PR-TREFI 81 (3)A

Do not Film Contents

TREFI COAL PROJECT
DRILL SITE RECLAMATION REPORT
1981

681

TREFI 1981 DRILLSITE RECLAMATION REPORT
DECEMBER 1981

This report covers reclamation work carried out on the Trefi Coal Exploration Drilling Project during October 10 through 12, 1981 inclusive. Two of the drillsites reclaimed during this period were drilled in the 1980 program, however winter freeze-up prevented the adequate reclamation of these sites during 1980. The drill sites referred to in this report are rotary drill sites located along British Petroleum's lease road, west of the Sukunka River.

This report will provide a brief description of the sites, an outline of the work performed and any recommendations concerning the sites. A summary of recommendations and comments concerning the drilling project will be included at the end of the report.

Items Used

a) 3/4 ton, 4x4 pick-up truck
b) Clark 735 bobcat and trailer
c) Oxygen - Acetylene Cutting Torch
d) Two bags of "Redi-Mix" Cement
e) Shovels, Picks, Crow Bar, Sledge Hammer and Rakes

Do Not
Film.

Site TR 80-06

This site was described in the February 1981 Reclmation Report

WORK PERFORMED

- a bobcat was used to contour the drill cuttings to the road grade over a 15m by 5m area, to a maximum depth of 10cm .
- the metal drill casing was cut off at bedrock and a 120cm cement surface plug was installed

RECOMMENDATION

- a re-inspection should follow to determine if additional reclamation is required.

Site TR 80-07

The site was described in the February 1981 Reclamation Report

WORK PERFORMED

- this site was obliterated by heavy machinery used to dig a collection sump for B.P.'s gas rig.

RECOMMENDATION

- a re-inspection should follow to determine if additional reclamation is required.

Site TR 81-103

This site is located on the east side of a spur road existing to the south of B.P.'s road

DESCRIPTION

- the metal drill casing is exposed 40cm above ground surface, and is cemented to within 60cm of the top
- cement has flowed in a patch 10cm to 15cm thick, 3m diameter around the drill hole and in a thin layer for 20m downslope
- the drill cuttings are spread in a thin layer across the road 20m to 25m downslope
- a channel has been eroded 20cm to 30cm deep, up to 1m wide for a distance of 20m downslope from the drill hole
- there is some debris, including a 5 gallon pail on site.

WORK PERFORMED

- the thick cement patch and debris was picked up and removed to a landfill disposal site
- the metal drill casing was cut off level with the cement
- a bobcat was used to fill in the erosion channel and contour the drillsite

RECOMMENDATION

- a re-inspection should follow to detemrine if additional reclamation is required.

Site TR 81-104

This site is located on a wide shoulder of British Petroleum's road.

DESCRIPTION

- there is a large cuttings pile 6m by 6m, 1m deep around the drill hole.
- the metal drill casing is exposed 30cm above surface level, and is cemented to within 50cm of the ground level
- a large cement flow, 20m by 4m, 10cm thick, extends downslope into a hollow by the trees next to the site. A thin layer of cement flowed in amongst the vegetation next to the drillsite.

WORK PERFORMED

- the drill cuttings were contoured over a 25m by 10m area using a bobcat
- as much cement as could be located due to snow cover was removed to a landfill site
- the metal drill casing was cut off level with the cement.

RECOMMENDATION

- a re-inspection should follow to determine if additional reclamation is required.

Sites TR 81-106, 80-08

These sites were drilled side by side in a large clearing to the north of the B.P. road

DESCRIPTION

Site TR 80-08 - This site was described in the February 1981 Reclamation Report

Site TR 81-106 - A drill cutting pile 6m by 4m, up to 1m high is present on site

- the metal drill casing is not cemented and is exposed 30cm above surface level.

WORK PERFORMED

- the metal drill casing of site TR 81-106 was cut at bedrock, 10cm below the surface level and 120cm cement surface plug was installed
- the drill cuttings from both sites were spread over a 20m by 10m area to a maximum depth of 5cm

RECOMMENDATION

- a re-inspection should follow to determine if additional reclamation is required.

Site TR 81-107

This site is located on the north side of the B.P. road in a road construction borrow pit.

DESCRIPTION

- a drill cuttings pile 5m by 2m, 50cm deep exists to the west of the drill hole.
- a cement flow 8m by 3m, up to 10cm thick extends from the drill hole. A thin layer of cement has flowed down the ditch for a distance of 10m.
- the metal drill casing is exposed 30cm above surface level and is cemented to within 50cm of the surface

WORK PERFORMED

- the drill cuttings were spread with a bobcat over a 20m by 5m area, to a maximum depth of 5cm.
- the drill casing was cut off at bedrock 20 cm below the surface
- as much cement as could be located due to snow cover was removed to a landfill site

RECOMMENDATIONS

- a re-inspection should follow to determine if additional reclamation is required

Site Tr 81-109

This site is located on a clearing to the south of a bend in the B.P. road.

DESCRIPTION

- there is a 5m by 2m by 40cm deep cuttings pile on site
- the drill casing is exposed 30cm above surface level and is cemented to within 40cm of the surface
- a cement patch 8m by 3m up to 10cm thick is in a hollow by the drill hole.

WORK PERFORMED

- the drill casing was cut off at the cement level
- the drill cuttings were spread over a 15m by 10m area
- most of the cement was removed, but that which couldn't be removed was buried using drill cuttings.

RECOMMENDATION

- a re-inspeciton should follow to determine if additional reclamation is required.

SUMMARY OF RECOMMENDATIONS AND COMMENTS

A re-inspection should follow to determine if seed is required on the drillsites and to determine that all government regulations have been met.

Due to partial snow cover on the drillsites at the time of reclamation, minor clean-up may be required to upgrade the sites to a satisfactory standard.

Greater care should be taken by the drill hole cementing crew to avoid flowing cement over the site or particularly amongst vegetation near the site. Excess cement should be contained, allowed to harden, and removed to an approved landfill disposal site. The cementing crew should also be informed to leave the top 1.5 m of the drill casing clear of cement to allow the casing to be cut off at a greater depth below the surface.

TREFI DRILLSITES

RECLAMATION REPORT

FEBURARY 1981

This report covers reclamation work carried out on the Trefi Coal Exploration Property during the last two weeks of Novermber 1980 and February 22-23, 1981. Site description and reclamation deficiencies for some of the drillsites were obtained from the attached report "Trefi Drillsite Inspections - October 26, 1980" by L.T.L. Callow.

This report will provide a brief outline of the work performed on the sites and recommendations for future reclamation work.

Items Used:

a) 3/4 ton, 4 X 4 pick-up truck
b) Portable oxygen - acetylene cutting torch
c) "Explosometer" combustible sniffer
d) Clark 735 bobcat with ripper bucker
e) Case 550 track-mounted front-end loader with bucket and blade
f) Four 25 Kg. sacks of seed mix containing:

Creeping Red Fescue	45%
Timothy	30%
Alsike	25%

g) Six 25 Kg. bags of 46-0-0 fertilizer
h) Cyclone hand seeders
i) Shovels, picks, crow bar, sledge hammer and rakes

Site TR-RDH-1

This site is located at the base of a 10 foot vertical head wall on the west side of the Hasler Creek forestry road, the slope is 5°.

Reclamation Deficiencies:

- The drillhole has caved forming a 2.5 foot diameter, 1.5 foot deep sink hole tapering to 10 inch diameter at a depth of 2 feet.
- The drillhole has been plugged with a log and appears to have had a thin cement plug on the surface, but this has since caved in.
- Drill cuttings have been spread downslope from the main cuttings pile (8' X 10' X 1.5').
- Erosion channels (1 to 2' wide, 6 to 8" deep) run downslope from the drillhole into a forested area 100 feet away.
- Some drill cuttings have been washed downslope via the erosion channels and deposited in the forested area.
- There are 2 cement patches (totalling 4' X 3' X 4") present on site.

Work Performed:

- The airphoto marker and a small amount of debris was removed.

- The caving hole was filled using cement removed from the site and then covered with cuttings scraped up with the bobcat.
- The entire area was seeded and fertilized.
- Due to the extent of ground frost, most of the drill cuttings, the erosion channels and some cement remains unaltered.

Recommendations:

- Further reclamation steps should be taken after the spring thaw to upgrade the site to an acceptable condition.

Site TR-RDH-2

This site is located on a grassy clearing adjacent to a small gravel road on the north side of Highway 97. The gravel road exits the highway opposite a viewpoint turnout.

Reclamation Deficiencies:

- The Site is relatively clean except for the cuttings pile (2 m diameter 1 m high), a few pieces of planking, the airphoto markers and the surface casing.
- The debris should be picked up.
- The cuttings pile should be spread out and used to fill a rut created by the drilling rig.
- The surface casing should be cut off a couple of feet below the surface (providing a torch is available) then plugged and covered with soil or cuttings.
- The entire disturbed area should be seeded and fertilized.

Work Performed:

- The pieces of planking and the airphoto marker were removed from the site.
- The drill casing was cut 1.5 feet below the surface and plugged with a log.
- The bobcat was used to spread the cuttings pile into the ruts made by the drill rig and also to cover the plugged drill casing.
- The entire area was seeded and fertilized.

Recommendations:

- A re-inspection is scheduled for 1981 to determine if further reclamation is required.

Site TR-RDH-3

I was unable to locate this site, however, the pipeline road on which the site is reportedly located has been recently widened and contoured and this may have destroyed the site.

Site TR-RDH-4

This site is located on the edge of a logging road which branches off from the Commotion Creek forestry road. It is situated at the base of a vertical headwall cut into shale. On the opposite side of the road a small tributary stream drains into Commotion Creek.

Reclamation Deficiencies:

- The site is relatively clean except for the airphoto markers and the cuttings pile (1 m diameter .5 high). The cuttings pile should be spread out and the airphoto markers removed.
- The entire disturbed area (4-5 m diameter) should be fertilized and seeded although the shaley surface materials from the headwall may hamper revegetation attempts.
- The drillhole is collapsing and poses a serious threat to motorists using the road. Therefore, a below surface plug should be installed and covered with soil before seeding.
- Although this site is relatively close to a small creek, the drainage is along the north ditch of the road into an open area away from the creek. It doesn't appear that any fluids or cuttings from the drillsite have entered the stream.

Work Performed:

- The caving drillhole was plugged with a large rock below the surface.
- The bobcat was used to spread cuttings over the rock and to smooth some small ruts made by the drill rig.
- The airphoto marker was removed.
- The entire area was seeded and fertilized.

Recommendations:

- A re-inspection is scheduled for 1981 to determine if further reclamation is required.

Site TR-RDH-5

This site is located on a bench cut into the toe of a steep headwall on the east side of the Commotion Creek forestry road. The site had been inspected shortly before drilling commenced by Lin Callow (see file note dated 1980 07 15). The headwall above the platform has slopes ranging from 21° to 31° and 40 m high, at its base is a vertical drop of 1.5 m to the drilling platform. This vertical wall is cut down into the shale bedrock.

The soil overlying the shale on the headwall is approximately 1 m thick and composed of silty sand with 40-60% unsorted gravel from pebble to rubble size. Much of the fine material has been washed off the steeply sloping headwall and onto the drilling platform and adjacent ditch. The drilling platform is composed of fine shale particles and forms an effective erosion bar and settling area below the headwall.

Reclamation Deficiencies:

- The site is relatively clean, however, a five gallon pail, and the airphoto marker should be removed.
- The culvert installed for access across the ditch should be removed as well as the erosion bar present in the ditch downslope from the drill site. These structures could cause the road to flood and erode during heavy spring run off.
- The drilling platform should remain largely intact, however, the pile of material pushed up at both ends should be recontoured to its original slope and the platform edge facing the road slightly sloped, back into the hillside. This will improve the erosion effectiveness and settling basin characteristics of the platform.
- The entire area should be seeded and fertilized although revegetation is expected to be slow due to the poor soil quality of the remaining materials. Natural recolonizing species such as aspen, aster and grass have to date established approximately 3-5% cover on the headwall.
- The drill hole is caving in and should be plugged below the surface and covered with soil (a rock, log or cement plug can be used).

Work Performed:

- The 5 gallon pail and air photo marker was removed from the site.
- The drill hole was plugged below surface with rock and the hole was filled with rock and cuttings.
- A small track-mounted front end loader pushed the overburden piled at each end of the drillsite back towards the platform and recontoured it to the original slope.
- The edge of the platform facing the road was pushed back and resloped to a lesser angle.
- The culvert in the ditch was removed and the ditch was cleaned to allow drainage.
- The cat compacted all disturbed soil by walking over the area repeatedly to lessen erosion of the recontoured slopes.
- The entire area was seeded heavily and fertilized.

Recommendations:

- A re-inspection is scheduled for 1981 to determine if further reclamation is required.

Site TR-RDH-6

This site is located on the north side of a spur road off the B.P. road.

Reclamation Deficiencies:

- There are 2 cuttings piles on site (one 8' X 8' X 1'; the second tapers up a 6' headwall from a depth of 1' at the bottom to 1" at the top and is 8' wide).

- The drill casing is protruding 1.5 feet out of the ground.
- There are two 8 inch wide ruts 3 inches deep and 10 feet long made by the dual rear wheels of the drilling rig.
- Site is clean of debris except for the airphoto marker.

Work Performed:

- The drill casing was cut off at a rock layer 6 inches below the surface and plugged with a log.
- Due to the amount of ground frost, the drill cuttings could not be spread at this time.
- The site was seeded and fertilized.

Recommendations:

- Further reclamation steps should be taken after the spring thaw to upgrade the site to an acceptable condition.

Site TR-RDH-7

This site is located on the south side of the B.P. road in a small clearing just off a bend in the road.

Reclamation Deficiencies:

- The extent of reclamation needed on this hole was hard to determine because of 4 inches of snow cover on the site.
- The drill hole appears to be plugged with cement and a cement flow extends at least 20 feet downslope from the drill hole.
- There is a drill cuttings pile 1 foot high and covering an undetermined area.
- A 6-inch piece of drill casing was embedded into the cuttings pile and it appears to have been cut from the drill hole, although no casing is present in the drill hole.

Work Performed:

- The airphoto marker was removed and the area was seeded and fertilized.

Recommendations:

- Further reclamation work should be attempted after spring thaw.

Site TR-RDH-8

This site is located on the north side of the B.P. road in a 200 foot by 75 foot clearing which has a 35 foot headwall on the north side. The clearing was probably made during the road construction as it has large piles of rock and surface material at the east and west ends of the clearing.

Reclamation Deficiencies:

- The drill hole is plugged with cement to the surface and there is no casing in the hole.
- A small cement flow (30' X 2' X .25") extends downslope from the hole.
- A cuttings pile (12' X 8' X 3') is present next to the drill hole.
- Site is clean of debris.

Work Performed:

- The area was seeded and fertilized.
- Due to the extent of ground frost, the cuttings pile has not been spread.

Recommendations:

- The site should be upgraded using a bobcat to spread the cuttings pile and remove the cement flow after spring thaw.

Site TR-RDH-9

This site is located on a Loffland oil rig lease at the north end of the drill sump.

Deficiencies:

- The drill cuttings appear to be well spread except for a berm 6 feet in diameter and 6 inches high around the hole.
- A 1 foot piece of drill casing and a large, truck oil filter are embedded into the drill cuttings.
- The surface casing protrudes one foot above ground level.

Work Performed:

- The drill casing was cut off 8 inches below the surface and plugged with a log.
- The cuttings berm was spread and used to cover the plugged drill casing.
- The airphoto marker and the debris on site was removed.
- The area was seeded and fertilized.

Recommendations:

- A re-inspection is scheduled for 1981 to determine if further reclamation is required.

Site TR-RDH-10

This site is on the east side of a forestry access road to a cut block, at the base of a 25 foot headwall which is eroding badly.

Reclamation Deficiencies:

- There is a large (7' X 5') oil patch caused by the drill rig next to the drill hole.
- The cuttings are well spread (25' diam. X 4") across the road.
- Water and cuttings flowed across the road at an erosion bar 20' downslope from the drillhole. The water then flowed over the bank of the road and into a forested area, cutting an erosion channel 6 inches wide and 3 inches deep down the bank of the road.

Work Performed:

- The drill casing was cut 8 inches below the surface and plugged with a log.
- The cuttings around the drill hole were used to cover the plugged casing.
- The oil patch was scooped up and removed.
- The airphoto marker was removed.
- The area was seeded and fertilized.

Recommendations:

- A re-inspection is scheduled for 1981 to determine if further reclamation is required.

Sites TR-RDH-11 and -12

These sites are located side by side on the west side of the Hasler Creek forestry road.

Reclamation Deficiencies:

- Drill Hole 12 has surface casing protruding 1 foot out of the ground and it is flowing water at a rate of approximately 1 gallon/minute.
- The water is flowing into low land next to the road and has formed a pond 50 feet X 15 feet X 8 inches deep, which could wash across the road if the water flow remains unchecked.
- Drill Hole 11 has been plugged to the surface with cement.
- There are 2 cutting piles on site (8' diam. X 1.5' high and 8' X 10' X 6").
- There is a cement patch on site (3' X 4' X 1").

Work Performed:

- Due to the extent of ground frost, the cuttings piles could not be spread at this time.
- The airphoto marker was removed and the area was seeded and fertilized.
- On February 22, 23, 1981 the flow of water was stopped and the drill hole was cemented from the bottom to within two feet from the surface by a pressure cementing crew.

Recommendations:

- The drill casing should be cut off at the cement plug and the cuttings piles should be spread over the drill sit. All debris and cement on site should be removed. This work should not be attempted until well after the spring thaw.

Summary of Recommendations

Further reclamation work may be required on some of the drillsites to upgrade them to meet the reclamation guidelines set out by the B.C. Government. This work may require the use of light machinery to be carried out effectively. Re-seeding of some of the disturbed areas may also be required.

1981 03 25
GJH:rm

cc: E.M. Wright
L.T.L. Callow
G.D. Childs.
B.P. Flynn

PR-TREFI 81(3)A

TREFI COAL PROJECT
1981

FORMATION TOPS FOR GEOPHYSICAL LOGS

DEVIATION SURVEYS

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TREFI COAL

Drill Hole Data Sheet for Oil & Gas Holes Driled on TREFI

HOLE	SURFACE ELEVATION (m)	TOP OF KCmw		TOP OF KCmb		THICKNESS KCmw	OTHER FORMATION TOPS (m)
		ELEVATION (m)	DEPTH (m)	ELEVATION (m)	DEPTH (m)		
93P/5 c-31-K	Hole is cased to below KCmb.						
93P/5 c-29-C	1242.0	692.0	550.0	617.0	625.0	75.0	KCmh 748.0 KCmg 854.0 KMb 1083.0
93P/12 a-23-D	1264.0	592.0	672.0	524.0	740.0	68.0	KCmh 824.0 KCmg 936.0 KMb 1159.0
93P/5 d-78-K	Data not released until one year after hole is completed. approximately September '82						

TREFI COAL

Drill Hole Data Sheets for 1980 & 1981 Drill Holes
1980 and Previous

HOLE	SURFACE ELEVATION (m)	TOP OF KCmw		TOP OF KCmb		THICKNESS KCmw	OTHER FORMATION TOPS (m)
		ELEVATION (m)	DEPTH (m)	ELEVATION (m)	DEPTH (m)		
DDH 80-01	710	586.0	124.0	523.3	186.7	62.7m	
DDH 80-02	926	754.8	171.2	698.9	227.1	55.9m[1]	
DDH 80-03	808	663.2	114.8	595.2	212.8	68.0m	
RDH 80-01	775	547.0	228.0	469.8	305.2	77.2m	
RDH 80-06	1060	1053.8	6.2	966.0	94.0	87.8m	
RDH 80-07	1250	1115.5	134.5	1059.3	190.7	56.2m[2]	
RDH 80-08	1153	1064.8	82.5	1004.5	148.5*	66.0m[3]	
RDH 80-11	832	773.2	58.8	705.9	126.1	67.3m	
RDH 80-12	832	773.2	58.8	708.0	124.0	65.2m	

1. 1981 Stratigraphic correlation shows DDH 80-02 did not intersect KCmb
2. 1980 log pick on KCmb incorrect: see 1981 data RDH 81-109c
3. 1980 log pick on KCmb incorrect: see 1981 data RDH 81-106c

1981 Drill Hole Data Sheet

HOLE	SURFACE ELEVATION (m)	TOP OF KCmw		TOP OF KCmb		THICKNESS KCmw	OTHER FORMATION TOPS (m)
		ELEVATION (m)	DEPTH (m)	ELEVATION (m)	DEPTH (m)		
DDH 81-100	923	750.2	172.8	689.0	234.0	61.2	
RDH 81-101	887	573.0	314.0	502.8	384.2	70.2	
DDH 81-102	1380	1333.5	46.5	1228.7	151.3	104.8	
RDH 81-103	1054	828.7	225.3	727.3	326.7	101.4	
RDH 81-104	1233	1024.3	208.7	955.8	277.2	68.5	
DDH 81-105	971	816.5	154.5	738.5	232.5	78.0	
RDH 81-106c	1153	1064.8	82.5	1002.0	151.0*	68.5	
RDH 81-107	1297	1222.3	74.7	1160.5	136.5	61.8	KCmh 217.0 KCmg 329.8
DDH 81-108	1204	661.6	542.4	590.5	613.6	71.1	KH 167.8
RDH 81-109c	1250	1115.5	134.5	1050.0	200.0*	65.5	

*1980 log picks incorrect, 1981 corrected log picks

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES INC. GRID: _____ DATE SURVEYED: 6 JULY 1980

DRILL HOLE: TR-RDH-80-01 LATITUDE: _____ SURVEY BY: ROBERTSON

LOCATION: TREFI PROPERTY DEPARTURE: _____ WITNESSED BY: MCFALL

FIELD: CHETWYND ELEVATION: _____ CALCULATIONS BY: _____

MAGNETIC DECLINATION: _____ CORRECTION OF: _____ FOR: _____ GRID: _____

BEARINGS ARE FROM MAGNETIC NORTH SLANT ANGLE IS FROM VERTICAL RUN AFTER HOLE WAS DEEPENED

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	00	0.55	001.7	11	150	2.61	12.5	22	315	07.78	018.0
	CASING TO 8.5M										
1	10	1.40	205.3	12	165	2.79	23.5	23			
2	15	2.31	331.3	13	180	* 2.57 3.17	38.4 39.5	24			
3	30	2.41	344.2	14	195	3.34	32.5	25			
4	45	3.02	345.8	15	210	3.53	77.3	26			
5	60	* 2.19 1.91	346.3 349.1	16	225	3.90	54.0	27			
6	75	2.64	346.6	17	240	* 4.27 5.39	53.4 91.6	28			
7	90	2.44	003.1	18	255	6.12	35.0	29			
8	105	2.62	007.3	19	270	6.12	35.0	30			
9	120	* 1.75 2.62	005.5 069.6	20	285	5.75	29.6	31			
10	135	1.87	017.0	21	300	* 5.75 7.41	14.5 18.6	32			

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES INC. GRID: _____ DATE SURVEYED: JULY 1980

DRILL HOLE: TR-RDH-80-07 LATITUDE: _____ SURVEY BY: ROBERTSON

LOCATION: TREFI PROPERTY DEPARTURE: _____ WITNESSED BY: MCFALL

FIELD: CHETWYND ELEVATION: _____ CALCULATIONS BY: _____

MAGNETIC DECLINATION: _____ CORRECTION OF: _____ FOR: _____ GRID: _____

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	00	1.44	197.7	11	165	7.82	230.6	22			
1	15	0.65	331.0	12	180	7.83	209.8	23			
2	30	* 2.07 2.27	249.6 255.2	13	195	8.48	229.3	24			
3	45	5.80	243.4	14	200	8.06	223.6	25			
4	60	7.82	256.9	15				26			
5	75	8.03	226.4	16				27			
6	90	* 7.84 8.05	240.4 244.2	17				28			
7	105	8.07	231.1	18				29			
8	120	7.83	235.8	19				30			
9	135	8.24	226.1	20				31			
10	150	* 7.05 7.05	227.8 225.9	21				32			

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES INC. GRID: _____ DATE SURVEYED: 21 JULY 1980

DRILL HOLE: TR-RDH-80-08 LATITUDE: _____ SURVEY BY: ROBERTSON

LOCATION: TREFI PROPERTY DEPARTURE: _____ WITNESSED BY: MCFALL

FIELD: CHETWYND ELEVATION: _____ CALCULATIONS BY: _____

MAGNETIC DECLINATION: _____ CORRECTION OF: _____ FOR: _____ GRID: _____

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	00	0.11	052.3	11	165	5.99	129.5	22			
1	15	2.03	083.3	12				23			
2	30	3.48	150.8	13				24			
3	45	4.72	152.9	14				25			
4	60	4.32	166.3	15				26			
5	75	3.50	173.1	16				27			
6	90	4.71	140.0	17				28			
7	105	4.33	154.3	18				29			
8	120	5.16	191.6	19				30			
9	135	5.17	150.9	20				31			
10	150	5.15	106.6	21				32			

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES INC. GRID: DATE SURVEYED: 26 JULY 1980

DRILL HOLE: TR-RDH-80-11 LATITUDE: SURVEY BY: ROBERTSON

LOCATION: TREFI PROPERTY DEPARTURE: WITNESSED BY: MCFALL

FIELD: CHETWYND ELEVATION: CALCULATIONS BY:

MAGNETIC DECLINATION: CORRECTION OF: FOR: GRID:

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	00	2.20	036.8	11				22			
	CASING TO 7.0 M										
1	15	3.30	163.7	12				23			
2	30	4.60	183.4	13				24			
3	45	* 6.61 6.82	238.1 213.0	14				25			
4	60	7.85	222.6	15				26			
5	75	9.68	210.4	16				27			
6	90	10.29	236.4	17				28			
7	105	* 10.78 10.91	223.4 221.2	18				29			
8	120	12.38	197.8	19				30			
9	130	13.61	192.8	20				31			
10				21				32			

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES INC. GRID: _____ DATE SURVEYED: September 20, 1980

DRILL HOLE: TR-RDH-80-12 LATITUDE: _____ SURVEY BY: SIM

LOCATION: _____ DEPARTURE: _____ WITNESSED BY: DUFORD

FIELD: TREFI ELEVATION: _____ CALCULATIONS BY: _____

MAGNETIC DECLINATION: _____ CORRECTION OF: _____ FOR: _____ GRID: _____

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	0	½	S-20-E	11	110	15°	S-16-W	22			
1	10	3°	S-4-W	12	120	17°	S-19-W	23			
2	20	4.5°	S-0	13	125	16°	S-19-W	24			
3	30	6°	S-10-W	14				25			
4	40	7°	S-20-W	15				26			
5	50	9°	S-27-W	16				27			
6	60	10°	S-30-W	17				28			
7	70	13°	S-27-W	18				29			
8	80	13°	S-27-W	19				30			
9	90	16°	S-25-W	20				31			
10	100	15°	S-18-W	21				32			

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES
GRID:
DATE SURVEYED: 14 July 1981

DRILL HOLE: TRF-DDH-81-100
LATITUDE:
SURVEY BY: PUBANZ

LOCATION:
DEPARTURE:
WITNESSED BY: MACFARLANE

FIELD: TREFI
ELEVATION:
CALCULATIONS BY:

MAGNETIC DECLINATION:
CORRECTION OF:
FOR: GRID:

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	0	1.97	CASING	11	165	3.01	340.6	22			
1	15	2.33		12	180	3.01	335.1	23			
2	30	2.50		13	195	2.64	334.8	24			
3	45	2.60	327.0	14	210	2.45	314.2	25			
4	60	2.31	5.6	15	225	2.45	313.4	26			
5	75	1.88	11.5	16	240	2.44	300.9	27			
6	90	2.32	347.2	17				28			
7	105	2.49	329.8	18		REPEATS		29			
8	120	2.85	340.2	19	60	1.69	5.6	30			
9	135	2.85	359	20	120	2.97	341	31			
10	150	3.02	1.4	21	180	2.98	320.5	32			

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES INC GRID: DATE SURVEYED: JULY 17, 1981.

