NTS 930/15, 94B/2

C O A L A C T

(Section 19 & B.C. Reg. #436/75)

Exploration & Development Work Report Cover Sheet

Property name: Carbon Creek Coal Map No. 930/15, 94B/2

Location: Carbon Creek Land District Peace River

Coal Licence No.(s) 3445-3505

Licensee: Utah Mines Ltd.

Operator: Utah Mines Ltd.

Title of Report: 1975 Report of Exploration Activities on the Carbon Creek Property by D. N. leNobel, P.Eng. and R. Karst

Period covered by Report: May 20 to September 10, 1975

Category of work covered in report

Geological Mapping	$2,775.00
Surveys: Geophysical	
Geochemical	
Other	
Road Construction	$154,302.81
Surface work	
Underground work	
Drilling	$365,524.30
Logging	$25,745.30
Sampling	
Testing	
Reclamation	$33,273.54
Other work	
Total costs of work reported	$ 732,760.82

Comments:

Value of work approved $ 732,760.82

Signature: A.R. James
Senior Inspector of Mines

Date Jan 7 1976

Accepted:
Chief Gold Commissioner
Mineral Resources Branch

Date Jan 12/76

(To be prepared in duplicate: Original to be filed with report
Duplicate to be filed on Plan of Operations file)

PR- CARBON CREEK 75(1)A

1975 REPORT OF EXPLORATION ACTIVITIES

on the CARBON CREEK PROPERTY

in the LIARD MINING DIVISION

45 miles northwest of Chetwynd, B.C.

55° 55'N, 122° 40'W

Owned by: Utah Mines Ltd.

by

D.N. leNobel, P.Eng.
and R. Karst

of Utah Mines Ltd.

1600 - 1050 West Pender Street

Vancouver, B.C.

V6E 3S7

Work Performed between 20th May and 10th September

- CL. NOS. 3445 - 3505.
- ALIENATED COAL LEASE NOS. 319-328.

NTS 93-O-15
94-B-2.

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ILLUSTRATIONS

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CARBON CREEK

ABSTRACT

During the summer of 1975, Utah Mines Ltd., a wholly owned subsidiary of Utah International Inc., conducted a coal exploration program on their Carbon Creek coal licence block located in north-eastern British Columbia. This report supplements and in some cases alters conclusions based on the results of programs in 1971, 1972, and 1973.

Favourable coal market changes during 1974 prompted a re-evaluation of the property.

A field program was designed to meet the following objectives:

1) To test lateral continuity and hence calculate more precisely coal tonnages for known potential coal reserve areas within the licence block.
2) To define by exploratory drilling additional areas for potential coal reserves.
3) To obtain unweathered coal samples suitable for laboratory and washability studies.

The major part of the drilling program was directed towards evaluation of seams 58, 55, 54, 52, 51A, 51, 47, 46, 40, 31, 15 and 14.

Mobilization of equipment began on 19th May, 1975 by barging camp facilities, road building equipment and supplies from Dunlevy Landing (a docking area on Williston Reservoir, approximately ten (10) miles west of W.A.C. Bennett Dam) to Carbon Creek. Final mobilization and camp construction was completed by 30th May, 1975, at which time the first drill hole was spudded.

By 5th September, 1975, twenty-seven (27) HQ (two and one-half inch (2½") drill core) and nine (9) PQ (three and one third inch (3 1/3") drill core) test holes totalling nineteen thousand two hundred and eighty-six (19,286) and five thousand six hundred and sixty (5,660) feet of drilling, respectively, were completed. To facilitate

movement of equipment for this program, 23.87 additional miles of roads were built.

A revised drill hole correlation in the Seven Mile Creek vicinity of the property indicated there may be in excess of three thousand four hundred feet (3,400') of Lower Cretaceous coal bearing Gething Formation in the Carbon Creek basin. The re-interpretation of data with inclusion of the 1975 information suggests principal coal beds are not lenticular as originally concluded.

Road building through terrain of shallow overburden with good rock exposures provided new structural data. Additional north-south faulting has been located in the vicinity of these exposures by mapping, section measurement and drilling. Four (4) miles of road, with abundant rock exposures, were mapped in detail and numerous creek traverses were completed.

The suspected pre-glacial stream channel of Seven Mile Creek was located and defined by 3.84 line miles of seismic reflection survey. Subsequent interpretation indicates coal reserves in this area are reduced due to stream channelling.

Upon returning to the property in May, all access roads were found to be in good condition. Bridges and abutments needed no repairs. Results of Utah Mines Ltd.'s voluntary seeding program were clearly evidenced. Grass and clover seeded in 1973 covered all roads are drillsites on the property. The program was continued in 1975 after completion of slashing, burying of debris and construction of water diversion ditches, or "erosion bars" on excessively steep road grades.

Resistivity, gamma and density logs were completed on all core holes with new equipment purchased in 1975. This more advanced logging unit provides logs of improved quality permitting greater ease of drill hole correlation.

PROPERTY

Licence numbers 3445 to 3505 totalling 38,047.78 acres or 59.45 square miles, and ten (10) alienated coal leases, numbers 319 to 328, comprise the Carbon Creek property (Figure 1). The licences were acquired through a negotiated agreement with Trend Exploration Ltd., a Colorado corporation and the leases held by P. Burns Foundation Ltd. of Calgary are under option agreement to Utah Mines Ltd.

Details as to the ownership agreements and interest concerning the coal properties are not contained in this report. Utah Mines Ltd. is sole operator of the property at this time and has available all legal documents pertaining to working agreements.

LOCATION AND ACCESSIBILITY

The Carbon Creek property is located in northeastern British Columbia about twenty (20) miles west of the W.A.C. Bennett Dam and approximately twenty-five (25) miles north of the John Hart Highway which connects Prince George and Dawson Creek. Chetwynd is approximately forty-five (45) miles to the southeast and MacKenzie is forty (40) miles to the southwest. Geographical co-ordinates for the center of the property are 55° 55' North Latitude and 122° 40' West Longitude.

The Carbon Creek embayment of Williston Reservoir extends five (5) miles southward from the main part of the lake providing access to the northern end of the property. From Dunlevy Landing (a docking site approximately ten (10) miles west of the W.A.C. Bennett Dam) to Carbon Creek, an overwater distance of twenty-five (25) miles, adequate water depth permits large boats and barges easy access into the area. Access via chartered float plane or helicopter is available from MacKenzie, Fort St. John or Chetwynd.

PR-CARSON CREEK 75(1)A

ECOLOGICAL STUDIES

The ecological suvey commenced by B.C. Research for the company during Utah Mine Ltd.'s initial exploratory program was continued during the 1975 field season.

The season's program included studies of wildlife, fish populations in the creeks and the Carbon Creek embayment, water sampling and vegetation.

In addition, a hydrologic study of the creeks and ground water over the Carbon Creek property was initiated this year by Golder Associates Ltd. for Utah Mines Ltd.

A weather station with a strip chart type recorder was installed on the property in late August. Temperature, pressure, rainfall and wind direction and speed are recorded automatically. The station has been removed from the property for the winter for adjustment, but will be installed on the property permanently early next year.

RECLAMATION

Utah Mines Ltd. continued to observe the British Columbia Forest Service regulations and guidelines with respect to forest and surface disturbance during road construction. Measures were taken to minimize surface disturbance. Excessive road grades were avoided, culverts utilized and all timber felled for road construction, including leaning trees, was slashed and bucked. Debris was buried beneath road grade wherever possible. Cross ditches or "erosion bars" to control erosion by water were prepared on excessive road grades, before leaving the property at the close of the field season. All procedures met the approval of the British Columbia Forest Service.

Prior to the conclusion of the 1973 exploration season, road

Photo 1: Clover growing at drillsite 72-10. The seed for this clover was spread during 1973.

Photo 2: Grass growth on road shoulders representative of the 1973 seeding program.

Photo 3: A cleared area which was seeded in 1973.

shoulders, drill sites and campsites of all prior field programs on the property were seeded with a mixture of grasses approved by the British Columbia Forest Service. This program was continued in 1975 with the dispersal of seven thousand pounds (7,000 lbs.) of seed over twenty-four (24) miles of road, thirty-six (36) drill sites and two (2) campsites. A similar seed mixture to 1973 was utilized and consisted of:

Creeping Red Fescue	40%
Alsike Clover	40%
Timothy	20%

Photos 1, 2 and 3 exhibit the favorable results of this program.

PREVIOUS WORK

Three (3) field programs, 1971 to 1973 inclusive, prior to 1975, saw completion of the following drill holes on the property.

YEAR	DRILL HOLES	CORE SIZE	FOOTAGE
1971	71-1 to 71-9	HQ(2 1/2")	6,752
1972	72-10 to 72-23	HQ	9,296
1973	73-24 to 73-34	HQ	6,642
	73-25A, 26A, 27A, 28A, 33A, 34A	6"	846
TOTAL			23,536

Thirty-eight (38) miles of road had been built, two (2) camps errected and six (6) creek crossings completed to facilitate these programs.

Drill hole correlations of the stratigraphy suggested two thousand eight hundred feet (2,800') of Lower Cretaceous coal-bearing Gething Formation underlay the property. Three hundred and sixteen (316) coal samples from test-drilling this section had been tested for free swelling indices and proximate natural and dry basis analysis. A total in-place coal reserve estimate for eleven principle coal seams; 55, 54, 52, 51A, 57, 47, 46, 40, 31, 15 and 14, was calculated out to ninety-three million (93,000,000) "measured" short tons and one hundred and fifty million (150,000,000)

"indicated" short tons. Approximately twenty-four million (24,000,000) short tons with a thickness of three feet (3') or greater were available for stripping at a 10:1 or less strip ratio.

1975 FIELD SEASON

LOGISTICS

All equipment for the program was mobilized by truck to Dunlevy, a docking site on the north shore of Williston Reservoir approximately twenty (20) miles from the property. Over water transportation of equipment to Carbon Creek was facilitated by tug and barge rented on a per trip basis from Findlay Navigation Ltd. of MacKenzie, British Columbia.

A tent and trailer base camp capable of supporting fifty (50) men was constructed on the 1973 site located on the west side of Carbon Creek and one-half mile north of Seven Mile Creek. Seven (7) aluminum frame tents and five (5) trailers were provided by the drilling contractor, Canadian Longyear Ltd., for Utah personnel and drilling personnel. Two (2) trailers were provided by the road building contractor, Peter and Paul Demeulemeester Ltd. A second temporary, aluminum tent frame camp was constructed for the month of August seven (7) miles to the south on the east side of Carbon Creek. This camp provided a base for personnel required for the McAllister area drilling program. A lengthy drive from the main base camp one hour away did not permit drilling in the area without a nearby support camp.

A twenty-six foot (26') aluminum crewboat, owned by Findlay Navigation Ltd., equipped with an inboard V-8 gas engine and Berkley jet drive, was retained on a full time basis for providing transportation and handling, foodstuffs, personnel and materials to and from Dunlevy Landing.

Two (2) five hundred (500), one (1) one thousand (1,000) and three (3) five thousand (5,000) gallon steel tanks on skids were

Photo 4: Equipment being loaded on a barge after completion of the 1975 Field Season.

supplied by Demeulemeester Ltd. for storage of gasoline and diesel fuel. Three thousand (3,000) gallons of mobile storage was also available for road building equipment. Tanker trucks were brought in by barge when tanks were emptied. Diesel powered generators provided electricity for lights and other general purposes. A nearby stream supplied water for the camp.

Seven (7) pickups and two (2) suburbans were brought in by Utah Mines Ltd. and the various contractors for on-site transportation. Utah Mines Ltd. supplied a tracked vehicle (bombardier) for use on roads impassable by pickup truck. A Unimog (Daimler-Benz diesel) with a three hundred (300) gallon water tank was supplied by Longyear for drilling in areas of no water supply.

Longyear and Utah Mines Ltd. supplied 4-channel, single-band radios for communication between camps and British Columbia Telephone in Vancouver. Two (2) smaller radios were supplied by Longyear for communications between base camp and the McAllister camp to the south.

ROAD BUILDING

All access roads to drillsites were built by Peter and Paul Demeulemeester Ltd. of Chetwynd, British Columbia. New road totalling 23.87 miles was built bringing the total mileage on the property up to sixty-two (62) miles.

Three (3) bulldozers, D-6, D-7 and a D-8 were utilized for road building and movement of drill rigs and associated equipment. Weather conditions were good throughout the season enabling easy road access construction. Minor problems in May and early June were encountered over areas of frozen ground. After entry with a "cat", road surfaces would soon thaw and turn into a quagmire

requiring several weeks to dry. During these times, access was by bombardier or bulldozer only.

All roads and bridges built in prior years were in good condition with the exception of one slide. The bridge across Carbon Creek, removed in 1972 to prevent log jams, was replaced in July to provide access to the McAllister area. New abutments were made and the bridge has been left in place this winter with the approval of the British Columbia Forest Service.

Manex Mining Ltd. was contracted to slash and buck trees felled during road building. Four (4) to seven (7) men were employed, depending on the work load, from mid-June to the program end. Seeding of road shoulders and drillsites was also completed by their personnel.

DRILLING

Canadian Longyear Ltd. was contracted for the core-drilling. Twenty-seven (27) HQ (two and one-half inch (2 1/2") core) and nine (9) PQ (three and one-third inch (3 1/3") core) totalling nineteen thousand two hundred and eighty-six (19,286) feet and five thousand six hundred and sixty (5,660) feet of drilling respectively were completed. Two (2) wireline type drill rigs were required for the entire program, one capable of HQ coring and the second capable of HQ or PQ coring. Reduction in hole size from PQ to HQ was possible with the latter rig.

Drilling began on 30th May and was completed on 5th September.

GEOPHYSICAL DRILL HOLE LOGGING

All down-hole logging was completed by Utah Mines Ltd. personnel using a company owned truck mounted Gearhart-Owens Industries Model 3200 logging unit. Resistivity, gamma and density logs were run on all drill holes having unobstructed hole conditions

Photo 5: Canadian Longyear's PQ wireline diamond drill at drillhole 75-42. The large tanks are for water storage.

which prevent possible loss of probe-head. Caving drill hole conditions required some logs to be run "through the pipe". Resistivity logging is not possible in such cases due to pipe conductance.

The gamma-resistivity logs were used primarily for correlation purposes while the density logs provided seam thickness data.

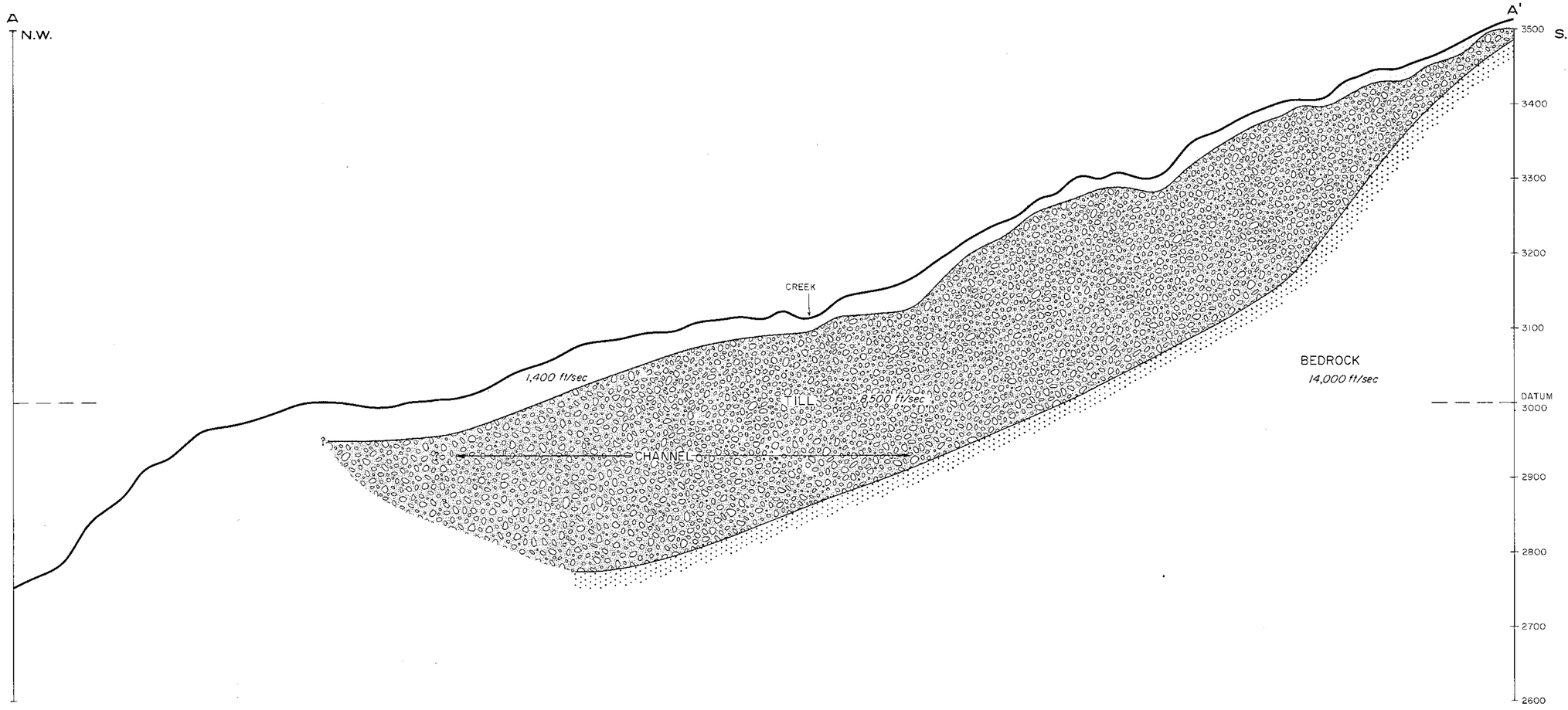
FIELD RECONNAISSANCE

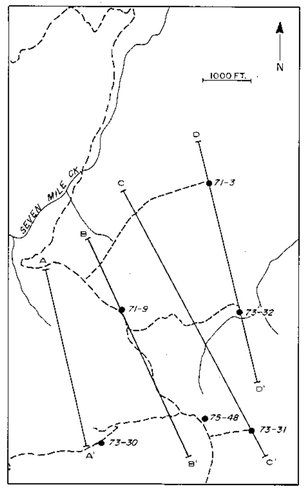
Additional creek traverses were completed and all exposed bedrock along new road cuts were mapped for structure attitudes, coal frequency and thickness. Areas of lengthy exposure were mapped in detail and plotted data was correlated to nearby drill holes. The number of new bedrock exposures resulting from road building as compared to the relatively minor programs of previous years has been beneficial in qualifying drill hole correlation, particularly the McAllister area. On a property such as Carbon Creek, where little bedrock is exposed, correlations are weak at best sometimes, particularly when the lack of exposure is combined with the drill hole spacing and the nature of deposition for deltaic sediments.

GEOPHYSICS

A proposal to define areas of thick glacial till cover with associated resultant coal reserve, depletion was suggested for the 1975 Carbon Creek field program.

A seismic survey over the plateau area immediately south of the Seven Mile Creek mouth has successfully delineated the suspected pre-glacial stream channel indicated by the thick tills encountered in drill holes 71-9 and 73-32. The interpretation profiles (Figures 3 to 6) indicate an east - west channel within the underlying bedrock. It is three thousand feet (3,000') wide on the west, one thousand four hundred feet (1,400') wide on the





LEGEND

OVERBURDEN

TILL

BEDROCK

14,000 ft/sec AVERAGE SEISMIC VELOCITY

VERTICAL SCALE: 1 inch = 100 feet

HORIZONTAL SCALE: 1 inch = 200 feet

SECTION LOOKING N 75° E

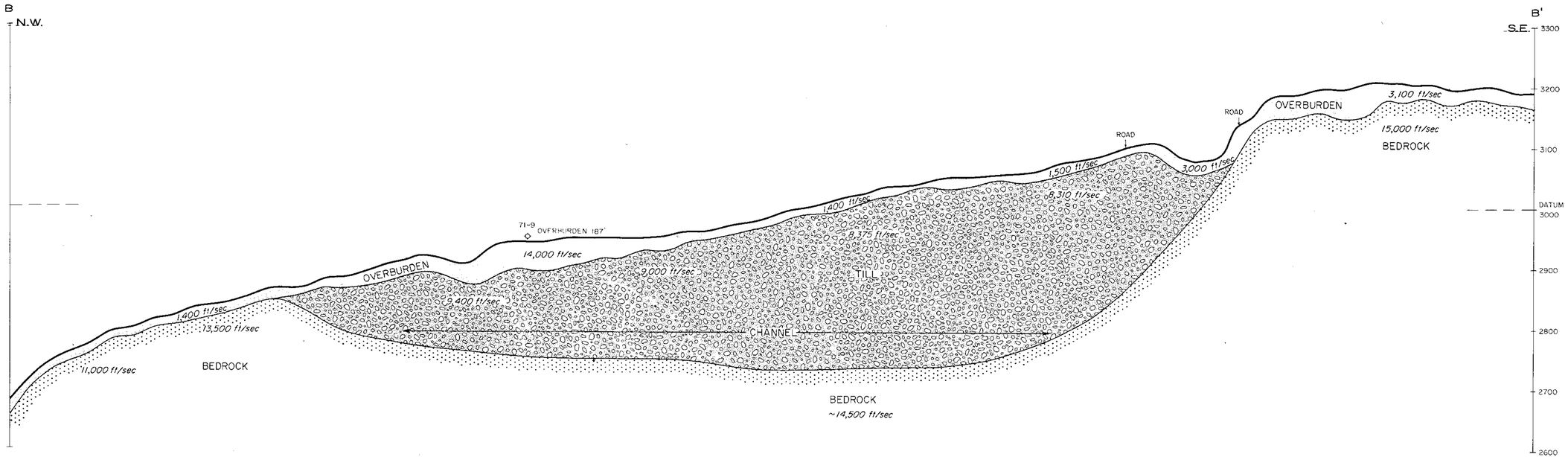
PR-CCK 75(1)A

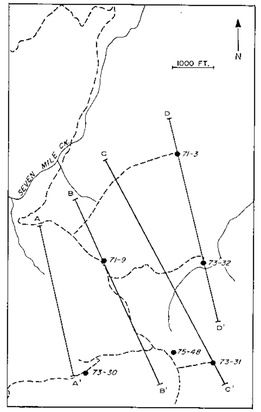
FIGURE 3

CARBON CREEK
INTERPRETATION PROFILE
SEISMIC REFLECTION SURVEY
LINE A-A'

WORK BY: K.E. WITHERLY & J. VYSELAAR

DRAWN BY: G.Y. SMEETON DECEMBER 1975





LEGEND

- OVERBURDEN
- TILL
- BEDROCK

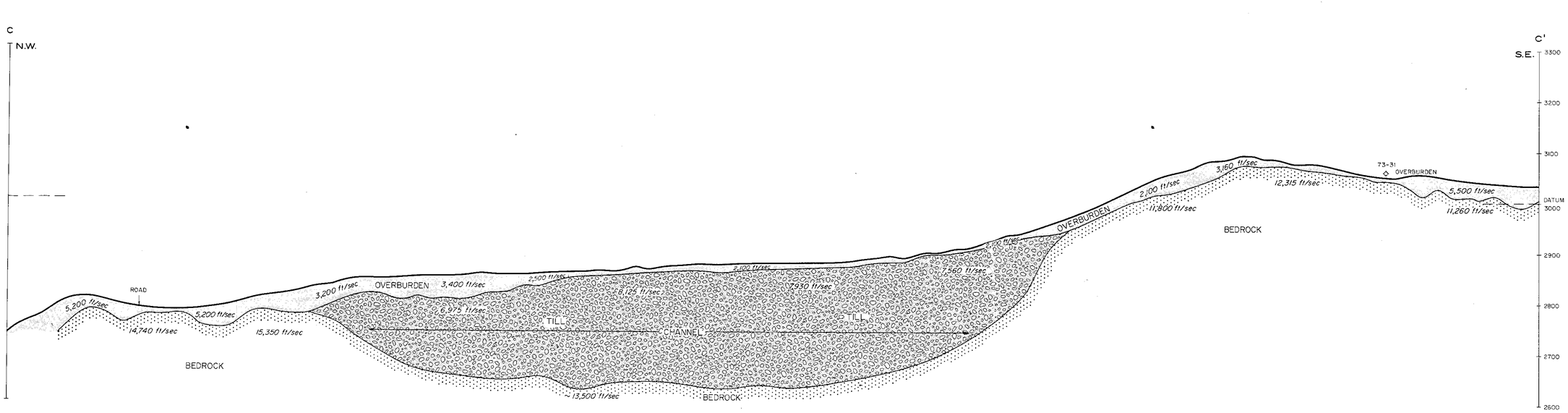
15,000 ft/sec AVERAGE SEISMIC VELOCITY
VERTICAL SCALE: 1 inch = 100 feet
HORIZONTAL SCALE: 1 inch = 200 feet
SECTION LOOKING N65°E

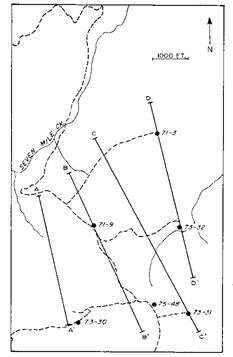
PR-CCK 75(1)A

FIGURE 4

CARBON CREEK
INTERPRETATION PROFILE
SEISMIC REFLECTION SURVEY
LINE B-B'

WORK BY: K.E. WITHERLY & J. VYSELAAR
DRAWN BY: G.Y. SMEETON DECEMBER 1975





LEGEND

- OVERBURDEN
- TILL
- BEDROCK

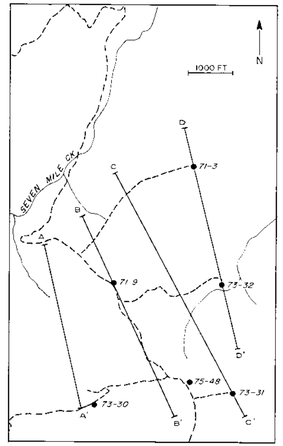
11,260 ft/sec AVERAGE SEISMIC VELOCITY
VERTICAL SCALE : 1 inch = 100 feet
HORIZONTAL SCALE : 1 inch = 200 feet
SECTION LOOKING N60°E

PR-CCK 75(1) A

FIGURE 5

CARBON CREEK
INTERPRETATION PROFILE
SEISMIC REFLECTION SURVEY
LINE C-C'

WORK BY: K.E. WITHERLY & J. VYSELAAR
DRAWN BY: G.Y. SMEETON DECEMBER 1975



LEGEND

- OVERBURDEN
- TILL
- BEDROCK

5,200 ft/sec AVERAGE SEISMIC VELOCITY
VERTICAL SCALE : 1 inch = 100 feet
HORIZONTAL SCALE : 1 inch = 200 feet
SECTION LOOKING N75°E

PR-CCK 75(1)A

FIGURE 6

CARBON CREEK
INTERPRETATION PROFILE
SEISMIC REFLECTION SURVEY
LINE D-D'

WORK BY: K.E. WITHERLY & J. VYSELAAR
DRAWN BY: G.Y. SMEETON DECEMBER 1975

east and ranges in depth from two hundred and forty-five feet (245') to three hundred and eighty feet (380') along the axis.

Three (3) material classifications were assigned on the basis of seismic velocities. These are:

1) overburden, or the organic plus soil and clay material loosely packed on the surface. Velocities range from one thousand two hundred (1,200) to three thousand five hundred (3,500) feet per second, or up to five thousand two hundred (5,200) feet per second if the water table is high.
2) glacial till, or the clay, gravel, boulder zone with varying degrees of composition. Velocities range from six thousand (6,000) to nine thousand (9,000) feet per second.
3) bedrock, velocities greater than ten thousand (10,000) feet per second define bedrock regions.

GENERAL GEOLOGY

The Carbon Creek map area is located within the structural foothils belt of the Rocky Mountains. This belt, characterized by a series of synclines, anticlines and major west dipping thrust faults, is underlain predominantly by Mesozoic rocks. The high northwesterly trending ridges and steep sided valleys are generally parallel with the strike of the underlying formations.

These formations, in ascending order, as defined by the Geological Survey of Canada, are present in the area: Upper Jurassic Fernie Formation; Lower Cretaceous Monteith, Beattie Peaks, Monach, Cadomin and Gething Formations (Table 1). Only the Gething is known to contain coal of commercial quantities. Rocks younger than the Gething crop out east of the map area; rocks older than the Fernie occur west of the area. Detailed descriptions of the various formations and the lithological variations within the formations are contained in the literature. For a detailed description of the Gething Formation in Carbon Creek, see "Carbon Creek Coal Basin, Progress Report, 1971 Field Season.

TABLE I

LOWER CRETACEOUS FORMATIONAL NOMENCLATURE

PEACE RIVER CANYON AREA

STOTT 1971 (This Report)			BEACH & SPIVAK 1944	MATHEWS 1947		HUGHES 1964			McLEARN 1923	
FORT ST. JOHN GROUP	COMMOTION FM.	BOULDER CRK. MB.	GATES FM.	GATES FM.		COMMOTION FM.			FORT ST. JOHN GROUP	GATES FM.
		HULCROSS MB.								
		GATES MB.								
	MOOSEBAR FM.		MOOSEBAR FM.	MOOSEBAR FM.		MOOSEBAR FM.				MOOSEBAR FM.
BULLHEAD GROUP	GETHING FM.		GETHING FM.	NON-MARINE BULLHEAD		BULLHEAD SUCCESSION	CRASSIER GROUP	GETHING FM.	BULLHEAD MOUNTAIN FORMATION	GETHING MB.
	CADOMIN FM.		DUNLEVY FM.	MARINE BULLHEAD				BRENOT FM.		LOWER MB.
MINNES GP.	MONACH FM.			MONACH FM.			BEAUDETTE GROUP	MONACH FM.		
	BEATTIE PEAKS FM.			BEATTIE PEAKS FM.				BEATTIE PEAKS FM.		
	MONTEITH FM.			MONTEITH FM.				MONTEITH FM.		

STRUCTURE

The Carbon Creek basin, an intervening syncline lying between two (2) major anticlinal belts, is approximately eight (8) miles wide with a fold axis twenty (20) miles long, and trends in a N 20° W direction. The embracing eastern anticlinal belt is a faulted continuation of the Pine River anticline. The western anticlinal belt consists of several en echelon folds in the area of the Monach and a single major fold between Mount Wrigley and Mount Barr.

Within the Carbon Creek basin and north of Ten Mile Creek, the syncline plunges gently southeastward. In-folded coal measures of the Gething Formation are exposed throughout the area. The base of this unit, or contact with the underlying Cadomin Formation, was mapped this season near the confluence of the Carbon Creek embayment with Williston Reservoir. The southern part of the basin is more complex with several subsidiary folds and flexures.

In the vicinity of Eleven Mile Creek, the basin is complicated by the high-angle westward dipping Carbon Creek thrust fault. Parallel and to the west of this structure are a series of north-south high angle faults. They are exposed in roadcuts, in areas of outcrop and can be further delineated by aerial photos and inferred from drilling. As yet, the strike length of these features has not been fully determined. The lack of outcrop throughout the area does not permit an accurate estimation of the structural complexities. Generally, though, distortion on the block east of the fault is less severe than the west. These localized faults appear to represent void filling, or block faulting of the sediments that slumped subsequent to the larger scale thrusting to the east. In all cases, the west block of these localized faults is down in relation to the east block. Reverse or normal nature would depend on axis

attitude which at this time is uncertain.

A tightly folded zone in the coal-measures is seen at the confluence of the North and South Forks of Eleven Mile Creek eastward towards Carbon Creek. Several en echelon folds mapped by the Burns Foundation are recognized in this area. Northward and southward from Eleven Mile Creek, a thick veneer of glacial drift masks these folded structures.

A monoclinal fold flexure can be traced from just east of the mouth of Eleven Mile Creek southeastward to the McAllister Creek area. On the west side of the flexure, dips range from thirty degrees (30°) southwest to seventy degrees (70°) southwest striking generally in a northwesterly direction. On the east side of the fold, dips range from five degrees (5°) to fifteen degrees (15°) in a southwest to northwest direction with strikes from northwest to northeast.

1975 EXPLORATION PROGRAM

OBJECTIVES

Inconclusive and incomplete data from prior field programs and improved market conditions for coking coal prompted a re-evaluation of the Carbon Creek coal basin in 1975.

This year's program had the following objectives:

1) to explore, by core-drilling, untested areas within the licence block for additional coal reserves.
2) To test the lateral continuity of major seams for a more precise definition of coal reserve potential.
3) To acquire unweathered coal samples from seams 58, 55, 54, 52, 51A, 51, 47, 46, 40, 31, 15 and 14 suitable for laboratory and washability studies.

A wireline drill rig equipped with a PQ size (three and one third inch (3 1/3 inch) core) core barrel was utilized for recovery of

samples from the major coal seams. Exploratory drilling was carried out using a wireline rig drilling HQ core. See diagrams at the end of this report.

RESULTS

North Area - North of Seven Mile Creek

Thirteen (13) drill holes were completed in this area. Nine (9) holes tested the stratigraphic interval which includes Beds 31, 15 and 14. These test holes are correlatable to pre-1975 drill hole data. The remaining four (4) holes 75-38, 40, 41 and 44 are only tentatively correlated to the stratigraphic section. All were located within a previously unknown structurally disturbed belt along the west border of this area.

The 1973 assessment of this area's data suggested a stratigraphic interval of five hundred and seventy-five (575) feet between Beds 31 and 15 and a northwest to southeast strike with gentle east dip attitude of the sediments. The resultant drill hole correlation indicated Beds 15 and 14 thinned rapidly away from a thicker central zone. Area for additional thick seam reserves beyond this core appeared limited.

After penetration of Beds 14 and 15 throughout this area in 1975, it became evident the 1973 evaluation was erroneous. With the aid of 1975 data, it can now be shown that the sediments in this area do in fact strike northeast-southwest and dip southeast - a reflection of the plunging syncline as described earlier in this report under "STRUCTURE".

The revised correlation now shows 1973 test holes 24, 25, 26 and 33 were not taken deep enough to intersect Beds 14 and 15. Subsequent holes have defined these beds at greater depths. In addition, the re-correlation of data has increased the stratigraphic interval between Beds 15 and 31 from five hundred and seventy-five feet (575') to one thousand four hundred feet (1,400').

This interval was cored completely in drill hole 75-45 this year.

The new revision has altered the nomenclature of seams in the vicinity of the section just below Bed 31. In the past, a significant coal zone in test holes 73-25 and 73-26, 73-34 and a coal outcrop by 73-33 were interpreted as a single distinct horizon and designated Bed 31. Additional drilling indicated three (3) major distinct coaly zones in this area of the section, all of which had been seen in drill hole 73-34. In the past, the upper zone was labelled Bed 31 and no seam numbers of importance were attached to the lower two (2) multiple, thin seam zones. The revised correlation now shows that seam labelled as Bed 31 in test hole 73-26 correlating to the lowest of the three (3) zones rather than the upper as shown before. This would be the only major change, all other seams labelled Bed 31 in the past for this area remain unchanged.

The lowest coal zone is now assigned Bed Numbers 26 and 27, the middle is designated 28 and 29 and the upper zone is Bed 31. The stratigraphic interval between the upper and lower zones, or Bed 31 and Beds 26 and 27, is two hundred and forty feet (240'). The upper zone, Bed 31, lies 1400 feet stratigraphically higher than Bed 15. The fence diagrams for these three (3) zones are located at the back of this report.

CENTRAL AREA
South of Seven Mile Creek and North of Ten Mile Creek

Six (6) PQ test holes three and one-third inch (3 1/3") core versus two and one-half inch (2 1/2") HQ core were completed within this area for confirmation of seam quality and characteristics of Beds 58, 55, 54, 52, 51A, 51, 47, 46, 40 and 31. Nine (9) exploratory HQ holes were located around the fringes of the area to check coal continuity, particularly Bed 31, which appeared attractive from prior quality tests and reserve calculations.

Photo 6: A view looking west. This road was constructed in 1975 for access to drillhole 75-70 in the west central area of the property.

The PQ drilling program indicated coal thickness and structural data for seams 58, 55, 54, 52, 51A, 51, 47, 46, and 40 was not too dissimilar when compared to prior test results for the area.

Test holes 75-46, 47, 51, 64, and 70 reveal Bed 31 is splitting and thinning to the west, south and southwest of test holes 71-3, 71-9, 73-30 and 73-31 where significant results had been received. In addition, the correlation of this particular seam or area of the section (and even the inclusion of seams labelled 31 in drill holes 71-3 and 71-9 south of Seven Mile Creek) to that labelled as Bed 31 north of Seven Mile Creek, is regarded as very weak. There are a number of possibilities, all approximately equal in strength. The presented correlation of holes south of Seven Mile to those north of Seven Mile has been left as shown for lack of a more convincing possibility. For these reasons, no reserves have been computed on the Bed 31 south of Seven Mile Creek.

Drill holes 75-61 and 70 have disclosed an offset in the formation along the west border of this central region. No outcrop can be seen to substantiate the fault, but the probable location aligns well with the mapped fault on the ridge to the south across Ten Mile Creek and to the mapped fault disturbance north of Seven Mile Creek. This newly located fault aligns itself well to others mapped east of here and is included with those related to major thrusts as discussed in teh section "STRUCTURE". There is roughly two hundred (200) to two hundred and fifty feet (250') of throw on this fault.

SOUTH AREA

South of North Fork, Eleven Mile Creek and WEst of Carbon Creek

Two (2) drill holes, 75-55 and 75-65, tested seven hundred and fifty feet (750') of section in this area. No significantly thick coals were intersected in either hole. The structure of the surrounding area, particularly to the north, would suggest the formation tested lies in the region of Beds 51 to 60.

Photo 7: This road was constructed in 1975 for access to drillhole 75-60 in the McAllister Area.

Because of the distance to other drill holes, it cannot be substantiated to any degree of certainty with the geophysical logs.

SOUTHEAST OR McALLISTER AREA
East of Carbon Creek and South of East Fifteen Mile Creek

Five (5) HQ (two and one-half inch (2 1/2") core) drill holes for a total of two thousand six hundred and fifty-five feet (2655') were drilled in this area. No significant coals were intersected in the exploratory oriented test holes 75-58 and 75-59. The lower coal zone (5.2 @ 410.6) of 73-22 was intersected in 75-60, 62 and 63 and found to be discontinous and dirty. Generally, the program continued to show the coal seams within this area are thin, discontinuous and lenticular.

The correlation of stratigraphy between drill holes has proved difficult. Thick sandstone beds are not always continuous between adjacent core holes. This would suggest the delta-building processes were very dynamic and unstable for this locality.

There was no evidence from this year's drilling or mapping of faulting within the area. All work continues to indicate the gentle five (5°) to ten degree (10°) northwest dip across the zone of investigation.

One minor change has been made to the correlation of drill holes. The upper coal zone present in core hole 72-20 is now stratigraphically lower than it was in the 1972 results. This change increases the areal extent of the zone and makes it a very worthwhile target for future programs. In the McAllister area, one thousand three hundred feet (1300') of Gething Formation has now been tested.

COAL GEOLOGY

A re-interpretation of the stratigraphic correlation has altered previous ideas and conclusions on the physical nature of the seams in the basin, particularly Beds 15 and 14. Present data would suggest coal seam lenticularity and discontinuity is not typical to the entire coal-bearing section or as radical as previously inferred, but rather, restricted to certain intervals within the formation. The McAllister area (southeast area) coals or the Bed 26 to 31 interval, could be classified as very discontinuous and lenticular in relation to other seams such as 40, 51, 52, 54, 55 and 58.

The fluvial-deltaic nature of deposition for these sediments has certainly produced varying and discontinuous lithologies across the Gething delta, but the new correlation would suggest there were periods of relative quiescence, or large undisturbed areas, for formation of more continuous seams.

COAL QUALITY

Three hundred (300) coal samples were recovered from this year's field program and forwarded to Utah Mines Ltd.'s Palo Alto laboratory for proximate analysis, free-swelling tests and washability studies. Free swelling indice determinations were made on site during the field program and at Palo Alto. Ash analysis were made at Palo Alto also.

Laboratory procedures in the handling of the coal samples are as follows:

1) Unseal and air-dry (sixty-five (65) to ninety degrees (90°) F) for twenty-four (24) to forty-eight (48) hours.
2) All individual seam samples crush through three-eighths inch (3/8").
3) Cone and quarter out head sample.
4) Seams of greater than three feet (3') thickness to washability

4) testing and screen sizing-minus twenty-eight (-28) mesh to froth flotation.
5) All seams to single gravity separation at 1.400.
6) Selected heads or gravity separation float for petrography and comprehensive analysis.
7) Compute material balances.

Head analysis on coal samples from drill holes 75-35 to 74-70 inclusive on those seams greater than 1.0 feet are shown in Appendix A.

COAL RESERVES

In-place coal reserves were calculated using Beds 58,55,54, 52,51A,51,47,46,40,31 (north of Seven Mile Creek) 29,28,27, 26,15 and 14. Strippable coal reserves were also calculated using all seams except 15 and 14.

Sufficient drilling has been completed so that all calculated coal tonnages could be categorized as "measured" reserves. There are small isolated regions between these "measured" blocks which should be classified as "indicated" coal reserves, yet the above average continuity of the seams is sufficient to categorize these areas as "measured" reserves also.

No reserves have been calculated for the areas south of Ten Mile Creek or for the regions around drillholes 75-61 and 70 in the west-central area and drillholes 75-46 and 64 in the east-central region. The lack of information on these areas does not warrant any kind of meaningful reserve estimate.

Criteria used for the calculation of reserves are as follows:

1) The minimum recoverable seam thickness would be 2.0 feet.
2) A 30:1 highwall is assumed for contour stripping which approximates an overall average 15:1 strip ratio. Highwall height would vary according to seam thickness.
3) Total strip operations were assumed for Beds 52,51A and 51 north of Nine Mile Creek. An overall strip ratio was calculated assuming total recovery of all three seams in this area.
4) Total strip operations were assumed for Beds 31,29,28,27 and 26 north of Seven Mile Creek. An overall strip ratio was calculated assuming total recovery of the

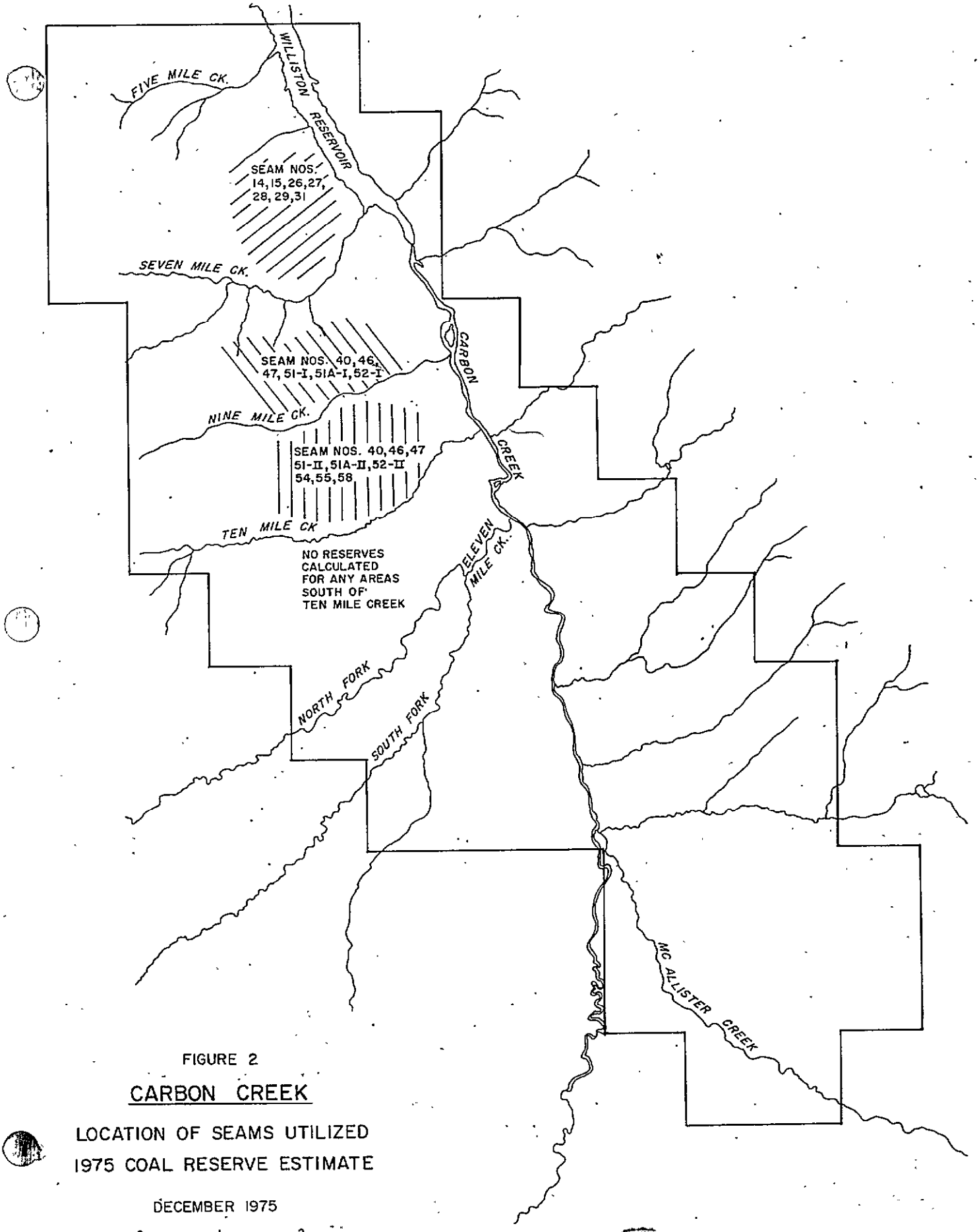


FIGURE 2

CARBON CREEK

LOCATION OF SEAMS UTILIZED
1975 COAL RESERVE ESTIMATE

DECEMBER 1975

0 1 2

SCALE IN MILES

PR-CCK 75(1)A

TABLE 2

COAL RESERVE ESTIMATE BY SEAM IN SHORT TONS

Seam	In-Place Tons **	Overburden Yards	Ratio	Cumulative Tons	Cumulative Yards	Cumulative Ratio	Tons-in-Place Contour Strip 15:1 Avg. Ratio
58	2,577,000	94,374,000	36.62				
57							
55	4,638,000	46,979,000	10.13	7,215,000	141,353,000	19.59	
54	4,665,000	19,991,000	4.29	11,880,000	161,344,000	13.58	
52*	11,047,000	43,920,000	19.33				1,676,000
51A*	13,042,000	36,976,000	13.39	5,034,000	80,896,000	16.07	2,464,000
51*	10,321,000	9,400,000	4.05	7,355,000	90,296,000	12.28	1,588,000
47	10,028,000						938,000
46	15,051,000						1,630,000
40	22,590,000						2,196,000
31 (north of Seven Mile Creek)	2,523,000						
29+28	5,401,000						
27+26	5,689,000			13,614,000	302,770,000	22.24	
15	14,546,000						
14	10,723,000						
TOTAL	132,841,000			32,849,000	554,410,000	16.87:1	10,486,000

* 100% recovery of Beds 52,51A,51 north of Nine Mile Creek, contour strip only on these beds south of Nine Mile Creek.

** 1800 TPAF factor utilized, coal at less than 40 feet of overburden assumed oxidized.

seams in this area.

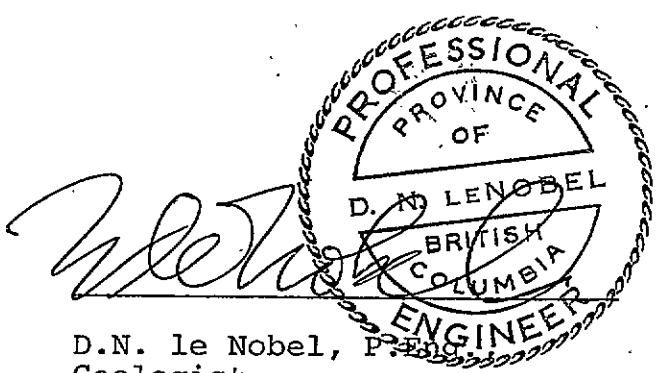
5) No reserves were calculated for areas where depth of cover was less than 40 feet. Coal in these zones is assumed to be oxidized.
6) A maximum overburden cover of 1000 feet was utilized for calculation of in-place reserves.

In summary the reserve estimate is as follows:

1) 132,841,000 short tons of coal in-place.
2) 10,486,000 in-place tons would be realized from contour stripping at an average ratio of 15 to 1.
3) 32,849,000 in-place tons would be available from total strip operations at an overall ratio of 16.87 to 1.

SUMMARY OF 1973 EXPLORATION PROGRAM

1) Twenty-seven (27) HQ (2 1/2" core) drillholes were completed in the Carbon Creek area totalling 19,286 feet.
2) Nine (9) PQ (3.3" core) drillholes were completed totalling 5,660 feet.
3) Coal quality analysis were determined on 300 coal core samples. These determinations are proximate analysis on head samples on a natural and dry basis.
4) 23.87 miles of new access roads were built on the property this year.
5) Geological studies of core samples, geophysical logs and outcrops were conducted.
6) Ecological studies were continued in order to monitor the environment. Seven thousand (7000) pounds of grass seed was spread over road shoulders and drillsites this year.



D.N. le Nobel, P.Eng.
Geologist

R.H. Karst
Geologist

UTAH MINES LTD.

DECEMBER 15, 1975

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APPENDIX A

SEE:

REPORT OF LABORATORY STUDIES

ON CORE SAMPLES FROM

CARBON CREEK COAL PROSPECT

BRITISH COLUMBIA, CANADA

1975

REPORT OF:
UTAH INTERNATIONAL INC.

ORE DRESSING LABORATORY,
1033 EAST MEADOW CIRCLE,
PALO ALTO, CALIFORNIA,
94303., U.S.A.

145-321-5151

E.W. BURCHERT

S.L. DO FOO

APPENDIX B

STATEMENT OF QUALIFICATIONS

R. KARST

All geological fieldwork of the 1975 Carbon Creek coal exploration program was performed or supervised by either or both of the two (2) geologists who worked on the property. They were:

a) D.N. le Nobel, P.Eng., Geologist

b) R.Karst, B.Sc., Graduated from the Faculty of Science, in the discipline of Geology from the University of Alberta in 1974. One year experience as a field geologist on coal properties. He has worked in Alberta and British Columbia

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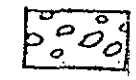
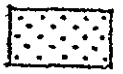
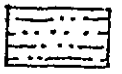
PR-CCK 75(3)A-1

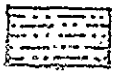
LEGEND

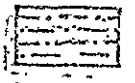

Conglomerate

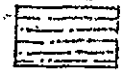

Med. gr. sandstone

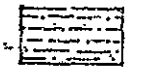

V.f. - fine grain sandstone

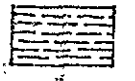

Silty sandstone

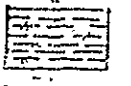

Sandy siltstone

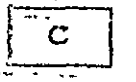

Siltstone


Muddy siltstone

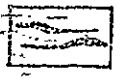

Silty mudstone

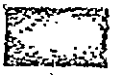

Mudstone


Carboneceous mudstone



Coal, coaly or carboneceous debris

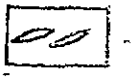

Coaly streaks

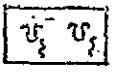

Coal


Small cross-beds


Large cross-beds


Contorted bedding


Pelecypods


Burrows

P.R.

75-35

Mt. Carbon Area 75(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-35 | HOLE NO. 75-36

LOG BY R. Yocat | ELEV. 9220 | HOLE SIZE HQ | PROJECT Carbon Creek

DATE June 3, 1975 | N 348,600 | AIR ☐ WATER ☑ F.D. | LEASE 3499

T.D. 457 | E 57,850 | PD — | SEC — T — R —

498'

% REC.	DEPTH	STRAT. CODE	ROCK TYPE	SAMPLE NUMBER	LITHOLOGY
	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				

WHITE SPECKS 3%

CALCITE VEINLETS // TO CORE AXIS

MUD CHIPS

MUD CHIPS

Calcite veinlets

MUD CHIPS

Mudstone

CALCITE VEINLETS 30° - 35°

CALCITE VEINLETS // TO CORE AXIS

Calcite veinlets // to core axis

SILTY COAL

mud chips

calcite veinlets

COAL

COAL

COAL

CALCITE VEINLETS // CORE AXIS

Calcite // to 45°

COAL

COAL

COAL

COAL

CORE LOSS 3.5' ASSUMED COAL

Bottom of hole 10-15 core ?

CCK-75(3)A-1

P.Q

75-36

Re: Carbon Ck. 75/3/19

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-36

LOG BY E. Heatherington, T. Watchuk

DATE: June 7, 1975

ELEV: 3970

N 370,275

E 41,250

HOLE SIZE: HQ

AIR ☐ WATER ☑ 707'

T.D. 707' P.D.

HOLE NO. 75-36

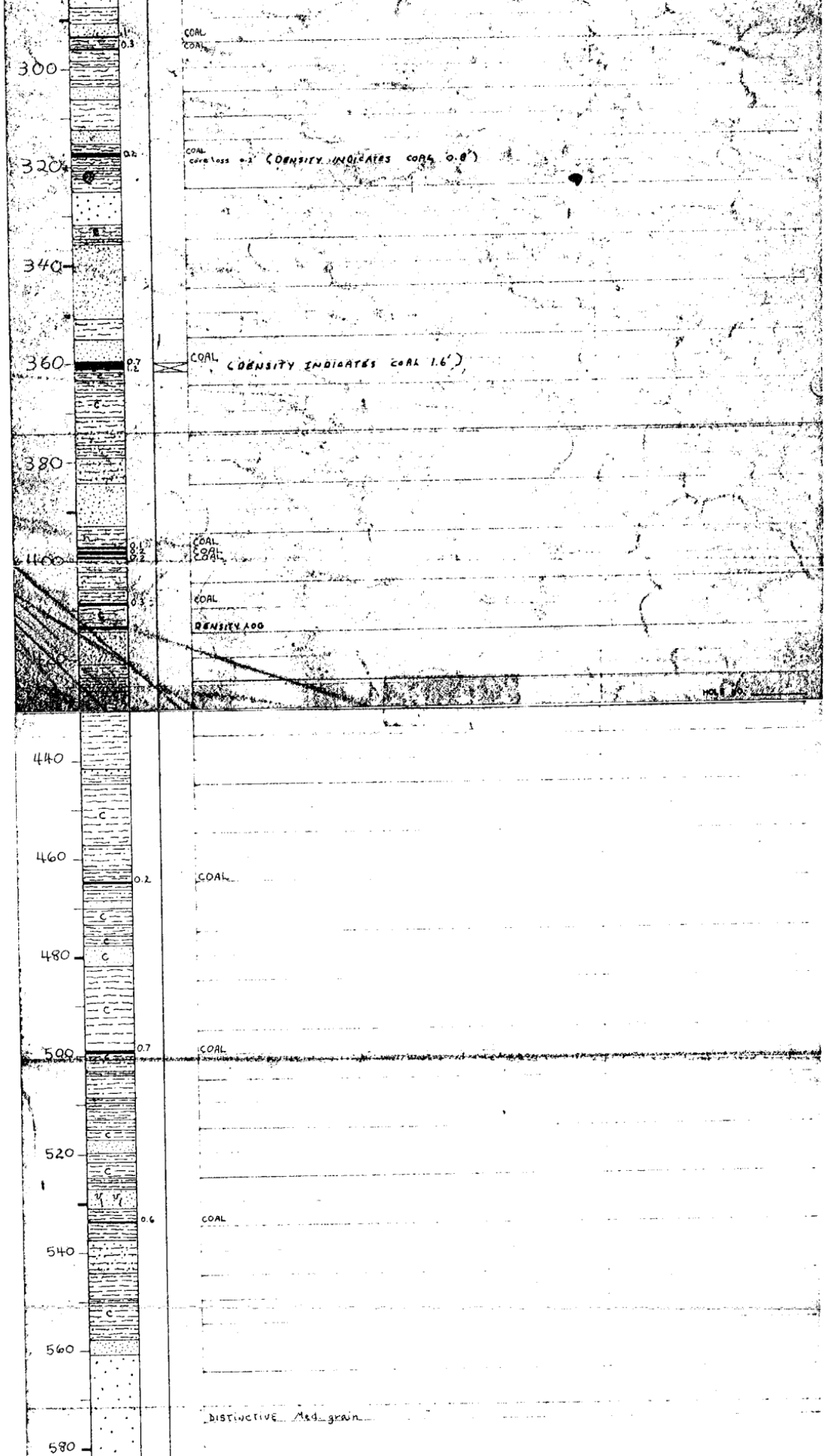
PROJECT: CARBON CK.

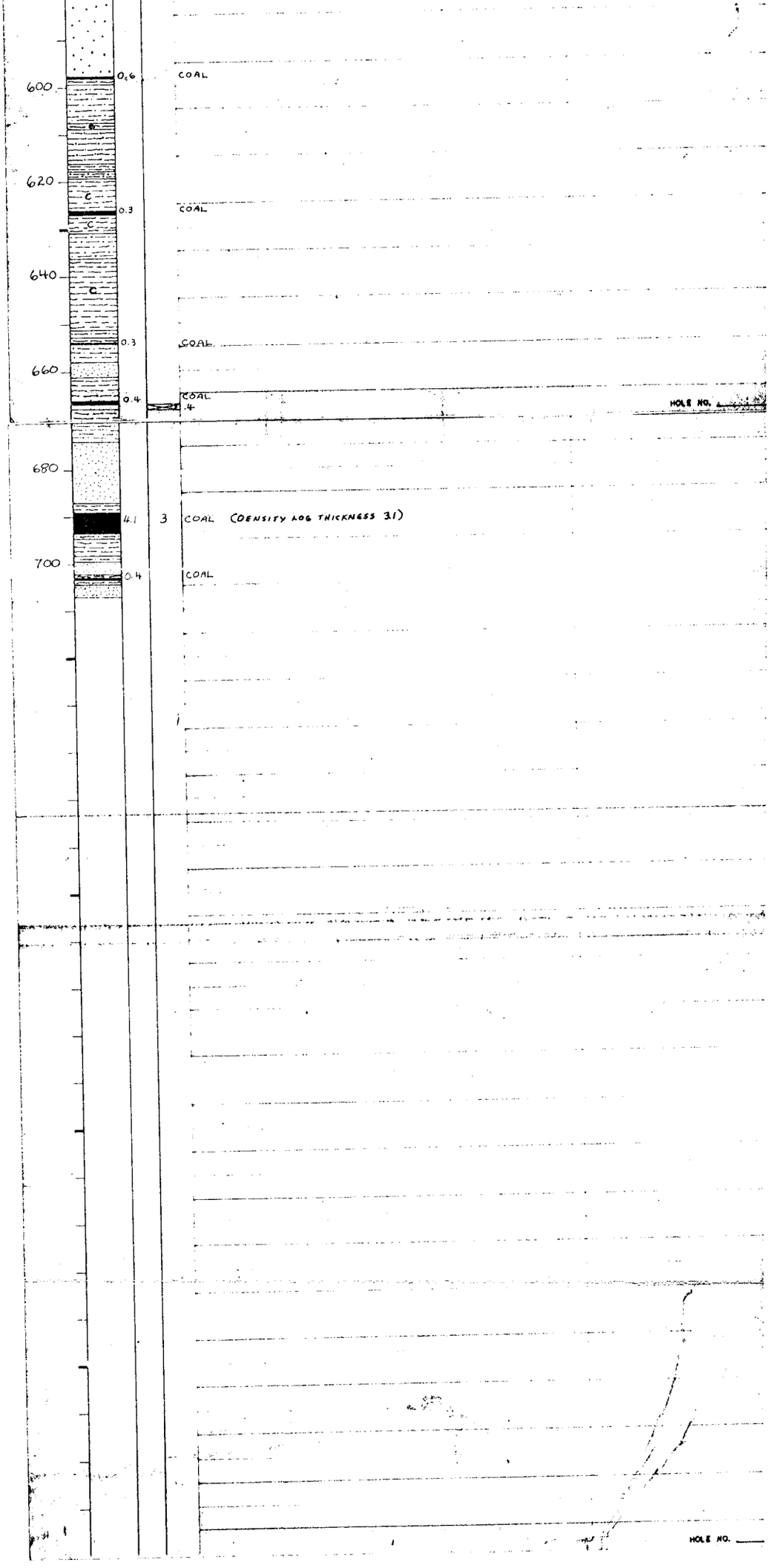
LEASE: 3502

SEC. T R

498

% REC	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	20				
	40		1.9	1	COAL
			0.2		
			0.8		
	60		0.6		
	80				DISTINCTIVE Med-grained light grey
	100				
			1.3		COAL
			1.7		COAL
	120				pyrite along fractures
			1.5		COAL
	140		0.8		COAL
			0.8		CALCITE VEINLET; COAL; CALCITE VEINLETS
	160				
	180		1. 9.0		.5 core loss COAL (DENSITY INDICATES COAL 2.3')
	200				
			0.1		COAL
			0.8		COAL
			0.9		
	220		2.0	2	COAL (probable core loss of possible coal)
	240				
	260		0.4		possible white pelecypod shells; COAL
	260				
	280				


300
320
340
360
380
400
440
460
480
500
520
540
560
580
0.3
0.2
0.7
0.1
0.2
0.2
0.3
0.2
0.7
0.6
COAL
COAL
COAL
core loss 0.2' (DENSITY INDICATES COAL 0.8')
COAL (DENSITY INDICATES COAL 1.6')
COAL
COAL
COAL
COAL
DENSITY 100
COAL
COAL
DISTINCTIVE Med grain


600
620
640
660
680
700
0.6
0.3
0.3
0.4
4.1
0.4
COAL
COAL
COAL
COAL
.4
3
COAL (DENSITY LOG THICKNESS 3.1)
COAL
HOLE NO.
HOLE NO.

CCK - 75(3)A-1

P.Q

75-37

Mt. Carbon Co. 75(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-37

LOG BY: P. Graham

DATE: June 8, 1975

ELEV 3510

N 372,250

E 48,900

HOLE SIZE HQ

AIR ☐ WATER ☑ 200'

T.D. 504' P.D.

HOLE NO. 75-37

PROJECT: CARBON CK

LEASE: C.L. 3504

SEC T. R.

498

% REC	DEPTH	STRIP LOG	THICK	SAMPLE NUMBER	LITHOLOGY
	0				
	20		1.0'		Coal Core Loss (DENSITY THICKNESS 3.0')
					Distinctive sandstone iron stain
	60				
	80		0.7'		Coal
	100		0.2'		Coal
	120				DENSITY LOG
	140				Possible core loss
	160		0.5'		Coal
	180		1.1'	2	COAL (DENSITY THICKNESS 3.4')
	180		0.8'		COAL
	200		0.2		COAL
	220				
	240		1.3		COAL (DENSITY THICKNESS 2.0)
	260		0.2		CORE LOSS
	280				
	300		1.0		CORE LOSS (DENSITY THICKNESS 5.5/4.8)
	320		0.3		COAL
			1.9		CORE LOSS
	340				
	360		0.3		COAL
			2.0		CORE LOSS (DENSITY INDICATES COAL 2.0')
	380		1.0		COAL
			1.9		CORE LOSS
	400				Apparent Core Loss
	420				
	440		0.3		COAL CORE LOSS (DENSITY THICKNESS 2.2')
	460		1.5		COAL
	480				
	500				

CCK-75(3)A-1

P.Q

75-38

1C - CARBON CR. 75(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. #75-38

LOG BY: R. Karst

DATE: June 17, 1975

ELEV. 4460

N. 368,875

E. 46,150

HOLE SIZE: PQ

AIR ☐ MUD WATER ☑ 853

T.D. 853' P.D.

HOLE NO.

PROJECT: CARBON CREEK

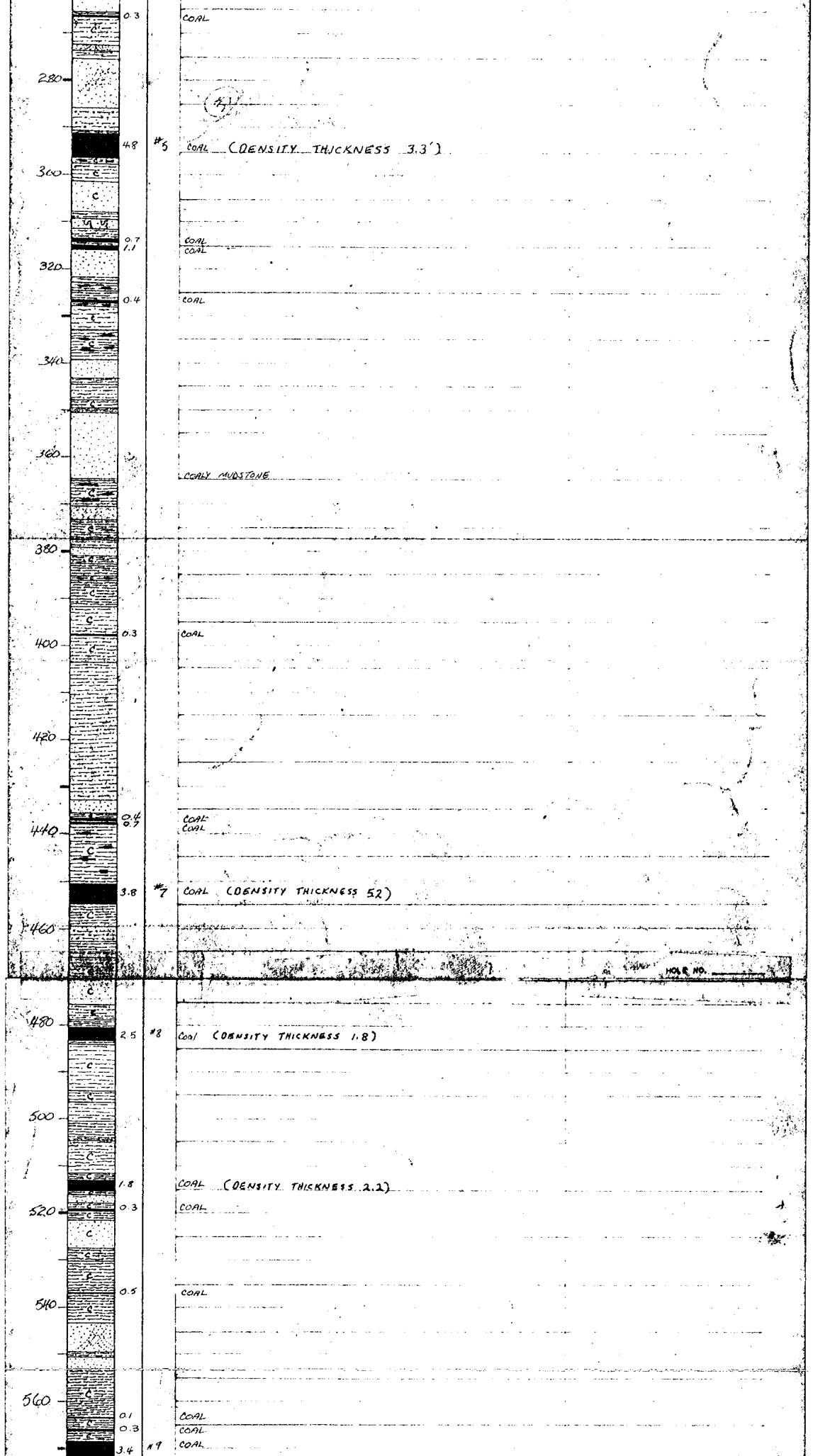
LEASE: CL. 3502

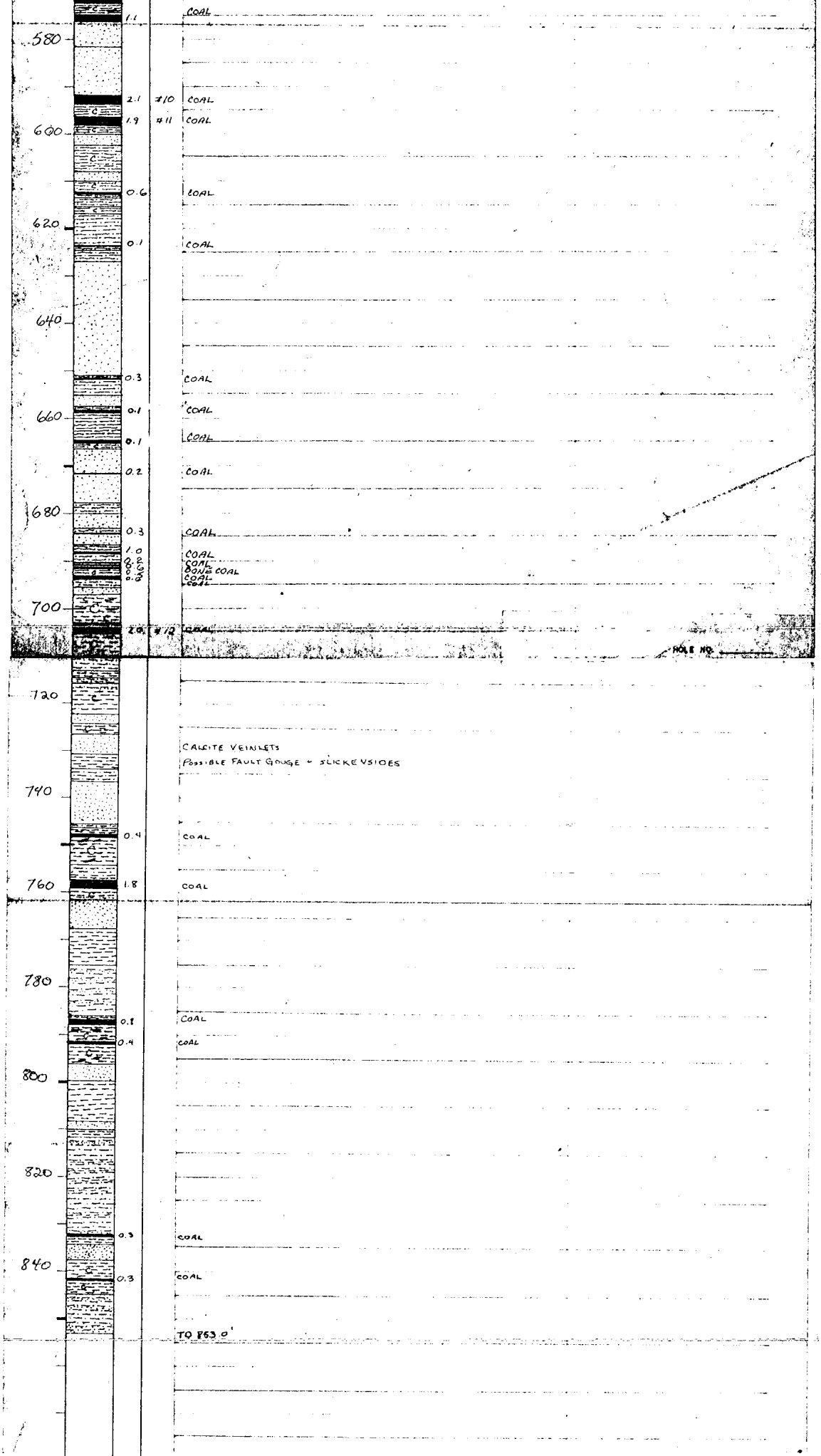
SEC. T. R.

498

% REC	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	0				
	20				
	40				
	60				Pebble band
					CONGLOMERATE - subrounded to round pebbles up to 1" in diameter, c.g. sand matrix, coal frags.
	80				Apparent Fault Gouge
					CORE LOSS
	100		0.2		COAL
			0.1		COAL
			0.4		COAL
					COAL
			0.7		COAL
	120		4.5		COAL
					CORE LOSS
	140				
			2.7		COAL
			0.7		COAL
	160				
	180				
			1.2		COAL
	200				
			0.9		COAL
			0.2		COAL
	220				
			0.8		COAL
			0.1		COAL
	240				
	260				

HOLE NO.


280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
0.3
4.8
0.7
1.1
0.4
0.3
0.4
0.7
3.8
2.5
1.8
0.3
0.5
0.1
0.3
3.4
#5
#7
#8
#9
COAL
COAL (DENSITY THICKNESS 3.3')
COAL
COAL
COAL
COALY MUDSTONE
COAL
COAL
COAL
COAL (DENSITY THICKNESS 5.2)
HOLE NO.
Coal (DENSITY THICKNESS 1.8)
COAL (DENSITY THICKNESS 2.2)
COAL
COAL
COAL
COAL
COAL


580
600
620
640
660
680
700
720
740
760
780
800
820
840
1.1 COAL
2.1 #10 COAL
1.9 #11 COAL
0.6 COAL
0.1 COAL
0.3 COAL
0.1 COAL
0.1 COAL
0.2 COAL
0.3 COAL
1.0 COAL
COAL
BONE COAL
COAL
COAL
2.0 #12 COAL
HOLE NO.
CALCITE VEINLETS
POSSIBLE FAULT GOUGE + SLICKENSIDES
0.4 COAL
1.8 COAL
0.8 COAL
0.4 COAL
0.3 COAL
0.3 COAL
TD 863.0'

HOLE NO. _____

CCK-75(3)A-1

P.Q

75-39

Pr. - CARBON CR. 75(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. #75-39

LOG BY: P. Graham

DATE: July 3, 1975

ELEV: 3000

N: 365,300

E: 56,700

HOLE SIZE: HQ

AIR ☐ WATER ☑ 1087'

T.D. 1087 P.D.

HOLE NO. #75-39

PROJECT: CARBON CREEK

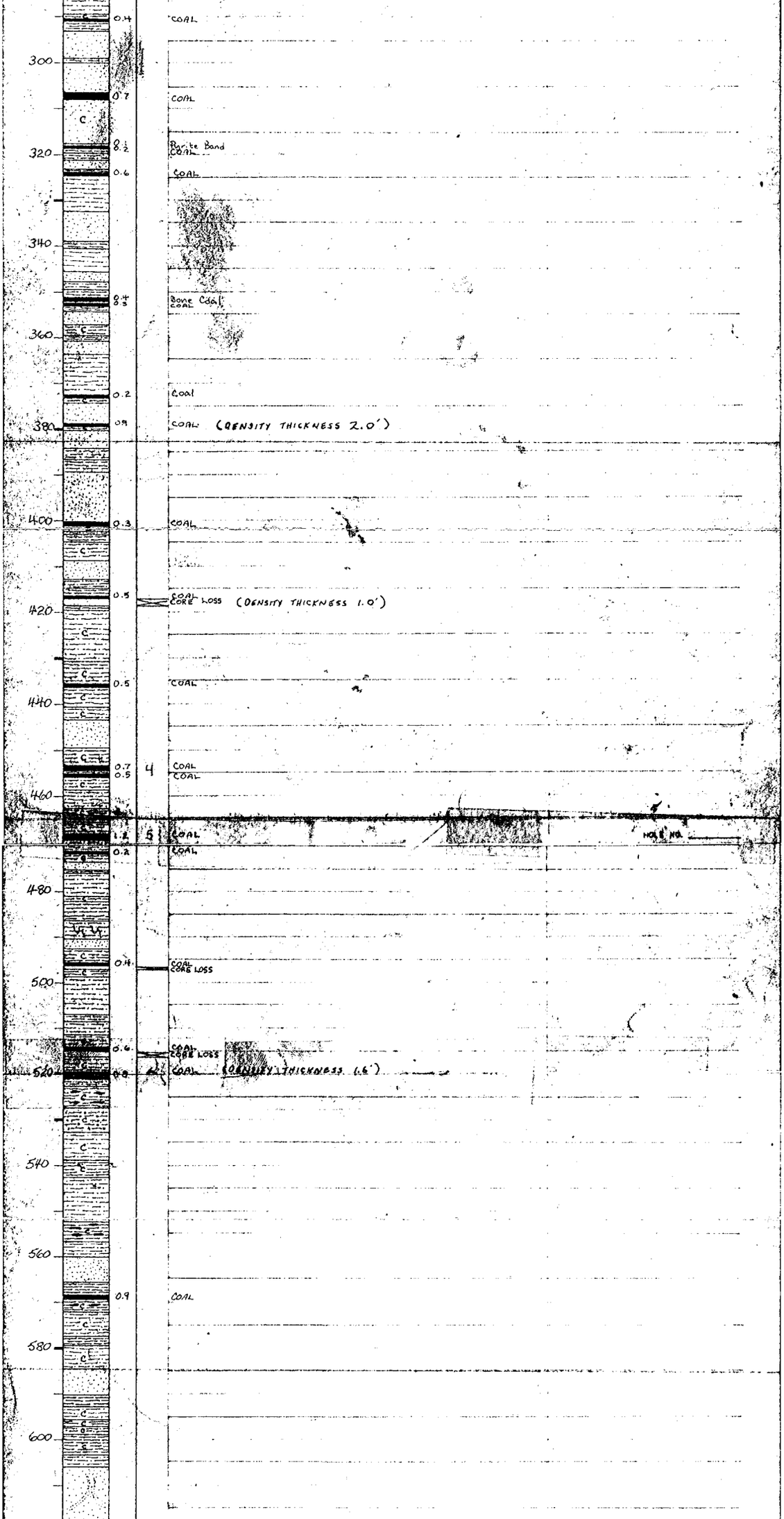
LEASE: 328

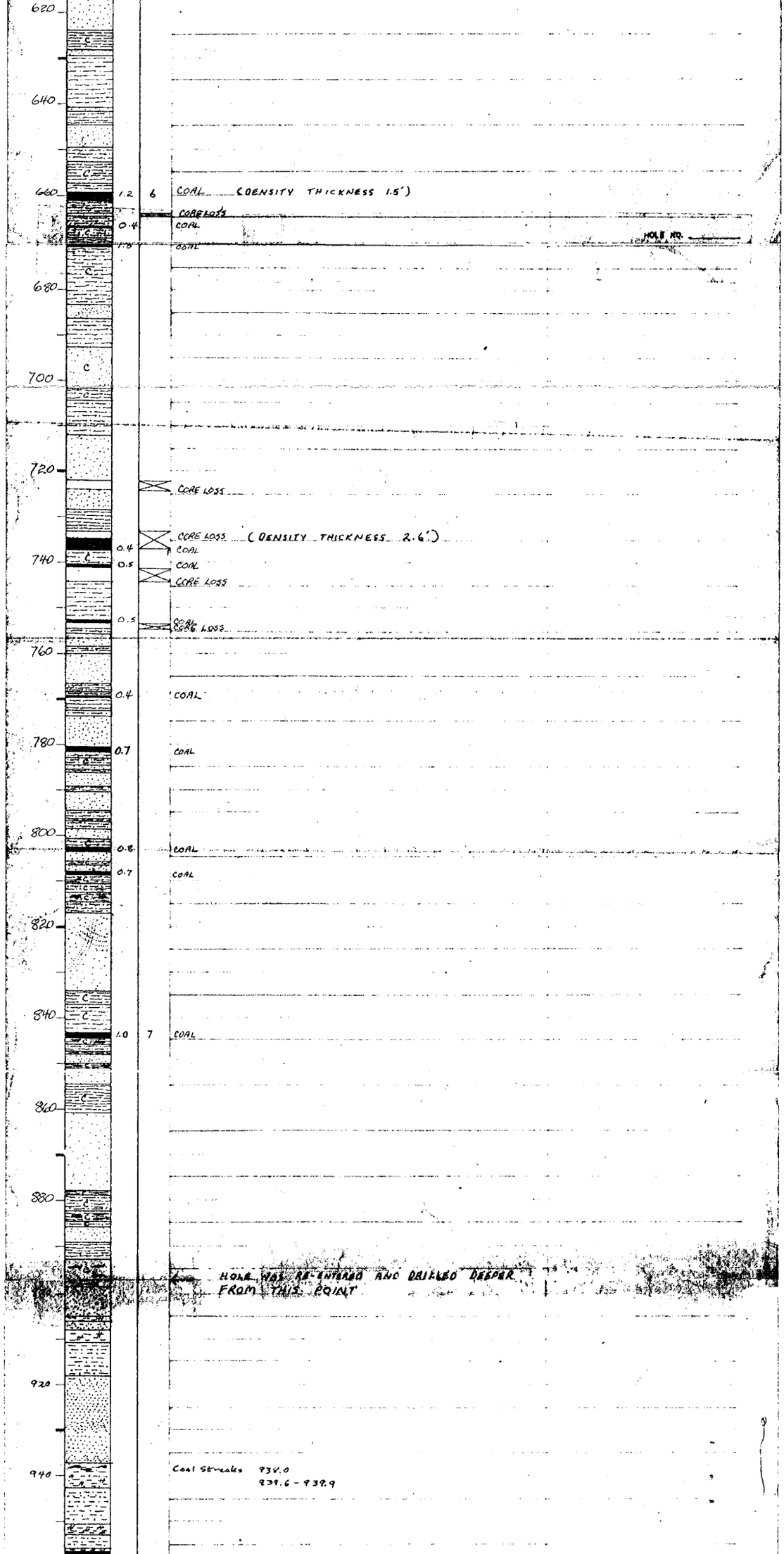
SEC. T. R.

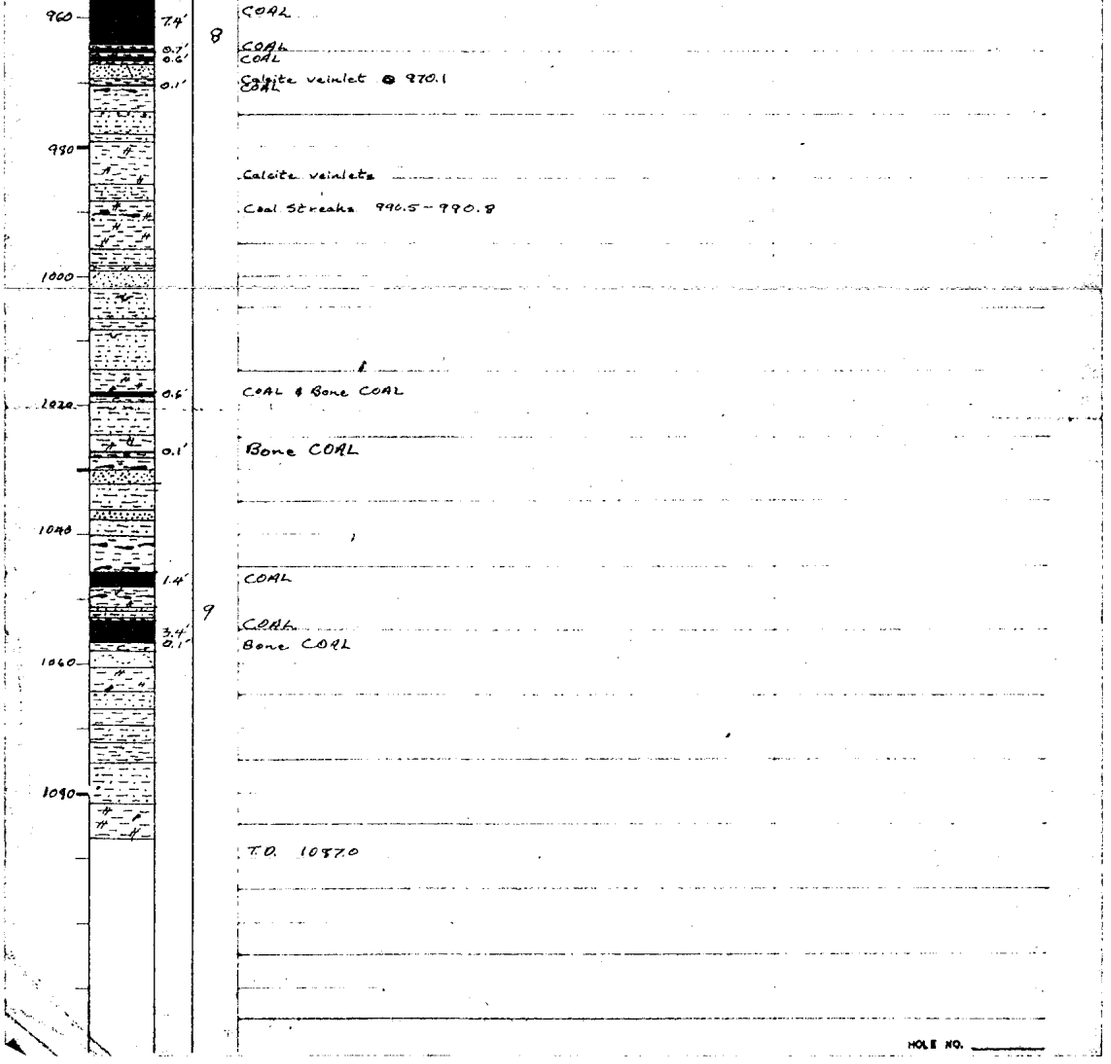
498

% REC	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	0				
	20				
					CORE LOSS
			0.5		COAL CORE LOSS (DENSITY THICKNESS 1.4')
	40				
	60		0.8		COAL (DENSITY THICKNESS 2.0')
					CORE LOSS
	80				
	100				
			0.2 0.7 0.4 1.8	2	CORE LOSS (DENSITY CORRECTION - SEE DENSITY LOG) COAL BONE COAL COAL
	120				
	140				
	160		1.1 1.9	2	COAL COAL BONE COAL 163.1 - 163.3
	180		1.4		COAL
	200				
	220		0.3		COAL CORE LOSS (DENSITY THICKNESS 1.8')
	240				
			3.0	3	COAL (DENSITY THICKNESS 2.0')
	260		0.2 0.7 0.2		COAL COAL BONE COAL
	280				

HOLE NO.


0.4
COAL
300
0.7
COAL
320
0.2
Pyrite Band
COAL
0.6
COAL
340
0.4
0.3
Bone Coal
COAL
360
0.2
Coal
380
0.9
COAL (DENSITY THICKNESS 2.0')
400
0.3
COAL
420
0.5
COAL
CORE LOSS (DENSITY THICKNESS 1.0')
440
0.5
COAL
460
0.7
0.5
4
COAL
COAL
1.2
5
COAL
HOLE NO.
0.2
COAL
480
0.4
COAL
CORE LOSS
500
0.6
COAL
CORE LOSS
520
0.8
COAL (DENSITY THICKNESS 1.6')
540
560
0.9
COAL
580
600


620
640
660
680
700
720
740
760
780
800
820
840
860
880
920
940
1.2
6
COAL (DENSITY THICKNESS 1.5')
CORE LOSS
0.4
COAL
1.0
COAL
HOLE NO.
CORE LOSS
CORE LOSS (DENSITY THICKNESS 2.6')
0.4
COAL
0.5
COAL
CORE LOSS
0.5
COAL
CORE LOSS
0.4
COAL
0.7
COAL
0.8
COAL
0.7
COAL
1.0
7
COAL
HOLE WAS RE-ENTERED AND DRILLED DEEPER FROM THIS POINT
Coal Streaks 934.0
939.6 - 939.9


960
980
1000
1020
1040
1060
1080
7.4'
0.7'
0.6'
0.1'
0.6'
0.1'
1.4'
3.4'
0.1'
8
9
COAL
COAL
COAL
Calcite veinlet @ 970.1
Calcite veinlets
Coal Streaks 990.5 - 990.8
COAL & Bone COAL
Bone COAL
COAL
COAL
Bone COAL
T.D. 1087.0
HOLE NO.

CCK-75(3)A-1

P.Q

75-40

Re: CARBON CO. 75(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. #75-40

LOG BY R. Kost

DATE June 16/75

ELEV. 4420

N 13414700

E 46050

HOLE SIZE HQ

AIR ☐ WATER ☑ TD

TD 517 PD

HOLE NO. #75-40

PROJECT Carbon Creek

LEASE 3503

SEC. T R

498

% REC	GAMMA	CORE LOSS	THICK	SAMPLE NO.	LITHOLOGY
			0.3		COAL
			3.0	1	COAL
			2.8	2	COAL
			2.5	3	COAL (DENSITY THICKNESS 2.5')
			0.7		COAL
			0.2		ARTHERY FAULT GOUGE
					COAL
			0.2		COAL
			0.3		COAL
			0.4	4	COAL (CORE 7.9'=3 cm)
			1.7	5	COAL
			0.1		
			0.1		
			0.7		COAL (Density thickness 1.2')
			0.9		COAL
			1.1		COAL
			1.2		*BONE COAL
			0.1		*COAL (DENSITY THICKNESS 1.0')
			2.5	6	COAL (DENSITY THICKNESS WRITE IS LOWER IN SEAM)
			2.2		COAL
		CORE LOSS	3.1	8	*COAL RECOVERED 3.1
			0.2		+ NOT RECOVERED 3.3' (DENSITY CORRECTION - SEE DENSITY LOG)
			0.5	9	*BONE COAL
			0.3		BONE COAL
			4.5	10	COAL
			0.3		BONE COAL
			0.9		*BONE COAL
					T.D.

HOLE NO.

CCK-75(3)A-1

P.R

75-41

Pr. CARBON CO. - 75(3)4-1

UTAH MINES LTD
DRILL & CORE LOG

HOLE NO. #75-41

LOG BY: R. Karst

DATE: June 23/75

ELEV: 4420

N: 366,050

E: 42,350

HOLE SIZE: HQ

WATER ☑

TD: 985' (Pb)

HOLE NO. 75-41

PROJECT: Carbon Creek

LEASE: 3503

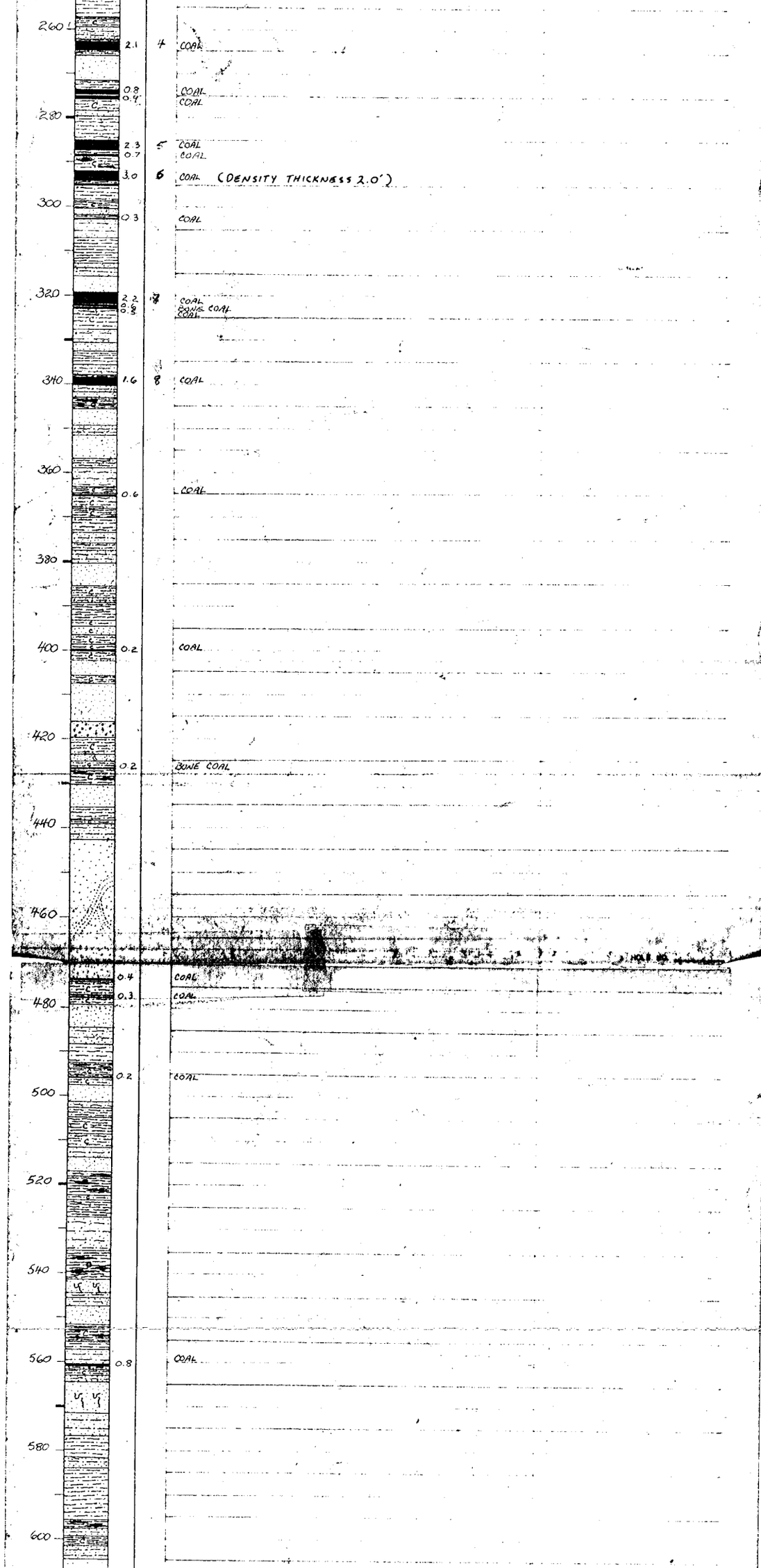
SEC: T: R:

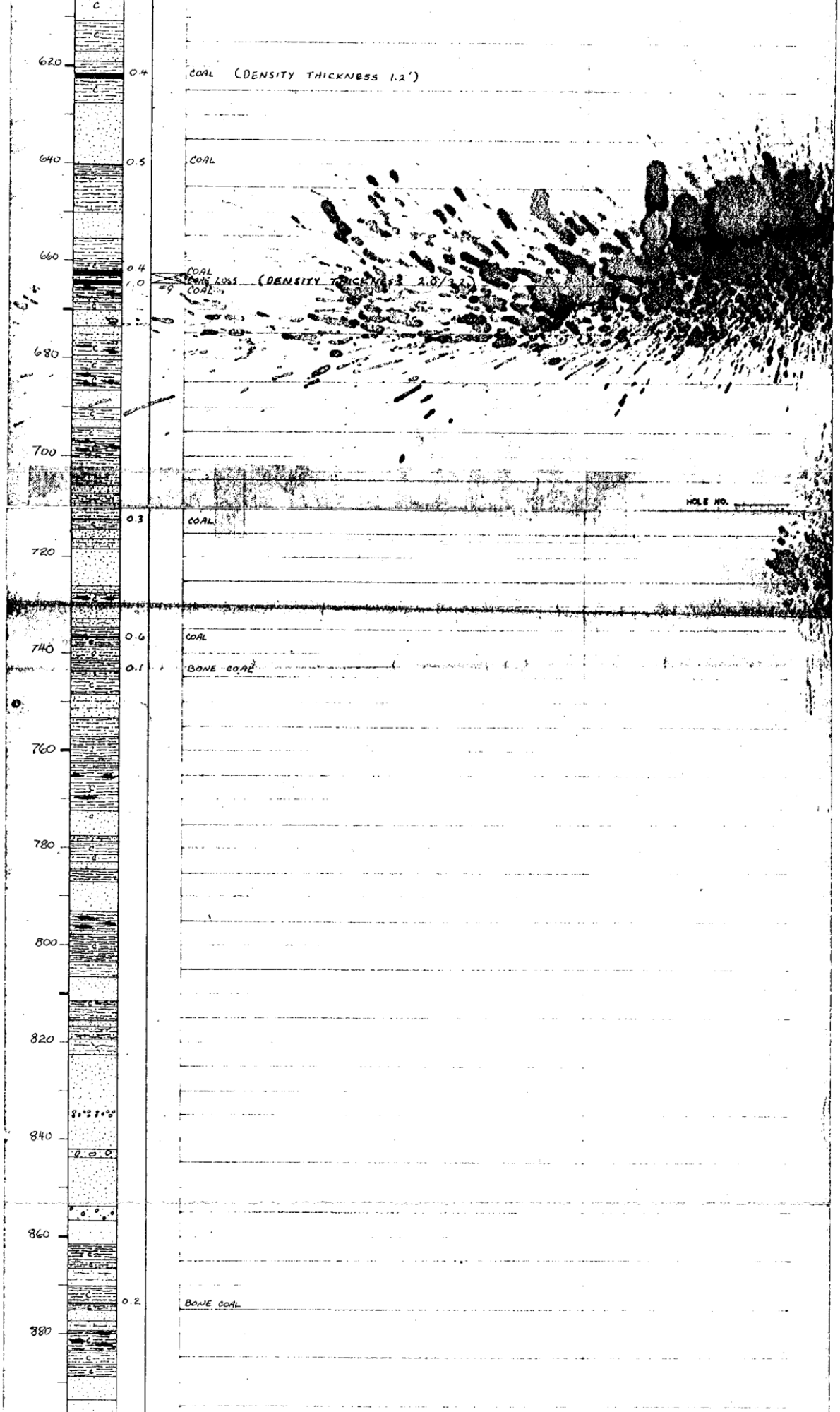
498

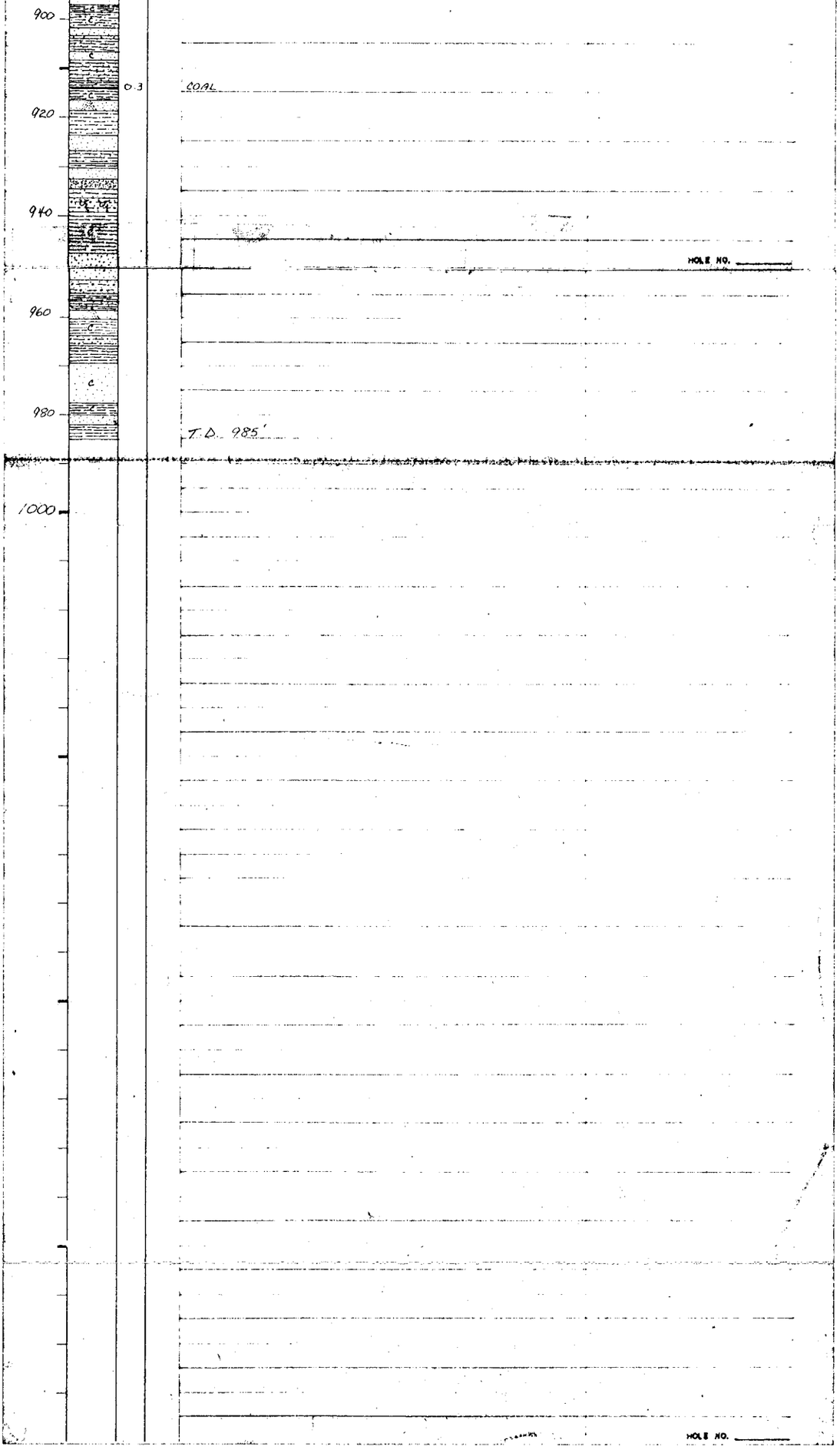
% REC	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
			0.4		BONE COAL
			1.2	1	CORE LOSS (DENSITY INDICATES COAL WITH SPLIT IN CENTER. 3.6' GROSS) COAL
			0.1		COAL
			0.8		COAL
			0.2		COAL
			0.5		COAL
			0.9		COALY MUDSTONE
			2.0	2	COAL (DENSITY THICKNESS 1.5')
			0.5		COAL
			0.3		COAL
			0.2		COAL
			0.7		COAL
			1.0	3	COAL

20 40 60 80 100 120 140 160 180 200 220 240

HOLE NO.


