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USGS  
OFR  
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UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

GEOPHYSICAL AND LITHOLOGIC LOGS OF 35 WELLS  
IN CONVERSE AND CAMPBELL COUNTIES, WYOMING

By

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RESEARCH INSTITUTE  
EARTH SCIENCE LAB.

Open-File Report 80-125

1980

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

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LIST OF ABBREVIATIONS

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bk	-	black
brn	-	brown
BS	-	Borehole Sonic Survey
carb	-	carbonaceous
dk	-	dark
f	-	fine
FDC	-	Compensated Formation Density (well survey)
frag	-	fragment (s, al)
ft	-	foot (feet)
GRC	-	Gamma Ray-Caliper (well survey)
gy	-	gray
IES	-	Induction Electric (well survey)
in.	-	inch (inches)
LTD	-	Logged Total Depth
m	-	medium
NR	-	No Record
qtz	-	quartz
sh	-	shale
slt	-	silt
sltst	-	siltstone
ss	-	sandstone
TB	-	Thunder Basin (Grazing Association well number)

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METRIC CONVERSION

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All depths, distances, and elevations are given in feet; to convert to meters multiply by 0.3048.

GEOPHYSICAL AND LITHOLOGIC LOGS OF 35 WELLS  
IN CONVERSE AND CAMPBELL COUNTIES, WYOMING

By Frank B. Kistner

INTRODUCTION

During 1976-78, 34 existing water wells and the upper portion of one oil-and-gas test in Converse and Campbell Counties, Wyo., were geophysically logged to augment coal data gathered as a part of an ongoing U.S. Geological Survey (USGS) program to evaluate and classify mineral lands in the public domain. The overall purpose of the program is to gather data on the thickness, extent, correlation, quality, and recoverability of coal beds, and the thickness and lithologic characteristics of the associated rocks in the Tertiary Fort Union and Wasatch Formations of the Powder River Basin. The wells were logged concurrently with, and in addition to, coal test holes being drilled in the same vicinity. In this manner, the program gathered considerable additional coal information at little extra expense to the government.

This report presents the geophysical logs and, for four wells (WW-76001, -76002, -77009, and -77013), driller's lithologic descriptions lagged, or corrected by depth intervals, to match the geophysical logs of each well. Insufficient completion data and no cores or samples are available for these wells. Log OW-77001 represents the upper 447 ft of the Diamond Shamrock Scott Fed. 22-17 oil-and-gas test. Water wells WW-77004, -77006, -77008, -77015, -77016, -78009, -78017, and -78019 penetrate non-Federal or leased Federal coal. Because the logs for these wells contain proprietary data, they are not presented here.

Similar information from 371 test holes and approximately 157 coal samples from 56 core tests in Campbell and Converse Counties, Wyo., was presented in earlier reports (U.S. Geological Survey and Montana Bureau of Mines and Geology, 1973, 1974, 1976a and 1976b, 1977, and 1978; Kistner, 1977; and Kistner and others, 1979). Figure 1 shows the locations and numbers of wells logged during 1976-78.

Specific locations, following the system of land survey used by the U.S. Bureau of Land Management, appear on the individual log headings. The locations are indicated as distances, in feet, scaled from section lines as they appear on topographic quadrangle sheets. Surface elevations are approximated from the topographic contours. Table 1 shows the locations and total depths for the 35 wells.

All wells were cased, and most contained a 2-inch steel riser pipe through which the wells were logged. The wells were geophysically logged with a 1½-inch-diameter gamma-ray probe. The probe used for logging during 1978 employed a casing collar locator and a large crystal gamma-ray detector to enhance lithologic characteristics of formation(s) traversed. The logs were photographically reduced to 1 in. to 50 ft for convenience in reproducing this report. The originals are on file at the Casper office.

## ACKNOWLEDGMENTS

Fieldwork was carried out by the following USGS personnel: Frank B. Kistner and Linda G. Riglin, geologists, and Gregg A. Hollomon, technician. Lithologic descriptions were adapted from the driller's logs by Frank B. Kistner.

The following landowners gave permission to log water wells on their lands: Baker Ranch, Jerry Dilts, The Dilts Co., D. Duane Haefele, Hardy Ranch Co., Pat L. Isenberger, Jacobs Ranch, Inc., Arthur R. Johnson, Morton's, Inc., Peabody Coal Company, Floyd Ray Ranch, Floyd C. Reno, Jr., Mathew J. Reno, Steinle Ranch, Stoddard Ranches, and Stuart Bros., Inc. Permission from John Love and George Holden of Diamond Shamrock Corp. to log the Scott Fed. 22-17 oil-and-gas test is also acknowledged.

## REFERENCES

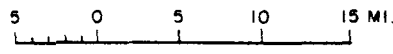
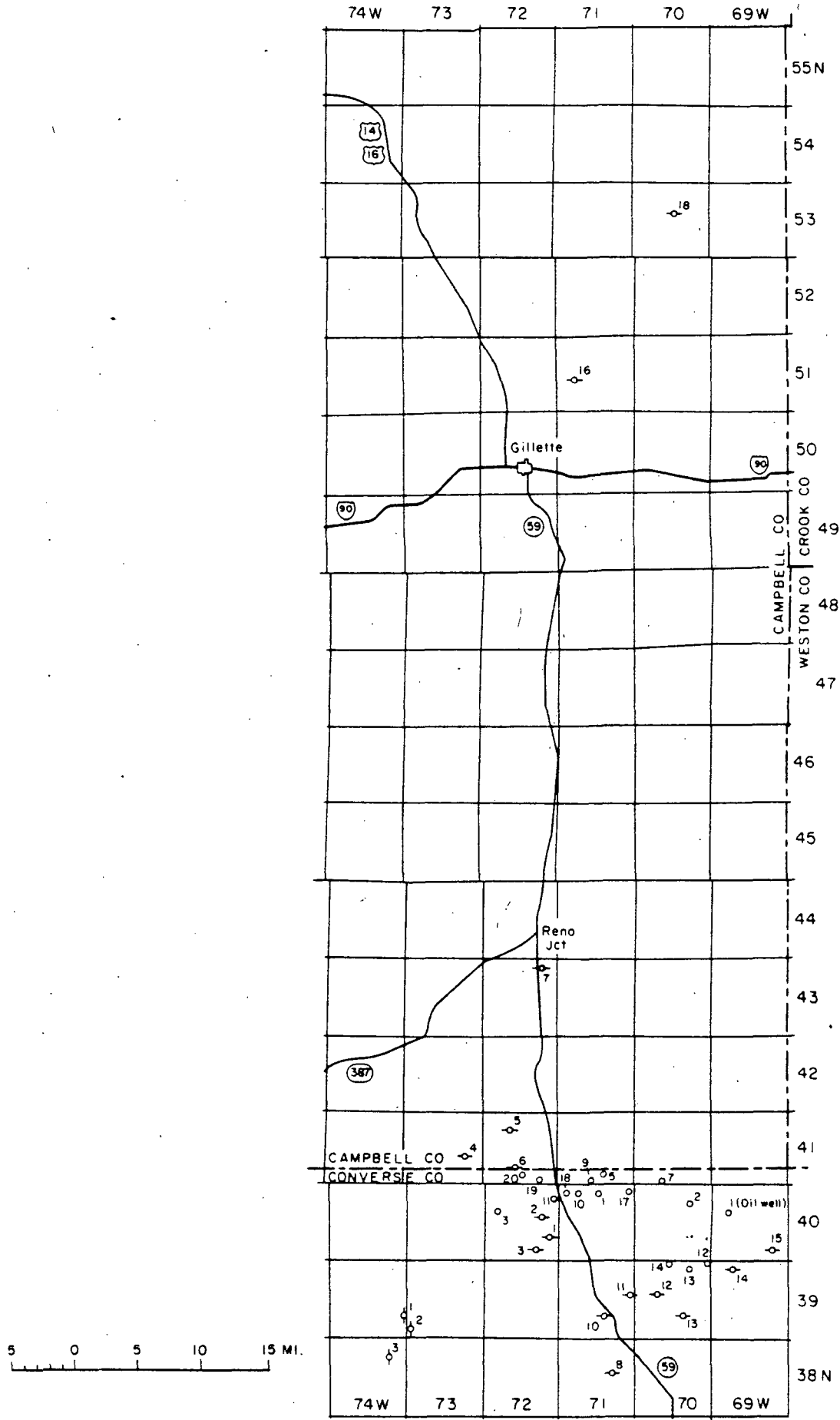
- Kistner, F. B., 1977, Preliminary report on five coal drill holes in Converse County, Wyoming: U.S. Geological Survey Open-File Report 77-774, 25 p.
- Kistner, F. B., Hollomon, G. A., and Coppock, D. G., 1979, Lithologic and geophysical logs and coal analyses from test holes drilled during 1977 in Converse and Campbell Counties, Wyoming: U.S. Geological Survey Open-File Report 79-1173, 88 p.
- U.S. Geological Survey and Montana Bureau of Mines and Geology, 1973, Preliminary report of coal drill-hole data and chemical analyses of coal beds in Sheridan and Campbell Counties, Wyoming, and Big Horn County, Montana: U.S. Geological Survey open-file report, 57 p.
- \_\_\_\_\_ 1974, Preliminary report of coal drill-hole data and chemical analyses of coal beds in Campbell County, Wyoming: U.S. Geological Survey Open-File Report 74-97, 241 p.

U.S. Geological Survey and Montana Bureau of Mines and Geology, 1976a,  
Preliminary report of coal drillhole data and chemical analyses of  
coal beds in Campbell and Sheridan Counties, Wyoming; Custer, Prairie,  
and Garfield Counties, Montana; and Mercer County, North Dakota:  
U.S. Geological Survey Open-File Report 76-319, 377 p.

\_\_\_\_\_ 1976b, Preliminary report of coal drill-hole data and chemical  
analyses of coal beds in Campbell, Converse, and Sheridan Counties,  
Wyoming; and Big Horn, Richland, and Dawson Counties, Montana:  
U.S. Geological Survey Open-File Report 76-450, 382 p.

\_\_\_\_\_ 1977, Preliminary report on 1976 drilling of coals in Campbell  
and Sheridan Counties, Wyoming; and Big Horn, Dawson, McCone,  
Richland, Roosevelt, Rosebud, Sheridan, and Wibaux Counties, Montana:  
U.S. Geological Survey Open-File Report 77-283, 403 p.

\_\_\_\_\_ 1978, Geophysical logs for Campbell and Converse Counties, Wyoming,  
chapter E of Preliminary report of 1977 coal drilling in eastern  
Montana and northeastern Wyoming: U.S. Geological Survey Open-File  
Report 77-721-E, 202 p.



Year logged — Well number  
 WW-77019 - Well reference on log forms

◊ Holes logged in 1976  
 ○ Holes logged in 1977  
 ◊ Holes logged in 1978

FIGURE I. - Well locations in Converse and Campbell Counties, Wyoming.

Table 1.--Locations and total depths for 35 wells in  
Converse, and Campbell Counties, Wyo.

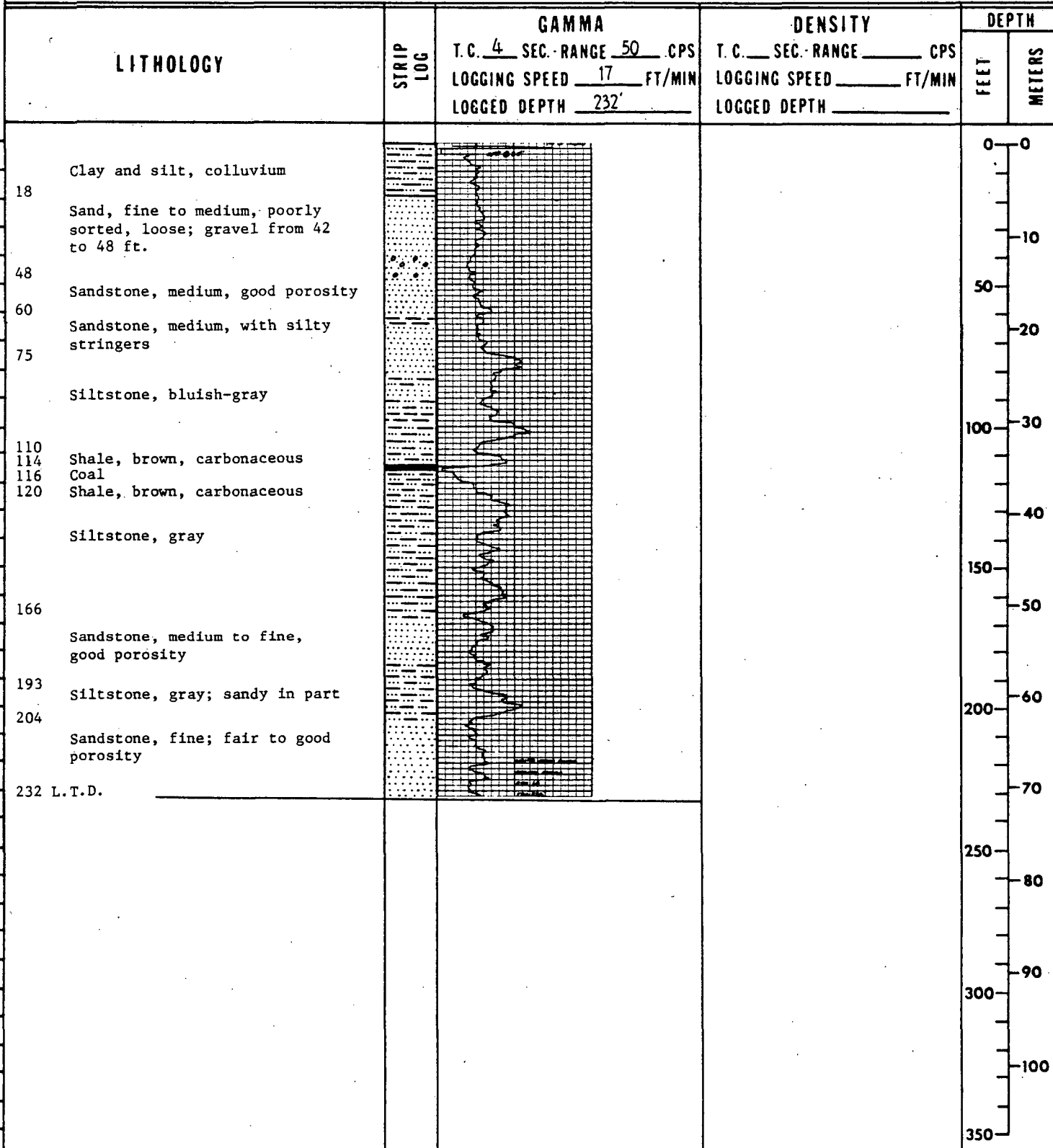
Well No.	Location				Total Depth (feet)	
	T.N.	R.W.	sec.	¼	Logged	Drilled
WW-76001	39	74	25	NE	232	238
WW-76002	39	73	31	NW	474	475
WW-76003	38	74	11	NE	71	NR
WW-77001	40	71	3	SW	522	NR
WW-77002	40	70	11	SW	708	709
WW-77003	40	72	17	NW	560	NR
WW-77005	41	71	34	NE	572	NR
WW-77007	41	70	33	SW	489	NR
WW-77009	41	71	33	SE	489	495
WW-77010	40	71	5	SW	293	NR
WW-77011	40	72	12	NE	326	NR
WW-77012	39	70	1	NE	124	NR
WW-77013	39	70	2	SW	657	675
WW-77014	39	70	4	NE	720	NR
WW-77017	40	71	1	SE	563	NR
WW-77018	40	71	6	SE	503	NR
WW-77019	41	72	35	SE	182	NR
WW-77020	41	72	34	NW	560	NR
OW-77001	40	69	17	NW	447	5894
WW-78001	40	72	25	NW	210	NR
WW-78002	40	72	14	SE	580	NR
WW-78003	40	72	35	NW	856	NR
WW-78004	41	73	23	SE	448	NR
WW-78005	41	72	9	SW	212	NR
WW-78006	41	72	28	SE	650	NR
WW-78007	43	72	2	SW	250	NR
WW-78008	38	71	14	SW	390	NR
WW-78010	39	71	27	NE	840	NR
WW-78011	39	71	13	SE	900	NR
WW-78012	39	70	17	SE	480	NR
WW-78013	39	70	27	NE	300	NR
WW-78014	39	69	5	SE	640	760
WW-78015	40	69	35	NE	705	760
WW-78016	51	71	20	SW	240	NR
WW-78018	53	70	15	SW	185	NR



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO ~~WW~~-76001  
SHEET 1 OF 1

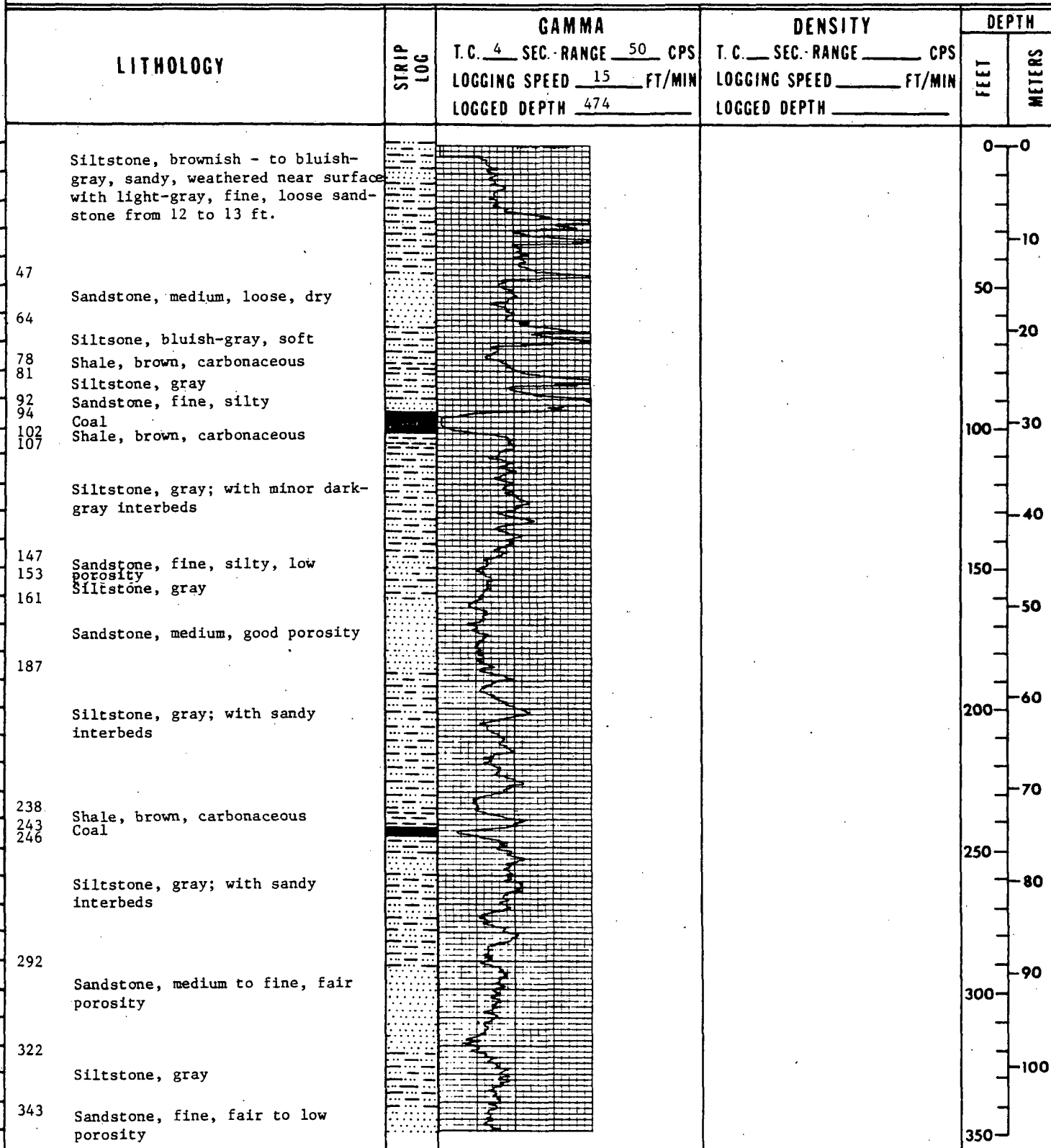
<b>AREA</b> Powder River Basin		<b>QUAD NAME</b> Coal Draw (SW $\frac{1}{4}$ )	
<b>DATE STARTED</b> 10-15-1974	<b>DATE COMP.</b> 10-15-1974	<b>COUNTY</b> Converse	<b>STATE</b> Wyoming
<b>LOCATION: SEC.</b> 25 <b>T.</b> 39 N., <b>R.</b> 74 W., <b>FOOTAGE LOC.</b> 2300		<b>FML</b> <del>233</del> 42	<b>FEL</b> <del>402</del>
<b>SIZE AND BIT TYPE:</b> NR		<b>FOOTAGE</b>	
		<b>ROTARY</b> 238	<b>CORING</b> 0
<b>DRILLING AGENCY:</b> Robertson Well Service		<b>DRILL TYPE:</b> Falling 1500	<b>GROUND ELEV</b> 5075
<b>LITHOLOGY RECORDED BY</b> D. Robertson		<b>GEOPHYSICAL LOGS RECORDED BY</b> F. Kistner 7-21-1976	
<b>REMARKS:</b> Lithology from driller's log lagged to gamma ray log.			



