Nor/Prod/wells - PPCo 8/10-1x

C O N F I D E N T I A L

WELL COMPLETION REPORT

PHILLIPS 8/10-1X

PRODUCTION LICENSE 017

Company Version

CONFIDENTIAL

WELL COMPLETION REPORT
PHILLIPS 8/10-1X
PRODUCTION LICENSE 017

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SUMMARY

Well:	Phillips 8/10-1X
Classification:	Dry Exploratory Well
Area:	Field 8, Block 10, Production License 017
Contractor and Rig:	ODECO Norway Inc., "Ocean Viking"
Location:	Line PG 030340, Shotpoint 30; 57° 08' 01.0" N., 03° 03' 55.1" E.
Water Depth:	66 meters (217 feet) below mean sea level
Rotary Kelly Bushing:	27 meters (90 feet) above mean sea level
Objective:	To test the Tertiary and Mesozoic
Results:	No oil or gas was encountered
Status:	Plugged and abandoned
Total Depth:	3099 meters (10166 feet)

DRILLING HISTORY

Dates of Operations

Spud:	May 30, 1969
At Total Depth:	June 28, 1969
Completed:	July 1, 1969

Details of Operations

- Casing Program -

20-inch set at 156 meters (511 feet) in 26-inch hole with 900 sacks cement.

13 3/8-inch set at 606 meters (1988 feet) in 17 1/2-inch hole with 1670 sacks cement.

9 5/8-inch set at 2125 meters (6972 feet) in 12 1/4-inch hole with 1770 sacks cement.

- Mud Program -

	Weight (ppg)	Viscosity	Pv	Yp	Water Loss
307 - 2000 feet (94 - 607 meters)	Sea water	-	-	-	-
2000 - 7000 feet (607 - 2133 meters)	13.0	53	29	12	6.0
7000 - 8500 feet (2133 - 2591 meters)	12.5	47	28	12	6.0
8500 - 8900 feet (2591 - 2713 meters)	13.0	55	34	16	5.6
8900 - 9980 feet (2713 - 3042 meters)	13.9	58	39	19	5.2
9980 - 10166 feet (3042 - 3097 meters)	14.4	55	35	15	4.0

Seawater was used for drilling to 2000 feet.

- Logging Program -

Schlumberger Tools	Run	Interval (Feet)
Induction Electric	1	6972 - 9983
	2	9700 - 10139
Sonic/Gamma Ray-Caliper	1	1987 - 6992
		306 - 6973 (GR)
	2	6972 - 9963
	3	9700 - 10156
Continuous Dipmeter	1	6972 - 9983
Directional Log	1	6972 - 9900

- Drilling Problems -

No significant problems were encountered in drilling.

- Hole Deviation -

Below 7200 feet deviation increased from 0° to 4° at 8600 feet, reached a maximum of 13 1/2° at 9120 feet, and decreased to 10° at 9900 feet.

- Stuck Pipe -

The drill pipe stuck when at a total depth of 9981 feet but was worked free in 3 1/2 hours after spotting diesel and mudban.

- Lost Circulation -

No lost circulation problems occurred.

- Coring -

No cores or sidewall cores were taken.

- Testing -

No tests were made.

- Plugging and Abandonment -

9260 - 9060 feet RKB:	laid cement plug with 150 sacks cement.
7072 - 6872 feet RKB:	laid cement plug with 100 sacks cement.
6000 feet RKB:	set Baker Model "K" bridge plug

Casing was cut as follows:

318 feet RKB:	9 5/8-inch
318 feet RKB:	13 3/8-inch
318 feet RKB:	20-inch

A cement plug was laid from 500 - 310 feet RKB with 70 sacks cement.

OBJECTIVES

The drilling objectives of the 8/10-1X were the Tertiary Miocene section equivalent to the gas-bearing sand section in the Murphy 2/3-1X well 35 miles southeast; Eocene sands which had minor gas shows in the Chub 7/8-1X 25 miles northwest and with oil shows in the Shell 1/3-1X; Paleocene sands productive in the Cod Field (25 miles east); fractured Upper Cretaceous limestone with condensate and gas shows in Shell 1/3-1X 20 miles southwest; and Jurassic and Triassic sands that were very porous and permeable in the Chub 7/8-1X. These sands had small shows in the Chub 7/8-1X and Amoseas' 9/4-1X 50 miles northwest.