260
280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
580
600
2.1
4
COAL
0.8
0.4
COAL
COAL
2.3
0.7
5
COAL
COAL
3.0
6
COAL (DENSITY THICKNESS 2.0')
0.3
COAL
2.2
0.8
0.3
7
COAL
BONE COAL
COAL
1.6
8
COAL
0.6
COAL
0.2
COAL
0.2
BONE COAL
0.4
COAL
0.3
COAL
0.2
COAL
0.8
COAL


620
640
660
680
700
720
740
760
780
800
820
840
860
880
0.4
0.5
0.4
1.0
0.3
0.6
0.1
0.2
COAL (DENSITY THICKNESS 1.2')
COAL
COAL
CORE LOSS (DENSITY THICKNESS 2.8/3.2)
COAL
COAL
COAL
BONE COAL
BONE COAL
HOLE NO.


900
920
940
960
980
1000
0.3
COAL
T.D. 985'
HOLE NO.
HOLE NO.

CCK - 75 - (3) A-1

75-42

Pt. Carbon Qd. 75(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-42

LOG BY: R. Anderson

DATE: June 20, 1975

ELEV 3329

N 370,925

E 51,300

HOLE SIZE: BQ

AIR ☐ MUD/WATER ☑

T.D. 372 P.D.

HOLE NO. 75-42

PROJECT Carbon Creek

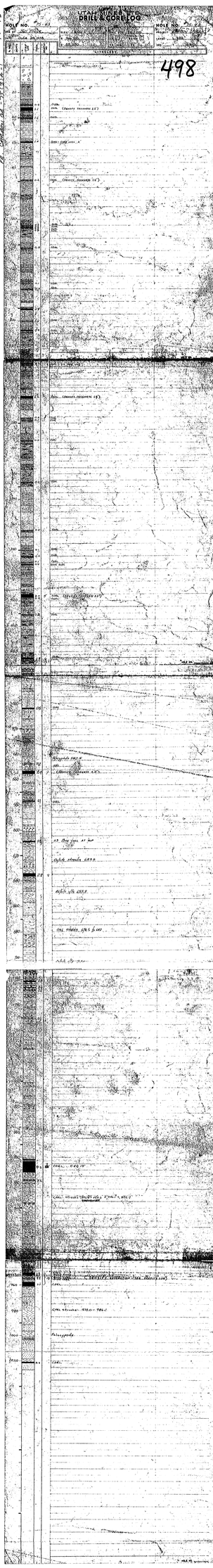
LEASE 3499

SEC ____ T ____ R ____

498

% REC.	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	20		0.3		COAL (DENSITY THICKNESS 10')
	40		0.4		COAL (DENSITY THICKNESS 10')
	60				
	80		2.4 0.3	M	COAL
	100				
	120		0.1		COAL
	140				
	160				COAL COAL BLACK COAL
	180		0.4		COAL
	200		2.0 3.9		COAL COAL (DENSITY THICKNESS 48/60)
	220		0.4		COAL
	240		0.5		COAL
	260				HOLE NO.
	280				
	300				
	320		0.8 1.3		COAL COAL CORE LOSS 6
	340		6.5 2.5 0.3		COAL COAL COAL
	360		0.4		COAL CORE LOSS - ASSUMES COAL
	380				T.D. 372.0
					HOLE NO.

CCK-75(3)A-1


DRILL & CORE LOG
498

P.Q

7544

Ck. Carbon Ck. 75(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-44

LOG BY: Andy Kay

DATE: June 27, 1975

ELEV: 4280' ±

N: 374,506

E: 43,750

HOLE SIZE: HQ

AIR ☐ WATER ☐

T.D. 917 P.D.

HOLE NO. 75-44

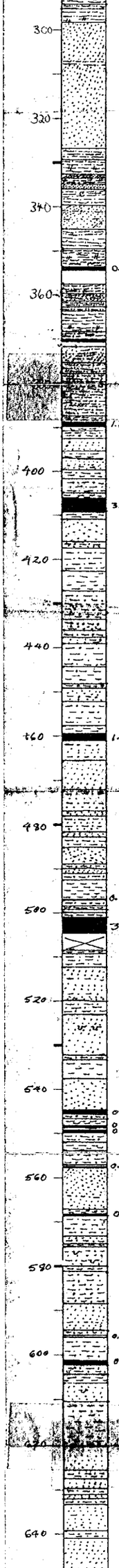
PROJECT: Carbon Creek

LEASE: C.L. 3505

SEC. T. R.

498

% REC.	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	10, 20, 30, 40, 50, 60				
			0.2		COAL
	80		0.1		COAL
	100				
	120		2.6 0.5 2.0	#1	COAL BONY COAL COAL
	140				
	160		0.5		COAL
	180		1.7 1.1		COAL COAL
	200				
	210		0.1		COAL
	220				
	240				
	260		0.5		COAL BONY
	280		2.1	#3	COAL 15% core loss (DENSITY THICKNESS 1.6')



Mud chips thru-out

Blebs common

COAL (DENSITY THICKNESS 2.1')

(DENSITY INDICATES COAL 0.5')

#4 COAL 99% Recovery

#5 COAL

Calcite veinlets

#6 COAL

Calcite veining, fault gouge??

COAL

#7 COAL (DENSITY THICKNESS 5.9')

Coal streaks @ 535

Coal streaks @ 543.3

COAL

COAL

COAL

COAL

mud chips

COAL

Coal streaks

COAL

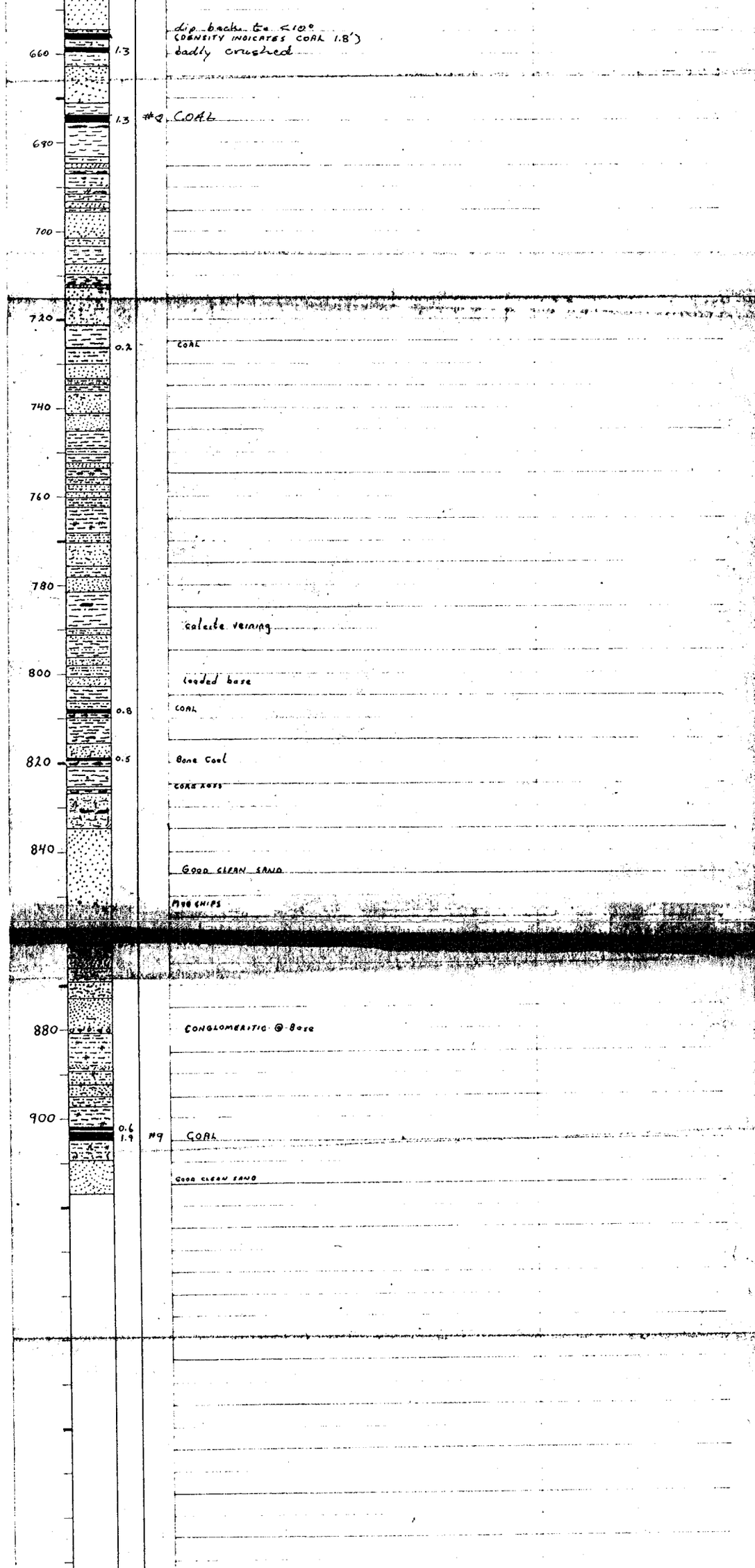
~~sand slabs~~

COAL 90% recovery (DENSITY THICKNESS 1.6')

HOLE NO.

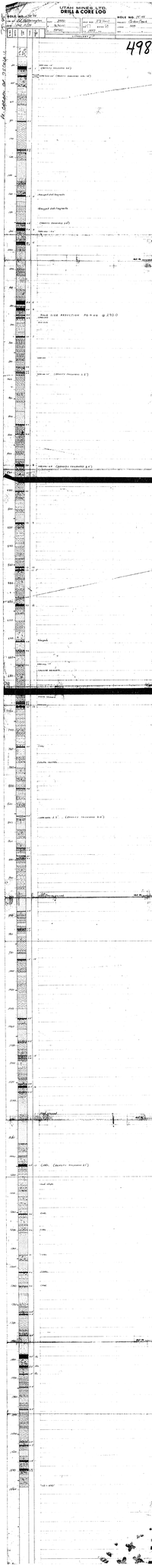
Badly fractured, infilled with calcite

dip changes from <70° to >50°


dip back to ≤10°
(DENSITY INDICATES COAL 1.8')
660
1.3
badly crushed
1.3
#9 COAL
680
700
720
0.2
COAL
740
760
780
calcite veining
800
loaded base
0.8
COAL
820
0.5
Bone Coal
COAL ROOT
840
GOOD CLEAN SAND
MUD CHIPS
880
CONGLOMERITIC @ Base
900
0.6
1.9
#9
COAL
GOOD CLEAN SAND

HOLE NO. _____

CCK-75(3)A-1


UTAH MINES LTD.
DRILL & CORE LOG
498

P.Q

75-46

Pe. CARBON CR. 75(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-46

LOG BY: R. KARST

DATE: July 8, 1975

ELEV 2940'±

N 350,550

E 69,915

HOLE SIZE HQ

AIR ☐ WATER ☐

T.D 806 PDH

HOLE NO. 75-46

PROJECT Carbon Creek

LEASE L. 324

SEC ___ T ___ R ___

498

% REC.	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
					TILL
	20				
			3.2'	#1	Core Loss .4' (DENSITY LOG INDICATES COAL) 4.0'
	40				
					Core Loss 3.2' (DENSITY LOG INDICATES NOT COAL)
	60				
			1.2'	#2	
	80				
	100				
			3.0	#3	0.1 SPLIT Core Loss .4' (DENSITY LOG INDICATES COAL) 3.5'
	120				
	140				47
			4.4	#4	MEGA DESCRIPTION (DENSITY THICKNESS 5.0') Small splits @ base
	160				
	180		3.4	#5	46 Core Loss .4' (DENSITY LOG INDICATES COAL) 4.2' calcite-veining
	200				
	220				
	260				

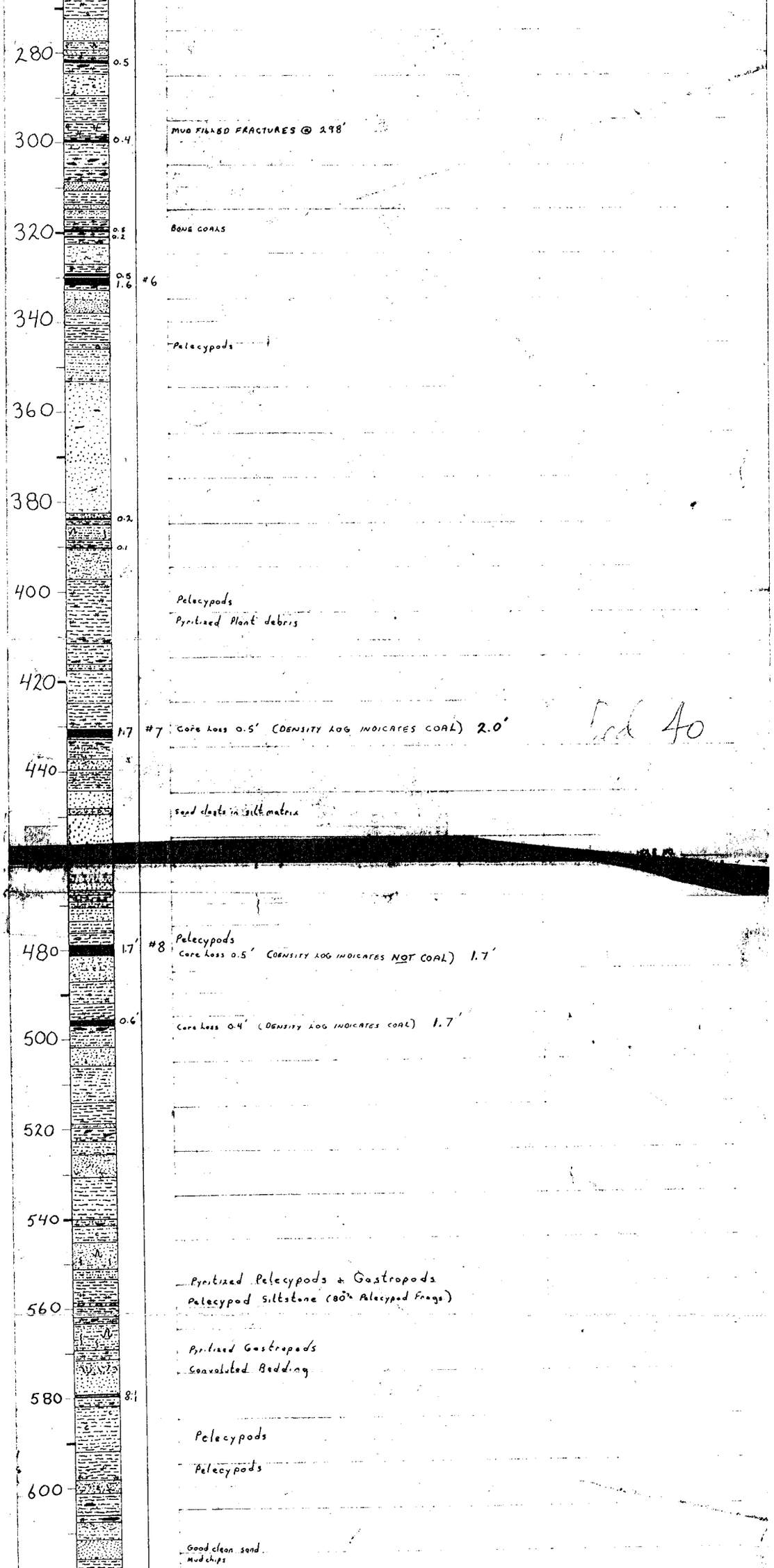
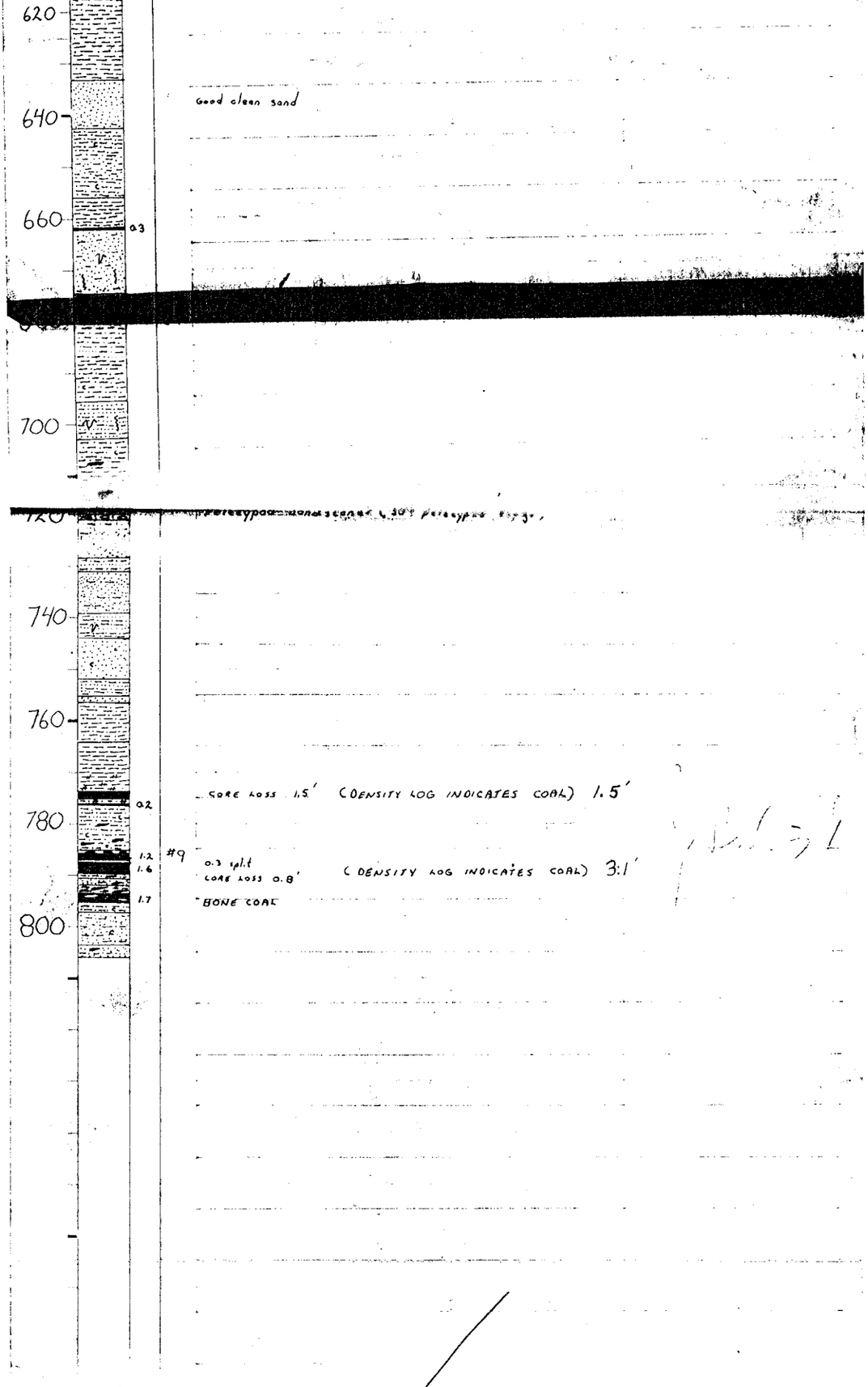

280
0.5
300
0.4
MUD FILLED FRACTURES @ 298'
320
0.5
0.2
BONE COALS
0.5
1.6
#6
340
Pelecypods
360
380
0.2
0.1
400
Pelecypods
Pyritized Plant debris
420
1.7
#7
Core loss 0.5' (DENSITY LOG INDICATES COAL) 2.0'
440
Sand clasts in silt matrix
480
1.7'
#8
Pelecypods
Core loss 0.5' (DENSITY LOG INDICATES NOT COAL) 1.7'
0.6'
Core loss 0.4' (DENSITY LOG INDICATES COAL) 1.7'
500
520
540
Pyritized Pelecypods + Gastropods
Pelecypod Siltstone (80% Pelecypod Frags)
560
Pyritized Gastropods
Convoluted Bedding
580
8.1
Pelecypods
Pelecypods
600
Good clean sand
Mud chips

Fig 40


620
640
660
700
740
760
780
800
Good clean sand
0.3
0.2
1.2
1.6
1.7
#9
CORE LOSS 1.5' (DENSITY LOG INDICATES COAL) 1.5'
0.3 split
CORE LOSS 0.8'
(DENSITY LOG INDICATES COAL) 3.1'
BONE COAL

CCK-75(3)A-1

PR

75-48

Pr. Canyon Cr. 75(2)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-48 | HOLE NO. 75-48

LOG BY R. KARST | ELEV 8130'± | HOLE SIZE PQ | PROJECT Carbon Creek

DATE July 17 '75 | N 355,350 | AIR ☐ WATER ☐ | LEASE U. 326

E 62,050 | FD 437 FD | SEC T R

% REC	DEPTH	LOG	THICK	SAMPLE

LITHOLOGY

498

Coal observed where tri-coning and indicated by density log. (3.0'±)

Badly weathered bedrock - cased to 15'

20 — 0.8 — dirty - cannel type appearance

0.1 — crushed

40

60

80

100 — 1.4 — #2

Coally (Cannel type appearance) Core loss 0.5' (Density indicates seam 10')

120

140 — Mudstone

Clean with Mudchips

160

2.0 — #2

180

200

220 — 1.5 — #3

240

260 — 5.3 — #4 (Density thickness 4.2')

280 — Coarse Wisps.

300 — 2.6 — #5 (Density thickness 2.1')

320 — Pelecypod zone

0.9

340 — Pelecypods

0.3 / 0.2

Silt stone

Siltstone Sand Mud chips

360

380 — Pyritized Pelecypods

0.7

Clean

400 — Abundant worm burrows, also pebbles < ¼" in size

Good Clean Sand

Coal wisps

420 — 2.2 — #6 (Density thickness 1.8')

460 — clean

480 — clean with coal wisps

500

520 — Silt stone

Gastropods

540

560

580

600

620 — 1.8 / 2.8 / 2.0 — #7 Density and Thickness

HOLE NO.

CCK - 75-(3) A-1

f.B

75-49

Re-Carbon Co. 75(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-49

LOG BY R. KARST

DATE July 30/75

ELEV 3050

N 358,650

E 52,775

HOLE SIZE HQ (2¾")

AIR ☐ WATER ☑

T.D 498' P.D.

HOLE NO. 75-49

PROJECT Carbon Creek

LEASE 3488

SEC ____ T ____ R ____

498

% REC.	DEPTH	CORE LOG	THICK	SAMPLE NO.	LITHOLOGY
	0				
	20				Till
	40				
	60				Disturbed Bedrock
	80				
	100				
	120		0.6		CORE LOSS - 12' (GAMMA LOG SUGGESTS COAL 12') COAL
	140		0.7		Calcite veinlets Pyrite along fractures COAL
	160		0.4		COAL
	180		0.3		COAL
	200		1.6	#1	Calcite veinlets COAL
	220		0.3		COAL
	240		0.1		BONE COAL
	260		0.7		Calcite veinlets BONE COAL
	280		0.5		COAL
	300		0.1		0.1' Pyrite Band BONE COAL
	320		0.7		COAL
	340		1.8	#2	COAL
	360		0.5		Pelecypods COAL
	380		1.5	#3	COAL
	400		1.0	#4	COAL
	420		0.9		COAL
	440		0.3		COAL
	460		0.8		BONE COAL
	480		0.7	45	
	500				CORE NOT RECOVERED

CORE NO. ____

CCK-75(3)A-1

P.R.

75-50

Re: Carbon Co. - 75(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-50

LOG BY: D. Malchowski

DATE: July 20/75

ELEV: 7610'

N 353,250

E 59,075

HOLE SIZE: HQ (3 7/8")

AIR ☐ WATER ☑

T.D. 595' P.D.

HOLE NO. 75-50

PROJECT Carbon Creek

LEASE L-326

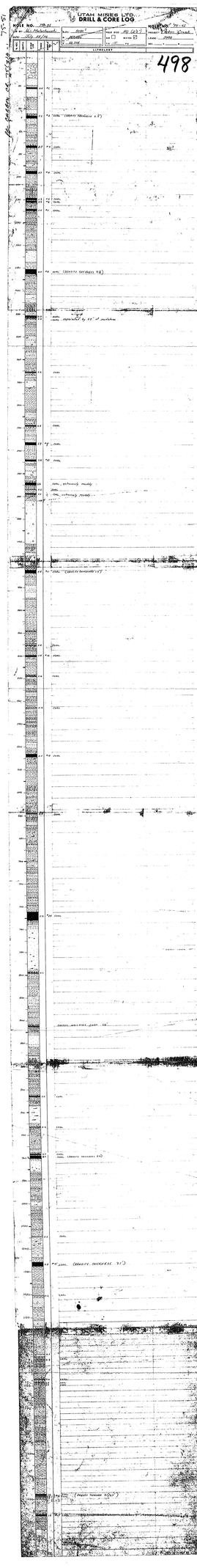
SEC. ___ T. ___ R. ___

498

% REC.	DEPTH	CORE THICK	SAMPLE #	LITHOLOGY
	0			
	20			
	40			
	60			
	80			
	100	5.0	#1	COAL (DENSITY THICKNESS 4.6')
	120	8.0	#2	COAL
	140	0.7		COAL
	160	0.7		COAL
	180	1.1		COAL
	200	0.3		COAL
	220	0.4		COAL
	240	0.8	#3	COAL
	260	0.2	#4	COAL
	280	0.5	#5	COAL
	300	0.3		COAL
	320	1.2	#6	COAL
	340	0.5	#7	COAL, very shaly
	360	0.4	#8	COAL
	380	0.6	#9	COAL
	400			spilled shale
	420			
	440			
	460	1.0	#10	COAL
	480	0.4		COAL
	500	0.2	#11	COAL

HOLE NO. ___

CLK-75(3)A-1



CCR-75(2)A-1

P.A

75-52

Mt. Carbon Co. 75-(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-52
LOG BY: W. Malachowski
DATE: July 25/75

ELEV. 3290'
N. 552,200
E. 62,700

HOLE SIZE: PQ (3¾")
AIR ☐ WATER ☑
F.O. 427' P.D.

HOLE NO. 75-52
PROJECT: Carbon Creek
LEASE: 325
SEC. T. R.

498

% REC.	DEPTH	CORE SIZE	TYPICAL	SAMPLE NO.	LITHOLOGY
	0				
	20				
	23			#1	COAL (DENSITY THICKNESS 2.7')
	40				
	58				COAL
	60				
	80				
	100				
	120				
	140				
	160				
	179				
	180			#2	COAL
					COAL
				#3	COAL
	200				COAL
	220				
	240				
	259			#4	COAL, BEDS 8/1 = 5/A
	260				
	280				
	300				
	316			#5	COAL
	320				
	340			#6	COAL, with pyrite
				#7	COAL
					COAL
					COAL
	360				
	380				COAL
				#8	COAL (DENSITY THICKNESS 7.0')
	400				
	418			#9	COAL (DENSITY THICKNESS 4.5')
	420				
					COAL

HOLE NO. _____

CC.K-75(3)A-1

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY
AREA
WELL 54
COUNTY STATE

COORDINATES
M.
S
ELEVATION
D.F.
K.B.
G.L.

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Source		
First Reading			Density		
Last Reading			Viscosity		
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ Bht	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Cor. Temp.		
Casing Size			B.H. Temp.		
Bit Size					
Bit Size			Logged by		
			Witnessed by		

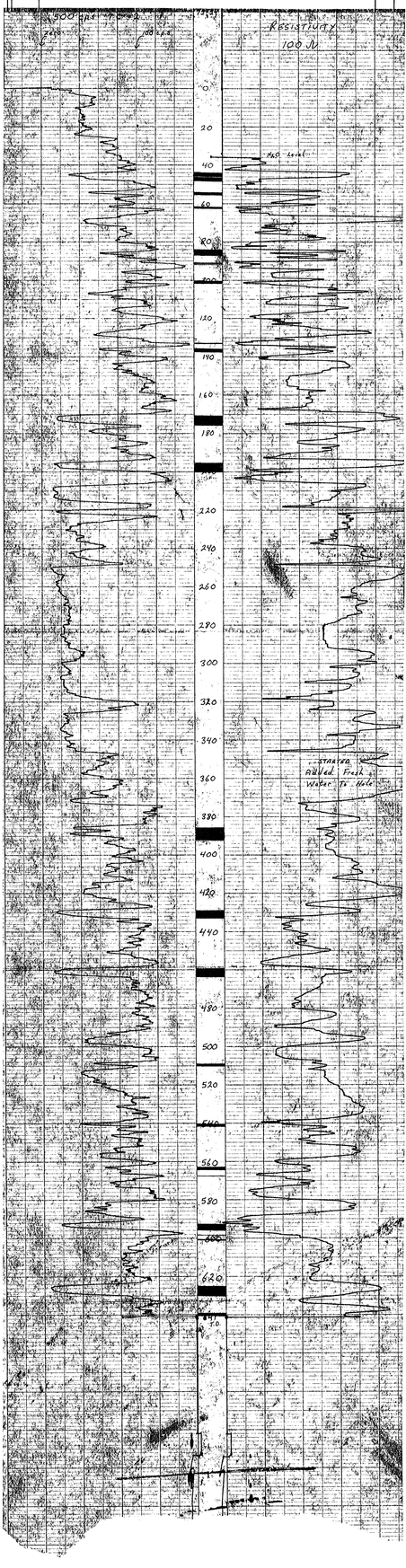
REMARKS

* Reg. U.S. Pat. Off.

COMPANY WELL LOCATION

TS-54

401-104



P8

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY

AREA CARBON CK 66

WELL 75-55

COUNTY STATE

COORDINATES
N
S
ELEVATION
D.F.
K.B.
G.L.

LOCATION WELL COMPANY

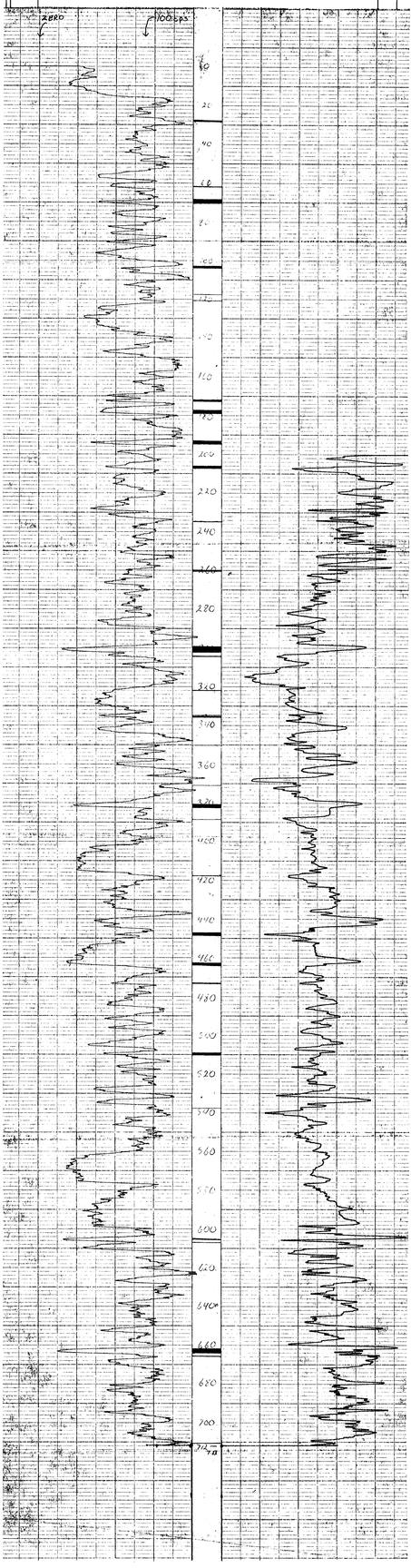
	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Mixture		
Density		
Viscosity	@ F	@ F
Resistivity	@ F	@ F
Res. @ BHT	@ F	@ F
pH		
Circ. Temp		
Bht Temp		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

GAMMA RESIST



P.Q

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-55
LOCATION: 328,250N x 66,550E

Pr - Carbon Cr. 75(3)A-2. 75-55

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-55
COUNTY STATE B.C.

COORDINATES: 328,250N
N x 66,550E
S
ELEVATION:
D.F.
K.B.
G.L. 3605'±

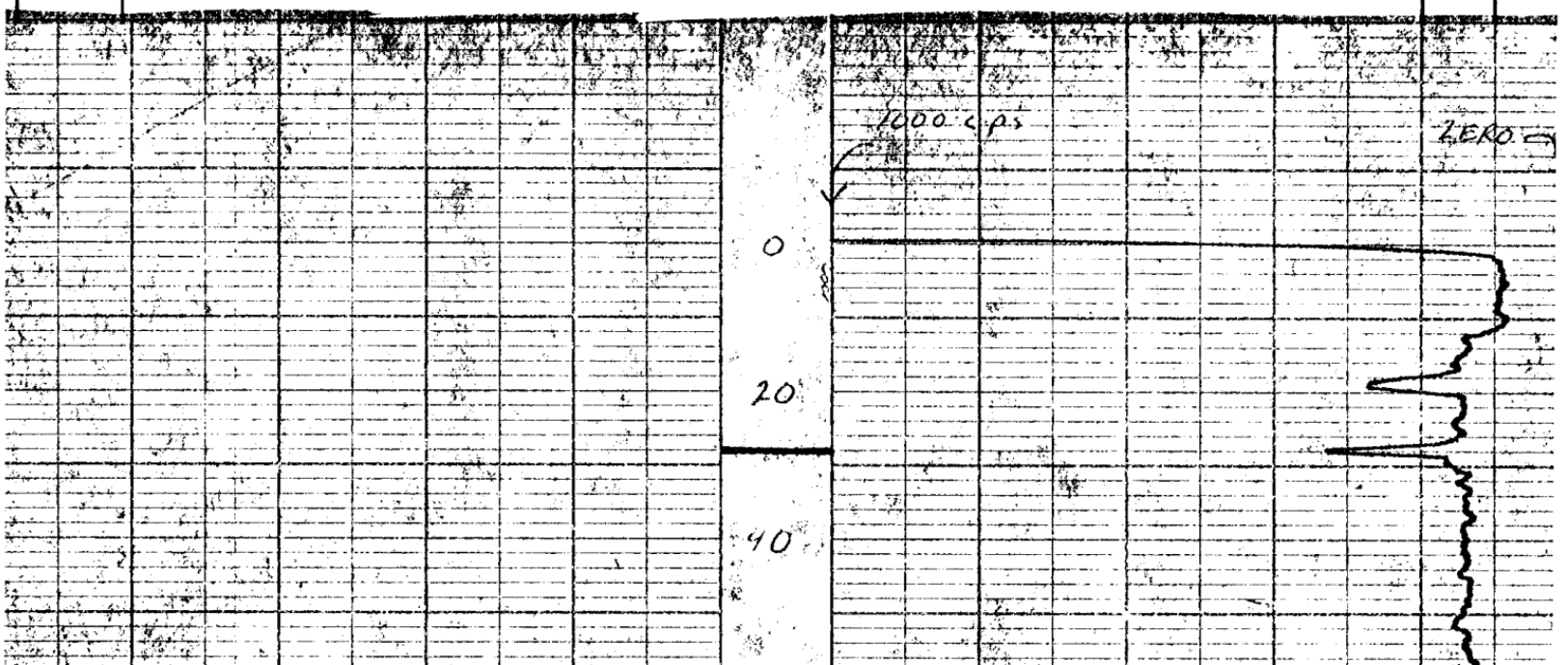
	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	August 1, 1975		Nature		
First Reading	712'		Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged	712'		Resistivity	@ °F	@ °F
Bottom (Driller)	716'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:					
Bit Size:					
			Logged by		
			Witnessed by		

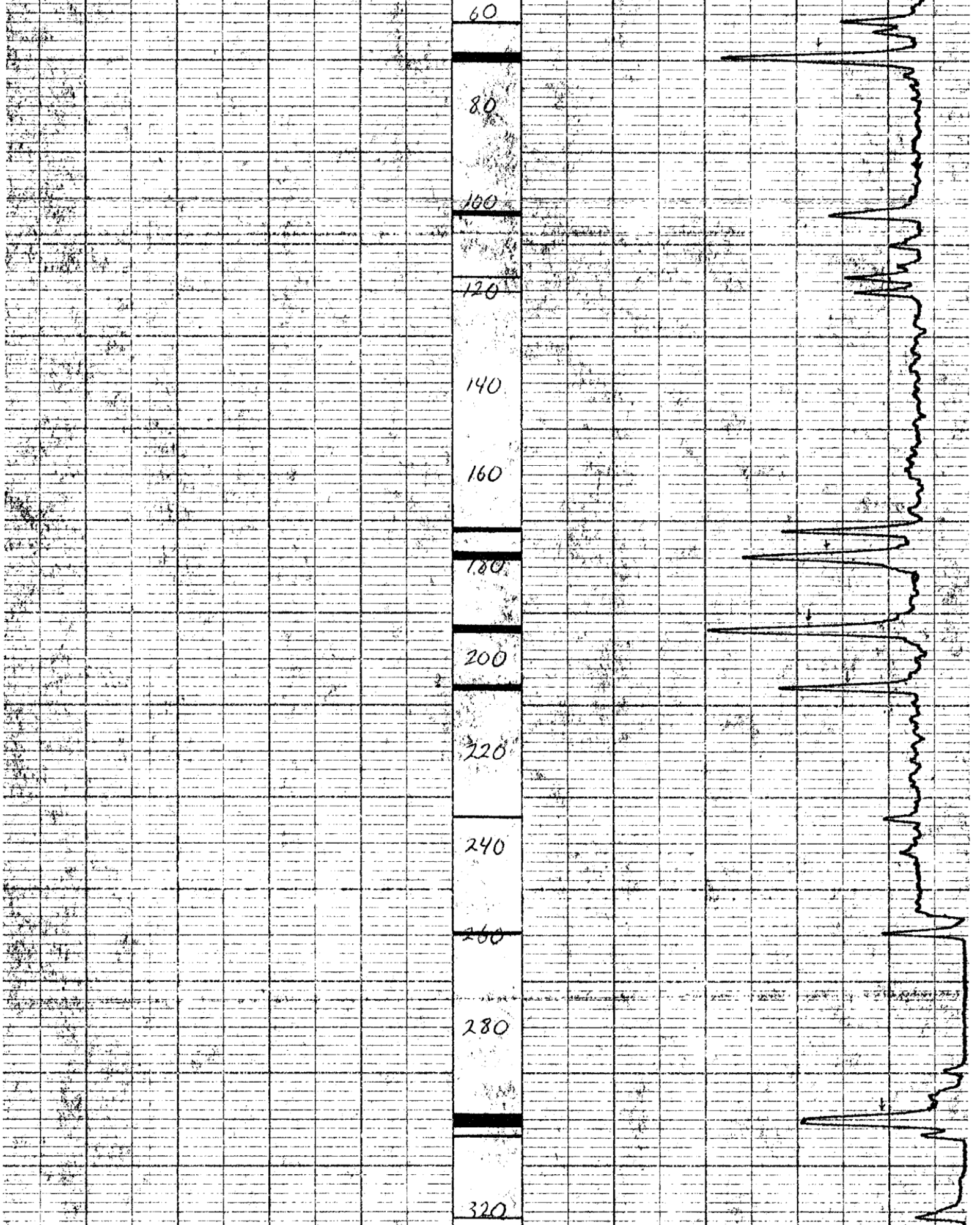
REMARKS

* Reg. U.S. Pat. Off.

DENSITY

FO-139




60
80
100
120
140
160
180
200
220
240
260
280
320

340

360

400

420

440

460

480

500

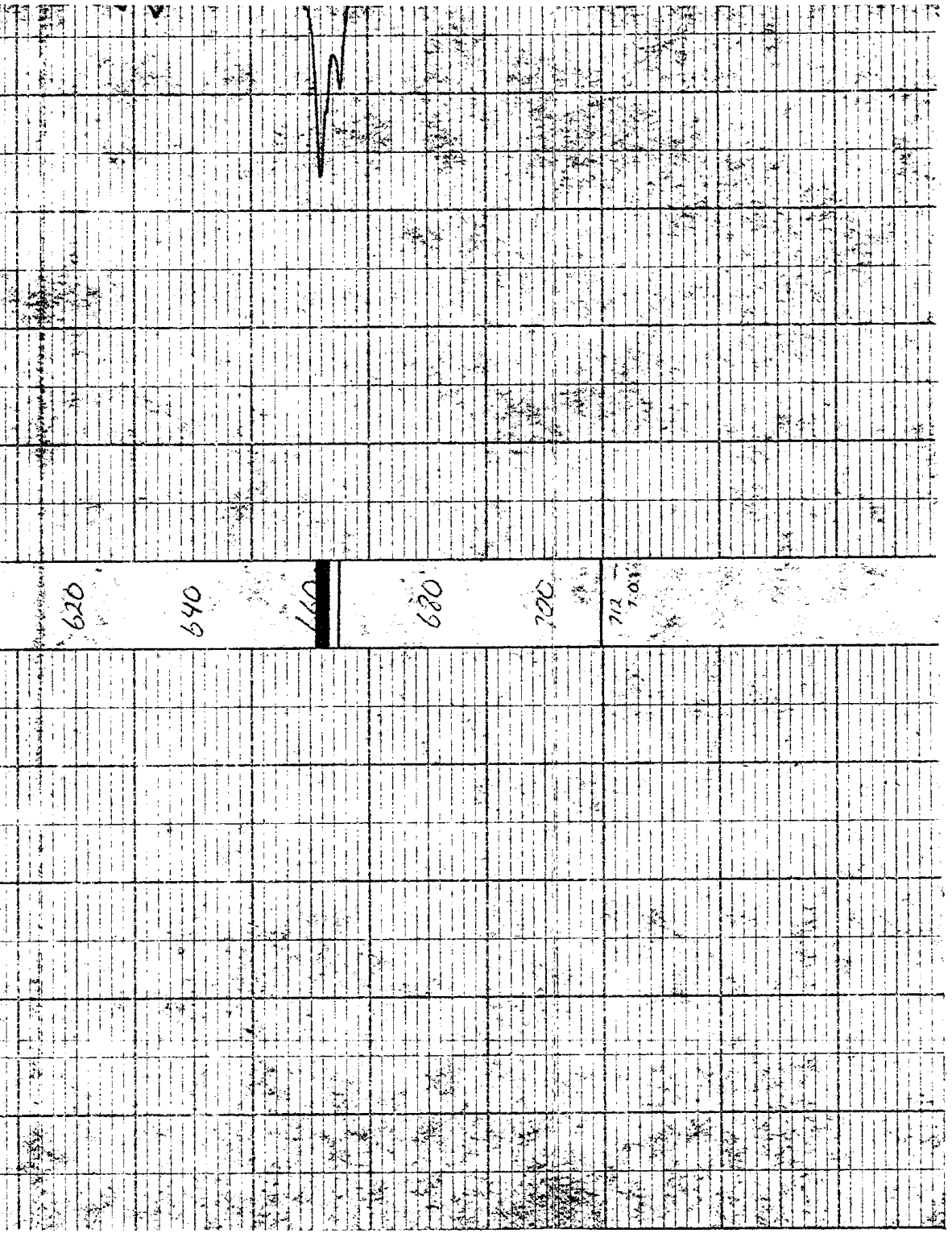
520

540

560

580

600


620
640
660
680
700
720
7.03

PR

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-56
COUNTY STATE B.C.

COORDINATES: 347,590N
NE. 60,775E
S
ELEVATION:
D.F.
K.B.
G.L. 3875'±

COMPANY Utah Mines Ltd.
WELL 75-56
LOCATION 347,590N X 60,775E

	Run No. 1	Run No. 2
Date	August 5, 1975	
First Reading	295'	
Last Reading	0	
Footage Logged	295'	
Bottom (Driller)	297'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size:	NX	
Bit Size:		

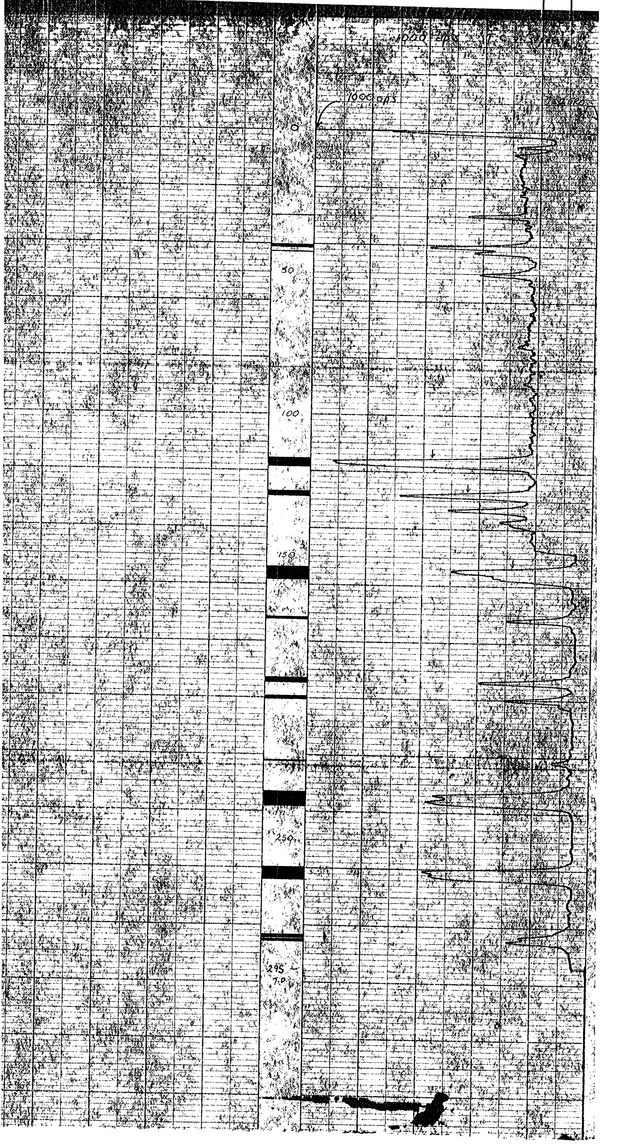
MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by	[illegible]	
Witnessed by	[illegible]	

REMARKS

* Reg. U.S. Pat. Off.

FO 129

N. Cheakamus Dr. - 75-56 - 75-56



UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY
AREA CARBON CK
WELL 75-56 56
COUNTY STATE

COORDINATES: N S
ELEVATION: D.F. K.B. G.L.

LOCATION WELL COMPANY

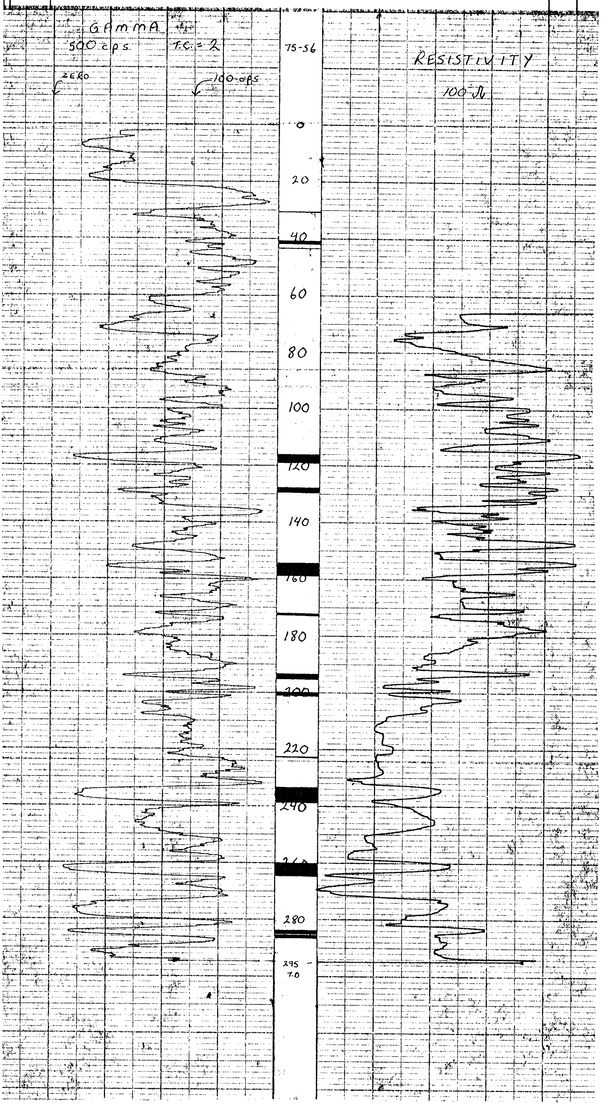
	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp		
Casing Size			B.H. Temp		
Bit Size					
Bit Size			Logged by		
			Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

GAMMA RESIST

Le Carbon Ck - 75-56 A-Z 7556



8D.

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY
WELL
LOCATION

COMPANY
AREA 57 CARBON CK
WELL 75-57
COUNTY STATE

COORDINATES:
N
S
ELEVATION:
D.F.
K.B.
G.L.

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ F	@ °F
Footage Logged			Resistivity	@ F	@ °F
Bottom (Driller)			Res. @ BHT	@ F	@ F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size					
Bit Size					
			Logged by		
			Witnessed by		

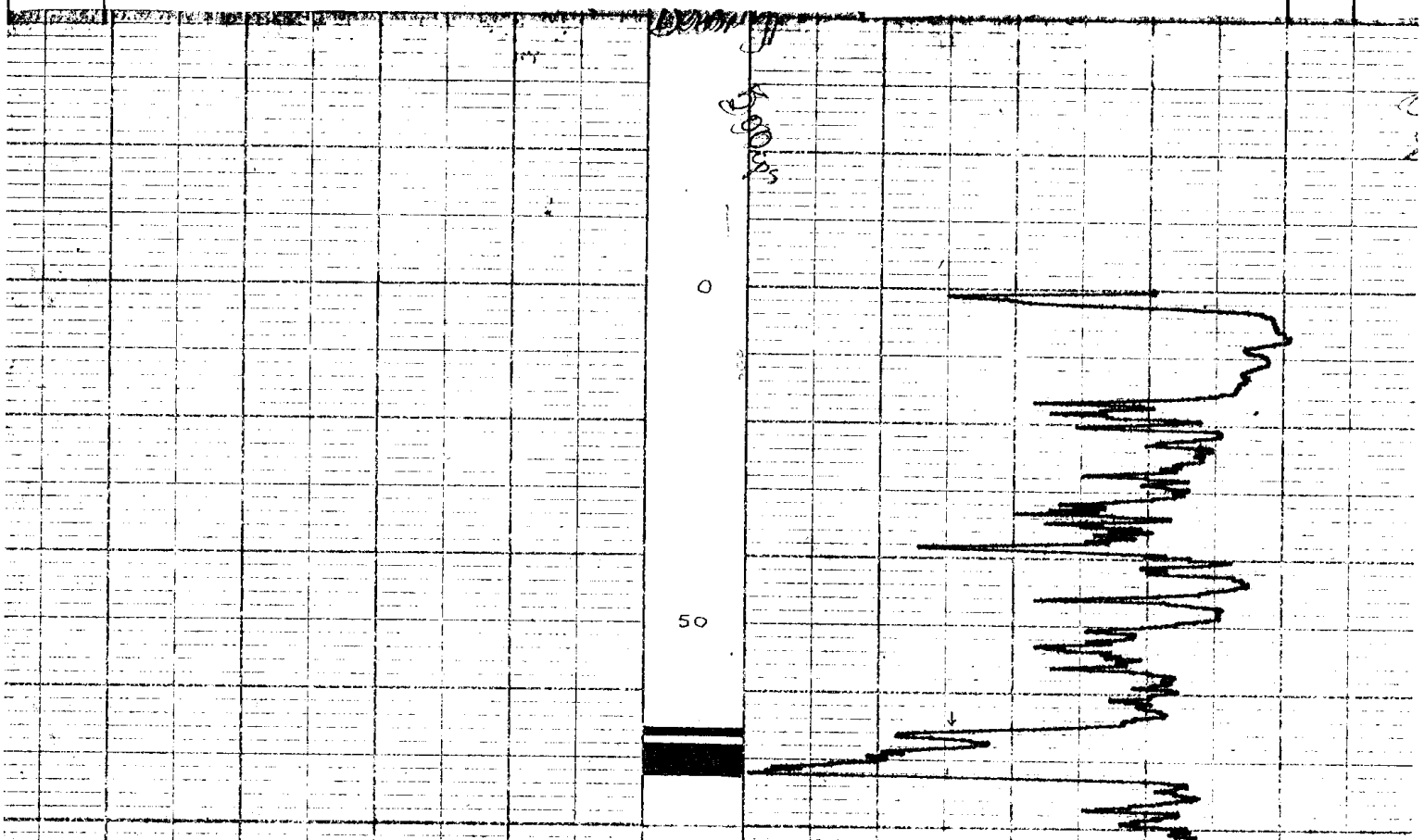
REMARKS

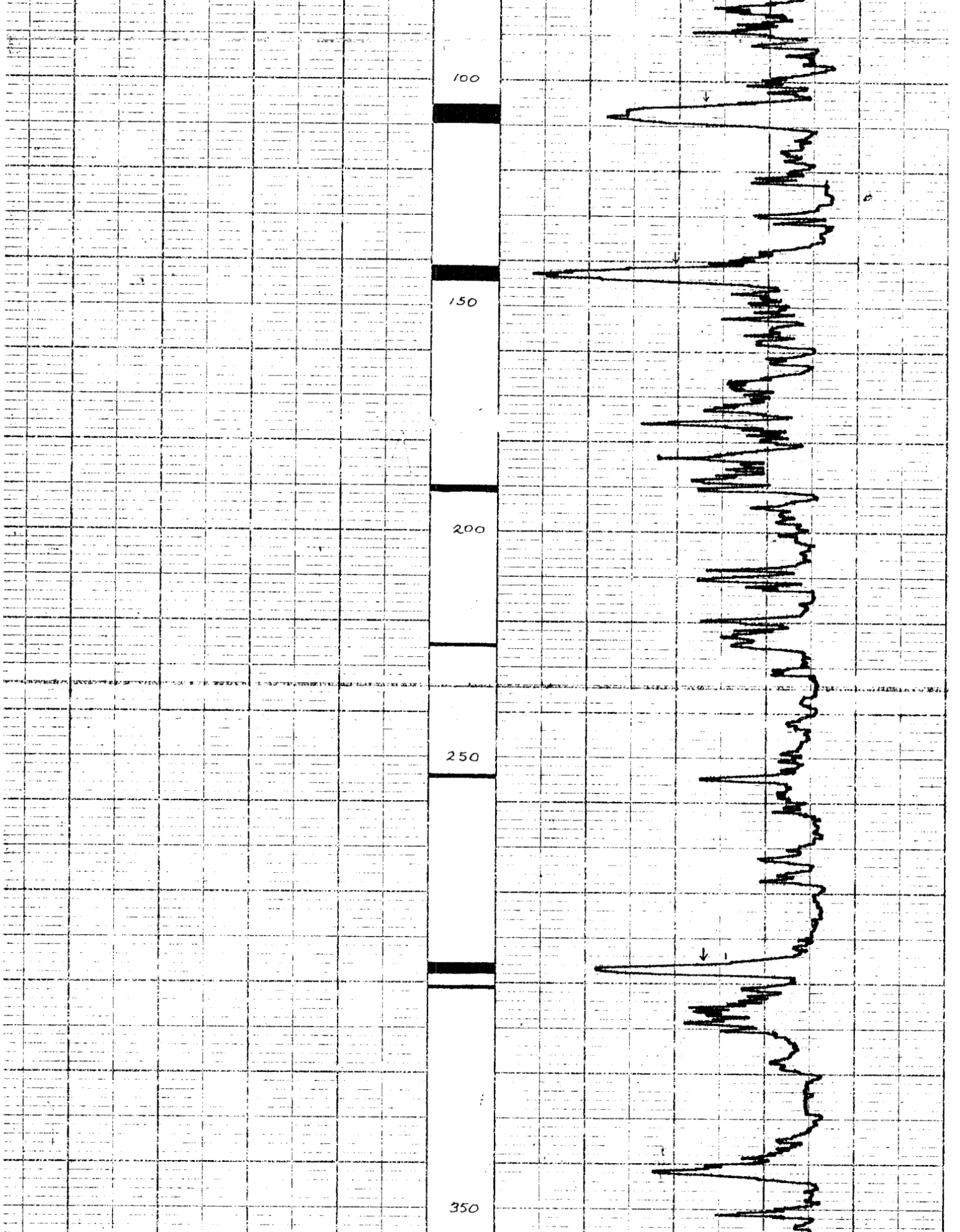
* Reg. U.S. Pat. Off.

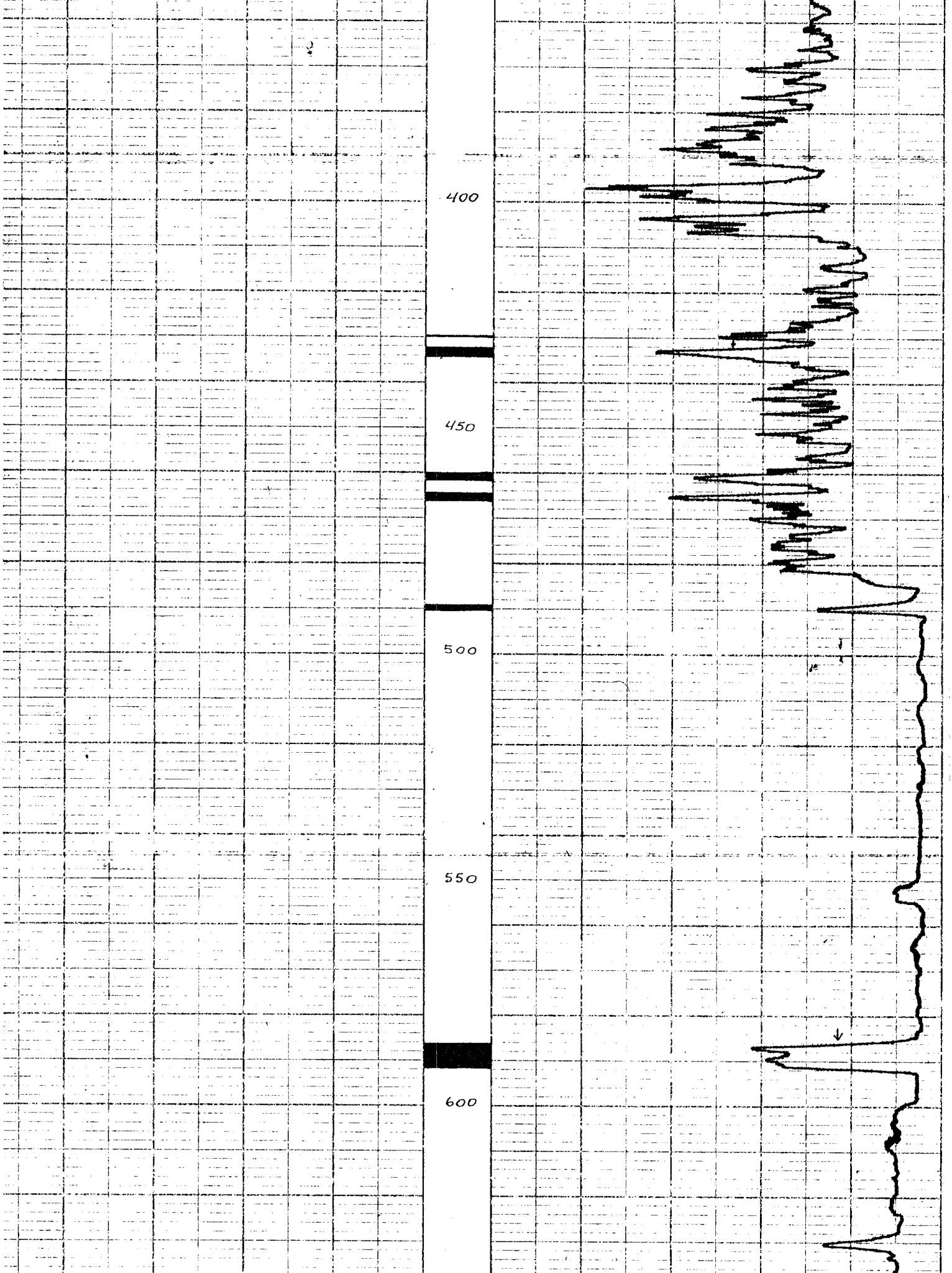
DENSITY

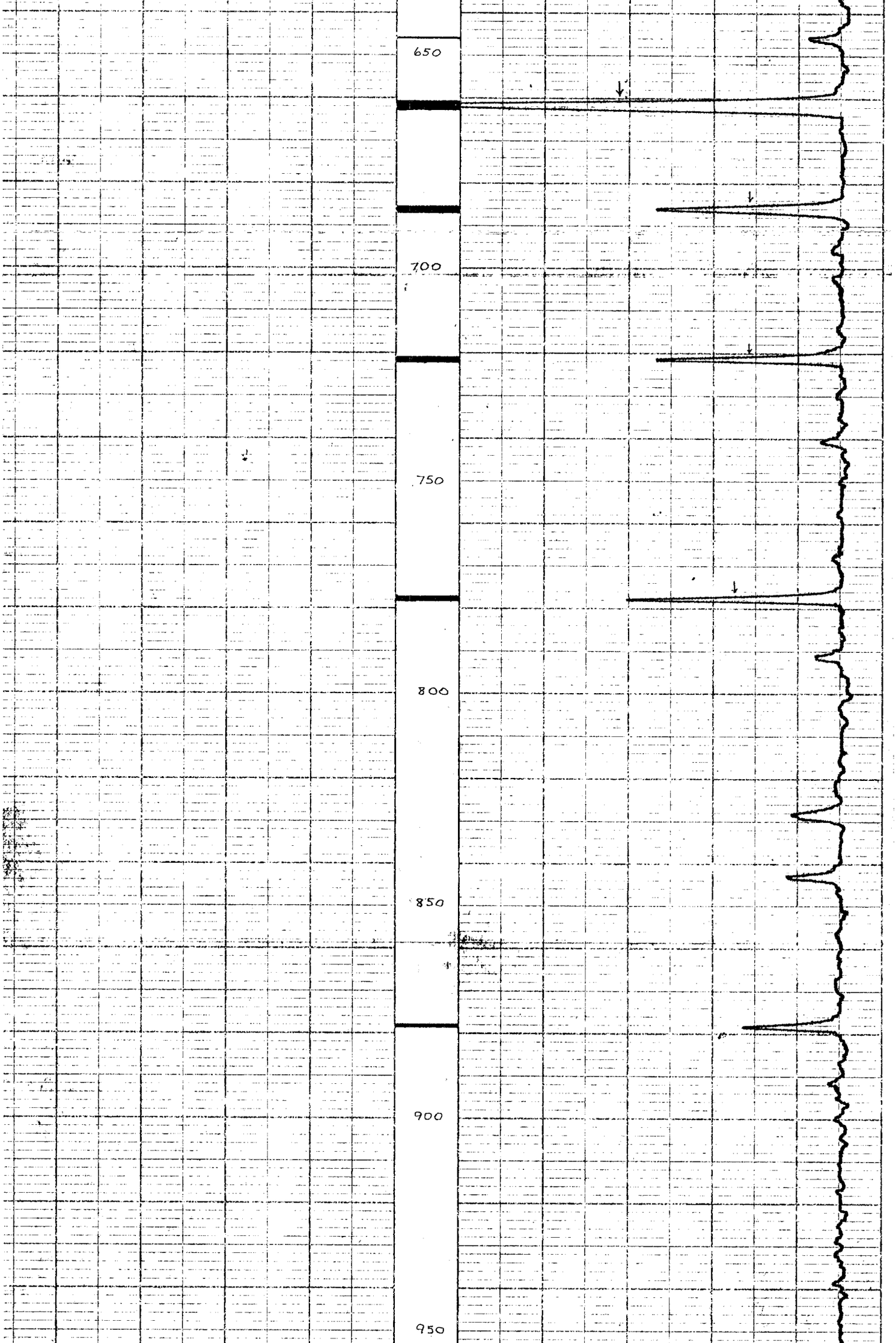
FO 139

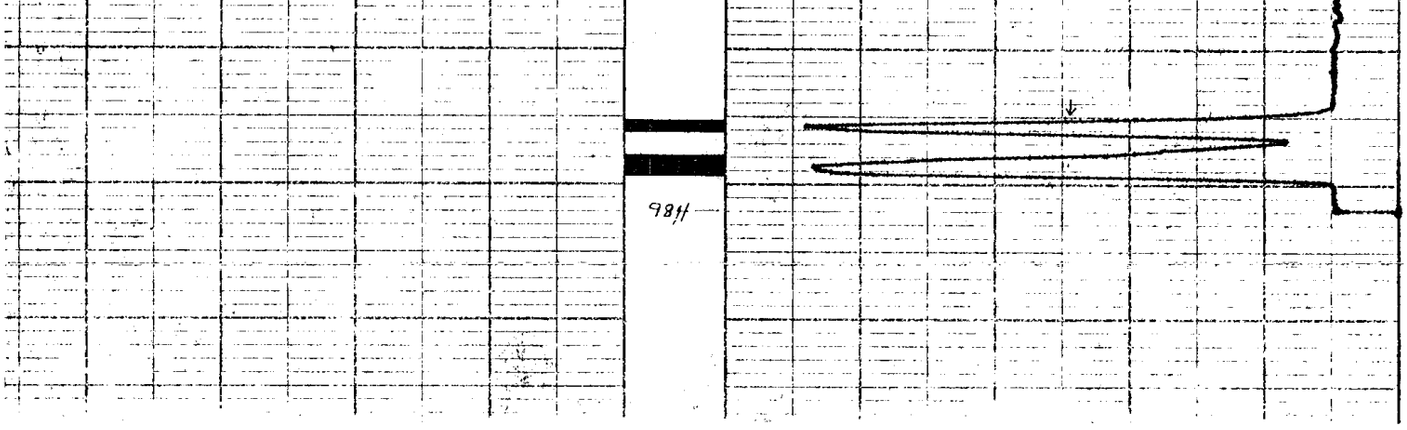
Co. Carbon Co. 75(3)A-2 75-57




100
150
200
250
350


400
450
500
550
600


650
700
750
800
850
900
950


9811

PQ

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco WELL LOG

COMPANY: UTAH MINES LTD.
AREA: Carlson Claim
WELL: Drill 57
COUNTY: STATE:

COORDINATES: N, E
ELEVATION: G.L. K.B. D.F.

RECORD / TIME / CEMENT

	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Feet/Inch Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Bit Type		
Bit No.		
Bit Size		

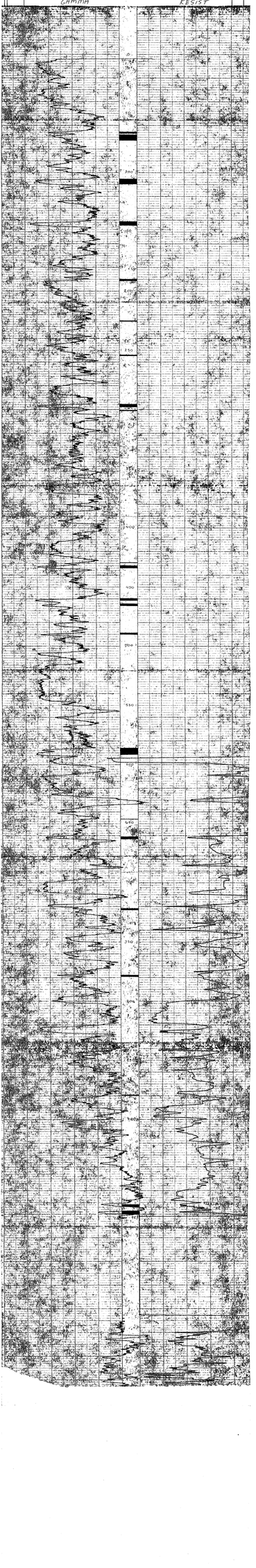
MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity		
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Cak. Temp.		
B.H. Temp.		
Logged by		
Witnessed by		

REMARKS:

* Reg. U.S. Pat. Off.

Widco Well Log 57

GAMMA RESIST



P.Q.

UTAH MINES LTD. 412-510 WEST HASTINGS

498

Pre-Carbon Cr 75 (3) A-2

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-58
LOCATION 333,700N x 84,100E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-58 58
COUNTY
STATE B.C.

COORDINATES: 333,700N
N 84,100E
S
ELEVATION:
D.F.
K.B.
G.L. 3720'±

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	August 9, 1975		Nature		
First Reading	403'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	403'		Resistivity	@ °F	@ °F
Bottom (Driller)	403'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	10"				
Bit Size:					
			Logged by		
			Witnessed by		

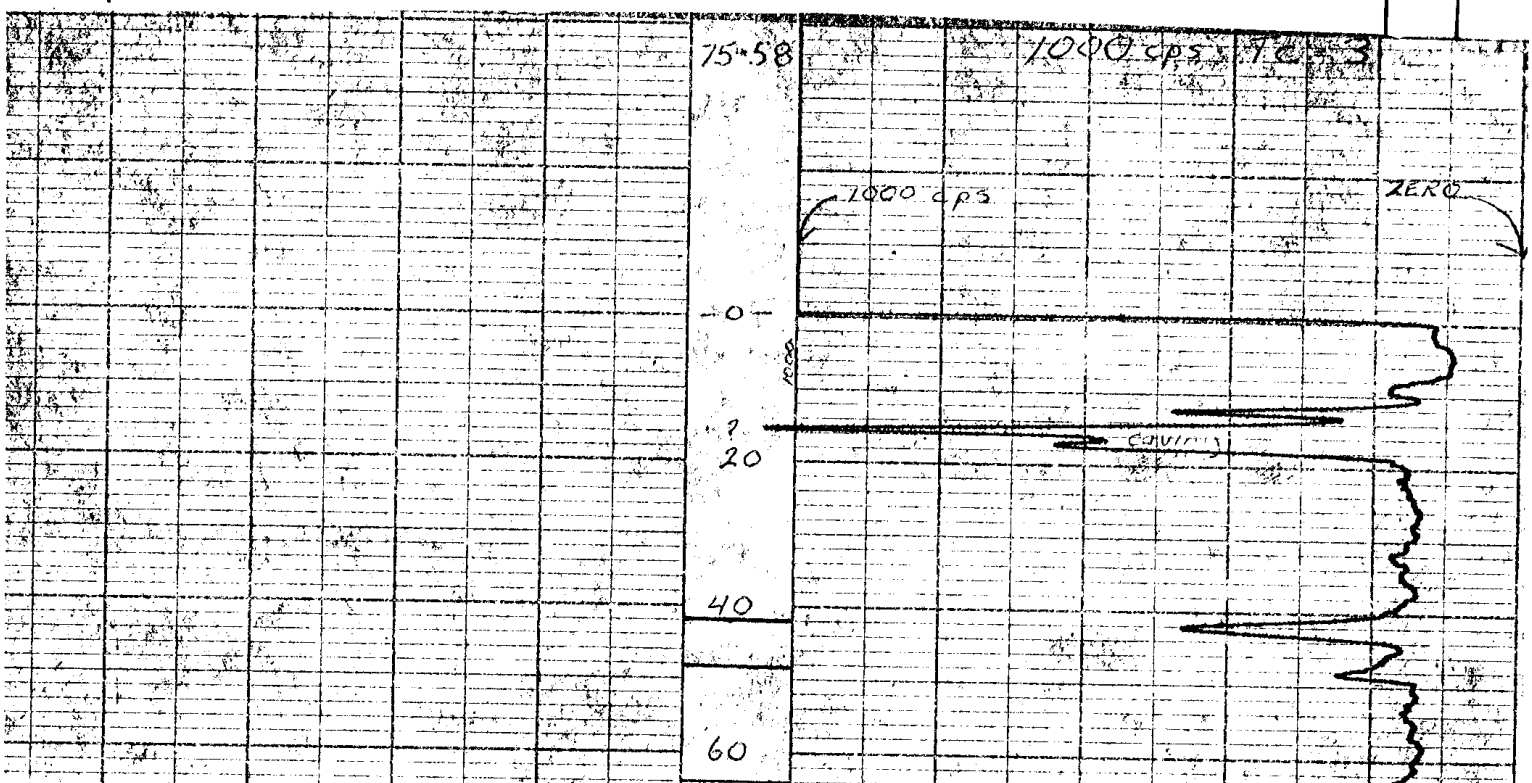
REMARKS

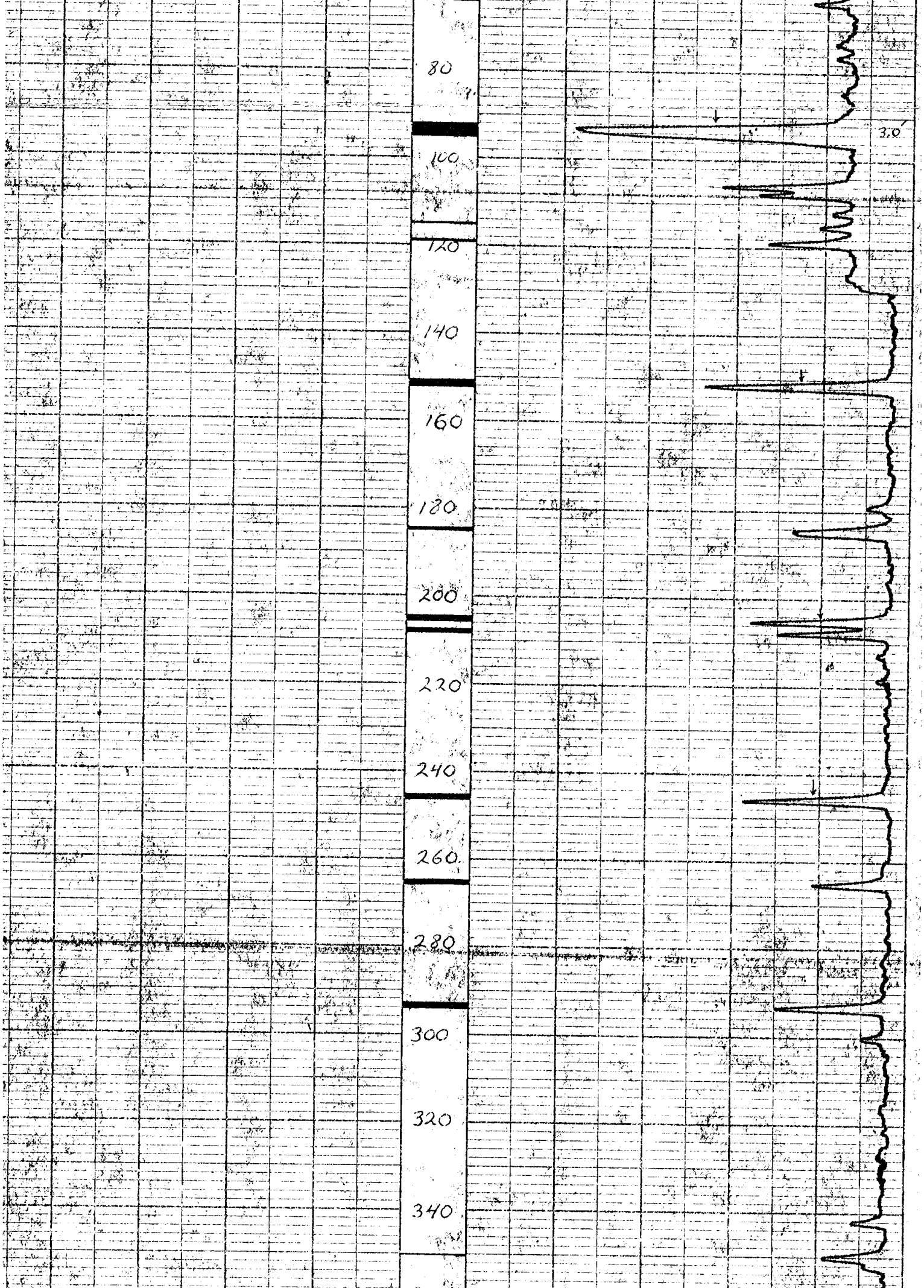
* Reg. U.S. Pat. Off.

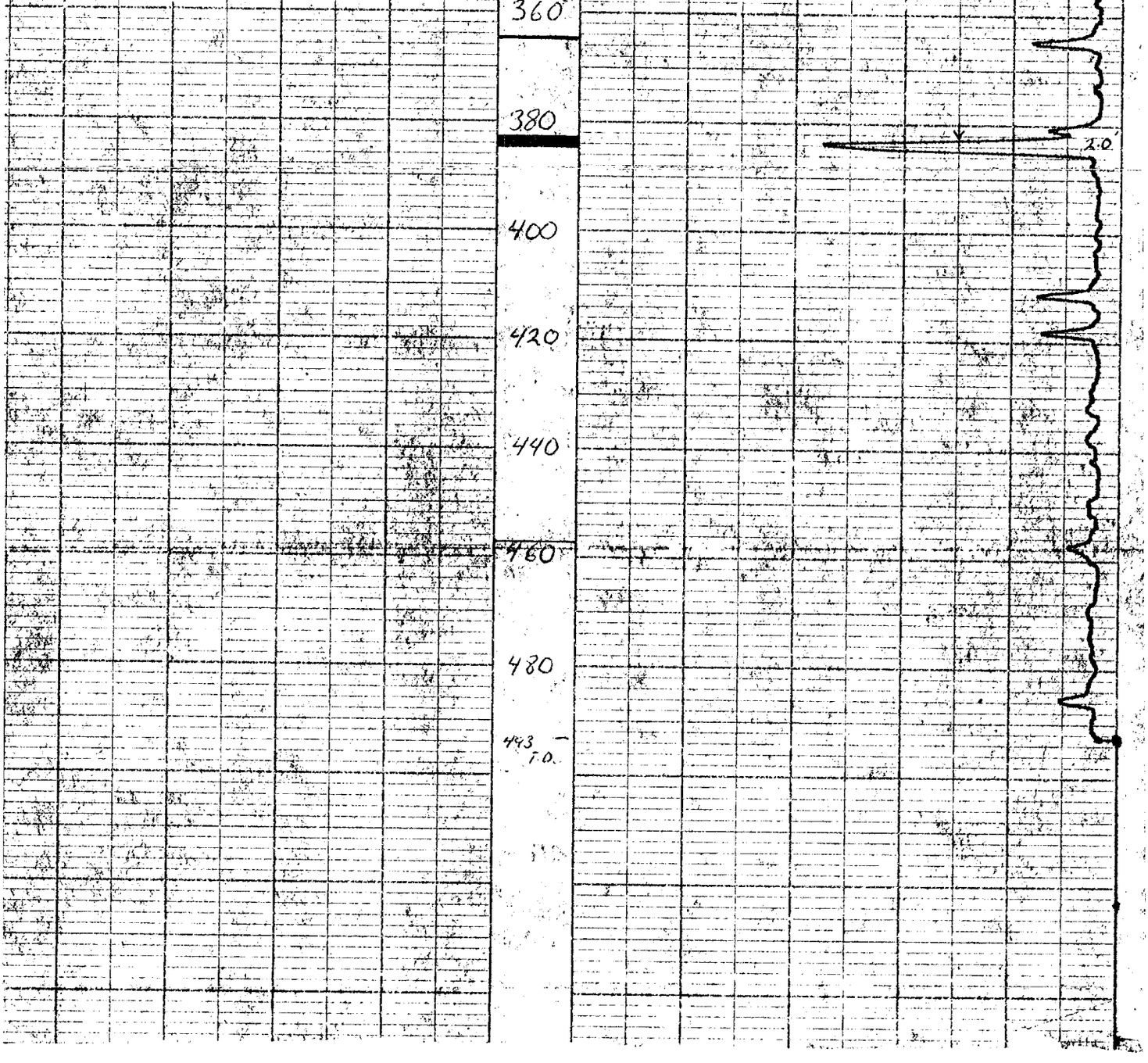
FO-139

75-58

DENSITY




80
100
120
140
160
180
200
220
240
260
280
300
320
340
3.0'


360
380
400
420
440
460
480
443
T.D.
2.0'

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY
AREA
WELL 58
COUNTY STATE

COORDINATES
N
S
ELEVATION
D.F.
K.B.
G.L.

	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ Bht	@ °F	@ °F
pH		
Circ. Temp		
Bht. Temp		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

GAMMA 2560 100 cps

RESIST 100-Ω

0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 493 T.D.

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-59
LOCATION 329,000N x 81,100E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-59
COUNTY STATE B.C.

COORDINATES: 329,000N x
N 81,100E
S
ELEVATION:
D.F.
K.B.
G.L. 3140'±

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	August 12, 1975		Nature		
First Reading	604'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	604'		Resistivity	@ °F	@ °F
Bottom (Driller)	607'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:					
Bit Size:					
			Logged by		
			Witnessed by		

REMARKS

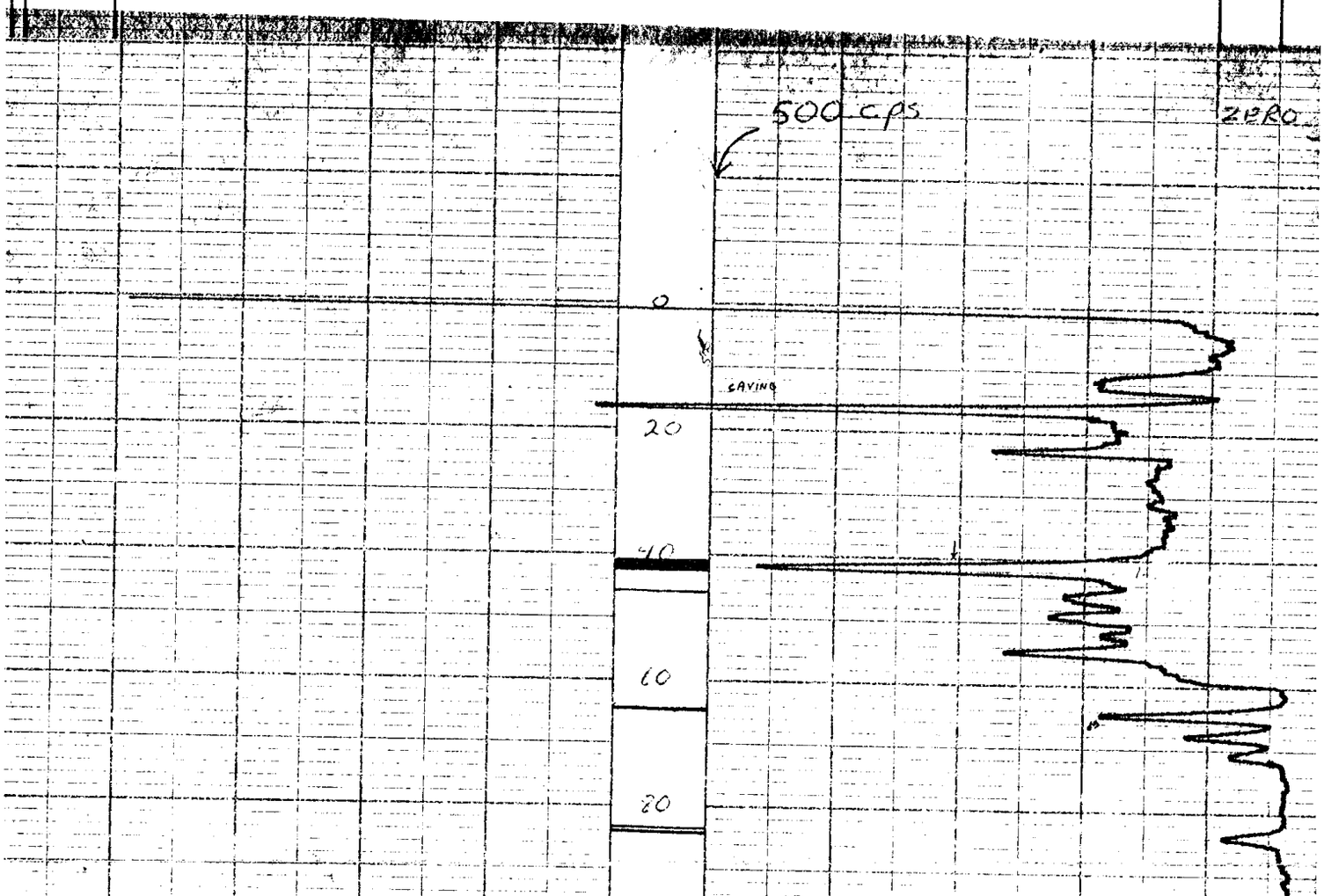
* Reg. U.S. Pat. Off.

