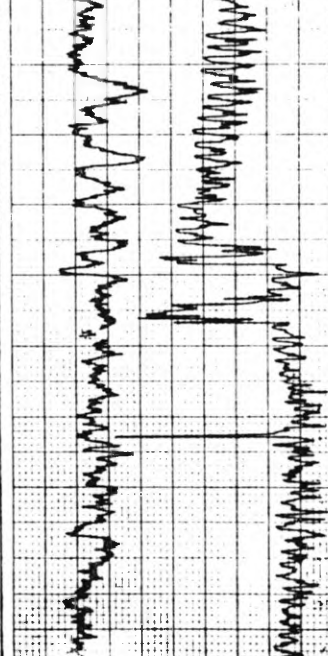
Hole No: US-79154 Map: Intake Date: 9/9/79 State: Montana County: Dawson
 Elev.: 2147 FT Location: T 18^N R 56^E Sec 26 Tract AABB Drilled depth 400 FT
 Measured: 150 FT ~~FNL~~ 1350 FT ~~FEL~~ RWX FT Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Denisty logged without source.

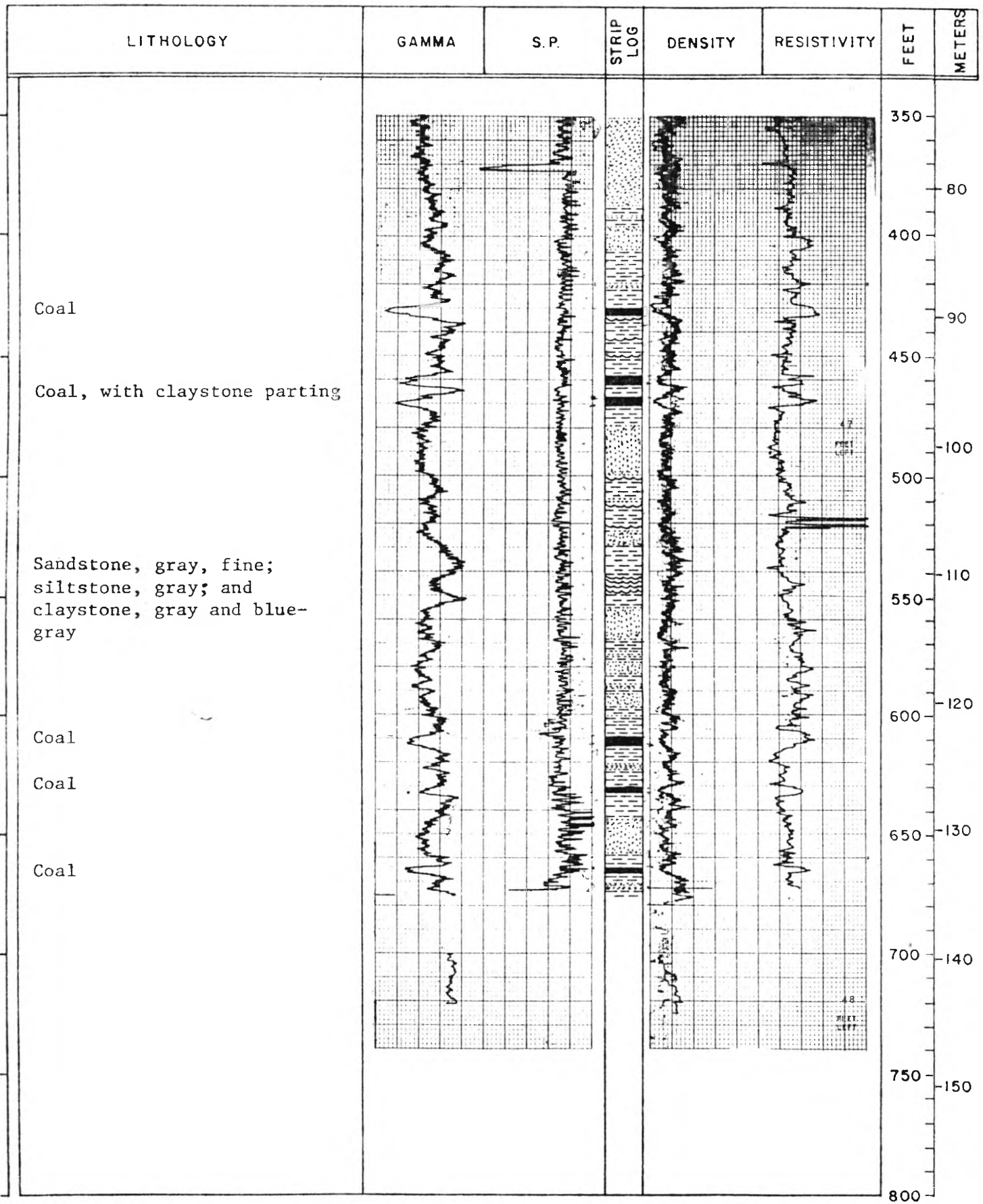
RECORDED BY WILLIAM JACKSON GEOLOGIST ~~NO~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN



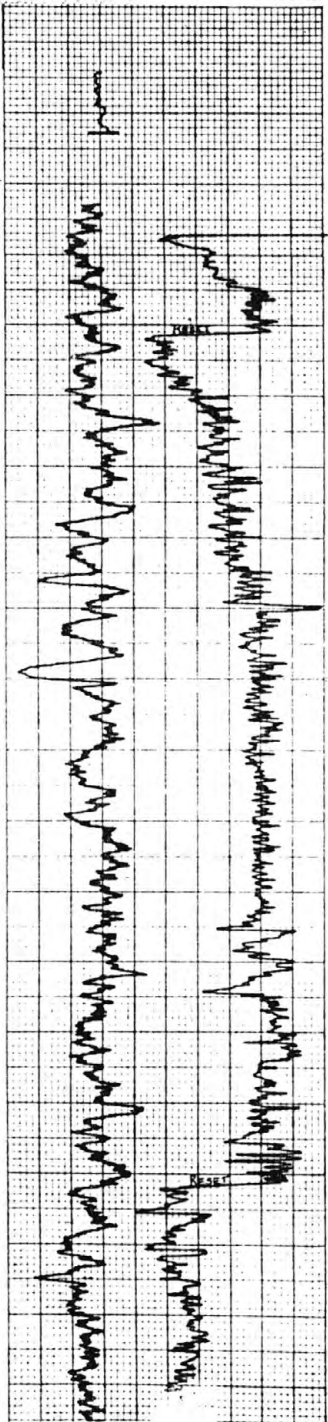
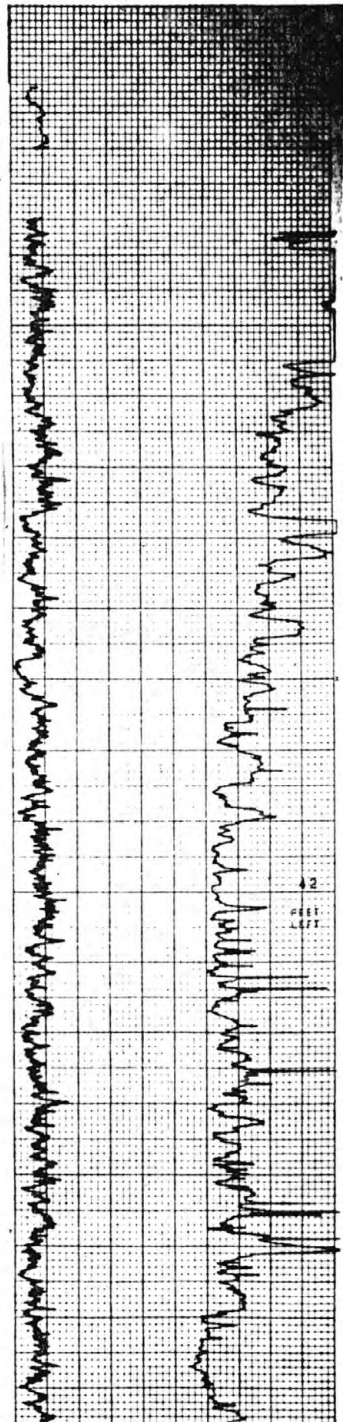
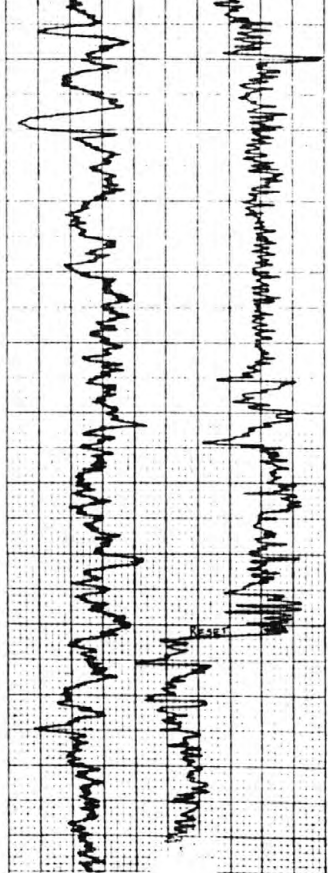
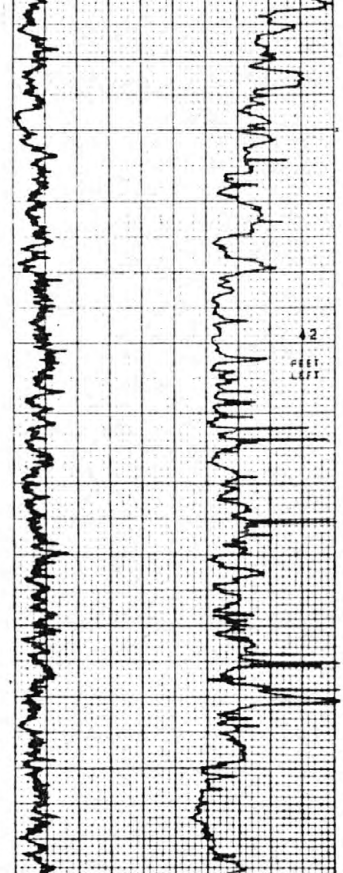
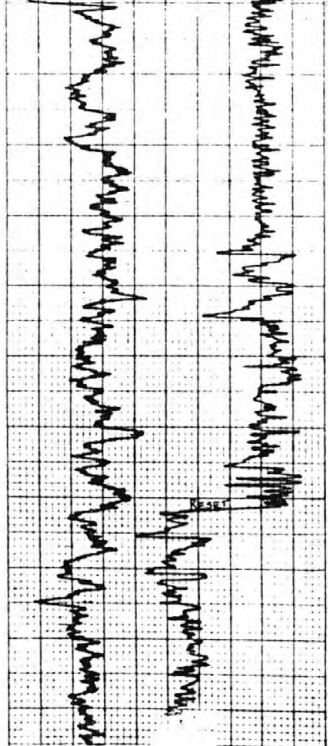
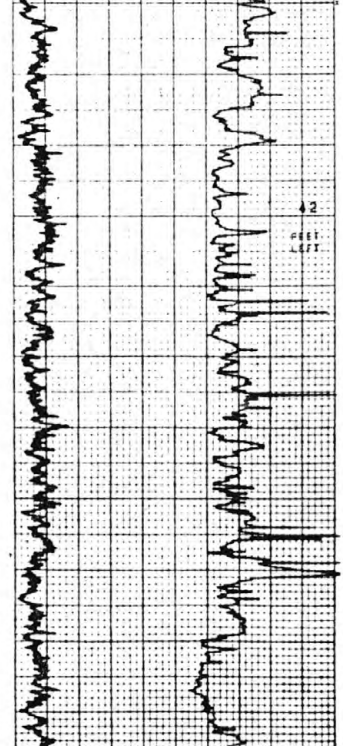
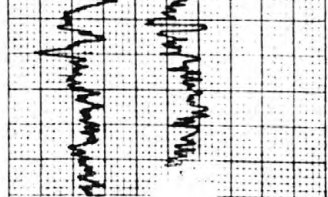
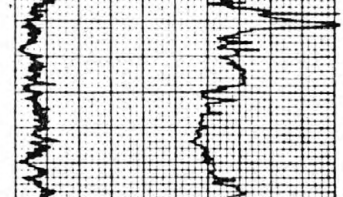
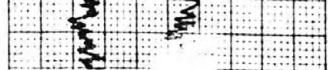



Hole No: US-79155 Map: Intake Date: 9/13/79 State: Montana County: Dawson
 Elev: 2380 ^N ^E Location: T 18 R 56, Sec 10 Tract CCCC Drilled depth 680 FT.
 Measured: 500 FT ^{KMK} PSL 480 FT ^{KMK} FWL FT. Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Density logged without source.

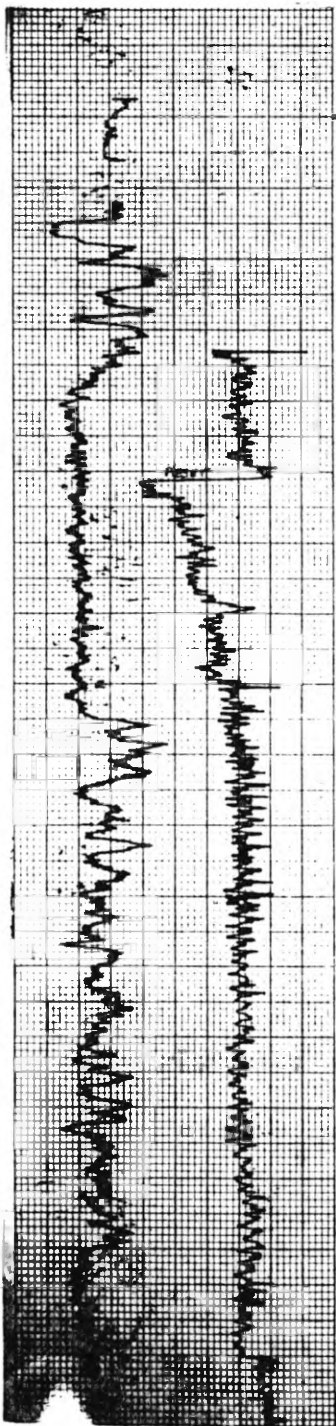
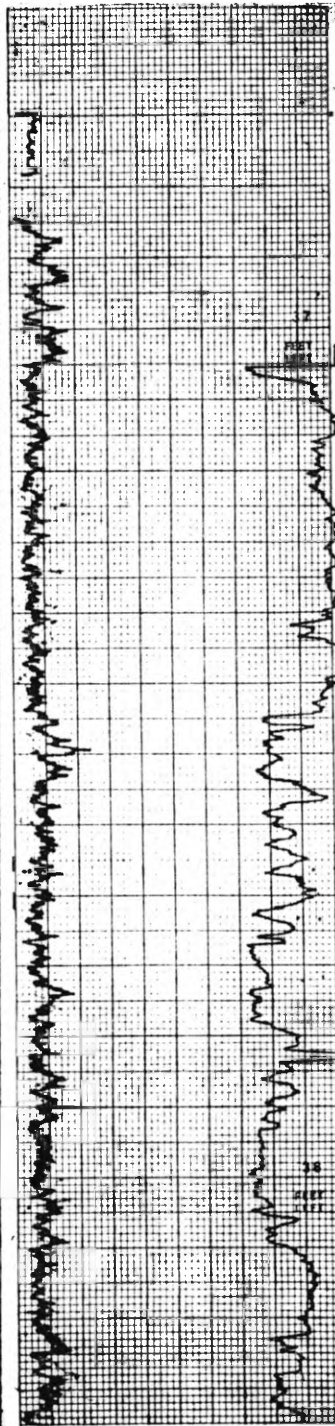
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{MR} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>	DENSITY T.C. <u>2</u> RANGE <u>50</u>
	LOGGED DEPTHS <u>656</u> FT <u>653</u> FT.		RESISTIVITY SENS SETTING <u>100</u>
	LOGGED DEPTHS <u>660</u> FT <u>653</u> FT.		
STRIP LOG		DEPTH FEET METERS	
Sandstone, gray, fine to coarse; and claystone, brown and gray			50 0
			0 10
Coal			50 20
			100 30
Sandstone, gray, fine; siltstone, gray; and claystone, gray and blue-gray			150 40
			200 50
Coal			250 60
			300 70
Sandstone, gray, fine; siltstone, gray; and claystone, blue-gray			350



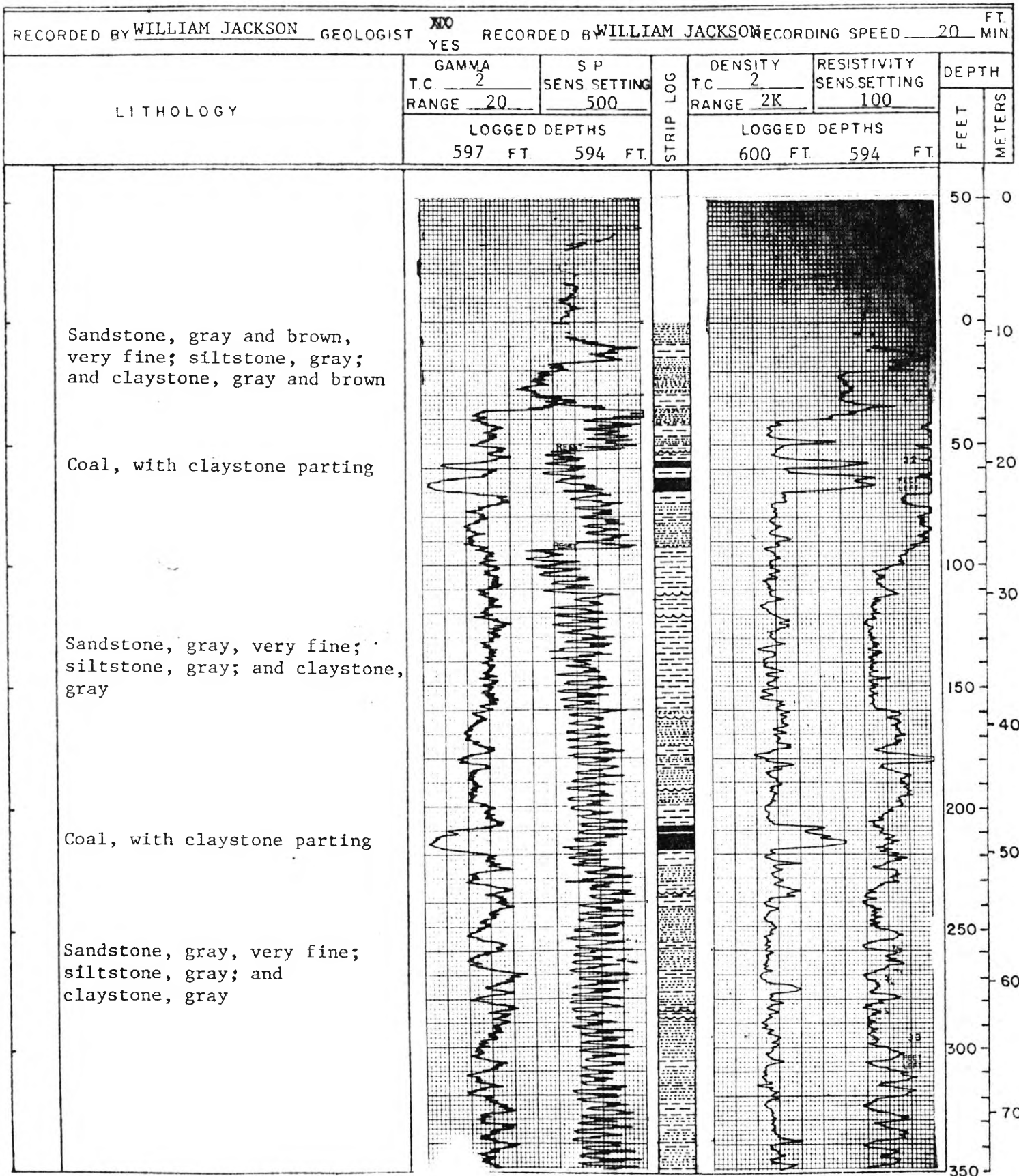
Hole No: US-79156 Map: Intake Date: 9/19/79 State: Montana County: Dawson
 Elev.: 2385 FT Location: T 19 ^N R 56 ^E W, Sec 34 Tract DDAD Drilled depth 600 FT
 Measured: 753 FT FSL 22 FT FEL KXX FT Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Density logged without source.

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{NE} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	SP SENS SETTING <u>500</u>	DENSITY TC <u>2</u> RANGE <u>50</u>	RESISTIVITY SENS SETTING <u>100</u>	DEPTH
	LOGGED DEPTHS		LOGGED DEPTHS		FEET METERS
	<u>595</u> FT	<u>593</u> FT	<u>599</u> FT	<u>593</u> FT	
Sandstone, gray and brown, very fine; siltstone, gray; and claystone, gray					50 0
					0 10
Coal					50 20
Coal					100 30
Sandstone, gray, fine; siltstone, gray; and claystone, blue-gray					150 40
					200 50
Coal					250 60
					300 70
Sandstone, gray-white, very fine; siltstone, gray; and claystone, gray					350

Hole No: US-79157 Map: Allard Ranch Date: 9/20/79 State: Montana County: Dawson
 Elev.: 2218 FT Location: T 19 ^N R 56 ^E, Sec 14 Tract CAAA Drilled depth 600 FT
 Measured: 1340 FT FSL 1290 FT FWL XXXX FT. Hole size: 5 5/8 IN. Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Logged through pipe, no source on density.

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.				
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>	DENSITY T.C. <u>2</u> RANGE <u>50</u>	RESISTIVITY SENS SETTING <u>100</u>	DEPTH	
	LOGGED DEPTHS 598 FT 595 FT		LOGGED DEPTHS 602 FT 595 FT		FEET	METERS
Claystone, brown Coal					50	0
					0	10
					50	20
					100	30
					150	40
Sandstone, light-gray, very fine grained; siltstone, gray; some carbonaceous claystone, gray					200	50
					250	60
					300	70
Coal					350	

Hole No: US-79158 Map: Intake Date: 9/22/79 State: Montana County: Dawson
 Elev.: 2500 FT Location: T 19 ^N R 56 ^E Sec 32 Tract CBAB Drilled depth 600 FT
 Measured: 2320 FT FSL 1100 FT FWL FT Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Logged through pit.



Sandstone, gray and brown, very fine; and claystone, gray

Coal

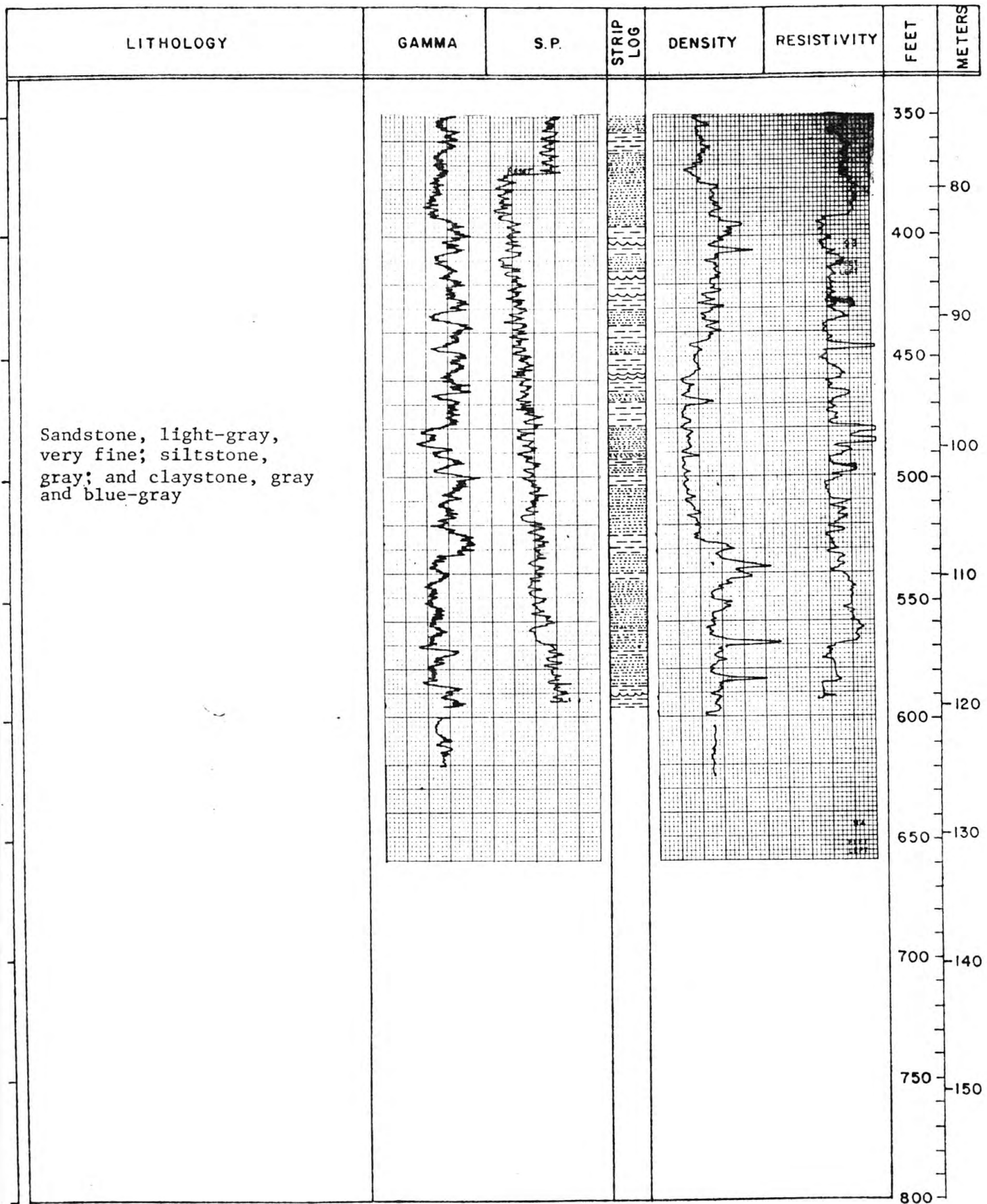
Sandstone, gray, very fine; siltstone, gray; and claystone, gray and blue-gray

Coal, with claystone parting

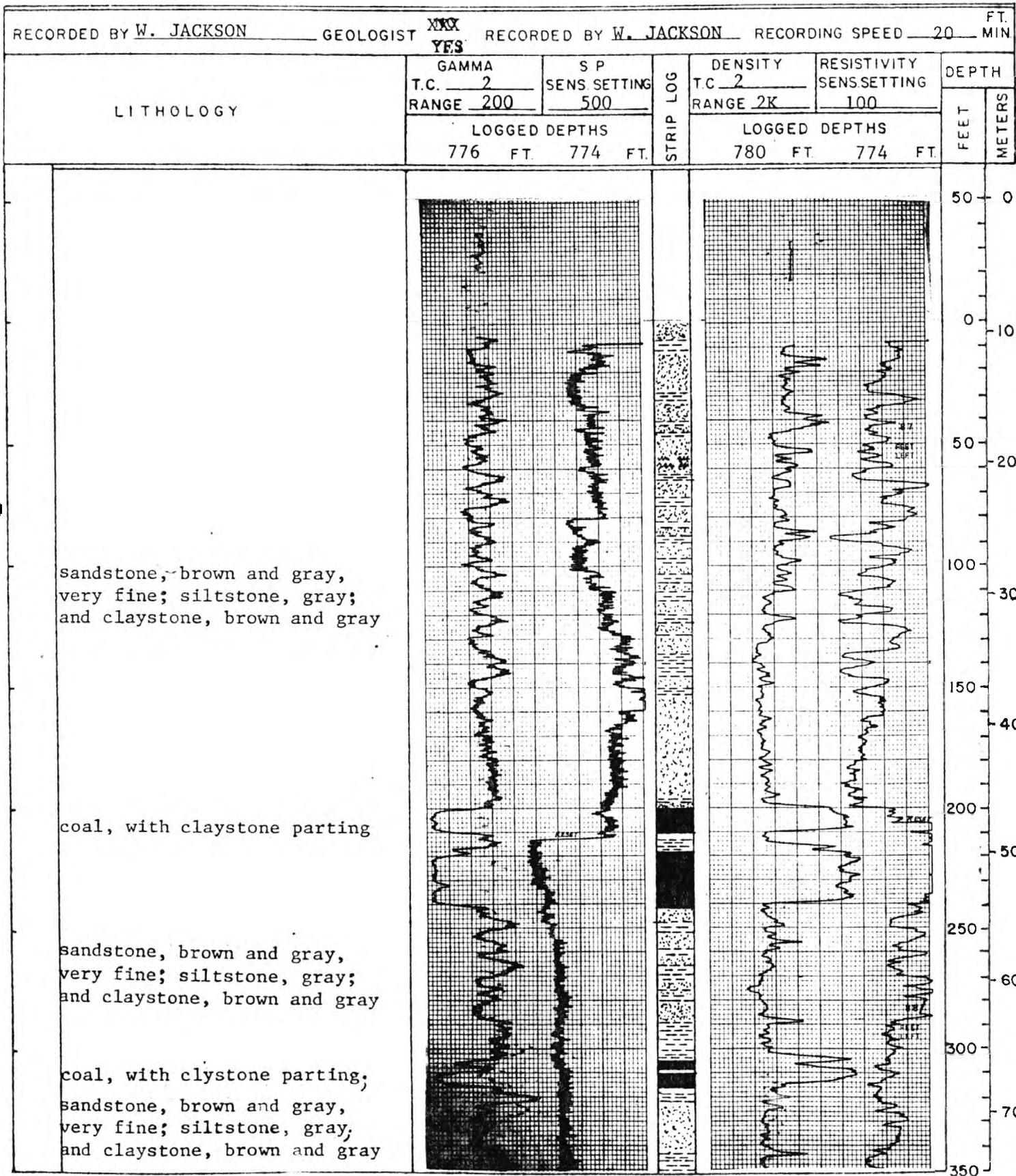
Sandstone, gray, very fine; siltstone, gray; and claystone, gray

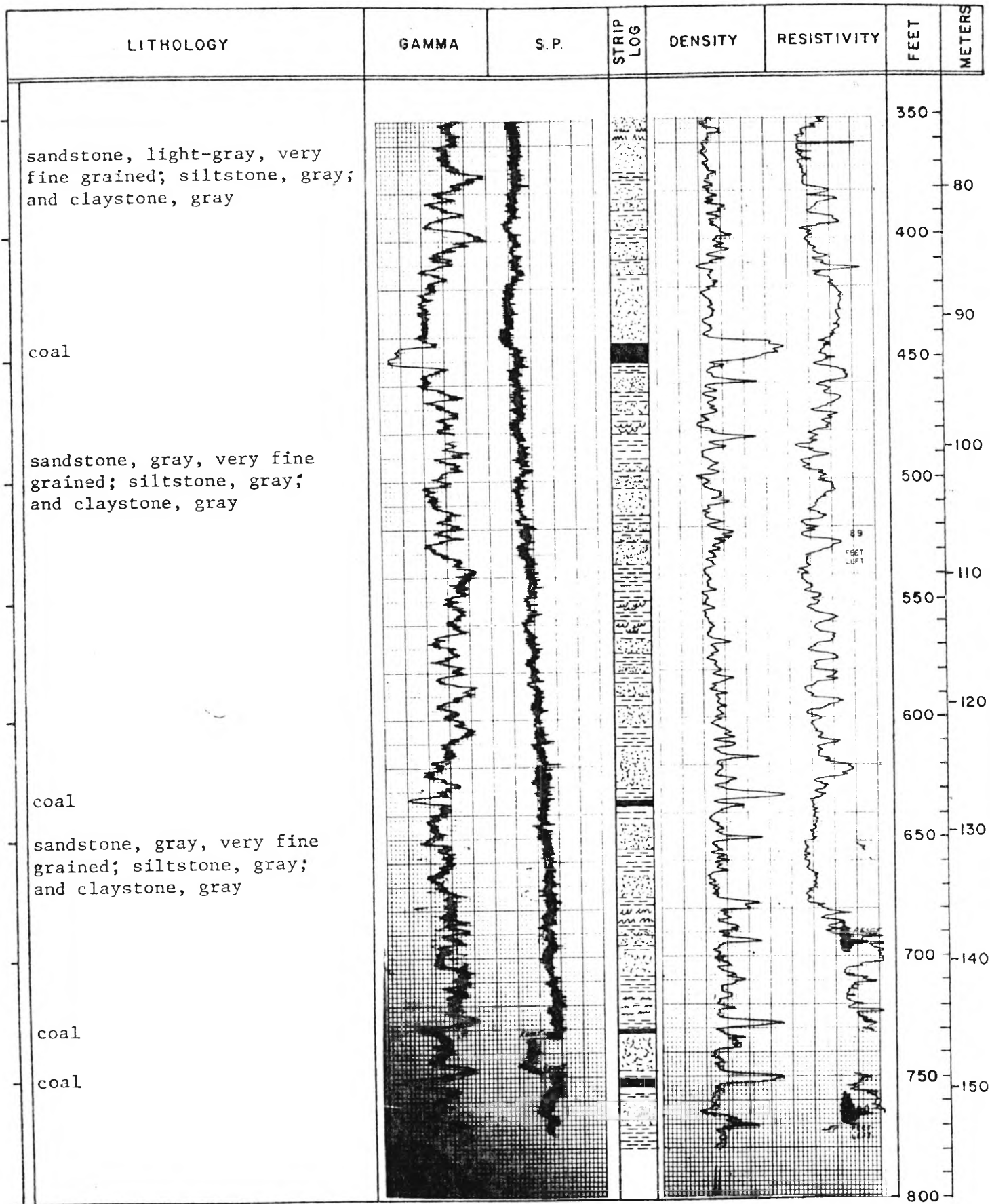
Coal, with claystone parting

The image displays a geological log with two columns of stratigraphic data plotted against a depth scale on the right. The depth scale ranges from 0 to 350 feet, with major ticks every 50 feet. The left column shows a sequence of sandstone (gray and brown, very fine) and claystone (gray) from 0 to approximately 100 feet, followed by coal (with claystone parting) from 100 to approximately 150 feet, and then sandstone (gray, very fine; siltstone, gray; and claystone, gray and blue-gray) from 150 to approximately 250 feet. The right column shows a similar sequence, with sandstone and claystone from 0 to approximately 100 feet, coal (with claystone parting) from 100 to approximately 150 feet, and sandstone, siltstone, and claystone from 150 to approximately 250 feet. A central lithology key identifies the patterns for sandstone, claystone, and coal. The log is plotted on a grid with a vertical axis for depth and a horizontal axis for stratigraphic position.



Hole No: US-79160 Map: Allard Ranch Date: 9/25/79 State: Montana County: Dawson
 Elev: 2681 FT Location: T 19^N R 56^E Sec 30 Tract AACD Drilled depth 780 FT
 Measured: 1200 FT ^{FNL} XXX 910 FT ^{FEL} XXX FT. Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____





Hole No: US-79161 Map: BLM NE 40 Date: 9/26/79 State: Montana County: Dawson
 Elev: _____ FT Location: T 15^N R 57^E, Sec 30 Tract DDDDB Drilled depth _____
 Measured: 600 FT ~~RXX~~ FSL 1200 FT ~~RXX~~ FEL _____ FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: ☐
 Remarks: No elevation control available.

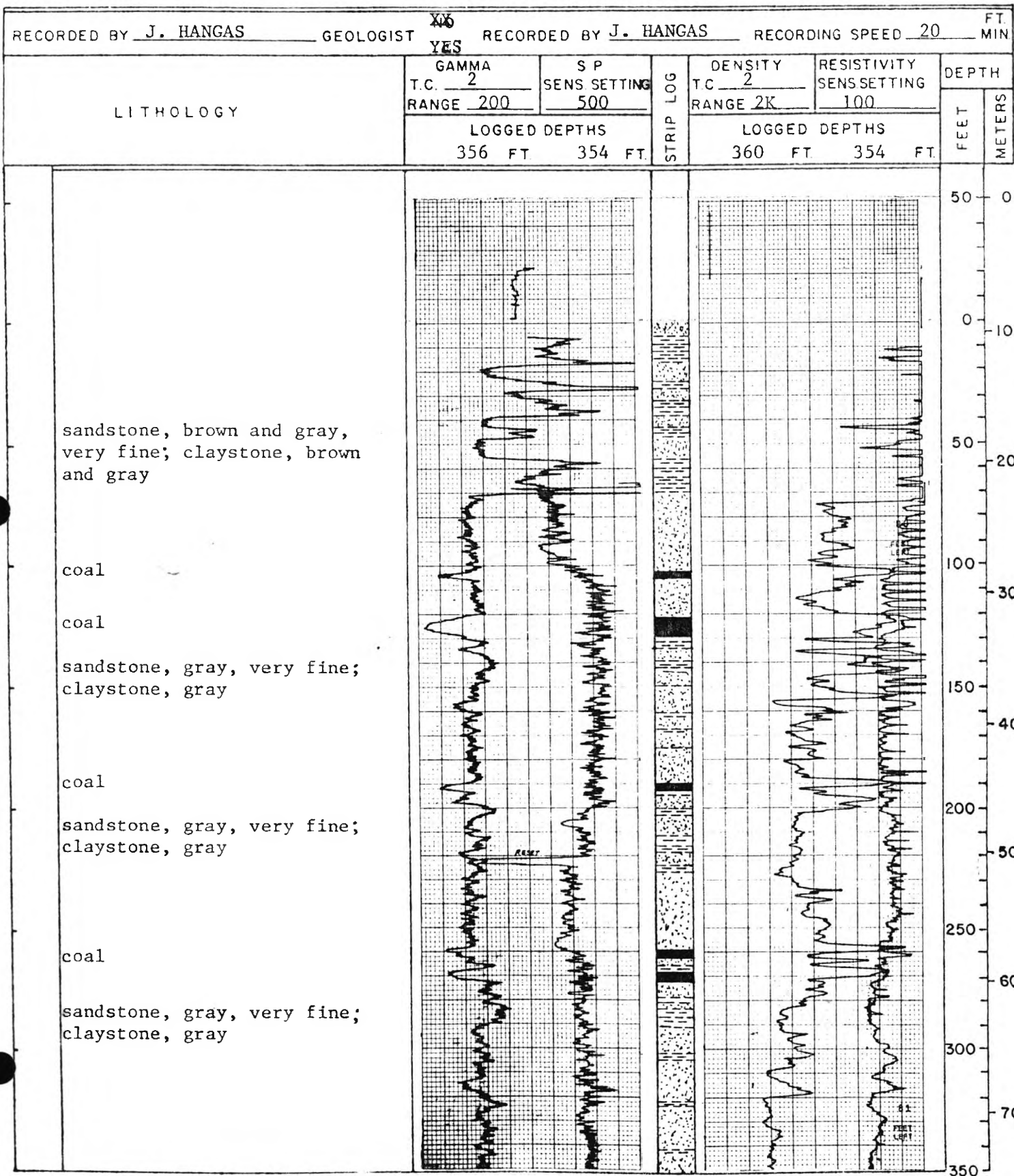
RECORDED BY WILLIAM JACKSON GEOLOGIST ^{MB} YES RECORDED BY WILLIAM JACKSON RECORDING SPEED _____



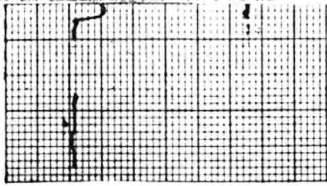
LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY
	T.C. 2 RANGE 200	SENS SETTING 500		T.C. 2 RANGE 2K	SENS SETTING 100
	LOGGED DEPTHS 176 FT 173 FT			LOGGED DEPTHS 180 FT 173	
Siltstone, brown; clay, brown; gravel; and alluvial					
Claystone, brown; sandstone, brown					
Claystone, gray; and sandstone, gray					
Coal, with claystone partings					
Sandstone, gray; and claystone, gray; and siltstone, gray					

US- 79161

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

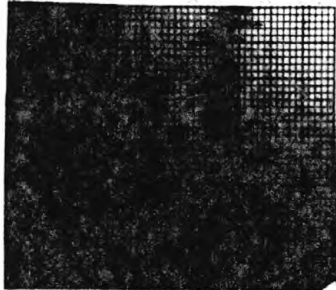
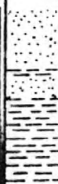
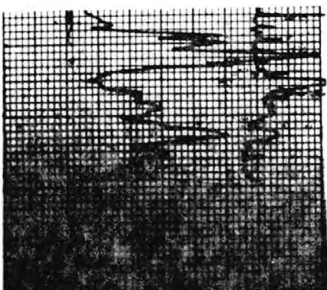
Hole No: US-79162 Map: NE 40 BLM Date: 10/4/79 State: Montana County: Dawson
 Elev.: FT Location: T 15^N R 57^E, Sec 26 Tract AADC Drilled depth 360 FT
 Measured: 1400 FT ^{FNL} ~~EST~~ 10 FT ^{FEL} ~~XXX~~ FT Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: No elevation control.



LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79163 Map: NE 40 BLM Date: 10/4/79 State: Montana County: Dawson
 Elev.: FT Location: T15 ^N~~X~~ R 58 ^E~~W~~, Sec 30 Tract DDBB Drilled depth 400 FT
 Measured: 1300 FT ~~XXX~~ FSL 1250 FT ~~XXX~~ FEL FT Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: no elevation control

RECORDED BY <u>JON HANGAS</u> GEOLOGIST NOX YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>	STRIP LOG	DENSITY TC <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>100</u>
	LOGGED DEPTHS <u>396</u> FT <u>393</u> FT.			LOGGED DEPTHS <u>400</u> FT <u>393</u> FT	
	FEET	METERS			
Sandstone, light-gray, very fine grained; siltstone, gray and greenish-gray; and claystone, brown to gray Coal Coal Coal, with claystone parting Sandstone, gray, very fine grained; and claystone, gray				50 0 0 10 50 20 100 30 150 40 200 50 250 60 300 70 350	

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Sandstone, gray, very fine grained; claystone, gray						350 80 400 90 450 100 500 110 550 120 600 130 650 140 700 150 750 800	

Hole No. US-79164 Map: NE 40 BLM Date: 10/5/79 State: Montana County: Dawson
 Elev.: FT Location: T 15 ^N R 57 ^E W, Sec 2 Tract BAAD Drilled depth 360 FT
 Measured: 660 FT FNL 1320 FT FWL FT Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: no elevation control

RECORDED BY WILLIAM JACKSON GEOLOGIST ^{XXX} YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN

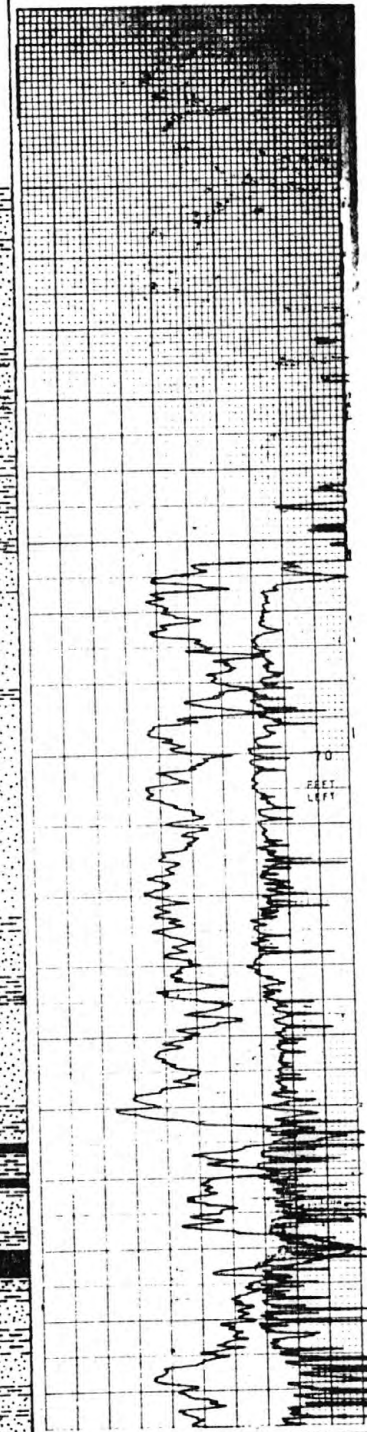
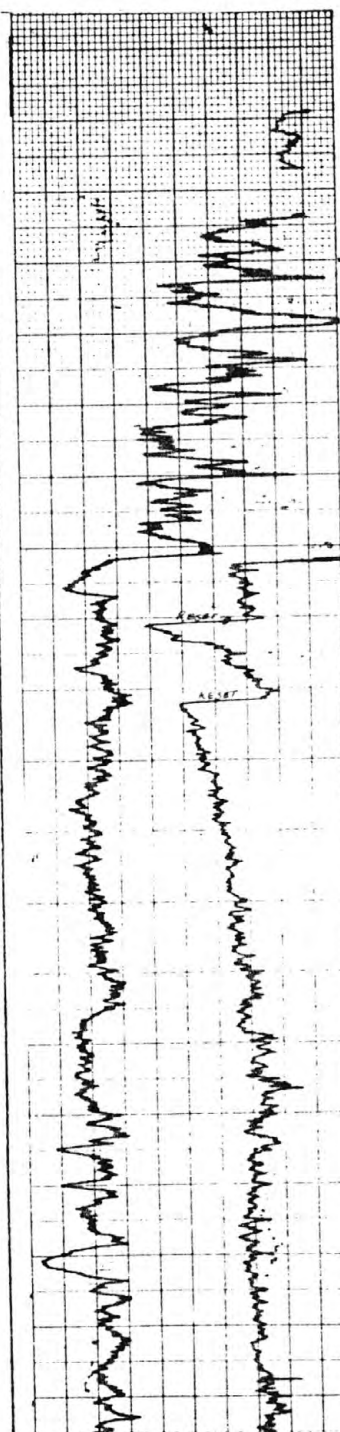
LITHOLOGY	YES		STRIP LOG	DENSITY		RESISTIVITY		DEPTH	
	T.C. <u>2</u>			T.C. <u>2</u>		SENS SETTING		FEET	METERS
	RANGE <u>200</u>			SENS SETTING		SENS SETTING			
	RANGE <u>200</u>			<u>500</u>		<u>100</u>			
LOGGED DEPTHS			LOGGED DEPTHS						
376 FT 373 FT.			380 FT 373 FT.						

Sandstone, gray, very fine grained; siltstone, gray; and claystone, gray and brown

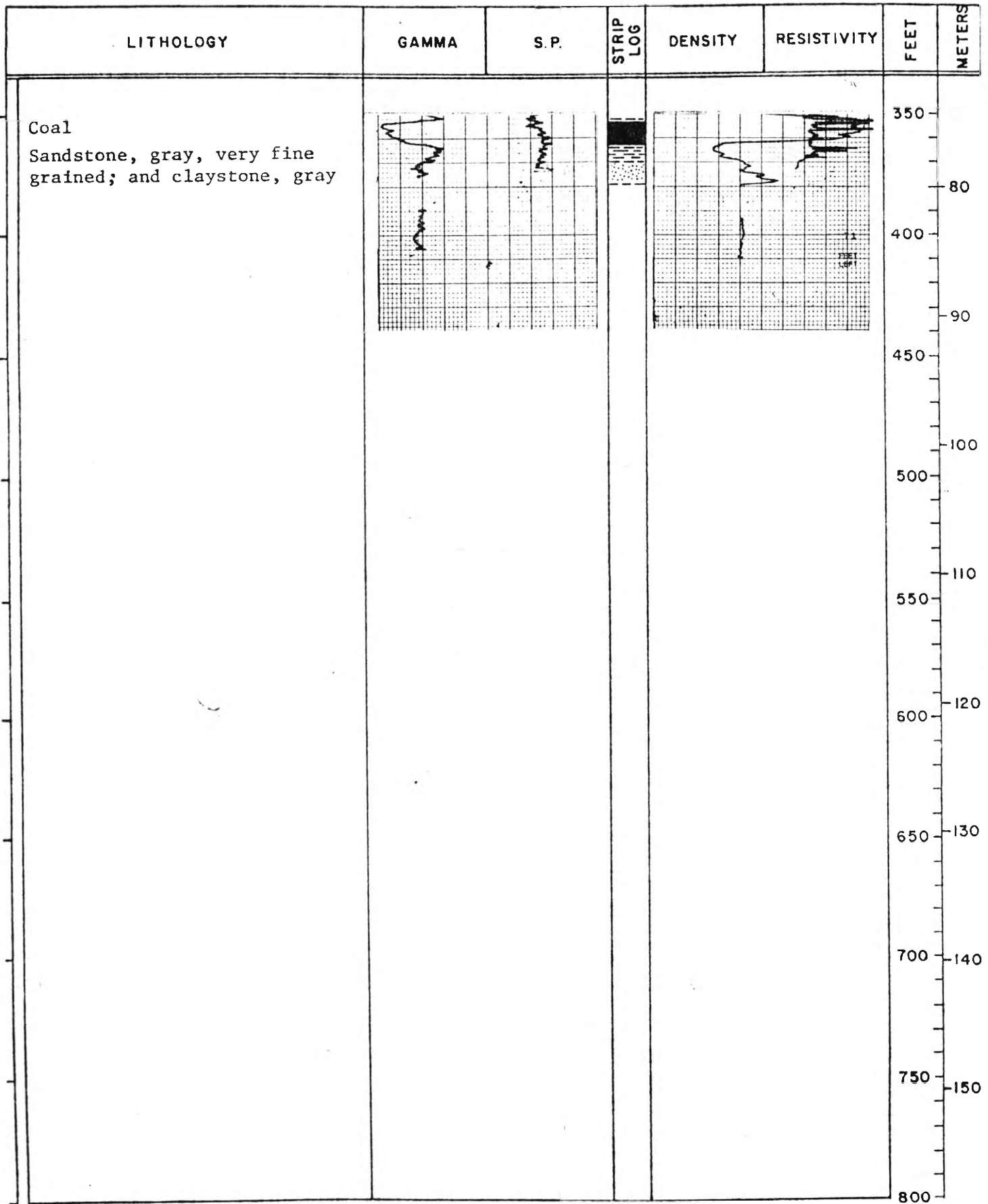
Coal, with claystone parting

Coal

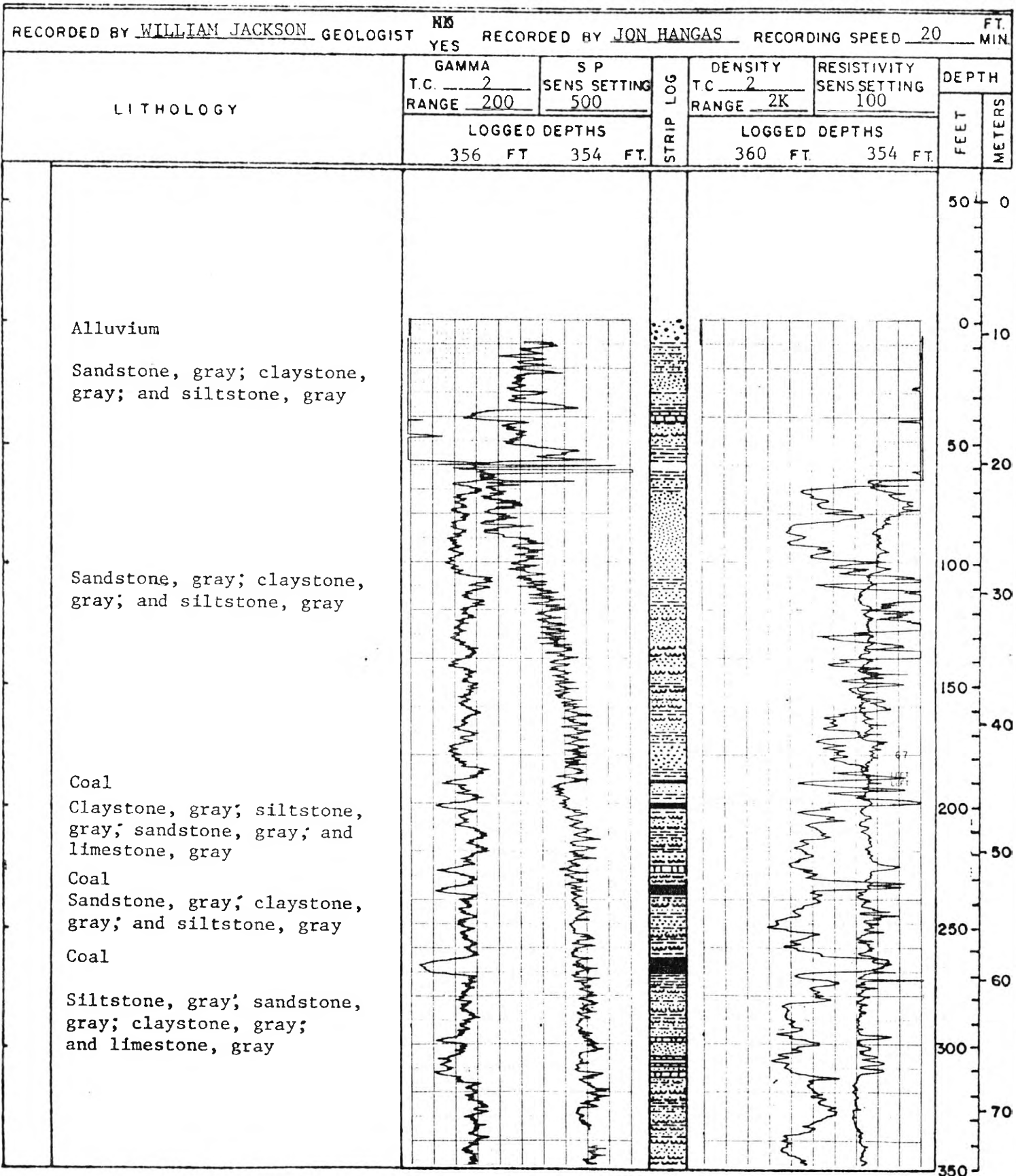
Sandstone, gray, very fine grained; and claystone, gray

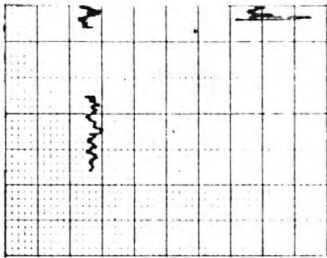
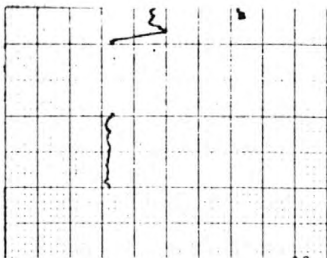


50 0
0 10
50 20
100 30
150 40
200 50
250 60
300 70
350

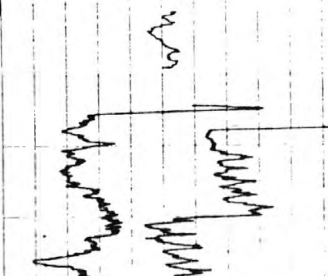

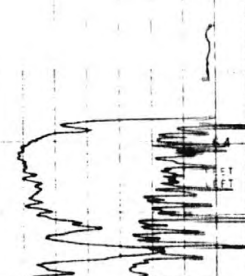

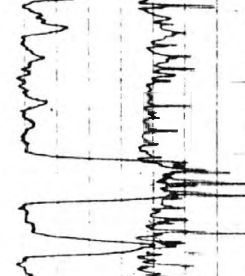

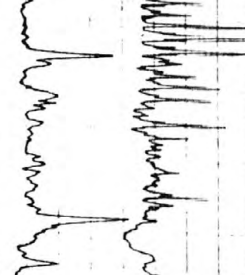
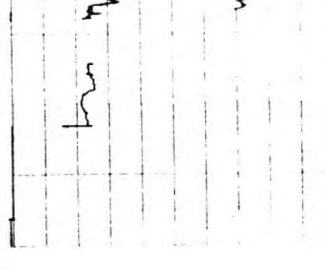
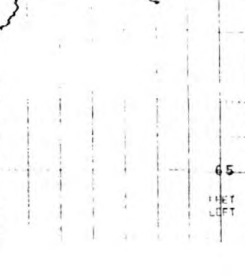

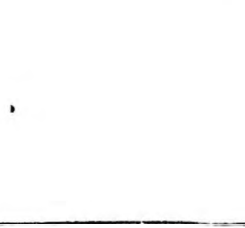




Hole No: US-79165 Map: BLM NE-40 Date: 10/5/79 State: Montana County: Dawson
 Elev.: _____ FT Location: T 16^N R 57^E, Sec 6 Tract DDDD Drilled depth 360 FT
 Measured: 50 FT ~~FSL~~ 50 FT ~~FEL~~ ~~FWK~~ FT Hole size: 5 5/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: no elevation control



LITHOLOGY	GAMMA	S. P.	STRIP, LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						700	
						140	
						750	
						150	
						800	

Hole No: US-79166 Map: BLM NE-40 Date: 10/6/79 State: Montana County: Dawson
 Elev: FT Location: T 16 ^N R 57 ^E, Sec 20 Tract BAA Drilled depth 220 FT
 Measured: 5 FT ^{FNL} ~~RXX~~ 2500 FT. ^{RXX} ~~FWL~~ FT. Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: no elevation control

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{RXX} YES		RECORDED BY <u>WILLIAM JACKSON</u>		RECORDING SPEED <u>20</u> FT. MIN.			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>100</u>	DEPTH	
	LOGGED DEPTHS			LOGGED DEPTHS		FEET	METERS
	216 FT	213 FT		220 FT	213 FT		
Claystone, brown						50 0	
Claystone, gray						0 10	
Coal						50 20	
Sandstone, gray; and claystone, gray						100 30	
Coal Claystone, gray, and siltstone, gray Coal						150 40	
Sandstone, gray; claystone, gray; and siltstone, gray						200 50	
						250 60	
						300 70	
						350	

LITHOLOGY	GAMMA	S.P.	STRIP, LOB	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <u>MM</u> YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	DENSITY TC _____ RANGE _____
	LOGGED DEPTHS 220 FT. 199 FT.		RESISTIVITY SENS SETTING <u>5</u>
STRIP LOG		LOGGED DEPTHS FT. 199 FT.	DEPTH FEET METERS
<p>Alluvium</p> <p>Sandstone, very fine; siltstone, brown to tan; and claystone;</p> <p>sandstone, very fine; claystone, gray, with siltstone</p> <p>Coal</p> <p>Claystone, gray, with siltstone</p> <p>Sandstone, siltstone; and claystone</p>	<p><i>Gamma</i></p>		<p>50 0</p> <p>0 10</p> <p>50 20</p> <p>100 30</p> <p>150 40</p> <p>200 50</p> <p>250 60</p> <p>300 70</p> <p>350</p>

US- 79200

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

9200
4-11

Hole No: US-79200 Map: Hedstrom Lake NW Date: 11/7/79 State: Montana County: McCone
Elev: 2634 FT Location: T 17^N R 44^E Sec 30 Tract DDDD Drilled depth 200 FT
Measured: 10 FT FSL 20 FT ~~XXX~~ ^{FEL} ~~XXX~~ FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NO YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN				
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS. SETTING <u>5</u>	DEPTH	
	LOGGED DEPTHS <u>220</u> FT <u>199</u> FT.		STRIP LOG	LOGGED DEPTHS FT <u>199</u> FT.		FEET
						METERS
		<div>S.P.</div>	<div>Res.</div>		50	0
					0	10
					50	20
					100	30
					150	40
					200	50
					250	60
					300	70
					350	

US- 79200

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79201 Map: Hedstrom Lake NW Date: 11/7/79 State: Montana County: Garfield
 Elev: 2640 FT Location: T 17 ^N R 43 ^E W, Sec 24 Tract AAAA Drilled depth 160 FT
 Measured: 10 FT ^{FNL} ~~PSL~~ 10 FT ^{FEL} ~~PSL~~ FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____
	RESISTIVITY SENS SETTING <u>5</u>		DEPTH
	LOGGED DEPTHS 160 FT 160 FT.		LOGGED DEPTHS FT 160 FT
	STRIP LOG		FEET METERS
<p>Siltstone, brown; sandstone, brown, fine; and claystone, brown</p> <p>Coal</p> <p>Sandstone, brown; siltstone, brown; and claystone, brown</p> <p>Coal</p> <p>Siltstone, gray; sandstone, gray; and claystone, gray</p>	<p><i>Gamma</i></p>		<p>50 0</p> <p>0 10</p> <p>50 20</p> <p>100 30</p> <p>150 40</p> <p>200 50</p> <p>250 60</p> <p>300 70</p> <p>350</p>

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						400	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79201 Map: Hedstrom Lake NW Date: 11/7/79 State: Montana County: Garfield
 Elev.: 2640 FT Location: T 17^N R 43^E W, Sec 24 Tract AAA Drilled depth 160 FT
 Measured: 10 FT ^{FNL} 10 FT ^{FEL} 10 FT ^{FWL} Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <input checked="" type="checkbox"/> YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____
	RESISTIVITY SENS. SETTING <u>5</u>		DEPTH
	LOGGED DEPTHS <u>160</u> FT. <u>160</u> FT.		FEET METERS
STRIP LOG		LOGGED DEPTHS FT. <u>160</u> FT.	
<p>S.P.</p>		<p>Res.</p>	
		50 0	
		0 10	
		50 20	
		100 30	
		150 40	
		200 50	
		250 60	
		300 70	
		350	

US- 79201

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79202 Map: Hedstrom 1 SW Date: 11/8/79 State: Montana County: Garfield
 Elev.: 2681 FT Location: T 17^N R 43^E, Sec 2 Tract CBBC Drilled depth 260 FT
 Measured: 2430 FT. FSL 25 FT. FWL 25 FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

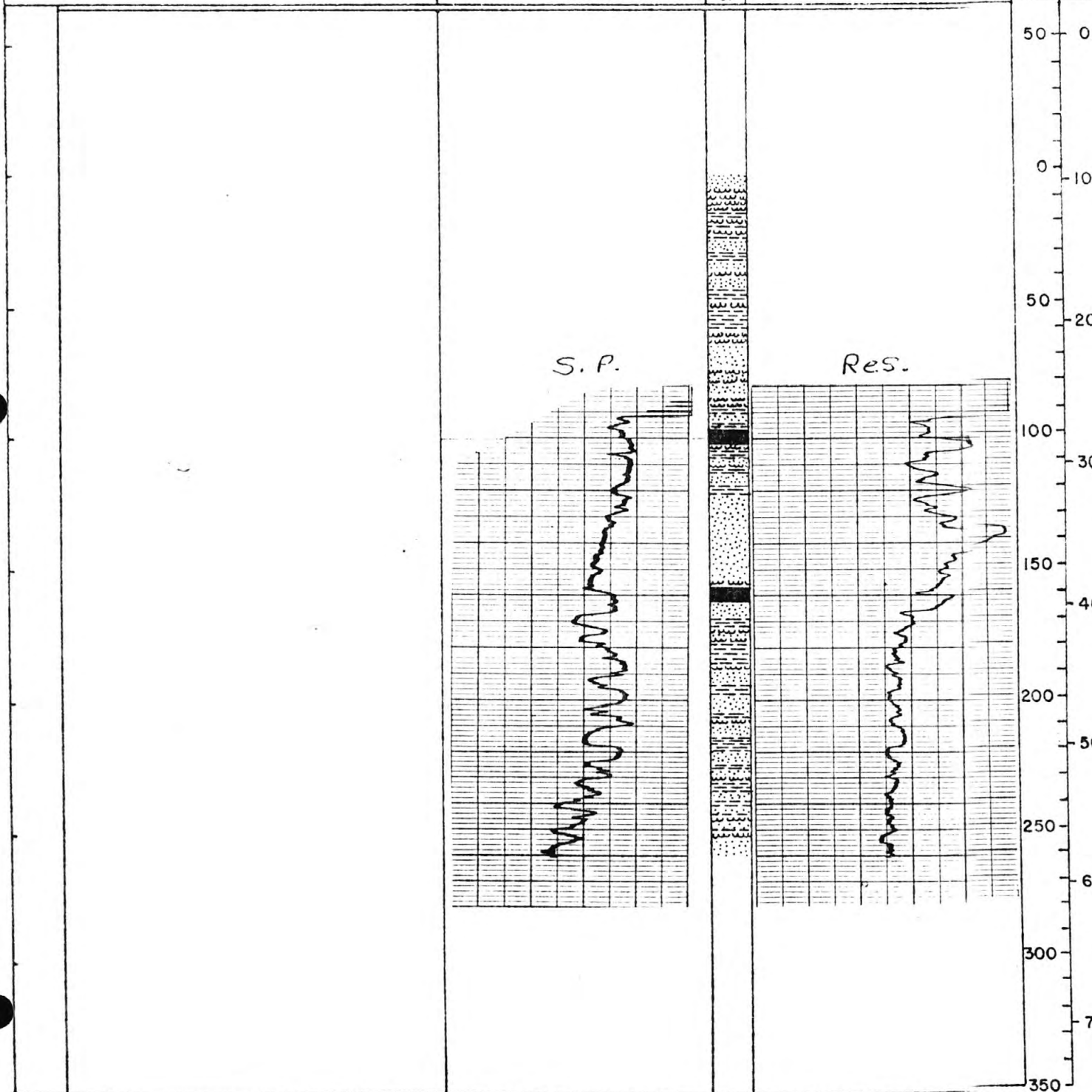
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <u>YES</u>		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN		
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____	
	LOGGED DEPTHS 260 FT. 260 FT.		RESISTIVITY SENS. SETTING <u>10</u>	
	LOGGED DEPTHS FT. 260 FT.		DEPTH FEET METERS	
Sand, brown, very fine; alluvial; siltstone, brown; claystone, brown; and sandstone, brown Siltstone, gray; claystone, gray; and sandstone, gray Coal Sandstone, gray; claystone, gray; and siltstone, gray Coal Sandstone, gray; claystone, gray; and siltstone, gray			STRIP LOG 	50 0
				0 10
				50 20
				100 30
				150 40
				200 50
				250 60
				300 70
				350

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79202 Map: Hedstrom 1 SW Date: 11/8/79 State: Montana County: Garfield
Elev.: 2681 FT Location: T 17^N R 43^E, Sec 2 Tract CBBC Drilled depth 260 FT
Measured: 2430 FT. FSL 25 FT. FWL XXX FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks: _____

RECORDED BY WILLIAM JACKSON GEOLOGIST NO YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN.

