UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of Minerals Exploration
224 New Customhouse
Denver 2, Colorado
November 10, 1958

OFFICIAL FILE COPY
O. M. E.
RECEIVED NOV 13 1958

DATE	INITIALS	CODE
11/13	C	220
"	[illegible]	110
"	Murphy	700

Memorandum

To: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4742 (Uranium) Contract Idm-E1133, McAlester Fuel Company, (Star claims and leased land) Fall River County, South Dakota - FINAL REPORT

Enclosed are two copies of a memorandum to T. A. Christensen, dated November 4, 1958, relative to final payment under the terms of the subject contract.

J. W. Townsend

Enclosures

EXTRA COPY O. M. E. RECEIVED NOV 13 1958		
DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado
November 4, 1958

Memorandum

To: T. A. Christensen

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4742 (Uranium) Contract Idm-E1133, McAlester Fuel Company, (Star claims and leased land) Fall River County, South Dakota - FINAL PAYMENT

Reference is made to our memorandum of May 15, 1958, whereby we forwarded the final Form MF-104, Operator's Monthly Report and Voucher, for the month of March 1958, and requested that you withhold an amount of $500.00, pending resolution of matters prerequisite to closing the account.

The Operator's final report has been received, therefore, final payment to the Operator is to be made on the following basis, which is in conformance with the Report of Review of reported project costs by the Contract Administration and Audit Division, OME, dated October 27, 1958.

<u>Basis for Final Payment</u>

Total accepted cost	$47,905.30
Government participation at 75 percent	35,[illegible].98
Total prior payments	35,[illegible].98
Balance due the Operator	$ 500.00

Original signed by
J. W. TOWNSEND
J. W. Townsend

JEC:bmh

cc: Chmn. Op. Comm. (2)
Harshman
Marshall, OME/DPC
Corres.file, Reg. III
MF-104 file, Reg. III
Cooper
Chron

Paid $500.00
RRC

11-7-58

DMEA-59-60

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION III

FINAL DISTRIBUTION

MADE APR 10 1958

Administrative Audit Difference Statement

Mulhattan Fuel Company
P. O. Box 703
Mulhattan, Oklahoma

Date: April 8, 1958
Payee's Reference: January 1958

DMEA-474v

Gentlemen:

OFFICIAL FILE COPY
DMEA
RECEIVED APR 14 1958

DATE	INITIALS	CODE
5	C	226
11	Vfd	110
	Murphy	700

Upon examination of the above Payee's Reference a difference was found which made it necessary to suspend your account accordingly:

Amount Claimed	$	22,410.54
Difference	$	14.56
Amount Approved	$	22,395.98

The reason for the difference was due to:

The cost for 545 feet of drilling is reported for hole M-93; however, only 532 feet is reported on the lithologic and radiometric logs. The reported cost, including Incidental Allowance for 13 feet of drilling, is disallowed.

Disallowed reported cost for 13 feet drilling at $1.00 per foot -----	$13.00
Disallowed Incidental Allowance for 13 feet drilling at $0.12 per foot ----------	1.56
Total amount disallowed ----------	14.56

Any reclaim for deductions made above must be supported by the ORIGINAL of this form.

Very sincerely yours,

N. E. Stokes
Audit Section

R-III-B & F Form No. 4
D

224 New Customhouse
Denver 2, Colorado
April 7, 1958

Memorandum

To: T. A. Christensen

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4742 (Uranium) Contract Idm-E1133, McAlester Fuel Company, (Star claims and Leased Lands) Fall River County, South Dakota - Operator's Monthly Progress Report for the month of January, 1958

Enclosed are the original and four copies each of Forms MF-104 and MF-104A, Operator's Narrative Report, and Engineer's Report for the above period.

The work is being performed partly under independent subcontract, and partly at fixed unit costs. The drilling rates are as low or lower than the rates contained in the lowest and best bid submitted with the application. Under the circumstances, the rates for the work performed under independent subcontract are considered to be reasonable.

Two arithmetical errors were made by the Operator on Forms MF-104 and MF-104A for November, 1957. Correction has been made on the January 1958 voucher, resulting in additional Stage I costs, as follows:

Incidental Allowance	$10.00
Analyses	6.50
Total	$16.50

Except as otherwise indicated below, we consider that the Operator has complied with the intent of the contract, and the work for which payment is recommended is acceptable to the Government. Payment is recommended on the following basis contingent on your verification of the correctness of applicable rates and arithmetical accuracy of computations.

Disallowance, Drilling

The cost for 545 feet of drilling is reported for hole M-93, however only 532 feet is reported on the lithologic and radiometric logs. The reported cost, including Incidental Allowance for 13 feet of drilling is to be disallowed.

Disallow reported cost for 13 feet drilling at $1.00 per foot----------	$ 13.00
Disallow Incidental Allowance for 13 feet drilling at $0.12 per foot----------	1.56
Total amount to be disallowed----------	14.56

Reconciliation with Amount Reported by the Operator on Form MF-104 for January, 1958

Amount reported on Form MF-104 for January, 1958----------	22,410.54
Amount to be disallowed----------	14.56
Acceptable cost for January, 1958----------	22,395.98
Government participation at 75 percent----------	16,796.99

Remarks:

Date of Report----------February 24, 1958
Date Received in Field Office--------February 28, 1958
Date Received in Region Office-------March 31, 1958

Original signed by
E. N. HARSHMAN
E. N. Harshman

Enclosures

JDC:hmh

cc: Chmn. Op. Comm. (2)
DMEA/DFC
MF-104 file, Reg. III
Harshman) w/copy of
Townsend) Engr's Report
Chron

DMEA
DEPARTMENT OF THE INTERIOR
APR 4 - 1958
REGION III
DENVER, COLORADO

REGION III

Building 20
Denver Federal Center
Denver 2, Colorado
April 3, 1958

Memorandum

To: Acting Executive Officer, DMEA Field Team, Region III

From: E. O. Binyon

Subject: Docket DMEA 4743 (Uranium) Contract Idm-E1133,
McAlester Fuel Company (Star claims and leased lands)
Fall River County, South Dakota -- Progress report for January 1958

Inspections of the drilling completed during the period were made on February 3, and March 26, 1958. On the first inspection, Max Hortle, the company field representative, accompanied the engineer and Wm. N. Sharp, geologist, U. S. G. S., was on the second inspection.

The drilling reported, included 39 holes with a total aggregate footage of 19,592 feet. Two of the 39 holes, M-7 and M-9, were deepened to total depths of 510 and 520 feet respectively, which as reported totaled 390 and 502 feet of DMEA sponsored drilling. In the drilling report "Stage II Drilling" the depth of hole M-93 is shown as 545 feet, whereas the log shows a drilled and logged depth of 532 feet, or a difference of 13 feet, which is disallowed. Footages in the remaining 36 holes are correct.

Except as stated, the work was done in conformance with the terms of the contract and the holes are properly located. Documentation of the footage and standby time accompany the report.

According to the operator's hole data sheets, 5 holes, Hole M-54, 71, 72, 73, and 77 contained ore or near ore grade material. The eU_3O_8 percentages however are based on total c.p.s. and it is believed that this is in error. From the interpretation of the logs only one hole, hole 73 had near ore grade material (0.08 eU_3O_8 at 432.5-433.5). The eU_3O_8 in the remaining four mineralized holes ranged from .02 to .06. The depth range of the mineralization is about 430 to 510 feet below the collar.

The MF-104 and 104A forms were corrected by the operator to include the amounts that were in error on the December report. Corrections are noted on the forms.

It is recommended that the operator be paid $16,796.99 or the Government's share at 75 percent of $22,395.98 which is the total amount claimed less $14.56 the amount disallowed. ($22,410.54 - $14.56 = $22,395.98) The contract expires May 1, 1958.

EOB/mw cc: 6 Idm-E1133 chron

E. O. Binyon, mining engineer

Statement

A. R. ORMSBEE

Drilling Contractor

315 20th Stre | Box 255 | Boulder, Colorado

Date February 19, 1958

M Mr. Tom. Garrard

McAlester Fuel Company

McAlester, Oklahoma

The following statement is per our contract on the drilling of McAlester Fuel Company property near Edgemont, South Dakota		
19,592 feet drilling @ $1.00/foot	19,592	00
43 hours standby time @ $10.00	430	00
Total:	$20,022	00

Form MF-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.5

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of January, 1958 Docket No. DMEA 4742 Contract No. Idm-E 1133
Operator's Name McAlester Fuel Company Minerals Uranium
Address McAlester, Oklahoma
Contract Amount, $72,136.00 Government Participation: 75 % Amount, $54,102.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent ~~Exxxxxxx~~ Contracts:						
Drilling	19,592.00	17,581.00	37,173.00			
Bulldozing	0.00	0.00	0.00			
~~xxxxxxxx~~ Standby	430.00	240.00	670.00			
~~xxxxxx~~ Incidentals	2,351.00	~~2,109.76~~ 2,109.76	4,460.76			
Analysis	21.00	~~45.50~~ 59.00	66.50			
(2) Labor and Supervision:		235.04				
~~Labor~~ Stage I error	10.00					
Supervision Stage I analysis	6.50					
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
Totals	$22,910.54 ~~22,394.04~~	19,959.72 ~~19,976.22~~	42,370.26	22,395.98	19,959.72	42,355.70

DMEA
DEPARTMENT OF THE INTERIOR
FEB 26 1958
REGION III
DENVER, COLORADO

I certify that the above bill is correct and just and that payment therefor has not been received.
Date 2-24-58 *Payee McAlester Fuel Co.
Per Tom E. Garrard Title vice pres.

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:
$16,796.99
Signature
(Authorized Certifying Officer)
Date 4/9/58 Voucher DMEA 58-108
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. IDME 1133 in accordance with the terms of the contract.

Signature E. O. Bergman ($16,140.10) Title Mining Engineer Date March 28 1958

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: Checked for Engineering Allowability

Signature [illegible] Title acting Executive Officer Date APR 7 1958

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

Form MF-104A
(April 1962)

Budget Bureau No. 42-R1151.2

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of January 1958 Docket No. DMEA 4742 Contract No. Idm-E 1133

Operator's Name McAlester Fuel Company Minerals Uranium

Address McAlester, Oklahoma

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
			Stage I					
~~Drilling:~~ Non Core Drill	ft.	17,581.00	17581	17,581.00	17,581	1.00		
~~Crosscutting~~ Bulldozing	hr.	0.00	0	0.00	0			
~~Raising~~ Standby	hr.	240.00	24	240.00	24	10.00		
~~Shaft~~ Incidentals	ft.	~~2,109.72~~ Apr. 2,088.72	17581	2,109.72	17,581	0.12		
~~Winze~~ Analyses	Spl.	~~45.50~~ Apr. 18.00	13	45.50	13	3.50		
Drilling: Core								
Churn			Stage II					
~~Raise~~ Bulldozing	hr.	0.00	0	0.00	0			
~~Stoping~~ Non Core	ft.	19,592.00	19592	37,173.00	37,173	1.00		
~~Timbering~~ Standby	hr.	430.00	43	670.00	67	10.00		
~~Muck~~ Incidentals	ft.	2,351.04	19592	4,460.76	37,173	0.12		
~~Mill~~ Analyses	Spl.	21.00	6	66.50	19	3.50		
	Stage I Apr. 16.50							
TOTAL DISTRIBUTED COSTS		$22,410.54 ~~22,394.04~~		42,370.26				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief.

Date 2-24-58 Operator McAlester Fuel Co.

Per Tom T. Garrard Title Vice Pres.

NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

(Instructions on reverse)

REMARKS:

(For Government use only)

A O Bunyon
Under "Cost to Date" and "Units to Date" Stage I amounts and units are included in the Stage II figures

INSTRUCTIONS

Preparation of Form MF-104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

In preparing Form MF-104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 872894

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

FORD & FOX
Consulting Geologists
206 S. BROADWAY
RIVERTON, WYOMING

P.O. BOX 428

UL6-3468

February 15, 1958

Report on Work Accomplished Under Stage II
Exploration Project Contract
McAlester Fuel Company
Docket No. DMEA 4743 (Uranium)
Contract No. Idm-E 1133

DMEA
DEPARTMENT OF THE INTERIOR
FEB 21 1958
REGION III
DENVER, COLORADO

Introduction

All drilling under Stage II of the above named contract was completed on February 14, 1958. The drilling was restricted to the same property as the Stage I drilling reported on December 16, 1957, and was confined to offset drilling from holes of significant mineralization and favorable sands as stated in paragraph one of Stage II of the subject contract. Thirty-seven (37) rotary non-core holes were drilled and two (2) Stage I drill holes deepened during the Stage II program. The total Stage II drilling is 19,592 feet. Drill holes 80 and 83, approved by the DMEA Field Team were not drilled for reasons established subsequent to the request and approval. The advisability of drilling these holes was discussed with the DMEA Field Team and verbal authorization was given to cancel holes 80 and 83.

Exploration Drilling

Drilling under Stage II was started on January 2, 1958 and terminated on February 14, 1958. The drilling was done with two Failing and one Mayhew drill. Samples were collected and stored from both air and water circulated mediums.

Drill hole locations were surveyed with transit, and are plotted on the accompanying map with reference to U. S. Coast and Geodetic Survey

coordinates. Accompanying cross sections are east-west, looking north and conform to the north coordinates as shown on the drill hole location map.

Drill holes 7 and 9 were deepened as part of the Stage II drilling. It was decided that a savings could be made by deepening these holes rather than drilling new offsets. Hole 7 had previously been drilled to 250 feet. It was necessary to ream and re-drill this hole from a depth of 120 feet. Hole 9 was almost completely caved and needed to be re-drilled from 18 feet. A savings of $138.00 was made in deciding to re-enter the old holes 7 and 9.

Sampling and Drill Hole Probing

Samples were logged lithologically and checked for radioactivity with a Model 111B Scintillation Counter. Samples were collected and saved from each two foot interval, with duplicate samples taken for assay purposes from intervals that gave two or more times background count.

All holes were probed by Century Geophysical Corporation, Uranium Division, Grand Junction, Colorado. Probe records accompanying this report show Gamma, resistivity, and self potential curves. The accompanying chart of drill hole depths also gives information on mineralization encountered. The thickness of the intercept is taken from the deflection of the gamma curve and the counts per second (c.p.s.) given is maximum. The correlation curve attached to the Stage I report has been found to be 20% low, based on probing through extreme mud cake that is evident in the drill holes.

Geology and Mineralization

The Stage II drilling confirmed the presence of significant, wide spread mineralization in the Lakota formation. The Stage II drilling has

confirmed the presence of a color change in the Lakota sandstone coincident with the mineralization in holes 71, 72, 73, 76 and 78. The mineralized holes are all bordering an undrilled area to the east. It is interesting that the mineralization is increasing going eastward, and that a definite color change in the sands of the mineralized area is noticeable. At present there is insufficient data to correctly map this zone of color change and successfully predict the trend. However, the presently known position of the color change is a gradational contact striking northwest-southeast. East of this line the mineralization may extend along the strike and increase in grade and thickness.