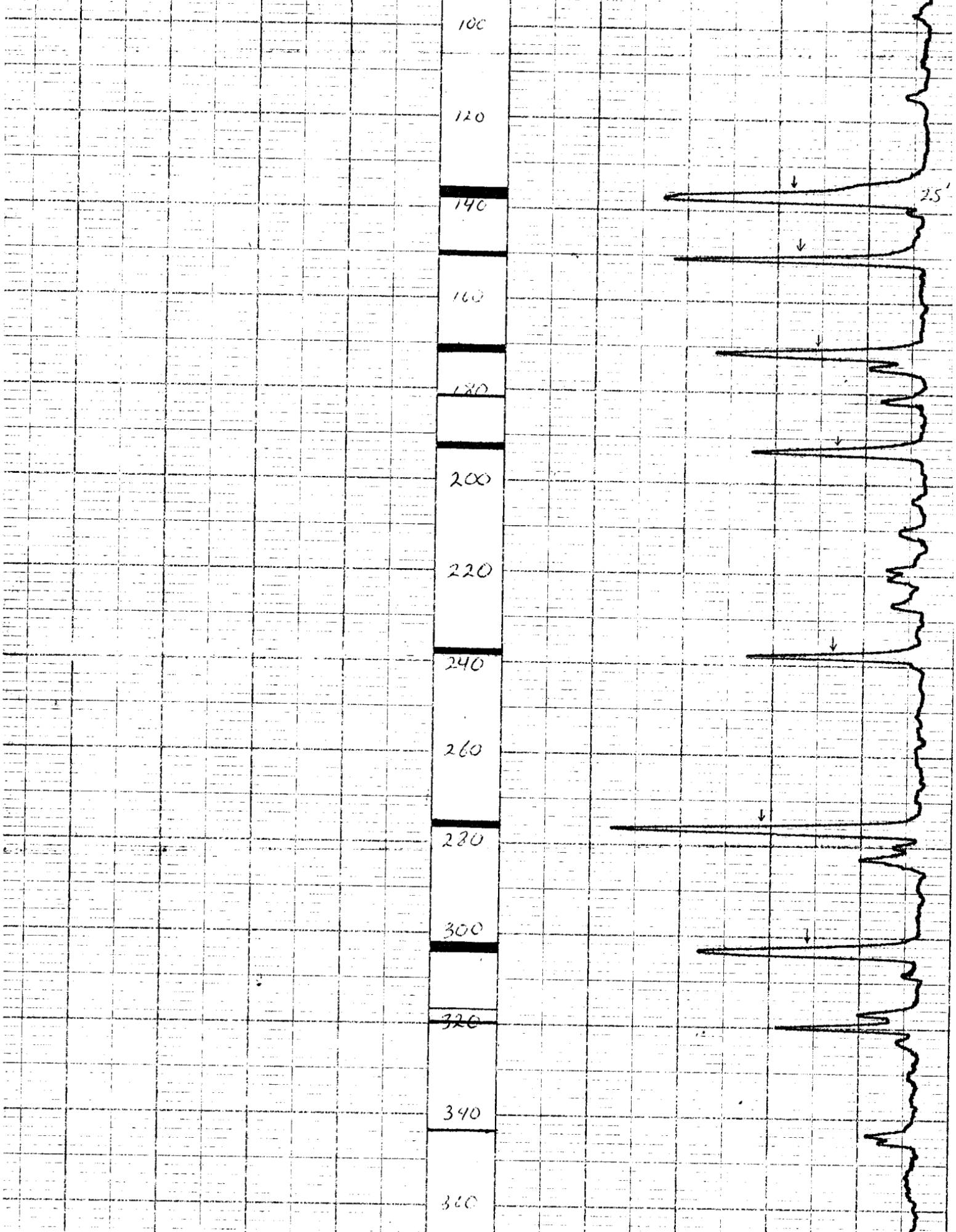
DENSITY

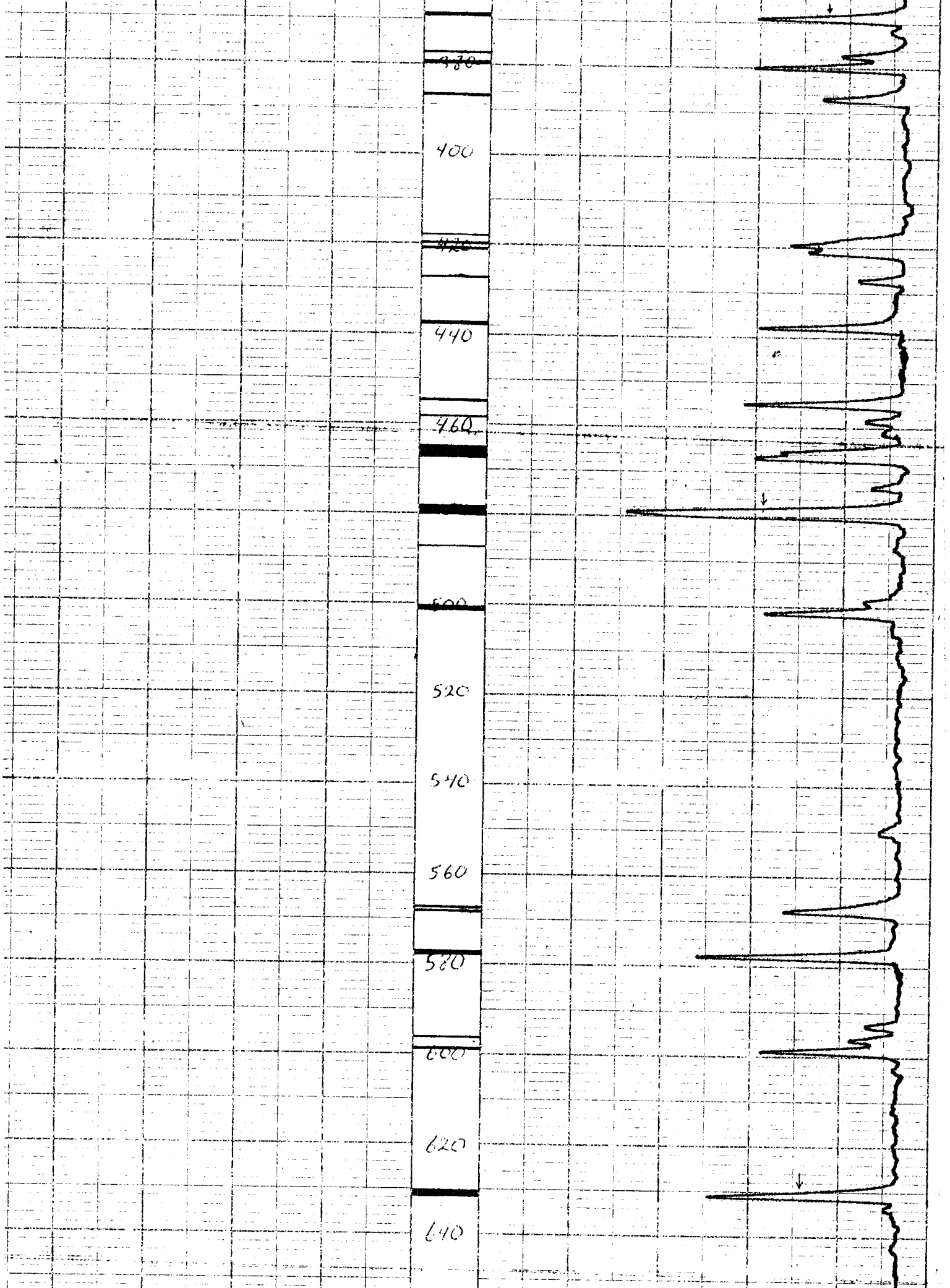
Re CARBON CR. 75/3/4-2

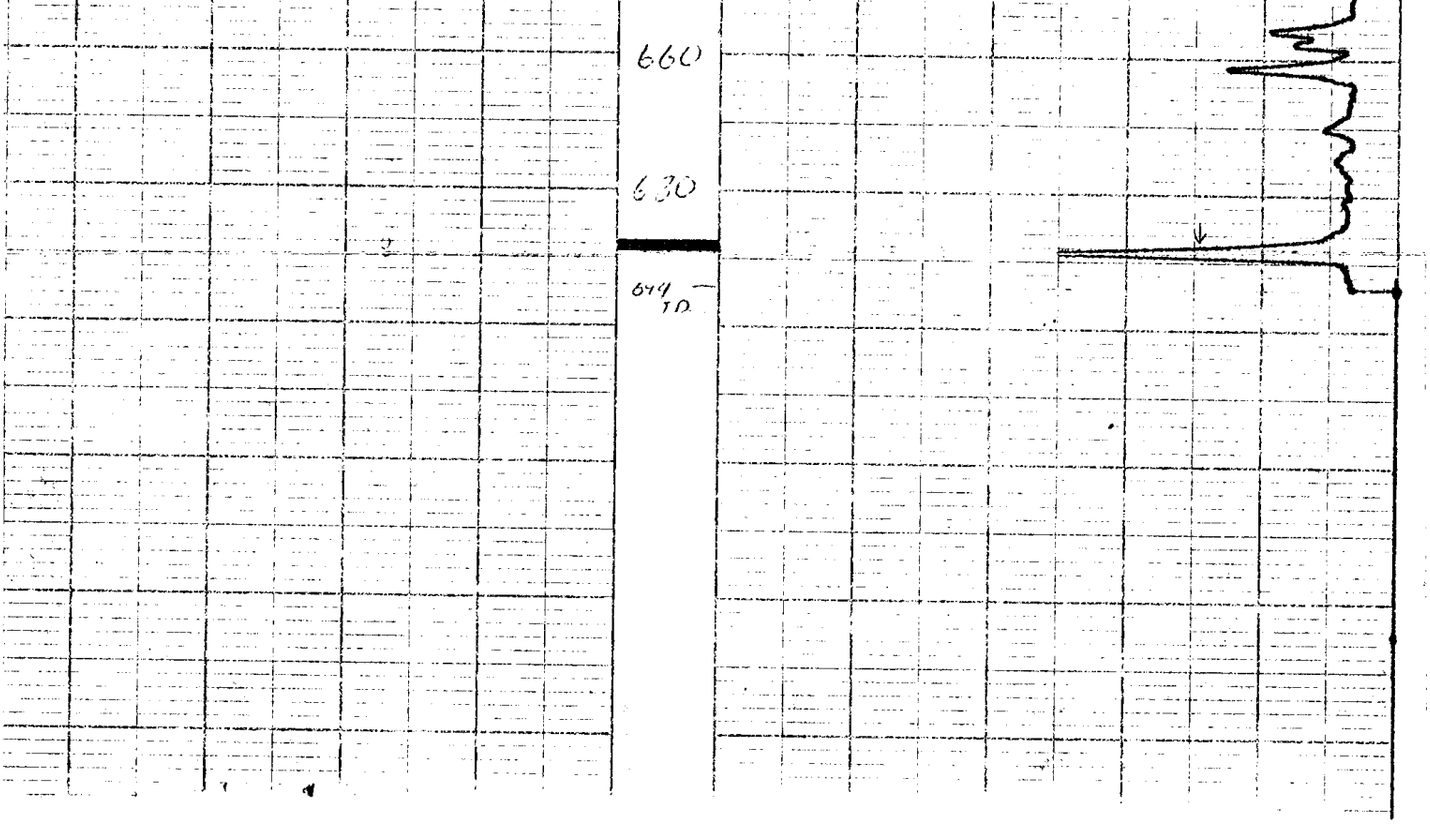
75-59

FO-139




100
120
140
160
180
200
220
240
260
280
300
320
340
360
2.5'


380
400
420
440
460
500
520
540
560
580
600
620
640


660
630
649
TD

From 75 (3) A-2 (Box B1)

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY

WELL

LOCATION

COMPANY _____

AREA _____

WELL 59

COUNTY _____ STATE _____

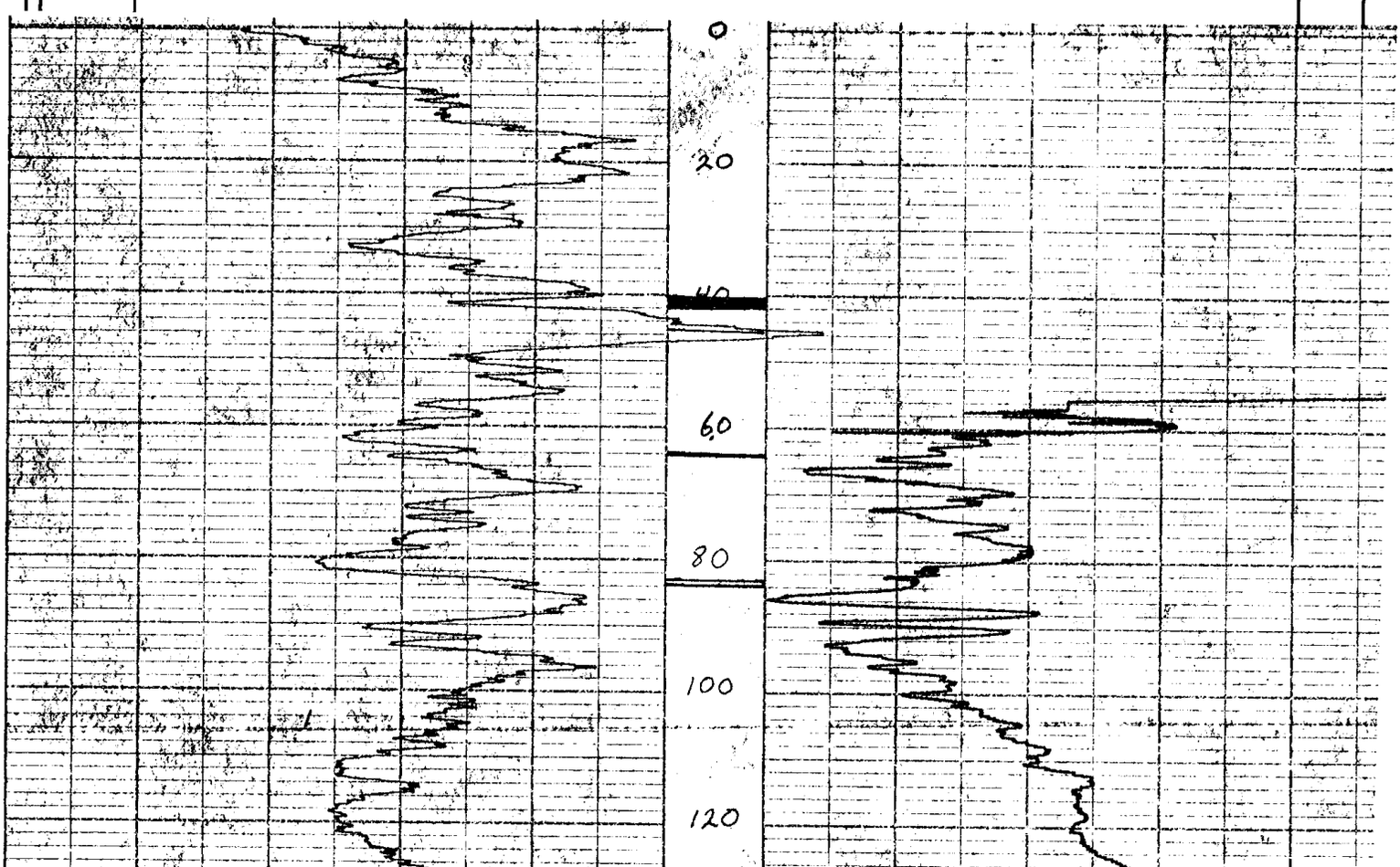
COORDINATES: _____
N _____
S _____
ELEVATION: _____
D.F. _____
K.B. _____
G.L. _____

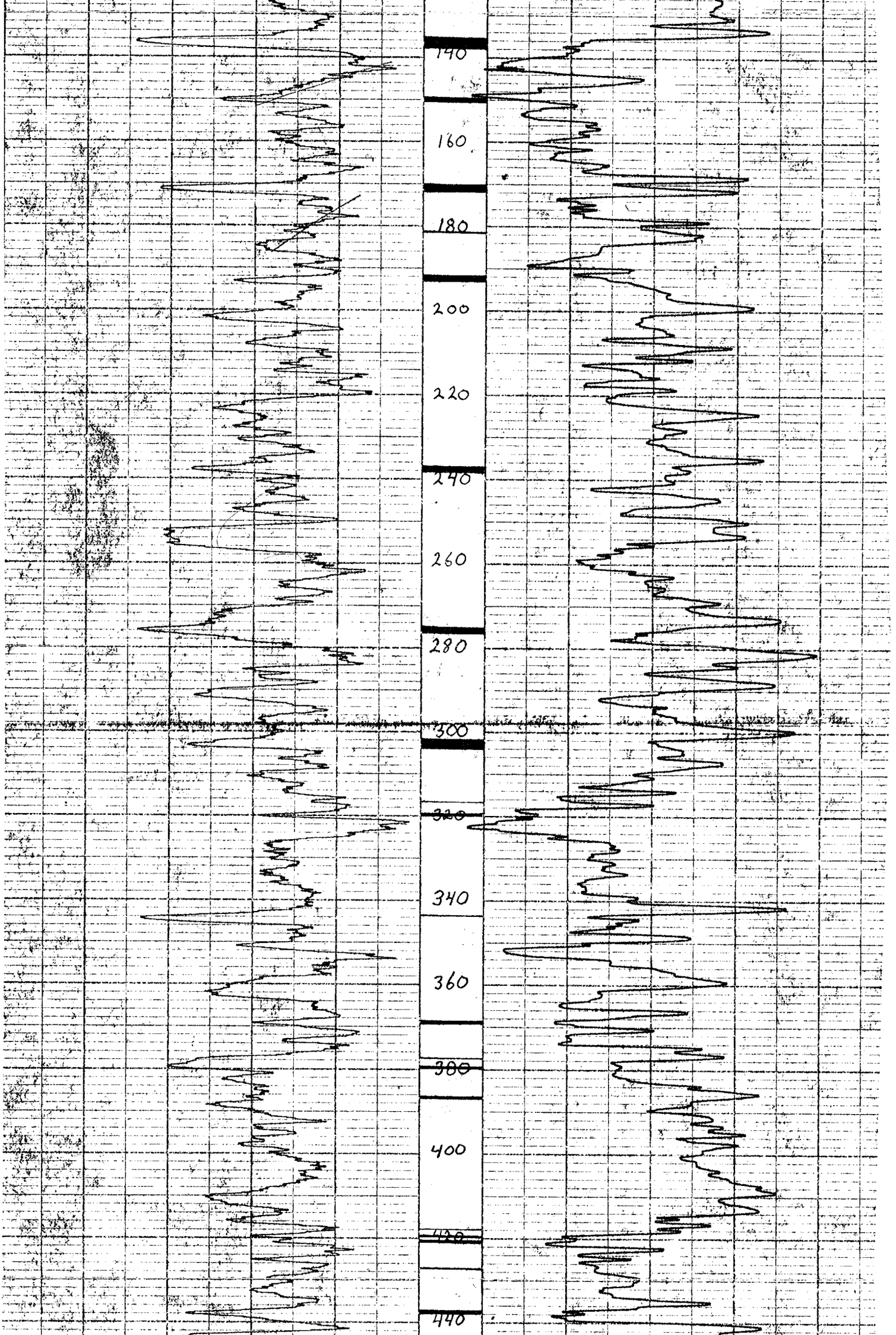
	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp		
Casing Size			B.H. Temp.		
Bit Size					
Bit Size					
			Logged by		
			Witnessed by		

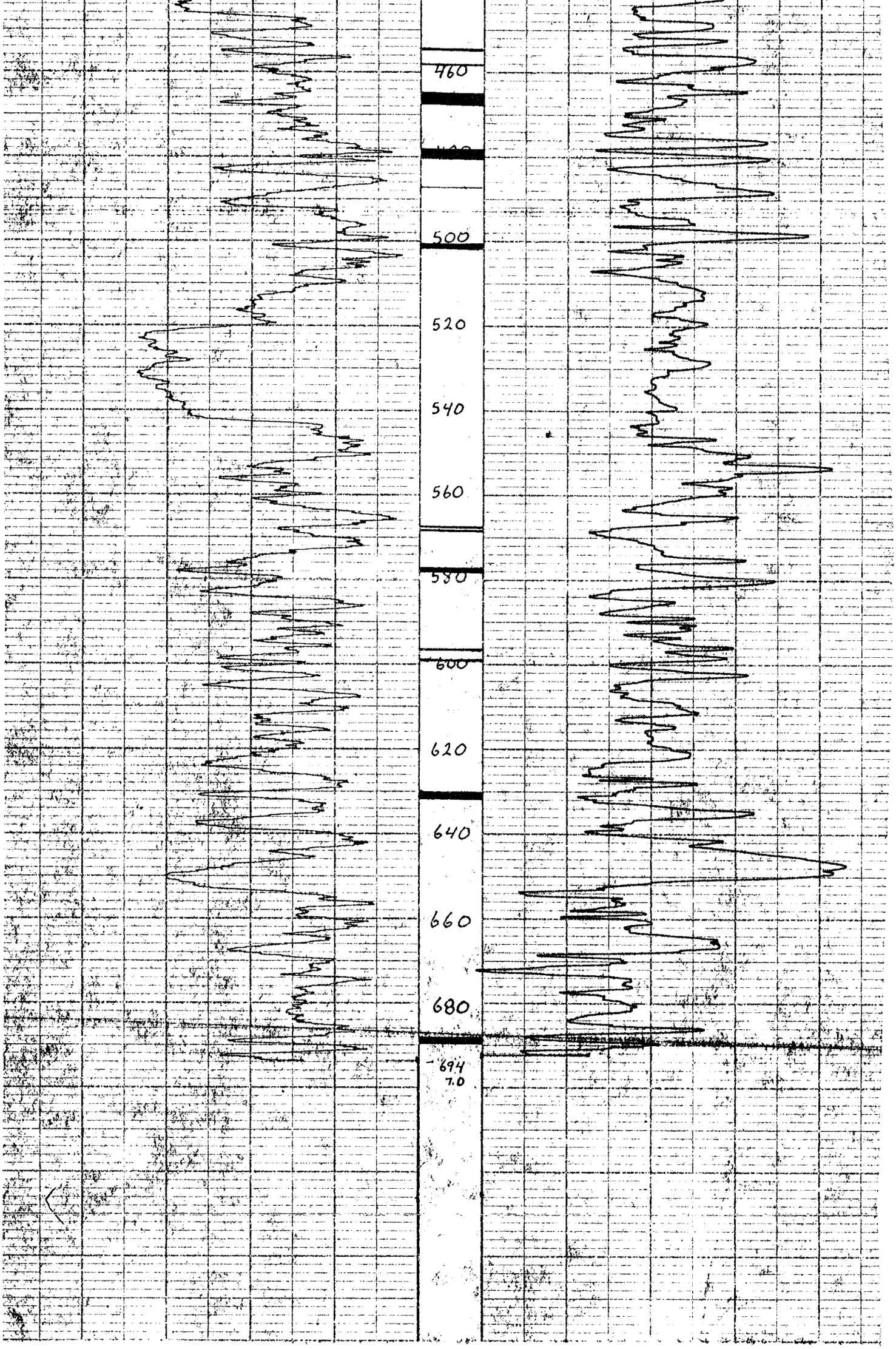
REMARKS _____

* Reg. U.S. Pat. Off.

Pa. Carbon Co. 75(3)A-2 75-59 FO 139




140
160
180
200
220
240
260
280
300
320
340
360
380
400
420
440


460
500
520
540
560
580
600
620
640
660
680
694
7.0

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY

AREA

WELL 60

COUNTY STATE

COORDINATES
N
S
ELEVATION
D.F.
K.B.
G.L.

LOCATION WELL COMPANY

	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp		
Bit Temp		

Logged by
Witnessed by

REMARKS

* Reg. U.S. Pat. Off.

GAMMA RESIST

ZERO 100cps

-0-
50
100
150
200
250
300
350
400
450
500
523
548

P8

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY
AREA
WELL 40 75-60
COUNTY STATE

COORDINATES: N S
ELEVATION: D.F. K.B. G.L.

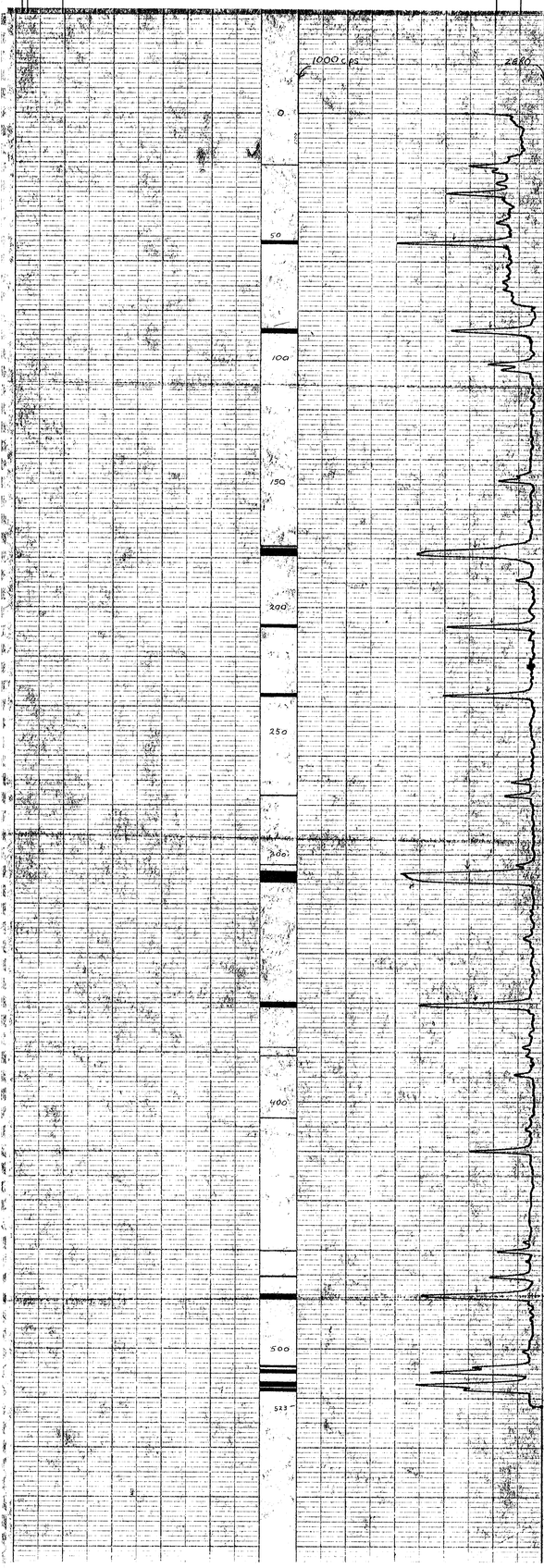
LOCATION WELL COMPANY

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			Bit Temp.		
Bit Size					
Bit Size			Logged by		
			Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

DENSITY



UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY

AREA

WELL 61 75-61

COUNTY STATE

COORDINATES
N
E
ELEVATION
D.F.
K.B.
G.L.

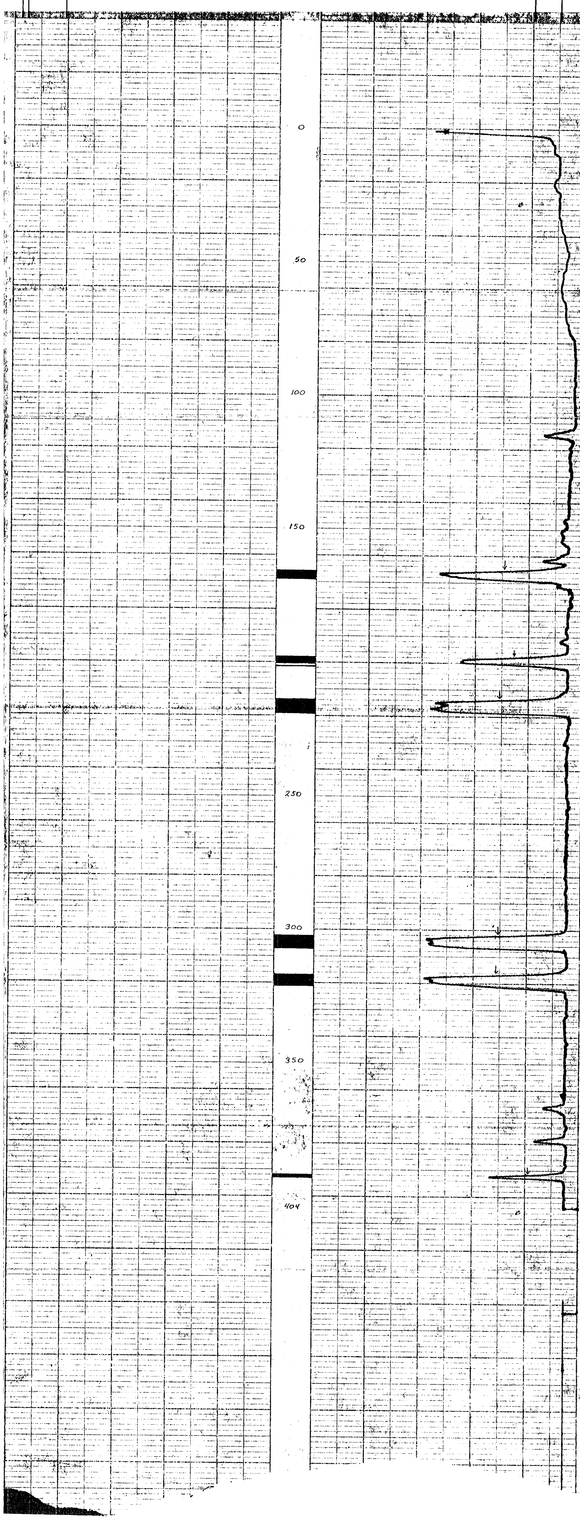
LOCATION WELL COMPANY

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ BHT	@ °F	@ °F
Casing (From Log			pH		
Casing (Driller)			Circ. Temp		
Casing Size			B.H. Temp		
Bit Size					
Bit Size					
			Logged by		
			Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

DENSITY



P.Q

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY
AREA
WELL 75-61 61
COUNTY STATE

COORDINATES:
N
S
ELEVATION
D.F.
K.B.
G.L.

LOCATION WELL COMPANY

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ Bht	@ °F	@ °F
Casing (From Log			pH		
Casing (Driller)			Circ. Temp		
Casing Size			B.H. Temp		
Bit Size					
Bit Size			Logged by		
			Witnessed by		

REMARKS

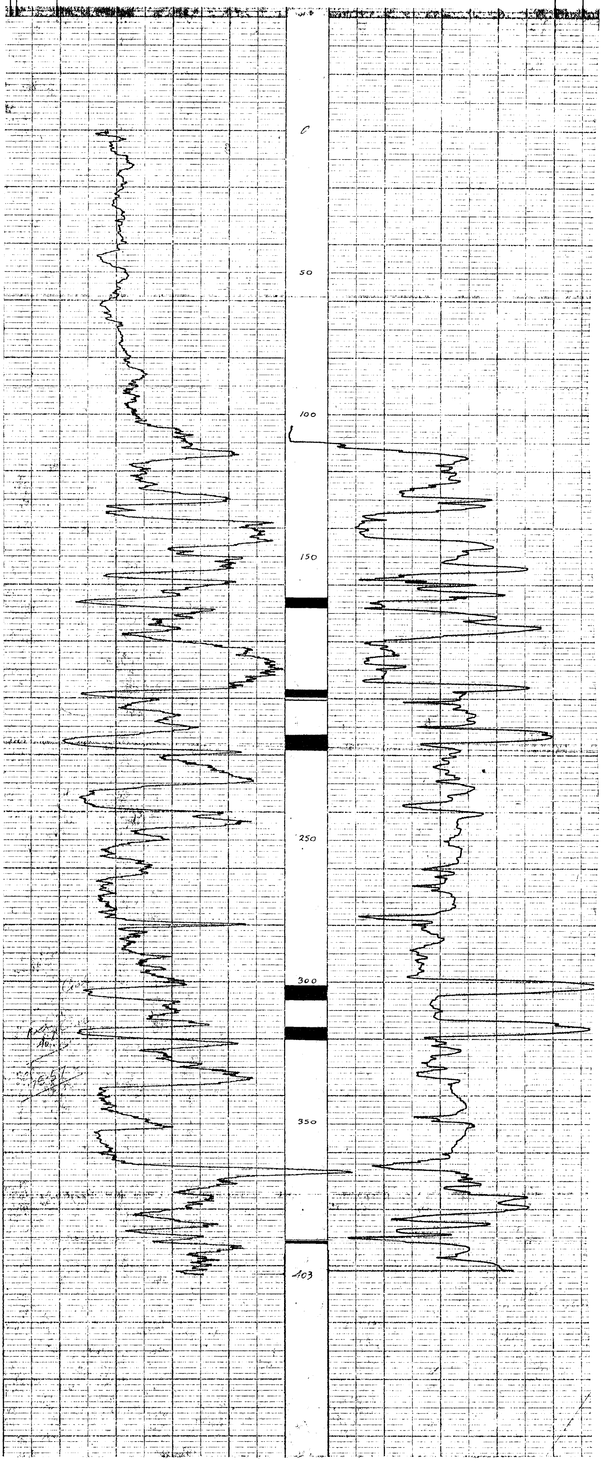
* Reg. U.S. Pat. Off.

In canyon at Tatlayoko

75-61

FORM 109

GAMMA RESIST



P.9

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY

AREA

WELL 62 75-62

COUNTY STATE

COORDINATES
N
X
ELEVATION
D.F.
K.B.
G.L.

LOCATION WELL COMPANY

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ F	@ F
Footage Logged			Resistivity	@ F	@ F
Bottom (Driller)			Res. @ BHT	@ F	@ F
Casing (From Log			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			Bit Temp.		
Bit Size					
Bit Size			Logged by		
			Witnessed by		

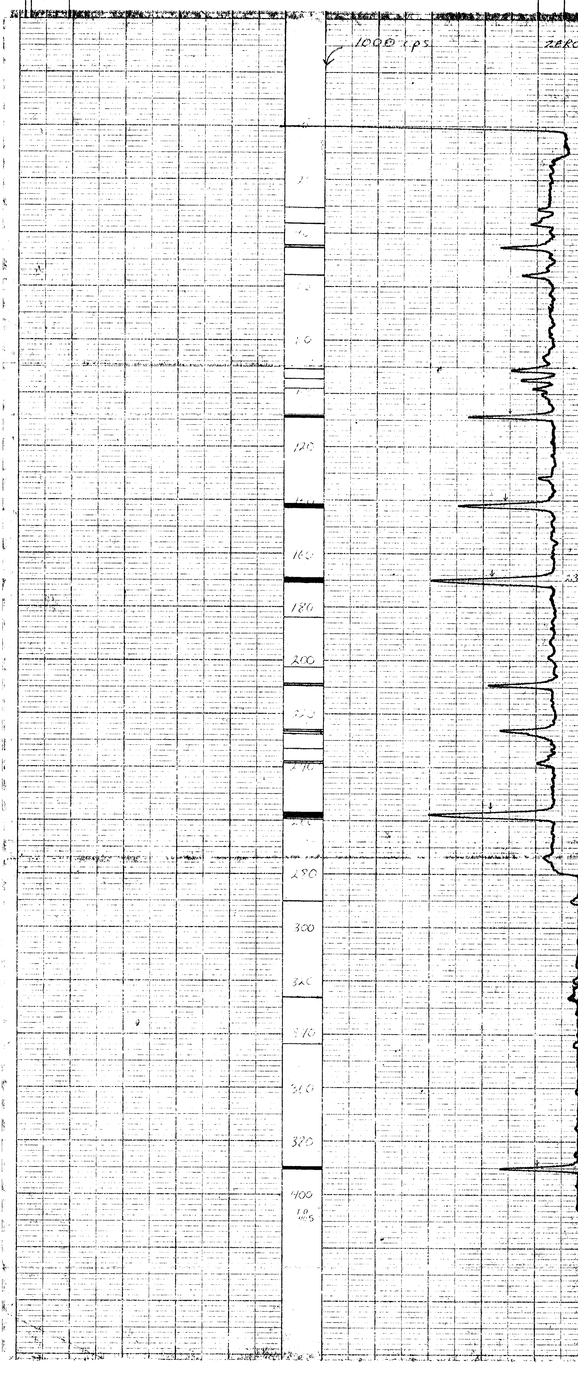
REMARKS

* Reg. U.S. Pat. Off.

DENSITY

Co. Canadian Oil 75-62-2

75-62



75(3) A-2 (Bit Runs)

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.

AREA Carbon Creek

WELL 75-62 62

COUNTY B.C. STATE

COORDINATES 312,400N N S E W

ELEVATION D.F. K.B. G.L.

COMPANY Utah Mines Ltd.

WELL 75-62

LOCATION 312,400N & 97,700E

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	Apr. 15, 1975		Nature		
First Reading	0		Density		
Last Reading	405'		Viscosity	@ °F	@ °F
Footage Logged	405'		Resistivity	@ °F	@ °F
Bottom (Driller)	405'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:					
Bit Size:			Logged by		
			Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

FO-139

Re correction of 75-(3) A-2 75-62

ZERO

100 cps

0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
405 T.D.

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY: Utah Mines Ltd.
AREA: Eastern Creek
WELL: 63
COUNTY: STATE:

COORDINATES: N 317,1000
N
S
ELEVATION:
D.F.
K.B.
G.L.

COMPANY
WELL
LOCATION

	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged	52	
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

DENSITY

500 cps

ZERO

0
50
100
200
250
300
350
400
450
500
525

P.Q.

W. Canada AE 75(2)A-2

75-62

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

LOCATION | WELL | COMPANY

COMPANY: Utah Mines Ltd.

AREA: Carbon Canyon

WELL: 63

COUNTY: STATE: Utah

COORDINATES: N 137,000 S

ELEVATION:

D.F.

K.B.

G.L.

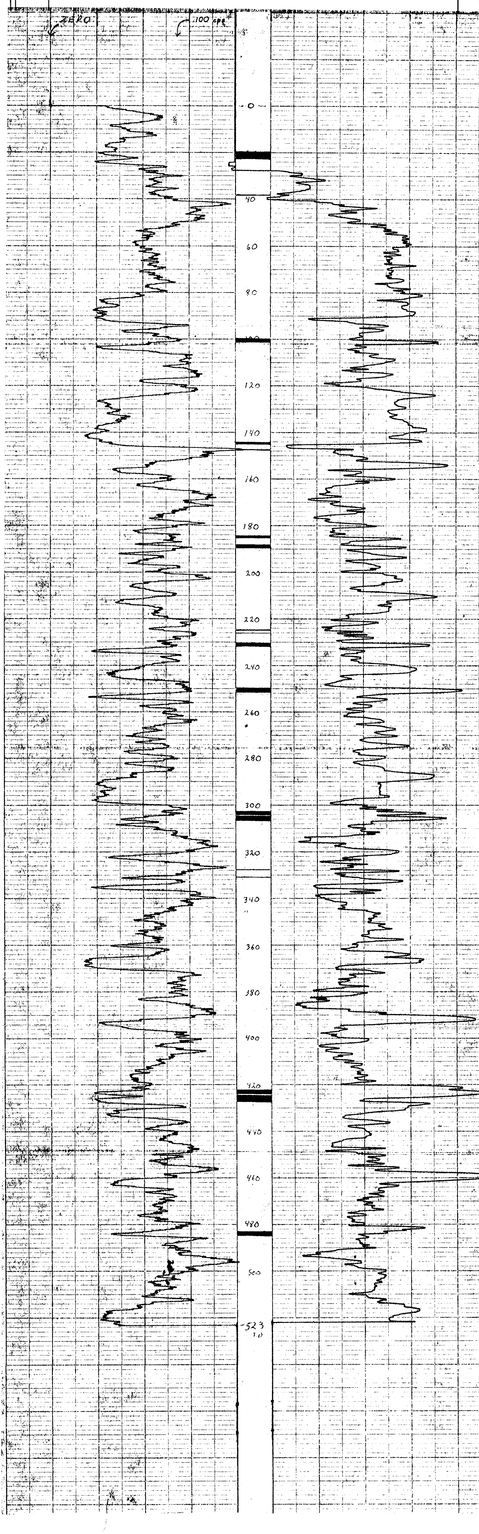
	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by		
Witnessed by		

REMARKS:

* Reg. U.S. Pat. Off.

75-63



P&A

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY

WELL

LOCATION

COMPANY

AREA

WELL UA 75-64

COUNTY STATE

COORDINATES: N S

ELEVATION: D.F. K.B. G.L.

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			BHT Temp.		
Bit Size					
Bit Size					
			Logged by		
			Witnessed by		

REMARKS

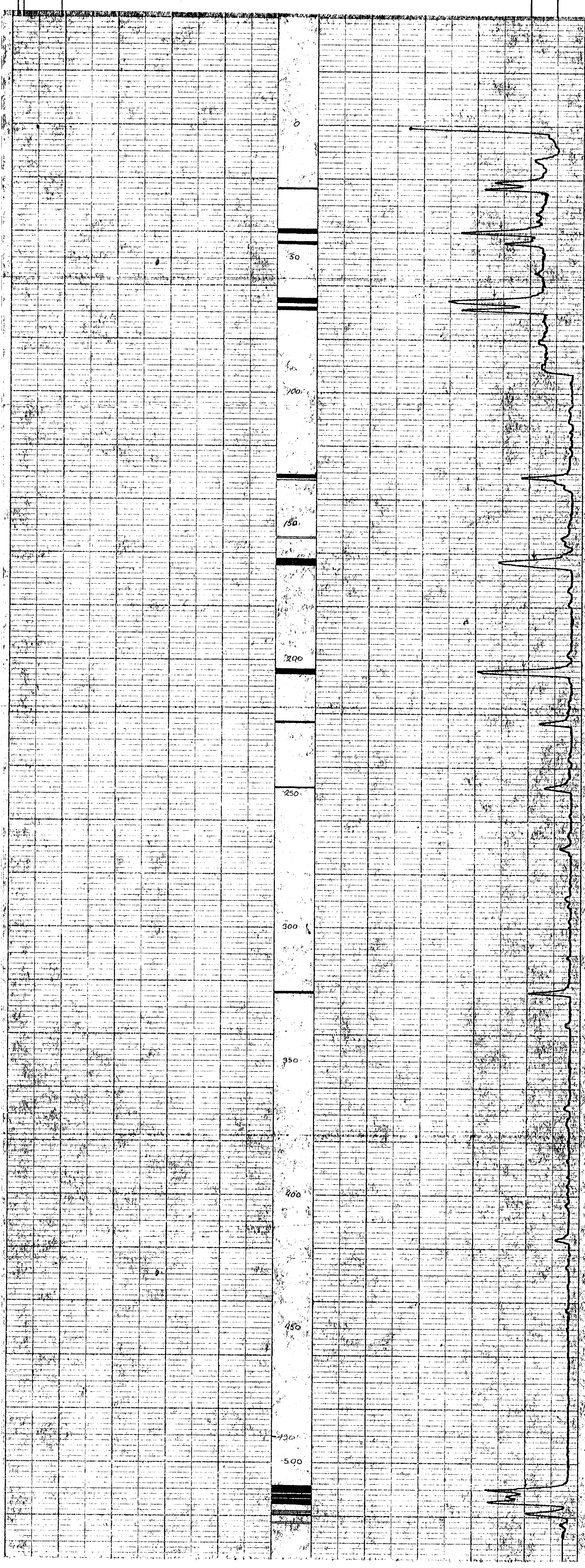
* Reg. U.S. Pat. Off.

10-129

DENSITY

U. of Utah Ua 75-64

75-64



UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY: Utah Mines Ltd.
AREA: Carbon Creek
WELL: 75-68
COUNTY: STATE:

COORDINATES: N S
ELEVATION: D.F. K.B. G.L.

LOCATION: WELL: COMPANY:

	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

"0"
50
100
150
200
250
300
350
400
450
500
529

Carbon Creek 75-68 75-68 01

P.Q

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-66
LOCATION 359,200N x 49,700E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-66
COUNTY STATE B.C.

COORDINATES: 359,200N x 49,700E
N
S
ELEVATION:
D.F.
K.B.
G.L. 3450'±

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	August 31, 1975		Nature		
First Reading	1442'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	1442'		Resistivity	@ °F	@ °F
Bottom (Driller)	1447'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	HO				
Bit Size:					
			Logged by	U.Malachowski	
			Witnessed by	D.N.leNobel	

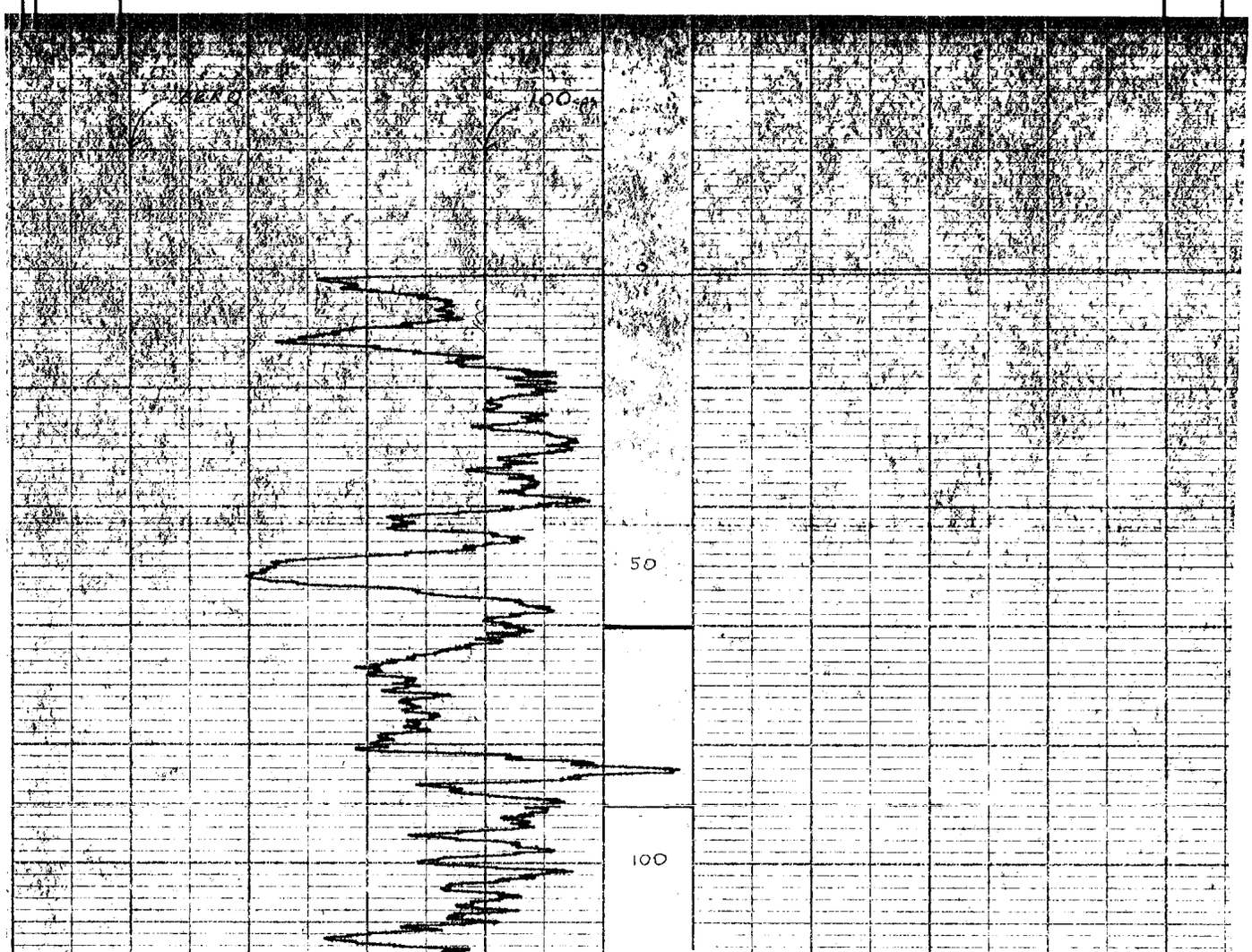
REMARKS

* Reg. U.S. Pat. Off.

Gamma

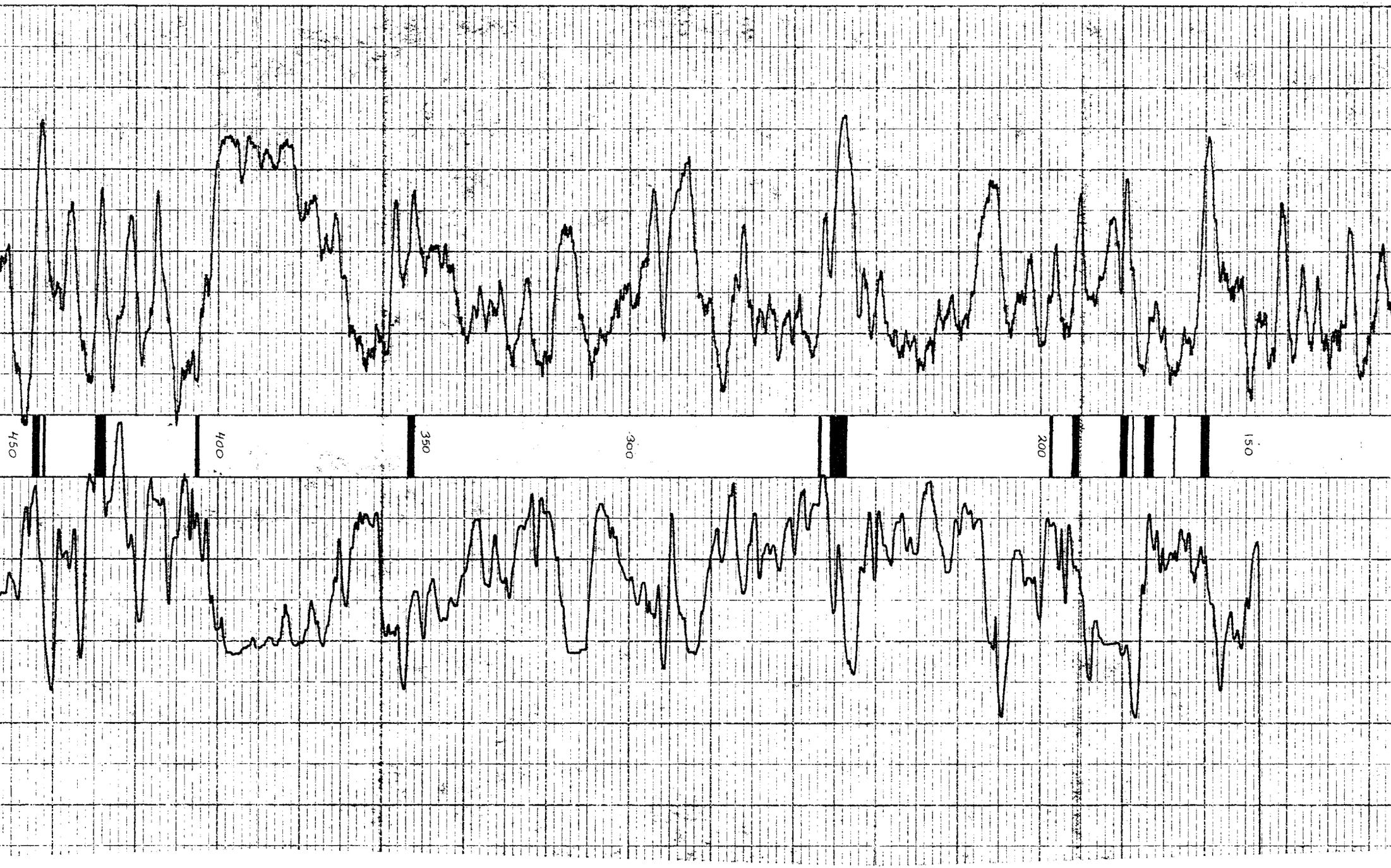
Resistivity

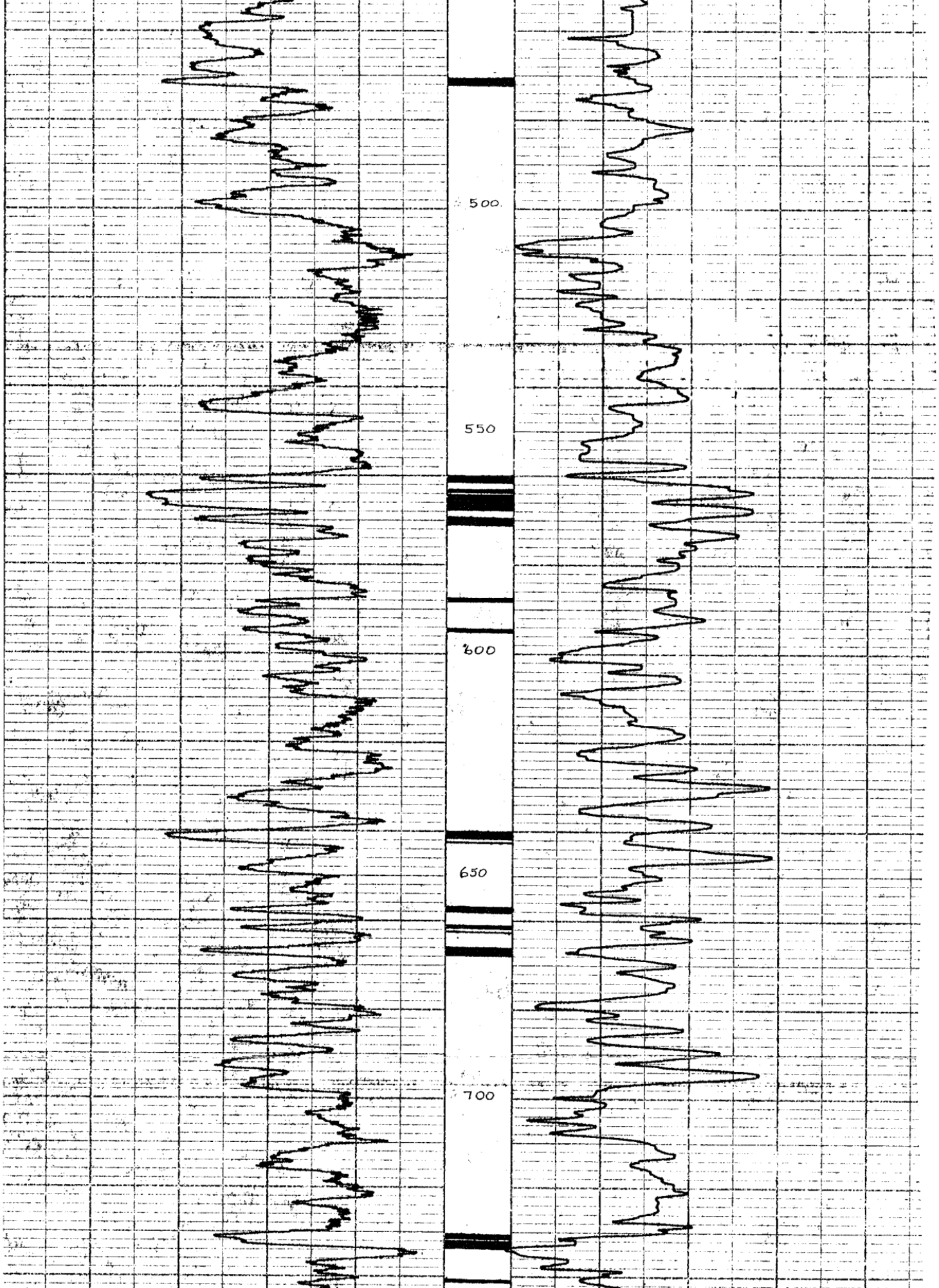
FO-139

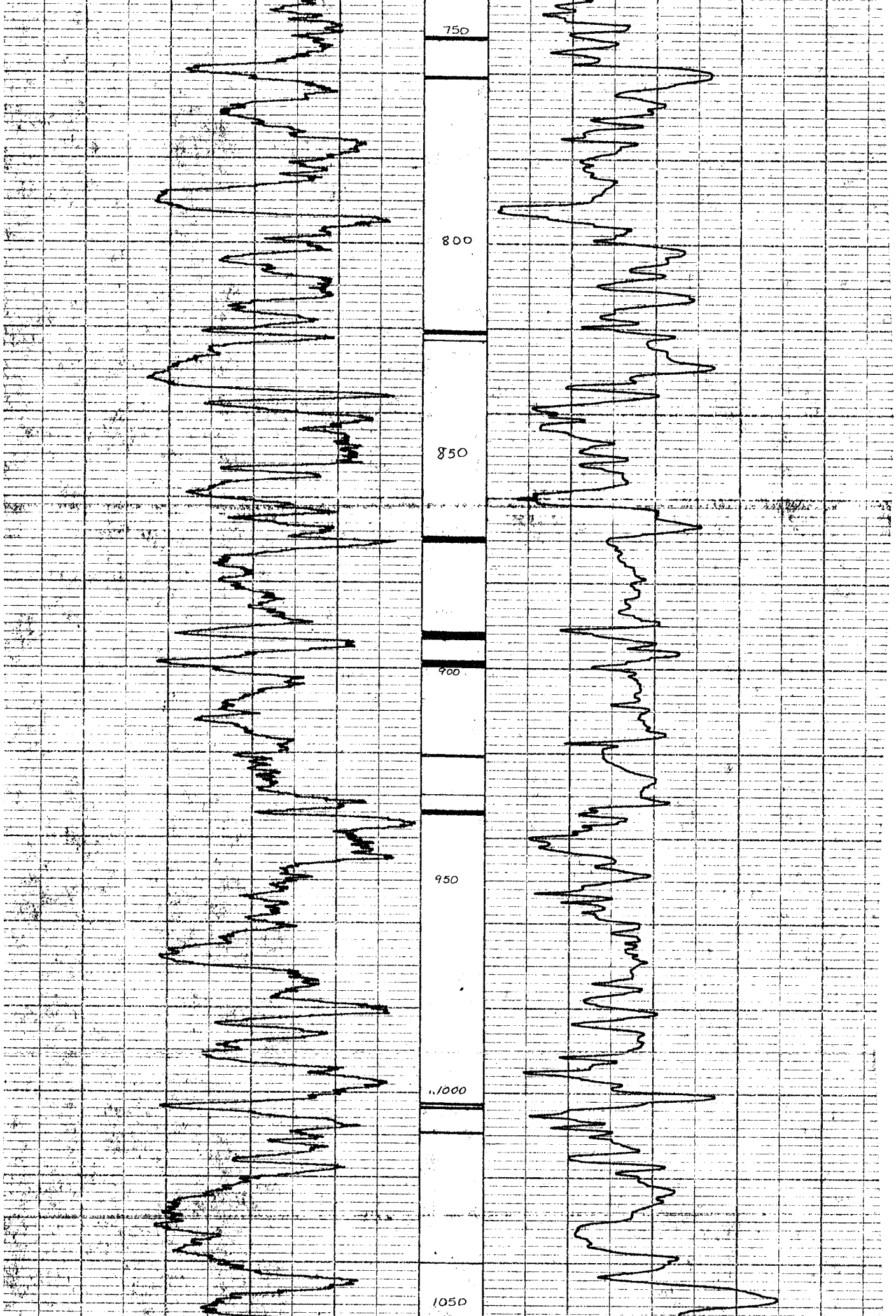


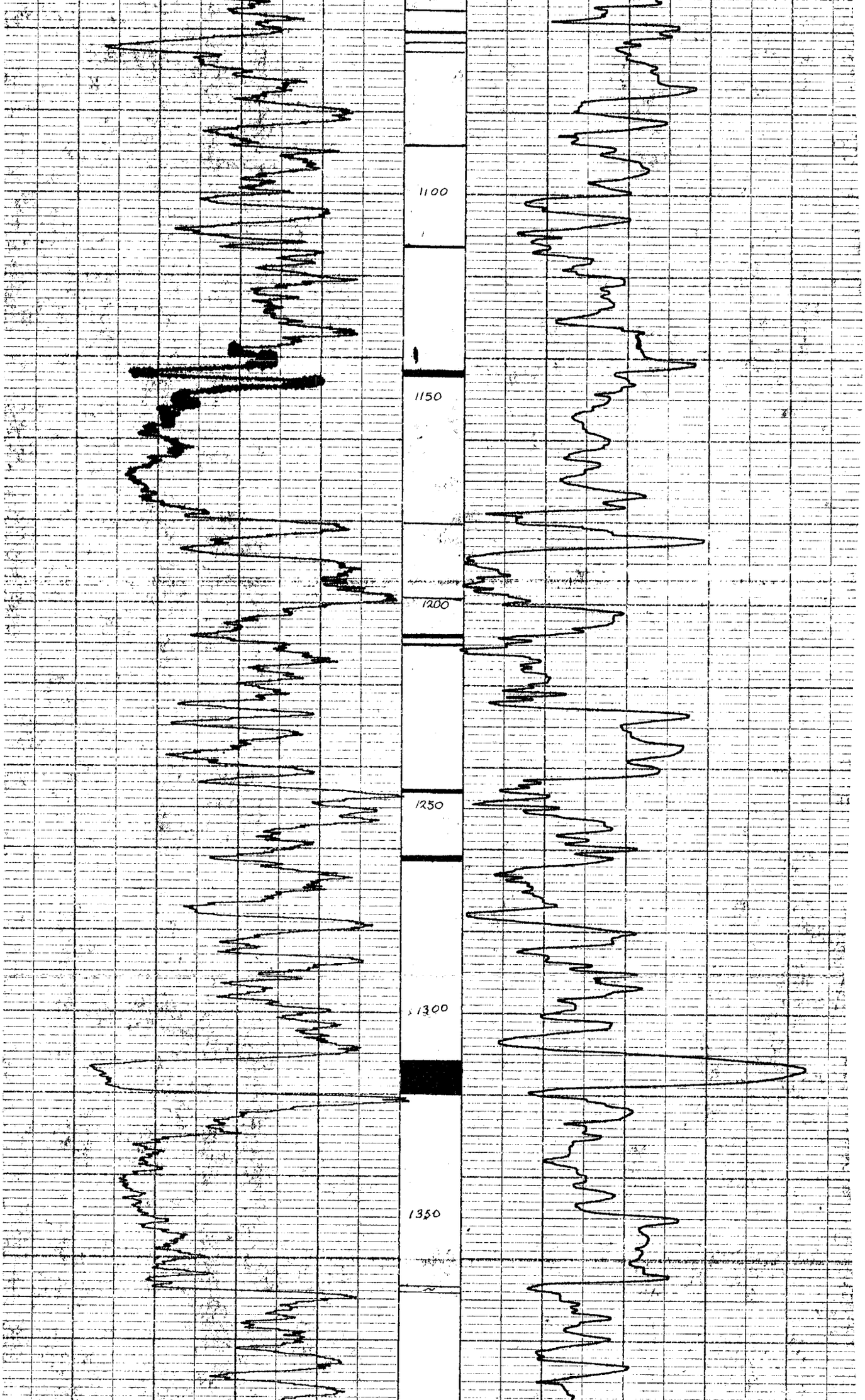
Re: Carbon Cr 75(3)A-2

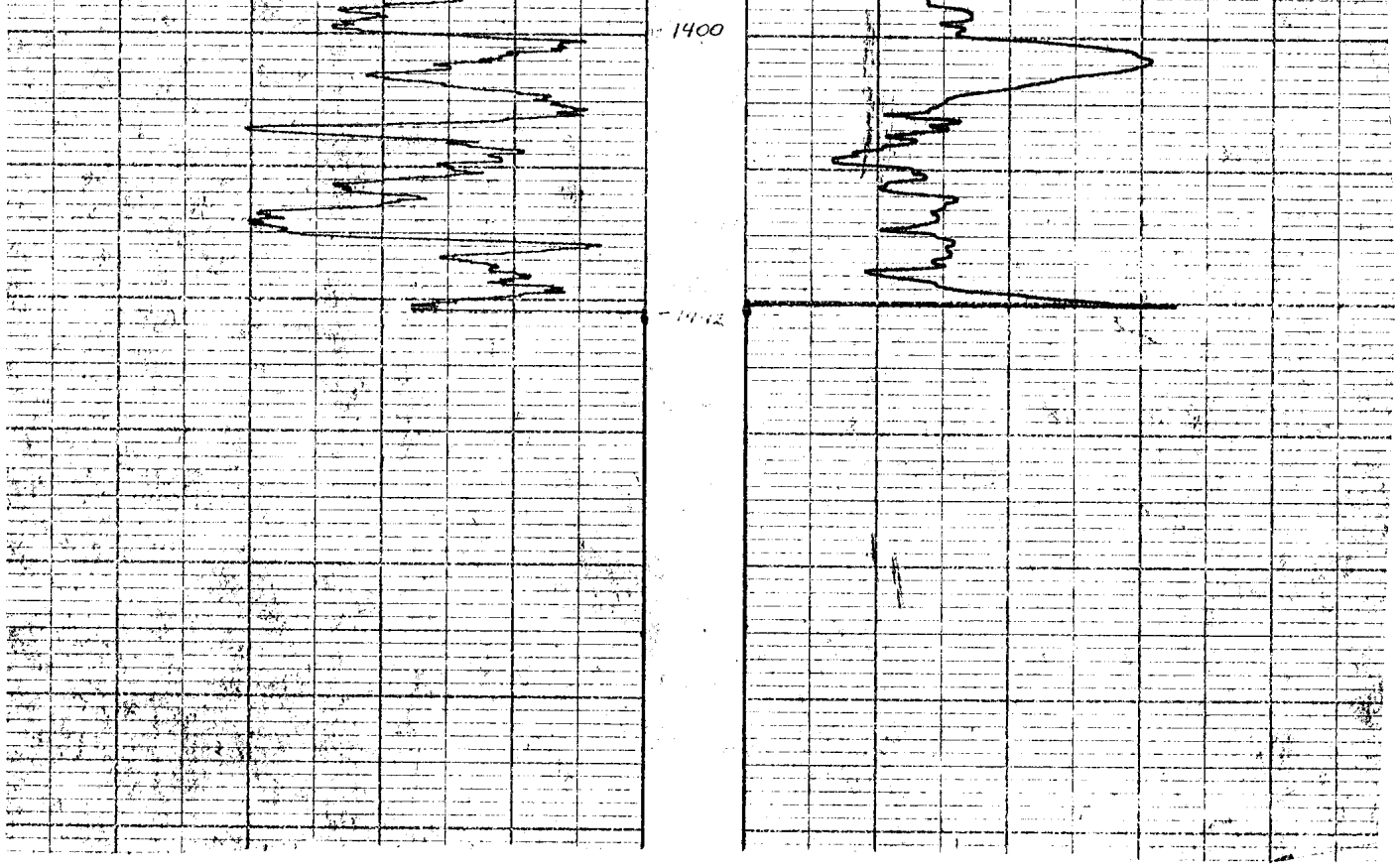
75-66


450
400
350
300
200
150


500
550
600
650
700


750
800
850
900
950
1000
1050


1100
1150
1200
1250
1300
1350


1400

75-66 P.Q.

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-66
LOCATION 359,200N x 49,700E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-66
COUNTY STATE B.C.

COORDINATES: 359,200N
N x 49,700E
S
ELEVATION:
D.F.
K.B.
G.L. 3450'±

	Run No. 1	Run No. 2	MUD.	Run No. 1	Run No. 2
Date	August 31, 1975		Nature		
First Reading	1410'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	1410'		Resistivity	@ °F	@ °F
Bottom (Driller)	1447'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	HO				
Bit Size:					
			Logged by	U.Malachowski	
			Witnessed by	D.N.LeNobel	

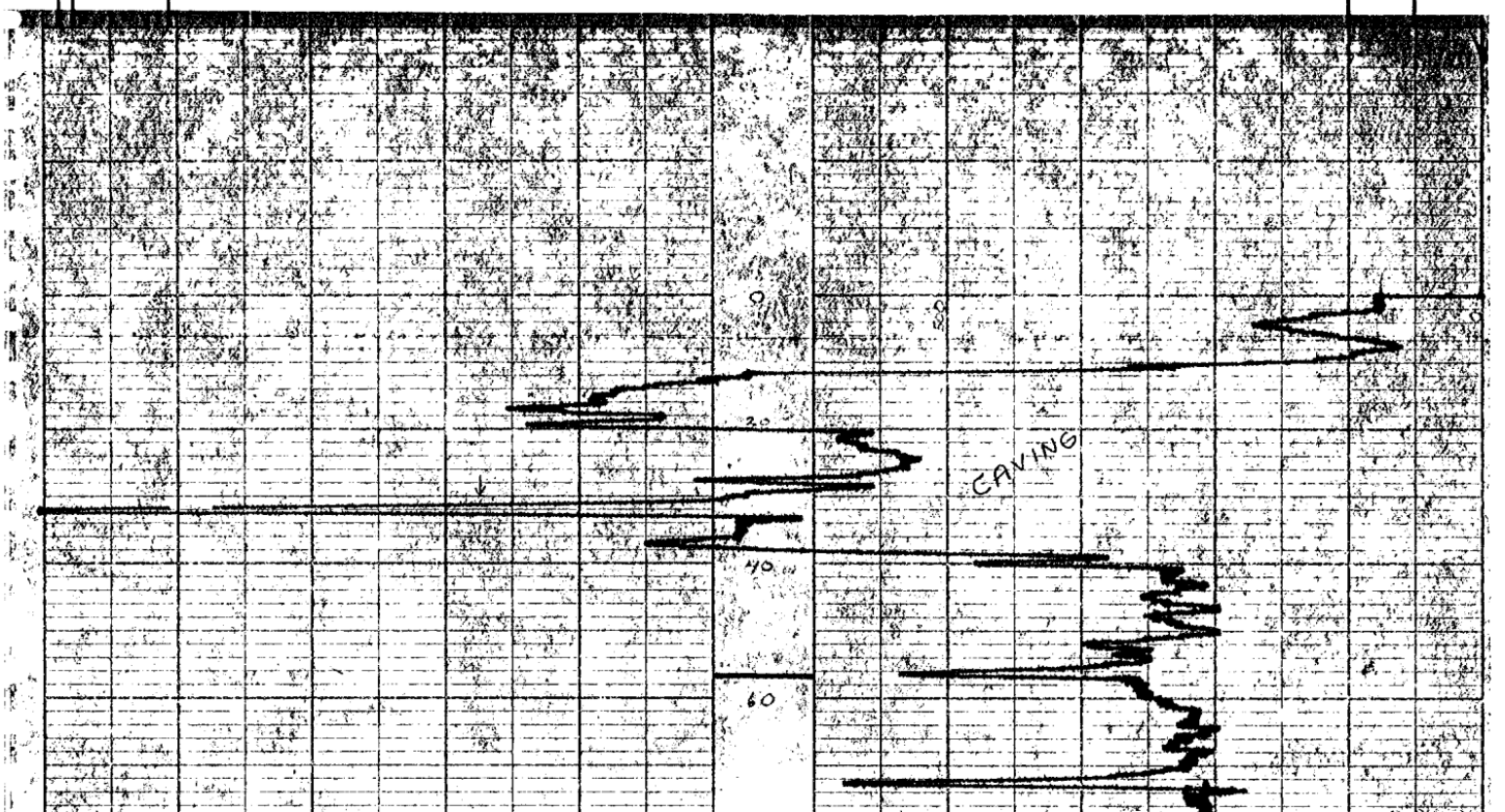
REMARKS

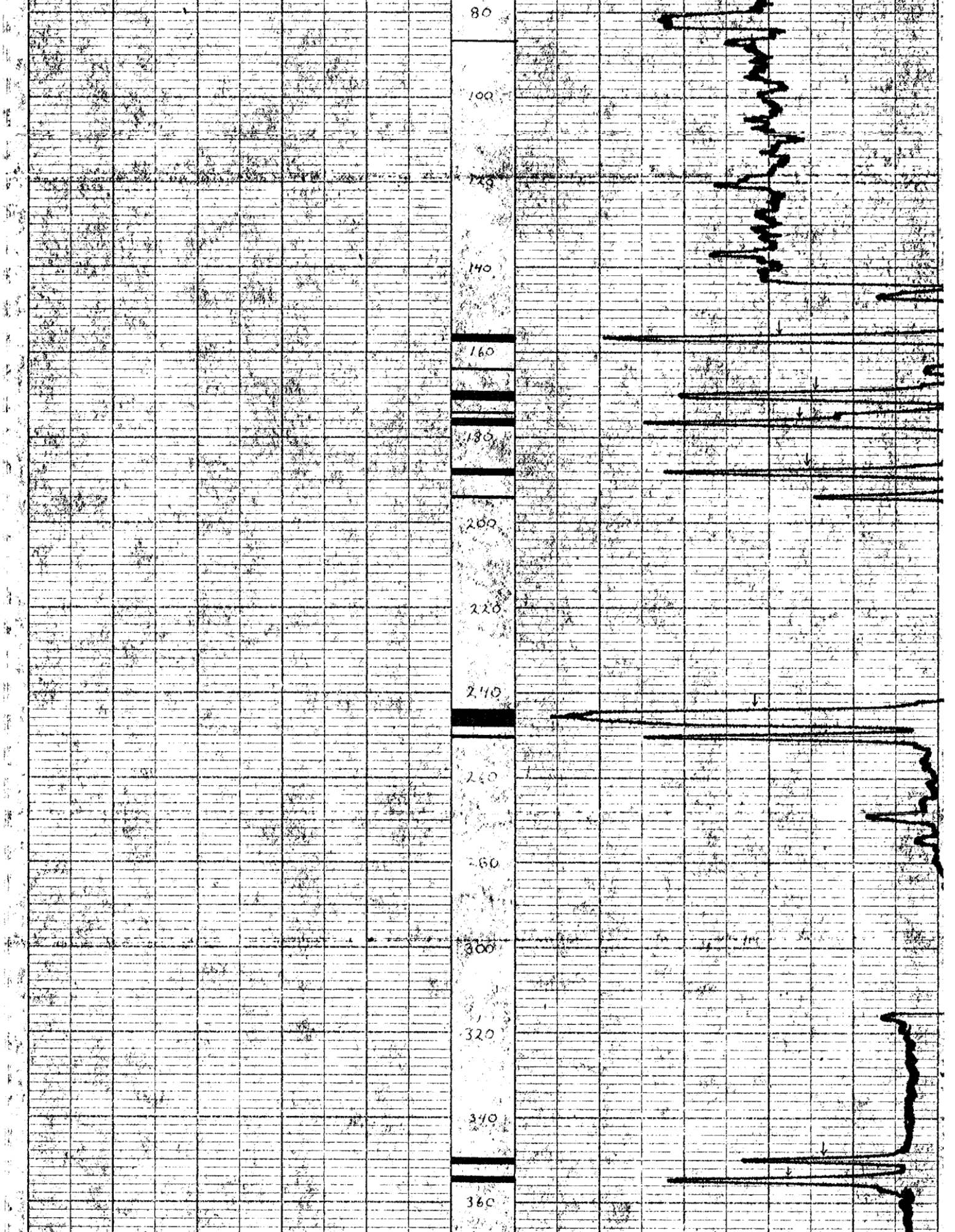
* Reg. U.S. Pat. Off.

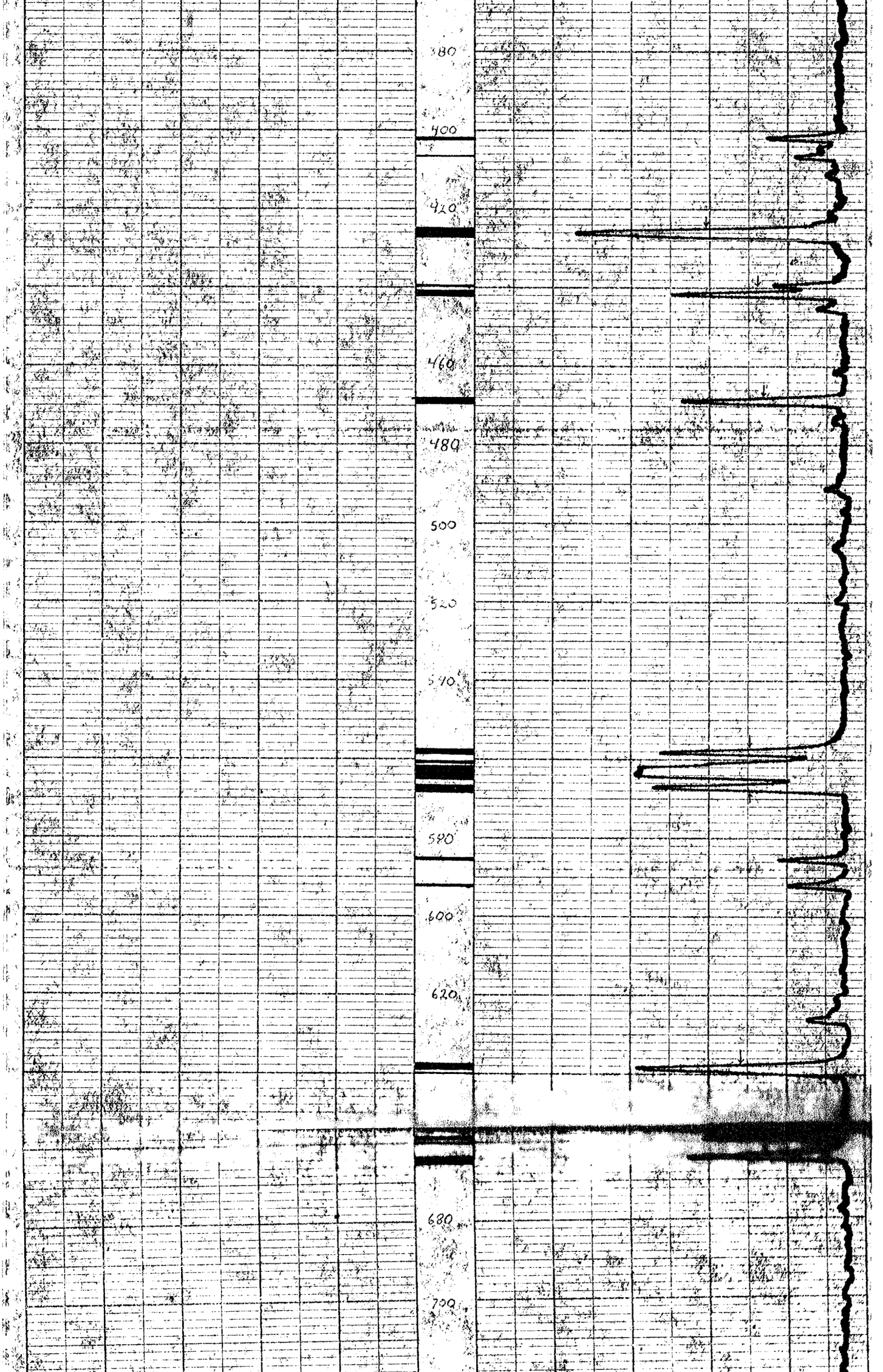
FO-139

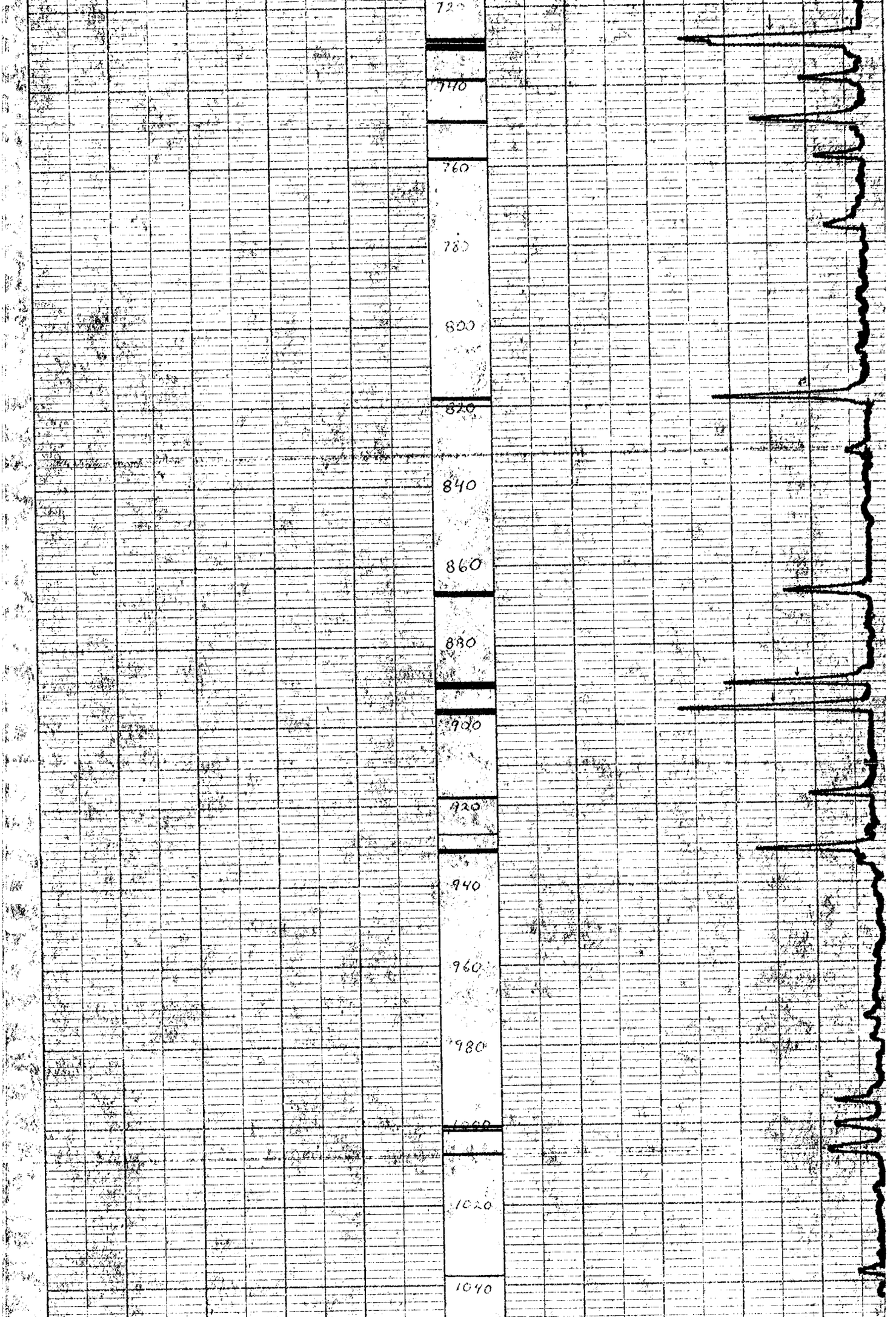
PR-CARBON CR-75(3)A-2

75-66.




80
100
120
140
160
180
200
220
240
260
280
300
320
340
360


380
400
420
460
480
500
520
540
590
600
620
680
700


720
740
760
780
800
820
840
860
880
900
920
940
960
980
1000
1020
1040

1060

1080

1100

1120

1140

1160

1180

1200

1220

1240

1280

1300

1320

1340

1360

1380

1400

1410 T.D.

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

LOCATION — WELL — COMPANY

COMPANY

AREA CARBON CK

WELL 67 75-67

COUNTY STATE

COORDINATES
N
S
ELEVATION
DF
KB
GL

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp		
Casing Size			B.H. Temp		
Bit Size					
Bit Size			Logged by		
			Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

DENSITY

1000 cps

CAVING

CAVING

0
50
100
150
200
250
300
350
400
433 – T.D.

75-67
re: 1000 cps

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY: Utah Mines Ltd.
AREA: Eastern Canada
WELL: Well 7
COUNTY: _____ STATE: N.B.

COORDINATES:
N.
S
ELEVATION:
D.F.
K.B.
G.L.

COMPANY: Utah Mines Ltd.
WELL: Well 7
LOCATION: Nash Creek Area, Bathurst, N.B.

	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by		
Witnessed by		

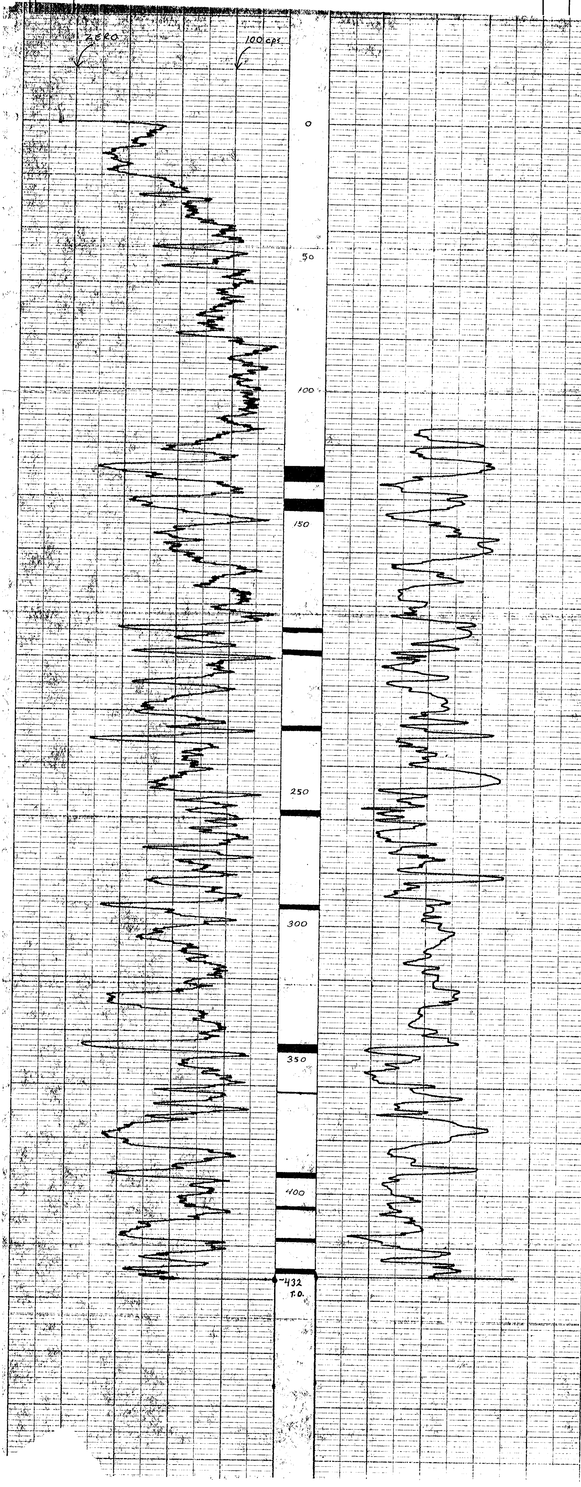
REMARKS:

* Reg. U.S. Pat. Off.

FORM 65

75-60 P.9

Re access see 12-12-75



UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY: Utah Mines Ltd.
AREA: Carbon Creek
WELL: 75-68
COUNTY: STATE B.C.

COORDINATES: N. 2 51,250S
E.
ELEVATION: D.F.
K.B.
G.L. 1055'±

COMPANY Utah Mines Ltd.
WELL 75-68
LOCATION: 365'±75W X 51,250S

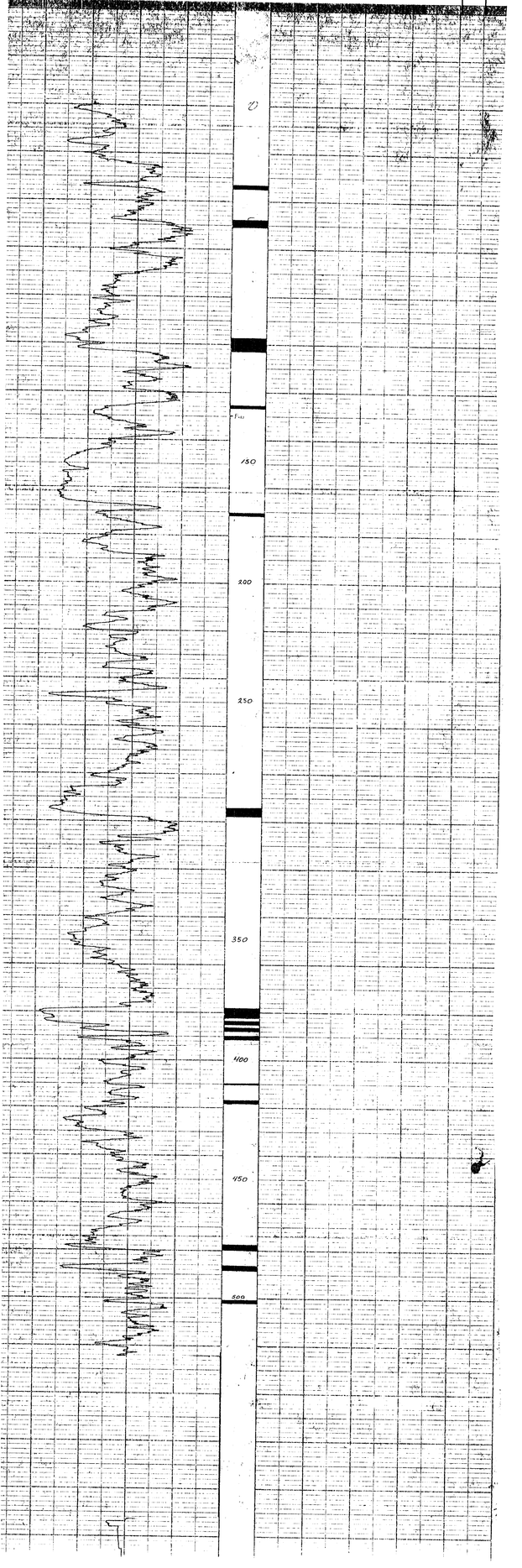
	Run No. 1	Run No. 2
Date	August 30, 1975	
First Reading	0	
Last Reading	1511	
Footage Logged	1511	
Bottom (Driller)	1511	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity		
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

75-68



498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY

AREA

WELL 68 75-68

COUNTY STATE

COORDINATES:
N.
S.
ELEVATION:
D.F.
K.B.
G.L.

LOCATION WELL COMPANY

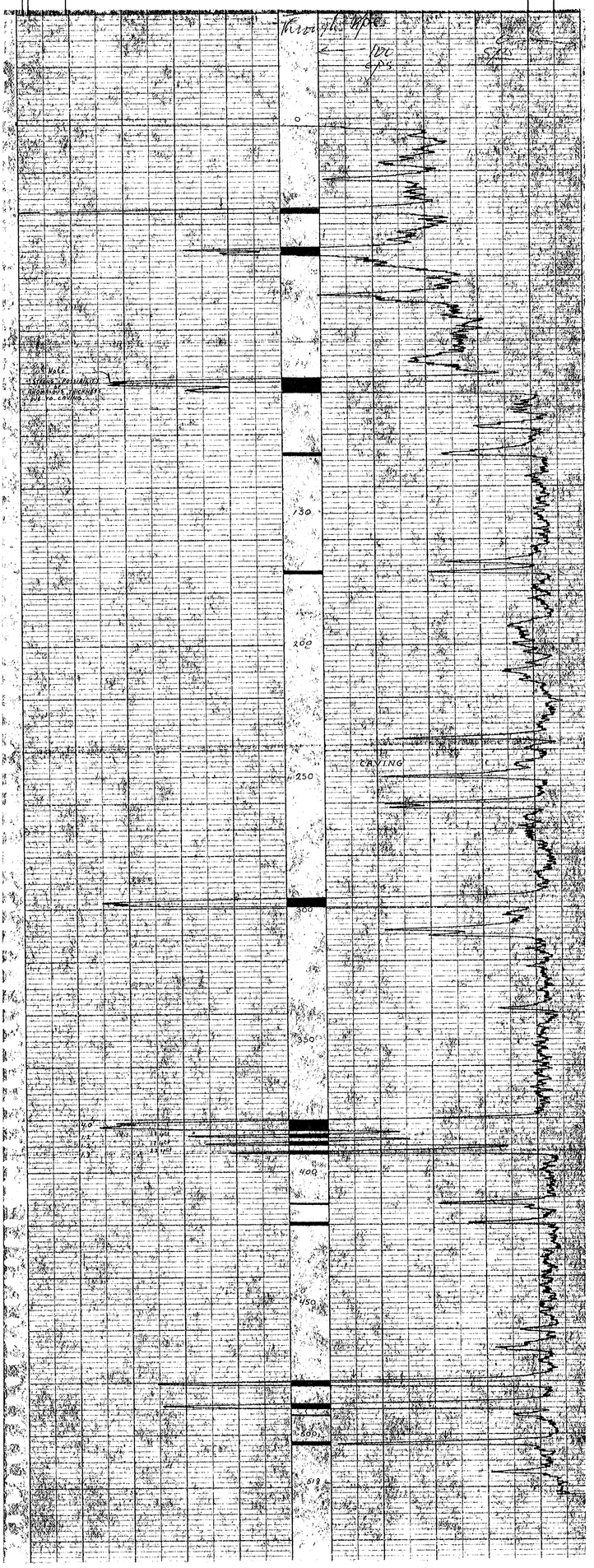
	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size					
Bit Size					
			Logged by		
			Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

CO 139

DENSITY



P.O.

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

LOCATION | WELL | COMPANY

COMPANY

AREA

WELL 69 69

COUNTY STATE

COORDINATES
N
S
ELEVATION:
D.F.
K.B.
G.L.

	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by		
Witnessed by		

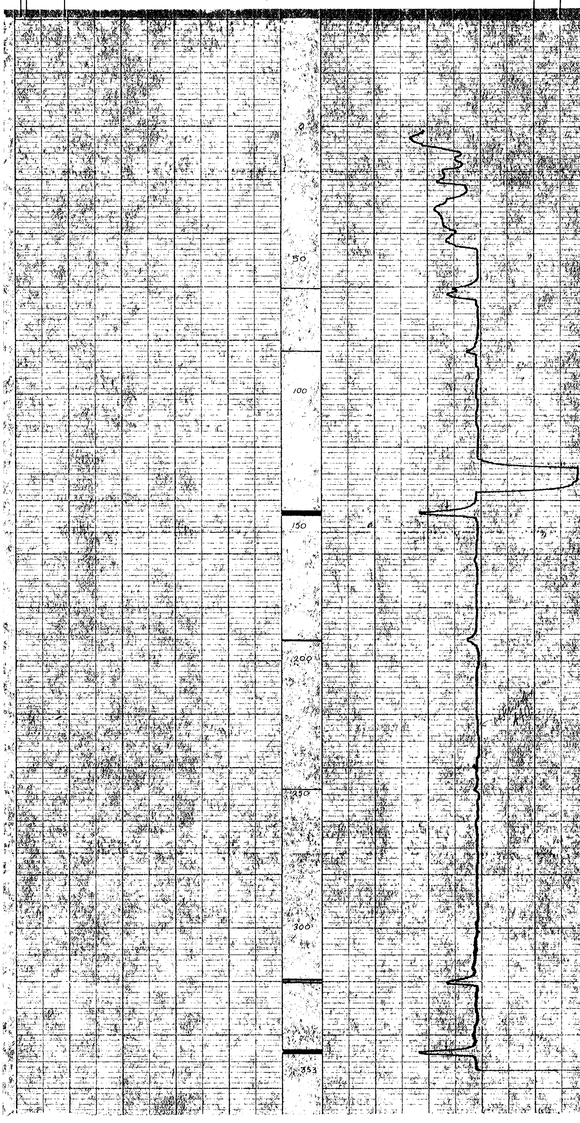
REMARKS

* Reg. U.S. Pat. Off.

SEE TOP

W. BOUNDARY OF TSC/A-2

75-69



UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY
AREA
WELL 69 69
COUNTY STATE

COORDINATES:
N
S
ELEVATION:
D.F.
K.B.
G.L.

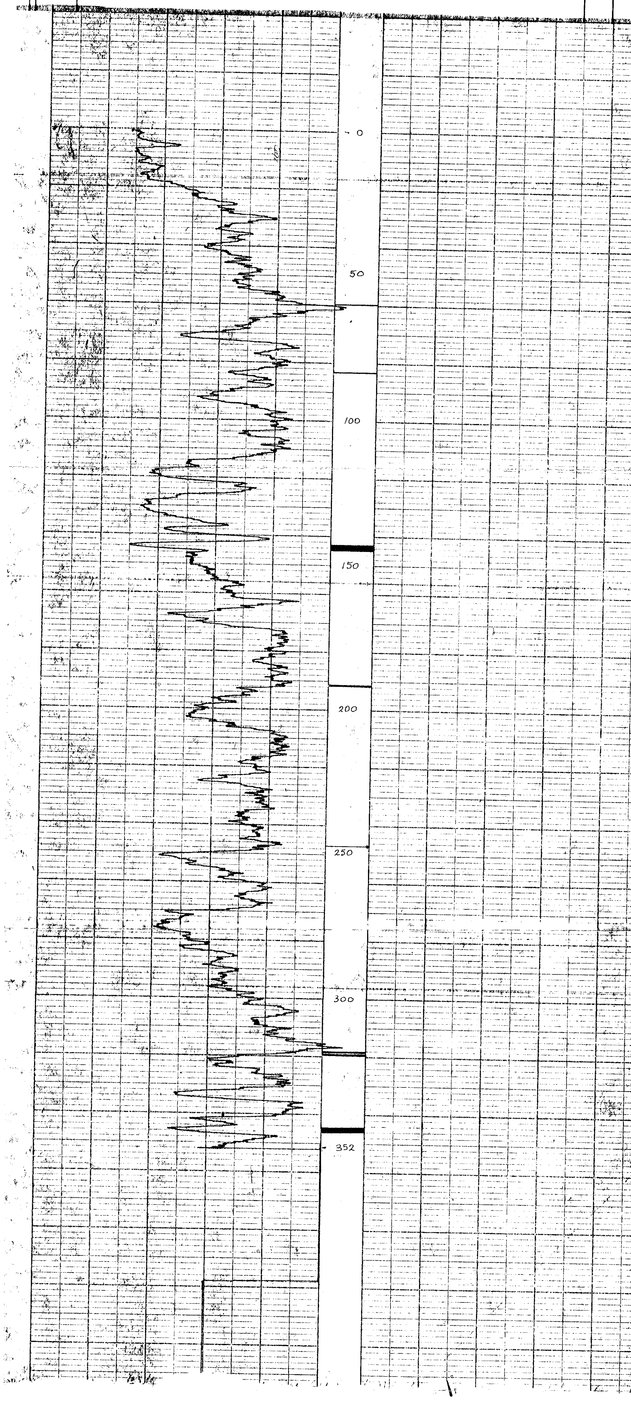
	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp		
B.H. Temp.		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

GAMMA



Le. 100,000 cc 75-12-2 75-66

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY

WELL 70

COUNTY STATE

COORDINATES
N
E
ELEVATION
D.F.
K.B.
G.L.

LOCATION | SEC. | TWP. | RGE. | COUNTY

	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ Bht	@ °F	@ °F
pH		
Circ. Temp.		
Bht Temp.		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

GAMMA

0
50
100
150
200
250
300
350
400
450
500
550
600
652
70

Re Cardex Re - Drill 75-70

P.Q

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY
WELL
LOCATION

COMPANY
AREA CARBON CK
WELL 70 75-70
COUNTY STATE

COORDINATES:
N
S
ELEVATION:
D.F.
K.B.
G.L.

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp		
Casing Size			B.H. Temp		
Bit Size					
Bit Size					
			Logged by		
			Witnessed by		

REMARKS

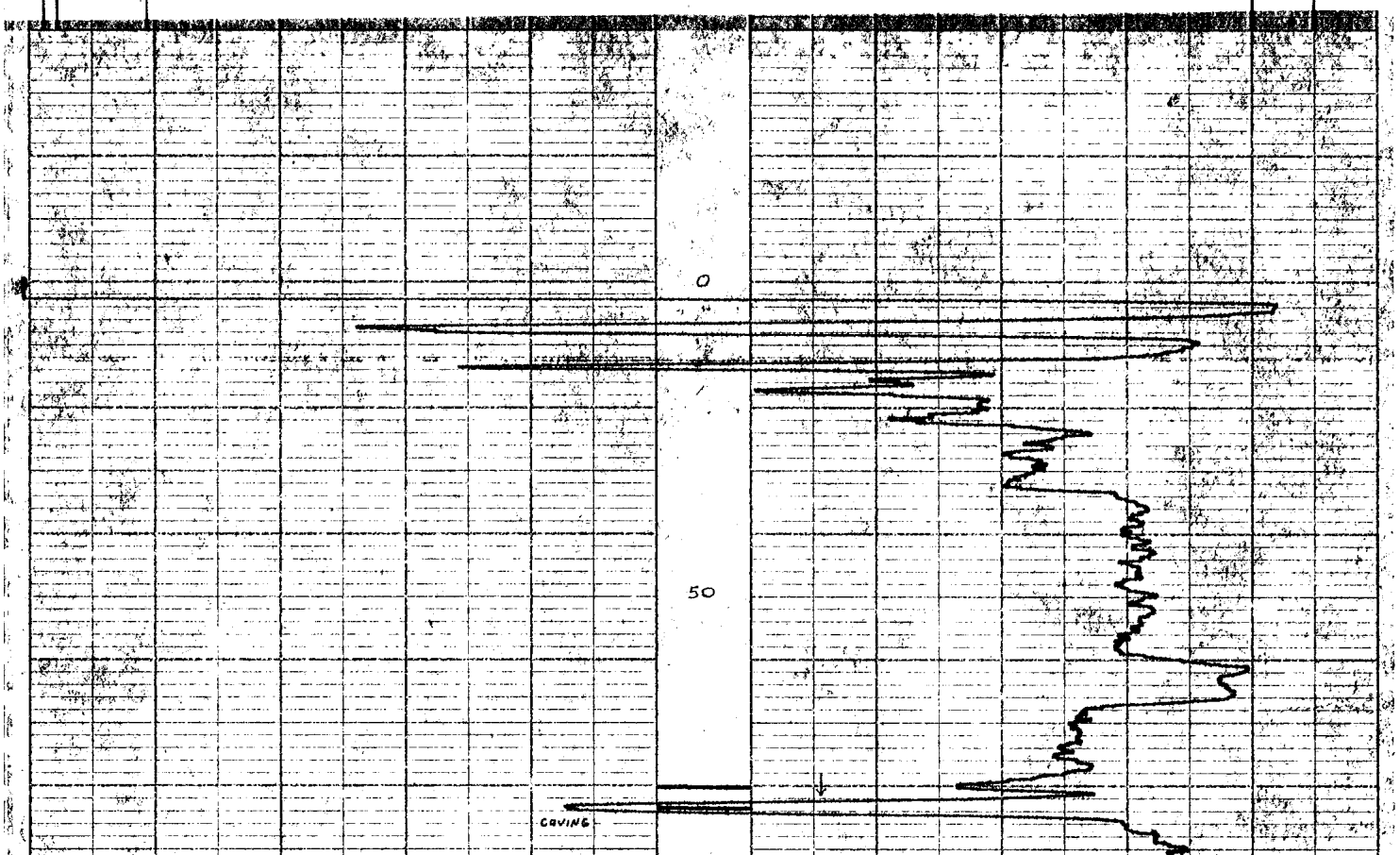
* Reg. U.S. Pat. Off.