DRILL HOLE: TRF - RDH - 81 - 101 LATITUDE: SURVEY BY: PUBANZ

LOCATION: DEPARTURE: WITNESSED BY: MACFARLANE

FIELD: ELEVATION: CALCULATIONS BY:

MAGNETIC DECLINATION: CORRECTION OF: FOR: GRID:

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	0	1.18	CASING	11	165	2.77	295.3	22	330	3.27	213.3
1	15	2.27	-	12	180	2.96	255.3	23	345	3.83	218.4
2	30	2.27	44.7	13	195	3.32	226	24	360	4.18	217.6
3	45	2.09	130.6	14	210	2.94	225.4	25			
4	60	1.89	183.0	15	225	2.96	229.7	26			
5	75	1.89	188.9	16	240	2.91	219.7	27			
6	90	2.98	216.7	17	255	3.28	242.5	28			
7	105	2.97	238.6	18	270	2.93	237.1	29		REPEATS	
8	120	2.97	237.5	19	285	3.20	256.5	30	90	2.80	251.6
9	135	3.33	266.0	20	300	2.91	254.2	31	180	2.71	257.5
10	150	2.96	307.8	21	315	2.91	235.1	32	270	3.05	230.7

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES | GRID: | DATE SURVEYED: 18 July 1981

DRILL HOLE: TRF-DDH-81-102 | LATITUDE: | SURVEY BY: PUBANZ

LOCATION: | DEPARTURE: | WITNESSED BY: MACFARLANE

FIELD: TREFI | ELEVATION: | CALCULATIONS BY:

MAGNETIC DECLINATION: | CORRECTION OF: | FOR: GRID:

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	0	22.07	CASING	11				22			
1	15	21.39	193.8	12				23			
2	30	21.39	189.1	13				24			
3	45	22.07	187	14				25			
4	60	21.74	188	15				26			
5	75	22.6	188.5	16				27			
6	90	22.82	188.4	17				28			
7	105	23.55	195.8	18				29			
8	120	23.55	195.2	19		REPEATS		30			
9	135	24.22	185.4	20	60	21.66	183.6	31			
10	150	24.57	185.1	21	120	23.66	185.8	32			

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES
GRID:
DATE SURVEYED: 19 July 1981

DRILL HOLE: TRF-RDH-81-103
LATITUDE:
SURVEY BY: PUBANZ

LOCATION:
DEPARTURE:
WITNESSED BY: MACFARLANE

FIELD: TREFI
ELEVATION:
CALCULATIONS BY:

MAGNETIC DECLINATION:
CORRECTION OF:
FOR: GRID:

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	0	1.18	CASING	11	165	5.13	236.3	22	325	14.37	234.6
1	15	1.91	232.9	12	180	5.31	236.3	23			
2	30	2.46	274.3	13	195	6.42	255.4	24			
3	45	2.99	261.9	14	210	6.58	260.1	25			
4	60	2.98	253.7	15	225	6.94	255	26			
5	75	3.53	270.8	16	240	7.3	246.1	27		REPEATS	
6	90	3.52	278.5	17	255	8.39	230.2	28	60	2.90	288.3
7	105	4.24	270.4	18	270	9.66	235.1	29	120	4.73	223.4
8	120	4.79	240	19	285	10.2	217.3	30	180	4.91	227.7
9	130	5.33	240.3	20	300	11.47	244.4	31	240	6.92	243.3
10	150	4.95	238.4	21	315	13.1	235.9	32	300	11.83	238.8

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES | GRID: | DATE SURVEYED: 20 July 1981

DRILL HOLE: TRF-RDH-81-104 | LATITUDE: | SURVEY BY: PUBANZ

LOCATION: | DEPARTURE: | WITNESSED BY: MACFARLANE

FIELD: TREFI | ELEVATION: | CALCULATIONS BY:

MAGNETIC DECLINATION: | CORRECTION OF: | FOR: GRID:

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	0	2.32	CASING	11	165	3.54	15.8	22			
1	15	1.41	1.9	12	180	5	13.5	23			
2	30	2.50	32.5	13	195	6.81	2.5	24			
3	45	2.50	93.6	14	210	6.8	6.2	25			
4	60	1.95	114	15	225	6.98	1.8	26			
5	75	1.21	23.6	16	240	7.52	352.1	27			
6	90	1.93	43.3	17	255	6.79	337.4	28		REPEATS	
7	105	1.84	54.3	18	270	7.7	344.9	29	60	0.19	318
8	120	1.12	6.7	19				30	120	1.31	351.6
9	135	1.3	324.4	20				31	180	4.22	358.7
10	150	2.94	5.7	21				32	240	7.34	348

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES INC. GRID: DATE SURVEYED: JULY 22, 1981.

DRILL HOLE: TRF - DDH - 81 - 105 LATITUDE: SURVEY BY: PUBANZ

LOCATION: DEPARTURE: WITNESSED BY: MACFARLANE

FIELD: TREFI ELEVATION: CALCULATIONS BY:

MAGNETIC DECLINATION: CORRECTION OF: FOR: GRID:

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	0	1.77	CASING	11	165	2.28	59.5	22			
1	15	1.76	CASING	12	180	2.46	53.8	23			
2	30	1.22	52.9	13	195	2.28	51.9	24			
3	45	1.76	88.4	14	210	2.28	46.0	25			
4	60	1.8	85.0	15	225	2.10	38.7	26			
5	75	1.75	77.8	16				27			
6	90	1.20	70.0	17				28			
7	105	1.94	77.3	18				29			
8	120	1.93	57.7	19				30			
9	135	1.92	58.7	20				31			
10	150	2.12	57.0	21				32			

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES INC. GRID: _____ DATE SURVEYED: JULY 21, 1981.

DRILL HOLE: TRF - RDH - 81 - 106C LATITUDE: _____ SURVEY BY: PUBANZ

LOCATION: _____ DEPARTURE: _____ WITNESSED BY: MACFARLANE

FIELD: TREFI ELEVATION: _____ CALCULATIONS BY: _____

MAGNETIC DECLINATION: _____ CORRECTION OF: _____ FOR: _____ GRID: _____

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	0	0.44	CASING	11				22			
1	15	0.53	27.8	12				23			
2	30	0.57	346.2	13				24			
3	45	2.35	45.3	14				25			
4	60	2.71	101.9	15				26			
5	75	3.76	55.1	16				27			
6	90	3.84	59.4	17				28			
7	105	3.51	54.2	18				29			
8	120	4.64	69.9	19		REPEATS		30			
9	135	4.26	71.2	20	60	4.08	61.8	31			
10	150	4.26	99.9	21	120	2.45	97.9	32			

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES INC. GRID: _____ DATE SURVEYED: JULY 23, 1981.

DRILL HOLE: TRF - RDH - 81 - 107 LATITUDE: _____ SURVEY BY: PUBANZ

LOCATION: _____ DEPARTURE: _____ WITNESSED BY: MACFARLANE

FIELD: TREFI ELEVATION: _____ CALCULATIONS BY: _____

MAGNETIC DECLINATION: _____ CORRECTION OF: _____ FOR: _____ GRID: _____

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	0	1.79	CASING	11	165	7.02	254.9	22	330	11.53	240.2
1	15	1.78	135.1	12	180	6.48	246.5	23			
2	30	2.69	246.7	13	195	6.11	237.9	24			
3	45	3.42	236.7	14	210	6.28	259.4	25			
4	60	4.32	259.7	15	225	6.83	256.9	26			
5	75	3.59	231.4	16	240	7.73	247.4	27			
6	90	4.31	230.7	17	255	9.20	253.0	28			
7	105	4.85	241.6	18	270	10.27	255.4	29		REPEATS	
8	120	4.12	231.2	19	285	11.17	253.5	30	90	4.78	256.2
9	135	5.76	245.7	20	300	11.54	247.5	31	180	6.24	221.5
10	150	6.30	262.0	21	315	11.01	248.2	32	270	10.25	258.8

DIRECTIONAL SURVEY

BOKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES INC. GRID: _____ DATE SURVEYED: AUGUST 3, 1981.

DRILL HOLE: TRF - DDH - 81 - 108 LATITUDE: _____ SURVEY BY: PUBANZ

LOCATION: _____ DEPARTURE: _____ WITNESSED BY: MACFARLANE

FIELD: TREFI ELEVATION: _____ CALCULATIONS BY: _____

MAGNETIC DECLINATION: _____ CORRECTION OF: _____ FOR: _____ GRID: _____

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	0	1.22	CASING	11	220	5.36	178.3	22	440	8.23	174.7
1	20	1.22	-	12	240	6.26	197.1	23	460	8.41	181.3
2	40	1.22	260.0	13	260	6.61	200.2	24	480	8.23	165.1
3	60	2.67	250.3	14	280	6.62	175.7	25	500	7.72	164.1
4	80	2.85	223.7	15	300	6.43	173.4	26	520	7.68	165.6
5	100	3.38	192.0	16	320	6.98	175.4	27	540	7.67	164.1
6	120	4.29	197.0	17	340	7.52	172.3	28	560	8.40	187.6
7	140	4.65	192.2	18	360	7.70	168.1	29	580	8.39	184.6
8	160	5.02	205.5	19	380	8.24	179.9	30	600	8.43	175.3
9	180	5.18	180.4	20	400	8.26	182.8	31	615	8.75	171.8
10	200	5.01	176.7	21	420	8.24	179.3	32			

DIRECTIONAL SURVEY

ROKE OIL ENTERPRISES LIMITED

COMPANY: GULF CANADA RESOURCES INC. GRID: _____ DATE SURVEYED: AUGUST 7, 1981.

DRILL HOLE: TRF - RDH - 81 - 109C LATITUDE: _____ SURVEY BY: PUBANZ

LOCATION: _____ DEPARTURE: _____ WITNESSED BY: MACFARLANE

FIELD: TREFI ELEVATION: _____ CALCULATIONS BY: _____

MAGNETIC DECLINATION: _____ CORRECTION OF: _____ FOR: _____ GRID: _____

Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing	Number	Cable Depth	Slant Angle	Slant Angle Bearing
0	0	1.55	CASING	11	165	6.21	204.3	22			
1	15	1.73		12	180	6.61	207.3	23			
2	30	2.27	222.7	13	190	6.4	222.7	24			
3	45	4.08	208.0	14				25			
4	60	4.82	217.5	15				26			
5	75	5.89	218.7	16				27			
6	90	5.72	215.6	17				28			
7	105	6.25	223.1	18				29			
8	120	6.42	209.0	19		REPEATS		30			
9	135	5.69	200.2	20	60	4.92	219.5	31			
10	150	6.08	196.5	21	120	6.21	213.4	32			

PR-TREFI 81(3)A

Do Not Film Contents

TREFI COAL PROJECT

REPORT OF SEALING OF DRILL HOLES

1981

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TREFI COAL PROPERTY

REPORT ON SEALING OF DRILL HOLES
1981

This report summarizes sealing procedures of drill holes carried out on the Trefi Coal Project during 1981. As coal seams were intersected that contain potential for underground mining, all drill holes were plugged or cemented.

This report contains a drill hole summary sheet, indicating type of hole drilled, diameter, length, surveyed location, and geophysical logs run. A report on sealing of drill holes is included for each drill hole on a form labelled Appendix II.

All other exploration work is included in a report filed with the Ministry of Energy Mines and Petroleum Resources, in Victoria, B.C., entitled "Trefi Coal Project - Geological Report 1981".

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Film.

GCRI - COAL DIVISION - DATA SOURCE RECORD

PROJECT: TRF BLOCK: __ DATA SOURCE: DDH81100

HISTORY

	DY MO YR		DY MO YR		
START DATE:	11/07/81	END DATE:	13/07/81	OPERATOR:	GULF CANADA RES.
CONTRACTOR:	COATES DRILLING	GEOLOGIST:	MacFARLANE	SURVEYOR:	CADASTER

REMARKS: _____

LOCATION

PROVINCE: B.C. ELEVATION: 923.0

UTM	ZONE: __	NORTH: 6150387.60	EAST: 572298.70							
LAT&LONG	LATITUDE: 55°29'46.2"	LONGITUDE: 121°51'20.3"								
DLS-ALTA	NORTH: __ .	EAST: __ .	LSD: __	SEC: __	TWP: ___	RGE: __	MER: _			
NTS-BC	NORTH: __ .	EAST: __ .	QUAD: _	UNIT: ___	BLK: K	ST: 93	MUS: P	MS: 5		

DIMENSIONS AND ORIENTATION

LENGTH: 245.00 INCLINATION: -90.0 AZIMUTH: __ .

SIZE WIDTH: 9.6 SIZE HEIGHT: __ .

ROOF STRIKE: ___ DIP: ___ FLOOR STRIKE: ___ DIP: ___

DRILL HOLE STATUS 360'

CASING DEPTH: 33.5 CEMENTED: _ PLUGGED: X PEIZOMETERS INSTALLED: _

AQUIFER DEPTHS: 171.2 __ . LOST CIRCULATION DEPTHS: __ . __ .

GEOPHYSICAL LOGGING

	LOG RUN	SCALE 1	SCALE 2	DIGITIZED	TRUE THICKNESS	OPEN HOLE	THRU RODS	TOOL NUMBER
GAMMA	X	1:100	:	_	_	_	X	125A004
NEUTRON	X	1:100	:	_	_	_	X	125A004
DENSITY	X	1:100	:	_	_	X	X	247AS
CALIPER	X	1:100	:	_	_	X	_	785
FE-SHORT	X	1:100	:	_	_	X	_	9
FE-LONG	_	:	:	_	_	_	_	_
DIRECTIONAL	X	:	:	_	_	X	_	_
DIPMETER	_	:	:	_	_	_	_	_

Report on the Sealing of drillholes Plugged.

Inspection District PRINCE GEORGE Date of Report

Company GULF CANADA RESOURCES Land District

Coal Map Number Licence Number 6074

1. Number of Drillhole. TRF DDH 81-100
2. Surface elevation. 915 m.
3. Type (Vertical - inclined, etc.) VERTICAL -90°
4. Drilled by: Name of Contractor COATES
   Name of Exploration Company GULF CANADA RESOURCES
5. Date of completion. July 13/81
6. Date of Sealing
7. Sealed by: Name of Contractor COATES
   Name of Exploration Company GULF CANADA RESOURCES
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole?
   (b) If so, give details and location. 33.5m at top of hole remained cased to hold back overburden.
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors' Instructions? Yes, Set Van Ruth plug
   (b) If No, give reasons and details of variation.
10. (a) Was the sealing effective? Completely
    (b) Details of any tests carried out. Norite run.
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature Ken Lamson
Designation Geologist
Date July 15, 1981
Countersignature R.V. Bennett
Designation Drill Foreman
Date July 15/81

GCRI - COAL DIVISION - DATA SOURCE RECORD

PROJECT: TRF BLOCK: __ DATA SOURCE: RDH81101

HISTORY

	DY MO YR		DY MO YR		
START DATE:	15/07/81	END DATE:	17/07/81	OPERATOR:	GULF CANADA RES.

CONTRACTOR: ALBERTA SOUTHERN GEOLOGIST: MacFARLANE SURVEYOR: CADASTER

REMARKS: RIG OUT OF PIPE 1200'. WILL DEEPEN WHEN PIPE AVAILABLE.
HOLE DEEPENED AUG. 8/81.

LOCATION

PROVINCE: B.C. ELEVATION: 887.0

UTM	ZONE: __	NORTH: 6153764.20		EAST: 565542.90							
LAT&LONG	LATITUDE: 55°31'38.9"		LONGITUDE: 121°57'42.3"								
DLS-ALTA	NORTH: ___.	EAST: ___.	LSD: __	SEC: __	TWP: ___	RGE: __	MER: _				
NTS-BC	NORTH: 53.7	EAST: 65.6	QUAD: _	UNIT: ___	BLK: D	ST: 93	MUS: P	MS: 12			

DIMENSIONS AND ORIENTATION

LENGTH: 367.3 INCLINATION: -90.0 AZIMUTH: ___.

SIZE WIDTH: 12.7 SIZE HEIGHT: ___.

ROOF STRIKE: ___ DIP: ___ FLOOR STRIKE: ___ DIP: ___

DRILL HOLE STATUS

CASING DEPTH: 21.6 CEMENTED: X PLUGGED: __ PEIZOMETERS INSTALLED: _

AQUIFER DEPTHS: ___. ___. LOST CIRCULATION DEPTHS: ___. ___.

GEOPHYSICAL LOGGING

	LOG RUN	SCALE 1	SCALE 2	DIGITIZED	TRUE THICKNESS	OPEN HOLE	THRU RODS	TOOL NUMBER
GAMMA	X	1:100	:___	_	_	X	_	125A004
NEUTRON	X	1:100	:___	_	_	X	_	125A004
DENSITY	X	1:100	:___	_	_	X	_	422AS
CALIPER	X	1:100	:___	_	_	X	_	785
FE-SHORT	X	1:100	:___	_	_	X	_	9
FE-LONG	_	:___	:___	_	_	_	_	_____
DIRECTIONAL	X	1:100	:___	_	_	X	_	_____
DIPMETER	_	:___	:___	_	_	_	_	_____

Report on the Sealing of drillholes

Inspection District Prince George Date of Report Sept 4, 1981

Company Gulf Canada Resources Land District

Coal Map Number Licence Number 6156

1. Number of Drillhole. TRF RDH 81-101
2. Surface elevation. 885m
3. Type (Vertical - inclined, etc.) Vertical, -90°
4. Drilled by: Name of Contractor Alberta Southern
   Name of Exploration Company Gulf Canada Resources
5. Date of completion. August 8, 1981
6. Date of Sealing SEPT 3/81
7. Sealed by: Name of Contractor ALTAWEST PETROLEUM CEMENTING INC.
   Name of Exploration Company Gulf Canada Resources.
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole? Yes
   (b) If so, give details and location. 71' of overburden left cased at top of hole.
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors' Instructions? Yes.
   (b) If No, give reasons and details of variation.
10. (a) Was the sealing effective? Yes
    (b) Details of any tests carried out. None run
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature

Designation

Date

Countersignature

Designation

Date

GCRI - COAL DIVISION - DATA SOURCE RECORD

PROJECT: TRF BLOCK: __ DATA SOURCE: DDH81102

HISTORY

	DY MO YR		DY MO YR		
START DATE:	16/07/81	END DATE:	18/07/81	OPERATOR:	GULF CANADA RES.
CONTRACTOR:	COATES DRILLING	GEOLOGIST:	MacFARLANE	SURVEYOR:	CADASTER

REMARKS: _____

LOCATION

PROVINCE: B.C. ELEVATION: 1380.0

UTM	ZONE: __	NORTH: 6150000.70		EAST: 568139.10							
LAT&LONG	LATITUDE: 55°29'35.9"		LONGITUDE: 121°55'17.6"								
DLS-ALTA	NORTH: ___.	EAST: ___.	LSD: __	SEC: __	TWP: ___	RGE: __	MER: _				
NTS-BC	NORTH: ___.	EAST: ___.	QUAD: _	UNIT: ___	BLK: L	ST: 93	MUS: P	MS: 5			

DIMENSIONS AND ORIENTATION

LENGTH: 59.00 INCLINATION: -70.0 AZIMUTH: ___.

SIZE WIDTH: 9.6 SIZE HEIGHT: ___.

ROOF STRIKE: ___ DIP: ___ FLOOR STRIKE: ___ DIP: ___

DRILL HOLE STATUS

CASING DEPTH: 0.0 CEMENTED: X PLUGGED: _ PEIZOMETERS INSTALLED: _

AQUIFER DEPTHS: ___. ___. LOST CIRCULATION DEPTHS: ___. ___.

GEOPHYSICAL LOGGING

	LOG RUN	SCALE 1	SCALE 2	DIGITIZED	TRUE THICKNESS	OPEN HOLE	THRU RODS	TOOL NUMBER
GAMMA	X	1:100	:	_	_	_	X	125A004
NEUTRON	X	1:100	:	_	_	_	X	125A004
DENSITY	X	1:100	1:40	_	_	X	X	247AS
CALIPER	X	1:100	:	_	_	X	_	785
FE-SHORT	X	1:100	1:40	_	_	X	_	9
FE-LONG	_	:	:	_	_	_	_	_____
DIRECTIONAL	X	:	:	_	_	X	_	_____
DIPMETER	_	:	:	_	_	_	_	_____

Report on the Sealing of drillholes

Inspection District PRINCE GEORGE Date of Report JULY 19, 1981

Company GULF CANADA RESOURCES Land District

Coal Map Number Licence Number 6070

1. Number of Drillhole. TRF-DDH-81-102
2. Surface elevation. 1390m.
3. Type (Vertical - inclined, etc.) INCLINED -70°
4. Drilled by: Name of Contractor COATES
   Name of Exploration Company GULF CANADA RESOURCES
5. Date of completion. JULY 18, 1981
6. Date of Sealing JULY 19, 1981
7. Sealed by: Name of Contractor COATES
   Name of Exploration Company G.C.R.
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole?
   (b) If so, give details and location. No
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors' Instructions? Yes
   (b) If No, give reasons and details of variation.
10. (a) Was the sealing effective? Yes
    (b) Details of any tests carried out.
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature D.Ma. FarQuno P.Geol

Designation Project Geologist

Date July 19, 1981

Countersignature R.V. Bennett

Designation Drill Foreman

Date July 21/81

GCRI - COAL DIVISION - DATA SOURCE RECORD

PROJECT: TRF BLOCK: __ DATA SOURCE: RDH81103

HISTORY

	DY MO YR		DY MO YR		
START DATE:	17/07/81	END DATE:	19/07/81	OPERATOR:	GULF CANADA RES.
CONTRACTOR:	ALBERTA SOUTHERN	GEOLOGIST:	MacFARLANE	SURVEYOR:	CADASTER

REMARKS: _____

LOCATION

PROVINCE: B.C. ELEVATION: 1054.0

UTM	ZONE: __	NORTH: 6143464.90	EAST: 574837.90						
LAT&LONG	LATITUDE: 55°26'01.0"	LONGITUDE: 121°49'02.3"							
DLS-ALTA	NORTH: __.	EAST: __.	LSD: __	SEC: __	TWP: ___	RGE: __	MER: _		
NTS-BC	NORTH: __.	EAST: __.	QUAD: _	UNIT: ___	BLK: K	ST: 93	MUS: P	MS: 5	

DIMENSIONS AND ORIENTATION

LENGTH: 329.00 INCLINATION: -90.0 AZIMUTH: ___.

SIZE WIDTH: 12.7 SIZE HEIGHT: ___.

ROOF STRIKE: ___ DIP: ___ FLOOR STRIKE: ___ DIP: ___

DRILL HOLE STATUS

CASING DEPTH: 7.9 CEMENTED: X PLUGGED: ___ PEIZOMETERS INSTALLED: _

AQUIFER DEPTHS: ____. ____. LOST CIRCULATION DEPTHS: ____. ____.

GEOPHYSICAL LOGGING

	LOG RUN	SCALE 1	SCALE 2	DIGITIZED	TRUE THICKNESS	OPEN HOLE	THRU RODS	TOOL NUMBER
GAMMA	X	1:100	:	_	_	X	_	125A004
NEUTRON	X	1:100	:	_	_	X	_	125A004
DENSITY	X	1:100	1:40	_	_	X	_	247AS
CALIPER	X	1:100	:	_	_	X	_	785
FE-SHORT	X	1:100	1:40	_	_	X	_	9
FE-LONG	_	:	:	_	_	_	_	_____
DIRECTIONAL	X	:	:	_	_	X	_	_____
DIPMETER	_	:	:	_	_	_	_	_____

Report on the Sealing of drillholes

Inspection District Peace River Date of Report Sept 4, 1981

Company Gulf Canada Resources Land District

Coal Map Number Licence Number 6055

1. Number of Drillhole. TRF RDH 81-103
2. Surface elevation. 1142m
3. Type (Vertical - inclined, etc.) Vertical, -90°
4. Drilled by: Name of Contractor Alberta Southern.
   Name of Exploration Company Gulf Canada Resources
5. Date of completion. July 19, 1981.
6. Date of Sealing SEPT 3/81
7. Sealed by: Name of Contractor ALTAWEST PRESSURE CEMENTING
   Name of Exploration Company Gulf Canada Resources.
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole?
   (b) If so, give details and location. 25' of overburden was left cased at top of hole.
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors Instructions? Yes.
   (b) If No, give reasons and details of variation.
10. (a) Was the sealing effective? Yes
    (b) Details of any tests carried out. No tests run
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature
Designation Engineer
Date Sept 4/81
Countersignature T. MacFarlane P. Eng.
Designation Prov. Engr.
Date Sept 4/81

GCRI - COAL DIVISION - DATA SOURCE RECORD

PROJECT: TRF BLOCK: __ DATA SOURCE: RDH81104

HISTORY

	DY MO YR		DY MO YR		
START DATE:	19/07/81	END DATE:	20/07/81	OPERATOR:	GULF CANADA RES.
CONTRACTOR:	ALBERTA SOUTHERN	GEOLOGIST:	MacFARLANE	SURVEYOR:	CADASTER

REMARKS: _____

_____

LOCATION

	PROVINCE: B.C.	ELEVATION: 1233.0								
UTM	ZONE: __	NORTH: 6147413.50	EAST: 572769.00							
LAT&LONG	LATITUDE: 55°28'09.8"	LONGITUDE: 121°50'56.3"								
DLS-ALTA	NORTH: ___.	EAST: ___.	LSD: __	SEC: __	TWP: ___	RGE: __	MER: _			
NTS-BC	NORTH: ___.	EAST: ___.	QUAD: _	UNIT: ___	BLK: K	ST: 93	MUS: P	MS: 5		

DIMENSIONS AND ORIENTATION

LENGTH: 281.00 INCLINATION: -90.0 AZIMUTH: ___.