Visible carnotite mineralization was found in hole 71. Samples from hole 71 assayed .05 and .06% U_3O_8 for six (6) feet. Higher grade assays were made from hole 54. Please refer to the attached assay data sheet.

Cross section maps included with this report show lithology based on sample description and electric logs. Stratigraphic units were easily picked from drill cuttings and experience gained in the Stage I drilling.

To date both Stage I and Stage II drilling have been successfully completed. Known geologic factors gained from Stage I drilling aided in keeping most of the Stage II holes in mineralization. The significant mineralized sections of Stage II drill holes suggest wide spread low grade, thick, sandstone type mineralization covering many acres. Stage III drilling may well indicate sufficient grade and tonnages to warrant core drilling and development.

Respectfully submitted,

Robert Ford

Robert Ford

STAGE II DRILLING

Hole No.	Total Depth	DMEA Sponsored	Additional Drilling	Mineralized Footage	Counts per Second
M-7	510'	390'	Stage I		
M-9	520'	502'	Stage I	479-496	85
M-51	485'	485'			
M-52	480'	480'			
M-53	500'	500'			
M-54	545'	545'		419-443 446-455	200 240
M-55	510'	510'			
M-56	536'	536'			
M-57	545'	545'		453-463 465-480 503-515	110 170 100
M-58	515'	515'			
M-59	526'	526'			
M-60	555'	555'		369-388 395-415	140 130
M-61	500'	500'			
M-62	550'	550'			
M-63	515'	515'			
M-64	480'	480'			
M-65	480'	480'			
M-66	500'	500'			
M-67	505'	505'			
M-68	300'	300'			
M-69	300'	300'			
M-70	300'	300'			
M-71	536'	536'		427-457 491-515	240 210
M-72	552'	552'		433-444 521-530	55 280

Hole No.	Total Depth	DMEA Sponsored	Additional Drilling	Mineralized Footage	Counts per Second
M-73	550'	550'		421-443 495-501	305 160
M-74	552'	552'		463-473	55
M-75	540'	540'			
M-76	545'	545'			
M-77	536'	536'		427-442 444-466	55 265
M-78	555'	555'			
M-79	538'	538'			
M-81	510'	510'			
M-82	545'	545'			
M-84	515'	515'		321-329	40
M-85	555'	555'		420-425	110
M-86	514'	514'		325-331	50
M-87	515'	515'		350-364	35
M-88	470'	470'			
M-93	545'	545'			
	Total:	19,592			

CHEMICAL ANALYSIS REPORT
FOR
McALESTER FUEL COMPANY

Uranium Center Laboratory
915 Elk Drive
Riverton, Wyoming

Lab. No.	Sample No.		$\%U_3O_8$
42-1	Hole 71	460-462	.05
42-2	Hole 71	462-464	.05
42-3	Hole 71	464-466	.06
43-21	Hole 54	452-454	.07
43-22	Hole 54	476-478	.03
43-23	Hole 54	478-482	.02

Assayer - John K. Schneider
A.E.C. Umpire Analyst

HOLE NO. 7

250-270	Gray shale.
270-280	Gray silty sandstone.
280-296	Gray shale.
296-306	Gray silty sandstone.
306-312	Gray shale.
312-338	Gray fine-grained sandstone. 2' quartzitic sand.
338-350	Dark gray shale.
350-368	Gray silty sandstone.
368-374	Dark gray shale.
374-508	Gray fine-grained sandstone. 2' quartzitic sandstone. 2' bed black shale 288-290. Muddy 380-400. Carbonaceous 450-490. Changes to pink 490-508.
508-510	Jm.

HOLE NO. 9

Hole deepened

200-272	Light red fine-grained sandstone.
272-306	Dark gray silty mudstone.
306-420	Gray fine-grained sandstone.
420-430	Dark gray mudstone.
430-472	Gray fine-grained sandstone. Some white silt from 446-470.
472-516	Gray fine to medium-grained sandstone.
516-520	Jm. Green shale.

HOLE NO. 51

0-6	Overburden
6-16	Buff medium to coarse-graned sandstone.
16-28	Light brown fine-grained sandstone.
28-34	Dark green silt with mud.
34-38	Red fine-grained sandstone. Iron stain.
38-54	White to buff fine-grained sandstone.
54-82	Dark gray mudstone with silt.
82-86	Red fine-grained sandstone. Iron stain.
86-134	Buff fine to medium-grained sandstone. Lim. stain 112-114. Lim. stain 130-134.
134-164	Dark gray muddy silt.
164-172	Buff coarse-grained sandstone.
172-178	Dark gray mudstone.
178-302	Light gray very fine grained sandstone. Lim. 178-180. Iron stain 194-198. Color gray 200-. Medium gr. 200-220. Went to water 290.
302-356	Red fine-grained sandstone.
356-380	Dark gray mudstone.
380-388	Gray fine-grained sandstone.
388-438	Dark gray mudstone.
438-478	Green silt.
478-485	Jm

HOLE NO. 52

0-2	Overburden.
2-16	Buff fine-grained sandstone.
16-26	Brown siltstone. 22-26 Iron stain.
26-36	Dark gray muddy siltstone.
36-44	Fine-grained sandstone. 36-40 Limonite stain.
44-84	Dark gray muddy siltstone.
84-94	Muddy fine-grained sandstone. Iron stain.
94-118	Buff medium to coarse-grained sandstone. (channel ?)
118-154	Dark gray muddy siltstone. Mud increases with depth.
154-204	Buff medium to coarse-grained sandstone. (channel ?) 202-204 Limonite stain.
204-210	Dark gray mudstone.
210-220	Dark brown fine-grained sandstone. Iron stain.
220-260	Dark gray muddy siltstone.
260-280	Pink fine-grained sandstone.
280-290	Dark gray fine-grained sandstone with mud.
290-352	Pink grading to white fine-grained sandstone.
352-376	Dark gray fine-grained sandy mudstone.
376-380	Light gray fine-grained sandstone.
380-390	Dark gray sandy mudstone.
390-418	Light gray fine-grained sandstone.
418-420	Light gray mudstone.
420-436	Light gray fine-grained sandstone.
436-446	Dark gray sandy mudstone.
446-456	Light gray fine-grained sandstone.
456-468	Dark gray mudstone. 460-464 (Sample missing).
468-480	Jm

HOLE NO. 53

*0-20	Medium brown sandstone. Iron stained. Channel. Some pyrite.
20-54	Dark grey mudstone. Some silt near bottom.
54-72	White fine-grained to medium sandstone.
72-110	White medium grained sandstone. Channel. Some coarse with pyrite near base.
110-138	White to light buff fine to medium grained sandstone.
138-142	Red-brown coarse-grained sandstone. Pyrite. Channel.
142-148	Dark gray shale.
148-150	Red-brown medium-grained sandstone. Pyrite.
150-156	Pale green silty shale.
156-170	White fine-grained sandstone.
170-176	Pale buff fine to medium-grained sandstone.
176-186	Buff fine-grained sandstone.
186-202	Dark grey muddy siltstone.
202-216	Red-buff fine-grained sandstone.
216-220	Dark gray mudstone.
220-266	Dark grey to light gmey muddy siltstone with depth. Less mud with depth. Very little mud 244.
266-272	Dark gray to black silty mudstone.
272-292	Dark gray muddy silt.
292-314	Gray very fine-grained sandstone.
314-340	Pink to white very fine-grained sandstone.
340-342	Dark gray mudstone.
342-490	Pink to white very fine-grained sandstone.
490-500	White claystone.

* Very little effervescence in 0-20. None in channel sands below.

HOLE NO. 54

0-58	Buff and brown fine to medium-grained sandstone.
58-80	Dark gray silty mudstone.
80-198	White fine-to-medium-grained sandstone. Lim. stain 80-82. Iron stain.
198-210	Dark gray muddy silt.
210-220	Brown fine-grained siltstone.
220-252	Buff fine to medium-grained sandstone.
252-272	Dark gray silty mudstone.
272-286	Gray to dark gray fine-grained sandstone. Some mud.
286-292	Dark gray sandy mudstone.
292-542	Gray fine-grained sandstone. Carbonaceous 328-342 and 382-440.
542-546	Jm. Pale green shale.

HOLE NO. 55

0-46	Brown to red-brown medium to coarse-grained sandstone. Channel. Some pyrite.
46-56	Dark gray silty mudstone.
56-100	Dark gray muddy silt.
100-152	White medium-grained sandstone. Channel. Finer with depth.
152-164	Gray-brown siltstone.
164-182	Black shale.
182-194	Brown silt.
194-206	Gray silt.
206-236	Light gray fine-grained sandstone.
236-246	Gray silt to mud.
246-300	Very fine-grained sandstone to mud. Went to water at 300.
300-308	Green silt.
308-428	White very fine-grained sandstone. Turns pink at 340.
428-504	Green silt and black shale.
504-510	Pale green claystone. Mudstone.
	No calcium cement in channel.

HOLE NO. 56

0-46	Buff fine-grained sandstone.
46-62	Brown medium to coarse-grained sandstone. Red at 48-52.
62-78	Black shale.
78-128	Gray fine to medium-grained sandstone.
128-166	Dark gray shale. Some silt. Iron stain 142-144.
166-248	Red-brown fine to medium-grained sandstone. Iron stain 168-172, 254-266, 276-278.
248-262	Black shale to 252 then dark gray.
262-282	Red-buff fine-grained sandstone.
282-288	Black shale.
288-314	Gray fine-grained sandstone.
314-322	Dark gray muddy siltstone.
322-334	Gray fine-grained sandstone.
334-336	Dark gray shale.
336-344	Gray fine-grained sandstone.
344-348	Dark gray mudstone.
348-352	Gray fine-grained sandstone.
352-354	Black shale.
354-490	Gray fine-grained sandstone with mud at 358-360, turns pink at 370, went to water 440.
490-498	Green silt.
498-532	Pink fine-grained sandstone.
532-536	Jm. Green clay.

Hole No. 57

0-2	Overburden.
2-64	Buff fine to medium-grained sandstone with depth. Coarse 6-12. Lim. stain 12-26. Iron stain 34-52.
64-82	Dark gray mudstone with silt.
82-144	Red-brown fine-grained sandstone. Strong iron stain 82-86, 196-198 and 116-152.
144-188	Pink coarse-grained sandstone.
188-192	Dark gray mudstone.
192-204	Buff medium-grained sandstone.
204-208	Dark gray shale.
208-244	Light buff to 216 then red brown fine-grained sandstone. Lim. stain 220-236. Iron stain 236-244.
244-250	Dark gray muddy silt.
250-274	Buff fine-grained sandstone. Iron stain 250-252 and 264-274.
274-284	Green shale.
284-286	Green fine-grained sandstone.
286-296	Dark gray sandy mudstone.
296-538	Gray fine-grained sandstone with mud. Mud at 296-298, 320-326, 334-338, 388-390, 534-538. Carbonaceous from 448 to 514. Color pink at 480-508.
538-	Jm Green shale.

HOLE NO. 58

0-50	Buff to light buff medium-grained sandstone. Channel? Iron stain 32-36. Lim. stain 48-50.
50-54	Dark gray mudstone.
54-56	Brown fine-grained sandstone.
56-74	Dark gray silty mudstone.
74-120	Light gray medium-grained sandstone. Some pyrite. Trace mud 84-88. Gets pebbly at 90-120. Quartz.
120-128	Light gray silt.
128-134	Samples missing.
134-154	Light gray silt.
154-170	Dark gray mudstone.
170-218	White fine-grained sandstone.
218-326	Green silt. Much pyrite.
326-412	White fine-grained sandstone. Color turns red at 344-412.
412-504	Green silt.
504-515	Jm.

HOLE NO. 59

0-4	Overburden. Brown sand.
4-44	Light buff fine to medium-grained sandstone. Iron stain 22-24, 38-40. Lim. stain 24-34.
44-60	Dark gray mudstone with silt.
60-110	Buff to white fine to medium-grained sandstone with depth. Lim. stain 40-72 and 108-110.
110-132	Dark gray muddy siltstone.
132-156	Dark gray sandy mudstone.
156-188	Brown fine to medium-grained sandstone. Iron stain 182-188.
188-214	Dark gray fine to medium-grained muddy sandstone.
214-228	Gray siltstone.
228-266	Green shale.
266-292	Dark gray mudstone.
292-328	Black shale.
328-366	White fine-grained sandstone.
366-442	Green silt.
442-504	White fine-grained sandstone.
504-514	White siltstone.
514-520	White fine-grained sandstone.
520-525	Jm. Green shale.

HOLE NO. 60

0-16	Overburden. Fine brown sand.
16-64	Buff fine-grained sandstone. Lim. stain 60-64.
64-86	Dark gray silty mudstone.
86-106	Light brown fine-grained sandstone. Lim. stain 86-88.
106-114	Red medium to coarse-grained sandstone.
114-160	Buff fine to medium-grained sandstone. Went to water 116.
160-192	Dark gray mudstone.
192-206	Buff fine-grained sandstone.
206-240	Brown very coarse-grained sandstone. Lim. stain.
240-250	Red-brown mudstone and clay.
250-254	Red fine to medium-grained sandstone.
254-338	Dark gray muddy silt.
338-340	Gray fine-grained sandstone.
340-346	Dark gray mudstone.
346-348	Gray fine-grained sandstone.
348-350	Dark gray mudstone.
350-384	Gray fine-grained sandstone.
384-394	Brown mudstone.
394-550	Pink fine-grained sandstone. Gray at 504.
550-555	Jm. Green shale.

HOLE NO. 61

0-2	Overburden.
2-32	Buff fine to medium-grained sandstone.
32-54	Dark gray silty mudstone.
54-78	Red fine to medium grained sandstone. Buff at 66-78.
78-122	Buff medium to coarse-grained sandstone.
122-152	Dark gray muddy silt.
152-206	White very fine grained sandstone.
206-210	Dark gray sandy mudstone.
210-212	Gray fine-grained sandstone.
212-318	Dark gray muddy silt. Grades to mudstone with depth.
318-322	Green silt.
322-336	Gray fine to medium-grained sandstone.
336-342	Dark gray mudstone.
342-446	Gray fine to medium-grained sandstone.
446-500	Green shale.

HOLE NO. 62

0-76	Buff fine to medium-grained sandstone. Lim. stain 66-76.
76-118	Dark gray silty mudstone.
118-126	Buff fine-grained sandstone.
126-130	Dark gray muddy siltstone.
130-274	Buff fine to medium-grained sandstone. Coarse-grained at 168.
274-400	Light gray very fine-grained sandstone.
400-548	Green siltstone.
548-550	Jm. Green shale.
	Samples destroyed in part by sample collector.

HOLE NO. 63

0-2	Overburden.
2-26	Gray brown silt with clay. Occasional iron stain.
26-32	Buff fine-grained sandstone.
32-42	Buff medium-grained sandstone. Channel.
42-44	Dark brown mudstone.
44-128	Buff fine to medium-grained sandstone. Color changes to red-brown with depth. Channel??
128-144	Black mudstone.
144-150	Gray siltstone.
150-160	Gray fine-grained sandstone.
160-162	Dark gray mudstone.
162-206	White medium to coarse-grained sandstone. Occasional lim. stain. Went to water at 200.
206-234	Dark gray mudstone.
234-256	White fine-grained sandstone.
256-274	Green silt. Some black shale.
274-280	White fine-grained sandstone.
280-286	Green siltstone.
286-290	White fine-grained sandstone.
290-306	Green silt.
306-410	White fine-grained sandstone.
410-428	Green silt.
428-438	Pink fine-grained sandstone.
438-448	Green silt.
448-462	Red very fine-grained sandstone.
462-515	Green silt.