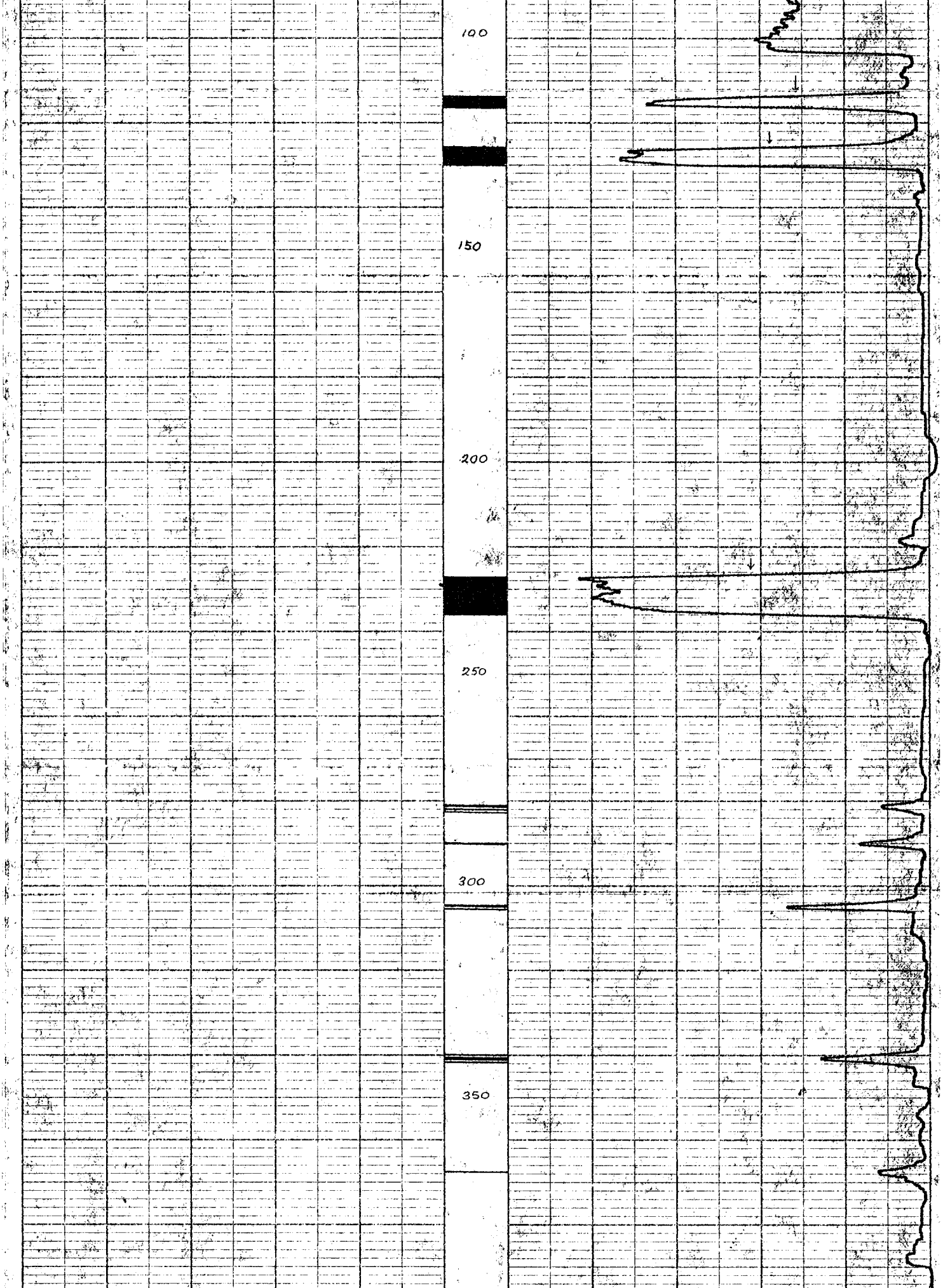
FO-139

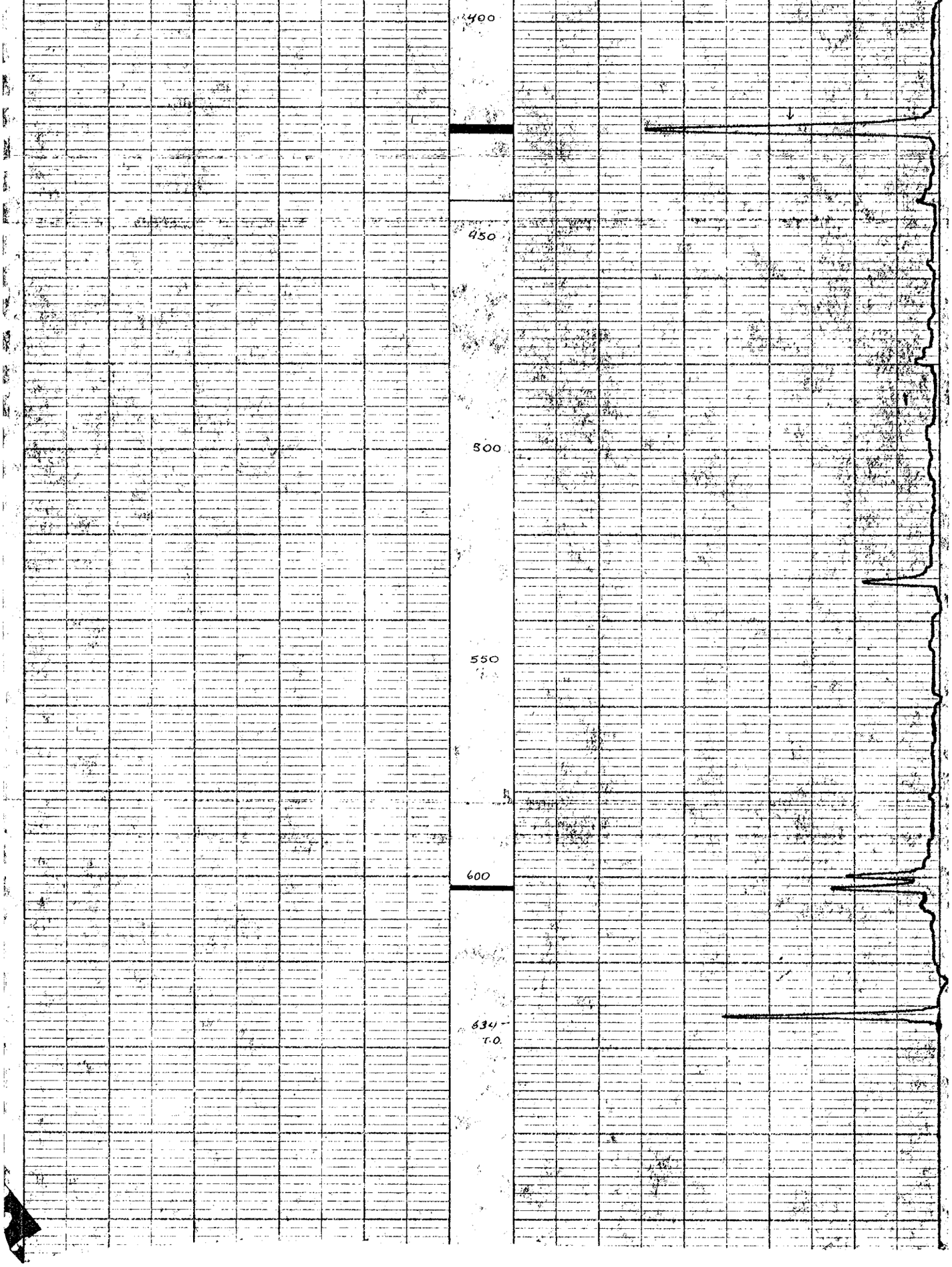
Pr - Carbon Ck 75-70-2

75-70

DENSITY




100
150
200
250
300
350


400
450
500
550
600
634
T.D.

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-35
LOCATION 363,600N x 52,850E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-35
COUNTY STATE B.C.

COORDINATES: 363,600N x 52,850E
N
S
ELEVATION:
D.F.
K.B.
G.L. 3120±

	Run No. 1	Run No. 2
Date	June 3, 1975	
First Reading	650'	
Last Reading	0	
Footage Logged	650'	
Bottom (Driller)	657'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size:	HO	
Bit Size:		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by	R. Karst	
Witnessed by	D.N. LeNobel	

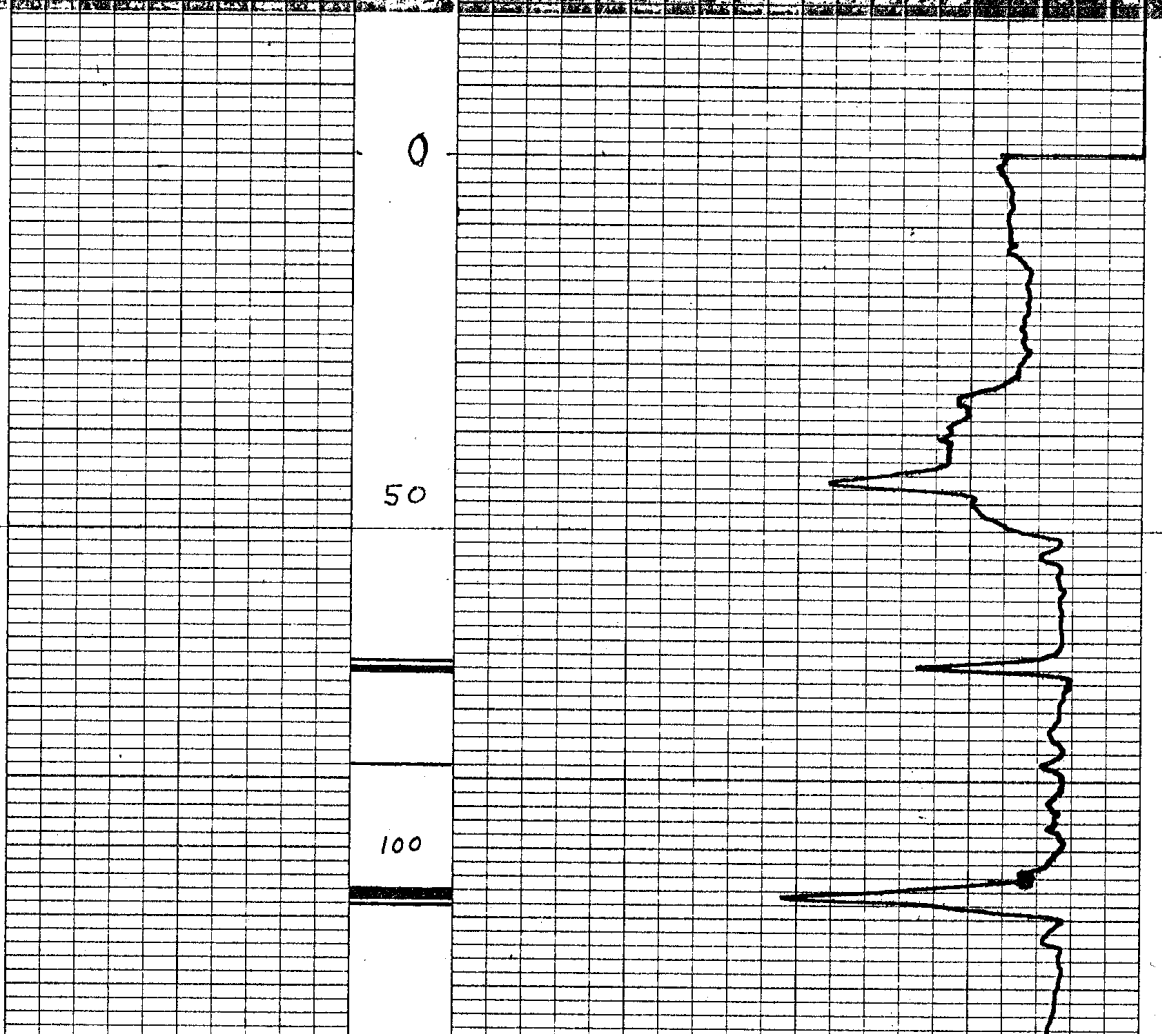
REMARKS

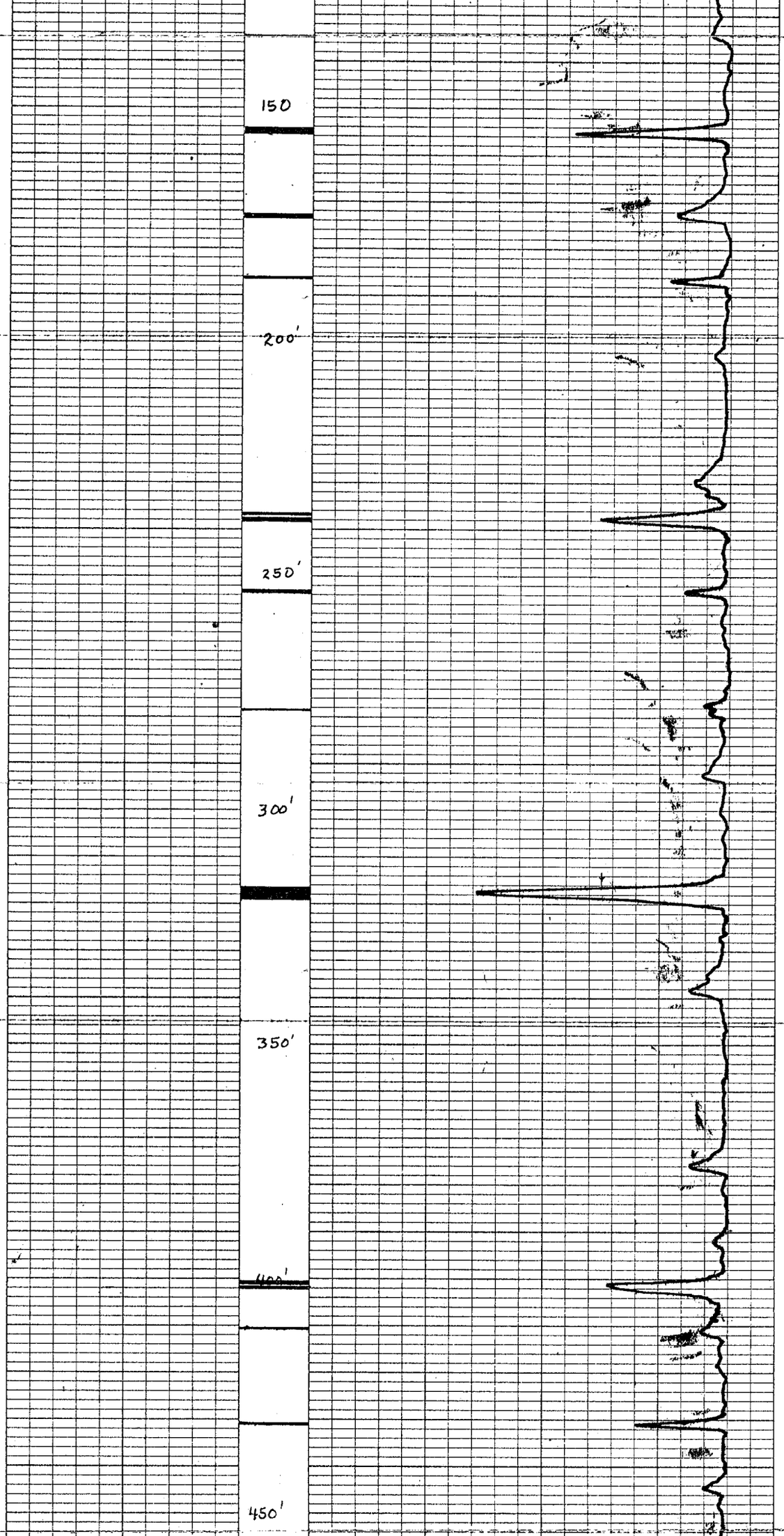
Density
1000 CPS
TC = 3 Secs.

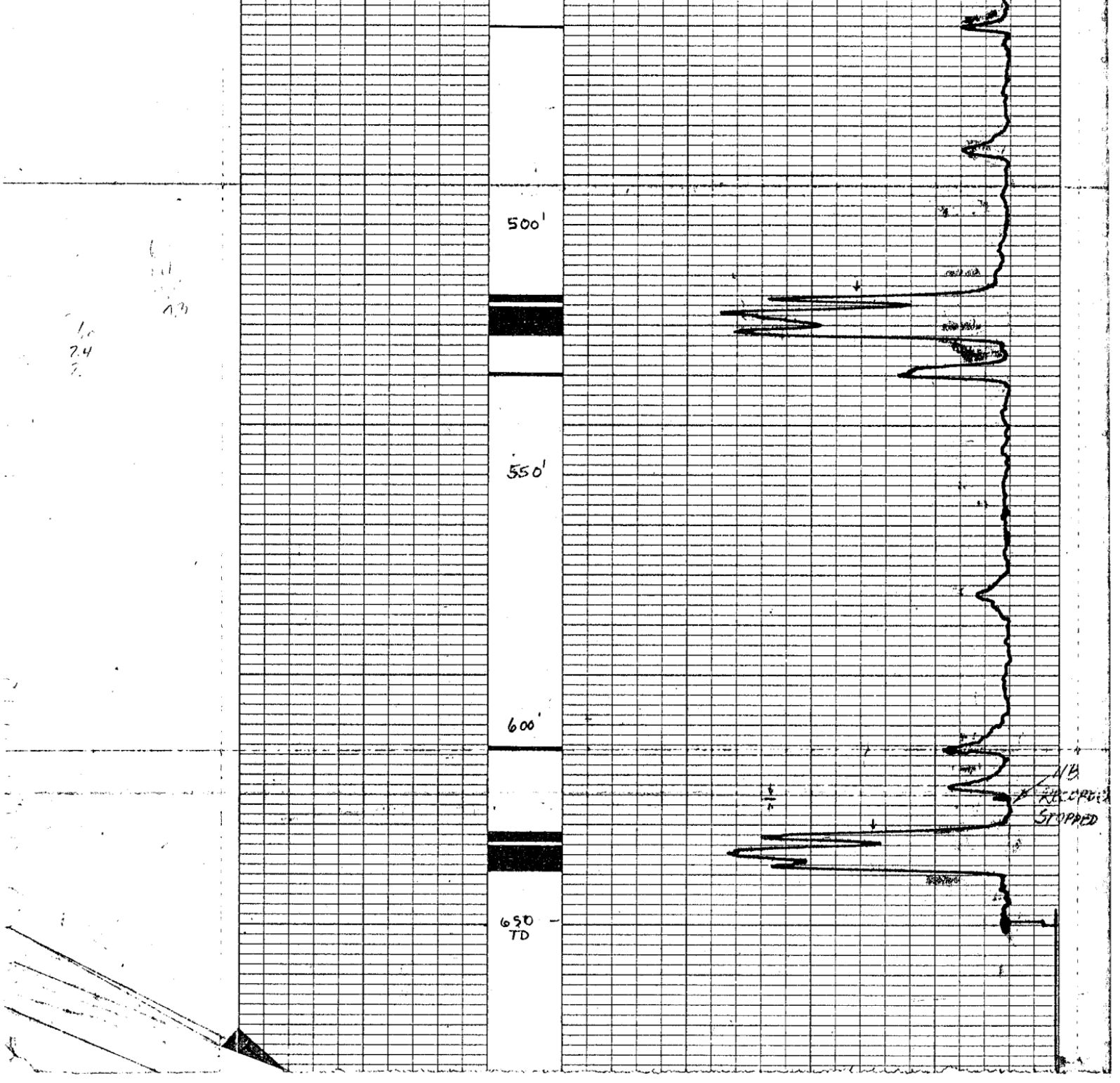
* Reg. U.S. Pat. Off.

FO-139

BC - CARBON CC - 75(3)4 75-35




150
200'
250'
300'
350'
400'
450'


500'
550'
600'
650
TD
NB
STOPPED

CCK-75(3)A-1

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY
AREA
WELL 35 75-35
COUNTY STATE

COORDINATES
N
E
ELEVATION
D.F.
K.B.
G.L.

LOCATION WELL COMPANY

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size					
Bit Size					
			Logged by		
			Witnessed by		

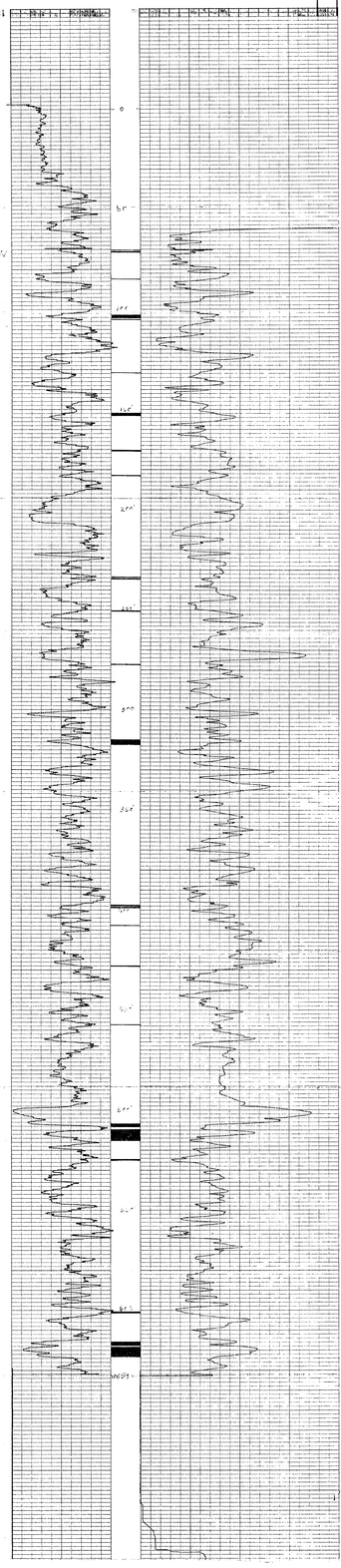
REMARKS

* Reg. U.S. Pat. Off.

All deeper at 75-19A-1

75-35

10-59



CC.K-75(3)A-1

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-36
LOCATION 137,275N & 73,225W

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-36
COUNTY STATE B.C.

COORDINATES 137,275N
73,225W
ELEVATION:
D.F.
K.B.
G.L. 1037'±

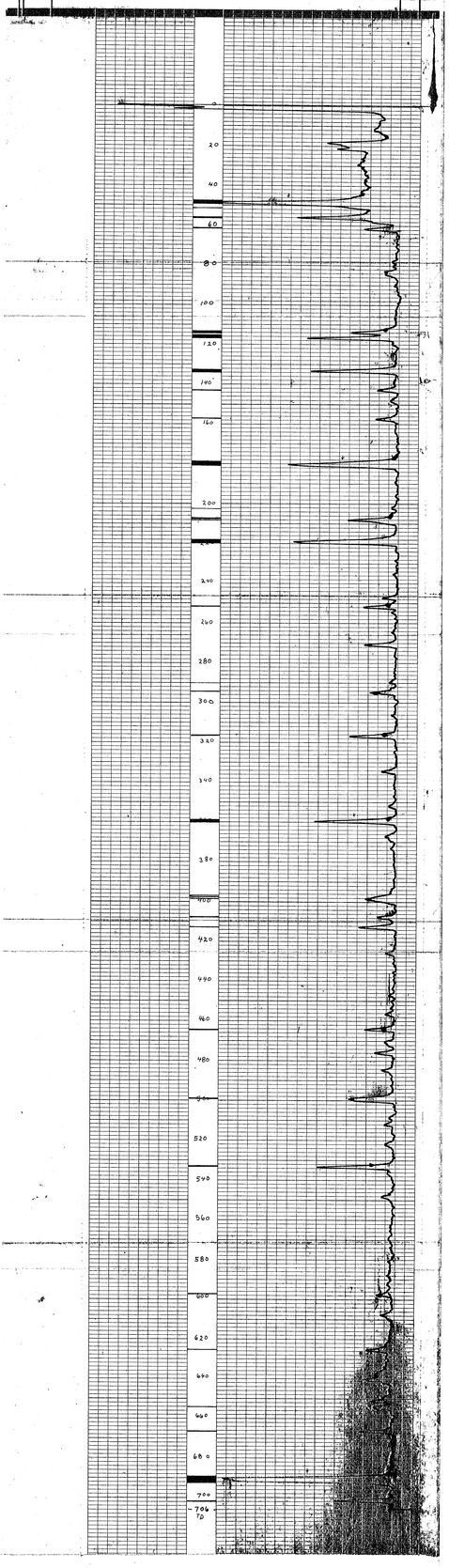
	Run No. 1	Run No. 2
Date	June 7, 1975	
First Reading	704'	
Last Reading	0	
Footage Logged	704'	
Bottom (Driller)	707'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size	BS	
Bit Size:		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ Bht	@ °F	@ °F
pH		
Fluid Loss		
Rm. Temp.		
B.H. Temp.		
Logged by	E. Hetherington	
Witnessed by	D.N. LeNobel	

REMARKS

* Reg. U.S. Pat. Off.

Density
1000 CPS
70 ± 3 Secs.



CCK-75(3)A-#1

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-36
LOCATION 370,675N x 17,250E

Re: Carbon Cr. 75(3)A-1 75-36

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-36 36
COUNTY STATE B.C.

COORDINATES: 370,275N
N x 17,250E
S
ELEVATION:
D.F.
K.B.
G.L. 3070'±

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	June 7, 1975		Nature		
First Reading	706'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	706'		Resistivity	@ °F	@ °F
Bottom (Driller)	707'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	40				
Bit Size:					
			Logged by	E. Rotherington	
			Witnessed by	D.N. LeNobel	

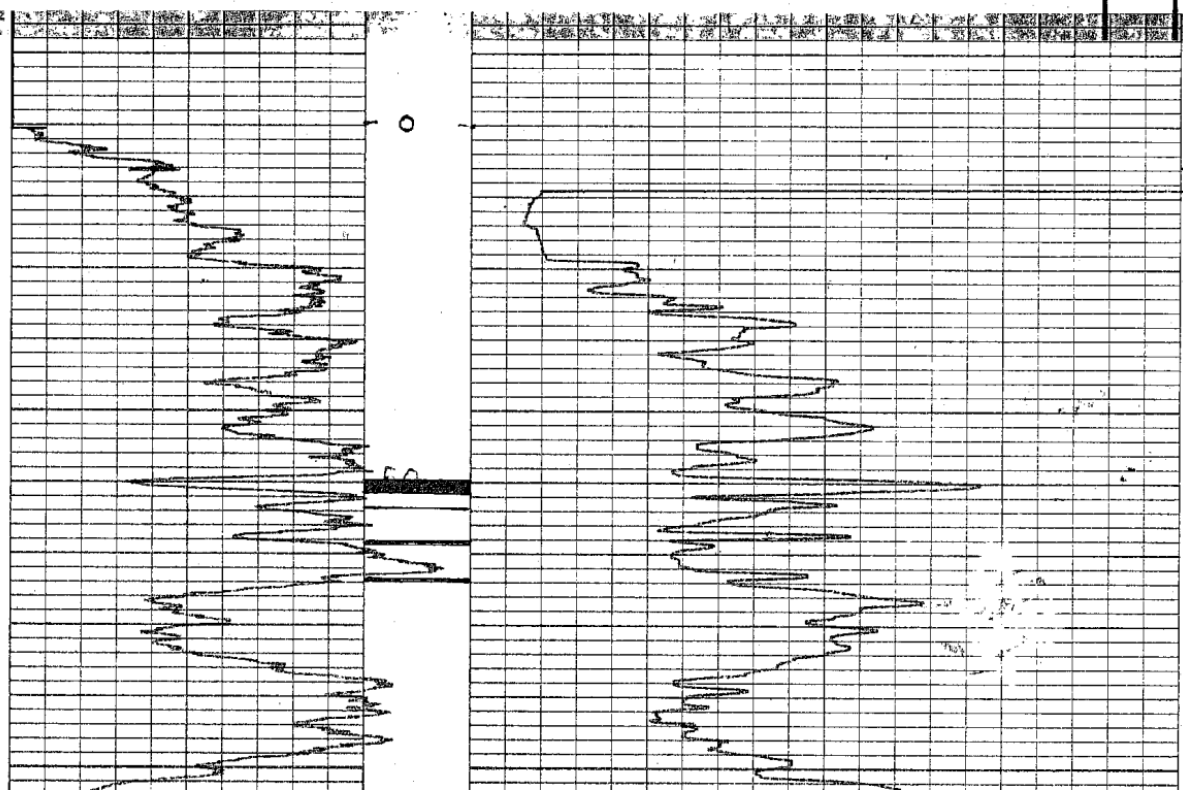
REMARKS

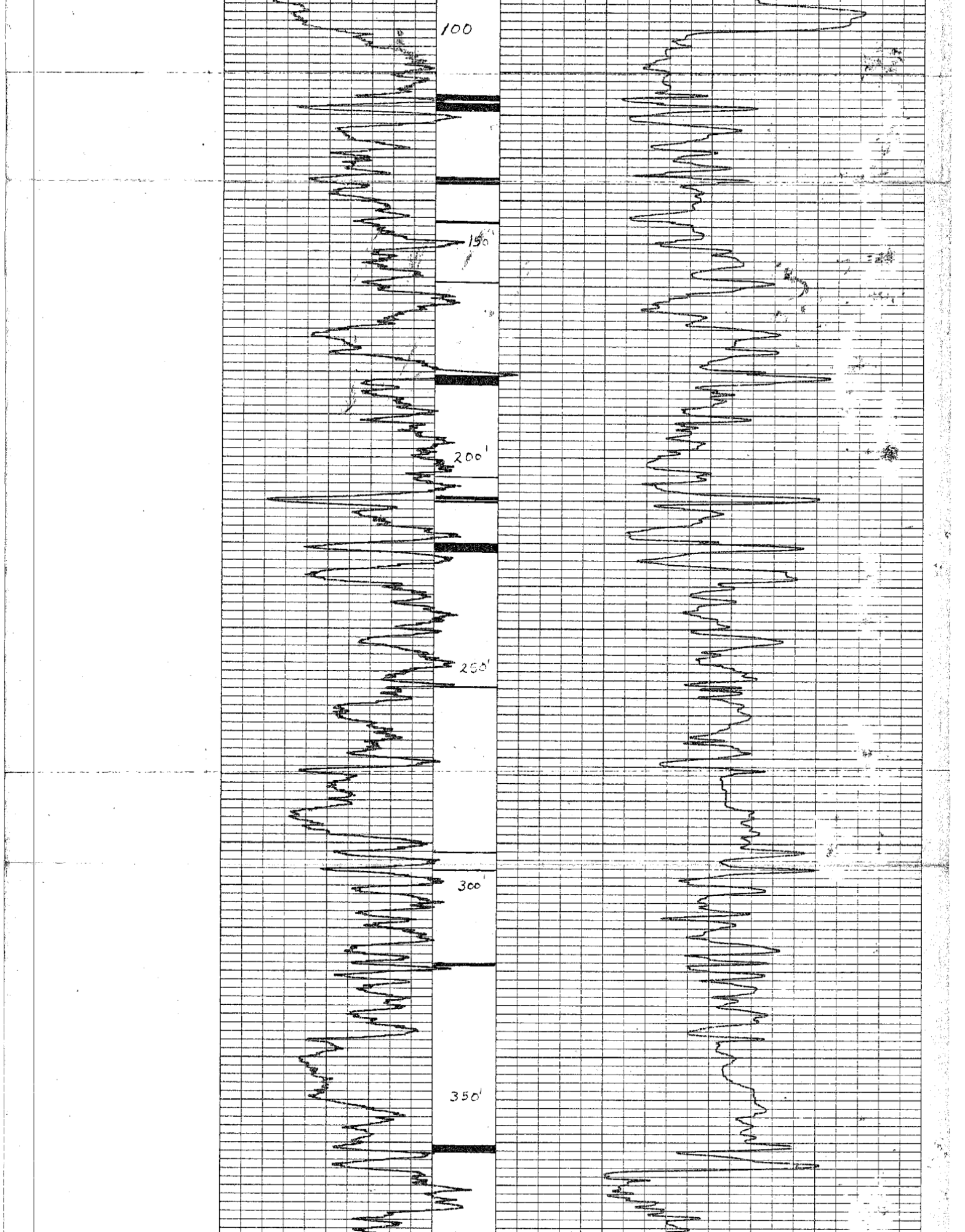
* Reg. U.S. Pat. Off.

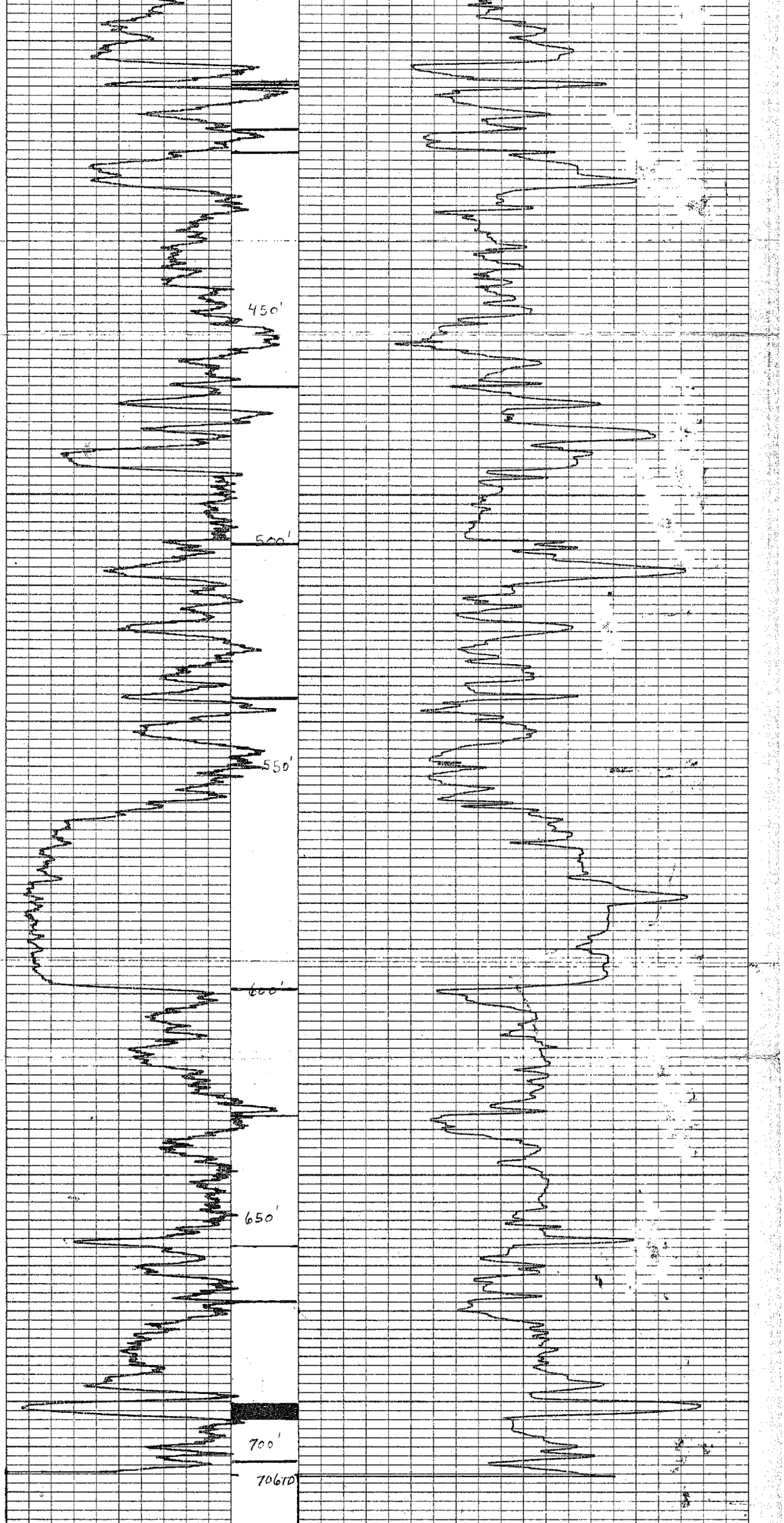
Gamma
50 CPS/Division

Resistivity
75 Ohms

FO-139




100
150'
200'
250'
300'
350'


450'
500'
550'
600'
650'
700'
706TD

CCK-75(3)A-1

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY
AREA
WELL 37 75-37
COUNTY STATE

COORDINATES: N E
ELEVATION: D.F. K.B. G.L.

COMPANY WELL LOCATION

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ BHT	@ °F	@ °F
Casing (from Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size					
Bit Size			Logged by		
			Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

108

GAMMA RESIST

0
50
100
150
200
250
300
350
400
450
501 TD

UK - CANADA OIL - 75(3)A-1 75-37

CCK-75(3)A-1

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-37
COUNTY STATE B.C.

COORDINATES: 373,350N
N. x 48,900E
S
ELEVATION:
D.F.
K.B.
G.L. 3510±

LOCATION 373,350N x 48,900E
WELL 75-37
COMPANY Utah Mines Ltd.

	Run No. 1	Run No. 2
Date	June 8, 1975	
First Reading	501'	
Last Reading	0	
Footage Logged	501'	
Bottom (Driller)	508'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size:	10"	
Bit Size:		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by	Peter Graham	
Witnessed by	Neil LeNoel	

REMARKS

Density
3.3 CPS/Division
TC = 3 Secs.
1000 CPS

* Reg. U.S. Pat. Off.

FO-139

0
50
100
150
200
250
300
350
400
450
501

Hr. CARBON CR. 75-37 1974

CCK-75(3)A-81

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-38
LOCATION 368,875N x 46,750E

COMPANY Utah Mines Ltd.

AREA Carbon Creek

WELL 75-38 38

COUNTY STATE B.C.

COORDINATES: 368,875N
N x 46,750E
S

ELEVATION:
D.F.
K.B.
G.L. 4460±

	Run No. 1	Run No. 2
Date	June 17, 1975	
First Reading	952'	
Last Reading	0	
Footage Logged	952'	
Bottom (Driller)	953'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size:	80	
Bit Size:		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
	°F	
Logged by	[illegible]	
Witnessed by	[illegible]	

REMARKS

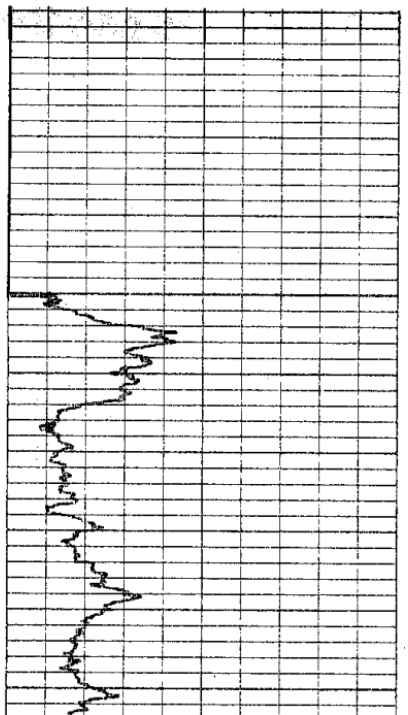
* Reg. U.S. Pat. Off.

FO-139

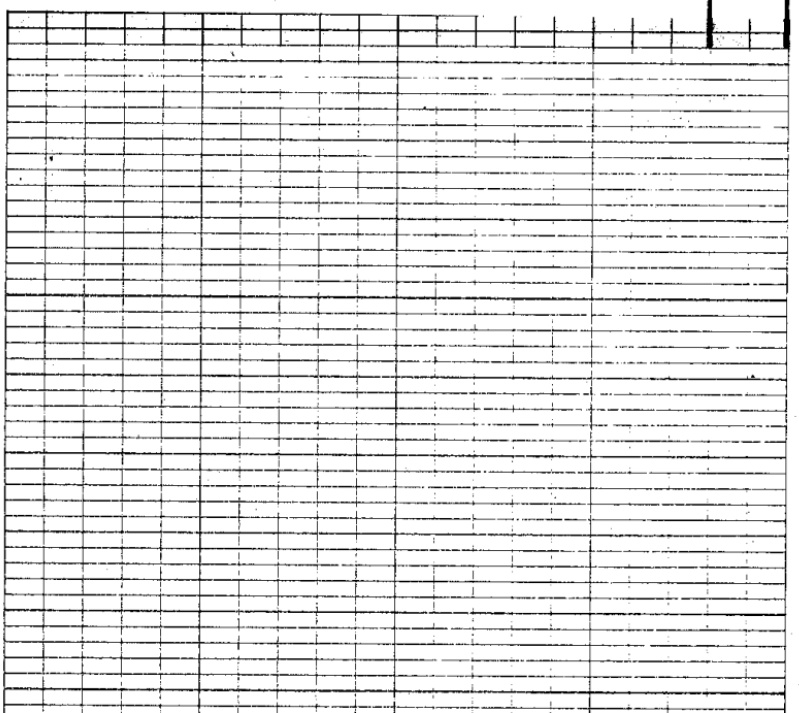
PR-CARBON CR-75(3)A-1

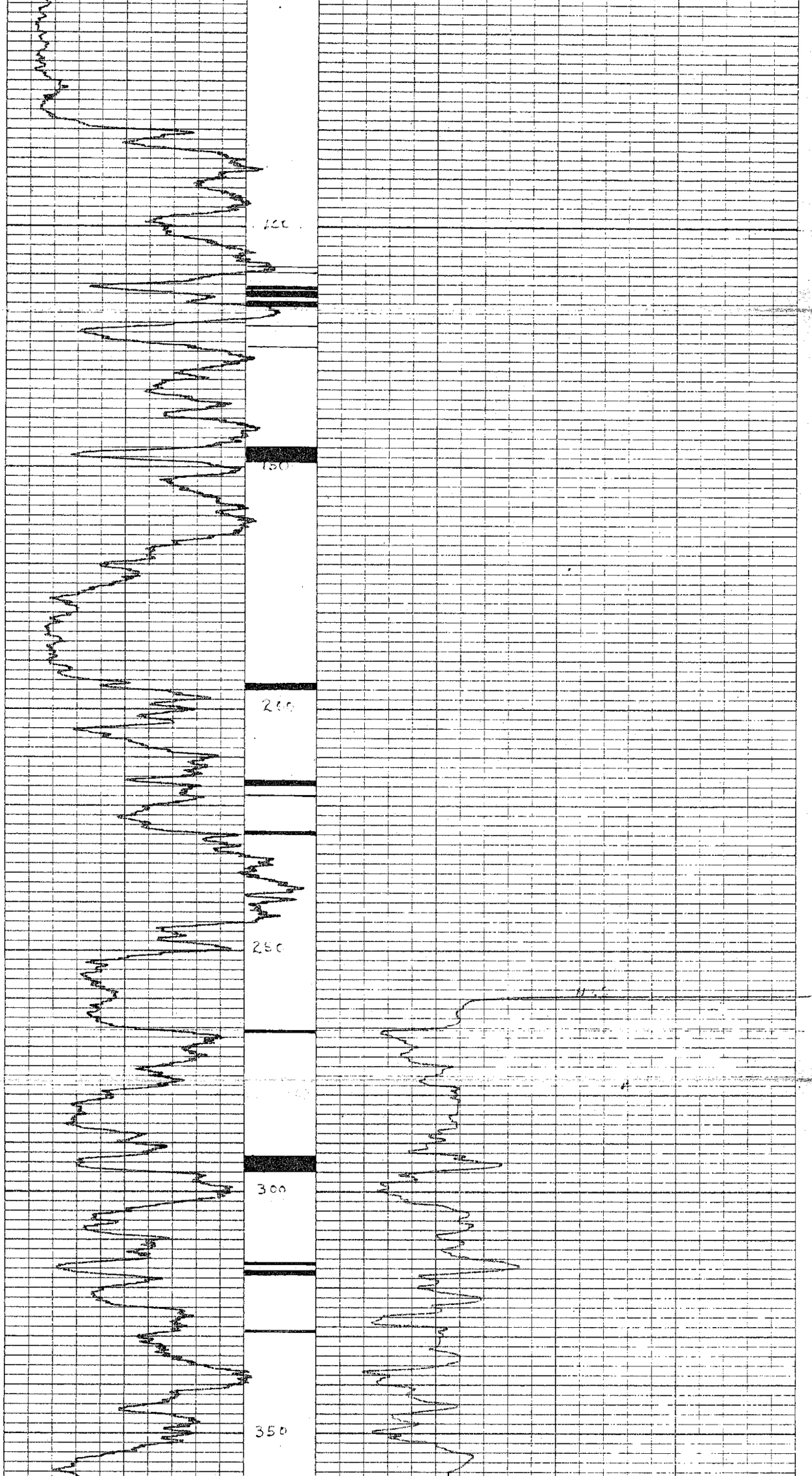
75-38

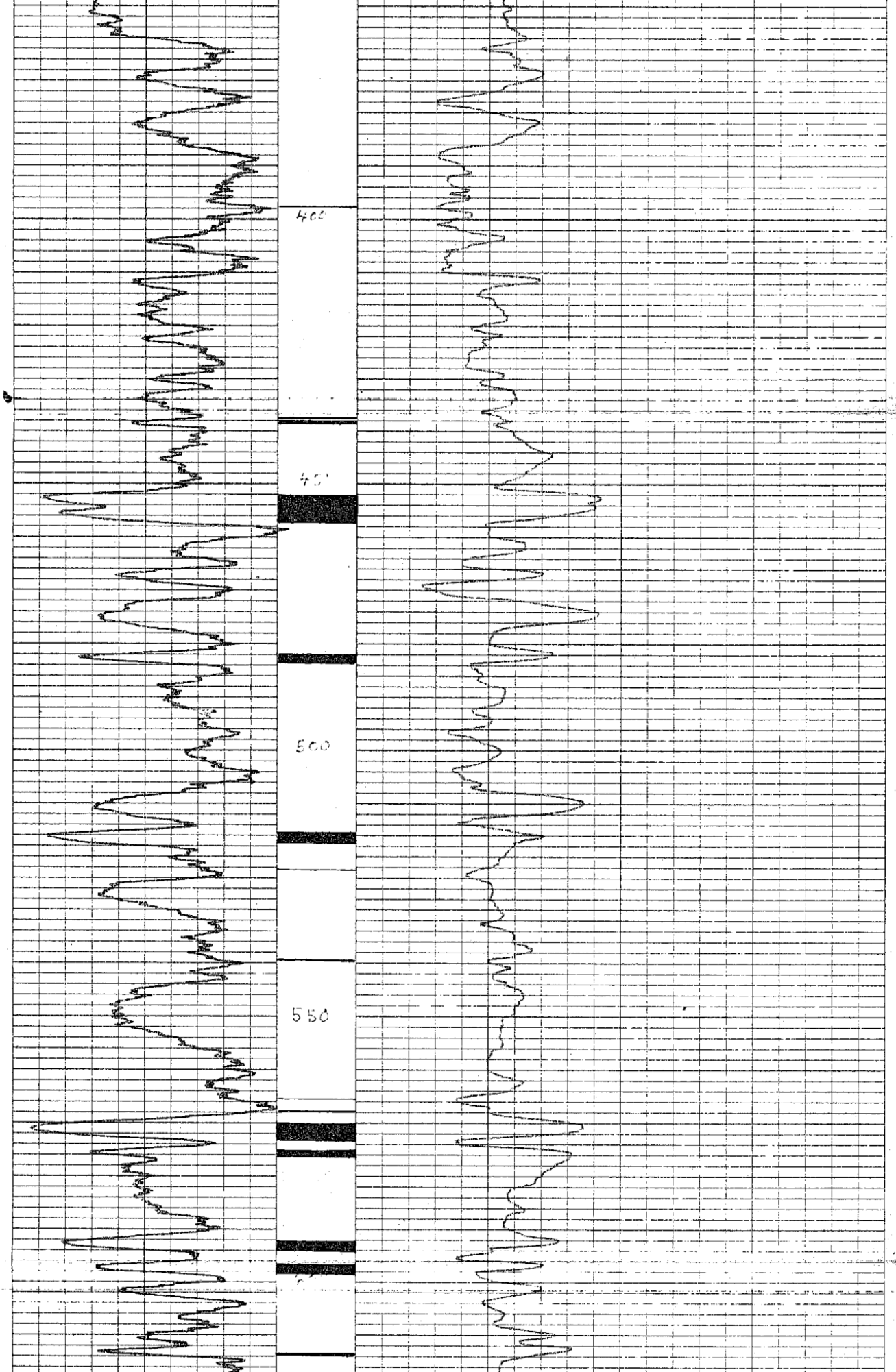
GAMMA

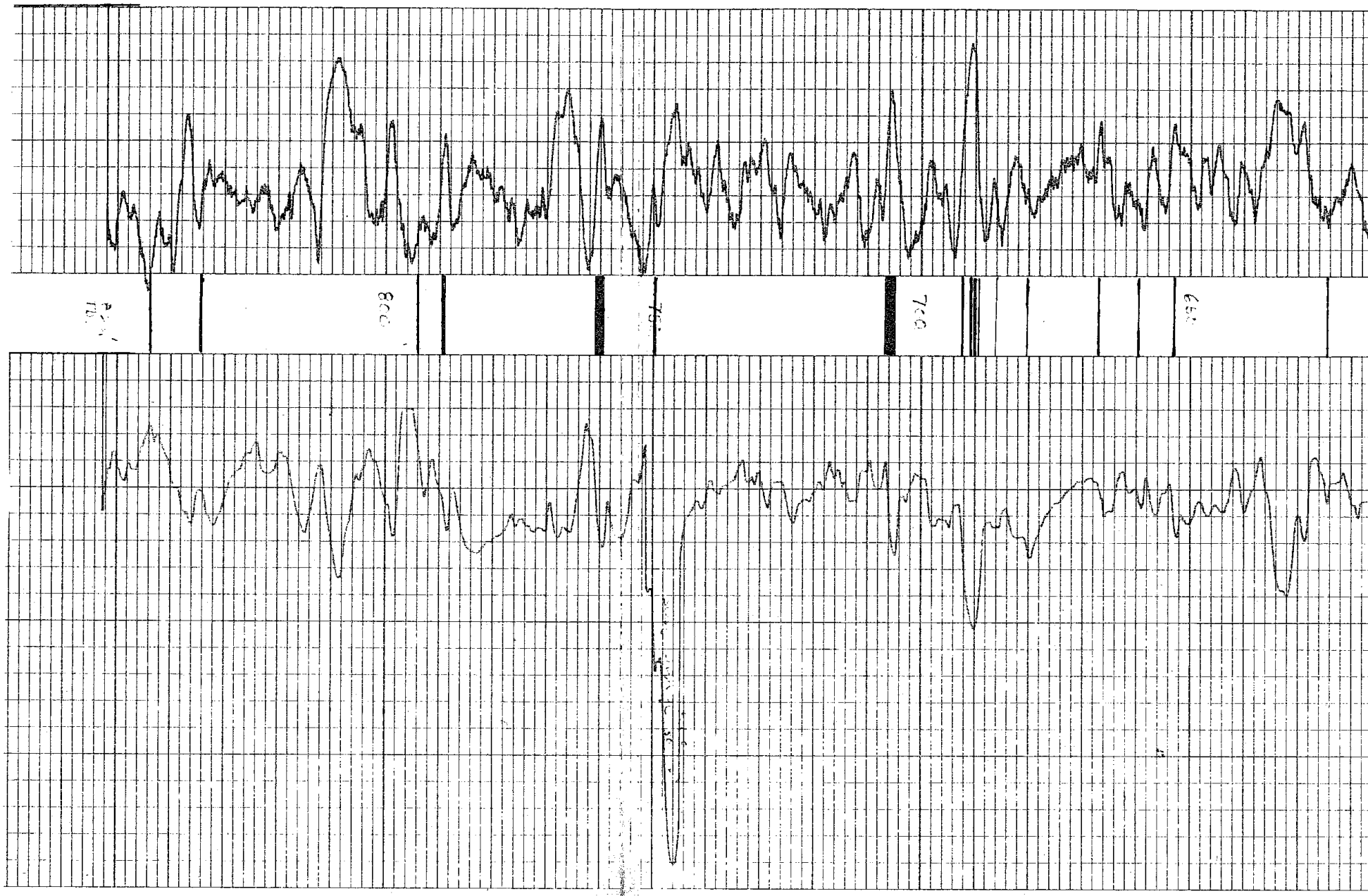


RESIST




100
150
200
250
300
350


400
450
500
550


800
700
600

CCK - 75 (3) A - 1

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-38
LOCATION 368,875N x 46,750E

COMPANY Utah Mines Ltd.

AREA Carbon Creek

WELL 75-38

COUNTY _____ STATE B.C.

COORDINATES: 368,875N
N x 46,750E
S

ELEVATION:
D.F.
K.B.
G.L. 4460'±

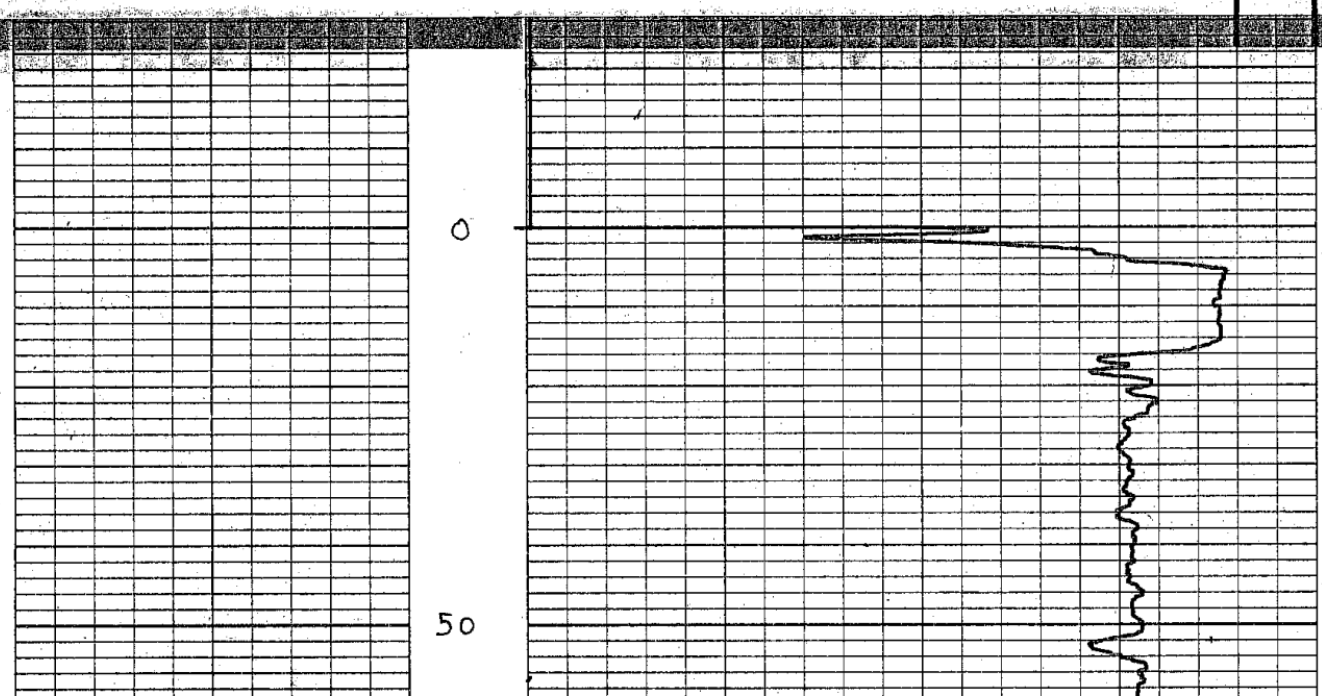
	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	June 17, 1975		Nature		
First Reading	853'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	853'		Resistivity	@ °F	@ °F
Bottom (Driller)	853'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	PO				
Bit Size:					
			Logged by	Randy Karst	
			Witnessed by	Peter Graham	

REMARKS

* Reg. U.S. Pat. Off.

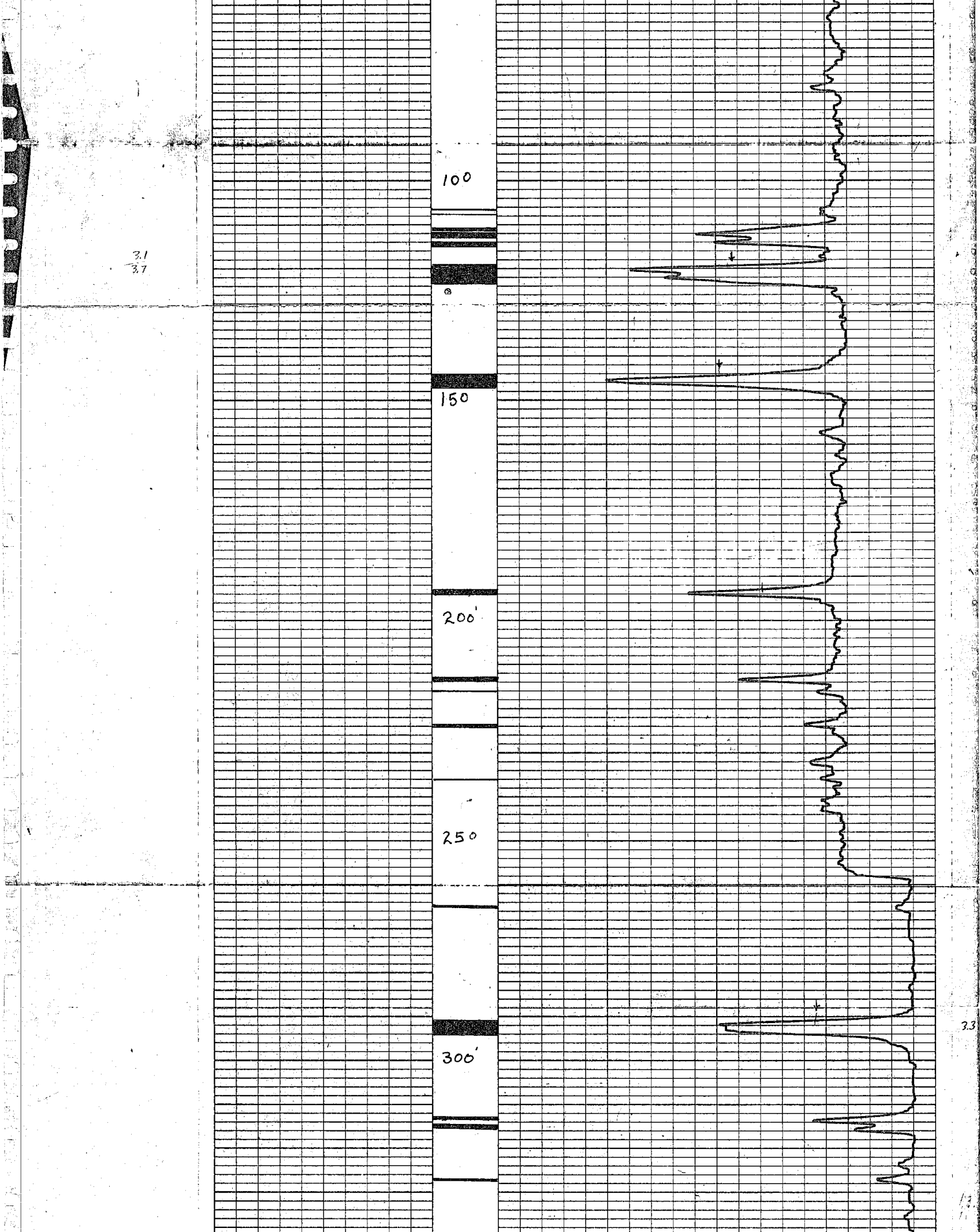
FO-139

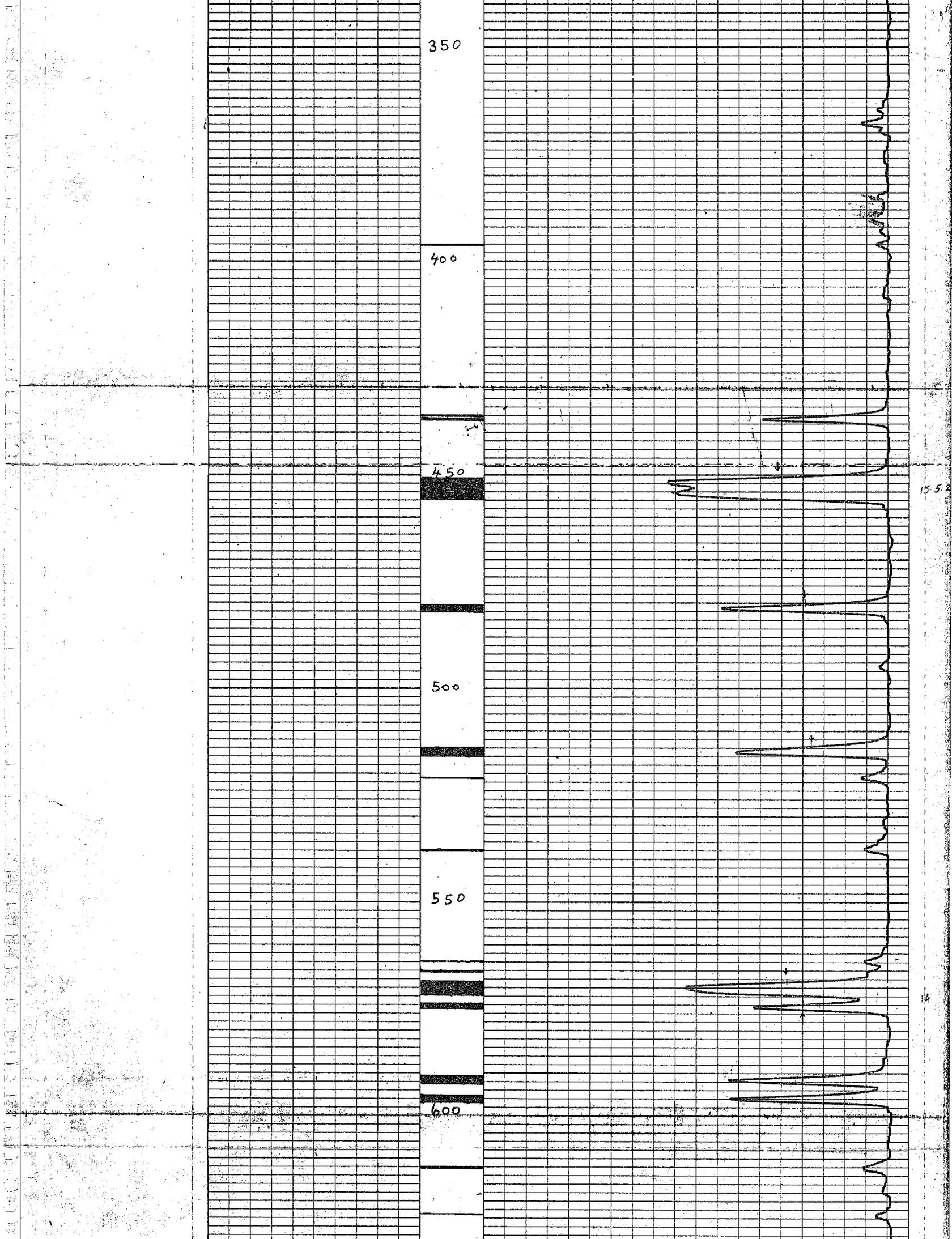
Density
50 CPS/Division
TC = 3 Secs
1000 CPS

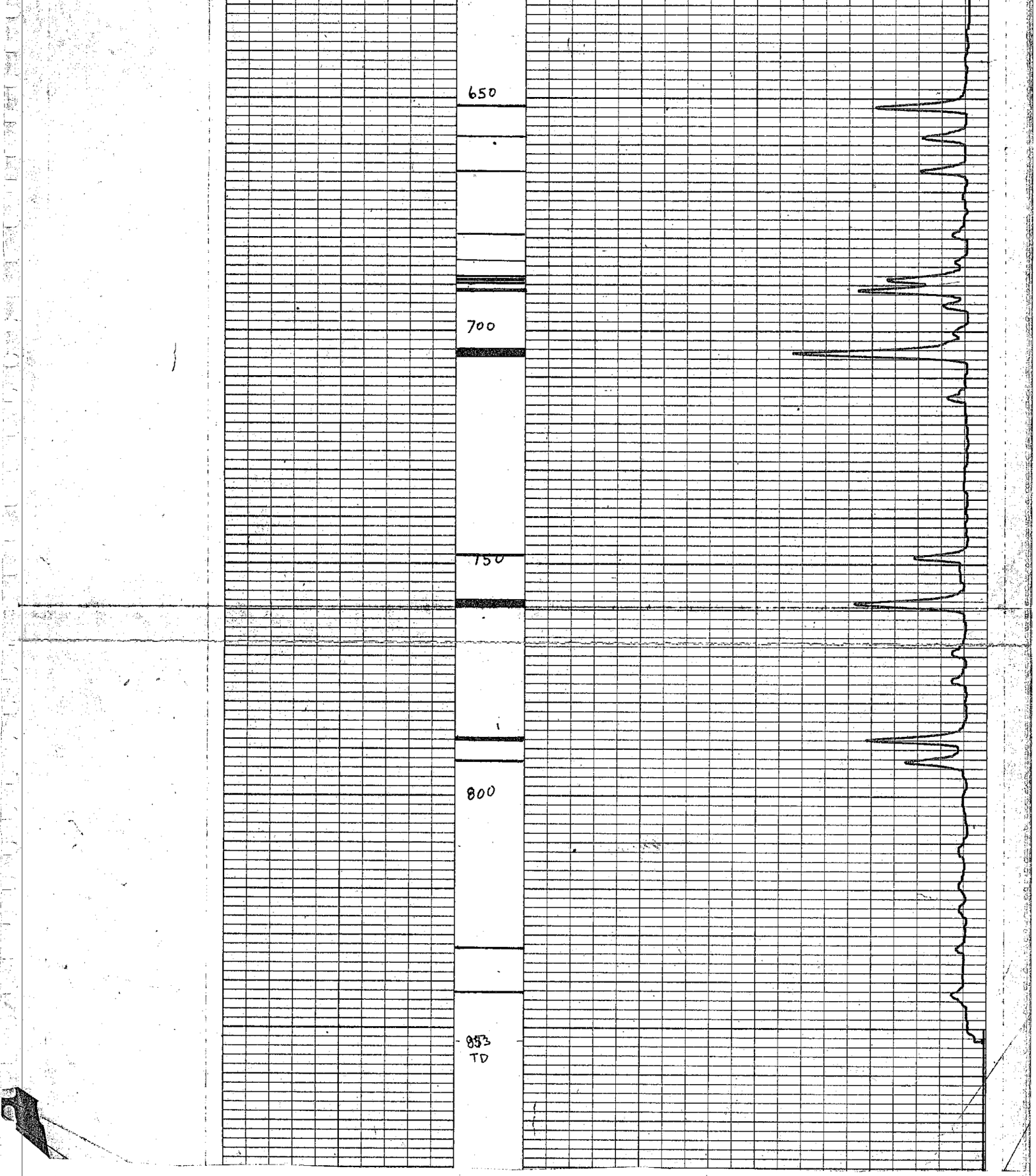


PU - CARBON CR. 75(3)A-1

75-38


100
150
200'
250
300'
3.1
3.7
3.3


350
400
450
500
550
600
15.5.2


650
700
750
800
853
TD

CCK - 75(3) A-1

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-39
LOCATION 365,300N x 56,700E

COMPANY	Utah Mines Ltd.
AREA	Carbon Creek
WELL	75-39
COUNTY	STATE BC.
COORDINATES: N	365,300N x 56,700E
S	
ELEVATION:	
D.F.	
K.B.	
G.L.	3000'±

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	July 3, 1975		Nature		
First Reading	1080'		Density		
Last Reading	0'		Viscosity	@ °F	@ °F
Footage Logged	1080'		Resistivity	@ °F	@ °F
Bottom (Driller)	1087'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	HQ				
Bit Size:					
			Logged by	R.Karst	
			Witnessed by	P.Graham	

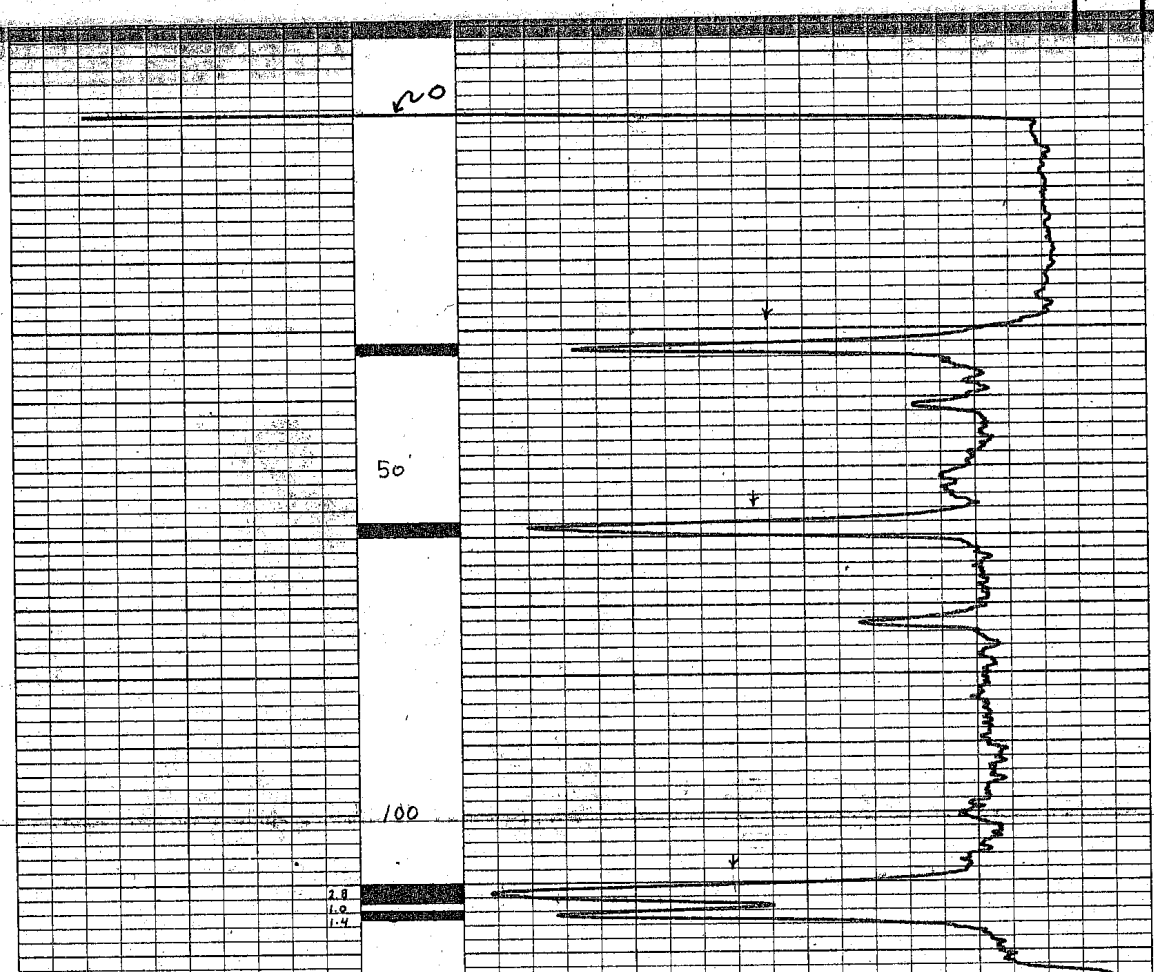
REMARKS

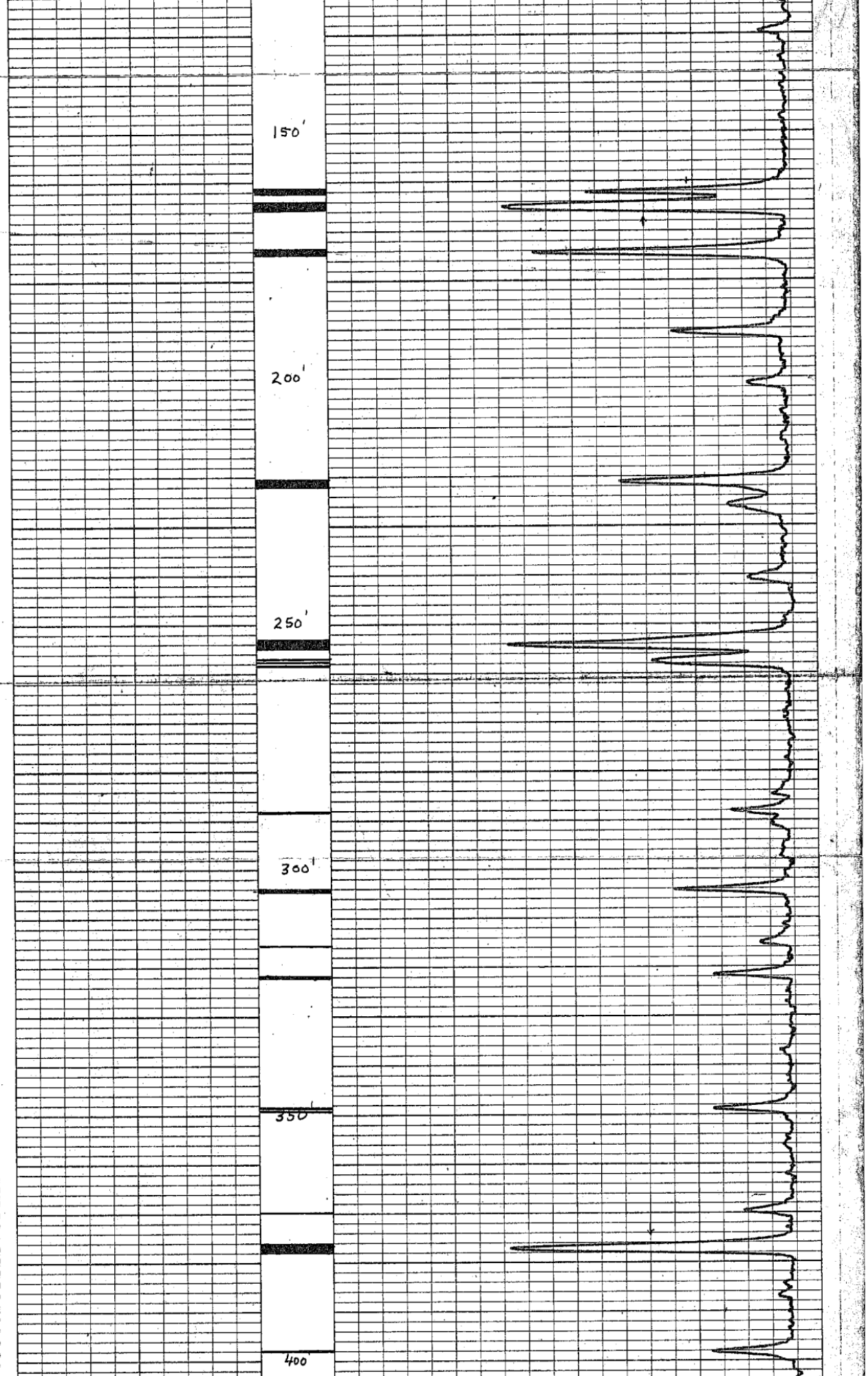
* Reg. U.S. Pat. Off.

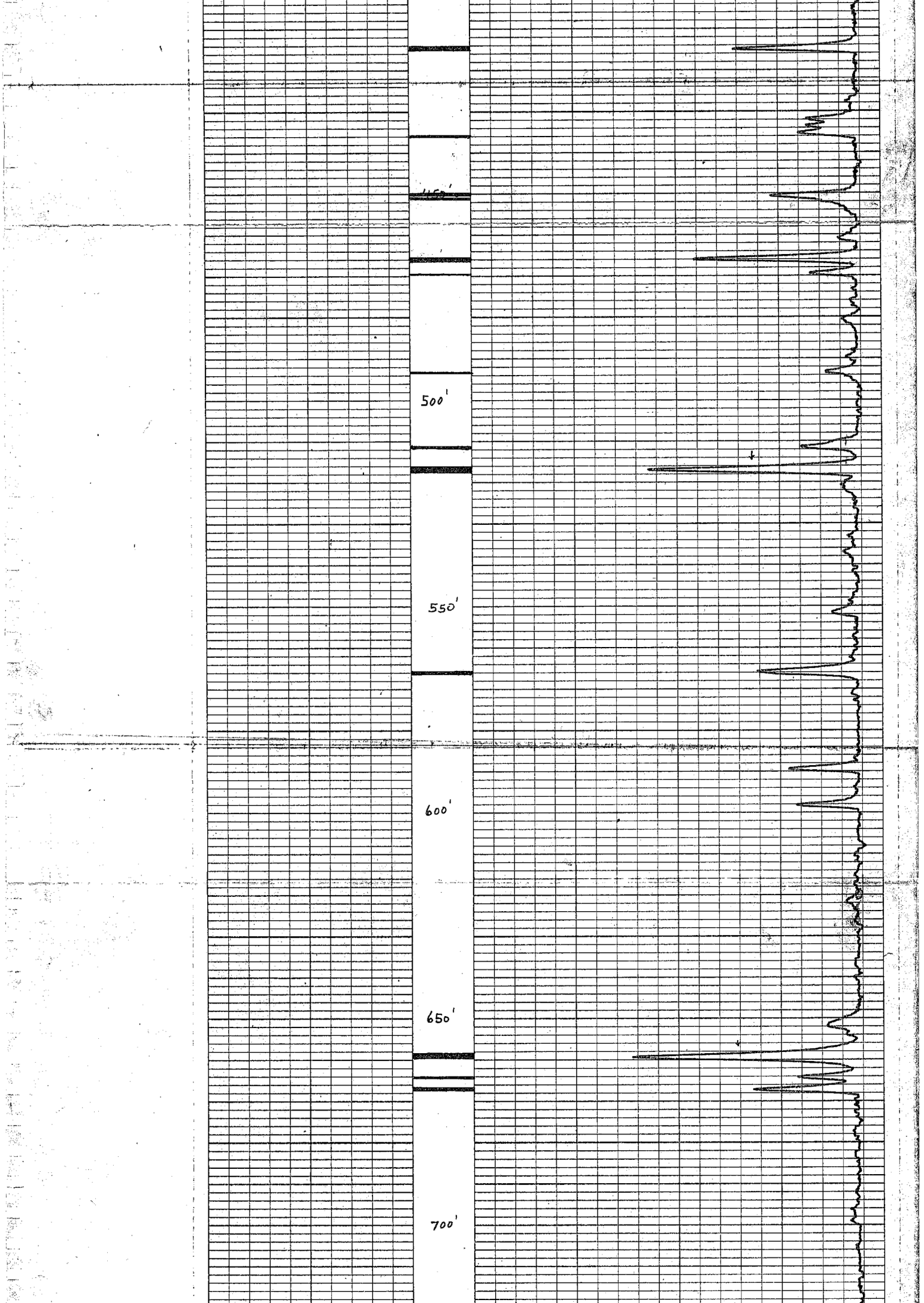
Density
TC = 3 Secs
10 ft./min.
1000 CPS

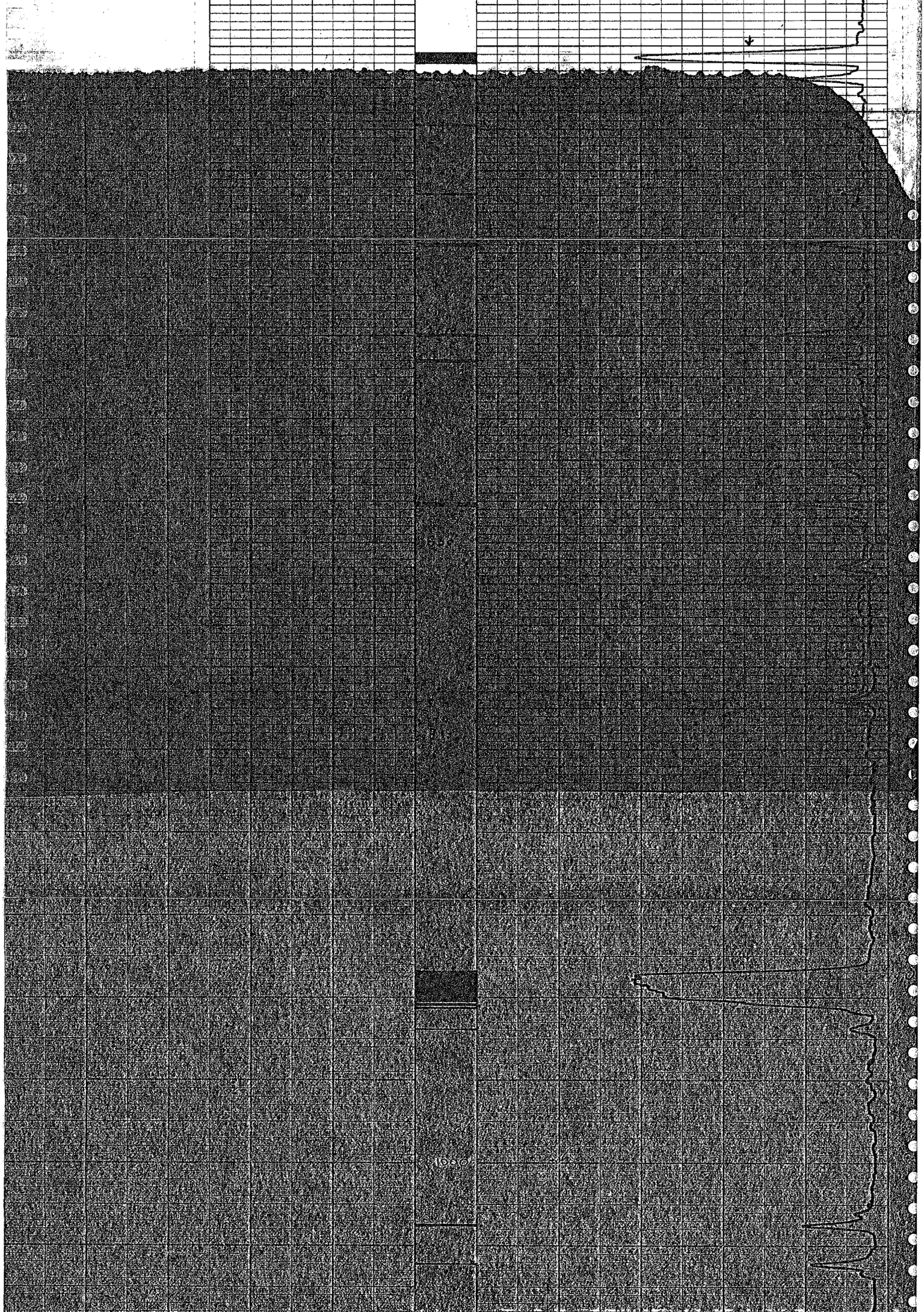
FO-139

Re. Carbon Cr. 75(3)A. 75-39




150'
200'
250'
300'
350'
400'


450'
500'
550'
600'
650'
700'



UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-40
LOCATION 366,700N x 46050E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-40
COUNTY _____ STATE B.C.

COORDINATES: 366,700N
N x 46,050E
S
ELEVATION:
D.F.
K.B.
G.L. 4420'±

	Run No. 1	Run No. 2
Date	June 16, 1975	
First Reading	573'	
Last Reading	0	
Footage Logged	573'	
Bottom (Driller)	577'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size:	HO	
Bit Size:		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by	R.Karst	
Witnessed by	P.Graham	

REMARKS

* Reg. U.S. Pat. Off.

Density
50 CPS/Division
TC = 3 Secs
1000 CPS

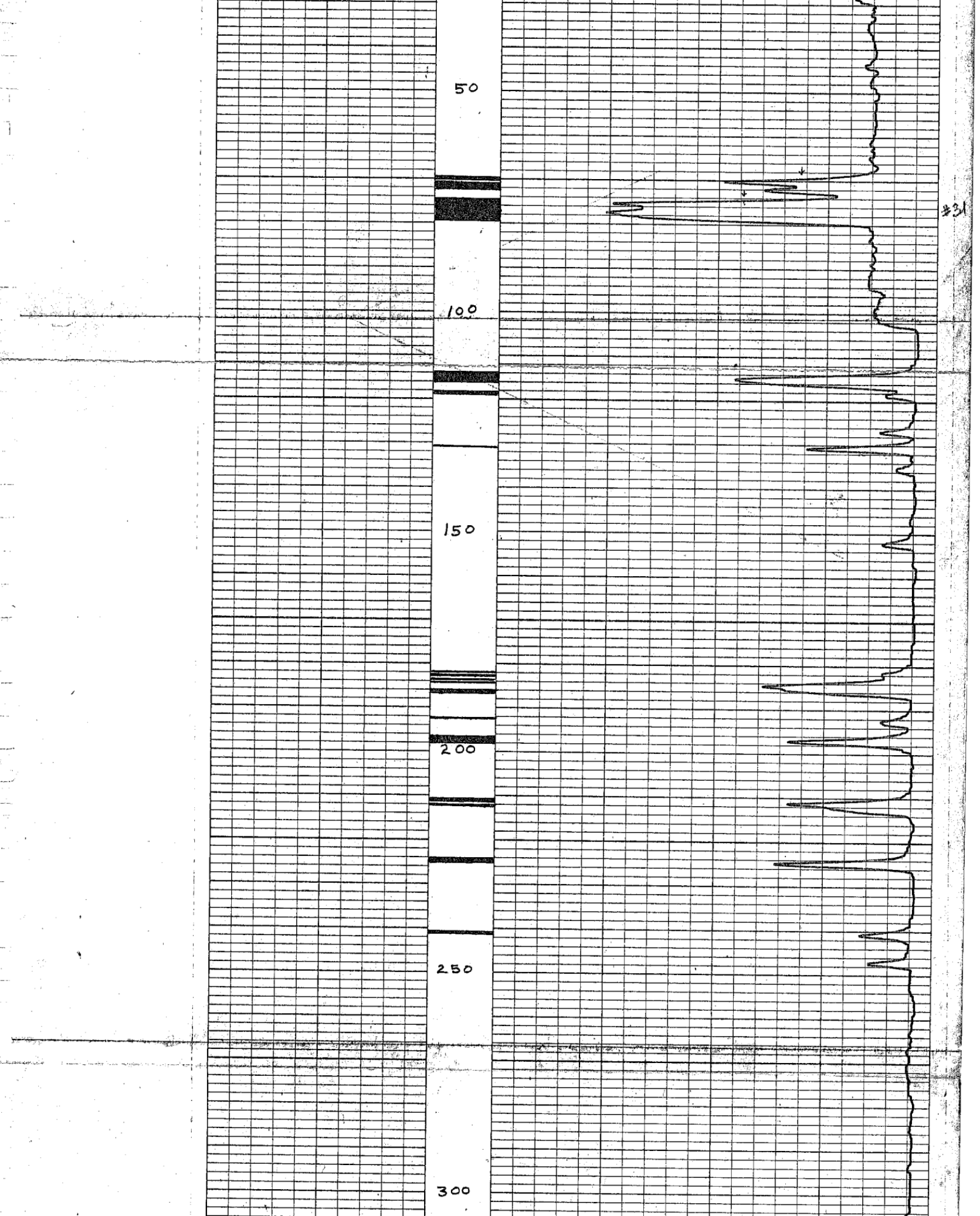
FO-139

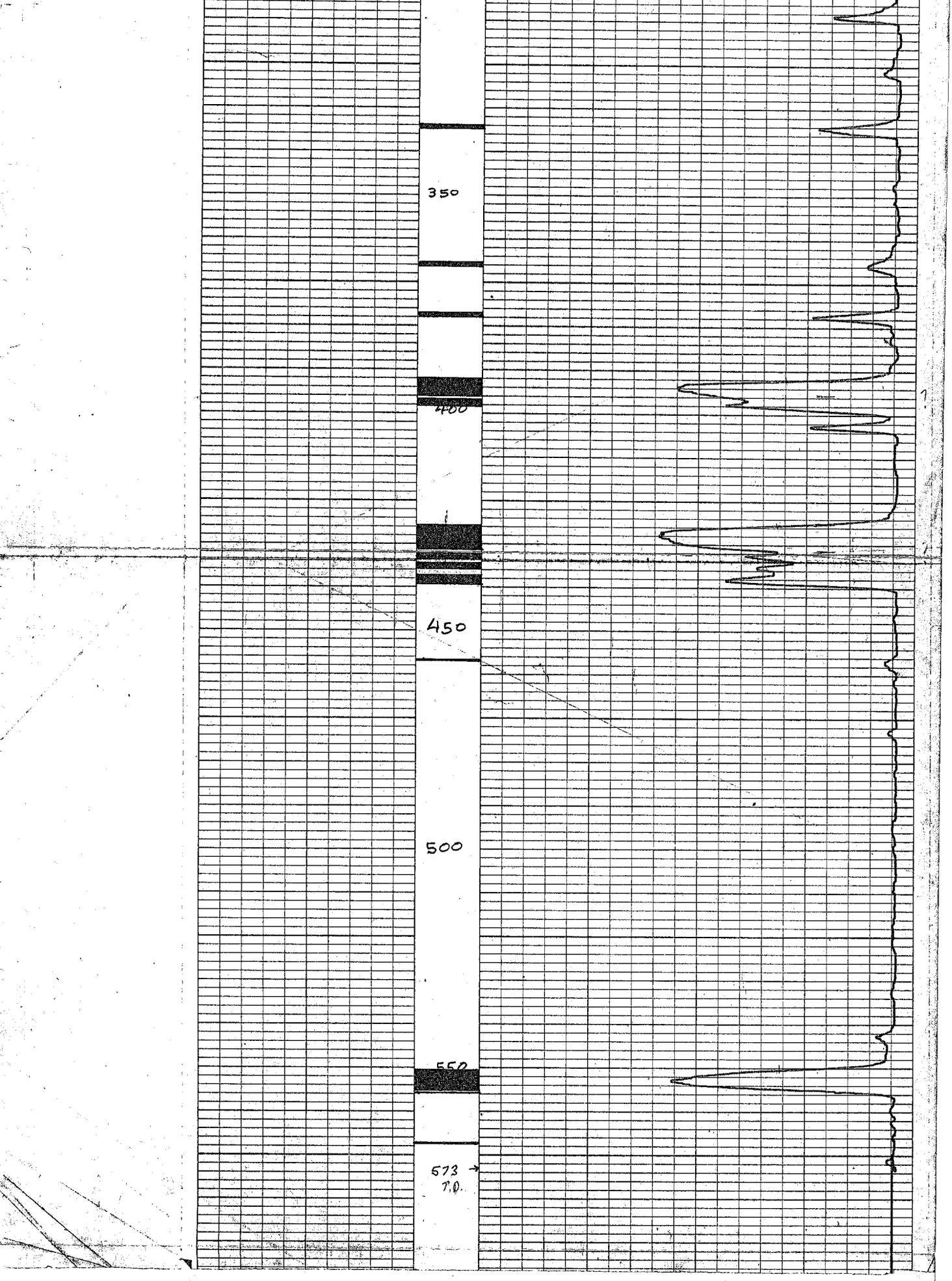
DENSITY
50 CPS./DIV
CPS = 1000
T.C. = 3

75-40

0 ~

CAVING


50
100
150
200
250
300
#31


350
400
450
500
550
573
T.D.

CCK - 75(3) A-1

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-39
LOCATION 365,300N x 56,700E

COMPANY Utah Mines Ltd.

AREA Carbon Creek

WELL 75-39 39

COUNTY _____ STATE B.C.

COORDINATES: 365,300N
N x 56,700E
S

ELEVATION:
D.F.
K.B.
G.L. 3000'±

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	July 2, 1975		Nature		
First Reading	100'		Density		
Last Reading	[illegible]		Viscosity	@ °F	@ °F
Footage Logged	100'		Resistivity	@ °F	@ °F
Bottom (Driller)	100'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	8"				
Bit Size:					
			Logged by	P. Karst	
			Witnessed by	P. Trahan	

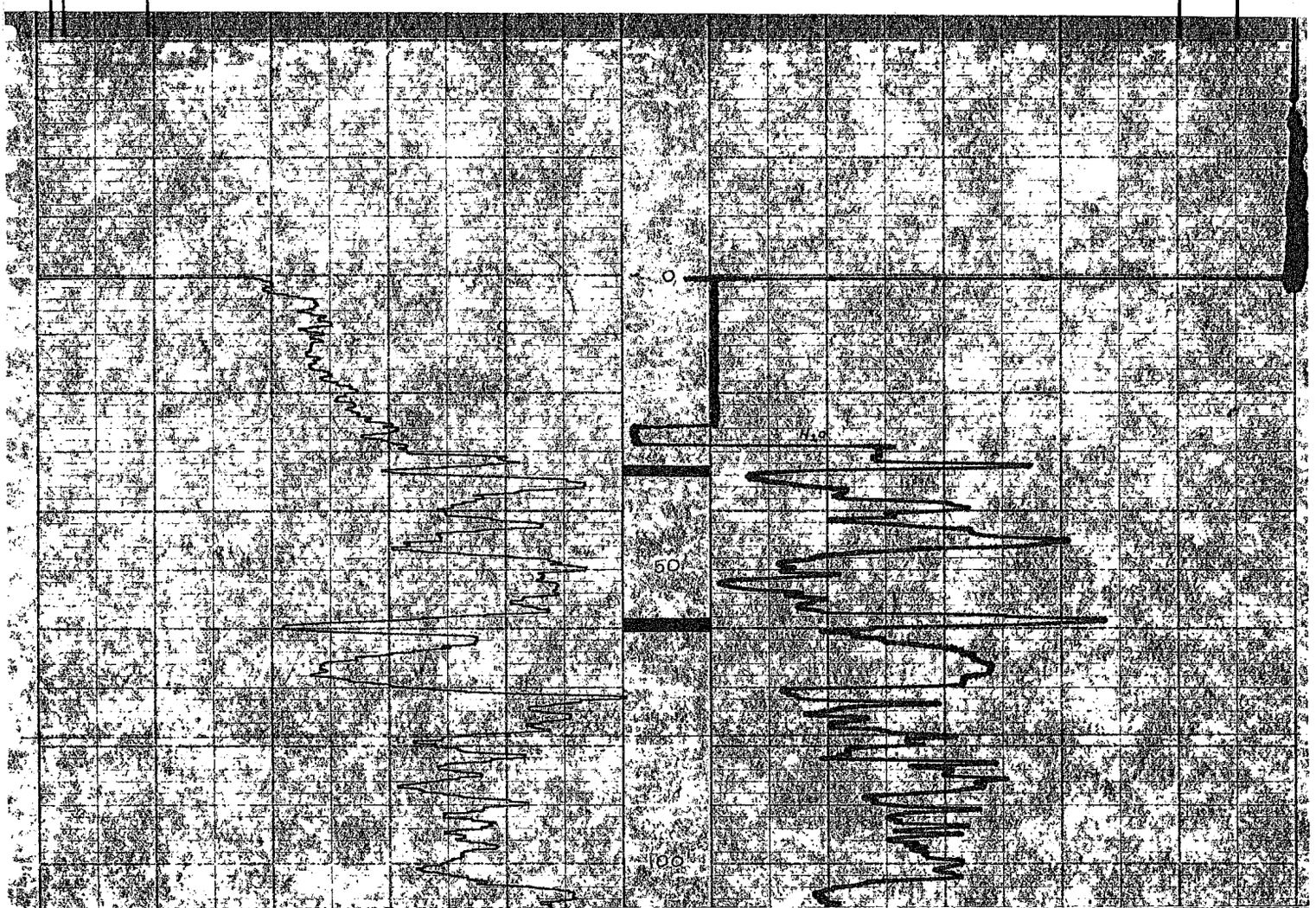
REMARKS

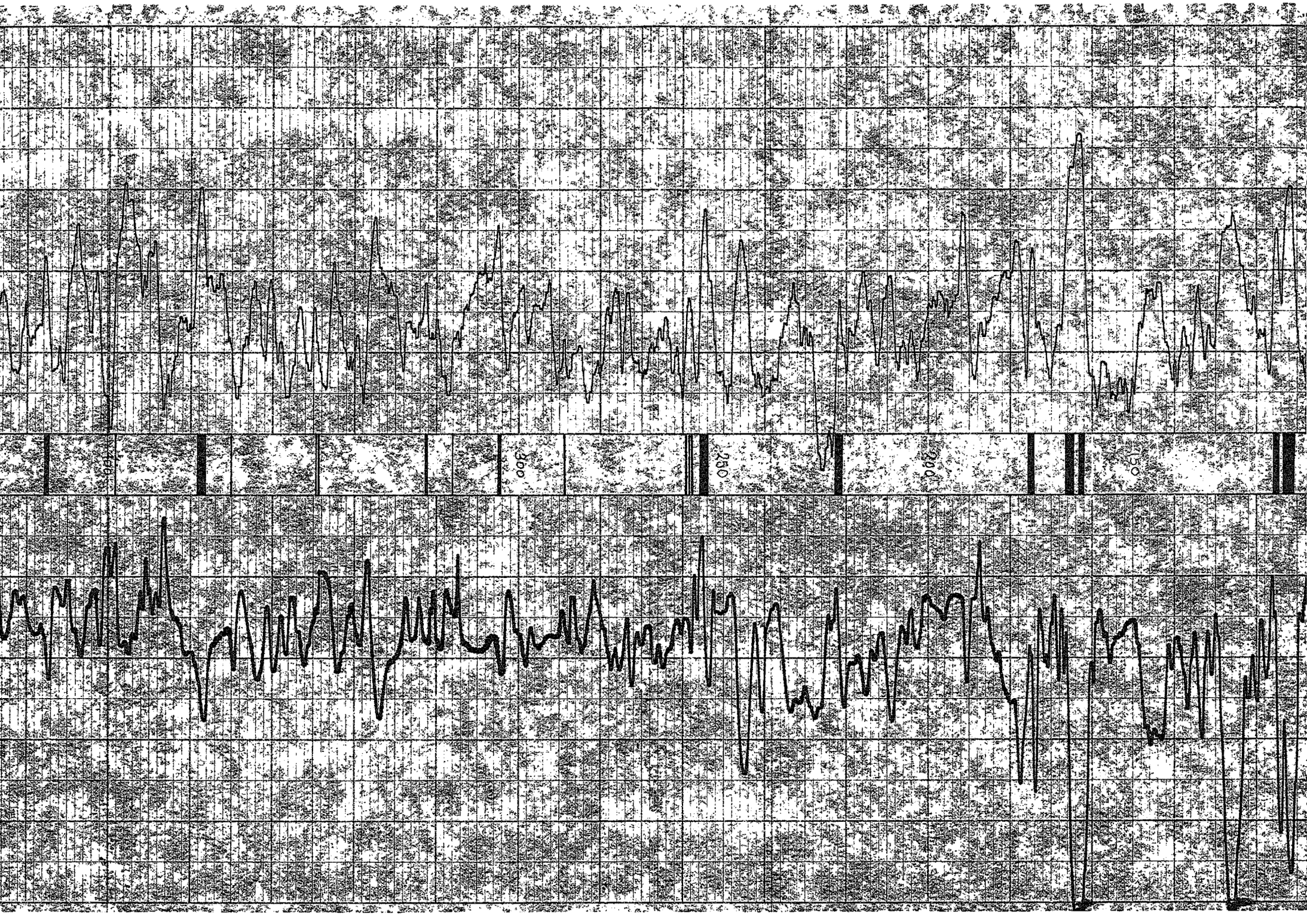
* Reg. U.S. Pat. Off.