SIZE WIDTH: 13.3 SIZE HEIGHT: ___.

ROOF STRIKE: ___ DIP: ___ FLOOR STRIKE: ___ DIP: ___

DRILL HOLE STATUS

CASING DEPTH: 5.5 CEMENTED: X PLUGGED: __ PEIZOMETERS INSTALLED: _

AQUIFER DEPTHS: ___. ___. LOST CIRCULATION DEPTHS: ___. ___.

GEOPHYSICAL LOGGING

	LOG RUN	SCALE 1	SCALE 2	DIGITIZED	TRUE THICKNESS	OPEN HOLE	THRU RODS	TOOL NUMBER
GAMMA	X	1:100	:	_	_	X	_	125A004
NEUTRON	X	1:100	:	_	_	X	_	125A004
DENSITY	X	1:100	1:40	_	_	X	_	247AS
CALIPER	X	1:100	:	_	_	X	_	785
FE-SHORT	X	1:100	1:40	_	_	X	_	9
FE-LONG		:	:	_	_		_	_____
DIRECTIONAL	X	:	:	_	_	X	_	_____
DIPMETER	_	:	:	_	_	_	_	_____

Report on the Sealing of drillholes

Inspection District Peace River Date of Report Sept 4, 1981

Company Gulf Canada Resources Land District

Coal Map Number Licence Number 6062

1. Number of Drillhole. TRF RDH 81-104
2. Surface elevation. 1222 m
3. Type (Vertical - inclined, etc.) Vertical, -90°
4. Drilled by: Name of Contractor Alberta Southern
   Name of Exploration Company Gulf Canada Resources
5. Date of completion. July 20, 1981.
6. Date of Sealing SEPT 3/81
7. Sealed by: Name of Contractor ALBERTA PRESSURE CEMENTING
   Name of Exploration Company Gulf Canada Resources.
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole? Yes
   (b) If so, give details and location. 20' of overburden was left cased at top of hole
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors' Instructions? Yes.
   (b) If No, give reasons and details of variation.
10. (a) Was the sealing effective? Yes
    (b) Details of any tests carried out. No tests run.
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature
Designation Engineer
Date Sept 4/81
Countersignature T. MacFarlane P.Geol
Designation Project Geol
Date Sept 4/81

GCRI - COAL DIVISION - DATA SOURCE RECORD

PROJECT: TRF BLOCK: __ DATA SOURCE: DDH81105

HISTORY

	DY MO YR		DY MO YR		
START DATE:	20/07/81	END DATE:	22/07/81	OPERATOR:	GULF CANADA RES.
CONTRACTOR:	D.W. COATES	GEOLOGIST:	MacFARLANE	SURVEYOR:	CADASTER

REMARKS: _____

LOCATION

	PROVINCE: B.C.	ELEVATION: 971.0									
UTM	ZONE: __	NORTH: 6149328.20	EAST: 571077.70								
LAT&LONG	LATITUDE: 55°29'12.6"	LONGITUDE: 121°52'30.8"									
DLS-ALTA	NORTH: ___.	EAST: ___.	LSD: __	SEC: __	TWP: ___	RGE: __	MER:				
NTS-BC	NORTH: ___.	EAST: ___.	QUAD: _	UNIT: ___	BLK: K	ST: 93	MUS: P	MS: 5			

DIMENSIONS AND ORIENTATION

LENGTH: 237.30 INCLINATION: -90.0 AZIMUTH: ___.

SIZE WIDTH: 9.6 SIZE HEIGHT: ___.

ROOF STRIKE: ___ DIP: ___ FLOOR STRIKE: ___ DIP: ___

DRILL HOLE STATUS

CASING DEPTH: 0.0 CEMENTED: X PLUGGED: _ PEIZOMETERS INSTALLED: _

AQUIFER DEPTHS: ___. ___. LOST CIRCULATION DEPTHS: ___. ___.

GEOPHYSICAL LOGGING

	LOG RUN	SCALE 1	SCALE 2	DIGITIZED	TRUE THICKNESS	OPEN HOLE	THRU RODS	TOOL NUMBER
GAMMA	X	1:100	:___	_	_	X	_	125A004
NEUTRON	X	1:100	:___	_	_	X	_	125A004
DENSITY	X	1:100	1:40	_	_	X	_	247AS
CALIPER	X	1:100	:___	_	_	X	_	785
FE-SHORT	X	1:100	1:40	_	_	X	_	9
FE-LONG		:___	:___	_	_		_	_____
DIRECTIONAL	X	:___	:___	_	_	X	_	_____
DIPMETER	_	:___	:___	_	_	_	_	_____

Report on the Sealing of drillholes

Inspection District PRINCE GEORGE Date of Report July 25/81

Company GULF CANADA RESOURCES Land District

Coal Map Number Licence Number 6070

1. Number of Drillhole. TRF DDH 81-105
2. Surface elevation. 950 m.
3. Type (Vertical - inclined, etc.) VERTICAL
4. Drilled by: Name of Contractor COATES
   Name of Exploration Company GULF CANADA RESOURCES
5. Date of completion. JULY 22/81
6. Date of Sealing July 23/81
7. Sealed by: Name of Contractor COATES
   Name of Exploration Company GULF CANADA RES.
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole?
   (b) If so, give details and location. No

9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors' Instructions? Yes
   (b) If No, give reasons and details of variation.

10. (a) Was the sealing effective? Yes
    (b) Details of any tests carried out.

11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature D MacFarlane

Designation PROJECT MANAGER

Date July 25/81

Countersignature R.V. Bennett

Designation Drill Foreman

Date July 25/81

GCRI - COAL DIVISION - DATA SOURCE RECORD

PROJECT: TRF BLOCK: __ DATA SOURCE: RDH81106c

HISTORY

DY MO YR DY MO YR
START DATE: 20/07/81 END DATE: 22/07/81 OPERATOR: GULF CANADA RES.
CONTRACTOR: ALBERTA SOUTHERN GEOLOGIST: MacFARLANE SURVEYOR: CADASTER
REMARKS: _____

LOCATION

PROVINCE: B.C. ELEVATION: 1153.0
UTM ZONE: __ NORTH: 6144933.30 EAST: 575206.40
LAT&LONG LATITUDE: 55°26'48.6"LONGITUDE: 121°48'39.9"
DLS-ALTA NORTH: __. EAST: __. LSD: __ SEC: __ TWP: ___ RGE: __ MER: _
NTS-BC NORTH: __. EAST: __. QUAD: _ UNIT: ___ BLK: K ST: 93 MUS: P MS: 5

DIMENSIONS AND ORIENTATION

LENGTH: 148.90 INCLINATION: -90.0 AZIMUTH: __.
SIZE WIDTH: 14.0 SIZE HEIGHT: __.
ROOF STRIKE: ___ DIP: ___ FLOOR STRIKE: ___ DIP: ___

DRILL HOLE STATUS

CASING DEPTH: 0.6 CEMENTED: X PLUGGED: _ PEIZOMETERS INSTALLED: _
AQUIFER DEPTHS: ____. ____. LOST CIRCULATION DEPTHS: ____. ____.

GEOPHYSICAL LOGGING

	LOG RUN	SCALE 1	SCALE 2	DIGITIZED	TRUE THICKNESS	OPEN HOLE	THRU RODS	TOOL NUMBER
GAMMA	X	1:100	:____	_	_	X	_	125A004
NEUTRON	X	1:100	:____	_	_	X	_	125A004
DENSITY	X	1:100	:____	_	_	X	_	247AS
CALIPER	X	1:100	:____	_	_	X	_	785
FE-SHORT	X	1:100	1:40	_	_	X	_	9
FE-LONG		:____	:____	_	_		_	_____
DIRECTIONAL	X	:____	:____	_	_	X	_	_____
DIPMETER	_	:____	:____	_	_	_	_	_____

Report on the Sealing of drillholes

Inspection District Peace River Date of Report Sept 4, 1981

Company Gulf Canada Resources Land District

Coal Map Number Licence Number 6055

1. Number of Drillhole. TRF RDH 81-106c.
2. Surface elevation. 1185 m
3. Type (Vertical - inclined, etc.) Vertical, -90°
4. Drilled by: Name of Contractor Alberta Southern
   Name of Exploration Company Gulf Canada Resources.
5. Date of completion. July 21, 1981
6. Date of Sealing Sept 2/81
7. Sealed by: Name of Contractor Alta West Pressure Cementing
   Name of Exploration Company Gulf Canada Resources.
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole? Yes
   (b) If so, give details and location. 2' of overburden left cased at top of hole

(a) Was the drillhole sealed in the manner outlined in the Chief Inspectors' Instructions? Yes

(b) If No, give reasons and details of variation.

10. (a) Was the sealing effective? Yes.
    (b) Details of any tests carried out. No tests run.

11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature [signature]
Designation Expediter
Date Sept 4/81
Countersignature [signature]
Designation P. Engr. Tech.
Date Sept 9/81

GCRI - COAL DIVISION - DATA SOURCE RECORD

PROJECT: TRF BLOCK: __ DATA SOURCE: RDH81107

HISTORY

DY MO YR DY MO YR

START DATE: 21/07/81 END DATE: 23/07/81 OPERATOR: GULF CANADA RES.

CONTRACTOR: ALBERTA SOUTHERN GEOLOGIST: MacFARLANE SURVEYOR: CADASTER

REMARKS: _____

_____

LOCATION

PROVINCE: B.C. ELEVATION: 1297.0

UTM ZONE: __ NORTH: 6146244.20 EAST: 572877.30

LAT&LONG LATITUDE: 55°27'31.9"LONGITUDE: 121°50'51.2"

DLS-ALTA NORTH: ___. EAST: ___. LSD: __ SEC: __ TWP: ___ RGE: __ MER: _

NTS-BC NORTH: ___. EAST: ___. QUAD: _ UNIT: ___ BLK: K ST: 93 MUS: P MS: 5

DIMENSIONS AND ORIENTATION

LENGTH: 341.00 INCLINATION: -90.0 AZIMUTH: ___.

SIZE WIDTH: 12.7 SIZE HEIGHT: ___.

ROOF STRIKE: ___ DIP: ___ FLOOR STRIKE: ___ DIP: ___

DRILL HOLE STATUS

CASING DEPTH: 1.8 CEMENTED: X PLUGGED: _ PEIZOMETERS INSTALLED: _

AQUIFER DEPTHS: ___.__ ___.__ LOST CIRCULATION DEPTHS: ___.__ ___.__

GEOPHYSICAL LOGGING

	LOG RUN	SCALE 1	SCALE 2	DIGITIZED	TRUE THICKNESS	OPEN HOLE	THRU RODS	TOOL NUMBER
GAMMA	X	1:100	:____	_	_	X	_	125A004
NEUTRON	X	1:100	:____	_	_	X	_	125A004
DENSITY	X	1:100	:____	_	_	X	_	247AS
CALIPER	X	1:100	1:40	_	_	X	_	785
FE-SHORT	X	1:100	1:40	_	_	X	_	9
FE-LONG	_	:____	:____	_	_	_	_	_____
DIRECTIONAL	X	:____	:____	_	_	X	_	_____
DIPMETER	_	:____	:____	_	_	_	_	_____

Report on the Sealing of drillholes

Inspection District Peace River Date of Report Sept 4, 1981

Company Gulf Canada Resources Land District

Coal Map Number Licence Number 6062

1. Number of Drillhole. TRF RDH 81-107
2. Surface elevation. 1300 m
3. Type (Vertical - inclined, etc.) Vertical, -90°
4. Drilled by: Name of Contractor Alberta Southern
   Name of Exploration Company Gulf Canada Resources
5. Date of completion. July 23, 1981
6. Date of Sealing SEPT 2/81
7. Sealed by: Name of Contractor ALTAWEST PRESSURE CEMENTING
   Name of Exploration Company Gulf Canada Resources
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole? Yes.
   (b) If so, give details and location. 6' of overburden left cased at top of hole.
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors' Instructions? Yes
   (b) If No, give reasons and details of variation.
10. (a) Was the sealing effective? Yes
    (b) Details of any tests carried out. No test run.
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature

Designation Engineer

Date Sept 4/81

Countersignature T.M. Fraser

Designation Project Geol

Date Sept 4/81

GCRI - COAL DIVISION - DATA SOURCE RECORD

PROJECT: TRF BLOCK: __ DATA SOURCE: DDH81108

HISTORY

	DY MO YR		DY MO YR		
START DATE:	24/07/81	END DATE:	02/08/81	OPERATOR:	GULF CANADA RES.
CONTRACTOR:	COATES DRILLING	GEOLOGIST:	MacFARLANE	SURVEYOR:	CADASTER

REMARKS: _____

_____

LOCATION

PROVINCE: B.C. ELEVATION: 1204.0

UTM ZONE: __ NORTH: 6151687.30 EAST: 566932.10

LAT&LONG LATITUDE: 55°30'31.0"LONGITUDE: 121°56'24.9"

DLS-ALTA NORTH: ___. EAST: ___. LSD: __ SEC: __ TWP: ___ RGE: __ MER: _

NTS-BC NORTH: ___. EAST: ___. QUAD: _ UNIT: ___ BLK: K ST: 93 MUS: P MS: 5

DIMENSIONS AND ORIENTATION

LENGTH: 617.00 INCLINATION: -90.0 AZIMUTH: ___.

SIZE WIDTH: 9.6 SIZE HEIGHT: ___.

ROOF STRIKE: ___ DIP: ___ FLOOR STRIKE: ___ DIP: ___

DRILL HOLE STATUS

CASING DEPTH: 4.8 CEMENTED: X PLUGGED: _ PEIZOMETERS INSTALLED: _

AQUIFER DEPTHS: ___.___ ___.___ LOST CIRCULATION DEPTHS: ___.___ ___.___

GEOPHYSICAL LOGGING

	LOG RUN	SCALE 1	SCALE 2	DIGITIZED	TRUE THICKNESS	OPEN HOLE	THRU RODS	TOOL NUMBER
GAMMA	X	1:100	:____	_	_	_	X	125A004
NEUTRON	X	1:100	:____	_	_	_	X	125A004
DENSITY	X	1:100	1:40	_	_	X	X	247AS
CALIPER	X	1:100	:____	_	_	X	_	785
FE-SHORT	X	1:100	1:40	_	_	X	_	9
FE-LONG	_	:____	:____	_	_	_	_	_____
DIRECTIONAL	X	:____	:____	_	_	X	_	_____
DIPMETER	_	:____	:____	_	_	_	_	_____

Report on the Sealing of drillholes

Inspection District PRINCE GEORGE Date of Report Aug 4/81

Company GULF CANADA RESOURCES Land District

Coal Map Number Licence Number 6154

1. Number of Drillhole. TRF DDH 81-108
2. Surface elevation. approx. 1,200 m.
3. Type (Vertical - inclined, etc.) VERTICAL
4. Drilled by: Name of Contractor COATES
   Name of Exploration Company GULF CANADA RESOURCES
5. Date of completion. AUG 2/81
6. Date of Sealing AUG 3/81
7. Sealed by: Name of Contractor COATES
   Name of Exploration Company GULF CANADA RES.
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole?
   (b) If so, give details and location. 4.8 m of overburden left cased at top of the hole.
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors' Instructions? Yes
   (b) If No, give reasons and details of variation.
10. (a) Was the sealing effective? Yes
    (b) Details of any tests carried out.
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature D MacFarlane P. Geol

Designation Geologist

Date Aug 4/81

Countersignature R. Bennett

Designation Drill Foreman

Date Aug 4/81

GCRI - COAL DIVISION - DATA SOURCE RECORD

PROJECT: TRF BLOCK: __ DATA SOURCE: RDH81109c

HISTORY

	DY MO YR		DY MO YR		
START DATE:	05/08/81	END DATE:	06/08/81	OPERATOR:	GULF CANADA RES.
CONTRACTOR:	ALBERTA SOUTHERN	GEOLOGIST:	MacFARLANE	SURVEYOR:	CADASTER

REMARKS: _____

LOCATION

PROVINCE: B.C. ELEVATION: 1250.0

UTM	ZONE: __	NORTH: 6145981.50		EAST: 573577.50						
LAT&LONG	LATITUDE: 55°27'23.0"	LONGITUDE: 121°50'11.6"								
DLS-ALTA	NORTH: ___.	EAST: ___.	LSD: __	SEC: __	TWP: __	RGE: __	MER: _			
NTS-BC	NORTH: ___.	EAST: ___.	QUAD: _	UNIT: ___	BLK: K	ST: 93	MUS: P	MS: 5		

DIMENSIONS AND ORIENTATION

LENGTH: 191.70 INCLINATION: -90.0 AZIMUTH: ___.

SIZE WIDTH: 12.7 SIZE HEIGHT: ___.

ROOF STRIKE: ___ DIP: ___ FLOOR STRIKE: ___ DIP: ___

DRILL HOLE STATUS

CASING DEPTH: 2.4 CEMENTED: X PLUGGED: _ PEIZOMETERS INSTALLED: _

AQUIFER DEPTHS: ____. ____. LOST CIRCULATION DEPTHS: ____. ____.

GEOPHYSICAL LOGGING

	LOG RUN	SCALE 1	SCALE 2	DIGITIZED	TRUE THICKNESS	OPEN HOLE	THRU RODS	TOOL NUMBER
GAMMA	X	1:100	:____	_	_	X	_	125A004
NEUTRON	X	1:100	:____	_	_	X	_	125A004
DENSITY	X	1:100	1:40	_	_	X	_	247AS
CALIPER	X	1:100	:____	_	_	X	_	785
FE-SHORT	X	1:100	1:40	_	_	X	_	9
FE-LONG	_	:____	:____	_	_	_	_	_____
DIRECTIONAL	X	:____	:____	_	_	X	_	_____
DIPMETER	_	:____	:____	_	_	_	_	_____

Report on the Sealing of drillholes

Inspection District Peace River Date of Report Sept 4, 1981

Company Gulf Canada Resources. Land District

Coal Map Number Licence Number 6061

1. Number of Drillhole. TRF ROH 81-109c
2. Surface elevation. 1210 m
3. Type (Vertical - inclined, etc.) Vertical, -90°
4. Drilled by: Name of Contractor Alberta Southern

   Name of Exploration Company Gulf Canada Resources
5. Date of completion. August 6, 1981
6. Date of Sealing Sept 4/81
7. Sealed by: Name of Contractor

   Name of Exploration Company Gulf Canada Resources
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole? Yes.

   (b) If so, give details and location. 8' of overburden left cased at top of hole.
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors' Instructions? Yes

   (b) If No, give reasons and details of variation.
10. (a) Was the sealing effective? Yes

    (b) Details of any tests carried out. No test run.
11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

Signature

Designation Engineer

Date Sept 4/81

Countersignature K. MacFarlane P. Geol.

Designation Project Geol

Date Sept 4/81

ROKE

OIL CORPORATION

1000 LOUISIANA, SUITE 5900 HOUSTON, TEXAS 77002

189

COMPANY	ROKE OIL CORPORATION
WELL	ROKE A-1
FIELD	WILDCAT
COUNTY	HARRIS
STATE	TEXAS
LOCATION	1000' FSL & 1000' FEL
SECTION	3
BLOCK	
SURVEY	
TOWNSHIP	
RANGE	
PERMANENT DATUM	GROUND LEVEL
ELEV.	0
LOG MEASURED FROM	KELLY BUSHING
ELEV.	10 FT. ABOVE PERM. DATUM
DRILLING MEASURED FROM	KELLY BUSHING
DATE	1-10-1958
RUN NO.	ONE
DEPTH-DRILLER	3,000
DEPTH-LOGGER	3,000
BTM. LOG INTERVAL	3,000
TOP LOG INTERVAL	0
CASING-DRILLER	10 3/4" @ 300
CASING-LOGGER	300
BIT SIZE	7 7/8"
TYPE FLUID IN HOLE	WATER BASE MUD
DENS.	10.0
VISC.	40
PH	9.0
FLUID LOSS	8
SOURCE OF SAMPLE	PIT
RM @ MEAS. TEMP.	.5 @ 70°
RMF @ MEAS. TEMP.	.4 @ 70°
RMC @ MEAS. TEMP.	.6 @ 70°
SOURCE OF RMF & RMC	CALC.
RM @ BHT	.3 @ 120°
TIME SINCE CIRC.	6 HRS.
MAX. REC. TEMP.	120°
EQUIP. NO. & LOCATION	3
RECORDED BY	J. SMITH
WITNESSED BY	R. JONES

EQUIPMENT DATA

GAMMA RAY	
RUN NO.	ONE
TOOL MODEL NO.	625
DIAMETER	3 1/2 IN.
DETECTOR MAKE NO.	
DETECTOR	SCINTILLATION
LENGTH	100 IN.
DISTANCE TO SOURCE	267 IN.
SHUNTING	
SHUNT TOOLS NO.	
INSTRUMENT TOOLS NO.	-
TOOL SERIAL NO.	1716007

NEUTRON	
RUN NO.	ONE
CAL. CON.	=
TOOL MODEL NO.	625
DIAMETER	3 1/2 IN.
DETECTOR MAKE NO.	
DETECTOR	PROPORTIONAL
LENGTH	100 IN.
DISTANCE TO SOURCE	300 IN.
SERIAL NO.	626
SPACING	5/8
TYPE	Porta
CATEGORY	3 116153

LOGGING DATA

SCALES					GAMMA RAY					NEUTRON				
REAL TIME	CORR. TIME	DEPTH IN	DEPTH OUT	SPEED IN MIN.	SET NO.	SETTINGS	M.V. & AMPS.	T.C. SEC.	SENS.	SETTINGS	M.V. & AMPS.	T.C. SEC.	SENS.
NO.	TYPE													
1	0	130	4	3	500	GL	20	3	1000	GL		3	500

REMARKS

GAMMA RAY

GAMMA RAY INCREASES

API

0 — 300

NEUTRON

NEUTRON INCREASES

API

0 — 3000

0

50

80

100

120

140

160

180

200

FEET

SCALE 1" = 100'

ROKE

SIGNAL SERVICES

COMPANY	ROKE SIGNAL SERVICES
WELL	187
FIELD	
COUNTY	
STATE	
LOCATION	
SECTION	
TOWNSHIP	
RANGE	
PERMANENT DATUM	
ELEV. PERM. DATUM	
LOG MEASURED FROM	
DRILLING MEASURED FROM	
ELEV. K.B.	
ELEV. D.F.	
ELEV. G.L.	
DATE	
RUN NO.	
DEPTH DRILLER	
DEPTH LOGGER	
BTM. LOG INTERVAL	
TOP LOG INTERVAL	
CASING DRILLER	
CASING LOGGER	
BIT SIZE	
TYPE FLUID IN HOLE	
DENS. VISC.	
PH FLUID LOSS	
SOURCE OF SAMPLE	
RM @ MEAS. TEMP.	
RMF @ MEAS. TEMP.	
RMC @ MEAS. TEMP.	
SOURCE RMF RMC	
RM @ BHT	
TIME SINCE CIRC.	
MAX. REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

TOOL TYPE	TOOL NO.	BOREHOLE RECORD					CASING RECORD				
		BIT SIZE	FROM	TO	BIT SIZE	FROM	TO	SIZE	WGT.	FROM	TO

REMARKS

RUN NO. | DATE | LOG TYPE | TOOL NO. | POS.

RUN	DATE	LOG TYPE	TOOL NO.	POS.