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO <sup>WW</sup>-7600  
SHEET 1 OF 2

AREA Powder River Basin		QUAD NAME Coal Draw (SW $\frac{1}{2}$ )	
DATE STARTED 12-5-1974	DATE COMP. 12-5-1974	COUNTY Converse	STATE Wyoming
LOCATION: SEC. 31 T. 39 N., R. 73 W., FOOTAGE LOC. 1950		FNL XXX 1150	XXX FWL GROUND ELEV 5230
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY 475	CORING 0
DRILLING AGENCY: Robertson Well Service		DRILL TYPE: Falling 1500	DEPTH TO WATER 7-20-1976 147
LITHOLOGY RECORDED BY D. Robertson		GEOPHYSICAL LOGS RECORDED BY F. Kistner 7-21-1976	
REMARKS: Lithology from driller's log lagged to gamma ray log			



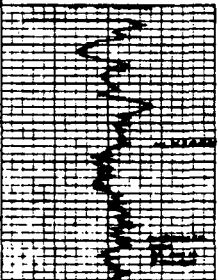
REMARKS:

LITHOLOGY	STRIP LOG	GAMMA		DENSITY		DEPTH	
		T. C. 4	SEC. RANGE 50	CPS	T. C. _____	SEC. RANGE _____	CPS
354 Sandstone, fine, fair to low porosity  Siltstone, gray; with sandy interbeds  420 Ss, fine, to siltst, little porosity 428 Siltstone, gray  440 Sandstone, fine to medium, fair to good porosity  474 L.T.D.						350 110 120 400 130 450 140 150 500 160 170 180 600 190 650 200 700 210 750 220	

# UNITED STATES GEOLOGICAL SURVEY

HOLE NO <sup>WW-7601</sup>  
SHEET 1 OF 1

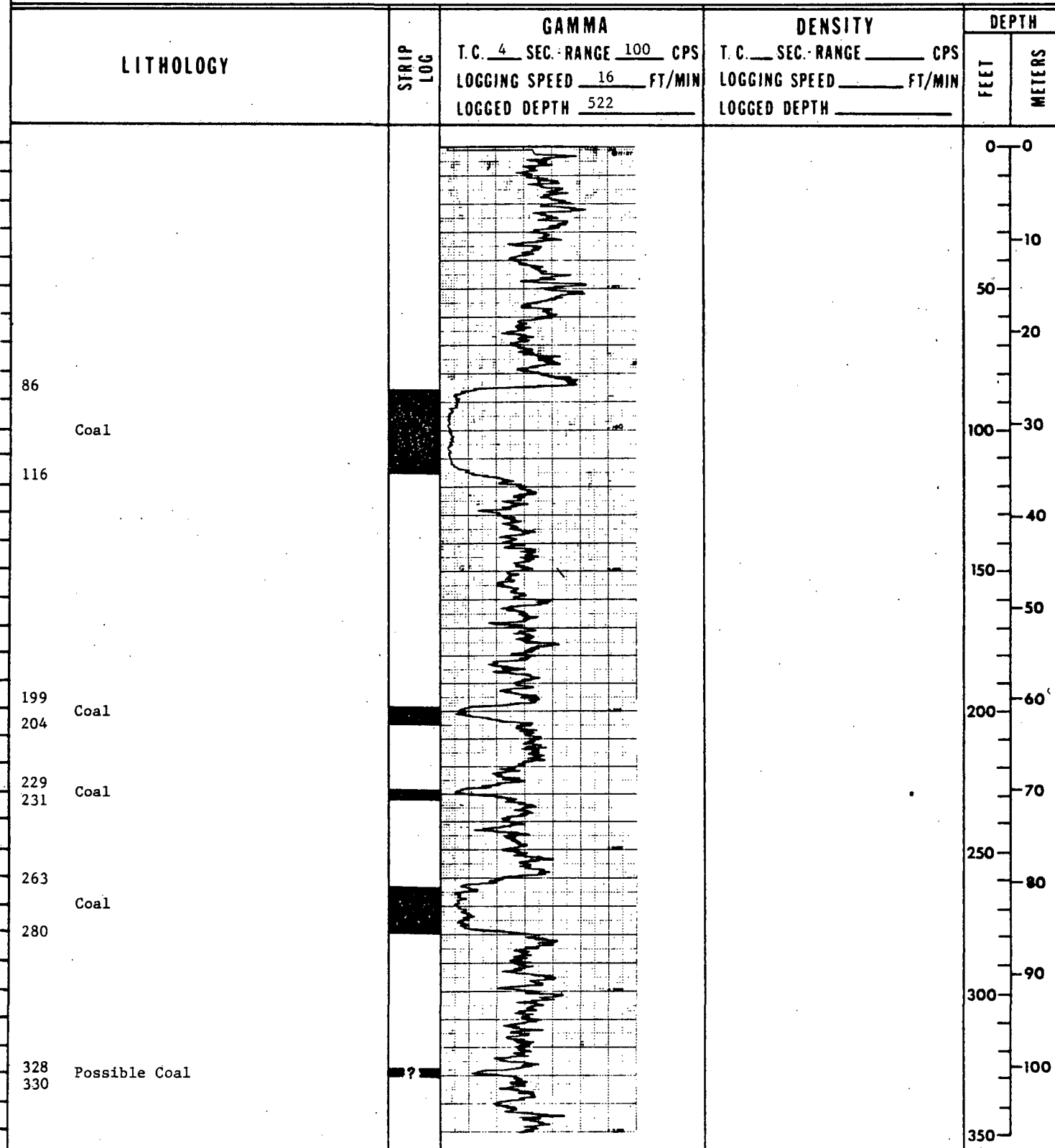
<b>AREA</b> Powder River Basin		<b>QUAD NAME</b> Coal Draw (SW $\frac{1}{4}$ )	
<b>DATE STARTED</b> NR	<b>DATE COMP.</b> NR	<b>COUNTY</b> Converse	<b>STATE</b> Wyoming
<b>LOCATION: SEC.</b> 11 T. 38 N., R. 74 W.,		<b>FOOTAGE LOC.</b> 2000	<b>GROUND ELEV</b> 5200
<b>SIZE AND BIT TYPE:</b> NR		<b>FOOTAGE</b>	
		<b>ROTARY</b> NR	<b>CORING</b> NR
<b>DRILLING AGENCY:</b> NR		<b>DRILL TYPE:</b> NR	
<b>LITHOLOGY RECORDED BY</b> NR		<b>GEOPHYSICAL LOGS RECORDED BY</b> F. Kistner 8-10-1976	
<b>REMARKS:</b> Abandoned windmill 6 in steel surface casing			

LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH	
		T.C. 4 SEC. RANGE 50 CPS LOGGING SPEED 16 FT/MIN LOGGED DEPTH 71	T.C. SEC. RANGE CPS LOGGING SPEED FT/MIN LOGGED DEPTH	FEET	METERS
71 L.T.D.				0 10 50 20 100 30 40 150 50 200 60 70 250 80 300 90 100 350	

# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-77001  
SHEET 1 OF 2

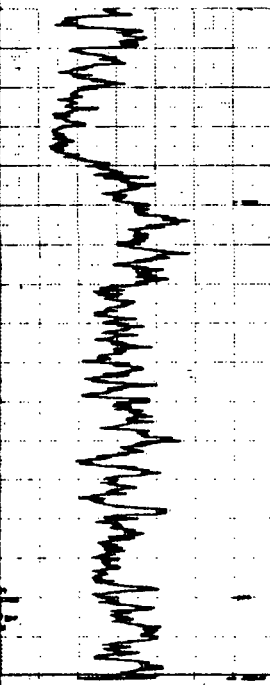
AREA Powder River Basin		QUAD NAME Betty Reservoir (NE $\frac{1}{4}$ )			
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming		
LOCATION: SEC. 3 T. 40 N., R. 71 W., FOOTAGE LOC. 1500		FSL 1000	FWL	GROUND ELEV 4690	
SIZE AND BIT TYPE: NR		FOOTAGE		TOTAL DEPTH NR	
		ROTARY NR	CORING NR	DEPTH TO WATER 9-1-1977 97	
DRILLING AGENCY: NR		DRILL TYPE: NR		LITHOLOGY RECORDED BY NR	
		GEOPHYSICAL LOGS RECORDED BY L. D. Riglin 9-1-1977			
REMARKS: TB-206 6-in steel surface casing					



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO <sup>WW</sup>-77001  
SHEET 2 OF 2

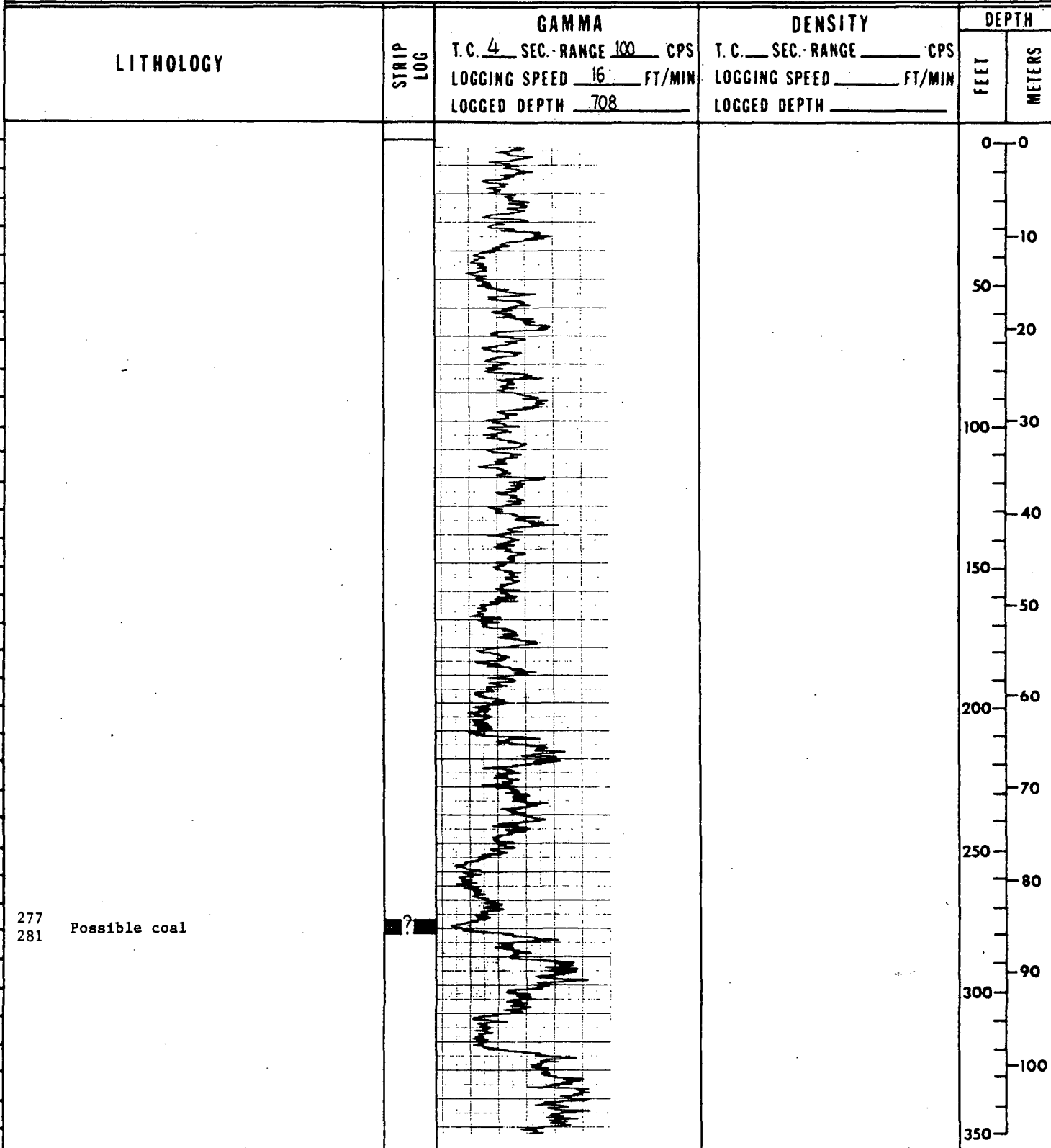
REMARKS:

LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH	
		T. C. <u>4</u> SEC. RANGE <u>100</u> CPS LOGGING SPEED <u>16</u> FT/MIN LOGGED DEPTH <u>522</u>	T. C. <u>    </u> SEC. RANGE <u>    </u> CPS LOGGING SPEED <u>    </u> FT/MIN LOGGED DEPTH <u>    </u>	FEET	METERS
352 Possible coal 355	?			350 110 120 400 130 450 140 500 150 160 550 170 180 600 190 650 200 700 210 220 750	
522 L.T.D.					

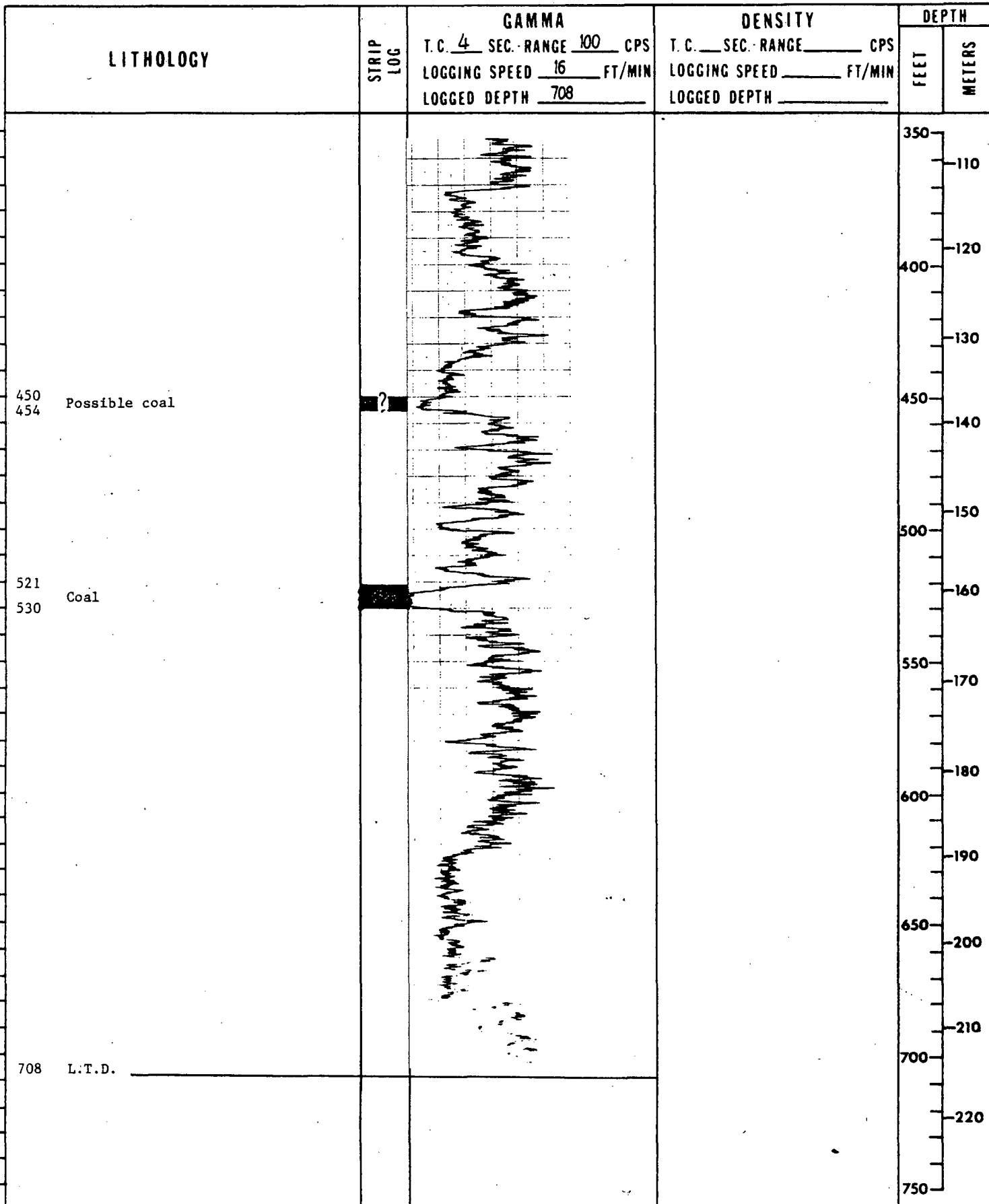
# UNITED STATES GEOLOGICAL SURVEY

HOLE NO **WW-77002**  
SHEET 1 OF 2

<b>AREA</b> Powder River Basin		<b>QUAD NAME</b> Coal Bank Draw	
<b>DATE STARTED</b> NR	<b>DATE COMP.</b> 1965	<b>COUNTY</b> Converse	<b>STATE</b> Wyoming
<b>LOCATION: SEC.</b> 11 <b>T.</b> 40 N., <b>R.</b> 70 W., <b>FOOTAGE LOC.</b> 950		<b>XXX FSL</b> 1500	<b>XXX FWL</b> <b>GROUND ELEV</b> 4597
<b>SIZE AND BIT TYPE:</b> NR		<b>FOOTAGE</b>	
		<b>ROTARY</b> 709	<b>CORING</b> NR
<b>DRILLING AGENCY:</b> Robertson Well Service		<b>DRILL TYPE:</b> Falling 1500 (?)	
<b>LITHOLOGY RECORDED BY</b> NR		<b>GEOPHYSICAL LOGS RECORDED BY</b> L. D. Riglin 9-6-1977	
<b>REMARKS:</b> TB-94 4-in steel surface casing			



REMARKS:

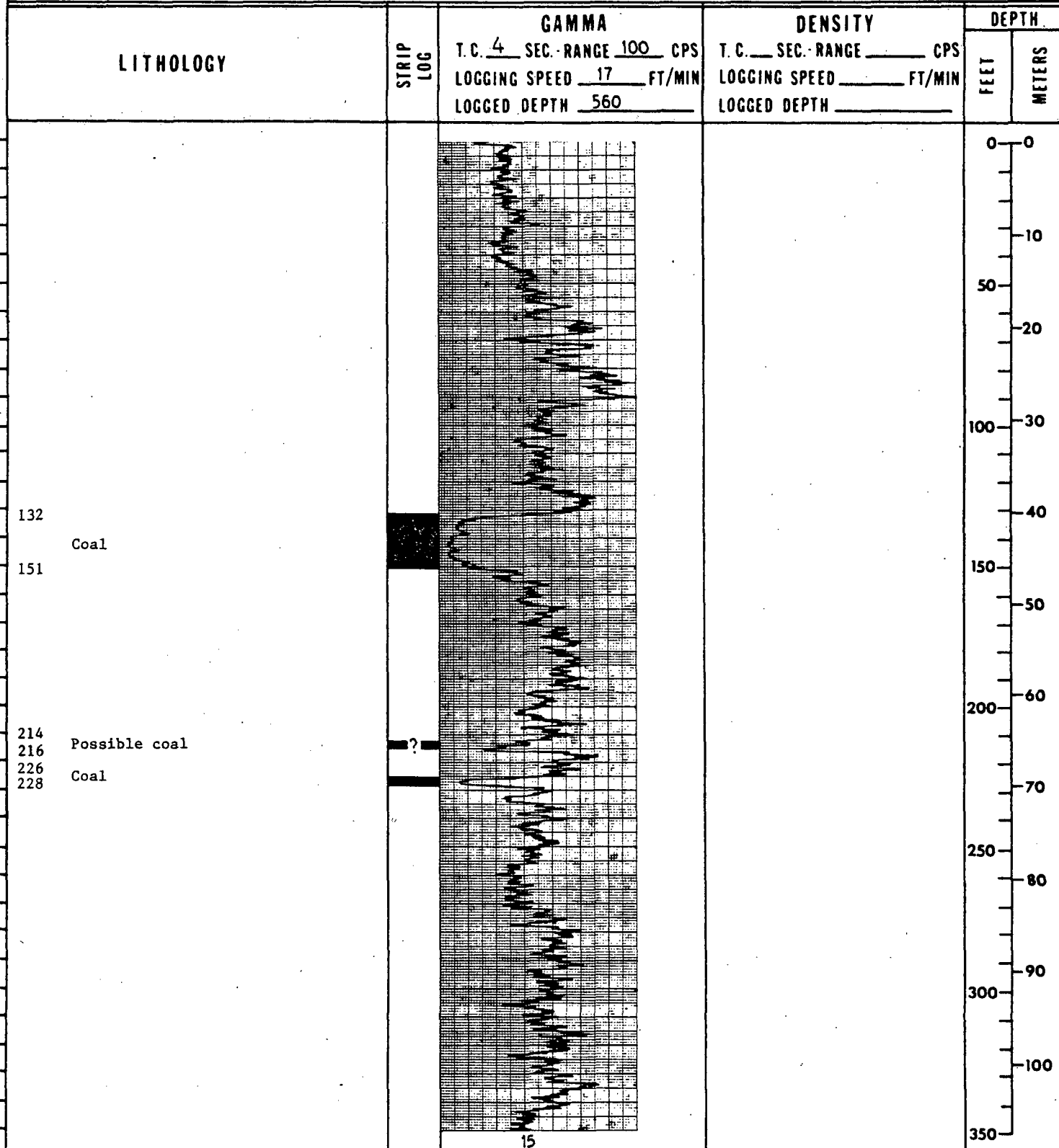




# UNITED STATES GEOLOGICAL SURVEY

HOLE NO <sup>WW</sup>-7700  
SHEET 1 OF 2

AREA Powder River Basin		QUAD NAME Coal Draw (NE $\frac{1}{4}$ )	
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming
LOCATION: SEC. 17 T. 40 N., R. 72 W., FOOTAGE LOC. 500		FNL <del>XXX</del> 1650	*** FWL
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY NR	CORING NR
DRILLING AGENCY: NR	DRILL TYPE: NR		DEPTH TO WATER Flowing
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY L. D. Riglin 9-20-1977	
REMARKS: 7-in steel surface casing			



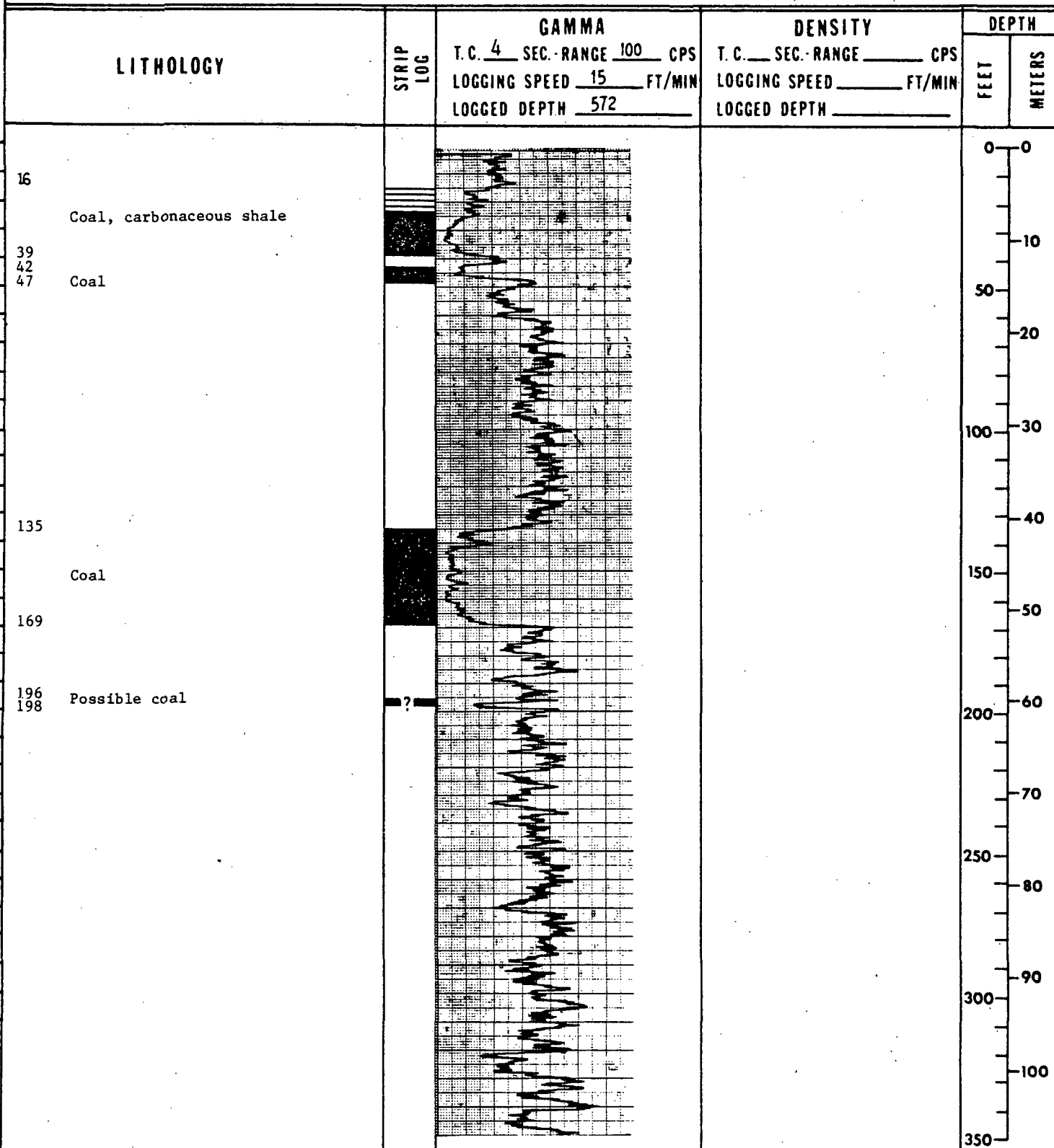


# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-77005  
SHEET 1 OF 2

AREA Powder River Basin		QUAD NAME Betty Reservoir (NE $\frac{1}{4}$ )			
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming		
LOCATION: SEC. 34 T. 41 N., R. 71 W., FOOTAGE LOC. 2200		FNL 850	FEL	GROUND ELEV 4580	
SIZE AND BIT TYPE: NR		FOOTAGE		TOTAL DEPTH NR	
		ROTARY NR	CORING NR	DEPTH TO WATER Flowing	
DRILLING AGENCY: NR		DRILL TYPE: NR			
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY L. D. Riglin 10-2-1977			

REMARKS:

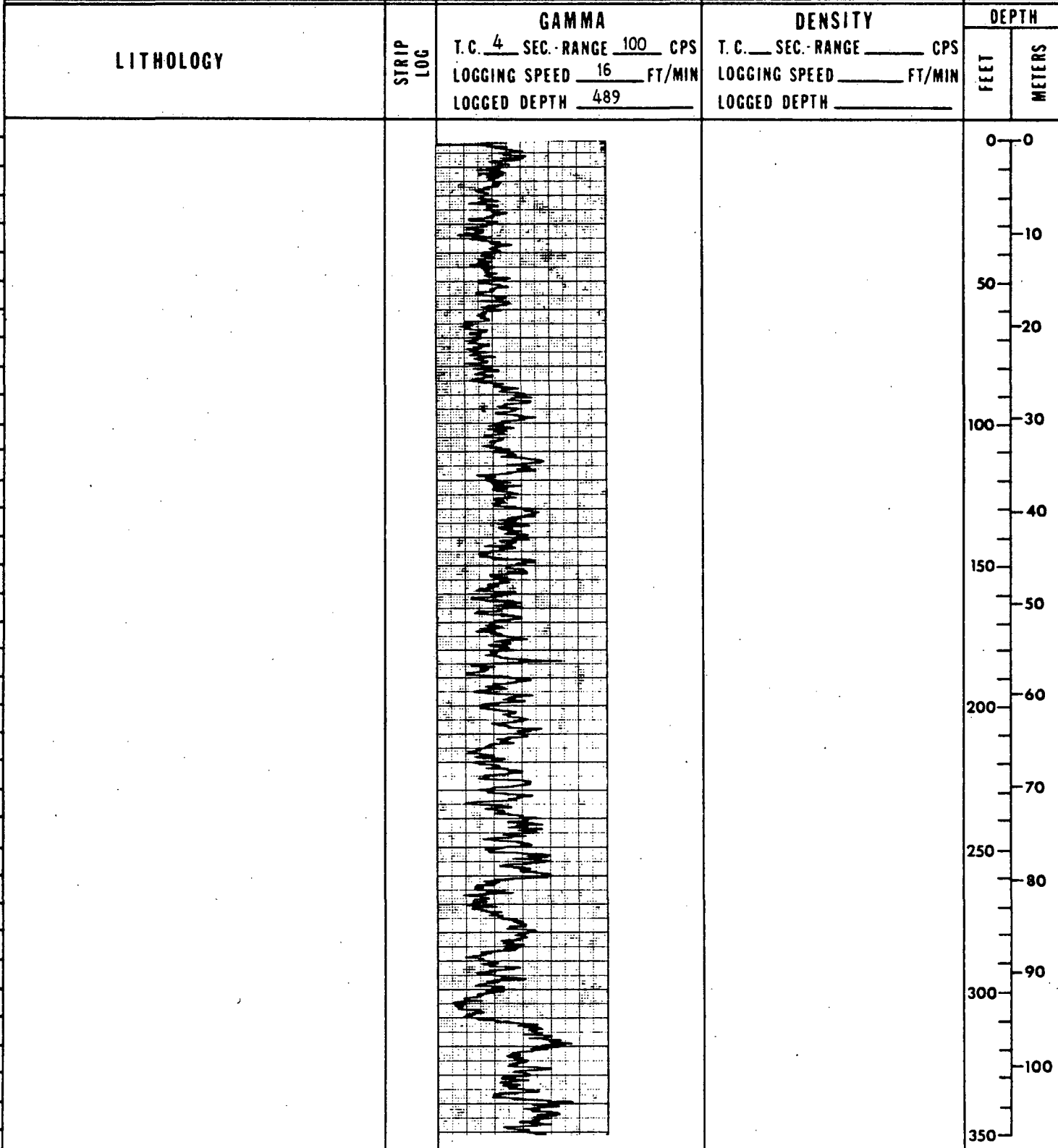




# UNITED STATES GEOLOGICAL SURVEY

HOLE NO <sup>WW</sup>-77007  
SHEET 1 OF 2

AREA Powder River Basin		QUAD NAME Betty Reservoir (NE $\frac{1}{2}$ )	
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming
LOCATION: SEC. 33 T. 41 N., R. 70 W., FOOTAGE LOC. 2300		XXX FSL 1800	XXX FWL
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY NR	CORING NR
DRILLING AGENCY: NR		DRILL TYPE: NR	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY L. D. Riglin 10-2-1977	
REMARKS: 3-in surface casing			

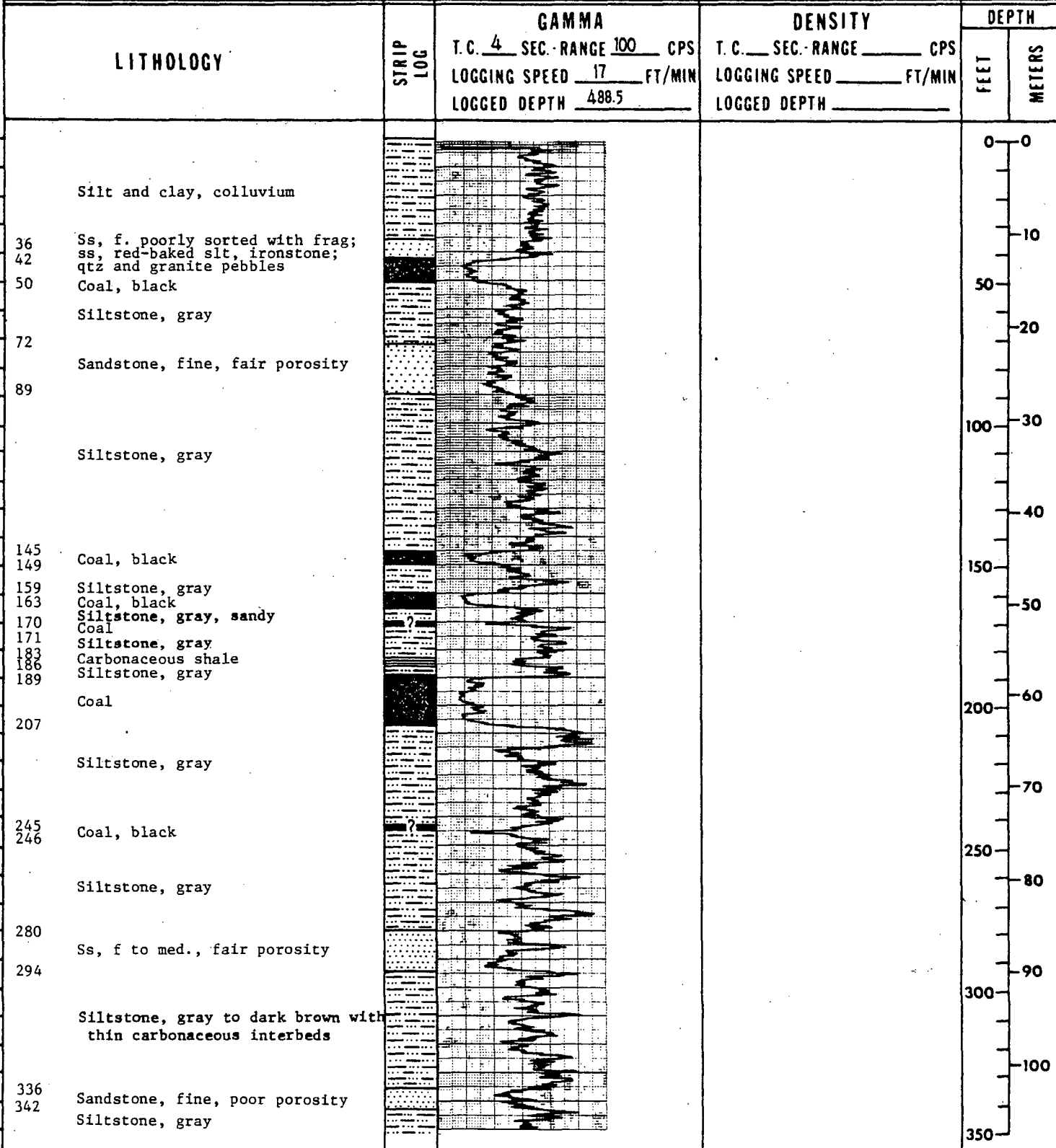




# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-7700  
SHEET 1 OF 2

AREA Powder River Basin		QUAD NAME Betty Reservoir (NW $\frac{1}{4}$ )			
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming		
LOCATION: SEC. 33 T. 41 N., R. 71 W.,		FOOTAGE LOC. 800	RWK FSL 1750	FEL RWK	GROUND ELEV 4600
SIZE AND BIT TYPE: NR		FOOTAGE		TOTAL DEPTH 495	
		ROTARY 495	CORING NR		
DRILLING AGENCY: NR		DRILL TYPE: NR		DEPTH TO WATER Flowing	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 10-13-1977			
REMARKS: TB-161 Lithology from driller's log lagged to gamma ray log. 2-in steel surface casing					



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-77009  
SHEET 2 OF 2

REMARKS:

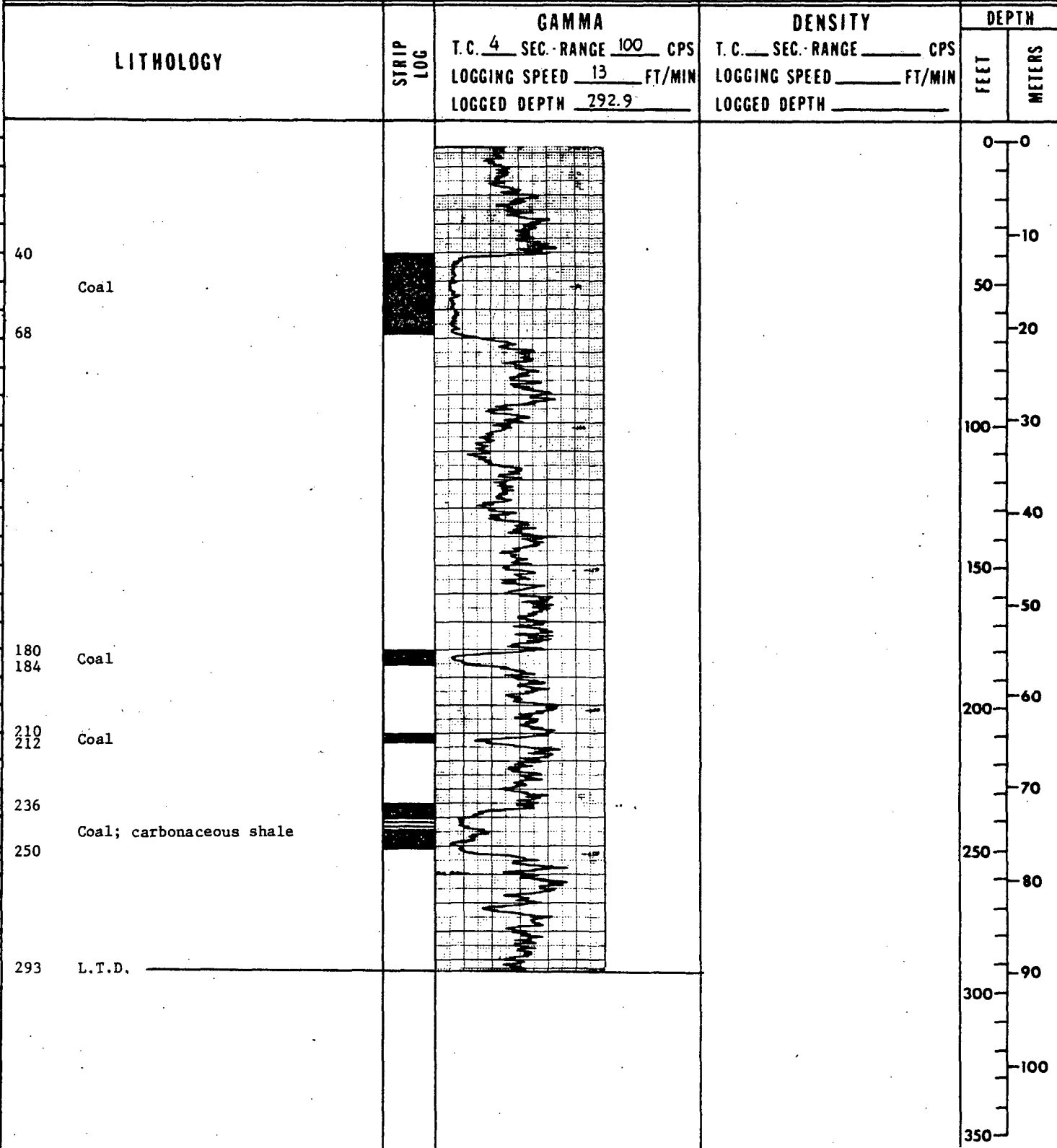
LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH	
		T.C. <u>4</u> SEC. RANGE <u>100</u> CPS LOGGING SPEED <u>17</u> FT/MIN LOGGED DEPTH <u>488.5</u>	T.C. ___ SEC. RANGE ___ CPS LOGGING SPEED ___ FT/MIN LOGGED DEPTH _____	FEET	METERS
357 Siltstone, gray Sandstone, fair porosity 366 Siltstone, gray 398 Possible coal 400 413 Siltstone, gray to dark-brown 418 <b>Sandstone</b> , fine, poor porosity Siltstone, gray with very thin coal stringers 455 Sandstone, fine to medium grained, fair porosity 479 Siltstone, gray, sandy 489 L.T.D.				350 110 120 400 130 450 140 150 500 160 550 170 180 600 190 650 200 700 210 750 220	



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO ~~WW~~-7701  
SHEET 1 OF 1

<b>AREA</b> Powder River Basin		<b>QUAD NAME</b> Betty Reservoir (NW¼)	
<b>DATE STARTED</b> NR	<b>DATE COMP.</b> NR	<b>COUNTY</b> Converse	<b>STATE</b> Wyoming
<b>LOCATION: SEC.</b> 5 <b>T.</b> 40 N., <b>R.</b> 71 W., <b>FOOTAGE LOC.</b> 800		<b>XXX FSL</b> 2300	<b>XXX FWL</b> <b>GROUND ELEV</b> 4638
<b>SIZE AND BIT TYPE:</b> NR		<b>FOOTAGE</b>	
		<b>ROTARY</b> NR	<b>CORING</b> NR
<b>DRILLING AGENCY:</b> NR		<b>DRILL TYPE:</b> NR	
<b>LITHOLOGY RECORDED BY</b> NR		<b>GEOPHYSICAL LOGS RECORDED BY</b> G. A. Hollomon 10-13-1977	
<b>REMARKS:</b> 6-in steel surface casing			

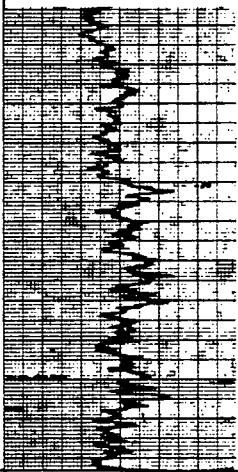




# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-77012  
SHEET 1 OF 1

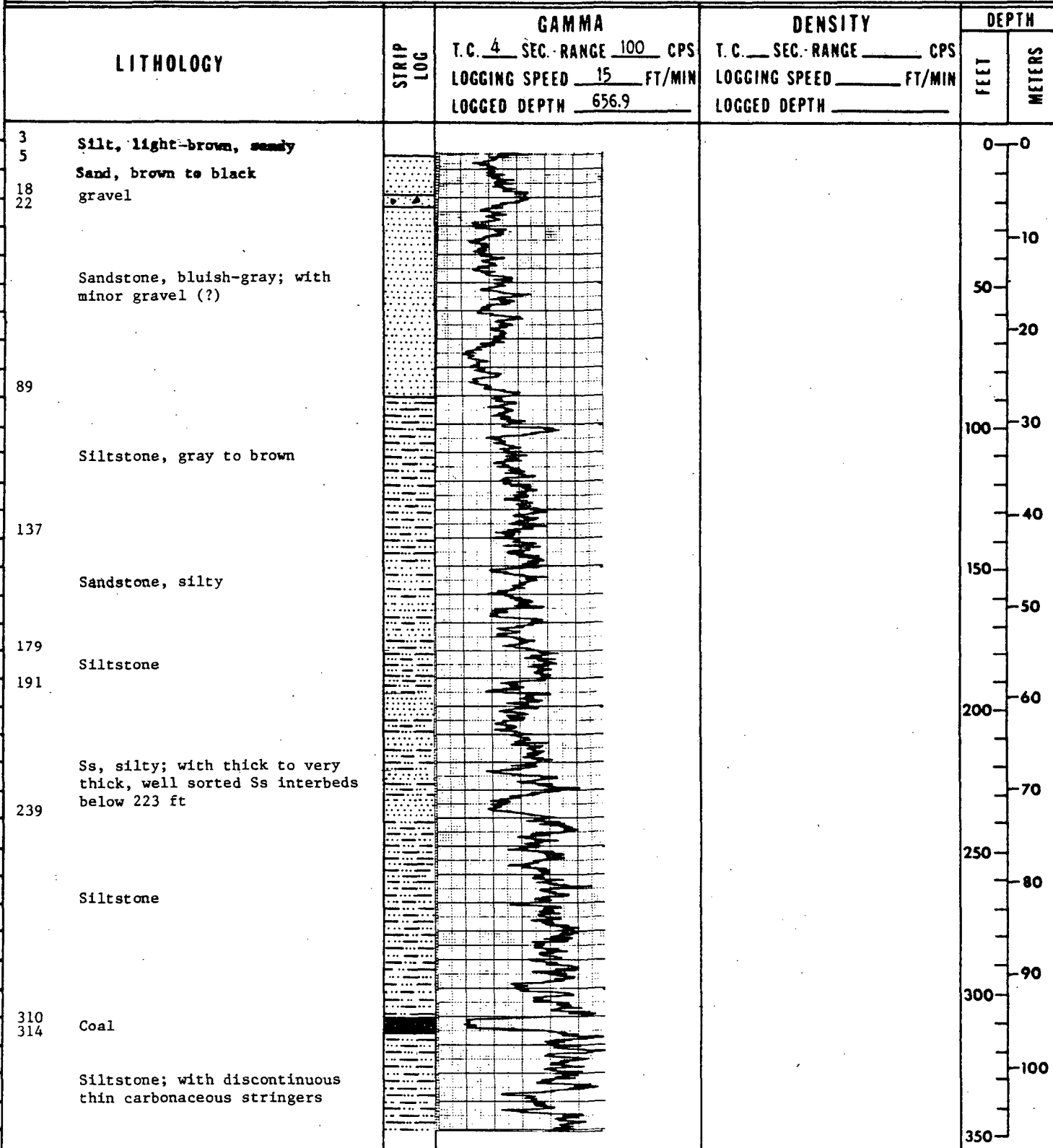
AREA Powder River Basin		QUAD NAME Coal Bank Draw			
DATE STARTED 10-19-1968	DATE COMP. NR	COUNTY Converse	STATE Wyoming		
LOCATION: SEC. 1 T. 39 N., R. 70 W., FOOTAGE LOC. 665		FML 614	FEL 614	GROUND ELEV 4525	
SIZE AND BIT TYPE: NR		FOOTAGE		TOTAL DEPTH NR	
		ROTARY NR	CORING NR	DEPTH TO WATER Flowing	
DRILLING AGENCY: True Drilling Company		DRILL TYPE: NR		GEOLOGICAL LOGS RECORDED BY G. A. Hoolomors 10-14-1977	
LITHOLOGY RECORDED BY NR		GEOLOGICAL LOGS RECORDED BY G. A. Hoolomors 10-14-1977			
REMARKS: Formerly Chorney Oil Company, 1-1 Morton's Inc. oil and gas test commercial logs: IE 327 - 10,526; BS/GRC 324 - 10,522; FDC 5,000 - 10,524 2-in steel surface pipe					

LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH	
		T.C. 4 SEC. RANGE 100 CPS LOGGING SPEED 15 FT/MIN LOGGED DEPTH 123.7	T.C. SEC. RANGE CPS LOGGING SPEED FT/MIN LOGGED DEPTH	FEET	METERS
124 L.T.D.				0-0 -10 50 -20 100-30 -40 150 -50 200-60 -70 250 -80 300 -90 -100 350	

# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-77013  
SHEET 1 OF 2

AREA Powder River Basin		QUAD NAME Coal Bank Draw			
DATE STARTED NR	DATE COMP. 9-6-1976	COUNTY Converse	STATE Wyoming		
LOCATION: SEC. 2 T. 39 N., R. 70 W., FOOTAGE LOC. 2250	RKK FSL 150	RKK FWL	GROUND ELEV 4570		
SIZE AND BIT TYPE: NR	FOOTAGE ROTARY 675 CORING 0		TOTAL DEPTH 675		
DRILLING AGENCY: Ruby Drilling	DRILL TYPE: Mayhew 2000		DEPTH TO WATER	Flowing	
LITHOLOGY RECORDED BY NR	GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 10-14-1977				
REMARKS: TB-192 Lithology from driller's log lagged to gamma ray log 5 1/2-in steel surface casing					

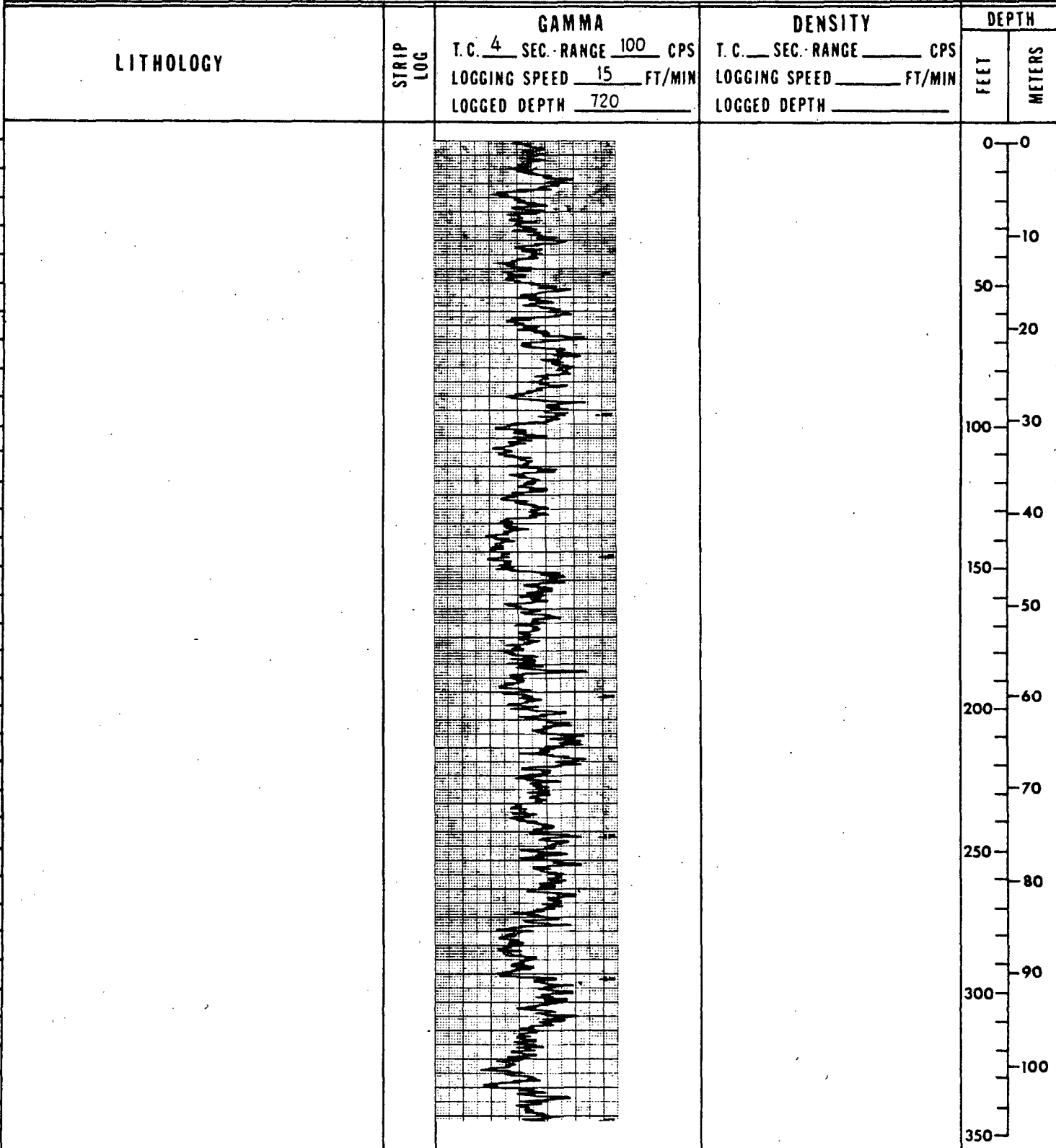




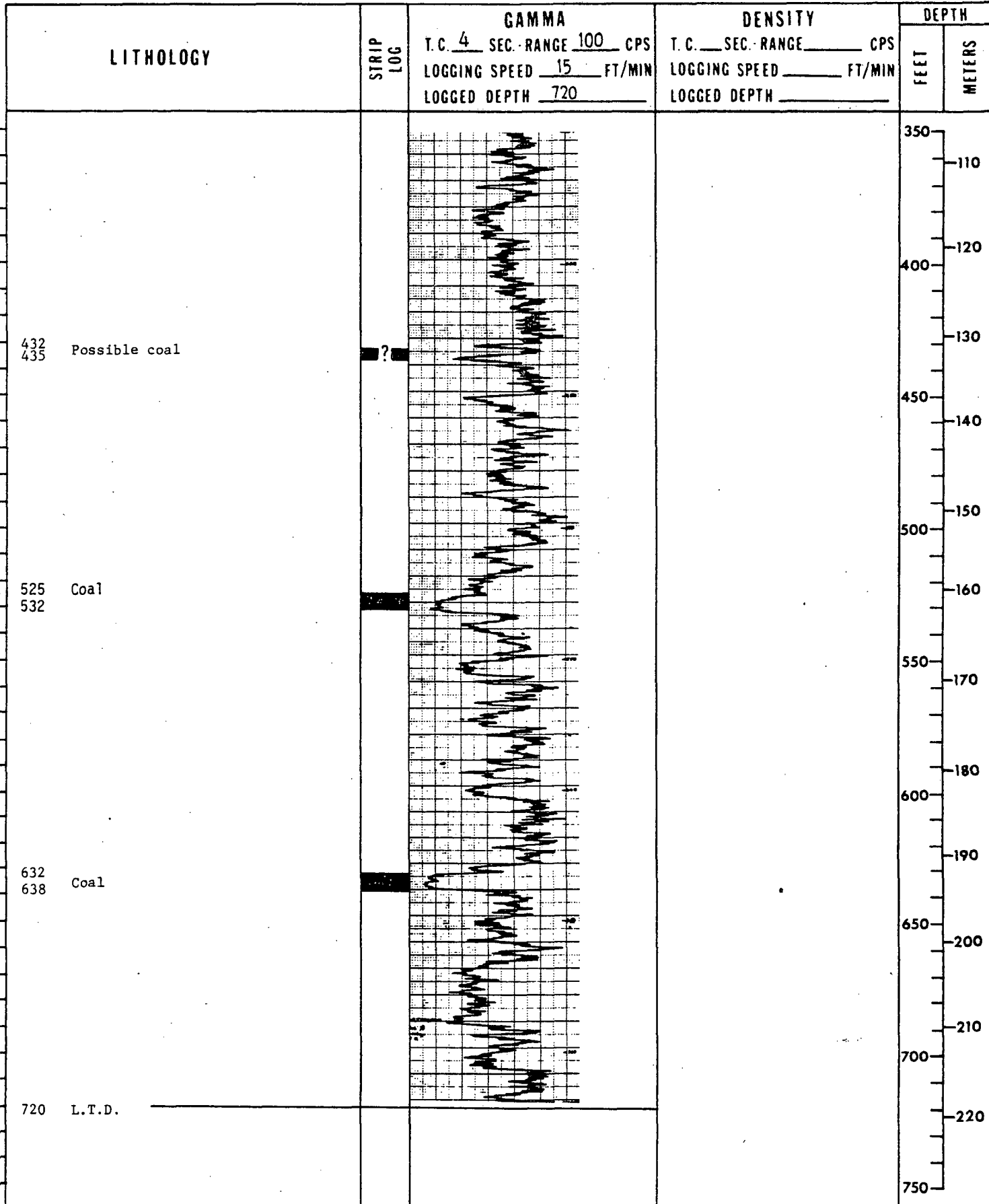
# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. WW-7701  
SHEET 1 OF 2