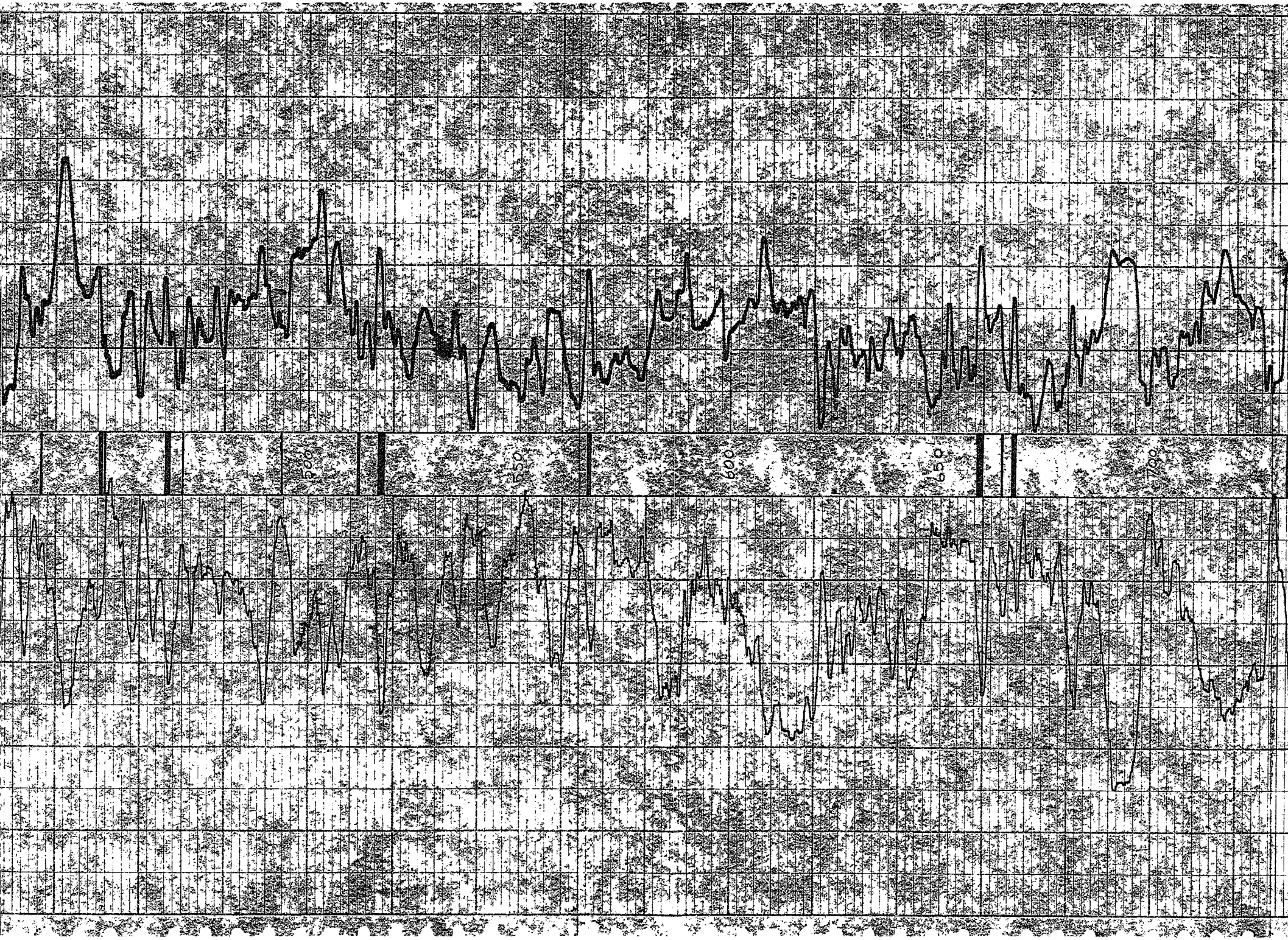
Re: Carbon Cr. 75(3)A.

75-39

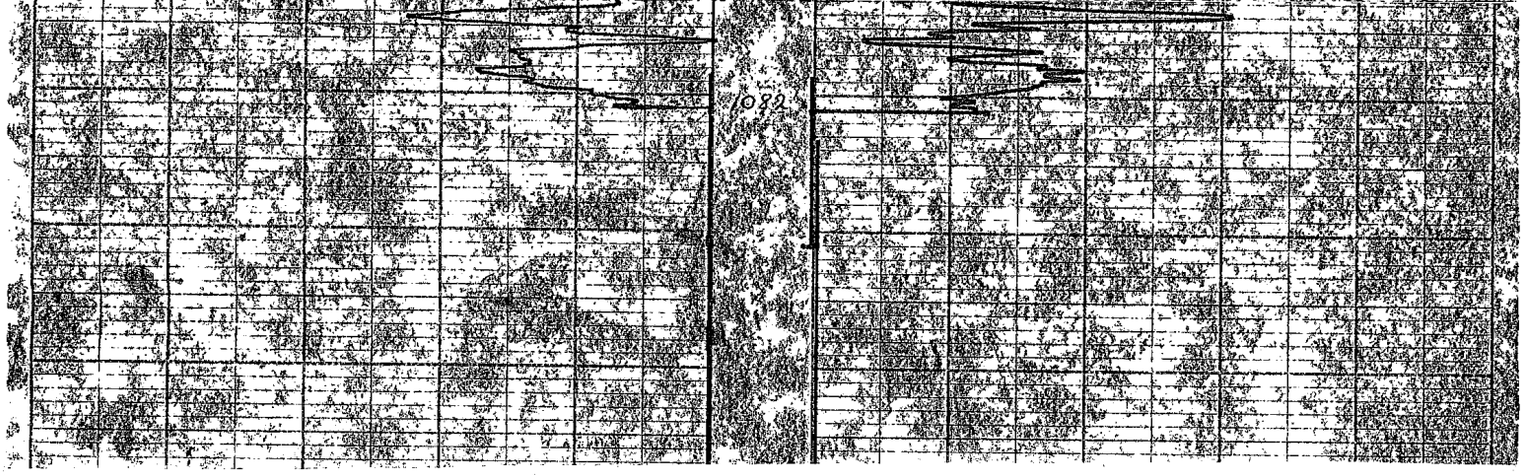
FO-139




300
250
200
150


500
550
600
650
700

800
850
900
950
1000



CCK - 75(3)A-1

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY
AREA
WELL 16 75-40
COUNTY STATE

COORDINATES: N E
ELEVATION: D.F. K.B. G.L.

LOCATION WELL COMPANY

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date			Nature		
First Reading			Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged			Resistivity	@ °F	@ °F
Bottom (Driller)			Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:					
Bit Size:					
			Logged by		
			Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

GAMMA RESIST

75-40

GAMMA
120 E. D.I.
Fast

RESISTIVITY
16 IN.

0
50
100
150
200
250
300
350
400
450
500
550

CCK-75(3)A-1

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-40
COUNTY STATE B.C.

COORDINATES: 366,709N
N X 68,095E
S
ELEVATION:
D.F.
K.B. 4435'±
G.L.

COMPANY Utah Mines Ltd.
WELL 75-40
LOCATION 366,709N X 68,095E

	Run No. 1	Run No. 2
Date	June 16, 1975	
First Reading	573'	
Last Reading	0	
Footage Logged	573'	
Bottom (Driller)	577'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size:	NP	
Bit Size:		

MUD	Run No. 1	Run No. 2
Nature.		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by	R.Karst	
Witnessed by	P.Graham	

REMARKS

* Reg. U.S. Pat. Off.

Density
50 CPS/Division
TC = 3 Secs
1000 CPS

75-40
50 CPS/Div
CPS = 1000
T.C = 3
0
CAVING
50
100
150
200
250
300
350
400
450
500
550
573
T.D.

75-40

CCK 75(3)A-1

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-41
LOCATION 366,650N x 42,350E

Re-Carbon Cr. 75 (3)A-1

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-41
COUNTY STATE B.C.

COORDINATES: 366,650N
N x 42,350E
S
ELEVATION:
D.F.
K.B.
G.L. 4420'±

	Run No. 1	Run No. 2
Date	June 23, 1975	
First Reading	981'	
Last Reading	0	
Footage Logged	981'	
Bottom (Driller)	985'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size:	HO	
Bit Size:		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by	R.Karst	
Witnessed by	P.Graham	

REMARKS

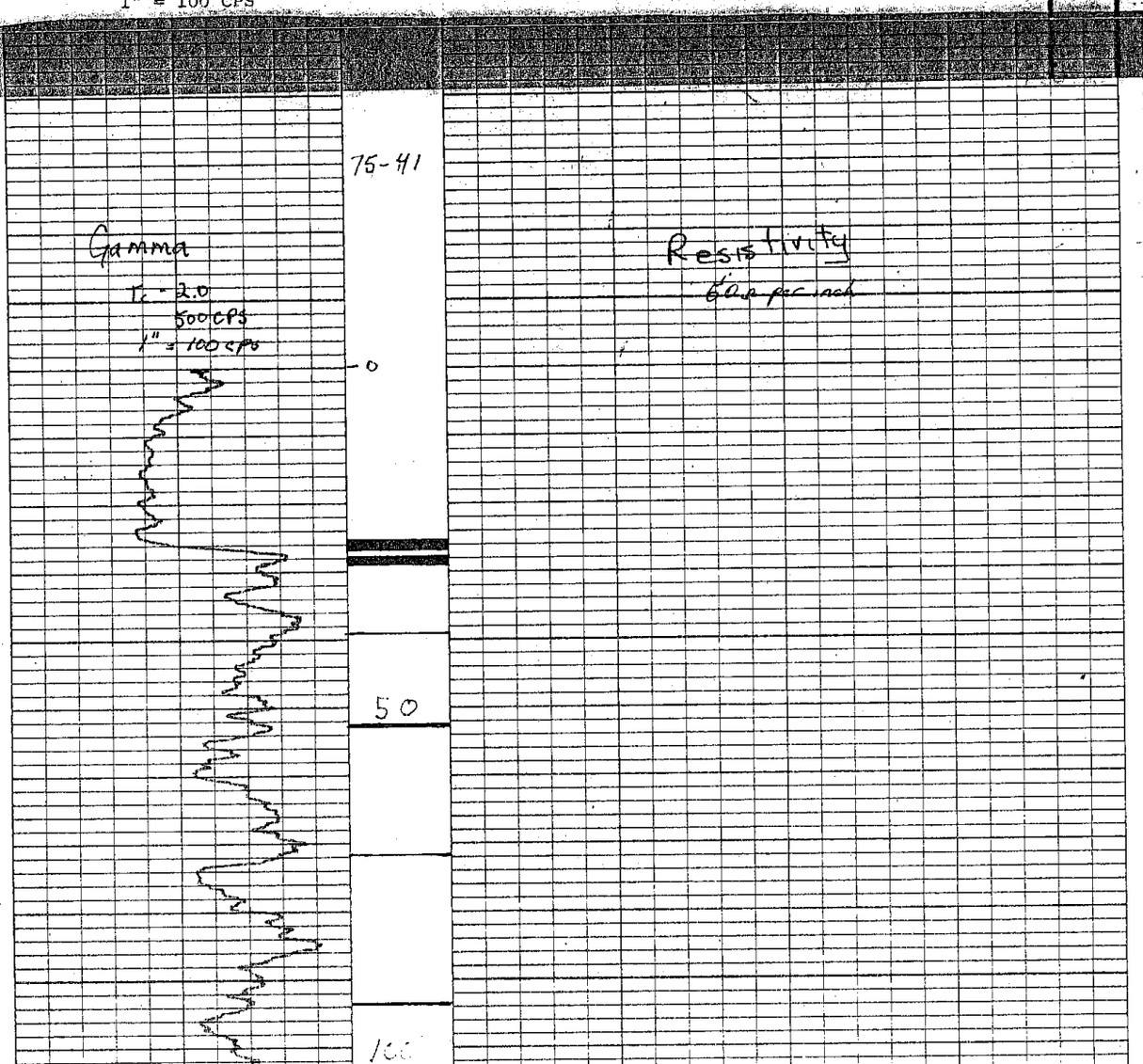
* Reg. U.S. Pat. Off.

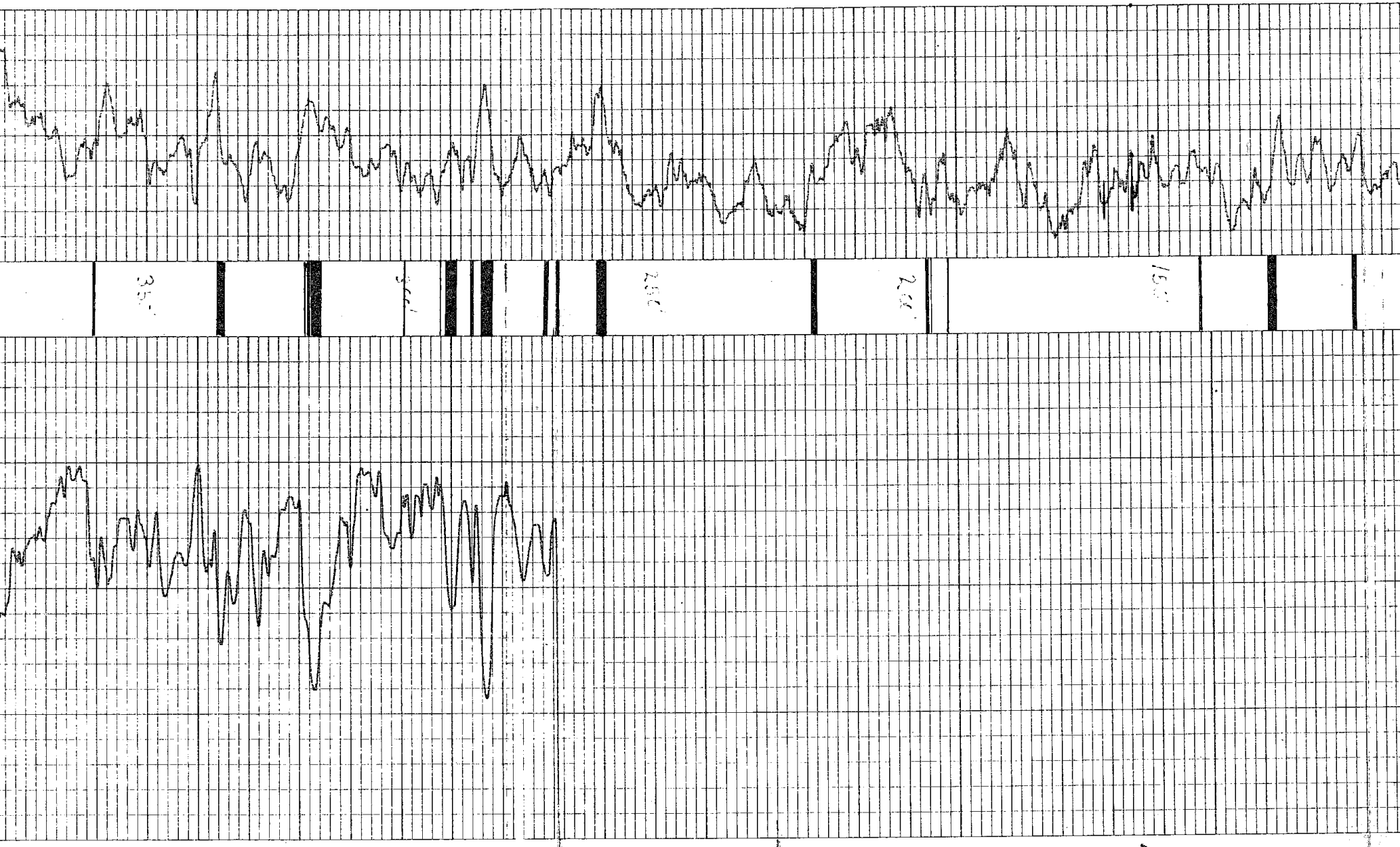
FO-139

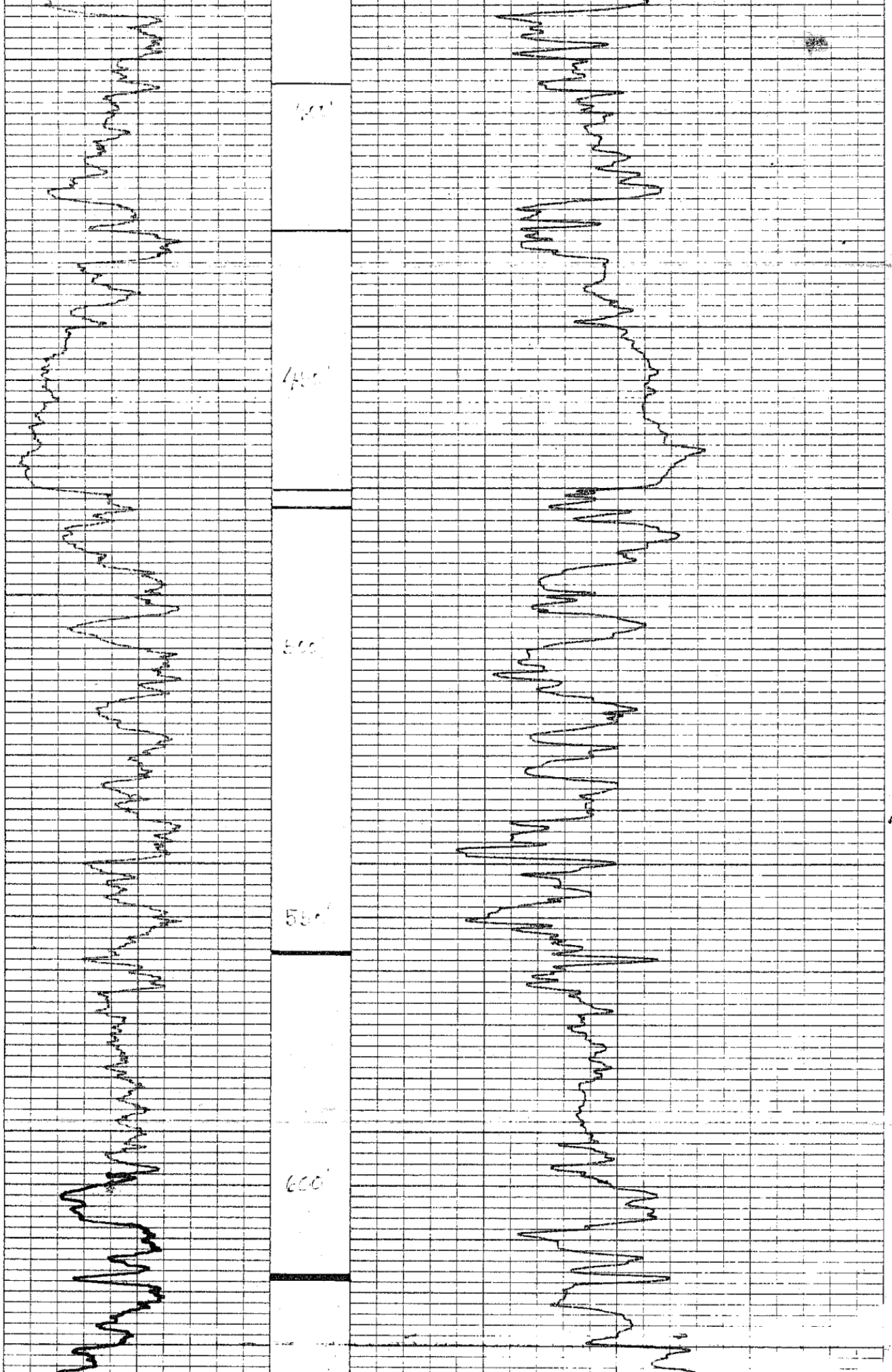
75-41

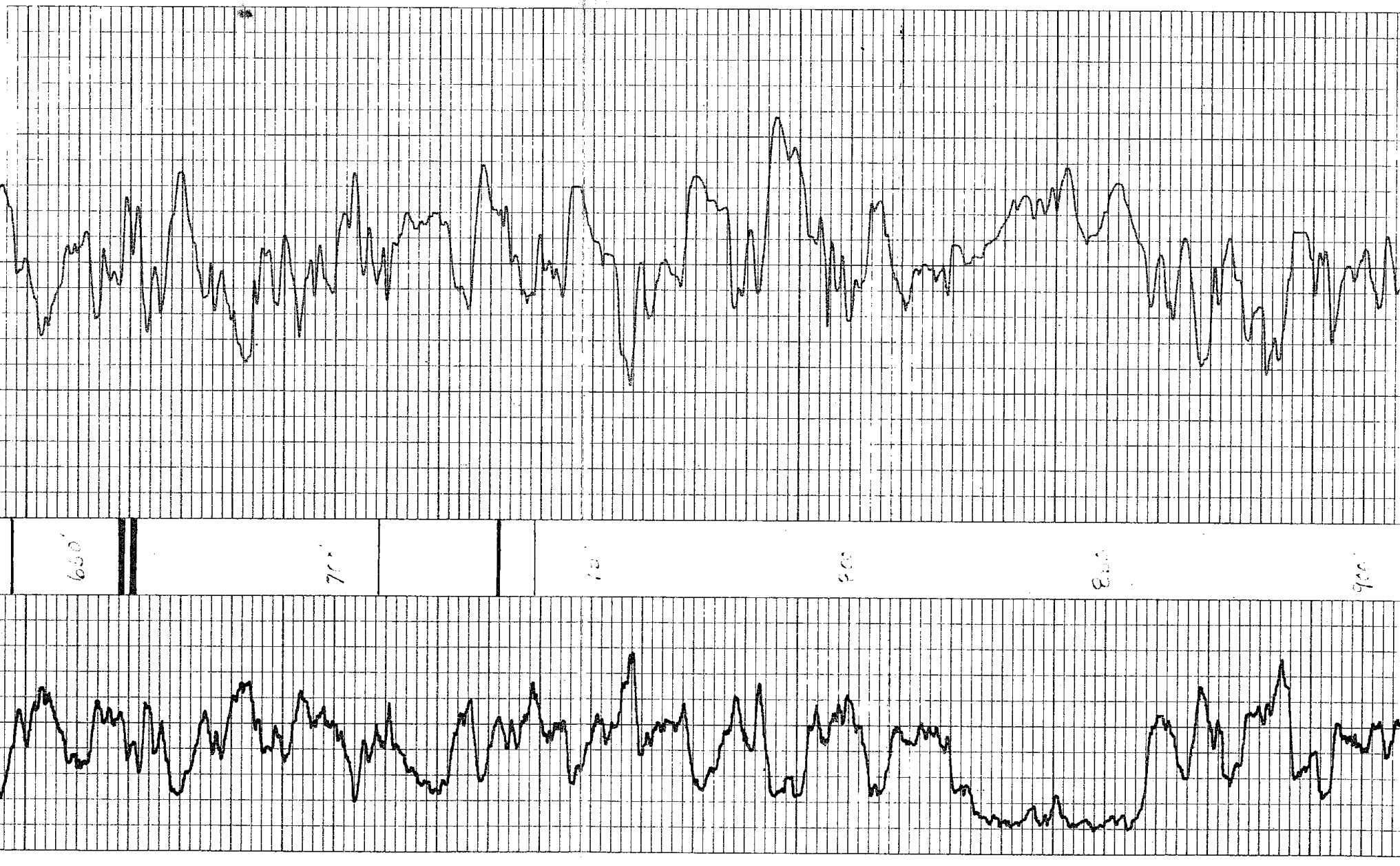
Gamma
TC = 2 Secs
500 CPS
1" = 100 CPS

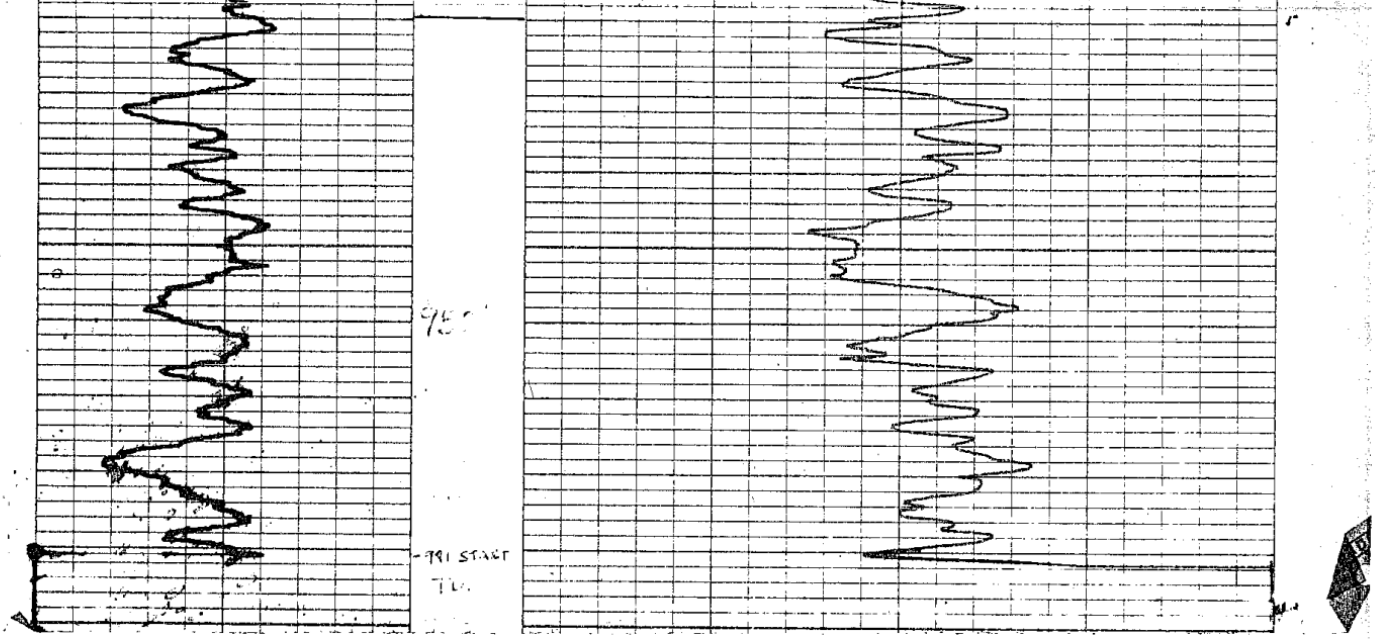
Resistivity
50 Ohms






400'
450'
500
550'
600'


650'
700'
800'
900'


9/5
-991 START
T.D.

CCK-75(3) A-1

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco WELL LOG

COMPANY: Utah Mines Ltd.
AREA: Carbon Creek
WELL: Hole #1
COUNTY: STATE: B.C.

COORDINATES: 365,600E
W.S. 21,700N
ELEVATION:
D.F.
K.B.
G.L. 3800'±

LOCATION: 365,600E & 21,700N
WELL: Hole #1
COMPANY: Utah Mines Ltd.

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	June 23, 1975		Nature		
First Reading	35'C		Density		
Last Reading			Viscosity	@ °F	@ °F
Footage Logged	0		Fluid Loss	@ °F	@ °F
Bottom (Driller)	1001'		Res. @ BHT	@ °F	@ °F
Casing (From Log)	1001'		pH		
Casing (Driller)			Cec Temp.		
Casing Size			B.H. Temp.		
Bit Size	BQ				
Kr Size					
			Logged by	R.Korpi	
			Witnessed by	P.Yurchak	

REMARKS

* Reg. U.S. Par. Off.

Density
50 = 10cps

Gamma Ray
Hole #1
Widco

75-91

0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
850
900
950
1000
1001 T.D.

CCK-75(3)A-1

UTAH MINES LTD. 412–510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY
AREA
WELL 42 42
COUNTY STATE

COORDINATES: N S
ELEVATION: D.F. K.B. G.L.

LOCATION WELL COMPANY

	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

75-42

GAMMA
500 CPS 66-2
15 CPS/DIV

RESISTIVITY
50 Ω

0
50'
100'
150'
200'
250'
300'
350'
400'

CCK-75(3)A-1

498

UTAH MINES LTD. 412–510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.

AREA Carbon Creek

WELL 75-42

COUNTY STATE

COORDINATES 370,950N
N
S
ELEVATION:
D.F.
K.B.
G.L. 3970ft ±

LOCATION 370,950N, 0, 0, 75-42

WELL 75-42

COMPANY Utah Mines Ltd.

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	June 20, 1975		Nature		
First Reading	300'		Density		
Last Reading	Surf		Viscosity	@ °F	@ °F
Footage Logged	300'		Resistivity	@ °F	@ °F
Bottom (Driller)	300'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	7 7/8"				
Bit Size:					
			Logged by	R. Wilson	
			Witnessed by	D. Graham	

REMARKS

* Reg. U.S. Pat. Off.

FO-139

DENSITY

DENSITY
1000 CPS Tc=3
50 cps / division

75-42
0
50
100
200
300'
350'
T.D. 304'

Re Log of 75(3)A1 75-42

CCK-75(3)A-1

UTAH MINES LTD. 412-510 WEST HASTINGS

498

Widco WELL LOG

COMPANY: Utah Power [illegible]

AREA: Parker Creek

WELL: 31-43

COUNTY: STATE: Utah

COORDINATES: Sec. Twp. Rge.
S.
E.L. N.S.
E.L. E.W.

ELEVATION:
D.F.
K.B.
G.L.

	Run No. 1	Run No. 2
Date	[illegible] 1975	
First Reading	1975	
Last Reading	1975	
Footage Logged	[illegible]	
Bottom (Driller)	[illegible]	
Bottom (Logger)		
Casing (Driller)		
Casing (Logger)		
Casing Size		
Bit Size		
Bit Type		

MUD	Run No. 1	Run No. 2
Source		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Fluid Loss		
Src. Temp.		
Rm. Temp.		

Logged by
Witnessed by

REMARKS:

* Avg. U.S. Pat. Off.

[illegible]

[illegible]

[illegible]

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco WELL LOG

COMPANY: Utah Mines Ltd.
AREA: Cretaceous Creek
WELL: 75-1A
COUNTY: [illegible] STATE: [illegible]

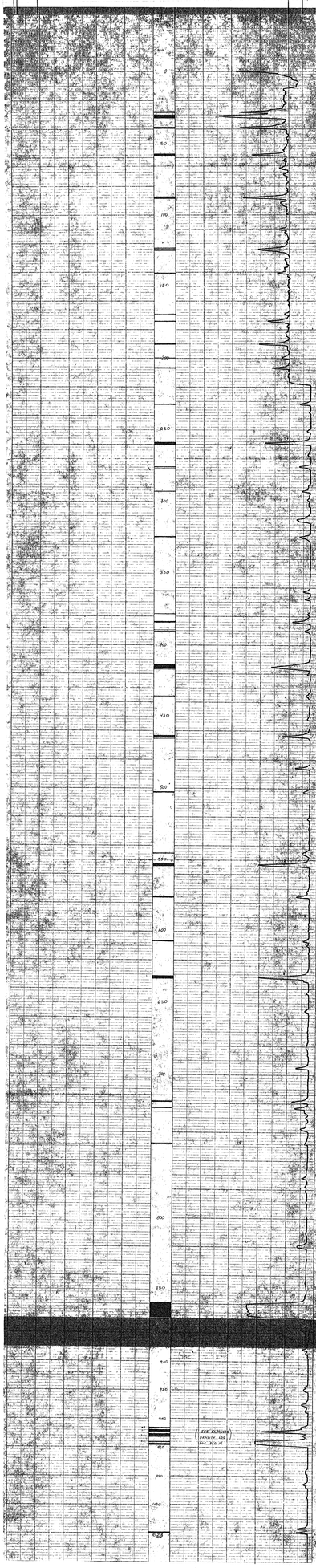
COORDINATES: N/S: [illegible] E/W: [illegible]
ELEVATION: G.P. [illegible] K.B. [illegible]

	Run No. 1	Run No. 2
Date	[illegible]	
Run Reading	[illegible]	
Bar Reading	[illegible]	
Footage Logged	[illegible]	
Bottom (Driller)	[illegible]	
Casing (From Log)	[illegible]	
Casing (Driller)	[illegible]	
Casing Size	[illegible]	
Bit Size	[illegible]	
Bit Size	[illegible]	

MUD	Run No. 1	Run No. 2
Nature		
Viscosity		
Density	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ Bott	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.



CCK-75(3)A-1

PQ

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-44
LOCATION 374,500N x 43,750E

Re- Carbon Cr 75(3)A-1

75-44

COMPANY	Utah Mines Ltd.
AREA	Carbon Creek
WELL	75-44
COUNTY	
STATE	B.C.
COORDINATES: N	374,500N
S	x 43,750E
ELEVATION:	
D.F.	
K.B.	
G.L.	4280'±

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	June 30, 1975		Nature		
First Reading	912'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	912'		Resistivity	@ °F	@ °F
Bottom (Driller)	917'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	HO				
Bit Size:					
			Logged by		
			Witnessed by	D.N.leNobel	

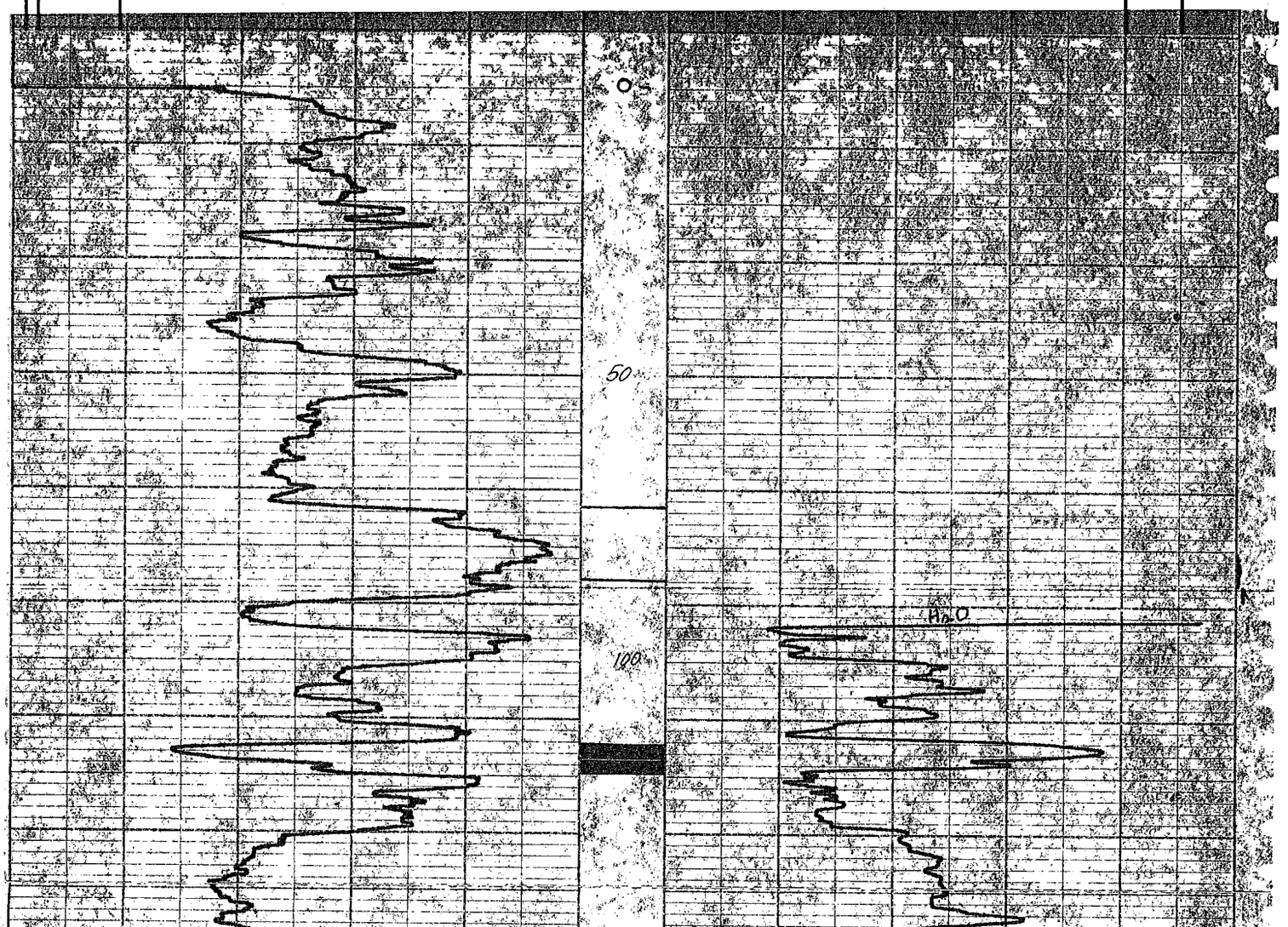
REMARKS

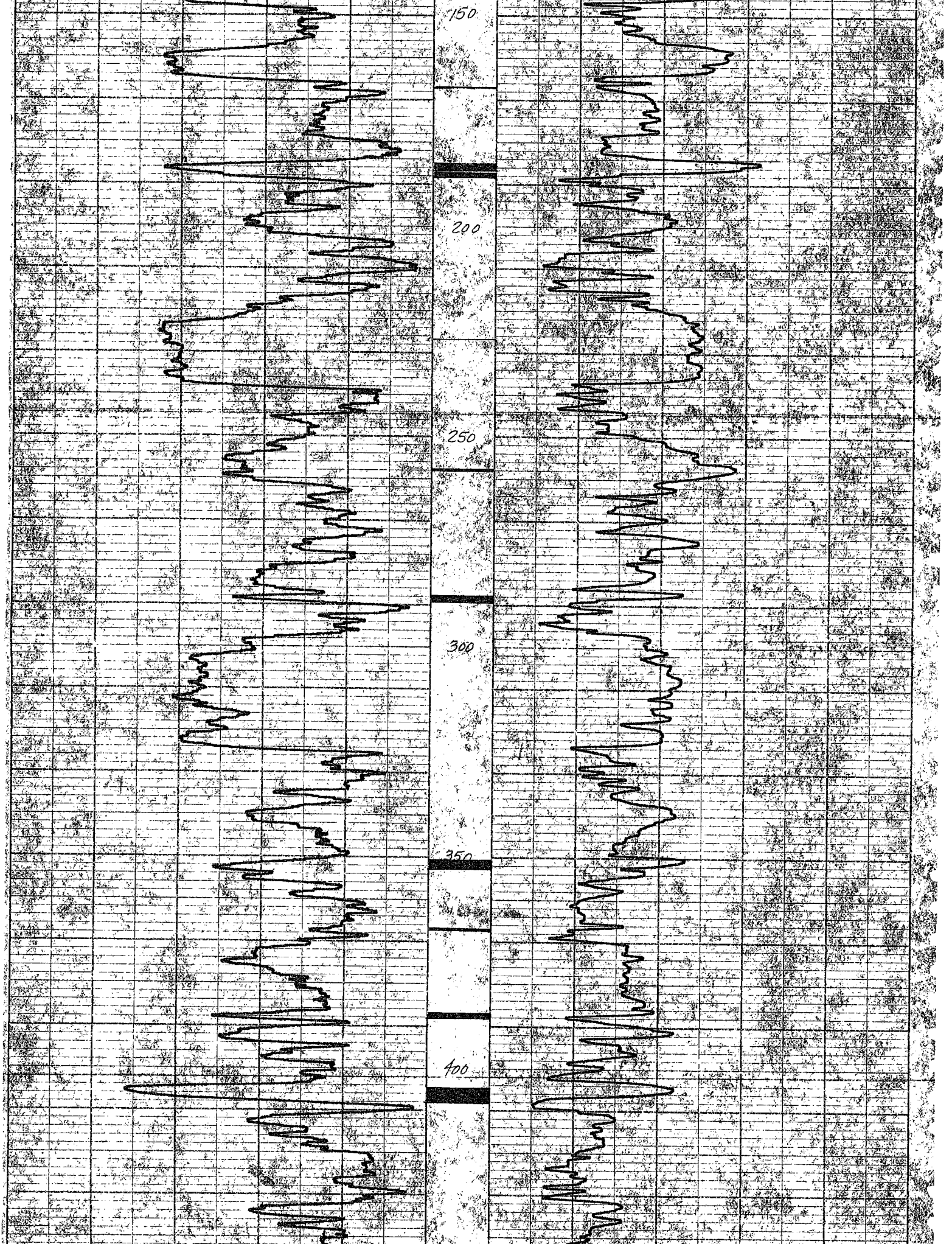
* Reg. U.S. Pat. Off.

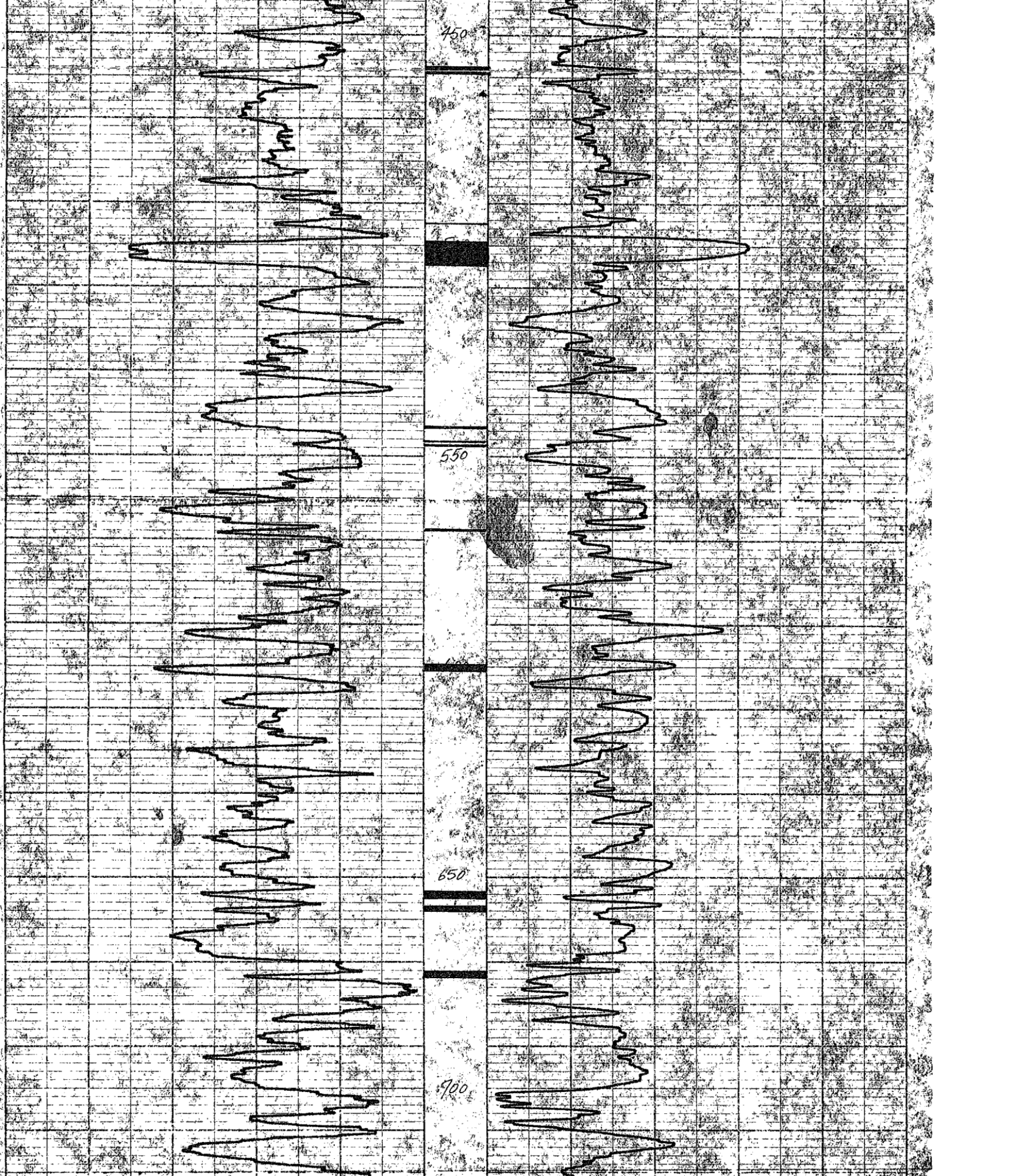
FO-139

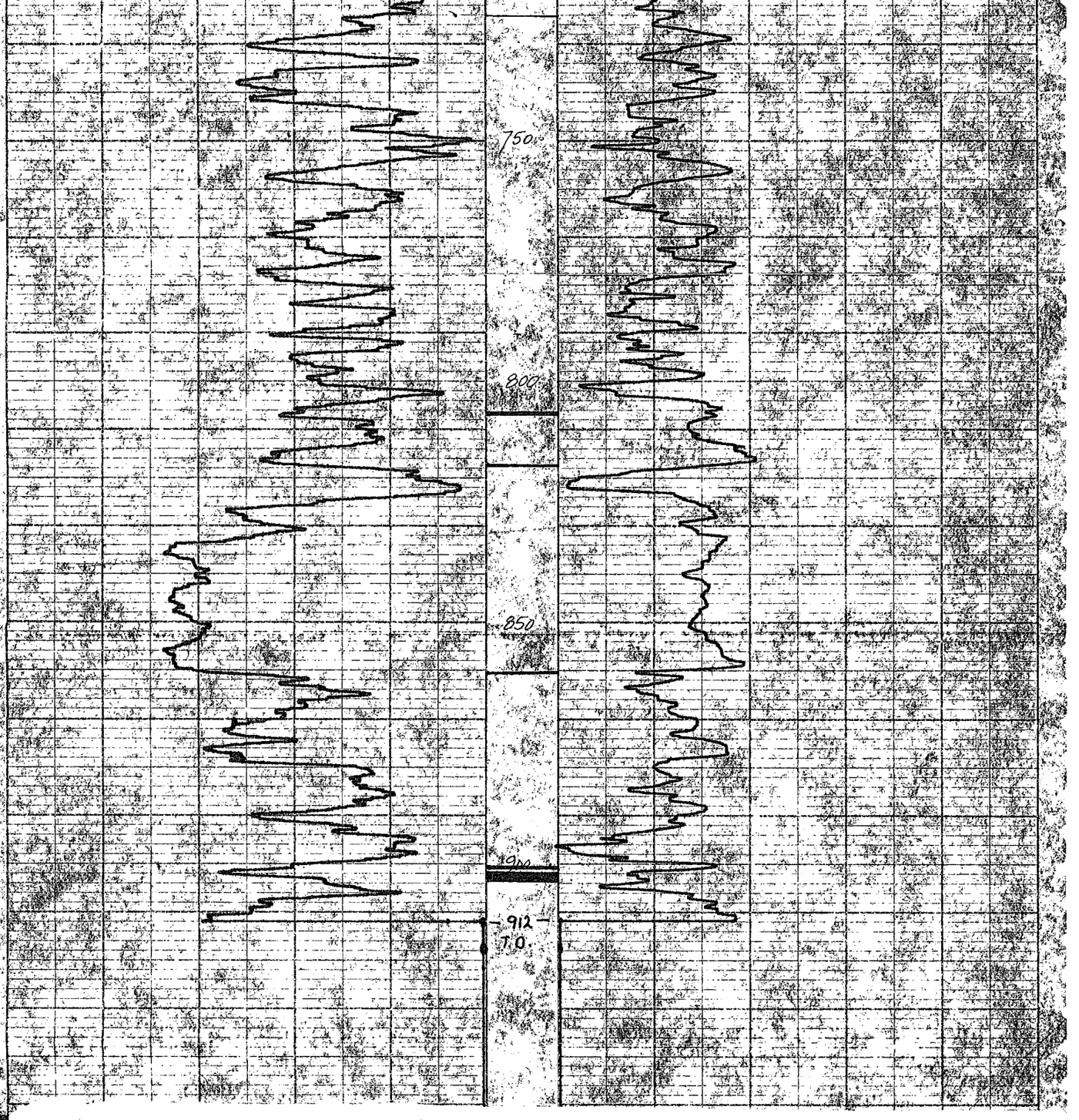
Gamma
500 CPS

Resistivity
50 Ohms




150
200
250
300
350
400


450
550
650
700



CCK - 75 (3) A-1

498

P.D

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-44
LOCATION 374,500N x 43,750E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-44
COUNTY STATE B.C.

COORDINATES: 374,500N
N x 43,750E
S
ELEVATION:
D.F.
K.B.
G.L. 4280'±

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	June 30, 1975		Nature		
First Reading	912'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	912'		Resistivity	@ °F	@ °F
Bottom (Driller)	917'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	HQ				
Bit Size:					
			Logged by		
			Witnessed by	D.N.LeNobel	

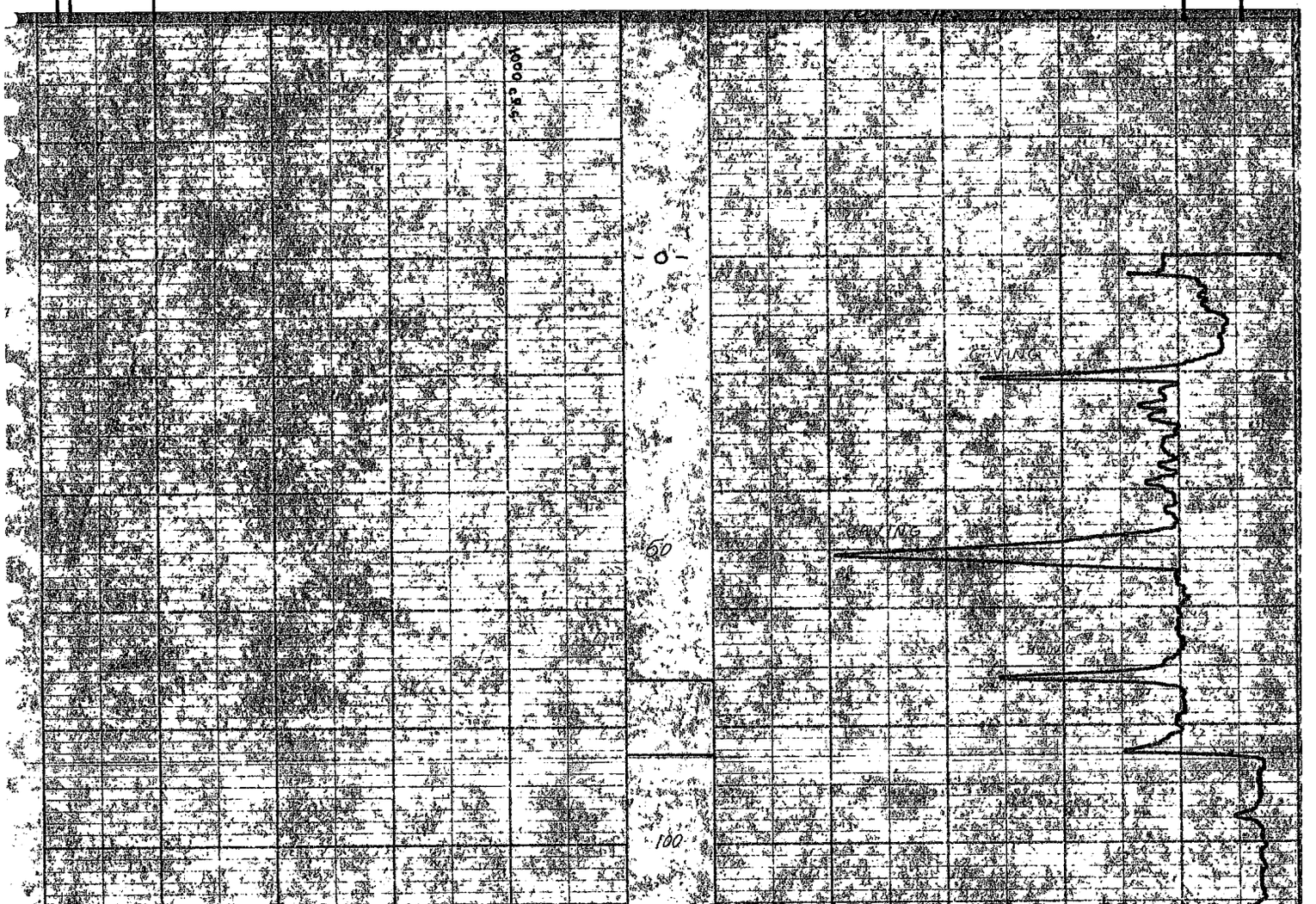
REMARKS

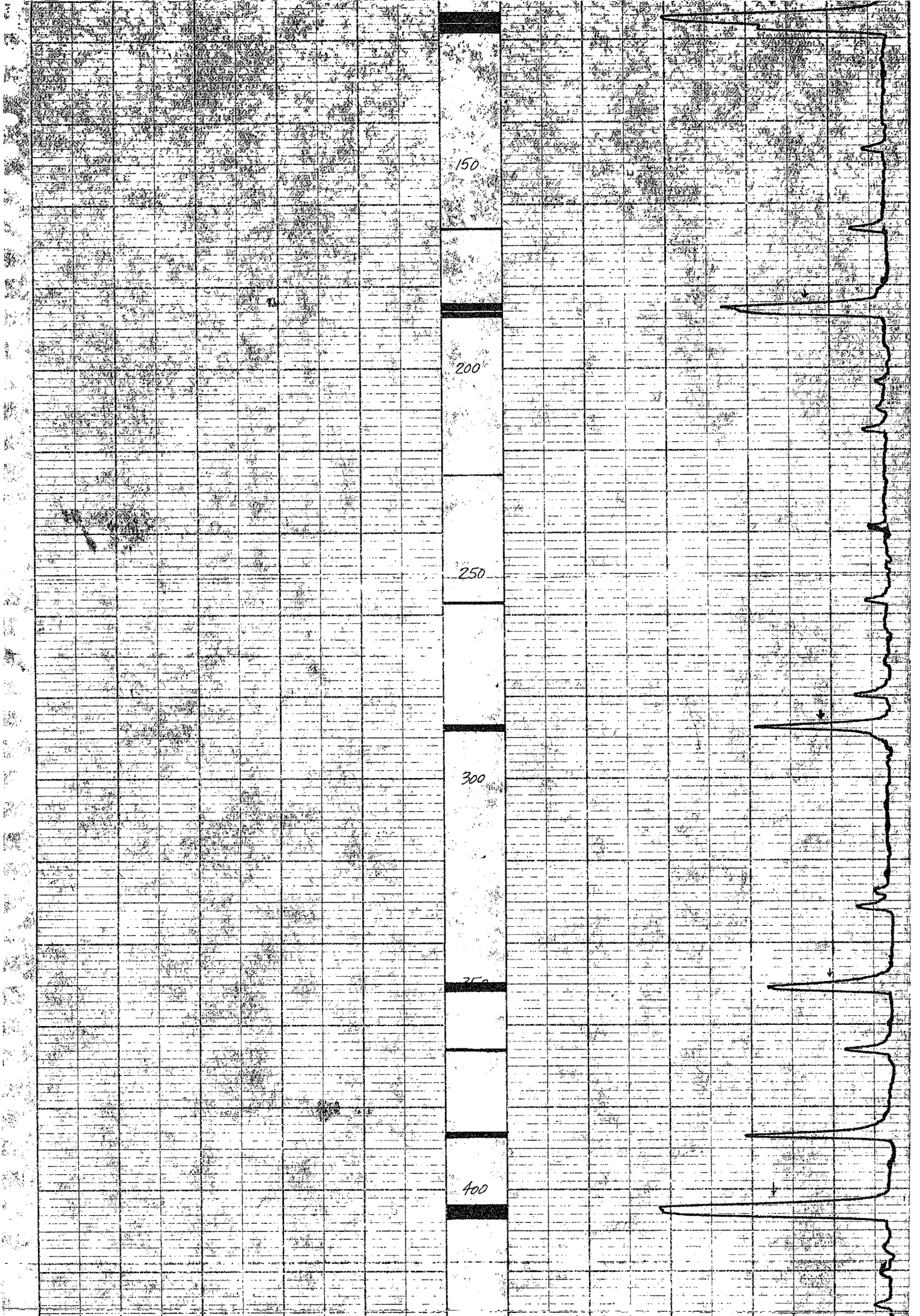
* Reg. U.S. Pat. Off.

FO-139

Density
TC = 3Sec
1000cps

BR - CARBON CR - 75(3)A-1 75-44

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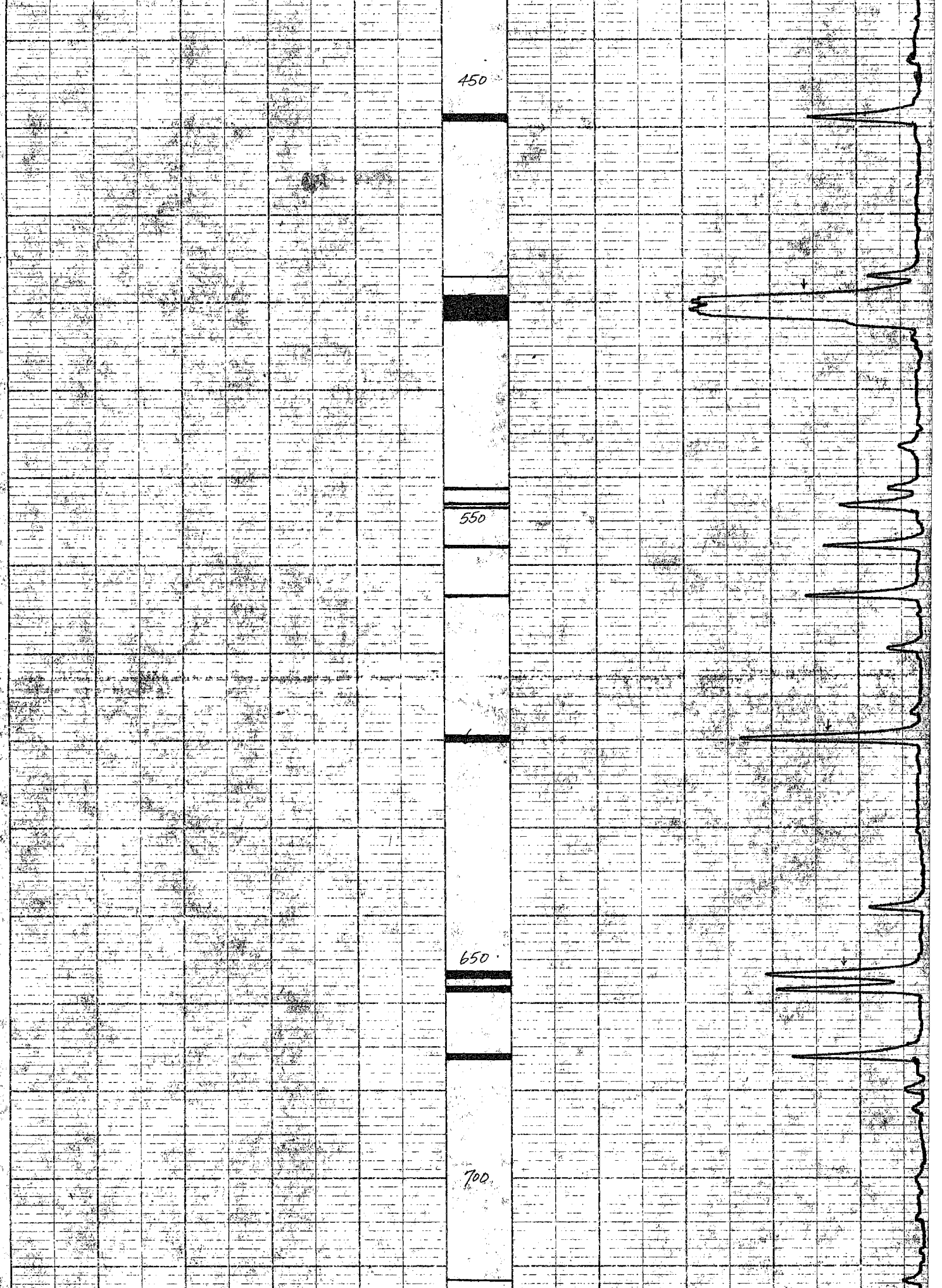
200
250
300
400


450
550
650
700

750

800

850

900

CCK - 75(3)A-1

498

UTAH MINES LTD. 412-580 WEST HASTINGS

Widco WELL LOG

COMPANY
AREA
WELL 75-45
COUNTY STATE

COORDINATES
N
ELEVATION
E
W

Run No. 1 | Run No. 2 | Run No. 3 | Run No. 4

Date
First Reading
Last Reading
Footage Logged
Bit Size
Casing (From-To)
Casing Size
Casing Wgt.
Mud Type
Mud Sample From

Run No. 1 | Run No. 2
Hole Deviation
Gravity
Viscosity
Resistivity
Rm @ BHT
Rmf
Rmc
Source
R.M. Temp

Logged by
Witnessed by

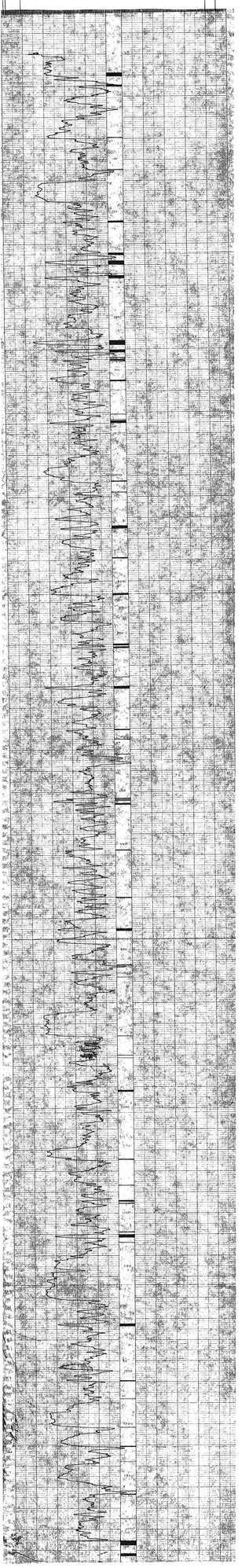
REMARKS

Reg. U.S. Pat. Off.

Widco

GAMMA

75-45



CC.K. - 75(5) A-1

P.Q.

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-45
LOCATION 363,600N x 54,500E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-45
COUNTY
STATE B.C.

COORDINATES: 363,600N
N x 54,500E
S
ELEVATION:
D.F.
K.B.
G.L. 3550'±

	Run No. 1	Run No. 2
Date	July 11, 1975	
First Reading	1552'	
Last Reading	0	
Footage Logged	1552'	
Bottom (Driller)	1557'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size:	HO & PO	
Bit Size:		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by	E.Hetherington	
Witnessed by	Neil LeNobel	

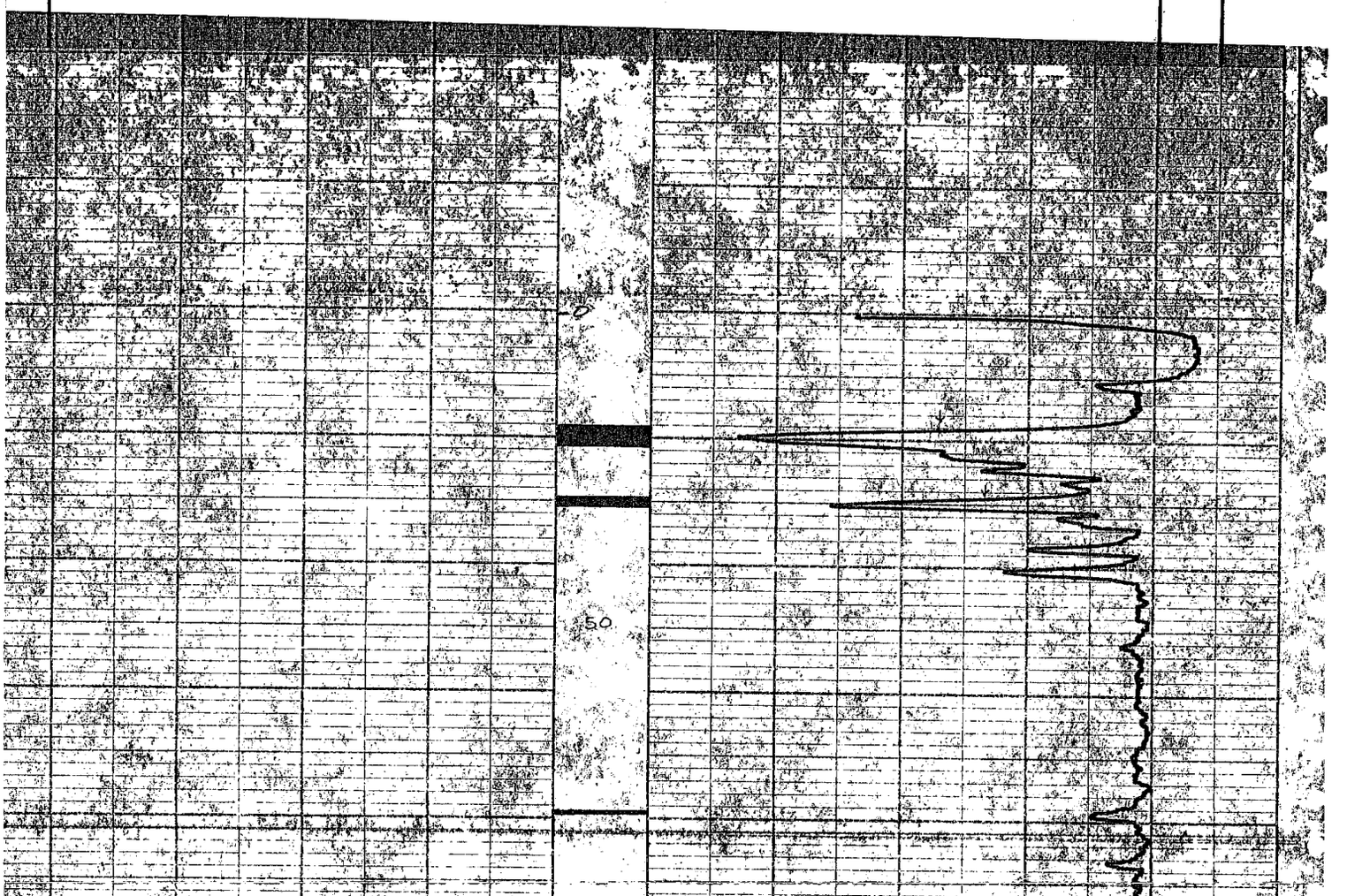
REMARKS

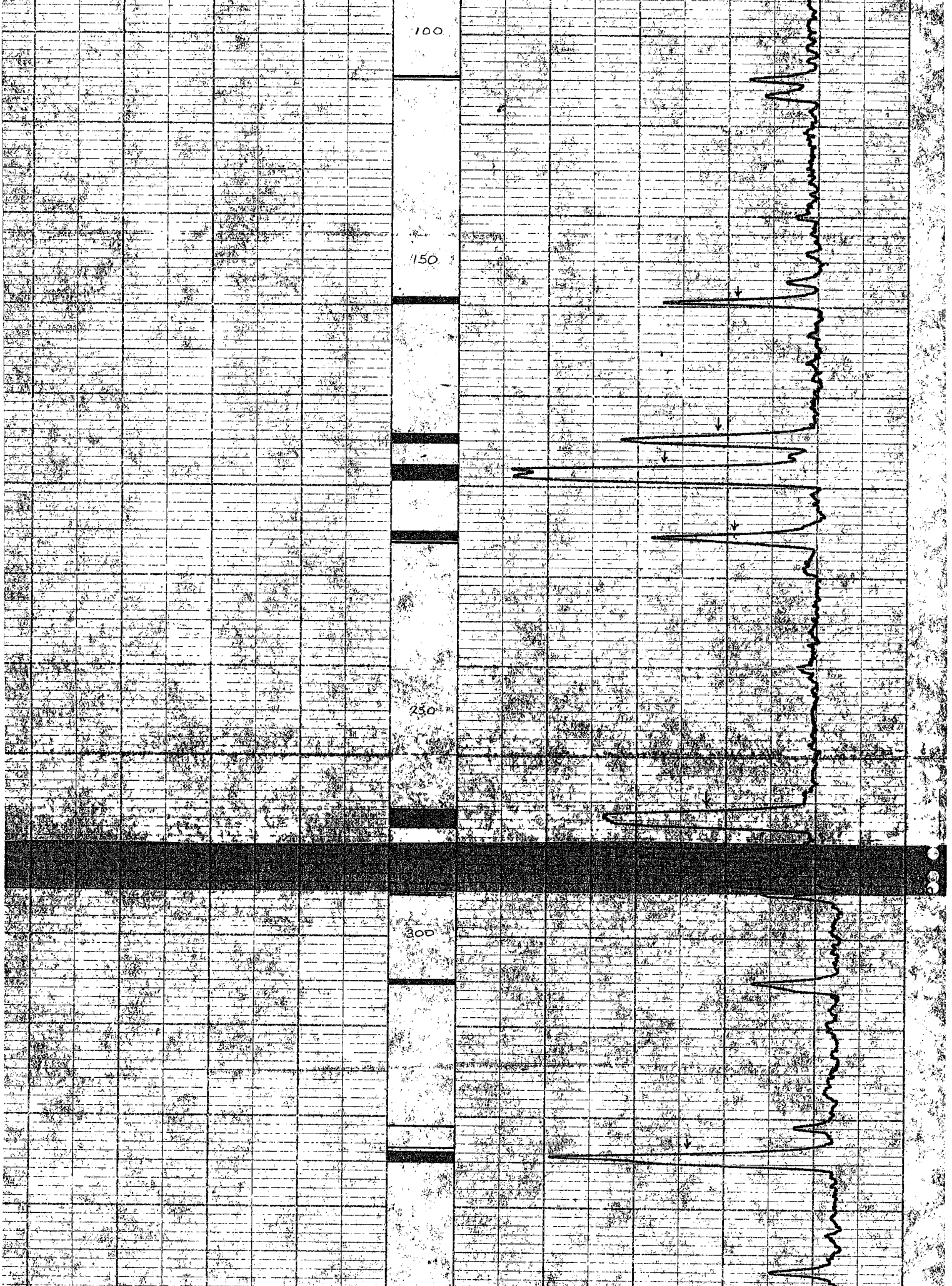
* Reg. U.S. Pat. Off.

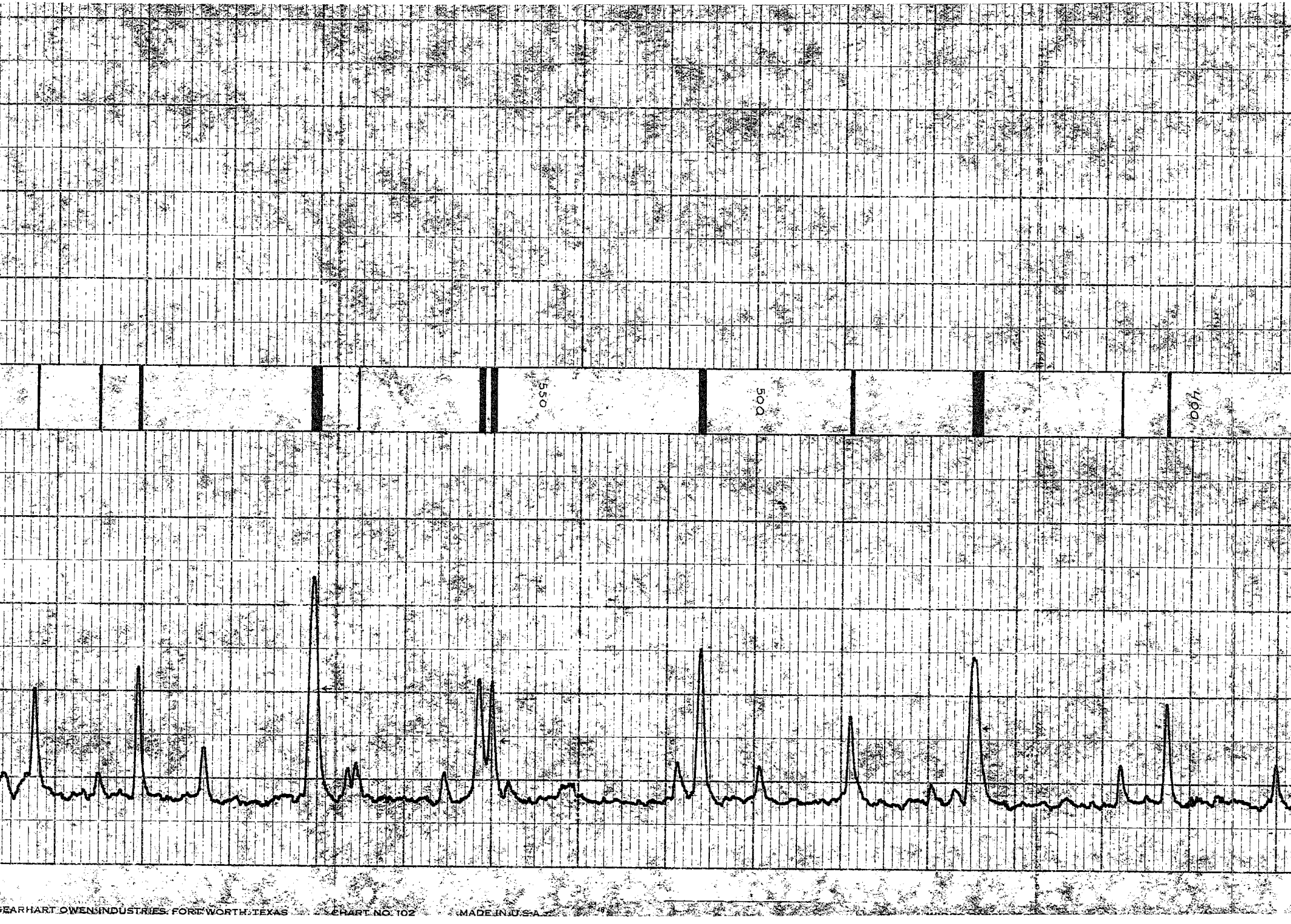
FO-139

PR. CARBON CR. 75(3)A'1 75-45

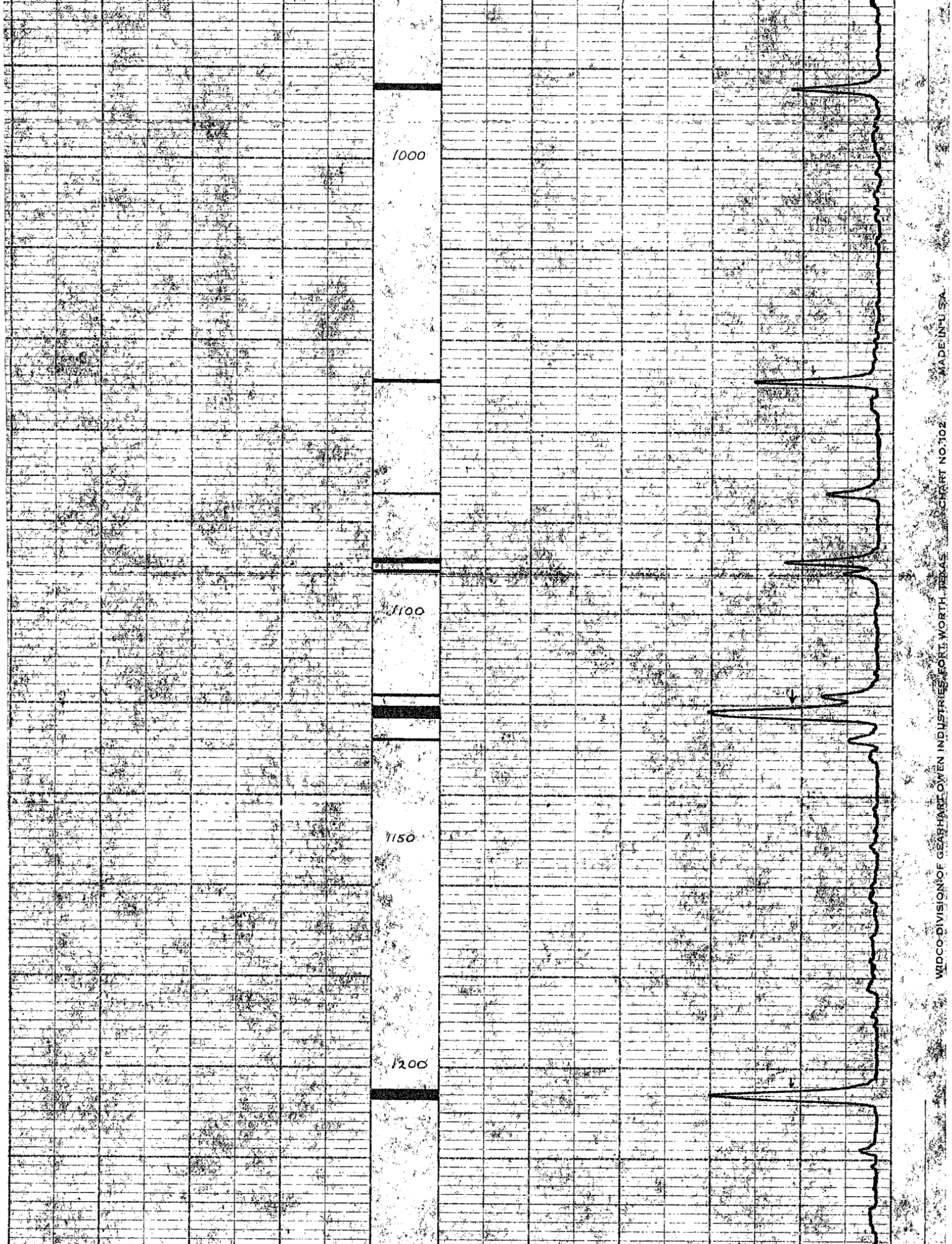
TC = 2 Secs

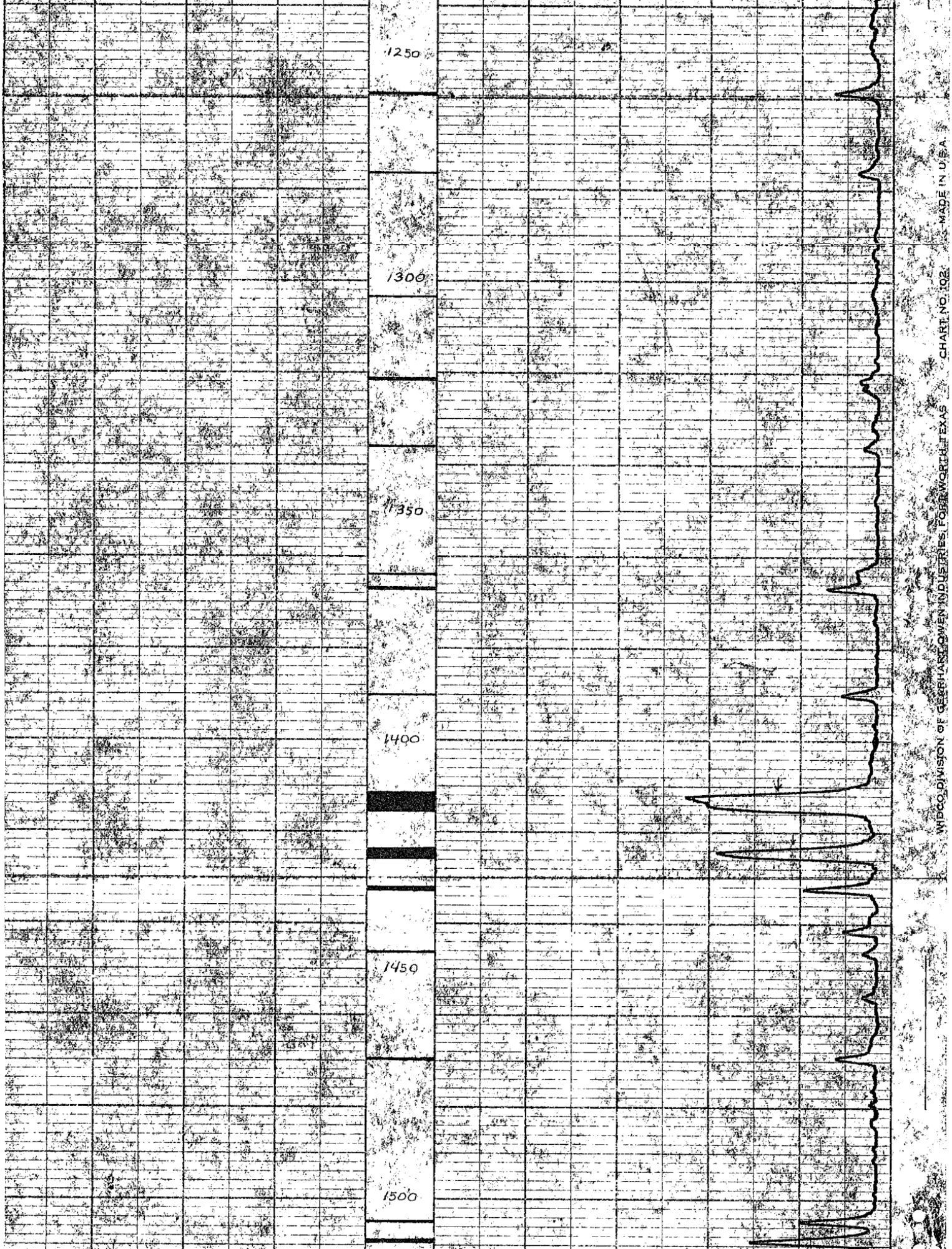



100
150
250
300


550
500
450
EARHART OWEN INDUSTRIES, FORT WORTH, TEXAS
CHART NO. 102
MADE IN U.S.A.

WIDCO DIVISION OF GEARHART OWEN INDUSTRIES, FORT WORTH, TEXAS CHART NO. J02 MADE IN U.S.A. WIDCO DIVISION OF G


1000
1100
1150
1200
WIDCO DIVISION OF GEARHART OWEN INDUSTRIES FORT WORTH, TEXAS
CHART NO. 102
MADE IN U.S.A.


1250
1300
1350
1400
1450
1500
WIDCO DIVISION OF GERHARD OWEN INDUSTRIES, FORT WORTH, TEXAS
CHART NO. 102
MADE IN U.S.A.


1530
INDUSTRIES, FORT WORTH, TEXAS
CHART NO. 102
MADE IN U.S.

CCK 75(3)A-1

P.Q

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-46
LOCATION 350,335N x 64,065E

Re CARBON CR. 75(31A-1)

75-46

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-46
COUNTY STATE B.C.

COORDINATES:
N
S
ELEVATION:
D.F.
K.B.
G.L. 2940'

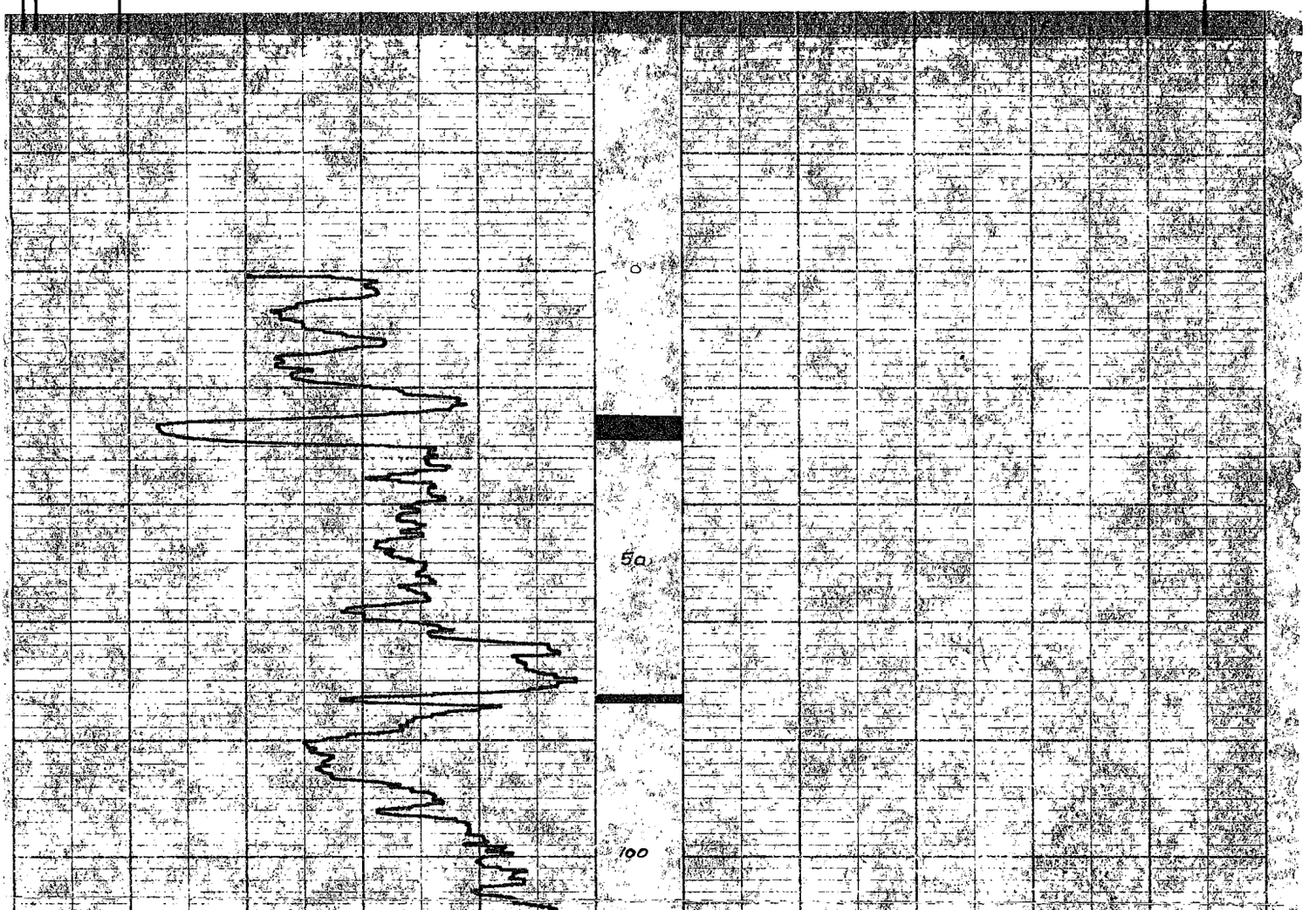
	Run No. 1	Run No. 2
Date	July 8, 1975	
First Reading	802'	
Last Reading	0	
Footage Logged	802'	
Bottom (Driller)	806'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size:	HO	
Bit Size:		

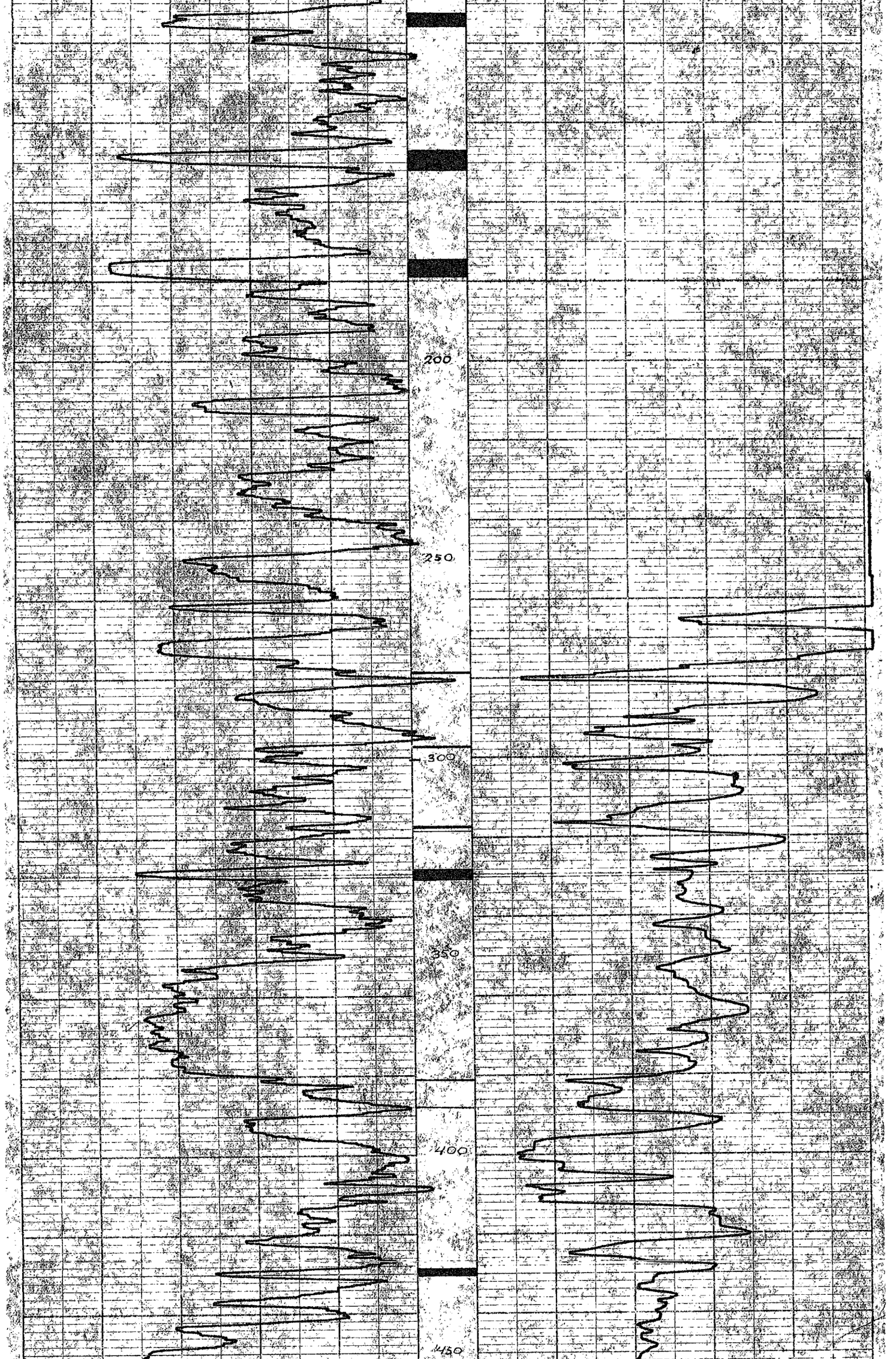
MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ @ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by	R.Korst	
Witnessed by	Neil Tolbert	

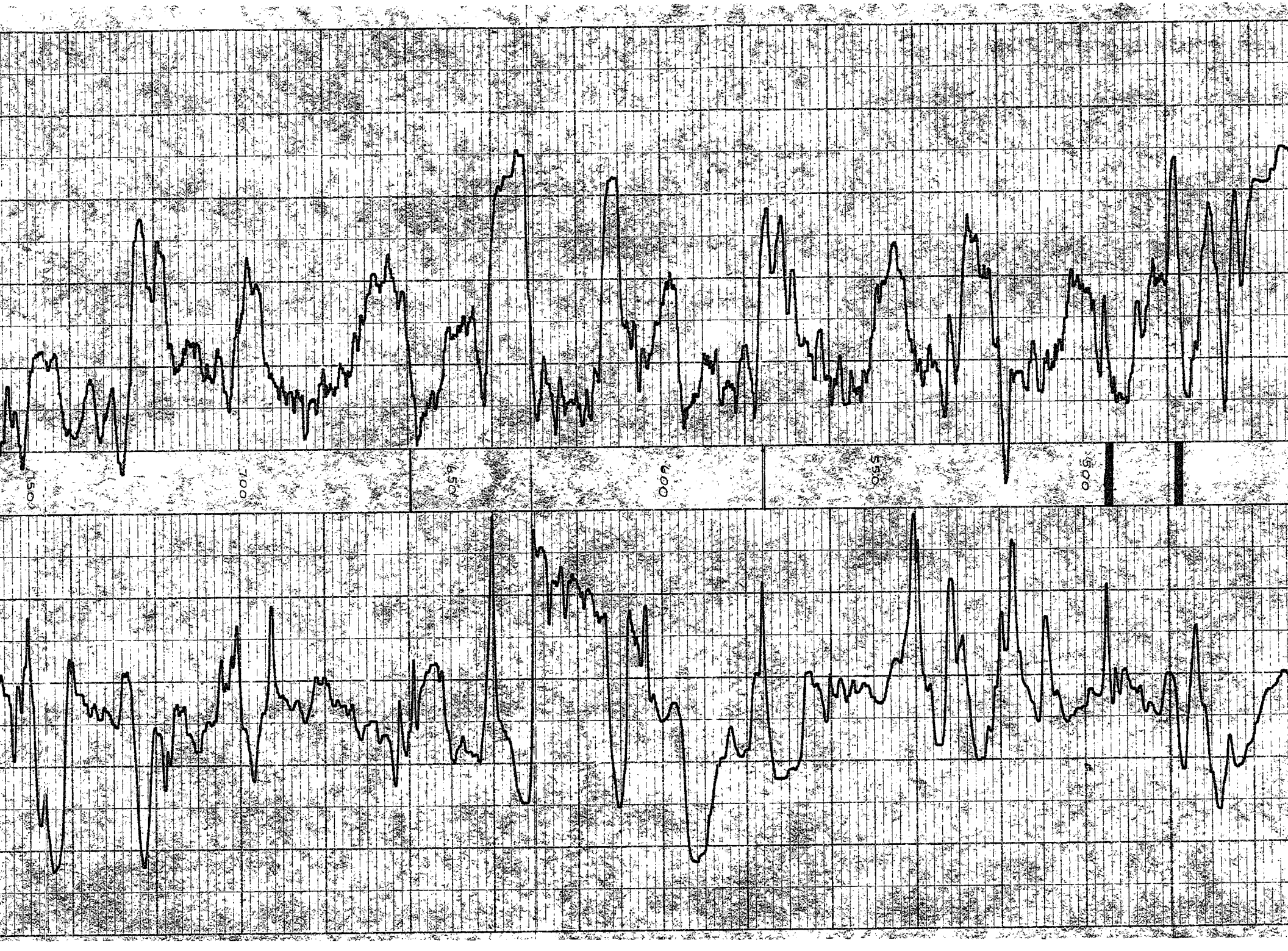
REMARKS

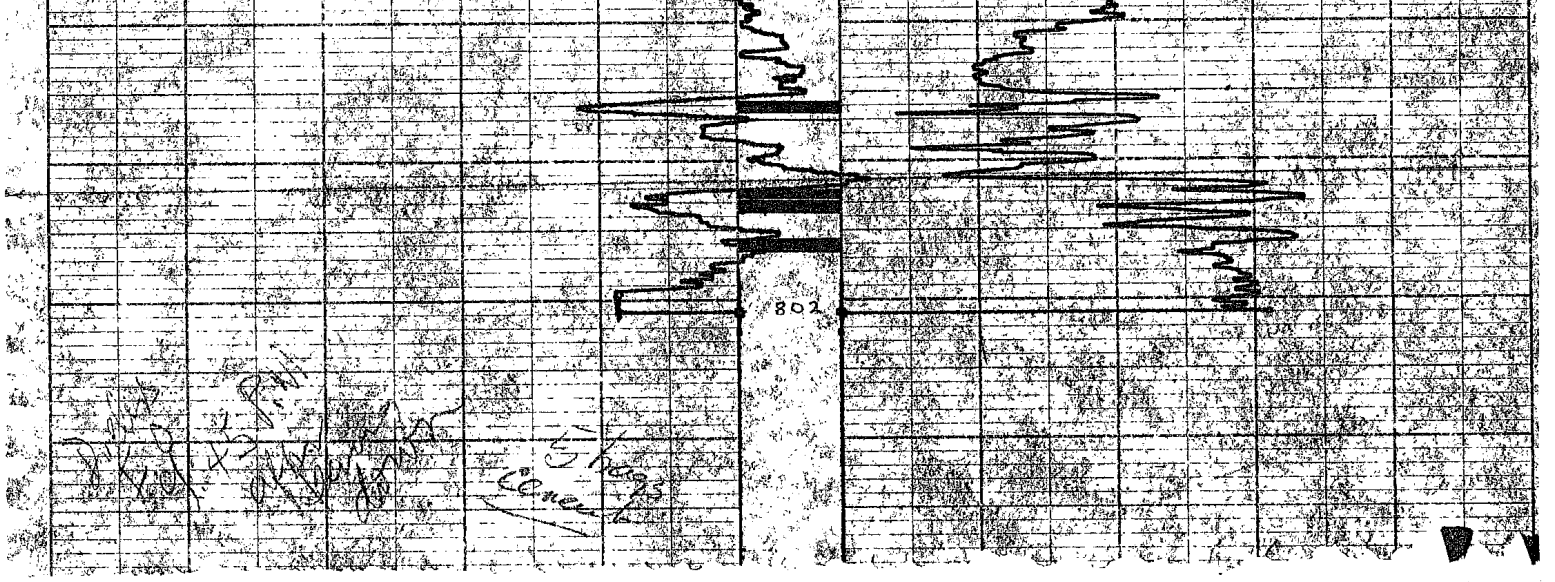
* Reg. U.S. Pat. Off.

FO-139




200
250
300
350
400
450


750
700
650
600
550
500



CCK-75(3) A-1

P.Q

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-46
LOCATION 350,335N x 64,975E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-46
COUNTY STATE B.C.