HOLE NO. 64

0-20	Overburden. Brown sand and pebbles.
20-36	Brown fine-grained sandstone.
36-76	Dark gray muddy silt.
76-84	Gray fine-grained muddy sandstone.
84-96	Dark gray muddy silt.
96-120	Gray fine-grained sandstone.
120-160	Dark gray fine-grained muddy sandstone.
160-218	Buff medium to coarse-grained sandstone with depth. Lix. stain 160-164.
218-234	Brown siltstone.
234-256	Green shale. Went to water.
256-368	White fine-grained sandstone.
368-406	White medium to coarse-grained sandstone. Some pyrite.
406-428	Dark gray mudstone.
428-434	White fine-grained sandstone.
434-440	Black shale.
440-466	Brown shale.
466-480	Jm. Dirty gray claystone.

HOLE NO. 65

0-20	Overburden. Brown sand, pebbles and clay.
20-40	Dark gray muddy silt.
40-50	Gray very fine-grained sandstone. Lim. stain 48-50.
50-86	Dark gray muddy silt.
86-122	Gray very fine-grained sandstone.
122-178	Buff medium to coarse-grained sandstone. Went to water 164.
178-204	Dark gray mudstone. Iron stain 204-214.
214-240	Gray fine-grained sandstone.
240-250	Gray mudstone.
250-256	Buff medium to coarse-grained sandstone. Calcium.
256-286	Dark gray mudstone.
286-298	Gray fine-grained sandstone.
298-366	Black shale.
366-388	Gray fine-grained sandstone.
388-408	Black shale.
408-420	Gray fine-grained sandstone.
420-480	Black shale.
480-568	Brown mudstone.
568-580	Jm. (?) Dirty gray clay. (off.)

HOLE NO. 66

0-20	Overburden. Brown sand.
20-38	Brown very fine-grained sandstone. (Mud 20-28).
38-106	Dark gray muddy silt.
106-170	Gray very fine-grained sandstone to 130 then pink to 150 then white. Fine to medium-grained at 150-170.
170-210	Dark gray silty mudstone. Water at 180-
210-226	Gray fine-grained muddy sandstone.
226-230	Dark gray mudstone.
230-270	Green shale.
270-378	Brown fine to medium-grained sandstone.
378-406	Dark gray mudstone.
406-484	Brown fine to medium-grained sandstone. Clay stringers from 448 to 484.
484-506	Jm. Green shale.

HOLE NO. 67

0-26	Brown gravels and sand. 1" in diameter.
26-120	Dark gray clay and mudstone.
120-188	Red conglomerate. Calcium cement.
188-200	Green shale.
200-224	Red conglomerate. Calcium cement. Pebbles up to 1" in diameter.
224-420	Dark gray medium to coarse-grained sandstone. Very coarse at 312.
420-436	Black carbonaceous shale.
436-476	Very coarse sandstone. Granular.
476-496	Green siltstone.
496-505	Jm. Green shale.

Samples 420-505 pretty well contaminated.

HOLE NO. 68

0-10	Overburden.
10-164	Black shale. Iron stain 130-140. Some sandstone stringers 150-164.
164-186	White fine-grained sandstone.
186-196	Black mudstone.
196-208	White fine-grained sandstone.
208-212	Black mudstone.
212-218	White fine-grained sandstone.
218-240	Black mudstone.
240-300	White fine-grained sandstone. Some white clay 294-300.

Hole No. 69

0-20	Overburden.
20-92	Black shale.
92-124	White fine-grained sandstone.
124-160	Red claystone to 144 then gray. Iron stain 124-144.
160-172	White medium grained sandstone.
172-190	Gray claystone.
190-202	White fine to medium-grained sandstone. Pyrite.
202- 210	Gray claystone.
210-246	Black shale. Stringers of coarse-grained sand from 228-246.
246-252	White fine-grained sandstone.
252-300	Green (pale) silt.

HOLE NO. 70

0-10	Overburden - Brown shale, sand, pebbles.
10-134	Black shale.
134-214	Red mudstone, turns gray at 160.
214-218	Red fine-grained sandstone.
218-228	Red mudstone.
228-266	Red sandstone.
266-300	Green siltstone.
	Water all the way.

HOLE NO. 71

0-2	Overburden. Brown sand.
2-44	Buff fine-grained sandstone. Lim. stain 16-44.
44-48	Brown sandy mudstone.
48-52	Pink very fine-grained sandstone.
52-74	Dark gray mudstone.
74-98	Brown fine-grained sandstone. Some clay 76-82. Turns white at 58.
98-180	White medium to coarse-grained sandstone. Trace iron 116-120. 176 to 180, brown.
180-200	Buff-brown fine-grained sandstone, went to water at 200.
200-208	Gray green silty shale.
208-222	Light brown fine to medium-grained sandstone.
222-226	Dark gray mudstone.
226-242	Light brown fine to medium-grained sandstone.
242-262	Dark gray mudstone.
262-338	Gray fine-grained sandstone. Pyrite. Also contains stringers of black mudstone throughout.
338-350	Black mudstone.
350-430	Gray silt with mud.
430-478	Gray fine-grained sandstone. At 462-464 visible carnotite.
478-518	Pink fine-grained sandstone.
518-536	Dark gray mudstone.

HOLE NO. 72

0-46	Buff fine-grained sandstone.
46-60	Buff medium-grained sandstone.
60-80	Dark gray mudstone.
80-90	Brown fine-grained sandstone, with gray clay.
90-190	Brown-buff medium to coarse-grained sandstone. High lim. stain 98-100. Color turns white 108, 138-140. Color changes to dark brown at 176 to 186.
190-210	Gray fine-grained sandstone. Lime stain 196-198. Color changes to brown at 198.
210-220	Samples missing. Went to water at 210.
220-236	Pink-buff, fine to medium-grained sandstone.
236-242	Dark gray mudstone.
242-266	Buff fine to medium-grained sandstone.
266-284	Dark gray mudstone.
284-338	Gray fine-grained sandstone.
338-344	Dark gray mudstone.
344-404	Gray fine-grained sandstone.
404-412	Black mudstone.
412-496	Gray fine-grained sandstone. Mudstone stringers throughout.
496-512	Black shale.
512-552	Gray fine to medium-grained sandstone. Mud stringers throughout.
552-	Jm. Green shale.

HOLE NO. 73

0-4	Overburden. Dark brown sand.
4-58	Buff fine-to-medium-grained sandstone.
58-66	Brown very fine-grained sandstone. Iron stain.
66-84	Dark gray silty mudstone.
84-218	Buff fine-grained sandstone. Lim. stain 84-88. Iron stain 110-118.
218-220	Dark green muddy silt.
220-224	Red-brown very fine-grained sandstone. Iron stain.
224-272	Brown to buff medium to coarse-grained sandstone with depth.
272-288	Dark gray muddy silt.
288-294	Dark gray fine-grained muddy sandstone.
294-308	Gray fine-grained sandstone.
308-314	Dark gray sandy mudstone.
314-342	Gray fine-grained sandstone.
342-352	Dark gray sandy mudstone.
352-516	Gray fine-grained sandstone. Mud stringers throughout.
516-534	Pink fine-grained sandstone.
534-555	Jm. Green shale.

HOLE NO. 74

0-64	Buff fine to medium-grained sandstone.
64-66	Dark gray mudstone.
66-68	Red fine-grained sandstone. Iron stained.
68-90	Dark gray mudstone.
90-148	Buff medium to coarse-grained sandstone. Lim. stained 120-138.
148-168	Dark gray muddy silt.
168-186	Buff fine-grained sandstone. Some mud at 178-180.
186-192	Dark gray mudstone.
192-214	Gray silt.
214-262	Buff fine to medium-grained sandstone.
262-268	Dark gray muddy silt.
268-270	Dark gray fine-grained muddy sandstone.
270-282	Light brown fine-grained sandstone.
282-288	Dark gray silty mudstone.
288-296	Gray silt.
296-298	Dark gray silty mudstone.
298-318	Gray silt.
318-332	Dark gray muddy silt.
332-348	Gray silt to mud at 344-346.
348-368	Dark gray fine-grained muddy sandstone.
368-378	Pink fine-grained sandstone.
378-390	Dark gray silty mudstone.
390-404	Pink fine-grained sandstone.
404-412	Dark gray fine-grained muddy sandstone.
412-470	Pink fine-grained sandstone.
470-484	Gray fine-grained sandstone.
484-492	Dark gray sandy mudstone.

HOLE NO. 74 Cont.

492-542 Pink fine-grained sandstone.

542-550 Jm. Green shale.

HOLE NO. 75

0-68	Buff fine to medium-grained sandstone. Some clay 16-28 (brown). Lim. stain 28-30 and 64-68. Iron stain 60-62.
68-86	Dark gray mudstone.
86-186	Brown fine to medium-grained sandstone, at 108 turns white. Iron stain 86-88.
186-192	Dark gray mudstone.
192-206	Brown fine to medium-grained sandstone.
206-218	Dark gray muddy silt.
218-236	Brown fine-grained sandstone.
236-246	Dark gray muddy silt.
246-276	Pink fine-grained sandstone.
276-294	Dark gray fine-grained muddy sandstone.
294-532	Gray fine-grained sandstone. Trace mud 200-202, 216-232, went to water at 422. Carbon 206-210.
532-536	Jm. Green clay.

HOLE NO. 76

0-38	Buff-brown fine to medium-grained sandstone. Lim. stain 0-2 and 8-16.
38-56	Buff fine-grained sandstone. Iron stain 42-48.
56-64	Buff fine to medium-grained sandstone.
64-88	Dark gray silty mudstone. Less silt with depth.
88-90	Red-brown fine-grained sandstone. Lim. stained.
90-92	Dark gray mudstone.
92-124	Buff fine-grained sandstone. Iron stain 98-114.
124-148	Gray medium to coarse-grained sandstone.
148-164	Dark gray silty mudstone.
164-166	Red fine-grained sandstone. Iron stained.
166-172	Dark gray muddy silt.
172-248	Light brown fine to medium-grained sandstone. Went to water at 186.
248-250	Dark gray silty mudstone.
250-278	Light brown fine to medium-grained sandstone.
278-312	Gray muddy silt.
312-510	Gray fine-grained sandstone. Stringers of mud throughout.
510-540	No sample.
540-545	Jm. Green shale.

HOLE NO. 77

0-6	Overburden. Brown sand.
6-38	Brown medium-grained sandstone.
38-72	Light buff fine to medium-grained sandstone. Lim. stain 56-62 and 70-72.
72-92	Dark gray silty mudstone.
92-108	Gray fine-grained muddy sandstone.
108-148	Buff fine-grained sandstone. Lim. stain 140-148.
148-202	Brown to buff medium to coarse-grained sandstone.
202-216	Red sandstone with mud stringers.
216-218	Dark gray mudstone.
218-232	Brown fine-grained sandstone.
232-236	Dark gray muddy silt.
236-244	Gray silt.
244-250-	Dark gray mudstone with silt.
250-290	Gray silt. Muddy at 266-270 and 276 and 290. Went to water at 282.
290-320	Gray fine-grained sandstone.
320-324	Dark gray mudstone.
324-424	Gray very fine-grained sandstone.
424-440	Green silt.
440-460	Dark gray mudstone.
460-462	Gray fine-grained sandstone.
462-484	Black shale.
484-528	Gray fine-grained sandstone. White silt stringers 492. At 520 pink sand.
528-536	Jm. Green shale.

HOLE NO. 78

0-2	Overburden. Brown sand.
2-60	Brown fine to medium-grained sandstone. Iron stain 68-70.
60-88	Dark gray mudstone.
88-184	Dark brown fine-grained sandstone. Iron stain 94-98, at 110 color changes to white and sands become medium to coarse-grained.
184-210	Brown very coarse-grained sandstone. Pyrite throughout. Some calcium.
210-232	Buff fine to medium-grained sandstone.
232-234	Dark gray mudstone.
234-256	Brown fine to medium-grained sandstone. Went to water at 244.
256-296	Green silt.
296-536	White fine-grained sandstone.
536-550	Gray medium -grained sandstone.
550-555	Jm. Green shale.

HOLE NO. 79

0-2	Overburden. Dark brown sand.
2-18	Buff fine to medium-grained sandstone.
18-60	Red fine-grained sandstone. Iron stained throughout.
60-86	Dark gray mudstone.
86-92	Red-brown fine-grained sandstone. Iron stained.
92-142	Buff medium-grained sandstone.
142-148	Dark gray muddy silt.
148-150	Red fine-grained sandstone. Iron stained.
150-214	Dark gray muddy silt.
214-238	Buff fine to medium-grained sandstone. Some iron staining at 214-216.
238-254	Dark gray fine-grained muddy sandstone.
254-304	Gray fine-grained sandstone. Some mud at 290-298.
304-338	Dark gray sandy mudstone.
338-364	Gray fine-grained sandstone.
364-506	Pink fine-grained sandstone.
506-514	Gray fine-grained sandstone.
514-524	No sample, went to water at 514.
524-530	Gray sandstone.
530-538.	Jm. Green shale.

HOLE NO. 81

0-54	Buff fine to coarse-grained sandstone.
54-80	Dark gray silty mudstone.
80-88	Brown fine-grained sandstone.
88-128	Buff fine to medium-grained sandstone.
128-132	Green silt.
132-158	Gray to buff fine to medium-grained sandstone.
158-168	Dark gray mudstone.
168-172	Green silt.
172-200	Buff fine to medium-grained sandstone. Lim. stain 186-200.
200-202	Dark gray mudstone.
202-218	Buff fine to medium-grained sandstone. Iron stain 202-204, 214-218.
218-220	Dark gray mudstone.
220-230	Pink fine-grained sandstone. Iron stain throughout.
230-234	Dark gray mudstone.
234-312	Gray fine-grained sandstone. Mud at 252-254, 260-262, 264-270, 290-296, 300-304.
312-320	Dark gray mudstone.
320-352	Gray fine-grained sandstone. Mud throughout.
352-492	Pink fine-grained sandstone. Mudstone at 386-388,
492-496	Dark gray mudstone.
496-504	Gray muddy fine-grained sandstone.
504-510	Jm. Green shale.