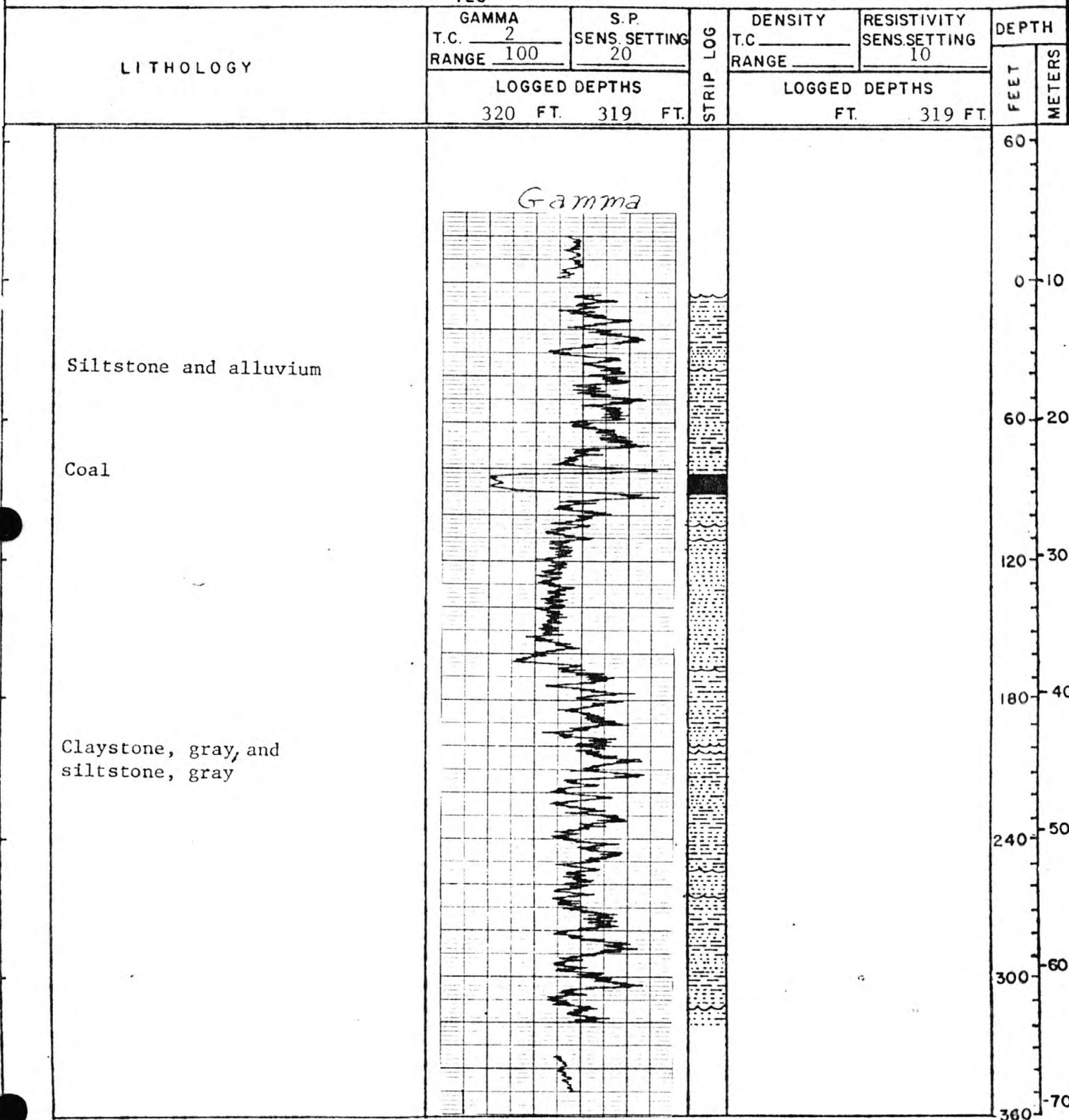
LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	DEPTH
	T.C.	SENS SETTING		T.C.	SENS SETTING	
	RANGE			RANGE		
	<u>2</u>	<u>20</u>			<u>10</u>	
	<u>100</u>	<u>20</u>			<u>10</u>	
	LOGGED DEPTHS			LOGGED DEPTHS		
	<u>260</u> FT. <u>260</u> FT.			<u>260</u> FT. <u>260</u> FT.		



LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No. US-79203 Map: Hedstrom Lake Date: 11/13/79 State: Montana County: Garfield
 Elev.: 2720 FT. Location: T 16^N R 44^E, Sec 8 Tract Drilled depth 520 FT.
 Measured: 10 FT. ~~KNX~~ FSL 2490 FT. ~~KNX~~ ^{FEL} FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks:

RECORDED BY WILLIAM JACKSON GEOLOGIST ^{N8} YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN.



LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						360	
						80	
						420	
						90	
						480	
						100	
						540	
						110	
						120	
						600	
						130	
						660	
						140	
						720	
						150	
						780	
						160	
						840	
						170	
						880	
						180	
						900	

SP 471

Hole No: US-79203 Map: Hedstrom Lake Date: 11/13/79 State: Montana County: Garfield
 Elev.: 2720 FT. Location: T 16^N R 44^E W, Sec Tract Drilled depth 520 FT.
 Measured: 10 FT. FSL 2490 FT. ^{RMK} ^{FEL} ^{RWX} FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks:

RECORDED BY <u>WILLIAM AJCKSON</u> GEOLOGIST ^{NOX} YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN.			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S.P. SENS. SETTING <u>20</u>	STRIP LOG	DENSITY T.C. <u> </u> RANGE <u> </u>	RESISTIVITY SENS. SETTING <u>10</u>	DEPTH	
	LOGGED DEPTHS			LOGGED DEPTHS		FEET	METERS
	320 FT.	319 FT.		FT.	319 FT.		
						60	
						0	10
						60	20
						120	30
						180	40
						240	50
						300	60
						360	70

LITHOLOGY	GAMMA	S R	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						360	
						80	
						420	
						90	
						480	
						540	110
						600	120
						660	130
						720	140
						780	150
						840	160
						900	170
							180

Hole No: US-79204 Map: Heitz School Date: 11/14/79 State: Montana County: McCone
 Elev.: 2818 FT Location: T 16 ^N R 46 ^E W, Sec 20 Tract DDDD Drilled depth 340 FT
 Measured: 100 FT FSL 30 FT FEL KWX FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NO YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN.		
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING <u>5</u>	DEPTH
	LOGGED DEPTHS <u>341</u> FT <u>340</u> FT.			LOGGED DEPTHS FT. <u>340</u> FT.		FEET
						METERS
Sand, Brown, fine; and alluvium						0
						10
Claystone, gray; and sandstone, gray						20
Coal						30
Sandstone, gray; and claystone, gray						40
						50
Coal						60
Limestone, gray; claystone, gray; sandstone, gray; and siltstone, gray						70
						80
						90
						100
						110
						120
						130
						140
						150
						160
						170
						180
						190
						200
						210
						220
						230
						240
						250
						260
						270
						280
						290
						300
						310
						320
						330
						340
						350

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79204 Map: Hietz School Date: 11/14/79 State: Montana County: McCone
 Elev.: 2818 FT Location: T 16 ^N R 46 ^E Sec 20 Tract DDDD Drilled depth 340 FT
 Measured: 100 FT FSL 30 FT FEL XXX FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{XX} YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>20</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS. SETTING <u>5</u>	DEPTH	
	LOGGED DEPTHS <u>341</u> FT. <u>340</u> FT.			LOGGED DEPTHS FT. <u>340</u> FT.		FEET	METERS
						0	10
						50	20
						100	30
						150	40
						200	50
						250	60
						300	70
						350	

S.P. *Res.*

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79205 Map: Heitz School Date: 11/14/79 State: Montana County: Prairie
 Elev.: 2920 FT Location: T 15^N R 46^E, Sec 32 Tract ADAA Drilled depth 300 FT
 Measured: 1310 FT FNL XXX 60 FT FEL KXX FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

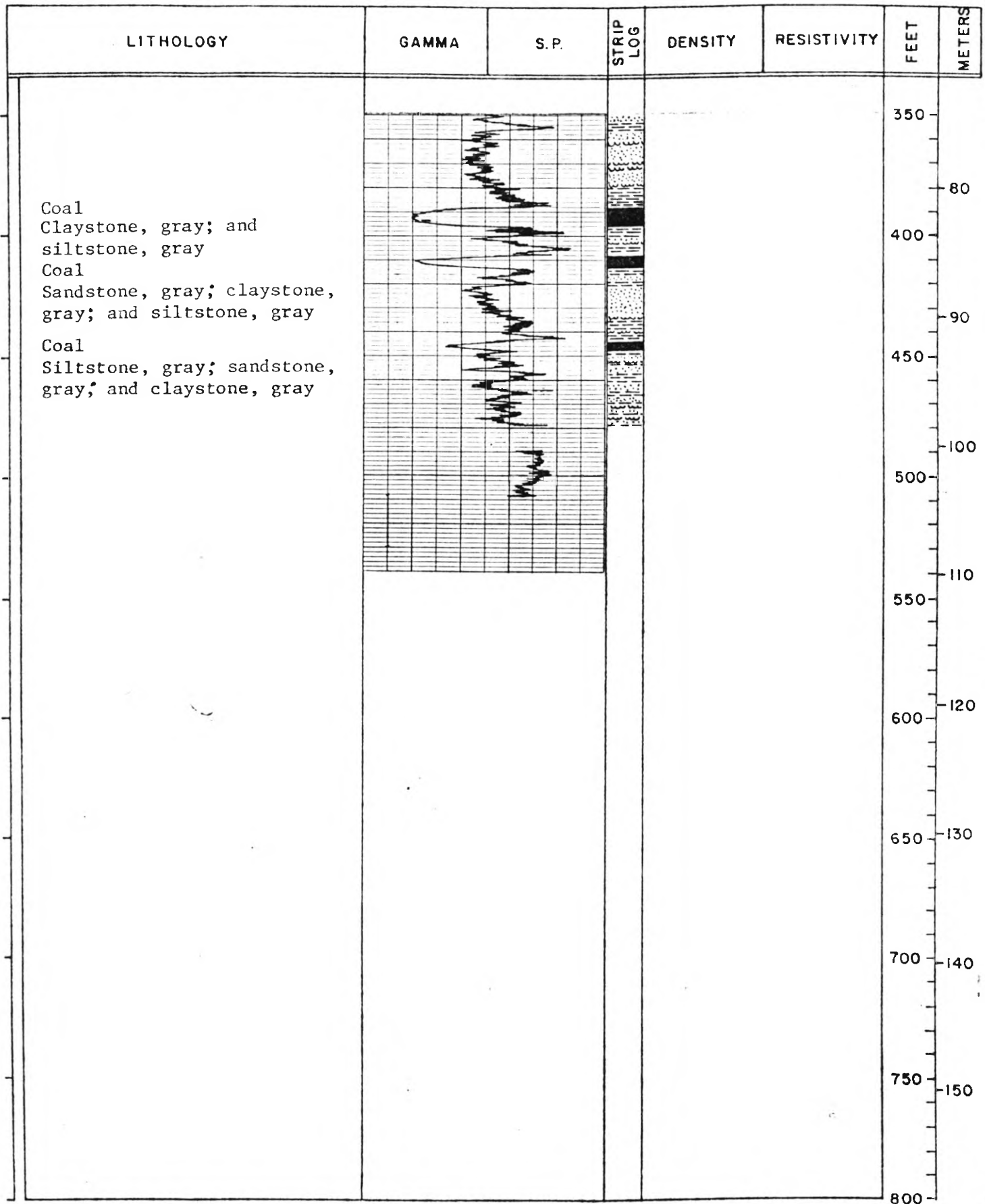
RECORDED BY <u>JON HANGAS</u> GEOLOGIST <u>MM</u> YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING	DENSITY T.C. _____ RANGE _____
	RESISTIVITY SENS. SETTING		DEPTH
	LOGGED DEPTHS <u>276</u> FT. FT.		LOGGED DEPTHS FT. FT.
Siltstone, tan to brown Claystone, brown; and siltstone, brown Coal Claystone, gray-green; sand- stone, green; and claystone Coal Coal Siltstone, carbonaceous; claystone, gray; sandstone, gray Claystone, green-gray; and sandstone, gray			50 0 0 10 50 20 100 30 150 40 200 50 250 60 300 70 350

US- 79205

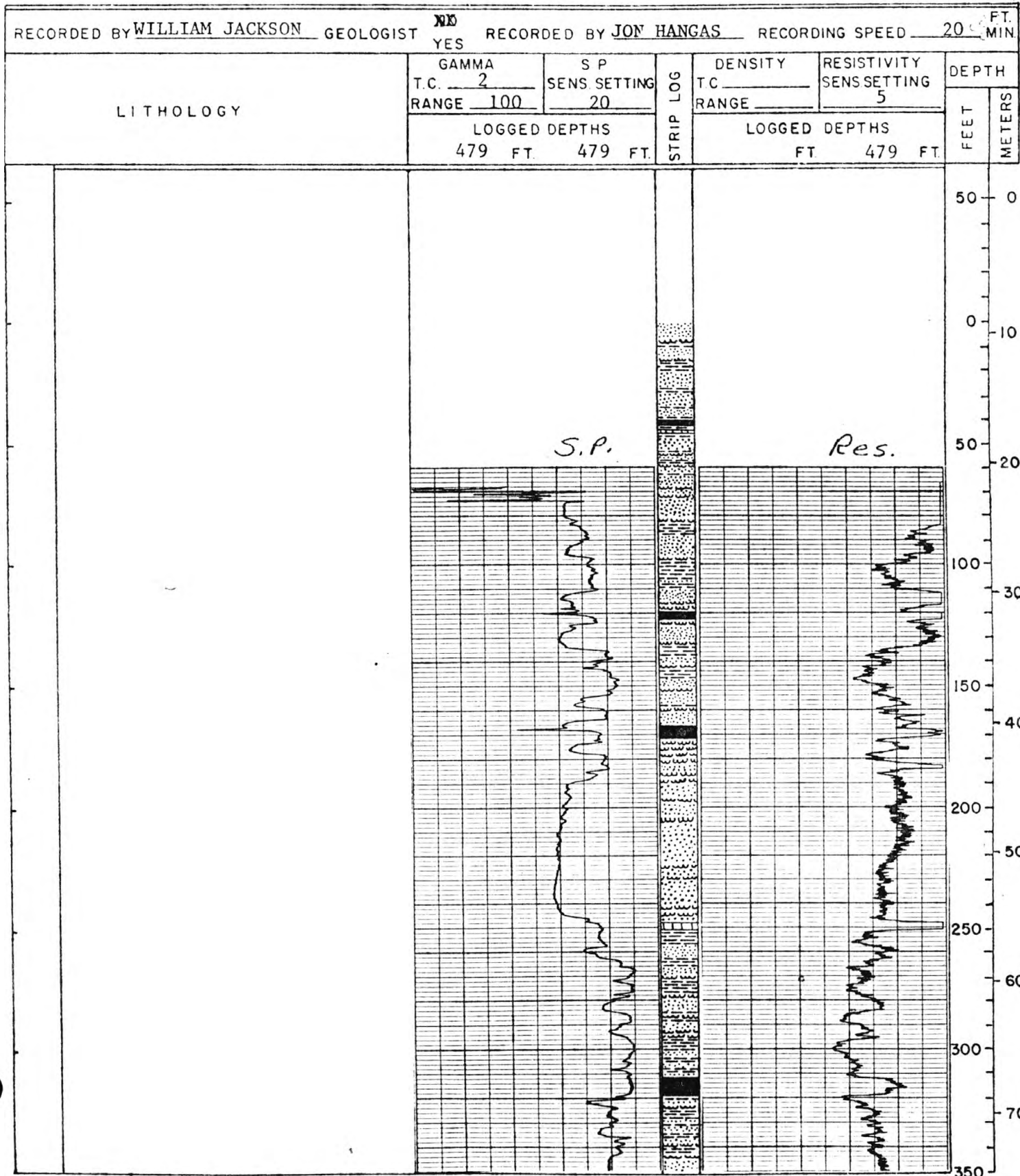
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350 80 400 90 450 100 500 110 550 120 600 130 650 140 700 150 750 800	

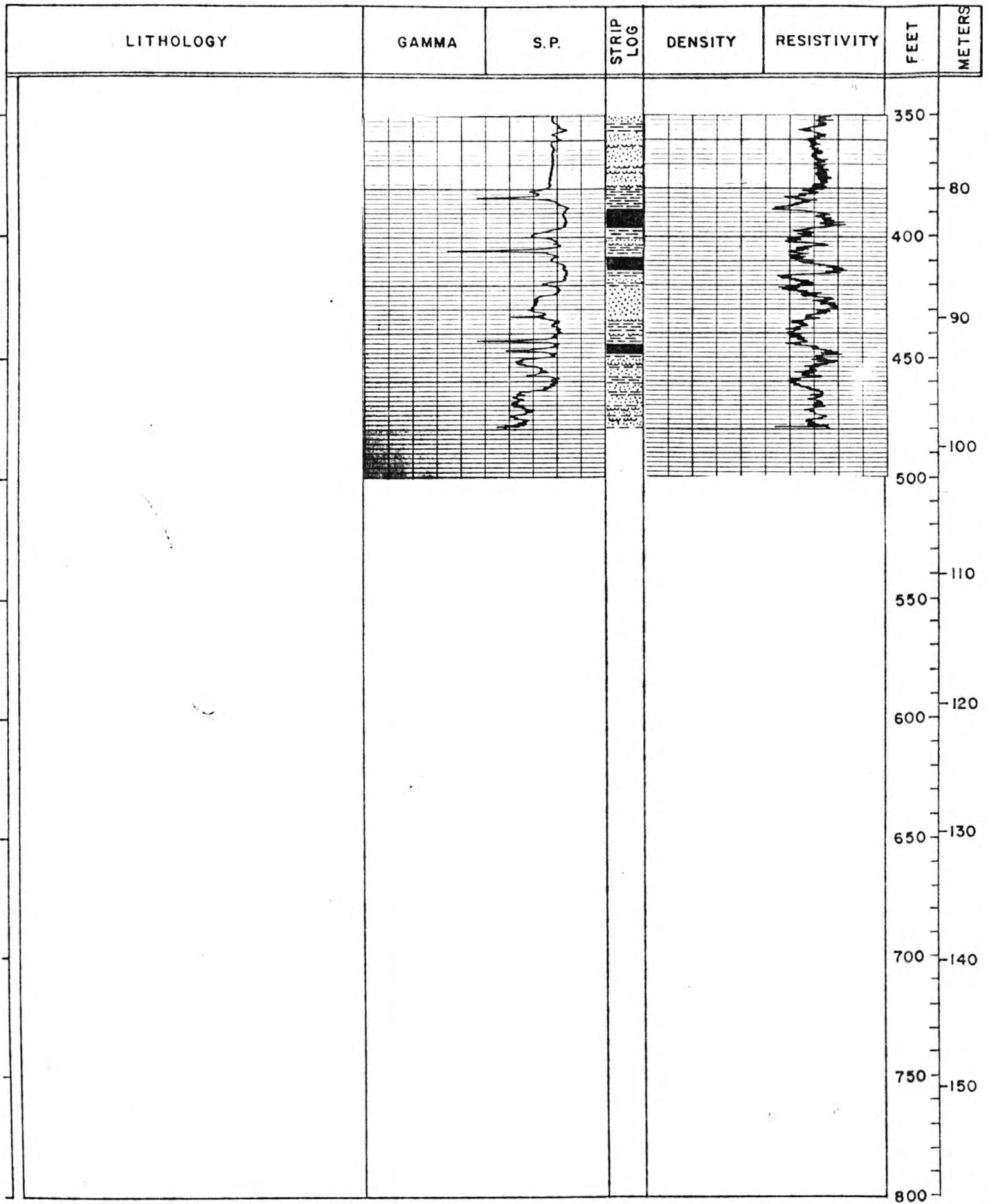
Hole No: US-79206 Map: Combs Ranch Date: 11/15/79 State: Montana County: Prairie
 Elev: 3080 FT Location: T 14^N R 46^E, Sec 21 Tract ADAA Drilled depth 480 FT
 Measured: 1400 FT ~~FNL~~ 95 FT ~~FEL~~ FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NO YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN.			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	STRIP LOG	DENSITY TC _____ RANGE _____	RESISTIVITY SENS SETTING <u>5</u>	DEPTH	
	LOGGED DEPTHS <u>479</u> FT. <u>479</u> FT.			LOGGED DEPTHS FT. <u>479</u> FT.		FEET	METERS
Sand, fine Claystone, gray; siltstone, gray; sandstone, brown Coal, carbonaceous; and shale Limestone, gray Sandstone, gray; claystone, gray; and siltstone, gray Coal, carbonaceous Coal, carbonaceous Sandstone, gray; siltstone, gray; and claystone, gray Limestone, gray Coal Sandstone, gray; claystone, gray; and siltstone, gray	Gamma					50	0
						0	10
						50	20
						100	30
						150	40
						200	50
						250	60
						300	70
						350	



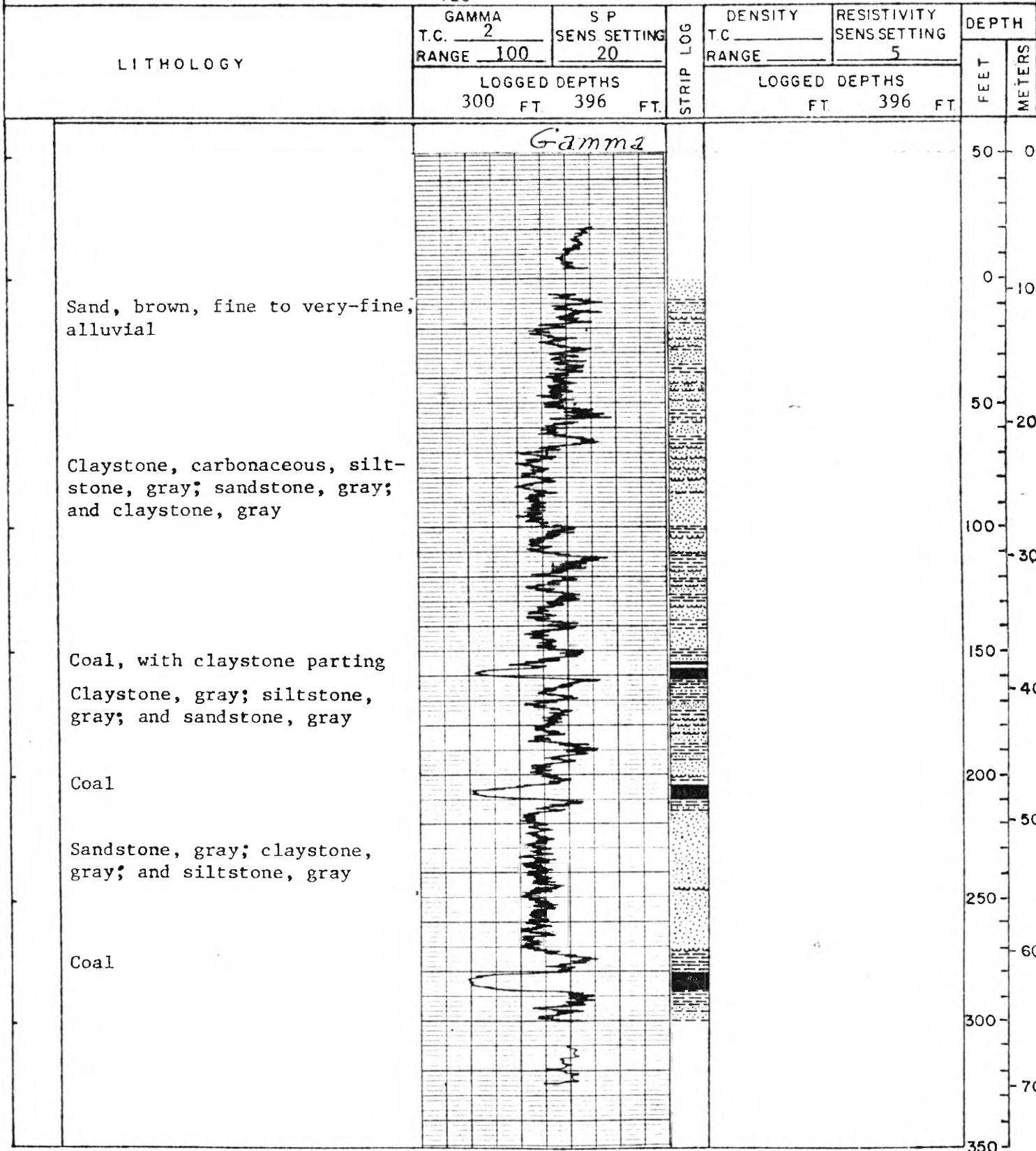
Hole No: US-79206 Map: Combs Ranch Date: 11/15/79 State: Montana County: Prairie
 Elev.: 3080 FT Location: T 14 ^N R 46 ^E Sec 21 Tract ADAA Drilled depth 480 FT
 Measured: 1400 FT ^{FNL} ~~501~~ 95 FT ^{FEL} ~~XXX~~ FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____





Hole No: US-79207 Map: Combs Ranch Date: 11/15/79 State: Montana County: Prairie
 Elev.: 2988 FT Location: T 14 ^N R 46 ^E W, Sec 34 Tract BBBC Drilled depth 300 FT.
 Measured: 170 FT. ^{FNL} XSS 100 FT. ^{KEY} FWL FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

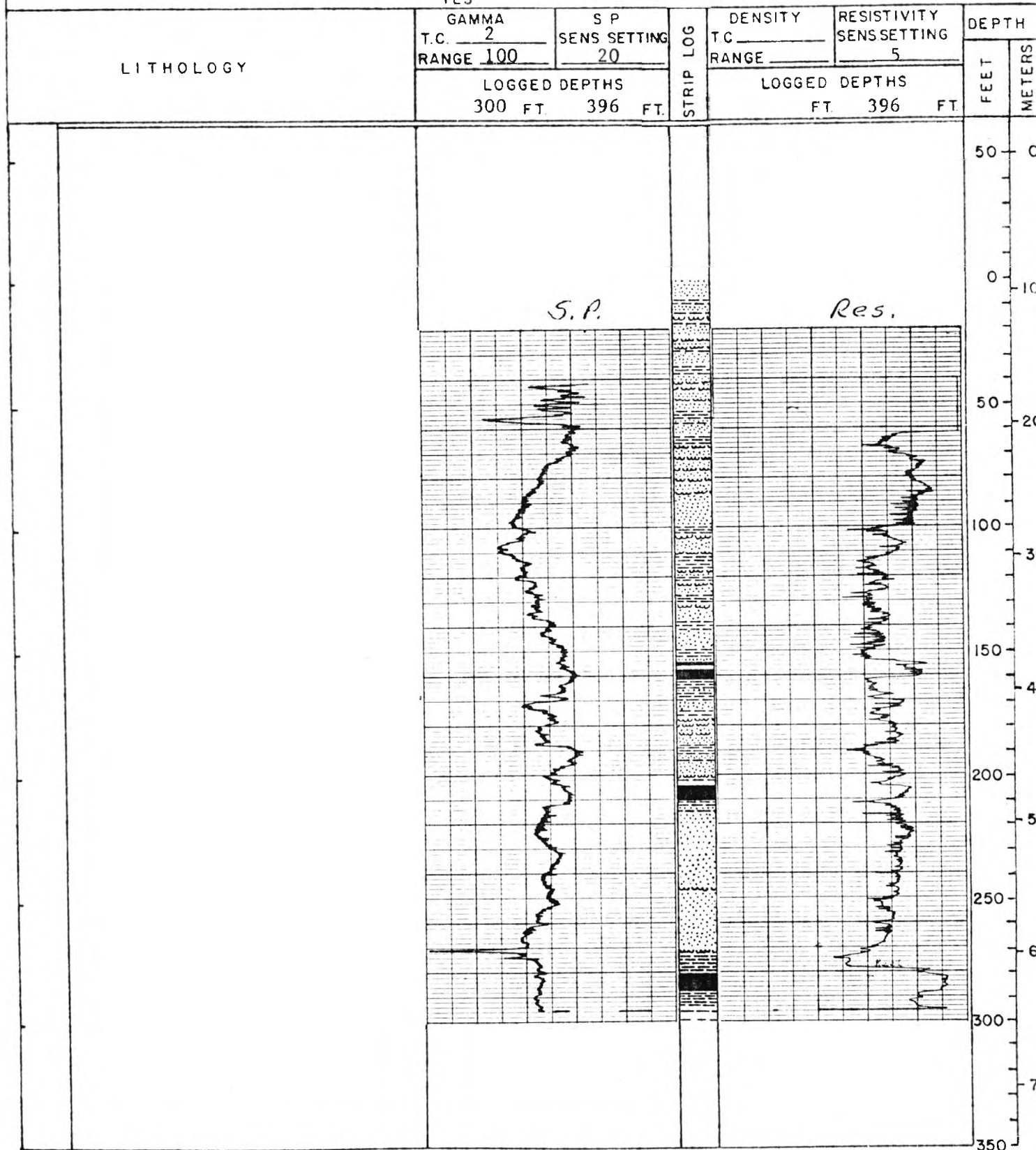
RECORDED BY WILLIAM JACKSON GEOLOGIST ^{XNO} YES RECORDED BY JON HANGAS RECORDING SPEED 20 ⁶⁰ FT. MIN.



LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79207 Map: Combs Ranch Date: 11/15/79 State: Montana County: Prairie
 Elev.: 2988 FT Location: T14 ^N R 46 ^E W, Sec 34 Tract BBBC Drilled depth 300 FT
 Measured: 170 FT ^{FNL} ~~FSX~~ 100 FT ^{FWL} ~~FWL~~ FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

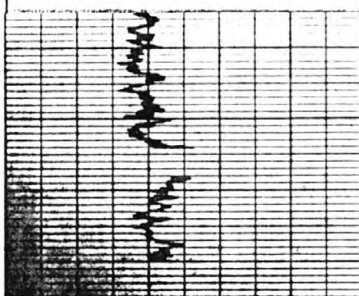
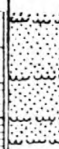
RECORDED BY WILLIAM JACKSON GEOLOGIST ^{NQ} YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN



LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

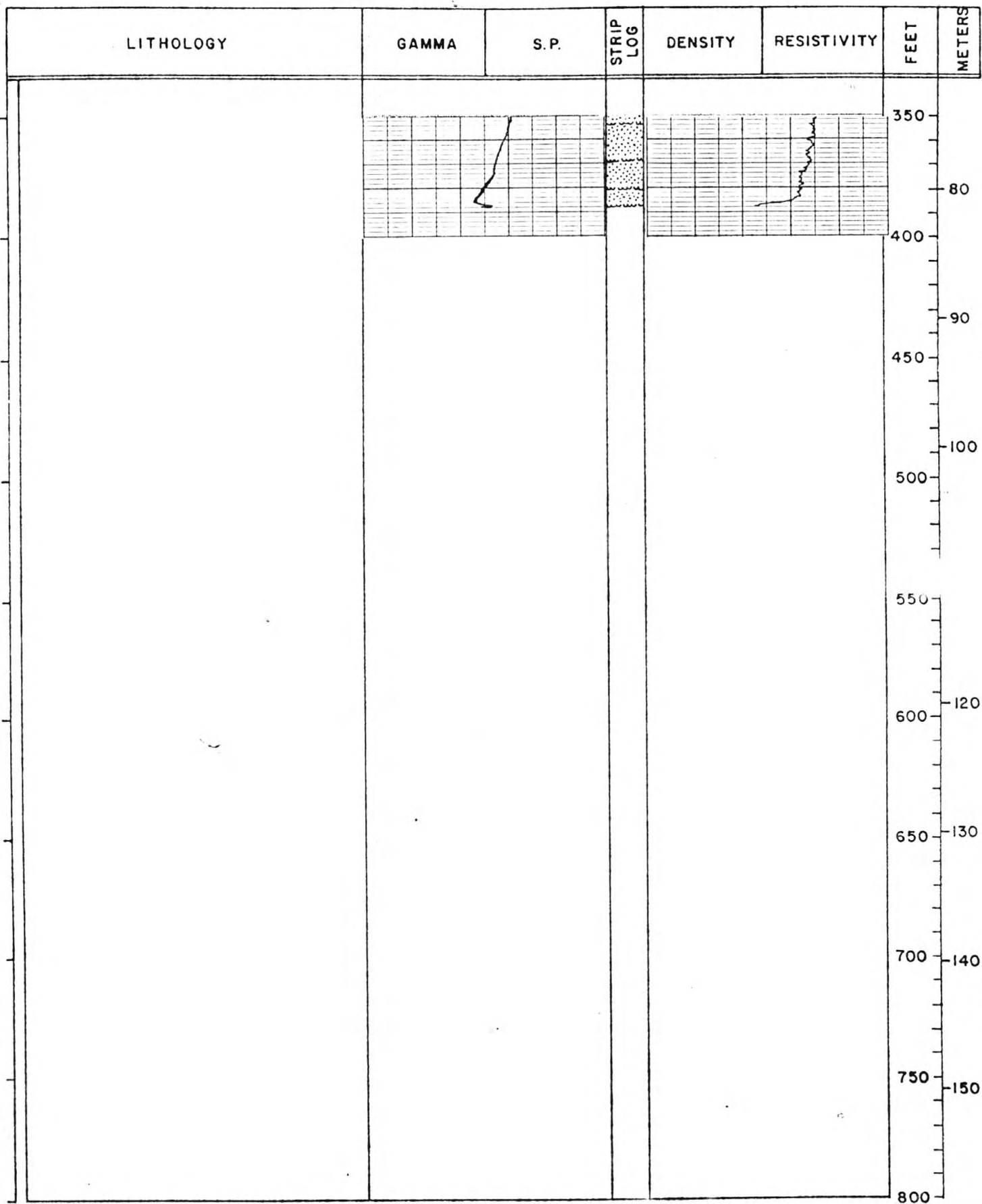
Hole No: US-79208 Map: Little Sheep Mt. Date: 11/16/79 State: Montana County: Prairie
 Elev.: 3074 FT Location: T 14^N R 46^E, Sec 24 Tract AAAD Drilled depth 400 FT
 Measured: 50 FT. ~~FNL~~ 500 FT. ~~FEL~~ XXX FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☐
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{MM} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> CC FT MIN					
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>20</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS. SETTING <u>5</u>	DEPTH	
	LOGGED DEPTHS 388 FT. 388 FT.			LOGGED DEPTHS FT. 388 FT.		FEET	METERS
Siltstone, brown, alluvial; and gravel						50	
Claystone, brown; siltstone, brown; and sand						0	
Claystone, greenish-gray						50	
Coal, shale, carbonaceous						100	
Sandstone, gray; and claystone, gray						150	
Coal						200	
Claystone, gray; and sandstone, gray						250	
Coal						300	
Sandstone, gray; and claystone, gray						350	
Coal							
Claystone, gray; and sandstone, gray							

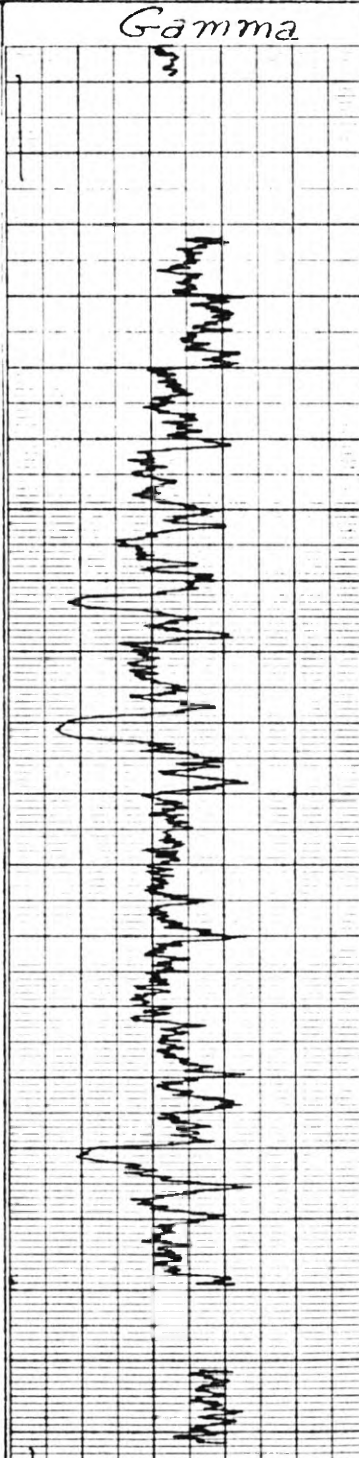
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79208 Map: Little Sheep Mt Date: 11/16/79 State: Montana County: Prairie
 Elev: 3074 FT Location: T 14 ^N R 46 ^E, Sec 24 Tract AAAD Drilled depth 400 FT
 Measured: 50 FT ^{FNL} ~~XXX~~ 500 FT ^{FEL} ~~XXX~~ FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☐
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{XXX} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS. SETTING <u>5</u>	DEPTH FEET
	LOGGED DEPTHS 388 FT. 388 FT.		LOGGED DEPTHS FT. 388 FT.		
	STRIP LOG				
	S.P.		Res.		50
					0
50					
100					
150					
200					
250					
300					
350					
400					
450					
500					
550					
600					
650					

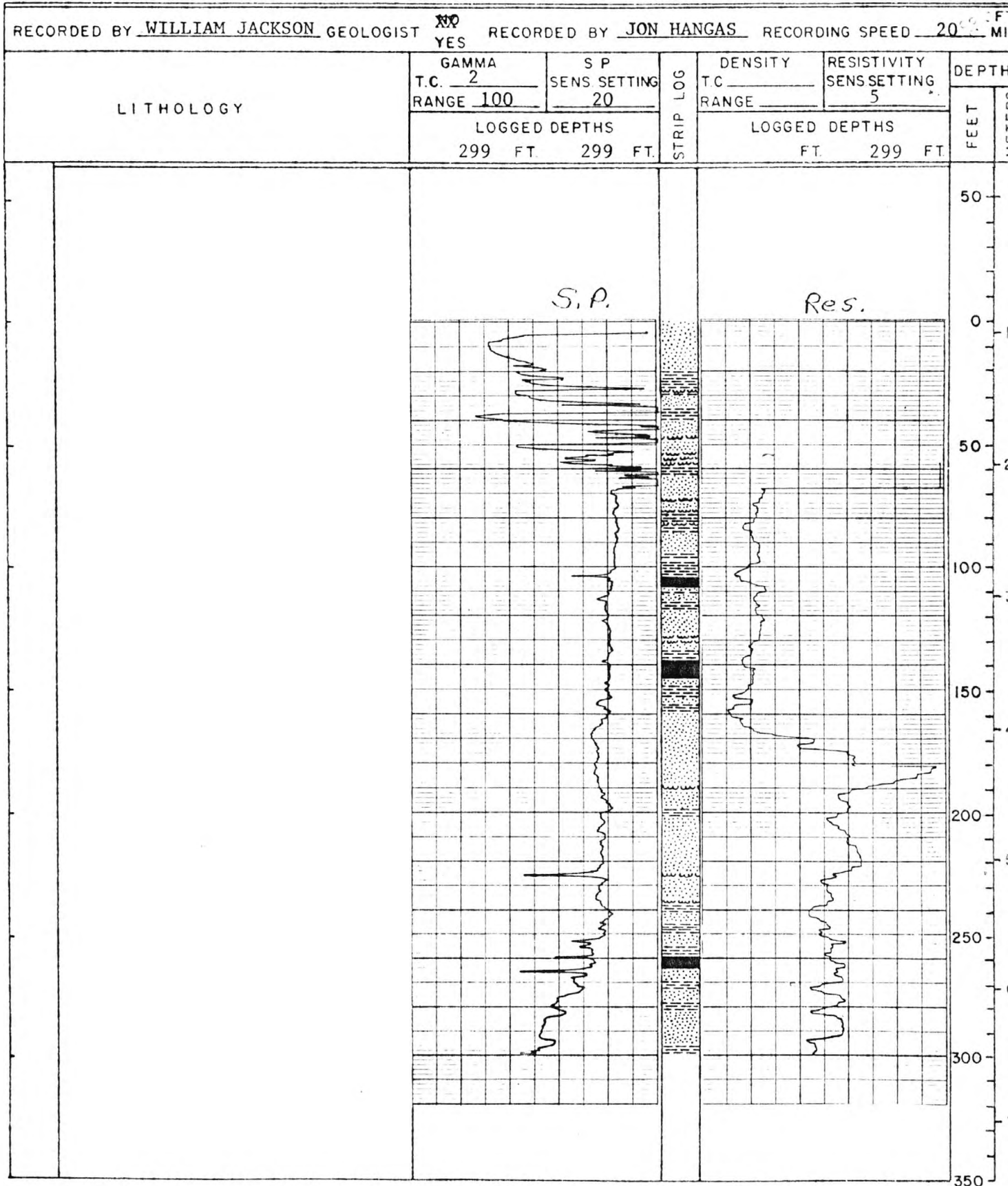


Hole No: US-79209 Map: Little Sheep Mt. Date: 11/16/79 State: Montana County: Prairie
 Elev.: 2975 FT Location: T 14^N R 47^E, Sec 27 Tract CBBC Drilled depth 300 FT
 Measured: 1280 FT. FSL 20 FT. FWL XXX FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☐
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST HW YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> °C/FT MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS. SETTING <u>5</u>
	LOGGED DEPTHS 299 FT 299 FT.			LOGGED DEPTHS FT 299 FT.	
Sand, brown, fine, alluvial Claystone, gray-brown; and siltstone, brown Shale, carbonaceous; claystone, gray; and sandstone, gray Coal Coal, shale, carbonaceous Claystone, gray; and sandstone, gray Coal Sandstone, gray; and claystone, gray	<u>Gamma</u> 		DEPTH FEET 50 0 50 100 150 200 250 300 350		

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

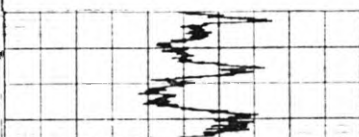
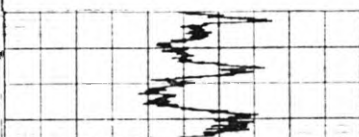
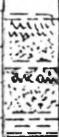


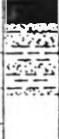
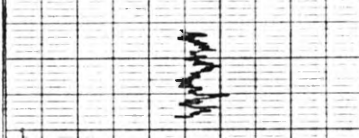
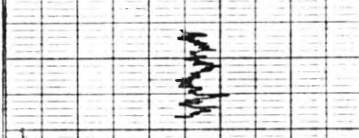
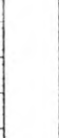


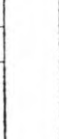


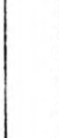


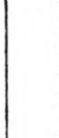
Hole No: US-79209 Map: Little Sheep Mt. Date: 11/16/79 State: Montana County: Prairie
 Elev.: 2975 FT Location: T 14 ^N ~~S~~ R 47 ^E ~~W~~, Sec 27 Tract CBBC Drilled depth 300 FT
 Measured: 1280 FT FSL 20 FT FWL 1280 FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☐
 Remarks: _____



LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

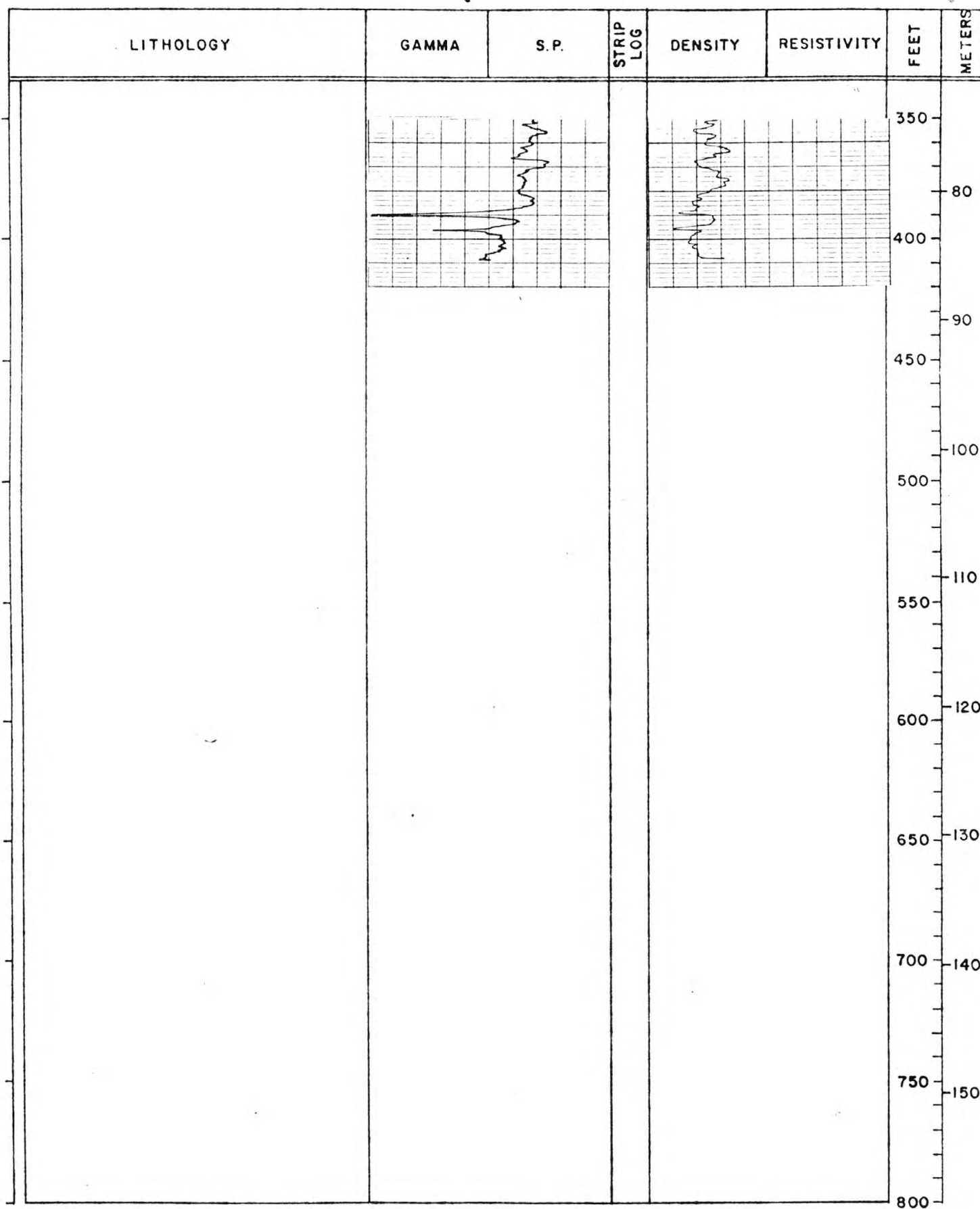
Hole No: US-79210 Map: Little Sheep Mt. Date: 11/17/79 State: Montana County: Prairie
 Elev.: 3210 FT Location: T 13^N R 47^E Sec 5 Tract BBBB Drilled depth 420 FT
 Measured: 12 FT ^{FNL} ~~XXX~~ 225 FT ^{FWL} ~~XXX~~ FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NO YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN.			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>20</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS. SETTING <u>5</u>	DEPTH	
	LOGGED DEPTHS			LOGGED DEPTHS		FEET	METERS
	412 FT	408 FT		FT	408 FT		
Alluvium, brown						50	0
Interbedded claystone, brown; siltstone, brown; and sandstone, brown, very fine						0	10
Interbedded sandstone, gray, fine to very fine; siltstone, gray; claystone, gray; and carbonaceous shale						50	20
Sandstone, gray, very fine to fine, with claystone laminae						100	30
Sandstone, gray, very fine to fine; coal; carbonaceous mudstone						150	40
Interbedded claystone, gray; and sandstone, gray						200	50
Interbedded claystone, gray; and sandstone, gray						250	60
Coal						300	70
Interbedded claystone, gray; sandstone, gray; and siltstone, gray, with limestone, gray						350	
Interbedded siltstone, gray; sandstone, gray, fine; and claystone, gray							
Coal							

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Interbedded claystone, gray; sandstone, gray; and siltstone, gray						350	
Coal						80	
Interbedded sandstone, gray; and claystone, gray						400	
						90	
						450	
						500	
						550	
						600	
						650	
						700	
						750	
						800	

Hole No: US-79210 Map: Little Sheep Mt. Date: 11/17/79 State: Montana County: Prairie
Elev.: 3210 FT Location: T 13 ^N R 47 ^E, Sec 5 Tract BBBB Drilled depth 420 FT
Measured: 12 FT ^{FNL} 225 FT ^{FWL} FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☐
Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST		<u>XNO</u>	RECORDED BY <u>JON HANGAS</u>		RECORDER SPEED <u>20</u>	FT MI
LITHOLOGY	GAMMA	S P	DENSITY	RESISTIVITY	DEPTH	
	T.C. <u>2</u>	SENS. SETTING	T.C. _____	SENS. SETTING		
	RANGE <u>100</u>	<u>20</u>	RANGE _____	<u>5</u>		
LOGGED DEPTHS		STRIP LOG	LOGGED DEPTHS		FEET	METERS
412 FT	408 FT.		FT.	408 FT.		
					50	
					0	
					50	
					100	
					150	
					200	
					250	
					300	
					350	



Hole No: US-79211 Map South Fork Reservoir Date: 11/17/79 State: Montana County: Prairie
 Elev.: 2785 FT Location: T 13^N R 48^E Sec 8 Tract BCCC Drilled depth 260 FT
 Measured: 2320 FT ~~PSL~~ 700 FT ~~FWL~~ FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>JON HANGAS</u> GEOLOGIST ^{NR} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> ^{FT} MIN				
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING <u>5</u>	DEPTH	
	LOGGED DEPTHS		LOGGED DEPTHS		FEET	METERS
	262 FT	263 FT	FT	263 FT		
Silt, brown					50	0
Siltstone, tan; claystone, tan and gray, some carbonaceous, and sandstone, gray					0	10
Limestone, brown-gray					50	2
Claystone, gray; and sandstone, gray					100	3
Coal					150	4
Sandstone, gray; claystone, gray; and siltstone, gray					200	5
					250	6
					300	7
					350	8

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79211 Map: South Fork Reservoir Date: 11/17/79 State: Montana County: Prairie
 Elev.: 2785 FT Location: T 13^N R 48^E, Sec 8 Tract BCCC Drilled depth 260 FT.
 Measured: 2320 FT ~~FSL~~ 700 FT ~~FWL~~ XXX FT. Hole size: 5 5/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>JON HANGAS</u> GEOLOGIST NO YES		RECORDED BY <u>WILLIAM JACKSON</u>		RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING <u>5</u>	DEPTH
	LOGGED DEPTHS 262 FT. 263 FT.		LOGGED DEPTHS FT. 263 FT.		FEET METERS

S.P.

Res.

50
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
300
310
320
330
340
350

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79212 Map: McCloud Date: 11/18/79 State: Montana County: Prairie
 Elev.: 2642 FT Location: T 13^N R 49^E, Sec 7 Tract DAAA Drilled depth 220
 Measured: 2600 FT ~~KMX~~ FSL 140 FT ~~FEL~~ ~~KMX~~ FT. Hole size: 5 1/5 IN Air ☒ Water ☐ Cored: Yes ☐ No
 Remarks: _____

RECORDED BY WILLIAM JACKSON GEOLOGIST ~~NO~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 F M

LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	DEPTH FEET
	T.C. <u>2</u>	SENS SETTING		T.C. _____	SENS SETTING	
	RANGE <u>100</u>	<u>20</u>		RANGE _____	<u>5</u>	
LOGGED DEPTHS 220 FT. 220 FT.		LOGGED DEPTHS FT. 220 FT.				
Sandstone, gray, fine to very fine; siltstone, gray; and claystone, gray	<p style="text-align: center;">Gamma</p>					50
						0
						50
						100
						150
						200
						250
						300
						350

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						600	
						120	
						650	
						130	
						700	
						140	
						750	
						150	
						800	

Hole No: US-79212 Map: McCloud Date: 11/18/79 State: Montana County: Prairie
Elev.: 2642 FT Location: T 13 ^N R 49 ^E W, Sec 7 Tract DAAA Drilled depth 220 FT
Measured: 2600 FT. ~~FT~~ 140 FT. ~~FT~~ ^{FEL} FT. Hole size: 5 1/5 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☐
Remarks: _____

522

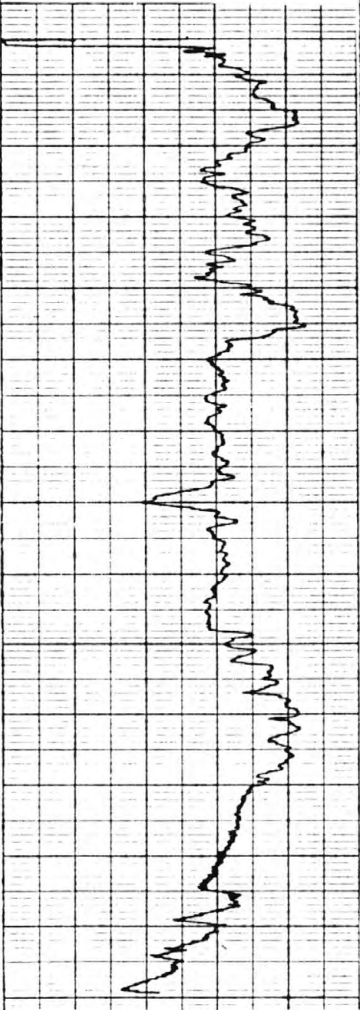
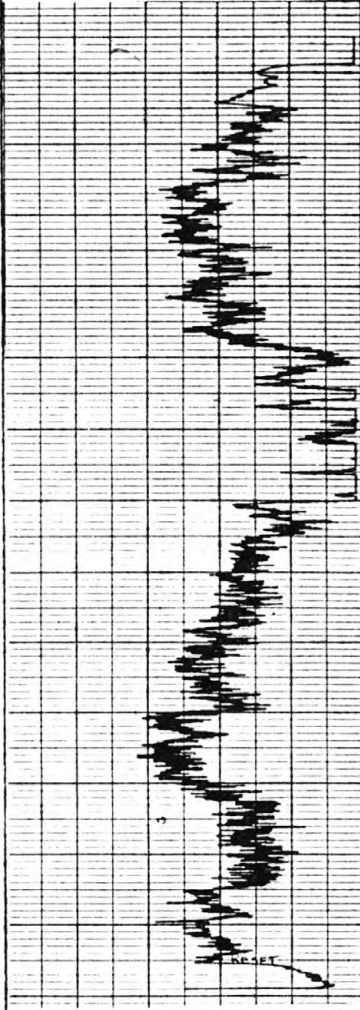
LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79213 Map: McCloud Date: 11/18/79 State: Montana County: Prairie
 Elev.: 2904 FT Location: T 14^N R 48^E, Sec 27 Tract DDDC Drilled depth 320 FT
 Measured: 110 FT ^{FNL} XXX 375 FT ^{FEL} XXX FT. Hole size: IN Air ☒ Water ☐ Cored: Yes ☐ No ☐
 Remarks:

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{YES}		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> ^{FT} ^{MIN}	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S.P. SENS. SETTING <u>20</u>	DENSITY T.C. <u> </u> RANGE <u> </u>
	RESISTIVITY SENS. SETTING <u>5</u>		DEPTH FEET METERS
	LOGGED DEPTHS 319 FT. 318 FT.		LOGGED DEPTHS FT. 318 FT.
Regolith, brown; sandstone, gray, very fine; siltstone, gray; and claystone, gray			50
Coal			0
Coal			50
Sandstone, gray, very fine; siltstone, gray; and claystone, gray			100
Coal			150
Sandstone, gray, very fine; siltstone, gray; and claystone, gray	200		
Coal	250		
Sandstone, gray, very fine; siltstone, gray; and claystone, gray	300		
	350		

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79213 Map: McCloud Date: 11/18/79 State: Montana County: Prairie
 Elev.: 2904 FT Location: T 14^N R 48^E Sec 27 Tract DDDC Drilled depth 320 FT
 Measured: 110 FT ^{FNL} ~~XXX~~ 375 FT ^{FEL} ~~XXX~~ FT Hole size: IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks:

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>20</u>	DENSITY T.C. <u> </u> RANGE <u> </u>
	LOGGED DEPTHS <u>319</u> FT. <u>318</u> FT.		LOGGED DEPTHS <u> </u> FT. <u>318</u> FT.
	STRIP LOG		DEPTH FEET METERS
	<p style="text-align: center;">S.P.</p> 		<p style="text-align: center;">Res</p> 

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79214 Map South Fork Reservoir Date: 11/18/79 State: Montana County: Prairie
 Elev.: 2820 FT Location: T 14 ^N R 48 ^E W, Sec 20 Tract CCCC Drilled depth 240 FT
 Measured: 105 FT FSL 15 FT FWL XXX FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN.		
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>50</u>	S P SENS SETTING <u>20</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING <u>10</u>	DEPTH
	LOGGED DEPTHS <u>242</u> FT <u>240</u> FT.			LOGGED DEPTHS FT. <u>240</u> FT.		FEET
						METERS
Regolith, brown						0
Coal						10
Sandstone, gray, very fine; siltstone, gray; and claystone, gray						20
Coal						30
Coal						40
Sandstone, gray, very fine; siltstone, gray; and claystone, gray						50
Coal						60
Coal						70
						80
						90
			100			
			110			
			120			
			130			
			140			
			150			
			160			
			170			
			180			
			190			
			200			
			210			
			220			
			230			
			240			
			250			
			260			
			270			
			280			
			290			
			300			
			310			
			320			
			330			
			340			
			350			

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

RECORDED BY WILLIAM JACKSON GEOLOGIST ^{NR}_{YES} RECORDED BY JON HANGAS RECORDING SPEED 20 ^{FT.}_{MIN.}

RECORDED BY JON HANGAS

RECORDING SPEED 20

FT.
MIN

GAMMA
T.C. 2
RANGE 50

S P
SENS. SETTING
20

STRIP LOG

DENSITY
T.C. _____
RANGE _____

RESISTIVITY
SENS. SETTING
10

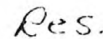
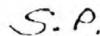
DEPTH	
FEET	METERS

LOGGED DEPTHS

242 FT. 240 FT.

LOGGED DEPTHS

FT. 240 FT.