COORDINATES: 350,335N
N x 64,975E
S
ELEVATION:
D.F.
K.B.
G.L. 2940'

	Run No. 1	Run No. 2
Date	July 8, 1975	
First Reading	802'	
Last Reading	0	
Footage Logged	802'	
Bottom (Driller)	807'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size:	HO	
Bit Size:		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by	R.Karst	
Witnessed by	D.N. leNobel	

REMARKS

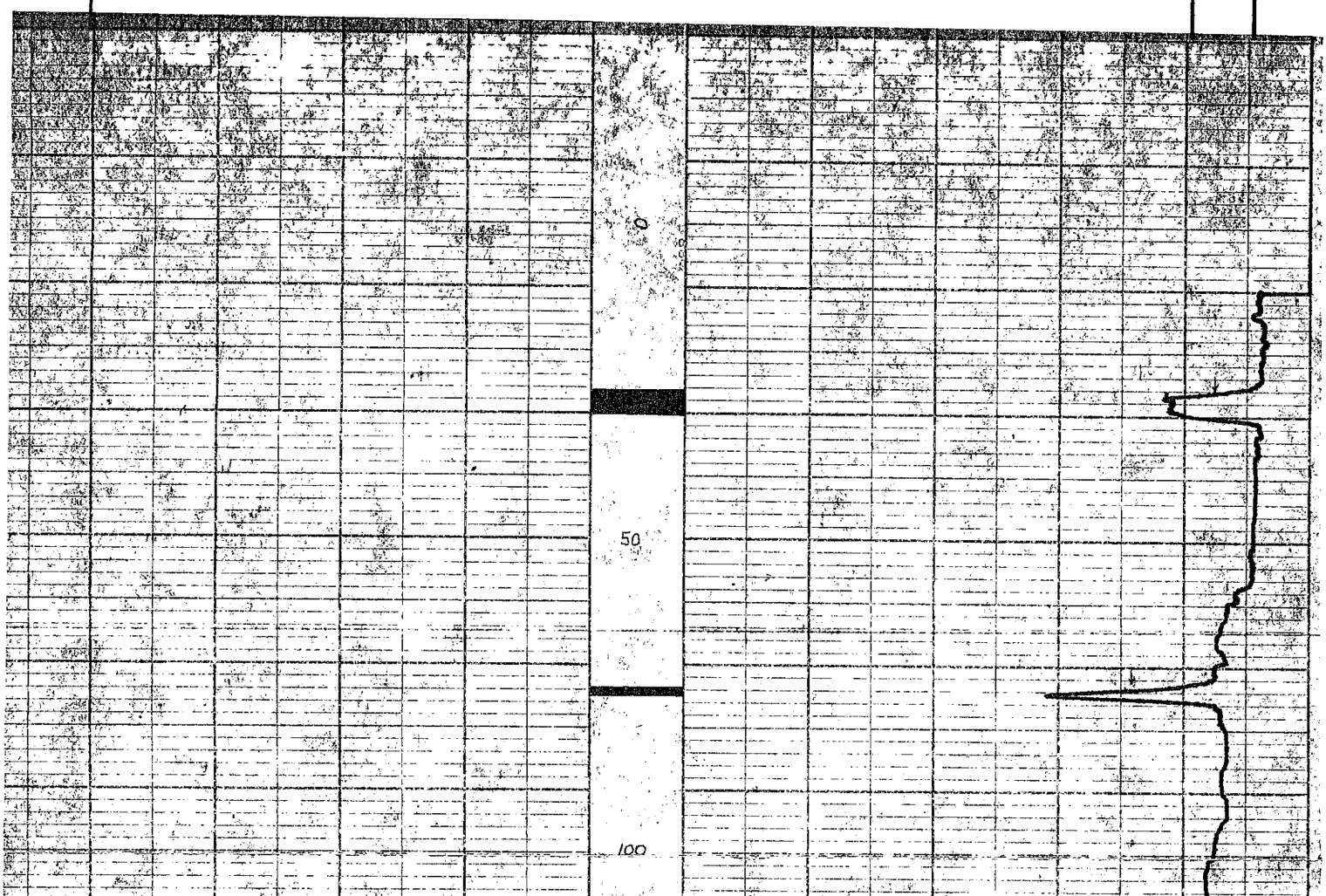
* Reg. U.S. Pat. Off.

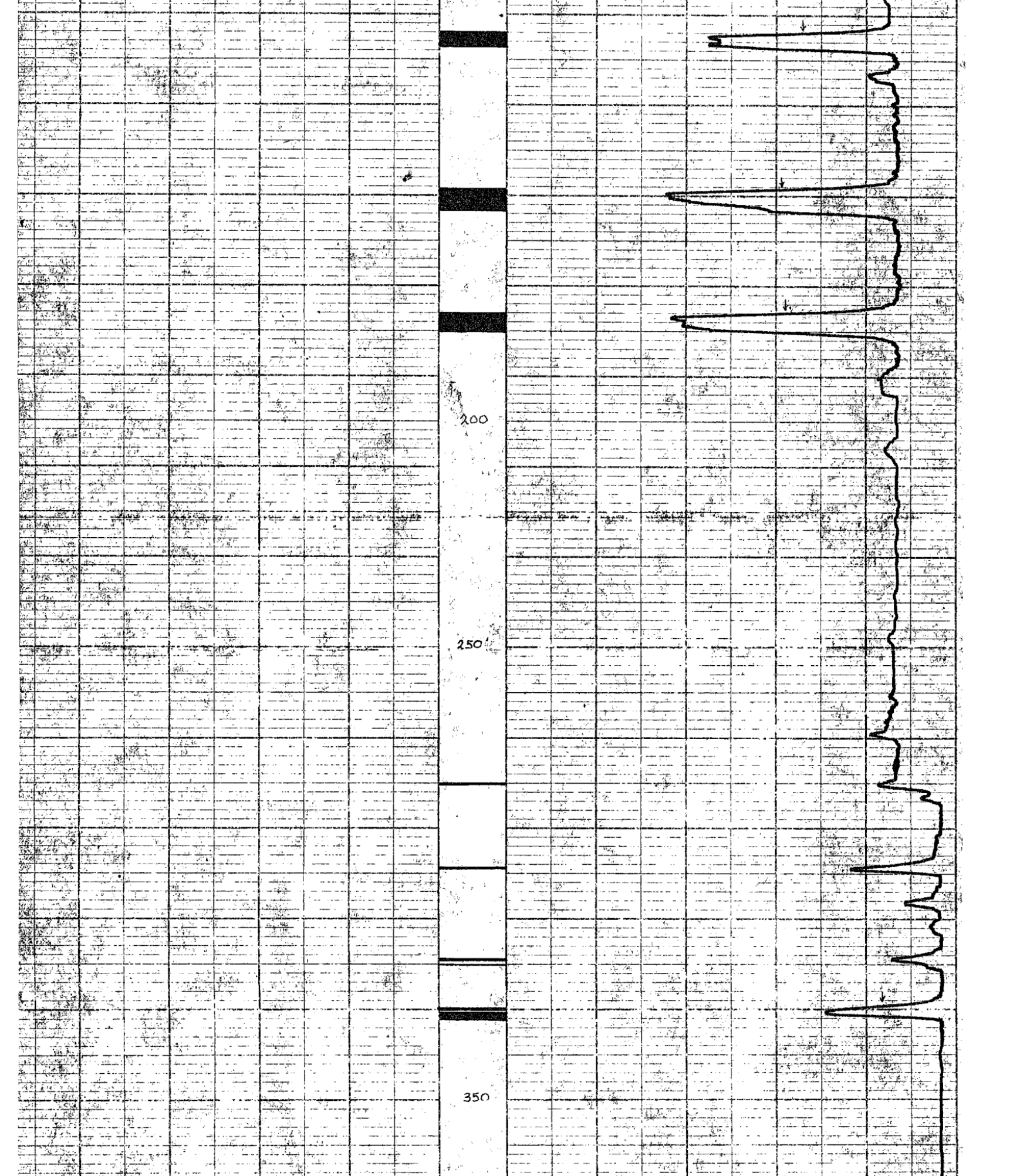
Density

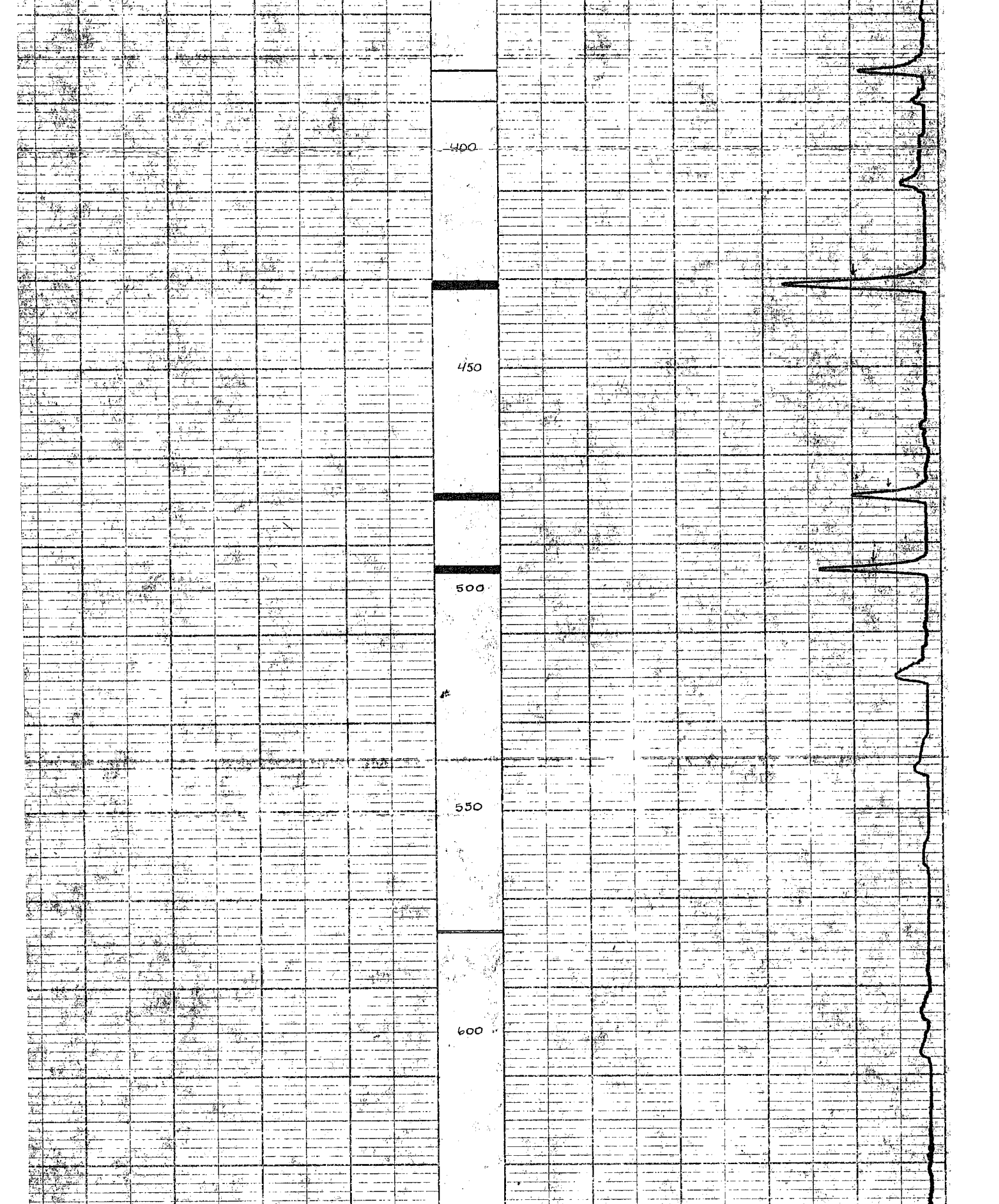
11 ft/min

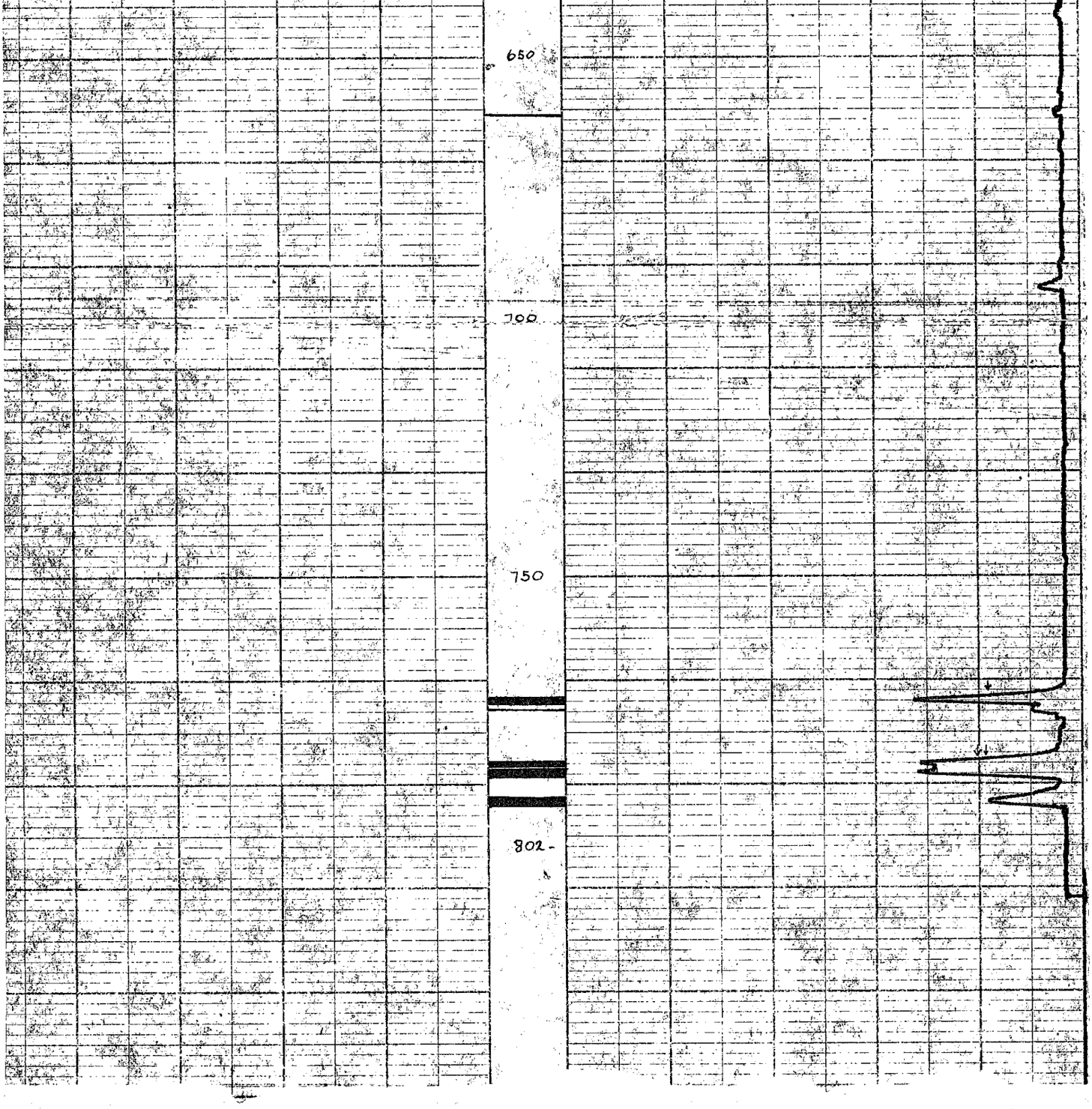
FO-139

Pl. Carbon Cr. 75(3)A-1 75-46.




200
250
350


400
450
500
550
600



CCK-75(3)A-1

P.8

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-47
LOCATION 356,650N x 56,075E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-47
COUNTY STATE B.C.

COORDINATES: 356,650N x 56,075E
N
S
ELEVATION:
D.F.
K.B.
G.L. 3150'±

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	July 16, 1973		Nature		
First Reading	1241'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	1241'		Resistivity	@ °F	@ °F
Bottom (Driller)	1247'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	[illegible]				
Bit Size:					
			Logged by	[illegible]	
			Witnessed by	[illegible]	

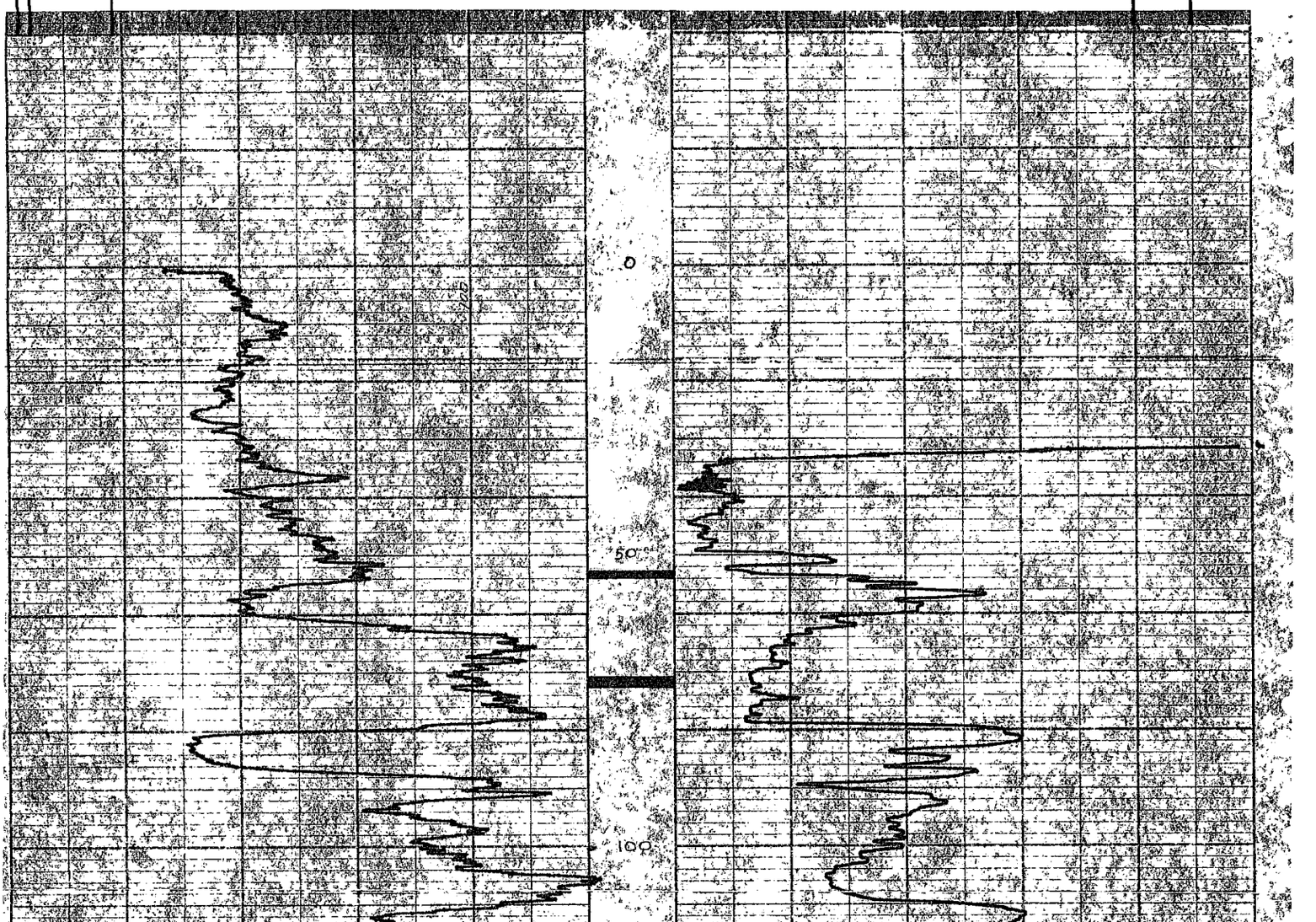
REMARKS

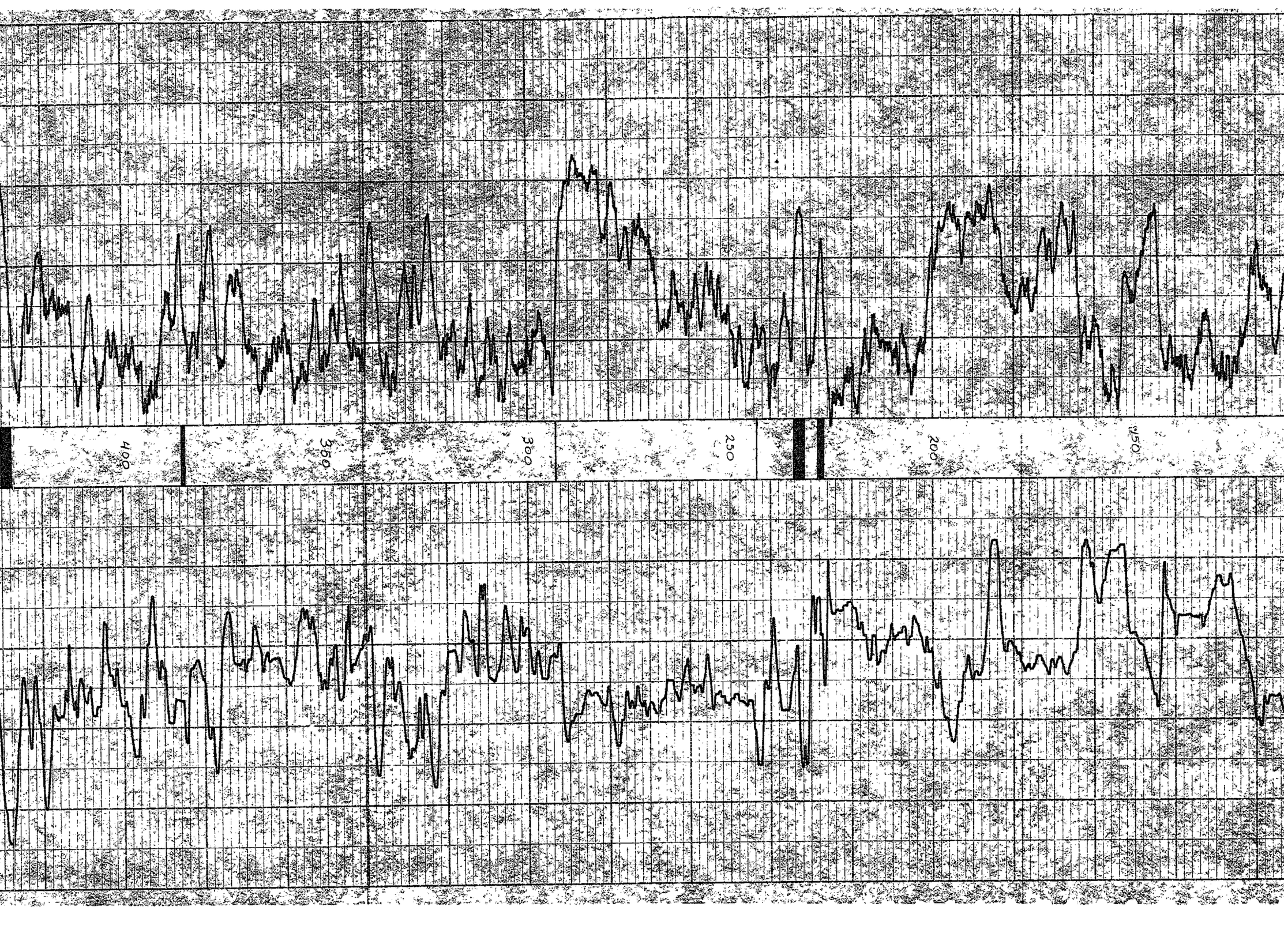
* Reg. U.S. Pat. Off.

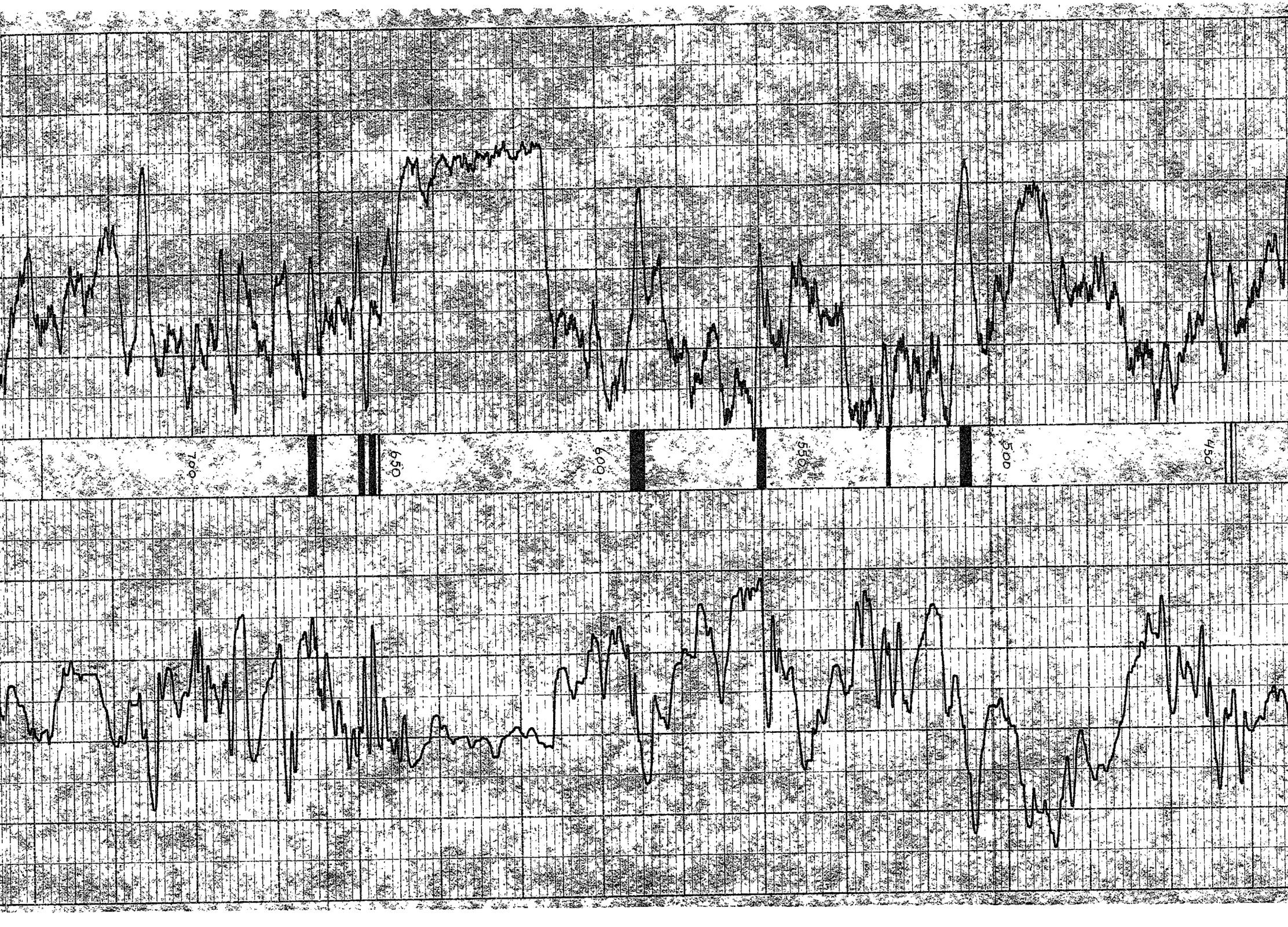
Re: Carbon Cr. 75(3)A-1

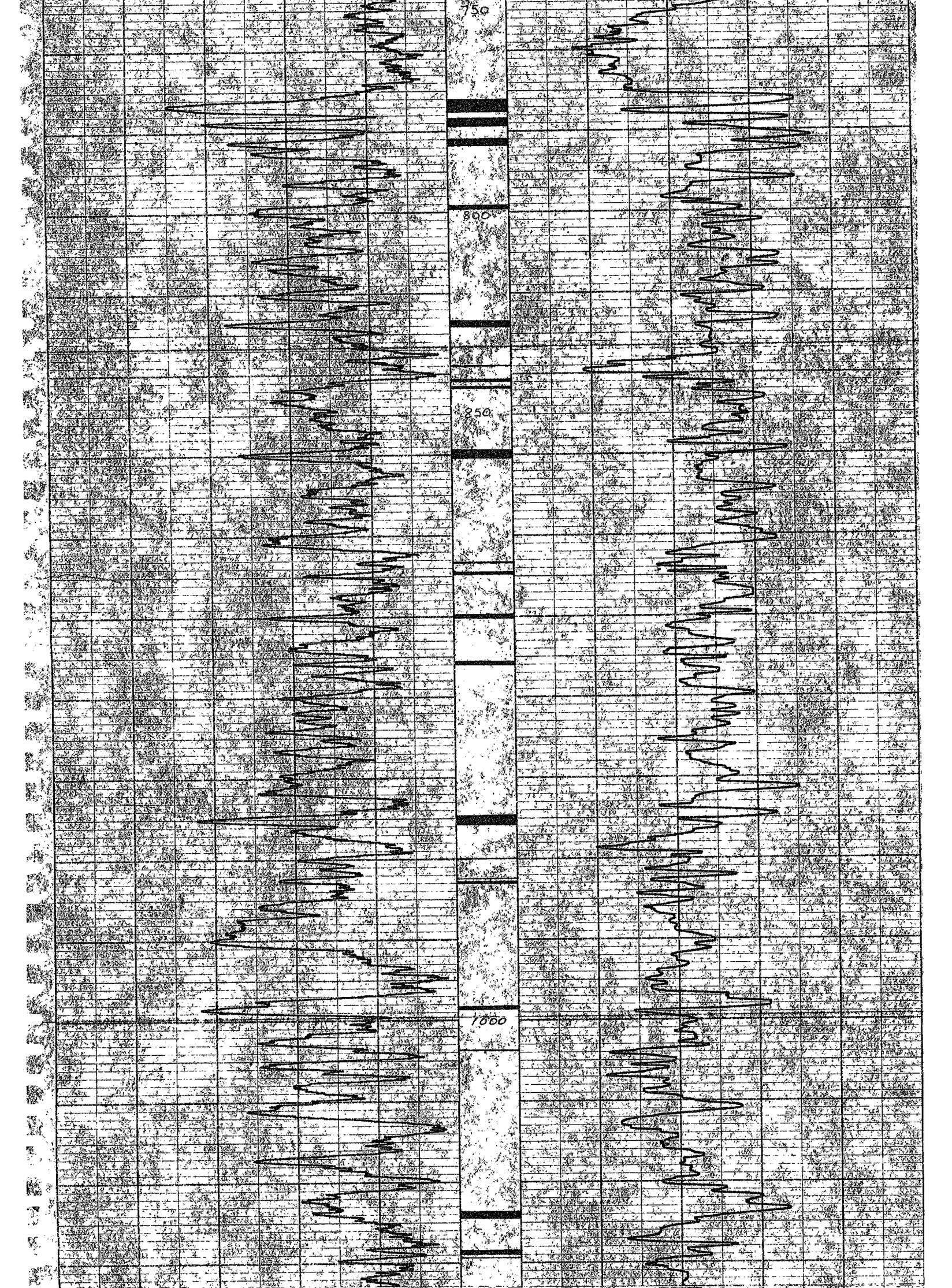
75-47

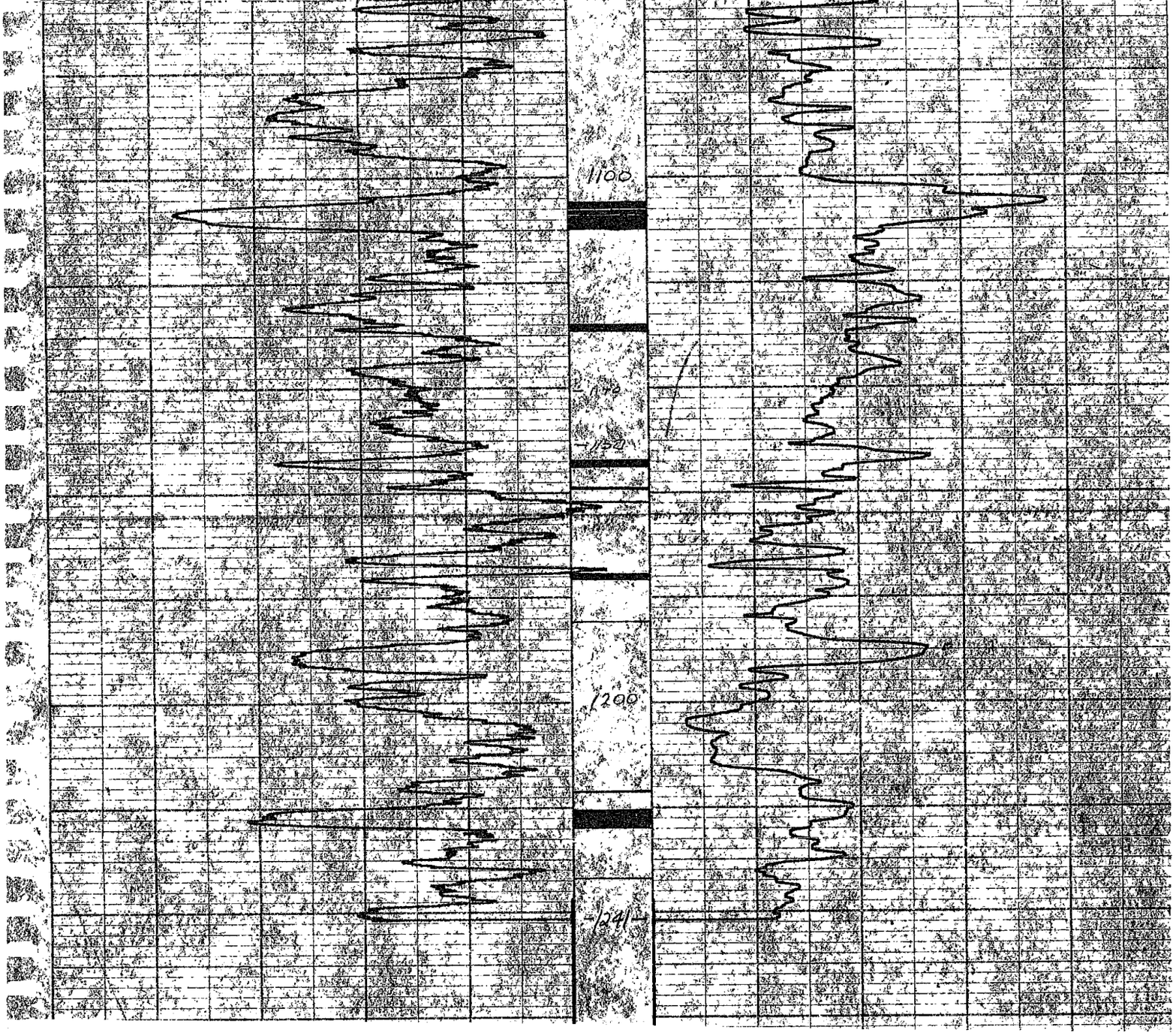
FO-139




400
350
300
250
200
150


700
650
600
550
500
450


750
800
850
1000



CCK - 75-(3)A-1

P.Q.

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-47
LOCATION 356,560N x 56,975E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-47
COUNTY ' STATE B.C.

COORDINATES: 356,650N
N x 56,975E
S
ELEVATION:
D.F.
K.B.
G.L. 3150'±

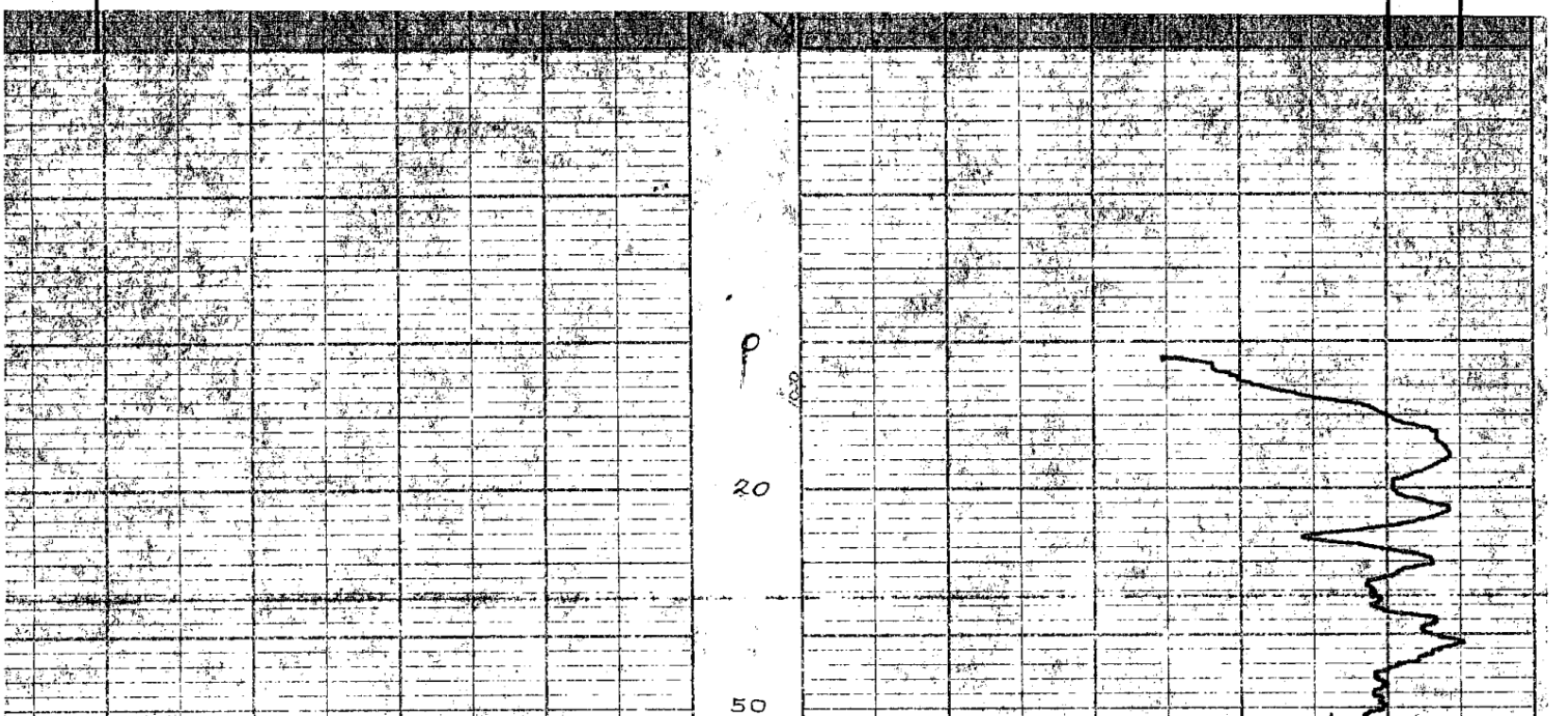
	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	July 16, 1975		Nature		
First Reading	1243'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	1243'		Resistivity	@ °F	@ °F
Bottom (Driller)	1247'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	10				
Bit Size:					
			Logged by	M.Chambers	
			Witnessed by	D.M. [illegible]	

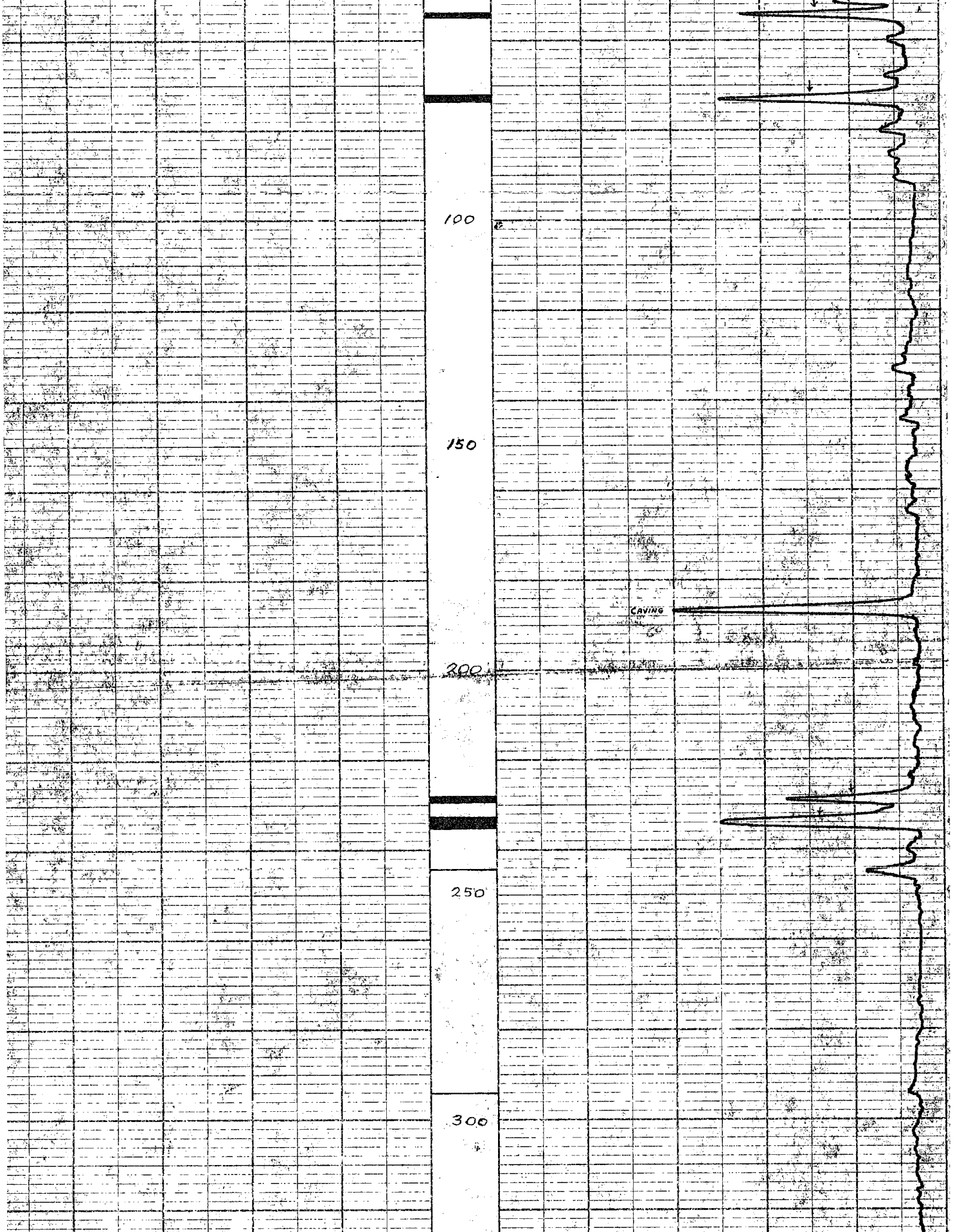
REMARKS

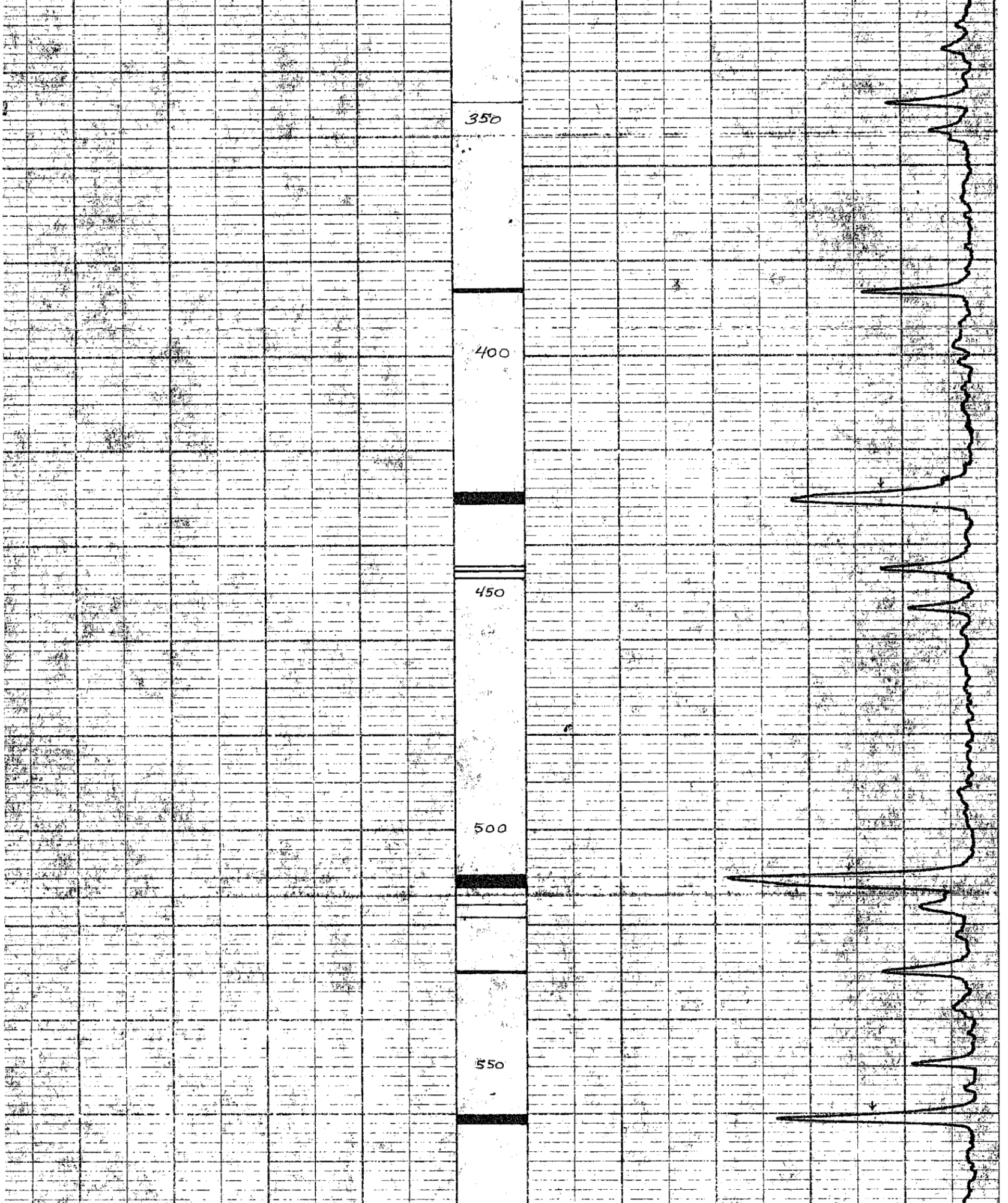
* Reg. U.S. Pat. Off.

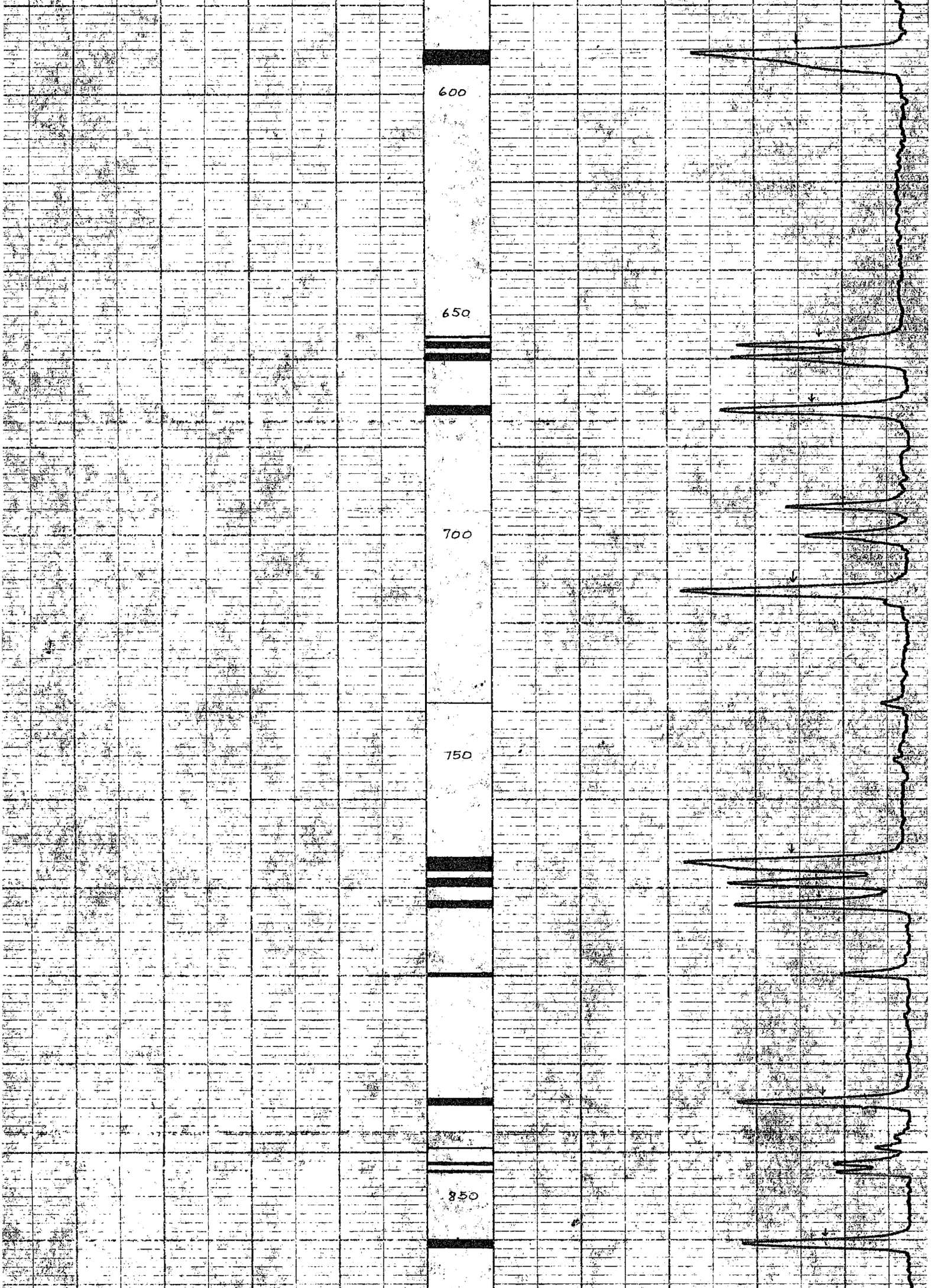
FO-139

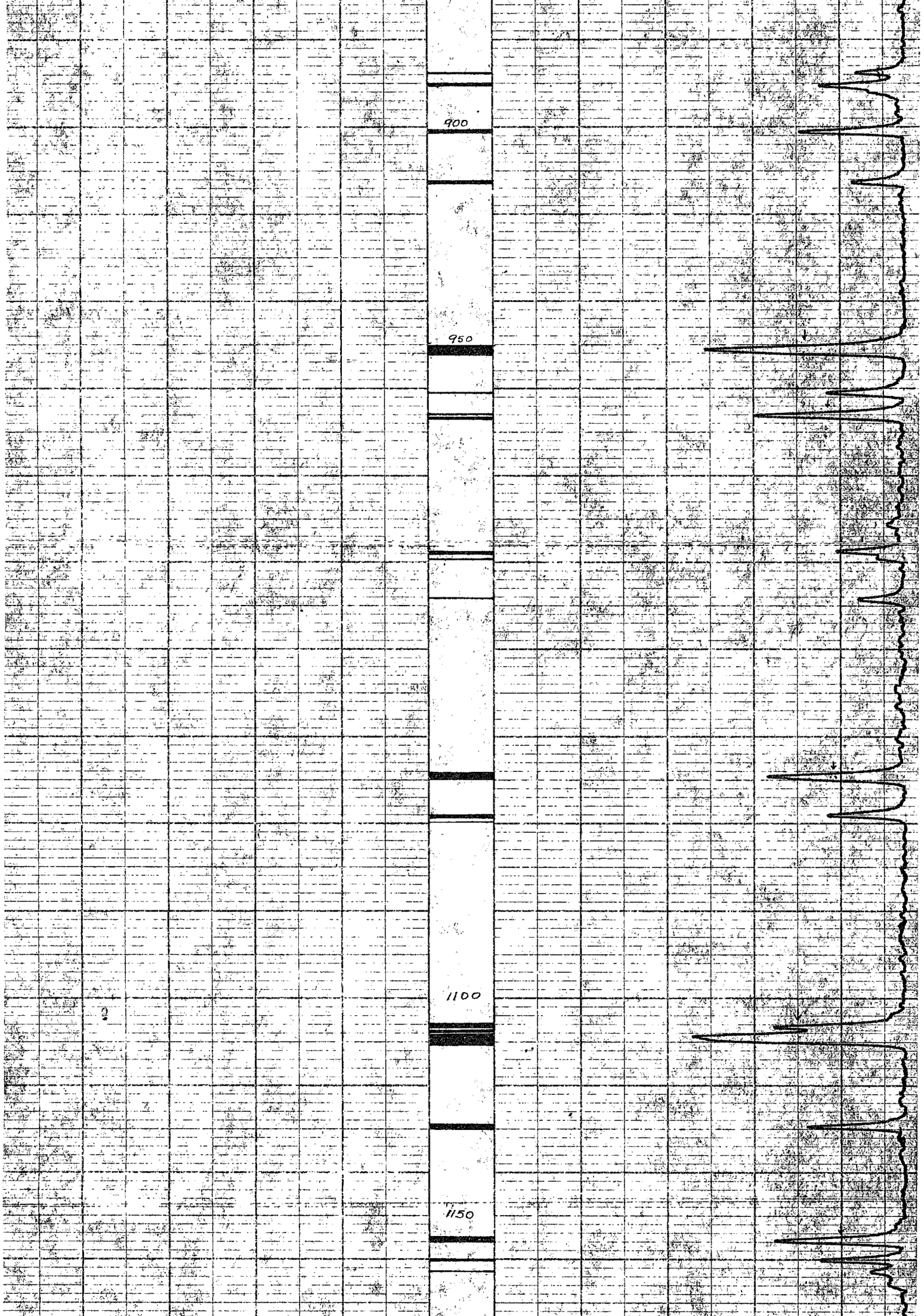
Re: Carbon Cr. - 75(319-1 75-47

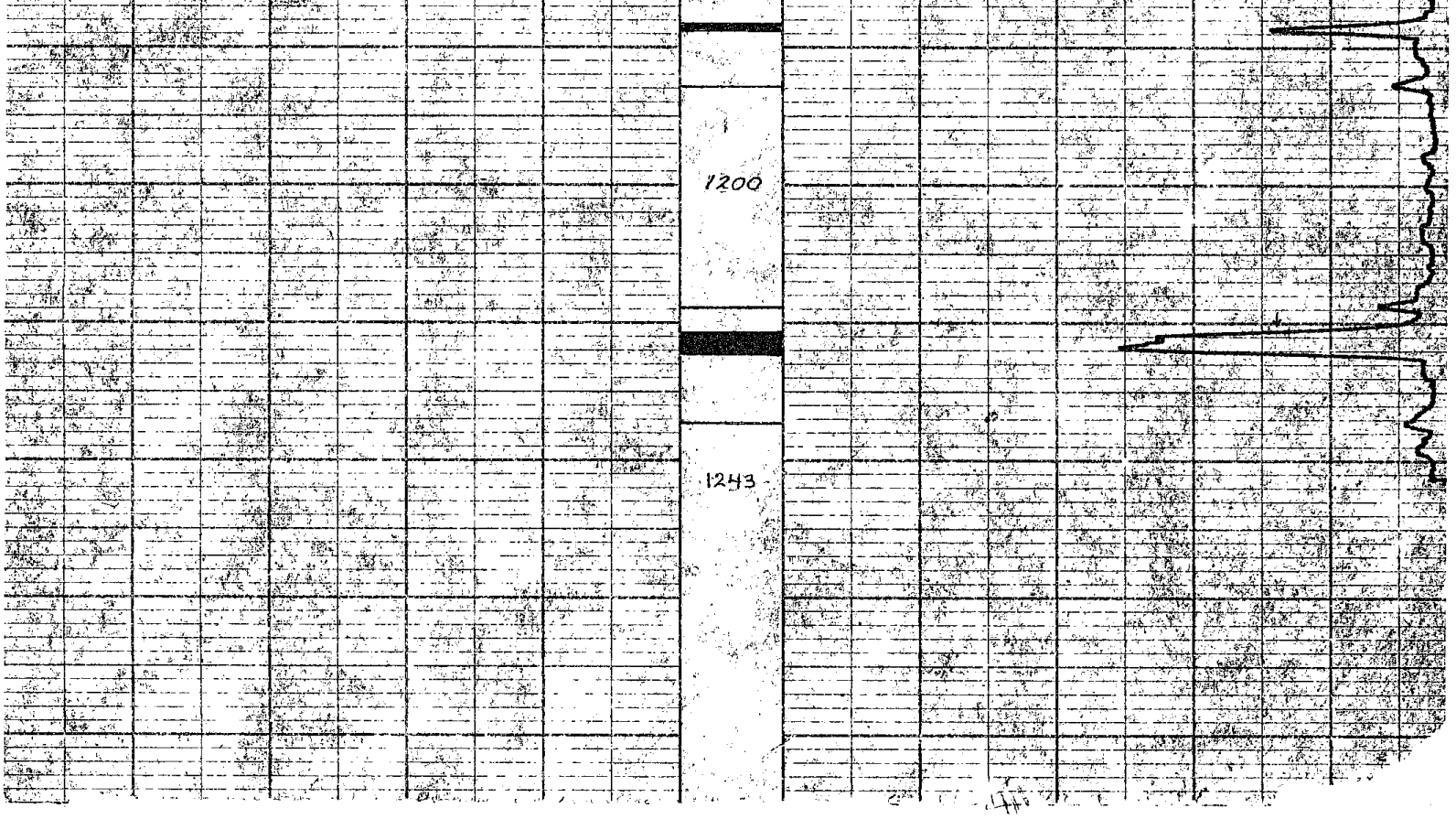



100
150
CAVING
200
250
300


350
400
450
500
550


600
650
700
750
850


900
950
1100
1150



CCK - 75(3)A-1

P.Q

75-47

PR. CARBON CR. 75(3)A-1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-47

LOG BY: MEL CHAMBERS

DATE: JULY 17 1975

ELEV: 3150 ±

N: 356650

E: 56975

HOLE SIZE: 2½" (core)

AIR ☐ WATER ☑

T.D. 1247 P.D.

HOLE NO. 75-47

PROJECT: CARBON CREEK

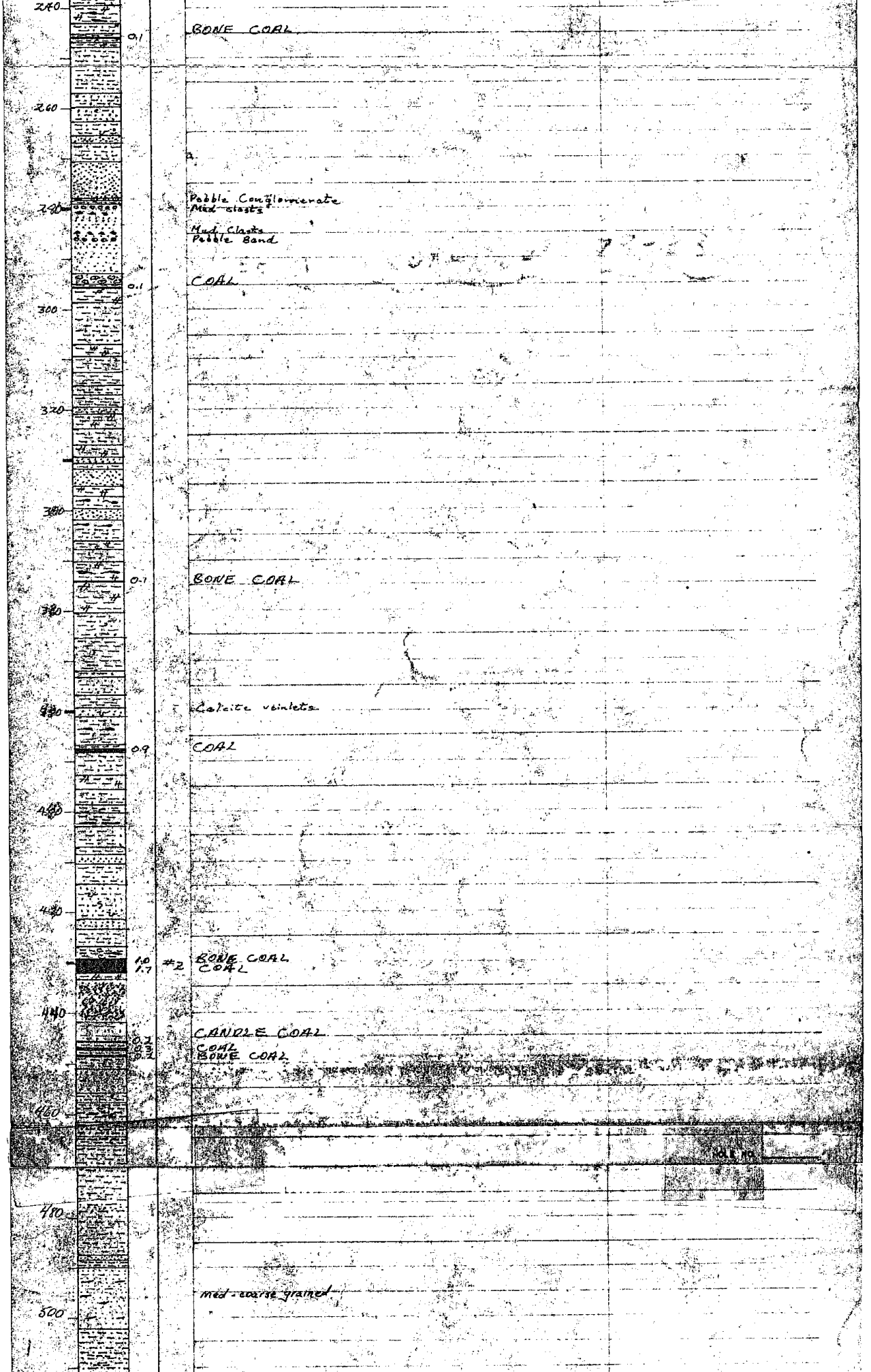
LEASE: 3488

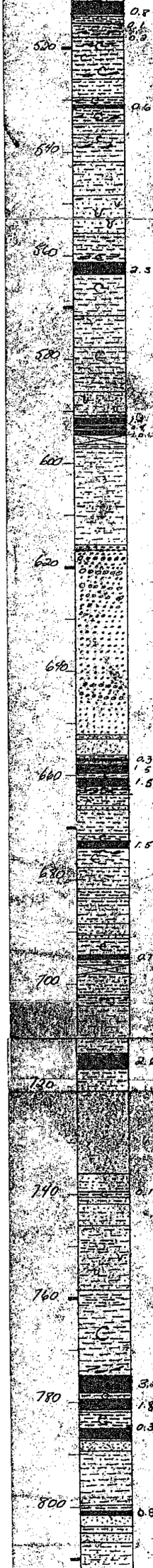
SEC. T. R.

498

% REC	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	0				
	20				CORE LOSS
					CORE LOSS
	40				CORE LOSS
					DENSITY INDICATES COAL 1.2'
	60				CORE LOSS
					DENSITY INDICATES COAL 1.7'
	80				
	100				
	120				
	140				
	160				
	180				CORE LOSS 0.9' (FILLED WITH MUD)
	200				
	220				
			1.1	#1	DENSITY INDICATES COAL 1.6' COAL (DENSITY THICKNESS 2.3')

HOLE NO.


240
0.1
BONE COAL
260
280
Pebble Conglomerate
Mud clasts
Mud Clasts
Pebble Band
0.1
COAL
300
320
340
0.1
BONE COAL
360
380
Calcite veinlets
0.9
COAL
400
420
1.0
1.7
#2
BONE COAL
COAL
440
CANDLE COAL
0.2
0.3
0.2
COAL
BONE COAL
460
480
med-coarse grained
500



COAL (DENSITY THICKNESS 2.7')
BONE COAL
BONE COAL

COAL

COAL (DENSITY THICKNESS 2.0)

COAL
BONE COAL (DENSITY THICKNESS 3.5)
BONE COAL

CONGLOMERATE BAND
Coarse grained sandstone with Pebble bands and Conglomerate

COAL

COAL (DENSITY THICKNESS 2.0')

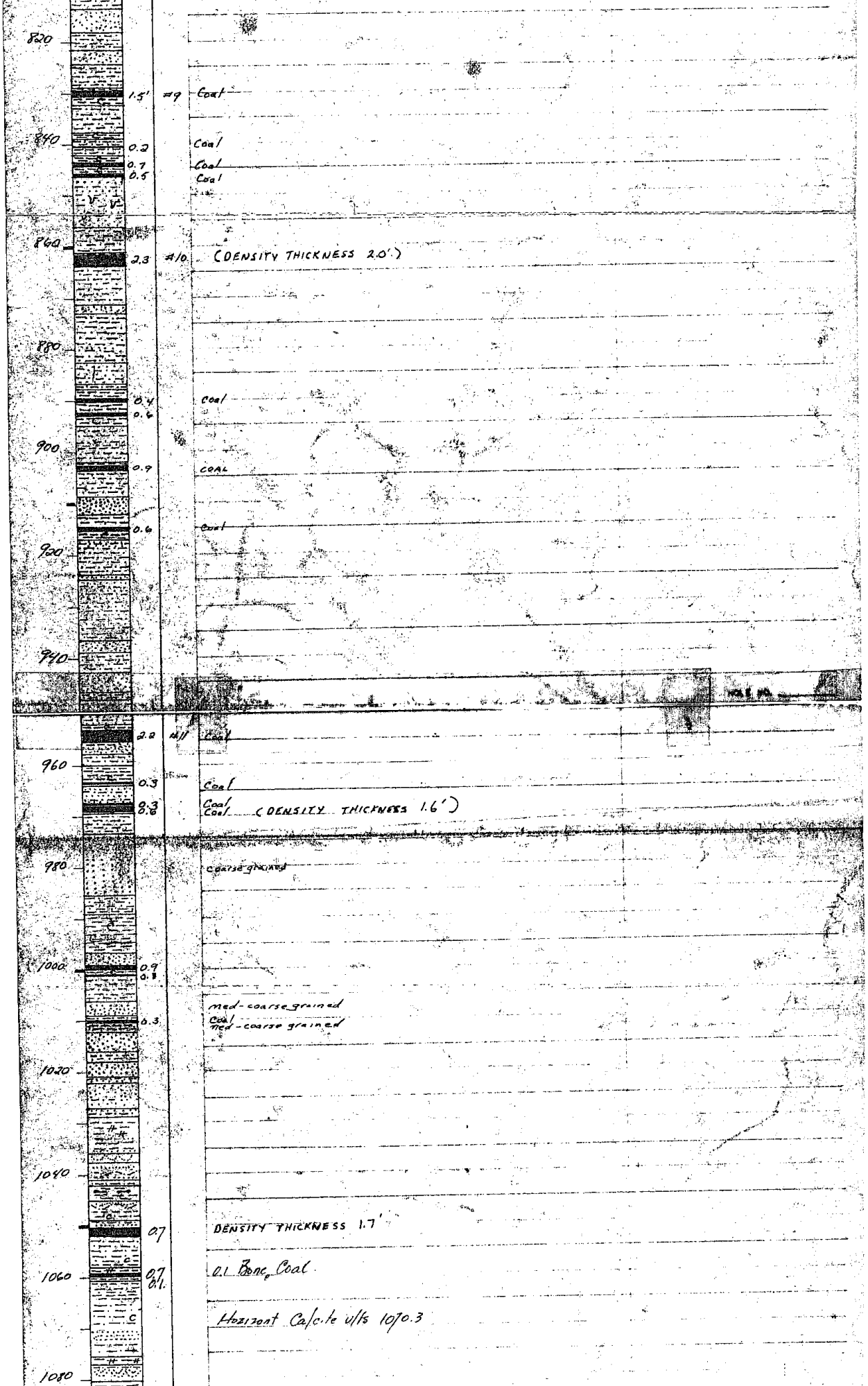
(DENSITY THICKNESS 2.3')

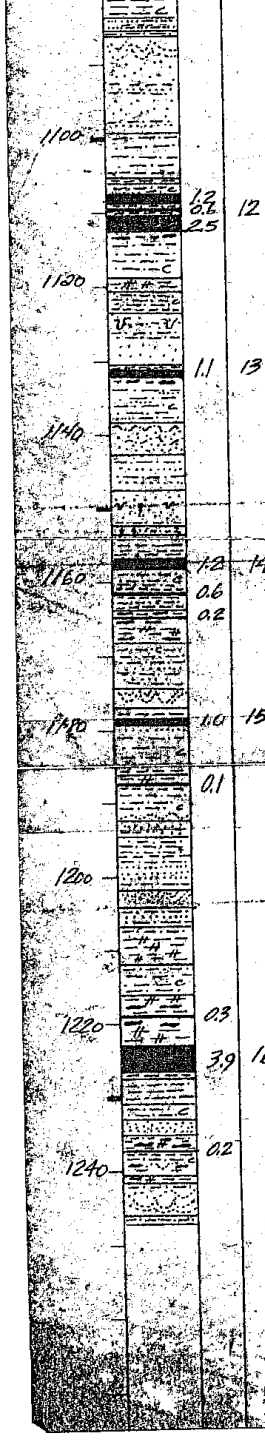
Bone Coal

Coal
Coal
Coal (DENSITY THICKNESS 1.8')

Coal

HOLE NO.


820
1.5' #9 Coal
840
0.2 Coal
0.7 Coal
0.5 Coal
860
2.3 #10 (DENSITY THICKNESS 2.0')
880
0.4 Coal
0.6
900
0.9 COAL
0.6 Coal
920
940
2.2 #11 Coal
960
0.3 Coal
0.3 Coal
0.8 Coal (DENSITY THICKNESS 1.6')
980
coarse grained
1000
0.9
0.1
med-coarse grained
0.3 Coal
med-coarse grained
1020
1040
0.7 DENSITY THICKNESS 1.7'
1060
0.7 O.L. Bone Coal
0.1
Horizont Calcite ults 1070.3
1080



Calcite v/ts 1126.4-1126.7

Calcite v/ts 1194.3-1197.0

(DENSITY THICKNESS 3.2')

Calcite v/ts 1242.4

CCK-75(3) A-1

P.G

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco WELL LOG

COMPANY: Utah Mines Ltd.
AREA: Carbon Creek
WELL: 75-48 48
COUNTY: STATE: B.C.

COORDINATES: 330 S&W
N
S
ELEVATION:
D.F.
K.B.
G.L. 3197'±

LOCATION: 330 S/S & W/S 000
WELL: 75-48
COMPANY: Utah Mines Ltd.

	Run No. 1	Run No. 2
Date	July 17, 1975	
First Reading	651'	
Last Reading	0'	
Footage Logged	651'	
Bottom (Driller)	651'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bor Size		

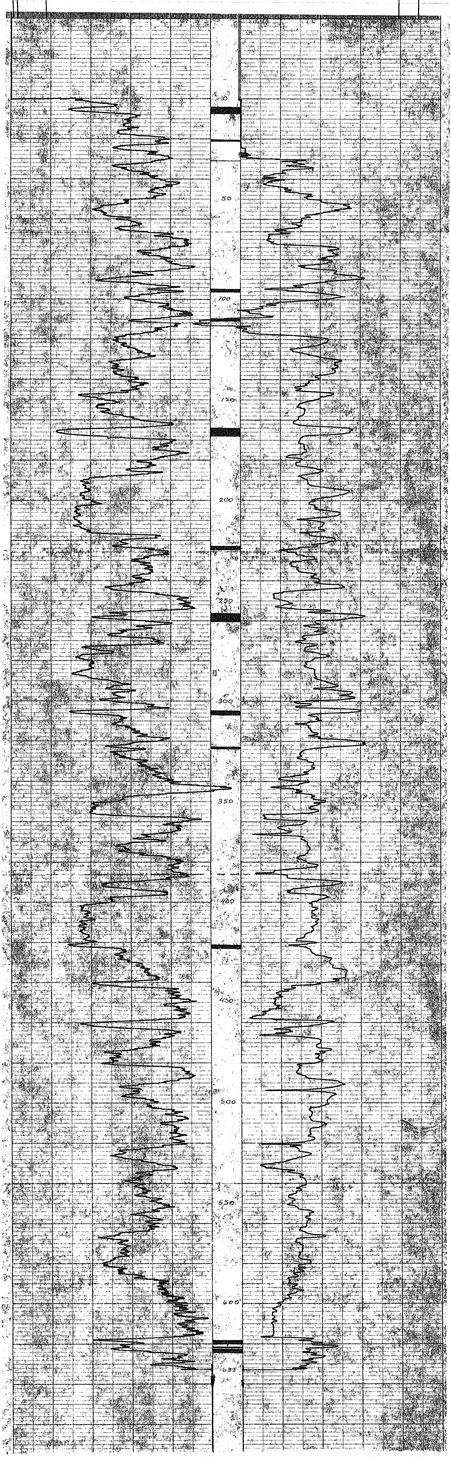
MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Sal. @ Brit	@ °F	@ °F
pH		
Circ. Temp.		
Bit Temp.		
Logged by	M. Carter	
Witnessed by	W. Hall	

REMARKS

* Reg. U.S. Pat. Off.

MEC 0/1

Ut. Carbon Cr. 75-48, 75-49



CCK-75(3) A-1

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-48 48
COUNTY STATE B.C.

COORDINATES 355,55'N
N
S
ELEVATION:
D.F.
K.B.
G.L.

COMPANY UTAH MINES LTD.
WELL 75-48
LOCATION 355' N. OF BOUNDARY 1255' E. OF W. BOUNDARY

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	Sept. 22, 1975		Nature		
First Reading	634		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	634		Resistivity	@ °F	@ °F
Bottom (Driller)	634		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Cnd. Temp.		
Casing Size			B.H. Temp.		
Bit Size					
Bit Size			Logged by	Schlumberger	
			Witnessed by	Mr. Gibson	

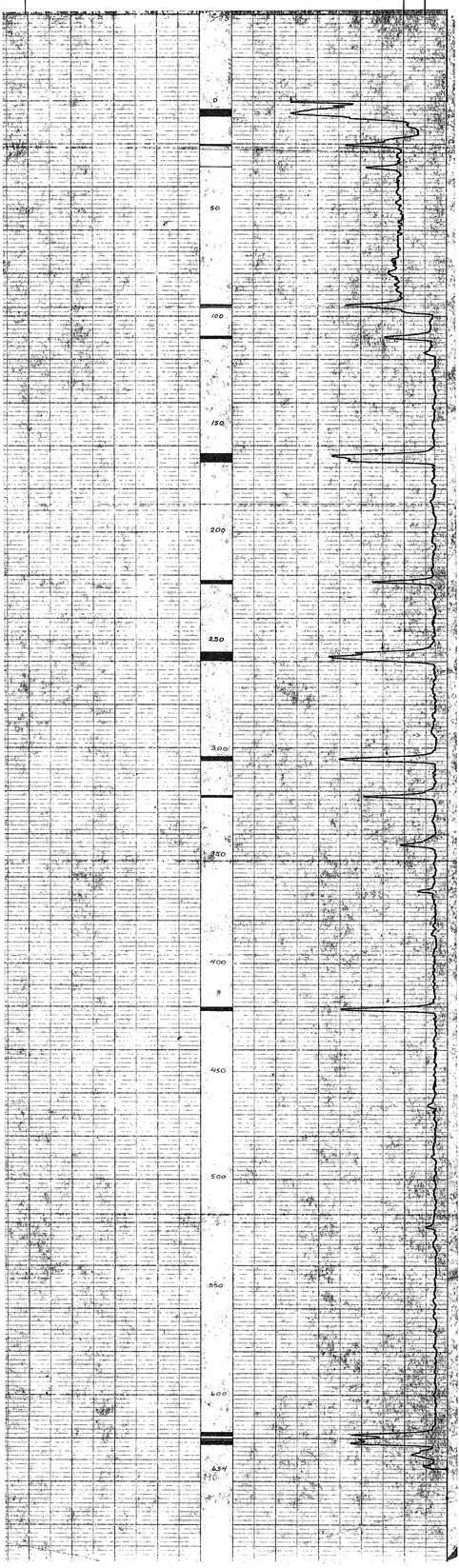
REMARKS

DENSITY

* Reg. U.S. Pat. Off.

Mr. Gibson OK 75/9/81

75-48



CCK-75(3)A-1

PQ

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY

AREA

WELL 75-49

COUNTY STATE

COORDINATES: N S

ELEVATION: D.F. K.B. G.L.

LOCATION WELL COMPANY

	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

GAMMA RESIST

15 ft/min
2 MeV
TC = 10 sec
75-49 through the pipe

0 10 0 50 100 150 200 250 300 350 400 450

CCK-75(3)A-1

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY
AREA
WELL 75-50
COUNTY STATE

COORDINATES N E
ELEVATION: D.F. K.B. G.L.
SEC TWP RGE
LOCATION COUNTY

	Run No. 1	Run No. 2
Date		
First Reading		
Last Reading		
Footage Logged		
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Cnt. Temp		
B.H. Temp		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

4M-10-61

GAMMA RESIST

1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600

CCK-75(3)A-1

P.R

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-50
LOCATION 353,250N x 59,075E

COMPANY Utah Mines Ltd.

AREA Carbon Creek

WELL 75-50

COUNTY _____ STATE B.C.

COORDINATES: N 353,250N x 59,075E
S
ELEVATION:
D.F.
K.B.
G.L. 3610'±

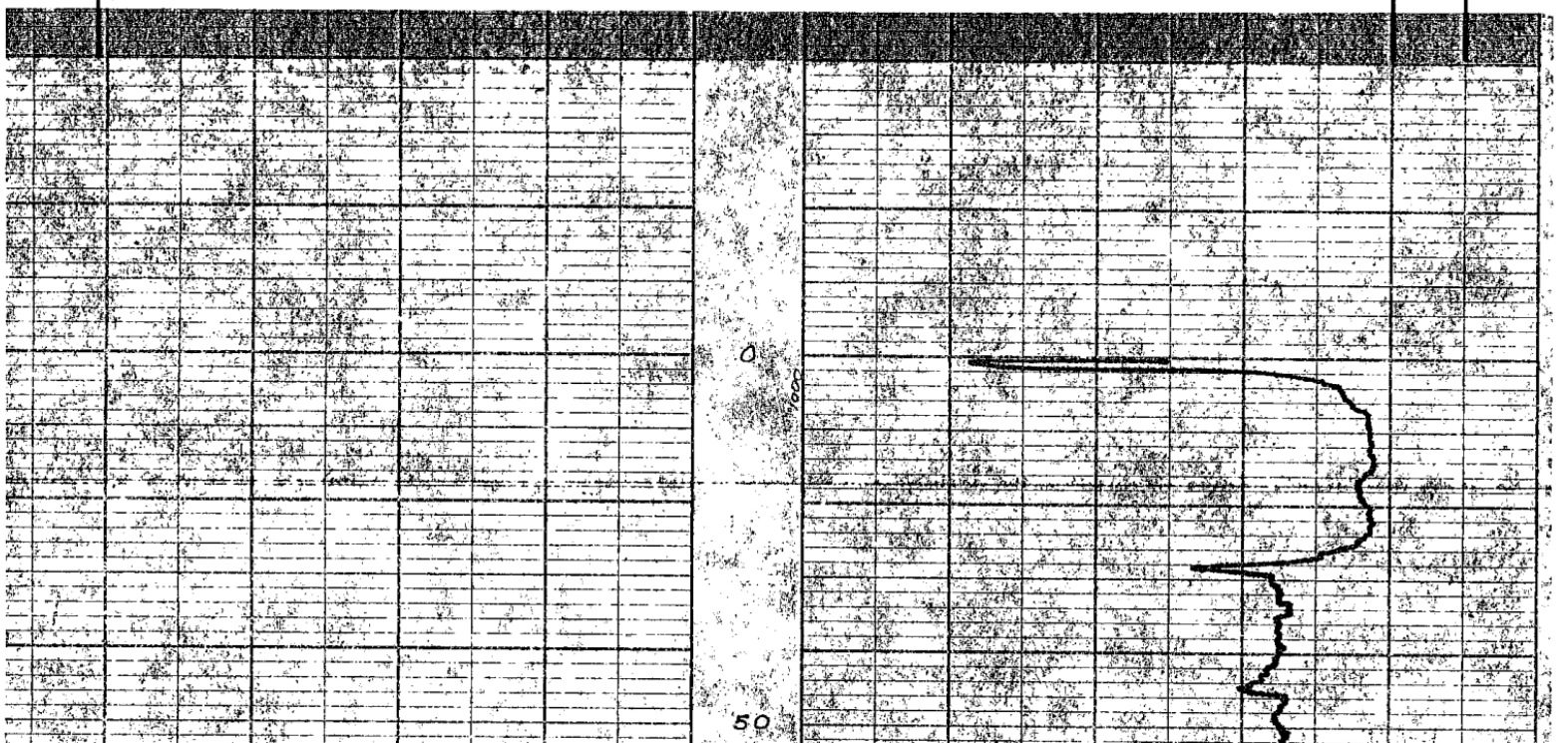
	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	July 23, 1975		Nature		
First Reading	591'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	591'		Resistivity	@ °F	@ °F
Bottom (Driller)	593'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	NQ				
Bit Size:					
			Logged by	H. Malachowski	
			Witnessed by	D.M. LeMoyet	

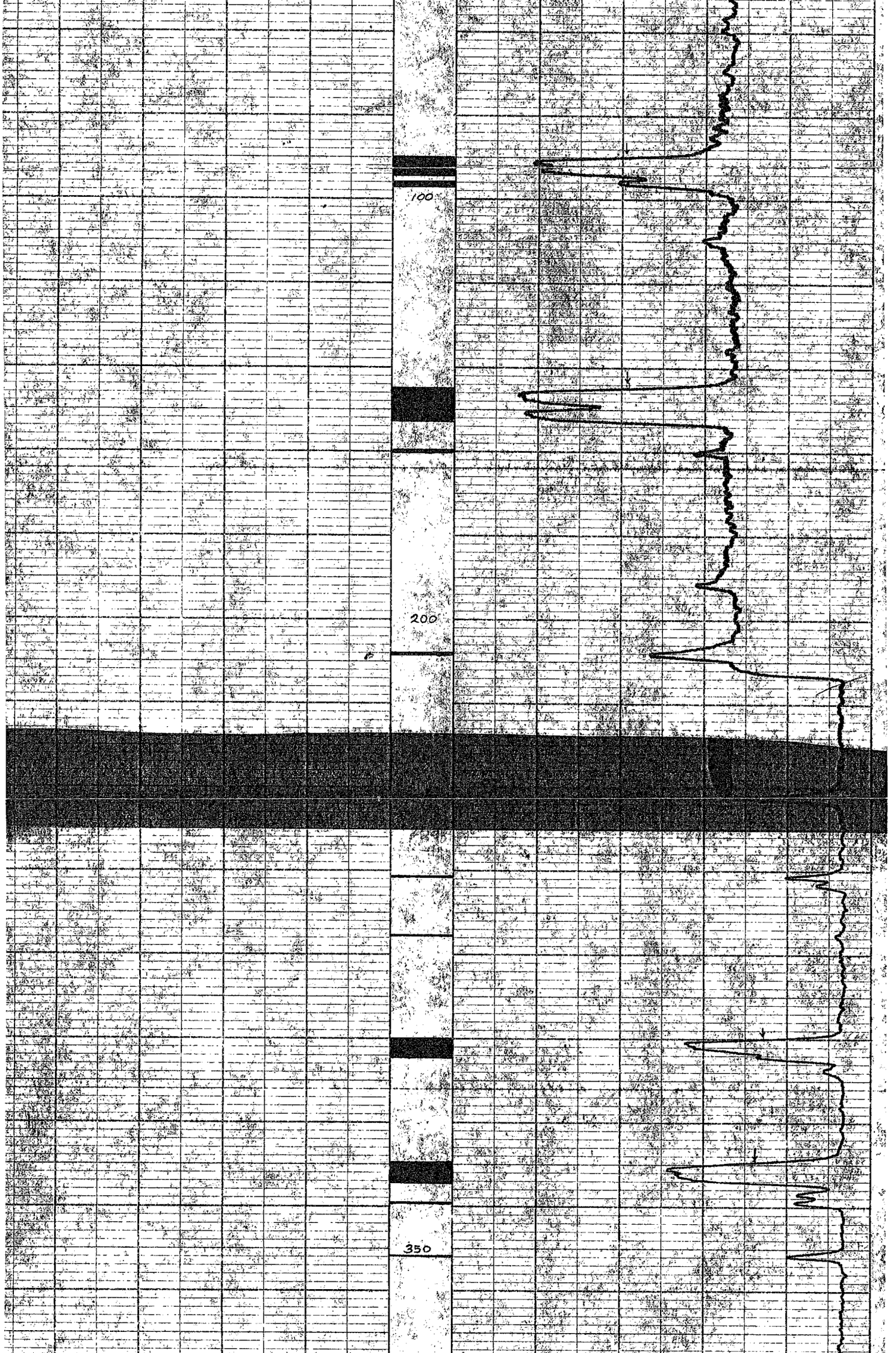
REMARKS

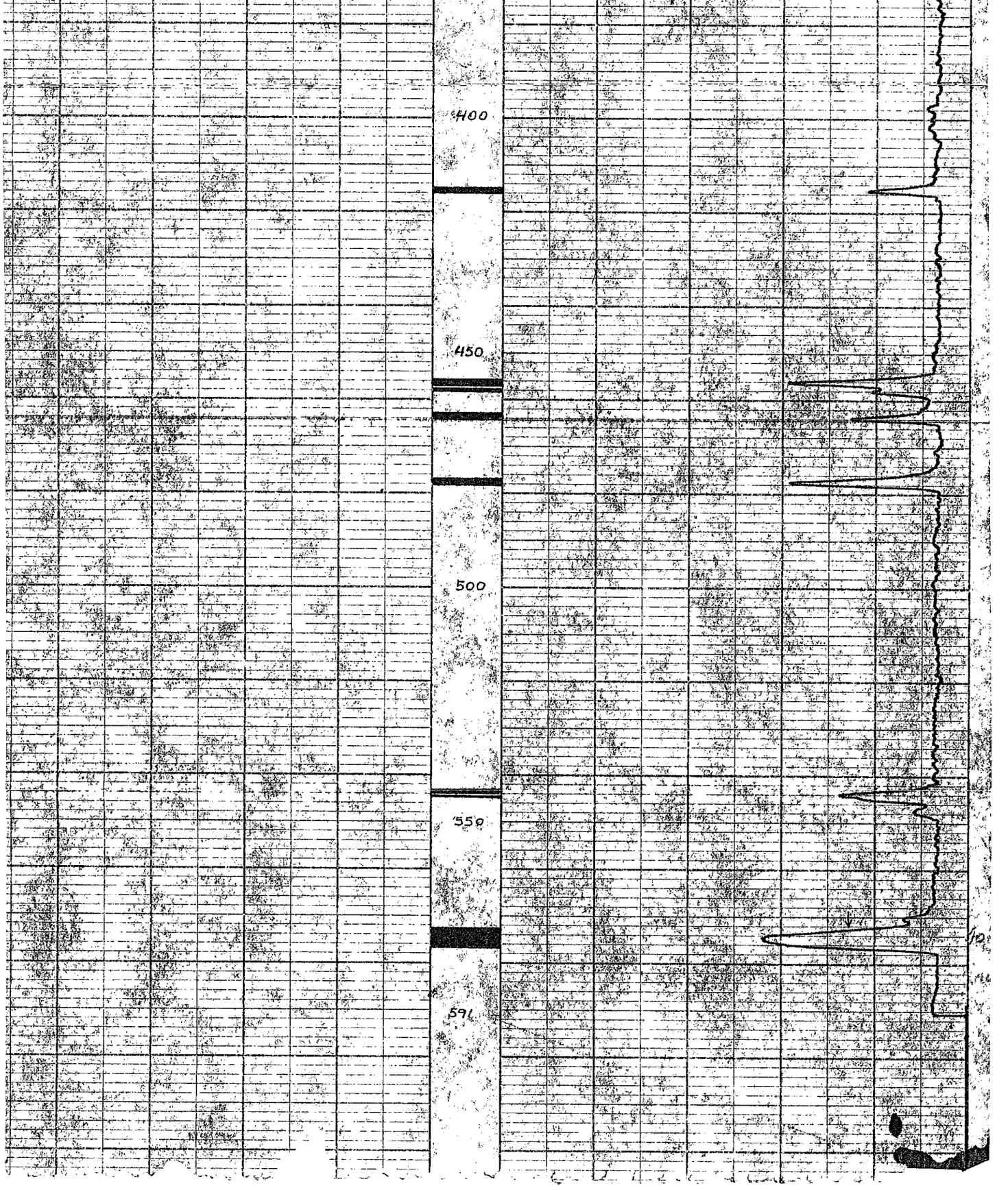
* Reg. U.S. Pat. Off.

Re-Carbon Cr. 75(31A-1 75-50

FO-139




100
200
350


400
450
500
550
591

CCK-75(3)A-1

P.8

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-51
LOCATION 357,850N x 51,775E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-51
COUNTY STATE B.C.

COORDINATES: N 357,850N x 51,775E S
ELEVATION:
D.F.
K.B.
G.L. 3080'±

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	July 30, 1975		Nature		
First Reading	1281'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	1281'		Resistivity	@ °F	@ °F
Bottom (Driller)	1287'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	HQ				
Bit Size:					
			Logged by	U.Malachowski	
			Witnessed by	D.N.leNobel	

REMARKS

* Reg. U.S. Pat. Off.