AREA Powder River Basin		QUAD NAME Betty Reservoir (NE $\frac{1}{4}$ )	
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming
LOCATION: SEC. 4 T. 39 N., R. 70 W., FOOTAGE LOC. 1750		FNL <del>5634</del> 0	FEL <del>5634</del>
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY NR	CORING NR
DRILLING AGENCY: NR	DRILL TYPE: NR		DEPTH TO WATER Flowing
LITHOLOGY RECORDED BY NR	GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 10-14-1977		
REMARKS: 4-in steel surface casing			



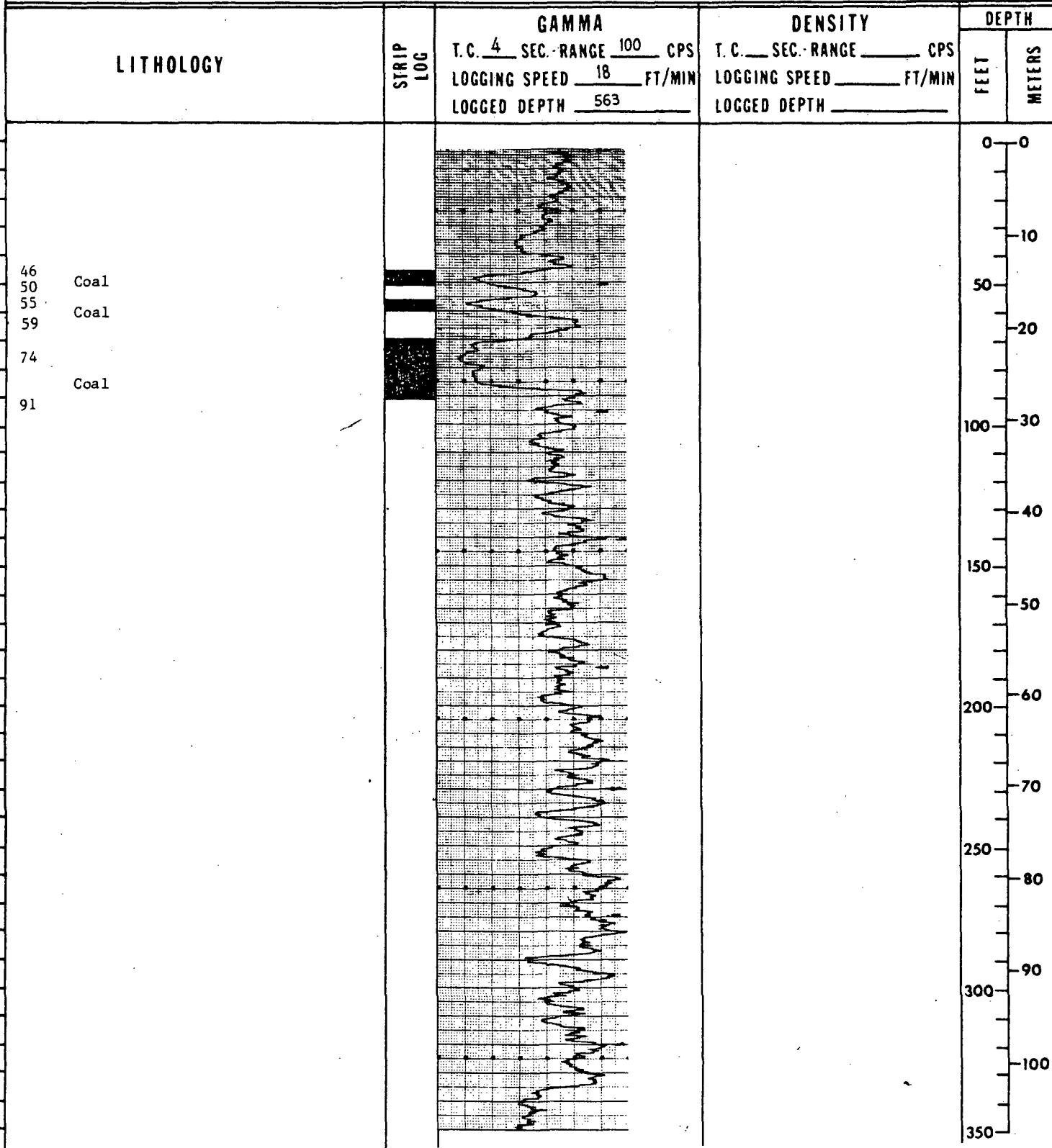
REMARKS:



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-7701  
SHEET 1 OF 2

<b>AREA</b> Powder River Basin		<b>QUAD NAME</b> Betty Reservoir (NE $\frac{1}{4}$ )	
<b>DATE STARTED</b> NR	<b>DATE COMP.</b> NR	<b>COUNTY</b> Converse	<b>STATE</b> Wyoming
<b>LOCATION: SEC.</b> 1 T. 40 N., R. 71 W., <b>FOOTAGE LOC.</b> 100		<del>XXX</del> FSL 800	<del>XXX</del> FEL
<b>SIZE AND BIT TYPE:</b> NR		<b>FOOTAGE</b>	
		ROTARY NR	CORING NR
<b>DRILLING AGENCY:</b> NR		<b>DRILL TYPE:</b> NR	
<b>LITHOLOGY RECORDED BY</b> NR		<b>GEOPHYSICAL LOGS RECORDED BY</b> G. A. Hollomon 11-1-1977	
<b>REMARKS:</b> 4-in steel surface casing Depths are inaccurate			

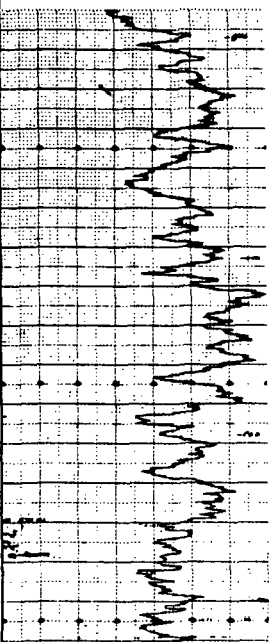




# UNITED STATES GEOLOGICAL SURVEY

HOLE NO ww-77017  
SHEET 2 OF 2

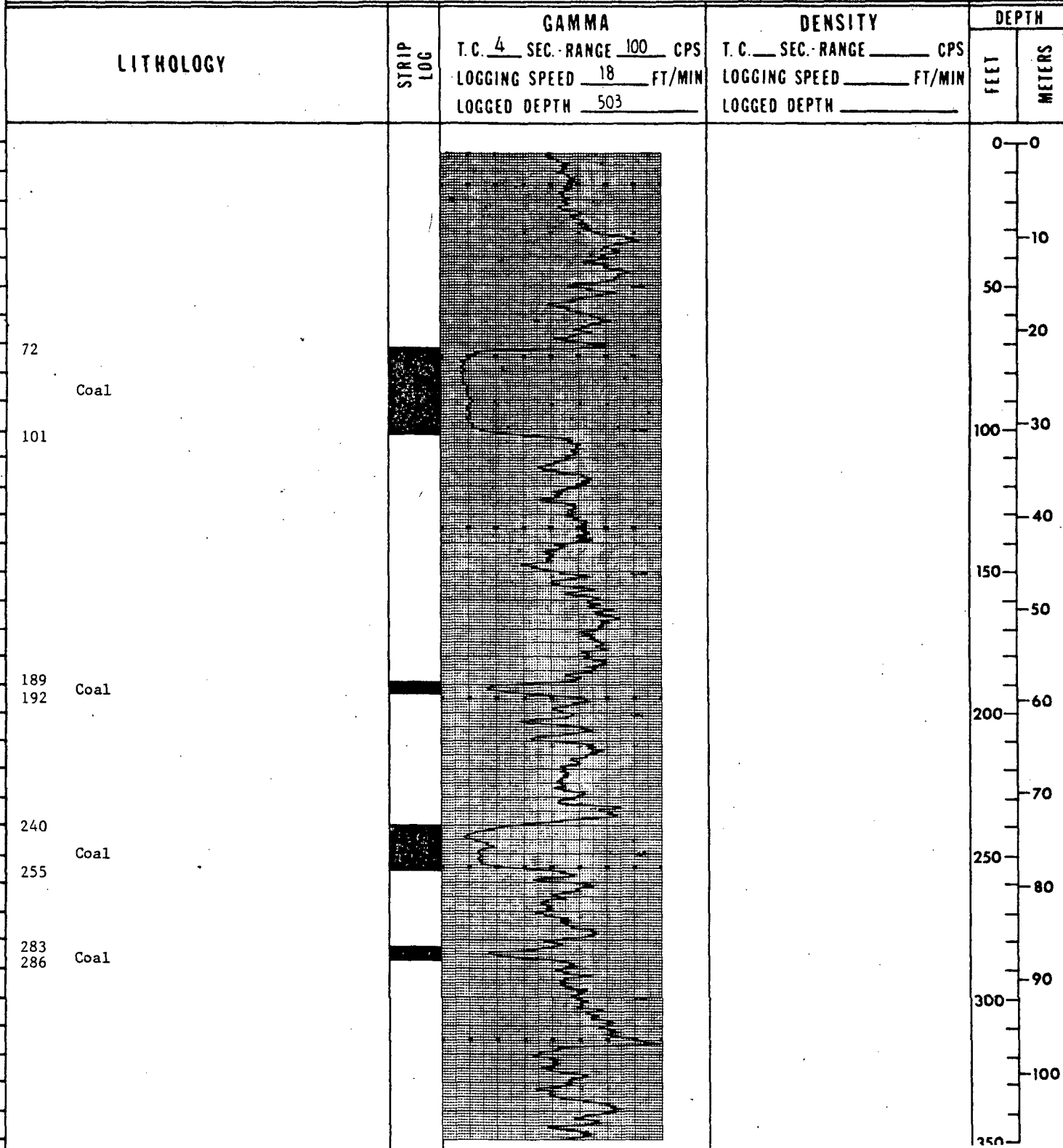
REMARKS: Depth inaccurate

LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH	
		T.C. <u>4</u> SEC. RANGE <u>100</u> CPS LOGGING SPEED <u>18</u> FT/MIN LOGGED DEPTH <u>563</u>	T.C. ___ SEC. RANGE ___ CPS LOGGING SPEED ___ FT/MIN LOGGED DEPTH ___	FEET	METERS
				<div style="text-align: right; font-size: x-small;">                     350 — 110 — 120 — 400 — 130 — 450 — 140 — 500 — 150 — 160 — 550 — 170 — 180 — 600 — 190 — 650 — 200 — 700 — 210 — 220 — 750                 </div>	
563 L.T.D.					

# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. <sup>WW</sup>-7701  
SHEET 1 OF 2

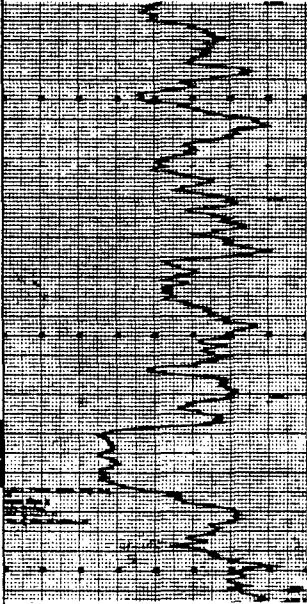
AREA Powder River Basin		QUAD NAME Betty Reservoir NW <sup>4</sup>			
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming		
LOCATION: SEC. 6 T. 40 N., R. 71 W., FOOTAGE LOC. 0		FSL 900	FEL <del>XXX</del>	GROUND ELEV 4630	
SIZE AND BIT TYPE: NR		FOOTAGE		TOTAL DEPTH NR	
		ROTARY NR	CORING NR		
DRILLING AGENCY: NR		DRILL TYPE: NR		DEPTH TO WATER Flowing	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 11-1-1977			
REMARKS: 4-in steel surface casing					



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-77018  
SHEET 2 OF 2

REMARKS:

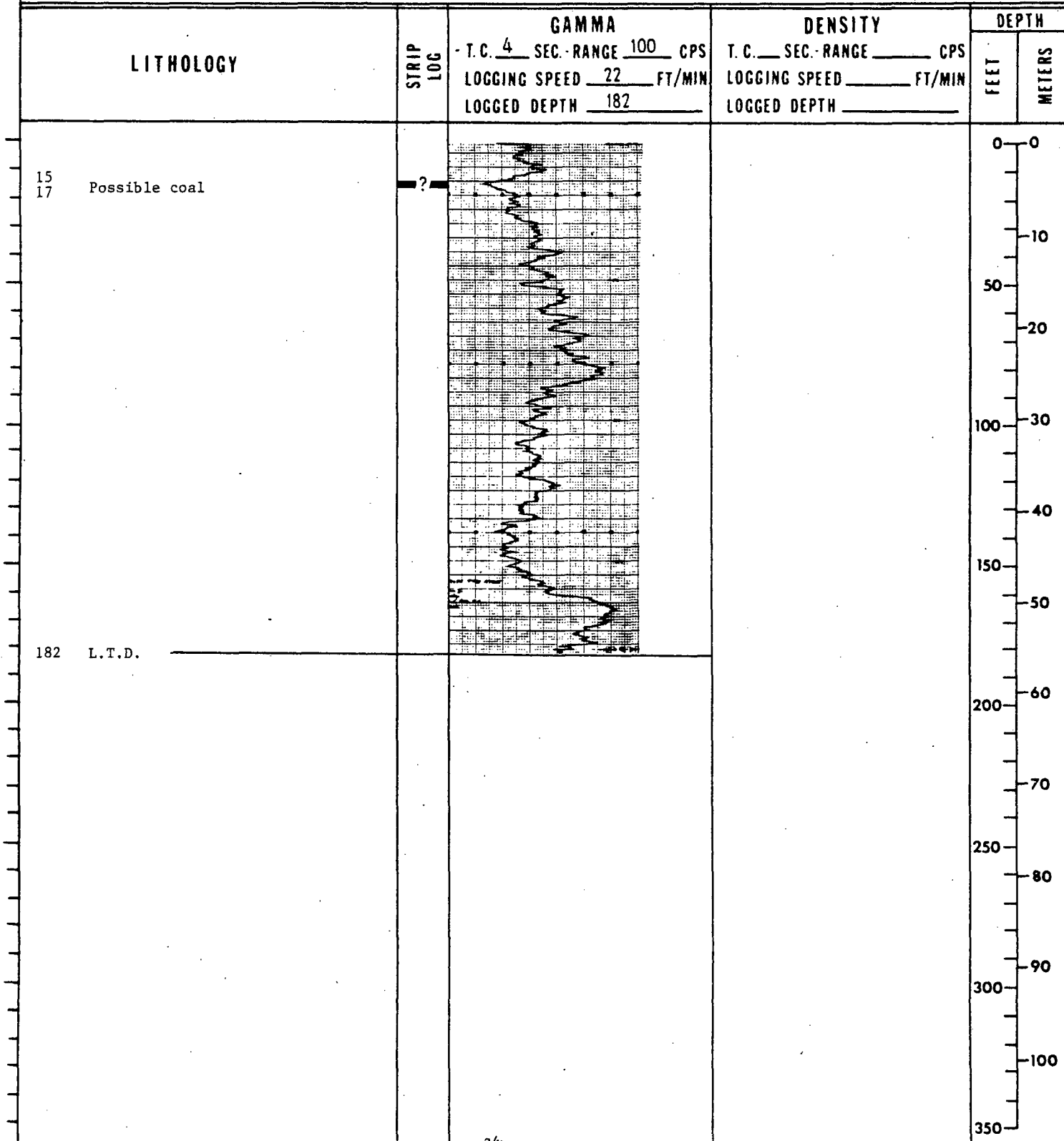
LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH	
		T. C. <u>4</u> SEC. RANGE <u>100</u> CPS LOGGING SPEED <u>18</u> FT/MIN LOGGED DEPTH <u>503</u>	T. C. _____ SEC. RANGE _____ CPS LOGGING SPEED _____ FT/MIN LOGGED DEPTH _____	FEET	METERS
<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div style="margin-bottom: 20px;">457 Possible coal</div> <div style="margin-bottom: 20px;">473</div> <div>503 L.T.D.</div> </div>	<div style="background-color: black; color: white; border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">?</div>			<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">350</div> <div style="margin-bottom: 10px;">110</div> <div style="margin-bottom: 10px;">120</div> <div style="margin-bottom: 10px;">400</div> <div style="margin-bottom: 10px;">130</div> <div style="margin-bottom: 10px;">450</div> <div style="margin-bottom: 10px;">140</div> <div style="margin-bottom: 10px;">500</div> <div style="margin-bottom: 10px;">150</div> <div style="margin-bottom: 10px;">160</div> <div style="margin-bottom: 10px;">550</div> <div style="margin-bottom: 10px;">170</div> <div style="margin-bottom: 10px;">180</div> <div style="margin-bottom: 10px;">600</div> <div style="margin-bottom: 10px;">190</div> <div style="margin-bottom: 10px;">650</div> <div style="margin-bottom: 10px;">200</div> <div style="margin-bottom: 10px;">700</div> <div style="margin-bottom: 10px;">210</div> <div style="margin-bottom: 10px;">750</div> <div style="margin-bottom: 10px;">220</div> </div>	

# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. ~~WW~~-7701  
SHEET 1 OF 1

AREA Powder River Basin		QUAD NAME Betty Reservoir (NW $\frac{1}{4}$ )	
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming
LOCATION: SEC. 35 T. 41 N., R. 72 W., FOOTAGE LOC. 2500		<del>FSL</del> 2400	FEL <del>FSL</del> GROUND ELEV 4860
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY NR	CORING NR
DRILLING AGENCY: NR		DRILL TYPE: NR	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 11-1-1977	

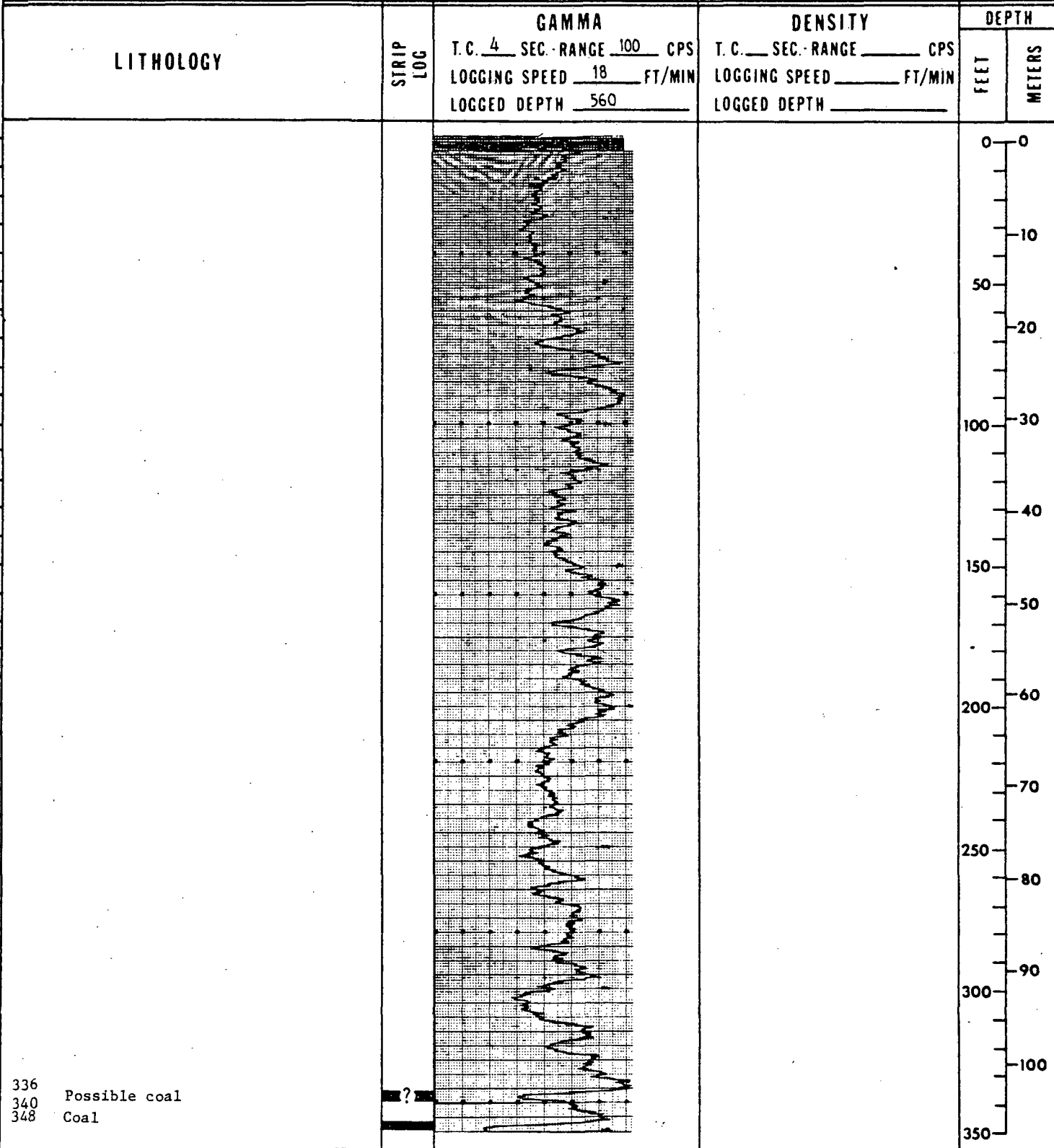
REMARKS: 4-in steel surface casing



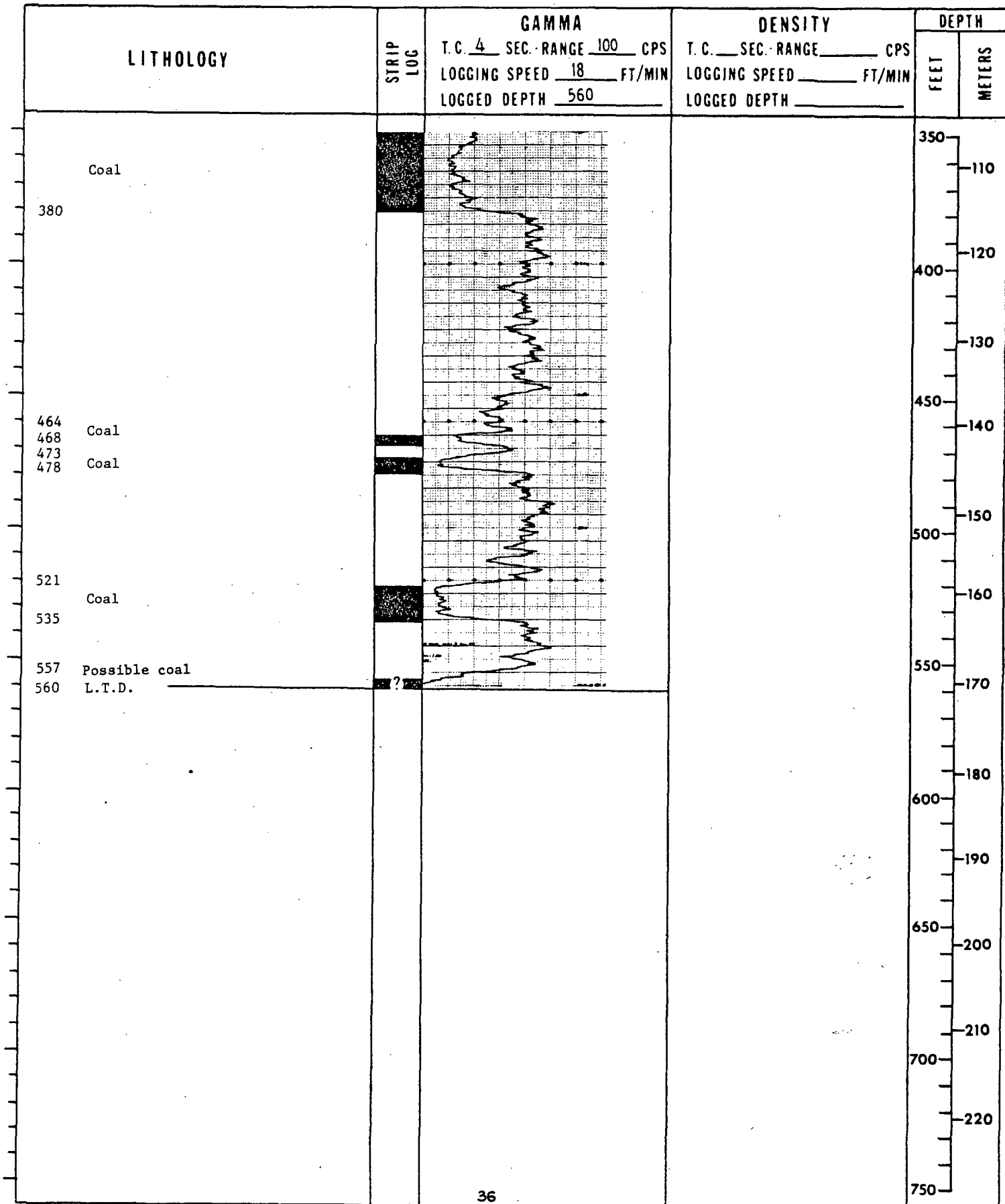
# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. WW-7702  
SHEET 1 OF 2