RUN 1 | RUN 2 | RUN 3

CALIPER DIAMETER

RUN 1 | RUN 2 | RUN 3

RUN 1 | RUN 2 | RUN 3

RUN DENSITY OVERLAID

RUN DENSITY OVERLAID

0

20

40

60

80

100

120

140

160

180

200

220

240

260

280

300

320

340

360

380

400

420

440

460

480

500

520

540

560

580

600

620

640

660

680

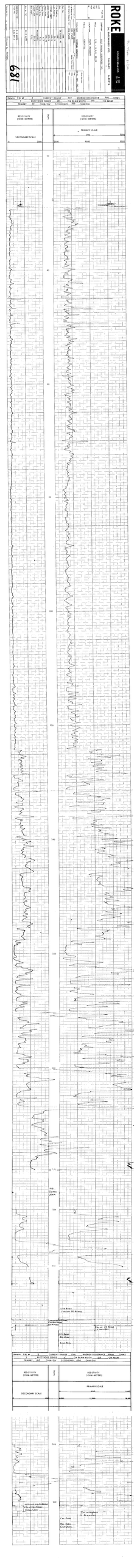
700

720

740

760

780


ROKE
OIL (UK) LIMITED
689
RESISTIVITY (OHM-METRES)
PRIMARY SCALE
SECONDARY SCALE

ROKE
ROKE OIL LTD.
SUITE 1, 1 CAMPUS
CALGARY, ALBERTA T2N 4S6

WELL	
FIELD	
COUNTY	
PROVINCE	
LOCATION	
SEC. TWP. RGE.	
PERMANENT DATUM	
ELEV. K.B.	
ELEV. D.F.	
ELEV. G.L.	
LOG MEASURED FROM	
DRILLING MEASURED FROM	
DATE	
RUN NO.	
DEPTH-DRILLER	
DEPTH-LOGGER	
BTM. LOG INTERVAL	
TOP LOG INTERVAL	
CASING-DRILLER	
CASING-LOGGER	
BIT SIZE	
TYPE FLUID IN HOLE	
DENSITY	
VISCOSITY	
PH	
FLUID LOSS	
SOURCE OF SAMPLE	
RM @ MEAS. TEMP.	
RMF @ MEAS. TEMP.	
RMC @ MEAS. TEMP.	
SOURCE RMF	RMC
RM @ BHT	
TIME SINCE CIRC.	
MAX. REC. TEMP.	
EQUIP. LOCATION	
RECORDED BY	
WITNESSED BY	

189

EQUIPMENT DATA

GAMMA RAY	NEUTRON
RUN NO.	RUN NO.
TOOL MODEL NO.	TOOL MODEL NO.
DIAMETER	DIAMETER
DEPTH TOP MEAS. PT.	MEAS. PT.
LOCATION	LOCATION
DETECTOR	DETECTOR
DISTANCE TO SOURCE	SOURCE MODEL NO.
SOURCE	SOURCE STRENGTH
DISTANCE TO SOURCE	DISTANCE TO DETECTOR

LOGGING DATA

GAMMA RAY						NEUTRON					
RUN	LOGGING SPEED	SCALE	T.C.	ZERO	API & "A" UNITS	RUN	LOGGING SPEED	SCALE	SPC & LIMITS
1	30	0-100	1	100	0 - 200	1	30	0-1000	0 - 300

REMARKS: PRINTED MAR. 14 1980 1018

GAMMA RAY

NEUTRON

GAMMA RAY INCREASES

NEUTRON INCREASES

API
0 100

SPC
1000 500

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

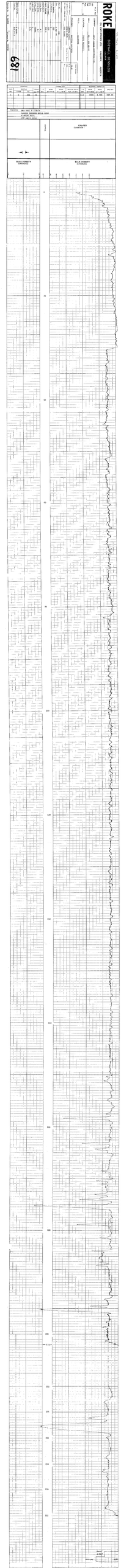
800

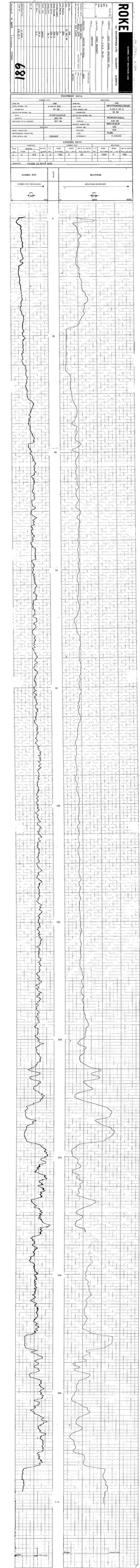
850

900

950

1000


ROKE
SEISMOGRAPH CO.
189
CALIPER
CALIPER
BLUE DENSITY
BLUE DENSITY


ROKE
OIL COMPANY
COMPANY
WELL
FIELD
COUNTY
STATE
LOCATION
SECTION
TOWNSHIP
RANGE
PERMANENT DATUM
ELEV.
LOG MEASURED FROM
DRILLING MEASURED FROM
DATE
RUN NO.
TYPE LOG
DEPTH-DRILLER
DEPTH-LOGGER
BTM. LOG INTERVAL
TOP LOG INTERVAL
CASING-DRILLER
CASING-LOGGER
BIT SIZE
TYPE FLUID IN HOLE
DENSITY
VISCOSITY
PH
FLUID LOSS
SOURCE OF SAMPLE
RM @ MEAS. TEMP.
RMF @ MEAS. TEMP.
RMC @ MEAS. TEMP.
SOURCE OF RMF
SOURCE OF RMC
RM @ BHT
TIME SINCE CIRC.
MAX. REC. TEMP.
EQUIP. LOCATION
RECORDED BY
WITNESSED BY
189
EQUIPMENT DATA
GAMMA RAY
NEUTRON
LOGGING DATA
GAMMA RAY
NEUTRON
GAMMA RAY INCREASES
NEUTRON INCREASES
RUN NO.
TYPE LOG
DEPTH-DRILLER
DEPTH-LOGGER
BTM. LOG INTERVAL
TOP LOG INTERVAL
CASING-DRILLER
CASING-LOGGER
BIT SIZE
TYPE FLUID IN HOLE
DENSITY
VISCOSITY
PH
FLUID LOSS
SOURCE OF SAMPLE
RM @ MEAS. TEMP.
RMF @ MEAS. TEMP.
RMC @ MEAS. TEMP.
SOURCE OF RMF
SOURCE OF RMC
RM @ BHT
TIME SINCE CIRC.
MAX. REC. TEMP.
EQUIP. LOCATION
RECORDED BY
WITNESSED BY

ROKE

SCHLUMBERGER

GEOLOGY

COMPANY	ROKE OIL & EXPLORATION LTD.
WELL	ROKE NO. 1
FIELD	WILDCAT
COUNTY	CALGARY
LOCATION	10-24-29-3W4
PERMANENT DATUM	GROUND LEVEL
ELEV.	1161
LOG MEASURED FROM	KELLY BUSHING
DRILLING MEASURED FROM	KELLY BUSHING
ELEV.	K.B. 1166
	D.F.
	G.L.

RUN NO.	ONE
DATE	5-11-72
DEPTH-DRILLER	5300
DEPTH-LOGGER	5296
BTM. LOG INTERVAL	5294
TOP LOG INTERVAL	1170
CASING-DRILLER	8.625 @ 1170
CASING-LOGGER	1167.5@
BIT SIZE	7.875
TYPE FLUID IN HOLE	GEL CHEM
DENSITY	10.2
VISCOSITY	45
PH	10.5
FLUID LOSS	6.4
SOURCE OF SAMPLE	FLOW LINE
RM @ MEAS. TEMP.	.75@ 70
RMF @ MEAS. TEMP.	.60@ 70
RMC @ MEAS. TEMP.	.90@ 70
SOURCE OF RMF & RMC	CALC
RM @ BHT	.30@ 150
TIME SINCE CIRC.	12 HRS
TIME ON BOTTOM	0600
MAX. REC. TEMP.	150
EQUIP. LOCATION	3-1
RECORDED BY	MOTT
WITNESSED BY	MR. SCOTT

RUN	BIT	FROM	TO	FEET	HOURS
ONE	7.875	SURF	5300	4130	23

CASING	WEIGHT	GRADE	FROM	TO
8.625	24	J-55	SURF	1170

TYPE	AMOUNT	SACKS	BRAND	ADDITIVES
REG.	1000	1	LAFARGE	2% CA CL

TYPE	AMOUNT	SACKS	BRAND	ADDITIVES
REG.	1000	1	LAFARGE	2% CA CL

ORIGINAL	FIELD PRINT - SECTION B
NOT TO SCALE	FILM

CALIPER
DIAMETER →

BULK DENSITY
(UNHARDED)

BULK DENSITY
(UNHARDED)

687

COMPANY: ROKE OIL INC.
WELL: 189
FIELD: WILDCAT
COUNTY: GRAHAM
STATE: TEXAS
LOCATION: 330' FSL & 330' FWL OF SEC. 14
SURVEY: T. T. RR. RR.
ELEVATION: DF 1310 GL 1300 KB 1310
DATE: 10-10-79
RUN NO.: ONE
DEPTH DRILLER: 2200
DEPTH LOGGER: 2200
BTM. LOG INTERVAL: 2200
TOP LOG INTERVAL: 1000
CASING: 8 5/8 @ 1000
TYPE FLUID IN HOLE: SALT GEL
DENS.: 10.0
VISC.: 45
PH: 10.5
FLUID LOSS: 10 CC
SOURCE OF SAMPLE: FLOWLINE
RM @ MEAS. TEMP.: .75 @ 70°
RMF @ MEAS. TEMP.: .60 @ 70°
RMC @ MEAS. TEMP.: 1.10 @ 70°
SOURCE: RMF
RM @ BHT: .37 @ 120°
TIME SINCE CIRC.: 6 HRS.
MAX. REC. TEMP.: 120°
EQUIP. LOCATION: 1 MILE SOUTH
RECORDED BY: T. MOORE
WITNESSED BY: MR. ROKE

ROKE OIL INC.
500 WILSON KX BLDG.
SAN ANTONIO, TEXAS

EQUIPMENT DATA

RUN NO.	ONE
CSG. DEPTH - ML	1000
BOREHOLE	7 7/8 IN
CSG. DEPTH - DL	1000
TYPE	UNCALIBRATED
LOCATION	ST IN
LOGGING TECH. ASSIST	J. M.

RUN NO.	ONE
LOCATION	
DUAL MODEL NO.	
S.N.	
UNCALIBRATED	
LOCATION	
SONDE MODEL NO.	
S.N.	
STAND OFFS	
MICRO NO.	
LOCATION	
SONDE	
LOCATION	

RECORDED

RUN NO.	ONE
NEUTRON/NEUTRON	
LOCATION	
S.N.	7 1/8
PROPORTIONAL	
LOCATION	
MIC. S.N.	
MICRO	
LOCATION	
BASE	
LOCATION	1 OFFSET

LOGGING DATA

RUN NO.	DATE	TIME	DEPTH DRILLER	DEPTH LOGGER	BTM. LOG INTERVAL	TOP LOG INTERVAL	CASING	BIT SIZE	TYPE FLUID IN HOLE	DENS.	VISC.	PH	FLUID LOSS	SOURCE OF SAMPLE	RM @ MEAS. TEMP.	RMF @ MEAS. TEMP.	RMC @ MEAS. TEMP.	SOURCE RMF	RM @ BHT	TIME SINCE CIRC.	MAX. REC. TEMP.	EQUIP. LOCATION	RECORDED BY	WITNESSED BY
ONE	10-10-79		2200	2200	2200	1000	8 5/8 @ 1000	7 7/8	SALT GEL	10.0	45	10.5	10 CC	FLOWLINE	.75 @ 70°	.60 @ 70°	1.10 @ 70°	RMF	.37 @ 120°	6 HRS.	120°	1 MILE SOUTH	T. MOORE	MR. ROKE

REMARKS: 1 MILE SOUTH

GAMMA RAY

GAMMA RAY (MICRO-REM/HR)

0 — 150

NEUTRON

NEUTRON (MICRO-REM/HR)

1000 — 0

1000

1050

1100

1150

1200

1250

1300

1350

1400

1450

1500

1550

1600

1650

1700

1750

1800

1850

1900

1950

2000

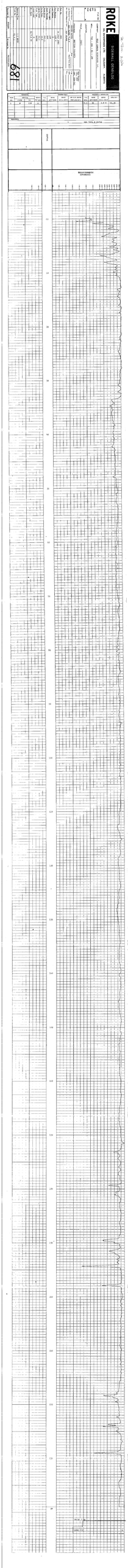
2050

2100

2150

2200

TD 2200



PR-TREFI 81(3)A

ROKE

FOCUSED BEAM LOG 20 CM

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.
LSD
SEC
TWP
RGE
W M

COMPANY GULF CANADA RESOURCES INC.

WELL TRF-DDH-81-100

LOCATION

FIELD TREFI

PROVINCE BRITISH COLUMBIA

Other Services:
DIR
GR-N, DEN-CAL

Permanent Datum GROUND LEVEL Elev.
Log Measured from RIG FLOOR 0.4 M Above Perm. Datum
Well Depths-Measured from RIG FLOOR

K.B.
CSG
G.L.

Run. No.	ONE		
Date	19 JULY 81		
First Reading	244		
Last Reading	30		
Footage Logged	214		
Depth Reached	245		
Depth Driller	245.3		
Casing Roke	33.4		
Casing Driller	33.5		
Fluid Type	WATER		
Liquid Level	0		
Min. Diam.	HQ 9.6 CM		
	4.85 EM @12°C		
Rm @ °C			
Operating Time	1.2 HR		
Truck No.	FU # 1		

681

Recorded By PUBANZ
Witnessed By MACFARLANE

Remarks FBL # 9 CURRENT RANGE STD. MUDFISH RESISTANCE 35 OHMS
7 ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY
PRIMARY 100 OHM/DIV SECONDARY 200 OHM/DIV

RESISTIVITY (OHM-METERS)	PRIMARY SCALE
	0 1000 2000
	2600 4600 6600

Depths

RESISTIVITY (OHM-METERS)	SECONDARY SCALE
	0 2000

Pr. Trefi, 81(3)A

ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG

FILE NO.	
LSD	
SEC	
TWP	
RGE	
W. M	
COMPANY	GULF CANADA RESOURCES INCORPORATED
WELL	TR-RDH-80-01
LOCATION	TREFI PROPERTY
FIELD	CHETWYND
PROVINCE	BRITISH COLUMBIA
Permanent Datum	GROUND LEVEL Elev.
Log Measured from	GROUND LEVEL Above Perm. Datum
Well Depths Measured from	GROUND LEVEL
Other Services:	DENS-CAL, FEL, DIP. 20CM FEL, 5CM FEL
K.B.	
CSG	
G.L.	

Run No.	ONE		
Date	4 JULY 1980		
First Reading	317.5M		
Last Reading	0		
Footage Logged	317		
Depth Reached	317.5		
Depth Driller	317.5		
Casing Roke	8.5		
Casing Driller	8.5		
Fluid Type	WATER		
Liquid Level	FULL		
Min. Diam.	15.88 CM		
Rm @			
Rmf @			
Operating Time	2 HOURS		
Truck No.	38		
Recorded By	ROBERTSON	Witnessed By	McFALL

189

EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125A	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	3.2 CM	TOOL MODEL NO.	125A
DETECTOR MODEL NO.		DIAMETER	3.20 CM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	215.2 CM	LENGTH	
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	126
HOIST TRUCK NO.	38	SPACING	43.2 CM
INSTRUMENT TRUCK NO.	38	TYPE	AmBe
TOOL SERIAL NO.	125A004	STRENGTH	3 CURIES

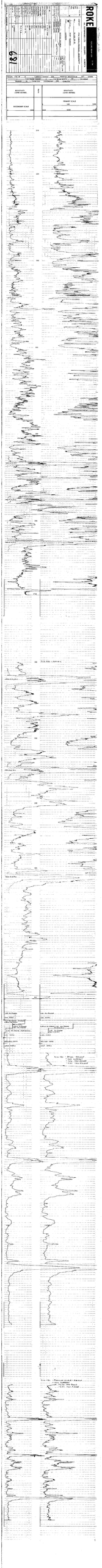
LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
ONE	0	16	4	3	500	0	20	3	5000	10 L	200 API
	16	317	4	3	500	0	20	3	5000	0	200 API

REMARKS

GAMMA RAY	DEPTHS	NEUTRON


19



Re-Treft, 81(3)A

ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG

FILE NO.

LSD
SEC
TWP
RGE
W M

COMPANY GULF CANADA RESOURCES INCORPORATED

WELL TR-RDH-80-06

LOCATION TREFI PROPERTY

FIELD CHETWYND

PROVINCE BRITISH COLUMBIA

Other Services:
DENS-CAL

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B.
CSG
G.L.

Run. No.	ONE
Date	21 JULY 1980
First Reading	247.5 M
Last Reading	0
Footage Logged	247.5
Depth Reached	248.5
Depth Driller	249.9
Casing Roke	3.75
Casing Driller	3.75
Fluid Type	WATER
Liquid Level	40.75
Min. Diam.	15.75 CM
Rm @	
Operating Time	1 HOUR
Truck No.	38
Recorded By	ROBERTSON
Witnessed By	McFALL

189

EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125A	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	3.2 CM	TOOL MODEL NO.	125A
DETECTOR MODEL NO.		DIAMETER	3.2 CM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10.2 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	215.2	LENGTH	15 CM
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	126
HOIST TRUCK NO.	38	SPACING	43.2
INSTRUMENT TRUCK NO.	38	TYPE	AmBe
TOOL SERIAL NO.	125A004/126	STRENGTH	3 CURIES

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
ONE	0	40.75	4	3	500	0	20	3	5000	20 L	200 API
	40.75	247.5	4	3	500	0	20	3	5000	0	200 API

REMARKS

GAMMA RAY	DEPTHS	NEUTRON
GAMMA RAY INCREASES API 20		NEUTRON INCREASES API 200
0 200		4000 6000 8000

ROKE

SERVICES LTD

ROKE OIL EXPLORATION LTD.
HAMPTON HOUSE, HAMPTON
MIDDLESEX, TW12 2HD

WELL: 186

FIELD: [illegible]

COUNTY: [illegible]

STATE: [illegible]

LOCATION: [illegible]

DATE: [illegible]

RUN NO.: [illegible]

DEPTH DRILLER: [illegible]

DEPTH LOGGER: [illegible]

BTM. LOG INTERVAL: [illegible]

TOP LOG INTERVAL: [illegible]

CASING DRILLER: [illegible]

CASING LOGGER: [illegible]

BIT SIZE: [illegible]

TYPE FLUID IN HOLE: [illegible]

DENS. VISC.: [illegible]

PH: [illegible]

FLUID LOSS: [illegible]

SOURCE OF SAMPLE: [illegible]

RM @ MEAS. TEMP.: [illegible]

RMF @ MEAS. TEMP.: [illegible]

RMC @ MEAS. TEMP.: [illegible]

SOURCE OF RMF & RMC: [illegible]

RM @ BHT: [illegible]

TIME SINCE CIRC.: [illegible]

MAX. REC. TEMP.: [illegible]

EQUIP. LOCATION: [illegible]

RECORDED BY: [illegible]

WITNESSED BY: [illegible]

	RUN NO.	BIT	FROM	TO	FEET

	RUN NO.	BIT	FROM	TO	FEET

	RUN NO.	BIT	FROM	TO	FEET

	RUN NO.	BIT	FROM	TO	FEET

REMARKS

[illegible]

CALIPER
CHANNEL 1 (0)

Inches

12 17 22

BULK DENSITY
CHANNEL 2

0 1 2

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

Rev 1/74

Re- Trefi 8/(3)A

ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG

FILE NO.
LSD
SEC
TWP
RGE
W ____ M

COMPANY GULF CANADA RESOURCES INCORPORATED
WELL TR-RON-80-07
LOCATION TREFI PROPERTY
FIELD CHETWYND
PROVINCE BRITISH COLUMBIA

Other Services:
DENS-CAL, DIR,
20CM FBL, 5CM FBL

Permanent Datum GROUND LEVEL Elev. ____
Log Measured from GROUND LEVEL ____ Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B. ____
CSG ____
G.L. ____

Run. No.	ONE
Date	20 JULY 1980
First Reading	201.5 M
Last Reading	00
Footage Logged	201.5
Depth Reached	202.5
Depth Driller	202.7
Casing Roke	
Casing Driller	
Fluid Type	WATER
Liquid Level	102.0
Min. Diam.	13.25 CM
Rm @	
Operating Time	1.25 HOUR
Truck No.	38
Recorded By	ROBERTSON
Witnessed By	McFALL

681

EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125A	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	3.2 CM	TOOL MODEL NO.	125A
DETECTOR MODEL NO.		DIAMETER	3.2 CM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10.2 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	215.2	LENGTH	15 CM
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	126
HOIST TRUCK NO.	38	SPACING	43.2 CM
INSTRUMENT TRUCK NO.	38	TYPE	AmBe
TOOL SERIAL NO.	125A004/126	STRENGTH	3 CURIES

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
ONE	0	98.5	4	3	500	0	20	3	5000	10 L	200 API
	98.5	201.5	4	3	500	0	20	3	5000	0	200 API

REMARKS

ROKE
SIDEWALL DENSILOG
OIL ENTERPRISES LTD. CALGARY, ALBERTA

LSD ____ SEC ____ TWP ____ RGE ____ M
FILE NO.
COMPANY ____ CHIEF CANADA RESOURCES LTD.
WELL ____ 7A-19-36-5-W5
LOCATION ____ TEEPEE PROPERTY
FIELD ____ CROSSFIELD

Permanent Datum: GROUND LEVEL — Elev. 3230 ft
Log Measured From: KELLY BUSHING — 10 ft above Perm. Datum
Drilling Measured From: GROUND LEVEL — Above Perm. Datum

Date: 20 JULY 1989
Run No.: ONE
Depth Driller: 208.5
Depth Logger: 207.7
Bottom Logged Interval: 206.5
Top Logged Interval: 51.5
Type Fluid in Hole: WATER
Salinity, PPM Cl: 3,000
Density: 8.5
Level: FULL
Max. Temp. Recorded: 13.5 DEG C
Operating Rig Time:
Recorded By: MCKAIG
Witnessed By: SCHULZ

Cross Section: 12 TWP 36 RGE 5 W5M
Long & Lat.: 52° 56' 20" 114° 28' 28"

GENERAL			GAMMA RAY			SIDEWALL DENSILOG			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV.L OR R	API G.R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV.L OR R	CPS/ DIV
ONE	140.0	208.5	8					0.5	1000	1.59 R	208.67

REMARKS
RWNE TOOL #2616R
CAL TOOL #659
JOB #3119

CALIPER
(DIAMETER – CM)

BULK DENSITY
(GRAMS/CC)

DEPTHS

140
160
180
200

FA

MAIN LOG RUN 2

FROM CM. TO

DENSITY – DETAIL

183
188
192

681

ROKE

687

Sonde Type: [illegible]
Current Range: [illegible] Depth Reference: [illegible] Zero: [illegible]
Fluid Type: [illegible] Current Scale: [illegible] Bit Size: [illegible] Casing: [illegible]
Primary: [illegible] Secondary: [illegible] Logged On: [illegible]

Resistivity (Ohm-Metres)

Secondary Scale

Primary Scale

Resistivity (Ohm-Metres)

Sonde Type: [illegible]
Current Range: [illegible] Depth Reference: [illegible] Zero: [illegible]
Fluid Type: [illegible] Current Scale: [illegible] Bit Size: [illegible] Casing: [illegible]
Primary: [illegible] Secondary: [illegible] Logged On: [illegible]

Resistivity (Ohm-Metres)

Secondary Scale

Primary Scale

Resistivity (Ohm-Metres)

ROKE

OIL SURVEYORS LTD.
CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG

Well	1-34-36-5W5
Field	STEELE BLUFF
County	
Province	ALBERTA
Company	JOINT VENTURE
Location	
Other Services	
Permanent Datum	GROUND LEVEL
Log Measured From	KELLY BUSHING
Drilling Measured From	KELLY BUSHING
Elevation	K.B. 3154.5 ft.
	D.F. 3153.5 ft.
	G.L. 3151.5 ft.
Date	1-MAY-1987
Run No.	ONE
Depth Driller	6445
Depth Logger	6443
Bottom Logged Interval	6443
Top Logged Interval	3300
Casing Driller	9 5/8 @ 3300
Casing Logger	3300
Bit Size	8 3/4
Type Fluid in Hole	GEL CHEM
Density	9.6
Viscosity	40
Fluid Loss	6.0
Source of Sample	CIRCULATION
Rm @ Meas. Temp.	0.25 @ 70
Rmf @ Meas. Temp.	0.20 @ 70
Rmc @ Meas. Temp.	0.30 @ 70
Source of Rmf & Rmc	CALCULATED
Rm @ BHT	0.15 @ 140
Time Since Circulation	12 HRS
Max. Rec. Temp.	140
Equipment No. & Location	1984
Recorded By	BOYD
Witnessed By	BUTCH

1984

EQUIPMENT DATA

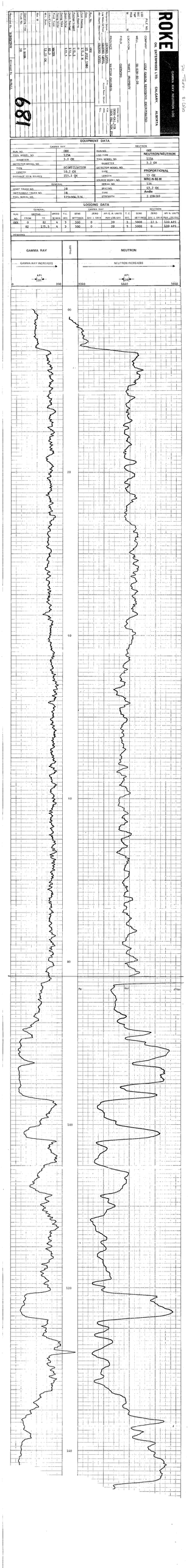
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO	125A	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	3.7 CM	TOOL MODEL NO.	134
DETECTOR MODEL NO		DIAMETER	3.2 CM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10.7 CM	TYPE	PROPORTIONAL
DISTANCE TO SOURCE	253.7 CM	LENGTH	15 CM
		SOURCE (CURI) NO	MRC N-55 W
GENERAL		SERIAL NO.	134
SONT TRUCK NO.	28	AMOUNT	45.1 GI
INSTRUMENT (SONDE) NO.	28	TYPE	Am-Be
TOOL SERIAL NO.	125A06/136	STRENGTH	3 CURIES

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTH FROM	DEPTH TO	SPEED (M/H)	T.C. SETTINGS	SPD (M/H)	ZERO (API & UNITS)	API & UNITS PER DIV.	T.C. SETTINGS	SENS	ZERO	API & UNITS PER DIV.
ONE	0	82	4	3	500	0	20	3	5000	27.5	120 API
	82	175.5	4	3	500	0	20	3	5000	0	120 API

REMARKS

GAMMA RAY		NEUTRON
GAMMA RAY INCREASES →		← NEUTRON INCREASES
API Units		API Units
0	200	3366 4445 4445 3660



ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

SIDEWALL DENSILOG

COMPANY: ROKE OIL ENTERPRISES LTD. CALGARY, ALBERTA

WELL: 04-08-08-26

FIELD: CREMONA

PROVINCE: ALBERTA

Location Other Services	
Permanent Datum	GROUND LEVEL
Log Measured From	KELLY BUSHING
Drilling Measured From	KELLY BUSHING
Elev.	K.B. 3824 ft.
	G.L. 3814 ft.
Date	26 JUNE 1980
Run No.	ONE
Depth-Driller	3124 ft.
Depth-Logger	3124 ft.
Bottom Logged Interval	3124 ft.
Top Logged Interval	SURFACE
Type Fluid in Hole	GEL CHEM
Salinity, PPM Cl	1,3,5,000
Density	10.2 LB/GAL
Level	FULL
Max. Rec. Temp.	120 °F
Equip. No.	3
Location	04-08-08-26
Recorded By	M.DEVLIN
Witnessed By	M.DEVLIN

RUN NO.	DEPTH FROM	DEPTH TO	SPEED ft./MIN.
ONE	60	3105	8

GAMMA RAY	T.C. SECS.	SENS. METHODS	ZERO API L.S.R.	API G.R. UNITS PER LOG DIV.

SIDEWALL DENSILOG	T.C. SECS.	SENS. METHODS	ZERO (CAL.) API L.S.R.	CPS/ DIV
	0.3	5000	1.99 R	208.67

REMARKS:

CORE TEST #1314'

CAL TOOL 8.5"

JOB #1119

CALIPER
(DIAMETER — CM.)