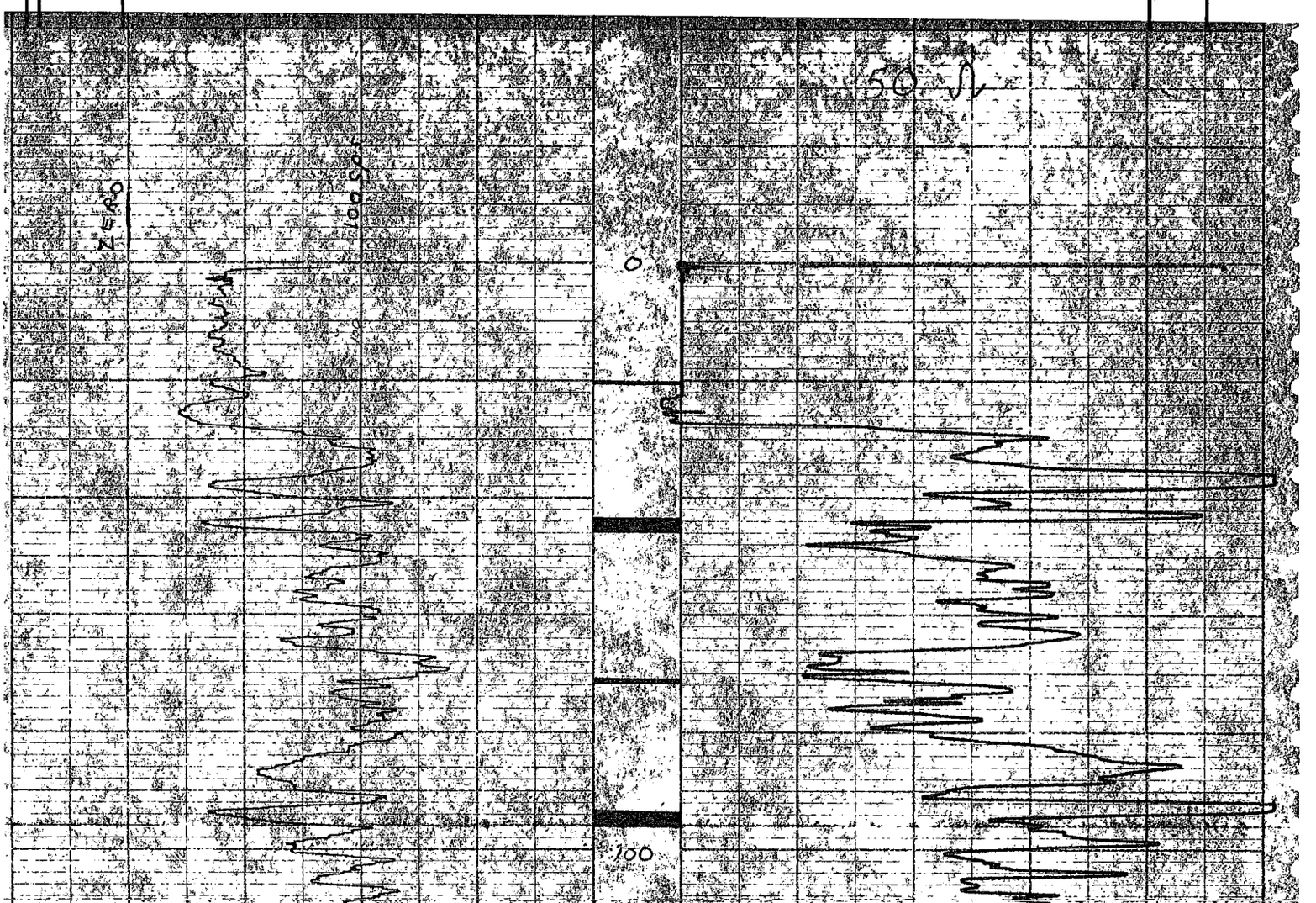
Gamma
TC = 2 Secs
500 CPS

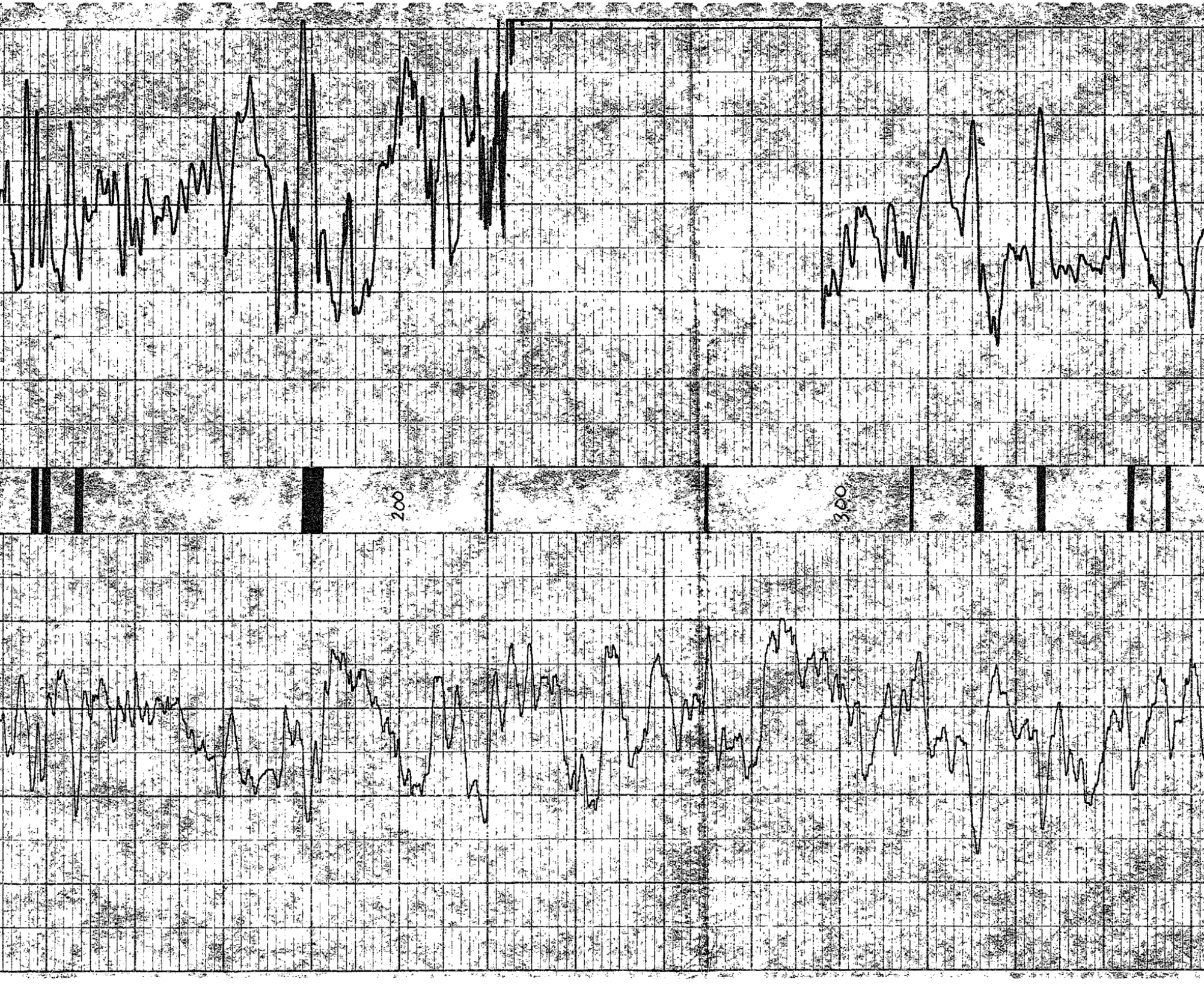
Resistivity
50 Ohms

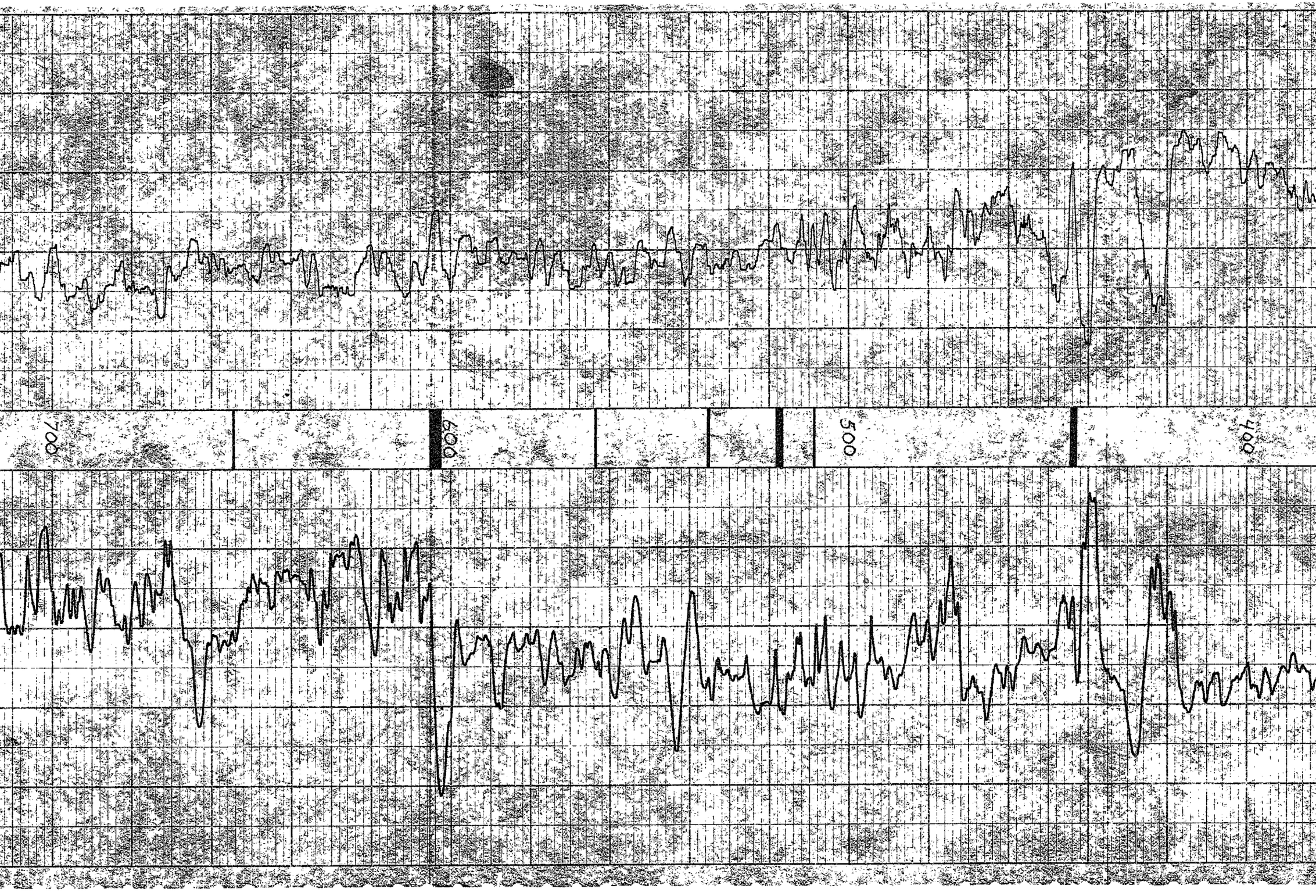
FO-139

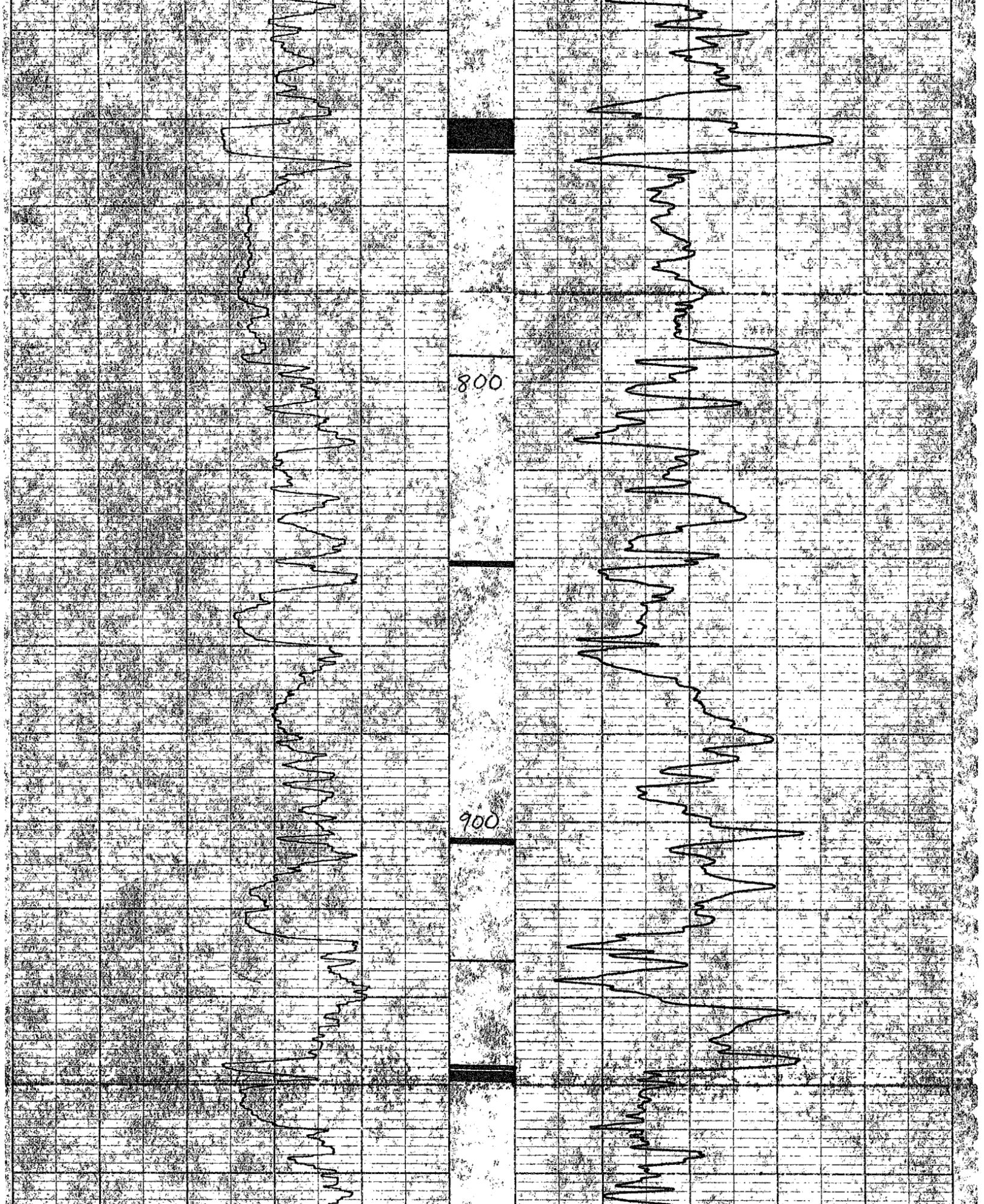
PR. CARBON CR. - 75 (3) 07

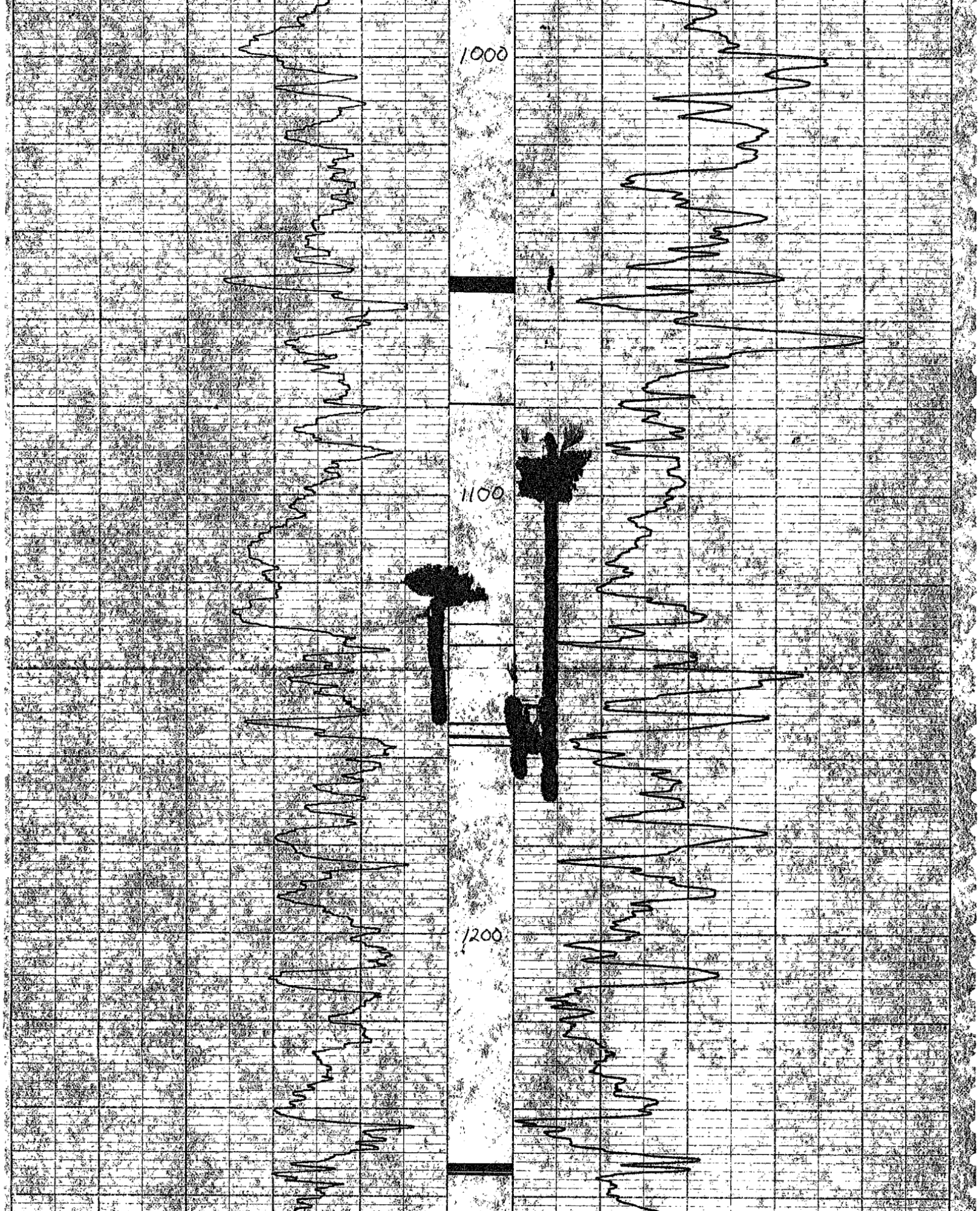
75-51




200
300


700
600
500
400


800
900


1000
1100
1200

1281
T.D

CCK - 75(3) A-1

P.Q

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-51
LOCATION 357,850N x 51,775E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-51
COUNTY STATE B.C.

COORDINATES: 357,850N
N 51,775E
S
ELEVATION:
D.F.
K.B.
G.L. 3080'±

	Run No. 1	Run No. 2
Date	July 30, 1975	
First Reading	1281'	
Last Reading	0	
Footage Logged	1281'	
Bottom (Driller)	1287'	
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size:	HO	
Bit Size:		

MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by	U.Malachowski	
Witnessed by	D.N.leNobel	

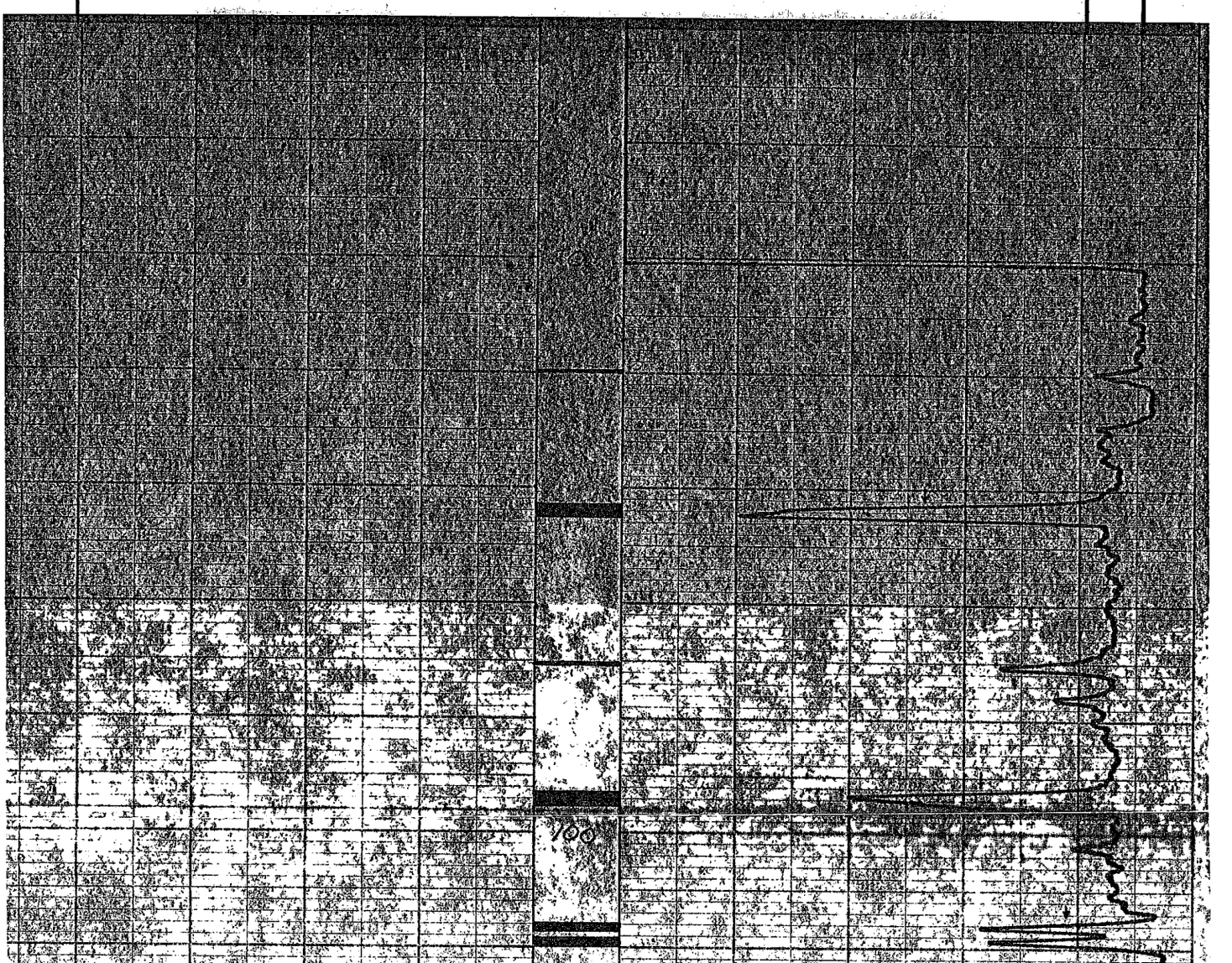
REMARKS

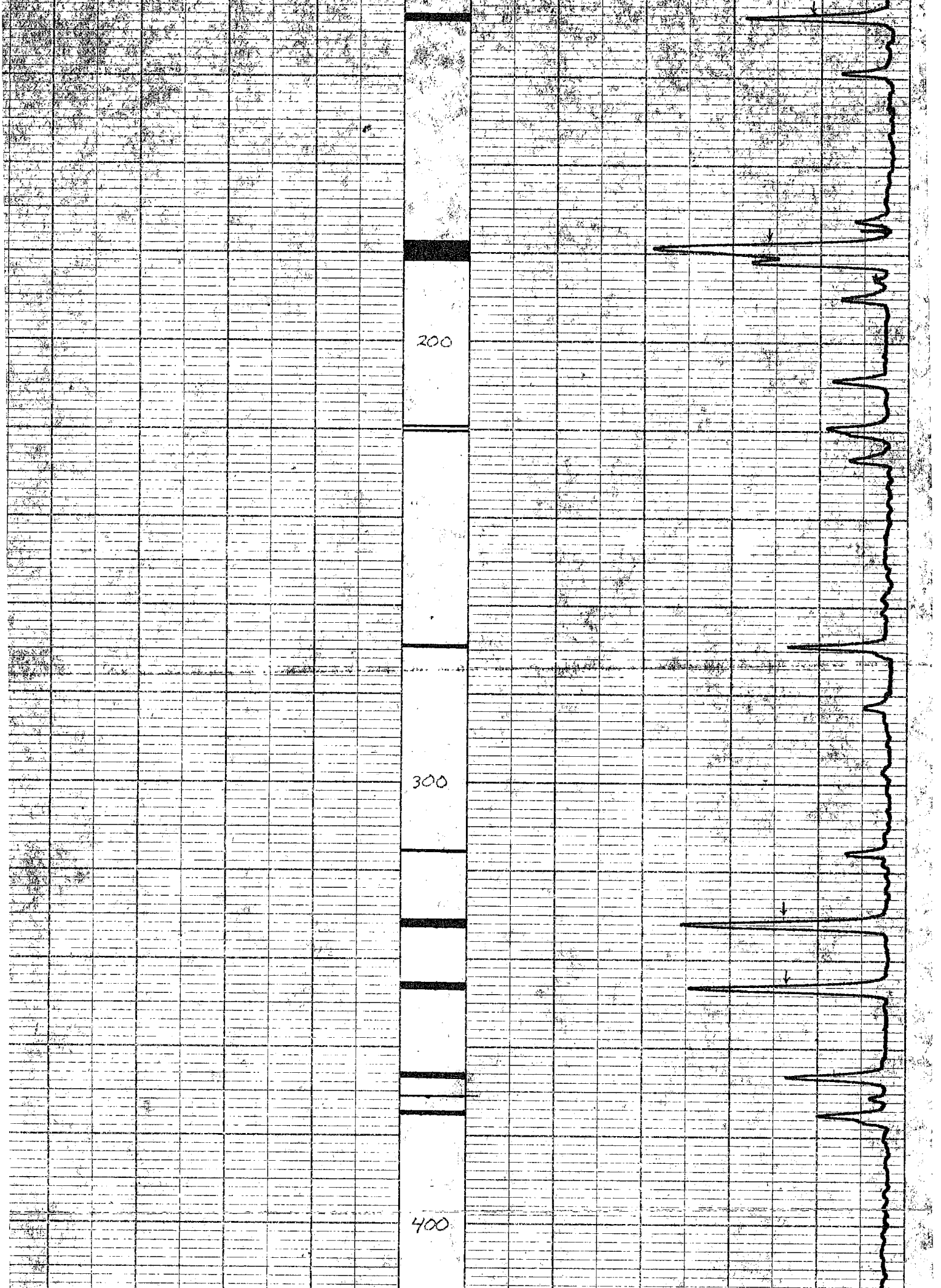
* Reg. U.S. Pat. Off.

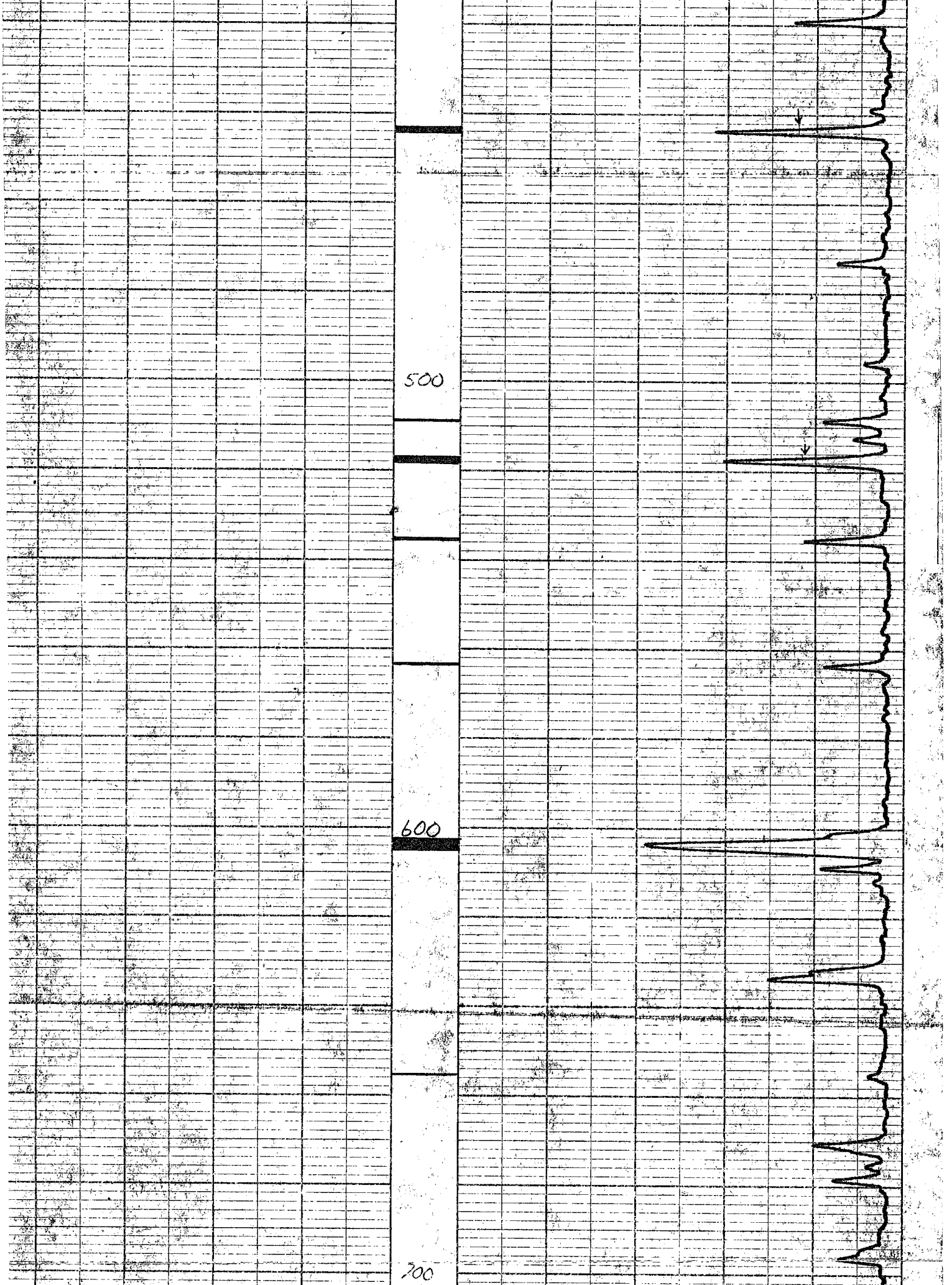
Density
1" = 5'
1000 CPS
TC = 3 Secs

FO-139

RE- CARBON CR - 75(3)A-1 75-51

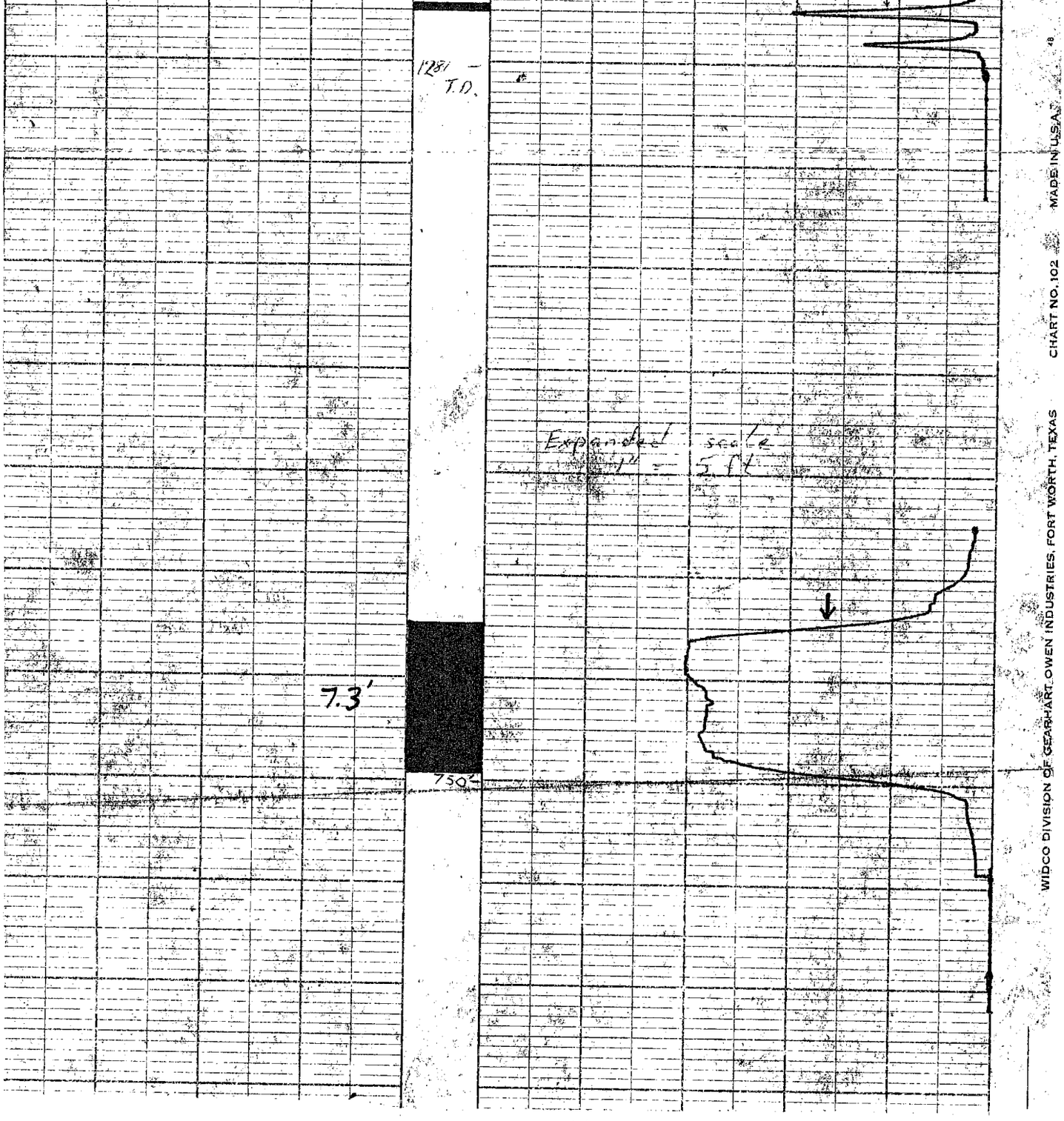



200
300
400


500
600
700

WIDCO DIVISION OF GEARHART-OWEN INDUSTRIES, FORT WORTH, TEXAS CHART NO. 102 MADE IN U.S.A.


1200
1100
1000
WIDCO DIVISION OF GEARHART OWEN INDUSTRIES, FORT WORTH, TEXAS
CHART NO. 102
MADE IN U.S.A.


1281 T.D.
Expanded scale
7.3'
750'
WIDCO DIVISION OF GEARHART-OWEN INDUSTRIES, FORT WORTH, TEXAS
CHART NO. 102
MADE IN U.S.A.

CCK - 75(3)A-1

P.Q.

UTAH MINES LTD. 412-510 WEST HASTINGS 498

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-51
LOCATION 349,975N x 60,050E

Ra-Carbon Cr. 75(3)A-2

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-54
COUNTY
STATE B.C.

COORDINATES: 349,975N
N x 60,050E
S
ELEVATION:
D.F.
K.B.
G.L. 3755'±

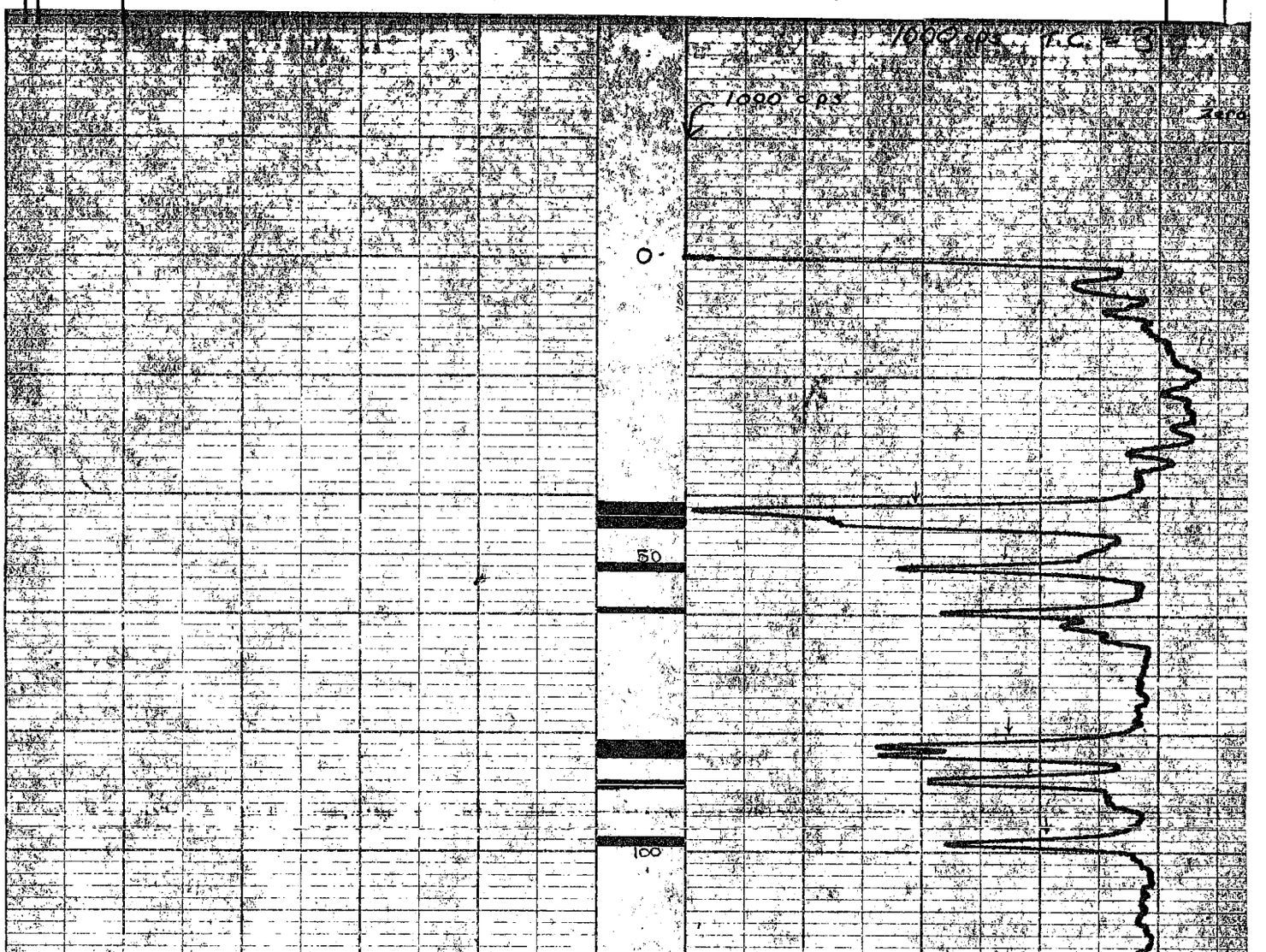
	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	August 1, 1975		Nature		
First Reading	640'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	640'		Resistivity	@ °F	@ °F
Bottom (Driller)	643'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	PQ				
Bit Size:					
			Logged by	U.Malachowski	
			Witnessed by	D.N. leNobel	

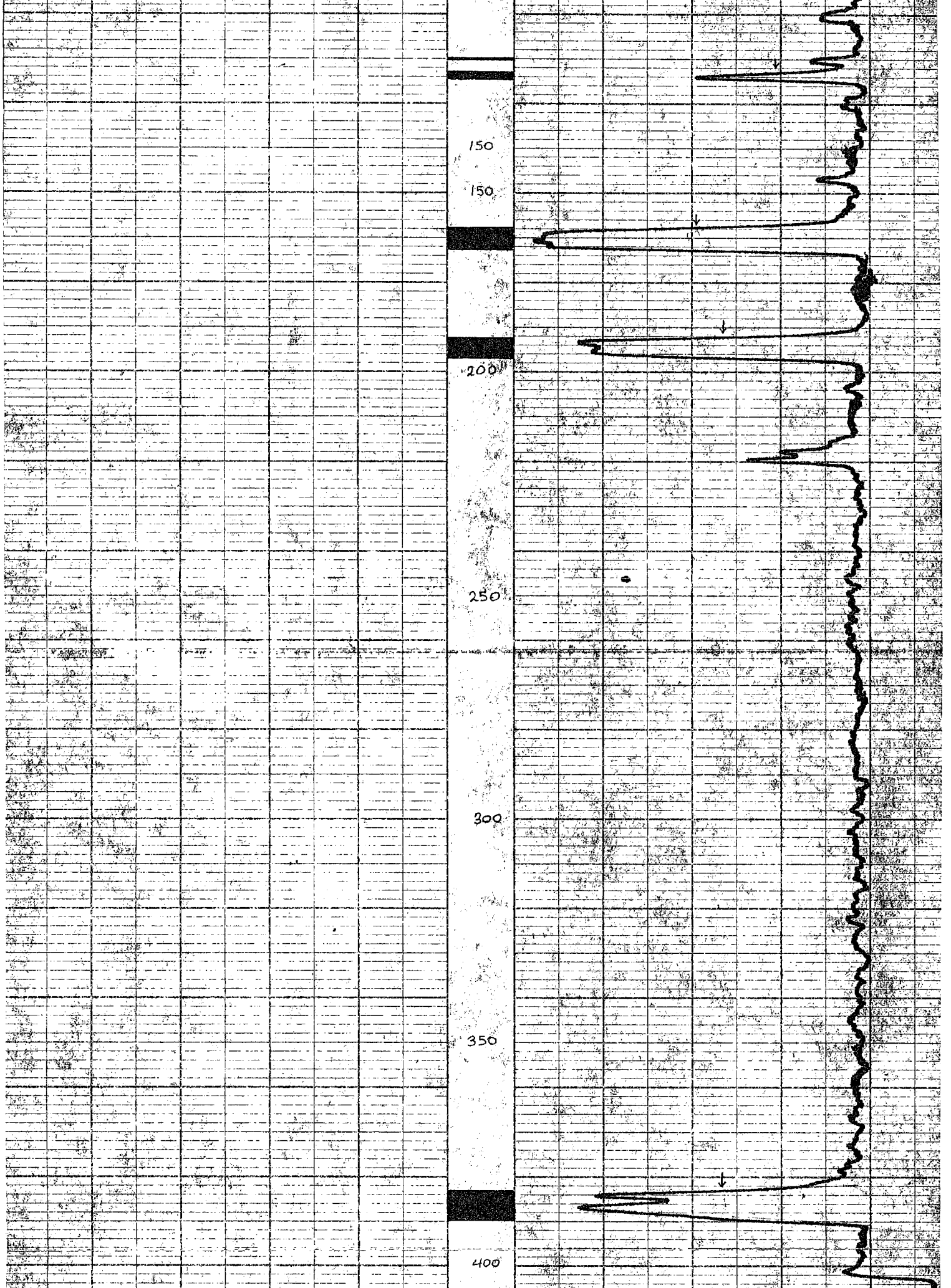
REMARKS

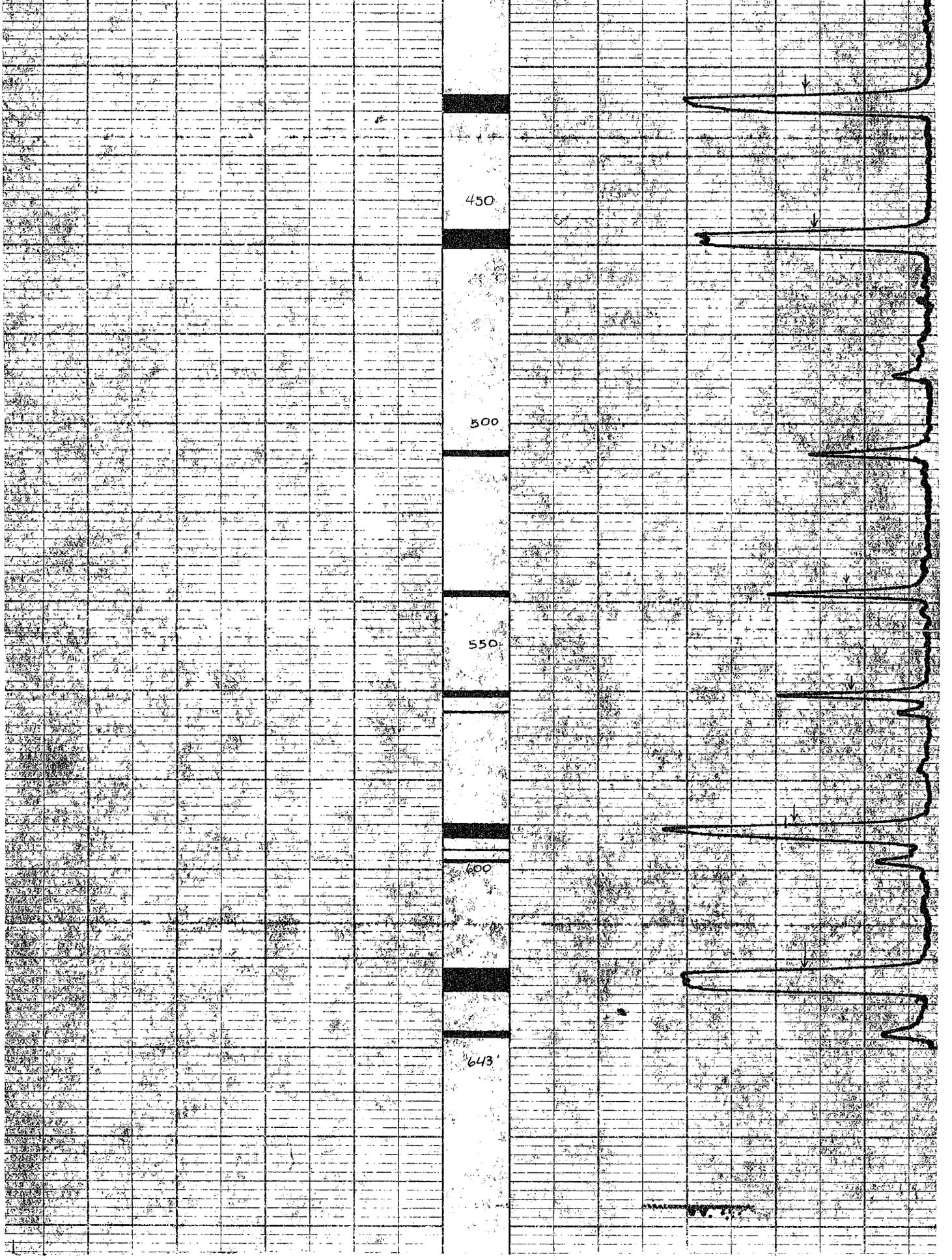
* Reg. U.S. Pat. Off.

75-51 FO-139

Density
1000 CPS




150
150
200
250
300
350
400


450
500
550
600
643'

P.Q

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY Utah Mines Ltd.
WELL 75-52
LOCATION 352,200N x 62,700E

COMPANY Utah Mines Ltd.
AREA Carbon Creek
WELL 75-52
COUNTY
STATE B.C.

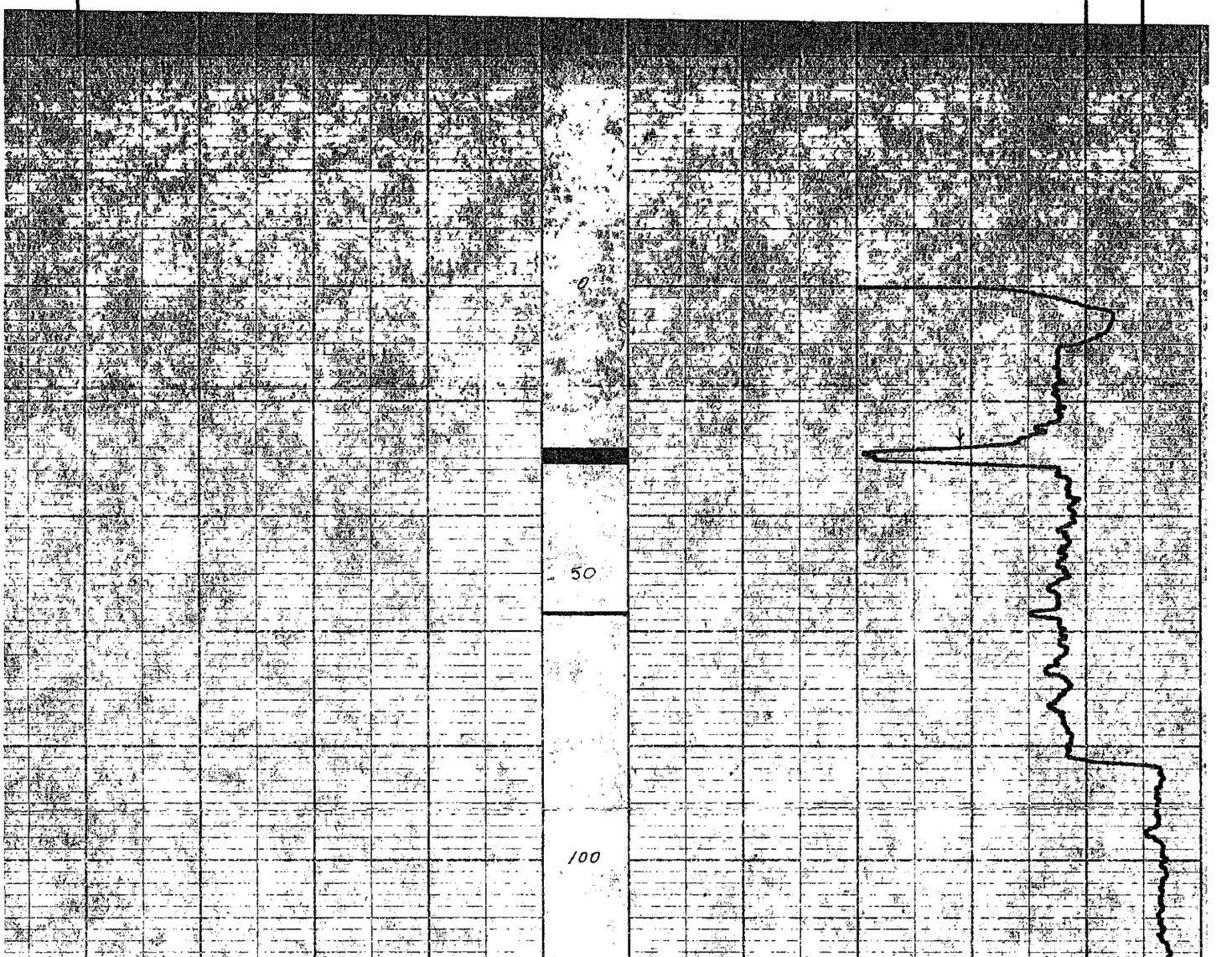
COORDINATES: 352,200N
N x 62,700E
S
ELEVATION:
D.F.
K.B.
G.L. 3290'±

	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
Date	July 26, 1975		Nature		
First Reading	423'		Density		
Last Reading	0		Viscosity	@ °F	@ °F
Footage Logged	423'		Resistivity	@ °F	@ °F
Bottom (Driller)	427'		Res. @ BHT	@ °F	@ °F
Casing (From Log)			pH		
Casing (Driller)			Circ. Temp.		
Casing Size			B.H. Temp.		
Bit Size:	PQ				
Bit Size:					
			Logged by	U.Malachowski	
			Witnessed by	D.N. leNobel	

REMARKS

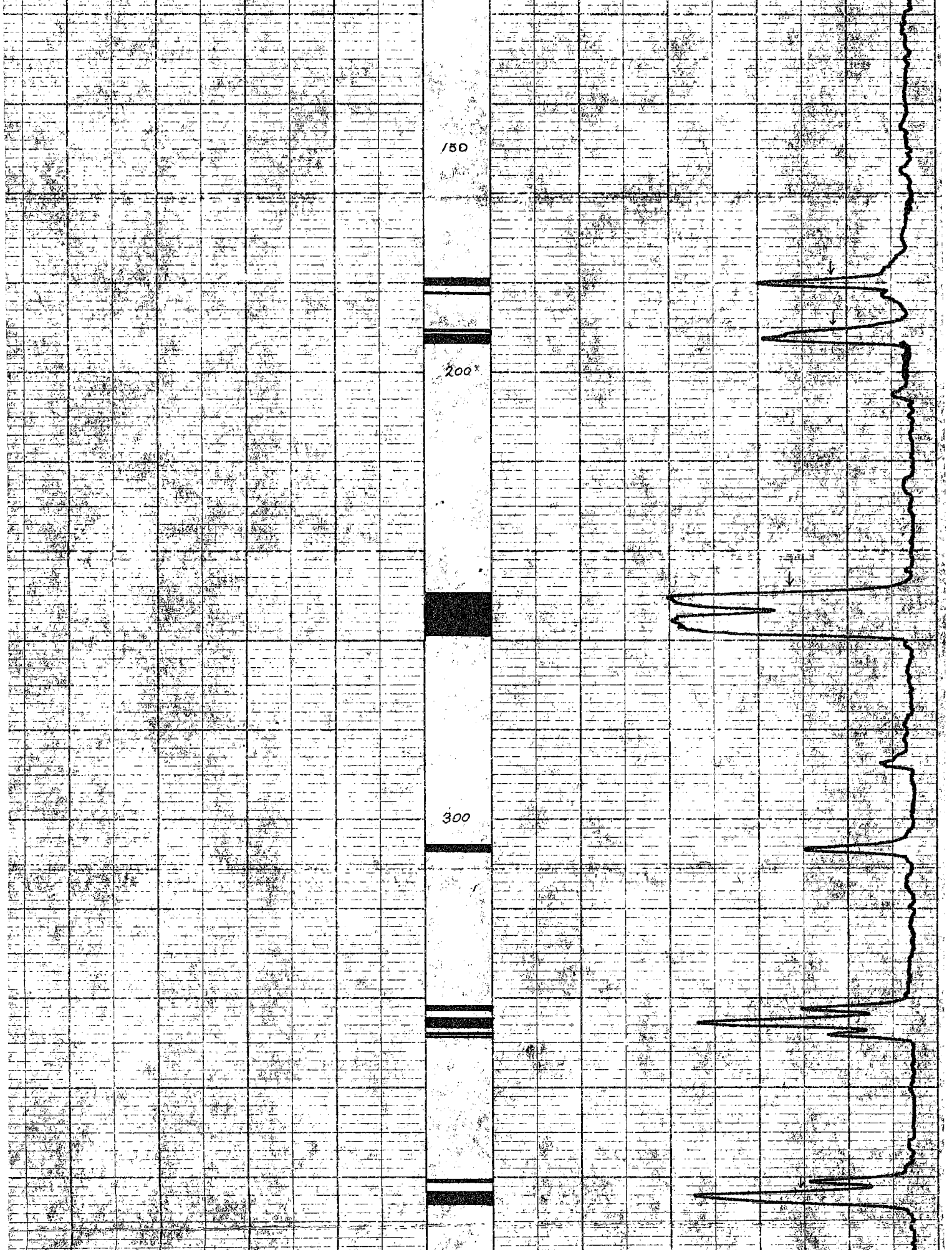
* Reg. U.S. Pat. Off.

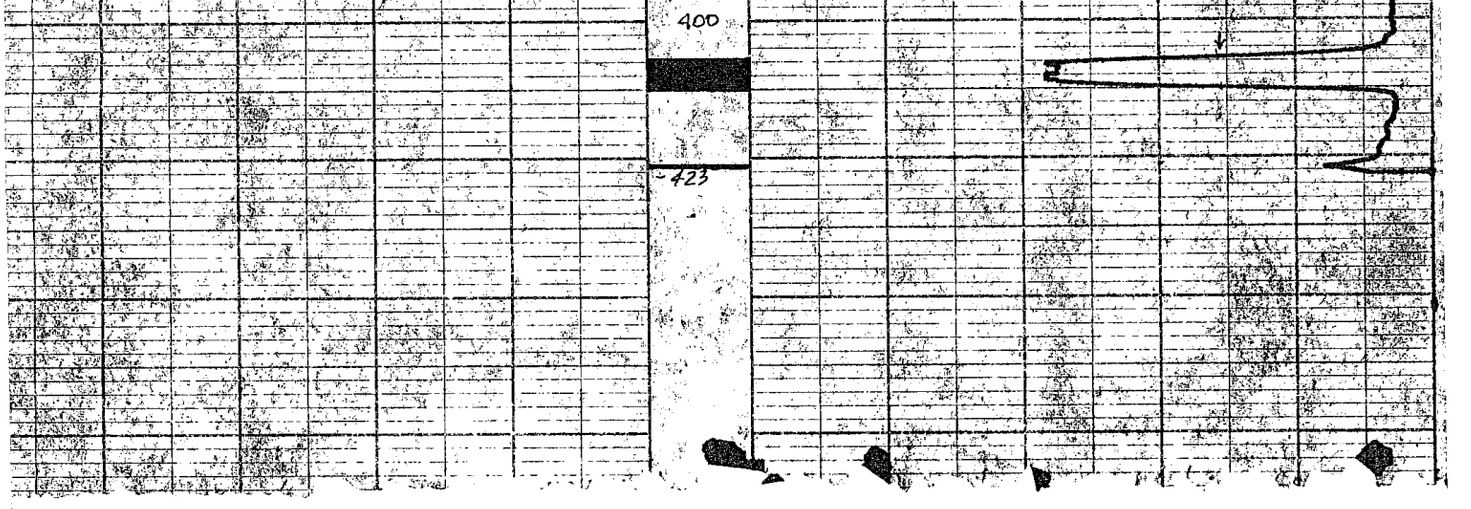
Density
"R" = 2Secs
10 ft/min
1000 cps



FO-139

PE-Carbon Cr 75(3)A-1
75-52


150
200
300


400
423

ECK-75(3)A-1

498

UTAH MINES LTD. 412-510 WEST HASTINGS

Widco* WELL LOG

COMPANY
AREA
WELL 75-52
COUNTY STATE

COORDINATES: N S
ELEVATION: D.F. K.B. G.L.

LOCATION: WELL: COMPANY:

	Run No. 1	Run No. 2
Date		
First Reading	42	
Last Reading		
Footage Logged	42	
Bottom (Driller)		
Casing (From Log)		
Casing (Driller)		
Casing Size		
Bit Size		
Bit Size		

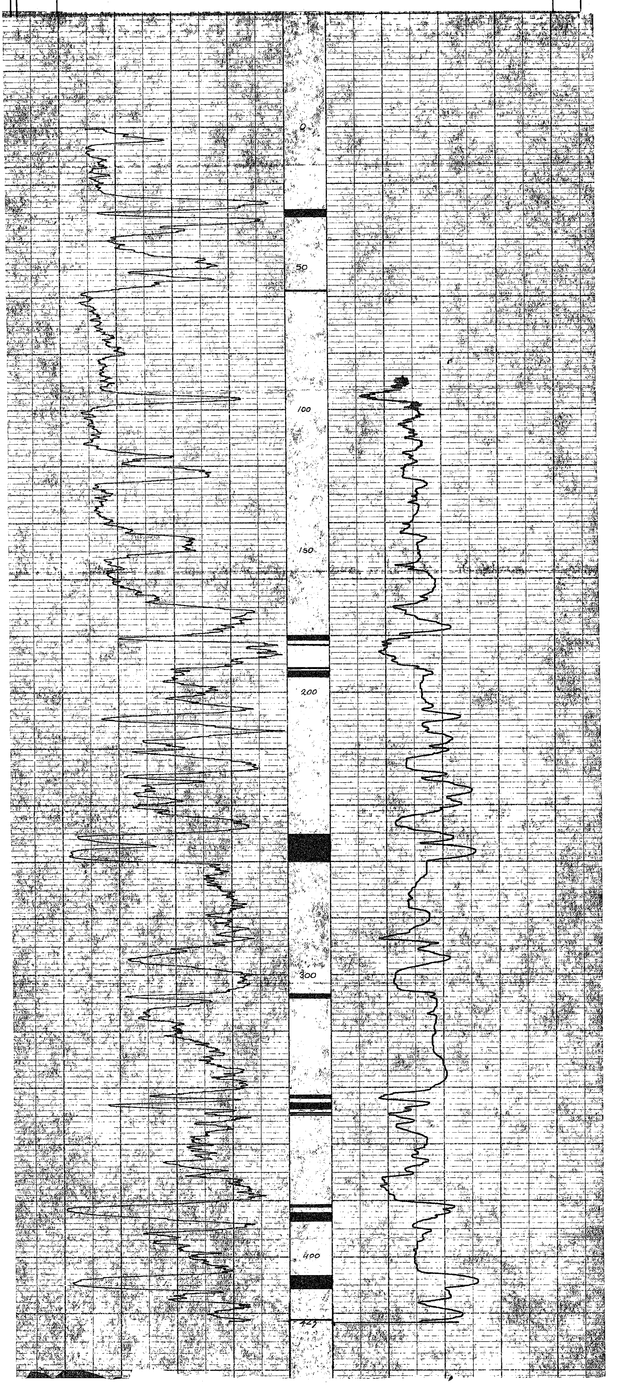
MUD	Run No. 1	Run No. 2
Nature		
Density		
Viscosity	@ °F	@ °F
Resistivity	@ °F	@ °F
Res. @ BHT	@ °F	@ °F
pH		
Circ. Temp.		
B.H. Temp.		
Logged by		
Witnessed by		

REMARKS

* Reg. U.S. Pat. Off.

10-39

GAMMA RESIST



CC K-75(3)A-1

75-54

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-54 | HOLE NO. 75-54

BY: Ed Hetherington | ELEV: 3785 ± | HOLE SIZE: PQ | PROJECT: Carbon Creek

DATE: July 20, 1975 | N 349,975 | AIR ☐ WATER ☑ | LEASE: 323

E 60,920 | TD 643 FD | SEC ___ T ___ R ___

LITHOLOGY

498

Mt. Carbon Qd. 75 (31) A-2

% REC	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	0				
	20				
	40				
0.6					
0.6					
	60				
	80				
1.5				2	
0.3					
	100				
6.1				3	
	120				
0.6					
0.6					
	140				
	160				
				4	
	180				
4.3				5	
	200				
	220				
	240				
	260				
	280				
	300				
	320				
	340				
	360				
	380				
6.3				6	
	400				
	420				
3.7				#7	
	440				
1.8				#8	
3.2					
	460				
	480				
	500				
	520				
1.2				#9	
	540				
1.1				#10	
	560				
1.2				#11	
0.3					
	580				
2.5				#12	
0.3					
0.2					
	600				
	620				
5.7				#13	
	640				
1.5					
	650				

Coal

Coal (DENSITY THICKNESS 1.3')

Coal (DENSITY THICKNESS 1.0')

Coal (DENSITY THICKNESS 3.0')

Coal (DENSITY THICKNESS 1.5')

Overburden

Coal (DENSITY THICKNESS 3.7')

Coal (DENSITY THICKNESS 5.0')

Coal (DENSITY THICKNESS 4.7')

HOLE NO. ___

Pyrite zone

HOLE NO. ___

Coal, minor pyrite

Coal core loss 1.0' (DENSITY THICKNESS 4.1')

Coal core loss 0.3 Coal (DENSITY THICKNESS 4.1')

HOLE NO. ___

Coal

Coal core loss 0.5 (DENSITY THICKNESS 1.4')

Coal core loss 0.3 (DENSITY THICKNESS 1.4')

Coal

Coal

Coal

Coal (DENSITY THICKNESS 5.0')

HOLE NO. ___

P.Q

75-55

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-55

LOG BY: R. KARST & M. CHAMBERS

DATE: Aug 4

ELEV: 3605'

N: 328,250

E: 66,500

HOLE SIZE: H.Q

AIR ☐ WATER ☑

T.D. 716' P.D.

HOLE NO. 75-55

PROJECT: Carbon Creek

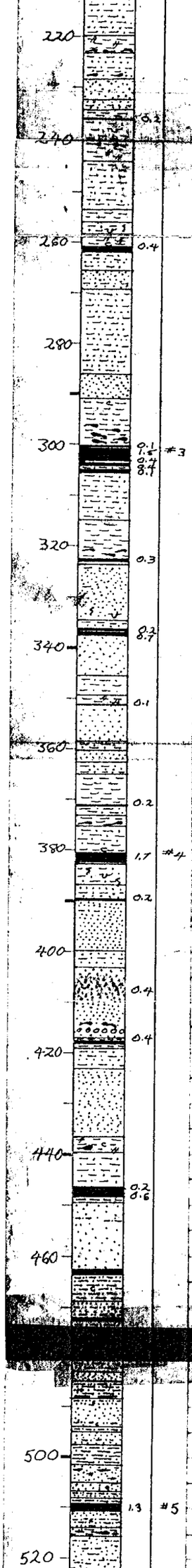
LEASE: 3447

SEC. ____ T. ____ R. ____

498

Lk - Carbon Cr 75(3) A-2

% REC.	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
					Till
	20				
					CORE LOSS 0.6' (DENSITY - COAL) 0.6'
	40				
	60				
					CORE LOSS 0.5' (DENSITY - COAL) 0.5'
			2.0	#1	
	80				
	100				
			0.4		CORE LOSS 0.6' (DENSITY - COAL) 1.0'
			0.2		BONE COAL
	120				CORE LOSS 1.2' (DENSITY - COAL) 0.2'
					clean
	140				
					oxidized fractures
	160				
					CORE LOSS 0.4' (DENSITY - COAL) 1.0'
	180		1.4'	#2	oxidized fractures CORE LOSS 0.8' (DENSITY - COAL) 1.9'
			0.9		CORE LOSS 0.8' (DENSITY - COAL) 1.7'
	200				
			0.5		CORE LOSS (DENSITY - COAL) 1.2'



mud clasts

CORE LOSS (DENSITY-COAL) 0.4'

Pyrite

CORE LOSS ON (DENSITY - COAL) 2.4'

CORE LOSS

Calcite veinlets

CORE LOSS (DENSITY 1.8')

mud clasts 398.8 – 399.0 & 399.5 – 400

Conglomerate 415.6 – 416.2

mud clasts 430.3 – 430.6, 431.2 – 431.3, 435.3 – 435.6 & 436.5 – 436.6

vertical calcite veinlets

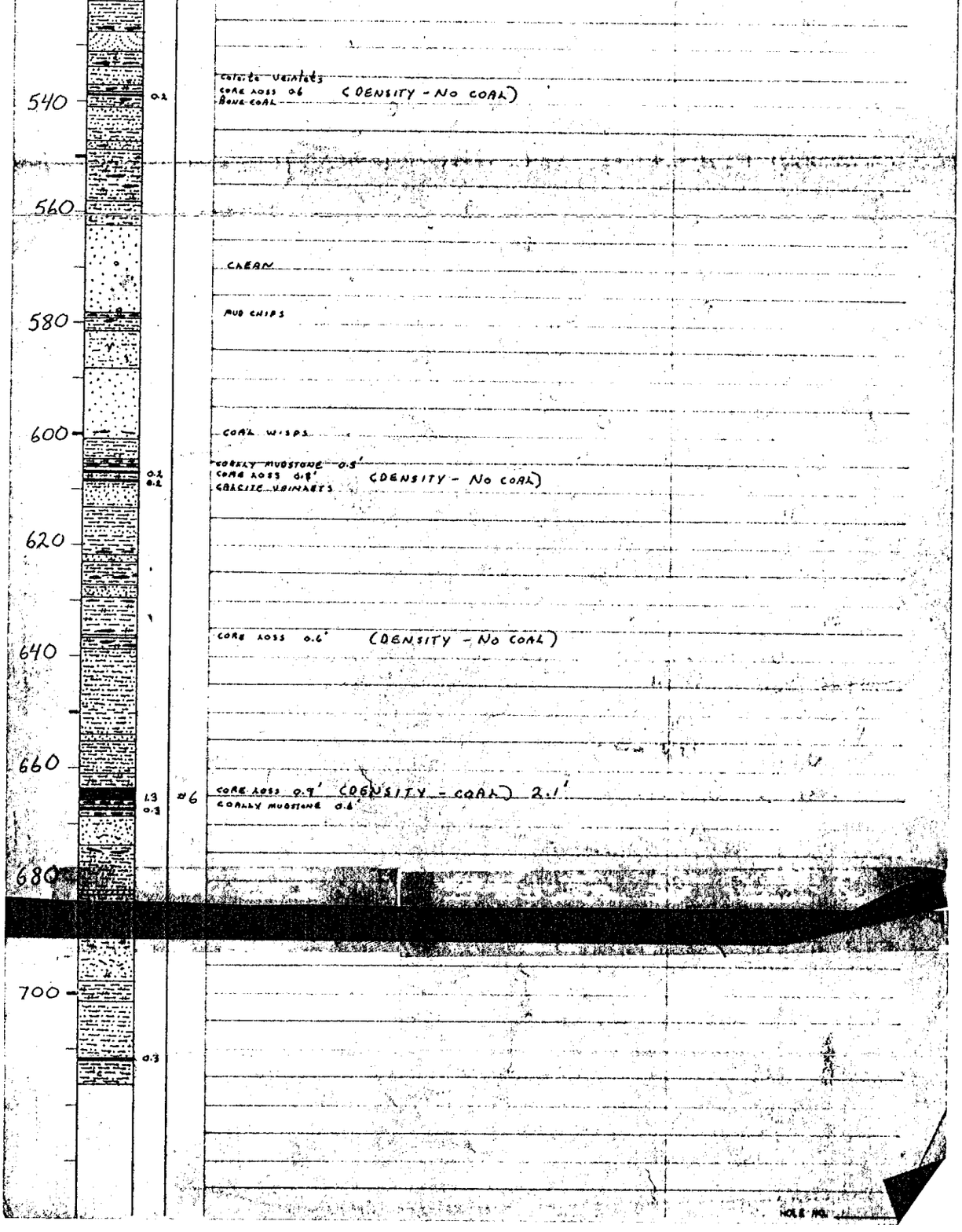
BOWE COAL (DENSITY - COAL) 1.3'
CORE LOSS

CLEAN

CORE LOSS 1.0' (DENSITY - COAL) 1.3'

CORE LOSS 0.4' (DENSITY - COAL)

MUD CHIPS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700
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#6
0.3
calcite veinlets
core loss 0.6
Bone coal
(DENSITY - No COAL)
CLEAN
MUD CHIPS
COAL WISPS
coaly mudstone 0.5'
core loss 0.8'
calcite veinlets
(DENSITY - No COAL)
core loss 0.6'
(DENSITY - No COAL)
core loss 0.9'
(DENSITY - COAL) 2.1'
coaly mudstone 0.6'

PQ

7556

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-56 | HOLE NO. 75-56

LOG BY: Ed Harrington | ELEV: 3015 ± | HOLE SIZE: PQ (3¾") | PROJECT: Carbon Creek

DATE: Aug 2/75 | N: 347,300 N | AIR ☐ WATER ☑ | LEASE: 322

E: 60,275 | T.D. 324' | SEC. ____ T. ____ R. ____

498

% REC.	DEPTH	LOG	THICK	SAMPLE #	LITHOLOGY
	0				
	10				Pebble conglomerate
	20		0.1		Coal Fragments
	30		0.4		Coal (DENSITY THICKNESS 13')
	40		0.2		Coal
	50				
	60				
	70				
	80				
	90				
	100				
	110				
	120		2.6	#1	COAL (DENSITY THICKNESS 20')
	130		2.8	#2	COAL (DENSITY THICKNESS 18')
	140		1.5	#3	COAL (DENSITY THICKNESS 4.3')
	150		0.6		Shale
	160		2.1	#4	COAL (DENSITY THICKNESS 18')
	170		1.1	#5	COAL
	180		0.3		Shale
	190		3.9	#6	COAL (DENSITY THICKNESS 5.0')
	200		4.8	#7	COAL (DENSITY THICKNESS 4.2')
	210		1.4		Shale
	220		2.1		COAL
	230				
	240				
	250				
	260				
	270				
	280				
	290				
	300				
	310				
	320				
	330				

HOLE NO. ____

Re domain of Scale 2

75 57

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 79-97 (Sheet 1 of 2)

LOG BY: D. Hutchinson
DATE: August 1979
E: 320 875
N: 92 875
ELEV: 5800'
TOTAL HOLE DEPTH: 1150'
DIP: -45°
AZIMUTH: 270°
CORE SIZE: NQ ☑ BQ ☐
T.D.: 1150'

HOLE NO. 79-97
PROJECT: Cordero Creek
LEASE: Jane
ELEV. ____ ft
AZ. ____ °

498

LITHOLOGY

FEET	METRES	CORE RUN	CORE REC.	CORE LOSS
0	0			
50	15			
100	30			
150	45			
200	60			
250	75			
300	90			
350	105			
400	120			
450	135			
500	150			
550	165			
600	180			
650	195			
700	210			
750	225			
800	240			
850	255			
900	270			
950	300			
1000	315			
1050	330			
1100	345			
1150	360			

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(1) Contact of Tertiary

Tertiary

Coal (density thickness 4')

Coal (density thickness 3.5')

Coal

Coal (density thickness 4.5')

Coal

Coal (density thickness 4.5')

Coal (density thickness 2.5')

Coal

Coal

Coal

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-58 | HOLE NO. 75-58

LOG BY: R. KARST M. CHAMBERS | ELEV. 3720 | HOLE SIZE HQ | PROJECT CARBON CK (South)

DATE: Aug 7 | N 333,700 | AIR ☐ WATER ☐ | LEASE

E 84,100 | T.D. 497' P.D. | SEC T R

498

% REC | DEPTH | STRIP LOG | THICK | SAMPLE NO. | LITHOLOGY

0-10

CORE LOSS 2.0' (Possibly a coal seam that caved completely)

20 — CORE LOSS 0.8'

Carbonaceous wisps
CORE LOSS 0.7'

Pyritized Cork Debris

40 — 0.2' Base coal ?

0.1' CORE LOSS 0.8'

60 — 0.2' CORE LOSS 0.5'

CHAR FILLED FRACTURES

80

2.2' #1

100 — CORE LOSS 0.6' (DENSITY - COAL 3.0')

0.2' CORE LOSS 0.6' (DENSITY - COAL 0.2')

120 — CORE LOSS 0.6' (DENSITY - CORE 0.4')

CORE LOSS 1' (DENSITY - NOT COAL)

140 — Calcite veinlet @ 148.0

CORE LOSS 1.5' (DENSITY - COAL 1.5')

160

Calcite & Pyrite veinlets 178.6 - 179.0

180

0.6

200 — 0.5 CORE LOSS 1.0' (DENSITY - COAL 22'/38')

mud clasts 217.4

220

240 — 0.8' CORE LOSS 0.6' (DENSITY - COAL 1.3')

260 — 0.2' CORE LOSS 0.9' (DENSITY - COAL 1.1')

280

13' #2

300

320 — SHARP BASE (Core displays bedding with an 18° dip)

340 — Core loss 1.0' (DENSITY - SOAILY MUDSTONE)

0.1 CORE LOSS 0.9' (DENSITY - SOAILY MUDSTONE)

360

0.4

380 — Calcite veinlet 378.7, 377.8 & 380.6

mud clasts 388.1 - 389.2

Core loss 2.0' (DENSITY - COAL 2.0')

Core loss 1.2' (DENSITY - NOT COAL)

400 — mud clasts 406.7

420

Core loss 0.8' (DENSITY - NOT COAL)

440

CORE DISPLAYS BEDDING WITH AN 19° Dip.

460

0.1

Core loss 0.2' (DENSITY - NOT COAL)

480

497 — T.D.

Mt. - CANYON CR. 75(3)A-2

85-57

from 75(3)A-2
Book B1

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-59

LOG BY R. KRAFT

DATE

ELEV. 3140

N 329,900

E 81,100

HOLE SIZE HQ

BIT ☐ WATER ☐

TD 697 PD

HOLE NO. 75-59

PROJECT CARBON CK

LEASE

SEC T

LITHOLOGY

498

75-59

Mt. Coal Co. 75(2)A-2

% REC.	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	20				Petroglyphs
					CORE LOSS 0.5'
	40				CORE LOSS 2.3' (DENSITY - COAL 1.6')
			0.1		CORE LOSS 1.1' BONE COAL MUD FILLED FRACTURE CORE LOSS 0.2'
	60				CORE LOSS 0.9'
			0.4		
	80				
			2.5		
	100				
	120				
	140		1.9	#1	CORE LOSS 1.4' (DENSITY - COAL 2.5')
					CORE LOSS 1.0' (DENSITY - COAL 1.3') MUD FILLED FRACTURE
	760				
					CORE LOSS 0.3'
			1.3'	#2	DENSITY THICKNESS 1.8'
	180		0.3		CORE LOSS 0.0
			0.1'		CORE LOSS 0.6' (DENSITY - COAL 1.6')
	200				CORE LOSS 0.9'
	220				
					CHERT MUD CHIPS SHARP BASE (CLAY)
	260				
			1.2'	#3	CHERT CORE LOSS 0.4' (DENSITY - COAL 1.6') CORE LOSS 0.3'
	280				
			1.6'	#4	CORE LOSS 0.8' (DENSITY - COAL 2.1')
	300				
			0.2		
	320		0.2		BONE COAL CORE LOSS 0.4' (DENSITY - COAL 0.6')
	340		0.3		
	360				
			0.2'		DENSITY THICKNESS 1.0'
	380		0.6'		CORE LOSS 2.0' (DENSITY - COAL 1.0/1.0')
			0.5		CORE LOSS 0.9'
	400				
	420		0.2		BONE COAL
			0.3'		CORE LOSS 0.5
			0.1'		
	460		0.3'		CORE LOSS 0.3' (DENSITY COAL 0.6')
			0.2		CORE LOSS 1.1' CORE LOSS 1.0' (DENSITY - BONE COAL 2.5')
	480		1.3'	#5	CORE LOSS 0.8' (DENSITY - COAL 2.1')
			0.1		BONE COAL
	500		1.1	#6	
	520				
	540				
	560		0.5'		
			1.1'	#7	
	580				
			0.6'		
	600		0.4'		
	620				
			0.4'		DENSITY THICKNESS 1.5'
	640				HOLE NO.
	660				CONTACT 1.0'
	680				
					DENSITY THICKNESS 1.5'
			0.5'		
	700				

75-60

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-60 | HOLE NO. 75-60

LOG BY R. Korst | ELEV 3560'± | HOLE SIZE HQ | PROJECT Carbon Creek

DATE Aug 14/15 | N 323,400 | AIR ☐ WATER ☐ | LEASE

E 88,800 | TO 327' PD | SEC T R

498

% REC	DEPTH	CORE LOSS	THICK	SAMPLE NO.	LITHOLOGY
	0				
	20		0.2		
	40				
	60		0.9		(DENSITY THICKNESS 1.5')
	80				
	100		0.4		BARE COAL (DENSITY THICKNESS 1.8')
					CORE LOSS 1.6'
					CORE LOSS 0.9'
	120				CORE LOSS 1.0'
	140				SLOUGH
	160				CORE LOSS 0.6'
	180				SLOUGH
					CORE LOSS 10.0'
	170		0.5'		
			2.3'	#1	CORE LOSS 0.9 (DENSITY - COAL 3.2')
	200				
			0.7		CORE LOSS 1.0' (DENSITY - COAL 1.2')
	220				EROSION
			0.9		CORE LOSS 0.9' (DENSITY - COAL 1.4') HOLE #2
	240				
	260				CARBONACEOUS SILTY CLASTS
	280		0.4		
	300				
			0.5'		CORE LOSS 0.5'
			1.1'	#2	CORE LOSS 2.0' (DENSITY - COAL 4.6')
	320				CORE LOSS 1.1'
	340				
	360		0.9'		CORE LOSS 2.2' (DENSITY - COAL 2.1')
	380		0.2'		CORE LOSS 1.0'
			0.2		
	400				
			0.3		CORE LOSS 0.6'
	420				
	440				HOLE #3
	460				CORE LOSS 0.5' (DENSITY INDICATES 0.3' COAL)
					CORE LOSS 0.9' (DENSITY INDICATES 0.4 COAL)
	480		0.5'	#3	CORE LOSS 0.7'
	500				
			0.8'		CORE LOSS 0.7'
	520		0.4'		CORE LOSS 0.5'
			1.2'		

Mt. Coffeen 13'30" - 2

75-61

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-61
LOG BY: V. Malachowski
DATE: Aug 17 / 75

ELEV. 4800
N 349,850
E 53,000

HOLE SIZE NQ (2⅞")
A.S. ☐ WATER ☑
F.D. 407' P.D.

HOLE NO. 75-61
PROJECT Carbon Creek
LEASE 3480
SEC ___ T ___ R ___

% REC.	DEPTH	LOG	THICK	SAMPLE NO.	LITHOLOGY

498

M. CARBON AR. 75(3)A-2

TILL

Tr coned

2.3 #2 COAL (DENSITY THICKNESS 7.2')

#6 #1 COAL (DENSITY THICKNESS 2.9')
#7 PARTING

5.0 #3 COAL

5.4 #4 COAL (DENSITY THICKNESS 4.8')

5.7 #5 COAL (DENSITY THICKNESS 4.4')

6.6 #6 COAL (DENSITY THICKNESS 1.3')

HOLE NO. ___

75-62

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-62

LOG BY: R. KARST E. METHERAWI

DATE: Aug. 17/75

ELEV 4,070

N 312,400

E 77,700

HOLE SIZE: HQ

AIR ☐ WATER ☐

T.D 407 P.D

HOLE NO. 75-62

PROJECT CARBON CK

LEASE

SEC T R

12 - CARBON CO. 75(3)A-2

498

% REC	DEPTH	STRIP LOG	THICK	SAMPLE NUMBER	LITHOLOGY
	0				TILL
					COAL FILLED FRACTURES
	20		0.1'		BONE COAL CORE LOSS 1.1'
			0.2'		
	40		0.3'		BONE COAL BONE COAL
			0.2'		CORE LOSS 0.8'
	60				Disturbed. Silt laminae
	80				Coaly wisps Shale base
			0.3'		BONE COAL
	100		0.1'		
			0.6'		CORE LOSS 1.0' (DENSITY - COAL 1.2')
	120				
	140		0.4'		CORE LOSS 1.2' (DENSITY - COAL 1.7')
	160				
			0.8'		CORE LOSS 1.5' (DENSITY - COAL 2.3')
	180		0.1'		BONE COAL
	200		0.1'		BONE COAL
			0.3'		CORE LOSS 1.0'
	220		0.3'		COALY MUDSTONE CORE LOSS 0.6' Bone coal
			0.3'		
	240		2.1'		BONE COAL HOLE NO.
	260		0.1'	#1	CORE LOSS 0.3'
					MUD SEAMS
	280		0.3'		
	300				Badly Fractured
	320		0.3'		CORE LOSS 0.7'
	340		0.2		
	360				
	380				
			1.2'	#2	
	400				
					HOLE NO.

75-63.

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-63

LOG BY K. KARST & E. HEINEMANN ELEV 2350'±

DATE Aug 20/75 N 317,100

E 83900

HOLE SIZE HQ

AIR ☐ WATER ☐

T.D. 521' PD

HOLE NO. 75-63

PROJECT: Carbon Creek

LEASE: 5460

SEC ___ T ___ R ___

498

% REC	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	20				CORE LOSS 1.6'
			1.3'	#1	CORE LOSS .2' (DENSITY - COAL 3.0')
	40				CORE LOSS .1'
			0.4'		CORE LOSS 1.9'
	60				
	80				
					CARBON PEBBLE BAND
	100		1.4'	#2	CORE LOSS 0.3' (DENSITY - COAL 1.8')
	120				
	140		0.9'		
			0.6'		CORE LOSS 0.3'
	160				
	180				
			0.4'		(DENSITY THICKNESS 1.0')
			0.6'		CORE LOSS 1.6' (DENSITY-COAL 1.3')
	200				
	220				
			0.5'		CORE LOSS 0.5'
			1.4'		
			0.3'		HOLE NO.
	240				
			0.8'		CORE LOSS 1.1' (DENSITY - COAL 1.9')
	260				
	280				CORE LOSS 0.3'
	300				
			0.5'		CORE LOSS 0.1' (DENSITY - COAL 3.6'/4.0')
	320				
			0.5'		CORE LOSS 1.2'
			0.2'		CORE LOSS 1.2'
	340				
	360				
	380				
	400				
	420				
			0.7'	#4	CORE LOSS 2.3'
					CORE LOSS 1.5' (DENSITY - COAL 4.5/5.0')
	440				HOLE NO.
			0.8'		
	460				
	480				
			1.4'	#5	CORE LOSS 0.7' (DENSITY - COAL 1.9')
	500				
	520				

HOLE NO.

UTAH MINES LTD.

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-64
LOG BY W. Malachowski
DATE May 12 1975

ELEV 2710'
N 334,850
E 65,450

HOLE SIZE 11" (2½")
AIR ☐ WATER ☑
T.D. 536 P.D.

HOLE NO. 75-64
PROJECT Carbon Creek
LEASE 325
SEC T R

498

75-64

RE- CARBON CR. 75(3) A-2

% REC.	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	0				
	20		0.6		COAL
	40		0.6		COAL (DENSITY THICKNESS 1.8')
			1.0	#1	COAL
	60		1.2	#2	COAL (DENSITY THICKNESS 2.0')
			1.3	#3	COAL
	80				poleygypsoid shells
	100				
	120				
	140		1.5	#4	COAL
			0.2		COAL
	160		0.1		COAL
			0.1		COAL
			3.7	#5	COAL (DENSITY THICKNESS 2.8')
	180				pyrite
	200				clayey and
			2.5	#6	COAL (DENSITY THICKNESS 2.0')
	220		0.2		COAL
	240		0.6		Very muddy COAL
			0.1		shaley debris
	260				
	280				
	300		0.1		COAL
	320		0.7		COAL
	340				
	360				
	380				
	400				
	420				
	440				
	460				
	480				
	500				
	520		1.2	#7	COAL (DENSITY THICKNESS 52/60')
			0.3		COAL
			0.1		Shale
			0.5		COAL
	536				

HOLE NO.

75-65

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-65

LOG BY: Ed Hetherington

DATE: August 23/75

ELEV. 3750 '±

N 326,450

E: 69,825

HOLE SIZE: HQ

AIR ☐ MUD WATER ☑ T.D.

T.D. 696' P.O.

HOLE NO. 75-65

PROJECT: Carbon Creek

LEASE: 3446

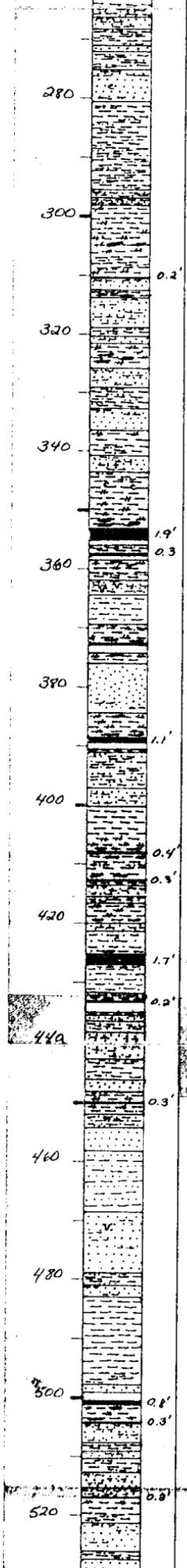
SEC. T. R.

498

PR - CARBON CR 75-13) A-2

% REC	DEPTH	STRIP LOG	THICK.	SAMPLE NO.	LITHOLOGY
	20		0.7'		CORE LOSS 7.3'
					CORE LOSS 2.0'
	40				CORE LOSS 3.5'
					CORE LOSS 1.8'
	60				
	80				CORE LOSS 1.3'
					CORE LOSS 1.3'
	100		0.1'		Bone Coal CORE LOSS 1.5' CORE LOSS 1.1'
	120				
	140				
	160				CORE LOSS 0.9'
	180				
	200				
			0.5' 0.7'		CORE LOSS 1.2'
	220				
			0.8'		CORE LOSS 0.8'
	260				

HOLE NO.



CORE LOSS 1.0'

CORE LOSS 0.7'

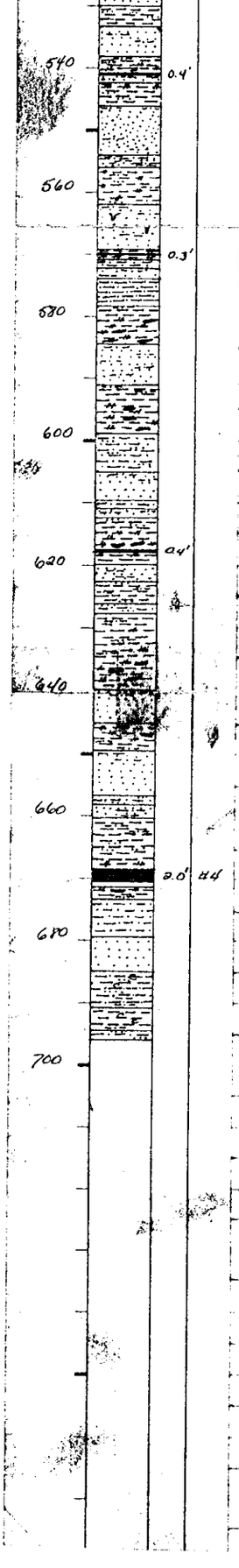
CORE LOSS 1.4'

CORE LOSS 1.0'

CORE LOSS 1.5'

vertical Calcite Veinlets

CORE LOSS 1.0'



HOLE NO. _____

75-66

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-66

LOG BY: U. Malachowski

DATE: Aug 24 /75

ELEV.: 3450 ±

N: 359,200

E: 49,700

HOLE SIZE: HQ (2½")

AIR ☐ WATER ☑

T.D. 1447' P.O.

HOLE NO. 75-66

PROJECT: Carbon Creek

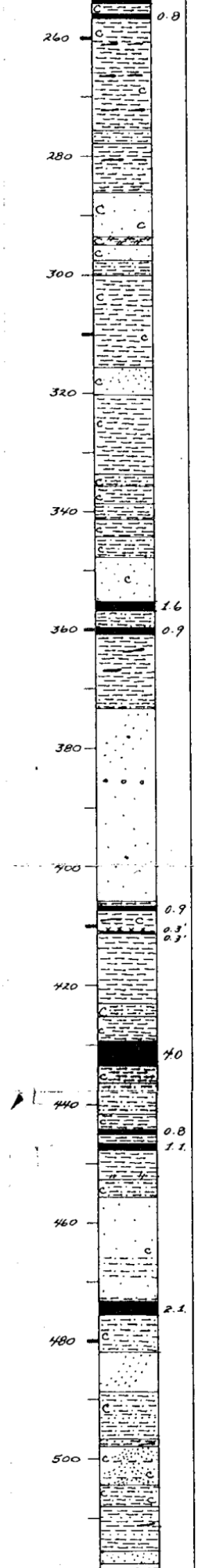
LEASE: 3494

SEC. ____ T. ____ R. ____

498

PR - CARBON CR - 75 (3) A-2

% REC.	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	0				
	20				
	40				
	60		0.5		COAL
	80				
			0.1		COAL
	100				
	120				
	140				
	160		1.8	#1	COAL
			0.6		COAL
			1.0		COAL, muddy (DENSITY THICKNESS 2.0')
			0.6		core loss
			0.7		COAL
	180		1.6	#2	COAL
			1.9	#3	COAL
			0.6		COAL
	200		0.5		core loss
	220				
	240				
			4.0	#4	COAL



0.8 COAL

1.6 #5 COAL

0.9 COAL (DENSITY THICKNESS 1.5')

0.9 COAL

0.3' COAL

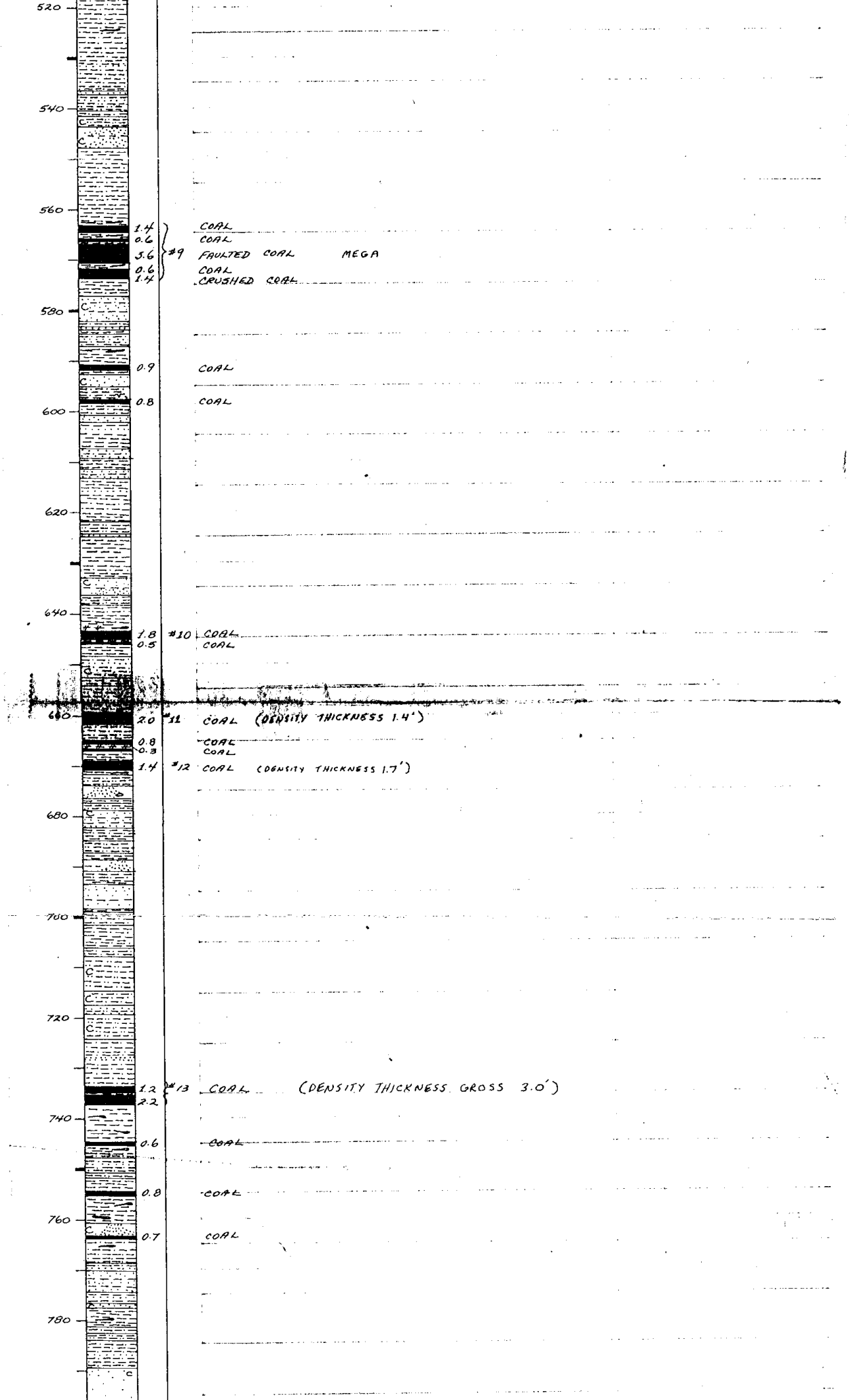
0.3' COAL

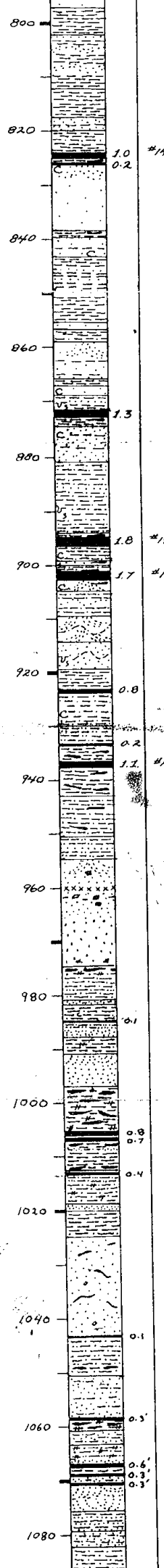
4.0 #6 COAL (DENSITY THICKNESS 2.3')

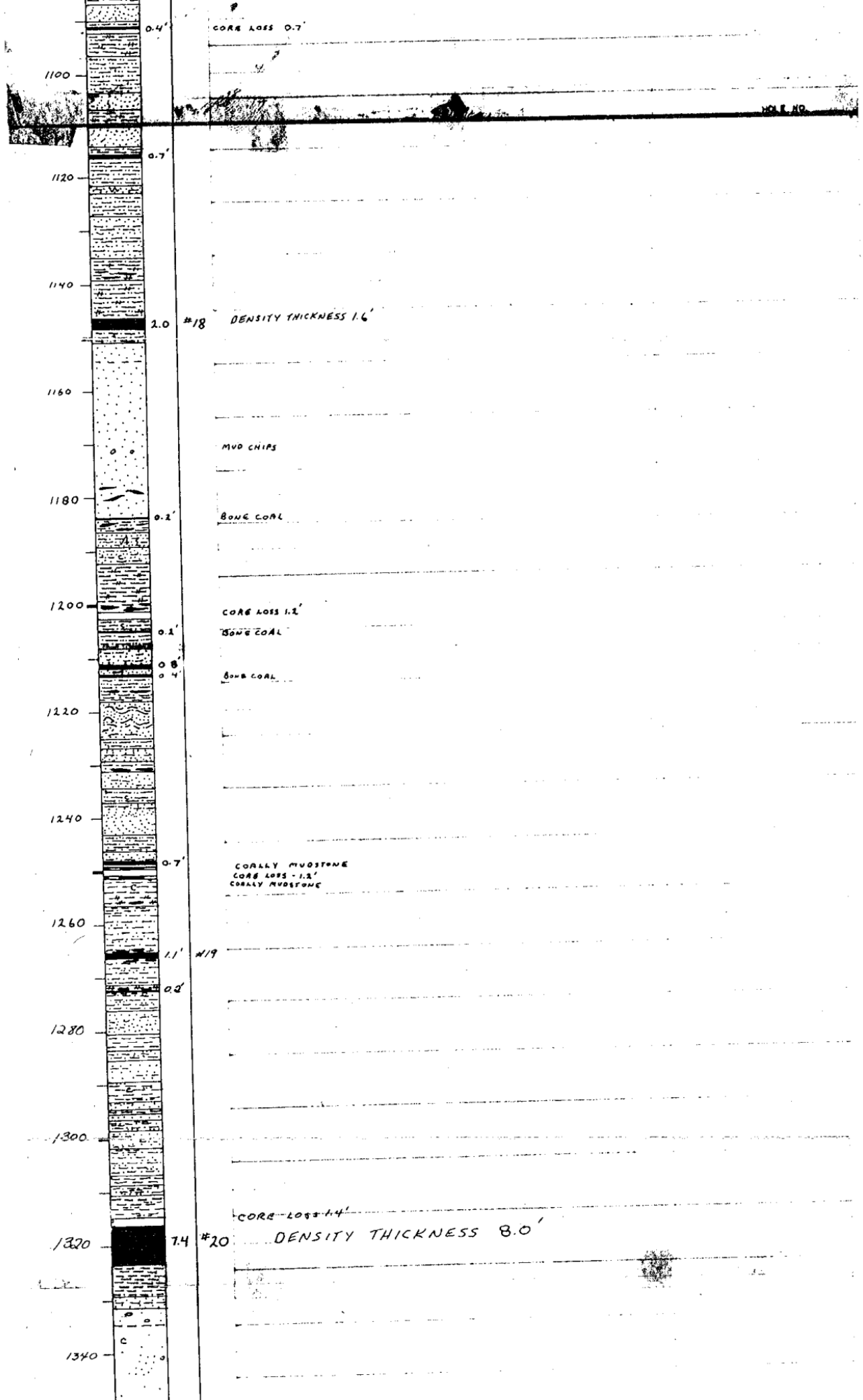
0.8 COAL

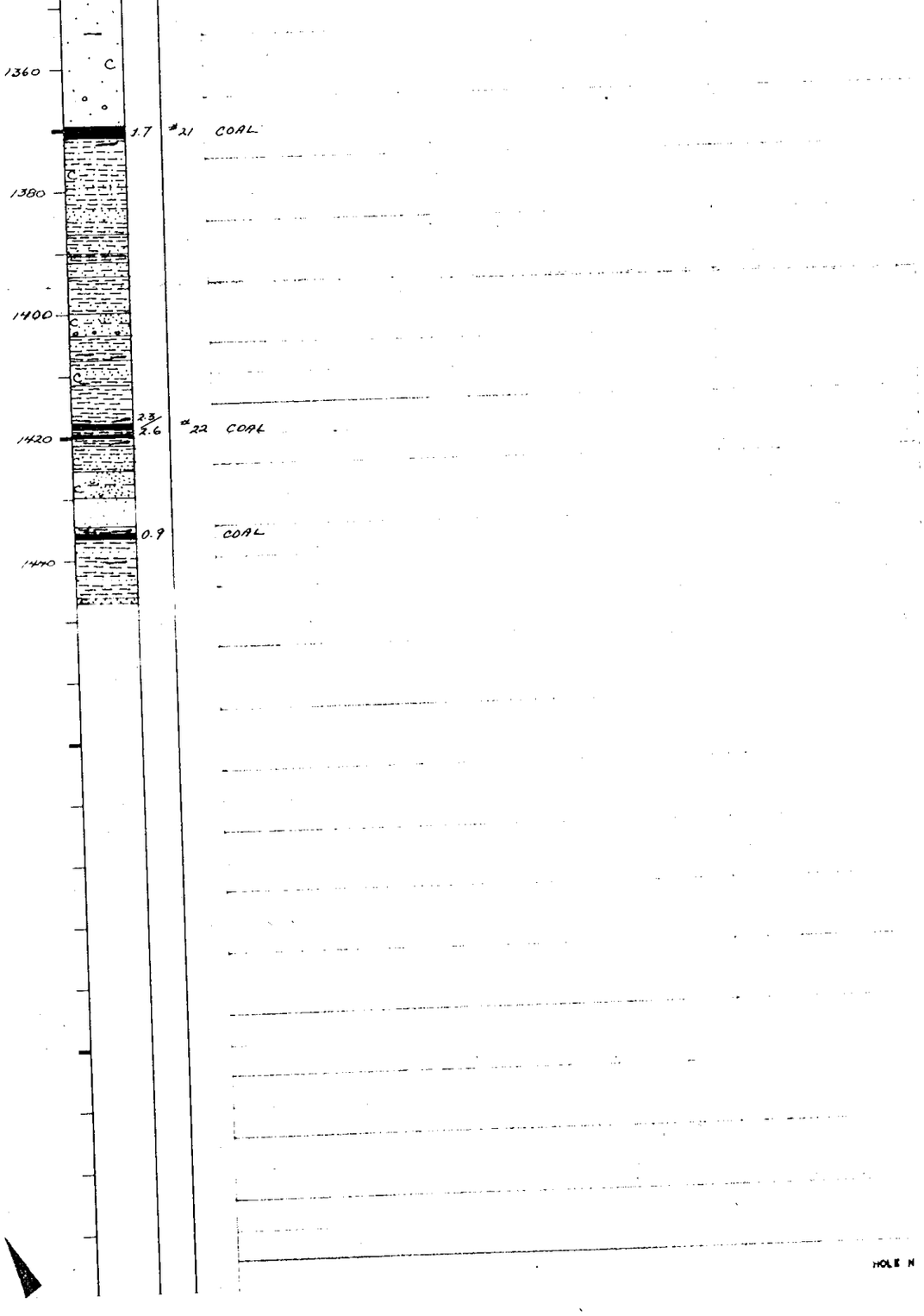
1.1 #7 COAL (DENSITY THICKNESS 1.4')

2.1 #8 COAL (DENSITY THICKNESS 1.8')


520
540
560
580
600
620
640
660
680
700
720
740
760
780
1.4
0.6
3.6
0.6
1.4
#9
COAL
COAL
FAULTED COAL
MEGA
COAL
CRUSHED COAL
0.9
COAL
0.8
COAL
1.8
0.5
#10
COAL
COAL
2.0
#11
COAL (DENSITY THICKNESS 1.4')
0.8
0.3
COAL
COAL
1.4
#12
COAL (DENSITY THICKNESS 1.7')
1.2
2.2
#13
COAL (DENSITY THICKNESS GROSS 3.0')
0.6
COAL
0.8
COAL
0.7
COAL


800
820
840
860
880
900
920
940
960
980
1000
1020
1040
1060
1080
1.0
0.2
1.3
1.8
1.7
0.8
0.2
1.1
0.1
0.8
0.7
0.4
0.1
0.5'
0.6'
0.3'
0.3'
#14 COAL
COAL
COAL
#15 COAL
#16 COAL
COAL
COAL
#17 COAL
1" pyrite band
MUD CHIPS
CLEAN
CORE LOSS 0.4
Coal Wisps
CLEAN
MUD CHIPS


0.4'
CORE LOSS 0.7'
1100
HOLE NO.
0.7'
1120
1140
2.0
#18
DENSITY THICKNESS 1.6'
1160
MUD CHIPS
1180
0.2'
BONE COAL
1200
CORE LOSS 1.2'
0.2'
BONE COAL
0.8'
0.4'
BONE COAL
1220
1240
0.7'
CORLLY MUDSTONE
CORE LOSS - 1.2'
CORLLY MUDSTONE
1260
1.1'
#19
0.2'
1280
1300
CORE LOSS 1.4'
1320
7.4
#20
DENSITY THICKNESS 8.0'
1340


1360
1380
1400
1420
1440
1.7
#21 COAL
2.3/2.6
#22 COAL
0.9
COAL
HOLE N

75-67

UTAH MINES LTD.
DRILL & CORE LOG

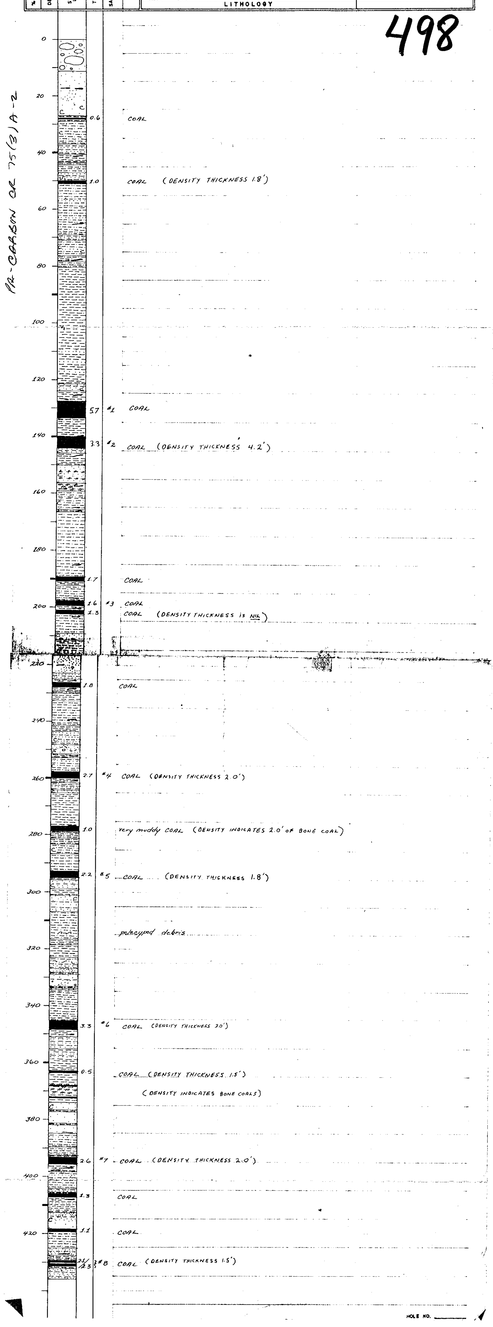
HOLE NO. 75-67 | HOLE NO. 75-67

LOG BY: U. Mahachowski | ELEV: 8100 | HOLE SIZE: NQ (2⅜") | PROJECT: Carbon Creek

DATE: Aug 26/75 | N: 361,725 | AIR ☐ WATER ☑ | LEASE: 327

E: 57,850 | T.D. 496' PD | SEC ____ T. ____ R. ____

498



12-CARBON at 75(3)A-2

HOLE NO. _____

75-68

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-68

LOG BY: U. Malachowski

DATE: Aug 28/75

ELEV.: 4055

N: 365,075

E: 51,450

HOLE SIZE: HQ (2½")

AIR ☐ WATER ☑

T.D. 539' P.D.