HOLE NO. 82

0-2	Overburden. Dark brown sand.
2-62	Buff fine to medium-grained sandstone. Lim. stain 42-58.
62-66	Dark gray silty mudstone.
66-68	Brown fine grained sandstone.
68-88	Dark gray silty mudstone. Less silt with depth.
88-104	Brown fine-grained sandstone. Iron stain 88-94. Lim. stain 96-98.
104-140	Buff medium to coarse-grained sandstone. Lim. stain 124-130.
140-146	Gray silt.
146-154	Dark gray silty mudstone.
154-186	Dark gray muddy siltstone.
186-242	Light brown to buff fine to medium-grained sandstone. High lim. stain 186-192, 218-220, 224-226.
242-250	Dark gray silty mudstone.
250-266	Pink fine to medium-grained sandstone.
266-292	Dark gray silty mudstone.
292-300	Pink fine-grained sandstone.
300-310	Dark gray silty mudstone.
310-386	Gray fine-grained sandstone. Muddy at 324-330, 334-340, 360-370.
386-544	Pink fine-grained sandstone. Pink-gray in places
544-546	Jm. Green shale.

HOLE NO. 84

0-34	Buff fine to medium-grained sandstone. Lim. stain 22-34.
34-56	Dark gray sandy mudstone.
56-60	Red-brown fine-grained sandstone.
60-152	Buff to gray fine to medium-grained sandstone.
152-154	Dark gray mudstone.
154-200	Buff fine to medium-grained sandstone. Lim. stained 154-156, 186-200.
200-206	Dark gray mudstone.
206-224	Buff fine to medium-grained sandstone.
224-236	Dark gray sandy mudstone.
236-282	Gray fine-grained sandstone slightly muddy. Less mud with depth.
282-286	Dark gray sandy mudstone.
286-328	Gray fine-grained sandstone. Muddy to 328.
328-336	Pink fine-grained sandstone.
336-338	Dark gray mudstone.
338-470	Pink fine-grained sandstone.
470-516	Gray fine-grained sandstone.
516-520	Jm. Green shale.

HOLE NO. 85

0-4	Overburden.
4-72	Light gray fine-grained sandstone. grades to light brown at 40 medium-grained, at 50 brown, medium-grained to coarse. Coarse 54-70. limonite 40-70.
72-90	Dark gray mudstone. Grades to red at 86-90.
90-102	Brown sandy clay, grades to red at 98-102.
102-148	Light gray fine-grained silty sandstone. Grades to medium-grained at 116. Coarse-grained 128. Buff medium-grained to fine-grained 134. Buff fine-grained 134-148.
148-156	Dark gray fine-grained muddy sand.
156-210	Light red fine-grained sandstone to 160. Buff 160-188 medium-grained, limonite 188-200, Buff fine-grained 200-210.
210-220	Brown sandy clay.
220-238	Buff silty sandstone.
238-250	Dark gray shale.
250-260	Buff fine-grained sandstone.
260-278	Gray sandy shale.
278-292	Dark gray shale.
292-300	Green shale.
300-310	Dark gray shale.
310-320	Buff fine-grained sandstone.
320-370	Gray silty sandstone. 8' shale at 230 and 256.
370-378	Dark gray shale.
378-555	Gray fine-grained silty sandstone. Grades to pink at 396, grades back to gray at 426 to 432, 432-555 Pink.
555-	Out of rod.

HOLE NO. 86

0-4	Overburden.
4-40	Buff medium-grained sandstone, brown coarse-grained 10-40, Limonite 4-40.
40-68	Sandy mudstone.
68-74	Maroon sandy clay.
74-116	Light gray medium to coarse-grained sandstone.
116-120	Light gray shale.
120-124	Brown coarse-grained sandstone.
124-134	Gray mudstone.
134-164	Dark gray shale.
164-178	Gray sandy shale.
178-200	Gray fine-grained sandstone.
200-212	Gray shale.
212-218	Gray silty sandstone.
218-224	Dark gray shale.
224-240	Gray fine-grained silty sandstone.
240-246	Dark gray shale.
246-254	Gray fine-grained silty sandstone.
254-262	Gray sandy shale.
262-280	Gray fine-grained muddy sandstone.
280-284	Dark gray shale.
284-336	Gray silty sandstone. Muddy 208-220.
336-350	Pink fine-grained sandstone.
350-376	Light buff fine-grained sandstone.
376-380	Dark gray shale.
380-480	Gray fine-grained silty sandstone.
480-484	Dark gray shale.
484-500	Gray fine-grained silty sandstone.
500-512	Jm.

HOLE NO. 87

0-8	Brown medium-grained sandstone. Limonite.
8-50	Buff fine-grained sandstone. Grades to pink at 40.
50-72	Dark gray sandy mudstone.
72-114	Buff fine-grained sandstone. Grades to yellow at 90. Limonite 90-114.
114-170	Dark gray shale.
170-220	Dark gray sandy shale.
220-250	Gray fine-grained silty sandstone.
250-254	Dark gray shale.
254-274	Gray fine-grained sandstone.
274-290	Dark gray shale.
290-320	Gray sandy shale.
320-330	Gray silty sandstone.
330-350	Dark gray shale.
350-400	Gray fine-grained silty sandstone.
400-450	Pink fine-grained sandstone.
450-512	Pink fine-grained silty sandstone.
512-515	Jm.

HOLE NO. 88

0-2	Overburden.
2-32	Buff fine to medium-grained sandstone.
32-54	Dark gray silty mudstone.
54-78	Red fine to medium-grained sandstone. Buff at 66-78.
78-122	Buff medium to coarse-grained sandstone.
122-152	Dark gray muddy silt.
152-206	White very fine-grained sandstone.
206-210	Dark gray sandy mudstone.
210-212	Gray fine-grained sandstone.
212-318	Dark gray muddy silt. Grades to mudstone with depth.
318-322	Green silt.
322-336	Gray fine to medium-grained sandstone.
336-342	Dark gray mudstone.
342-446	Gray fine to medium-grained sandstone.
446-470	Green shale.

HOLE NO. 93

0-12	Overburden.
12-26	Light brown fine-grained sandstone.
26-56	Light gray fine-grained sandstone.
56-66	Light gray medium-grained sandstone.
66-70	Brown coarse-grained sandstone.
70-88	Dark gray mudstone.
88-96	Dark gray muddy sand. Changes to red at 92.
96-100	Light gray muddy sand.
100-118	Buff fine-grained sandstone, changes to medium-grained at 110.
118-122	Light gray coarse-grained sandstone.
122-136	Light gray fine-grained sandstone.
136-146	Buff medium sandstone.
146-156	Red coarse-grained sandstone. Hematite stain.
156-184	Gray coarse-grained sandstone with some shale layers 156-160.
184-190	Dark gray coarse-grained sandstone. Abundant pyrite.
190-198	Dark gray shale.
198-208	Buff fine-grained sandstone.
208-220	Fine-grained sandstone with some shale, changes from gray to red at 218.
220-230	Light brown sandy clay.
230-258	Dark gray shale changes to red 240.
258-304	Gray shale, sandy from 290-304.
304-350	Gray fine-grained sandstone.
350-528	Gray fine-grained sandstone, carbonaceous, some pyrite, small amount of pink sand at 500.
528-532	Jm.

FINAL DISTRIBUTION

MADE MAY 19 1958

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION III

Administrative Audit Difference Statement

[redacted]

Date: [redacted]
Payee's Reference: [redacted]

DMEA-474V

[redacted]

Upon examination of the above Payee's Reference a difference was found which made it necessary to suspend your account accordingly:

Amount Claimed $ [redacted]

Difference $ [redacted]

Amount Approved $ [redacted]

The reason for the difference was due to:

[redacted]

ORIGINAL FILE COPY
DMEA
RECEIVED MAY 21 1958

DATE	INITIALS	CODE
5/21	H. G.	225
21	[illegible]	140
21	[illegible]	700

Any reclaim for deductions made above must be supported by the ORIGINAL of this form.

Very sincerely yours,

[redacted]
Audit Section

[redacted]

R-III-B & F Form No. 4
4-15-52 D

224 New Customhouse
Denver 2, Colorado
May 15, 1958

Memorandum

To: T. A. Christensen

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4742 (Uranium) Contract Idm-E1133, McAlester Fuel Company, (Star claims and Leased Lands) Fall River County, S. D., Operator's Monthly Progress Report for the month of March, 1958

Enclosed are the original and four copies each of Forms MF-104 and MF-104A, Operator's Narrative Report, and Engineer's Report for the above period.

The work is being performed partly under independent subcontract, and partly at fixed unit costs. The drilling rates are as low or lower than the rates contained in the lowest and best bid submitted with the application. Under the circumstances, the rates for the work performed under independent subcontract are considered to be reasonable.

We consider that the Operator has complied with the intent of the contract, and the work for which payment is recommended is acceptable to the Government. Payment is recommended for 75 percent of the amount reported on Form MF-104 for March, 1958, contingent on your verification of the correctness of applicable rates and arithmetical accuracy of computations, except for the following deduction:

Withhold an amount of $500.00 pending possible additional work under the contract. If additional work is not approved by the Government and performed by the Operator continue to hold the amount of $500.00 pending resolution of matters prerequisite to closing the account.

Remarks: Date of Report----------May 8, 1958
Date Received in Field Office----------May 13, 1958
Date Received in Region Office----------May 15, 1958

Note: Although the Operator has indicated on Form MF-104 that the period covered is March, 1958, review of the drill logs indicates that the work was performed during the month of February, 1958.

Original signed by
E. N. HARSHMAN
E. N. Harshman

Enclosures

JDC:hmh

cc: Chmn. Op. Comm. (2)
DMEA/DFC
MF-104 file, Reg. III
Harshman) w/copy Engr's
Townsend) Report
Chron

DMEA
DEPARTMENT OF THE INTERIOR

REGION III

MAY 15 1958
REGION III
DENVER, COLORADO

Building 20
Denver Federal Center
Denver 2, Colorado
May 14, 1958

Memorandum

To: Acting Executive Officer, DMEA Field Team, Region III

From: E. O. Binyon

Subject: Docket DMEA 4742 (Uranium) Contract Idm-21133,
McAlester Fuel Company (Star claims and Leased Land)
Fall River County, S. D. -- Progress report for March 1958

An inspection was made of the drilling completed during the period on March 26, 1958. W. N. Sharp, geologist, U. S. G. S. accompanied the engineer on the inspection.

The locations and depths of the 9 holes drilled were found to be as shown on the map and as reported by the operator. A total of 4830 feet were drilled in the 9 holes. No check of the cuttings could be made because of snow. However, a check of the gamma ray logs showed near ore grade, 0.098% eU_3O_8 in hole 95 at depth 508.5-510.5 feet and 0.095% eU_3O_8 in hole 96 from 465.8-466.8 feet. Five holes, hole No. 94, 97, 98, 99, and 100 each had one foot of .03% or slightly better eU_3O_8 at depths ranging from 376' to 476'. No ore grade mineralization was found in any of the nine holes.

The operator's narrative list of the holes does not check the probe logs and the probe logs show 4839 feet drilled and 4836 feet logged. However, the 4830 feet is the footage invoiced and allowed for payment. Drilling footage and stand by time are properly documented and the MF-104 and 104A forms are correct.

It is recommended that the operator be paid $4,162.20 or the Government's share at 75 percent of $5,549.60, the amount claimed for payment and that $500.00 be withheld pending receipt of the final report.

Expiration date of the contract is May 1, 1958.

E. O. Binyon
Mining Engineer

EOB/mw
cc: 6 Idm-21133 chron

Form MF-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.5

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S MONTHLY REPORT AND VOUCHER

RECEIVED MAY 21 1958 DMEA

Month of March, 1958 Docket No. DMEA 4742 Contract No. Tdm-E1133
Operator's Name McAlester Fuel Company Minerals Uranium
Address P. O. Box 783, McAlester, Oklahoma
Contract Amount, $ Government Participation: 75 % Amount, $

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling	4830.00	37,160.00	41,990.00			
Bulldozing	0.00	0.00	0.00			
~~xxxxxxx~~ Standby	140.00	670.00	810.00			
~~xxxx~~ Incidentals	579.60	4,459.20	5,038.80			
Analyses	0.00	66.50	66.50			
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	5549.60	42,355.70	47,905.30	5549.60	42,355.70	47,905.30

DMEA
DEPARTMENT OF THE INTERIOR
MAY 12 1958
REGION III
DENVER, COLORADO

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 5-8-58 *Payee Mc Alester Fuel Co.

Per Tom E. Garrard Title vice pres.

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$ 3662.20

Signature RRC
(Authorized Certifying Officer)

Date 5/16/58 Vou. No. DMA-58-125

(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. DMA 2133 in accordance with the terms of the contract.

Signature E O Bryson ($ 4162.70) Title Mining Engineer Date May 14, 1958

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: Checked for Engineering Allowability

Signature E. M. Henderson Title Executive Officer Date MAY 15 1958

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.2

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED MAY 21 D.M.E.A.

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of March 1958 Docket No. DMEA 4742 Contract No. Idm-E1133
Operator's Name McAlester Fuel Company Minerals Uranium
Address P. O. Box 783, McAlester, Oklahoma

OPERATION	Unit	Costs This Month	Units This Month	Costs to Date	Units to Date	Unit Costs to Date	Authorized by Contract: Units	Authorized by Contract: Unit Costs
			STAGE I					
Non-core drill	ft.			17,581.00	17,581	1.00	20300	1.00
Standby	hr			240.00	24	10.00	34.5	10.00
Incidentals	ft.			2,109.72	17,581	0.12	20300	0.12
Analyses	Spl			45.50	13	3.50	140	3.50
			STAGE II					
Drilling: Non-core	ft.			19,579.00	19,579	1.00	26000	1.00
Standby	hr			430.00	43	10.00	45	10.00
Incidentals	ft.			2,349.48	19,579	0.12	26000	0.12
Analyses	Spl			21.00	6	3.50	210	3.50
			STAGE III					
Non-core Drill	ft.	4830.00	4830	4,830.00	4,830	1.00	15000	1.00
Standby	hr	140.00	14	140.00	14	10.00	22.5	10.00
Incidentals	ft.	579.60	4830	579.60	4,830	0.12	15000	0.12
Total Distributed Costs								Total Costs Authorized by Contract
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
Total Costs		5549.60		47,905.30				

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief.

Date 5-8-58 Operator McAlester Fuel Co.

Per John E. Garrard Title Vice Pres.

Remarks:

NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

(Instructions on reverse)

(For Government use only)

E O Bunyon

INSTRUCTIONS

Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 872894

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

FORD & FOX
Consulting Geologists
206 S. BROADWAY
RIVERTON, WYOMING

P.O. BOX 428

UL6-3468

March 15, 1958

DMEA
DEPARTMENT OF THE INTERIOR
MAR 21 1958
REGION III
DENVER, COLORADO

Mr. A. H. King, Executive Director
DMEA Field Team, Region 111
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 4742
Contract No. Idm-E1133
McAlester Fuel Company

Dear Mr. King:

In reference to your letters of March 3, 1958 wherein your approvals of nine (9) Stage 111 drill holes were received, the following is a brief report of the Stage 111 drilling to date.

Stage 111 Drill Hole No.	Depth	Mineralization
94	540 ft.	Yes
95	531 ft.	"
96	540 ft.	"
97	545 ft.	"
98	549 ft.	"
99	541 ft.	"
100	522 ft.	"
101	528 ft.	"
102	534 ft.	"

Total Footage 4,830 ft.