10 15 20

BULK DENSITY
(GRAMS/CC)

1.95 2.00 2.05 2.10 2.15 2.20 2.25 2.30 2.35 2.40 2.45 2.50 2.55 2.60 2.65 2.70 2.75 2.80 2.85 2.90 2.95 3.00

DEPTH

60 80 100 120 140 150 FR

Base of Fresh Water

Porosity — Detail

144 150

681

7/24

Pr - Teefi 81(3A)

ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FOCUSED BEAM LOG 5 CM 20 CM

FILE NO.
LSD
SEC
TWP
RGE
W M

COMPANY GULF CANADA RESOURCES INCORPORATED
WELL TR-RDH-80-08
LOCATION TREFI PROPERTY
FIELD CHETWYND
PROVINCE BRITISH COLUMBIA

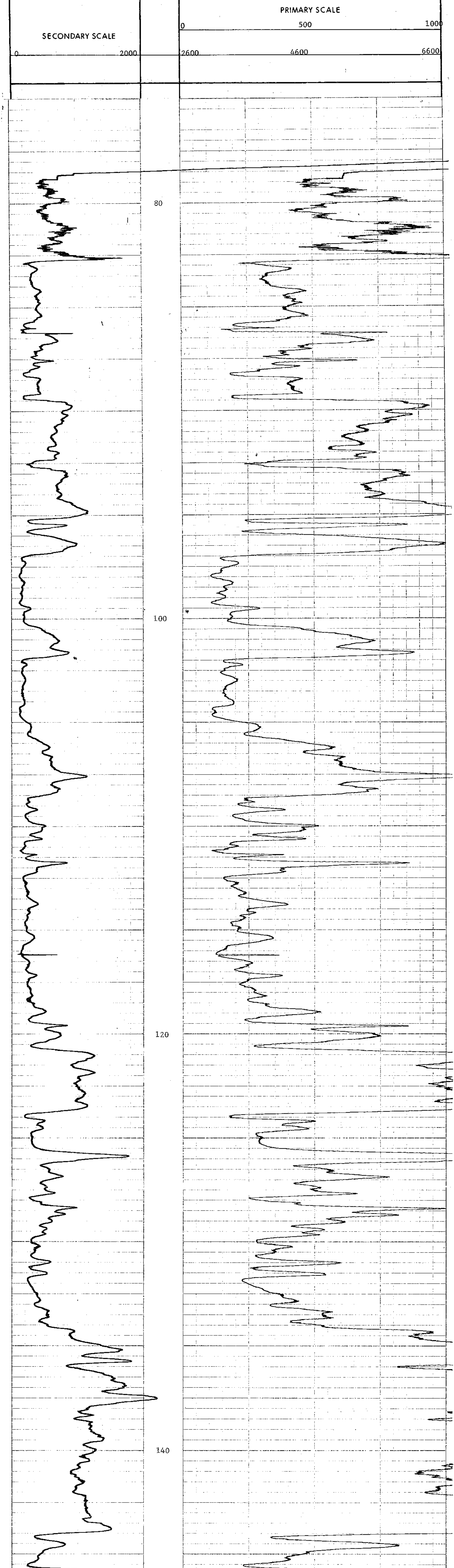
Other Services: GRN, DENS-CAL, DIR

Permanent Datum GROUND LEVEL Elev. K.B.
Log Measured from GROUND LEVEL Above Perm. Datum CSG
Well Depths Measured from GROUND LEVEL G.L.

Run. No.	ONE		
Date	21 JULY 1980		
First Reading	171 M		
Last Reading	78		
Footage Logged	93		
Depth Reached	172		
Depth Driller	172.5		
Casing Roke			
Casing Driller			
Fluid Type	WATER		
Liquid Level	82.5		
Min. Diam.	13.25 CM		
Rm @ °C	43.29 @ 9.5		
Operating Time	2 HOURS		
Truck No.	38		681
Recorded By	ROBERTSON	Witnessed By	McFALL

Remarks FBL # 8 CURRENT RANGE HIGH MUDFISH RESISTANCE 900 OHMS
7 ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY
PRIMARY 50 OHM/DIV SECONDARY 200 OHM/DIV

RESISTIVITY (OHM-METERS)	Depths	RESISTIVITY (OHM-METERS)
SECONDARY SCALE 0 2000		PRIMARY SCALE 0 500 1000 2600 4600 6600



Remarks FBL # 8 CURRENT RANGE STD MUDFISH RESISTANCE 900 OHMS
7 ELECTRODE SONDE 5 CM BEAM WIDTH 60 CM ARRAY
PRIMARY 50 OHM/DIV SECONDARY 200 OHM/DIV

RESISTIVITY (OHM-METERS)	Depths	RESISTIVITY (OHM-METERS)
SECONDARY SCALE 0 2000		PRIMARY SCALE 0 500 1000 2600 4600 6600

ROKE OIL ENTERPRISES LTD.

GAMMA RAY NEUTRON LOG

CALGARY, ALBERTA

Run No. ONE
Date 3-7-80
Depth-Driller 1200
Depth-Logger 1200
Bottom Logged Interval 1200
Top Logged Interval SURFACE
Type Fluid in Hole WATER
Salinity, PPM Cl 1500
Density 9.0
Level FULL
Max. Rec. Temp. Deg. F. 75
Operating Rig Time 3 HRS.
Recorded By BRENDON
Witnessed By MICHAEL

Permanent Datum GROUND LEVEL
Elev. 2978
Log Measured From KELLY BUSHING
4.5 Ft. Above Perm. Datum

Rig No. 681
COMPANY ROKE OIL ENTERPRISES LTD.
WELL 31-08-30-11
FIELD TOFIELD (NORTH)
LOCATION 31-08-30-11
COUNTY/PROVINCE STRATHCONA COUNTY, ALBERTA

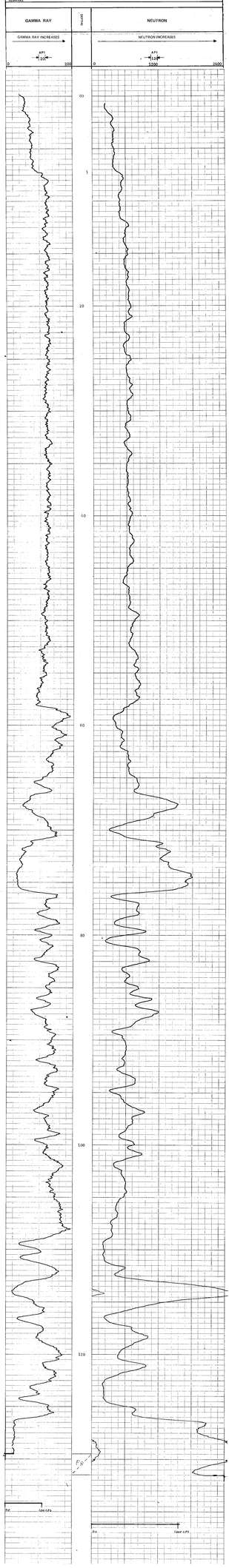
EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	1754	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	3.2 CM	TOOL MODEL NO.	1754
DETECTOR MODEL NO.	SCINTILLATION	DIAMETER	3.2 CM
TYPE		DETECTOR MODEL NO.	PROPORTIONAL
LENGTH	10.2 CM	TYPE	
DISTANCE TO S. SOURCE	215.2	ISOTOPE	MRC-N 65 M
		SOURCE MODEL NO.	1754
GENERAL		SERIAL NO.	15.2 CM
HOIST TRUCK NO.	38	SPACING	Am/Be
INSTRUMENT TRUCK NO.	38	TYPE	3 CURIES
TOOL SERIAL NO.	1754/06	STRENGTH	

LOGGING DATA

RUN NO.	GENERAL INTERVAL FROM	TO	SPEED M /MIN	T.C. SEC.	GAMMA RAY SENS SETTINGS	ZERO DIV. L OR M	API G. R. UNITS PER LOG DIV	T. C. SEC	NEUTRON SENS SETTINGS	ZERO DIV. L OR M	API N. UNITS PER LOG DIV
ONE	0	131.1	6	5	500	0	20	5	5000	0	150 API

REMARKS



PR-TREFI 81(3A)

ROKE

SIDEWALL DENSILOG
CALIPER

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	
LSD	
SEC	
TWP	
RGE	
W M	
COMPANY	GULF CANADA RESOURCES INCORPORATED
WELL	TR-RDH-80-11
LOCATION	TREFI PROPERTY
FIELD	CHETWYND
PROVINCE	BRITISH COLUMBIA
Other Services:	GRN,DIR 20CM FBL,5CM FBL
Permanent Datum	GROUND LEVEL
Elev.	
Log Measured from	GROUND LEVEL
Above Perm. Datum	
Well Depths Measured from	GROUND LEVEL
K.B.	
CSG	
G.L.	

Run. No.	ONE
Date	26 JULY 1980
First Reading	131.25
Last Reading	0
Footage Logged	131.25
Depth Reached	132.25
Depth Driller	133.5
Casing Roke	7.0
Casing Driller	7.0
Fluid Type	WATER
Liquid Level	FULL
Min. Diam.	15.25 CM
Operating Time	2 HOURS
Truck No.	38
Recorded By	ROBERTSON
Witnessed By	McFALL

681

GENERAL				GAMMA RAY				SIDEWALL DENSILOG			
RUN. NO.	DEPTHS FROM	DEPTHS TO	SPEED M /MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV.L OR R	API G.R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV.L OR R	CPS/ DIV
ONE	0	131.25	8					0.5	5000	1.59 R	208.67

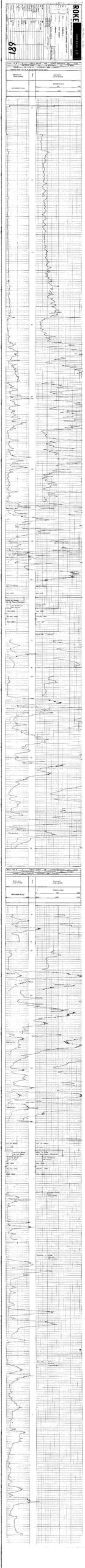
REMARKS

DENS TOOL #241AS
CAL TOOL #459
JOB #5119

DEPTHS

CALIPER
(DIAMETER – CM)

BULK DENSITY
(GRAMS/CC)



ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

GAMMA RAY NEUTRON LOG

FILE NO.

COMPANY GULF CANADA RESOURCES INC.

WELL TR - ROK - 80 - 12

LOCATION

FIELD TROUT

PROVINCE BRITISH COLUMBIA

Permanent Datum GROUND LEVEL Elev. 0 M

Log Measured from GROUND LEVEL Above Perm. Datum

Well Depths Measured from K.B. O.S.G. G.L. DIR

Other Services: DSN, CAL, SFL

LSD SEC TWP RGE M

Run No.	ONE	
Date	12 SEPT. 1980	
First Reading	128 M	
Last Reading	100	
Footage Logged	28	
Depth Driller	128.3	
Depth Reached	128.6	
Casing Driller		
Casing Rake		
Fluid Type	WATER	
Liquid Level	FLOWING	
Mtn. Diam.	15 CM	
Rm @	28 @ 7° C	
Operating Time	½ HOURS	
Truck No.	FU 2	
Recorded By	SIM	
Witnessed By	DEFORD	

681

Pr. 1655, 81/82

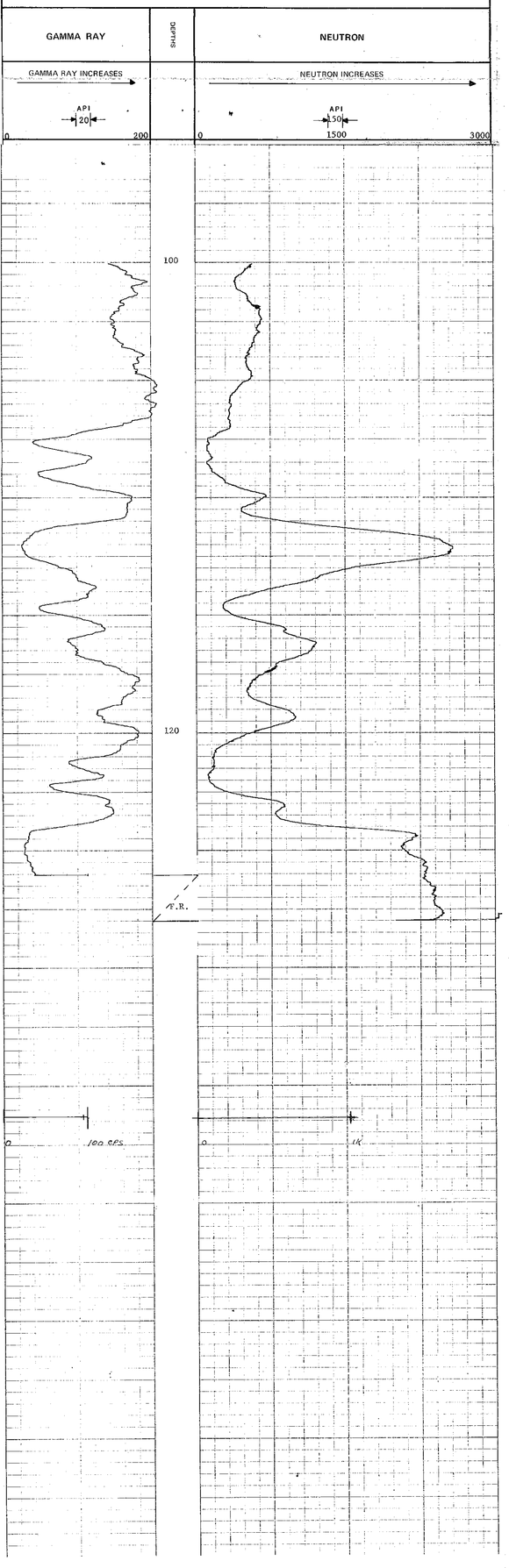
EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	32 MM	*TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	32 MM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	2.1 M	LENGTH	15 CM
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	127
HOIST TRUCK NO.		SPACING	43 CM
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	125A006	STRENGTH	3 CURIES

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV
1	100	128	4	3	100	0 L	20 API	3	1 K	0 L	150 API

REMARKS



ROKE

GAMMA RAY
SIDEWALL DENSILOG
CALGARY ALBERTA

Rge.	26 W4
COMPANY	ROKE PETROLEUMS LTD.
WELL	16-13-26-4
LOCATION	SW - SEC. 13 - TWP. 26 - RGE. 4 - W4
FIELD	BANTRY
PROVINCE	ALBERTA
COUNTY, SERVICE ORDER, DEGREE, SURVEY	80-36-7541 828
Other Services	
Permanent Datum	G.L.
Elevation	3175
Log Measured From	K.B. 10 FT. ABOVE PERM. DATUM
Drilling Measured From	K.B.
Date	13 SEPT. 1980
Run No.	ONE
Depth-Driller	3202
Depth-Logger	3202
Bottom Logged Interval	3196
Top Logged Interval	3100
Casing-Driller	244.5 @ 3196
Casing-Logger	244.5 @ 3196
Bit Size	7 7/8"
Type Fluid in Hole	WATER
Density	8.9
Viscosity	37
pH	9.5
Fluid Loss	13.2
Source of Sample	CIRC.
Rm @ Meas. Temp.	.33 @ 70°F
Rmf @ Meas. Temp.	.26 @ 70°F
Rmc @ Meas. Temp.	.44 @ 70°F
Source of Rmf & Rmc	CALC.
Rm @ BHT	.19 @ 120°F
Time Since Circ.	5 HRS.
Max. Rec. Temp.	120°F
Equipment No.	2362
Location	13-26-4
Recorded By	D. RAY
Witnessed By	GORD

GENERAL				GAMMA RAY				SIDEWALL DENSILOG			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED F/MIN	T.C. SEC.	BIAS SETTINGS	ZERO DIV.L OR R	API O.R. UNITS PER LOG DIV.	T.C. SEC.	BIAS SETTINGS	ZERO DIV.L OR R	CPS/ DIV
1	100	127	6					2	5 0	4.04 R	132.51
EXP	106-111	113-116									
	119-126										
CAL	100	127									

REMARKS

CAL 587 DEN 82565

CALIPER
DIAMETER -CH

GAMMA RAY
API

BULK DENSITY
(GRAMS/CC)

100
120
F.B.
106
108
110
114
116
120
122
124

681

ROKE

1681

Remarks: FIL #: ____ CURRENT RANGE: 200 — MUDFILTRATE RESISTANCE: 2.25 OHMS
ELECTRODE SPACING: 16" NORMAL — 64" LATERAL — 18'8" SP — SALINITY
MUDCAKE: 3/4" DOWN HOLE — SECONDARY — 3/4" DOWN HOLE

RESISTIVITY (OHM-METERS)

SECONDARY SCALE

0 — 5000

RESISTIVITY (OHM-METERS)

PRIMARY SCALE

0 — 5000 — 10,000 — 15,000 — 20,000

100

110

120

130

140

150

160

170

180

190

200

210

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270

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290

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310

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850

860

870

880

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1200

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2100

2110

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2130

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2190

2200

2210

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2240

2250

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ROKE
163
CASING SIZE
CASING CUT
RECORDED BY
WITNESSED BY
RUN NO.
DATE
TYPE LOG
DEPTH-DRILLER
DEPTH-LOGGER
BTM. LOG INTERVAL
TOP LOG INTERVAL
OPEN HOLE SIZE
TYPE FLUID IN HOLE
DENSITY
VISCOSITY
PH
FLUID LOSS
SOURCE OF SAMPLE
RM @ MEAS. TEMP.
RMF @ MEAS. TEMP.
RMC @ MEAS. TEMP.
SOURCE RMF
SOURCE RMC
RM @ BHT
TIME SINCE CIRC.
MAX. REC. TEMP.
EQUIP. LOCATION
RECORDED BY
WITNESSED BY
RUN
BIT
FROM
TO
SIZE
WEIGHT
GRADE
THREADS
CASING
BIT
TYPE
MAKE
MODEL
SERIAL NO.
SIZE
DEPTH IN
DEPTH OUT
FOOTAGE
HOURS
CONDITION
CASING OUT
RESISTIVITY
GAMMA RAY
API
0
100
SP
-80
+20
RES
0.2
2000
SHORT NORMAL 16 in.
LONG NORMAL 64 in.
LATERAL 18 ft. 8 in.
SPONTANEOUS POTENTIAL
1
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PR TREFI 81(3)A

ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FOCUSED BEAM LOG 20 CM

FILE NO.
LSD
SEC
TWP
RGE
W___M

COMPANY GULF CANADA RESOURCES INC.
WELL TRF - RDH - 81 - 101
LOCATION
FIELD TREFI
PROVINCE BRITISH COLUMBIA

Other Services:
DIR
GR-N, DEN-CAL

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

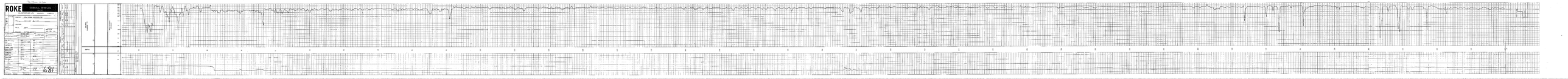
K.B.
CSG
G.L.

Run No.	ONE	TWO	681
Date	JULY 17, 1981.	AUG. 7, 1981.	
First Reading	364 M	400 M	
Last Reading	89	360	
Footage Logged	275	40	
Depth Reached	365	401	
Depth Driller	367.3	402.3	
Casing Roke			
Casing Driller	21.6		
Fluid Type	WATER	WATER	
Liquid Level	89		
Min. Diam.	12 CM	12.7 CM	
Rm @ °C	8.7 ΩM @ 15°C	8.7 ΩM @ 15°C	
Operating Time	1 HOUR	0.7 HOUR	
Truck No.	FU #1	FU #1	

Recorded By FURANZ Witnessed By MACFARLANE

Remarks FBL # 9 CURRENT RANGE STD MUDFISH RESISTANCE 10 OHMS
7 ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY
PRIMARY 100 OHM/DIV SECONDARY 200 OHM/DIV

RESISTIVITY (OHM-METERS)	Depths	RESISTIVITY (OHM-METERS)
SECONDARY SCALE 0 2000		PRIMARY SCALE 0 1000 2000 2600 4600 6600


ROKE
CARDIAL SERVICES
PATIENT
DATE
DOCTOR
ROOM
DIAGNOSIS
TECHNICIAN
681

ROKE

GAMMA RAY NEUTRON LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.

LSD
SEC
TWP
RGE
W M

COMPANY GULF CANADA RESOURCES INC.

WELL TRF - DDH - 81 - 102

LOCATION

FIELD TREFI

PROVINCE BRITISH COLUMBIA

Permanent Datum GROUND LEVEL Elev.
Log Measured from RIG FLOOR 0.5 Above Perm. Datum
Well Depths Measured from RIG FLOOR

Other Services: DIR, DEN DEN-CAL, FBL

K.B.
CSG
G.L.

Run. No.	ONE
Date	18 JULY 1981
First Reading	154 M
Last Reading	0
Footage Logged	154
Depth Reached	155
Depth Driller	160
Casing Roke	8.8
Casing Driller	8.5
Fluid Type	WATER/MUD
Liquid Level	0
Min. Diam.	HQ 9.6 CM
Rm @	
Operating Time	1.1 HOUR
Truck No.	FU # 1

Recorded By PUBANZ

Witnessed By MACFARLANE

681

TR- TREFI 81 (3)A

EQUIPMENT DATA

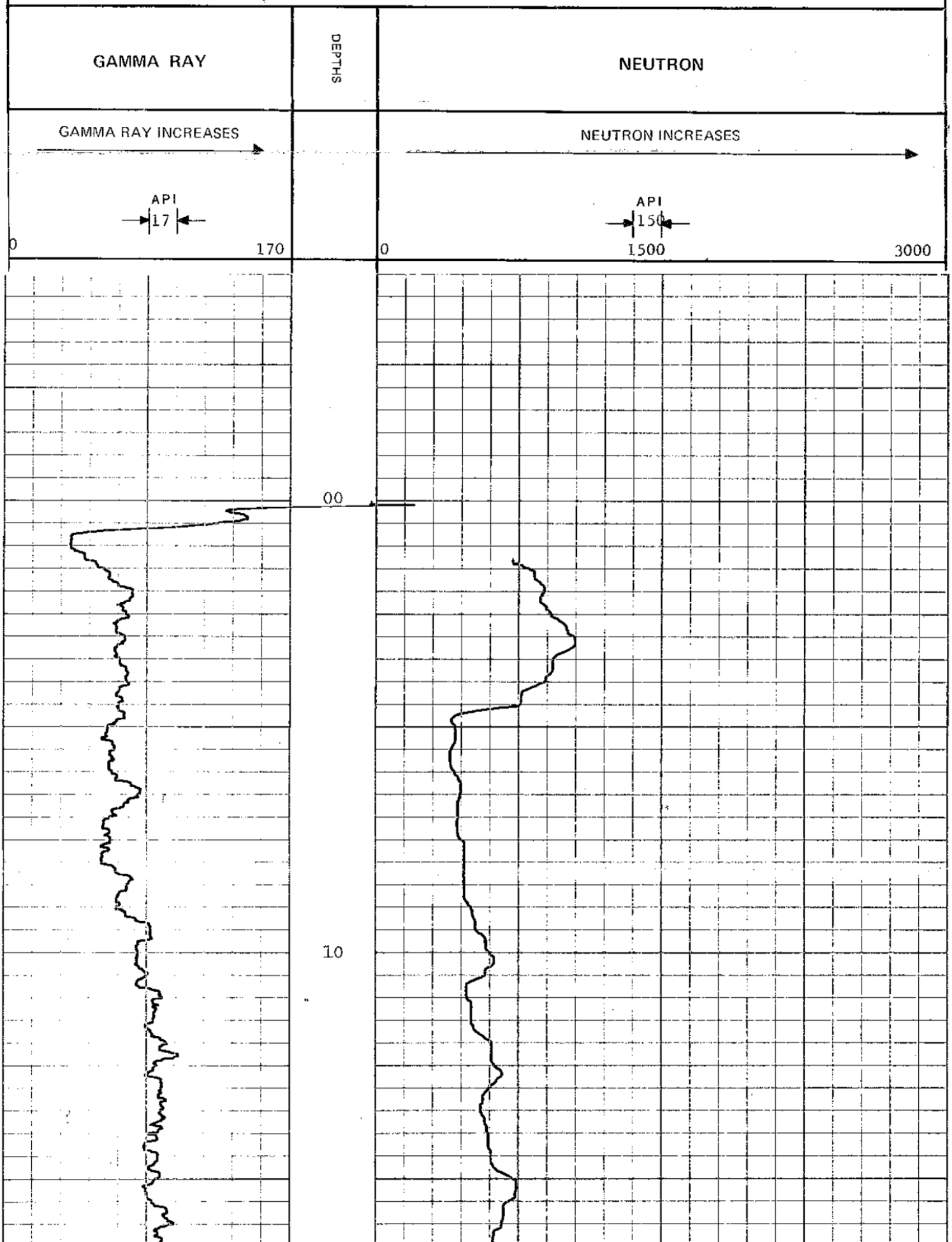
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	3.2 CM	TOOL MODEL NO.	125
DETECTOR MODEL NO.		DIAMETER	3.2 CM
TYPE	SCINT.	DETECTOR MODEL NO.	
LENGTH	10 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	2 M	LENGTH	15 CM
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	126
HOIST TRUCK NO.		SPACING	38 CM
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	125A004	STRENGTH	3 CURIE