GEOLOGY

Regional Setting

The Dolphin structure is the largest of nine prospect structures in Production License 017 and the shallowest of four prospects in Block 8/10. It is also the closest of these to the Cod Field. The 8/10-1X occupies a position on the margin of the Tertiary basin trough with 7865 feet of Tertiary section and 2247 feet of Mesozoic section above the Permian salt. The Dolphin structure has been formed by intrusion of Permian salt and it is the northern diapir on a north-south trending salt massif.

Prospect Geology

- Structure -

The Dolphin structure as mapped is an asymmetrical dome with a slight northeast bulge. The structure is bisected by two east-west trending faults and several minor northeast-southwest-trending faults. The intrusion of salt has effected closure as high as the Miocene 2080 feet below sea level. The dimensions of the structure on the top of the Upper Cretaceous limestone are 13.5 square miles in areal closure and 1050 feet in vertical closure. Dimensions are less on shallower horizons and about the same on deeper horizons.

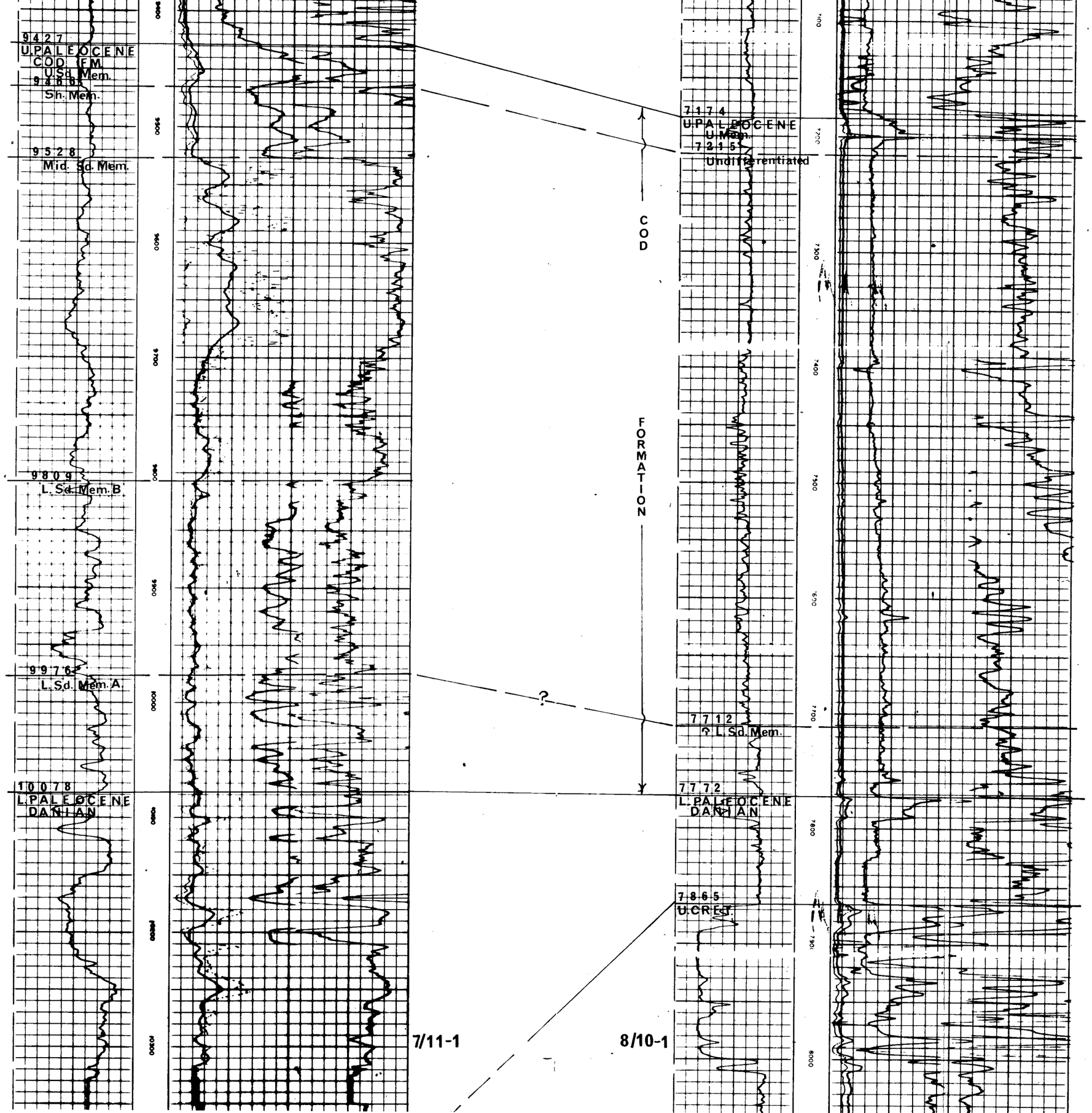
- Stratigraphy -

Stratigraphic control to the 8/10-1X location was projected from the Cod Field 25 miles east for the Tertiary section. The Mesozoic section was projected from the Chub 7/8-1X well 25 miles northwest. For the section down to the base of the chalk, drilled tops run consistently about 700 feet higher than predicted tops. Seismic reflections on the record sections across the well location can now be correlated with drilled tops.

Turbidite sand hoped for in Miocene, Oligocene, Eocene and Paleocene was realized only in the case of the Oligocene which exhibited shaley sands carrying methane in the interval 5750 - 5770' and 5840 - 5860'. Neither sand warranted testing.

Sand and/or fractured limestone development hoped for in the Danian-Upper Cretaceous was absent. Nevertheless, a new sand unit, not encountered in our previous wells nor in trade wells, was drilled within the shale-marl sequences of the ?Upper Cretaceous between 8674 - 8710'. It consisted of two tight very fine grained and silty calcareous sands of 15 and 10 feet in thickness. This sand had no show.

A 225-foot thick ?Jurassic-Triassic sand section, correlatable with sections in the 7/8-1X and 16/11-1X wells was found as expected, but calculated wet as in the latter two wells.