Attached hereto is a map showing the location of all Stage 111 drill holes and a competation of mineralized data which represents cps/ft. This value was arrived at by taking a point 2/3 the maximum deflection on the curve for both thickness in feet and average cps. The product of these two figures is used as a measure of the total mineralization. Hole 71 is the most highly mineralized hole because of thickness. Several other holes had a higher total intensity in cps but the thickness was not as great. Hole 71 assayed .05% U_3O_8 from 460 to 466 feet. The assays were taken on dust collected samples and are considered low. The average maximum count was 178 cps for six (6) feet. When compared with the correlation curve included in my Stage 1 report, this hole should have assayed .036% U_3O_8 for six (6) feet.

The attached letter from Century Geophysical Company explains the many possible ramifications effecting the hole probe and that the curve referred to is based upon a dry hole and wet holes or mud caked holes would decrease the average cps materially.

Logs of hole 73 are attached. The one shows the results of probing the hole dry and the other after mud and water was used in the hole.

Favorable trends of mineralization are shown on the attached drill hole location map. Many of the more mineralized holes may have 2 to 3 feet of ore grade material based upon a more favorable correlation between assay and probe as indicated by the attached letter from Century Geophysical Company.

No decision has yet been made to ask for additional drilling in this mineralized zone. Considerable study is now being given the possibility of finding a smaller ore body between the drill holes now spaced a minimum of 250 feet apart.

Very truly yours,

Robert Ford

RBF:hlm

Encl 4
Attached map and 2 logs hole 71
CC: Mr. Tom Garrard

GAMMA — ELECTRIC — CALIPER
LOGGING
AND
INTERPRETATIONS

GEOLOGICAL AND GEOPHYSICAL
MINING SURVEYS
SEISMIC
SURVEYS

Century Geophysical Corporation
LOGGING AND URANIUM DIVISION
312 Uranium Center
GRAND JUNCTION COLORADO
CHapel 3-1183

March 15, 1958

Ford and Fox
Consultant Geologists
206 S. Broadway Ave.
Riverton, Wyoming

Dear Mr. Ford:

In reference to the work we have thus far completed for you in South Dakota, an examination of the logs shows the following:

Analysis of the gamma ray anamolies in dry holes and fluid filled holes shows that the anamolies in the fluid filled holes are about 20% less than same anamolies in the dry holes.

In relating chemical assays of your dust samples to our C.P.S. versus $\%U_3O_8$ conversion curve it was found that the conversion curve does not give a reliable relationship between C.P.S. and $\%U_3O_8$ in your area. This curve was calculated from data obtained from the Wind River formation in the Gas Hills Area in Wyoming and will not necessarily give a true relationship in other areas. Calculations show that the curve could be as much as 25% in error indicating a lower $\%U_3O_8$ than the chemical values.

Some factors that influence the recorded C.P.S. in an exploration hole are, hole diameter, position of the probe in the hole relative to the center and drilling mud density. Charts relating these factors are available upon request.

Yours very truly,

CENTURY GEOPHYSICAL CORP.

Alfred C. Mercier
Geologist

CC: A.J.Nicol

ACM/ltm

Hole No. 94

0-2	Overburden
2-48	Brown grades to red coarse-grained sandstone. Brown at 24'. Hematite.
48-56	Red-brown sandy clay.
56-78	Dark grey sandy sandstone.
78-80	Brown sandy clay.
80-98	Red-brown medium-grained sandstone. Hematite.
98-170	Yellow-brown medium-grained sandstone. Grades to buff and coarse-grained at 104. Light buff 136'. Medium-grained 136-170.
170-172	Blue-grey shale
172-186	Yellow-brown medium-grained sandstone. Limonite.
186-206	Blue-grey shale.
206-210	Maroon clay.
210-214	Yellow clay.
214-216	Blue-grey shale.
216-218	Maroon Clay.
218-230	Brown sandy clay. Red at 224'.
230-312	Dark grey shale with some fine sand.
312-350	Grey fine-grained muddy sandstone.
350-360	Dark grey shale sandstone.
360-365	Grey fine-grained sandstone.
365-370	Dark grey shale.
370-430	Grey silty sandstone.
430-472	Grey fine-grained sandstone. No carbon.
472-502	Grey fine-grained sandstone. Small amount of carbon in sands.
502-536	Light grey sandstone.
536-540	Jm.

Hole No. 95

0-2	Overburden
2-42	Yellow coarse-grained sandstone. Limonite. Medium-grained from 12'-30'. Brown-red coarse-grained 30'-42'. Hematite.
42-50	Maroon sandy clay.
50-72	Dark grey sandy sandstone.
72-80	Brown medium-grained sandstone.
80-164	Buff coarse-grained sandstone.
164-170	Dark grey shale.
170-200	Light buff fine-grained sandstone.
200-216	Grey fine-grained silty sandstone.
216-228	Dark grey shale.
228-232	Buff coarse-grained sandstone.
232-284	Grey fine-grained muddy sandstone.
284-300	Grey fine-grained sandstone.
300-452	Grey fine-grained silty sandstone.
452-500	Pink fine-grained sandstone.
500-530	Light grey fine-grained sandstone.
530-532	Green shale. Jm.

Hole No. 96

0-54	Light brown Medium-grained sandstone. Dark brown grades to coarse-grained at 40'.
54-62	Maroon sandy clay.
62-88	Dark grey sandy mudstone.
88-200	Light grey fine-grained sandstone. Grades to brown and coarse-grained at 98'. Light buff and coarse-grained at 100'. Red and coarsed-grained 116-126. Buff and coarse-grained 126-136. Pink and coarse-grained 136-150. Buff and medium-grained 150-170. Buff and fine-grained 170-188. Yellow-green fine-grained 188-200.
200-210	Green shale .
210-216	Red sandy clay.
216-250	Pink to red fine-grained sandstone. Grades to light green and fine-grained 216-250.
250-270	Dark grey shale
270-280	Dark grey fine-grained muddy sandstone.
280-292	Dark grey shale.
292-320	Dark grey fine-grained muddy sandstone.
320-324	Dark grey shale
324-440	Dark grey silty sandstone.
440-446	Grey fine-grained sandstone.
446-450	Pink fine-grained sandstone.
450-454	Grey fine-grained sandstone.
454-464	Buff fine-grained sandstone.
464-468	Grey fine-grained sandstone. Sample 468-464.
468-476	Buff fine-grained sandstone.
476-492	Light buff fine-grained sandstone.
492-544	Grey fine-grained silty sandstone.
544-546	Jm.

Hole No. 97

0-4	Overburden
4-54	Light brown medium-grained sandstone.
54-60	Maroon Clay
60-82	Dark grey sandy mudstone.
82-90	Light grey fine-grained sandstone.
90-148	Light buff coarse-grained sandstone.
148-158	Light grey medium-grained sandstone.
158-162	Brown coarse-grained sandstone.
162-184	Light grey fine-grained sandstone.
184-188	Grey shale.
188-198	Light grey fine-grained sandstone.
198-204	Brown shale.
204-212	Light green shale.
212-220	Brown sandy clay.
220-222	Black shale.
222-236	Pink to brown sandy clay
236-258	Light buff fine-grained sandstone.
258-270	Dark grey shale.
270-292	Dark grey fine-grained muddy sandstone.
292-296	Black shale.
296-302	Grey silty sandstone.
302-304	Black shale.
304-374	Dark grey silty sandstone.
374-378	Black shale.
378-384	Dark grey muddy sandstone.
384-386	Black shale.
386-542	Grey fine-grained silty sandstone.
542-544	Jm.

Hole No. 98

0-20	Yellow-green medium-grained sandstone. Limonite.
20-60	Light buff medium-grained sandstone.
60-72	Red sandy clay.
72-90	Dark grey sandy mudstone.
90-100	Red fine-grained sandstone.
100-110	Buff medium-grained sandstone.
110-140	Light buff coarse-grained sandstone. Grades to brown at 128.
140-170	Dark grey mudstone.
170-198	Buff medium-grained sandstone.
198-214	Blue shale.
214-250	Buff fine-grained sandstone. Grades to light yellow at 238.
250-264	Buff coarse-grained sandstone.
264-272	Dark grey shale.
272-290	Buff fine-grained sandstone.
290-330	Dark grey fine-grained muddy sandstone.
330-340	Dark grey shale.
340-388	Dark grey silty sandstone.
388-400	Pink fine-grained sandstone.
400-460	Grey fine-grained silty sandstone.
460-508	Pink fine-grained sandstone.
508-528	Buff fine-grained sandstone.
528-534	Light brown fine-grained sandstone.
534-548	Red fine-grained sandstone. Water.
548-550	Jm.

Hole No. 99

0-60	Yellow-green medium-grained sandstone. 52-60 Limonite.
60-68	Maroon sandy clay.
68-86	Dark grey sandy mudstone.
86-90	Black shale.
90-100	Sandy clay. Brown at 90-94. Grey at 94-100.
100-264	Brown medium-grained sandstone at 100-110. Grades to Light grey and coarse-grained at 110-152. Light buff and medium grained 152-190. Buff and coarse-grained 190-264.
264-286	Grey-green shale.
286-300	Dark grey fine-grained muddy sandstone.
300-304	Dark grey shale.
304-330	Dark grey fine-grained muddy sandstone.
330-440	Grey silty sandstone.
440-448	Buff fine-grained sandstone.
448-452	Grey fine-grained sandstone. Carbonaceous.
452-456	Grey fine-grained sandstone.
456-538	Grey fine-grained sandstone.
538-541	Jm.

Hole No. 100

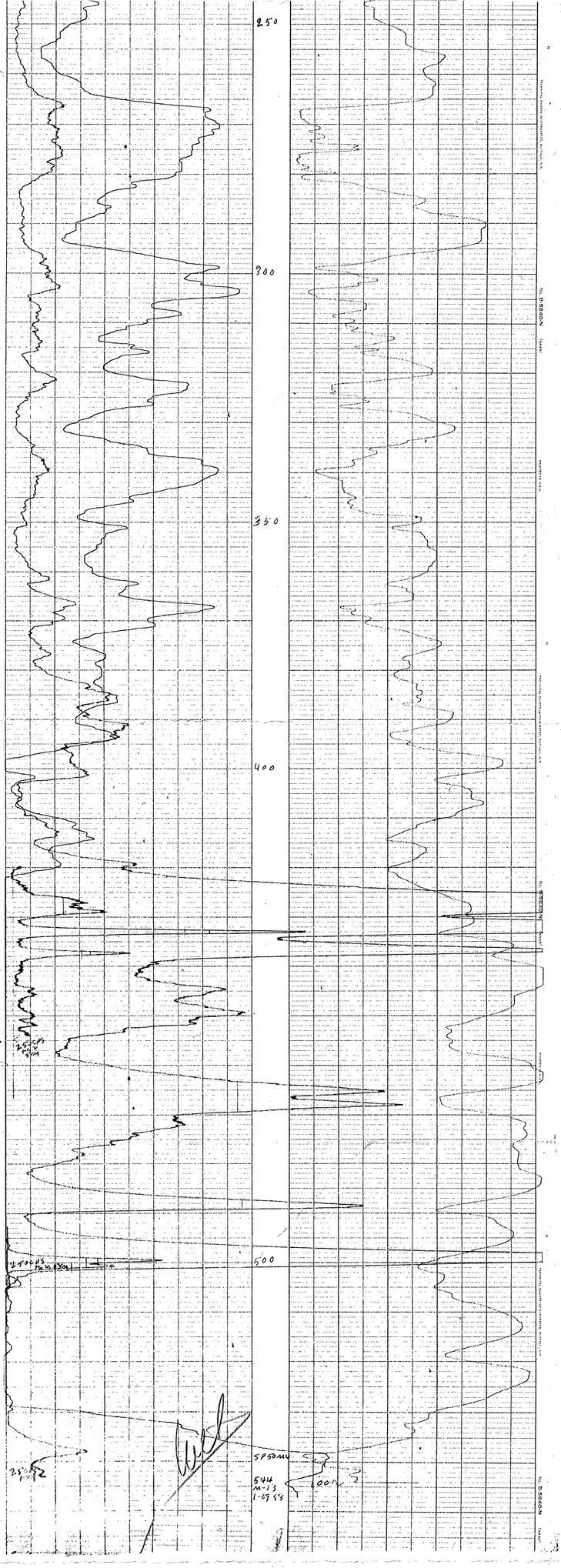
0-16	Iron brown coarse-grained sandstone. Ironstain.
16-22	Maroon sandy clay.
22-54	Dark grey sandy mudstone.
54-152	Buff medium-grained sandstone to 70. Grades to light buff and coarse-grained to 114. Medium-grained 114-138. Coarse-grained 138-152.
152-156	Brown clay.
156-172	Grey-green shale.
172-182	Light brown sandy clay.
182-190	Yellow fine-grained sandstone.
190-202	Red clay.
202-210	Brown sandy clay.
210-218	Blue-grey shale.
218-250	Dark grey fine-grained muddy sandstone.
250-270	Grey silty sandstone.
270-286	Dark grey shale.
286-300	Grey silty sandstone.
300-316	Light grey fine-grained sandstone.
316-320	Dark grey shale.
320-408	Grey fine-grained silty sandstone.
408-412	Dark grey shale.
412-430	Grey fine-grained silty sandstone.
430-518	Pink fine-grained sandstone.
518-522	Jm.

HOLE NO. 101

0-20	Brown coarse-grained sandstone. Hematite.
20-26	Gray clay.
26-30	Maroon clay.
30-40	Blue gray sandy clay.
40-50	Dark gray fine-grained muddy sandstone.
50-66	Dark gray mudstone.
66-82	Light brown fine-grained sandstone.
82-90	Yellow coarse-grained sandstone. Limonite.
90-110	Buff medium-grained sandstone.
110-150	Light gray coarse-grained sandstone.
150-162	Dark gray shale.
162-180	Light buff fine-grained sandstone.
180-190	Dark gray shale.
190-214	Brown sandy clay.
214-222	Buff fine-grained sandstone.
222-230	Buff coarse-grained sandstone.
230-242	Blue shale.
242-290	Dark gray muddy sandstone.
290-296	Blue shale.
296-396	Dark gray fine-grained silty sandstone.
396-448	No sample return.
448-496	Pink fine-grained sandstone.
496-520	Dark gray fine-grained silty sandstone.
520-531	Jm.