HOLE NO. 75-68

PROJECT: Carbon Creek

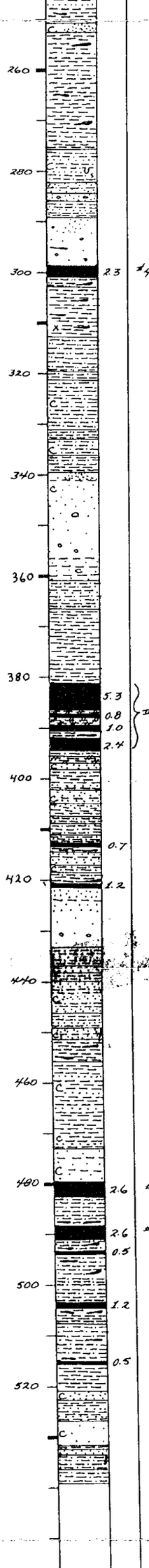
LEASE: 3491

SEC. T. R.

498

% REC.	DEPTH	STRIP LOG	THICK	SAMPLE NO.	LITHOLOGY
	0				
	20				
	40		2.4	#1	COAL (DENSITY THICKNESS 1.8)
	60		3.3	#2	COAL (DENSITY THICKNESS 3.0)
	80				
	100		2.9	#3	COAL (DENSITY THICKNESS 5.6')
	120				
	140		1.2		COAL
	160				
	180		2.6		COAL
	200				
	220				
	240				

12-CARBON CR - 75(3)A-2



#4 COAL (DENSITY THICKNESS 3.3')

COAL

#5 COAL (DENSITY ADJUSTMENT - SEE DENSITY LOG)

COAL

COAL

COAL

COAL

#6 COAL (DENSITY THICKNESS 2.0')

#7 COAL (DENSITY THICKNESS 2.0')

COAL

COAL

COAL

HOLE NO. _____

75-69

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-69
LOG BY: R. KOEST
DATE: SEPT. / 75

ELEV: 3800'±
N 335,650
E 83,050

HOLE SIZE: HQ
AIR ☐ WATER ☐
T.D. 357 P.O.

HOLE NO. 75-69
PROJECT: CARBON CREEK
LEASE: CL. 3488
SEC. ____ T. ____ R. ____

498

Mt. - CARBON CR. 75(31)9-2

% REC.	DEPTH	STRIP LOG	THICK	SAMPLE NOS.	LITHOLOGY
	0				
	20				
	40				
	60		0.3		
	80		0.3		
	100				
	120				
	140		1.0	#1	CORE LOSS 1.4' (DENSITY THICKNESS 1.9')
	160		0.1		
	180				Siderite banding
	200		0.7		
	220				HOLE NO.
	240				Siderite banding
	260		0.1		CORE LOSS 0.8'
	280				
	300				Pyritized Paleopods
	320		0.7	#2	Pyrite stringers
	340		0.6		Brecciated with calcite infilling. Slks.
			0.8		CORE LOSS 1.0' (DENSITY THICKNESS 1.8')
					T.D. 357'

HOLE NO. ____

75-70

UTAH MINES LTD.
DRILL & CORE LOG

HOLE NO. 75-70 | HOLE NO. 75-70
LOG BY: R. KARST D.N.N. | ELEV: 4775 | HOLE SIZE: | PROJECT: CARBON CREEK
DATE: SEPT 1975 | N | AIR ☐ WATER ☐ | LEASE: 3493
E | T.D. 631 P.B. | SEC. T. R.

% REC.	DEPTH	STRIP LOG	THICK	SAMPLE	LITHOLOGY

498

MT. CARBON 6.2. 7S(3)A-12

0
20
40
60
80
0.5
0.5
100
3.0
0.4
120
#1
#2
core loss 0.7'
140
160
180
mod. fissile fracture
coaly wisps
200
220
0.1
#3 DENSITY THICKNESS 9.9'
240
260
280
PEBBLE BANDS
CORE LOSS 0.5'
2.5'
0.3'
Petrified Pelecypods
Cannel Type
300
2.5'
Pelecypods
Pelecypods
320
340
2.5'
0.5'
Pelecypods
core loss 0.5'
360
Siderite Banding
0.1
380
Pelecypods
400
Pebble Band
CONGLOMERATE
420
CONGLOMERATE
1.6'
#4 (DENSITY THICKNESS 2.0')
440
0.3'
460
Siderite Banding
480
500
Pelecypod @ 509
520
540
560
580
Carbonate fract fillings 586.0 ±0°±80° C.A
600
609.5-609.7 Core loss (DENSITY INDICATES 1.2' OF BONEY COAL)
609.7-609.9 Conglomerate? Coal Chips
in a crushed mud zone - tar-like smell
620
631 T.D.
0.5

123°00' 55° 50' 122°45' 40' 35' 122°30'

10' 05' 56°00' 55' 50' 55°45'

PEACE RIVER FLOODING

INDIAN HEAD FLATS

BRANHAM FLATS

NORGAN FLATS

MOUNT COWPER

MOUNT ROCHFORT

MOUNT WRIGLEY

MOUNT McALLISTER

BATTLESHIP CABBAGE MOUNTAIN

CARBON PEAK

MT. GETHING 5980'

BOCOCK PEAK 6398

THE MONARCH 6396

SEATTIE PEAKS 6965

CL-3505 CL-3504 CL-3501 CL-3500 CL-3503 CL-3502 CL-3499 CL-3498 CL-3497 CL-3496 CL-3495 CL-3494 CL-3493 CL-3492 CL-3491 CL-3490 CL-3489 CL-3488 CL-3487 CL-3486 CL-3485 CL-3484 CL-3483 CL-3482 CL-3481 CL-3480 CL-3479 CL-3478 CL-3477 CL-3476 CL-3475 CL-3474 CL-3473 CL-3472 CL-3471 CL-3470 CL-3469 CL-3468 CL-3467 CL-3466 CL-3465 CL-3464 CL-3463 CL-3462 CL-3461 CL-3460 CL-3459 CL-3458 CL-3457 CL-3456 CL-3455 CL-3454 CL-3453 CL-3452 CL-3451 CL-3450 CL-3449 CL-3448 CL-3447 CL-3446 CL-3445

ET ES

INSERT

YUKON BRITISH COLUMBIA ALBERTA LICENSED AREA PRINCE RUPERT PRINCE GEORGE CALGARY VANCOUVER USA

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505 LOCATED 55° 55' 122° 40'NW BY D.N.LENOBEL R.KARST MAY TO SEPTEMBER 1975

PLATE I

LEGEND

- 1971-1973 DRILL HOLE LOCATIONS
- 1975 DRILL HOLE LOCATIONS
- 1971-1973 ROAD CONSTRUCTION
- 1975 ROAD CONSTRUCTION
- CAMPSITE LOCATIONS
- CL-3405 UTAH MINES LTD., LICENCES LICENCE NO.
- ALIENATED LEASES PRESENTLY HELD BY UTAH MINES LTD.

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK - COAL BASIN

1975 ROAD AND DRILL HOLE LOCATIONS

Work by : D.N. le NOBEL	Date : MARCH 1975	NTS Ref. 93I-O-15
Drawn by : GAIL SMEETON	Revised: DECEMBER 1975	Scale: 1:50,000

498

PR-CCK 75(2)A

LEGEND

PLEISTOCENE TO RECENT

- Qal — STREAM ALLUVIUM
- Qt — GLACIAL TERRACE DEPOSITS, SAND GRAVEL
- Qd — GLACIAL DRIFT
- ~~~ UNCONFORMITY ~~~

LOWER CRETACEOUS
Bullhead Group

- Kg — GETHING FORMATION
- Kcd — CADOMIN FORMATION

SYMBOLS

- FAULT, solid where indicated, dashed where inferred by drilling and photos
- AXIS OF MONOCLINAL FOLD
- CONTACT, definite
- CONTACT, approximate
- 40 — COAL BED SUBCROP, number indicates principle seam, solid where approximate, dashed where inferred
- 10 — OUTCROP with STRIKE and DIP of bedding
- ROAD
- x 5.0' — COAL OUTCROP, measured thickness where indicated
- DIAMOND DRILL LOCATION
- ADIT, Burns Foundation 1940's
- BEDROCK CHANNEL (Area of Thick Overburden) defined by seismic survey

PHOTOGEOLOGY

- AIRPHOTO - bedding trace of strata
- 30 — STRIKE and DIP of bedding

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505 LOCATED 55° 55' 122° 40' NW BY D.N. leNOBEL R.KARST MAY TO SEPTEMBER '75

PLATE 2.

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK COAL BASIN (WEST HALF)

GEOLOGY MAP

PEACE RIVER AREA, B.C.

Work by : D.N. le NOBEL	Date : DECEMBER 1975	NTS Ref. 93 O/15
Drawn by : GAIL SMEETON	Revised:	

1000 500 0 1000 2000
SCALE IN FEET

498

Reduced to 1:50,000

PR-Carbon Cr 75(2)19

498

PR-CCK 75(2)A

PLATE 3

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK COAL BASIN
(EAST HALF)

GEOLOGY MAP

PEACE RIVER AREA, B.C.

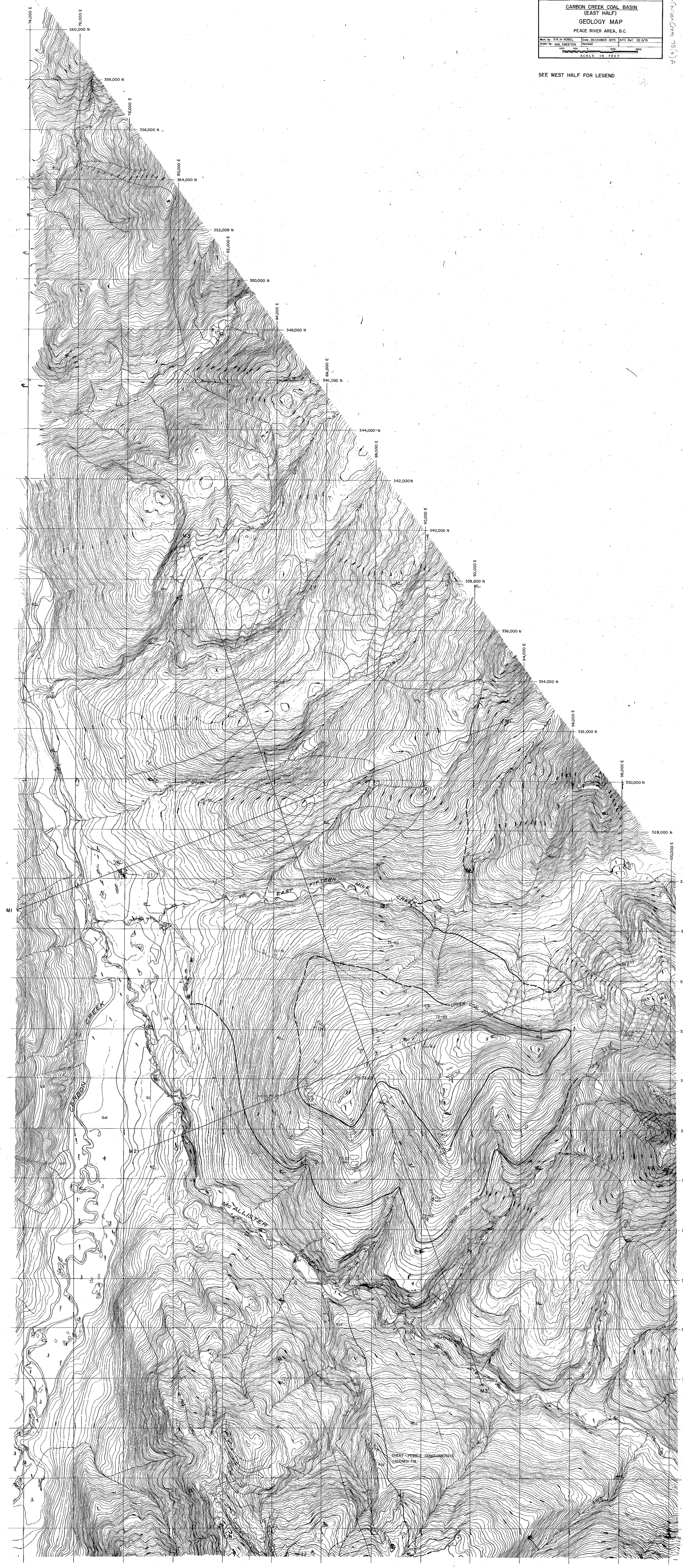
Map By: D.N. in NOREC	Date: DECEMBER 1975	NTS Ref: 93 G/15
Drawn By: GAIL SWEETON	Revised	

SCALE IN FEET

SEE WEST HALF FOR LEGEND

498

PR-CCK-75(2)A



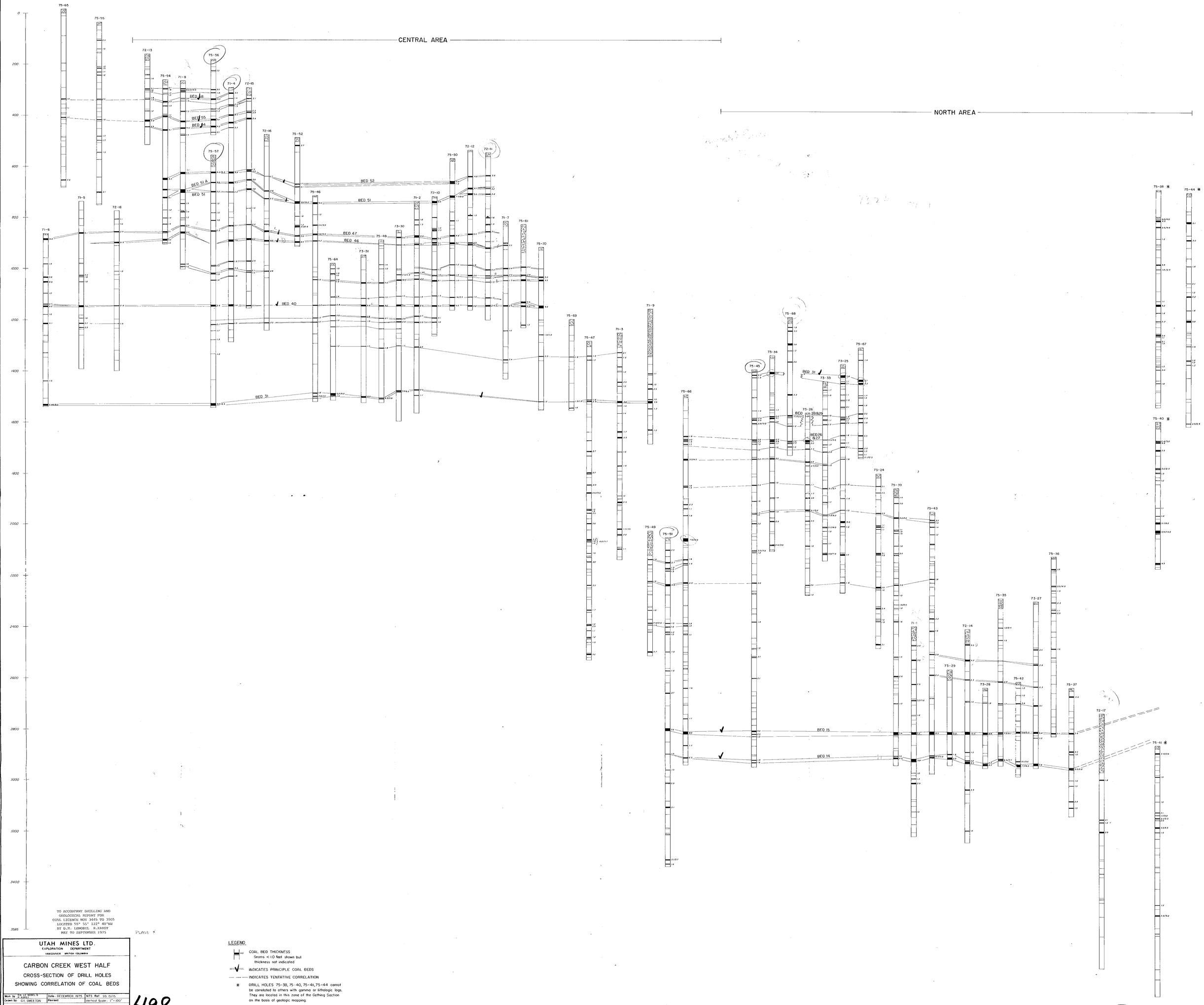
498 PR-CCK-75(2)A

Taken out Sep 1980 Return to Files

SOUTH AREA

CENTRAL AREA

NORTH AREA



TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505 LOCATED 55° 55' 122° 40'NW BY D.M. LEMOND, R.RANEY MAY TO SEPTEMBER 1975

PLATE 4

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK WEST HALF
CROSS-SECTION OF DRILL HOLES SHOWING CORRELATION OF COAL BEDS

Work by D.M. LE MOND, R. RANEY	Date: DECEMBER 1975	NTS Ref 93 O/15
Drawn by G.V. SMEETON	Revised	Vertical Scale: 1" = 100'

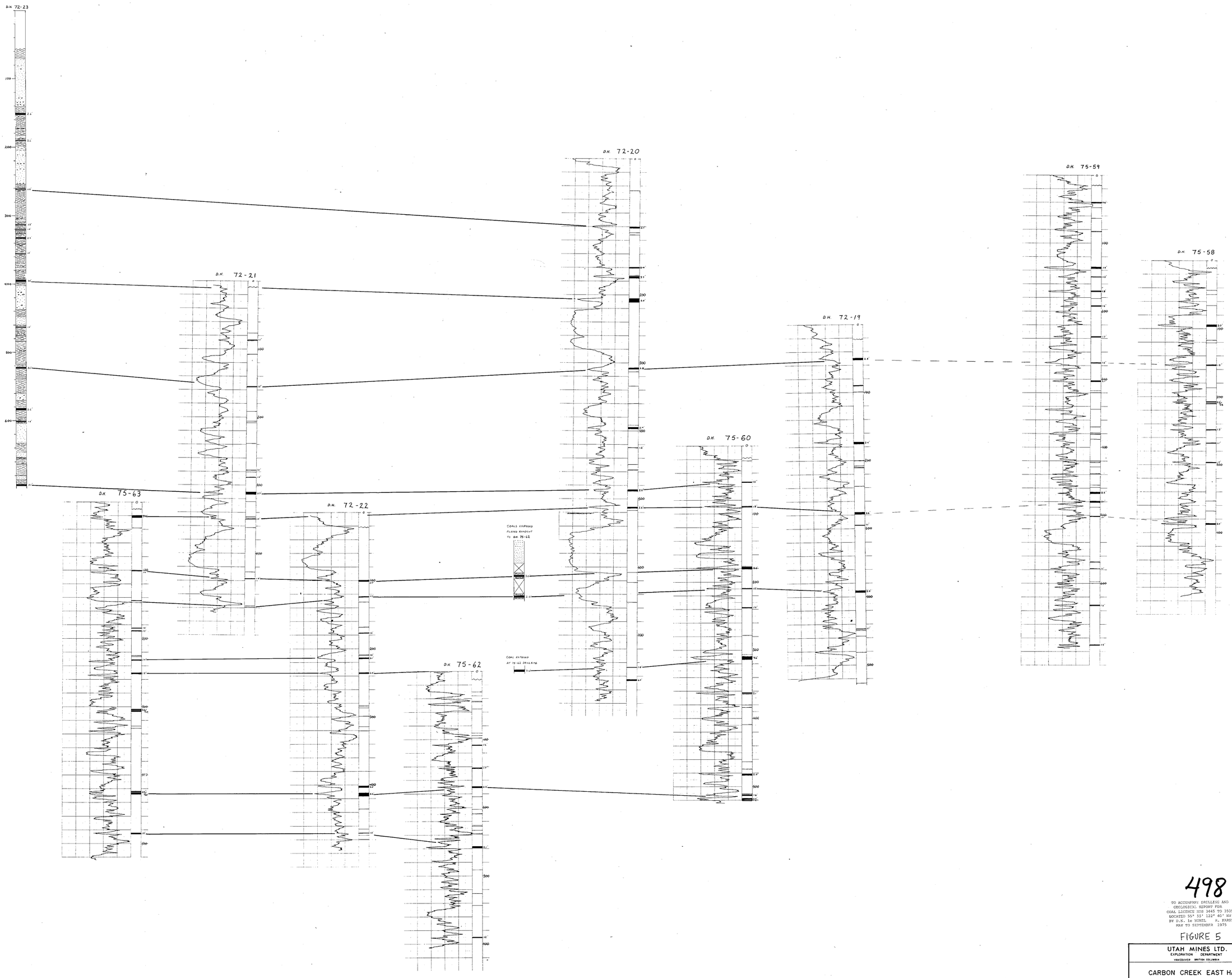
SCALE IN FEET

498

LEGEND

- COAL BED THICKNESS — Seams < 1.0 feet shown but thickness not indicated
- INDICATES PRINCIPLE COAL BEDS
- INDICATES TENTATIVE CORRELATION
- * DRILL HOLES 75-38, 75-40, 75-41, 75-44 cannot be correlated to others with gamma or lithologic logs. They are located in this zone of the Gething Section on the basis of geologic mapping.

FR-CCK 75(2)A



498

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505 LOCATED 55° 55' 122° 40' NW BY D.N. le NOBEL & R. KIRST MAY TO SEPTEMBER 1975

FIGURE 5

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

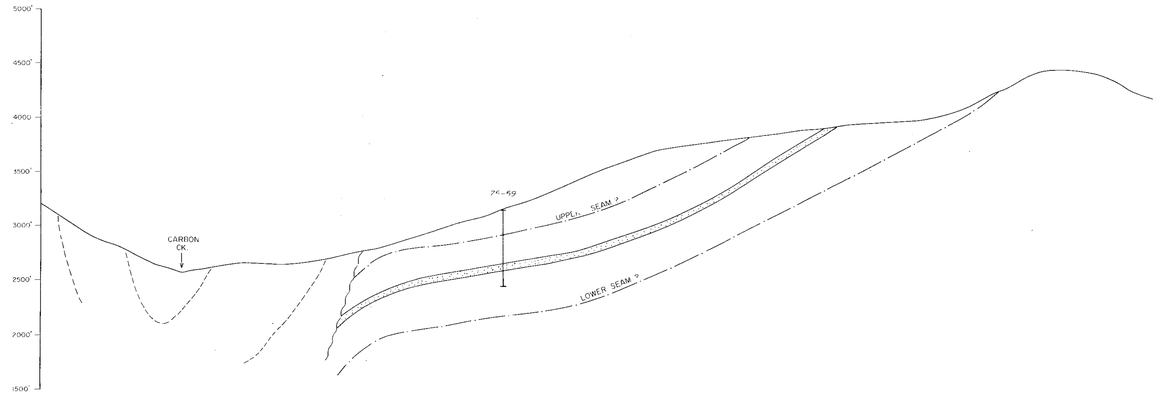
CARBON CREEK EAST HALF
(McALLISTER AREA)
GAMMA-RAY and COAL BED CORRELATION

Work by: R.H.K.	Date: Dec. 1975	NTS Ref.
Drawn by:	Revised:	

SCALE IN FEET

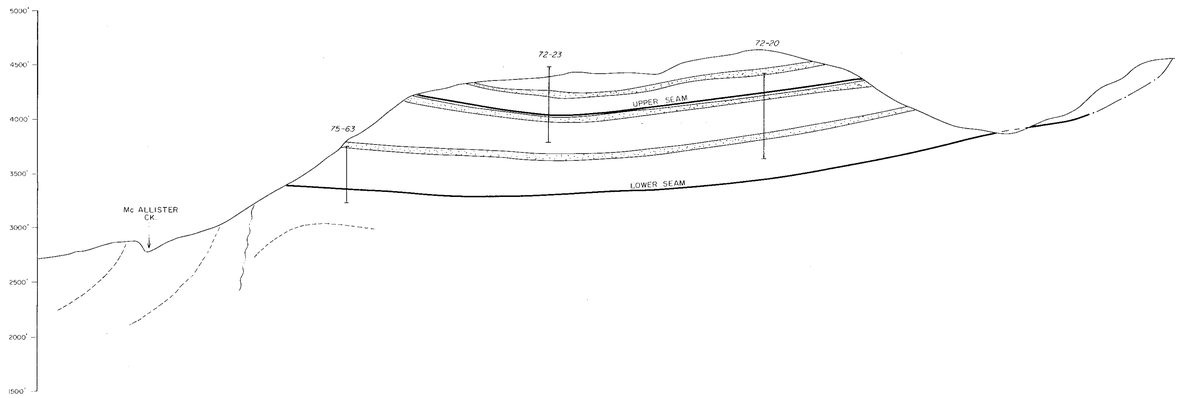
PR-CCK 75(2)A

S.W.
M1



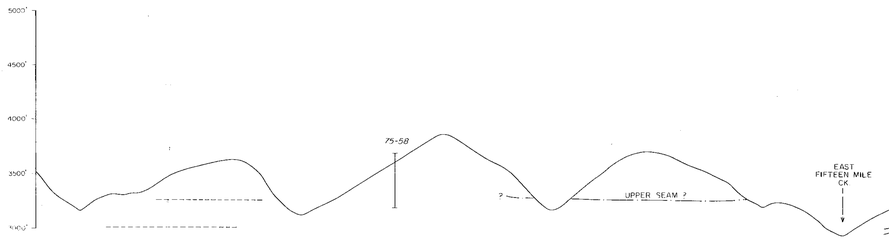
N.E.
M1'

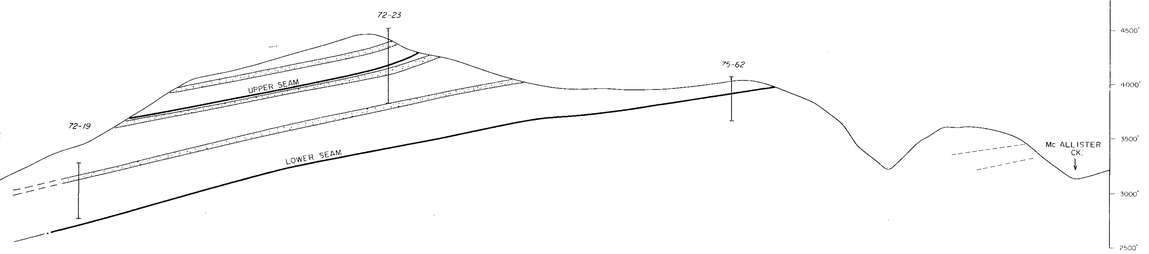
S.W.
M2



N.E.
M2'

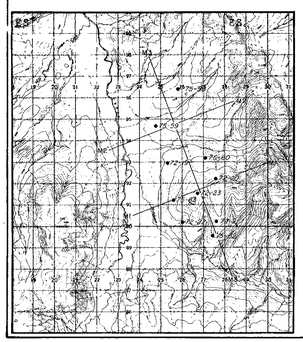
N.W.
~~S.E.~~
M3





S.E.
~~N.W.~~
M3'

CROSS-SECTION PLANE IS PERPENDICULAR TO STRIKE



LEGEND

- COAL SEAM
- COAL SEAM (POSITION ESTIMATED)
- BEDDING
- SANDSTONE
- FAULT

HORIZONTAL SCALE 1" = 1000'
VERTICAL SCALE 1" = 500'
VERTICAL EXAGERATION 2X

498

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505 LOCATED 55° 55' 122° 40'NW BY D.N. LeMIEUX R.KARST MAY TO SEPTEMBER 1975

PLATE 6

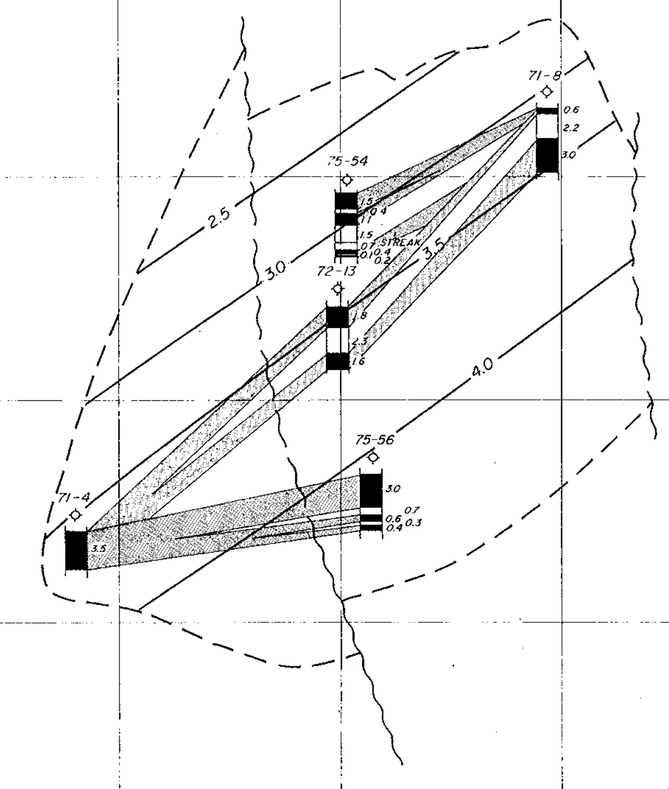
UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK EAST HALF
STRUCTURAL CROSS-SECTIONS
(Mc ALLISTER AREA)

Work by [illegible]	Date [illegible]	NTS Ref 93 [illegible]
Drawn by [illegible]	Revised	

SCALE IN FEET

PR-CCK 75(2)A

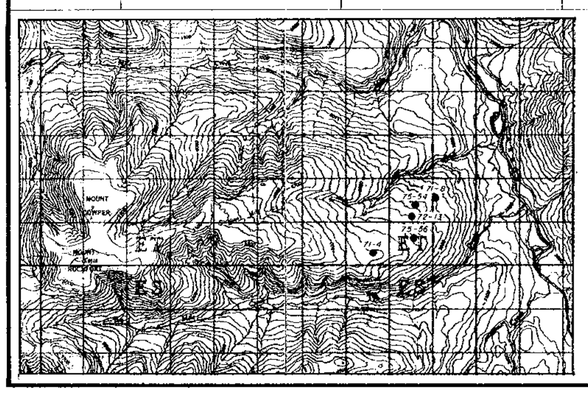


362,000 N
360,000 N
358,000 N
356,000 N
354,000 N
352,000 N
350,000 N
348,000 N
346,000 N
344,000 N
342,000 N
340,000 N
338,000 N
336,000 N

50,000 E
52,000 E
54,000 E
56,000 E
58,000 E
60,000 E
62,000 E
64,000 E
66,000 E
70,000 E

498

TO ACCOMPANY DRILLING AND
GEOLOGICAL REPORT FOR
COAL LICENCE NOS 3445 TO 3505
LOCATED 55° 55' 122° 40'NW
BY D.N. LENOBEL R.KARST
MAY TO SEPTEMBER 1975



LEGEND

75-56 ◇ DIAMOND DRILLHOLE

COAL BED OUTCROP, drillhole indicated

4.0 COAL BED NET THICKNESS CONTOUR, in feet

FAULT; mapped, drillhole and photo indicated

PLATE 7

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

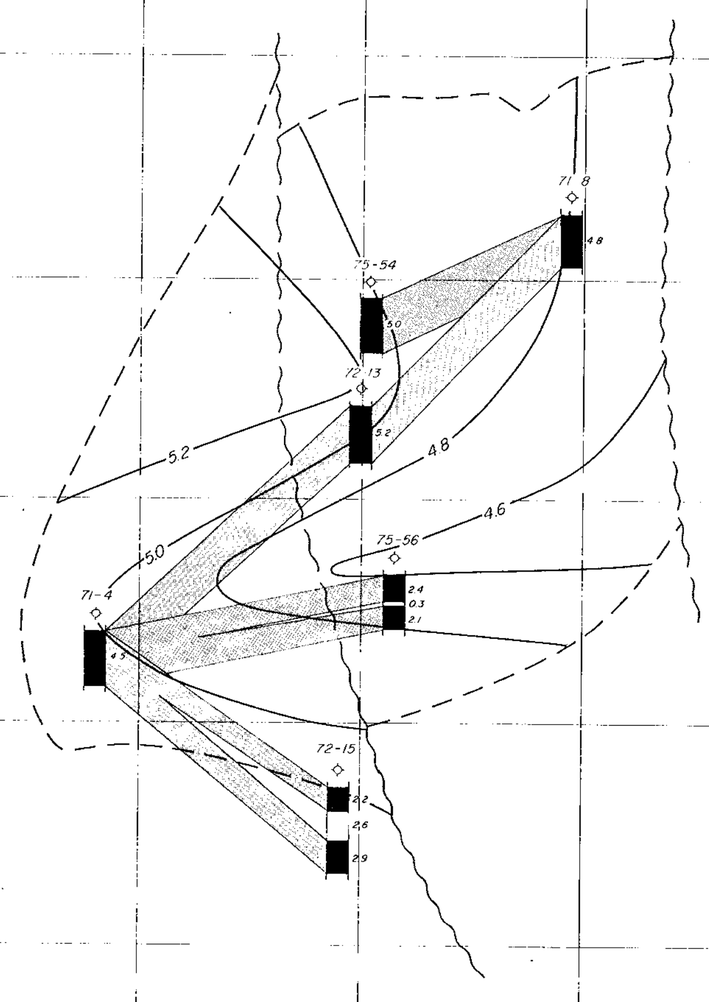
CARBON CREEK

PANEL SECTION BED NO. 58

Work by D.N. LE NOBEL R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 10'

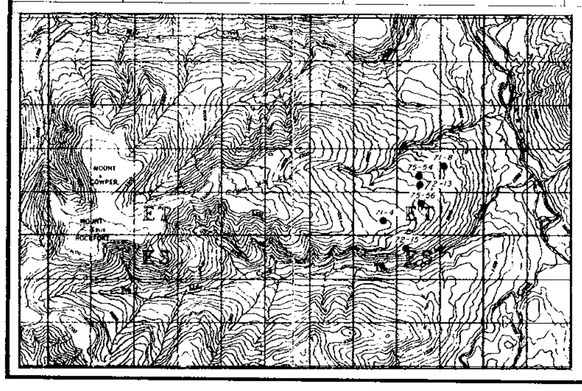
1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

PR-CCK 75(2)A



360,000 N
358,000 N
356,000 N
354,000 N
352,000 N
350,000 N
348,000 N
346,000 N
344,000 N
342,000 N
340,000 N
338,000 N
336,000 N
334,000 N

50,000 E
52,000 E
54,000 E
56,000 E
58,000 E
60,000 E
62,000 E
64,000 E
66,000 E
70,000 E



LEGEND

72-15 ◇ DIAMOND DRILLHOLE

COAL BED OUTCROP, drillhole indicated

5.0 COAL BED NET THICKNESS CONTOUR, in feet

FAULT; mapped, drillhole and photo indicated

498

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505
LOCATED 55° 55' 122° 40' NW
BY D.N. leNOBER R. KARST
MAY TO SEPTEMBER 1975

PLATE 8

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

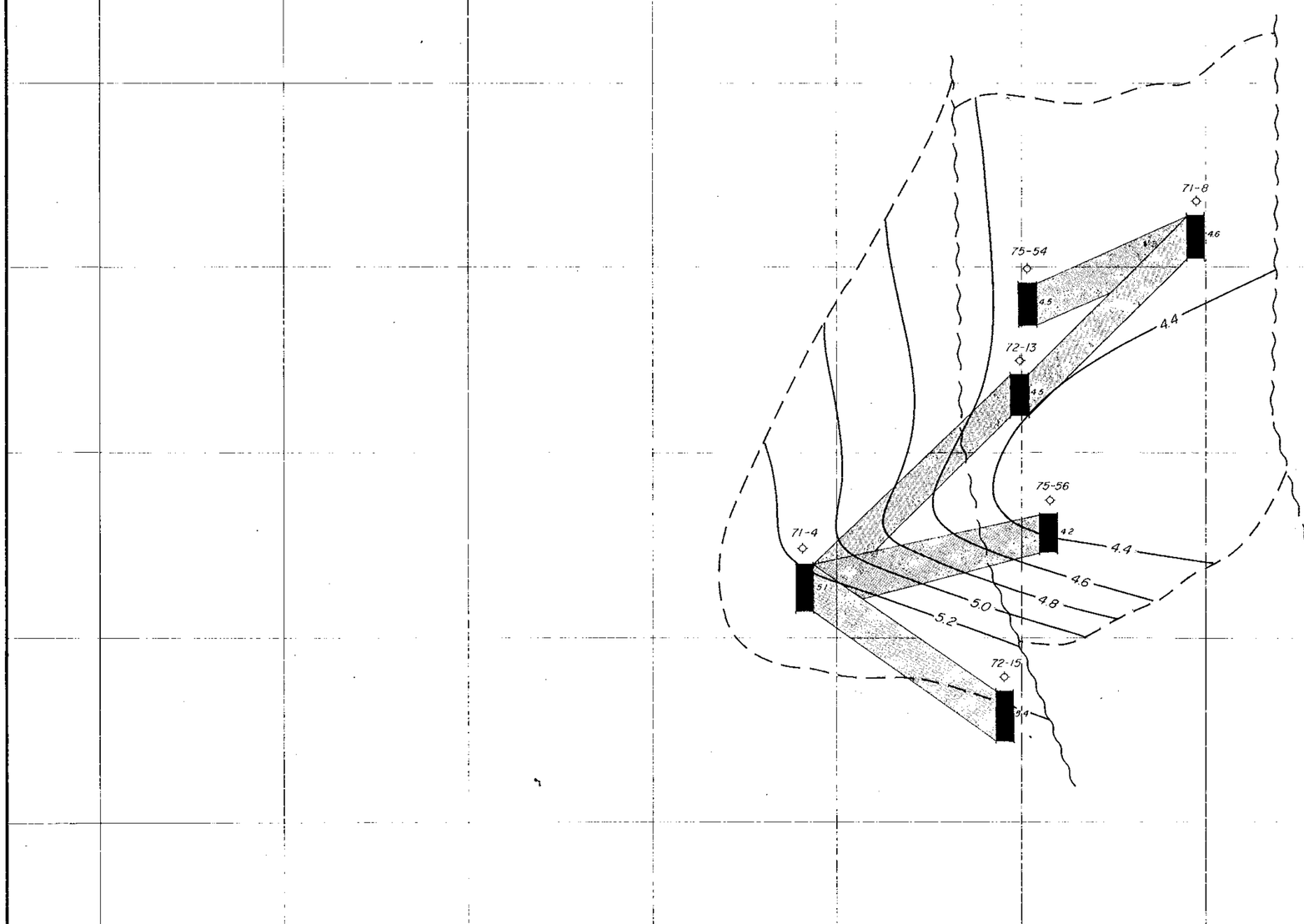
CARBON CREEK

PANEL SECTION BED NO. 55

Work by D.N. LE NOBEL R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 10'

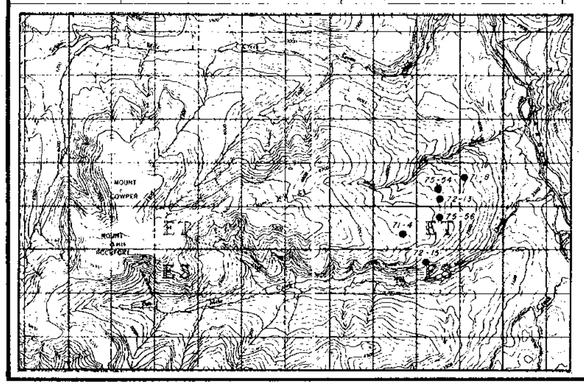
1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

PR-CCK 75(2)A



362,000 N
360,000 N
358,000 N
356,000 N
354,000 N
352,000 N
350,000 N
348,000 N
346,000 N
344,000 N
342,000 N
340,000 N
338,000 N
336,000 N

50,000 E
52,000 E
54,000 E
56,000 E
58,000 E
60,000 E
62,000 E
64,000 E
66,000 E
70,000 E



LEGEND

72-15 ☼ DIAMOND DRILLHOLE

COAL BED OUTCROP, drillhole indicated

5.2 COAL BED NET THICKNESS CONTOUR, in feet

FAULT; mapped, drillhole and photo indicated

498

TO ACCOMPANY DRILLING AND
GEOLOGICAL REPORT FOR
COAL LICENCE NOS 3445 TO 3505
LOCATED 55° 55' 122° 40' NW
BY D.N.leNOBEL R. KARST
MAY TO SEPTEMBER 1975

PLATE 9

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK

PANEL SECTION BED NO. 54

Work by D.N. LE NOBEL, R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 10'

1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

PR-CCK 75(2)A

362,000 N

360,000 N

358,000 N

356,000 N

354,000 N

352,000 N

350,000 N

348,000 N

346,000 N

344,000 N

342,000 N

340,000 N

338,000 N

336,000 N

48,000 E

50,000 E

52,000 E

54,000 E

56,000 E

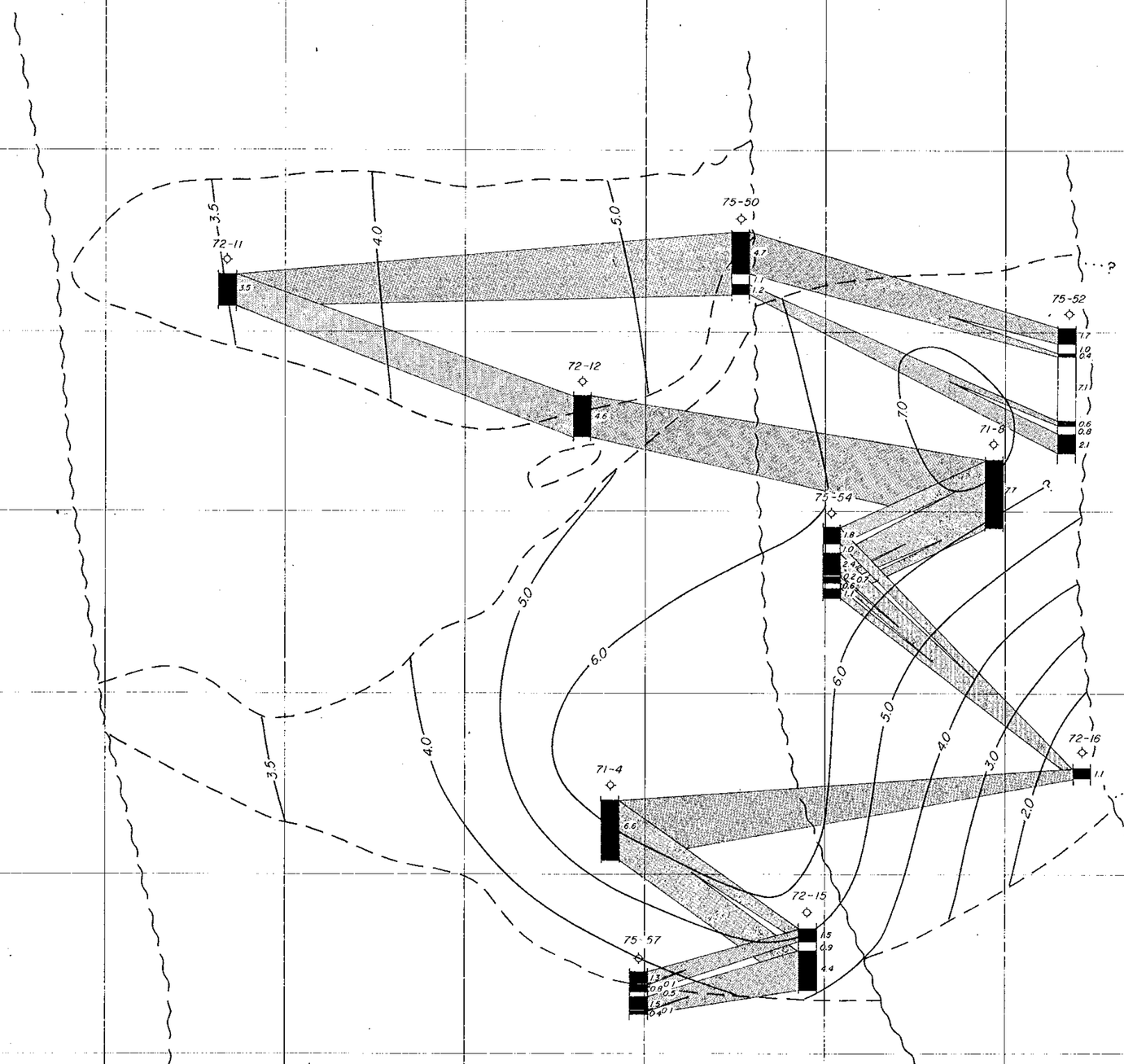
58,000 E

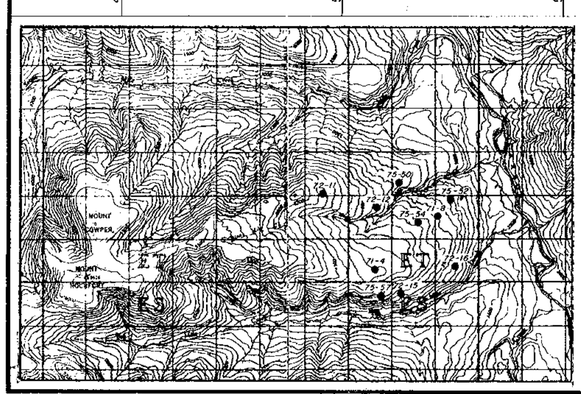
60,000 E

62,000 E

64,000 E

68,000 E





LEGEND

75-57 ◇ DIAMOND DRILLHOLE

COAL BED OUTCROP, drillhole indicated, assumed

5.0 COAL BED NET THICKNESS CONTOUR, in feet

FAULT; mapped, drillhole and photo indicated

498

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505 LOCATED 55° 55' 122° 40' NW BY D.N. LENOBEL R. KARST

PLATE 10

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK

PANEL SECTION BED NO. 52

Work by D.N. LE NOBEL R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 10'

1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

Pr-cck 75(2) A

362,000 N
360,000 N
358,000 N
356,000 N
354,000 N
352,000 N
350,000 N
348,000 N
346,000 N
344,000 N
342,000 N
340,000 N
338,000 N
336,000 N

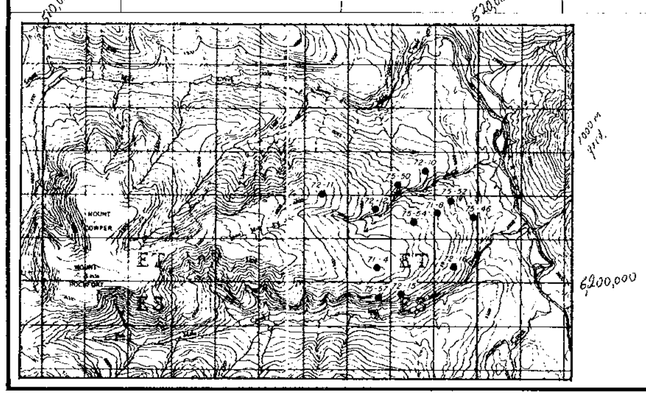
50,000 E
52,000 E
54,000 E
56,000 E
58,000 E
60,000 E
62,000 E
64,000 E
66,000 E
70,000 E

72-10 4.5 2.2 3.8
75-50 4.5 0.1 3.2
72-11 2.9 2.8 19.0 3.2 7.3 0.7
72-12 3.7 15.3 5.0
75-52 3.3 0.3 5.8
71-8 4.6 1.9 5.2
75-46 4.0
75-54 4.1 20.6 4.0
72-16 3.8 31.1 3.2
71-4 6.2 32.4
72-15 3.0 33.7 36.9 3.9 3.2
75-57 2.5 4.0

4.0 3.0 4.0 4.5 4.5 4.0 5.0 4.0 3.5 3.0 5.5 5.0 4.5 4.0 3.5

51A
51

?



LEGEND

75-57 ◇ DIAMOND DRILLHOLE

COAL BED OUTCROP, BED 51
COAL BED OUTCROP, BED 51A
} drillhole indicated, assumed

5.0 COAL BED NET THICKNESS CONTOUR, BED 51
4.0 COAL BED NET THICKNESS CONTOUR, BED 51A
} in feet

FAULT; mapped, drillhole and photo indicated

BED 51A

BED 51

498

TO ACCOMPANY DRILLING AND
GEOLOGICAL REPORT FOR
COAL LICENCE NOS 3445 TO 3505
LOCATED 55° 55' 122° 40' NW
BY D.N.LeNOBEL R. KARST
MAY TO SEPTEMBER 1975

PLATE 11 & 12

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

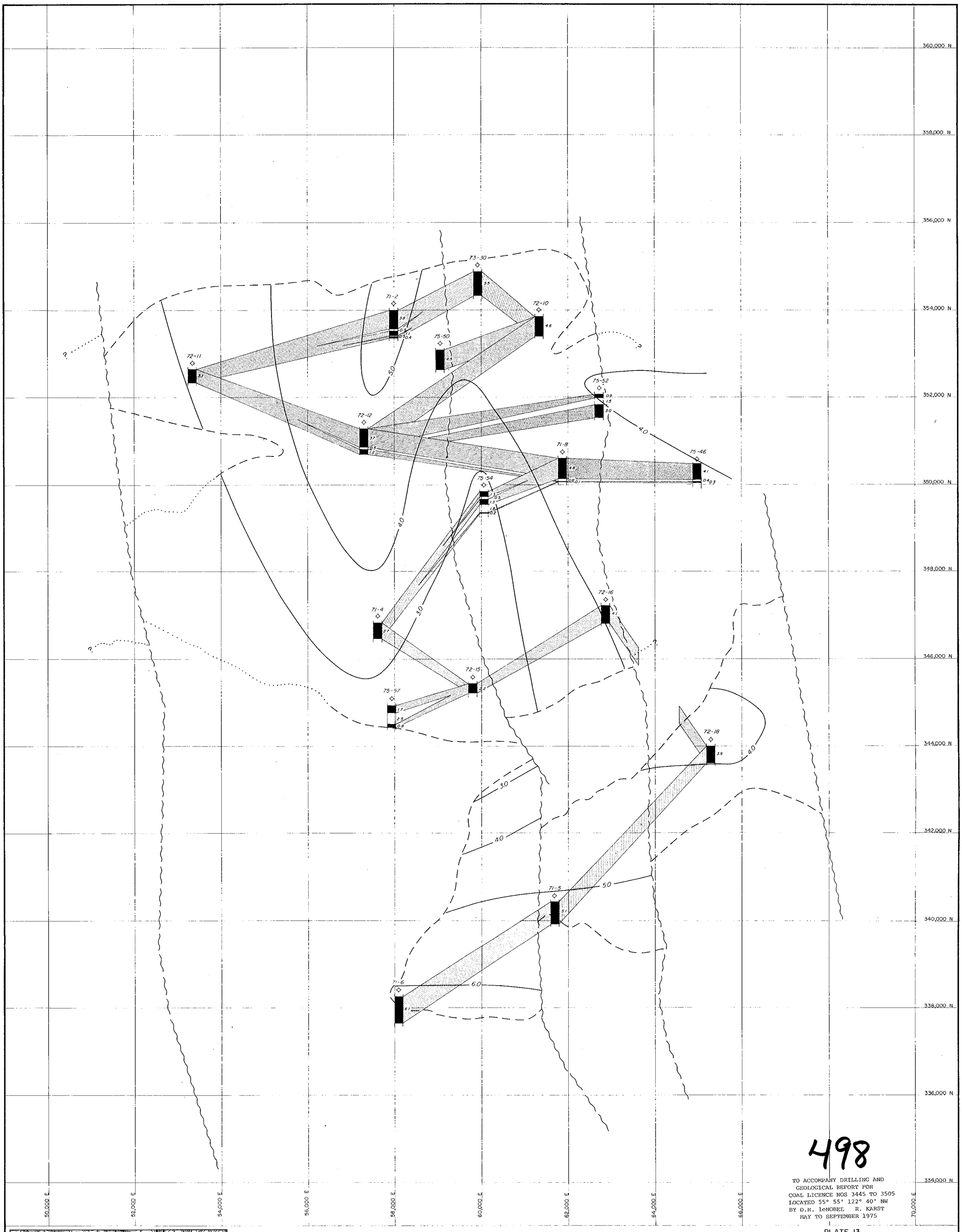
CARBON CREEK

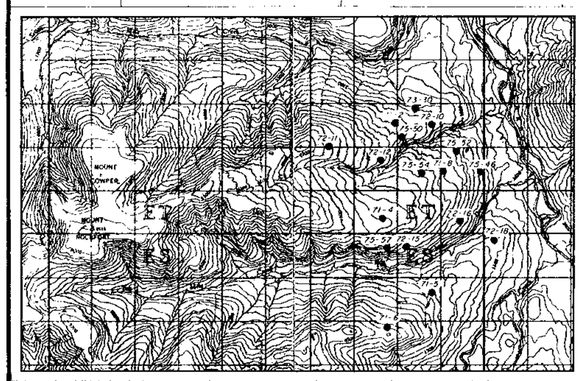
PANEL SECTION BED NO'S. 51 & 51A

Work by D.N. LE NOBEL, R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 20'

1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

PR-CCK 75(2)A





LEGEND

71-6 ◇ DIAMOND DRILL HOLE

COAL BED OUTCROP, drill hole indicated, assumed

5.0 COAL BED NET THICKNESS CONTOUR, in feet

FAULT; mapped, drill hole and photo indicated

498

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505 LOCATED 55° 55' 122° 40' NW BY D.N. leNOBEL R. KARST MAY TO SEPTEMBER 1975

PLATE 13

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK

PANEL SECTION BED NO. 47

Work by D.N. LE NOBEL, R. KARST	Date OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale 1"=10'

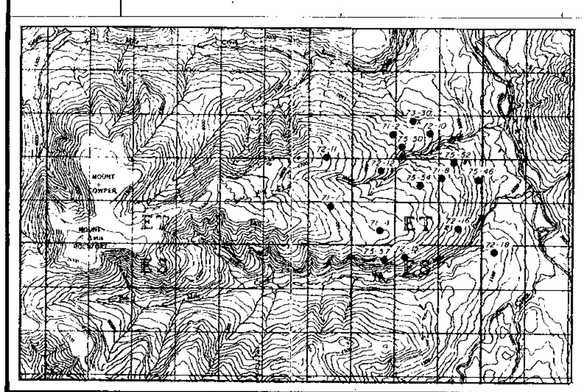
1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

PR-CCK 75(2)A

360,000 N
358,000 N
356,000 N
354,000 N
352,000 N
350,000 N
348,000 N
346,000 N
344,000 N
342,000 N
340,000 N
338,000 N
336,000 N
334,000 N

50,000 E
52,000 E
54,000 E
56,000 E
58,000 E
60,000 E
62,000 E
64,000 E
66,000 E
70,000 E

73-30 3.3 6.0 CARBONACEOUS MUDSTONE 2.9
71-2 0.5 4.0 4.1
72-10 1.9 3.1 5.5 2.7
75-50 5.0
72-11 1.7 18.1 0.9 3.1 1.7
72-12 3.0 1.9 4.3
75-52 4.8
71-8 6.0
75-46 4.2
75-54 5.0
71-7 0.2 0.8 0.4 0.3 6.2 3.3
2.0' split
7.0
6.0
5.0
71-4 7.0
72-16 4.6
72-15 5.9
75-57 COAL CHANNELED
72-18 4.5



LEGEND

72-15 ◇ DIAMOND DRILL HOLE

COAL BED OUTCROP, drillhole indicated, assumed

5.0 COAL BED NET THICKNESS CONTOUR, in feet - up to 2.0' split

× COAL OUTCROP EXPOSURE, measured section

FAULT; mapped, drillhole and photo indicated

498

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505 LOCATED 55° 55' 122° 40'NW BY D.N. LENOBEL R.KARST MAY TO SEPTEMBER 1975

PLATE 14

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK

PANEL SECTION BED NO. 46

Work by D.N. LE NOBEL R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 10'

1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

PR-CCK 75(2)A

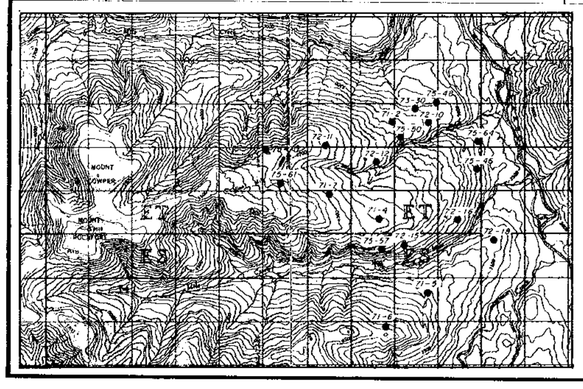
Pre-glacial channel

75-48 4.0
73-30 0.6 0.7 3.1
73-31 0.9 0.8 2.3 0.9 0.6
71- 0.6 0.3 4.1
72-10 3.0
75-50 3.8
75-64 2.8
72-11 3.9
75-70 9.0 9.3
72-12 5.2
75-46 1.7
75-61 5.7
71-7 3.6
71-4 5.4
72-16 1.7
72-15 3.4
75-57 5.5
72-18 2.4
71-5 2.0 0.9 4.1
71-6 2.7 5.6 5.0

10.0 9.0 8.0 7.0 6.0 5.0 4.0 3.0 2.0 6.0 2.0' split

360,000 N
358,000 N
356,000 N
354,000 N
352,000 N
350,000 N
348,000 N
346,000 N
344,000 N
342,000 N
340,000 N
338,000 N
336,000 N
334,000 N

48,000 E
50,000 E
52,000 E
54,000 E
56,000 E
58,000 E
60,000 E
62,000 E
64,000 E
68,000 E



LEGEND

75-57 ◇ DIAMOND DRILLHOLE

COAL BED OUTCROP, drillhole indicated, assumed

5.0 COAL BED NET THICKNESS CONTOUR, in feet, up to the 2.0 foot split

FAULT, mapped, drillhole and photo indicated

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505 LOCATED 55° 55' 122° 40'NW BY D.N.LENOBEL R.KARST MAY TO SEPTEMBER 1975

PLATE 15

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK

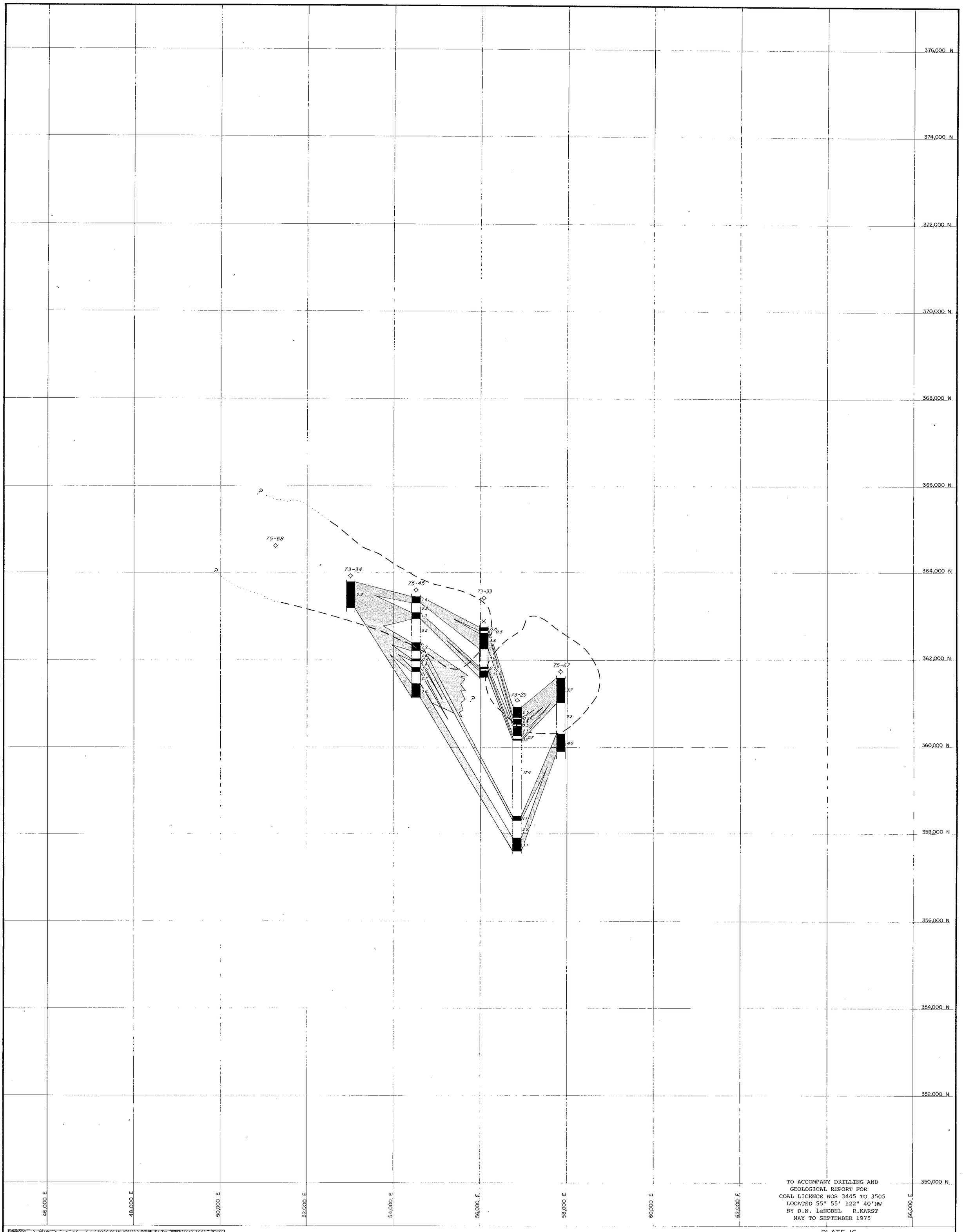
PANEL SECTION BED NO. 40

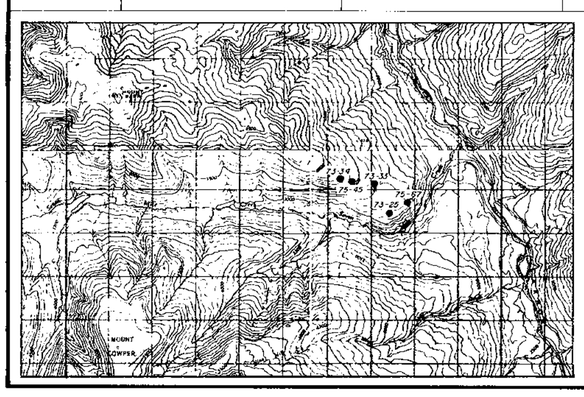
Work by D.N. LE NOBEL R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 10'

1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

498

PR-CCK 75(2)A





LEGEND

73-25 ◇ DIAMOND DRILLHOLE

COAL BED OUTCROP; mapped, drillhole indicated, assumed

× COAL OUTCROP EXPOSURE, measured section

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505
LOCATED 55° 55' 122° 40'NW
BY D.N. leNOBEL R.KARST
MAY TO SEPTEMBER 1975

PLATE 16

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK

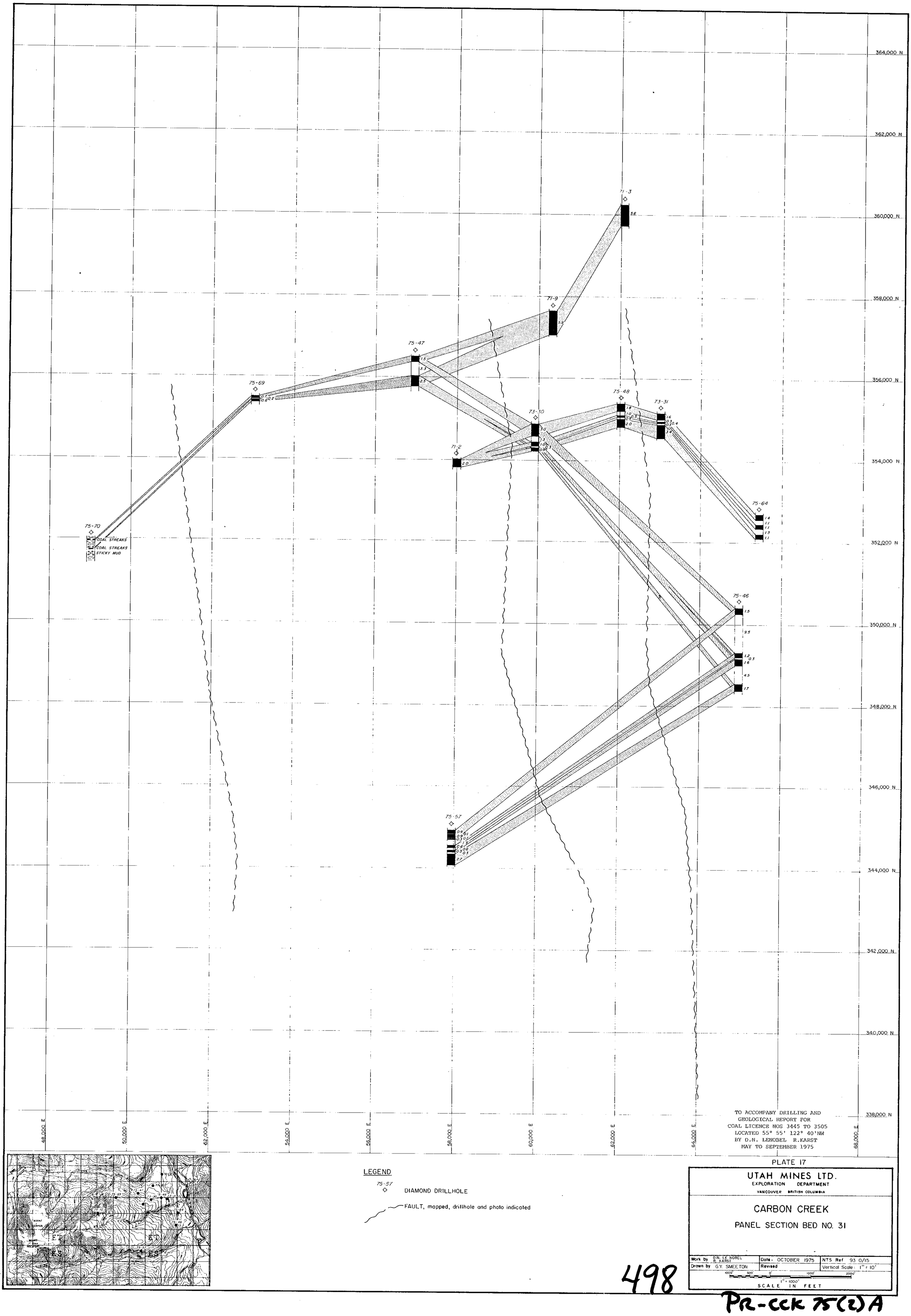
PANEL SECTION BED NO. 31
NORTH OF SEVEN MILE CREEK

Work by D.N. LE NOBEL R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1"=10'

1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

498

PR-CCK 75(2)A



LEGEND

75-57 ◇ DIAMOND DRILLHOLE

FAULT, mapped, drillhole and photo indicated

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505 LOCATED 55° 55' 122° 40'NW BY D.N. LENOBEL R.KARST MAY TO SEPTEMBER 1975

PLATE 17

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK

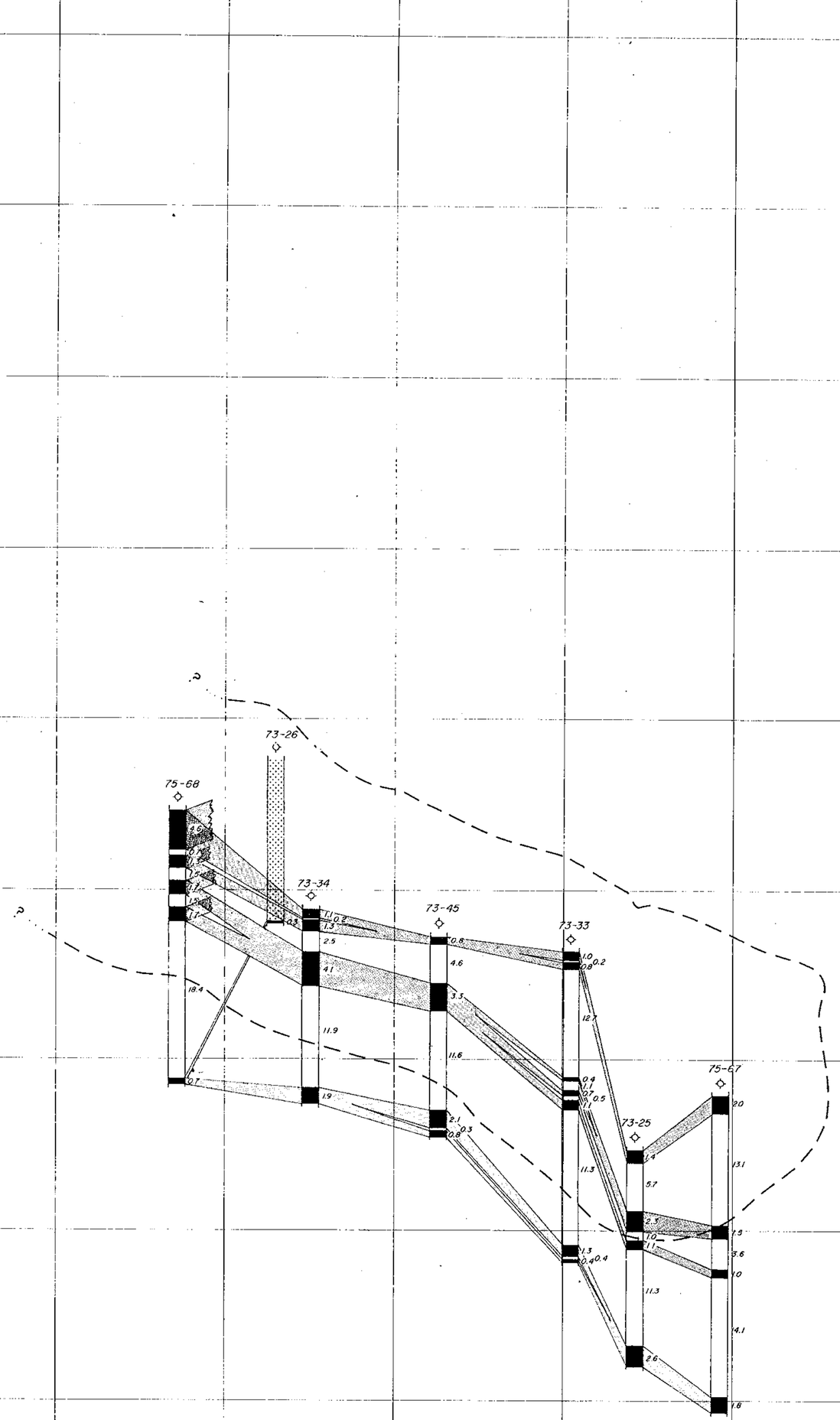
PANEL SECTION BED NO. 31

Work by D.N. LE NOBEL R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 10'

1000' 500' 0' 1000' 2000'
1" = 1000'
SCALE IN FEET

498

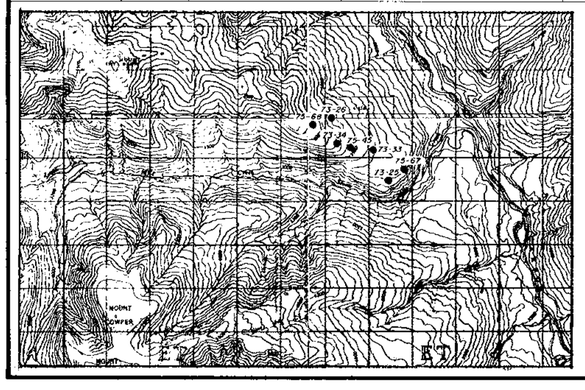
PR-CCK 75(2)A



374,000 N
372,000 N
370,000 N
368,000 N
366,000 N
364,000 N
362,000 N
360,000 N
358,000 N
356,000 N
354,000 N
352,000 N
350,000 N
348,000 N

44,000 E
46,000 E
48,000 E
50,000 E
52,000 E
54,000 E
56,000 E
58,000 E
60,000 E
64,000 E

TO ACCOMPANY DRILLING AND
GEOLOGICAL REPORT FOR
COAL LICENCE NOS 3445 TO 3505
LOCATED 55° 55' 122° 40'NW
BY D.N. le NOBEL, R. KARST
MAY TO SEPTEMBER 1975



LEGEND

75-67 ◇ DIAMOND DRILLHOLE

COAL BED OUTCROP, drillhole indicated, assumed

BED 29

BED 28

SANDSTONE, coal channeled in D.H. 73-26

PLATE 18

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK

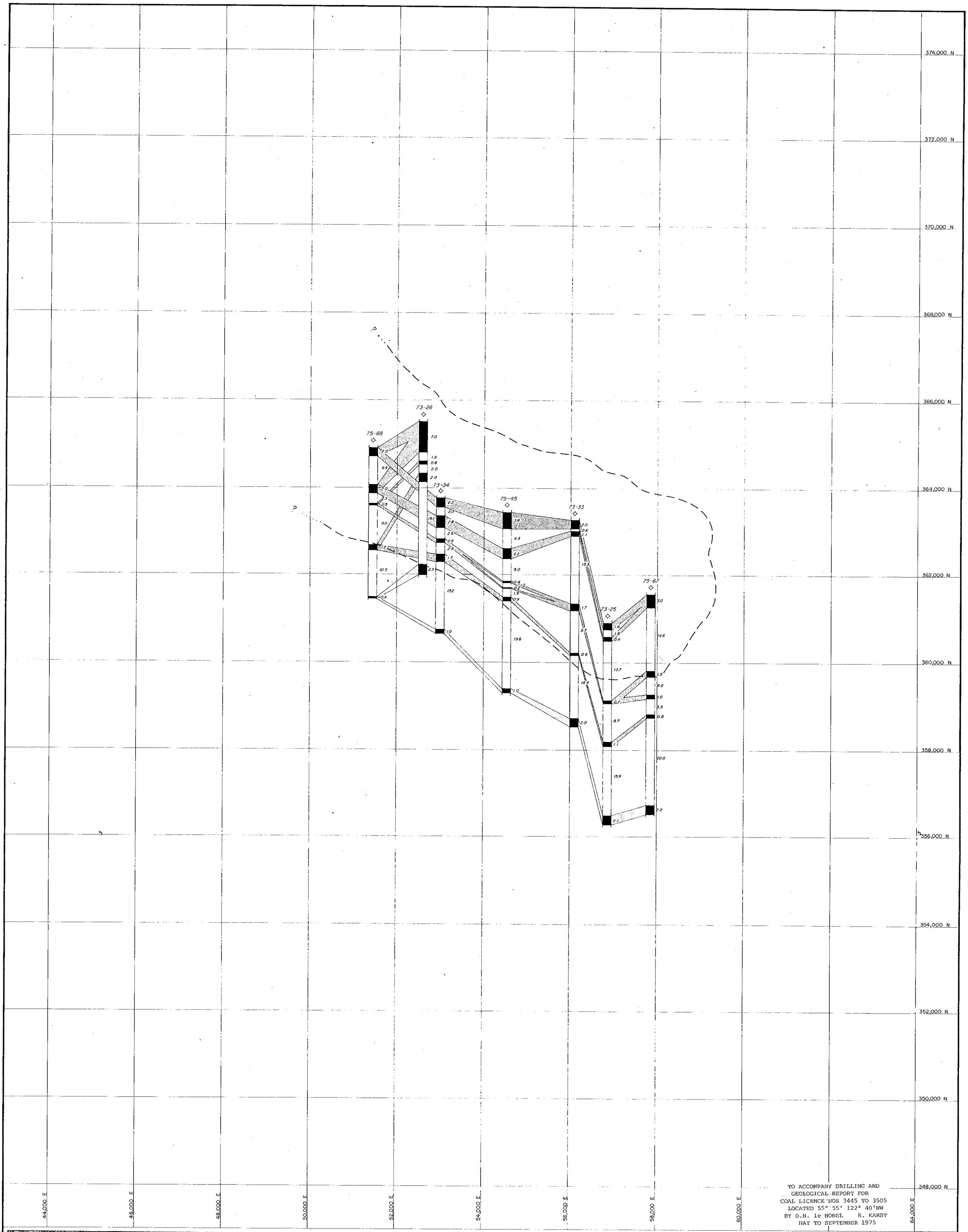
PANEL SECTION BED NO'S. 28 & 29
NORTH OF SEVEN MILE CREEK

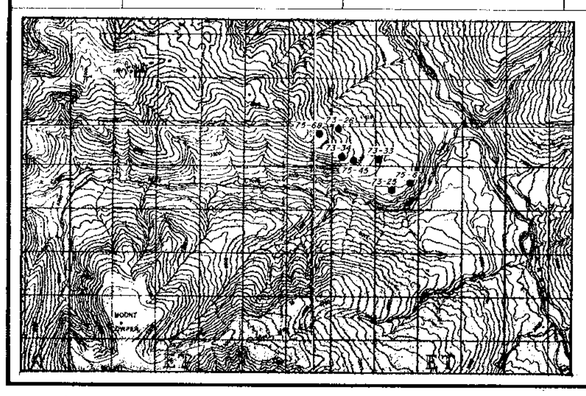
Work by D.N. LE NOBEL, R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 10'

1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

498

PR-CCK 75(2)A





LEGEND

73-25 ◇ DIAMOND DRILLHOLE

COAL BED OUTCROP, drillhole indicated, assumed

BED 27

BED 26

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505
LOCATED 55° 55' 122° 40'NW
BY D.N. le NOBEL R. KARST
MAY TO SEPTEMBER 1975

PLATE 19

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK

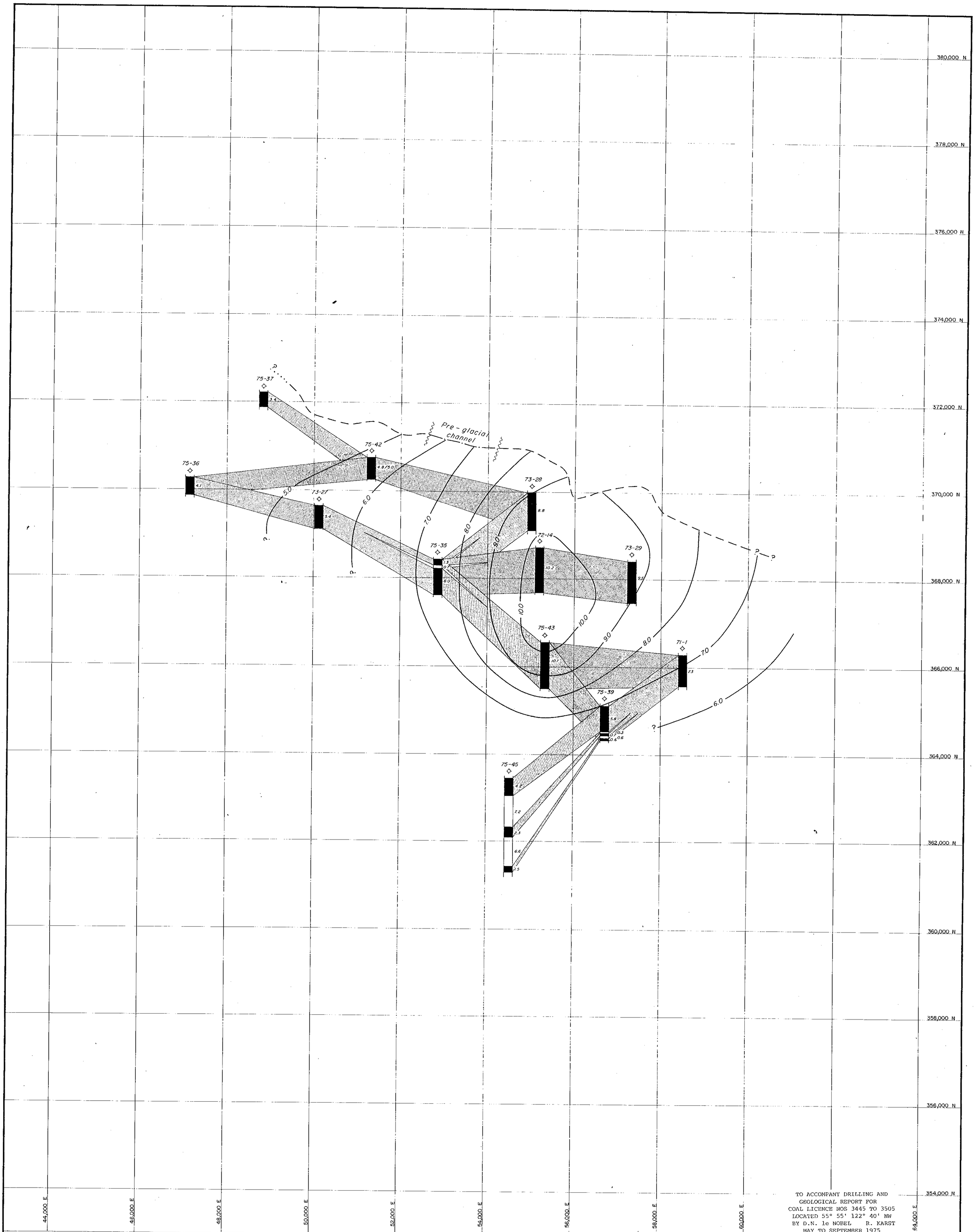
PANEL SECTION BED NO'S. 26 & 27
NORTH OF SEVEN MILE CREEK

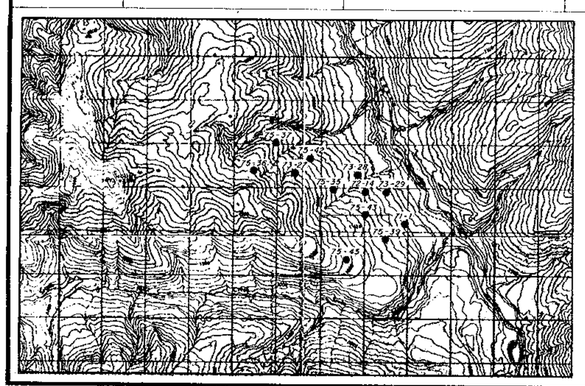
Work by D.N. LE NOBEL R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 10'

1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

498

PR-CCK 75(2)A





LEGEND

75-45 ◇ DIAMOND DRILLHOLE

COAL BED OUTCROP, drillhole indicated

5.0 COAL BED NET THICKNESS CONTOUR, in feet

TO ACCOMPANY DRILLING AND GEOLOGICAL REPORT FOR COAL LICENCE NOS 3445 TO 3505 LOCATED 55° 55' 122° 40' NW BY D.N. le NOBEL R. KARST MAY TO SEPTEMBER 1975

PLATE 20

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK

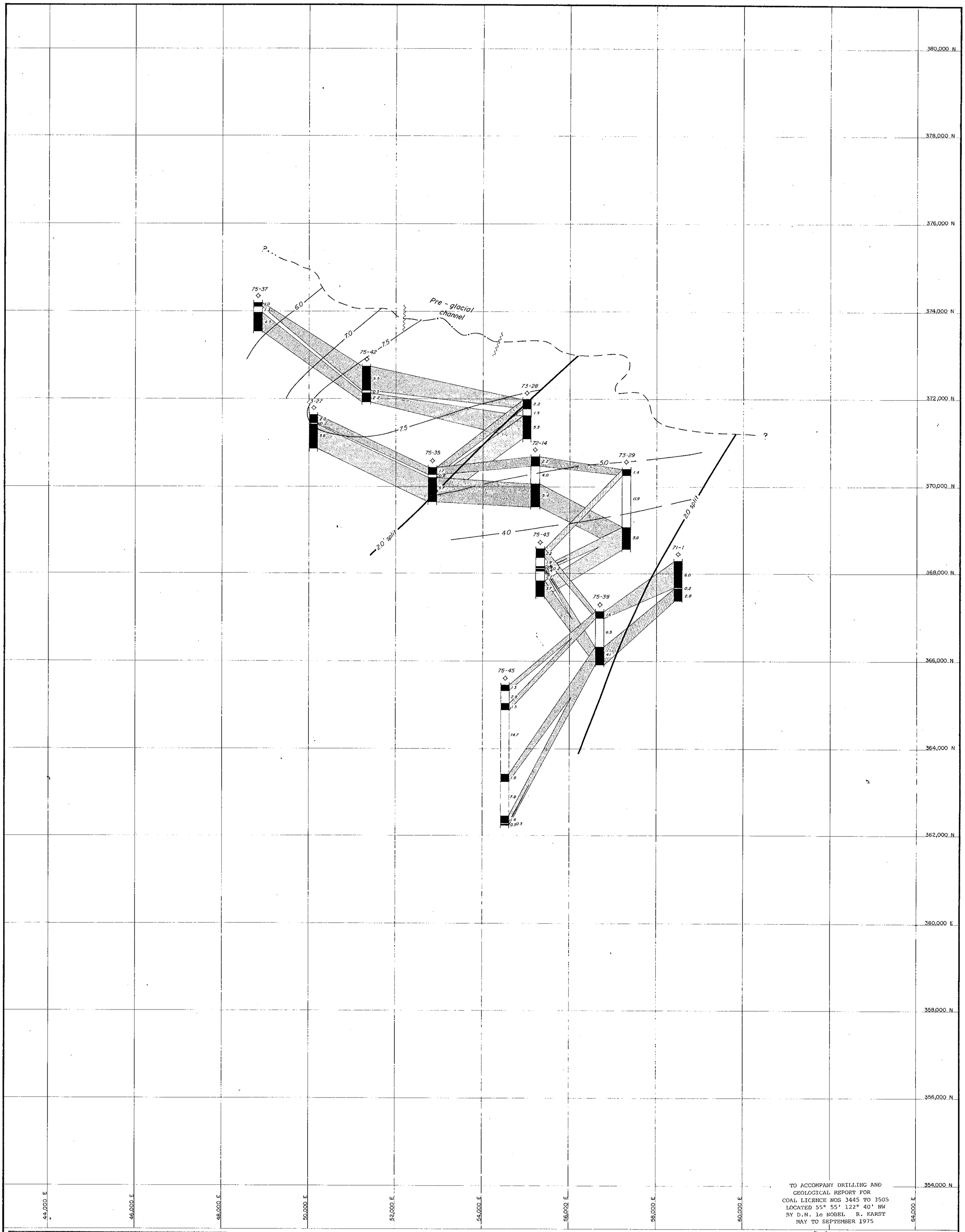
PANEL SECTION BED NO. 15

Work by: D.N. LE NOBEL, R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 10'

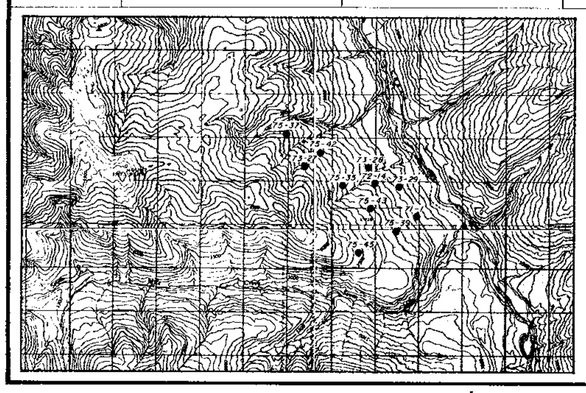
1000' 500' 0 1000' 2000'
SCALE IN FEET 1" = 1000'

498

Pr-CCK 75(2)A



TO ACCOMPANY DRILLING AND
GEOLOGICAL REPORT FOR
COAL LICENCE NOS 3445 TO 3505
LOCATED 55° 55' 122° 40' NW
BY D.N. le NOBEL R. KARST
MAY TO SEPTEMBER 1975



LEGEND

75-45 ◇ DIAMOND DRILLHOLE

COAL BED OUTCROP, drillhole indicated

6.0 COAL BED NET THICKNESS CONTOUR, to the 2.0 foot split } in feet

4.0 COAL BED NET THICKNESS CONTOUR, lower bench only }

PLATE 21

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK

PANEL SECTION BED NO. 14

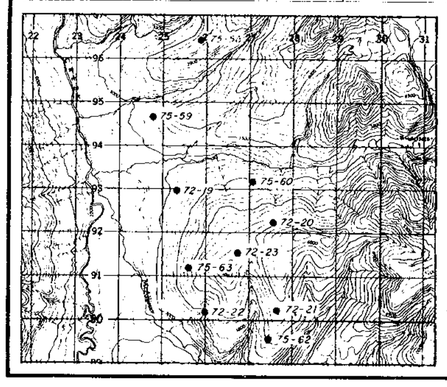
Work by D.N. LE NOBEL R. KARST	Date: OCTOBER 1975	NTS Ref 93 O/15
Drawn by G.Y. SMEETON	Revised	Vertical Scale: 1" = 10'

1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

498

PR-CCK 75(2)A

75-58
75-59
75-60
72-19
72-20
72-21
72-22
72-23
75-63
75-62
?
3700
3800
3900
4000
4100
4200
4300
4400
4500
4600
6.0'
5.0'
4.4/5.7'
5.0'
6.0'
336,000 N
334,000 N
332,000 N
330,000 N
328,000 N
326,000 N
324,000 N
322,000 N
320,000 N
318,000 N
316,000 N
314,000 N
312,000 N
310,000 N
78,000 E
80,000 E
82,000 E
84,000 E
86,000 E
88,000 E
90,000 E
92,000 E
94,000 E
98,000 E



LEGEND

- ◇ DIAMOND DRILLHOLE
- ....50'.... ISOPACH CONTOUR
- 4100 STRUCTURE CONTOUR, assumed, defined
- OUTCROP CONTOUR, assumed, defined

498

TO ACCOMPANY DRILLING AND
GEOLOGICAL REPORT FOR
COAL LICENCE NOS 3445 TO 3505
LOCATED 55° 55' 122° 40' NW
BY D.N. leNOBEL R. KARST
MAY TO SEPTEMBER 1975

PLATE 22

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK EAST HALF

STRUCTURE & ISOPACH INTERPRETATION OF UPPER SEAM

(Mc ALLISTER AREA)

Work by D.N. LENOBEL, R. KARST	Date: NOVEMBER 1975	NTS Ref 93 O/16
Drawn by GAIL Y. SMEETON	Revised	Vertical Scale: 1" = 10'

1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

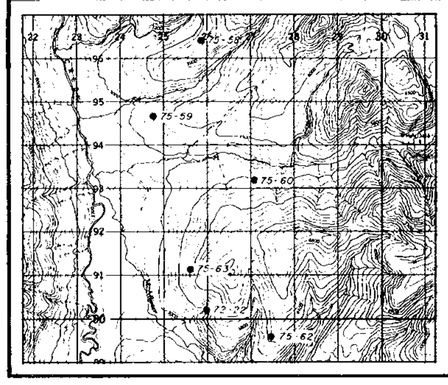
PR-CCK 75(2)A

336,000 N
334,000 N
332,000 N
330,000 N
328,000 N
326,000 N
324,000 N
322,000 N
320,000 N
318,000 N
316,000 N
314,000 N
312,000 N
310,000 N

78,000 E
80,000 E
82,000 E
84,000 E
86,000 E
88,000 E
90,000 E
92,000 E
94,000 E
96,000 E

75-38
75-59
75-60
3.2'/3.4'
75-63
4.5'/5.0'
72-22
5.2'
75-62
1.7'

2500
2600
2700
2800
2900
3000
3100
3200
3300
3400
3500
3600
3700
3800
3900
5.0'
4.0'
3.0'
2.0'



LEGEND

- DIAMOND DRILLHOLE
- 50' ISOPACH CONTOUR
- 3100 STRUCTURE CONTOUR, assumed, defined
- OUTCROP CONTOUR, assumed, defined
- FAULT

TO ACCOMPANY DRILLING AND
GEOLOGICAL REPORT FOR
COAL LICENCE NOS 3445 TO 3505
LOCATED 55° 55' 122° 40'NW
BY D.N. leNOBEL R. KARST
MAY TO SEPTEMBER 1975

PLATE 23

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

CARBON CREEK EAST HALF

STRUCTURE & ISOPACH INTERPRETATION OF LOWER SEAM

(Mc ALLISTER AREA)

Work by D.N. LE NOBEL, R. KARST	Date NOVEMBER 1975	NTS Ref 93 O/16
Drawn by GAIL Y. SMEETON	Revised	Vertical Scale: 1" = 10'

1000' 500' 0 1000' 2000'
1" = 1000'
SCALE IN FEET

498

PR-CCK 75(2)A