IES LOG
CORRELATION
OF
PALEOCENE
7/11-1 : 8/10-1

Stratigraphic Units:

Unit	Depth RKB Meters	Depth RKB Feet	Depth MSL Meters	Depth MSL Feet	Drilled Thickness Meters	Drilled Thickness Feet
QUATERNARY	93	306	-66	-217	-	-
TERTIARY						
Lower Pliocene					535	1751
Upper Miocene	628	2057	-602	-1968	102	341
Middle Miocene	731	2398	-704	-2309	561	1840
Lower Miocene						
Burdigalian	1292	4238	-1969	-4149	88	290
Aquitanian	1380	4528	-3322	-4439	39	126
Oligocene	1419	4654	-1392	-4565	671	2203
Eocene	2090	6857	-2063	-6768	97	317
Upper Paleocene	2187	7174	-2160	-7085	182	598
Lower Paleocene						
Danian	2369	7772	-4503	-7683	28	93
UPPER CRETACEOUS						
Maestrichtian	2397	7865	-2370	-7776	175	573
Campanian	2572	8438	-2545	-8349	12	40
Cenomanian	2584	8478	-2557	-8389	31	102
LOWER CRETACEOUS						
Albian Aptian	2615	8580	-2588	-8491	34	110
Barremian	2649	8690	-2622	-8601	32	106
Berriasian	2681	8796	-2654	-8707	91	300
JURASSIC						
Kimmeridgian	2772	9096	-2745	-9007	22	70
Undifferentiated	2794	9166	-2767	-9077	31	104
TRIASSIC	2825	9270	-2798	-9181	257	842
PERMIAN						
Zechstein	3082	10112	-3055	-10023	17	54
(Total Depth)	3099	10166	-3072	-10077		

Lithology:

Quaternary

Recent-Pleistocene undifferentiated. Thickness unknown. This section was drilled without returns.

Tertiary

Lower Pliocene. Thickness unknown. No sample returns between Pliocene and Quaternary contact. This unit is composed of grey sandy to silty pyritic clay. The sand grains are fine grained subrounded to rounded, some are cemented by pyrite.

Upper Miocene. Thickness 103 meters (341 feet). This unit is composed of sandy pyritic clay. The sand is fine grained. The clay is occasionally intercalated with thin beds of light grey non calcareous friable shale and very thin beds of buff limestone.

Middle Miocene. Thickness 561 meters (1840 feet). This interval consists of slightly sandy, pyritic clays with minor amounts of light green-grey shale and thin beds of buff-brown microcrystalline limestone. The limestone changes to a light greyish-brown cryptocrystalline to finely sucrosic dolomite and is associated with light brown shale.

Lower Miocene Burdigalian. Thickness 88 meters (290 feet). This unit consists of dark brown micaceous clays and light green micaceous shale with occasional thin stringer of coarse- fine grained glauconitic sand and a few thin beds of grey-brown dolomite.