WOLE NO. 102

0-46	Sandstone. Red 0-4. Light brown 4-46. Coarse-grained 0-10. Medium-grained 10-46.
46-52	Maroon clay.
52-70	Dark gray sandy mudstone.
70-80	Brown sandy clay.
80-168	Buff fine-grained to 98, medium-grained sandstone.
168-172	Dark gray shale.
172-186	Iron Brown fine-grained sandstone.
186-200	Gray shale.
200-210	Light red sandy clay.
210-222	B uff fine-grained sandstone.
222-228	2' red, 4' dark grey shale.
228-238	Light red fine-grained sandstone.
238-260	Gray shale.
260-276	Dark gray fine-grained muddy sandstone.
276-282	Dark gray shale.
282-300	Gray fine-grained sandstone.
300-304	Dark gray shale.
304-314	Dark gray fine-grained muddy sandstone.
314-324	Dark gray shale.
324-448	Gray silty sandstone. Interbedded shale stringers.
448-530	Pink fine-grained sandstone.
530-532	Jm.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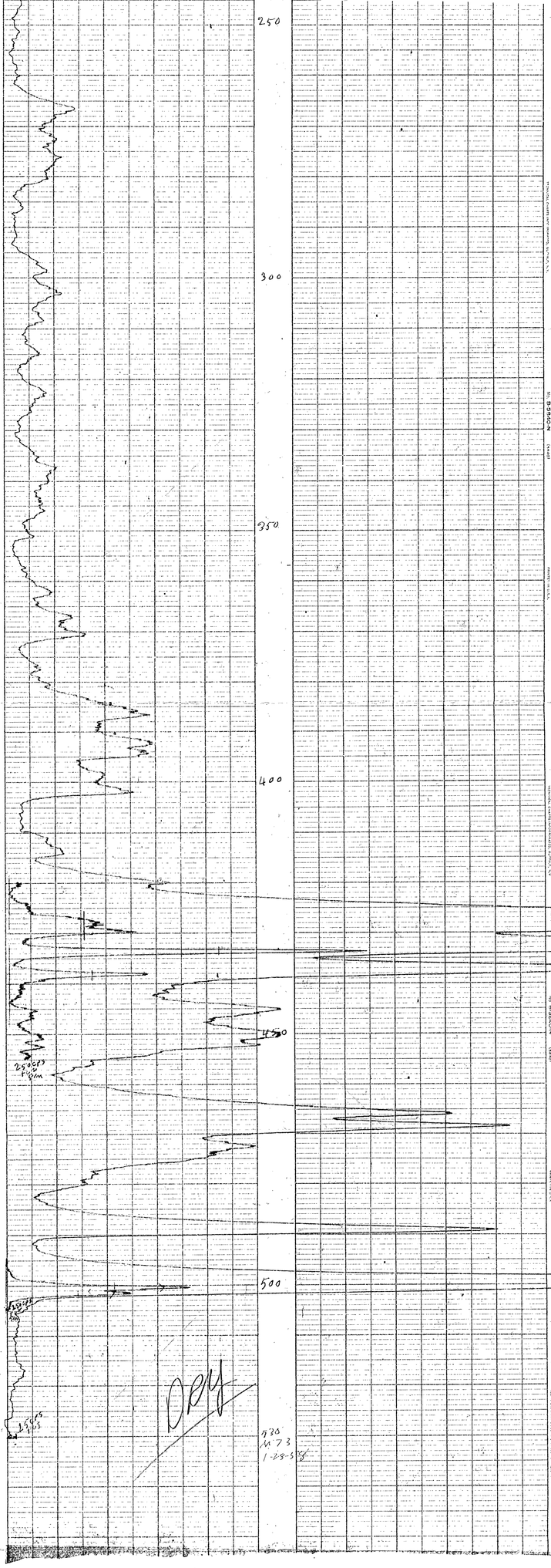


LOGGING DATA

PROBE SIZE: 1 3/4 CALIBRATION: 300
DATE: 1-28-58 FIELD HOOTRSS

	INITIAL RUN	RE. RUN	RE. RUN	RE. RUN	RE. RUN	RE. RUN
HOLE NO.						
HOLE DIA.		IN				
DRILLED DEPTH		FT				
LOGGED DEPTH		FT				
GAMMA SCALE		CPS				
TIME CONSTANT		SEC				
PAPER SPEED		FT/IN				
LOGGING SPEED		FT/IN	FT/IN	FT/IN	FT/IN	FT/IN
RESISTANCE SCALE						
SELF POT SCALE		MV/IN				
BORE-HOLE MEDIUM			WITH			
MUD READINGS	RESISTIVITY			TYPE BASE		
	VISCOSITY			SALINITY		
CALIPER SCALE		MV/IN	LEG SIZE	FFFER SCALE		
TIME IN			CASED TO		I.D.	IN
TIME OUT			CORE INT.		DIAM	IN

LOCATION		TIME	
SEC.	TWP.	RGE.	DRIVE:
COUNTY:			FIELD:
STATE:			STANDBY:
AREA:			BREAKDOWN:
CLIENT:			TOTAL:
LOG REC'D BY:			OPERATOR:
			PARTY NO:

Century
GEOPHYSICAL CORP.
TULSA, OKLA., U. S. A.
EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM ..... FILE
DRLG. MEAS. FROM ..... NO.

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
RR
GL
BKGRD. COUNT
SLUSH PIT CT.

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH THICKNESS	K KD	CORR. CPS.	% U3O8

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

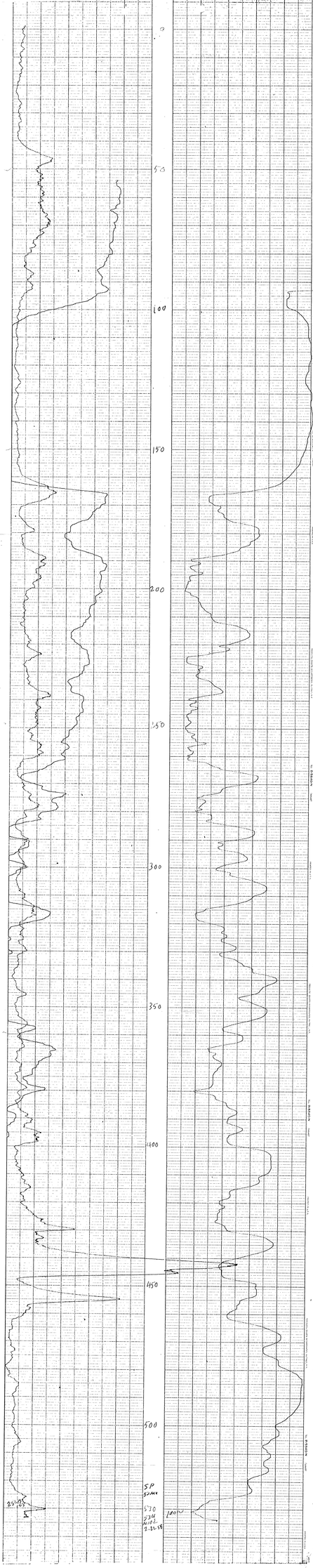
SELF POTENTIAL

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
4	8	12	16	20	24

RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 2.9 CALIBRATION: 1.60

DATE: 2-22-58 LOGGED: 2-22-58

NOW				
LAST				
NOW	1.60			
LAST	1.60			
NOW				
LAST				
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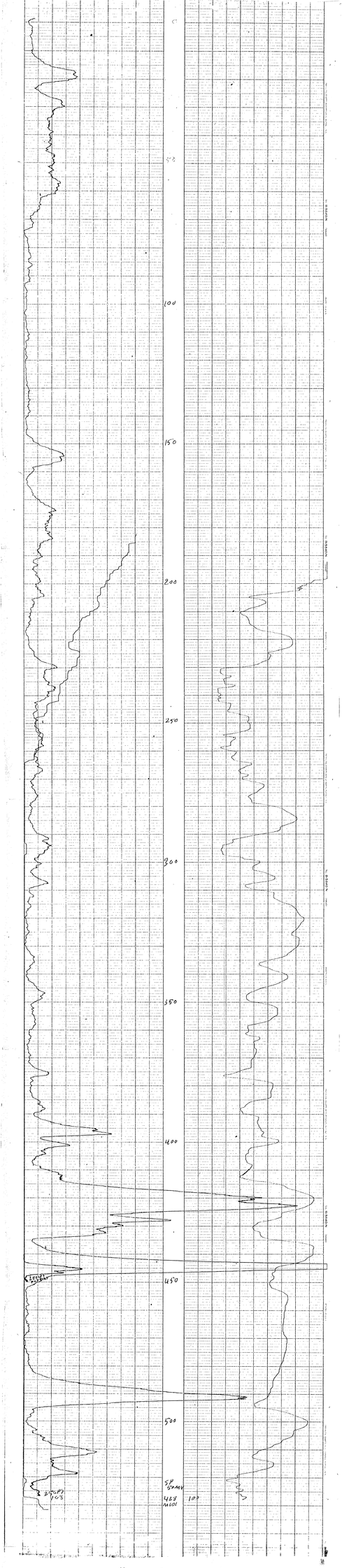
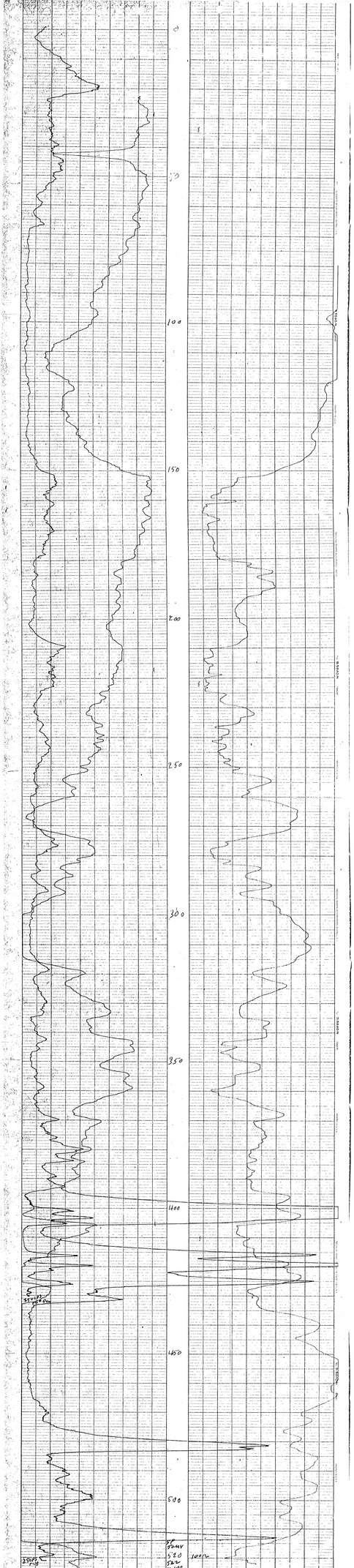
LAST				
NOW				
LAST



LOGGING DATA

H. SIZE:		CALIBER:	
DATE:		FLUID:	
		FLUID LEVEL:	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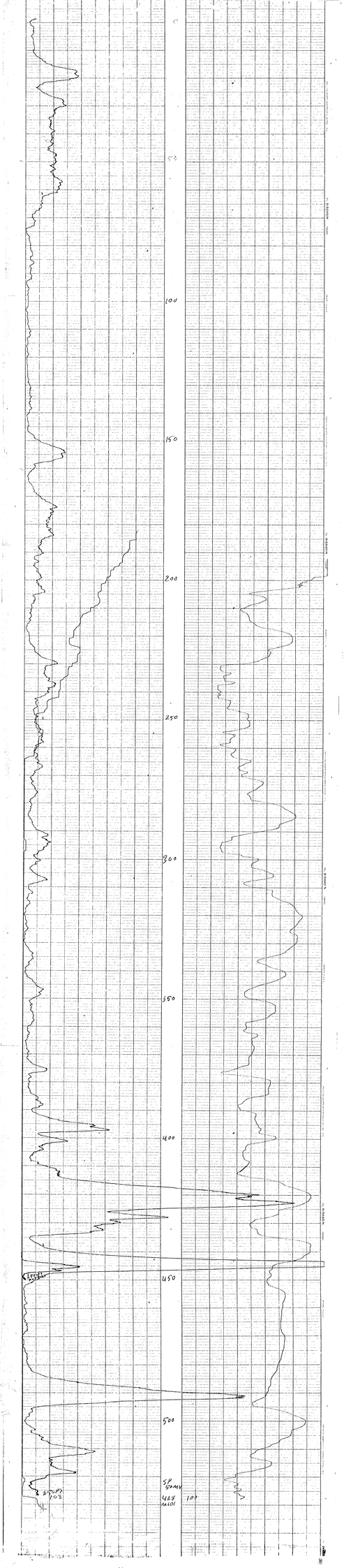


LOGGING DATA

HOLE SIZE: CASING: 10 3/4" @ 5'
DATE: 2-2-61 FIELD: 5 2-2-61
HOURS: 5 2-2-61

	RUN	TD	TIME	TIME	TIME	TIME	TIME	TIME	TIME
	NO.	FT.	IN	OUT	ON BTM	OFF BTM	ON BTM	OFF BTM	ON BTM
HOLE DIA.	1	11 1/4							
MUD DIA.	2								
MUD WT.	3	9.3 lb.							
MUD VISC.	4	53 sec.							
MUD FLUID LOSS	5	5.2 cc in 15							
MUD PH	6	7.5							
MUD RESISTIVITY	7	5 sec.							
MUD TEMP.	8	1 min.							
MAX. RECORDED TEMP.	9	1 min.							
ESTIMATED BOTTOM HOLE TEMP.	10	1 min.							
RM @ MEASURED TEMP.	11								
RMF @ MEASURED TEMP.	12								
RMC @ MEASURED TEMP.	13								
MATRIX	14	2-1	MATRIX						
MAX. RECORDED		RESISTIVITY							
		SENSITIVITY							
									BALANCE
CALIPER									
CALIBRATION		MATRIX	LOG						
TIME									
TIME									
TIME									
TIME									
TIME									

LOCATION		TIME	
SEC.	TWP.	RGE.	DRIVE: 7.2
COUNTY:			FIELD: 7.2
STATE:			STANDBY: 1.5
AREA:			BREAKDOWN:
CLIENT:			TOTAL: 6.5

LOG REC'D BY: OPERATOR: Miller

PARTY NO.: 1

Century GEOPHYSICAL CORP.

TULSA, OKLA., U.S.A.