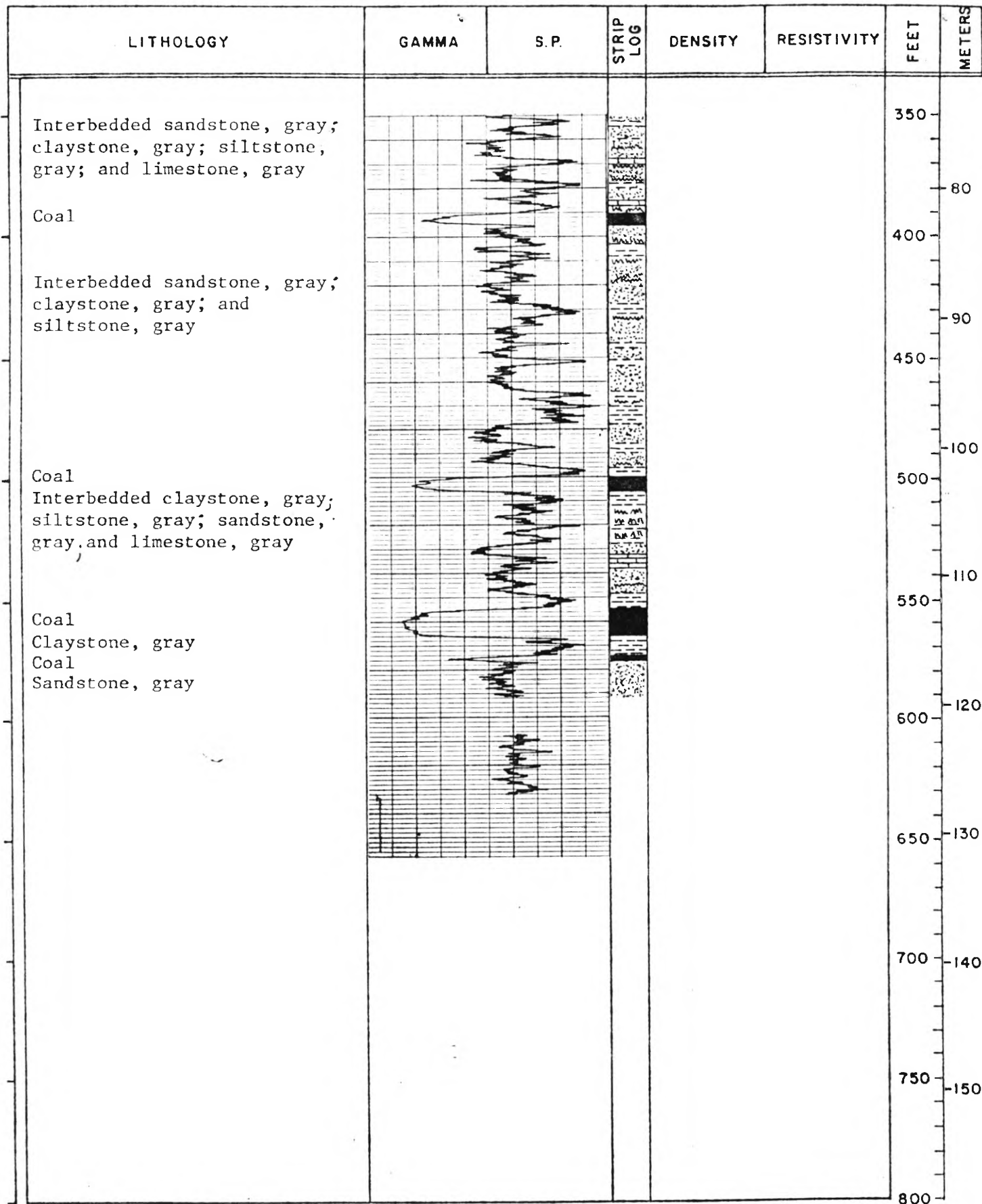


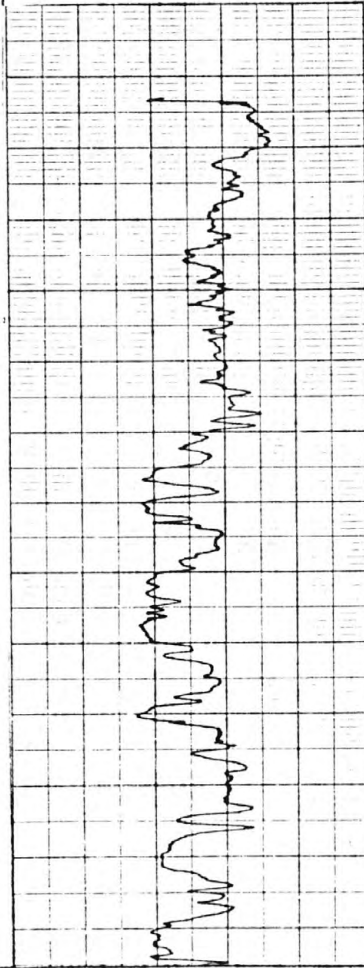
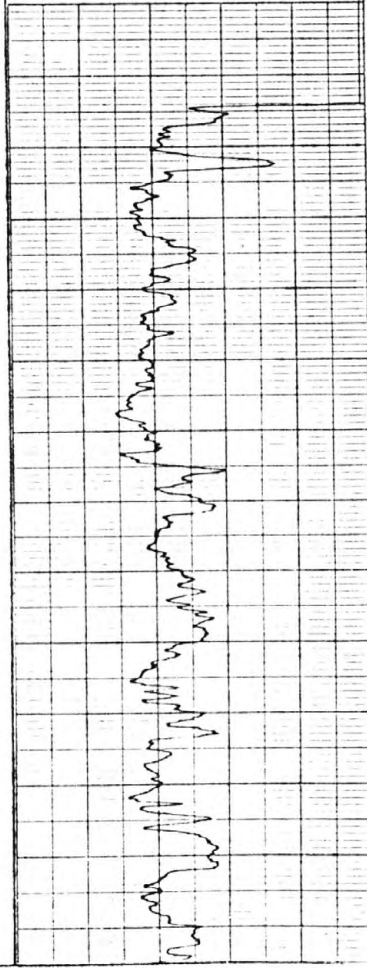
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

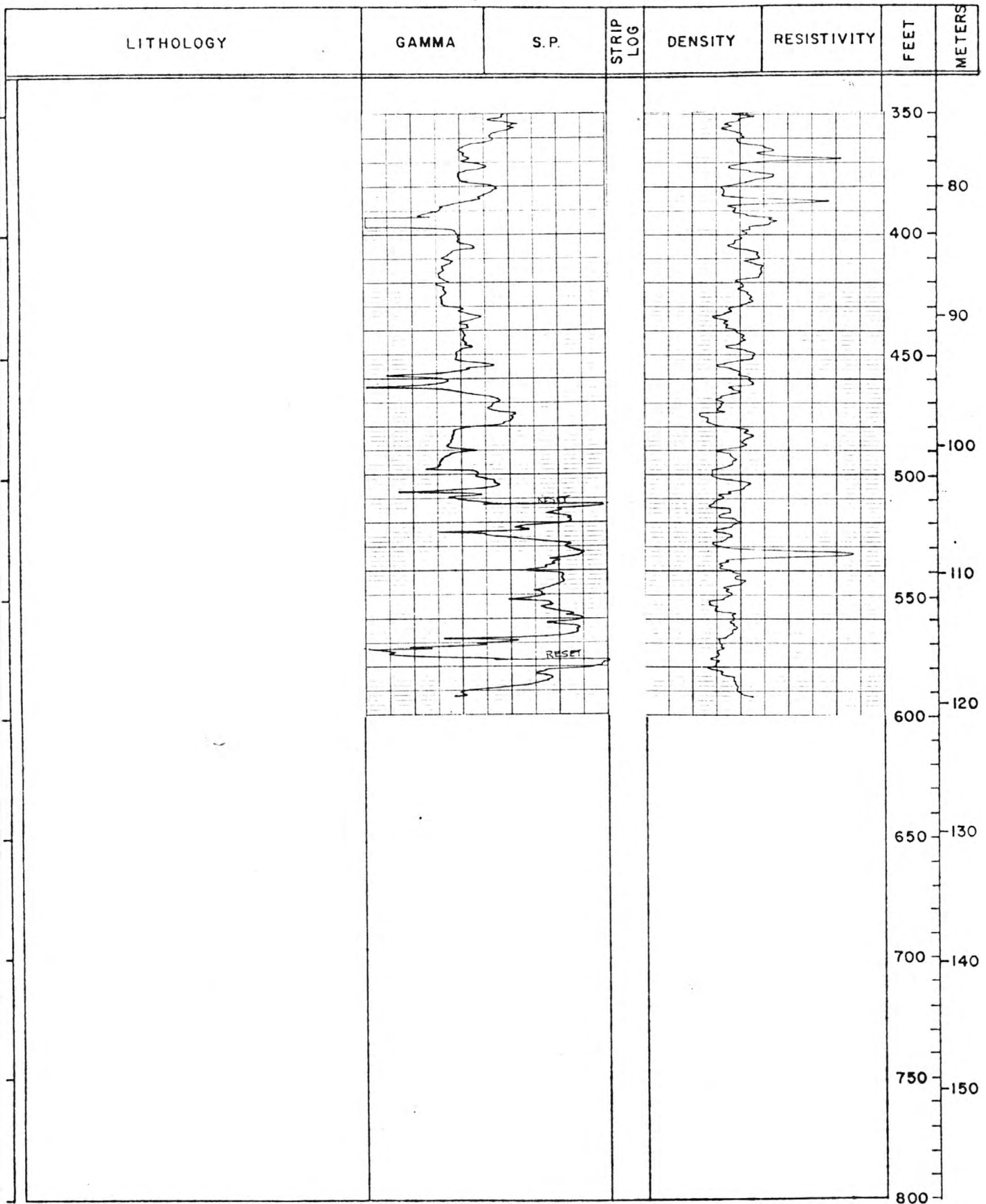
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79216 Map: Watkins SE Date: 11/29/79 State: Montana County: Prairie
 Elev.: 3222 FT Location: T 15^N R 47^E, Sec 30 Tract ACAB Drilled depth 600 FT
 Measured: 1780 FT FSL 1650 FT FWL XXX FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☐
 Remarks: _____

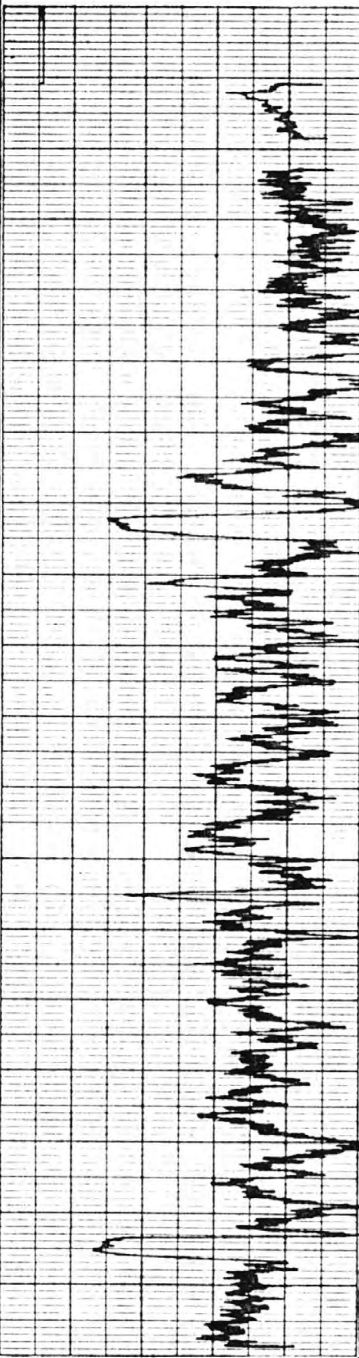
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <input checked="" type="checkbox"/> YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT MIN		
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>10</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING <u>5</u>	DEPTH FEET METERS
	LOGGED DEPTHS 591 FT 592 FT			LOGGED DEPTHS FT 592 FT		
	Silt, brown, fine, sand; colluvium Interbedded claystone, brown; sandstone, brown; and siltstone, brown Interbedded sandstone, gray; siltstone, gray; and claystone, gray Coal Interbedded claystone, gray; sandstone, gray; and siltstone, gray Coal Interbedded sandstone, gray; claystone, gray; and siltstone, gray Coal	Gamma 				



RECORDED BY WILLIAM JACKSON GEOLOGIST		MR YES		RECORDED BY JON HANGAS		RECORDING SPEED 20		F M	
LITHOLOGY	GAMMA T.C. 2 RANGE 100	S P SENS. SETTING 10	DENSITY T.C. RANGE	RESISTIVITY SENS. SETTING 5	DEPTH				
	LOGGED DEPTHS 591 FT 592 FT.		LOGGED DEPTHS FT. 592 FT.		FEET				
	S.P.		Res.		50				
					0				
					50				
					100				
					150				
					200				
					250				
					300				
					350				



Hole No: US-79217 Map: Watkins SE Date: 11/30/79 State: Montana County: Prairie
 Elev.: 2965 FT Location: T 15 ^N R 47 ^E W, Sec 6 Tract CCCC Drilled depth 340
 Measured: 25 FT ~~FSL~~ 340 FT ~~FWL~~ FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No
 Remarks: _____

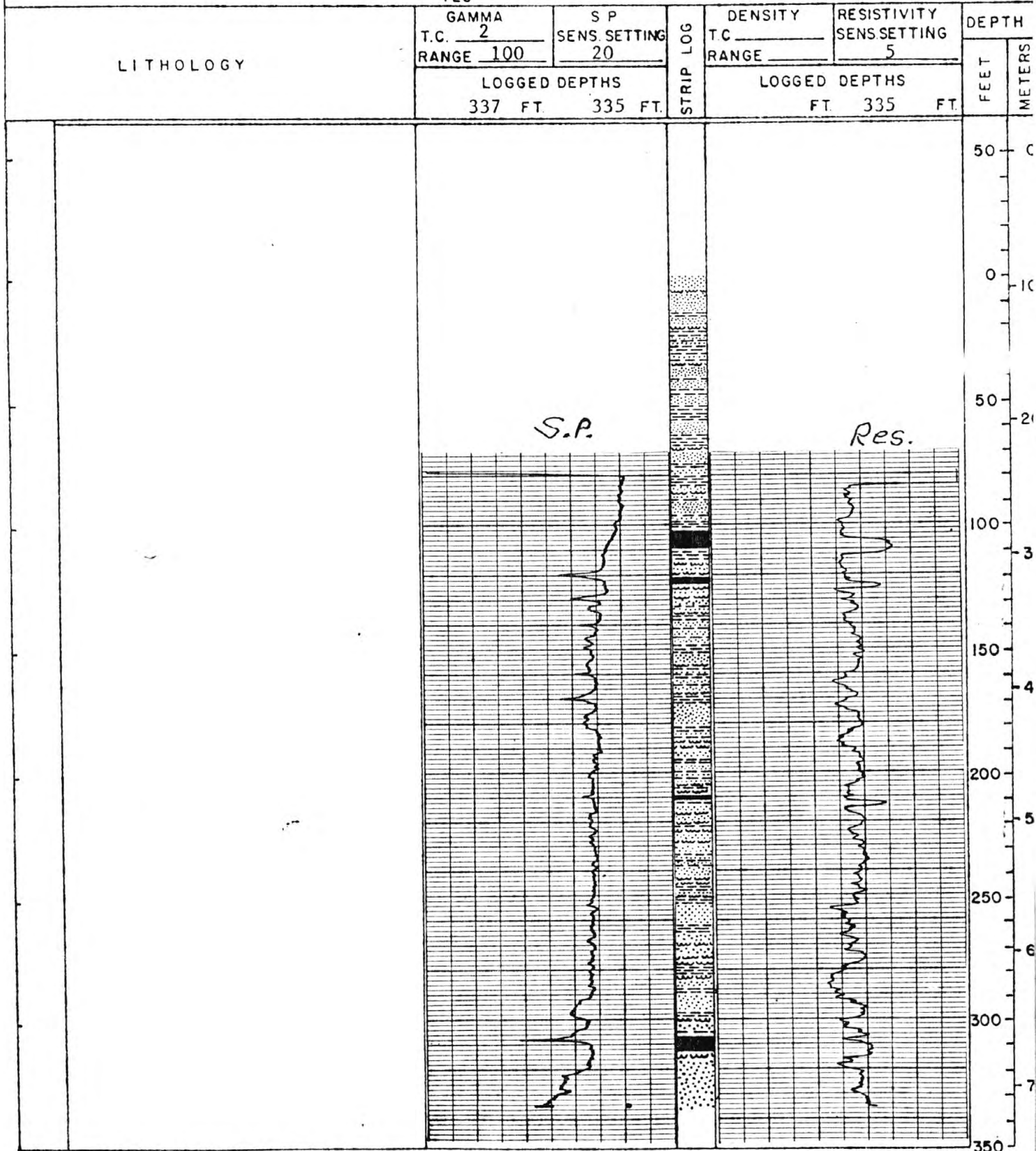
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> F	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____
	LOGGED DEPTHS <u>337</u> FT <u>335</u> FT		RESISTIVITY SENS SETTING <u>5</u>
	LOGGED DEPTHS FT. <u>335</u> FT.		DEPT FEET
Sandstone, brown; siltstone, brown; and claystone, brown			50
			0
Claystone, gray; sandstone, gray; and siltstone, gray			50
			100
Coal			150
Coal; and shale, carbonaceous			200
Siltstone, gray; sandstone, gray; and claystone, gray			250
			300
Coal			350
Claystone, gray; siltstone, gray; and sandstone, gray			
Coal			
Sandstone, gray			

US- 9217

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79217 Map: Watkins SE Date: 11/30/79 State: Montana County: Prairie
Elev.: 2965 FT Location: T 15^N R 47^E, Sec 6 Tract CCCC Drilled depth 340 FT
Measured: 25 FT ~~XX~~ FSL 340 FT ~~XX~~ FWL FT. Hole size: 5 5/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks:

RECORDED BY WILLIAM JACKSON GEOLOGIST ~~MR~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN



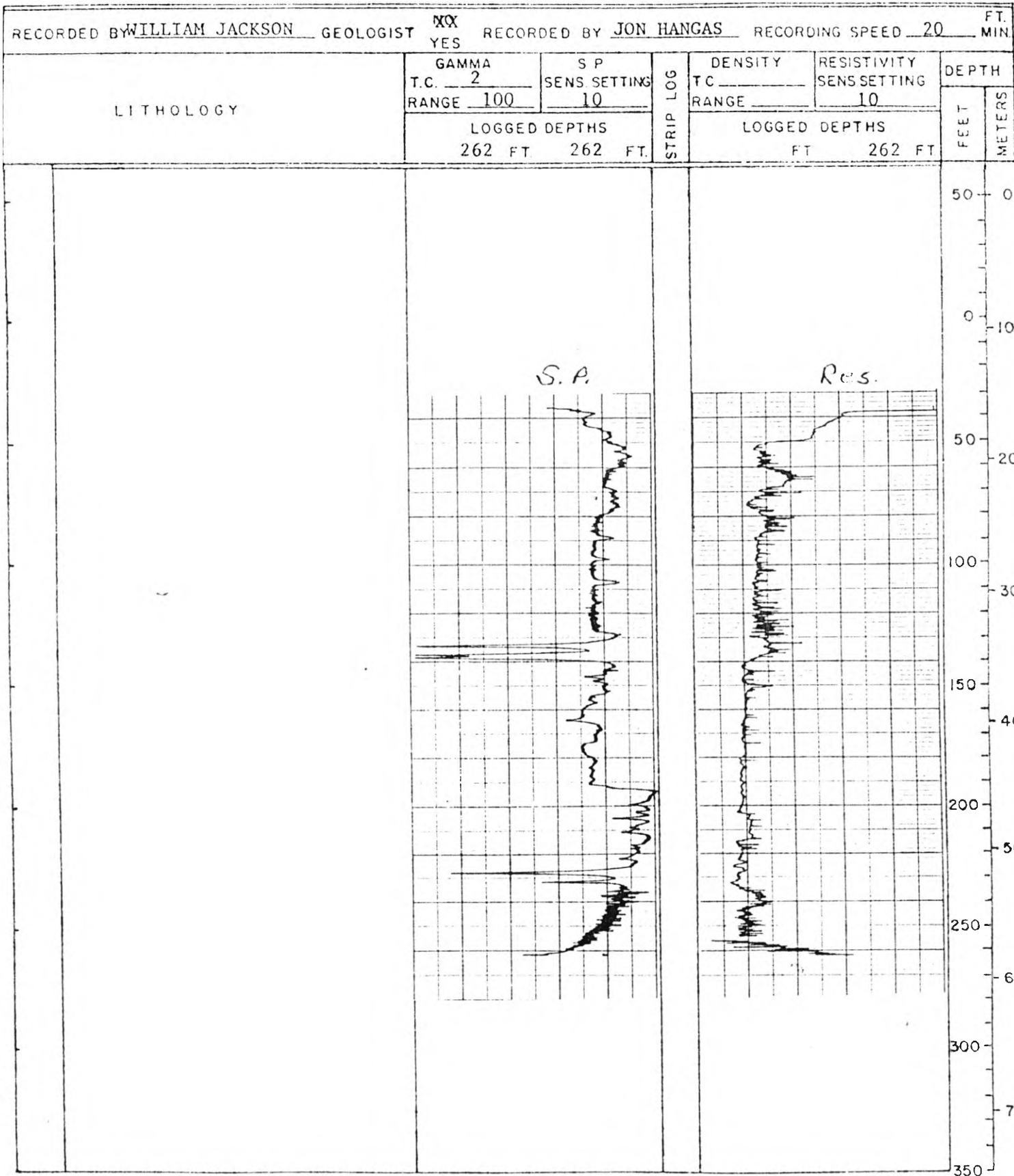
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79218 Map: Hietz School Date: 11/30/79 State: Montana County: Prairie
Elev.: 2816 FT Location: T 15 ^N R 46 ^E, Sec 18 Tract BBBB Drilled depth 260 FT
Measured: 50 FT ^{FNL} 40 FT ^{FWL} XXX FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <u>NR</u>		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA	SP	DENSITY	RESISTIVITY	DEPTH
	T.C. <u>2</u>	SENS SETTING	T.C. _____	SENS SETTING	
	RANGE <u>100</u>	<u>10</u>	RANGE _____	<u>10</u>	
	LOGGED DEPTHS		LOGGED DEPTHS		
	262 FT 262 FT		FT 262 FT		FEET METERS
Siltstone, brown,					50 0
siltstone, brown, interbedded with sandstone; and claystone, brown					0 10
Claystone, gray, some carbonaceous; shale; and sandstone, gray					50 20
Coal					100 30
Interbedded siltstone, gray; and sandstone, gray					150 40
Coal					200 50
Claystone, gray; and sandstone, gray					250 60
Coal, with claystone parting					300 70
Coal					350 80
Interbedded siltstone, gray; and claystone, gray					400 90

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79218 Map: Hietz School Date: 11/30/79 State: Montana County: Prairie
 Elev.: 2816 FT Location: T 15^N R 46^E, Sec 18 Tract BBBB Drilled depth 260 FT
 Measured: 50 FT ^{FNL} XXX 40 FT ^{FWL} XXX FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____



LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Remarks:

LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	DEPTH
	T.C. 2	SENS SETTING		TC	SENS SETTING	
	RANGE 200	10		RANGE	5	
	LOGGED DEPTHS			LOGGED DEPTHS		
	315 FT 314 FT.			FT 314 FT		FEET METERS

Gamma

Regolith, brown

Coal

Sandstone, gray, very fine;
siltstone, gray; and
claystone, gray

Coal

Coal

Coal

Coal

0

50

100

150

200

250

300

350

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79219 Map: Watkins Date: 12/1/79 State: Montana County: McCone
 Elev: 2755 ^N ^E FT Location: T 16 R 46, Sec 14 Tract AAAA Drilled depth 320 FT
 Measured: 25 ^{FNL} FT RXX 20 ^{FEL} FT KXX FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

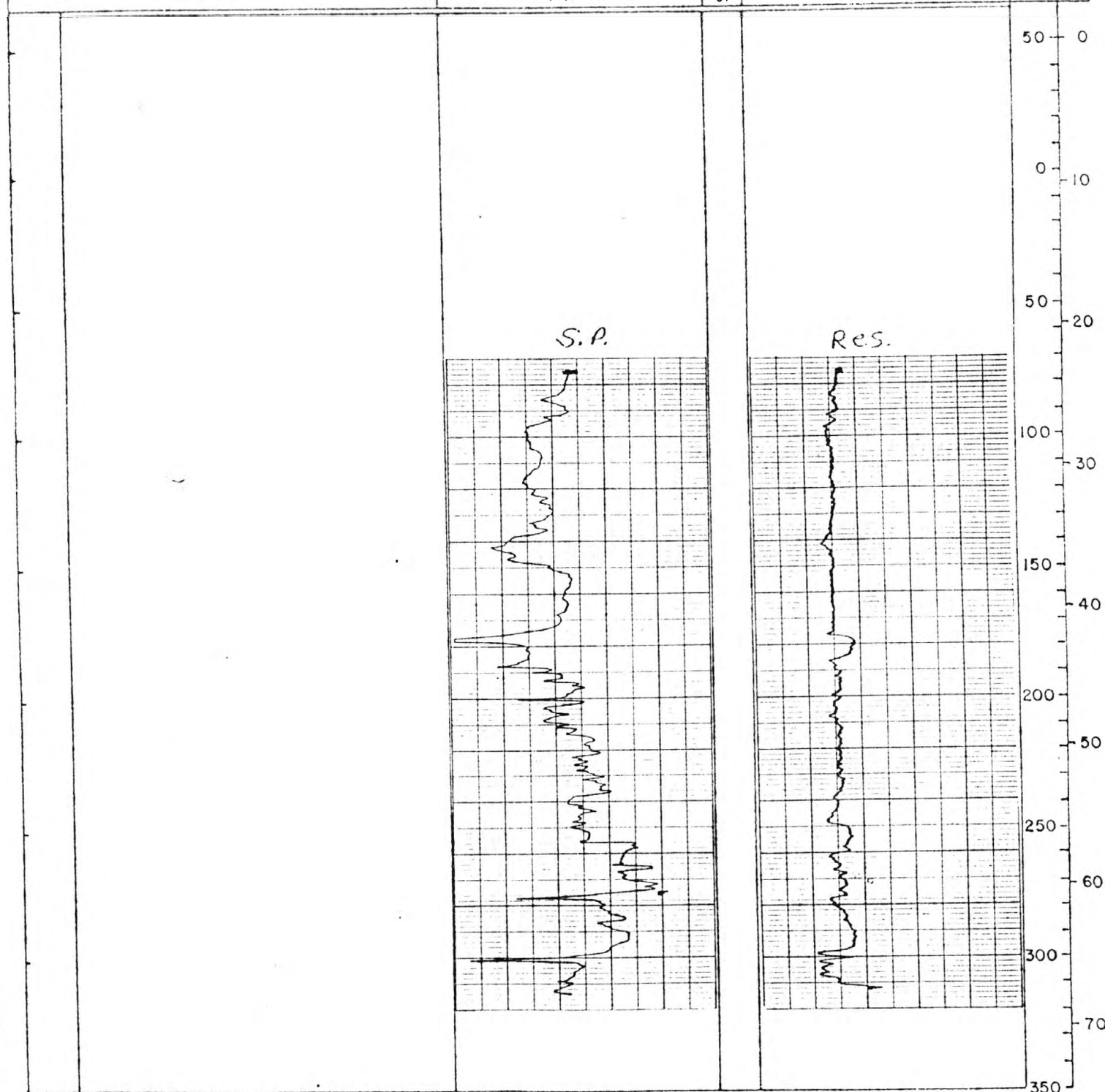
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{XXX} YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> ^{FT} MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>10</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING <u>5</u>	DEPTH	
	LOGGED DEPTHS <u>315</u> FT <u>314</u> FT			LOGGED DEPTHS FT <u>314</u> FT		FEET	METERS
	Regolith, brown						50
Coal						0	10
Sandstone, gray, very fine; siltstone, gray; and claystone, gray						50	20
						100	30
						150	40
Coal						200	50
Coal						250	60
Coal						300	70
Coal						350	

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Elev: 2755 FT Location: T 16^N R 46^E, Sec 14 Tract AAAA Drilled depth 320 FT
Measured: 25 FT KKK 20 FT XXX FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒

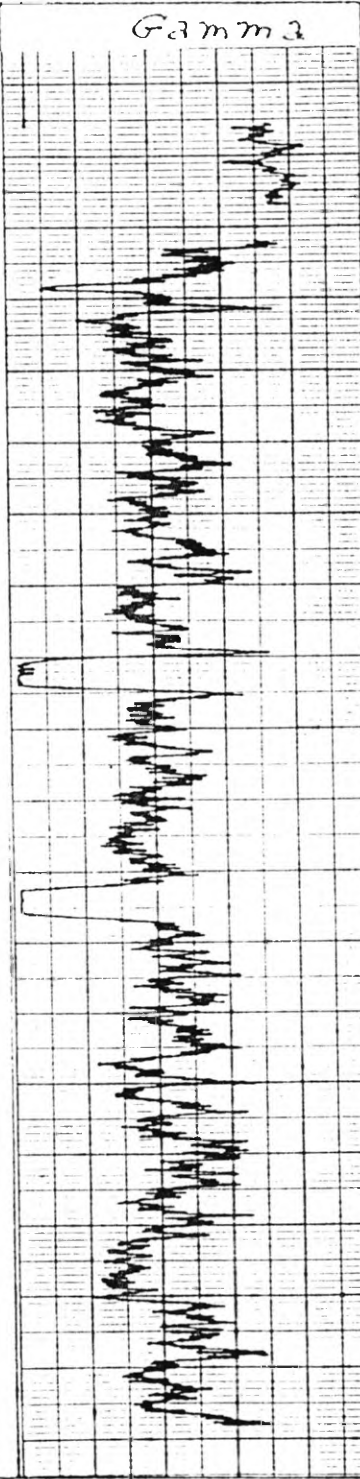
RECORDED BY WILLIAM JACKSON GEOLOGIST ☒ NO
YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN

LITHOLOGY	YES		STRIP LOG	DENSITY		RESISTIVITY		DEPTH	
	GAMMA	S P		TC	SENS SETTING	TC	SENS SETTING	FEET	METERS
	T.C. <u>2</u>	SENS SETTING		RANGE		RANGE			
	RANGE <u>200</u>	<u>10</u>							
	LOGGED DEPTHS				LOGGED DEPTHS				
	315 FT 314 FT				FT 314 FT				



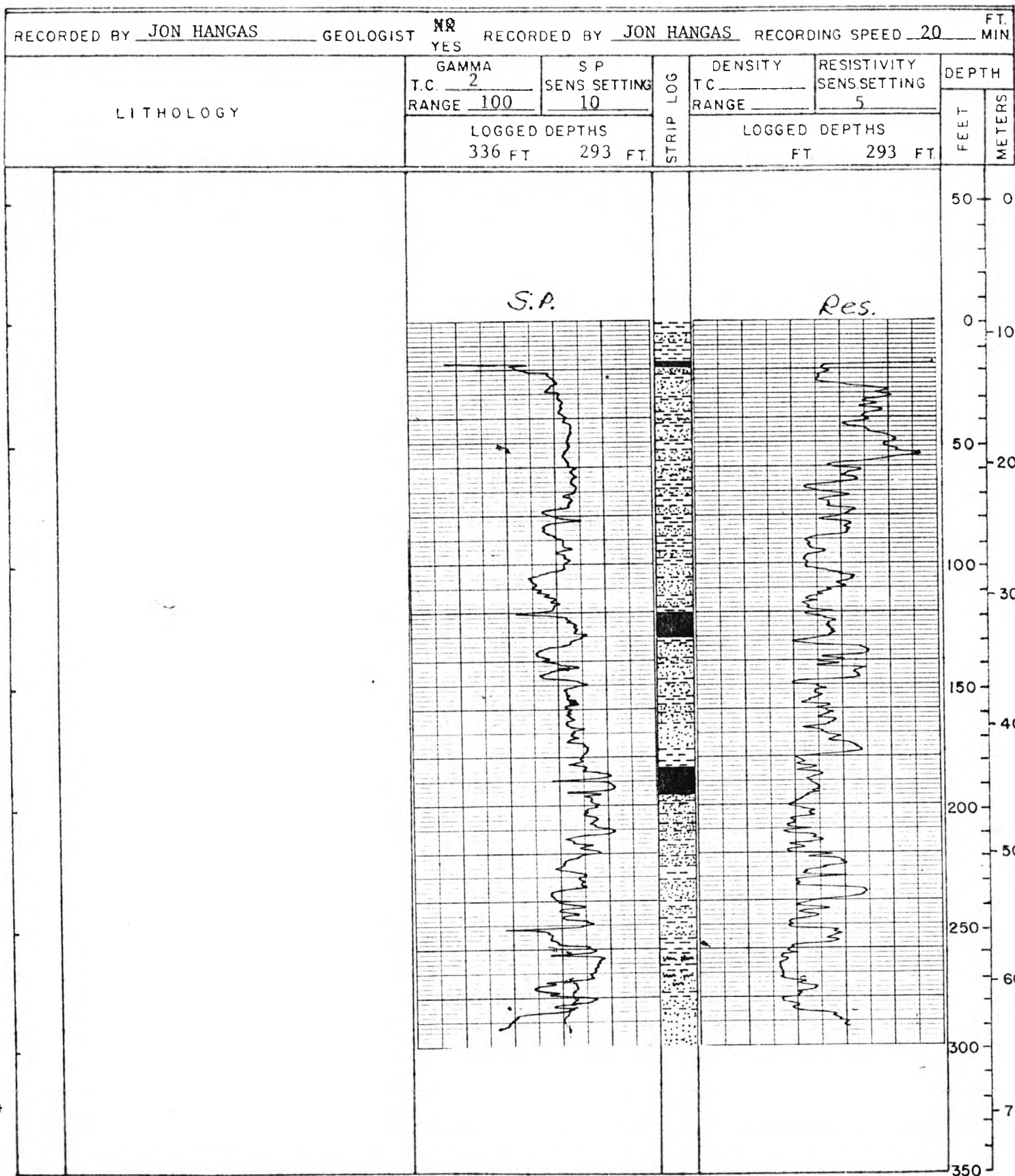
LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79220 Map: Berry School Date: 12/1/79 State: Montana County: McCone
 Elev: 2738 FT Location: T 17^N R 45^E Sec 26 Tract DDDD Drilled depth 340 FT
 Measured: 85 FT ^{RNK} 45 FT ^{FEL} KWX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>JON HANGAS</u> GEOLOGIST ^{NX} YES		RECORDED BY <u>JON HANGAS</u> RECORDING SPEED <u>20</u> FT MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>10</u>	DENSITY T.C. _____ RANGE _____
	RESISTIVITY SENS SETTING <u>5</u>		DEPTH
	LOGGED DEPTHS <u>336</u> FT <u>293</u> FT		LOGGED DEPTHS FT <u>293</u> FT
STRIP LOG		FEET	METERS
<p>Sandstone, brown, very fine; and claystone, brown</p> <p>Coal</p> <p>Sandstone, gray, very fine; siltstone, gray; and claystone, gray</p> <p>Coal</p> <p>Sandstone, light-gray, very fine; and claystone, gray</p> <p>Coal</p> <p>Sandstone, gray, very fine; siltstone, gray; and claystone, gray</p>		<p style="font-size: 1.2em;">Gamma</p> 	

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

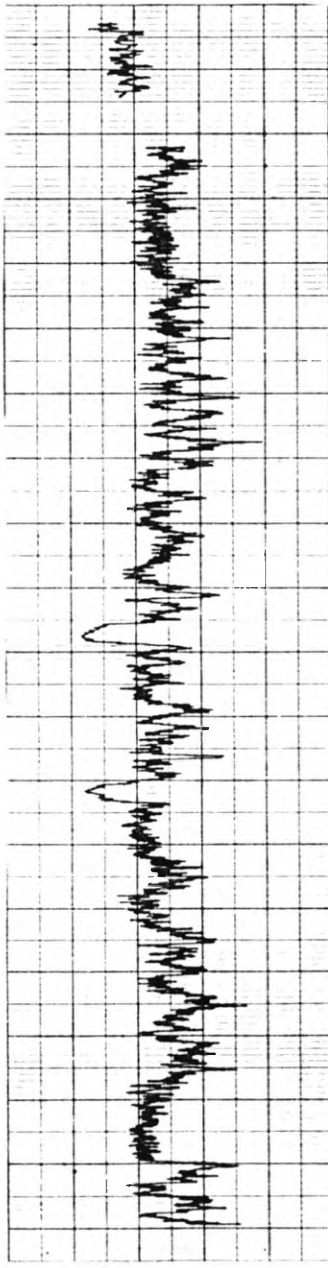
Hole No: US-79220 Map: Berry School Date: 12/1/79 State: Montana County: McCone
 Elev: 2738 FT Location: T 17^N R 45^E Sec 26 Tract DDDD Drilled depth 340 FT
 Measured: 85 FT ~~PSL~~ 45 FT ~~FEL~~ XXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____



LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79221 Map: Glendive AMS Date: 12/2/79 State: Montana County: McCone
 Elev.: 2844 FT. Location: T 17^N R 46^E W, Sec 8 Tract AAAD Drilled depth 340 FT.
 Measured: 500 FT. ^{FNL} 10 FT. ^{FEL} 10 FT. ^{FWL} 10 FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒

Remarks: _____

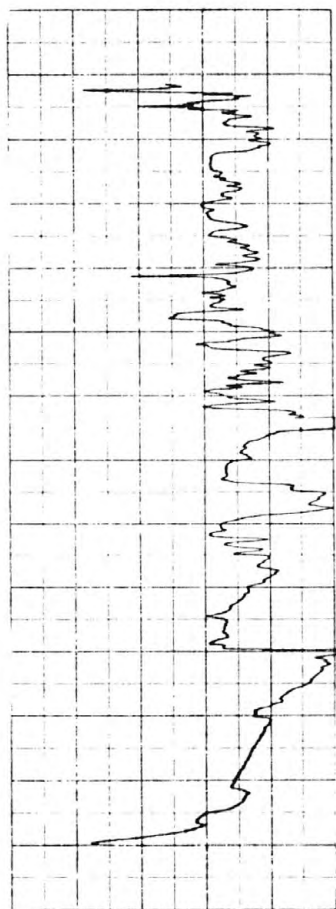
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>1</u> RANGE <u>200</u>	S.P. SENS. SETTING <u>10</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS. SETTING <u>5</u>
	LOGGED DEPTHS 339 FT. 340 FT.			LOGGED DEPTHS FT. 340 FT.	
	FEET	METERS			
Alluvium Claystone, brown Claystone, gray Coal Claystone, gray Coal Claystone, gray	Gamma 		60 0-10 60-20 120-30 180-40 240-50 300-60 360-70		

LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						360	
						80	
						420	
						90	
						480	
						100	
						540	
						120	
						600	
						130	
						660	
						140	
						720	
						150	
						780	
						160	
						170	
						840	
						180	
						900	

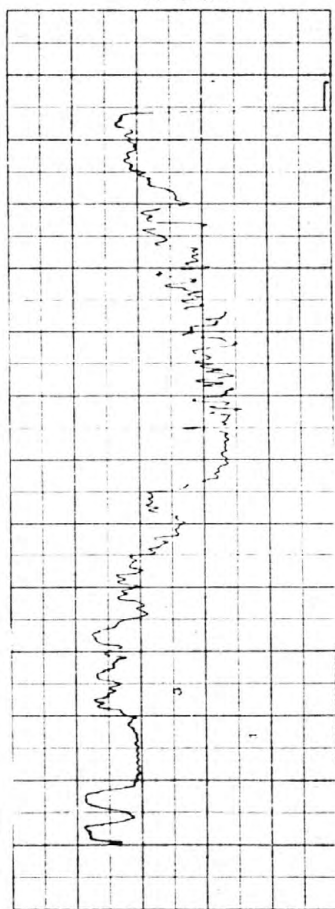
Hole No: US-79221 Map: Glendive AMS Date: 12/2/79 State: Montana County: McCone
 Elev.: 2844 FT. Location: T 17^N R 46^E Sec 8 Tract AAAD Drilled depth 340 FT.
 Measured: 500 FT. ~~FNL~~ 10 FT. ~~FEL~~ XXX FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NO YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>1</u> RANGE <u>200</u>	S.P. SENS. SETTING <u>10</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS. SETTING <u>5</u>
	LOGGED DEPTHS			LOGGED DEPTHS	
	339 FT.	340 FT.		FT.	340 FT.
				FEET	METERS
				60	
				0	10
				60	20
				120	30
				180	40
				240	50
				300	60
				360	70

S.P.

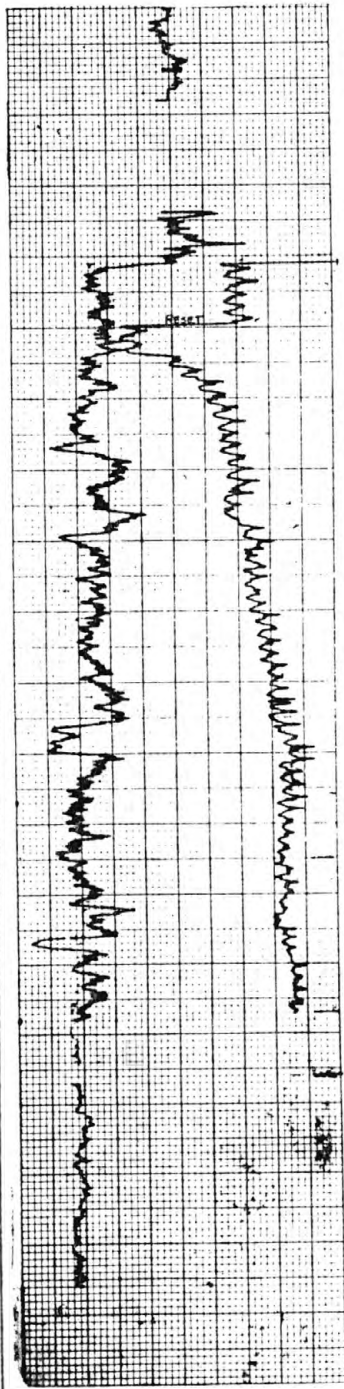

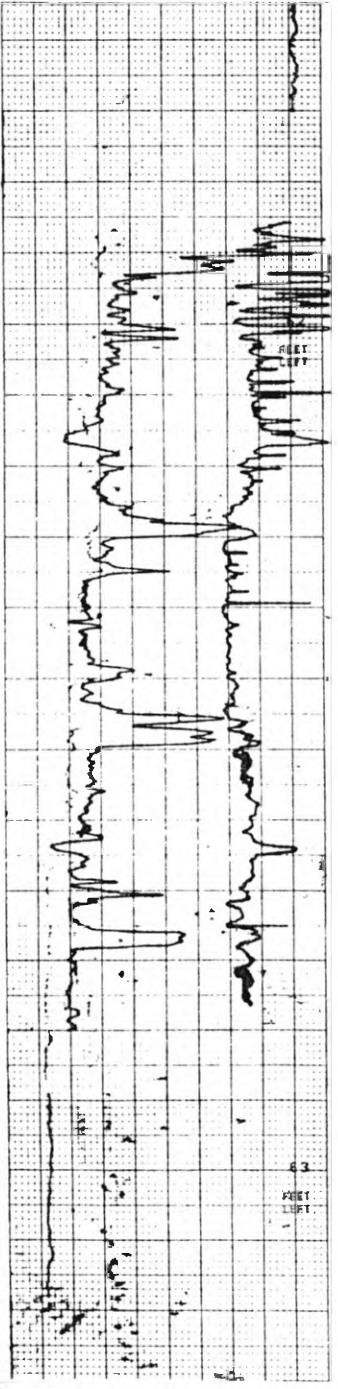


Res.



LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79167 Map: NE 40 BLM Date: 10/4/79 State: Montana County: Dawson
 Elev.: _____ FT Location: T 16^N R 57^E, Sec 4 Tract BBBA Drilled depth _____ 240 FT
 Measured: 100 FT ~~K88~~ 520 FT ~~K88~~ FWL _____ FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: no elevation control

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST XXX YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>2K</u>	RESISTIVITY SENS SETTING <u>100</u>	DEPTH	
	LOGGED DEPTHS <u>236</u> FT <u>233</u> FT			LOGGED DEPTHS <u>240</u> FT <u>233</u> FT		FEET	METERS
	Sandstone, gray, very fine grained; claystone, brown and gray; and limestone, gray Coal Sandstone, light-gray, very fine grained; siltstone, gray; and claystone, gray Coal Sandstone, light-gray, fine grained; siltstone, gray; and claystone, gray Coal						50 0 10 50 20 100 30 150 40 200 50 250 60 300 70 350

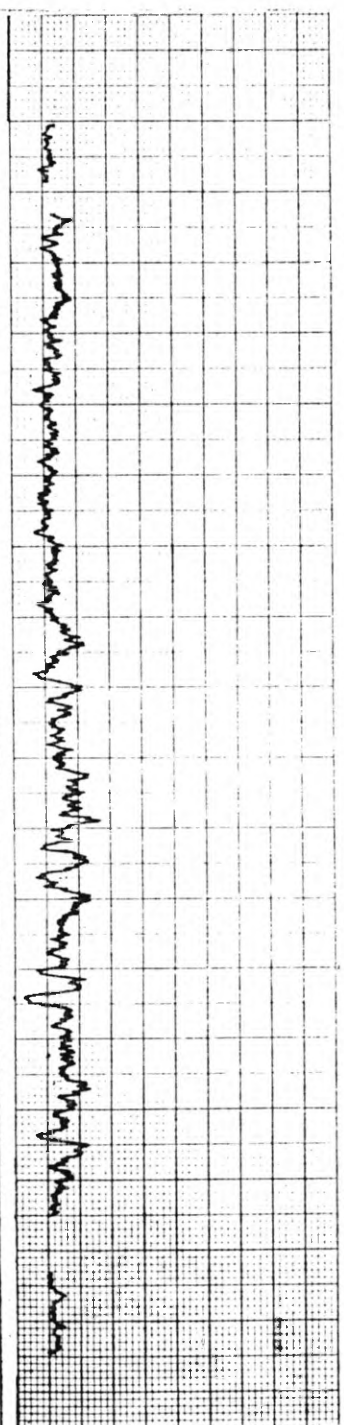

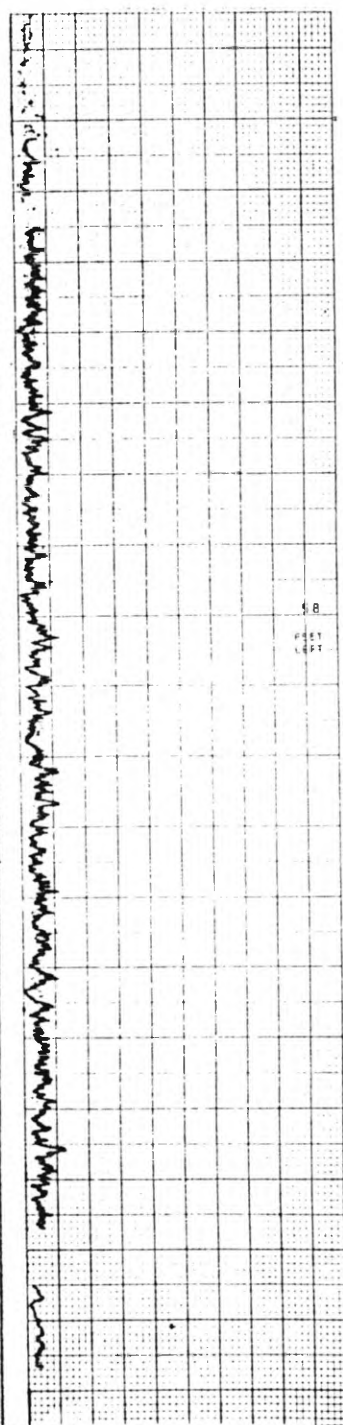
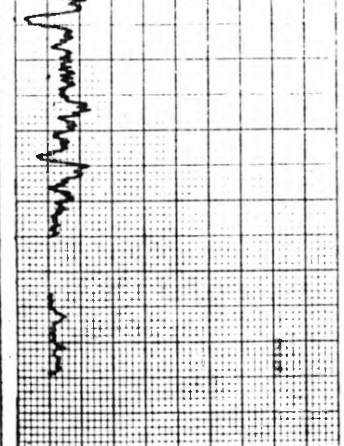

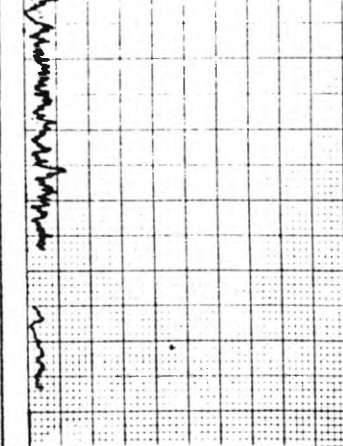
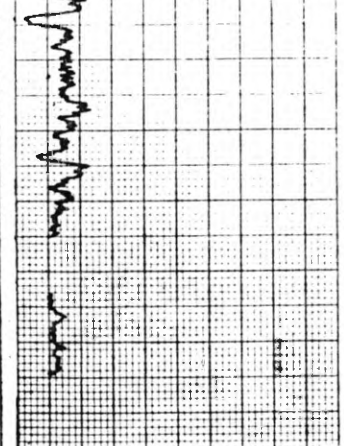

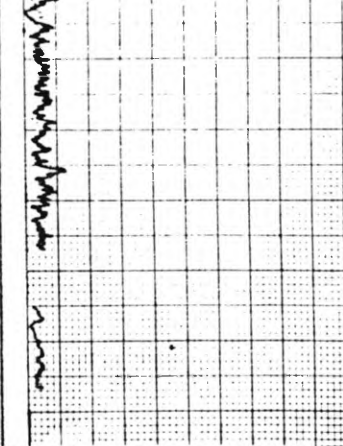
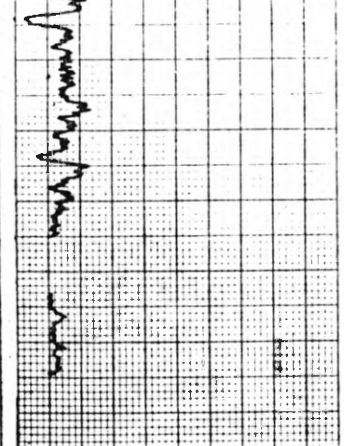

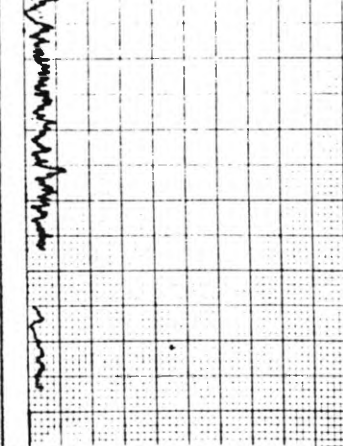
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79168 Map: NE 40 BLM Date: 10/6/79 State: Montana County: Dawson
 Elev.: FT Location: T 16 ^N R 56 ^E, Sec 2 Tract DDDD Drilled depth 200 FT
 Measured: 52 FT ^{XMM} 70 FT ^{FEL} KW FT. Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Density logged without source. no elevation control

RECORDED BY <u>JON HANGAS</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>JON HANGAS</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING	DENSITY T.C. <u>2</u> RANGE <u>50</u>
	LOGGED DEPTHS <u>171</u> FT		RESISTIVITY SENS SETTING
	LOGGED DEPTHS <u>175</u> FT		DEPTH FEET METERS
Sandstone, gray and brown, medium-fine to coarse- grained; and claystone, gray Coal Sandstone, gray, very fine grained; and claystone, gray			50 0
			0 10
			50 20
			100 30
			150 40
			200 50
			250 60
			300 70
			350

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Coal
Sandstone, light-gray, very
fine grained; and claystone,
gray
Coal

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN.							
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>		S P SENS SETTING		STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u>50</u>		RESISTIVITY SENS SETTING		DEPTH	
	LOGGED DEPTHS		LOGGED DEPTHS			FEET	METERS				
	290 FT	FT	294 FT	FT							
Sandstone, light-gray, very fine grained; and claystone, gray							50	0	10	20	30
							0				
Coal							50	0	10	20	30
							0				
Sandstone, light-gray, very fine grained; and claystone, gray							50	0	10	20	30
Coal							50	0	10	20	30

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Remarks: Density logged without source. no elevation control

Sandstone, brown and gray,
 fine to very-fine grained;
 and claystone, gray

Coal

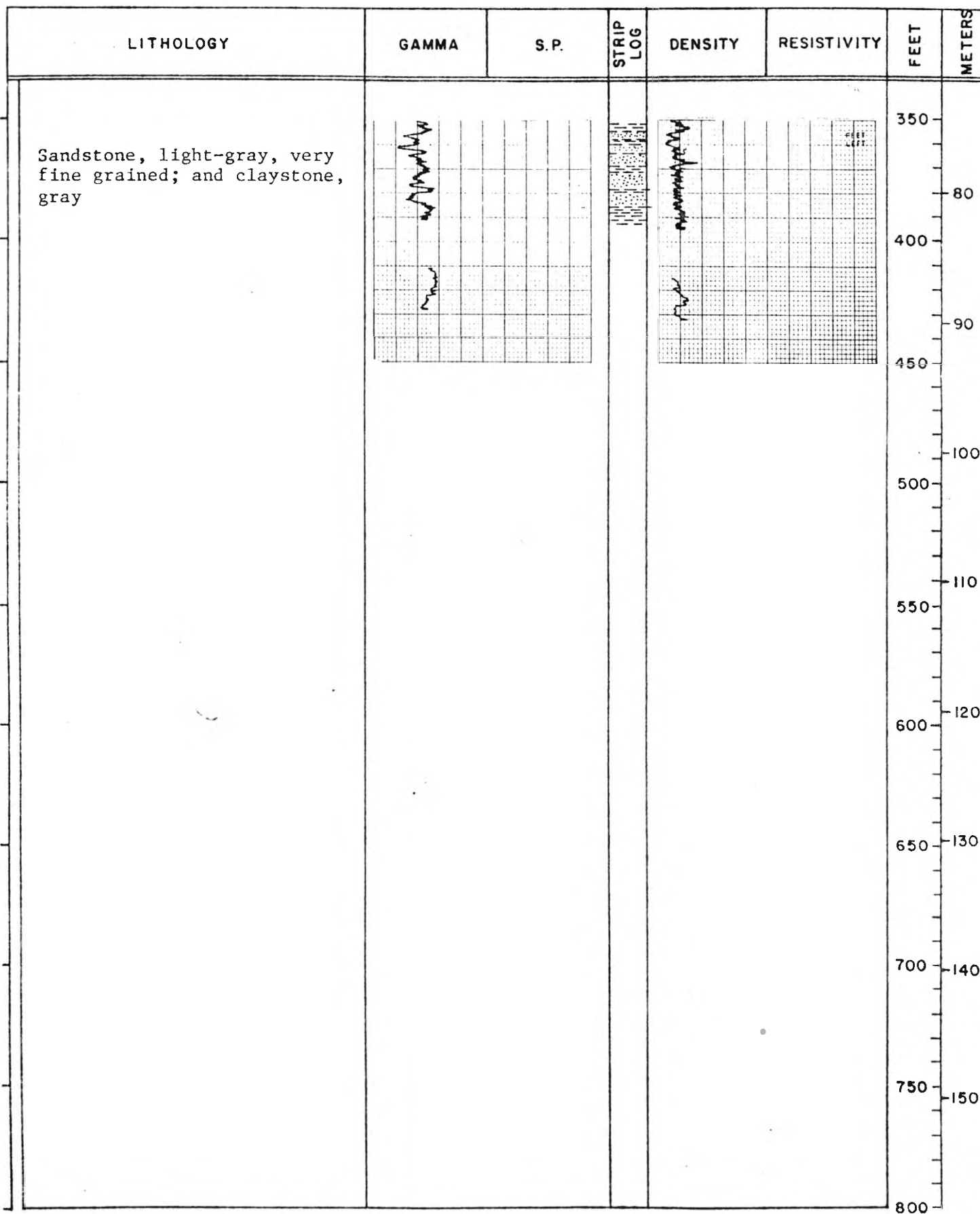
Coal

Sandstone, light-gray, very
 fine grained; and claystone,
 gray

Coal

55
 13061
 13061

50
 0
 10
 20
 30
 40
 50
 60
 70
 80
 90
 100
 110
 120
 130
 140
 150
 160
 170
 180
 190
 200
 210
 220
 230
 240
 250
 260
 270
 280
 290
 300
 310
 320
 330
 340
 350



Hole No: US-79171 Map: NE 40 BLM Date: 10/ /79 State: Montana County: Dawson
 Elev.: _____ FT Location: T16 ^N ~~X~~ R 56 ^E ~~W~~, Sec 14 Tract CBBB Drilled depth _____ 160 FT
 Measured: 2600 FT FSL 100 FT FWL _____ FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: no elevation control

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{XSO} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS. SETTING <u>500</u>	DENSITY T.C. <u>2</u> RANGE <u>5K</u>
	LOGGED DEPTHS 156 FT. 153 FT.		RESISTIVITY SENS. SETTING <u>100</u>
	LOGGED DEPTHS 160 FT. 153 FT.		
Sandstone, gray, very fine grained; siltstone, gray; claystone, gray; and limestone, gray Coal Coal, with claystone parting Sandstone, light-gray, very fine grained; claystone, gray			

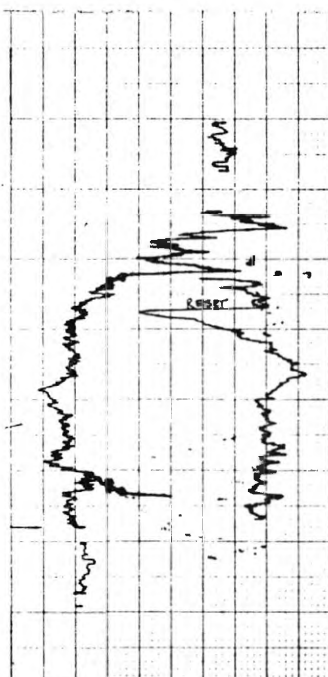

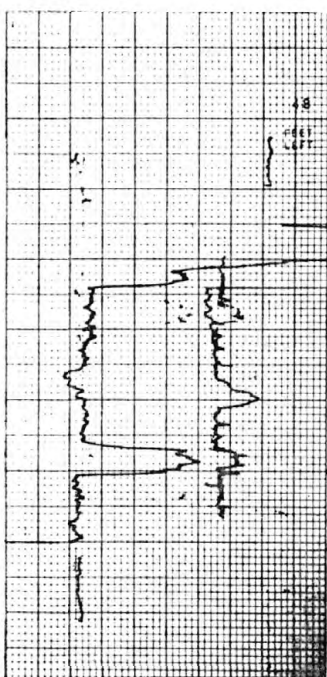
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79172 Map: NE 40 BLM Date: 10/9/79 State: Montana County: Dawson
 Elev.: FT Location: T 16 ^N R 57 ^E, Sec 30 Tract CCCC Drilled depth 120 FT
 Measured: 200 FT ~~FSL~~ 250 FT ~~FWL~~ FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: no elevation control

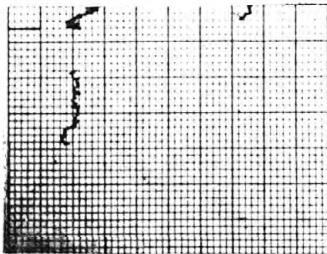

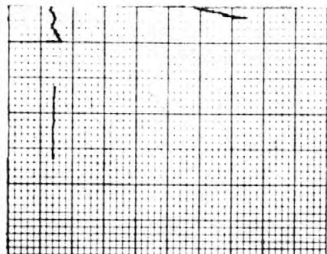
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NO YES		RECORDED BY <u>WILLIAM JACKSON</u>		RECORDING SPEED <u>20</u> FT. MIN				
LITHOLOGY	GAMMA		S P SENS SETTING	DENSITY		RESISTIVITY SENS SETTING	DEPTH	
	T.C. <u>2</u>	RANGE <u>200</u>		T.C. <u>2</u>	RANGE <u>5K</u>		FEET	METERS
	LOGGED DEPTHS 116 FT 113 FT			LOGGED DEPTHS 120 FT 113 FT				
Sandstone, gray, fine-grained; and claystone, brown and gray Coal Sandstone, gray, fine-grained; siltstone, gray; and claystone, gray Coal Sandstone, gray, fine- grained; and claystone, gray						50 0		
						0 10		
						50 20		
						100 30		
						150 40		
200 50								
250 60								
300 70								
350								

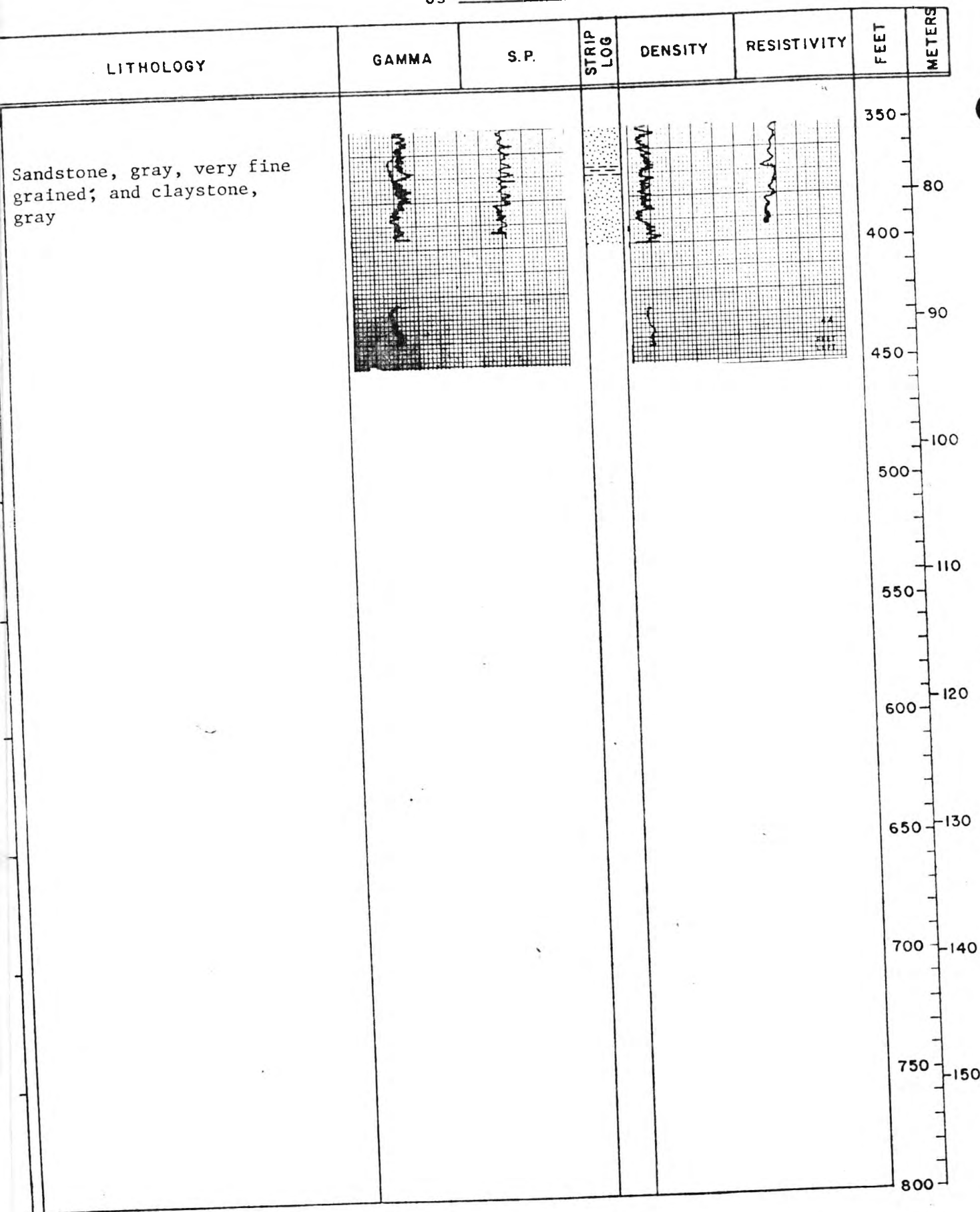
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79173 Map: NE 40 BLM Date: 10/9/79 State: Montana County: Dawson
 Elev: 2419 FT Location: T 19^N R 56^E, Sec 22 Tract CCDD Drilled depth 100 FT
 Measured: 10 FT FSL 1350 FT FWL FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: no elevation control