Lower Miocene Aquitanian. Thickness 39 meters (126 feet). This unit is composed of light grey-brown pyritic clay and brown and green shale with occasional stringers of fine to medium-grained subrounded to rounded quarts sand. The sand contains traces of glauconite.

Oligocene. Thickness 671 meters (2203 feet). This unit is composed of grey-brown pyritic clay with occasional thin beds of greenish grey shale. The clay and shale becomes more sandy from 1618 meters (5310 feet) and between 1810 meters (5940 feet) and 1841 meters (6040 feet). There are some thin beds of tan-buff fine crystalline limestone. This thin bedded limestone continues in minor amounts to the base of the section and between 1964 meters (6445 feet) and 2018 meters (6620 feet). The lithology is predominately a light grey-tan marl.

Eocene. Thickness 97 meters (317 feet). This unit is composed of grey-brown pyritic clay and shales with occasional thin beds of white and grey-brown hard crystalline limestone and lesser amounts of light brown sucrosic dolomite. At 2146 meters (7040 feet) a few beds of greenish-grey shale that contains fragments of sphaerosiderite.

Upper Paleocene. Thickness 182 meters (598 feet). This unit is composed of grey to brown pyritic and glauconitic clay and shale. There are some thin beds of grey microcrystalline limestone and dark brown hard crystalline dolomite. Some of the dolomite is slightly argillaceous from 2286 meters (7500 feet) to the base of the section. There is an increasing amount of silt grading to a very fine grained light grey tight slightly glauconitic sandstone with a calcareous matrix. This sand grades into grey-light grey sandy limestone.

Lower Paleocene Danian. Thickness 28 meters (93 feet). This unit is composed of a massive white, chalky limestone with tan and amber (translucent slightly pyritic) chert nodules and interbedded red brown, green grey shales. There are also interbeds of light grey very fine grained tight slightly glauconitic sandstone some of which grades into light grey sandy limestone. The sandstone beds increase in the lower half of this section.

Upper Cretaceous Maestrichtian. Thickness 175 meters (573 feet). This unit is composed of a massive white chalk with tan and white translucent chert nodules. The chalk facies are occasionally broken by thin beds of grey-green sometimes carbonaceous shales.

Upper Cretaceous Campanian. Thickness 12 meters (40 feet). This interval is composed of a light tan soft marl which alternates with a white marly limestone containing some white and tan translucent chert nodules.

Upper Cretaceous Cenomanian. Thickness 31 meters (102 feet). This unit is composed of grey-green and brown glauconitic shale with some stringers of grey to brown very fine grained argillaceous micaceous friable slightly glauconitic sandstone.

Lower Cretaceous Albian? Aptian? Thickness 34 meters (110 feet). This unit has essentially the same lithology as the Cenomanian section but with the addition of a few thin beds of white microcrystalline limestone.

Lower Cretaceous Barremian. Thickness 32 meters (106 feet). This unit is composed of light grey soft sandy marl interbedded with red-brown occasionally olive firm shale.

Lower Cretaceous Berriasian. Thickness 91 meters (300 feet). This unit is composed of grey brown soft non calcareous shale which grades into a grey brown slightly fissile calcareous sandy shale. This shale grades to a tan soft marl at the base of the interval.

Jurassic

Jurassic Kimmeridgian. Thickness 22 meters (70 feet). This unit is composed of a clay shale dark brown soft lignitic. The clay shale changes to a grey hard splintery slightly dolomitic micaceous shale.

Jurassic undifferentiated. Thickness 31 meters (104 feet). This unit is composed of a white to light grey very fine grained subrounded slightly glauconitic sandstone with some carbonaceous flecks and occasional unconsolidated medium-coarse grains. The sandstone alternates with beds of grey hard dolomitic shale.

Triassic

Undifferentiated. Thickness 257 meters (842 feet). This unit is composed of white to light grey subrounded very fine grained glauconitic sandstone. Some of the grains have a red tinge. There are occasional coarse grains. This sand alternates with red brown grey and grey green soft to medium firm occasionally calcareous silty shale.

Permian

Zechstein. Thickness to total depth 17 meters (54 feet). The top of this unit is composed of a white massive anhydrite which changes to massive salt.

CONCLUSIONS

Turbidite sand in the Tertiary was not developed as hoped. We may be able to predict loci of each stage of turbidite deposits by reconstruction of basin centers for each of the Tertiary ages with correlation of additional well data with seismic data.