EXPLORATION LOG

COMPANY:
BORE HOLE NO.:
FIELD:
COUNTY:
LOCATION: SEC. TWP. RGE.
NS WEST FROM SEC. MEAS. FROM
DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
GR
KB
REFER. COUNT
CLOCK PF CS

REMARKS:

INTERPRETATION

RADIO METRIC VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

GRAMS PER SEC.	DEPTH FROM KB	GRAM CPS.	GRAM

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL 5 mv

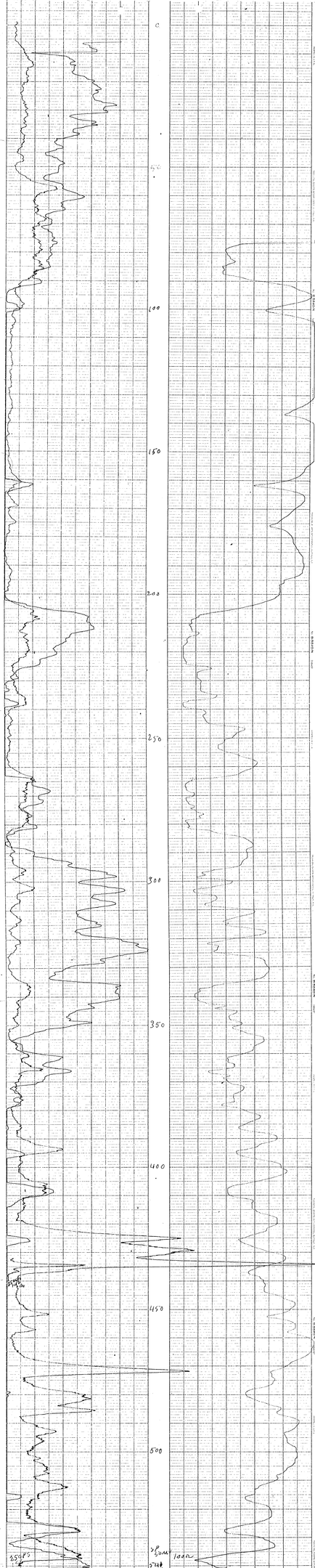
+ 10 – 0 –

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	16
4	8	12	16	20	24

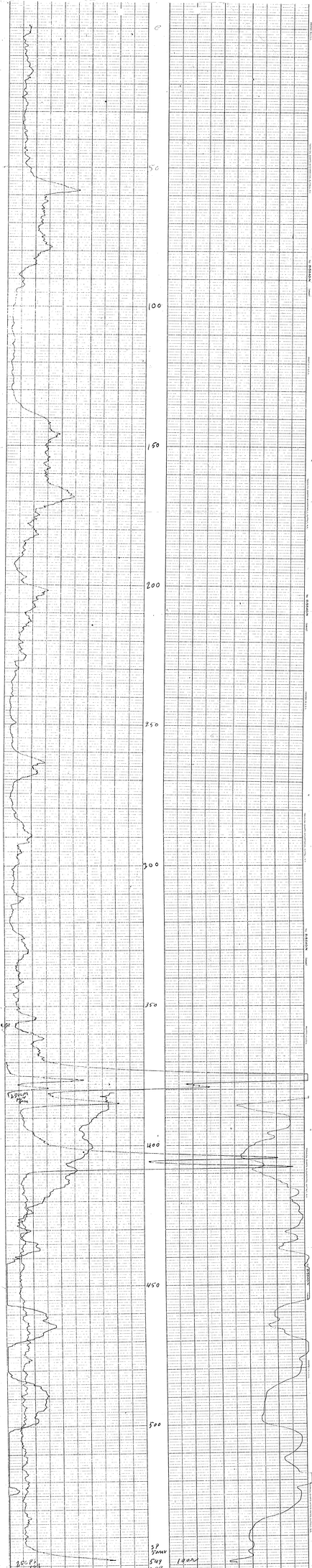
RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1 3/8 CALIBRATION: 2 3/8
DATE: FIELD: 2 3/8
HOURS: 2 3/8

	METER READ.							
HIGH VOLT.								
MAIN AMPS								
MAIN VOLTS								
LOWER AMPS								
LOWER VOLTS								
SPARK								
CLOCK								
SPEED								
SPEED CHANGE								
SPEED CHANGE								
SPEED CHANGE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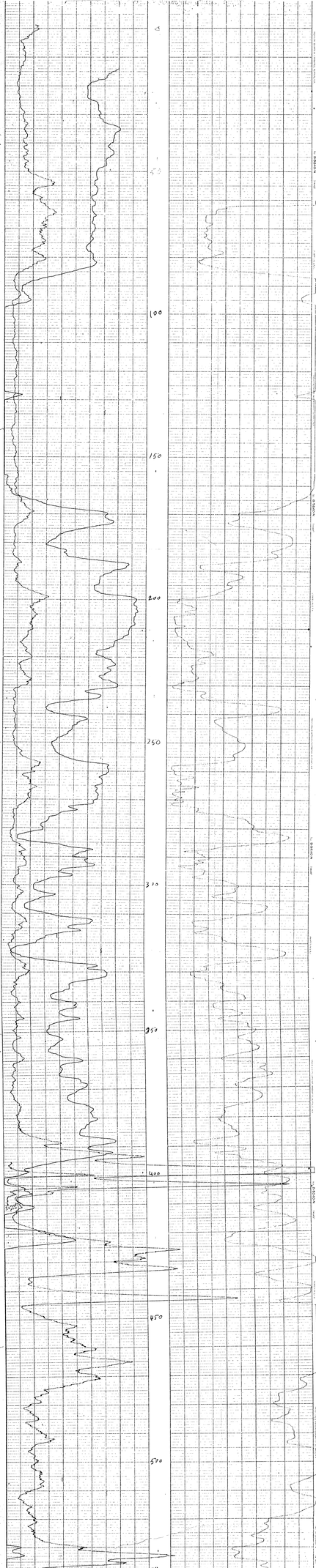


LOGGING DATA

PROBE SIZE: 1 3/8 CONNECTION: 3/8
DATE: 2-25-55 FIELD FIGURES: 5/9 11/12

HOLE SIZE	7 7/8				
HOLE DEPTH	1012				
CASING SIZE	5 1/2				
CASING DEPTH	1012				
MUD WT.	9.2				
MUD VISCOSITY	37				
MUD RESISTIVITY	1.5 OHM				
MUD TEMPERATURE	75				
PH OF MUD	11.5				
MUD SOURCE	FRESH				
RM	1.5 OHM	75F			
RMF					
RMC					
MAX. RECORDED TEMPERATURE	75				
ELEV. OF MEAS. POINT	1.5' AGL				
TIME SINCE CIRCULATION	12				
MAX. RECORDED	1.5' AGL				
BHC RECORDER					
CALIBRATOR					
CALIBRATOR TOP	1015	CALIBRATOR BOTTOM	1000	CALIBRATOR VALUE	15
TIME TO TOP	1 HRS	TIME TO BOTTOM	1 HRS		
TIME	1 HRS	TIME			

LOCATION: SEC. TWP. RGE.
COUNTY: Lafayette
STATE: Ark.
AREA:
CLIENT:
(OIL OR GAS):

TIME: DRIVE: 3 hr
FIELD: 5
STANDBY: 5
BREAKDOWN:
TOTAL: 43
OPERATOR: Mack

PARTY NO. 1/11

Century GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.
EXPLORATION LOG

COMPANY:
BORE HOLE NO.:
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.
LOG MEAS. FROM FILE NO.
DRILL MEAS. FROM
BASE
PORTAGE
TOTAL DEPTH (DR)
HOLE DIAM
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
DF
GL
SPUDDED
COMPL.
REMARKS:

INTERPRETATION

FORMATION	DEPTHS	THICKNESS

MINERALIZATION

COUNTY PER MIN.	DEPTH TREATED	% TO	CUTS. CUTS.	% CUTS

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

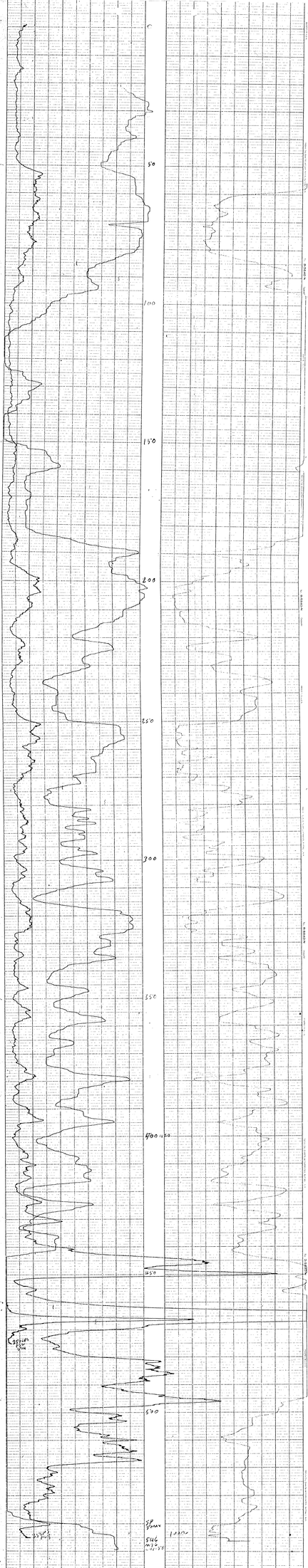
SELF POTENTIAL

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
4	8	12	16	20	24

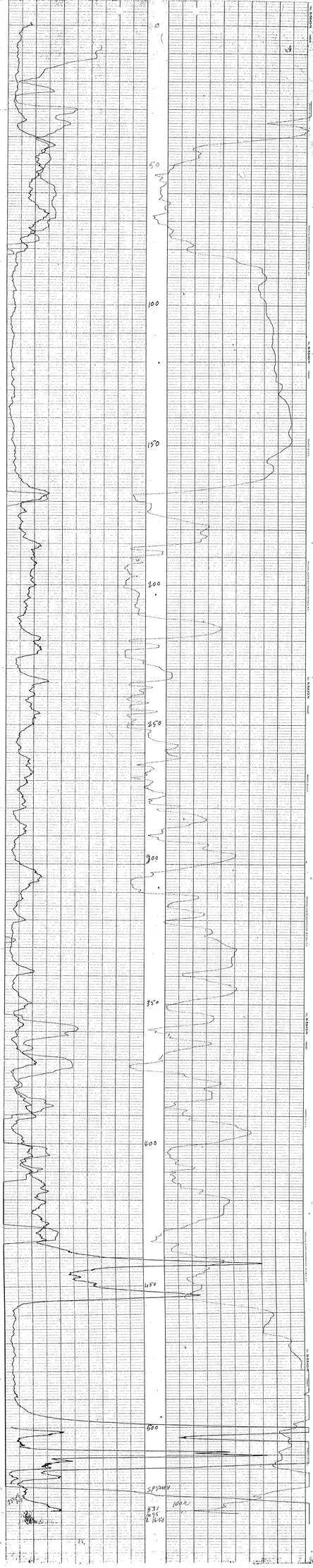
RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1.5 CALIBRATION: 3.0
DATE: 5-11-53 FIELD HOOPES: Syfrett

	MAIN					
	MAIN	AUX.	AUX.	AUX.	AUX.	AUX.
HOLE SIZE	6					
MUD WT.	10.0					
MUD VIS.	40					
MUD LOSS	3-3					
MUD SALINITY	3-4					
MUD RESIST.	1.0					
CASING SIZE	8					
CASING WEIGHT	24					
CASING DEPTH	15					
MUD RESISTIVITY	1.0					
MUD AT BOTTOM	1.0					
MUD AT MEASURED	1.0					
MUD RESISTIVITY



LOGGING DATA

PROBE SIZE: 1 3/4 CALIBRATION: 2.0

DATE: 2-16-88 FIELD HOURS: 1 hour

	SETTING	FT.	FT.	FT.	FT.	FT.	FT.
	VALUE						
NOISE	10 mv						
NOISE	25 mv						
SELECTOR	5 in					5.5	
SELECTOR	25 in						
SELECTOR	25 in 200						
SELECTOR	25 in 500						
GAMMA	3 mv 2						
GAMMA	5 mv 10						
GAMMA	10 mv 50						
SELECTOR	10 mv						
NOISE	10 mv						
NOISE	10 20						

MUD RESISTIVITY		MUD LEVEL	
MUD SOURCE		BIT SIZE	
CALIPER SETTING	7	CALIPER SOURCE	
TOP LOGGED	1700	LOGGED BY	J.R.
BOTTOM LOGGED	1100	TIME	10:00

LOCATION

SEC: TWP: RGE:
COUNTY: Nowata
STATE: Ok
AREA:
CLIENT:
LOG REC'D BY:

TIME

DRIVE:
FIELD: 1.0
STANDBY: 1.5
BREAKDOWN:
TOTAL: 2.5
OPERATOR: Miller
PARTY NO.: U11

Century

GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.

EXPLORATION LOG

COMPANY:
ACRES HOLE NO.:
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM FT.
DRILL MEAS. FROM FT.

DATE:
PROBE#
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF INDEX

ELEVATION
KB
GL
MEASS. COUNT
DRILL MEAS. FT.

REMARKS: 750 - 420 - 2.5 cps/sec

1.2 - 1.0 - 1.1 - 0.4

INTERPRETATION

RADIO METRIC VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH THICKNESS	%	GRADE GPT.	% GRADE

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL MV/IN

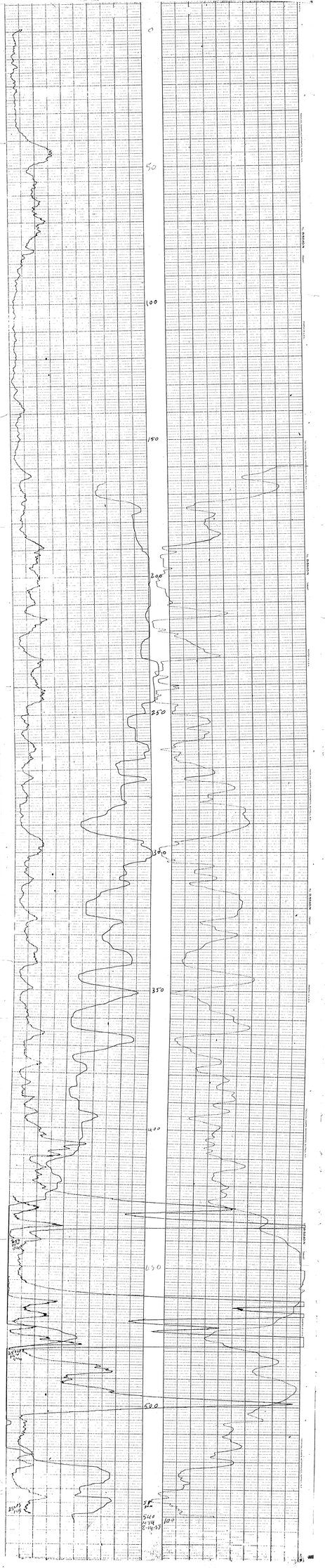
+ 10 − 10 −

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4 5 6 7 8 9
4 6 8 10 12 14
4 8 12 16 20 24