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NE YES		RECORDED BY <u>WILLIAM JACKSON</u>		RECORDING SPEED <u>20</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>	STRIP LOG	DENSITY T.C. <u>2</u> RANGE <u> </u>	RESISTIVITY SENS SETTING <u>100</u>		
	LOGGED DEPTHS <u>96</u> FT. <u>94</u> FT.			LOGGED DEPTHS <u>100</u> FT. <u>93</u> FT.			
	FEET	METERS					
Sandstone, gray, fine-grained; and claystone, brown and gray						50	0
						0	10
						50	20
						100	30
						150	40
						200	50
						250	60
						300	70
						350	80
						400	90
						450	100
						500	110

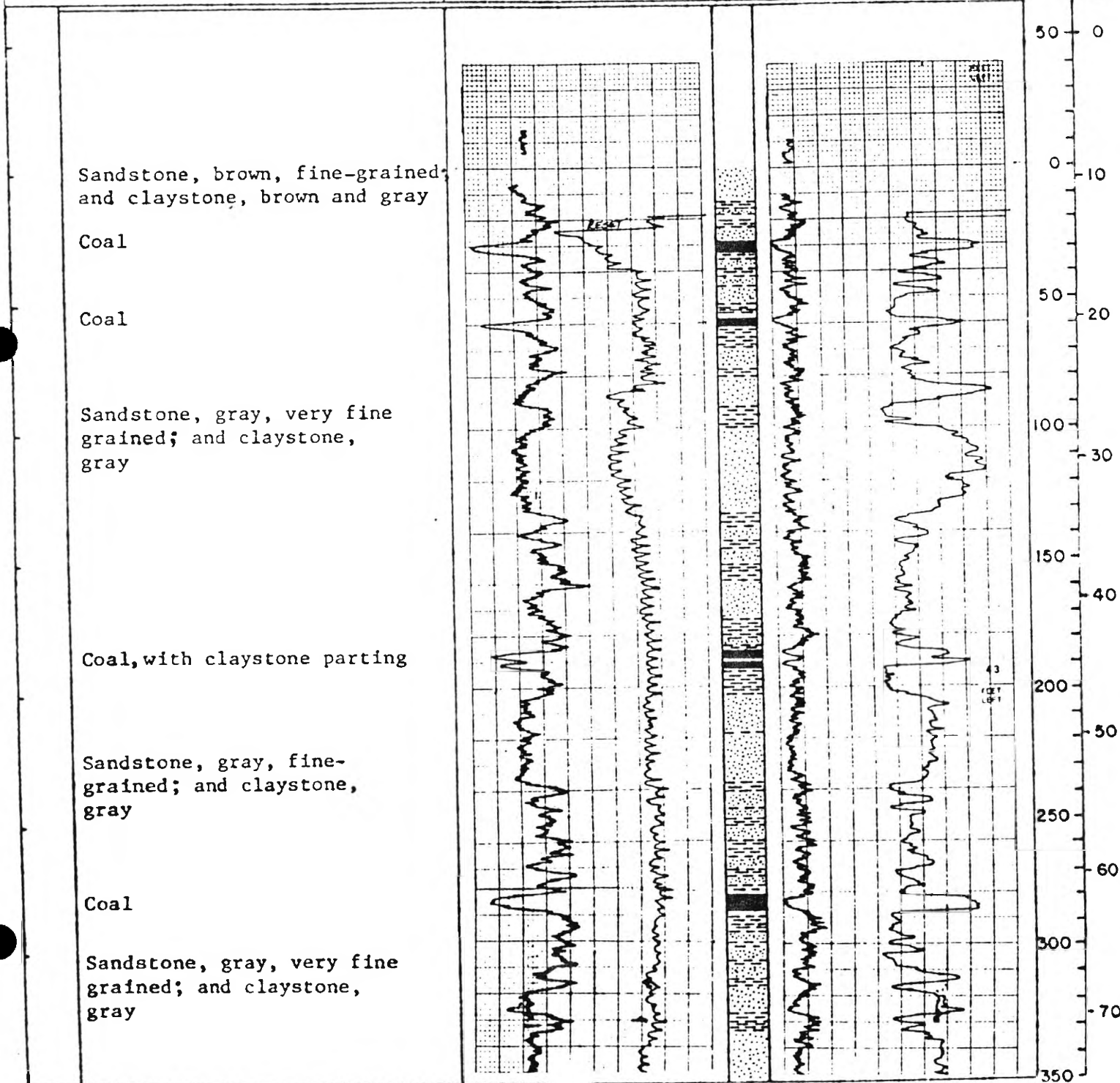
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Sandstone, gray, very fine grained; and claystone, gray						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

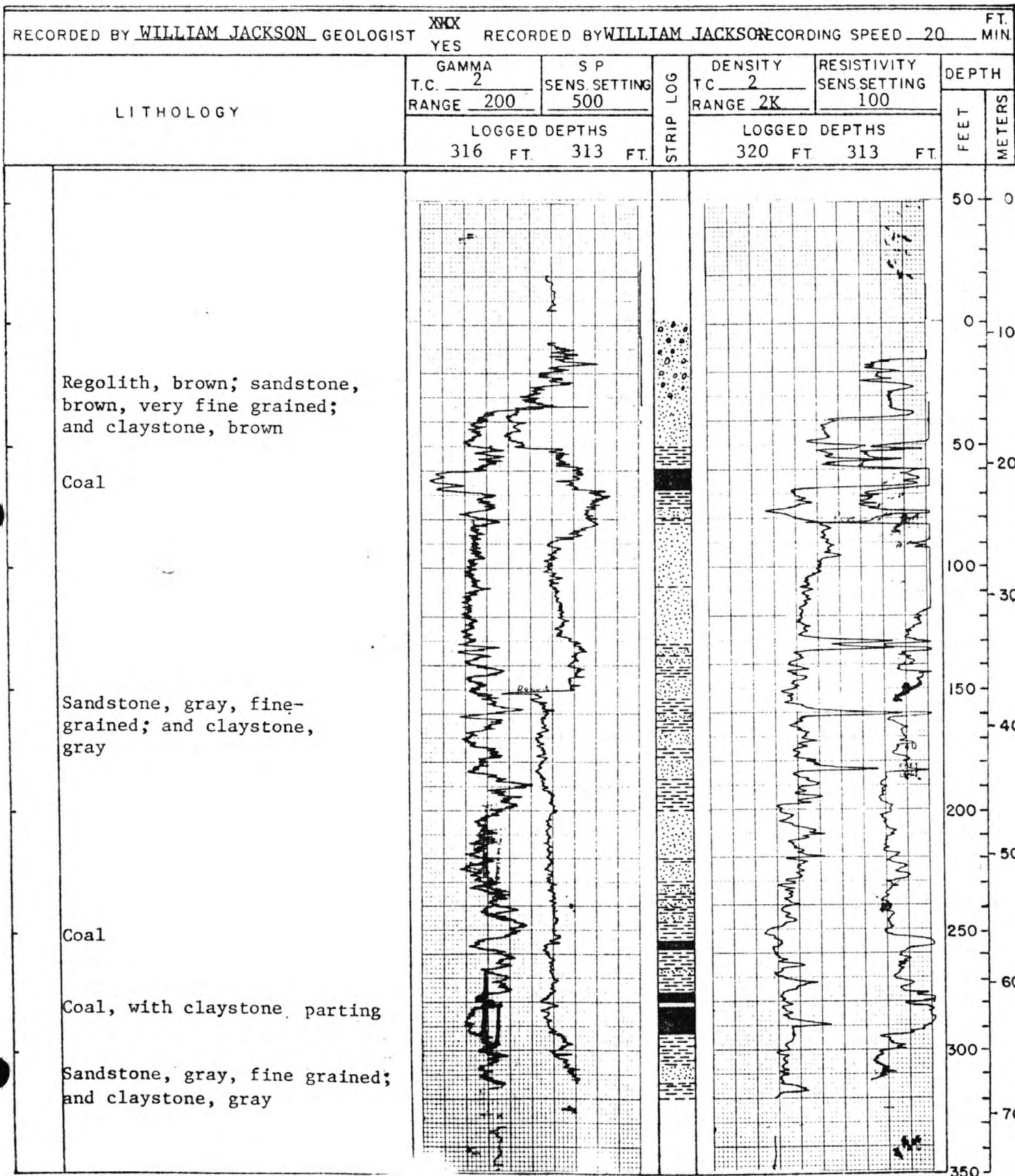


Hole No: US-79175 Map: SE 8 BLM Date: 10/14/79 State: Montana County: Prairie
 Elev: FT Location: T 12 N R 56 E, Sec 21 Tract: DDAD Drilled depth: 400 FT
 Measured: 750 FT ~~XXX~~ FSL 700 FT ~~XXX~~ FEL XXX FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: Density logged through source. no elevation control

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST XXX YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>500</u>	DENSITY T.C. <u>2</u> RANGE <u>50</u>
	RESISTIVITY SENS SETTING <u>100</u>		DEPTH
	LOGGED DEPTHS <u>496</u> FT <u>493</u> FT		LOGGED DEPTHS <u>400</u> FT <u>493</u> FT

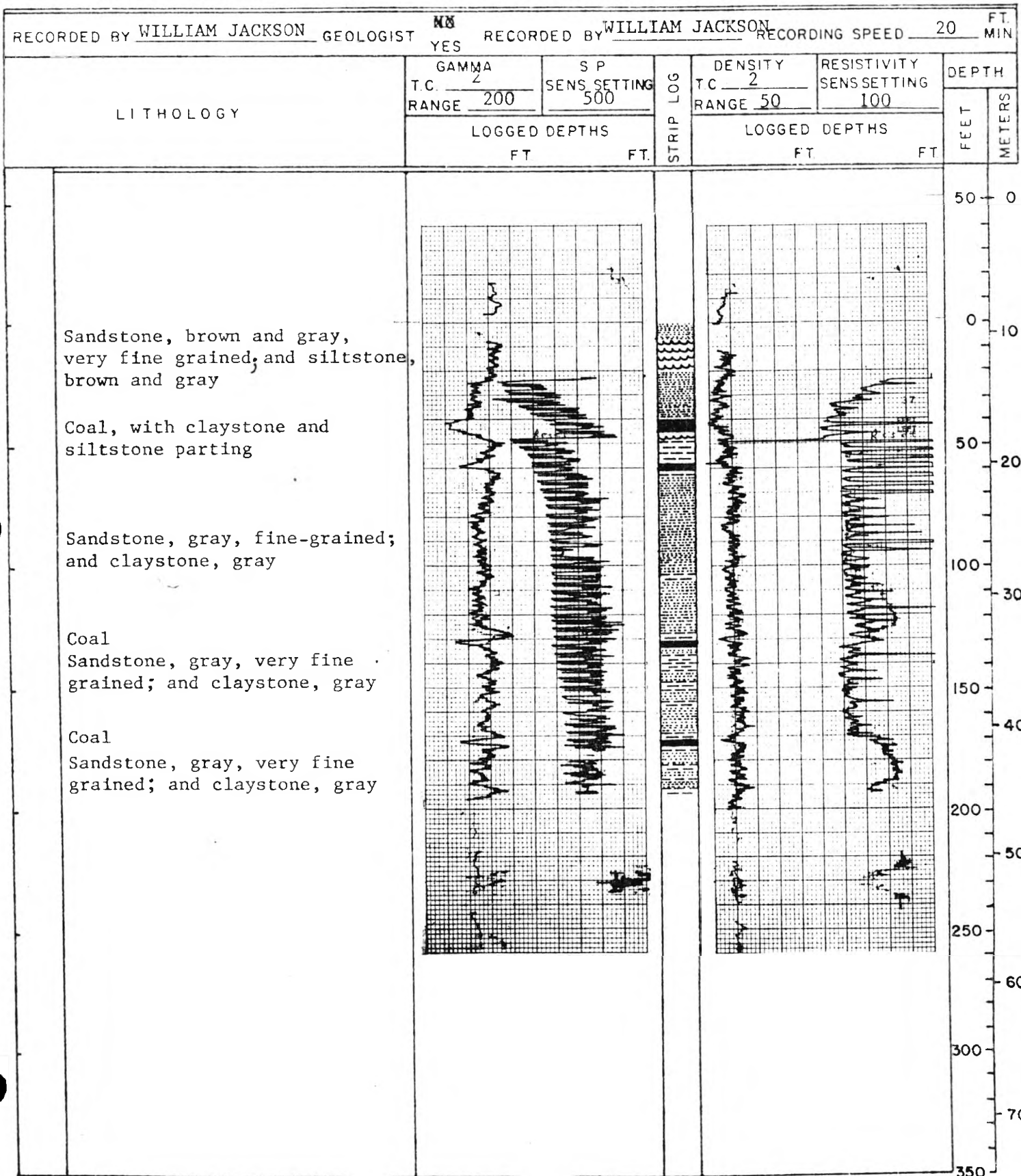


Hole No: US-79176 Map: SE 7 BLM Date: 10/11/79 State: Montana County: Prairie
 Elev: _____ FT Location: T 12 ^N R 55 ^E W, Sec 18 Tract AABB Drilled depth _____ 320 FT
 Measured: 25 FT ^{ENL} ~~XXX~~ 1300 FT ^{XXX} ~~FWL~~ FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control



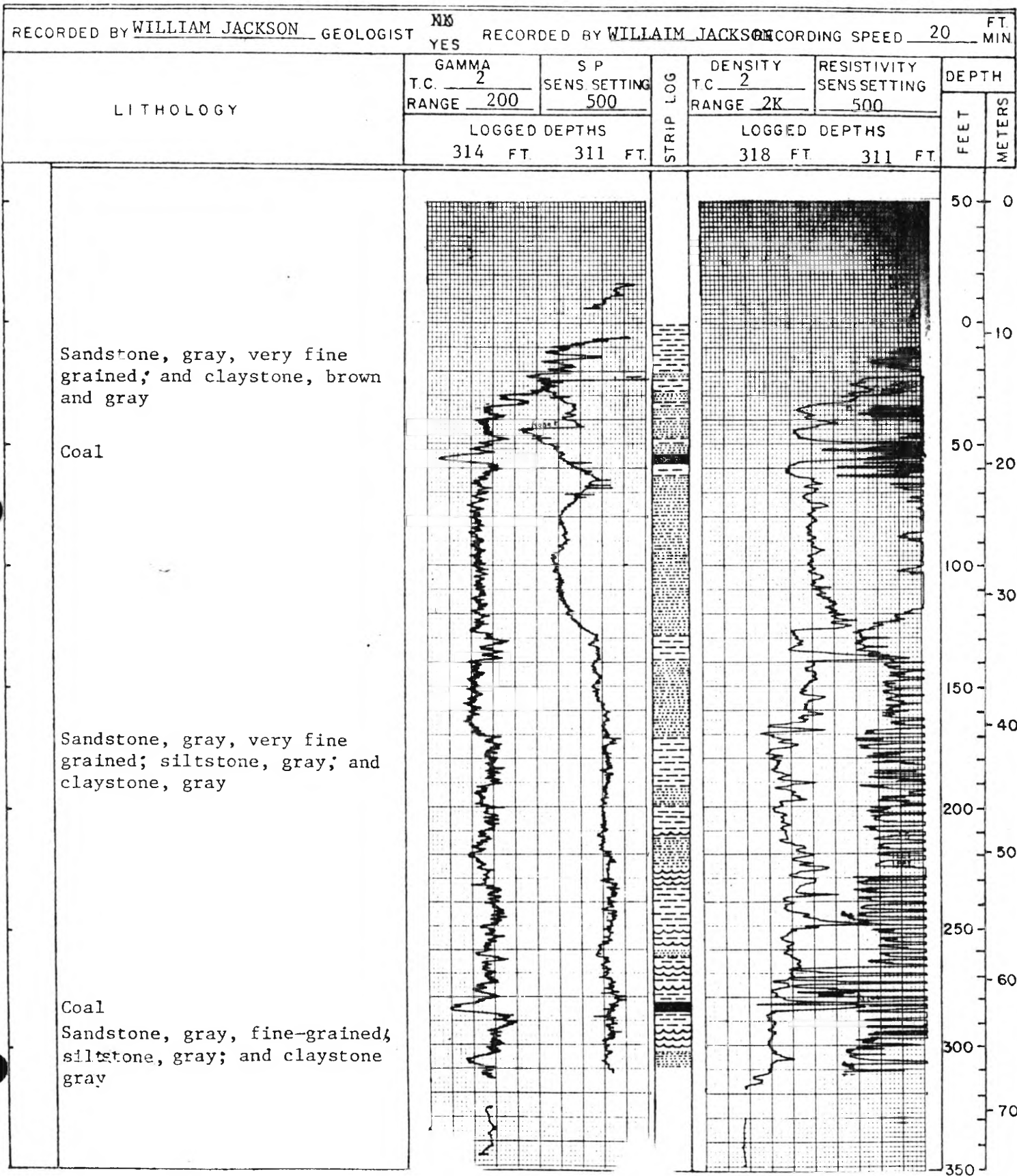
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET
						350
						400
						450
						500
						550
						600
						650
						700
						750
						800

Hole No: US-79177 Map: SE 8 BLM Date: 10/17/79 State: Montana County: Prairie
 Elev.: FT Location: T 11^N R 56^E, Sec 8 Tract CCDD Drilled depth 200 FT
 Measured: 200 FT FSL 1350 FT FWL FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Density logged without source. no elevation control



LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79178 Map: SE 8 BLM Date: 10/17/79 State: Montana County: Prairie
 Elev.: FT Location: T 11 ^N R 56 ^E W, Sec 33 Tract DAAA Drilled depth 320 FT
 Measured: 1700 FT FSL 20 FT FEL FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control

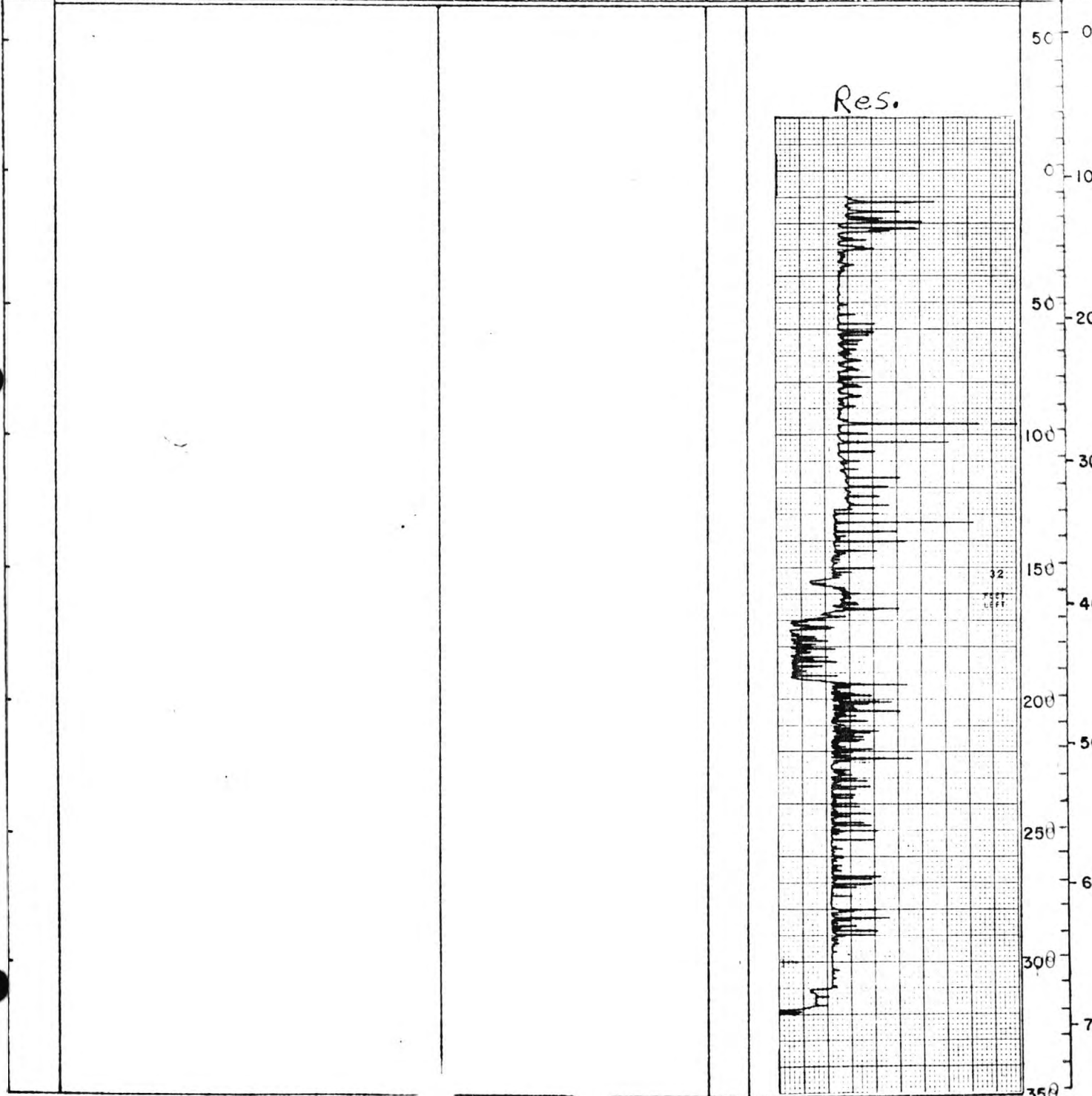


LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79178 Map: SE 8 BLM Date: 10/17/79 State: Montana County: Prairie
 Elev.: FT Location: T 11^N R 56^E, Sec 33 Tract DAAA Drilled depth 320 FT
 Measured: 1700 FT ~~XXX~~ FSL 20 FT ~~XXX~~ ^{FEL} FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: No elevation control.

RECORDED BY WILLIAM JACKSON GEOLOGIST ~~NO~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN.

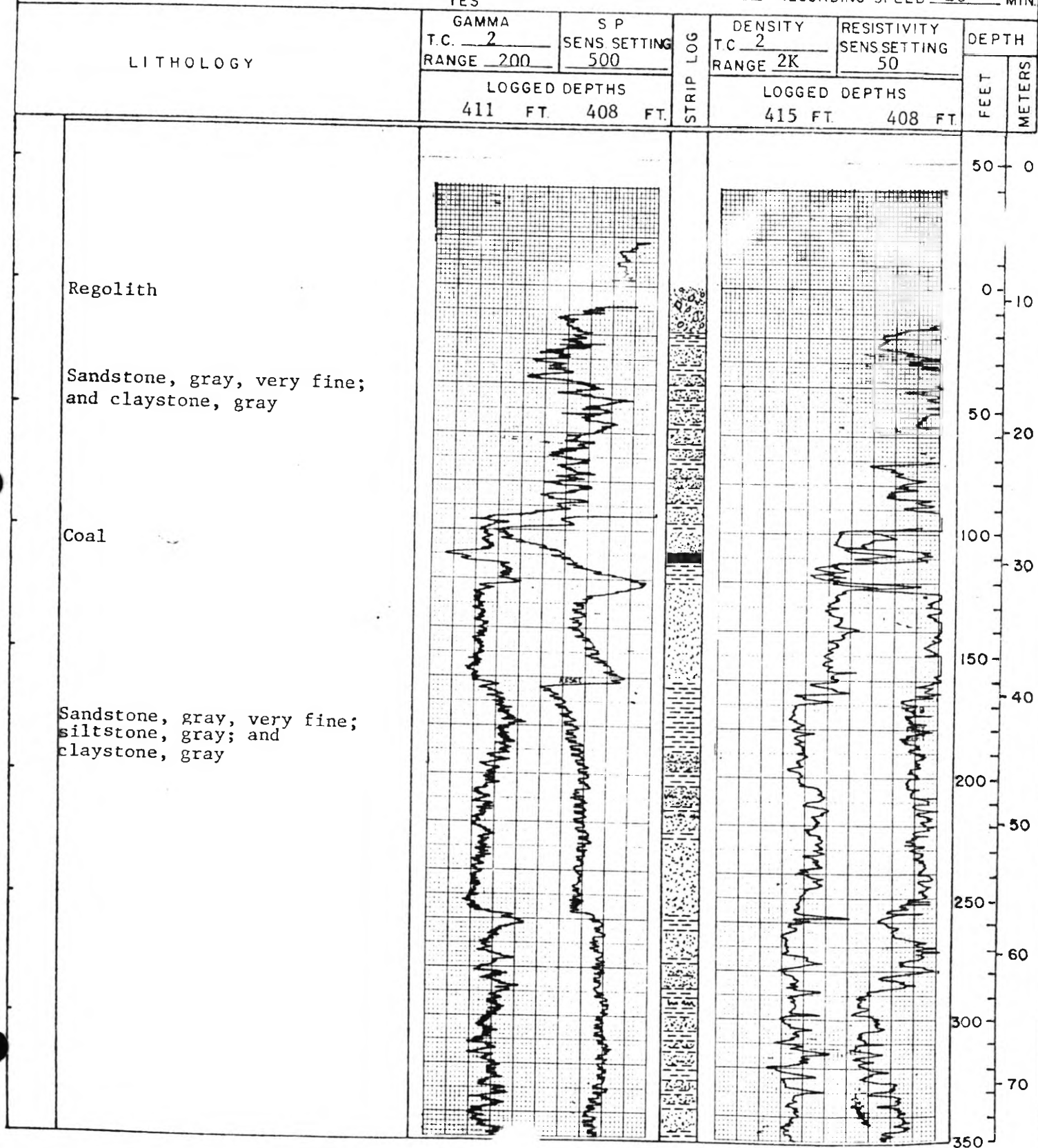
LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	DEPTH	
	T.C. <u>2</u>	SENS SETTING		T.C. <u>2</u>	SENS SETTING	FEET	METERS
	RANGE <u>200</u>	<u>500</u>		RANGE <u>2K</u>	<u>500</u>		
	LOGGED DEPTHS			LOGGED DEPTHS			
	314 FT			318 FT			
	311 FT			311 FT			

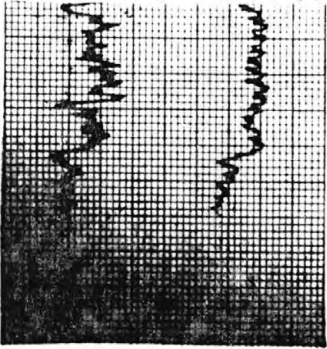

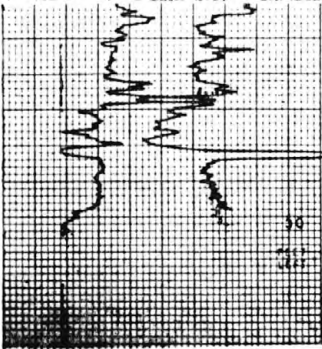
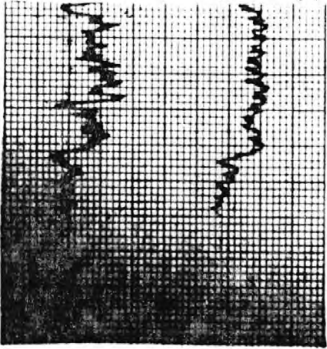

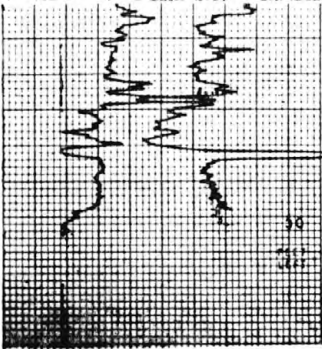
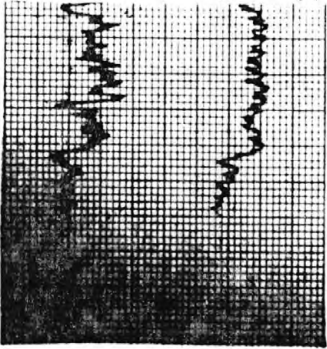

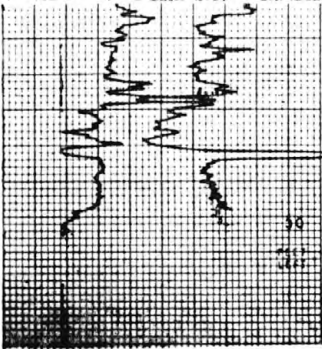
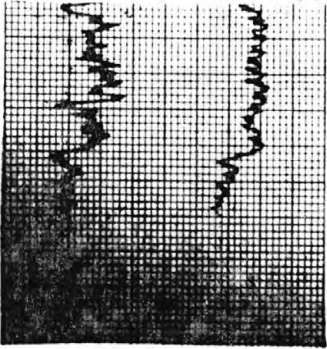

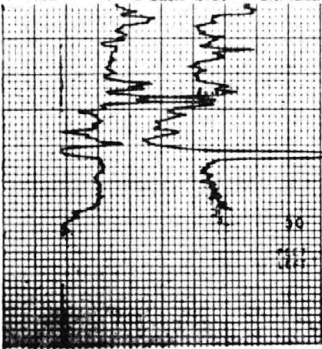
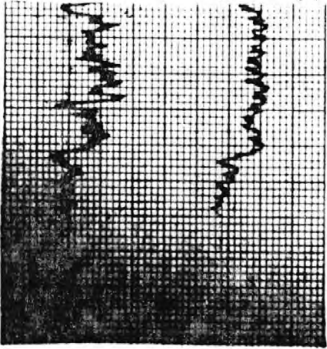

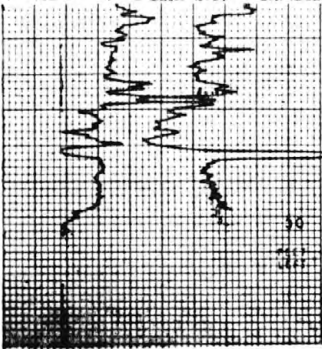
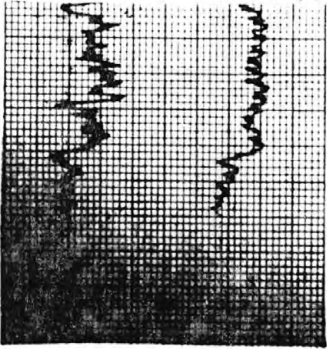

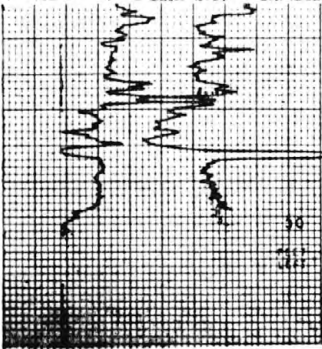
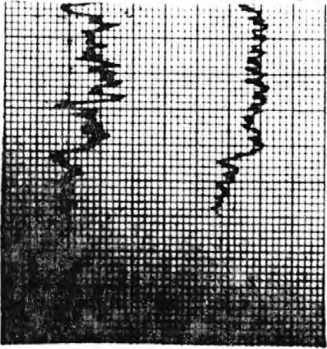

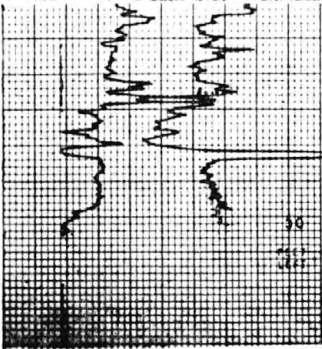
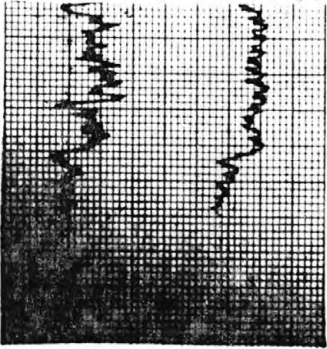

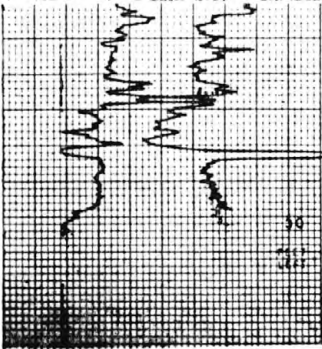
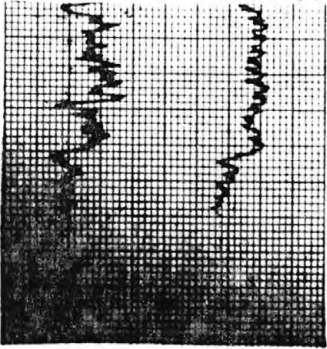

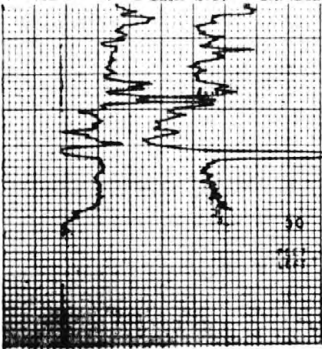


LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

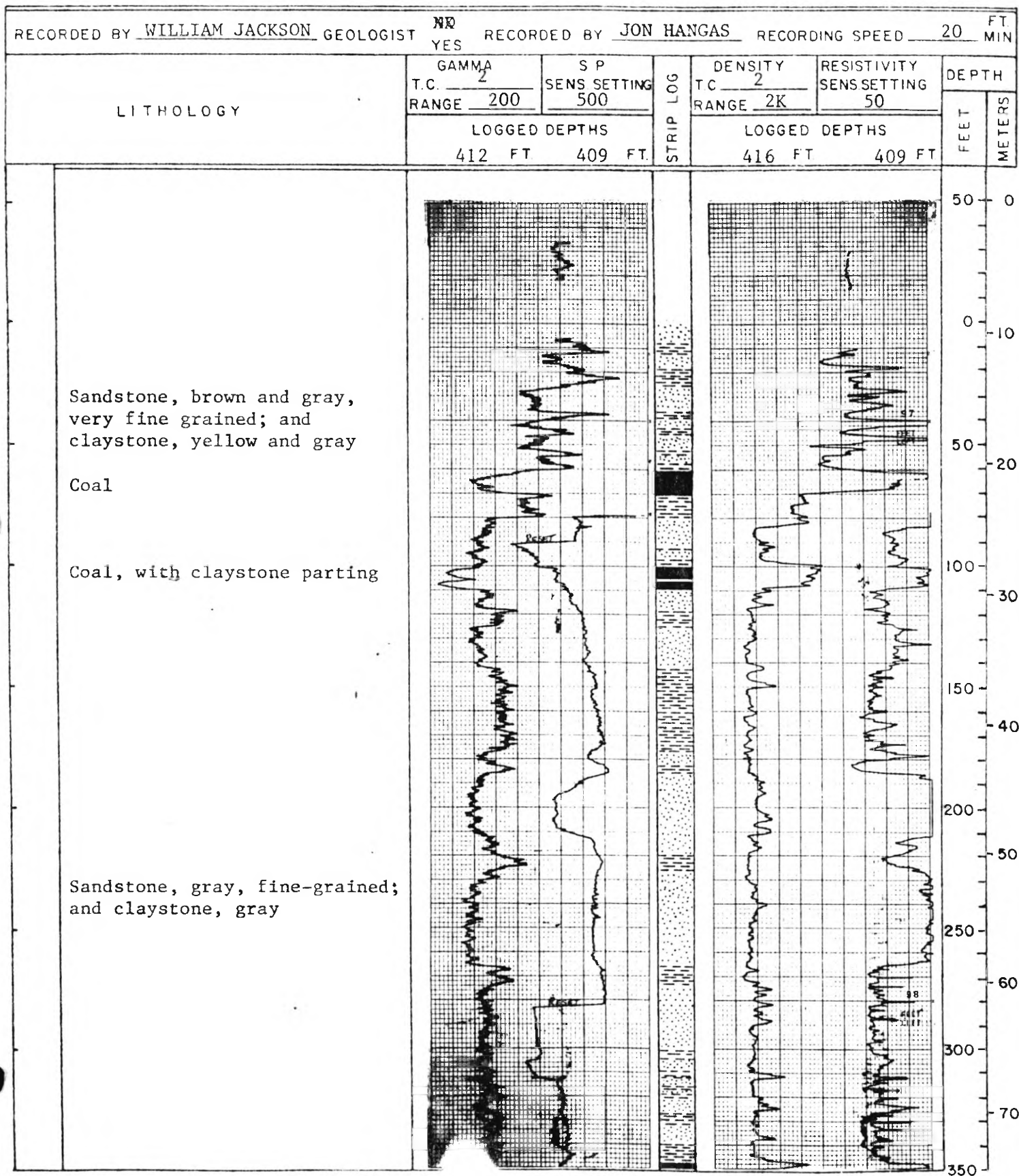
Hole No: US-79179 Map: BLM SE 8 Date: 10/17/79 State: Montana County: Fallon
 Elev.: FT Location: T 10 ^N R 56 ^E W, Sec 14 Tract CCBB Drilled depth 420 FT
 Measured: 1000 FT FSL 30 FT FWL FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control

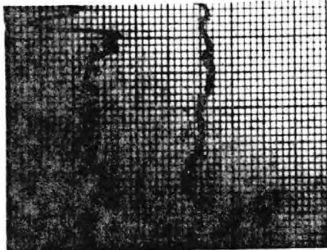

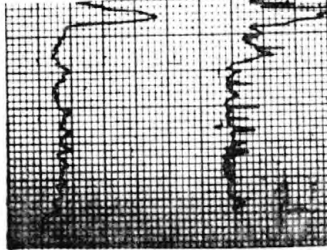
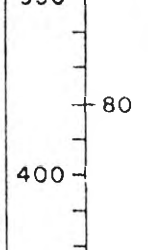
RECORDED BY WILLIAM JACKSON GEOLOGIST ~~XXX~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN.



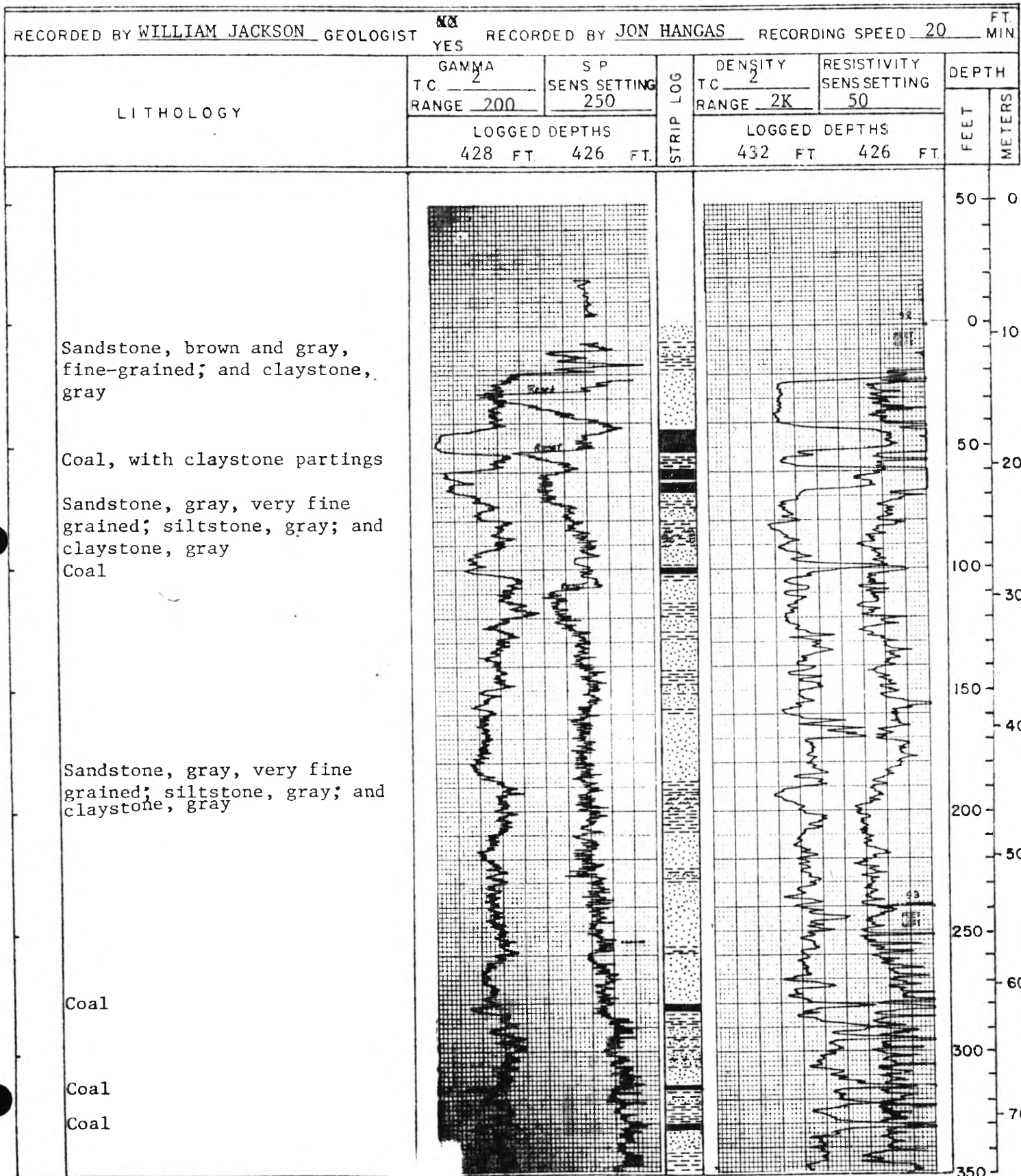
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Coal				350			
Sandstone, gray, very fine; siltstone, gray				80			
Coal				400			
Sandstone, gray, very fine; siltstone, gray; claystone, gray; and limestone, gray				90			
				450			
				100			
				500			
				110			
				550			
				120			
				600			
				130			
				650			
				140			
				700			
				150			
				750			
				800			

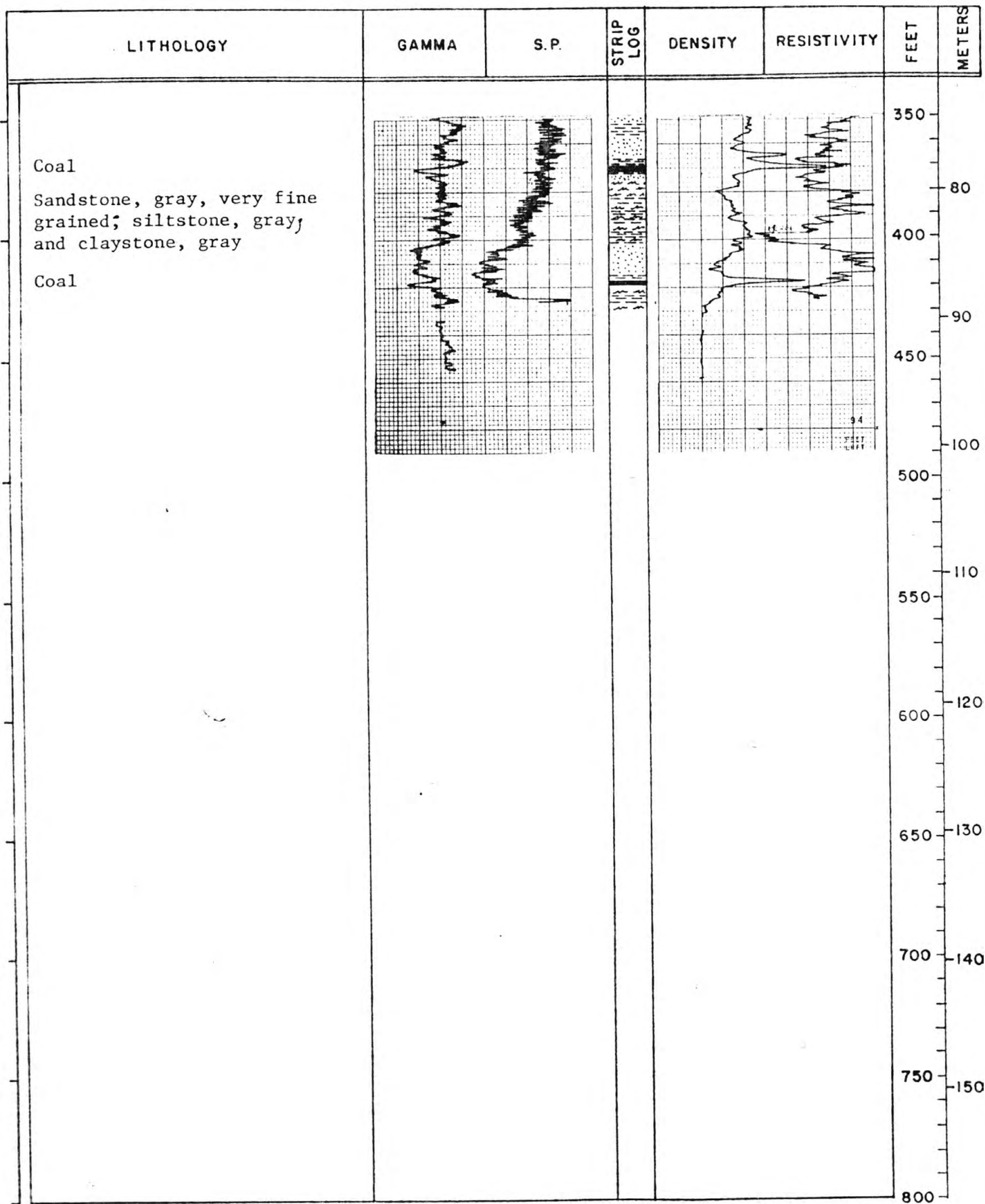
Hole No: US-79180 Map: SE 8 BLM Date: 10/18/79 State: Montana County: Fallon
 Elev.: FT Location: T 9 ^N R 56 ^E W, Sec 36 Tract BBBE Drilled depth 420 FT
 Measured: 20 FT ^{FNL} ~~XXX~~ 100 FT ^{FWL} ~~XXX~~ FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control



LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Coal						350	
Sandstone, gray, very fine grained; and claystone, gray						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

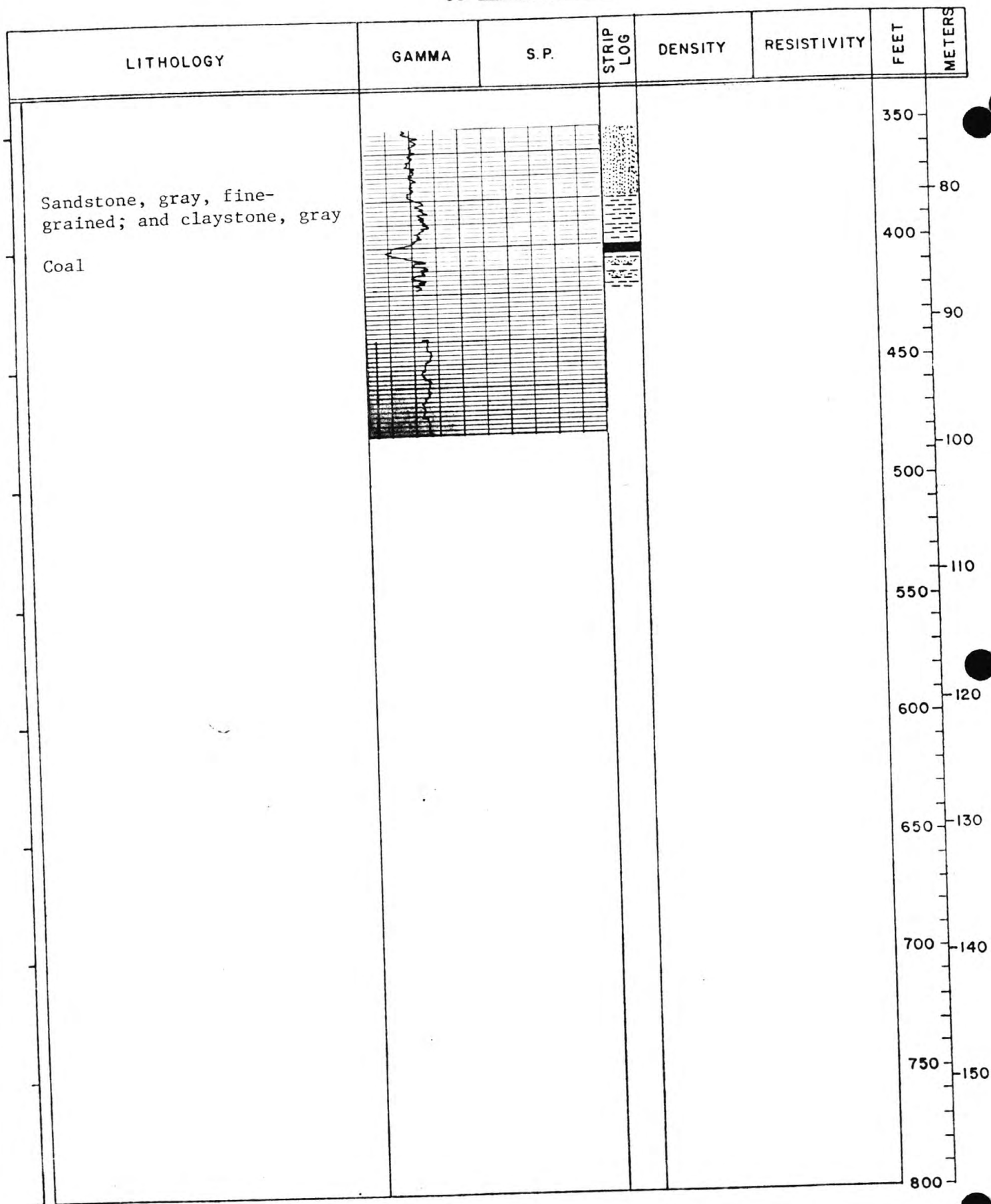
Hole No: US-79181 Map: SE 7 BLM Date: 10/18/79 State: Montana County: Fallon
 Elev.: FT Location: T 9^N R 57^E W, Sec 16 Tract ABCC Drilled depth 440 FT
 Measured: 1300 FT FNL 1100 FT FEL RWX FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control



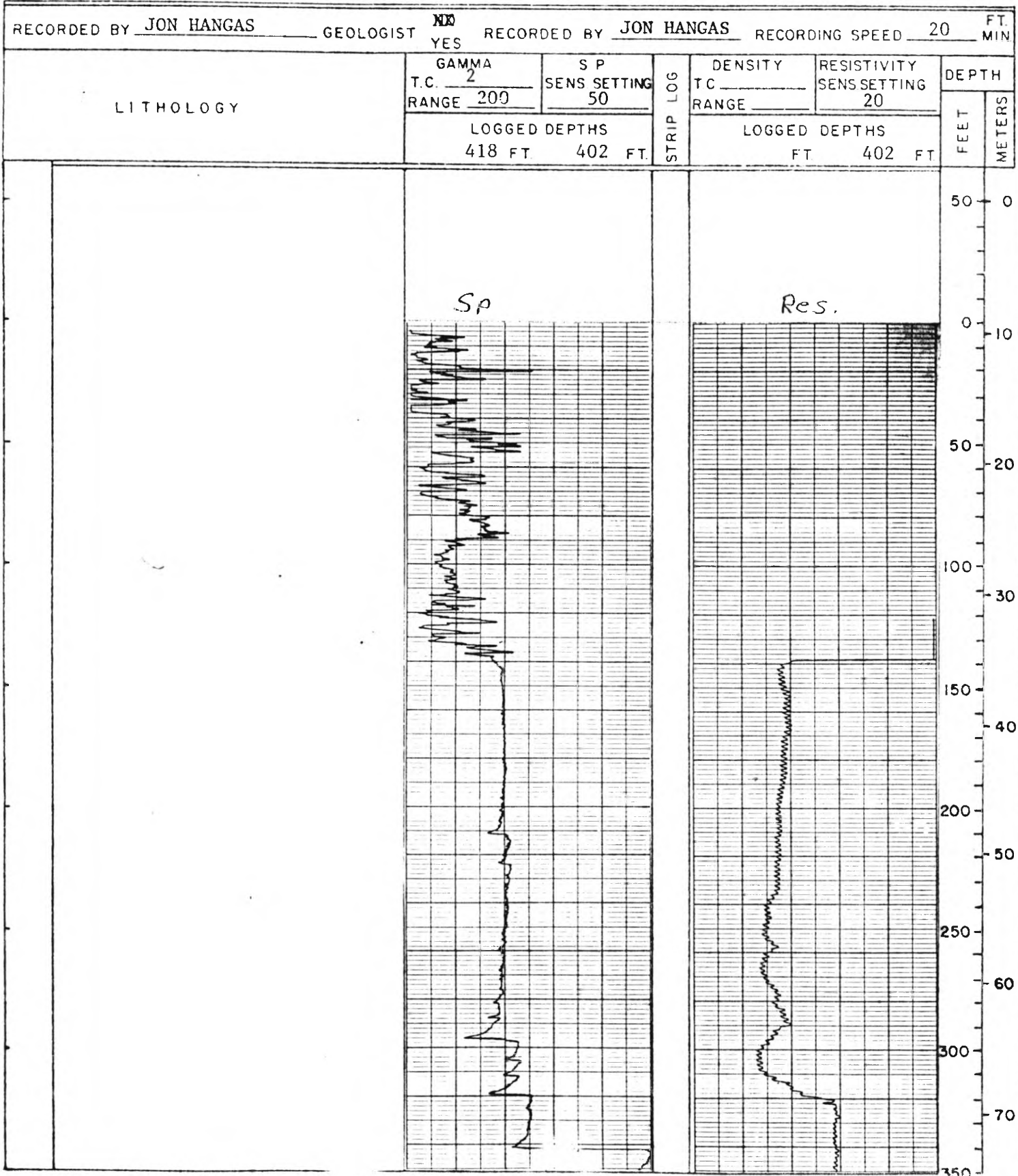


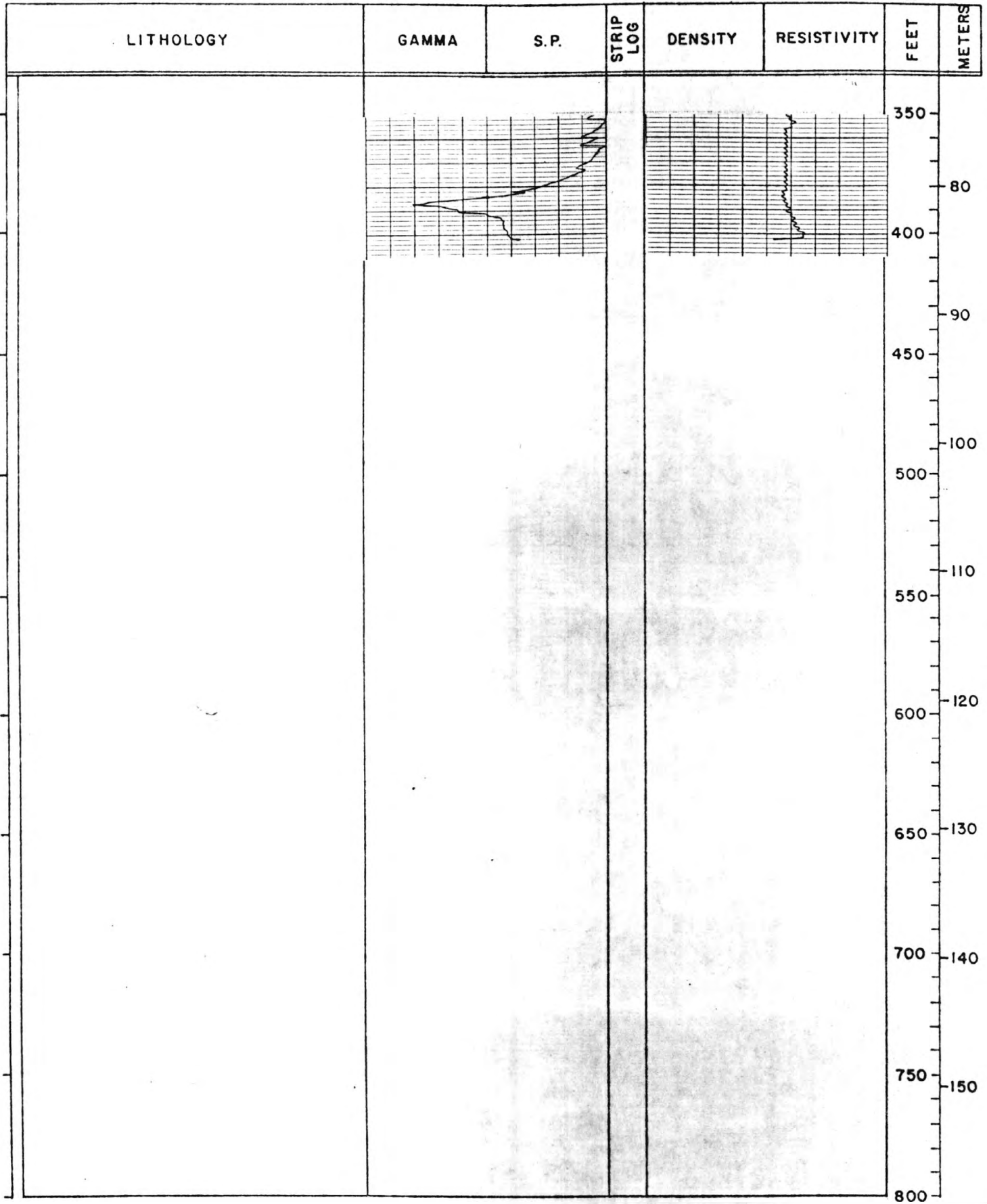
Hole No: US-79182 Map: SE 8 BLM Date: 10/19/79 State: Montana County: Fallon
 Elev.: FT Location: T 9^N R 57^E, Sec 6 Tract AAAB Drilled depth 420 FT
 Measured: 200 FT ~~FNL~~ 330 FT ~~FEL~~ FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control

RECORDED BY <u>JON HANGAS</u> GEOLOGIST NO YES		RECORDED BY <u>JON HANGAS</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>50</u>	DENSITY T.C. <u> </u> RANGE <u> </u>
	RESISTIVITY SENS SETTING <u>20</u>		DEPTH
	LOGGED DEPTHS <u>418</u> FT. <u>402</u> FT.		LOGGED DEPTHS <u> </u> FT. <u>402</u> FT.
	STRIP LOG		FEET METERS
Sandstone, gray and light-brown, very fine grained; and claystone, gray Coal, with claystone parting Sandstone, light-gray, very fine grained; siltstone, gray; and claystone, gray Coal Sandstone, gray, very fine grained; siltstone, gray; and claystone, gray Coal, with claystone parting	Gamma 		50 - 0
			0 - 10
			10 - 20
			20 - 30
			30 - 40
			40 - 50
			50 - 60
			60 - 70
			70 - 80
			80 - 90
			90 - 100
			100 - 110
			110 - 120

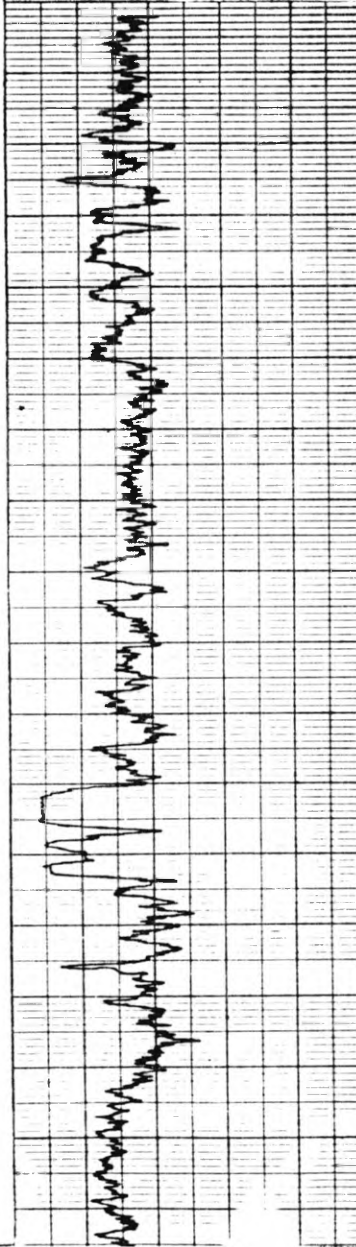


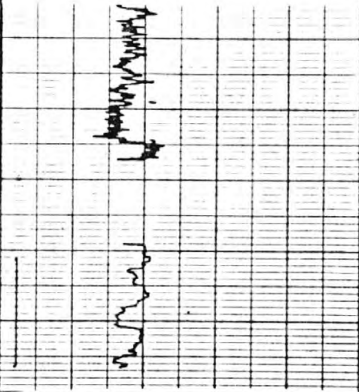

Hole No: US-79182 Map: SE 8 BLM Date: 10/19/79 State: Montana County: Fallon
 Elev.: FT Location: T 9^N R 57^E, Sec 6 Tract AAAB Drilled depth 420 FT
 Measured: 200 FT. ^{FNL} 330 FT. ^{FEL} FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control