AREA <u>Powder River Basin</u>		QUAD NAME <u>Betty Reservoir (NW<math>\frac{1}{4}</math>)</u>	
DATE STARTED <u>NR</u>	DATE COMP. <u>NR</u>	COUNTY <u>Converse</u>	STATE <u>Wyoming</u>
LOCATION: SEC. <u>34</u> T. <u>41 N.</u> , R. <u>72 W.</u> , FOOTAGE LOC. <u>250</u>		FNL <u>1350</u>	GROUND ELEV. <u>4790</u>
SIZE AND BIT TYPE: <u>NR</u>		FOOTAGE	
		ROTARY <u>NR</u>	CORING <u>NR</u>
DRILLING AGENCY: <u>NR</u>	DRILL TYPE: <u>NR</u>		TOTAL DEPTH <u>NR</u>
LITHOLOGY RECORDED BY <u>NR</u>	GEOPHYSICAL LOGS RECORDED BY <u>G. A. Hollomon 11-1-1977</u>		
REMARKS: <u>6-in steel surface casing</u>			



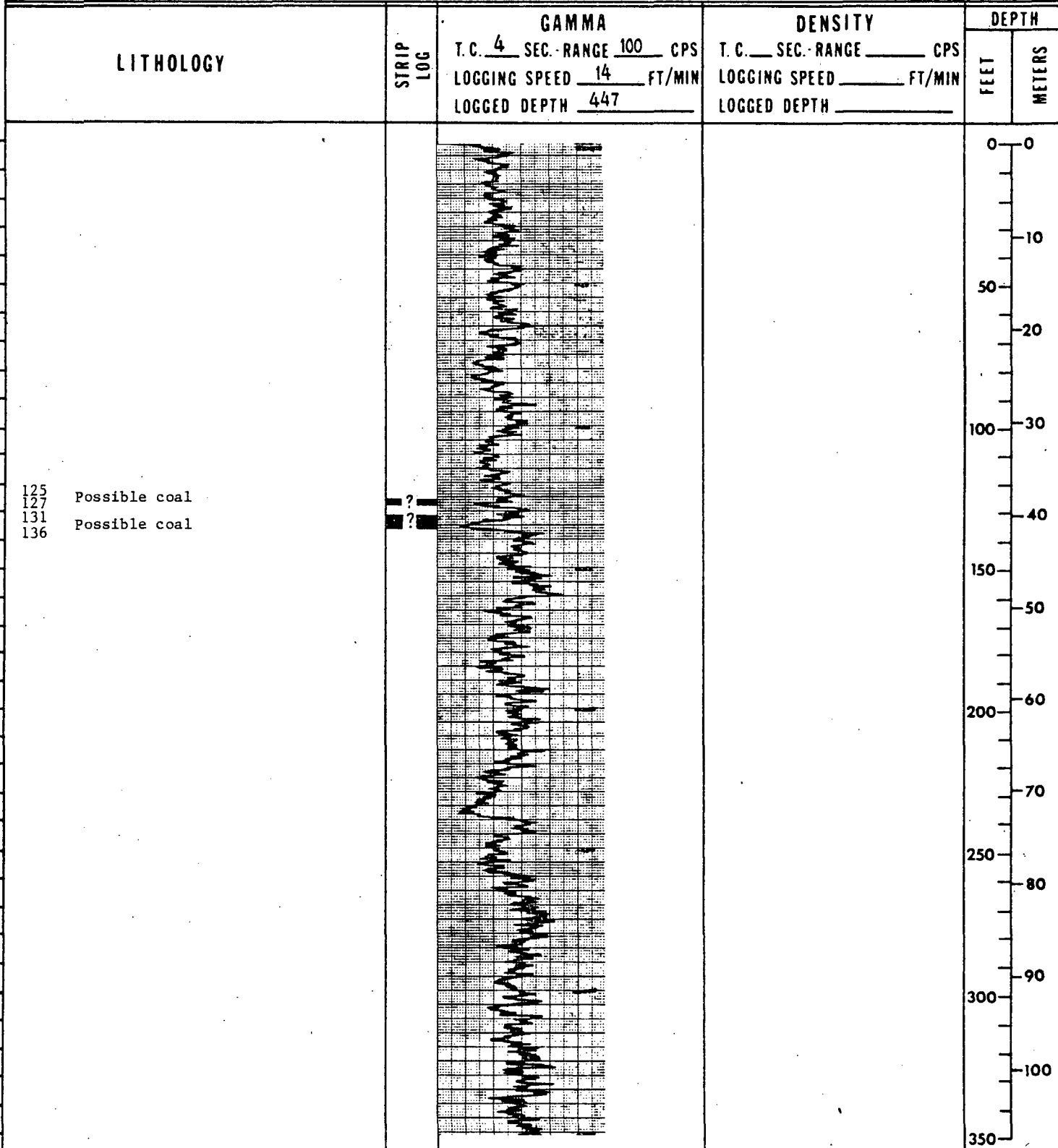
REMARKS:



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO OW-770C  
SHEET 1 OF 2

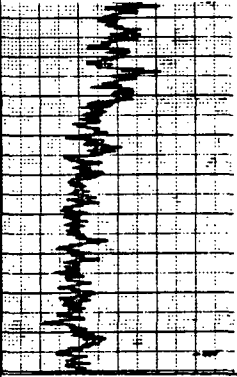
AREA Powder River Basin		QUAD NAME Coal Bank Draw	
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming
LOCATION: SEC. 17 T. 40 N., R. 69 W., FOOTAGE LOC. 1980		FNL 1980	GROUND ELEV 4510
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY 5894	CORING NR
DRILLING AGENCY: Exeter		DRILL TYPE: NR	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY F. B. Kistner 10-4-1977	
REMARKS: Diamond Shamrock, Scott Fed. 22-17 9 5/8-in steel surface casing Heavy mud in hole		Commercial logs: FDC/GR 4600 - 5881 IE 1011 - 5876	



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO <sup>OW</sup>-77001  
SHEET 2 OF 2

REMARKS:

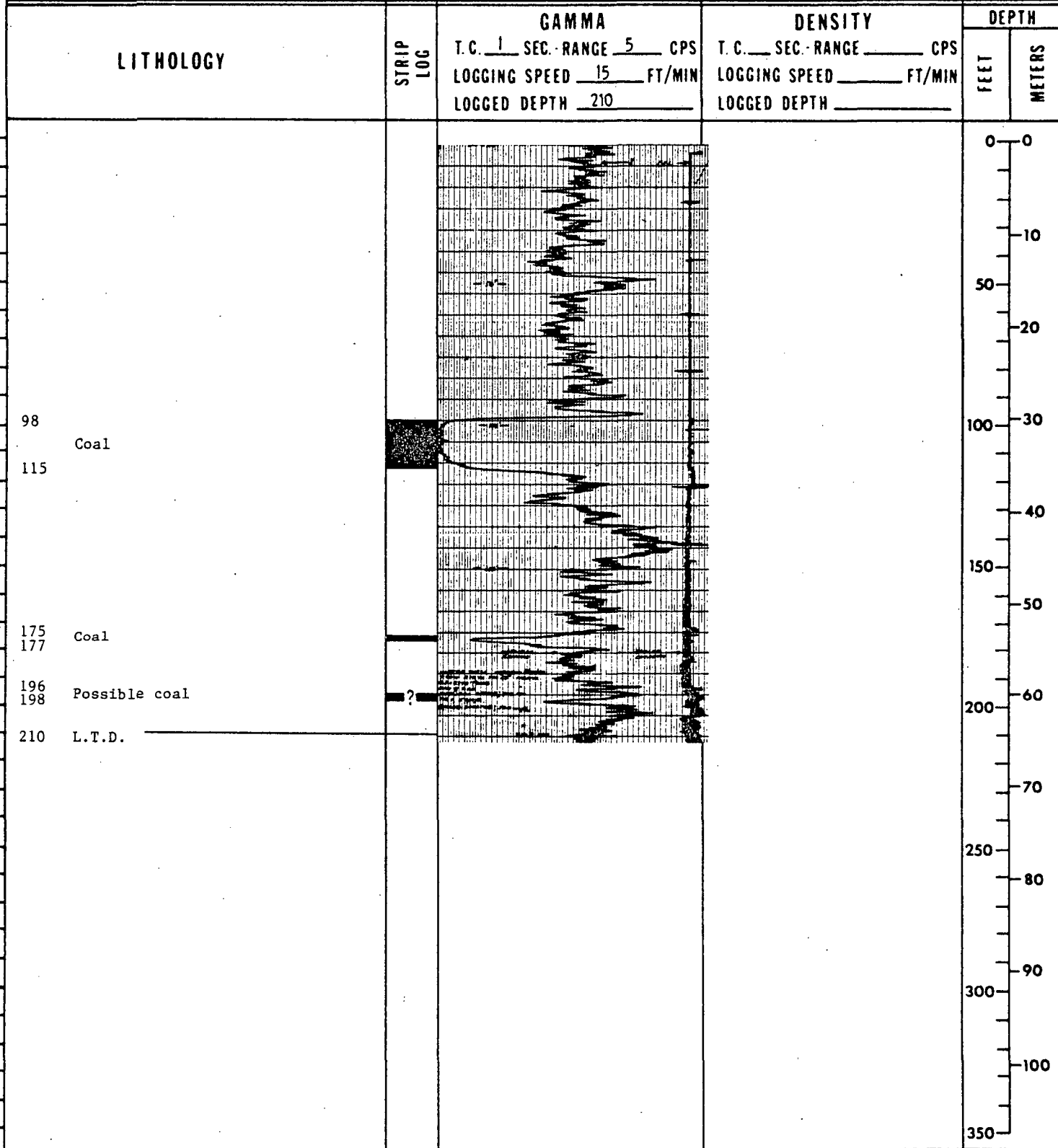
LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH	
		T. C. <u>4</u> SEC. RANGE <u>100</u> CPS LOGGING SPEED <u>14</u> FT/MIN LOGGED DEPTH <u>447</u>	T. C. ___ SEC. RANGE ___ CPS LOGGING SPEED ___ FT/MIN LOGGED DEPTH ___	FEET	METERS
447 L.T.D.				350 110 120 400 130 450 140 500 150 160 550 170 180 600 190 650 200 700 210 750 220	



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. <sup>WV</sup>78001  
SHEET 1 OF 1

<b>AREA</b> Powder River Basin		<b>QUAD NAME</b> Betty Reservoir (NW $\frac{1}{2}$ )	
<b>DATE STARTED</b> NR	<b>DATE COMP.</b> NR	<b>COUNTY</b> Converse	<b>STATE</b> Wyoming
<b>LOCATION: SEC.</b> 25 <b>T.</b> 40 N., <b>R.</b> 72 W., <b>FOOTAGE LOC.</b> 700		<b>FNL</b> 1700	<b>EXEL</b> FWL
<b>SIZE AND BIT TYPE:</b> NR		<b>FOOTAGE</b>	
		<b>ROTARY</b> NR	<b>CORING</b> NR
<b>DRILLING AGENCY:</b> NR		<b>DRILL TYPE:</b> NR	
<b>LITHOLOGY RECORDED BY</b> NR		<b>GEOPHYSICAL LOGS RECORDED BY</b> G. A. Hollomon 6-13-1978	
<b>REMARKS:</b> 6-in steel surface casing			

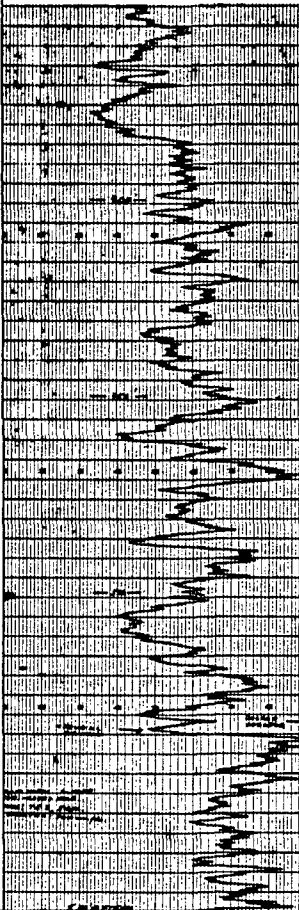




# UNITED STATES GEOLOGICAL SURVEY

HOLE NO <sup>ww</sup>-78002  
SHEET 2 OF 2

REMARKS:

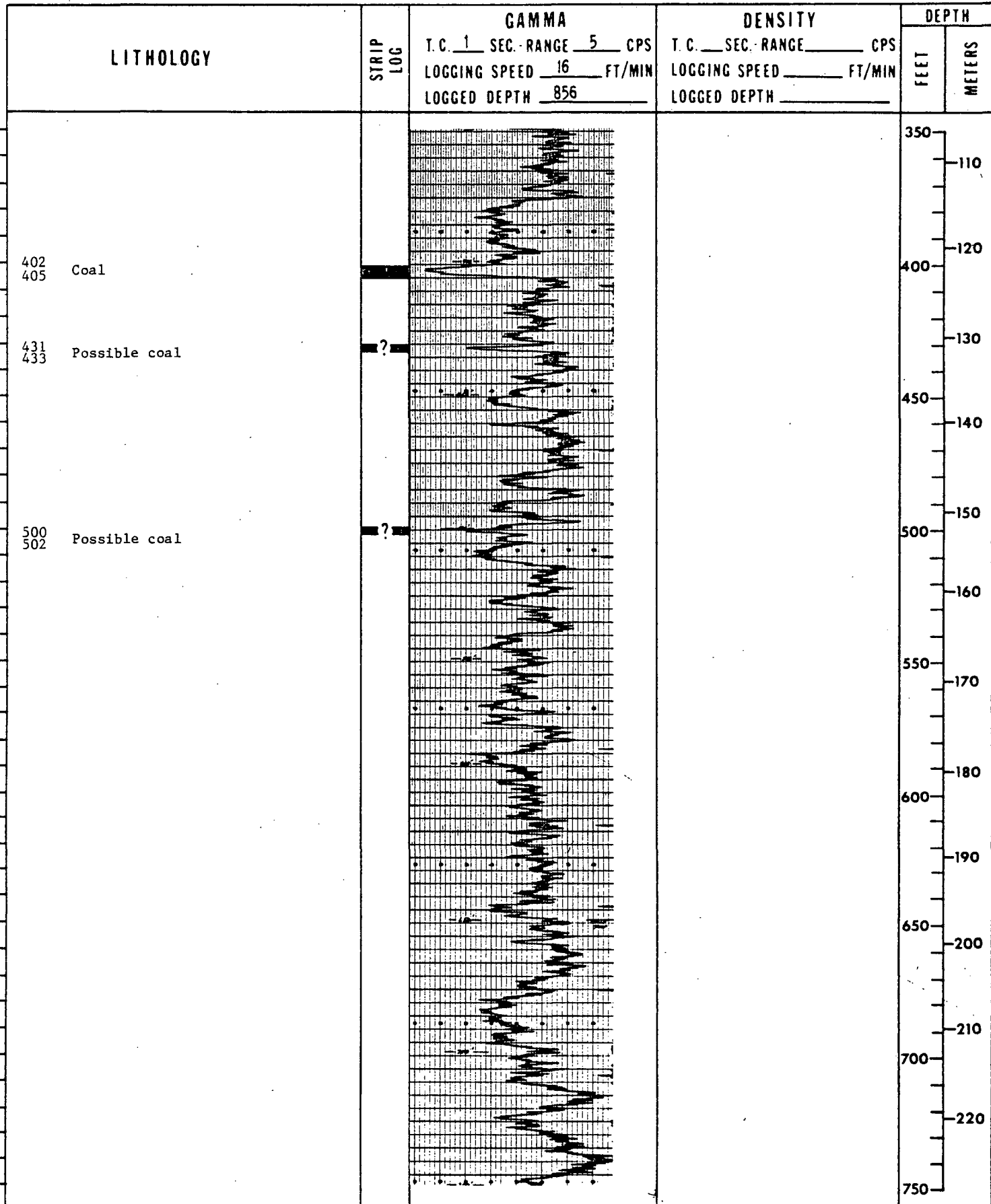
LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH	
		T. C. <u>2</u> SEC. RANGE <u>5</u> CPS LOGGING SPEED <u>15</u> FT/MIN LOGGED DEPTH <u>580</u>	T. C. _____ SEC. RANGE _____ CPS LOGGING SPEED _____ FT/MIN LOGGED DEPTH _____	FEET	METERS
580 L.T.D.				<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 5px;">350</div> <div style="margin-bottom: 5px;">—110</div> <div style="margin-bottom: 5px;">—120</div> <div style="margin-bottom: 5px;">400</div> <div style="margin-bottom: 5px;">—130</div> <div style="margin-bottom: 5px;">—140</div> <div style="margin-bottom: 5px;">450</div> <div style="margin-bottom: 5px;">—150</div> <div style="margin-bottom: 5px;">—160</div> <div style="margin-bottom: 5px;">500</div> <div style="margin-bottom: 5px;">—170</div> <div style="margin-bottom: 5px;">—180</div> <div style="margin-bottom: 5px;">600</div> <div style="margin-bottom: 5px;">—190</div> <div style="margin-bottom: 5px;">—200</div> <div style="margin-bottom: 5px;">650</div> <div style="margin-bottom: 5px;">—210</div> <div style="margin-bottom: 5px;">—220</div> <div style="margin-bottom: 5px;">700</div> <div style="margin-bottom: 5px;">—220</div> <div style="margin-bottom: 5px;">750</div> </div>	



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-78003  
SHEET 2 OF 3

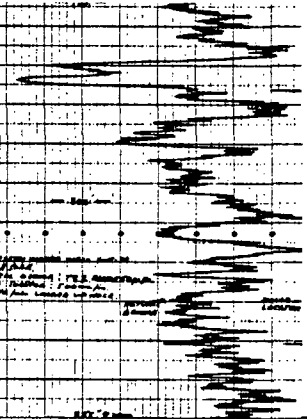
REMARKS:



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. NW-78003  
SHEET 3 OF 3

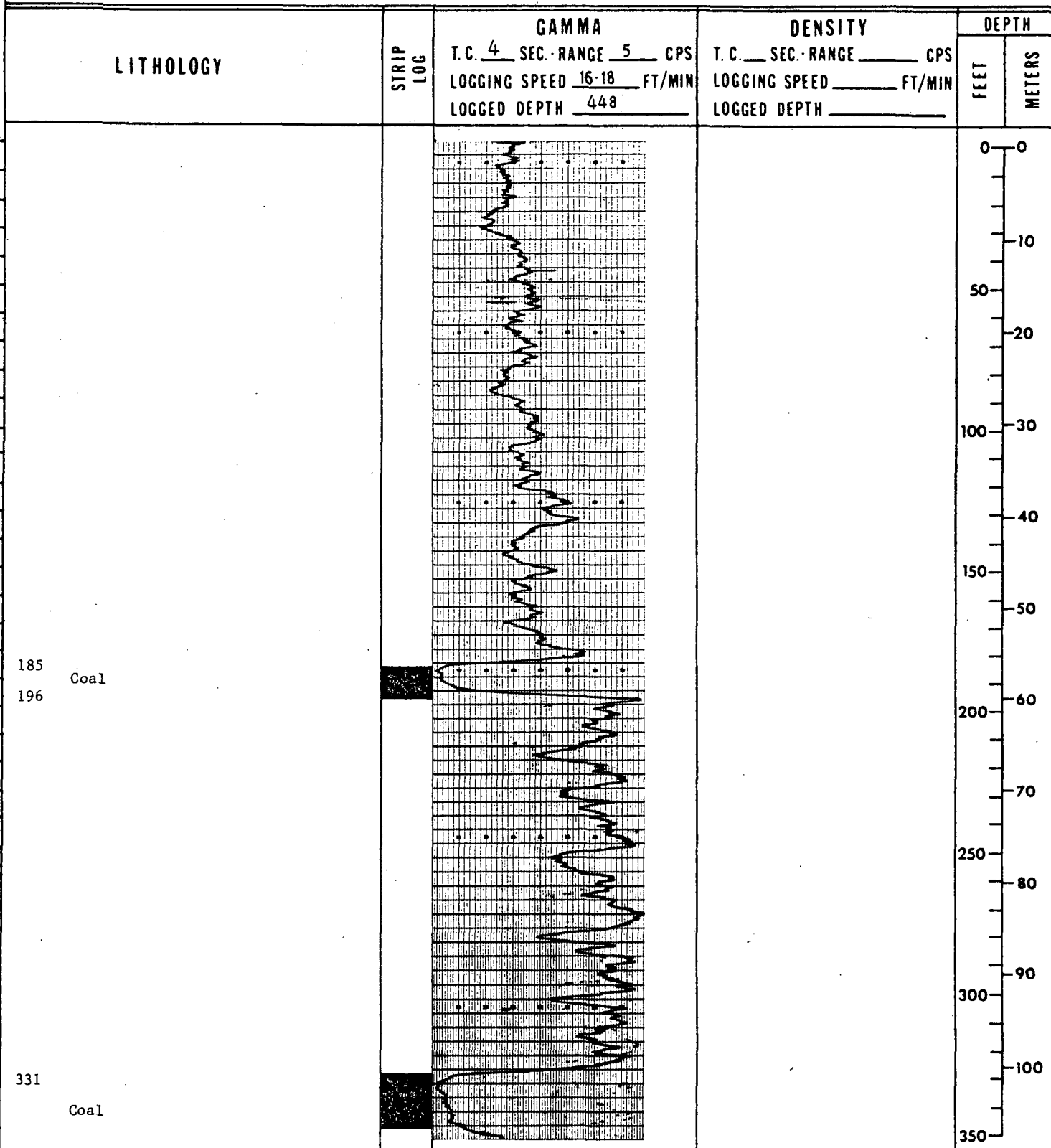
REMARKS:

LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH		
		T.C. <u>1</u> SEC. RANGE <u>5</u> CPS LOGGING SPEED <u>16</u> FT/MIN LOGGED DEPTH <u>856</u>	T.C. <u>   </u> SEC. RANGE <u>   </u> CPS LOGGING SPEED <u>   </u> FT/MIN LOGGED DEPTH <u>   </u>	FEET	METERS	
766 Coal 771				750 230 240 800 250 850 260 270 900 280 950 290 300 1000 310 1050 320 330 1100 340 1150 350		
856 L.T.D.						

# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-78004  
SHEET 1 OF 2

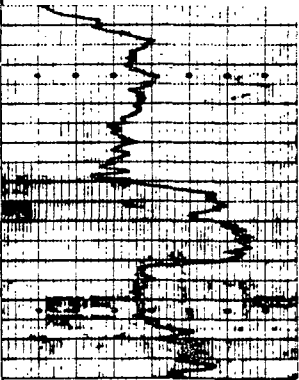
AREA <u>Powder River Basin</u>		QUAD NAME <u>Turnercrest (SE½)</u>			
DATE STARTED <u>NR</u>	DATE COMP. <u>NR</u>	COUNTY <u>Campbell</u>	STATE <u>Wyoming</u>		
LOCATION: SEC. <u>23</u> T. <u>41 N.</u> , R. <u>73 W.</u> , FOOTAGE LOC. <u>1600</u>		<del>FSL</del> <u>500</u>	FEL <del>FWL</del>	GROUND ELEV. <u>4837</u>	
SIZE AND BIT TYPE: <u>NR</u>		FOOTAGE		TOTAL DEPTH <u>NR</u>	
		ROTARY <u>NR</u>	CORING <u>NR</u>		
DRILLING AGENCY: <u>NR</u>		DRILL TYPE: <u>NR</u>		DEPTH TO WATER <u>Flowing</u>	
LITHOLOGY RECORDED BY <u>NR</u>		GEOPHYSICAL LOGS RECORDED BY <u>G. A. Hollomon 7-19-1978</u>			
REMARKS: <u>7-in steel surface casing</u>					



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO ww-78004  
SHEET 2 OF 2

REMARKS:

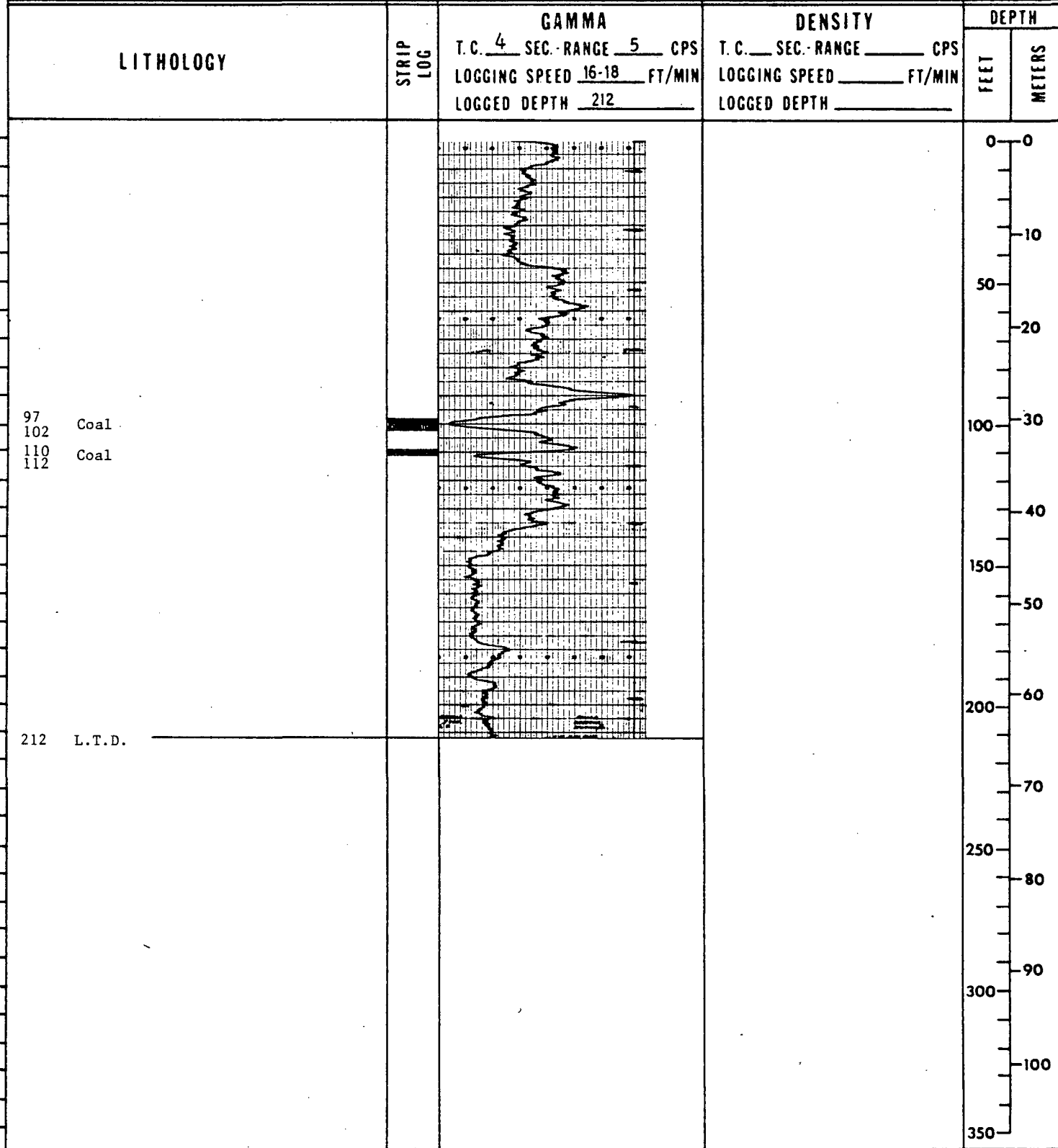
LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH	
		T. C. <u>4</u> SEC. RANGE <u>5</u> CPS LOGGING SPEED <u>16-18</u> FT/MIN LOGGED DEPTH <u>448</u>	T. C. ___ SEC. RANGE ___ CPS LOGGING SPEED ___ FT/MIN LOGGED DEPTH _____	FEET	METERS
353 Coal				350	
448 L.T.D.				110 120 130 140 150 160 170 180 190 200 210 220 750	



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO ~~WW~~-78005  
SHEET 1 OF 1

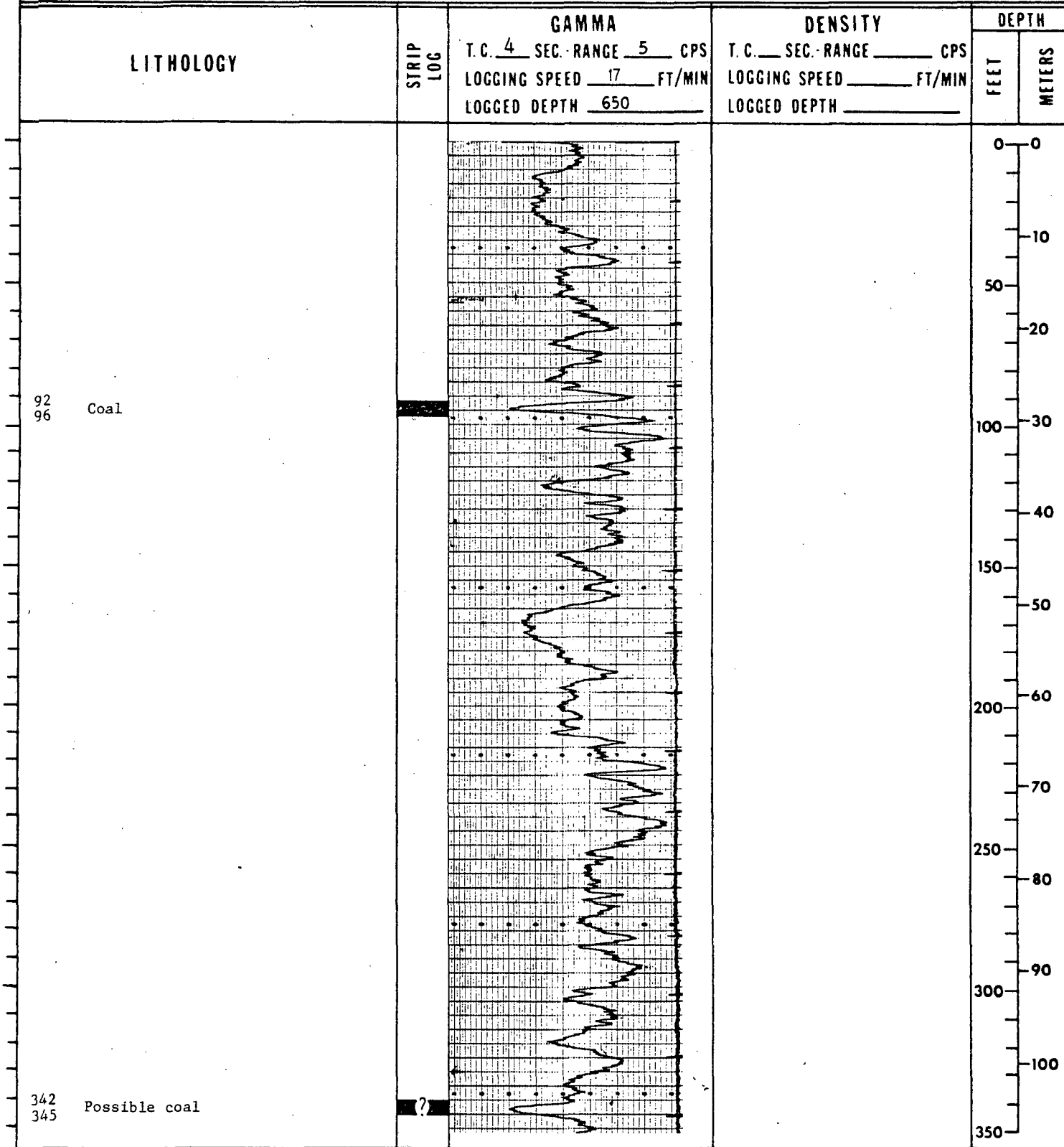
AREA Powder River Basin		QUAD NAME Turnercrest (SE $\frac{1}{2}$ )			
DATE STARTED NR	DATE COMP. NR	COUNTY Campbell	STATE Wyoming		
LOCATION: SEC. 9 T. 41 N., R. 72 W., FOOTAGE LOC. 100		XX FSL 300	XX FWL	GROUND ELEV 4900	
SIZE AND BIT TYPE: NR		FOOTAGE		TOTAL DEPTH NR	
		ROTARY NR	CORING NR		
DRILLING AGENCY: NR		DRILL TYPE: NR		DEPTH TO WATER NR	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 7-20-1978			
REMARKS: 6-in steel surface casing					



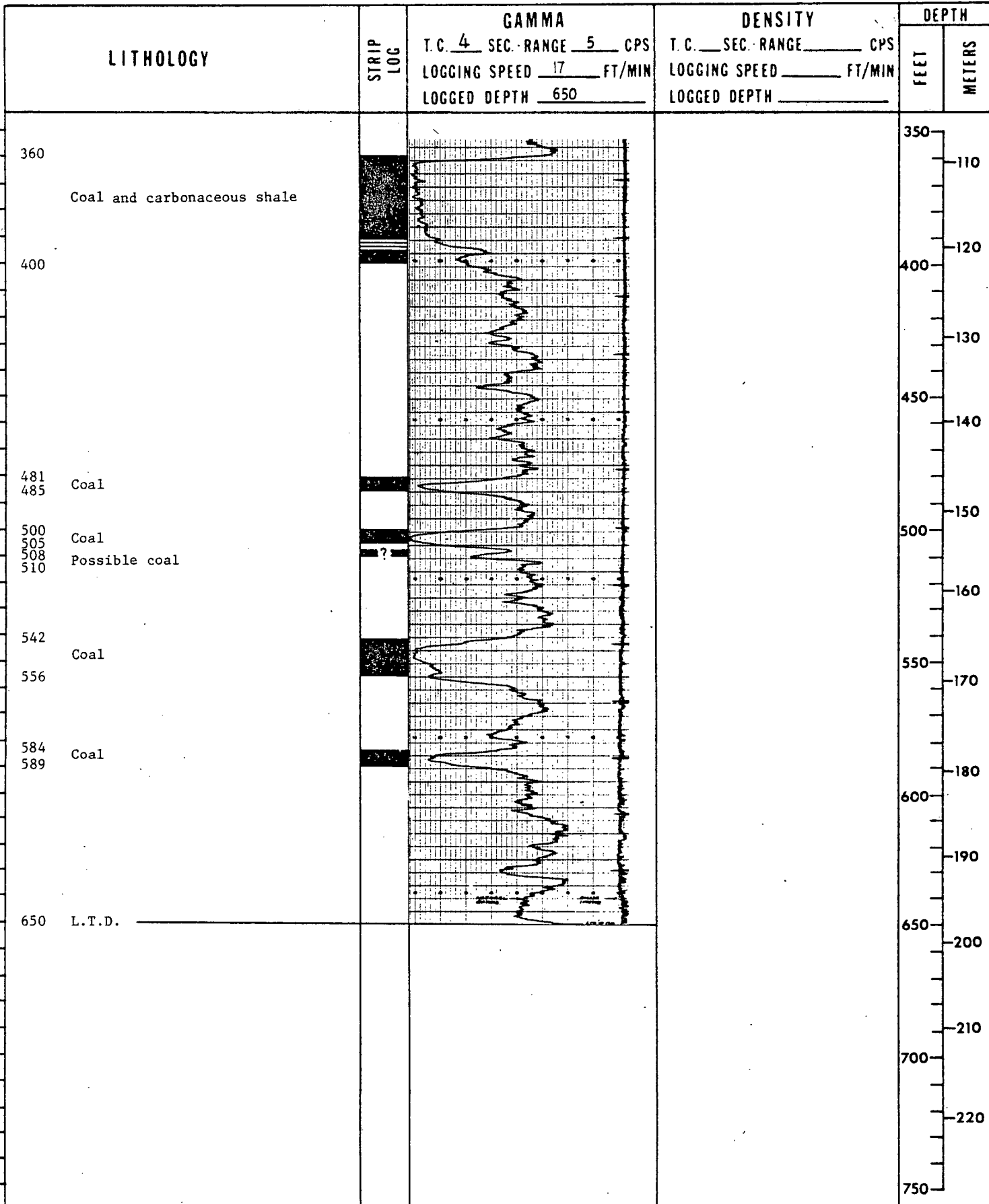
# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. WW-7800  
SHEET 1 OF 2

AREA Powder River Basin		QUAD NAME Coal Draw (NE $\frac{1}{4}$ )			
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming		
LOCATION: SEC. 28 T. 41 N., R. 72 W., FOOTAGE LOC. 300		NEW FSL 1700	FEL 4791	GROUND ELEV 4791	
SIZE AND BIT TYPE: NR		FOOTAGE		TOTAL DEPTH NR	
		ROTARY NR	CORING NR		
DRILLING AGENCY: NR		DRILL TYPE: NR		DEPTH TO WATER 7-24-78 57	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 7-22-1978			
REMARKS: 3-in steel surface casing					



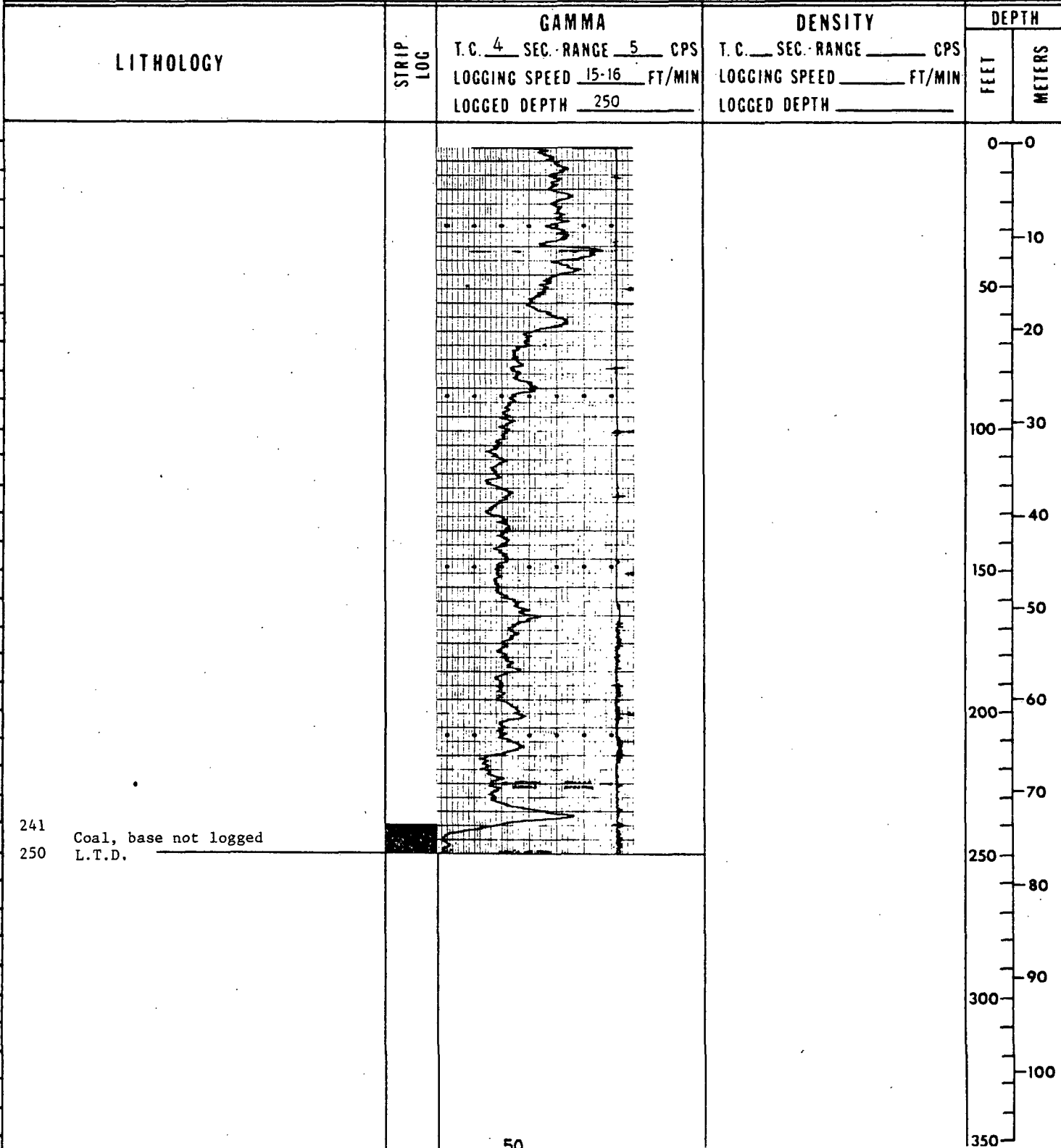
REMARKS:



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO **WW-78007**  
SHEET 1 OF 1

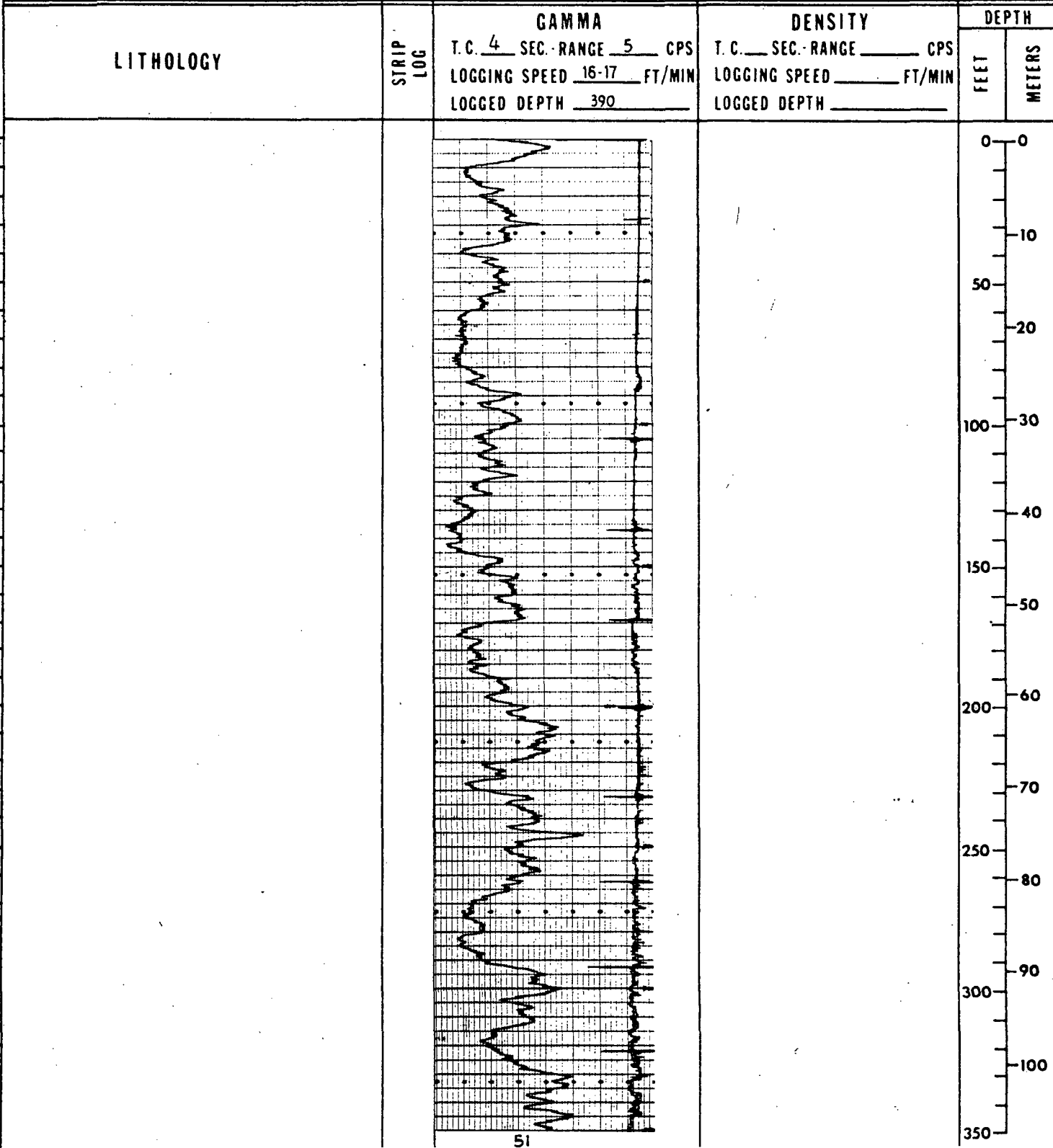
AREA Powder River Basin		QUAD NAME Little Thunder Reservoir	
DATE STARTED NR	DATE COMP. NR	COUNTY Campbell	STATE Wyoming
LOCATION: SEC. 2 T. 43 N., R. 72 W., FOOTAGE LOC. 100		<del>XXX</del> FSL 2600	<del>XXX</del> FWL GROUND ELEV 4890
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY NR	CORING NR
DRILLING AGENCY: Wyoming Highway Department		DRILL TYPE: NR	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 7-22-1978	
REMARKS: Wyoming Highway Department Waterwell No. 2 8 3/4-in steel surface casing			



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO <sup>WW</sup>-78008  
SHEET 1 OF 2

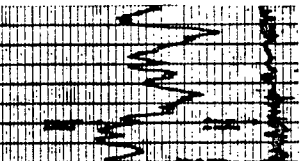
AREA Powder River Basin.		QUAD NAME Betty Reservoir (SE $\frac{1}{4}$ )	
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming
LOCATION: SEC. 14 T. 38 N., R. 71 W., FOOTAGE LOC. 300		<del>XXX</del> FSL 300	<del>XXX</del> FWL 4690
SIZE AND BIT TYPE: NR		FOOTAGE ROTARY NR CORING NR	
DRILLING AGENCY: NR		DRILL TYPE: NR	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 8-31-1978	
REMARKS: 5 $\frac{1}{4}$ -in steel surface casing			