Danian and Upper Cretaceous sand and fractured limestone developments were not encountered, but this potential pay horizon will still be an objective in the area. The Cretaceous sand development, 8674 - 8710', is new to the area and will be an objective in future wells.

The Jurassic and Triassic sand section was wet. We believe this section will be water-bearing in all deep basin locations. The main hope for hydrocarbon accumulation in the Jurassic-Triassic is in structures along a regional stratigraphic wedgeout under the Cretaceous unconformity on the shallower northeast flank of the basin.

PHILLIPS PETROLEUM COMPANY

CONTRACTOR

CONTRACT NO. 14-08-0001-8486 BOOK NO. 1
LEASE NAME OCS-G-1399 WELL NO. 1
LOC. 1000' FSL & 1000' FEL
SEC. 29 BLK. 1 SURVEY
COUNTY OR PARISH DUKES BAY BLOCK 32 STATE FLORIDA
ELEVATION: DF 24 GL 15 DATE SPUDDED 8-8-74
TOTAL DEPTH 12,000' DATE COMPLETED 8-24-74
PRODUCING INTERVAL 11,800'-11,900'
TYPE OF COMPLETION SINGLE
TUBING RECORD 2-7/8" 6.5# J-55 11,800'

DIRECTIONAL

DRILLING

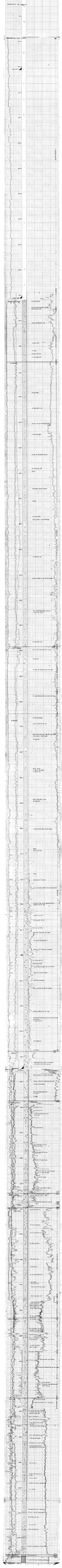
Contractor	Brown Drilling Co.	Mud Type	Lignosulfate
Rig No.	1	Mud Wt.	9.6
Spud Date	8-8-74	Viscosity	40
Comp. Date	8-24-74	Fluid Loss	8
Total Depth	12,000'	Ph	10.5
Drill Time	16 days	Chlorides	1,000
Hole Size	12-1/4"	Bit Record	12-1/4" Hughes
Casing	9-5/8" 47#		8-3/4" Hughes
Cement	1,000 sx	Core Record	None
Perforations	11,800'-11,900'	Drill Stem Test	None
Stimulation	None	Logs Run	Dual Induction
Completion	Flowing		Sonic
Tubing Pressure	2,000 psi		Density
Flow Rate	1,000 BPD		Neutron
Gas Rate	1,000 MCF		Dipmeter
Gravity	40		Velocity Survey
Gas Gravity	.65		Mud Logging
Gas Oil Ratio	1,000		
Bottom Hole Temp.	300°		

Schlumberger

CHANGE RUN

Logging Date	8-24-74
Run No.	1
Depth Driller	12,000'
Depth Logger	12,000'
Bottom Log Interval	12,000'
Top Log Interval	11,000'
Casing Driller	1,000'
Casing Logger	1,000'
Bit Size	8-3/4"
Type Fluid in Hole	Lignosulfate
Density	9.6
Viscosity	40
Fluid Loss	8
Source of Sample	Flowline
Rm @ Meas. Temp.	.25 @ 75°
Rmf @ Meas. Temp.	.20 @ 75°
Rmc @ Meas. Temp.	.30 @ 75°
Source Rmf / Rmc	Calc. / Calc.
Rm @ BHT	.12 @ 300°
Time Since Circ.	6 hrs.
Max. Rec. Temp.	300°
Equipment Location	1
Recorded By	Hoffman
Witnessed By	Mr. Hoffman

Schlumberger

DUAL INDUCTION-SONIC GR

Run No.	1
Depth Driller	12,000'
Depth Logger	12,000'
Bottom Log Interval	12,000'
Top Log Interval	11,000'
Casing Driller	1,000'
Casing Logger	1,000'
Bit Size	8-3/4"
Type Fluid in Hole	Lignosulfate
Density	9.6
Viscosity	40
Fluid Loss	8
Source of Sample	Flowline
Rm @ Meas. Temp.	.25 @ 75°
Rmf @ Meas. Temp.	.20 @ 75°
Rmc @ Meas. Temp.	.30 @ 75°
Source Rmf / Rmc	Calc. / Calc.
Rm @ BHT	.12 @ 300°
Time Since Circ.	6 hrs.
Max. Rec. Temp.	300°
Equipment Location	1
Recorded By	Hoffman
Witnessed By	Mr. Hoffman