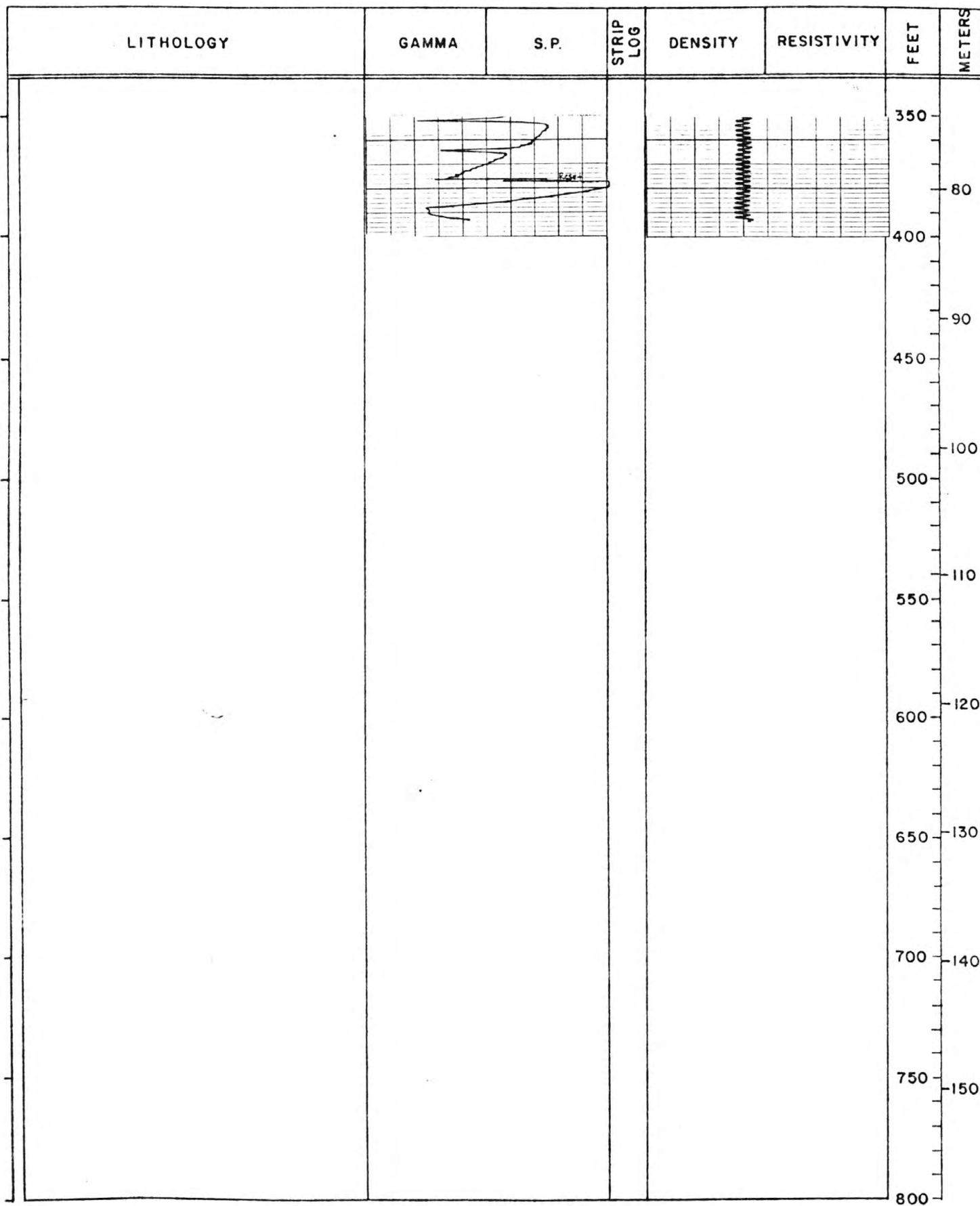
Hole No: US-79183 Map: SE 8 BLM Date: 10/19/79 State: Montana County: Fallon
 Elev.: 3100 FT Location: T 9^N R 58^E W, Sec 6 Tract ADC Drilled depth 400 FT
 Measured: 2500 FT ^{FNL} XXX 1000 FT ^{FEL} XXX FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control

RECORDED BY <u>JON HANGAS</u> GEOLOGIST <input checked="" type="checkbox"/> YES		RECORDED BY <u>JON HANGAS</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>20</u>	DENSITY TC RANGE
	LOGGED DEPTHS 394 FT 393 FT.		RESISTIVITY SENS. SETTING
	LOGGED DEPTHS FT FT		DEPTH FEET METERS
Coal			50 0
Sandstone, gray, very fine grained; siltstone, gray; and claystone, gray			0 10
Coal, with claystone parting			50 20
Coal			100 30
Sandstone, gray, very fine grained; siltstone, gray; and claystone, gray			150 40
			200 50
			250 60
			300 70
			350

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

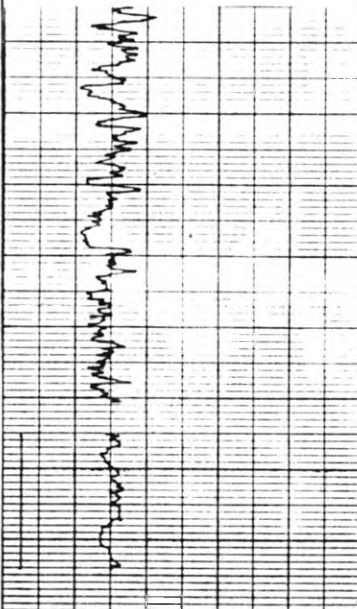

Hole No: US-79183 Map: SE 8 BLM Date: 10/19/79 State: Montana County: Fallon
 Elev.: _____ FT Location: T 9 ^N R 58 ^E, Sec 6 Tract ADC Drilled depth _____ 400 FT
 Measured: 2500 FT ^{FNL} 1000 FT ^{FEL} XXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control

RECORDED BY <u>JON HANGAS</u> GEOLOGIST XXX YES		RECORDED BY <u>JON HNAGAS</u>		RECORDING SPEED <u>20</u> FT. MIN		
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING _____	
	LOGGED DEPTHS 394 FT. 393 FT.			LOGGED DEPTHS FT. FT.		
	S.P.		STRIP LOG	Res.		50
						0
						10
						20
						30
						40
						50
						60
						70
						80

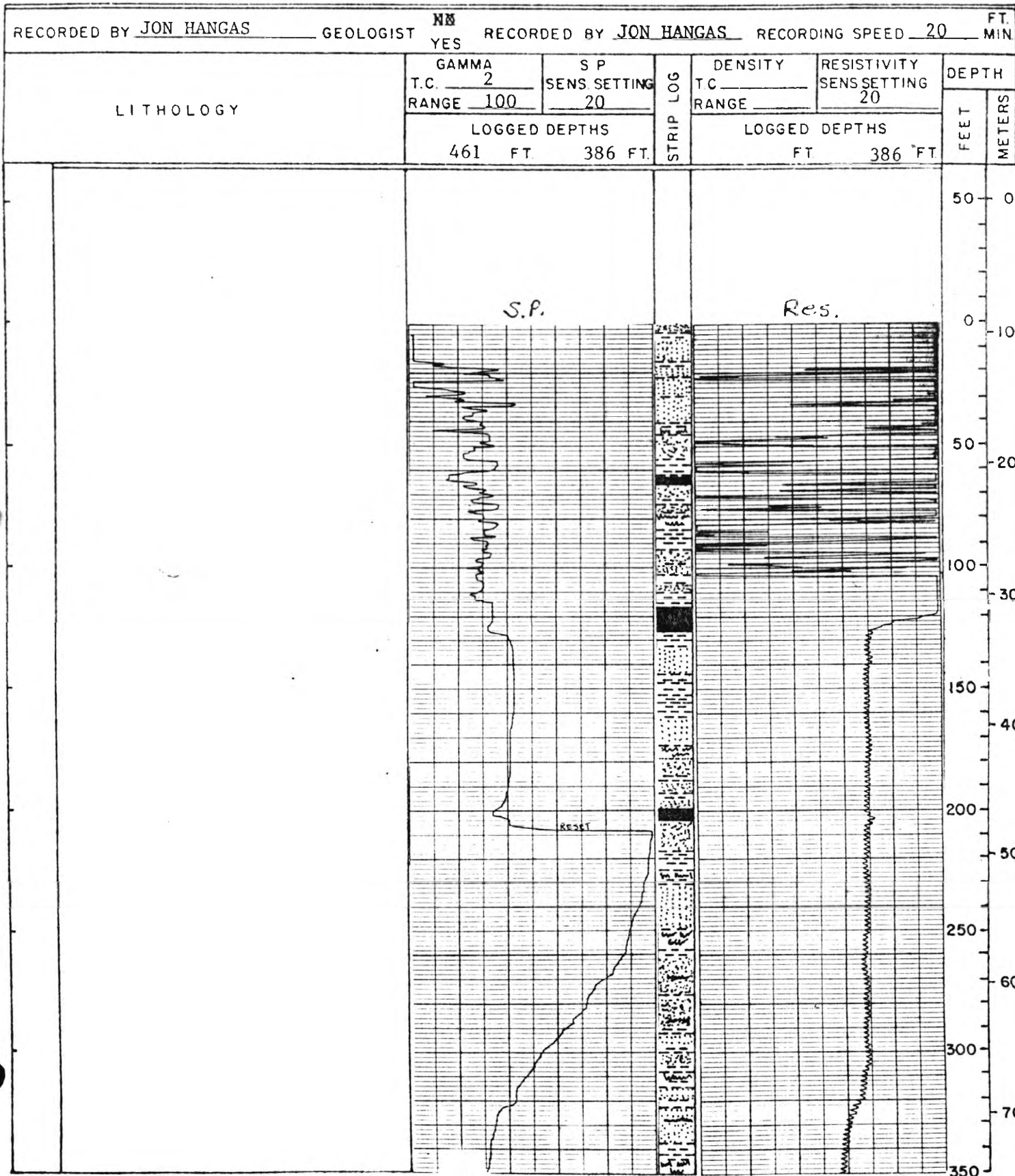


Hole No: US-79184 Map: BLM SE 8 Date: 10/21/79 State: Montana County: Fallon
 Elev.: FT Location: T 10^N R 57^E, Sec 22 Tract ABAD Drilled depth 480 FT
 Measured: 200 FT ^{FNL} 700 FT ^{FEL} FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control

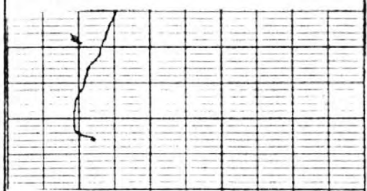
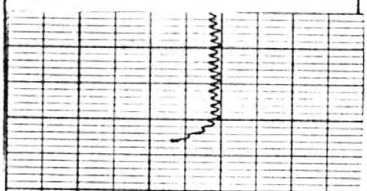
RECORDED BY <u>JON HANGAS</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>JON HANGAS</u> RECORDING SPEED <u>20</u> FT. MIN					
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	STRIP LOG	DENSITY T.C. <u> </u> RANGE <u> </u>	RESISTIVITY SENS SETTING <u>20</u>	DEPTH	
	LOGGED DEPTHS <u>461</u> FT <u>386</u> FT.			LOGGED DEPTHS <u> </u> FT <u>386</u> FT.		FEET	METERS
Sandstone, gray and tan, fine-grained; siltstone, light-gray and tan; and claystone, light-gray Coal Sandstone, light-gray, very fine grained; siltstone, gray, and claystone, gray Coal Sandstone, light-gray, very fine grained; siltstone, light-gray; and claystone, gray Coal Sandstone, gray, very fine grained; siltstone, gray; and claystone, gray	<i>Gamma</i>					50	0
						0	10
						50	20
						100	30
						150	40
						200	50
						250	60
						300	70
						350	
						400	
						450	
						500	
						550	
						600	
						650	

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Sandstone, gray, very fine grained; siltstone, gray; and claystone, gray						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79184 Map: BLM SE 8 Date: 10/21/79 State: Montana County: Fallon
 Elev.: FT Location: T 10 ^N R 57 ^E, Sec 22 Tract ABAD Drilled depth 480 FT
 Measured: 200 FT ^{FNL} 700 FT ^{FEL} FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control

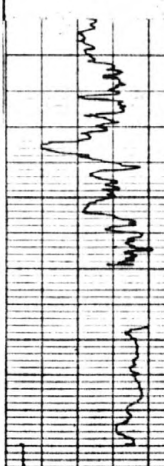

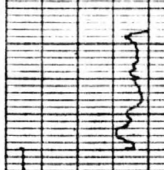









US- 79184

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						700	
						140	
						750	
						150	
						800	

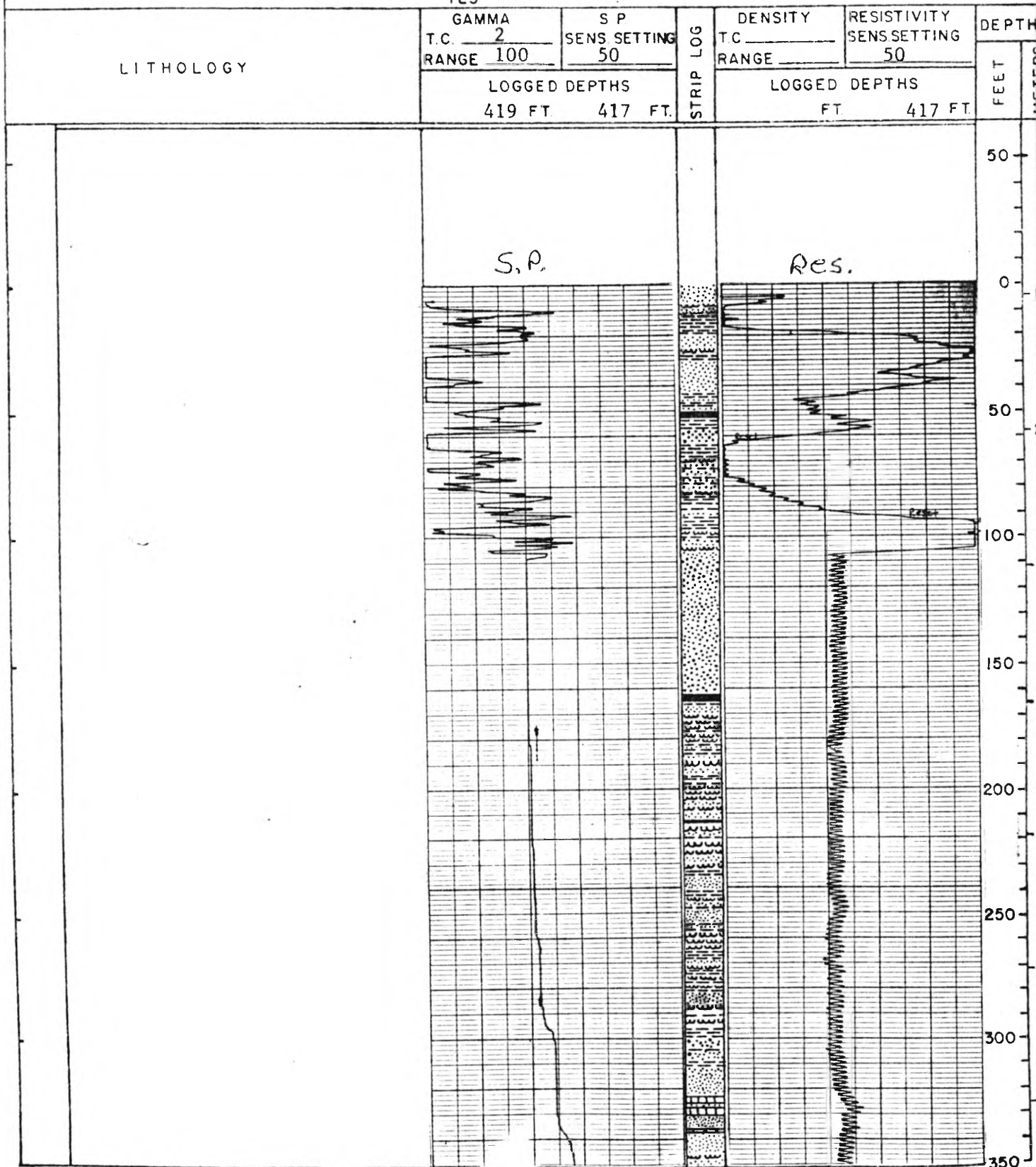
Hole No: US-79185 Map: BLM SE 8 Date: 10/21/79 State: Montana County: Fallon
 Elev: _____ FT Location: T 10 ^N R 57 ^E, Sec 4 Tract ACDA Drilled depth _____ 420 FT
 Measured: 2000 FT ^{FNL} XXX 1500 FT ^{FEL} RXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control

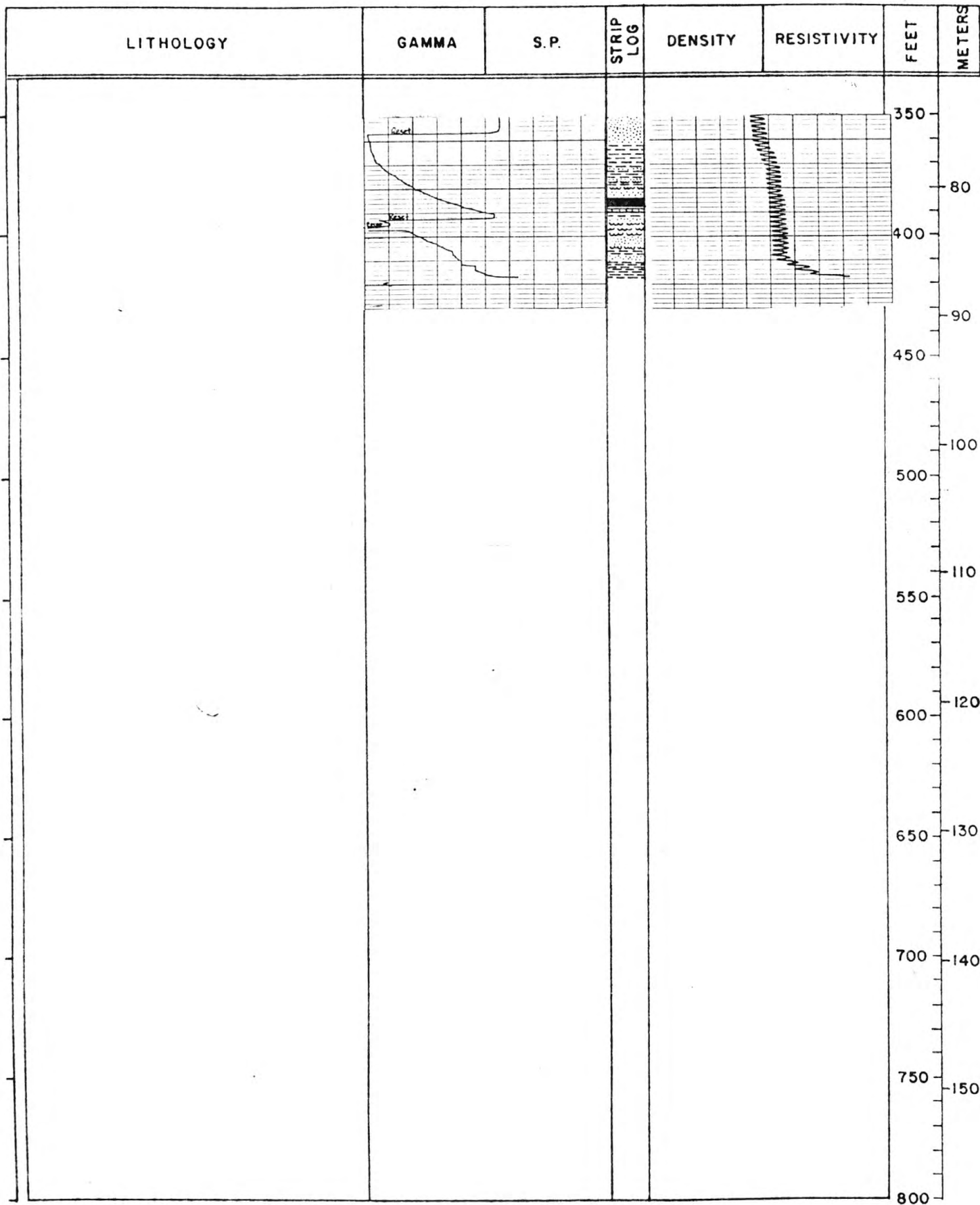
RECORDED BY <u>JON HANGAS</u> GEOLOGIST ^{XIX} YES		RECORDED BY <u>JON HANGAS</u> RECORDING SPEED <u>20</u> FT. MIN.					
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>50</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING <u>50</u>	DEPTH	
	LOGGED DEPTHS 419 FT 417 FT			LOGGED DEPTHS FT 417 FT		FEET	METERS
	Sand						
Claystone, brown-gray						0	10
Coal						50	20
Siltstone, gray						100	30
Sand, gray-brown, coarse						150	40
Coal						200	50
Siltstone, gray						250	60
Coal						300	70
Sand, fine, light-gray							
Siltstone, brown-gray							
Limestone, gray							

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Sand, fine light-gray						350	
Siltstone						80	
Coal						400	
Limestone, gray						90	
Siltstone, brown, carbonaceous						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						700	
						140	
						750	
						800	

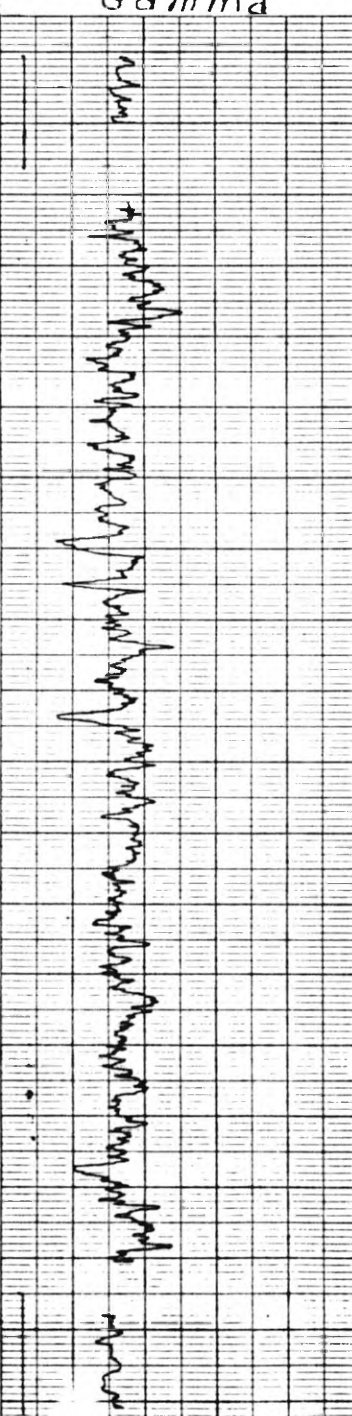

Hole No: US-79185 Map: BLM SE 8 Date: 10/21/79 State: Montana County: Fallon
 Elev.: FT Location: T 10^N R 57^E W, Sec 4 Tract ACDA Drilled depth 420 F
 Measured: 2000 FT ^{FNL} ~~FSK~~ 1500 FT ^{FEL} ~~FXM~~ FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No
 Remarks: no elevation control

RECORDED BY JON HANGAS GEOLOGIST ^{NO} YES RECORDED BY JON HANGAS RECORDING SPEED 20 MI



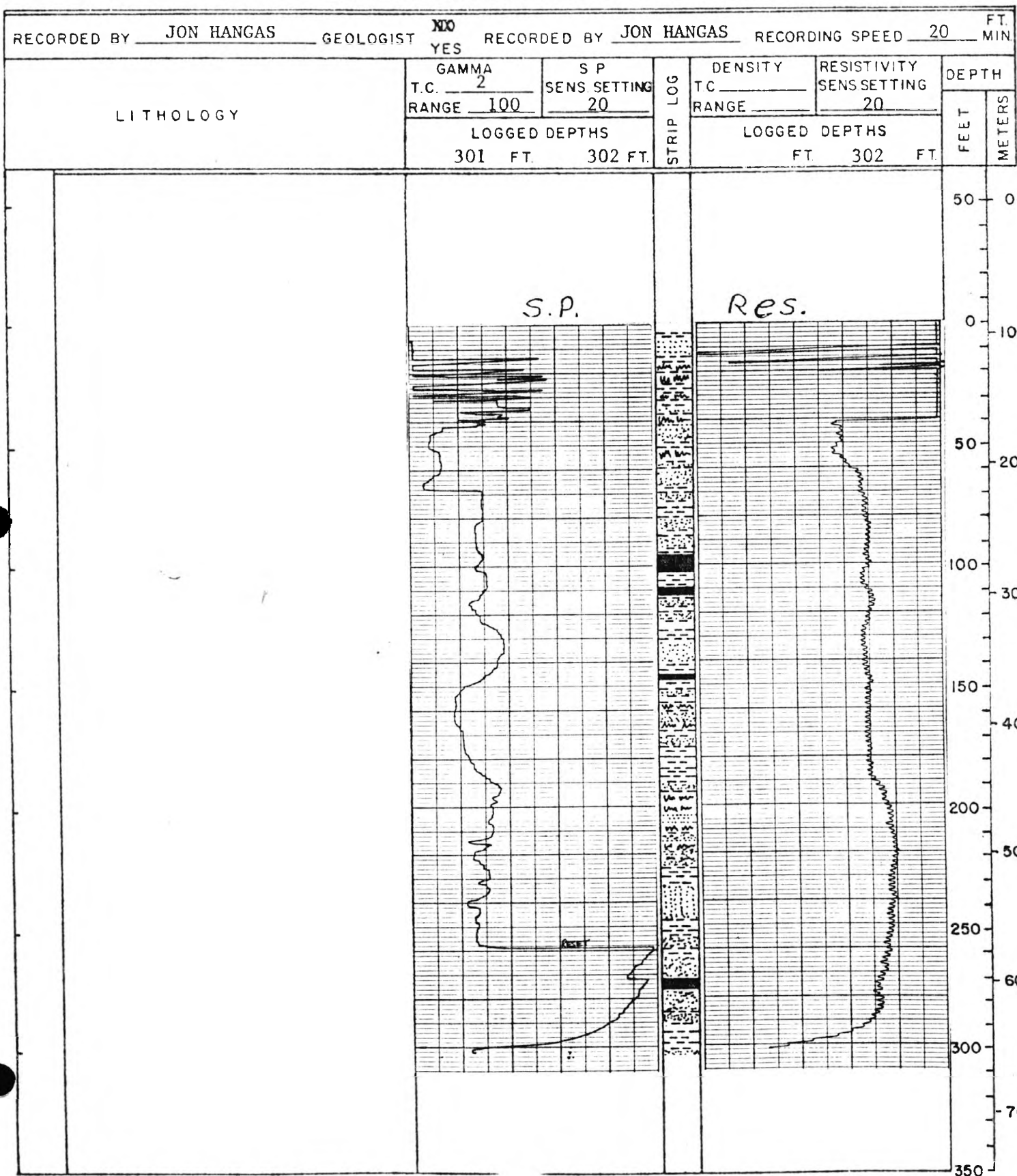


Hole No: US-79186 Map: Wibaux 3 NE Date: 10/22/79 State: Montana County: Wibaux
 Elev.: 3181 FT Location: T 11^N R 59^E, Sec 4 Tract CBBB Drilled depth 300 FT
 Measured: 2500 FT ^{FNL} ~~XXX~~ 10 FT ^{FWL} ~~XXX~~ FT. Hole size: 5 5/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>JON HANGAS</u> GEOLOGIST NO YES		RECORDED BY <u>JON HANGAS</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	DENSITY TC _____ RANGE _____
	LOGGED DEPTHS 301 FT. 302 FT.		RESISTIVITY SENS SETTING <u>20</u>
	LOGGED DEPTHS FT 302 FT		DEPTH FEET METERS
Sandstone, tan and gray, very fine; siltstone, gray; and claystone, gray Coal, with claystone parting Sandstone, gray, very fine; and claystone, gray Coal Sandstone, gray, very fine; siltstone, gray; and claystone, gray Coal	Gamma 		
			50 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350

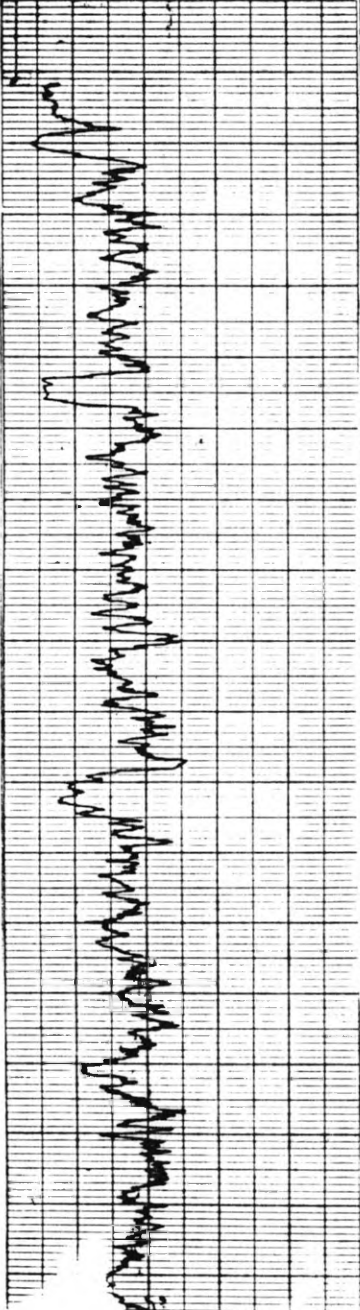
LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

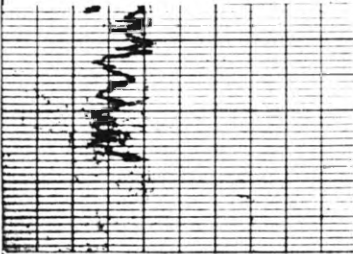
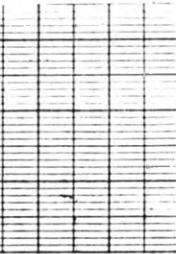

Hole No: US-79186 Map: Wibaux 3 NE Date: 10/22/79 State: Montan County: Wibaux
 Elev.: 3181 FT Location: T 11^N R 59^E W, Sec 4 Tract CBBB Drilled depth 300 FT
 Measured: 2500 FT ~~X88~~^{FNL} 10 FT ~~XXX~~^{FWL} FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____



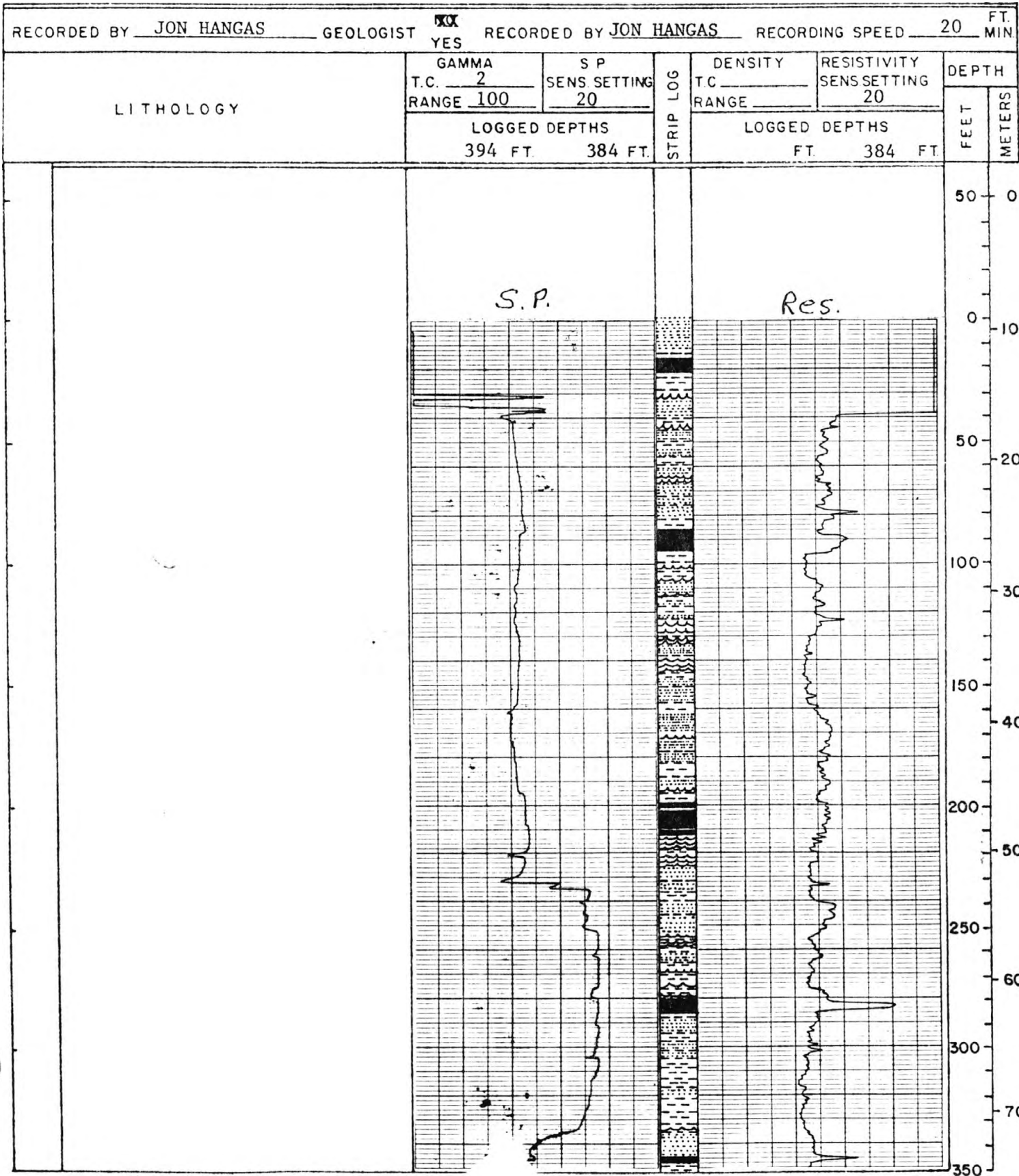
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

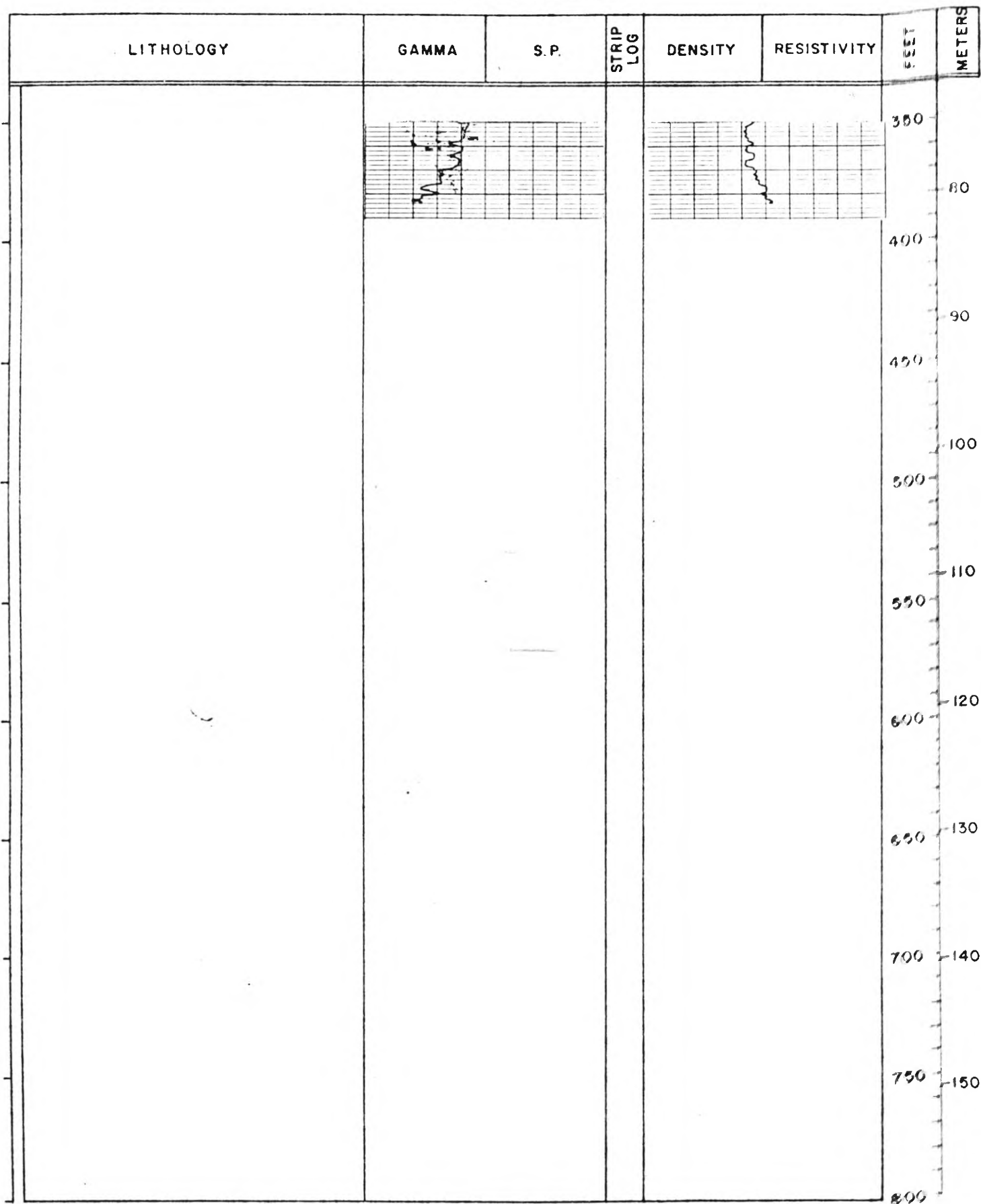
Hole No: US-79187 Map: Wibaux 4 NW Date: 10/22/79 State: Montana County: Wibaux
 Elev.: 2953 FT Location: T 12 ^N R 60 ^E, Sec 32 Tract CCDD Drilled depth 400 FT
 Measured: 15 FT PSL 315 FT FWL XXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Logged through 20 feet of drill stem at top of hole.

RECORDED BY <u>JON HANGAS</u> GEOLOGIST <input checked="" type="checkbox"/> YES		RECORDED BY <u>JON HANGAS</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____
	LOGGED DEPTHS <u>394</u> FT <u>384</u> FT.		RESISTIVITY SENS. SETTING <u>20</u> LOGGED DEPTHS FT. <u>384</u> FT.
STRIP LOG		DEPTH FEET METERS	
Sandstone, brown, very fine; and claystone, gray Coal Sandstone, gray, very fine; siltstone, gray; and claystone, gray Coal Sandstone, gray, very fine; siltstone, gray; and claystone, gray Coal, with claystone partings Sandstone, gray, very fine; siltstone, gray and gray- brown; and claystone, gray Coal Sandstone, gray, fine; siltstone, gray and gray- brown; and claystone, gray Coal		Gamma 	50 0 10 50 20 100 30 150 40 200 50 250 60 300 70 350

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Sandstone, gray, fine; siltstone, gray; and claystone, gray						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

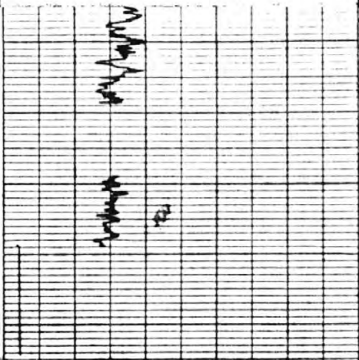
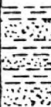
Hole No: US-79187 Map: Wibaux 4 NW Date: 10/22/79 State: Montana County: Wibaux
 Elev.: 2953 FT Location: T 12 ^N ~~S~~ R 60 ^E ~~W~~, Sec 32 Tract CCDD Drilled depth 400 FT
 Measured: 15 FT ~~PSL~~ 315 FT ~~FWL~~ XXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: Logged through 20 feet of drill stem at top of hole.





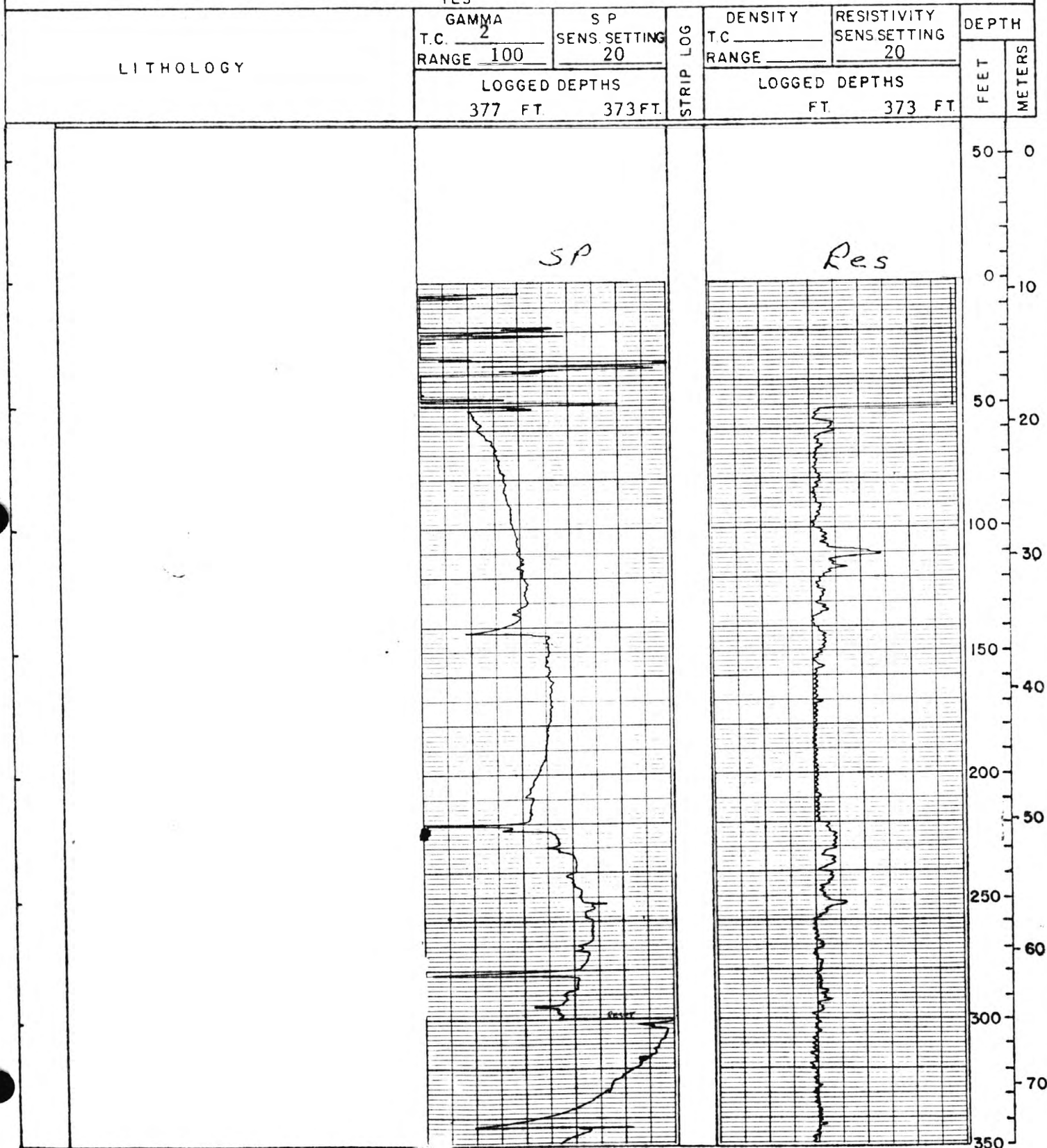
Hole No: US-79188 Map: BLM SE 8 Date: 10/23/79 State: Montana County: Fallon
 Elev.: FT Location: T 10^N R 61^E, Sec 32 Tract DDDD Drilled depth 380 FT
 Measured: 300 FT FSL 15 FT FEL KXX FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control

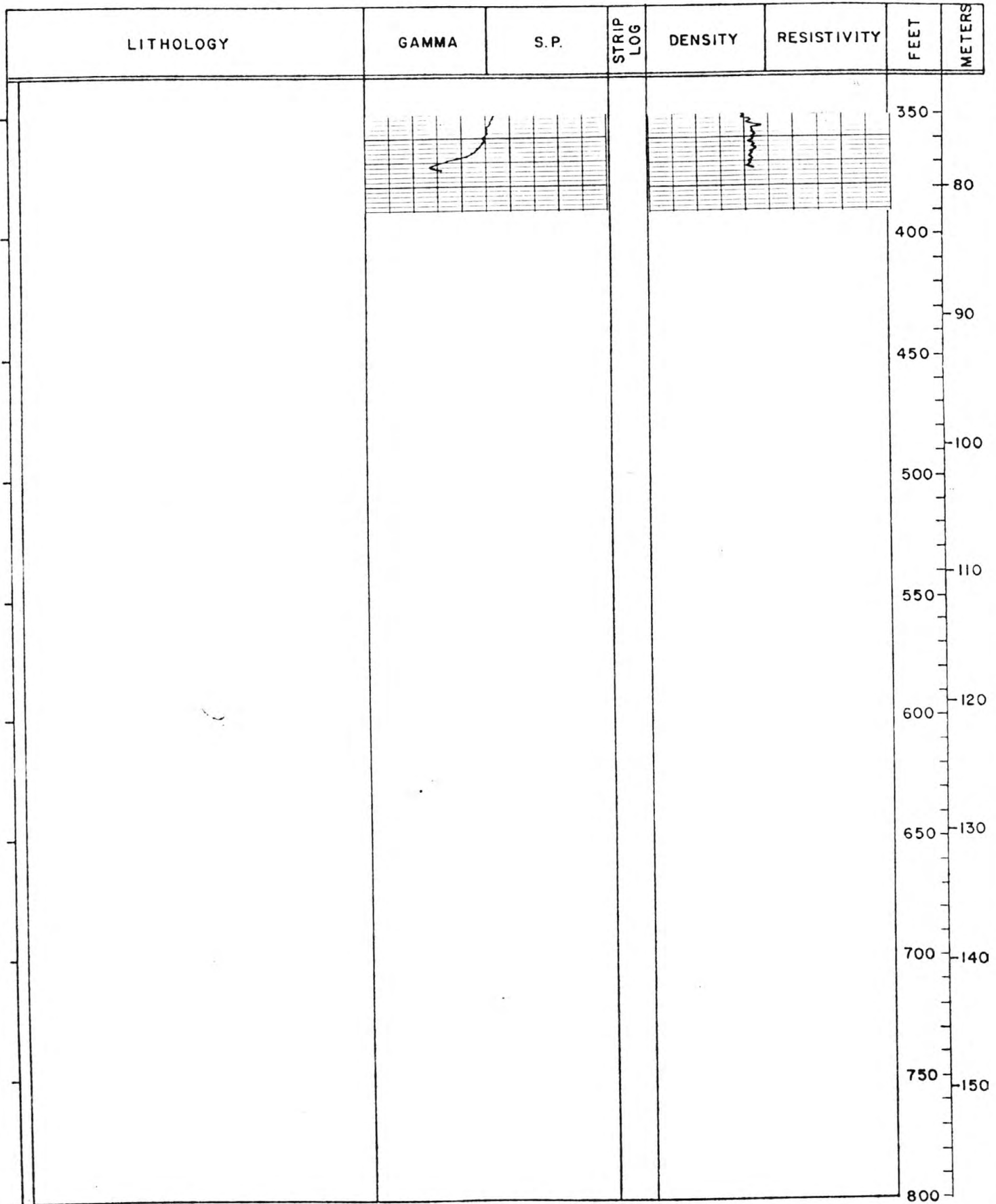
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <input checked="" type="checkbox"/> YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	STRIP LOG	DENSITY T.C. <u> </u> RANGE <u> </u>	RESISTIVITY SENS SETTING <u>20</u>	DEPTH	
	LOGGED DEPTHS <u>377</u> FT. <u>373</u> FT.			LOGGED DEPTHS <u> </u> FT. <u>373</u> FT.		FEET	METERS
Claystone, brown and gray; sandstone, gray, very fine Coal	Gamma					50	0
						0	10
Coal						50	20
Sandstone, gray, very fine; siltstone, brown and gray; and claystone, gray						100	30
Coal						150	40
Sandstone, gray, very fine; siltstone, gray; and claystone, gray						200	50
Coal, with claystone parting						250	60
Sandstone, gray, very fine; siltstone, gray; and claystone, gray						300	70
Sandstone, gray, very fine; siltstone, brown and gray; and claystone, gray						350	

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Sandstone, gray, very fine; and claystone, gray						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79188 Map: BLM SE 8 Date: 10/23/79 State: Montana County: Fallon
 Elev.: FT Location: T 10^N R 61^E W, Sec 32 Tract DDDD Drilled depth 380 FT.
 Measured: 300 FT. ~~PSL~~ 15 FT. ~~FEL~~ XXX FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: no elevation control

RECORDED BY WILLIAM JACKSON GEOLOGIST ~~NO~~ YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN.





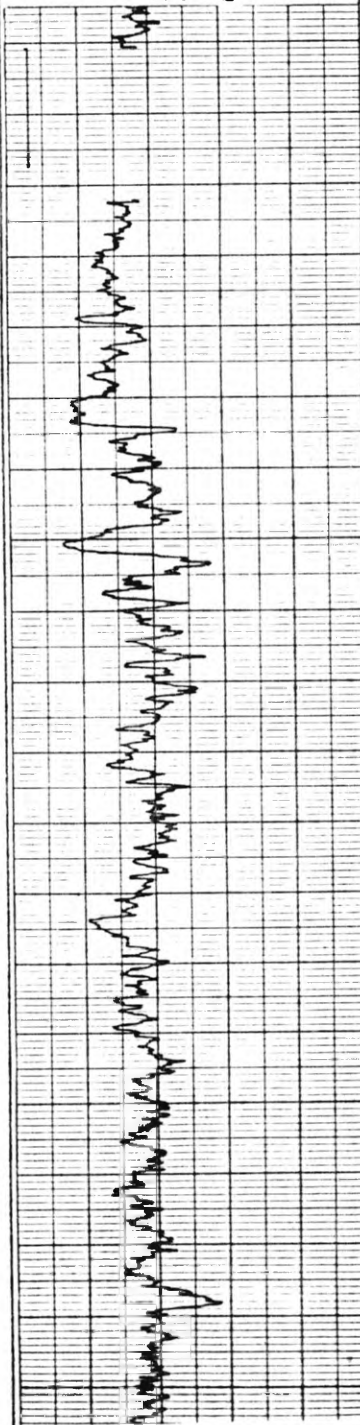
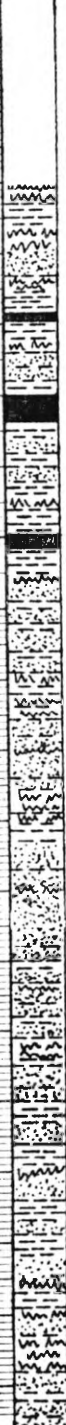
Hole No: US-79189 Map: BLM SE 8 Date: 10/23/79 State: Montana County: Fallon

Elev.: FT Location: T 10 ^N R 60 ^E, Sec 22 Tract AAAA Drilled depth 360 FT

Measured: 150 FT ^{FNL} ~~KXX~~ 20 FT ^{FEL} ~~KXX~~ FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒

Remarks: no elevation control

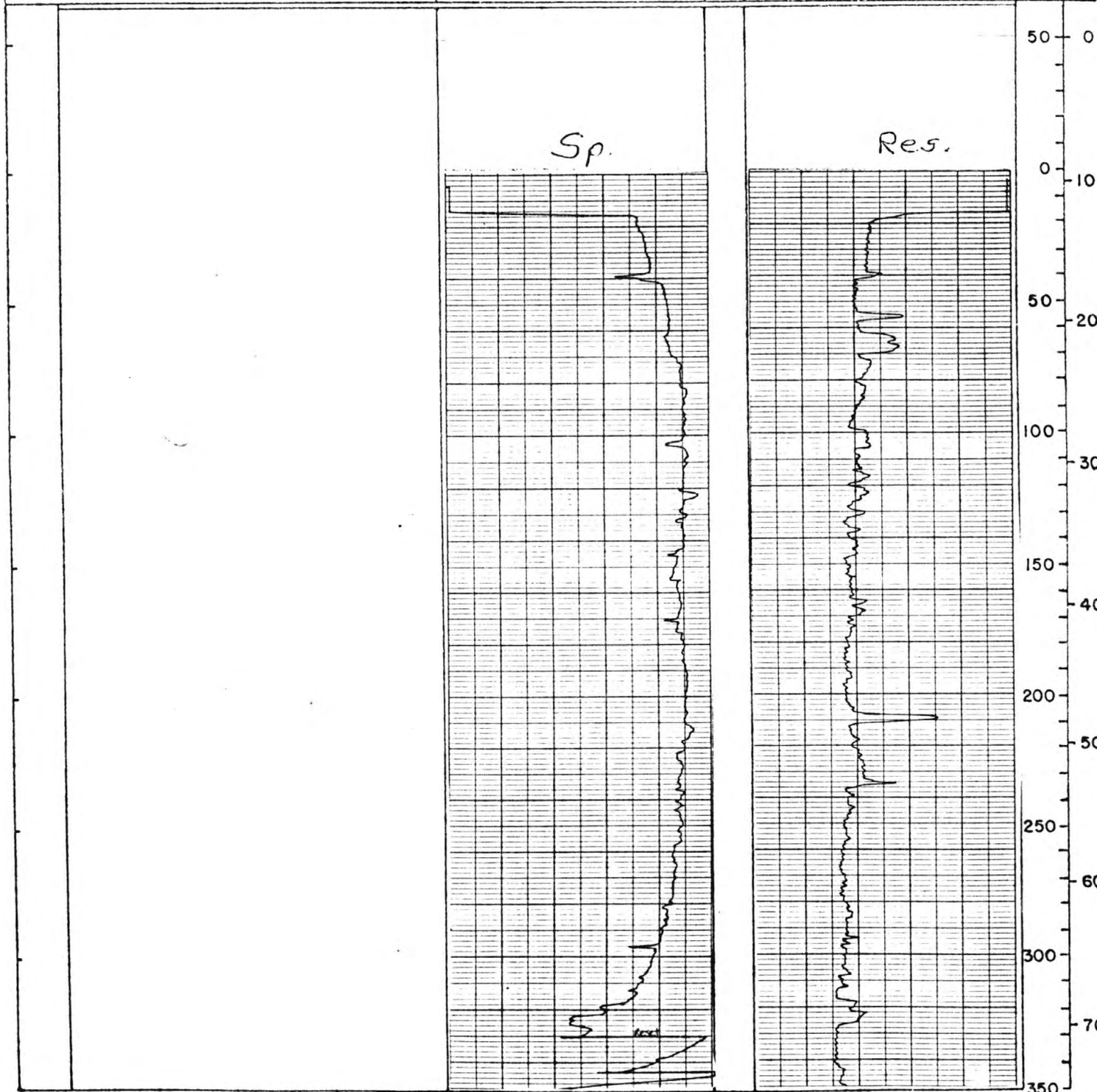
RECORDED BY WILLIAM JACKSON GEOLOGIST ^{NOX} YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN.

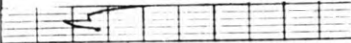
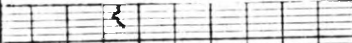
LITHOLOGY	GAMMA		S P		STRIP LOG	DENSITY		RESISTIVITY		DEPTH											
	T.C.	2	SENS SETTING			T.C.		SENS SETTING		FEET	METERS										
	RANGE	100	20			RANGE		20													
LOGGED DEPTHS						LOGGED DEPTHS															
357 FT.						357 FT.															
Sandstone, gray, very fine; siltstone, gray; and claystone, gray	<div>Gamma</div> 												50	0							
													0	10							
													50	20							
													100	30							
													150	40							
													200	50							
													250	60							
													300	70							
													350								
													Coal								
													Coal								
													Coal								
													Sandstone, gray, very fine; siltstone, gray; and claystone, gray								
													Sandstone, gray, very fine; siltstone, gray; and claystone, gray								

Hole No: US-79189 Map: BLM SE 8 Date: 10/23/79 State: Montana County: Fallon
Elev.: FT Location: T 10^N R 60^E, Sec 22 Tract AAAA Drilled depth 360 FT
Measured: 150 FT ^{FNL} ~~KXX~~ 20 FT ^{FEL} ~~KXX~~ FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks: no elevation control

RECORDED BY WILLIAM JACKSON GEOLOGIST ^{NR} YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN


LITHOLOGY	GAMMA		S P	STRIP LOG	DENSITY		RESISTIVITY		DEPTH	
	T.C.	2	SENS SETTING		TC		SENS SETTING		FEET	METERS
	RANGE	100	20		RANGE		20			
	LOGGED DEPTHS				LOGGED DEPTHS					
	357	FT	357		FT.	FT	357	FT		

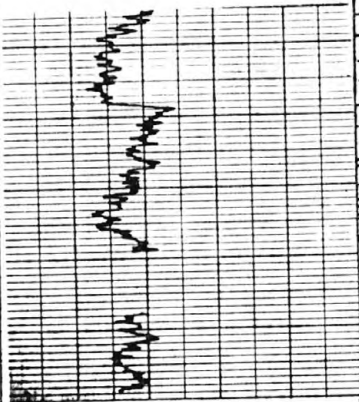
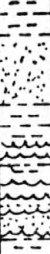


LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

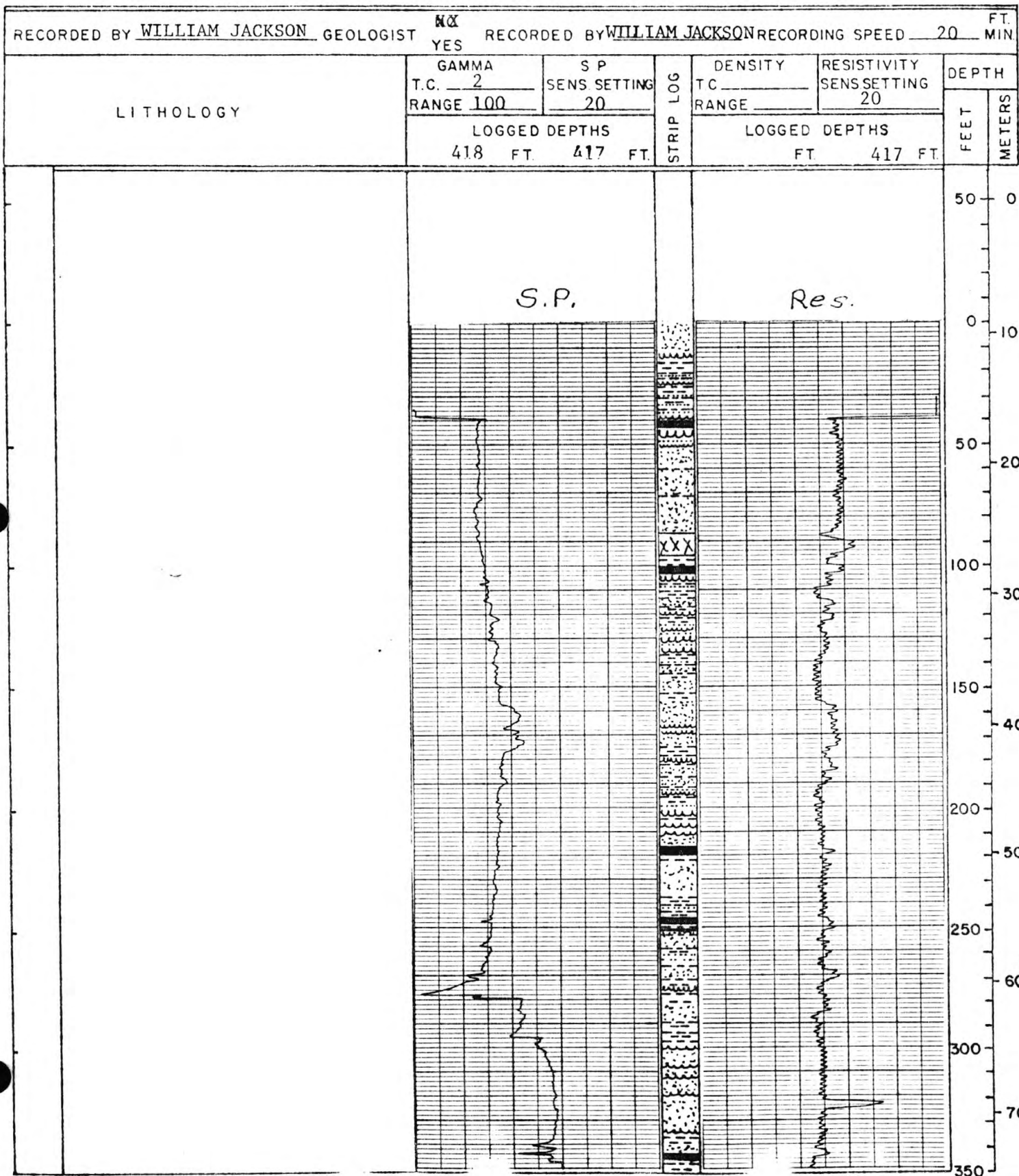
Hole No: US-79190 Map: BLM SE 8 Date: 10/24/79 State: Montana County: Wibaux
 Elev.: 2844 FT Location: T 13 ^N R 59 ^E, Sec 34 Tract DDAA Drilled depth 420 FT
 Measured: 1200 FT ~~RXX~~ FSL 20 FT ~~RXX~~ FEL 20 FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

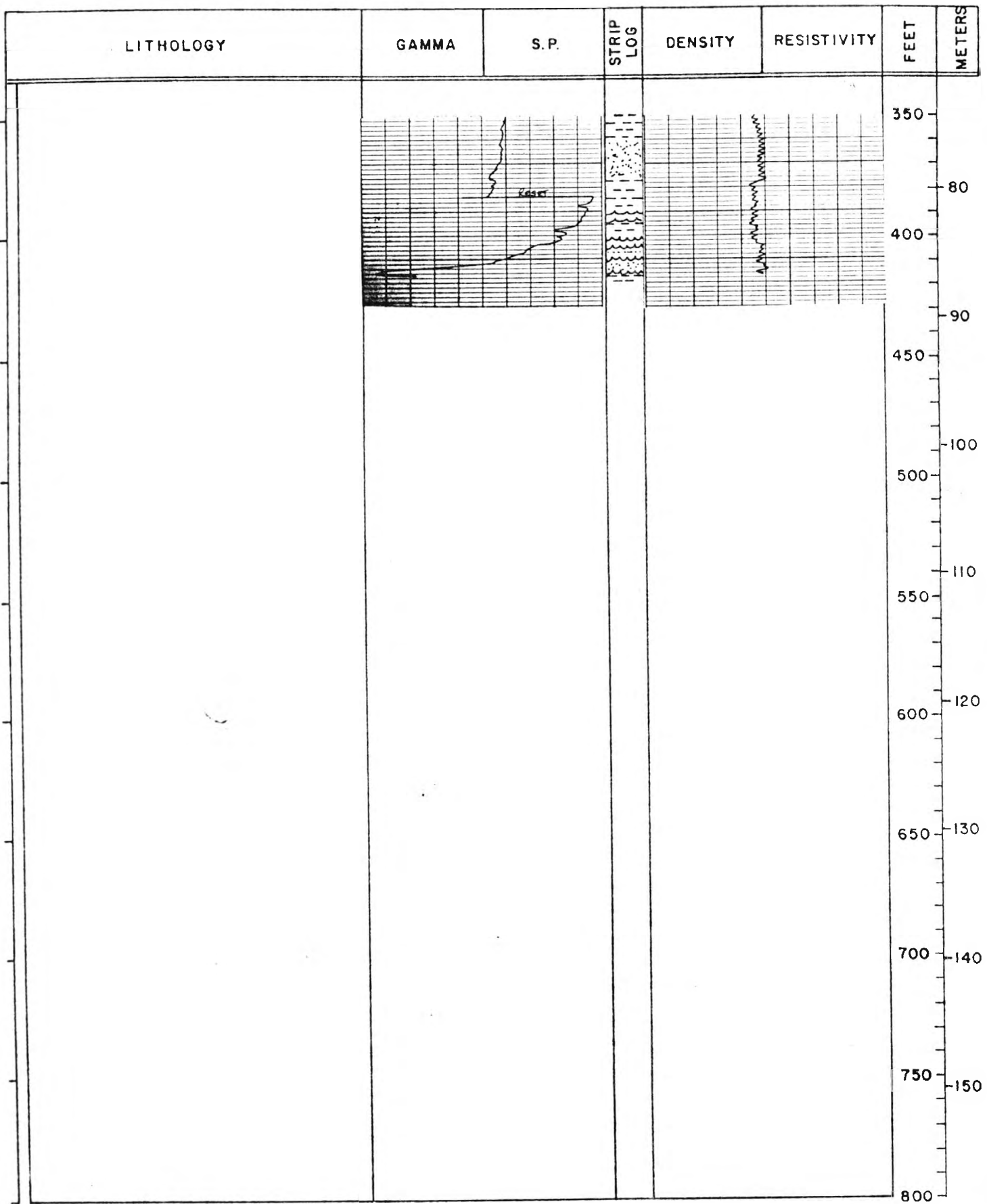
RECORDED BY WILLIAM JACKSON GEOLOGIST ~~RXX~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN.

LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	DEPTH	
	T.C. <u>2</u>	SENS SETTING		T.C. _____	SENS SETTING	FEET	METERS
	RANGE <u>100</u>	<u>20</u>		RANGE _____	<u>20</u>		
	LOGGED DEPTHS			LOGGED DEPTHS			
	418 FT.	417 FT.		FT.	417 FT.		
Sand, brown, fine Interbedded claystone, brown, carbonaceous; and siltstone, brown Coal	<i>Gamma</i>					50	0
Siltstone, gray; and sandstone, gray						0	10
Coal, with claystone parting						50	20
Interbedded sandstone, gray; claystone, gray; and siltstone, gray						100	30
Coal						150	40
Sandstone, gray; and claystone, gray						200	50
Coal						250	60
Interbedded claystone, gray; sandstone, gray; and siltstone, gray						300	70
Coal						350	

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Sandstone, gray						350	
Interbedded siltstone, gray, and claystone, gray						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79190 Map: BLM SE 8 Date: 10/24/79 State: Montana County: Wibaux
 Elev.: 2844 FT Location: T 13^N R 59^E, Sec 34 Tract DDAA Drilled depth 420 FT
 Measured: 1200 FT. FSL 20 FT. ~~FXX~~ ^{FEL} ~~FXX~~ FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____





Hole No: US-79191 Map: BLM SE 8 Date: 10/25/79 State: Montana County: Wibaux
Elev: 3014 FT Location: T 13 ^N R 59 ^E, Sec 18 Tract CCDB Drilled depth 300 FT
Measured: 1000 FT ^{XXX} FSL 15 FT ^{FEL} XXX FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <input checked="" type="checkbox"/> YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING <u>20</u>	DEPTH
	LOGGED DEPTHS 299 FT. 301 FT.		LOGGED DEPTHS FT. 301 FT.		FEET METERS
Sandstone, gray, very fine; and claystone, gray					50
					0
Coal					50
					20
Coal Sandstone, gray, very fine; and claystone, gray					100
					30
Coal					150
					40
Sandstone, gray, very fine; siltstone, gray; and claystone, gray					200
					50
					250
					60
					300
					70
					350

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79191 Map: BLM SE 8 Date: 10/25/79 State: Montana County: Wibaux
Elev.: 3014 FT Location: T 13^N R 59^E, Sec 18 Tract CCDB Drilled depth 300 FT
Measured: 1000 FT ~~FSL~~ 15 FT ~~KXX~~ ^{FEL} FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST		NO YES		RECORDED BY <u>WILLIAM JACKSON</u>		RECORDING SPEED <u>20</u> FT. MIN.					
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>		S P SENS SETTING <u>20</u>		STRIP LOG	DENSITY T.C. _____ RANGE _____		RESISTIVITY SENS. SETTING <u>20</u>		DEPTH	
	LOGGED DEPTHS 299 FT 301 FT					LOGGED DEPTHS FT 301 FT				FEET	METERS
	<i>S.P.</i>					<i>Res.</i>				50	0
										0	10
										50	20
										100	30
										150	40
										200	50
										250	60
										300	70
										350	

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350 80 400 90 450 100 500 110 550 120 600 130 650 140 700 150 750 800	

Hole No: US-79192 Map: BLM SE 8 Date: 10/25/79 State: Montana County: Wibaux
 Elev: 2917 FT Location: T 13 ^N R 58 ^E Sec 12 Tract AAAD Drilled depth 320 FT
 Measured: 400 FT ^{FNL} ~~KXX~~ 12 FT ^{KXX} FWL FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks:

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	DENSITY TC <u> </u> RANGE <u> </u>
	LOGGED DEPTHS 219 FT 320 FT		RESISTIVITY SENS SETTING <u>20</u>
	LOGGED DEPTHS FT 320 FT		DEPTH FEET METERS
Regolith, brown	<i>Gamma</i>		50 0
Sandstone, gray, very fine; siltstone, gray; and claystone, gray			0 10
Coal			50 20
Sandstone, gray, very fine; siltstone, gray; and claystone, gray			100 30
Coal, with claystone parting			150 40
Sandstone, gray, very fine; siltstone, gray; and claystone, gray			200 50
Coal, with fine gray sandstone and gray claystone partings			250 60
Sandstone, gray, very fine; and claystone, gray			300 70
			350

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

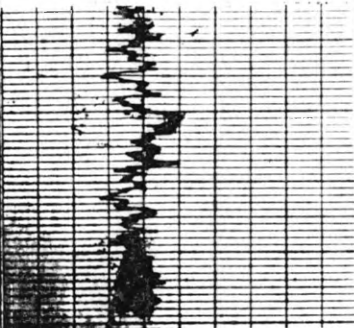
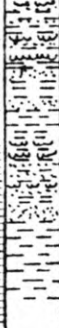
Hole No: US-79192 Map: BLM SE 8 Date: 10/25/79 State: Montana County: Wibaux
 Elev.: 2917 FT Location: T 13 ^N R 58 ^E, Sec 12 Tract AAAD Drilled depth 320 FT
 Measured: 400 FT ^{FNL} ~~EST~~ 12 FT ^{FWL} ~~FWL~~ FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NO YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN					
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>20</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS. SETTING <u>20</u>	DEPTH	
	LOGGED DEPTHS <u>319</u> FT <u>320</u> FT.			LOGGED DEPTHS FT <u>320</u> FT.		FEET	METERS
	S.P.			Res.		50	0
						0	10
						50	20
						100	30
						150	40
						200	50
						250	60
						300	70
						350	

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79193 Map: Wibaux 2 NE Date: 10/30/79 State: Montana County: Wibaux
 Elev.: 2876 FT Location: T 14 ^N R 58 ^E W, Sec 26 Tract DBBB Drilled depth 440 FT
 Measured: 2440 FT. ^{KKK} FSL 2570 FT. ^{FEL} ~~XXX~~ FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

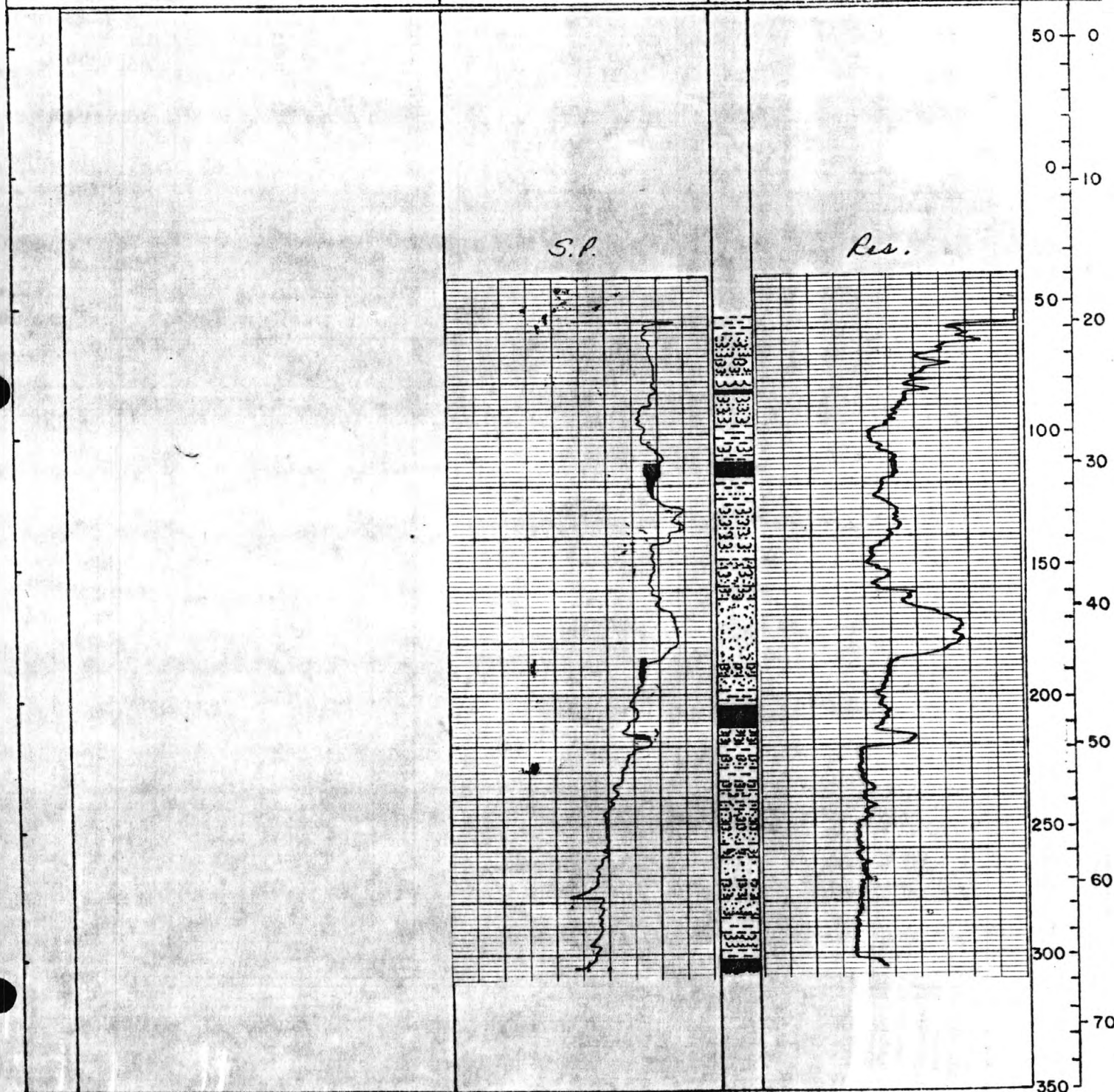
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST <input checked="" type="checkbox"/> YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> ^{FT.} MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____
	LOGGED DEPTHS <u>432</u> FT. <u>305</u> FT.		RESISTIVITY SENS SETTING <u>20</u>
	LOGGED DEPTHS FT. <u>305</u> FT.		DEPTH FEET METERS
Siltstone, tan, sand, tan, and claystone, tan Claystone, gray Coal			50 0
Interbedded claystone, gray; siltstone, gray; and sandstone, gray			0 10
Coal, carbonaceous shale Interbedded claystone, gray; sandstone, gray; siltstone, gray; and carbonaceous shale Coal			50 20
Interbedded sandstone, gray; siltstone, gray; and claystone, gray			100 30
Coal			150 40
Interbedded claystone, gray; sandstone, gray; and siltstone, gray			200 50
Shale, carbonaceous			250 60
Coal, with claystone partings Interbedded claystone, gray; siltstone, gray; and sandstone, gray			300 70
			350

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Interbedded claystone, gray; sandstone, gray; and siltstone, gray						350 80 400 90 450 100 500 110 550 120 600 130 650 140 700 150 750 800	

Hole No: US-79193 Map: Wibaux 2 NE Date: 10/30/79 State: Montana County: Wibaux
Elev.: 2876 FT Location: T 14^N R 58^E, Sec 26 Tract DBBB Drilled depth 440 FT
Measured: 2440 FT. ~~RXX~~ FSL 2570 FT. ~~RXX~~ ^{FEL} FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks: _____

RECORDED BY WILLIAM JACKSON GEOLOGIST ~~RXX~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 ^{FT.} MIN.

LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>		S P SENS. SETTING <u>20</u>		STRIP LOG	DENSITY T.C. _____ RANGE _____		RESISTIVITY SENS. SETTING <u>20</u>		DEPTH	
	LOGGED DEPTHS					LOGGED DEPTHS				FEET	METERS
	432 FT. 305 FT.					FT. 305 FT.					



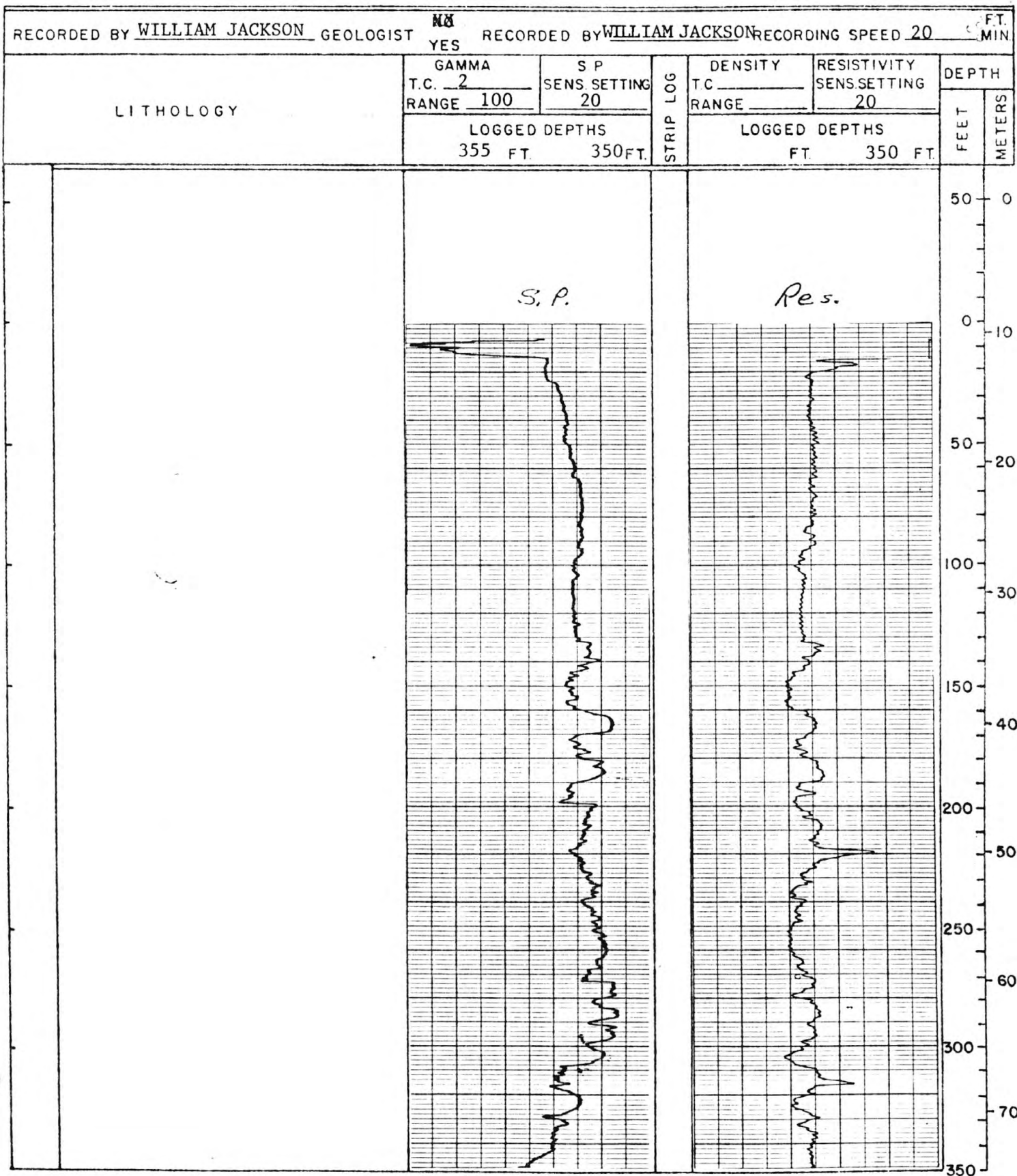
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79194 Map: Wibaux 2 NE Date: 10/31/79 State: Montana County: Wibaux
 Elev.: 2769 FT Location: T 14 ^N R 59 ^E, Sec 18 Tract AABA Drilled depth 380 FT
 Measured: 10 FT ^{FNL} ~~KXX~~ 1010 FT ^{FEL} ~~KXX~~ FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST KX YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____
	RESISTIVITY SENS SETTING <u>20</u>		DEPTH
	LOGGED DEPTHS 355 FT. 350 FT.		LOGGED DEPTHS FT 350 FT
	STRIP LOG	FEET	METERS
Regolith, brown		50	0
		0	10
		50	20
Sandstone, gray, very fine; siltstone, gray; and claystone, gray		100	30
Coal		150	40
	200	50	
Sandstone, gray, very fine; siltstone, gray; and claystone, gray	250	60	
Coal	300	70	
	350		

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET
	<div data-bbox="743 268 1101 520"> </div>					<div data-bbox="1518 210 1624 1869"> </div>

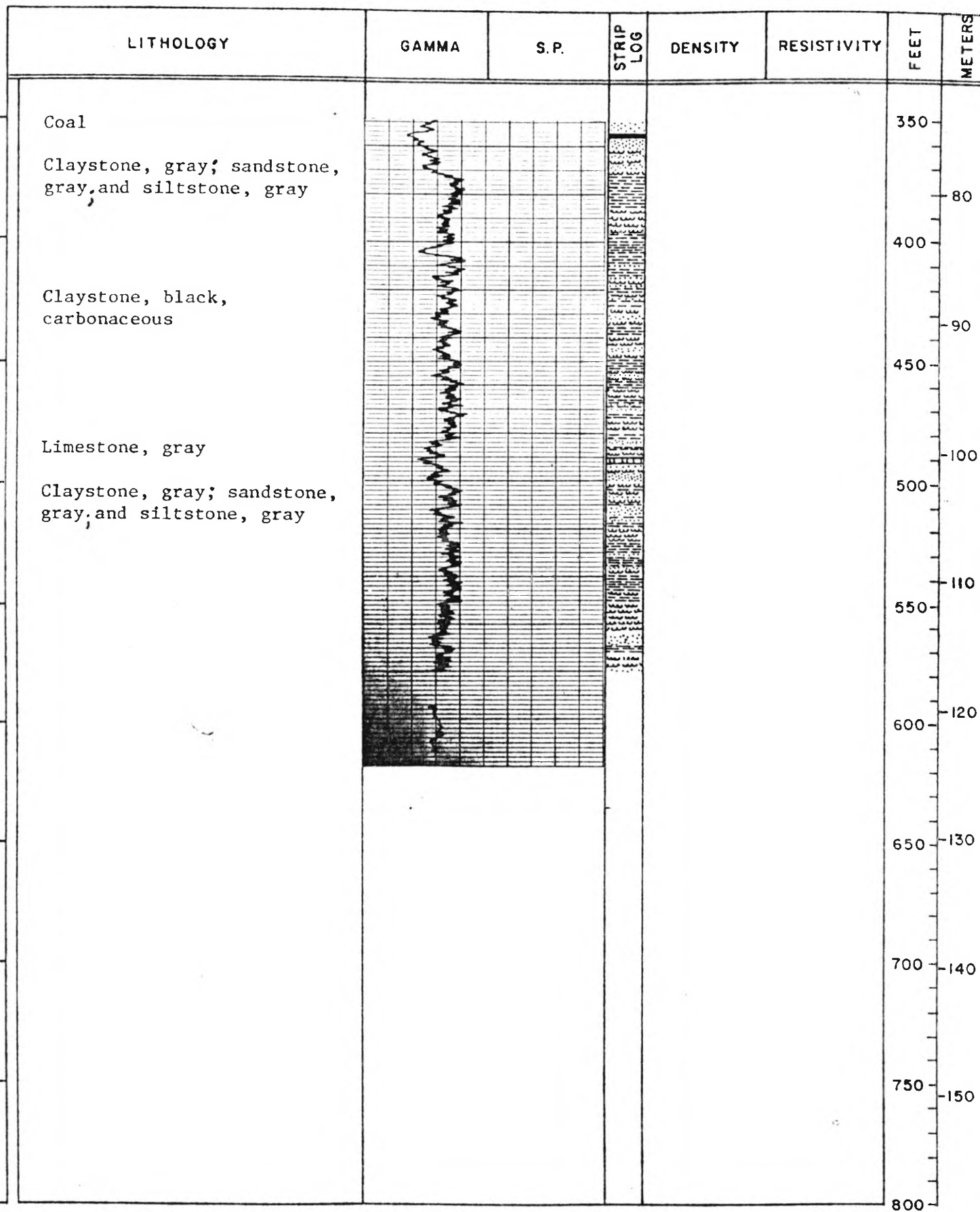
Hole No: US-79194 Map: Wibaux 2 NE Date: 10/31/79 State: Montana County: Wibaux
 Elev.: 2769 FT Location: T 14^N R 59^E, Sec 18 Tract AABA Drilled depth 380 FT
 Measured: 10 FT ^{FNL} ~~KXX~~ 1010 FT ^{FEL} ~~KXX~~ FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____



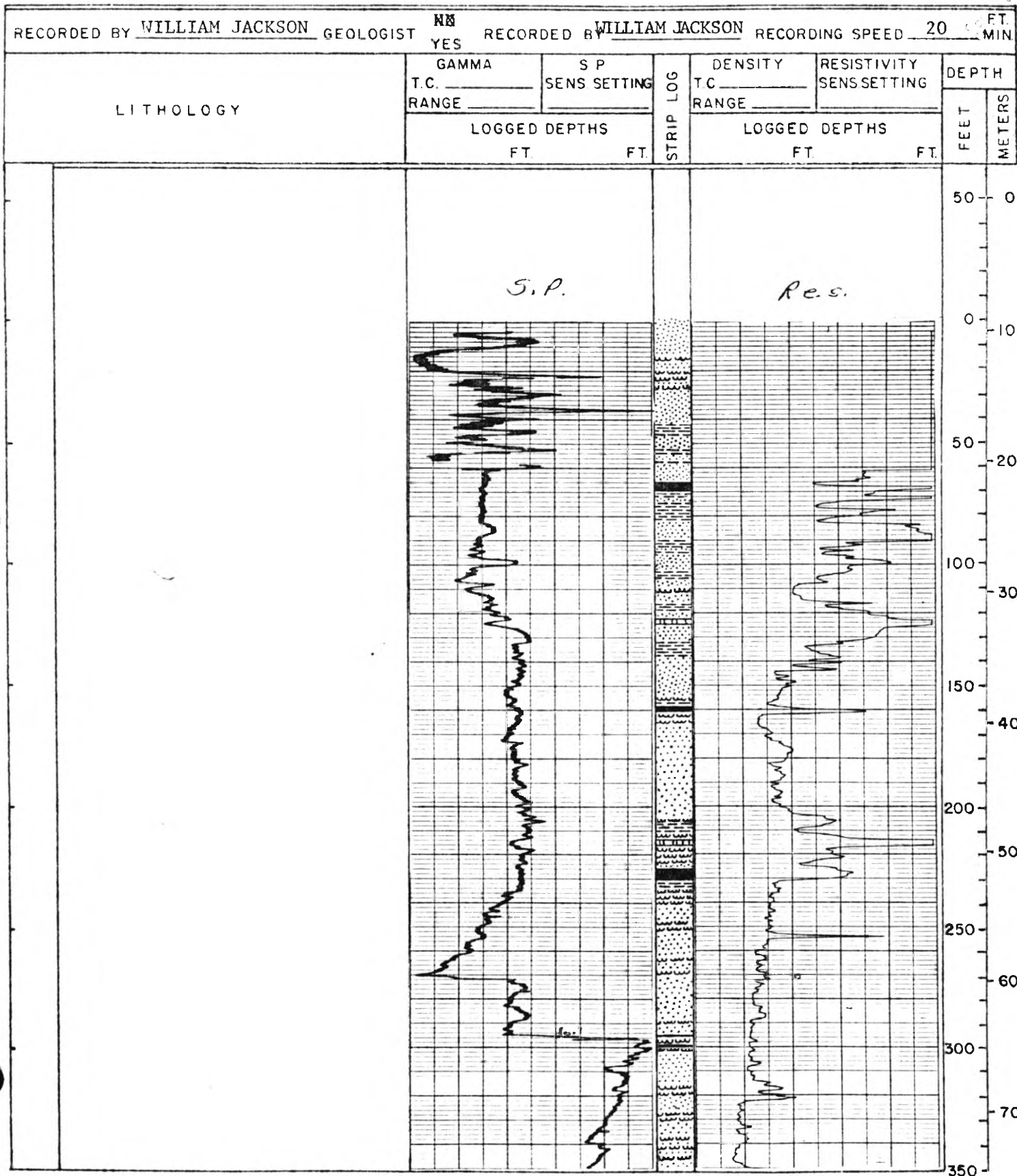
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79195 Map: Wibaux 2 NE Date: 10/31/79 State: Montana County: Wibaux
 Elev.: 2728 FT Location: T 14^N R 58^E, Sec 2 Tract CCCC Drilled depth 600 FT
 Measured: 10 FT ~~KNX~~ 20 FT ~~FEL~~ KNX FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

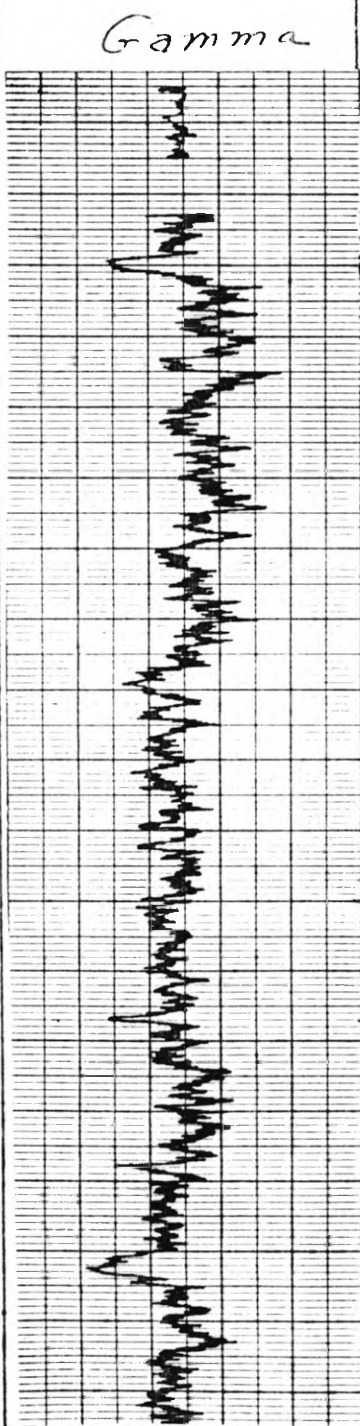
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST		YES		RECORDED BY <u>WILLIAM JACKSON</u>		RECORDING SPEED <u>20</u> FT. MIN.					
LITHOLOGY	GAMMA		S P		STRIP LOG	DENSITY		RESISTIVITY		DEPTH	
	T.C.	RANGE	SENS SETTING			T.C.	RANGE	SENS SETTING		FEET	METERS
	<u>2</u>	<u>100</u>	<u>20</u>					<u>20</u>			
		LOGGED DEPTHS				LOGGED DEPTHS					
		580 FT 583 FT				FT 583 FT					
Sand, brown and alluvial										50	0
Siltstone, brown, and sandstone, brown										0	10
Claystone, gray; and sandstone, gray										50	20
Coal											
Claystone, gray; and sandstone, gray										100	30
Limestone, gray; sandstone, gray; claystone, gray; and siltstone, gray										150	40
Shale, carbonaceous, and coal											
Sandstone, gray, and siltstone, gray										200	50
Limestone											
Coal											
Sandstone, gray; siltstone, gray, and claystone, gray										250	60
Coal, with siltstone parting										300	70
Sandstone, gray, and siltstone, gray											
										350	

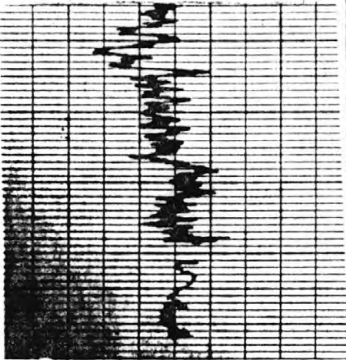

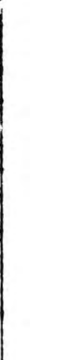


Hole No: US-79195 Map: Wibaux 2 NE Date: 10/31/79 State: Montana County: Wibaux
 Elev.: 2728 FT Location: T14 ^N R 58 ^E W, Sec 2 Tract CCCC Drilled depth 600 FT
 Measured: 10 FT ~~FSL~~ ^{FEL} 20 FT ~~FWK~~ FT Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____



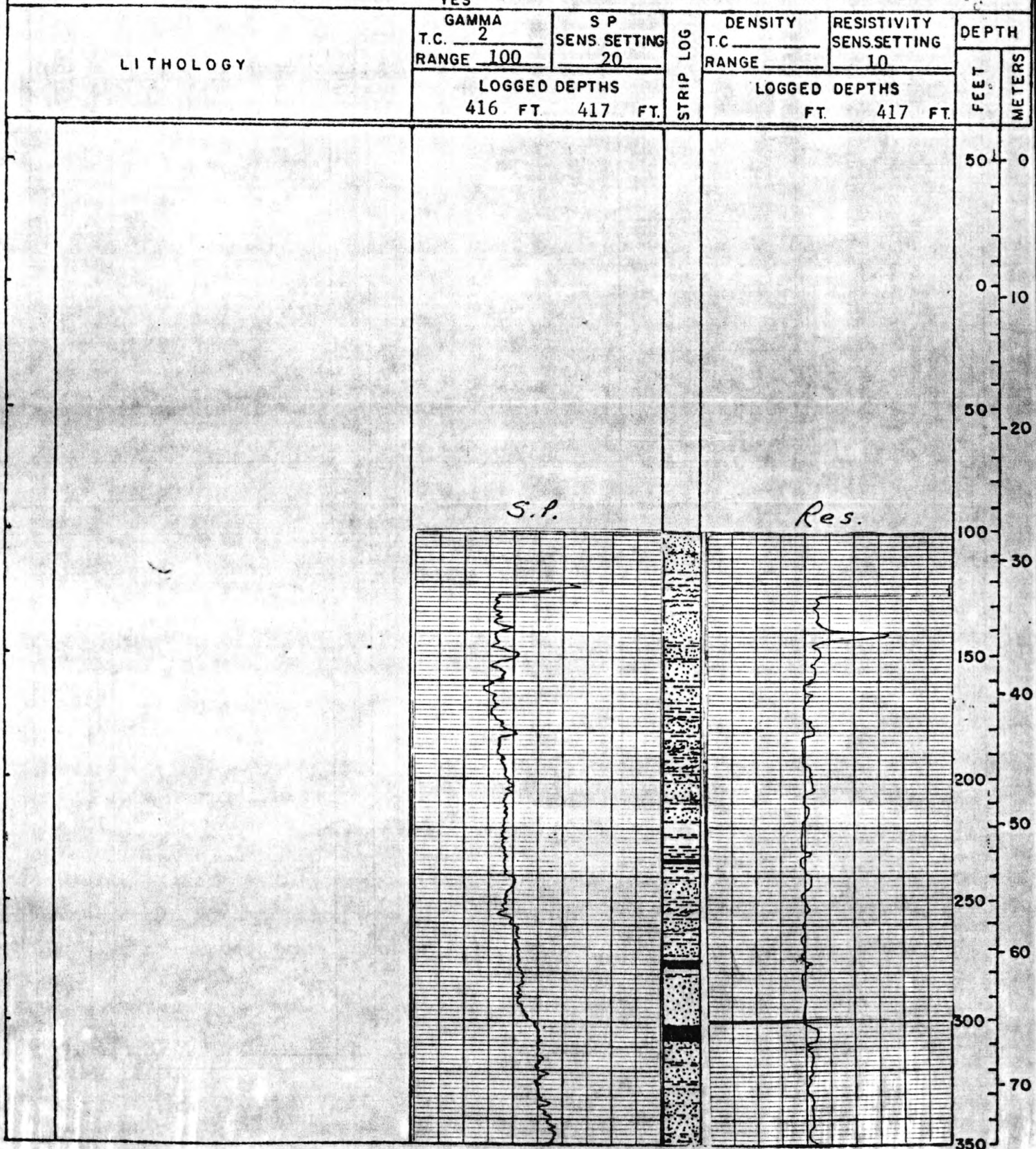
Hole No: US-79196 Map: NE 40 BLM Date: 11/3/79 State: Montana County: Dawson
 Elev.: FT Location: T 15^N R 58^E, Sec 22 Tract BBBB Drilled depth 420 FT.
 Measured: 100 FT. ~~XXX~~ FNL 10 FT. ~~XXX~~ FWL FT. Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

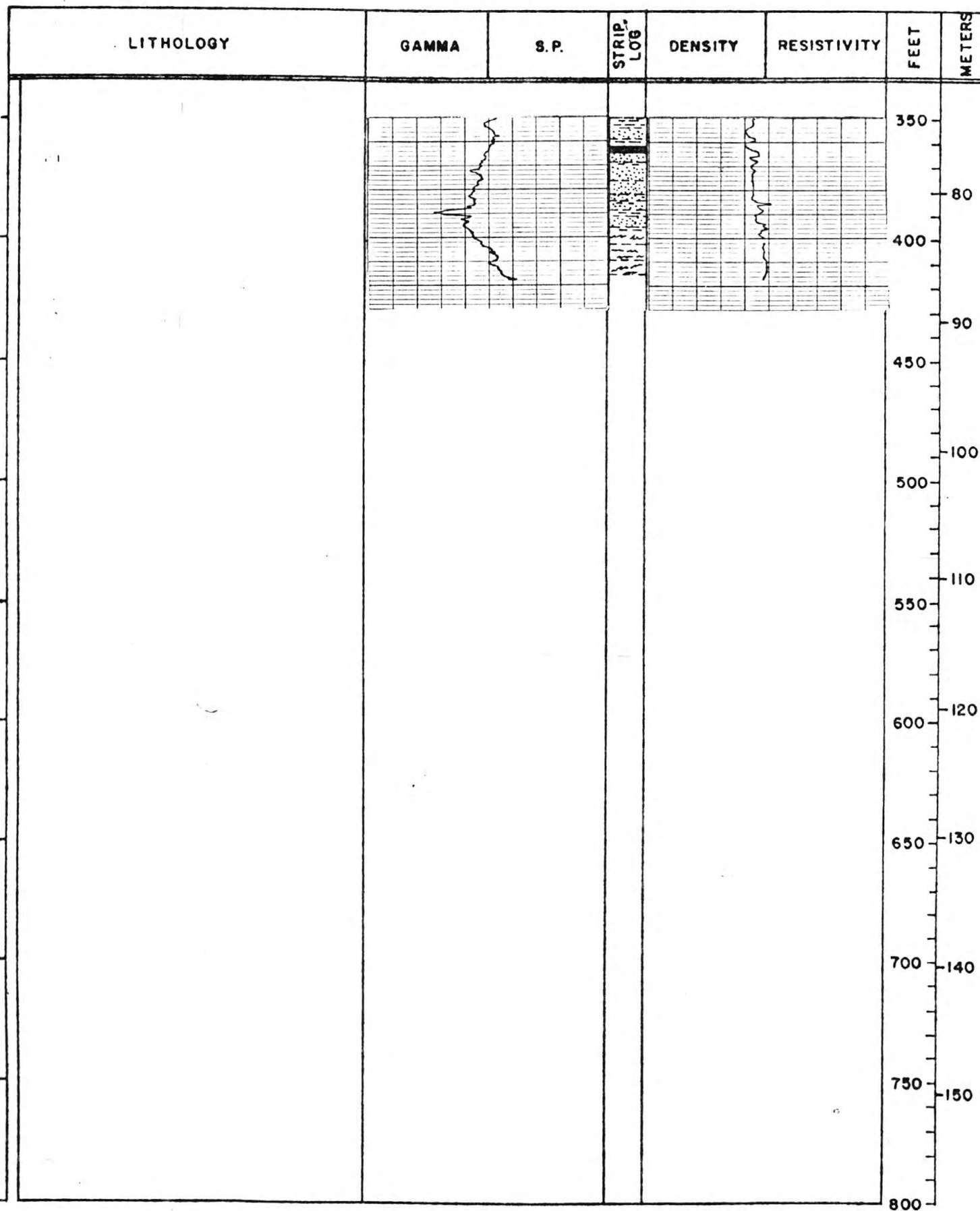
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST NR YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____
	RESISTIVITY SENS SETTING <u>10</u>		DEPTH
	LOGGED DEPTHS 416 FT. 417 FT.		LOGGED DEPTHS FT. 417 FT.
	STRIP LOG		FEET METERS
Regolith, brown Coal			50 0
			0 10
			50 20
Sandstone, gray, very fine; siltstone, gray; and claystone, gray			100 30
			150 40
Coal		200 50	
Coal		250 60	
Coal		300 70	
Sandstone, gray, very fine; and claystone, gray		350	

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Coal						350	
Sandstone, gray, very fine; siltstone, gray; and claystone, gray						80	
						400	
						90	
						450	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79196 Map: BLM NE-40 Date: 11/3/79 State: Montana County: Dawson
 Elev.: FT Location: T 15^N R 58^E W, Sec 22 Tract BBBB Drilled depth 420 FT
 Measured: 100 FT ^{FNL} 10 ^{XXX} FT FWL FT Hole size: 5 1/8 IN Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks:

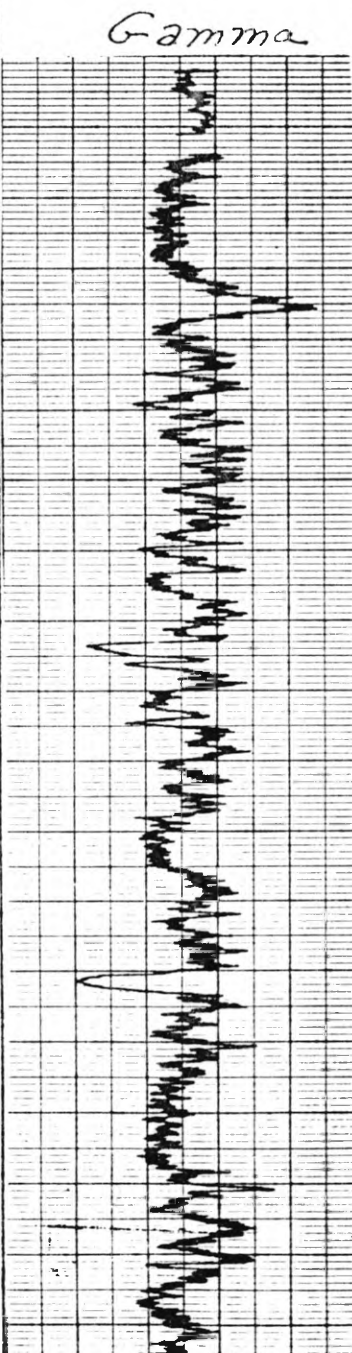

RECORDED BY WILLIAM JACKSON GEOLOGIST ^{NR} YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN.

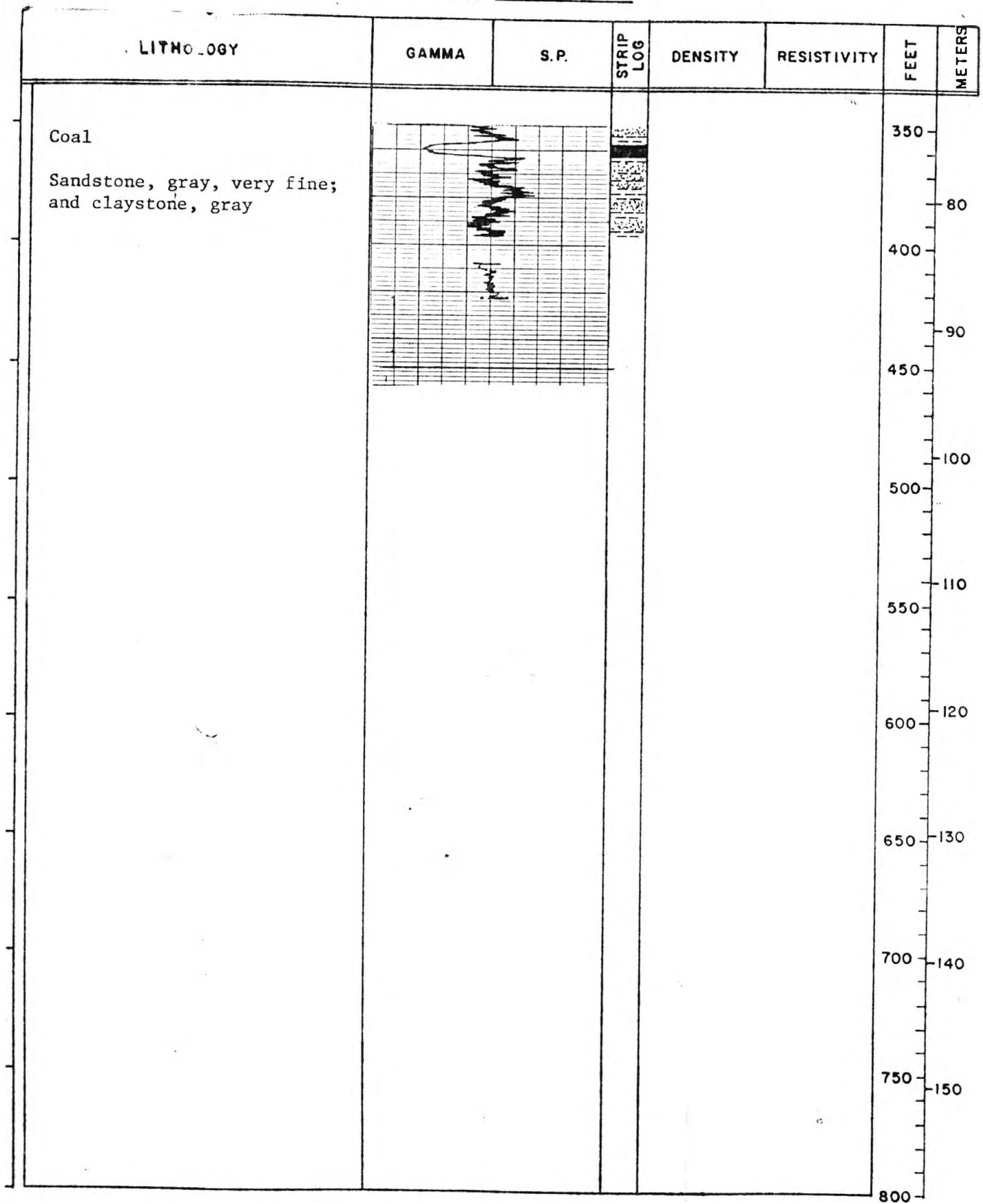




4117
00000

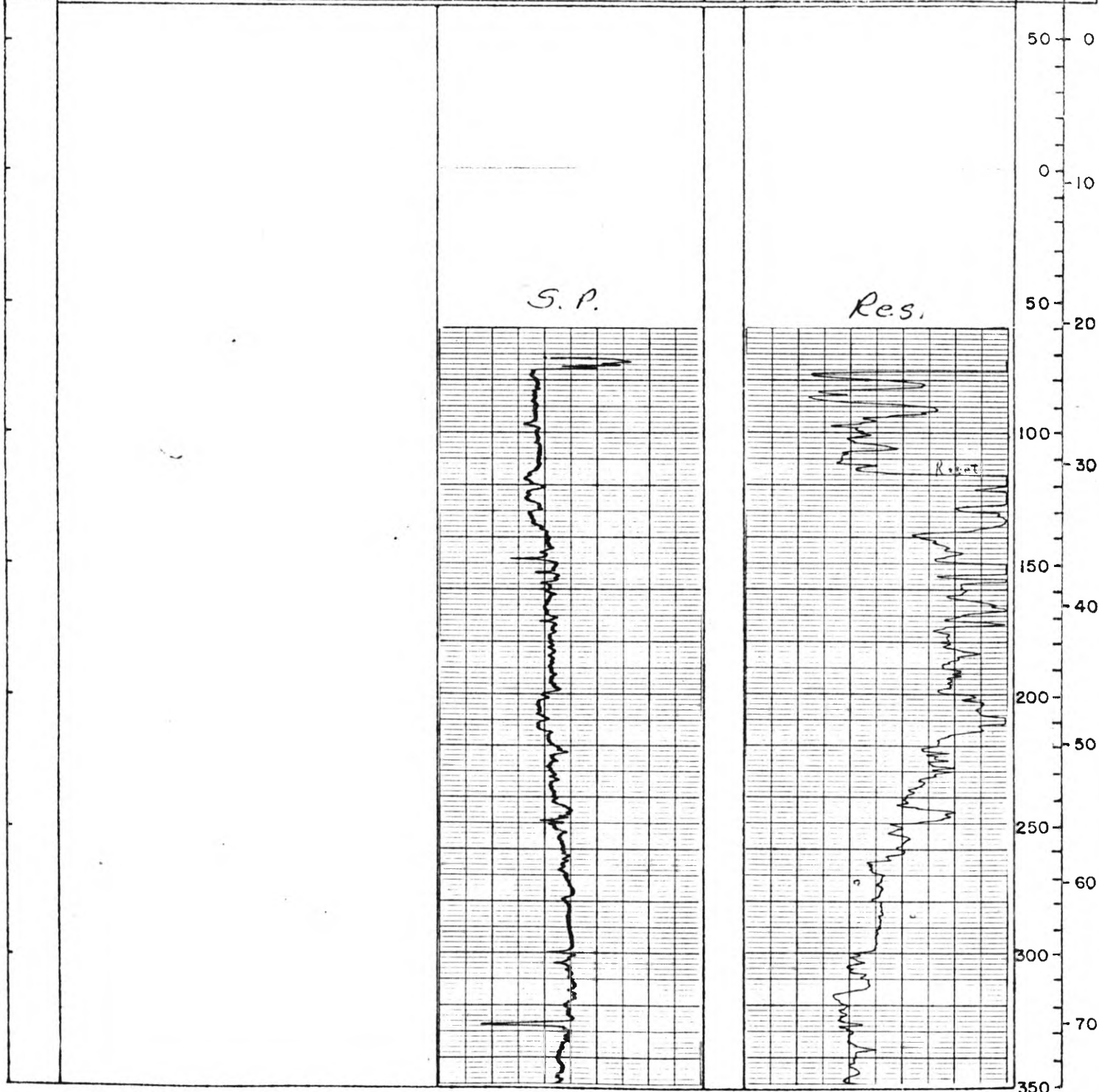
Hole No: US-79197 Map Mt Sheep Butte Date: 11/5/79 State: Montana County: McCone
Elev.: 2743 FT Location: T18 ^N ~~X~~ R46 ^E ~~X~~, Sec 8 Tract BBBB Drilled depth 400 FT
Measured: 75 FT ^{FNL} ~~XXX~~ 40 FT ^{FWL} ~~XXX~~ FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks: _____

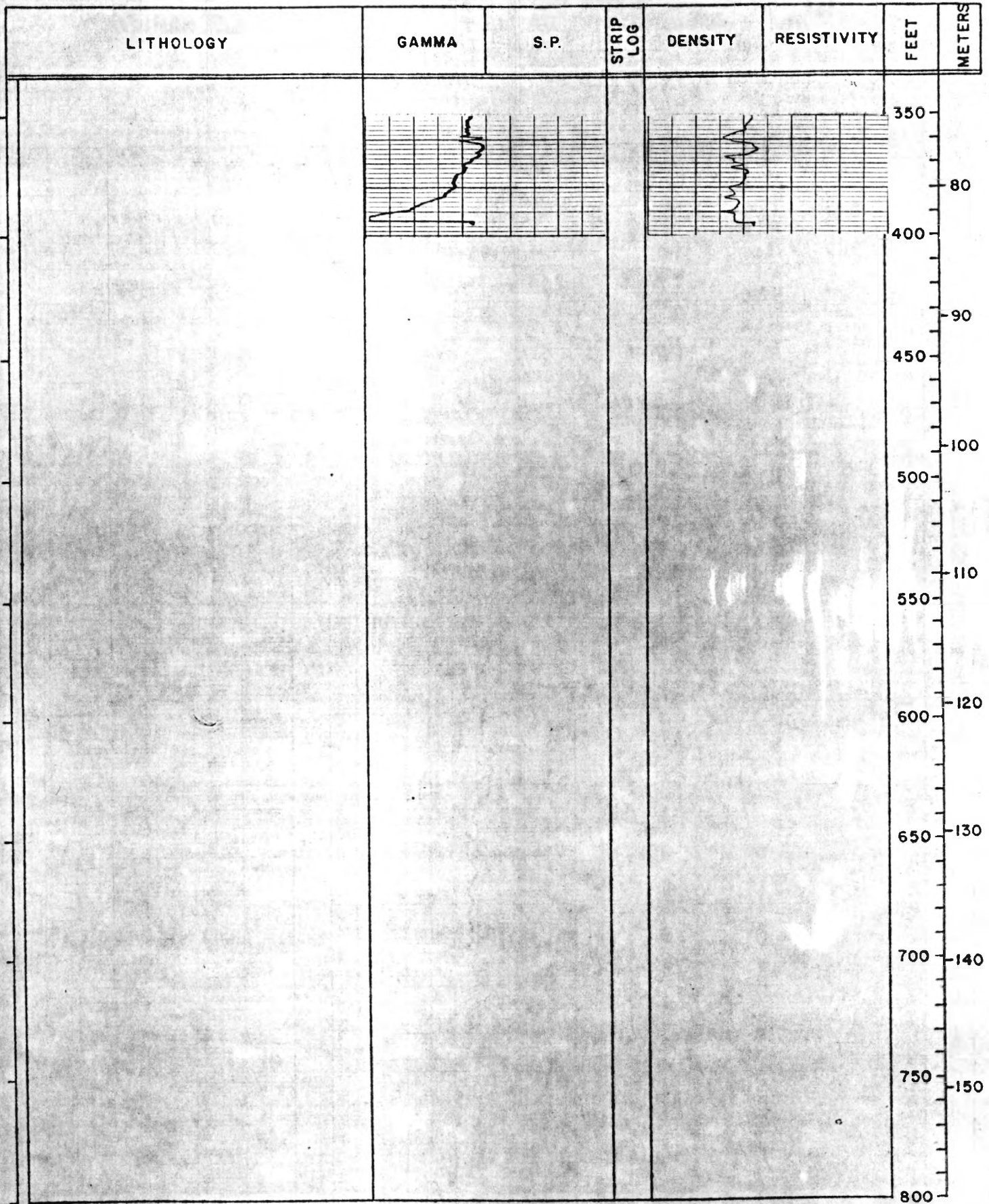
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{NO} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN										
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>20</u>	STRIP LOG	DENSITY T.C. _____ RANGE _____	RESISTIVITY SENS SETTING <u>5</u>	DEPTH						
	LOGGED DEPTHS 396 FT 395 FT.			LOGGED DEPTHS FT 395 FT.		FEET	METERS					
Sandstone, gray, very fine; siltstone, gray; and claystone, gray						50	0					
						0	10					
						50	20					
						100	30					
						150	40					
						200	50					
						250	60					
						300	70					
						350						
						Coal, with claystone parting						
						Sandstone, gray, very fine; siltstone, gray; and claystone, gray						
						Coal						
						Sandstone, gray, very fine; siltstone, gray; and claystone, gray						



Remarks: _____

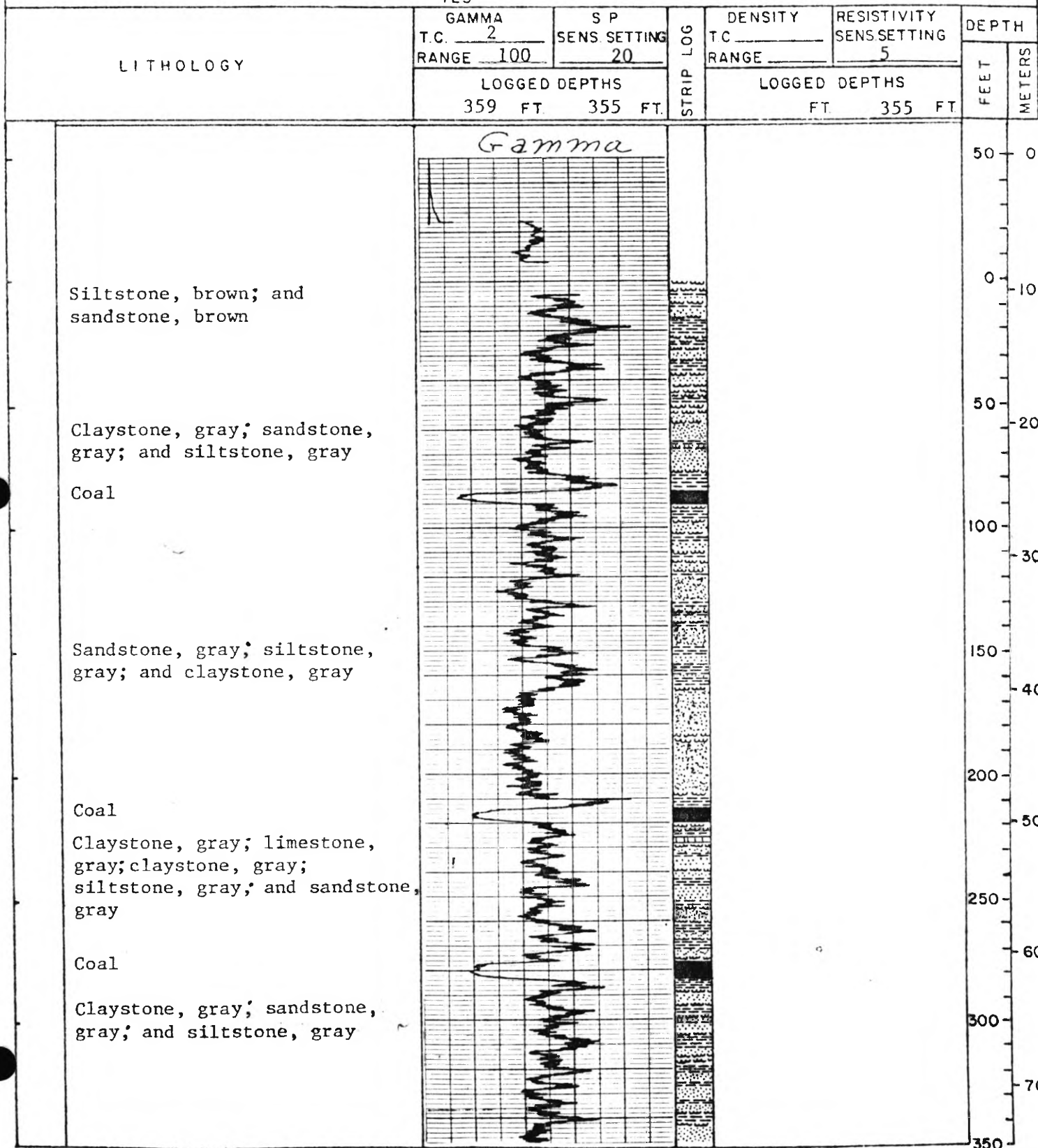
LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	DEPTH
	T.C. <u>2</u>	SENS SETTING		T.C. _____	SENS SETTING	
	RANGE <u>100</u>	<u>20</u>		RANGE _____	<u>5</u>	
	LOGGED DEPTHS			LOGGED DEPTHS		
	396 FT.	395 FT.		FT.	395 FT.	FEET METERS

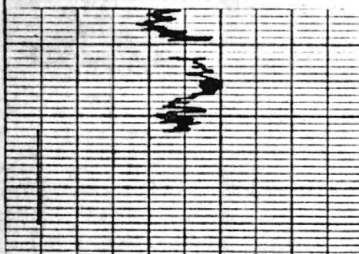




Hole No: US-79198 Map: Hedstrom 1 SE Date: 6/16/79 State: Montana County: McCone
 Elev.: 2615 FT Location: T 18 ^N R 45 ^E Sec 8 Tract AAAB Drilled depth 360 FT
 Measured: 10 FT ^{FNL} ~~EST~~ 620 FT ^{FEL} ~~FWL~~ FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY WILLIAM JACKSON GEOLOGIST ^{XX} YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN.