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. WW-78008  
SHEET 2 OF 2

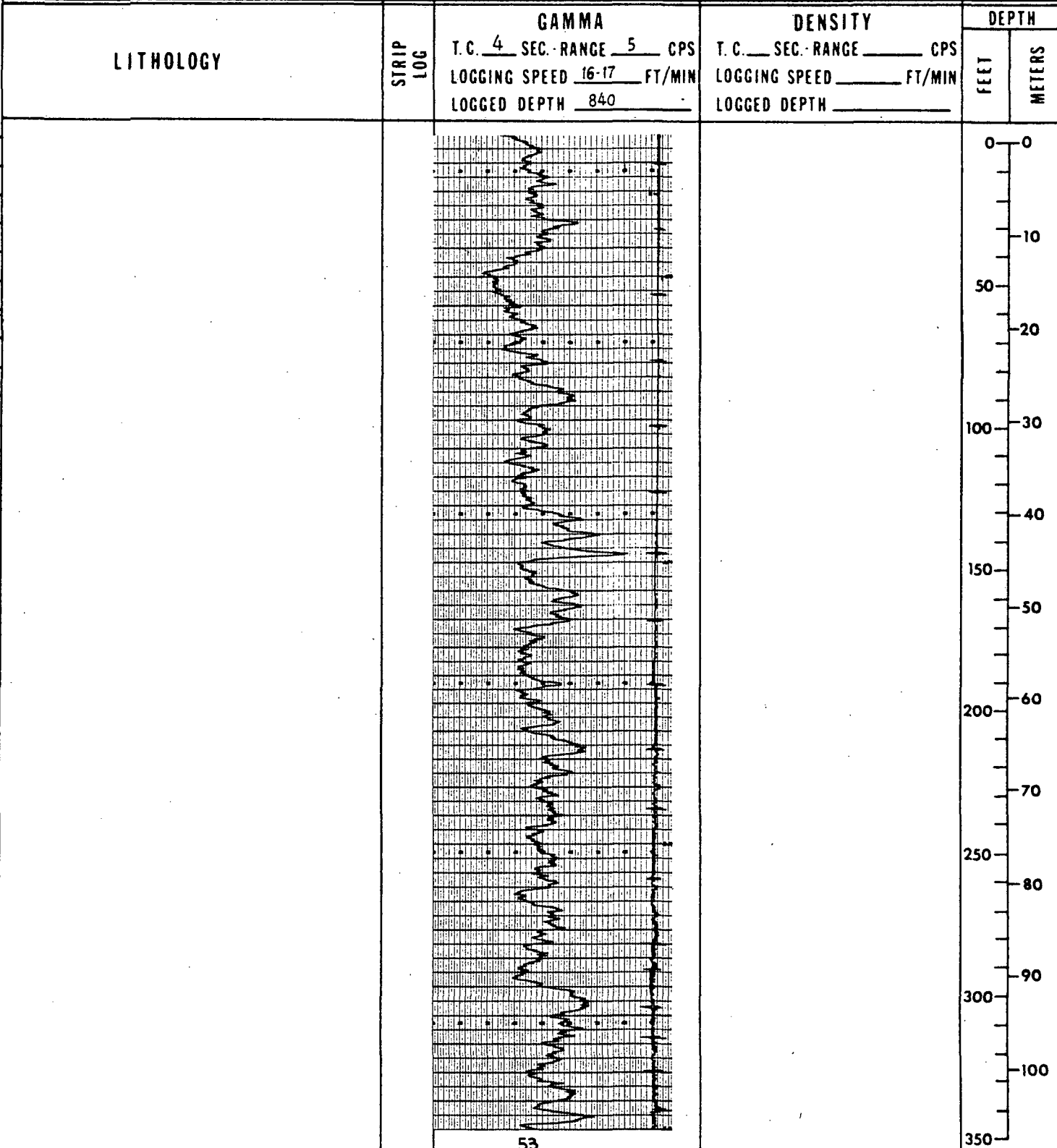
REMARKS:

LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH	
		T. C. <u>4</u> SEC. RANGE <u>5</u> CPS LOGGING SPEED <u>16-17</u> FT/MIN LOGGED DEPTH <u>390</u>	T. C. _____ SEC. RANGE _____ CPS LOGGING SPEED _____ FT/MIN LOGGED DEPTH _____	FEET	METERS
390 L.T.D.				350 110 120 400 130 450 140 500 150 160 550 170 180 600 190 650 200 700 210 750 220	

# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-7801C  
SHEET 1 OF 3

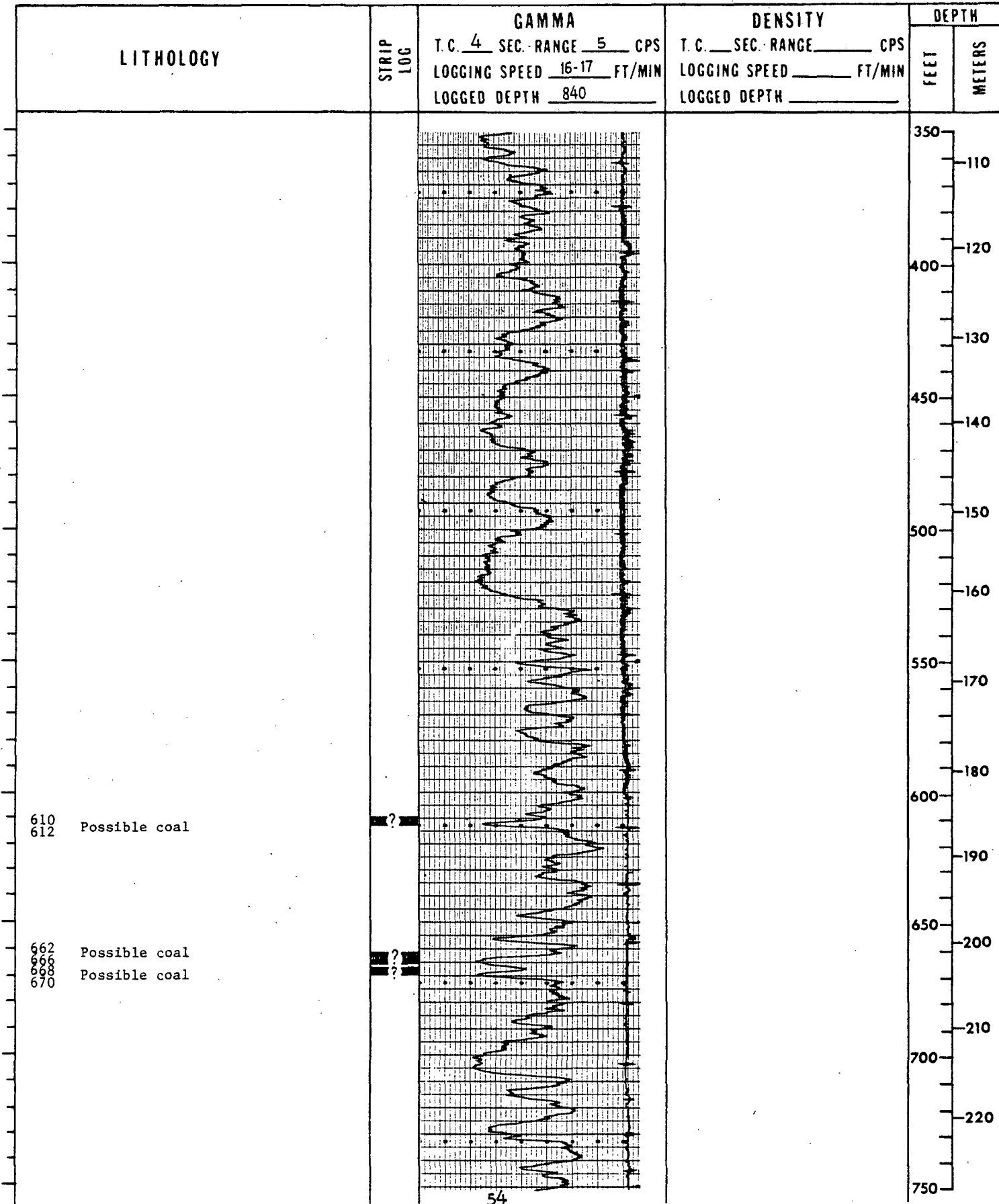
AREA <u>Powder River Basin</u>		QUAD NAME <u>Betty Reservoir (SE<math>\frac{1}{4}</math>)</u>	
DATE STARTED NR	DATE COMP. NR	COUNTY <u>Converse</u>	STATE <u>Wyoming</u>
LOCATION: SEC. <u>27</u> T. <u>39 N.</u> , R. <u>71 W.</u> , FOOTAGE LOC. <u>800</u>		FNL <u>1100</u>	FEL <u>4672</u>
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY NR	CORING NR
DRILLING AGENCY: NR		DRILL TYPE: NR	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY <u>G. A. Hollomon</u> 9-5-1978	
REMARKS: <u>3<math>\frac{1}{2}</math>-in steel surface casing</u>			



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-7801C  
SHEET 2 OF 3

REMARKS:





# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. W-78010  
SHEET 3 OF 3

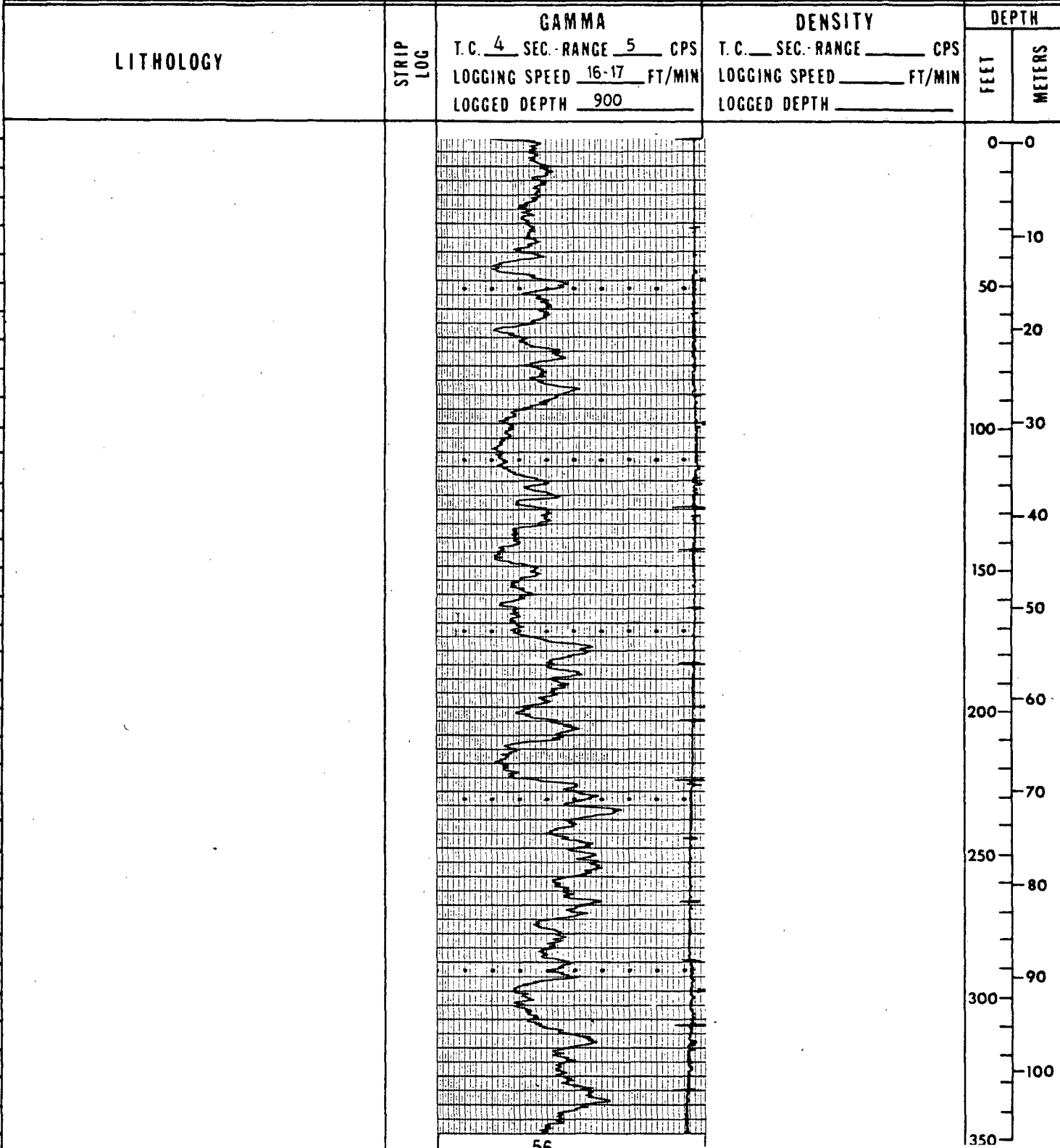
REMARKS:

LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH	
		T.C. <u>4</u> SEC. RANGE <u>5</u> CPS LOGGING SPEED <u>16-17</u> FT/MIN LOGGED DEPTH <u>840</u>	T.C. _____ SEC. RANGE _____ CPS LOGGING SPEED _____ FT/MIN LOGGED DEPTH _____	FEET	METERS
766 Coal 769	█			750 230 240 800 250	
827 Coal 832	█			850 260 270 900 280 950 290 300	
840 L.T.D.				1000 310 1050 320 330 1100 340 1150 350	

# UNITED STATES GEOLOGICAL SURVEY

HOLE NOWW-7801  
SHEET 1 OF 3

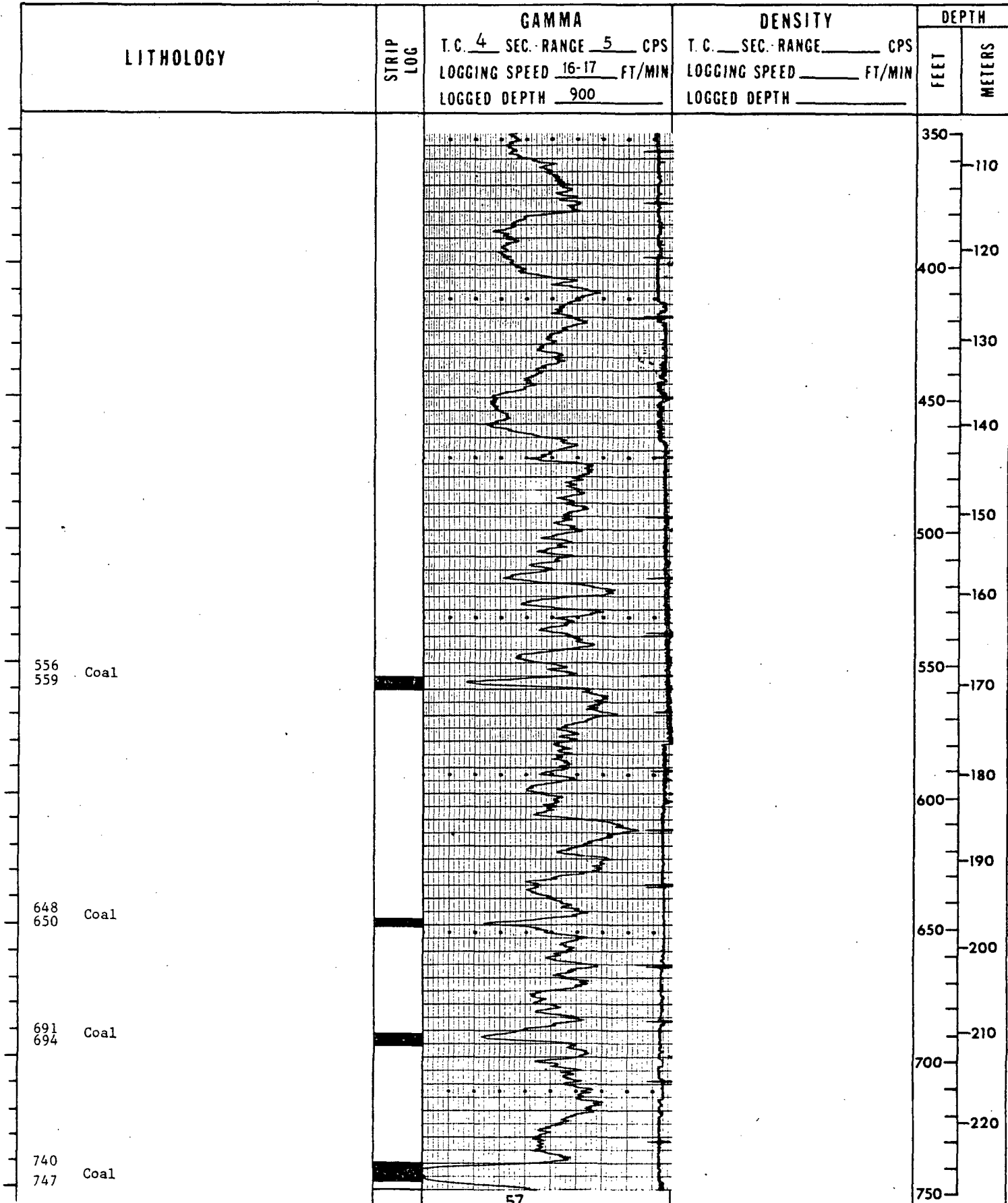
AREA Powder River Basin		QUAD NAME Betty Reservoir (SE¼)	
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming
LOCATION: SEC. 13 T. 39 N., R. 71 W.,		FOOTAGE LOC. 1100	GROUND ELEV 4650
SIZE AND BIT TYPE: NR		FOOTAGE	
DRILLING AGENCY: NR		ROTARY NR	CORING NR
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 9-5-1978	
REMARKS: 4½-in steel surface casing			



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-78011  
SHEET 2 OF 3

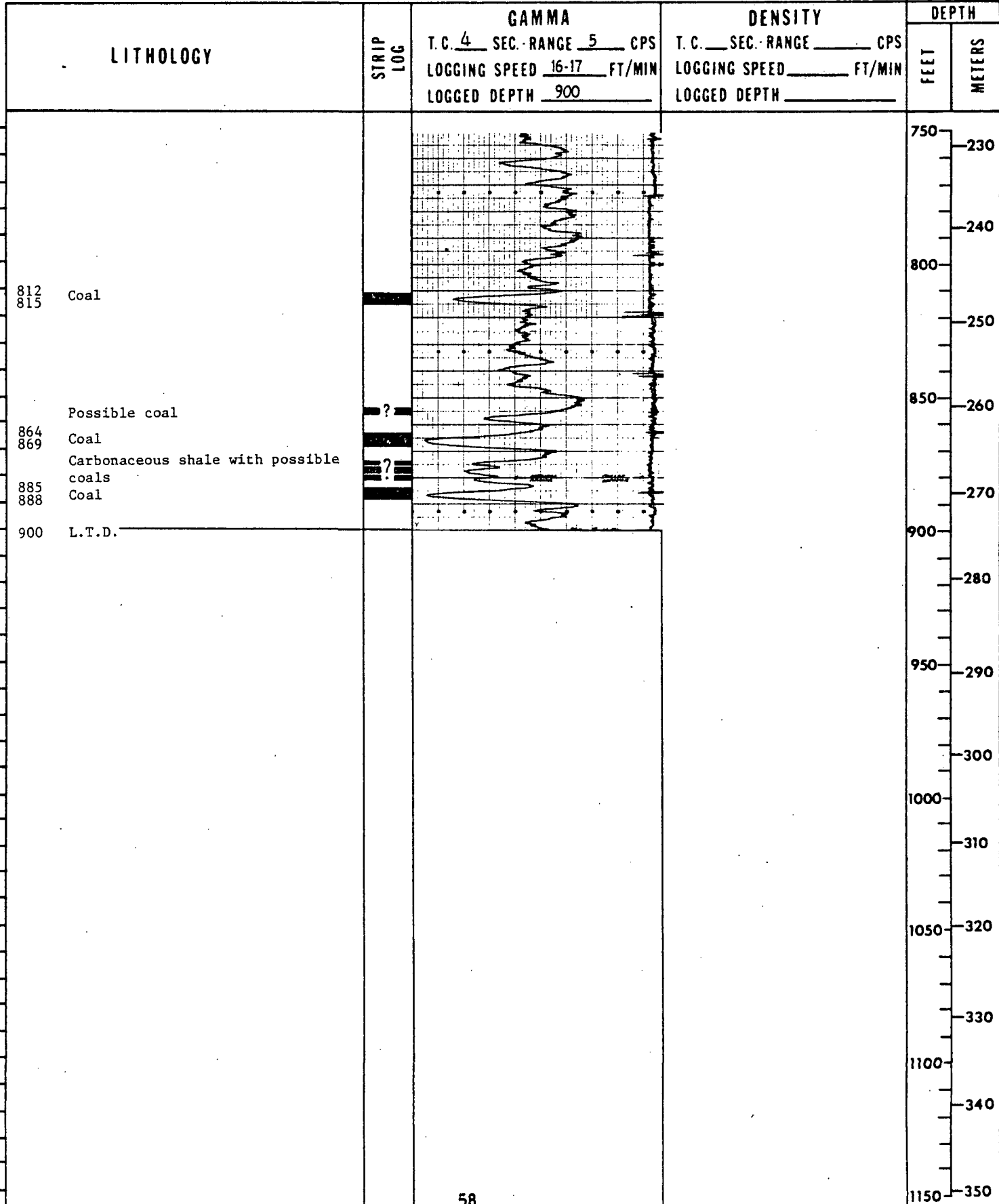
REMARKS:



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. WW-78011  
SHEET 3 OF 3

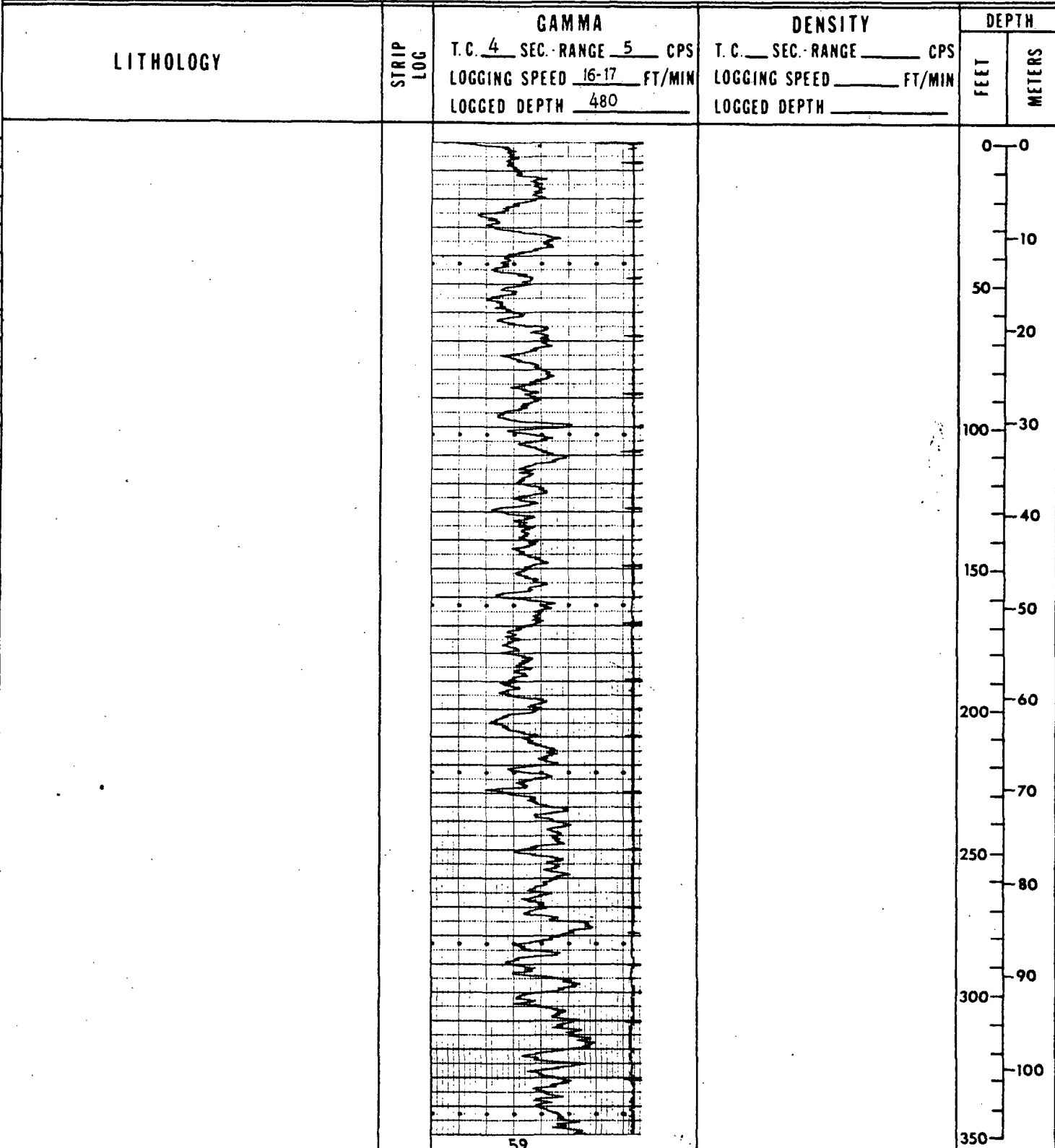
REMARKS:



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. <sup>WW</sup>7801  
SHEET 1 OF 2

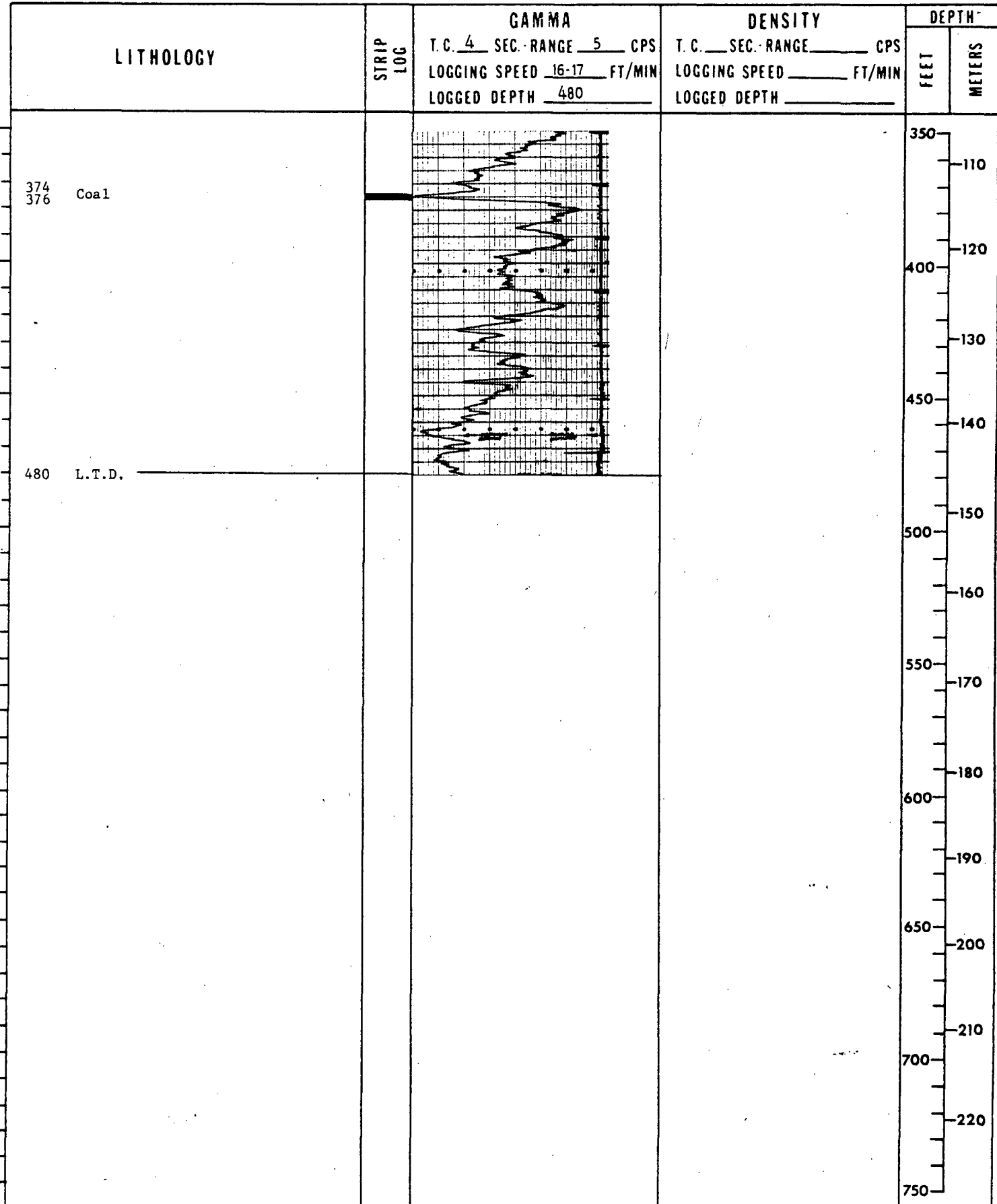
AREA Powder River Basin		QUAD NAME Betty Reservoir (SE $\frac{1}{4}$ )	
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming
LOCATION: SEC. 17 T. 39 N., R. 70 W., FOOTAGE LOC. 100		<del>XXX</del> FSL 2300	FEL <del>FW</del> GROUND ELEV 4598
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY NR	CORING NR
DRILLING AGENCY: NR		DRILL TYPE: NR	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 9-5-1978	
REMARKS: 2-in steel surface pipe			



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. WW-78012  
SHEET 2 OF 2

REMARKS:

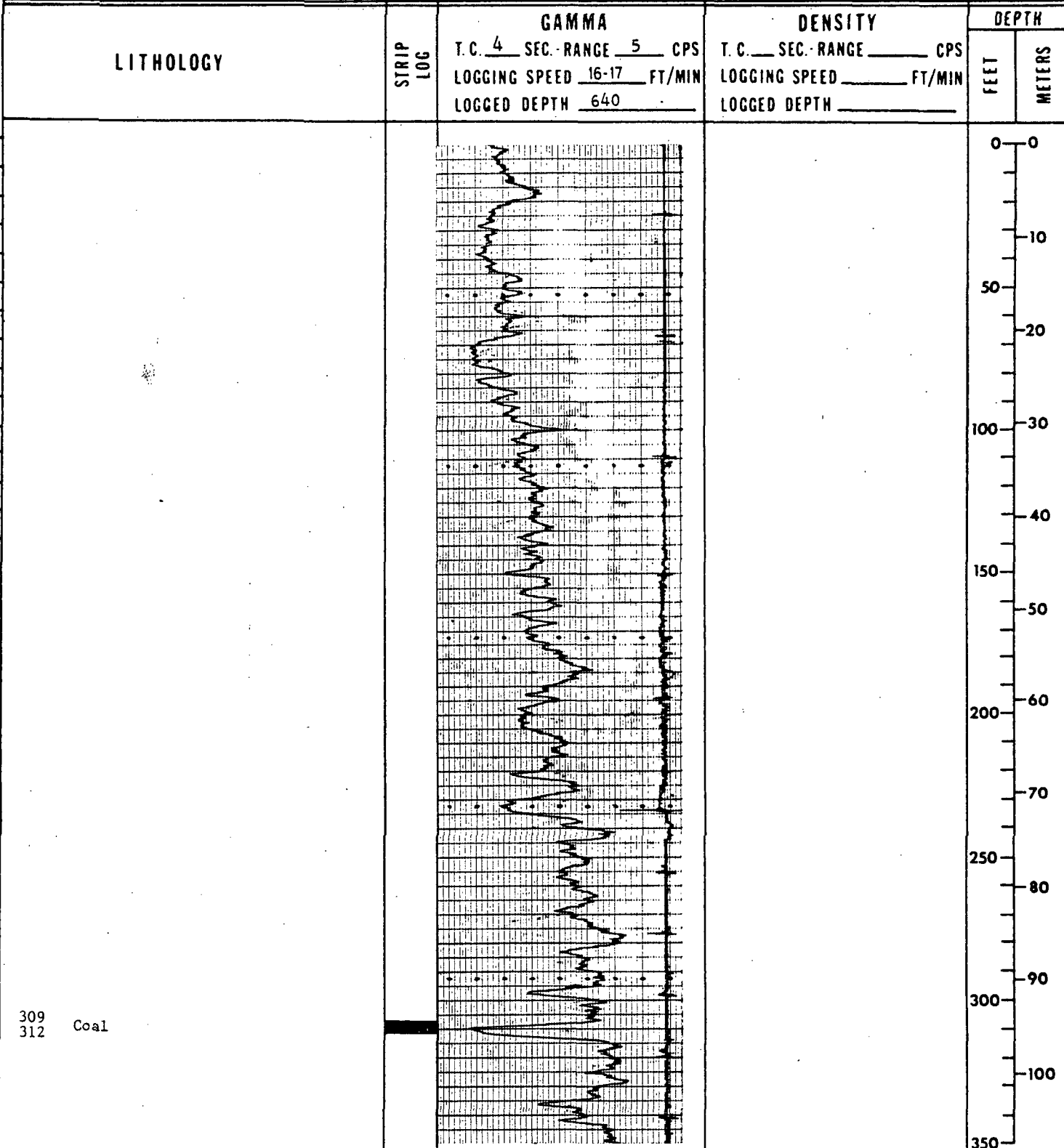




# UNITED STATES GEOLOGICAL SURVEY

HOLE NOWW-78014  
SHEET 1 OF 2

AREA Powder River Basin		QUAD NAME Coal Bank Draw	
DATE STARTED NR	DATE COMP. NR	COUNTY Converse	STATE Wyoming
LOCATION: SEC. 5 T. 39 N., R. 69 W., FOOTAGE LOC. 300		XRX FSL 1800	FEL FWE GROUND ELEV 4460
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY NR	CORING NR
DRILLING AGENCY: Ruby Drilling		DRILL TYPE: NR	DEPTH TO WATER Flowing
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 9-14-1978	
REMARKS: Morton's Inc., S. Dorr Well No. 119 6 5/8-in steel surface casing			

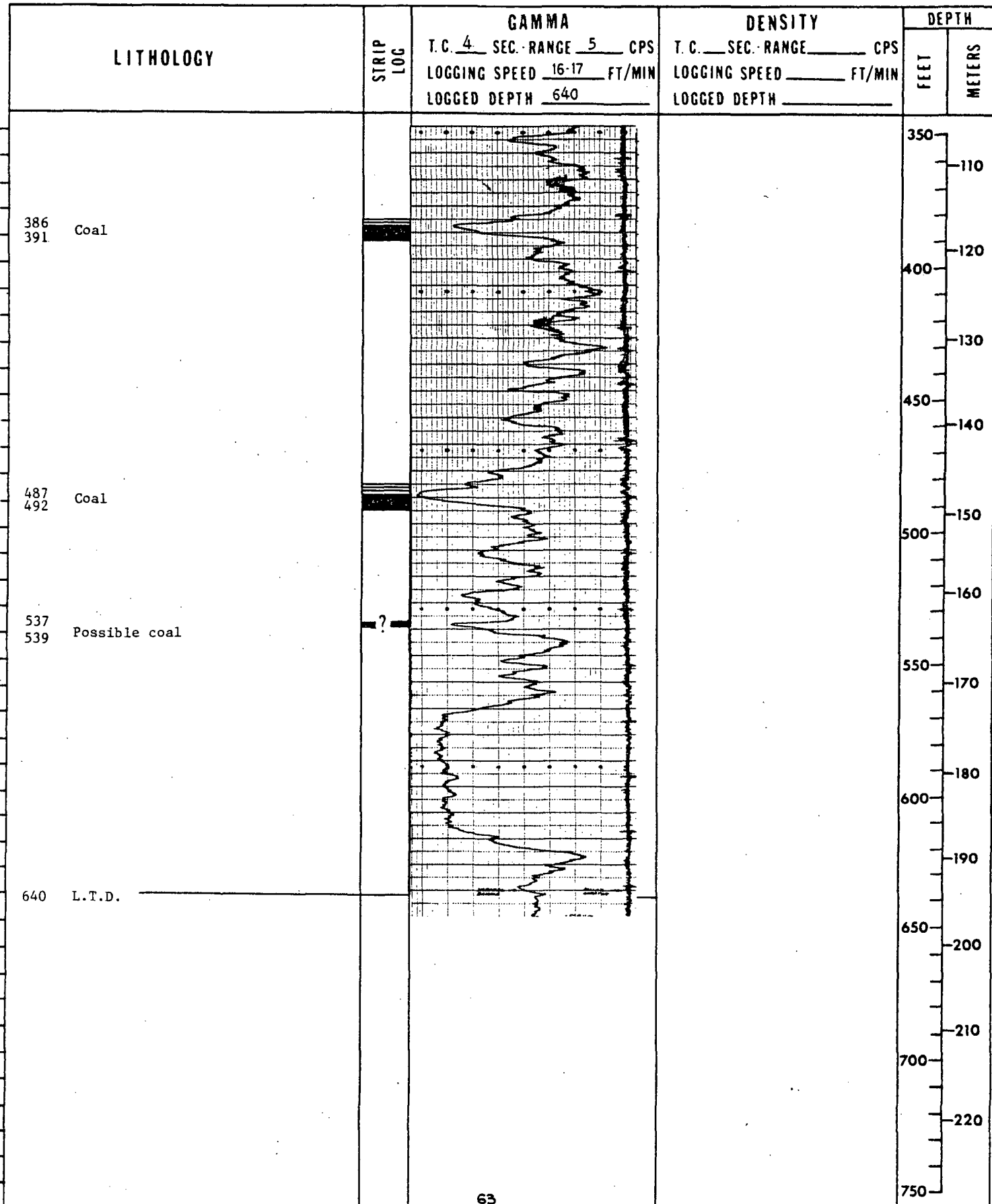




# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. WW-7801  
SHEET 2 OF 2

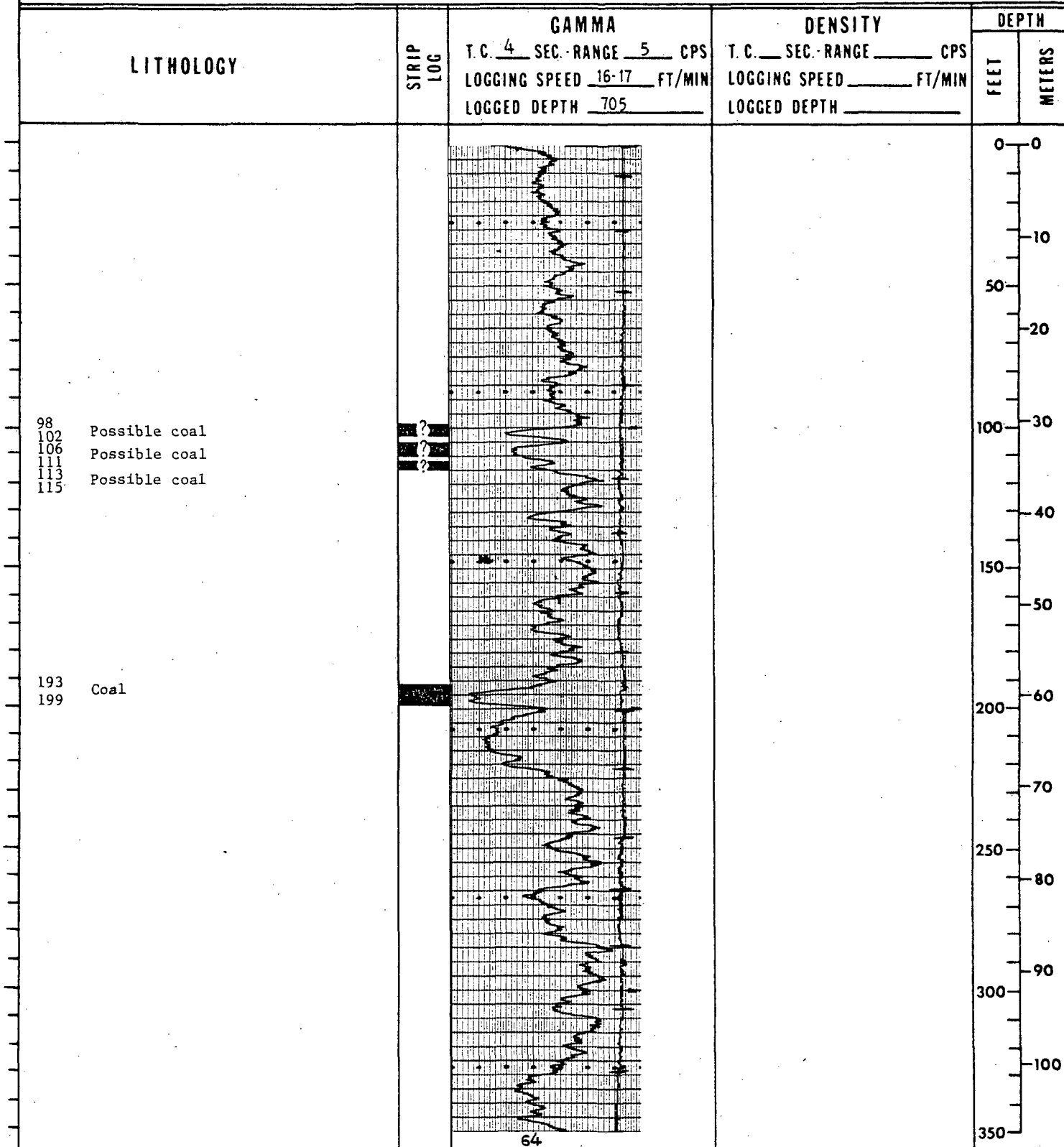
REMARKS:



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO. WW-78015  
SHEET 1 OF 2

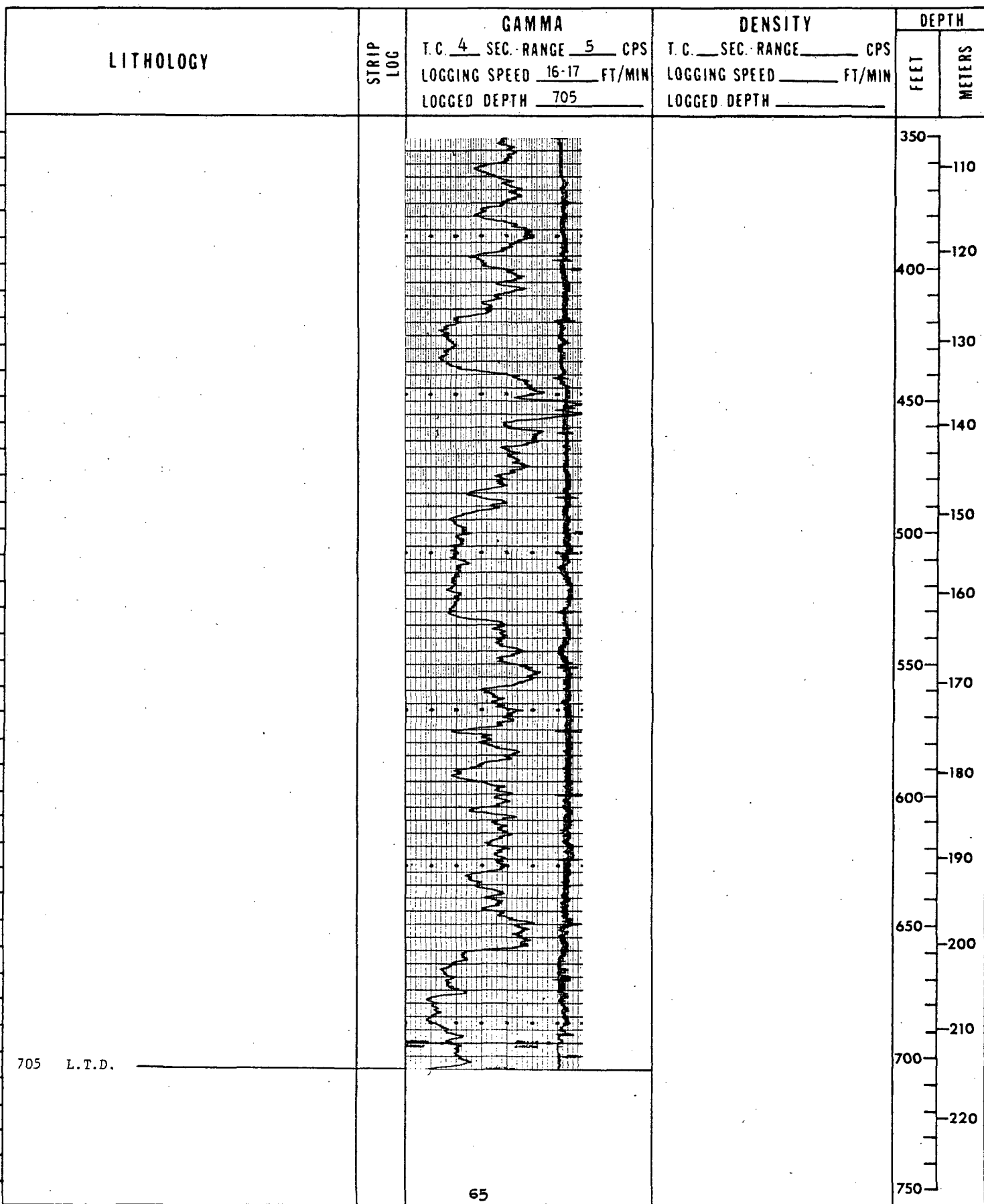
AREA	Powder River Basin	QUAD NAME	Fiddleback Ranch						
DATE STARTED	12-1-1974	DATE COMP.	12-15-1974	COUNTY	Converse	STATE	Wyoming		
LOCATION: SEC.	35	T. 40 N., R. 69 W.,	FOOTAGE LOC.	1200	FNL <del>FSL</del>	800	FEL <del>FSL</del>	GROUND ELEV	4400
SIZE AND BIT TYPE:	NR	FOOTAGE		TOTAL DEPTH		760			
DRILLING AGENCY:		Frank Kirn	DRILL TYPE:	NR	DEPTH TO WATER		Flowing		
LITHOLOGY RECORDED BY	NR	GEOPHYSICAL LOGS RECORDED BY				G. A. Hollomon	9-14-1978		
REMARKS: Morton's Inc., Welch Flats Well No. 115 4½-in steel surface casing									



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-78015  
SHEET 2 OF 2

REMARKS:



# UNITED STATES GEOLOGICAL SURVEY

HOLE NO WW-78018  
SHEET 1 OF 1

AREA <u>Powder River Basin</u>		QUAD NAME <u>Lone Tree Creek</u>	
DATE STARTED NR	DATE COMP. NR	COUNTY <u>Campbell</u>	STATE <u>Wyoming</u>
LOCATION: SEC. <u>15</u> T. <u>53 N.</u> , R. <u>70 W.</u> , FOOTAGE LOC. <u>700</u>		<del>XXX</del> FSL <u>600</u>	<del>XXX</del> FWL
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY NR	CORING NR
DRILLING AGENCY: NR		DRILL TYPE: NR	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY <u>G. A. Hollomon</u> 10-4-1978	

REMARKS:  
10-in steel surface casing

LITHOLOGY	STRIP LOG	GAMMA	DENSITY	DEPTH		
		T.C. <u>4</u> SEC. RANGE <u>5</u> CPS LOGGING SPEED <u>16-17</u> FT/MIN LOGGED DEPTH <u>185</u>	T.C. ___ SEC. RANGE ___ CPS LOGGING SPEED ___ FT/MIN LOGGED DEPTH ___	FEET	METERS	
<p>167 Coal</p> <p>170</p> <p>185 L.T.D.</p>				<p>0-0</p> <p>10</p> <p>50</p> <p>20</p> <p>100-30</p> <p>40</p> <p>150-50</p> <p>200-60</p> <p>70</p> <p>250-80</p> <p>300-90</p> <p>100</p> <p>350</p>		

# UNITED STATES GEOLOGICAL SURVEY

HOLE NO <sup>WW</sup>-78016  
SHEET 1 OF 1

AREA Powder River Basin		QUAD NAME Moyer Springs	
DATE STARTED NR	DATE COMP. NR	COUNTY Campbell	STATE Wyoming
LOCATION: SEC. 20 T. 51 N., R. 71 W., FOOTAGE LOC. 2300		<del>XXX</del> FSL 600	<del>XXX</del> FWL
SIZE AND BIT TYPE: NR		FOOTAGE	
		ROTARY NR	CORING NR
DRILLING AGENCY: NR		DRILL TYPE: NR	
LITHOLOGY RECORDED BY NR		GEOPHYSICAL LOGS RECORDED BY G. A. Hollomon 10-1-1978	
REMARKS: 4½-in PVC surface casing			