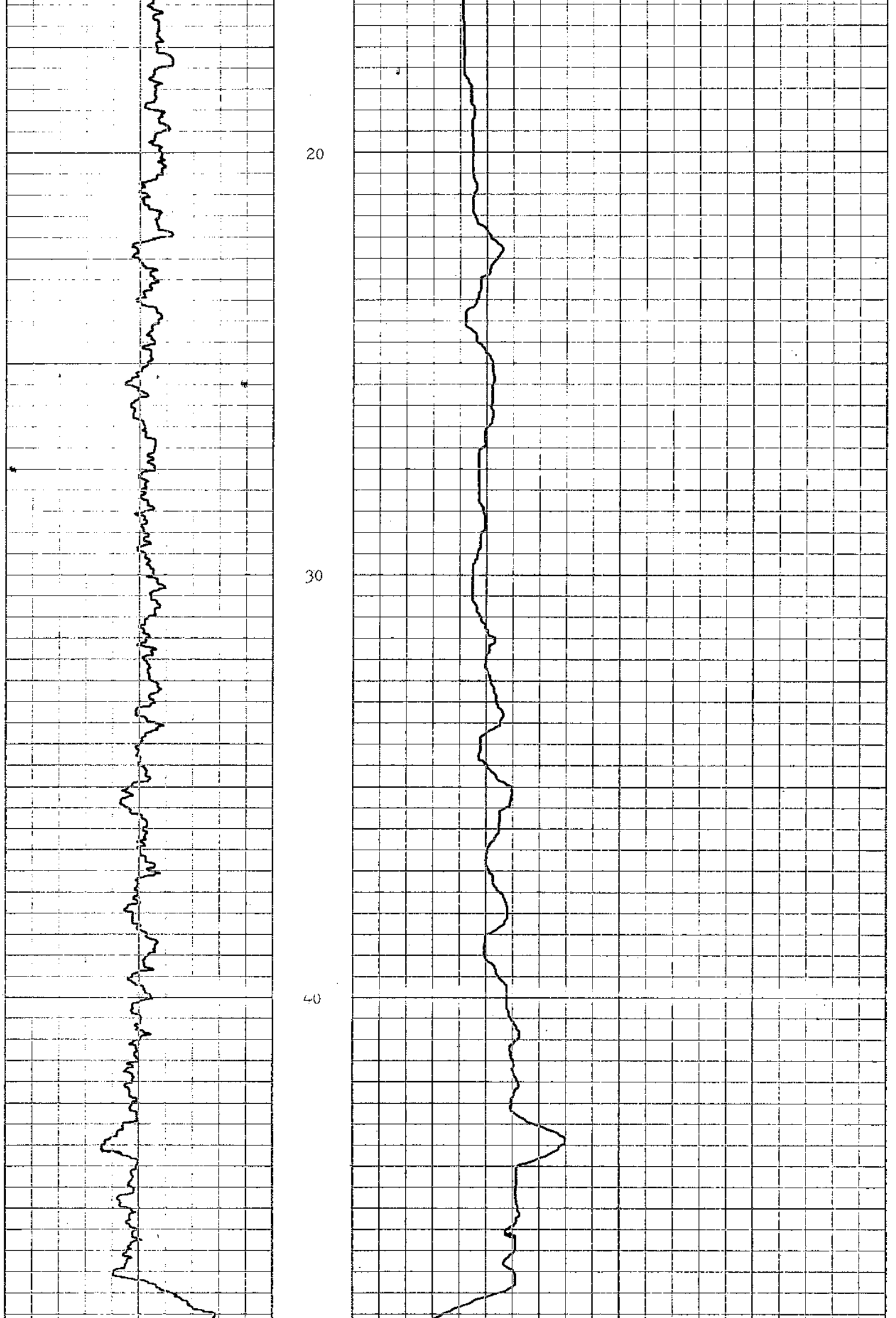
LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M /MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	0	154	4	2	500	0	17	2	5K	0	150

REMARKS

LOGGED THROUGH HQ DRILLRODS ANGLE HOLE




20
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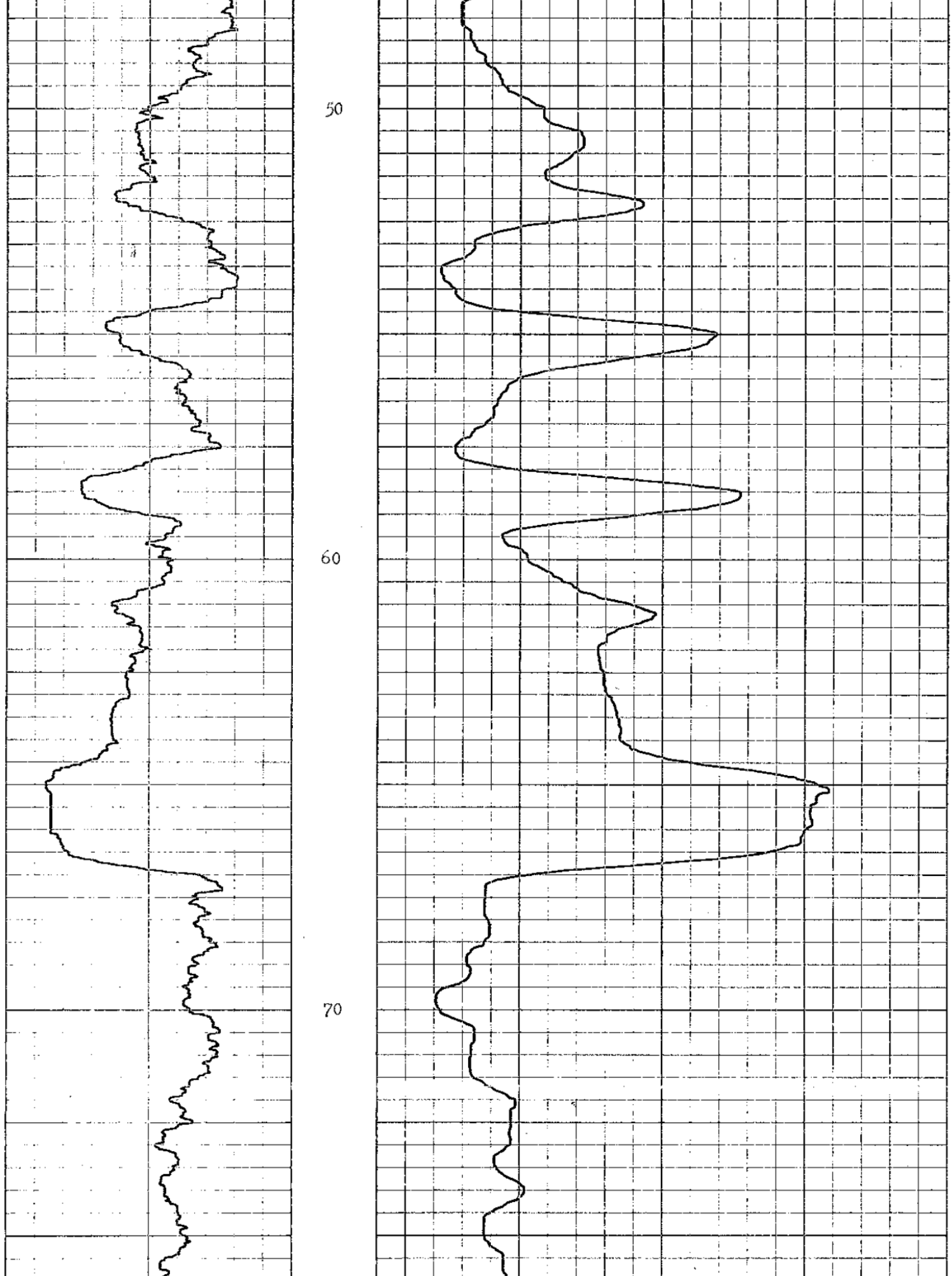
40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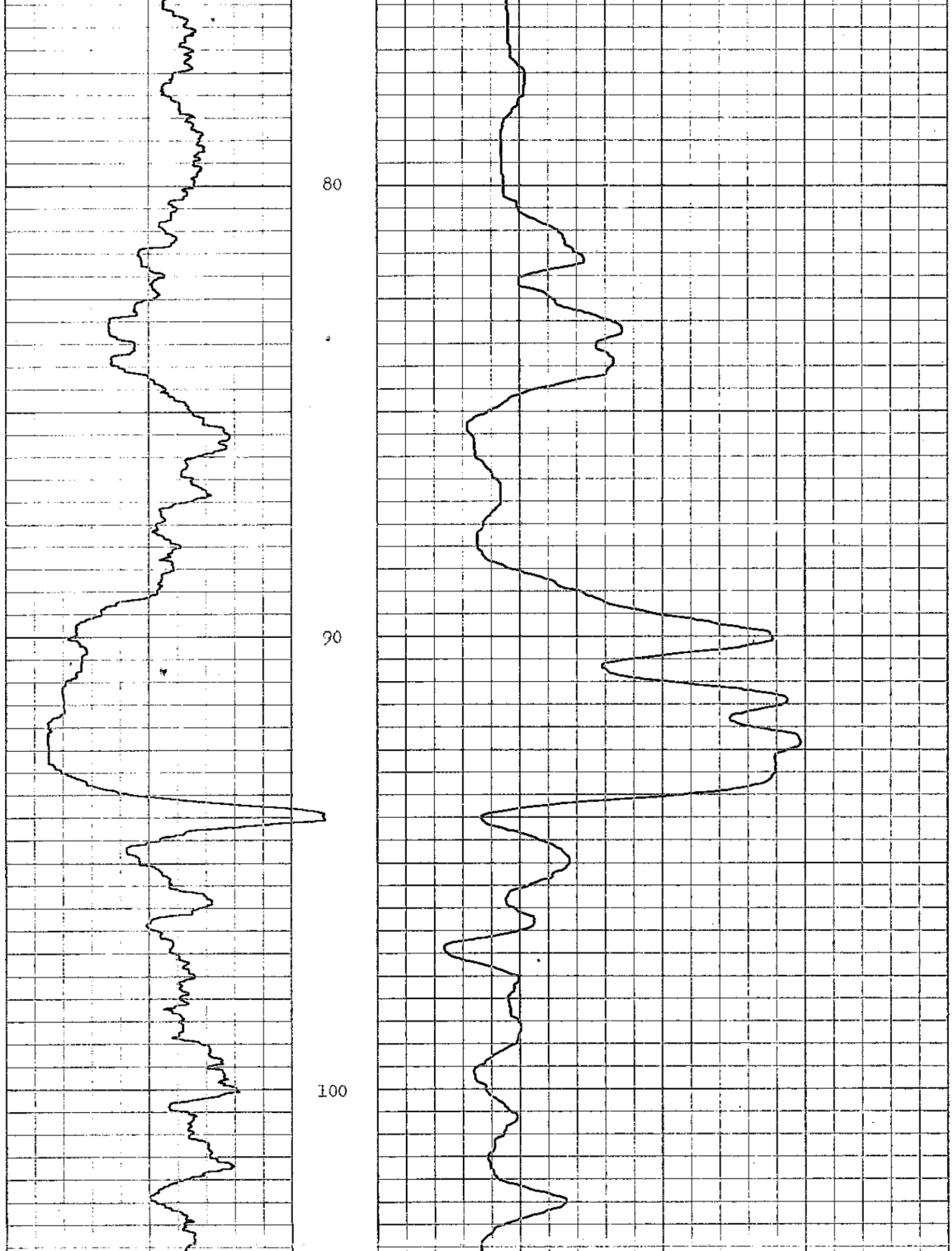
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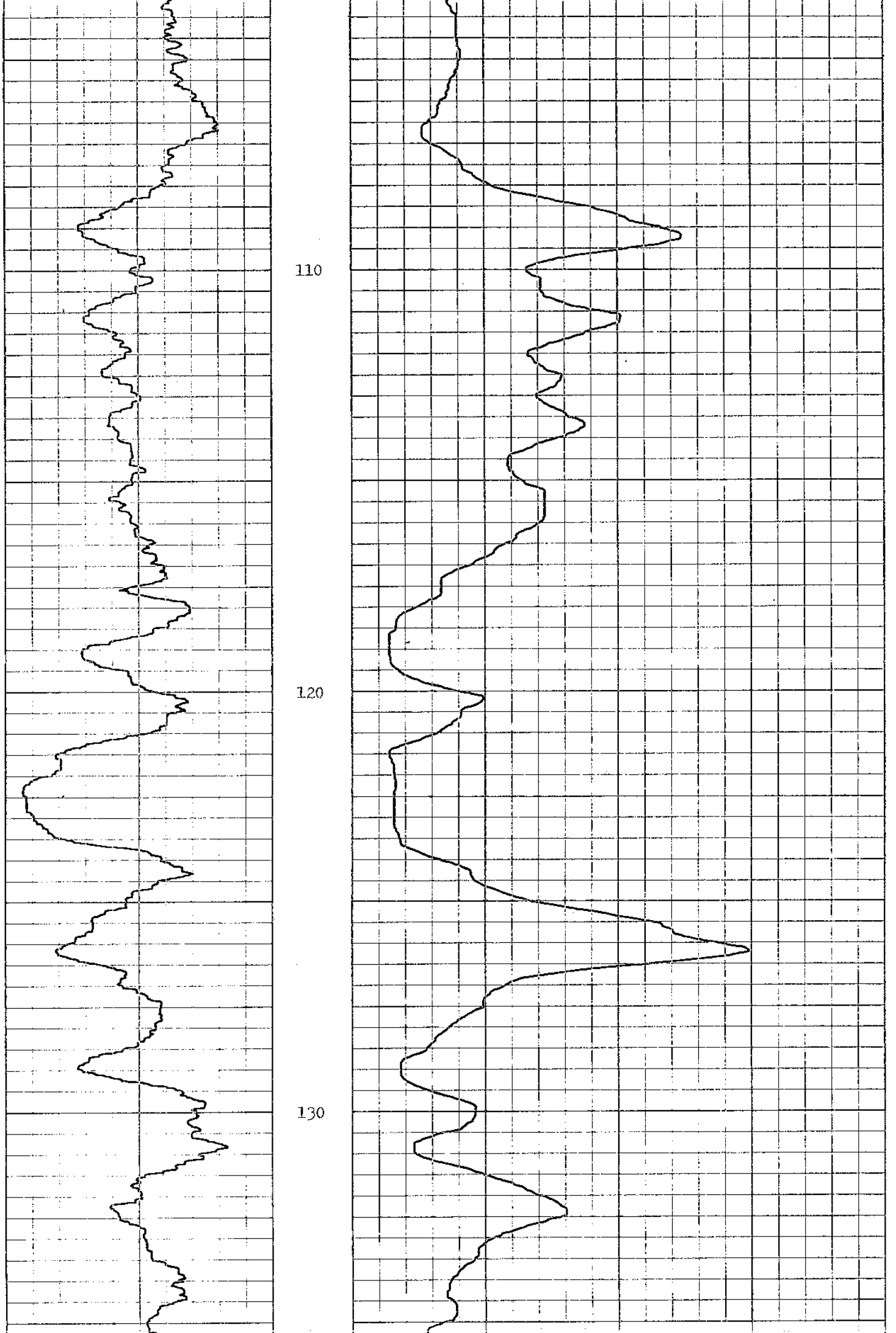
100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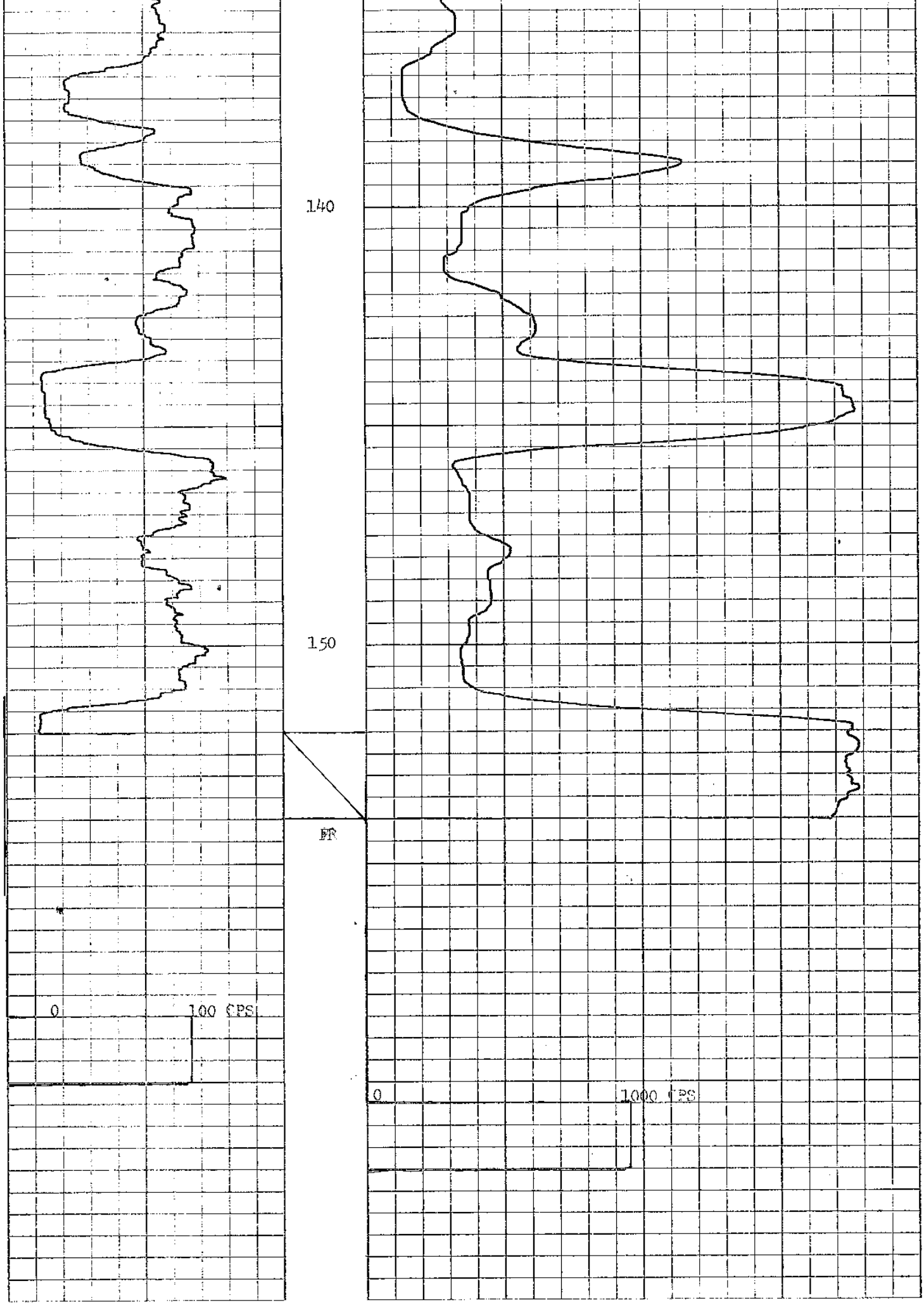
120
130


140
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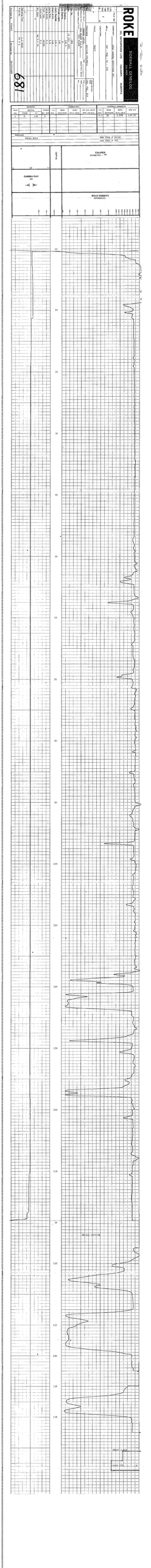
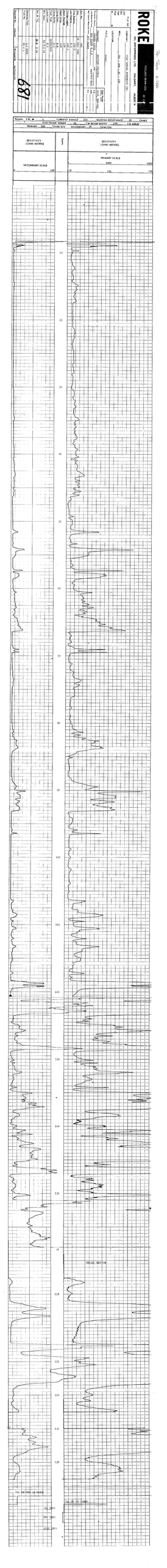
100 CPS
0
1000 CPS


ROKE
DOUGLAS COUNTY, KANSAS
189
CALIPER
DIAMETER — IN
GAMMA RAY
API
BULK DENSITY
(DYNAMIC)
SPONTANEOUS POTENTIAL
MILLIVOLTS
RESISTIVITY
OHMS
FEET


ROKE
OIL EXPLORATION LTD.
GALWAY
ELECTRODE SPACING
SURFACE RESISTIVITY SURVEY
1689
RESISTIVITY (OHM-METRES)
SECONDARY SCALE
RESISTIVITY (OHM-METRES)
PRIMARY SCALE
INFLECTION POINT
INFLECTION POINT
INFLECTION POINT

ROKE

RESISTIVITY

189

COMPANY NAME

WELL NAME

FIELD

COUNTY

STATE

LOCATION

SECTION

TOWNSHIP

RANGE

PERMANENT DATUM

ELEVATION

LOG MEASURED FROM

DRILLING MEASURED FROM

DATE

RUN NO.

DEPTH DRILLER

DEPTH LOGGER

BTM. LOG INTERVAL

TOP LOG INTERVAL

CASING DRILLER

CASING LOGGER

BIT SIZE

TYPE FLUID IN HOLE

DENSITY

VISCOSITY

PH

FLUID LOSS

SOURCE OF SAMPLE

RM @ MEAS. TEMP.

RMF @ MEAS. TEMP.

RMC @ MEAS. TEMP.

SOURCE OF RMF

SOURCE OF RMC

RM @ BHT

TIME SINCE CIRC.

MAX. REC. TEMP.

EQUIP. LOCATION

RECORDED BY

WITNESSED BY

RUN | BIT | CASING | FROM | TO

TOOL | TYPE | SERIAL NO. | POSITION | DIA | WEIGHT | FROM | TO

GAMMA RAY

NEUTRON

RESISTIVITY

SPONTANEOUS POTENTIAL

GAMMA RAY (API UNITS) | NEUTRON (POROSITY %)

RESISTIVITY (OHMM) | SPONTANEOUS POTENTIAL (MV)

CASING SHOE

TOTAL DEPTH

Re-Treft, 81(3)A

ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FOCUSED BEAM LOG 20 CM

FILE NO.	
LSD	
SEC	
TWP	
RGE	
W M	
COMPANY	GULF CANADA RESOURCES INC.
WELL	TRF - DDH - 81 - 102
LOCATION	
FIELD	TREFT
PROVINCE	BRITISH COLUMBIA
Other Services:	DEN, DIR GR-N, DEN-CAL
Permanent Datum	GROUND LEVEL Elev.
Log Measured from	RIG FLOOR 0.5 M Above Perm. Datum
Well Depths Measured from	RIG FLOOR
K.B.	
CSG	
G.L.	

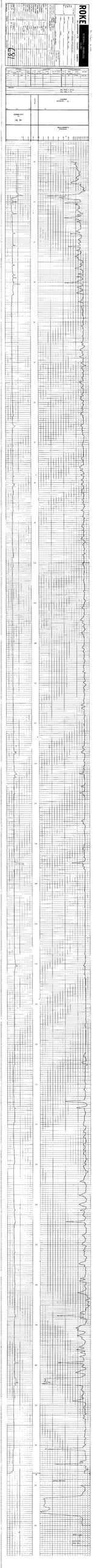
Run. No.	ONE
Date	18 JULY 1981
First Reading	158 M
Last Reading	8.5
Footage Logged	149.5
Depth Reached	159
Depth Driller	160
Casing Roke	8.8
Casing Driller	8.5
Fluid Type	WATER/MUD
Liquid Level	8.5
Min. Diam.	HQ 9.6 CM
Rm @ °C	38.8 @ 26
Operating Time	1.1 HOUR
Truck No.	FU # 1
Recorded By	PUBANZ
Witnessed By	MACFARLANE