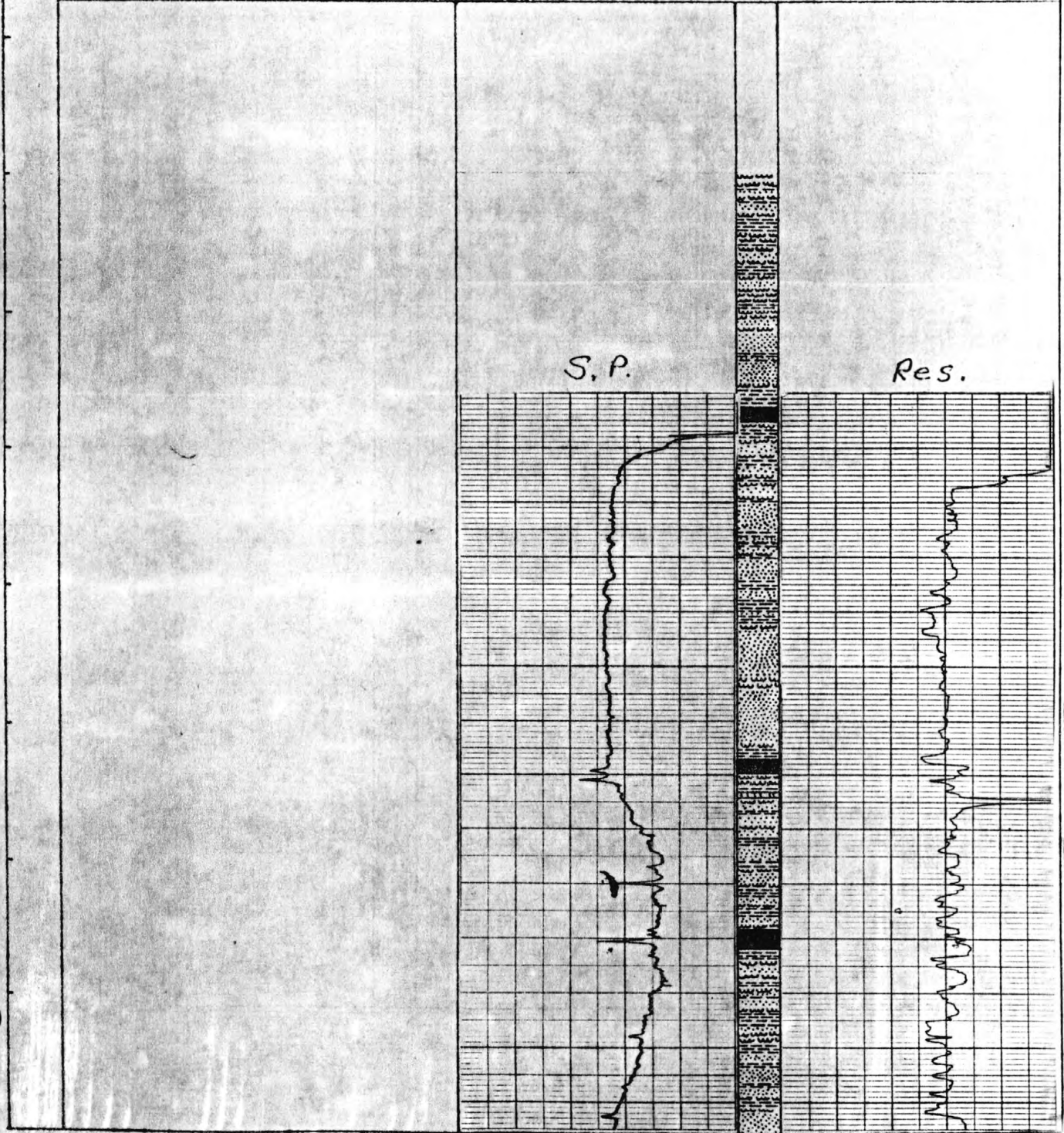
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						700	
						140	
						750	
						150	
						800	

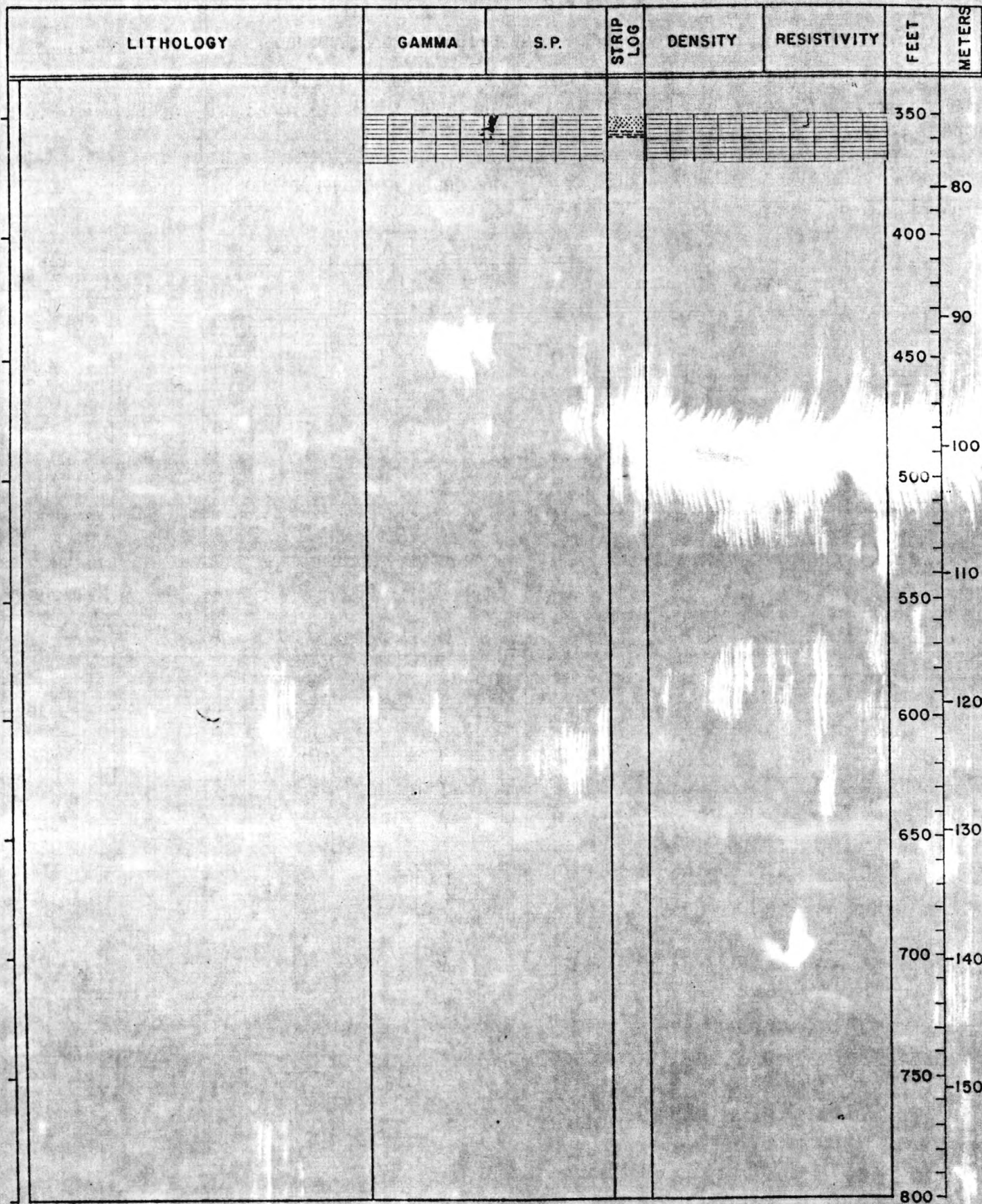
9198
Sp. CK

Hole No: US-79198 Map: Hedstrom 1 SE Date: 6/16/79 State: Montana County: McCone
Elev.: 2615 FT Location: T 8 ^N _S R 45 ^E _W, Sec 8 Tract AAAB Drilled depth 360 FT
Measured: 10 FT ^{FNL} ~~XXX~~ 620 FT ^{FEL} ~~XXX~~ FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes
Remarks: _____

RECORDED BY WILLIAM JACKSON GEOLOGIST ^{KK} YES RECORDED BY WILLIAM JACKSON RECORDING SPEED _____

LITHOLOGY	GAMMA	S.P	STRIP LOG	DENSITY	RESISTIVITY
	T.C. <u>2</u>	SENS. SETTING		T.C. _____	SENS. SETTING
	RANGE <u>100</u>	<u>20</u>		RANGE _____	<u>5</u>
	LOGGED DEPTHS			LOGGED DEPTHS	
	359 FT.			355 FT.	





Hole No: US-79199 Map: Hedstrom Lake Date: 11/6/79 State: Montana County: Garfield
 Elev.: 2747 FT Location: T 16 ^N R 45 ^E, Sec 6 Tract BBBB Drilled depth 340 FT
 Measured: 35 FT ^{FNL} ~~XXX~~ 50 FT ^{FWL} ~~XXX~~ FT. Hole size: 5 1/8 IN. Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST XXX YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS. SETTING <u>20</u>	DENSITY T.C. _____ RANGE _____
	LOGGED DEPTHS 312 FT. 315 FT.		RESISTIVITY SENS. SETTING <u>5</u>
	LOGGED DEPTHS FT. 315 FT.		
Regolith, brown Sandstone, brown, very fine; and claystone, brown Coal			DEPTH FEET METERS 50 0 0 10 50 20 100 30 150 40 200 50 250 60 300 70 350
Sandstone, gray, very fine; siltstone, gray; and claystone, gray			
Coal, with claystone parting			
Coal			
Sandstone, gray, very fine; siltstone, gray; and claystone, gray			

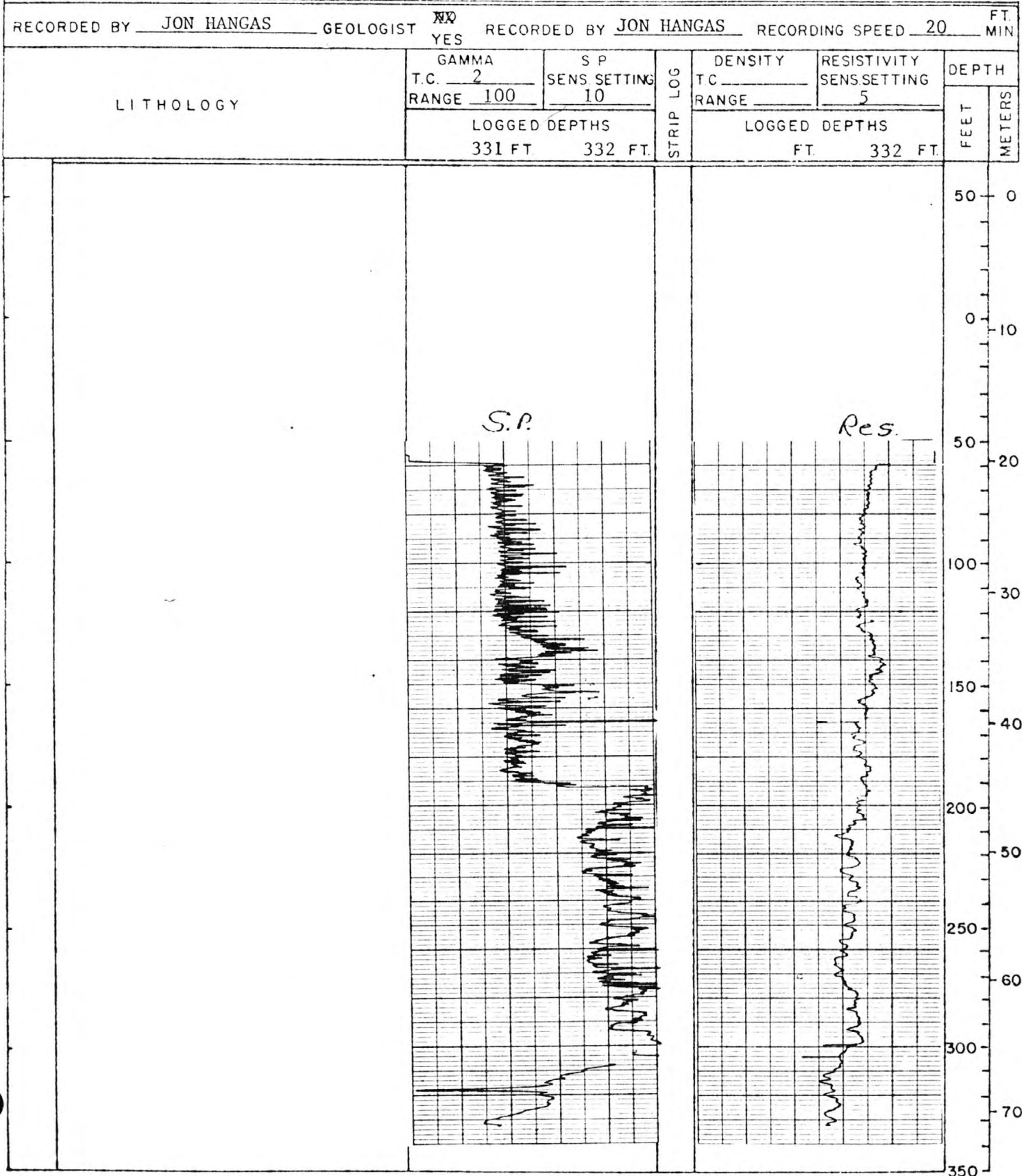
LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79199 Map: Hedstrom Lake Date: 11/6/79 State: Montana County: Garfield
 Elev.: 2747 FT Location: T 16^N R 45^E, Sec 6 Tract BBBB Drilled depth 340 FT
 Measured: 35 FT ~~FNL~~ 50 FT ~~KXX~~ FWL FT Hole size: 5 1/8 IN. Air ☐ Water ☒ Cored: Yes ☐ No ☒
 Remarks:

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST WJ YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>200</u>	S P SENS SETTING <u>20</u>	DEPTH
	LOGGED DEPTHS <u>312</u> FT <u>315</u> FT.		FEET
	LOGGED DEPTHS <u> </u> FT <u>315</u> FT.		METERS
	STRIP LOG	DENSITY T.C. <u> </u> RANGE <u> </u>	RESISTIVITY SENS SETTING <u>5</u>
		LOGGED DEPTHS <u> </u> FT <u>315</u> FT.	
			50 0
			0 10
			50 20
			100 30
			150 40
			200 50
			250 60
			300 70
			350

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79222 Map: Watkins Date: 12/2/79 State: Montana County: McCone
 Elev.: 2722 FT Location: T 17^N R 46^E, Sec 28 Tract DDDD Drilled depth 340 FT
 Measured: 10 FT. ^{BNK}PSL 10 FT. ^{FEL}FWL FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks:



LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79223 Map: Watkins Date: 12/3/79 State: Montana County: McCone
 Elev: 2733 FT Location: T 17 ^N R 46 ^E Sec 12 Tract DDDD Drilled depth 280 FT
 Measured: 70 FT ^{RNK} FSL 35 FT ^{FEL} ^{XYM} FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY WILLIAM JACKSON GEOLOGIST ^{NO} YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN.

LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	DEPTH	
	T.C. <u>2</u>	SENS SETTING		T.C. _____	SENS SETTING		
	RANGE <u>100</u>	<u>10</u>		RANGE _____	<u>5</u>	FEET	METERS
	LOGGED DEPTHS			LOGGED DEPTHS			
	280 FT	270 FT		FT	270 FT		
Silt, tan Sandstone, brown; siltstone, brown; and claystone, brown	<i>Gamma</i>					50	0
						0	10
Sandstone, gray; siltstone, gray; and claystone, gray						50	20
Coal						100	30
Sandstone, gray; siltstone, gray; and claystone, gray						150	40
Coal						200	50
Shale, black, carbonaceous; sandstone, gray; siltstone, gray; and claystone, gray						250	60
						300	70
						350	

LITHOLOGY	GAMMA	S. P.	STRIP. LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79223 Map: Watkins Date: 12/3/79 State: Montana County: McCone
 Elev: 2733 FT Location: T 17^N R 46^E Sec 12 Tract DDDD Drilled depth 280 FT
 Measured: 70 FT ^{BMK} PSL 35 FT ^{FEL} ~~DMK~~ FT Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY WILLIAM JACKSON GEOLOGIST ^{NIO} YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN.

LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	DEPTH
	T.C. <u>2</u>	SENS SETTING		T.C. _____	SENS SETTING	
	RANGE <u>100</u>	<u>10</u>		RANGE _____	<u>5</u>	
	LOGGED DEPTHS			LOGGED DEPTHS		
	280 FT	270 FT.		FT.	270 FT.	FEET METERS
						50 0
						0 10
						50 20
						100 30
						150 40
						200 50
						250 60
						300 70
						350

S.P.

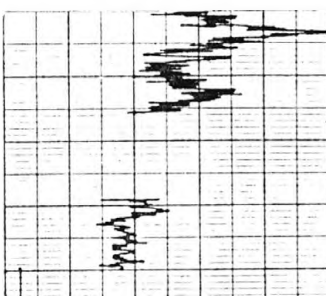
Res.

RESET

LITHOLOGY	GAMMA	S.P.	STRIP- LOG	DENSITY	RESISTIVITY	FEET	METERS
						350	
						80	
						400	
						90	
						450	
						100	
						500	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

Hole No: US-79224 Map: Glendive AMS Date: 12/3/79 State: Montana County: McCone
 Elev.: FT. Location: T 18^N R 48^E, Sec 30 Tract AAAA Drilled depth 400 FT.
 Measured: 100 FT. FNL 20 FT. FEL FWL FT. Hole size: 5 1/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST		NO YES		RECORDED BY <u>JON HANGAS</u>		RECORDING SPEED <u>20</u>		FT. MIN.			
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>50</u>		S.P. SENS. SETTING <u>391</u>		STRIP LOG	DENSITY T.C. _____ RANGE _____		RESISTIVITY SENS. SETTING _____		DEPTH	
	LOGGED DEPTHS					LOGGED DEPTHS				FEET	METERS
	FT.		FT.			FT.		FT.			
Alluvium, and siltstone Siltstone, brown to gray Coal Claystone, gray, and siltstone, gray Coal Claystone, gray, and siltstone, gray Coal Siltstone, gray, and claystone, gray Coal Siltstone, gray; and claystone, gray	Gamma 								60 0 10 60 20 120 30 180 40 240 50 300 60 360 70	60 0 10 60 20 120 30 180 40 240 50 300 60 360 70	

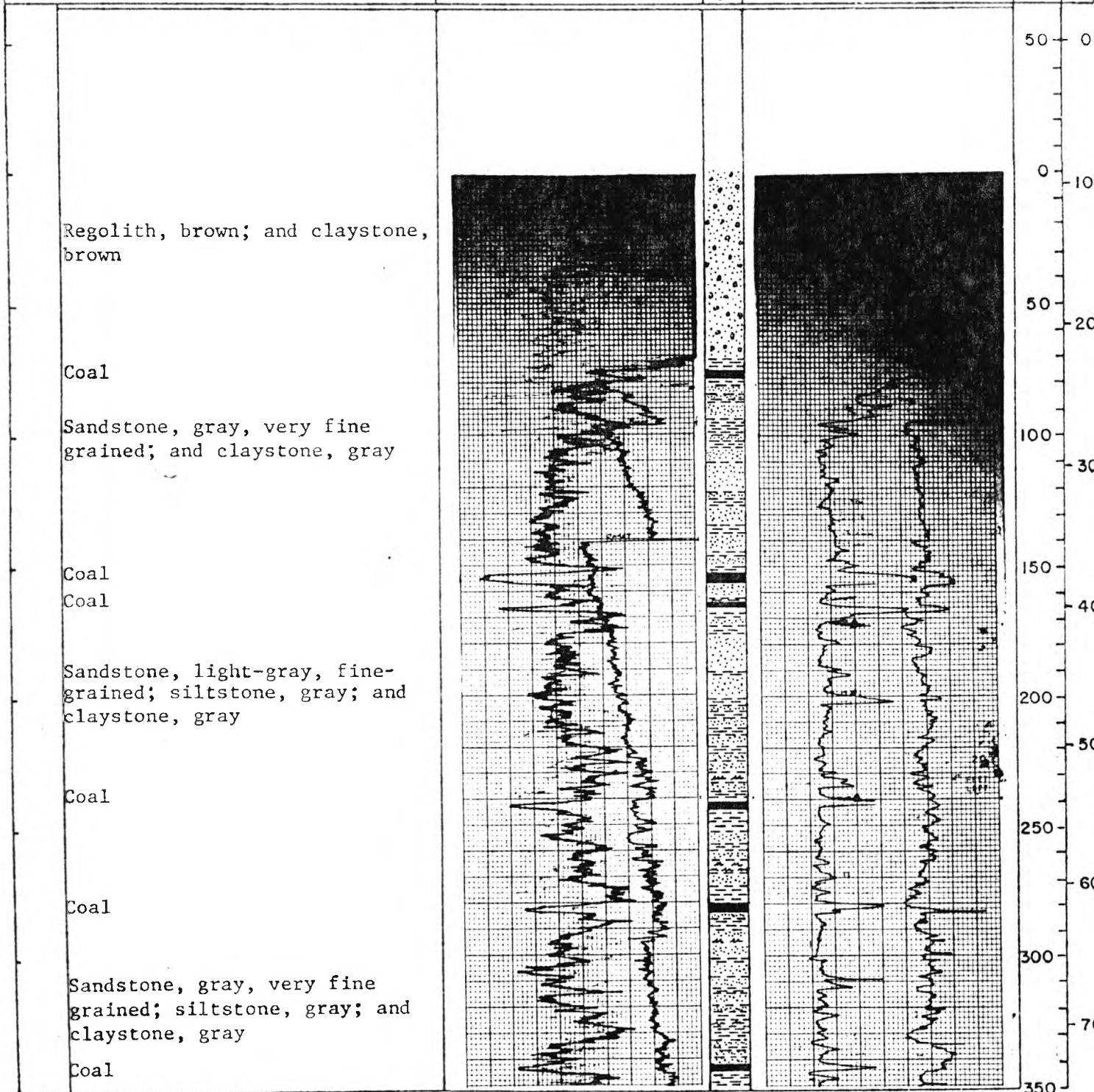
LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
						360	
						80	
						420	
						90	
						480	
						100	
						540	
						110	
						600	
						120	
						660	
						130	
						720	
						140	
						780	
						150	
						840	
						160	
						900	
						170	
						180	
						900	

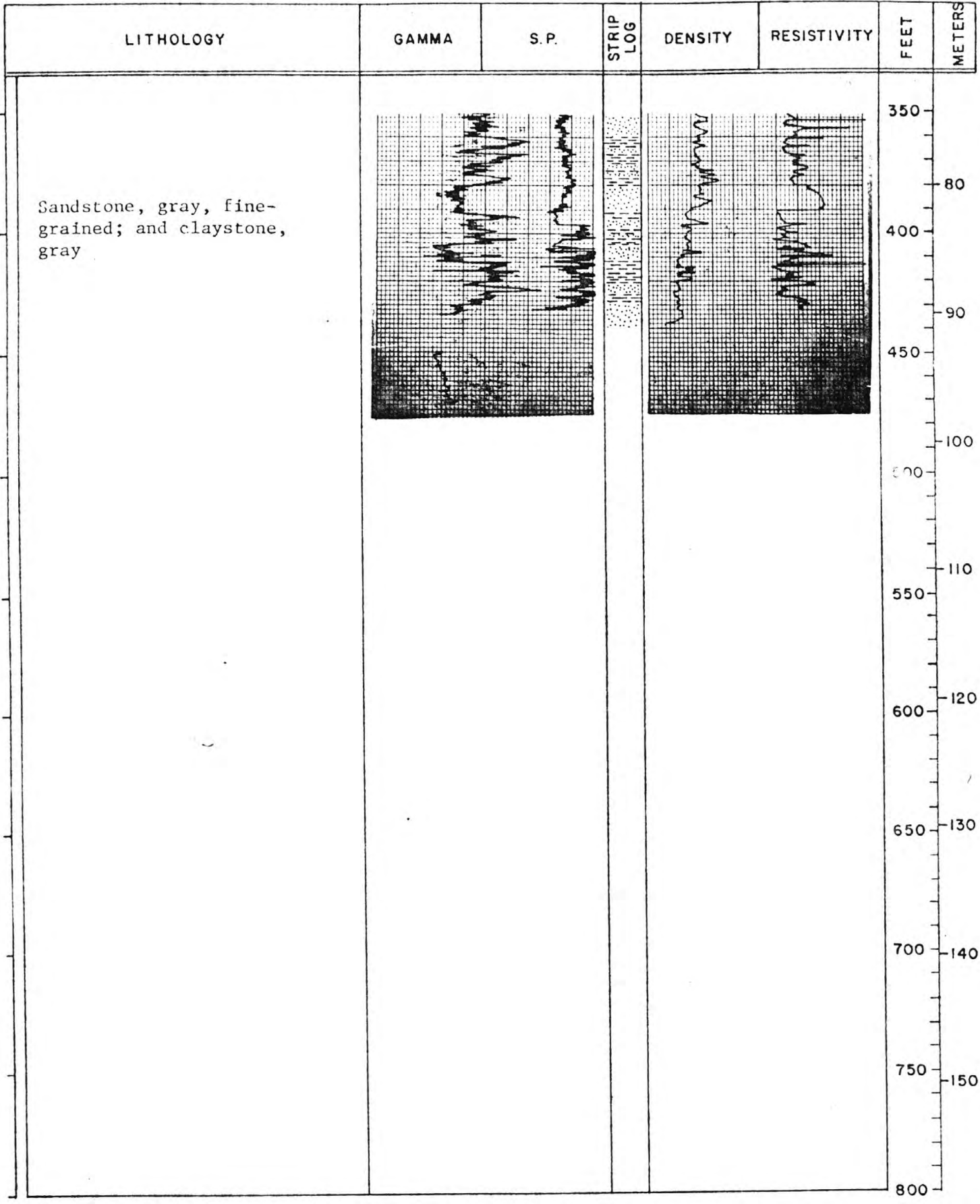
If location is correct, the elev is 2638

Hole No: US-79225 Map: Richey BLM Date: 12/6/79 State: Montana County: Dawson
Elev: 2938 FT Location: T 21^N R 52^E, Sec 14 Tract DDDD Drilled depth 440 FT
Measured: 35 FT ~~FSI~~ 30 FT ~~FEI~~ FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
Remarks: _____

RECORDED BY WILLIAM JACKSON GEOLOGIST ~~NE~~ YES RECORDED BY WILLIAM JACKSON RECORDING SPEED 20 FT. MIN.

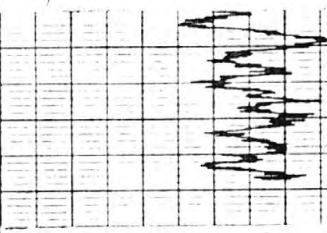
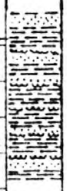

LITHOLOGY	GAMMA	S P	STRIP LOG	DENSITY	RESISTIVITY	DEPTH	
	T.C. <u>2</u>	SENS SETTING		T.C. <u>2</u>	SENS SETTING		
	RANGE <u>100</u>	<u>500</u>		RANGE <u>2K</u>	<u>100</u>	FEET	METERS
	LOGGED DEPTHS			LOGGED DEPTHS			
	434 FT			439 FT			
	431 FT			431 FT			





Hole No: US-79226 Map: Mt. Sheep Butte Date: 12/12/79 State: Montana County: McCone
 Elev.: 2810 FT Location: T 18^N R 48^E W, Sec 26 Tract DDDA Drilled depth 420 FT
 Measured: 1000 FT ~~RNK~~ ^{FEET} 850 FT ~~RNK~~ FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

RECORDED BY <u>JON HANGAS</u> GEOLOGIST XX YES		RECORDED BY <u>JON HANGAS</u> RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS SETTING <u>10</u>	DENSITY T.C. _____ RANGE _____
	RESISTIVITY SENS SETTING <u>5</u>		DEPTH
	LOGGED DEPTHS <u>397</u> FT. <u>392</u> FT.		FEET METERS
Siltstone, light-brown			50
Siltstone, brown; claystone, brown; and sandstone, brown			0
Claystone, gray; siltstone, gray; and sandstone, gray			50
Coal			100
Coal			150
Sandstone, gray; claystone, gray; and siltstone, gray			200
			250
			300
			350
Coal			
Claystone, gray; sandstone, gray; and siltstone, gray			50
			60
			70
			300
			350

LITHOLOGY	GAMMA	S.P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Sandstone, gray; claystone, gray; siltstone, gray						350	
						80	
						400	
						90	
						450	
						100	
						500	
						110	
						550	
						120	
						600	
						130	
						650	
						140	
						700	
						150	
						750	
						800	

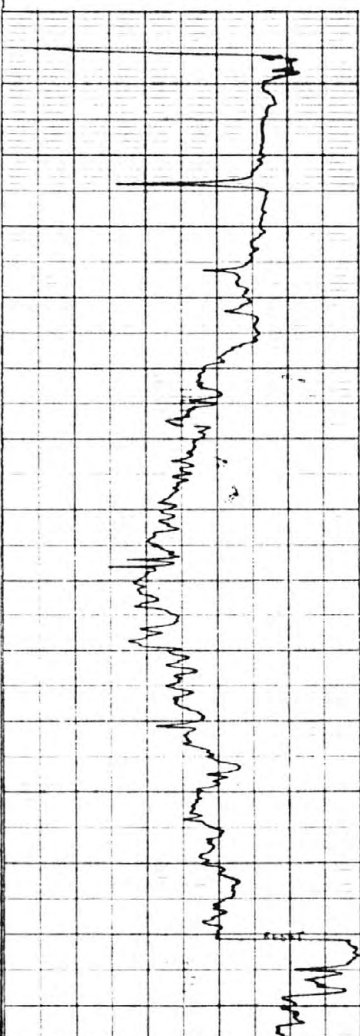
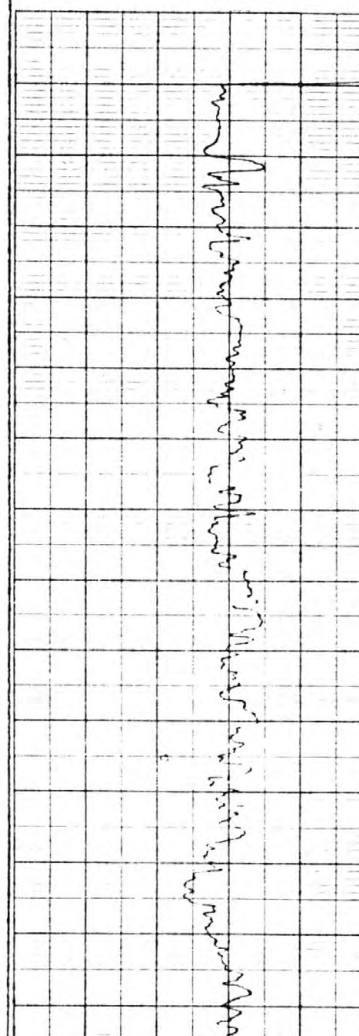
Hole No: US-79226 Map: Mtn. Sheep Butte Date: 12/12/79 State: Montana County: McCone

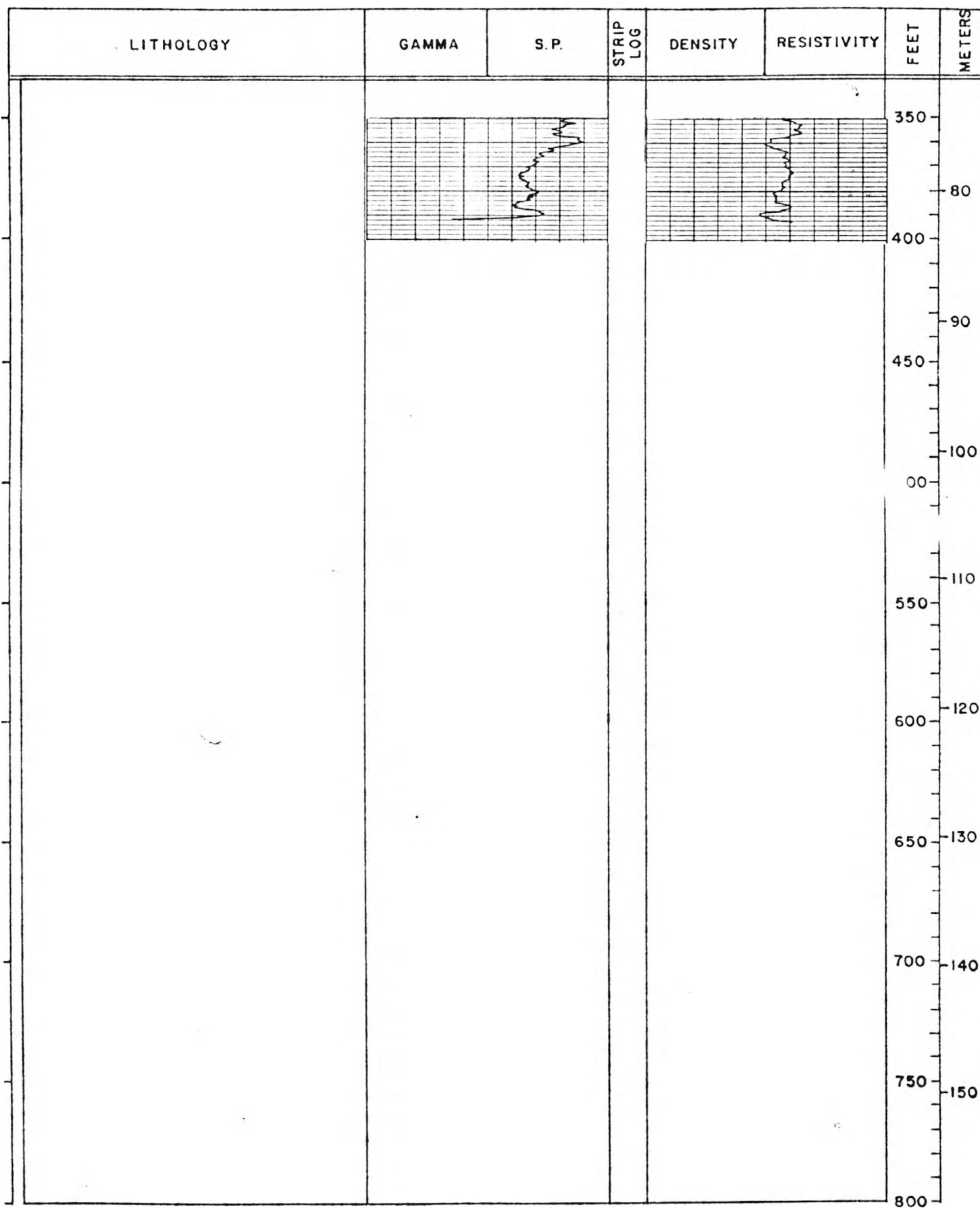
Elev.: FT Location: T 18^N R 48^E, Sec 26 Tract DDDA Drilled depth 420 FT

Measured: 450 FT. ~~FSL~~ 450 FT. ~~FEL~~ FT. Hole size: 5 5/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒

Remarks:

RECORDED BY JON HANGAS GEOLOGIST ~~NE~~ YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN

LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>10</u>	STRIP LOG	DENSITY T.C. <u> </u> RANGE <u> </u>	RESISTIVITY SENS. SETTING <u>5</u>	DEPTH	
	LOGGED DEPTHS <u>397</u> FT. <u>392</u> FT.			LOGGED DEPTHS <u> </u> FT. <u>392</u> FT.		FEET	METERS
	<div>S.P.</div> 			<div>Res.</div> 		50	0
						0	10
						50	20
						100	30
						150	40
						200	50
						250	60
						300	70
						350	



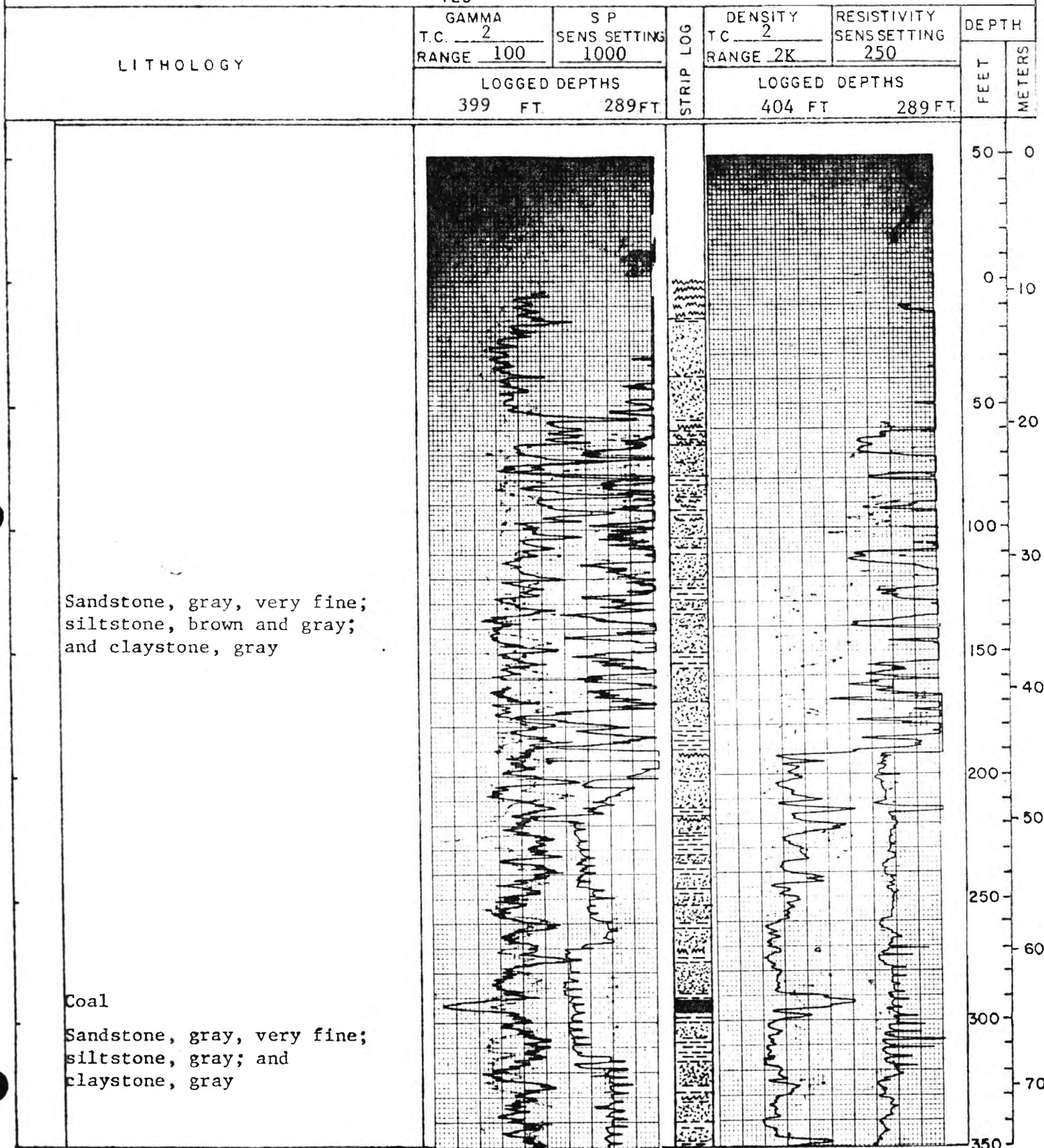
Hole No: US-79227 Map: Circle 1 NE Date: 12/12/79 State: Montana County: Dawson
 Elev.: 2805 FT Location: T 19^N R 52^E, Sec 22 Tract DDDD Drilled depth 600 FT
 Measured: 25 FT ^{FNL} ~~XXX~~ 35 FT ^{FEL} ~~RXX~~ FT. Hole size: 5 1/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

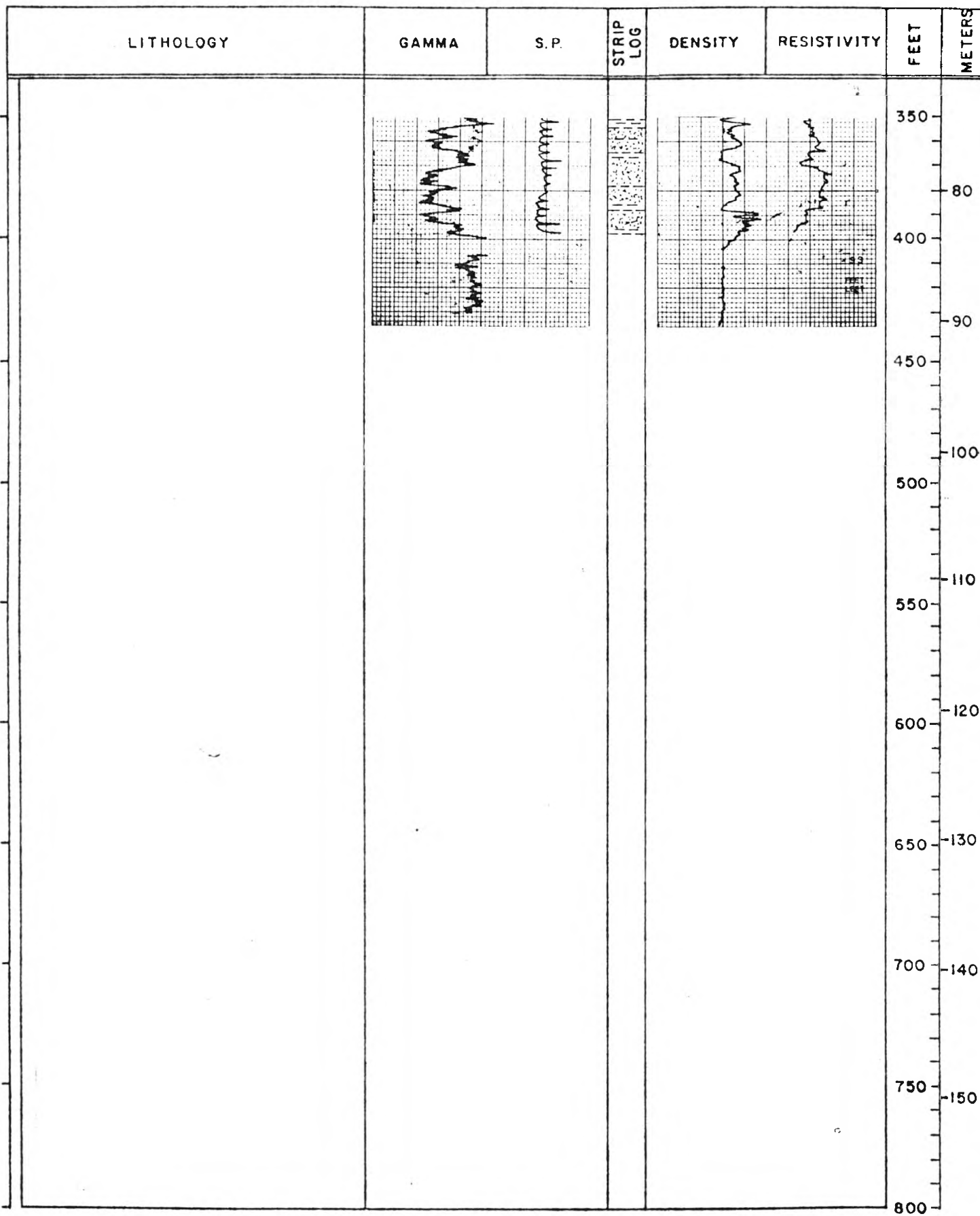
RECORDED BY <u>WILLIAM JACKSON</u> GEOLOGIST ^{NR} YES		RECORDED BY <u>WILLIAM JACKSON</u> RECORDING SPEED <u>20</u> FT. MIN.	
LITHOLOGY	GAMMA T.C. <u>2</u> RANGE <u>100</u>	S P SENS. SETTING <u>1000</u>	DENSITY T.C. <u>2</u> RANGE <u>500</u>
	RESISTIVITY SENS. SETTING <u>250</u>		DEPTH
	LOGGED DEPTHS <u>577</u> FT <u>574</u> FT.		LOGGED DEPTHS <u>581</u> FT <u>574</u> FT
	STRIP LOG		
Regolith, brown			50 0
Sandstone, gray, very fine; and claystone, gray			0 10
Coal			50 20
Sandstone, gray, very fine; and claystone, gray			100 30
Coal			150 40
Coal			200 50
Sandstone, gray, very fine; siltstone, gray; and claystone, gray			250 60
			300 70
			350

LITHOLOGY	GAMMA	S. P.	STRIP LOG	DENSITY	RESISTIVITY	FEET	METERS
Sandstone, gray, very fine; siltstone, gray; and claystone, gray					350		
Coal, with claystone partings					400	80	
Sandstone, gray, very fine; and claystone, gray					450	90	
	500	100					
	550	120					
	600	130					
	650	140					
	700	150					
	750						
	800						

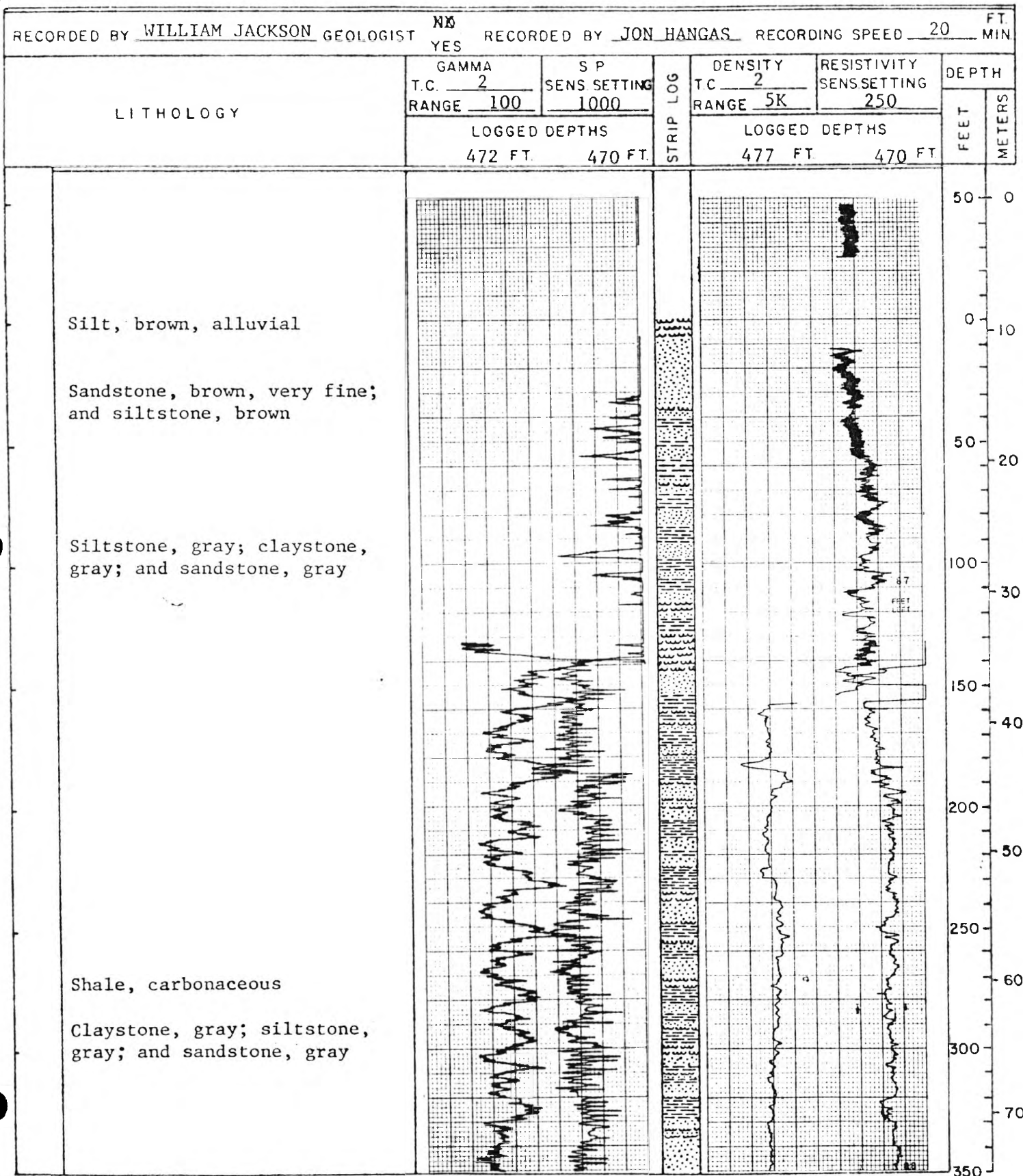
Hole No: US-79228 Map: Mtn. Sheep Butte Date: 12/13/79 State: Montana County: McCone
 Elev.: 2861 FT Location: T 17^N R 48^E W, Sec 4 Tract DDDD Drilled depth 420 FT
 Measured: 45 FT ~~FSL~~ 40 FT ~~FEL~~ XXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☒ No ☐
 Remarks: _____

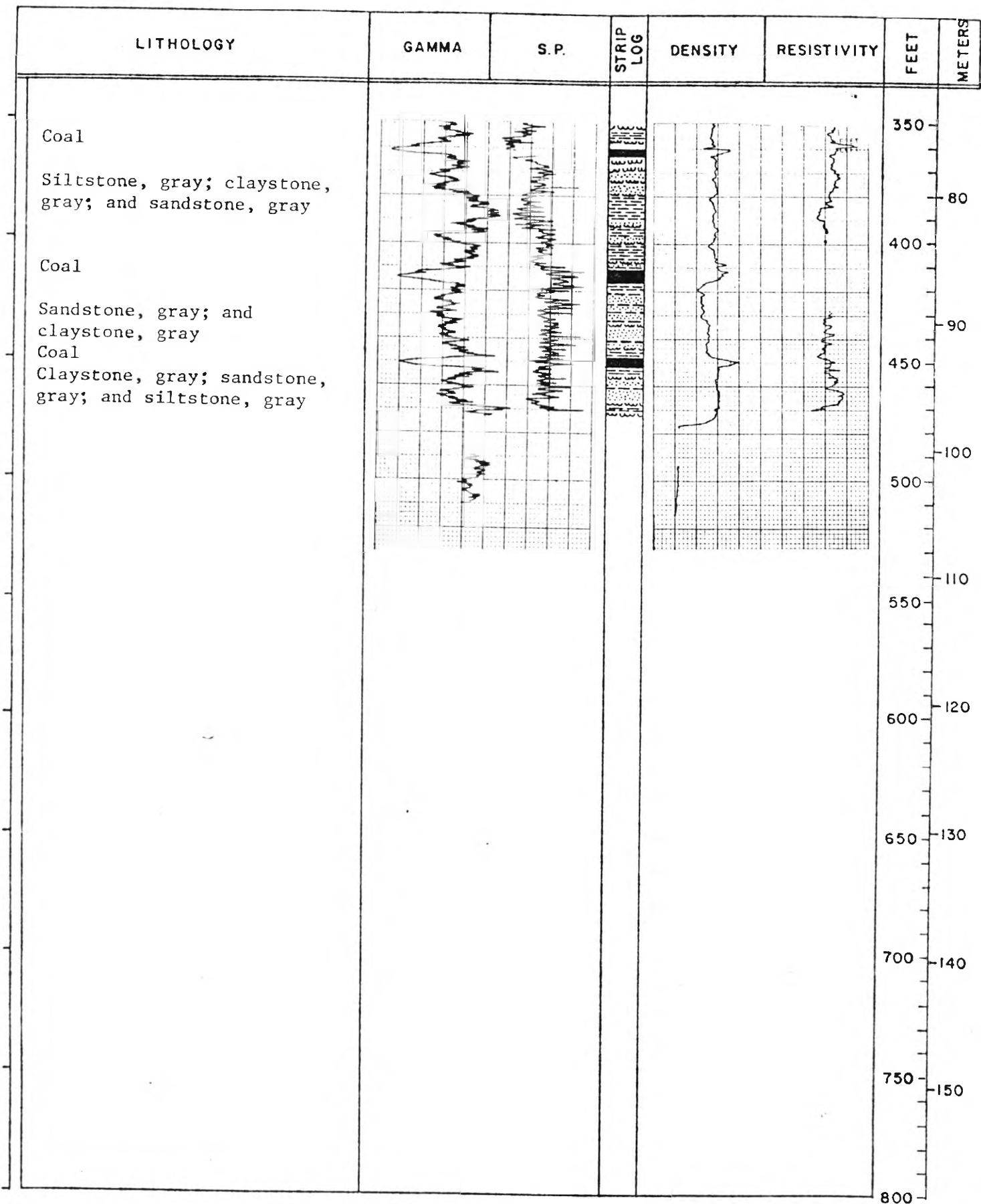
RECORDED BY WILLIAM JACKSON GEOLOGIST ~~NO~~ YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN.





Hole No: US-79229 Map: Circle 3 NW Date: 12/13/79 State: Montana County: McCone
 Elev.: 3061 FT Location: T 17 ^N R 49 ^E W, Sec 8 Tract ADCD Drilled depth 480 FT
 Measured: 2720 FT ^{RXX} FSL 470 FT ^{FEL} ~~XW~~ FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____





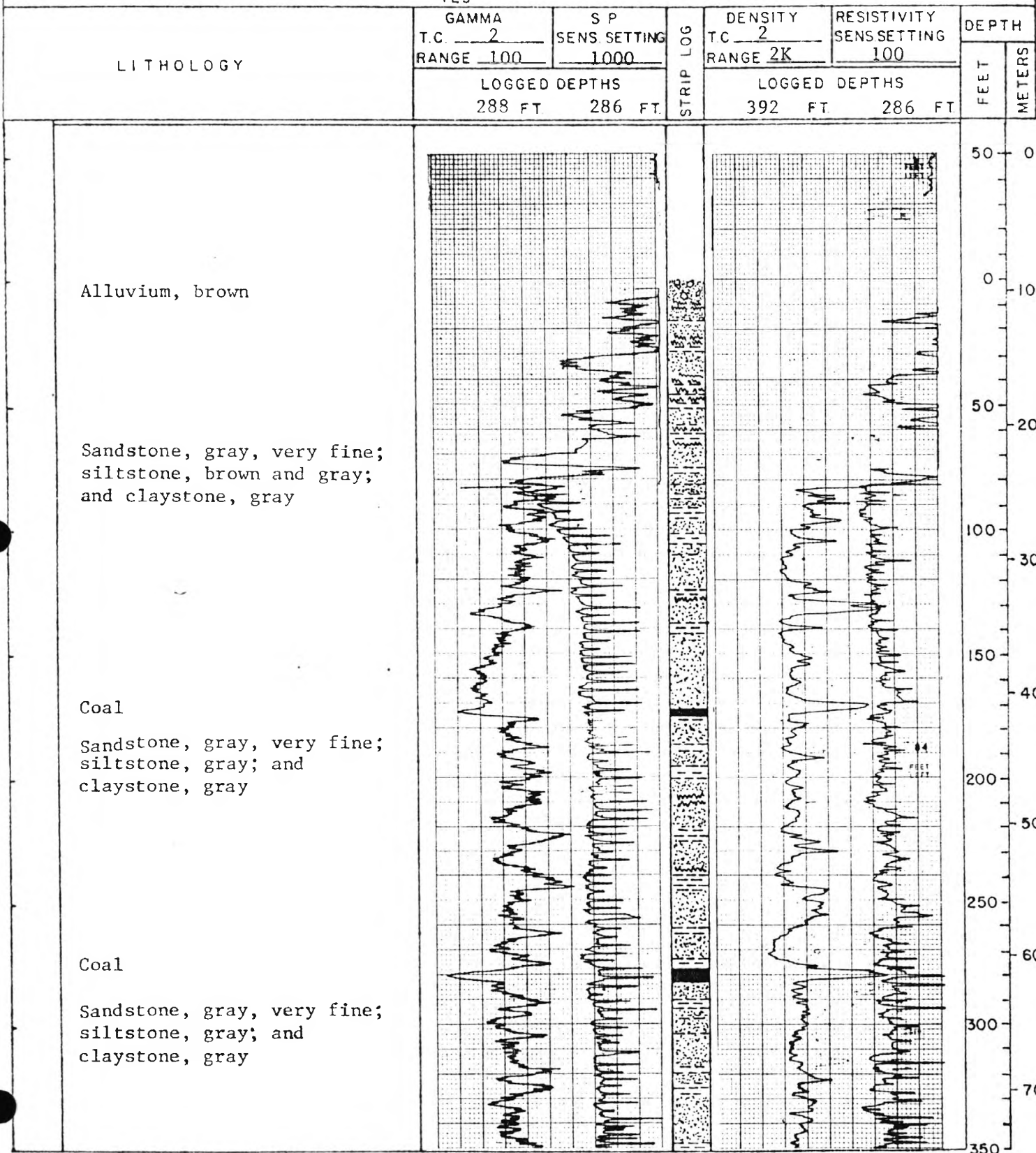
a No: US-79230 Map: MTN Sheep Butte Date: 12/13/79 State: Montana County: McCone

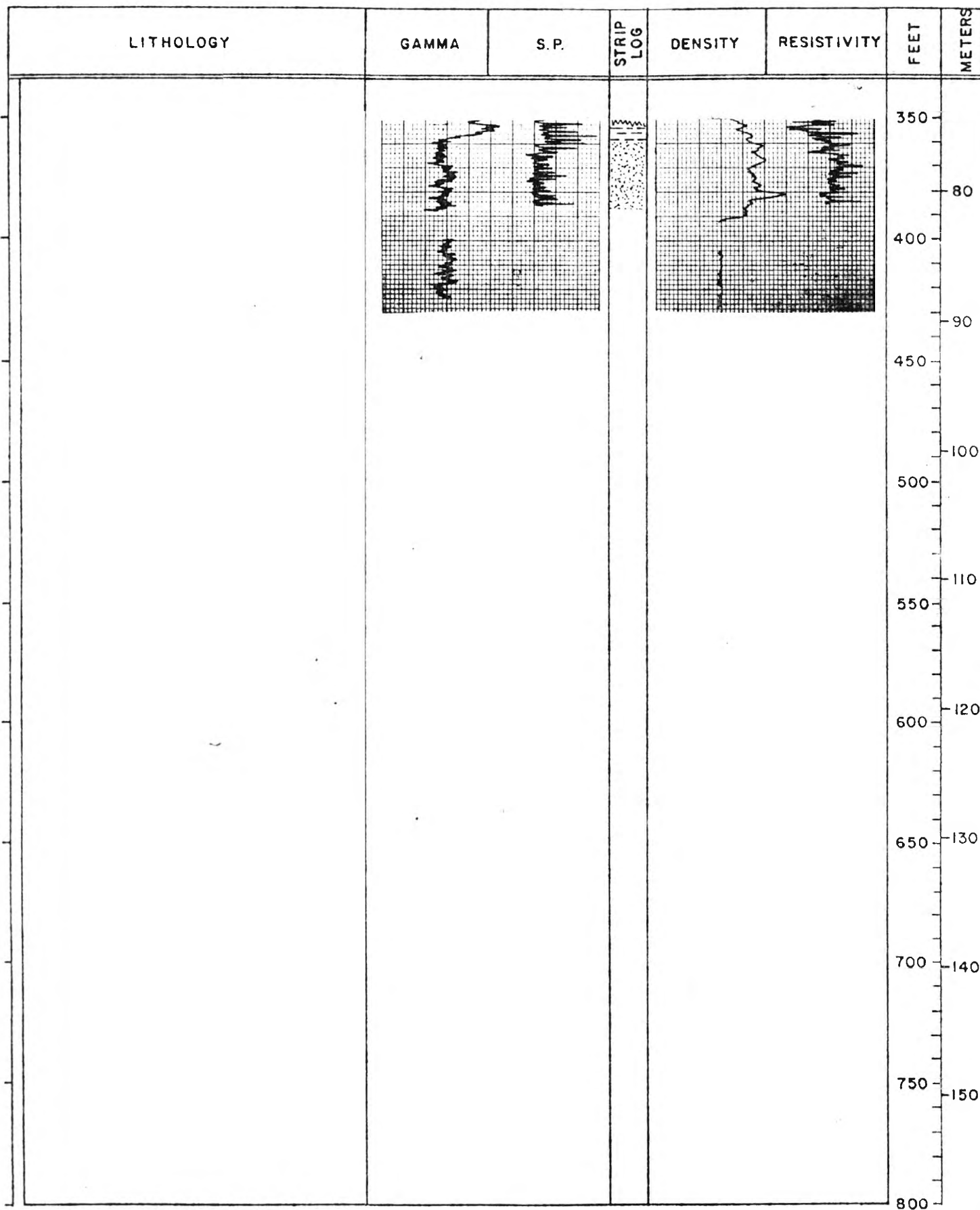
Elev.: 2867 FT Location: T 17^N R 48^E W, Sec 14 Tract DDDD Drilled depth 400 FT

Measured: 18 FT KNX FSL 275 FT FEL KNX FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒

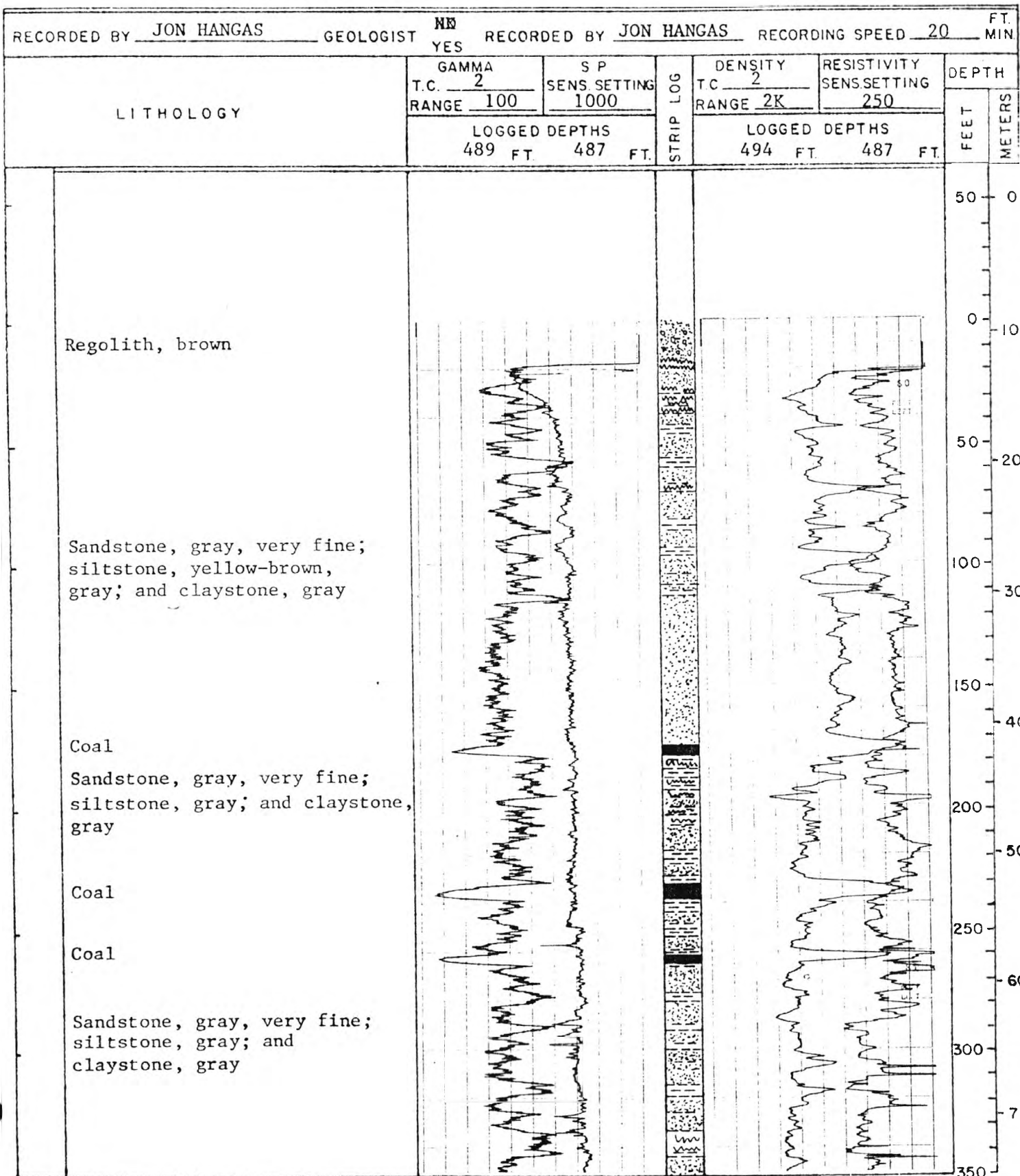
Remarks: _____

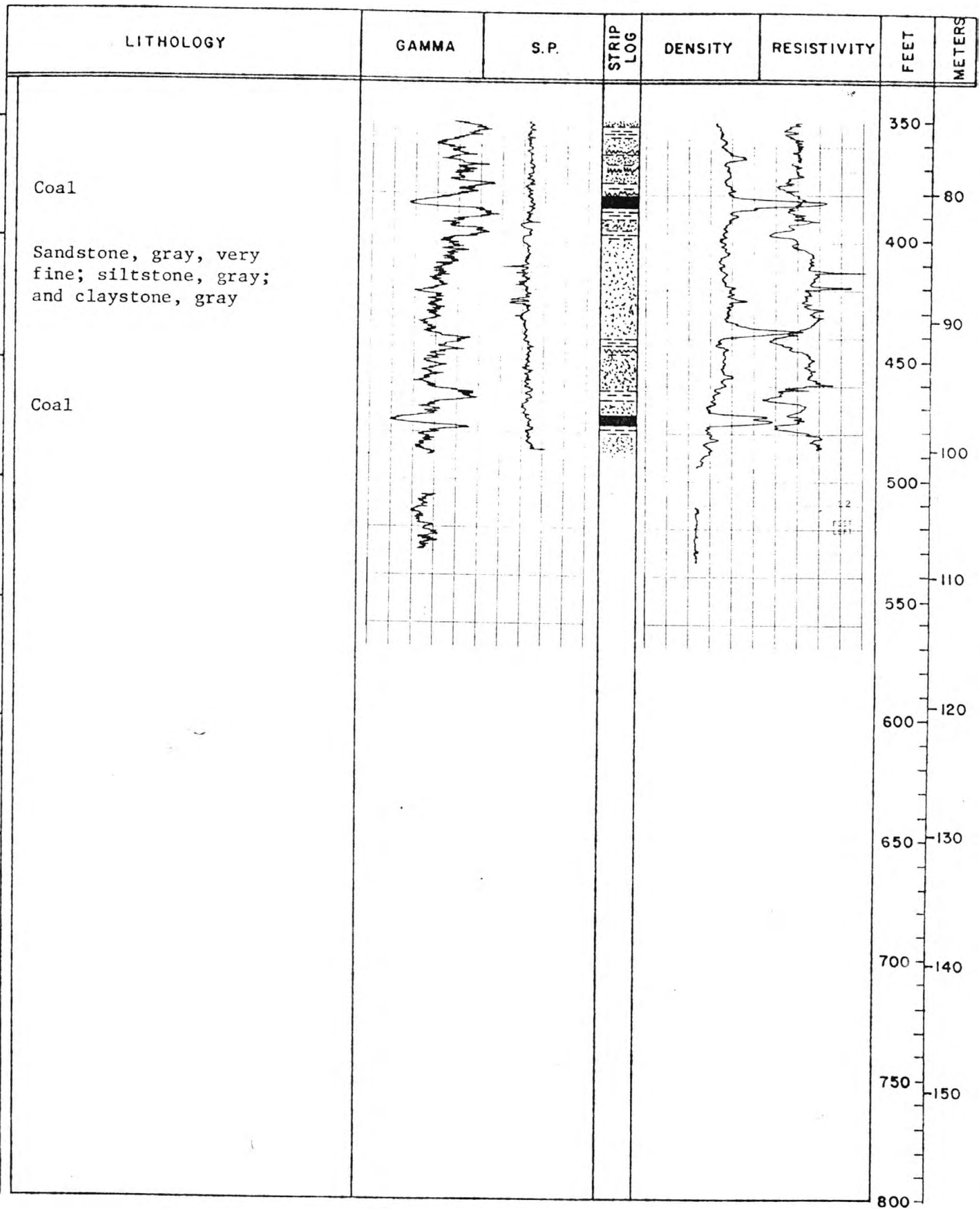
RECORDED BY WILLIAM JACKSON GEOLOGIST NO YES RECORDED BY JON HANGAS RECORDING SPEED 20 FT. MIN