681

Remarks FBL # 9 CURRENT RANGE STD MUDFISH RESISTANCE 38 OHMS

7 ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY

PRIMARY 200 OHM/DIV SECONDARY 1K OHM/DIV


ROKE
TECHNOLOGIES LTD
Roke Manor Research Limited
Roke, Romsey, Hampshire, SO51 0ZN, UK
Tel: +44 (0) 1794 833000
Fax: +44 (0) 1794 833434
www.roke.co.uk
Roke Manor Research Limited
Registered in England No. 1036382
Registered Office: Roke Manor, Romsey, Hampshire, SO51 0ZN, UK
This drawing is the property of Roke Manor Research Limited and may not be copied or used without our consent.
Unless otherwise specified:
Dimensions are in millimetres
Tolerances: Linear ±0.1 Angular ±1°
Surface finish: 3.2 µm
Material:
Finish:
Drawn
Checked
Approved
Date
Scale
Sheet
Drawing No.
Issue
Title
Notes
Revisions
Issue
Description
Date
Approved
Parts List
Item
Qty
Part No.
Description
Material
Finish
Remarks
Mass
Total Mass
Mass Properties
Centre of Gravity
Moments of Inertia
Products of Inertia
Principal Axes
Principal Moments
Radii of Gyration
Volume
Surface Area
Density
Weight
Total Weight
Sheet Metal
Bend Allowance
Bend Deduction
K-Factor
Flat Pattern
Flat Pattern Dimensions
Bend Table
Bend Radius
Bend Angle
Bend Direction
Bend Order
Tooling
Punch
Die
Tonnage
Stroke
Shut Height
Press
Operation
Setup
Fixture
Datum
Reference
Tolerance
Inspection
Gauge
Measurement
Result
Pass
Fail
Rework
Scrap
Quarantine
Hold
Release
Shipping
Packaging
Label
Barcode
Serial Number
Batch
Lot
Traceability
Revision History
Change Request
Engineering Change Order
Deviation
Waiver
Concession
Non-Conformance
Corrective Action
Preventive Action
Root Cause
Containment
Disposition
Verification
Validation
Qualification
Certification
Approval
Signature
Date
Name
Role
Organisation
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Telephone
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Fax
Mobile
Pager
Skype
Twitter
LinkedIn
Facebook
YouTube
Instagram
Blog
Forum
Wiki
Knowledge Base
FAQ
Support
Training
Documentation
Manual
Guide
Tutorial
Example
Sample
Template
Macro
Script
Plugin
Add-in
Extension
Theme
Skin
Icon
Image
Video
Audio
Animation
Simulation
Model
Assembly
Part
Feature
Sketch
Constraint
Dimension
Annotation
Note
Comment
Reply
Thread
Post
Topic
Category
Tag
Keyword
Search
Filter
Sort
Group
Ungroup
Lock
Unlock
Hide
Show
Suppress
Unsuppress
Freeze
Thaw
Activate
Deactivate
Enable
Disable
Start
Stop
Pause
Resume
Restart
Reset
Undo
Redo
Cut
Copy
Paste
Delete
Select
Deselect
Move
Rotate
Scale
Mirror
Pattern
Array
Offset
Trim
Extend
Fillet
Chamfer
Shell
Draft
Loft
Sweep
Extrude
Revolve
Hole
Thread
Boss
Rib
Web
Slot
Pocket
Island
Boss
Stud
Pin
Bushing
Bearing
Gear
Cam
Follower
Spring
Damper
Actuator
Sensor
Switch
Relay
Solenoid
Motor
Pump
Valve
Pipe
Tube
Hose
Fitting
Flange
Gasket
Seal
O-Ring
Bolt
Screw
Nut
Washer
Rivet
Weld
Braze
Solder
Adhesive
Paint
Coating
Plating
Anodize
Passivate
Clean
Degrease
Etch
Polish
Grind
Lap
Hone
Blast
Peen
Heat Treat
Anneal
Temper
Harden
Quench
Normalize
Stress Relief
Age
Cryogenic
Vacuum
Pressure
Temperature
Humidity
Corrosion
Oxidation
Fatigue
Creep
Wear
Abrasion
Erosion
Cavitation
Vibration
Shock
Impact
Drop
Crush
Compression
Tension
Shear
Torsion
Bending
Buckling
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Strain
Stress
Load
Force
Moment
Torque
Power
Energy
Work
Heat
Thermal
Electrical
Magnetic
Optical
Acoustic
Fluid
Gas
Liquid
Solid
Plasma
Vacuum
Atmosphere
Environment
Ambient
Operating
Storage
Transport
Handling
Installation
Commissioning
Decommissioning
Disposal
Recycling
Reuse
Remanufacture
Refurbish
Repair
Maintain
Inspect
Test
Calibrate
Adjust
Align
Balance
Tune
Optimize
Improve
Upgrade
Obsolete
Replace
Retire
Archive
Backup
Restore
Recover
Migrate
Convert
Import
Export
Publish
Subscribe
Notify
Alert
Warning
Error
Exception
Log
Trace
Debug
Profile
Monitor
Report
Dashboard
Metric
KPI
Goal
Objective
Strategy
Plan
Schedule
Milestone
Deliverable
Task
Activity
Resource
Budget
Cost
Revenue
Profit
Loss
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Actual
Variance
Risk
Issue
Opportunity
Threat
Weakness
Strength
SWOT
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Agile
Scrum
Kanban
Waterfall
V-Model
Spiral
Iterative
Incremental
Prototype
Proof of Concept
Pilot
Trial
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Assessment
Audit
Review
Retrospective
Lessons Learned
Best Practice
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Requirement
Constraint
Assumption
Dependency
Interface
Boundary
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Context
Stakeholder
User
Customer
Supplier
Partner
Competitor
Regulator
Auditor
Assessor
Certifier
Approver
Reviewer
Author
Editor
Publisher
Librarian
Archivist
Administrator
Developer
Engineer
Designer
Architect
Analyst
Manager
Director
Executive
Board
Committee
Working Group
Team
Department
Division
Company
Group
Alliance
Partnership
Joint Venture
Consortium
Supply Chain
Logistics
Procurement
Sourcing
Vendor
Contract
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Warranty
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Insurance
Indemnity
Intellectual Property
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Confidential
Proprietary
Public
Private
Internal
External
Restricted
Classified
Secret
Top Secret
Need to Know
Clearance
Vetting
Security
Safety
Hazard
Risk Assessment
Mitigation
Contingency
Emergency
Evacuation
First Aid
Fire
Flood
Earthquake
Storm
Power Failure
Network Failure
Cyber Attack
Data Breach
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GDPR
Compliance
Regulation
Law
Jurisdiction
Court
Arbitration
Mediation
Litigation
Settlement
Judgment
Appeal
Precedent
Statute
Ordinance
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Treaty
Convention
Protocol
Agreement
Memorandum
Letter of Intent
Heads of Terms
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Non-Disclosure Agreement
Mutual Non-Disclosure Agreement
Confidentiality Agreement
Data Processing Agreement
Service Level Agreement
Key Performance Indicator
Balanced Scorecard
Dashboard
Report
Presentation
Slide
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Sankey Diagram
Chord Diagram
Network Graph
Word Cloud
Infographic
Poster
Brochure
Flyer
Leaflet
Booklet
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Padding
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Hyphenation
Kerning
Tracking
Leading
Baseline
Ascender
Descender
Cap Height
x-Height
Serif
Sans-serif
Monospace
Bold
Italic
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Strikethrough
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Downgrade
Rollback
Migration
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User
Customer
Supplier
Partner
Competitor
Regulator
Auditor
Assessor
Certifier
Approver
Reviewer
Author
Editor
Publisher
Librarian
Archivist
Administrator
Developer
Engineer
Designer
Architect
Analyst
Manager
Director
Executive
Board
Committee
Working Group
Team
Department
Division
Company
Group
Alliance
Partnership
Joint Venture
Consortium
Supply Chain
Logistics
Procurement
Sourcing
Vendor
Contract
Agreement
Terms
Conditions
Warranty
Liability
Insurance
Indemnity
Intellectual Property
Patent
Trademark
Copyright
Trade Secret
Confidential
Proprietary
Public
Private
Internal
External
Restricted
Classified
Secret
Top Secret
Need to Know
Clearance
Vetting
Security
Safety
Hazard
Risk Assessment
Mitigation
Contingency
Emergency
Evacuation
First Aid
Fire
Flood
Earthquake
Storm
Power Failure
Network Failure
Cyber Attack
Data Breach
Privacy
GDPR
Compliance
Regulation
Law
Jurisdiction
Court
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Mediation
Litigation
Settlement
Judgment
Appeal
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Balanced Scorecard
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Box Plot
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Heat Map
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Chord Diagram
Network Graph
Word Cloud
Infographic
Poster
Brochure
Flyer
Leaflet
Booklet
Book
Chapter
Section
Paragraph
Sentence
Word
Character
Glyph
Font
Typeface
Style
Theme
Template
Layout
Grid
Margin
Padding
Alignment
Justification
Hyphenation
Kerning
Tracking
Leading
Baseline
Ascender
Descender
Cap Height
x-Height
Serif
Sans-serif
Monospace
Bold
Italic
Underline
Strikethrough
Superscript
Subscript
Small Caps
Uppercase
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Hotfix
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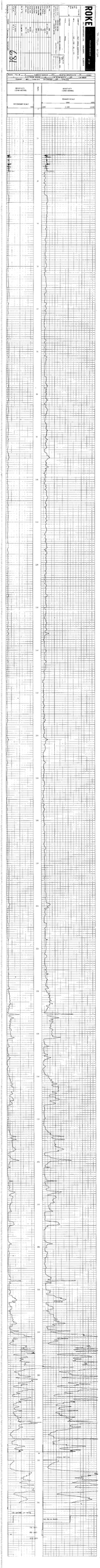
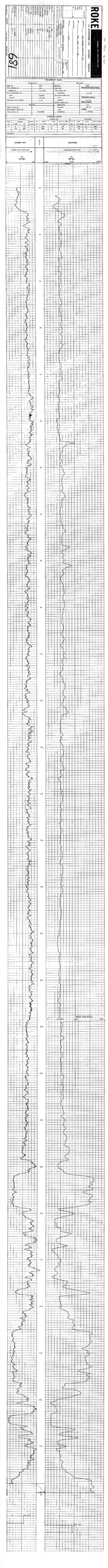
Upgrade
Downgrade
Rollback
Migration
Conversion
Import
Export


ROKE
RESISTIVITY
SP
GAMMA RAY
CALIPER
1:240
1:600


ROKE
189
EQUIPMENT DATA
CASING DATA
GAMMA RAY
NEUTRON
RUN 1
RUN 2
RUN 3
LOG MEASURED FROM
DRILLING MEASURED FROM
PERMANENT DATUM
ELEVATIONS
K.B.
D.F.
G.L.
DATE
TYPE LOG
DEPTH-DRILLER
DEPTH-LOGGER
BTM. LOG INTERVAL
TOP LOG INTERVAL
CASING-DRILLER
CASING-LOGGER
BIT SIZE
TYPE FLUID IN HOLE
DENSITY
VISCOSITY
PH
FLUID LOSS
SOURCE OF SAMPLE
RM @ MEAS. TEMP.
RMF @ MEAS. TEMP.
RMC @ MEAS. TEMP.
SOURCE OF RMF
SOURCE OF RMC
RM @ BHT
TIME SINCE CIRC.
MAX. REC. TEMP.
EQUIP. LOCATION
RECORDED BY
WITNESSED BY
MATRIX
MATRIX DENSITY
HOLE CORR.
PROPRIETARY
MISCELLANEOUS
MAIN PASS
REPEAT PASS
LOGGING DISTANCE
SCALE CHANGES
HOLE LOCATION

Pr - Trefi 9 / (3) 9

ROKE
SIDEWALL DENSILOG
CALIPER

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.
LSD
SEC
TWP
RGE
W. M

COMPANY GULF CANADA RESOURCES INC.
WELL TRF - RDH - 81 - 104
LOCATION
FIELD TREFI
PROVINCE BRITISH COLUMBIA

Other Services: GRN, FEL, DIR

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B.
CSG
G.L.

Run. No.	ONE
Date	20 JULY 1981
First Reading	280 M
Last Reading	0
Footage Logged	280
Depth Reached	281
Depth Driller	281.9
Casing Roke	5
Casing Driller	5.5
Fluid Type	WATER
Liquid Level	167
Min. Diam.	13.3 CM
Operating Time	2 HOURS
Truck No.	FU # 1
Recorded By	PUBANZ
Witnessed By	MACFARLANE

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GENERAL				GAMMA RAY				SIDEWALL DENSILOG			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M./MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV.L OR R	API G.R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV.L OR R	CPS/DIV
1	0	280	6					0.5	5K	2.89	139.45

REMARKS
DEN TOOL # 247AS
CAL TOOL #785

ROKE

OIL ENTERPRISES LTD.

CALGARY, ALBERTA

FOCUSED BEAM LOG 25 cm

Company ROKE OIL ENTERPRISES LTD.

Well 2-34-26-5 W4M

Location 2-34-26-5 W4M

Field GRIFFIN HOME

County/Province RED DEER, ALBERTA

Permanent Datum GROUND LEVEL Elev. 2961

Log Measured From KB 12 Ft. Above Perm. Datum

Drilling Measured From KB

Date	28-10-83		
Run No.	ONE		
Depth-Driller	3150		
Depth-Logger	3150		
Bottom Logged Interval	3150		
Top Logged Interval	2961		
Casing-Driller	244.5 @ 2961		
Casing-Logger	244.5 @ 2961		
Bit Size	200		
Type Fluid in Hole	CHEMICAL		
Density	1.13		
Viscosity	50		
Fluid Loss	5.6		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp.	1.0 @ 20°C		
Rmf @ Meas. Temp.	0.8 @ 20°C		
Rmc @ Meas. Temp.	1.2 @ 20°C		
Source of Rmf & Rmc	CALC.		
Rm @ BHT	0.6 @ 90°C		
Time Since Circ.	12 HRS.		
Max. Rec. Temp.	90°C		
Equip. Location	4-26-5 W4M		
Recorded By	MCPHERSON		
Witnessed By	MORRISON		

Run No. ONE

Depth-Driller 3150

Depth-Logger 3150

Bottom Logged Interval 3150

Top Logged Interval 2961

Type Fluid in Hole CHEMICAL

Density 1.13

Viscosity 50

Fluid Loss 5.6

Source of Sample FLOWLINE

Rm @ Meas. Temp. 1.0 @ 20°C

Rmf @ Meas. Temp. 0.8 @ 20°C

Rmc @ Meas. Temp. 1.2 @ 20°C

Source of Rmf & Rmc CALC.

Rm @ BHT 0.6 @ 90°C

Time Since Circ. 12 HRS.

Max. Rec. Temp. 90°C

Equip. Location 4-26-5 W4M

Recorded By MCPHERSON

Witnessed By MORRISON

DUAL INDUCTION LATEROLOG

DUAL INDUCTION SFL

BOREHOLE COMPENSATED SONIC

DENSITY COMPENSATED

NEUTRON

Run No. ONE

Depth-Driller 3150

Depth-Logger 3150

Bottom Logged Interval 3150

Top Logged Interval 2961

Casing-Driller 244.5 @ 2961

Casing-Logger 244.5 @ 2961

Bit Size 200

Type Fluid in Hole CHEMICAL

Density 1.13

Viscosity 50

Fluid Loss 5.6

Source of Sample FLOWLINE

Rm @ Meas. Temp. 1.0 @ 20°C

Rmf @ Meas. Temp. 0.8 @ 20°C

Rmc @ Meas. Temp. 1.2 @ 20°C

Source of Rmf & Rmc CALC.

Rm @ BHT 0.6 @ 90°C

Time Since Circ. 12 HRS.

Max. Rec. Temp. 90°C

Equip. Location 4-26-5 W4M

Recorded By MCPHERSON

Witnessed By MORRISON

DUAL INDUCTION LATEROLOG

DUAL INDUCTION SFL

BOREHOLE COMPENSATED SONIC

DENSITY COMPENSATED

NEUTRON

Run No. ONE

Depth-Driller 3150

Depth-Logger 3150

Bottom Logged Interval 3150

Top Logged Interval 2961

Casing-Driller 244.5 @ 2961

Casing-Logger 244.5 @ 2961

Bit Size 200

Type Fluid in Hole CHEMICAL

Density 1.13

Viscosity 50

Fluid Loss 5.6

Source of Sample FLOWLINE

Rm @ Meas. Temp. 1.0 @ 20°C

Rmf @ Meas. Temp. 0.8 @ 20°C

Rmc @ Meas. Temp. 1.2 @ 20°C

Source of Rmf & Rmc CALC.

Rm @ BHT 0.6 @ 90°C

Time Since Circ. 12 HRS.

Max. Rec. Temp. 90°C

Equip. Location 4-26-5 W4M

Recorded By MCPHERSON

Witnessed By MORRISON

DUAL INDUCTION LATEROLOG

DUAL INDUCTION SFL

BOREHOLE COMPENSATED SONIC

DENSITY COMPENSATED

NEUTRON

Run No. ONE

Depth-Driller 3150

Depth-Logger 3150

Bottom Logged Interval 3150

Top Logged Interval 2961

Casing-Driller 244.5 @ 2961

Casing-Logger 244.5 @ 2961

Bit Size 200

Type Fluid in Hole CHEMICAL

Density 1.13

Viscosity 50

Fluid Loss 5.6

Source of Sample FLOWLINE

Rm @ Meas. Temp. 1.0 @ 20°C

Rmf @ Meas. Temp. 0.8 @ 20°C

Rmc @ Meas. Temp. 1.2 @ 20°C

Source of Rmf & Rmc CALC.

Rm @ BHT 0.6 @ 90°C

Time Since Circ. 12 HRS.

Max. Rec. Temp. 90°C

Equip. Location 4-26-5 W4M

Recorded By MCPHERSON

Witnessed By MORRISON

DUAL INDUCTION LATEROLOG

DUAL INDUCTION SFL

BOREHOLE COMPENSATED SONIC

DENSITY COMPENSATED

NEUTRON

189

Remarks FSL #

CURRENT RANGE 500 MUDFISH RESISTANCE OHMS

ELECTRODE SPACE 40 CM BEAM WIDTH 100 CM ABSAR

PRIMARY 200 OHM/DIV SECONDARY 5K OHM/DIV

RESISTIVITY (OHM-METERS)

SECONDARY SCALE

0 10K

RESISTIVITY (OHM-METERS)

PRIMARY SCALE

0 2000 4000

0 13K 13K

Depth

150

160

170

180

190

200

210

220

230

240

250

260

270

280

END

260

DENSITY

0 2000 3000 4000

2.75 2.25

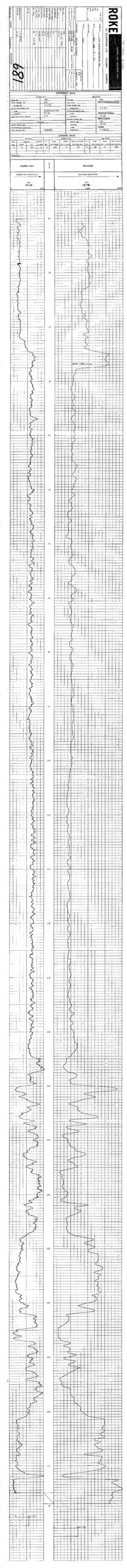
CAL OR LS PAYZ

CAL OR DOL PAYZ

CAL ZONE

FRAC ZONE

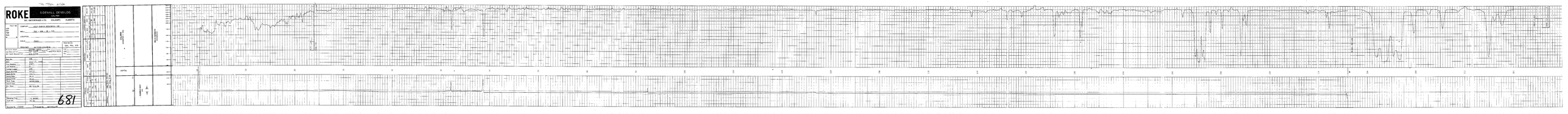
STEP ZONE


ROKE
GAMMA RAY
NEUTRON
GAMMA RAY NEUTRON
NEUTRON NEUTRON
API
LIMESTONE
MOST OPEN HOLE
BASE CSG

ROKE

CALGARY, ALBERTA

681



ROKE

Record FB-8 | CURRENT RANGE 100 | MUDPIT RESISTANCE 10 OHMS
ELECTRODE SCHEME 10 | CM REAM BODY SUB | CM ABSENT
PRIMARY 10M | CONSTANT SECONDARY 2M | CONSTANT

RESISTIVITY (OHM-METRES)

PRIMARY SCALE
0 5000 10000

SECONDARY SCALE
0 10K

RESISTIVITY (OHM-METRES)

PRIMARY SCALE
0 5000 10000

SECONDARY SCALE
0 10K

CAL. IN 24 SIZES

CAL. IN DIN SIZES

PR-TREF) 81(3)A

ROKE

GAMMA RAY NEUTRON LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.

LSD
SEC
TWP
RGE
W_____M

COMPANY GULF CANADA RESOURCES INC.

WELL TRF - RDH - 81 - 106C

LOCATION

FIELD TREFT

PROVINCE BRITISH COLUMBIA

Other Services:
DIR
DEN-CAL, FBL

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B.
CSG
G.L.

Run. No.	ONE											
Date	JULY 21, 1981.											
First Reading	148 M											
Last Reading	125											
Footage Logged	23											
Depth Reached	148.9											
Depth Driller	149											
Casing Roke												
Casing Driller												
Fluid Type	WATER											
Liquid Level												
Min. Diam.	14 CM											
Rm @												
Operating Time	0.4 HOUR											
Truck No.	FU #1											
Recorded By PUBANZ	Witnessed By MACFARLANE											

681

EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.	125	LOG TYPE	NEUTRON/NEUTRON
DIAMETER	3.2 CM	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	3.2 CM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10 CM	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	2 M	LENGTH	15 CM
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	126
HOIST TRUCK NO.		SPACING	38 CM
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	125A004	STRENGTH	3 CURIES

LOGGING DATA

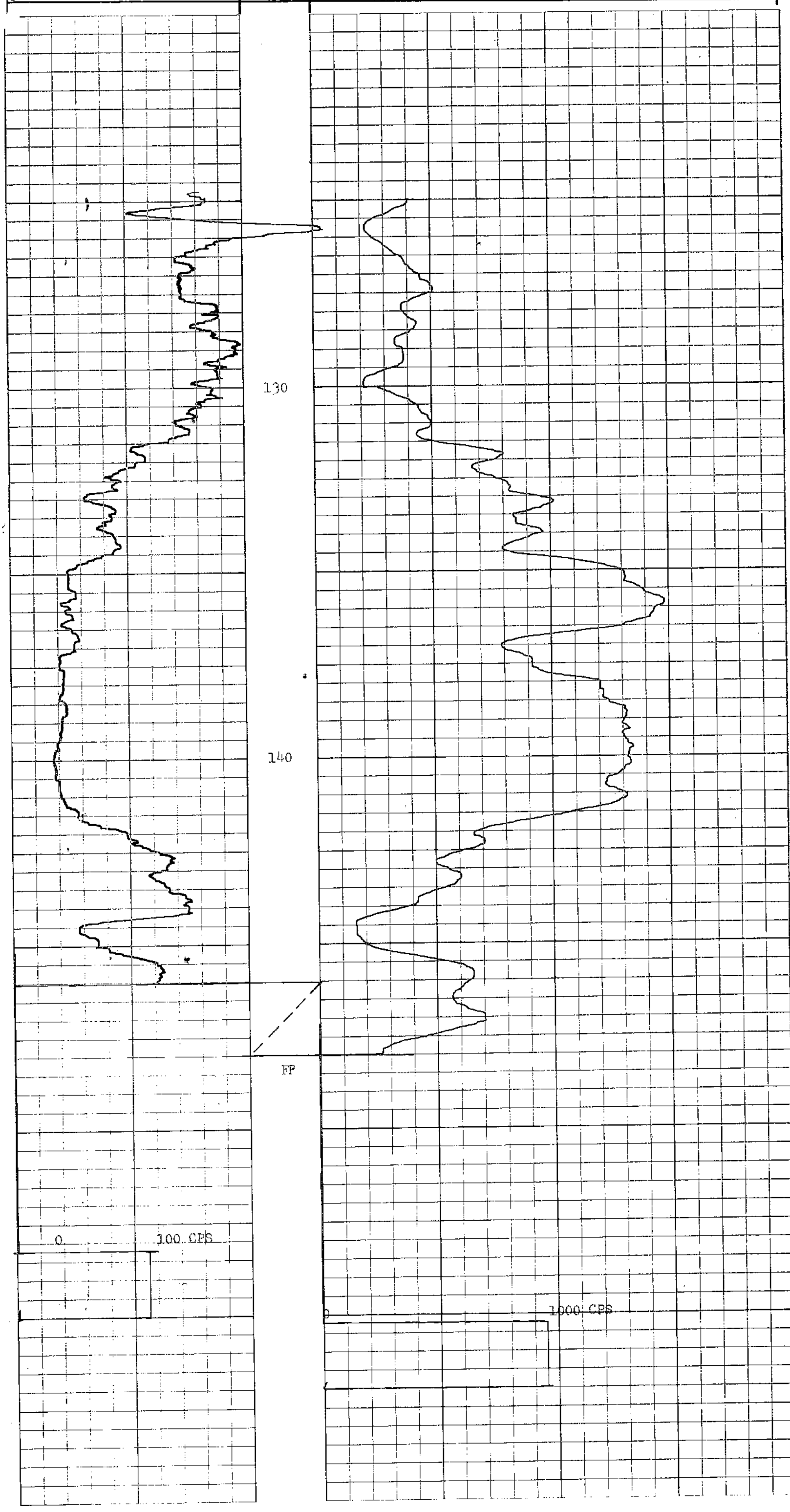
GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	125	148	4	2	500	0	20	2	5K	0	150

REMARKS

GAMMA RAY | DEPTHS | NEUTRON

GAMMA RAY INCREASES → API 20 — 0 — 200

NEUTRON INCREASES → API 15 — 0 — 1500 — 3000



ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

SIDEWALL DENSILOG
CALIPER

PR-TREF & CSA

FILE NO.

COMPANY GULF CANADA RESOURCES INC.

WELL TRF - RIM - 81 - 106C

FIELD TREF

LOCATION

LSD SEC TWP RGE W M

PROVINCE BRITISH COLUMBIA

Permanent Datum GROUND LEVEL Elev.
Log Measured from KB 4.6M Above Perm. Datum
Well Depths Measured from GROUND LEVEL GL

Other Services GRN, FDL, DIR

Run No.	ONE
Date	JULY 21 1981
First Reading	148 M
Last Reading	130
Footage Logged	18
Depth Reached	148.9
Depth Drlr.	149
Casing Depth	
Casing Drlr.	
Fluid Type	WATER
Liquid Level	
Max. Diam.	
Min. Diam.	14 CM
	"
Operating Time	½ HOUR
Truck No.	FU #1

Recorded By P.DRANZ

Witnessed By MACFARLANE

681

GENERAL RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/MIN	GAMMA RAY T.C. SEC.	GAMMA RAY SENS SETTINGS	GAMMA RAY ZERO DIV.L OR R	GAMMA RAY API G.R. UNITS PER LOG DIV.	SIDEWALL DENSILOG T.C. SEC.	SIDEWALL DENSILOG SENS SETTINGS	SIDEWALL DENSILOG ZERO DIV.L OR R	SIDEWALL DENSILOG CPS/ DIV
1	130	148	6					0.5	5K	2.89R	139.45

REMARKS DEN TOOL #247AS
CAL TOOL #785

CALIPER
DIAMETER -CM

10 15 20

DEPTHS

BULK DENSITY
(GRAMS/CC)

1.00 1.10 1.20 1.30 1.40 1.50 1.60 1.70 1.80 1.90 2.00 2.10 2.20 2.30 2.40 2.50 2.60 2.70 2.80

130

140

FR

SHIFT 2.89R

1000 CPS 0

DETAIL SECTION

144

146

ROKE

FOCUSED BEAM LOG 20 CM

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.
LSD
SEC
TWP
RGE
W M

COMPANY GULF CANADA RESOURCES INC.

WELL TRF - RDH - 81 - 106C

LOCATION

FIELD TREFI

PROVINCE BRITISH COLUMBIA

Other Services:
DIR
DEN-CAL, GRN

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B.
CSG
G.L.

Run. No.	ONE		
Date	JULY 21, 1981.		
First Reading	148 M		
Last Reading	130		
Footage Logged	18		
Depth Reached	148.9		
Depth Driller	149		
Casing Roke			
Casing Driller			
Fluid Type	WATER		
Liquid Level			
Min. Diam.	14 CM		
Rm @ °C	29.4 M @ 8 °C		
Operating Time	0.6 HOUR		
Truck No.	FU #1		

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Recorded By PUBANZ Witnessed By MACFARLANE

Remarks FBL # 9 CURRENT RANGE STD MUDFISH RESISTANCE 30 OHMS
ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY
PRIMARY 100 OHM/DIV SECONDARY 200 OHM/DIV

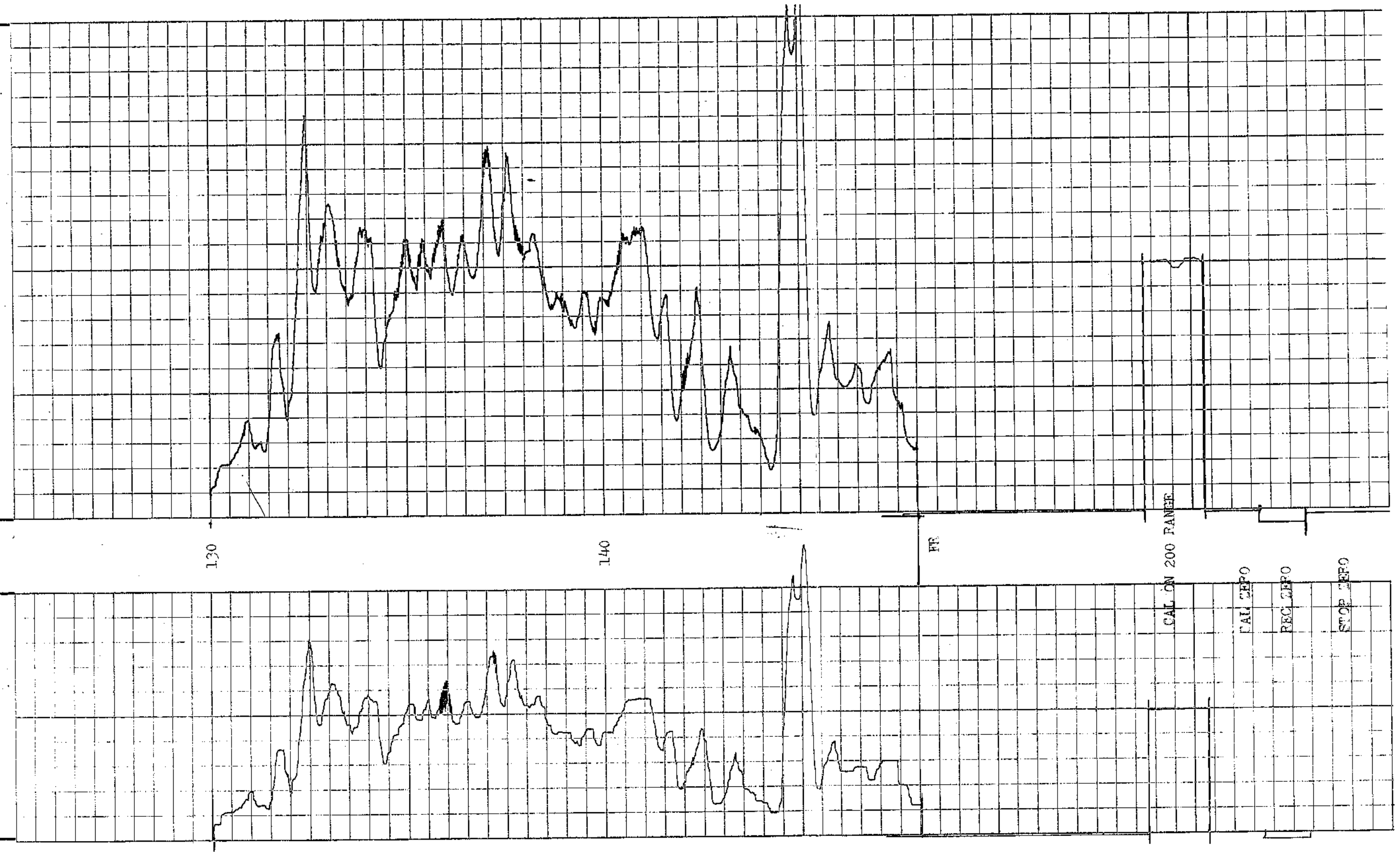
RESISTIVITY (OHM-METERS)

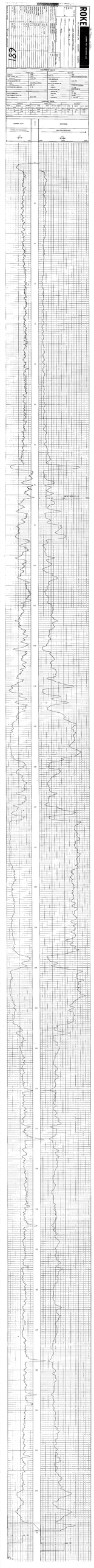
PRIMARY SCALE 2000 1000 0 — 6600 4600 2600

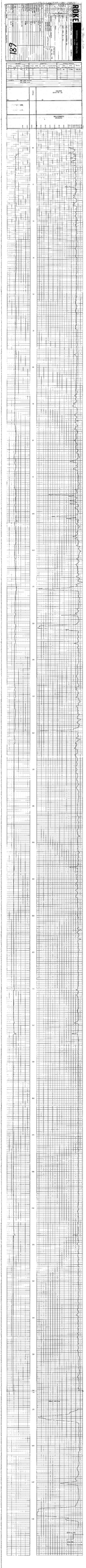
Depths

RESISTIVITY (OHM-METERS)

SECONDARY SCALE 2000 0




ROKE
289



PR-TREF 81(3)A

ROKE

FOCUSED BEAM LOG 20 CM

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	
COMPANY	GULF CANADA RESOURCES INC.
WELL	TRF - RDH - 81 - 107
LOCATION	
FIELD	TREFI
PROVINCE	BRITISH COLUMBIA

LSD
SEC
TWP
RGE
W M

Other Services: DIR GRN, DEN-CAL

K.B.
CSG
G.L.

Permanent Datum GROUND LEVEL Elev
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

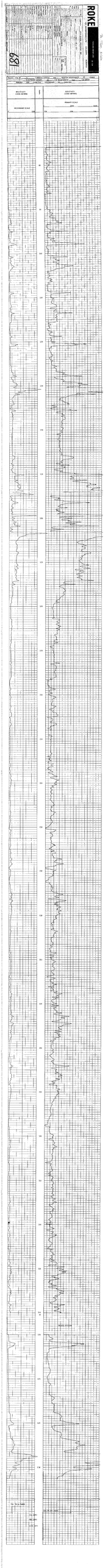
Run No.	ONE
Date	JULY 23, 1981
First Reading	340 M
Last Reading	76
Footage Logged	264
Depth Reached	341
Depth Driller	342.9
Casing Roke	
Casing Driller	1.8
Fluid Type	WATER
Liquid Level	76
Min Diam.	12.7 CM
Rm @ °C	12.8 ΩM @ 7°C
Operating Time	1 HOUR
Truck No.	FU #1

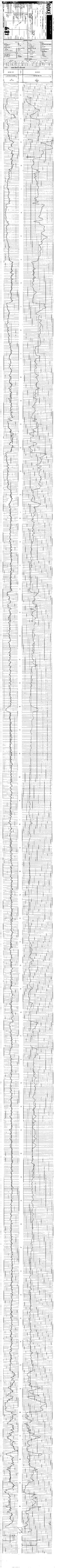
Recorded By PUBANZ
Witnessed By MACFARLANE

681

Remarks FBL # 9 CURRENT RANGE STD MUDFISH RESISTANCE 35 OHMS
7 ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY
PRIMARY 200 OHM/DIV SECONDARY 1K OHM/DIV

RESISTIVITY (OHM-METERS)	Depths	RESISTIVITY (OHM-METERS)
SECONDARY SCALE 0 13K		PRIMARY SCALE 0 2000 4000 13K 23K 33K





DR-TREE 81/3A

ROKE

GAMMA RAY NEUTRON LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.

LSD
SEC
TWP
RGE
W_____M

COMPANY GULF CANADA RESOURCES INC.

WELL TRF - RDH - 81 - 109C

LOCATION

FIELD TREE

PROVINCE BRITISH COLUMBIA

Other Services:
DIR
DEN-CAL., FBL

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B.
CSG
G.L.

Run. No.	ONE				
Date	AUG. 7, 1981.				
First Reading	191.5 M				
Last Reading	170				
Footage Logged	21.5				
Depth Reached	191.7				
Depth Driller					
Casing Roke					
Casing Driller					
Fluid Type	WATER				
Liquid Level					
Min. Diam.	14 CM				
Rm @ .					
Operating Time	0.7 HOUR				
Truck No.	FU #1				
Recorded By PUBANZ		Witnessed By MACFARLANE			

681

EQUIPMENT DATA

GAMMA RAY	
RUN NO.	ONE
TOOL MODEL NO.	125
DIAMETER	3.2 CM
DETECTOR MODEL NO.	
TYPE	SCINTILLATION
LENGTH	10 CM
DISTANCE TO N. SOURCE	2 M

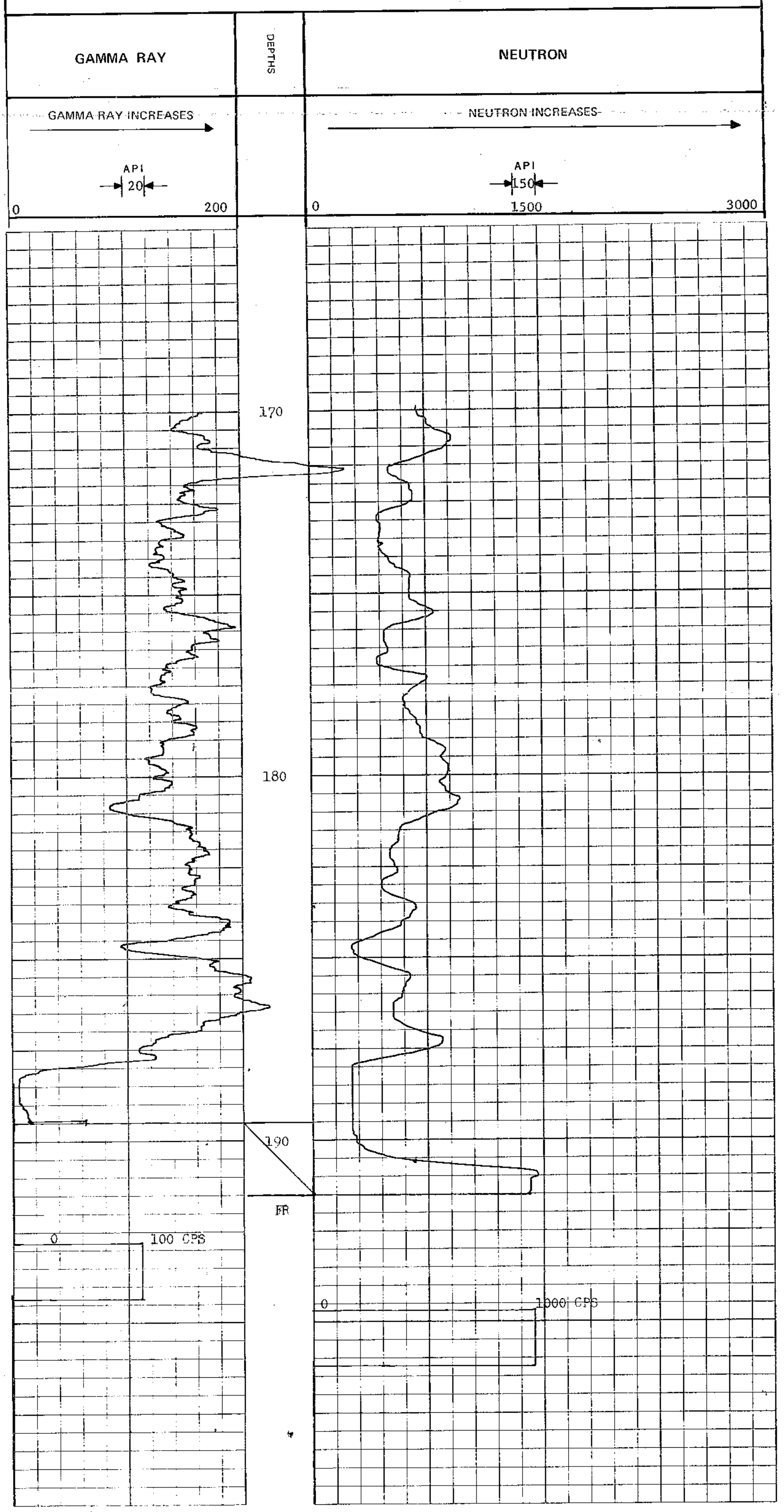
GENERAL	
HOIST TRUCK NO.	
INSTRUMENT TRUCK NO.	FU #1
TOOL SERIAL NO.	125A004

NEUTRON	
RUN NO.	ONE
LOG TYPE	NEUTRON/NEUTRON
TOOL MODEL NO.	125
DIAMETER	3.2 CM
DETECTOR MODEL NO.	
TYPE	PROPORTIONAL
LENGTH	15 CM
SOURCE MODEL NO.	MRC-N-SS-W
SERIAL NO.	126
SPACING	38 CM
TYPE	AmBe
STRENGTH	3 CURIES

LOGGING DATA

GENERAL				GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS FROM	DEPTHS TO	SPEED M/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	170	191.5	4	3	500	0	20	2	5K	0	150

REMARKS



PR. TREFI 81C34

ROKE

SIDEWALL DENSILOG
CALIPER

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.

LSD
SEC
TWP
RGE
W M

COMPANY GULF CANADA RESOURCES INC.

WELL TRF - RDH - 81 - 109C

LOCATION

FIELD TREFI

PROVINCE BRITISH COLUMBIA

Other Services:
GRN, FBL, DIR

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B.
CSG
G.L.

Run. No.	ONE
Date	AUG. 7, 1981.
First Reading	190.5 M
Last Reading	170
Footage Logged	20.5
Depth Reached	191.7
Depth Driller	
Casing Roke	
Casing Driller	
Fluid Type	WATER
Liquid Level	
Min. Diam.	14 CM
Operating Time	3/4 HOUR
Truck No.	FU #1

681

Recorded By PURANZ Witnessed By MACFARLANE

SIDEWALL DENSILOG: T.C. SEC. 0.5 | SENS SETTINGS 5K | ZERO DIVS. OHMS 2.56K | CPS/DIV 149.76

GAMMA RAY: T.C. SEC. | SENS SETTINGS | ZERO DIVS. OHMS | API G.R. UNITS PER 100 DIV. | API G.R. UNITS PER DIV.

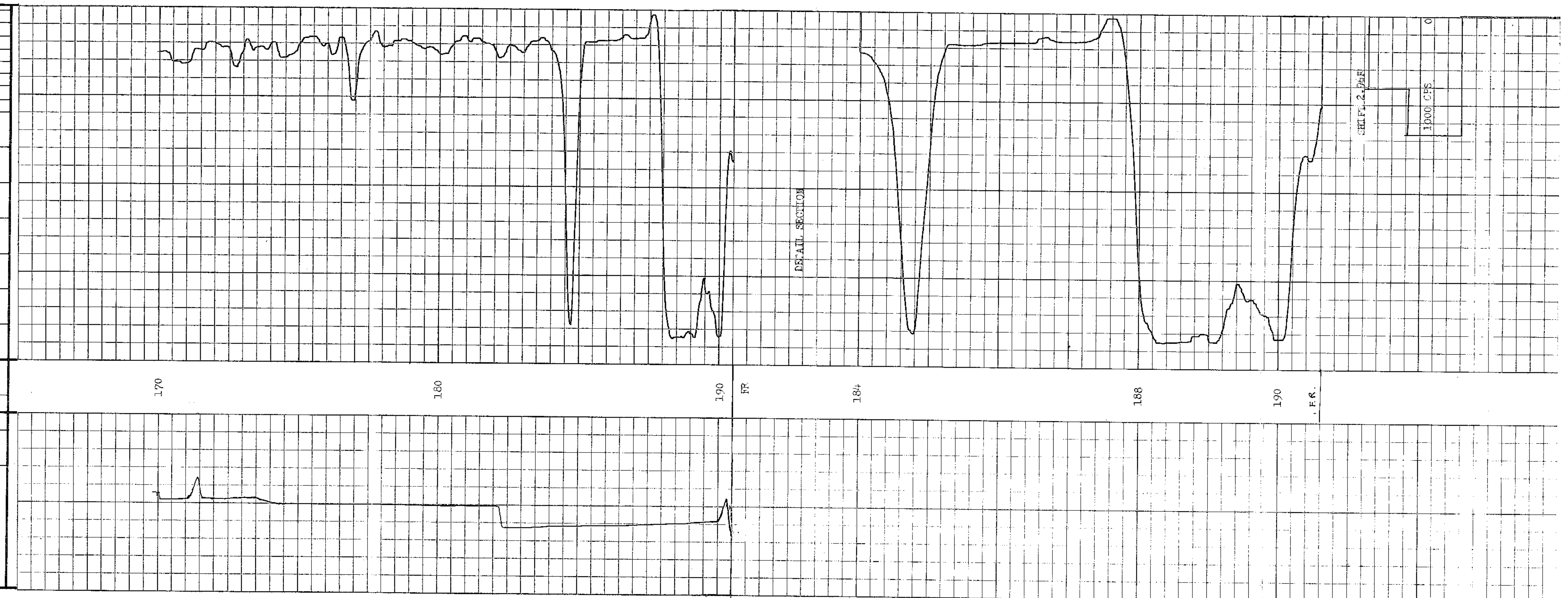
GENERAL: RUN NO. 1 | DEPTHS FROM 170 TO 190.5 | SPEED M/MIN 6

REMARKS: DEN TOOL #4228-S CAL TOOL #785

CALIPER DIAMETER - CM 25 20 15 10

DEPTHS

BULK DENSITY (GRAMS/CC) 2.80 2.70 2.60 2.50 2.40 2.30 2.20 2.10 2.00 1.90 1.80 1.70 1.60 1.50 1.40 1.30 1.20 1.10 1.00



ROKE

FOCUSED BEAM LOG 20 CM

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.

LSD
SEC
TWP
RGE
W ____ M

COMPANY GULF CANADA RESOURCES INC.

WELL TRF - RDH - 81 - 109C

LOCATION

FIELD TREFI

PROVINCE BRITISH COLUMBIA

Other Services:
DIR
GRN, DEN-CAL

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B.
CSG
G.L.

Run No.	ONE		
Date	AUG. 7, 1981.		
First Reading	190.5		
Last Reading	170		
Footage Logged	20.5		
Depth Reached	191.7		
Depth Driller			
Casing Roke			
Casing Driller			
Fluid Type	WATER		
Liquid Level			
Min. Diam.	14 CM		
Rm @ °C	18.7 M @ 9°C		
Operating Time	0.7 HOUR		
Truck No.	FU #1		

681

Recorded By PURANZ Witnessed By MACFARLANE

Remarks FBL # 1 9 CURRENT RANGE STD MUDFISH RESISTANCE 45 OHMS
7 ELECTRODE SONDE 20 CM BEAM WIDTH 100 CM ARRAY
PRIMARY 200 OHM/DIV SECONDARY 1K OHM/DIV

RESISTIVITY (OHM-METERS) PRIMARY SCALE 0 2000 4000 13K 23K 33K

Depths

RESISTIVITY (OHM-METERS) SECONDARY SCALE 0 10K

PR-Trefi 81(4)A
Gulf Canada Resources Inc

(10)

GEOLOGICAL BRANCH
ASSESSMENT REPORT

00 681

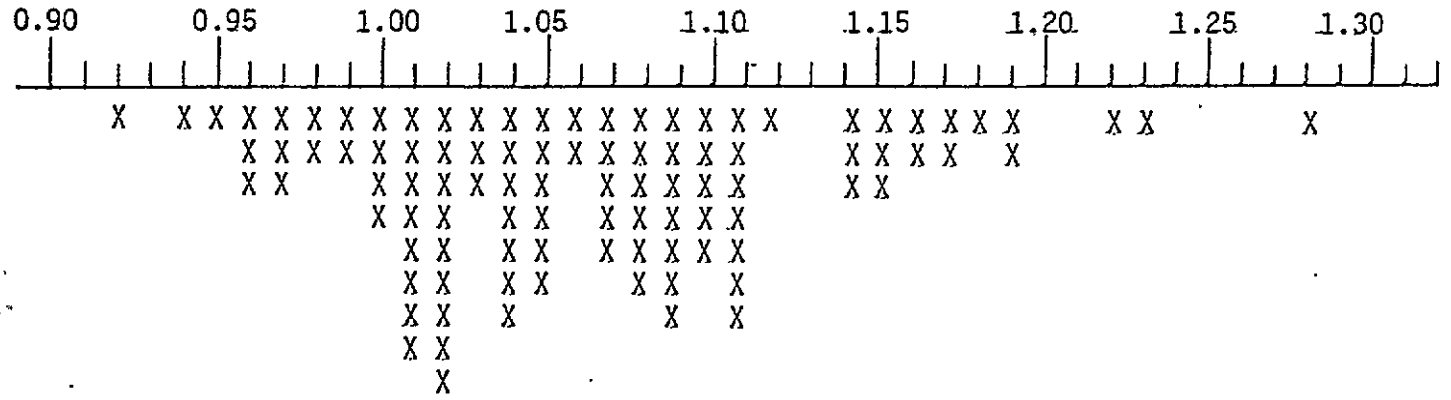
REFLECTANCE ANALYSIS

IAD Batch: 97-G415-514-03

Report of Analysis on Sample: Tref. Met.

Mean-Maximum Vitrinite Ro: 1.07

Distribution of Vitrinite Reflectance Readings:



Number of Counts

(Total = 100)

V-Type Table for Vitrinites (=100%)

V- 9	V- 10	V- 11	V- 12
13.0	57.0	26.0	4.0

V-Type Table for Vitrinites (= 62.7 %)

(Adjusted to =Maceral % of Reactive Vitrinites

V- 9	V- 10	V- 11	V- 12
8.1	35.8	16.3	2.5

IAD Batch #: 97-G415-514-03

Report of Analysis of Sample: Tref. Met.

MICROLITHOTYPE MACERAL ANALYSIS

(Volume Percent)

(Mineral-Matter Containing Basis)

Maceral		Maceral Composition	
Vitrite	33.3		
Liptite	0.4	Monomaceral	47.2
Inertite	13.5		
Clarite	2.7		
Vitrinertite	12.8	Bimaceral	23.1
Durite	7.6		
Duroclarite	8.2		
Vitrinertoliptite	13.9		
Clarodurite	2.4	Trimaceral	29.7
Carbominerite	5.2		
TOTAL:	100.0		100.0

Based on 1000 point counts.

IAD BATCH NUMBER: 97-G415-514-03

REPORT OF ANALYSIS ON SAMPLE: TREF. MET.

6/ 9/81

MACERAL ANALYSIS
(VOLUME PERCENT)
(MINERAL-MATTER CONTAINING BASIS)

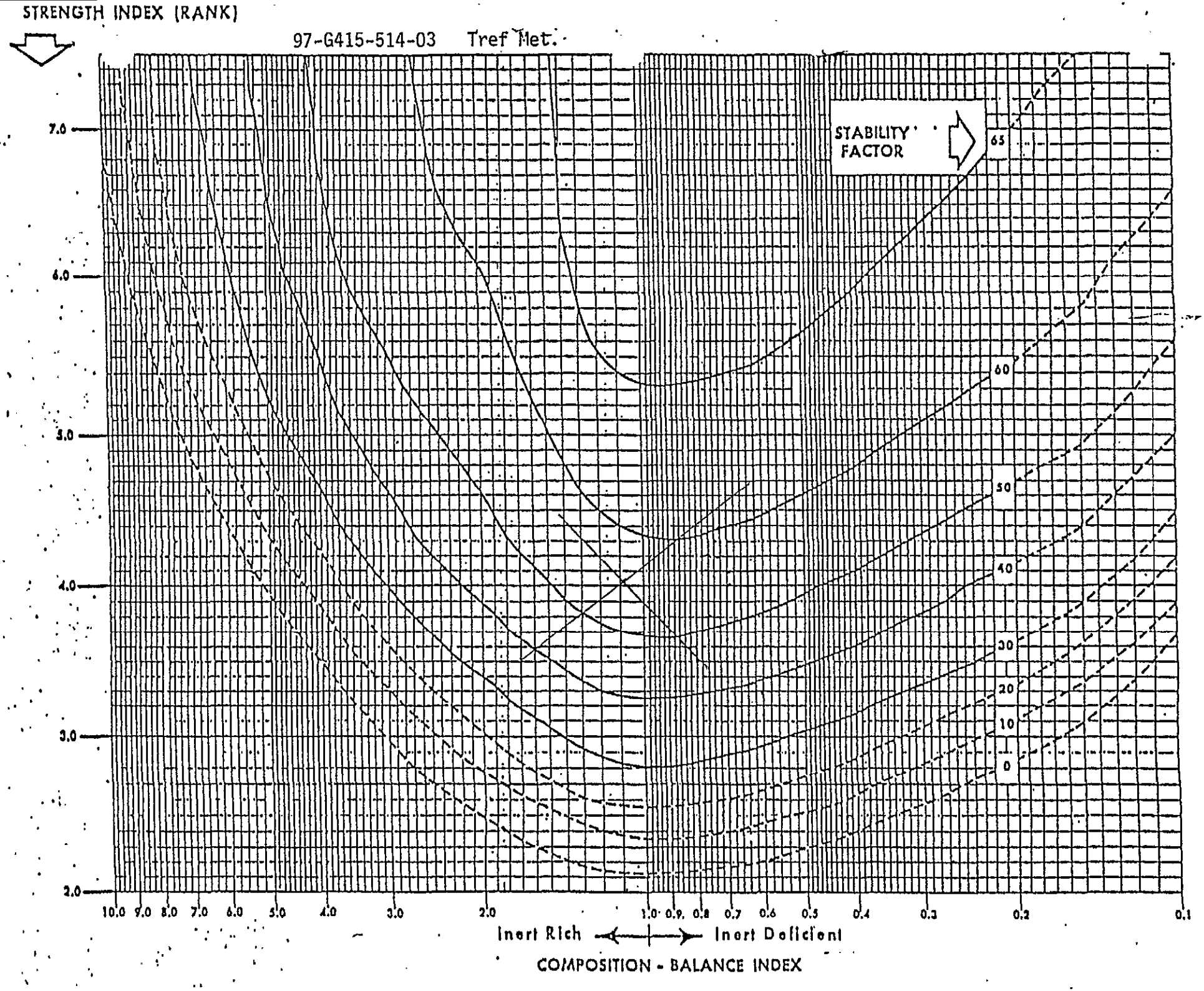
MACERAL		MACERAL GROUP	
VITRINITE	62.7	VITRINITE	62.7
PSEUDOVITRINITE	0.0		
EXINITE	0.7	EXINITE (LIPTINITE)	0.8
RESINITE	0.1		
SEMI-FUSINITE*	18.9		
SEMI-MACRINITE*	0.0		
FUSINITE	13.2	INERTINITE	32.2
MACRINITE	0.1		
MICRINITE	0.0		
MINERAL MATTER**	4.3		4.3
TOTAL	100%		100%

TOTAL REACTIVES- 69.8
TOTAL INERTS- 30.2

<<<<<<<<<<<<

* CONSIDERED 1/3 REACTIVE, 2/3 INERT FOR PURPOSES OF COKE STABILITY PREDICTIONS.

** CALCULATED FROM 7.70 % DRYASH, 0.50 % DRY SULFUR


STRENGTH INDEX (RANK)
97-G415-514-03 Tref Met.
STABILITY FACTOR
65
60
50
40
30
20
10
0
7.0
6.0
5.0
4.0
3.0
2.0
10.0 9.0 8.0 7.0 6.0 5.0 4.0 3.0 2.0 1.0 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1
Inert Rich
Inert Deficient
COMPOSITION - BALANCE INDEX

IAD BATCH NUMBER: 97-0415-514-03

REPORT OF ANALYSIS ON SAMPLE: TREF. MET.

6/ 9/81

COKE STABILITY PREDICTION
CALCULATED RESULTS

TOTAL REACTIVES-	69.8
TOTAL INERTS-	30.2
OPTIMUM INERT INDEX-	27.67
COMPOSITION-BALANCE INDEX-	1.09
OPTIMUM STRENGTH-	280.48
STRENGTH INDEX-	4.02

PREDICTED ASTM
TUMBLER STABILITY: 54-55