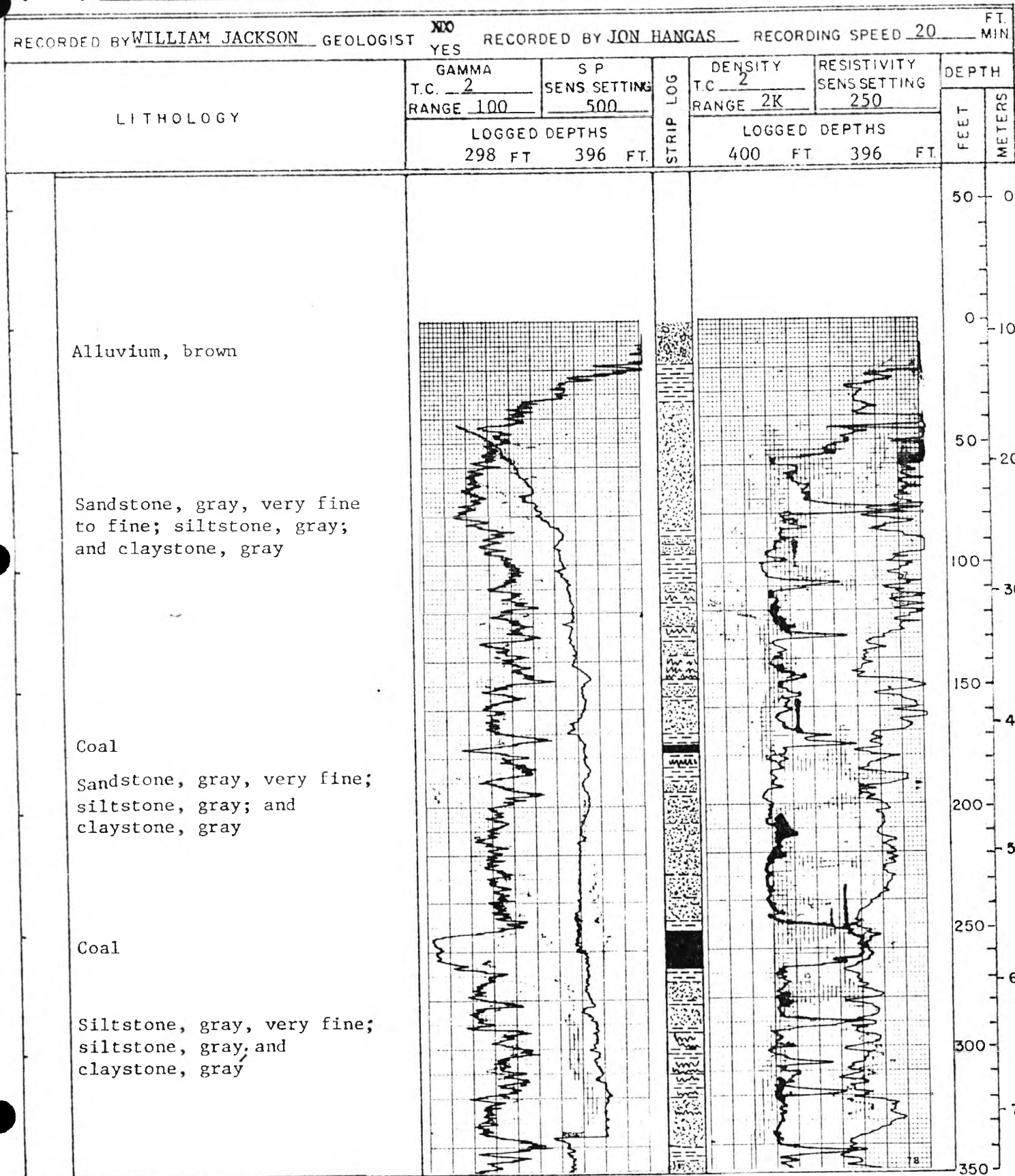


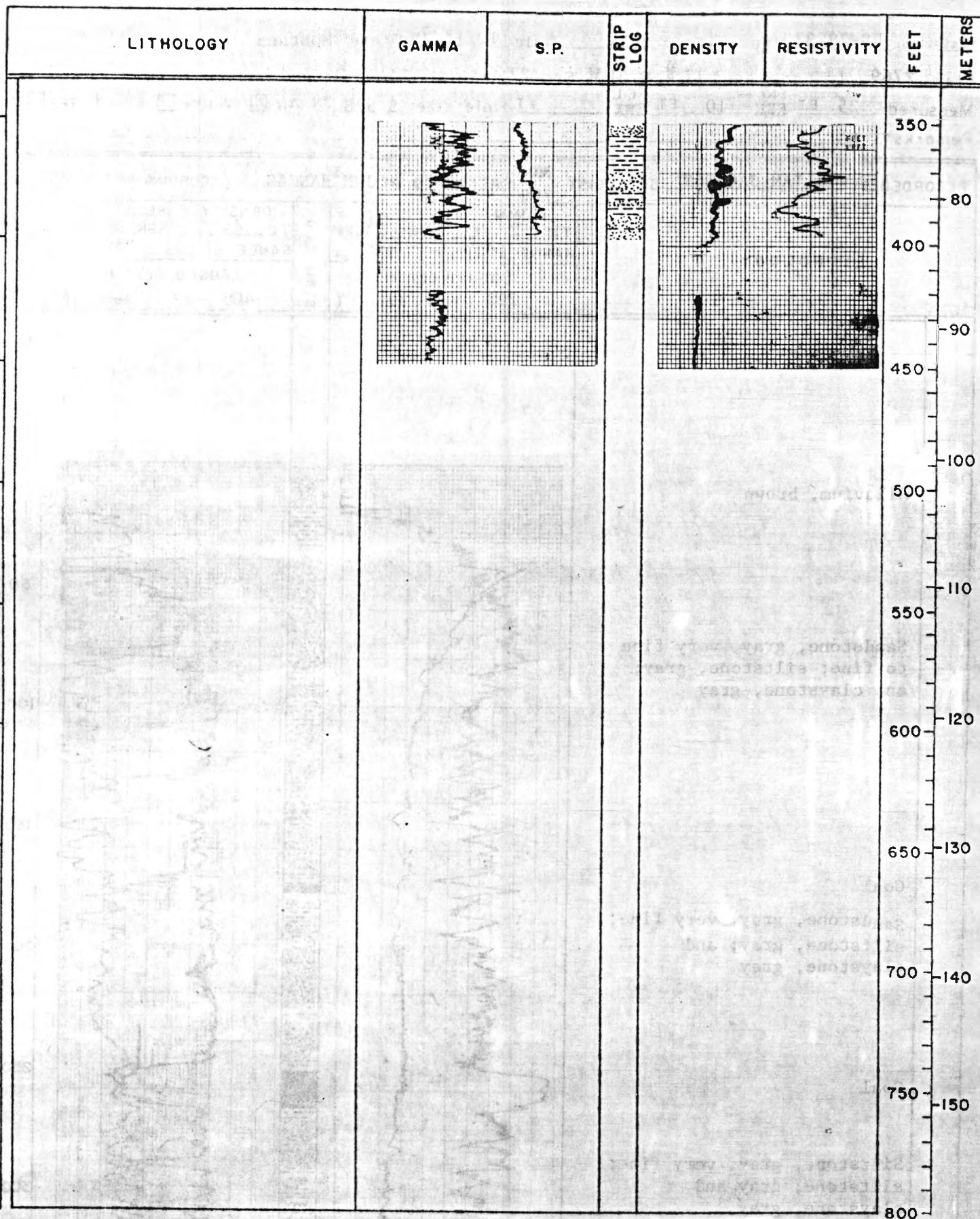
Hole No: US-79231 Map: Mtn. Sheep Butte Date: 12/14/79 State: Montana County: McCone
 Elev.: 2942 FT Location: T 17^N R 49^E W, Sec 32 Tract CCCC Drilled depth 500 FT
 Measured: 250 FT FSL 7 FT. FWL FT. Hole size: 5 5/8 IN. Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks:



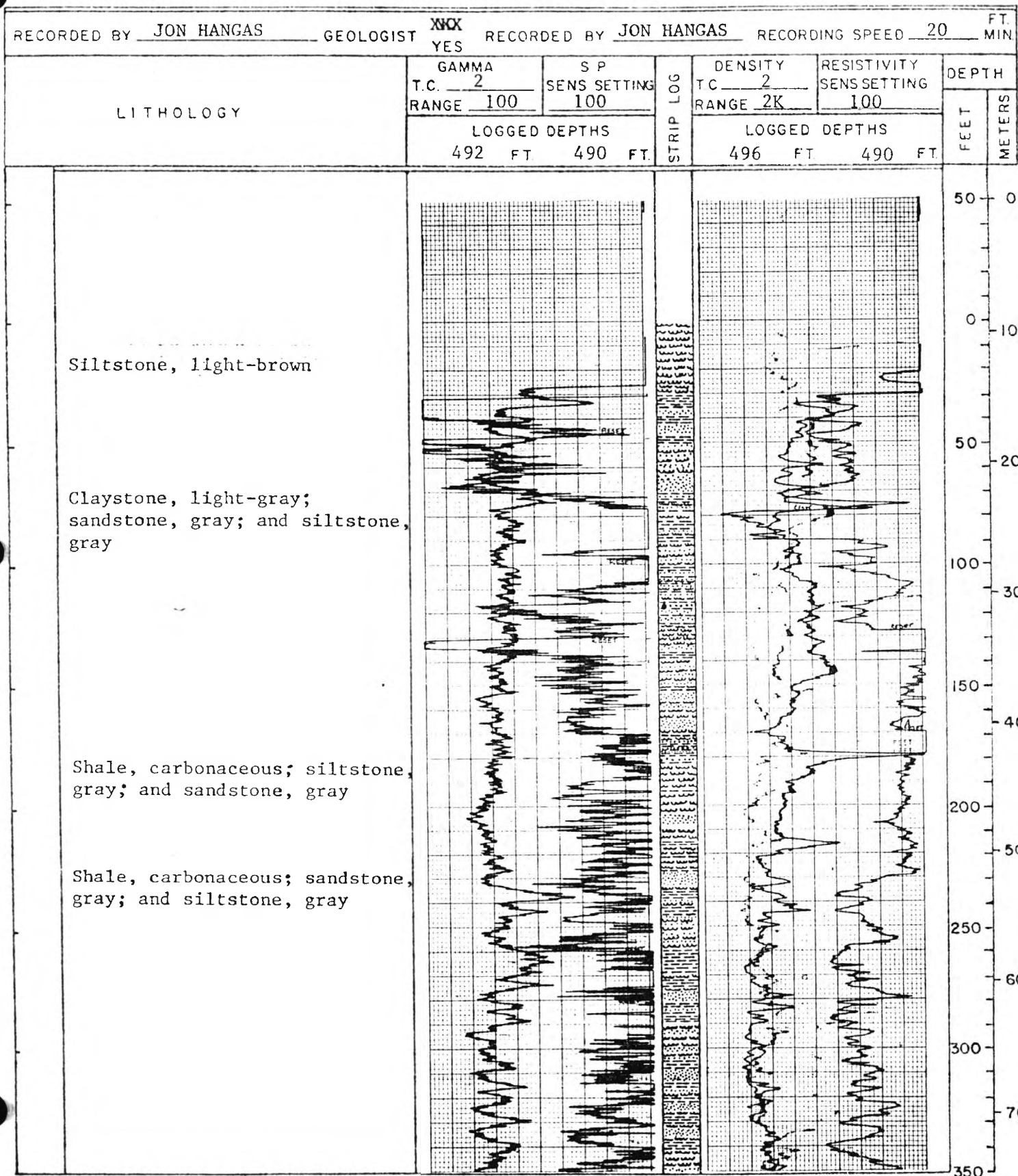


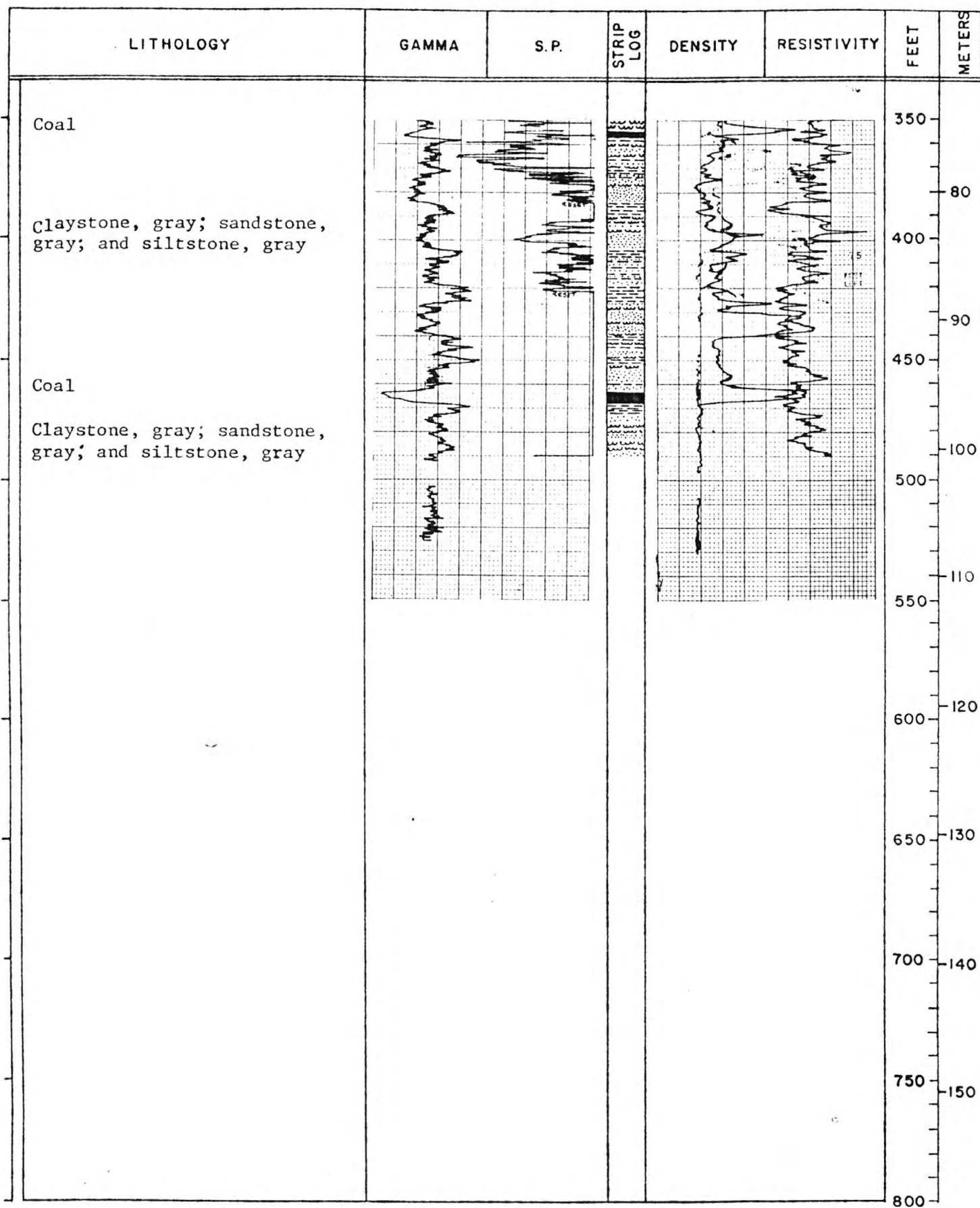
Hole No: US-79232 Map: Circle 4 NW Date: 12/14/79 State: Montana County: McCone
 Elev.: 2769 FT Location: T 17 ^N/_S R 51 ^E/_W, Sec 22 Tract AAAA Drilled depth 400 FT
 Measured: 25 FT ^{FNL}/_{RSL} 10 FT ^{FEL}/_{RWL} FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____





Hole No: US-79233 Map: Circle 3 NW Date: 12/14/79 State: Montana County: McCone
 Elev: 3107 FT Location: T17 ^N R 50 ^E W, Sec 24 Tract AAAB Drilled depth 500 FT
 Measured: 30 FT ^{FNL} 750 FT ^{FEL} ~~XXX~~ FT. Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☐ No ☒
 Remarks: _____

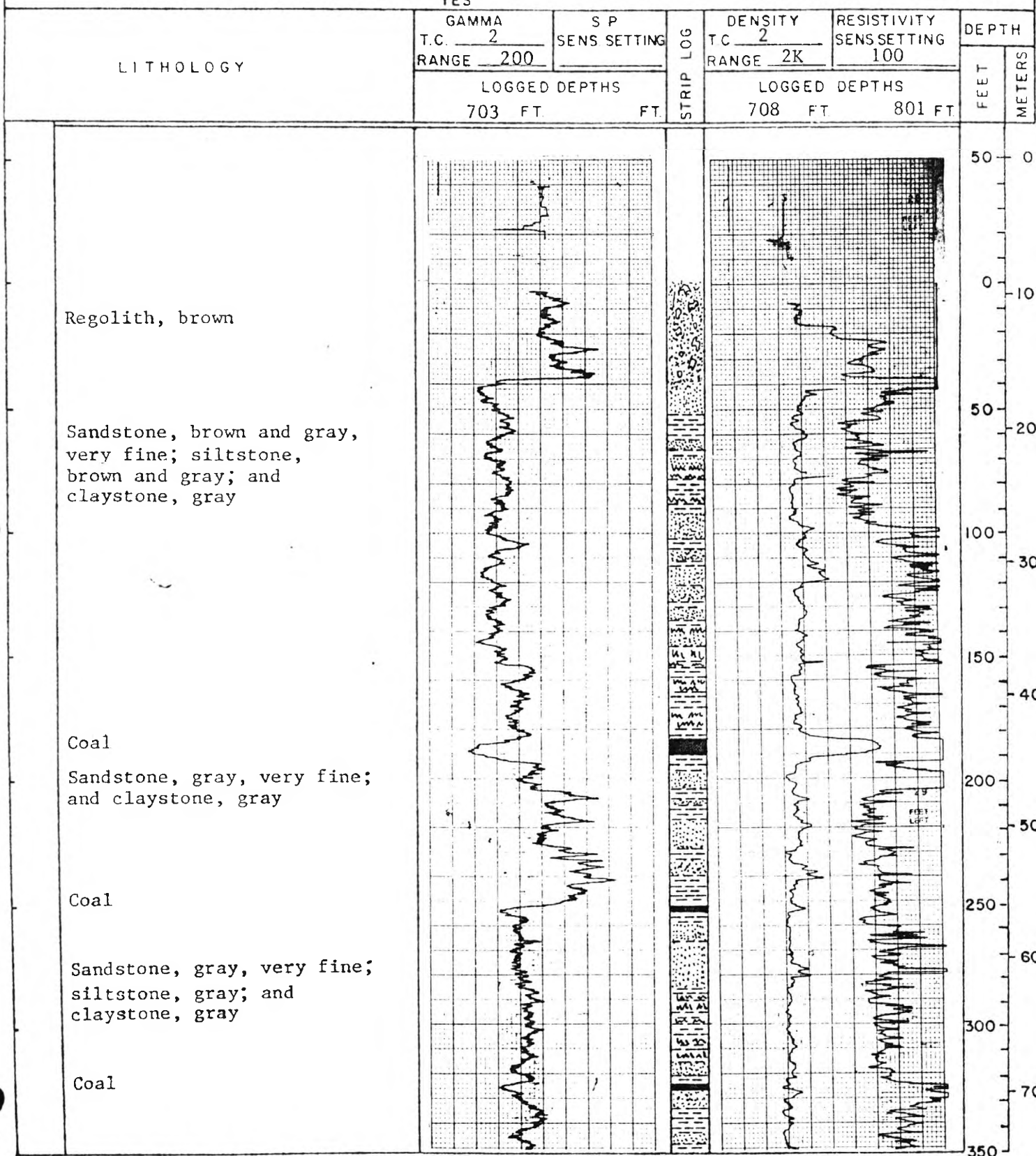


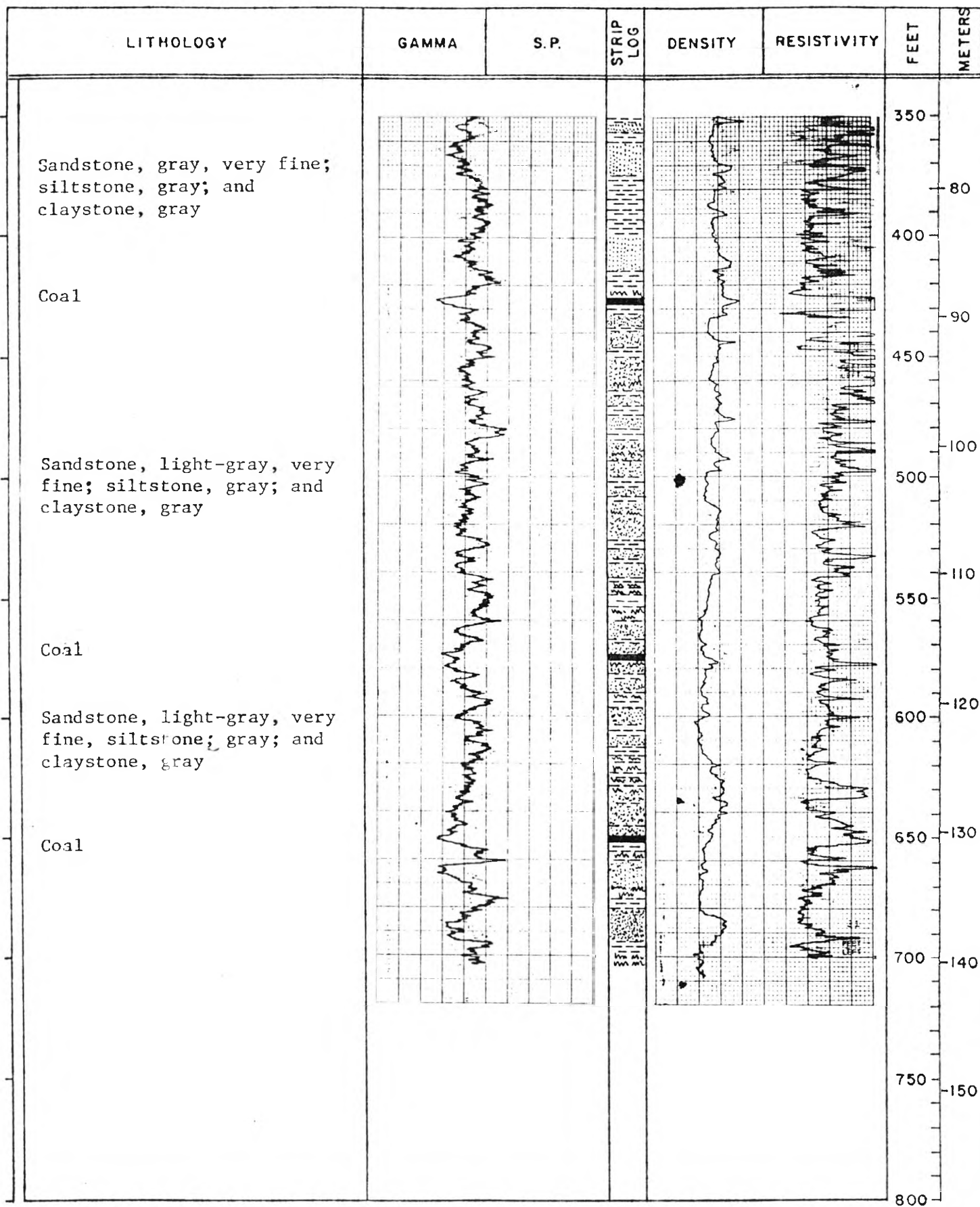


125. -12W ??

Hole No: US-79234 Map: Medicine Lodge Peak Date: 11/29/79 State: Montana County: Beaverhead
 Elev.: 6630 FT Location: T 12^N R 12^E Sec 14 Tract ADDC Drilled depth 720 FT
 Measured: 2360 FT ^{FNL} XXX 400 FT ^{FEI} XXX FT Hole size: 5 5/8 IN Air ☒ Water ☐ Cored: Yes ☒ No ☐
 Remarks: Hole caving badly, had to set 40 foot of surface casing.

RECORDED BY RUSSELL PATTERSON GEOLOGIST ☒ YES RECORDED BY RUSSELL PATTERSON RECORDING SPEED 20 FT. MIN





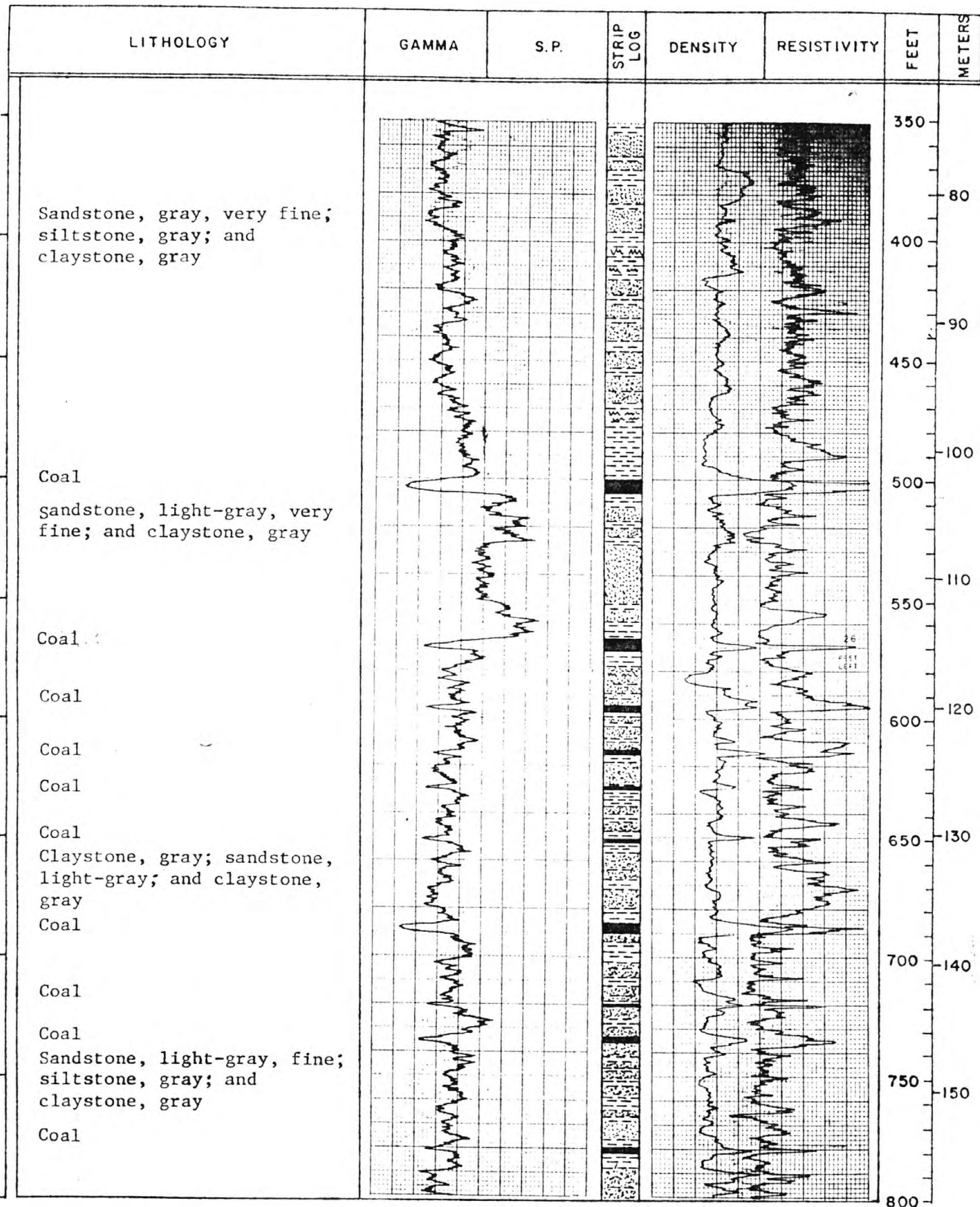
RECORDED BY RUSSELL PATTERSON GEOLOGIST 20 MIN. RECORDING SPEED 20 MIN.

Regolith, brown

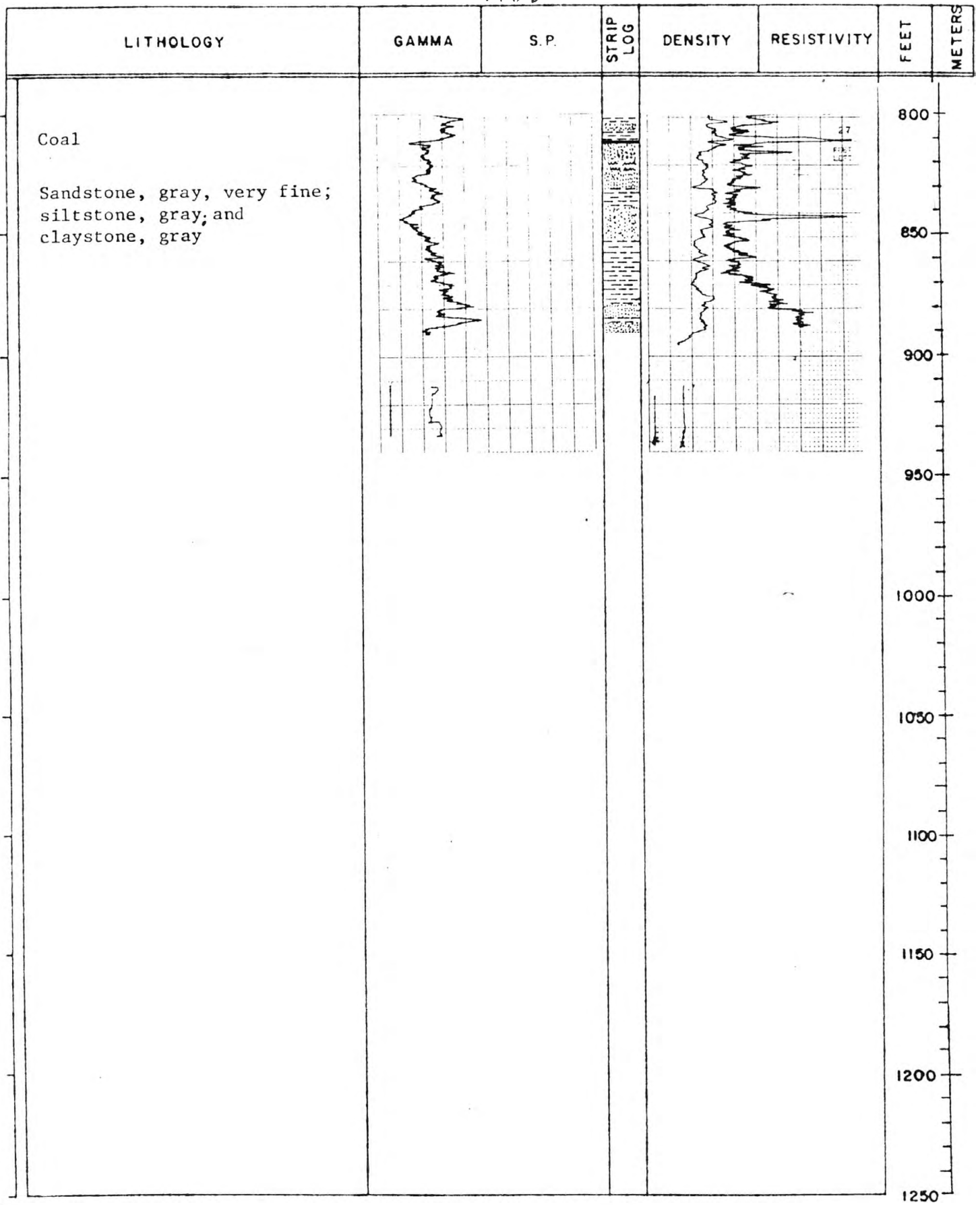
Sandstone, light-gray,
medium to fine; siltstone,
gray; and claystone,
gray

24
25
FEET
LEFT

50
0
0
50
100
150
200
250
300
350



79235



Montana Bureau of Mines and Geology

6N-26E-12

Coal Analysis Report

Sample No. US-793-CA

Core Sample 227'9½"-233'1" Lab. No. 79-C-25

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>20.69</u>			
<u>Air Dried Loss</u>	<u>13.08</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>7.07</u>		
Volatile Matter	<u>30.48</u>	<u>35.07</u>	<u>37.74</u>	<u>41.93</u>
Fixed Carbon	<u>40.76</u>	<u>48.57</u>	<u>52.27</u>	<u>58.08</u>
Ash	<u>8.07</u>	<u>9.29</u>	<u>10.00</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>4.70</u>	<u>5.41</u>	<u>4.98</u>	<u>5.53</u>
Carbon	<u>45.51</u>	<u>52.36</u>	<u>56.34</u>	<u>62.60</u>
Nitrogen	<u>0.793</u>	<u>0.912</u>	<u>0.981</u>	<u>1.090</u>
Oxygen	<u>26.94</u>	<u>30.99</u>	<u>26.59</u>	<u>29.54</u>
Sulfur	<u>0.904</u>	<u>1.04</u>	<u>1.12</u>	<u>1.24</u>
<u>British Thermal Units</u>	<u>9,783</u>	<u>11,255</u>	<u>12,111</u>	<u>13,457</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.018</u>	<u>0.0207</u>	<u>0.0223</u>	<u>0.025</u>
Pyrite	<u>0.654</u>	<u>0.752</u>	<u>0.809</u>	<u>0.899</u>
Organic	<u>0.233</u>	<u>0.268</u>	<u>0.288</u>	<u>0.320</u>
<u>Hardgrove Grindability Index</u>		<u>43</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

Sample No. US-793-CB

Core Sample 233' 1 3/4" - 235' 3/4" Lab. No. 79-C-26

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>				
<u>Air Dried Loss</u>				
<u>Proximate Analysis</u>				
Moisture (residual)		10.20		
Volatile Matter		32.86	36.59	39.70
Fixed Carbon		49.91	55.58	60.30
Ash		7.03	7.83	
<u>Ultimate Analysis</u>				
Hydrogen		5.57	4.94	5.36
Carbon		57.04	63.52	68.92
Nitrogen		0.858	0.955	1.036
Oxygen		28.03	21.12	22.92
Sulfur		1.47	1.64	1.78
<u>British Thermal Units</u>		11,276	12,334	13,382
<u>Sulfur Forms</u>				
Sulfate		0.0266	0.0252	0.027
Pyrite		1.03	1.15	1.248
Organic		0.413	0.459	0.498
<u>Hardgrove Grindability Index</u>		48		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

Sample No. US-793-CC

Core Sample 235'3/4"-235'33/4" b. No. 78-C-27

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	_____	_____	_____	_____
<u>Air Dried Loss</u>	_____	_____	_____	_____
<u>Proximate Analysis</u>				
Moisture (residual)	_____	<u>4.91</u>	_____	_____
Volatile Matter	_____	<u>31.62</u>	<u>33.25</u>	<u>43.25</u>
Fixed Carbon	_____	<u>41.52</u>	<u>43.66</u>	<u>56.76</u>
Ash	_____	<u>21.95</u>	<u>23.08</u>	_____
<u>Ultimate Analysis</u>				
Hydrogen	_____	<u>4.75</u>	<u>4.42</u>	<u>5.75</u>
Carbon	_____	<u>43.14</u>	<u>45.37</u>	<u>58.98</u>
Nitrogen	_____	<u>0.494</u>	<u>0.520</u>	<u>0.676</u>
Oxygen	_____	<u>27.93</u>	<u>24.78</u>	<u>32.21</u>
Sulfur	_____	<u>1.74</u>	<u>1.83</u>	<u>2.38</u>
<u>British Thermal Units</u>	_____	<u>9,243</u>	<u>9,720</u>	<u>12,636</u>
<u>Sulfur Forms</u>				
Sulfate	_____	<u>0.0424</u>	<u>0.0446</u>	<u>0.058</u>
Pyrite	_____	<u>1.11</u>	<u>1.17</u>	<u>1.521</u>
Organic	_____	<u>0.5870</u>	<u>0.617</u>	<u>0.802</u>
<u>Hardgrove Grindability Index</u>	_____	_____	_____	_____

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

6N-26E-24

Sample No. US-794-CB

Core Sample 36'-37.8'

Lab. No. 79-C-29

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>				
<u>Air Dried Loss</u>				
<u>Proximate Analysis</u>				
Moisture (residual)		7.33		
Volatile Matter		33.20	35.83	42.59
Fixed Carbon		44.75	48.29	57.41
Ash		14.72	15.88	
<u>Ultimate Analysis</u>				
Hydrogen		5.43	4.98	5.92
Carbon		45.12	48.69	57.88
Nitrogen		0.799	0.862	1.024
Oxygen		32.01	27.51	32.70
Sulfur		1.92	2.07	2.46
<u>British Thermal Units</u>		10,064	10,860	12,910
<u>Sulfur Forms</u>				
Sulfate		0.0322	0.0347	0.041
Pyrite		1.38	1.49	1.771
Organic		0.498	0.537	0.638
<u>Hardgrove Grindability Index</u>				

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

8N-26E-28

Sample No. US-795-C

Core Sample 60'-69'

Lab. No. 79-C-30

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>				
<u>Air Dried loss</u>				
<u>Proximate Analysis</u>				
Moisture (residual)		4.51		
Volatile Matter		34.97	36.62	44.46
Fixed Carbon		43.68	45.74	55.54
Ash		16.84	17.64	
<u>Ultimate Analysis</u>				
Hydrogen		5.06	4.77	5.79
Carbon		55.37	57.99	70.41
Nitrogen		0.946	0.992	1.20
Oxygen		21.17	17.97	21.82
Sulfur		0.61	0.64	0.777
<u>British Thermal Units</u>		10,611	11,112	13,492
<u>Sulfur Forms</u>				
Sulfate		0.0159	0.0167	0.020
Pyrite		0.147	0.1536	0.187
Organic		0.471	0.494	0.600
<u>Hardgrove Grindability Index</u>		45		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

7M-26E-4

Sample No. US-796-CA

Core Sample 209'-211'8"

Lab. No. 79-C-31

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>31.73</u>			
<u>Air Dried Loss</u>	<u>26.13</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>5.30</u>		
Volatile Matter	<u>27.13</u>	<u>36.72</u>	<u>38.78</u>	<u>44.45</u>
Fixed Carbon	<u>32.22</u>	<u>45.90</u>	<u>48.47</u>	<u>55.56</u>
Ash	<u>8.923</u>	<u>12.08</u>	<u>12.76</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>4.02</u>	<u>5.44</u>	<u>5.12</u>	<u>5.87</u>
Carbon	<u>42.26</u>	<u>57.21</u>	<u>60.41</u>	<u>69.25</u>
Nitrogen	<u>0.692</u>	<u>0.937</u>	<u>0.989</u>	<u>1.134</u>
Oxygen	<u>17.63</u>	<u>23.87</u>	<u>20.23</u>	<u>23.19</u>
Sulfur	<u>0.340</u>	<u>0.46</u>	<u>0.49</u>	<u>0.56</u>
<u>British Thermal Units</u>	<u>8,003</u>	<u>10,834</u>	<u>11,440</u>	<u>13,114</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.007</u>	<u>0.0093</u>	<u>0.0098</u>	<u>0.011</u>
Pyrite	<u>0.087</u>	<u>0.118</u>	<u>0.125</u>	<u>0.143</u>
Organic	<u>0.246</u>	<u>0.333</u>	<u>0.351</u>	<u>0.402</u>
<u>Hardgrove Grindability Index</u>		<u>46</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

Sample No. US-796-CC

Core Sample 216'5"-218'

Lab. No. 79-C-33

Date June, 1979

	As Received	Air Dried	Moisture Free	Moisture & Ash Free %
<u>Total Moisture</u>	<u>17.09</u>			
<u>Air Dried loss</u>	<u>10.94</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>5.79</u>		
Volatile Matter	<u>34.98</u>	<u>39.28</u>	<u>41.69</u>	<u>44.87</u>
Fixed Carbon	<u>41.99</u>	<u>48.26</u>	<u>51.23</u>	<u>55.13</u>
Ash	<u>5.940</u>	<u>6.67</u>	<u>7.08</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>5.15</u>	<u>5.78</u>	<u>5.45</u>	<u>5.87</u>
Carbon	<u>53.13</u>	<u>59.66</u>	<u>63.33</u>	<u>68.16</u>
Nitrogen	<u>0.843</u>	<u>0.947</u>	<u>1.005</u>	<u>1.082</u>
Oxygen	<u>23.29</u>	<u>26.15</u>	<u>22.29</u>	<u>2.399</u>
Sulfur	<u>0.704</u>	<u>0.79</u>	<u>0.84</u>	<u>0.904</u>
British Thermal Units	<u>10,371</u>	<u>11,645</u>	<u>12,361</u>	<u>13,303</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.014</u>	<u>0.0161</u>	<u>0.0171</u>	<u>0.018</u>
Pyrite	<u>0.411</u>	<u>0.461</u>	<u>0.490</u>	<u>0.527</u>
Organic	<u>0.279</u>	<u>0.313</u>	<u>0.332</u>	<u>0.357</u>
<u>Hardgrove Grindability Index</u>		<u>40</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

75-40E-29

Sample No. US-7911-C

Core Sample 93'6"-103'

Lab. No. 79-C-16

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>26.24</u>			
<u>Air Dried Loss</u>	<u>19.96</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>5.91</u>		
Volatile Matter	<u>36.37</u>	<u>45.44</u>	<u>48.29</u>	<u>52.81</u>
Fixed Carbon	<u>30.95</u>	<u>40.6</u>	<u>43.15</u>	<u>47.19</u>
Ash	<u>6.44</u>	<u>8.05</u>	<u>8.56</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>4.51</u>	<u>5.64</u>	<u>5.30</u>	<u>5.80</u>
Carbon	<u>43.35</u>	<u>54.16</u>	<u>57.56</u>	<u>62.95</u>
Nitrogen	<u>0.559</u>	<u>0.698</u>	<u>0.742</u>	<u>0.811</u>
Oxygen	<u>24.27</u>	<u>30.32</u>	<u>26.64</u>	<u>29.13</u>
Sulfur	<u>0.904</u>	<u>1.13</u>	<u>1.20</u>	<u>1.312</u>
<u>British Thermal Units</u>	<u>8,551</u>	<u>10,684</u>	<u>11,355</u>	<u>12,418</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.034</u>	<u>0.0422</u>	<u>0.0449</u>	<u>0.049</u>
Pyrite	<u>0.322</u>	<u>0.402</u>	<u>0.4270</u>	<u>0.467</u>
Organic	<u>0.549</u>	<u>0.6860</u>	<u>0.729</u>	<u>0.797</u>
<u>Hardgrove Grindability Index</u>		<u>44</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

Sample No. US-7911-C

Core Sample 103-113'

Lab. No. 79-C-17

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>24.10</u>			
<u>Air Dried Loss</u>	<u>14.35</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>8.88</u>		
Volatile Matter	<u>37.92</u>	<u>44.27</u>	<u>48.58</u>	<u>50.57</u>
Fixed Carbon	<u>34.91</u>	<u>43.27</u>	<u>47.49</u>	<u>49.43</u>
Ash	<u>3.07</u>	<u>3.58</u>	<u>3.93</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>5.19</u>	<u>6.06</u>	<u>5.57</u>	<u>5.80</u>
Carbon	<u>44.83</u>	<u>52.34</u>	<u>57.44</u>	<u>59.79</u>
Nitrogen	<u>0.666</u>	<u>0.777</u>	<u>0.853</u>	<u>0.888</u>
Oxygen	<u>31.72</u>	<u>37.03</u>	<u>31.98</u>	<u>33.29</u>
Sulfur	<u>0.180</u>	<u>0.21</u>	<u>0.23</u>	<u>0.239</u>
<u>British Thermal Units</u>	<u>9,169</u>	<u>10,705</u>	<u>11,748</u>	<u>12,228</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.002</u>	<u>0.0018</u>	<u>0.0020</u>	<u>0.002</u>
Pyrite	<u>0.001</u>	<u>0.0011</u>	<u>0.0012</u>	<u>0.001</u>
Organic	<u>0.177</u>	<u>0.207</u>	<u>0.227</u>	<u>0.236</u>
<u>Hardgrove Grindability Index</u>		<u>40</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

Sample No. US-7911-C

Core Sample 113'1"-123'1" Lab. No. 79-C-18

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>11.21</u>			
<u>Air Dried Loss</u>	<u>.713</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>9.50</u>		
Volatile Matter	<u>43.30</u>	<u>43.61</u>	<u>48.19</u>	<u>50.54</u>
Fixed Carbon	<u>41.32</u>	<u>42.69</u>	<u>47.17</u>	<u>49.47</u>
Ash	<u>4.17</u>	<u>4.20</u>	<u>4.64</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>6.07</u>	<u>6.11</u>	<u>5.59</u>	<u>5.86</u>
Carbon	<u>52.64</u>	<u>53.02</u>	<u>58.59</u>	<u>61.44</u>
Nitrogen	<u>0.826</u>	<u>0.832</u>	<u>0.919</u>	<u>0.964</u>
Oxygen	<u>35.35</u>	<u>35.60</u>	<u>30.01</u>	<u>31.47</u>
Sulfur	<u>0.238</u>	<u>0.24</u>	<u>0.27</u>	<u>0.283</u>
British Thermal Units	<u>10,444</u>	<u>10,519</u>	<u>11,623</u>	<u>12,189</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.005</u>	<u>0.0047</u>	<u>0.0052</u>	<u>0.005</u>
Pyrite	<u>0.009</u>	<u>0.0092</u>	<u>0.0102</u>	<u>0.011</u>
Organic	<u>0.224</u>	<u>0.226</u>	<u>0.250</u>	<u>0.262</u>
<u>Hardgrove Grindability Index</u>		<u>40</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

Sample No. US-7911-C Core Sample 123'1"-125'5" Lab. No. 79-C-19

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>24.35</u>			
<u>Air Dried Loss</u>	<u>15.90</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>7.79</u>		
Volatile Matter	<u>31.24</u>	<u>37.15</u>	<u>40.29</u>	<u>42.49</u>
Fixed Carbon	<u>40.39</u>	<u>50.28</u>	<u>54.53</u>	<u>57.51</u>
Ash	<u>4.020</u>	<u>4.78</u>	<u>5.18</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>4.61</u>	<u>5.48</u>	<u>5.00</u>	<u>5.27</u>
Carbon	<u>38.14</u>	<u>45.35</u>	<u>49.18</u>	<u>51.87</u>
Nitrogen	<u>0.751</u>	<u>0.893</u>	<u>0.968</u>	<u>1.021</u>
Oxygen	<u>36.31</u>	<u>43.18</u>	<u>39.32</u>	<u>41.47</u>
Sulfur	<u>0.269</u>	<u>0.32</u>	<u>0.35</u>	<u>0.369</u>
<u>British Thermal Units</u>	<u>9,346</u>	<u>11,113</u>	<u>12,052</u>	<u>12,710</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.007</u>	<u>0.0082</u>	<u>0.0089</u>	<u>0.009</u>
Pyrite	<u>0.007</u>	<u>0.0080</u>	<u>0.0087</u>	<u>0.009</u>
Organic	<u>0.256</u>	<u>0.304</u>	<u>0.330</u>	<u>0.348</u>
<u>Hardgrove Grindability Index</u>		<u>53</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

Sample No. US-7911-C

Core Sample 127'5"-133'1" Lab. No. 79-C-20

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>24.47</u>			
<u>Air Dried Loss</u>	<u>12.27</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>10.87</u>		
Volatile Matter	<u>35.78</u>	<u>40.78</u>	<u>45.75</u>	<u>48.66</u>
Fixed Carbon	<u>35.07</u>	<u>43.01</u>	<u>48.26</u>	<u>51.33</u>
Ash	<u>4.68</u>	<u>5.34</u>	<u>5.99</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>5.10</u>	<u>5.81</u>	<u>5.16</u>	<u>5.49</u>
Carbon	<u>44.98</u>	<u>51.27</u>	<u>57.52</u>	<u>61.18</u>
Nitrogen	<u>0.744</u>	<u>0.848</u>	<u>0.951</u>	<u>1.012</u>
Oxygen	<u>31.78</u>	<u>36.23</u>	<u>29.81</u>	<u>31.71</u>
Sulfur	<u>0.439</u>	<u>0.50</u>	<u>0.56</u>	<u>0.596</u>
<u>British Thermal Units</u>	<u>8,888</u>	<u>10,131</u>	<u>11,367</u>	<u>12,091</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.008</u>	<u>0.0086</u>	<u>0.0096</u>	<u>0.010</u>
Pyrite	<u>0.090</u>	<u>0.103</u>	<u>0.116</u>	<u>0.123</u>
Organic	<u>0.340</u>	<u>0.388</u>	<u>0.435</u>	<u>0.463</u>
<u>Hardgrove Grindability Index</u>		<u>47</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

Sample No. US-7911-C Core Sample 133'1"-138'2" Lab.No. 79-C-21

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>30.27</u>			
<u>Air Dried Loss</u>	<u>11.41</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>15.87</u>		
Volatile Matter	<u>32.82</u>	<u>37.05</u>	<u>44.04</u>	<u>47.52</u>
Fixed Carbon	<u>31.44</u>	<u>40.91</u>	<u>48.63</u>	<u>52.48</u>
Ash	<u>5.47</u>	<u>6.17</u>	<u>7.33</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>5.33</u>	<u>6.02</u>	<u>5.06</u>	<u>5.46</u>
Carbon	<u>40.66</u>	<u>45.90</u>	<u>54.56</u>	<u>58.88</u>
Nitrogen	<u>0.753</u>	<u>0.850</u>	<u>1.01</u>	<u>1.090</u>
Oxygen	<u>35.29</u>	<u>39.84</u>	<u>30.59</u>	<u>33.01</u>
Sulfur	<u>1.080</u>	<u>1.22</u>	<u>1.45</u>	<u>1.565</u>
British Thermal Units	<u>8,877</u>	<u>10,020</u>	<u>11,910</u>	<u>12,852</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.235</u>	<u>0.265</u>	<u>0.0315</u>	<u>0.034</u>
Pyrite	<u>0.458</u>	<u>0.517</u>	<u>0.614</u>	<u>0.663</u>
Organic	<u>0.600</u>	<u>0.677</u>	<u>0.805</u>	<u>0.869</u>
<u>Hardgrove Grindability Index</u>		<u>41</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

85-395-5

Sample No. US-7916-C

Core Sample 229'7"-235'

Lab. No. 79-C-22

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>18.35</u>			
<u>Air Dried Loss</u>	<u>.8090</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>16.04</u>		
Volatile Matter	<u>34.47</u>	<u>35.45</u>	<u>42.22</u>	<u>44.87</u>
Fixed Carbon	<u>42.36</u>	<u>43.55</u>	<u>51.87</u>	<u>55.13</u>
Ash	<u>4.82</u>	<u>4.96</u>	<u>5.91</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>5.04</u>	<u>6.09</u>	<u>5.13</u>	<u>5.45</u>
Carbon	<u>46.49</u>	<u>56.20</u>	<u>66.94</u>	<u>71.14</u>
Nitrogen	<u>0.717</u>	<u>0.867</u>	<u>1.03</u>	<u>1.09</u>
Oxygen	<u>26.14</u>	<u>31.60</u>	<u>20.66</u>	<u>21.96</u>
Sulfur	<u>0.232</u>	<u>0.28</u>	<u>0.33</u>	<u>0.351</u>
<u>British Thermal Units</u>	<u>8,819</u>	<u>10,660</u>	<u>12,697</u>	<u>13,494</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.004</u>	<u>.0051</u>	<u>0.0061</u>	<u>0.006</u>
Pyrite	<u>0.017</u>	<u>0.0207</u>	<u>0.0247</u>	<u>0.026</u>
Organic	<u>0.210</u>	<u>0.254</u>	<u>0.303</u>	<u>0.322</u>
<u>Hardgrove Grindability Index</u>		<u>32</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

Sample No. US-7916-C

Core Sample 235'-247'

Lab. No. 79-C-23

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>26.62</u>			
<u>Air Dried loss</u>	<u>17.27</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>8.56</u>		
Volatile Matter	<u>31.83</u>	<u>38.47</u>	<u>42.07</u>	<u>43.86</u>
Fixed Carbon	<u>38.46</u>	<u>49.23</u>	<u>53.84</u>	<u>56.13</u>
Ash	<u>3.09</u>	<u>3.74</u>	<u>4.09</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>4.62</u>	<u>5.59</u>	<u>5.07</u>	<u>5.29</u>
Carbon	<u>39.74</u>	<u>48.04</u>	<u>52.54</u>	<u>54.78</u>
Nitrogen	<u>0.723</u>	<u>0.874</u>	<u>0.956</u>	<u>0.997</u>
Oxygen	<u>34.44</u>	<u>41.63</u>	<u>37.21</u>	<u>38.80</u>
Sulfur	<u>0.108</u>	<u>0.13</u>	<u>0.14</u>	<u>0.146</u>
<u>British Thermal Units</u>	<u>9,138</u>	<u>11,045</u>	<u>12,079</u>	<u>12,594</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.007</u>	<u>0.0084</u>	<u>0.0092</u>	<u>0.010</u>
Pyrite	<u>0.001</u>	<u>0.0011</u>	<u>0.0012</u>	<u>0.001</u>
Organic	<u>0.100</u>	<u>0.121</u>	<u>0.132</u>	<u>0.138</u>
<u>Hardgrove Grindability Index</u>		<u>35</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

Sample No. US-7916-C

Core Sample 253'2"-258'9" Lab. No. 79-C-24

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>28.01</u>			
<u>Air Dried loss</u>	<u>11.70</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>14.02</u>		
Volatile Matter	<u>33.37</u>	<u>37.79</u>	<u>43.95</u>	<u>46.32</u>
Fixed Carbon	<u>34.70</u>	<u>43.75</u>	<u>50.88</u>	<u>53.63</u>
Ash	<u>3.92</u>	<u>4.44</u>	<u>5.16</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>5.26</u>	<u>5.96</u>	<u>5.12</u>	<u>5.40</u>
Carbon	<u>46.89</u>	<u>53.10</u>	<u>61.76</u>	<u>65.10</u>
Nitrogen	<u>0.745</u>	<u>0.844</u>	<u>0.982</u>	<u>1.035</u>
Oxygen	<u>30.41</u>	<u>34.44</u>	<u>25.56</u>	<u>26.94</u>
Sulfur	<u>1.078</u>	<u>1.22</u>	<u>1.42</u>	<u>1.497</u>
<u>British Thermal Units</u>	<u>9,143</u>	<u>10,354</u>	<u>12,042</u>	<u>12,692</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.006</u>	<u>0.0066</u>	<u>0.0077</u>	<u>0.008</u>
Pyrite	<u>0.183</u>	<u>0.207</u>	<u>0.240</u>	<u>0.253</u>
Organic	<u>0.901</u>	<u>1.02</u>	<u>1.19</u>	<u>1.254</u>
<u>Hardgrove Grindability Index</u>		<u>35</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

85-4/E-2

Sample No. US-7941A

Core Sample 124'-134.4'

Lab. No. 79-C-34

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>27.60</u>			
<u>Air Dried Loss</u>	<u>19.64</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>7.37</u>		
Volatile Matter	<u>35.62</u>	<u>44.33</u>	<u>47.86</u>	<u>49.90</u>
Fixed Carbon	<u>33.73</u>	<u>44.51</u>	<u>48.05</u>	<u>50.10</u>
Ash	<u>3.05</u>	<u>3.79</u>	<u>4.09</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>4.40</u>	<u>5.48</u>	<u>5.03</u>	<u>5.24</u>
Carbon	<u>37.51</u>	<u>46.68</u>	<u>50.39</u>	<u>52.54</u>
Nitrogen	<u>0.828</u>	<u>1.03</u>	<u>1.11</u>	<u>1.157</u>
Oxygen	<u>34.31</u>	<u>42.70</u>	<u>39.03</u>	<u>40.69</u>
Sulfur	<u>0.257</u>	<u>0.32</u>	<u>0.35</u>	<u>0.365</u>
<u>British Thermal Units</u>	<u>8,636</u>	<u>10,747</u>	<u>11,602</u>	<u>12,096</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.066</u>	<u>0.0820</u>	<u>0.0894</u>	<u>0.093</u>
Pyrite	<u>0.048</u>	<u>0.0597</u>	<u>0.0644</u>	<u>0.067</u>
Organic	<u>0.143</u>	<u>0.178</u>	<u>0.192</u>	<u>0.200</u>
<u>Hardgrove Grindability Index</u>		<u>49</u>		

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

28N-55E-11

Sample No. US-7981-C Core Sample 55.7'-60.9' Lab. No. 79-C-36

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>43.87</u>			
<u>Air Dried Loss</u>	<u>20.66</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>17.72</u>		
Volatile Matter	<u>29.08</u>	<u>36.65</u>	<u>44.54</u>	<u>51.21</u>
Fixed Carbon	<u>18.55</u>	<u>34.92</u>	<u>42.44</u>	<u>48.79</u>
Ash	<u>8.50</u>	<u>10.71</u>	<u>13.02</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>4.38</u>	<u>5.52</u>	<u>4.32</u>	<u>4.97</u>
Carbon	<u>29.36</u>	<u>37.00</u>	<u>44.97</u>	<u>51.70</u>
Nitrogen	<u>0.636</u>	<u>0.801</u>	<u>0.974</u>	<u>1.120</u>
Oxygen	<u>36.16</u>	<u>45.58</u>	<u>36.25</u>	<u>41.68</u>
Sulfur	<u>0.304</u>	<u>0.39</u>	<u>0.47</u>	<u>0.540</u>
<u>British Thermal Units</u>	<u>6,398</u>	<u>8,064</u>	<u>9,801</u>	<u>11,268</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.012</u>	<u>0.0147</u>	<u>0.0179</u>	<u>0.021</u>
Pyrite	<u>0.069</u>	<u>0.0872</u>	<u>0.106</u>	<u>0.122</u>
Organic	<u>0.228</u>	<u>0.288</u>	<u>0.350</u>	<u>0.402</u>
<u>Hardgrove Grindability Index</u>		<u>59</u>		

Note: All decimal numbers are percentages.

* Note: 0 entered where percentages less than 0.01

Montana Bureau of Mines and Geology

Coal Analysis Report

30N-58E-1

Sample No. US-79106C

Core Sample _____

Lab. No. 79-C-35

Date June, 1979

	As Received %	Air Dried %	Moisture Free %	Moisture & Ash Free %
<u>Total Moisture</u>	<u>44.89</u>			
<u>Air Dried loss</u>	<u>20.12</u>			
<u>Proximate Analysis</u>				
Moisture (residual)		<u>19.85</u>		
Volatile Matter	<u>31.69</u>	<u>39.67</u>	<u>49.49</u>	<u>55.00</u>
Fixed Carbon	<u>17.01</u>	<u>32.45</u>	<u>40.49</u>	<u>45.00</u>
Ash	<u>6.41</u>	<u>8.03</u>	<u>10.02</u>	
<u>Ultimate Analysis</u>				
Hydrogen	<u>4.78</u>	<u>5.98</u>	<u>4.71</u>	<u>5.23</u>
Carbon	<u>32.37</u>	<u>40.52</u>	<u>50.56</u>	<u>56.19</u>
Nitrogen	<u>0.568</u>	<u>0.711</u>	<u>0.887</u>	<u>0.986</u>
Oxygen	<u>35.47</u>	<u>44.41</u>	<u>33.39</u>	<u>37.110</u>
Sulfur	<u>0.280</u>	<u>0.35</u>	<u>0.44</u>	<u>0.489</u>
<u>British Thermal Units</u>	<u>6,251</u>	<u>7,826</u>	<u>8,764</u>	<u>10,852</u>
<u>Sulfur Forms</u>				
Sulfate	<u>0.030</u>	<u>0.0378</u>	<u>0.0472</u>	<u>0.052</u>
Pyrite	<u>0.0174</u>	<u>0.0218</u>	<u>0.0272</u>	<u>0.030</u>
Organic	<u>0.232</u>	<u>0.290</u>	<u>0.362</u>	<u>0.402</u>
<u>Hardgrove Grindability Index</u>				

Note: All decimal numbers are percentages.

Note: 0 entered where percentages less than 0.01

References

- American Society for Testing and Materials, 1967, Laboratory sampling and analysis of coal and coke (ASTM Designation D 271-64), in Gaseous fuels; coal and coke: pt. 19, p. 16-47.
- U.S. Bureau of Mines, 1967, Methods of analyzing and testing coal and coke: U.S. Bureau of Mines Bulletin 638, 69 p.