RESISTANCE
OHMS — M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300
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400
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600
650
700
750
800
850
900
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1100
1150
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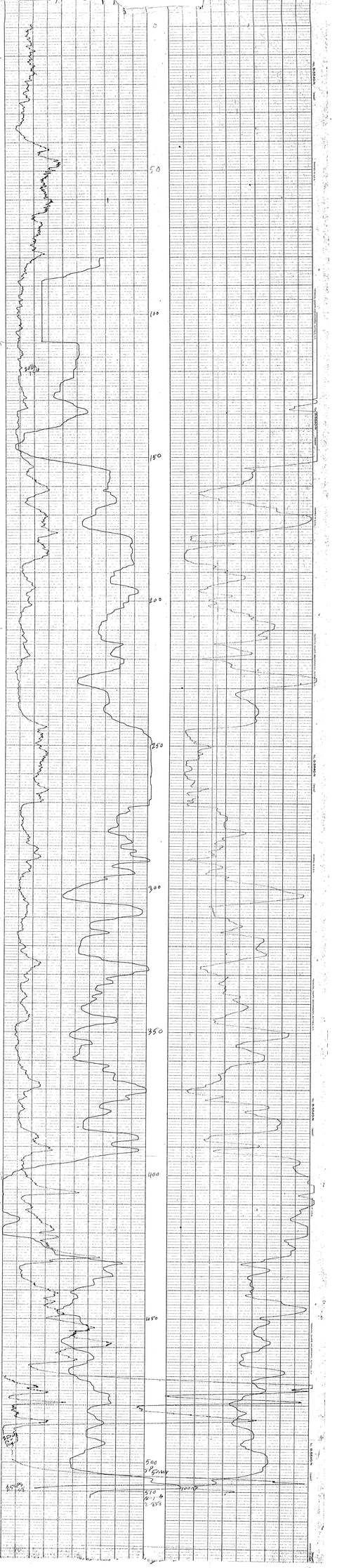
1900
1950
2000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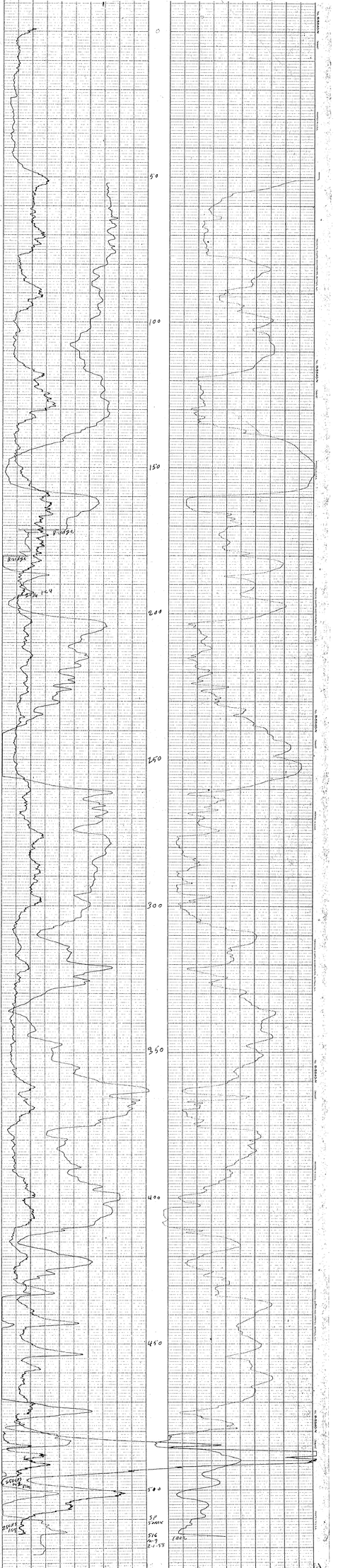
1900
1950
2000



LOGGING DATA

PROBE SIZE: 1 3/4 — CALIBRATION: 300
DATE: 2-1-58 — FIELD: [illegible]
HOURS: [illegible]

	PRESET MEAS.	AS RUN	AS RUN	AS RUN	AS RUN	AS RUN
HOLE SIZE	14.7					
MUD WT.	10.0					
MUD VISC.	50					
MUD LEVEL	2.16	15				
CASING SIZE	5	5				
CASING DEPTH	50	50				
SENSITIVITY	10	10				
SPEED	10	10	10			
DEPTH	1	1				
SENSITIVITY	10					
MUD WT.	10					
BORE HOLE DEPTH	120					
MUD RESISTIVITY						
REMARKS						

CALIPER SPEED		TIME MEASURE		TIME SPEED	
TIME CONST.	1.15	TIME CONST.		J.B.	1.15
TIME	1.5	TIME		TIME	

LOCATION	TIME	
SEC. TWP. RGE.	DRIVE:	5
COUNTY: [illegible]	FIELD:	2
STATE: [illegible]	STANDBY:	1.5
AREA: [illegible]	BREAKDOWN:	
CLIENT: [illegible]	TOTAL:	2.5
LOG REC'D BY:	OPERATOR: [illegible]	
	PARTY NO.	[illegible]

Century

GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.
EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM ..... FEET
(RKB, MEAS. FROM ..... FEET

DATE:
PDTD/GBE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
RK
GL
SECS. COUNT
SECONDS PER MIN.

REMARKS:
4175 - 450 - 2.5 CPS EC
175-0 : 2.5 CPS E-4

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH THICKNESS	%	%	EQUIV. CPS.	% EQUIV.

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESSES

SELF POTENTIAL 50 MV

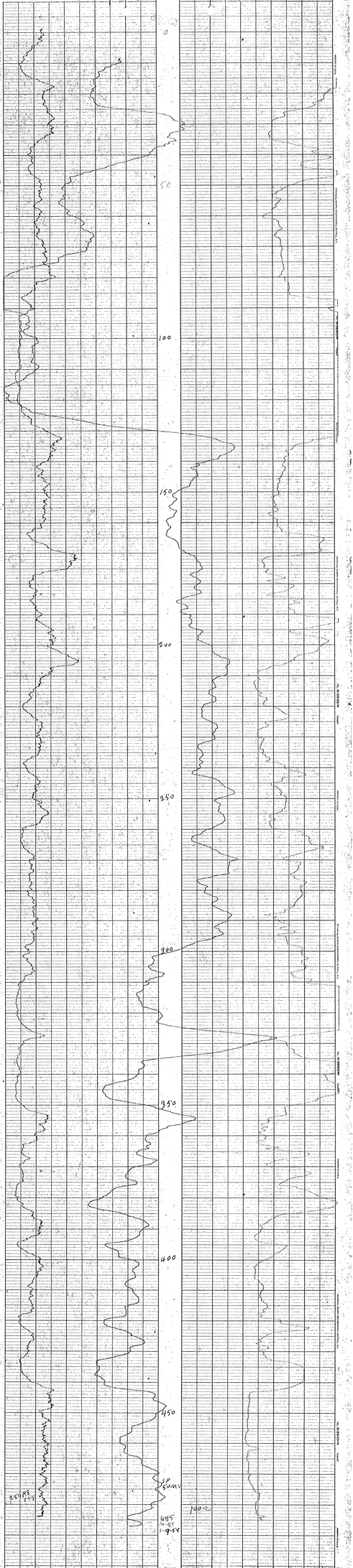
+ 10 — 0 −

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4 5 6 7 8 9
4 6 8 10 12 14
4 8 12 16 20 24

RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1 3/4 CALIBRATION: 500

DATE: 1-5-59 HELD HOURS: Optional

	METER 1	METER 2	METER 3	METER 4	METER 5	METER 6
HOLE DIA	7 7/8					
MUD WT	10.2 LB					
MUD VISCOSITY	43 SEC					
MUD LOSS	43 CC					
GAMMA SCALE	2 STP					
GAMMA SENSITIVITY	5 STP					
CHART SPEED	10 INCH					
SPONT. SENSITIVITY	10 FT/IN	FT/IN	FT/IN	FT/IN	FT/IN	FT/IN
RESISTIVITY	100					
RESISTIVITY SPACING	16 INCH					
BORE HOLE CORRECTION	112.0	MUD		CASE SIZE		
MUD RESISTIVITY				MUD WEIGHT		
CALIPER SCALE						
TIME CONST.	15 SEC	CASED HOLE			I.D.	IN
TIME CONST.	1.5 SEC	OPEN HOLE			DIAM.	IN

LOCATION

SEC. 19 TWP. RGE.

COUNTY: Jefferson

STATE:

AREA:

CLIENT:

Winchester

LOG REC'D BY:

TIME

DRIVE: 2

FIELD: 2

STANDBY:

BREAKDOWN: 1.5

TOTAL: 3.5

OPERATOR: Mosler

PARTY NO.: U11

Century

GEOPHYSICAL CORP.

TULSA, OKLA., U.S.A.

EXPLORATION LOG

COMPANY:

BORE HOLE NO.

FIELD

COUNTY

LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM ..... HER

DRLG. MEAS. FROM ..... HER

DATE:

FOOTAGE

TOTAL DEPTH (DR)

HOLE DIAM.

LOGGING SPEED

TIME CONSTANT

MUD TYPE

CASED TO

LOCATION OF HOLE

ELEVATION GR

DERRICK FLOOR

REMARKS:

DRILLING CONTRACTOR

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC	DEPTH THICKNESS	% GR.	CORR. CAL.	U/Th RATIO

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL 475MV

+ 10 − 0 −

NATURAL GAMMA RAY

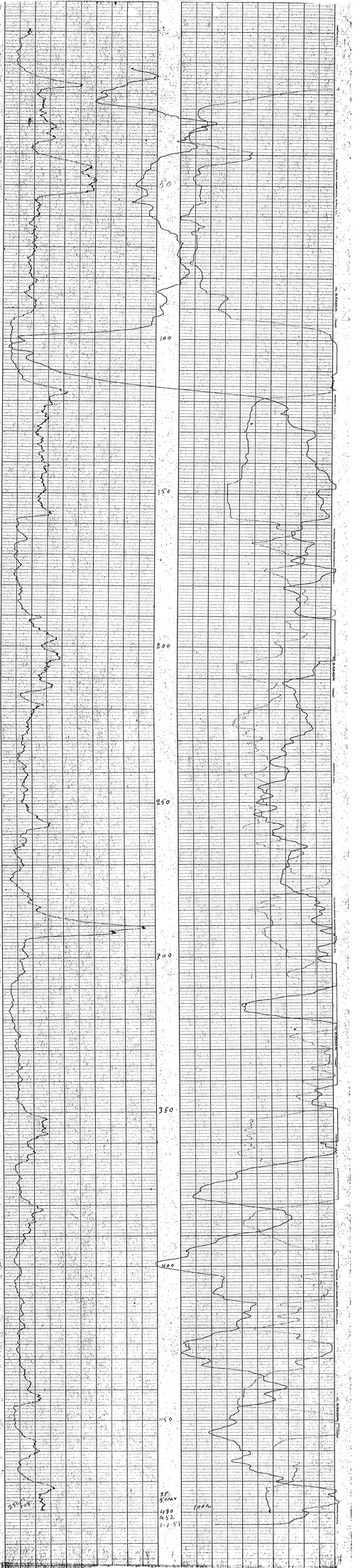
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
4	8	12	16	20	24

RESISTANCE

OHMS — M



LOGGING DATA

PROBE SIZE: 1 3/8

CALIBRATION: 300

DATE: 1-6-59

FIELD HOURS: 2 hours

	INITIAL	RE.	RE.	RE.	RE.	RE.	RE.
	RE.	RE.	RE.	RE.	RE.	RE.	RE.
HIGH RIDE	12.5						
LOW RIDE	4.5						
SPREAD	450	FS					
SENSITIVITY	50						
GAMMA SCALE	25	CPM					
FILTER CONSTANT	2	SEC					
GAMMA SPEED	10	FT/MIN					
SPEED CONTROL	14	FT/IN	FT/IN	FT/IN	FT/IN	FT/IN	FT/IN
RESISTIVITY SCALE	100						
RES. MV OFF SCALE	10	MV/IN					
MUD RES. MEASUR.	4.20		WITH				
MUD RESISTIVITY					RES. MEAS.		
MUD TEMPERATURE					SALINITY		
CALIPER SCALE	LEG				FLUID LEVEL		
FILTER CONSTANT	MV/IN						
TIME	1500		FROM				
TIME	1515		TO				
			TIME				
			DRIVE				

LOCATION

SEC. TWP. RGE.

COUNTY: Gallatin

STATE: S. D.

AREA:

CLIENT:

LOG RECD BY: Al Rotenberg

TIME

DRIVE:

FIELD:

STANDBY:

BREAKDOWN:

TOTAL: 4 H.

OPERATOR: Mr. Hen

PARTY NO. W 11

Century

GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.

EXPLORATION LOG

COMPANY:
HOLE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM ..... FILE
DRLG. MEAS. FROM ..... NO.

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
KB
GL
DERR. COUNT .....
HIGH RIV CONT .....

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH FROM-TO	%	TOTAL CPM	% TOTAL

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL 5 MV/IN

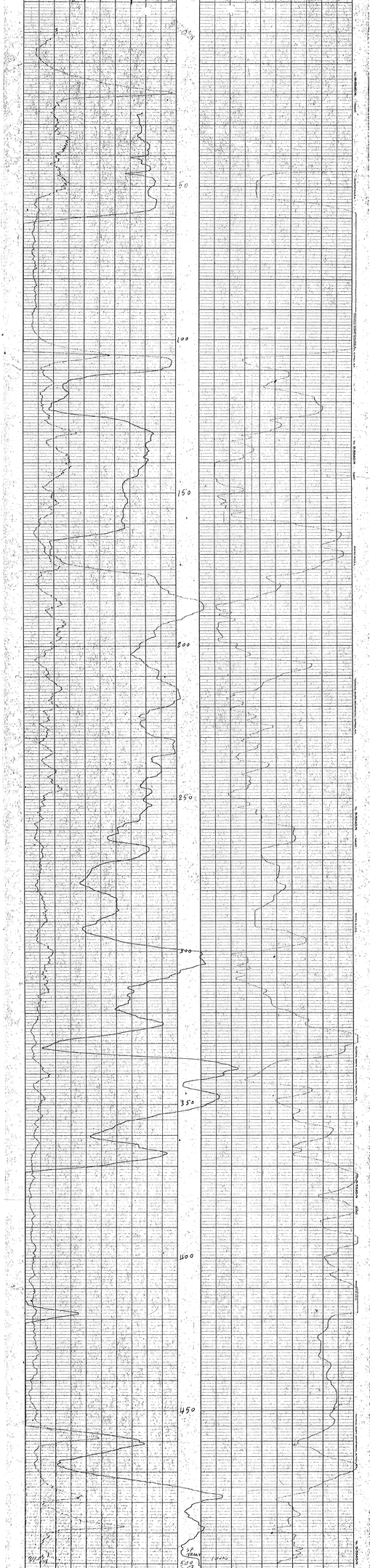
+ ◀ 10 ▶ −

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	16
4	8	12	16	20	24

RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1 3/8 — CALIBRATION: 300

DATE: 1-3-55 — FIELD NOTES: Adjustment

#	RATIO	ADJ. FACTOR	ADJ. FACTOR	ADJ. FACTOR	ADJ. FACTOR	ADJ. FACTOR
HIGH VOL.	1.55					
LOW VOL.	1.50					
SECONDARY	330					
SUMMER	300					
SUMMER	85					
CONTROL	5					
CONTROL	5					
SPUN	10					
SPUN	10					
RESISTIVITY	100					
SELF POT.	10					
NONE USED						
MODULUS	1.20					
MUD RESISTIVITY						
MUD TEMPERATURE						
CALIPER	11.5					
CALIPER	11.5					
CASING	11.5					

WATER — MUD — CASING — FRESH — SALINITY

LOCATION: SEC. TWP. RGE. COUNTY: STATE: AREA: CLIENT: McCLINTOCK

LOG REC'D BY:

TIME: DRIVE: 1.0 FIELD: 1.0 STANDBY: 5.7 BREAKDOWN: TOTAL: 7.7

OPERATOR: Miller

PARTY NO.: 611

Century

GEOPHYSICAL CORP.
TULSA, OKLA. U.S.A.

EXPLORATION LOG

COMPANY:
SCHL HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM FEE
DRILL MEAS. FROM NO.

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
KB
DF
RKB
GROUND
FLUSH PIPE CO.

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH FROM/TO	% U	CONC. U3O8	% U3O8

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTH	THICKNESS

SELF POTENTIAL MV/DIV

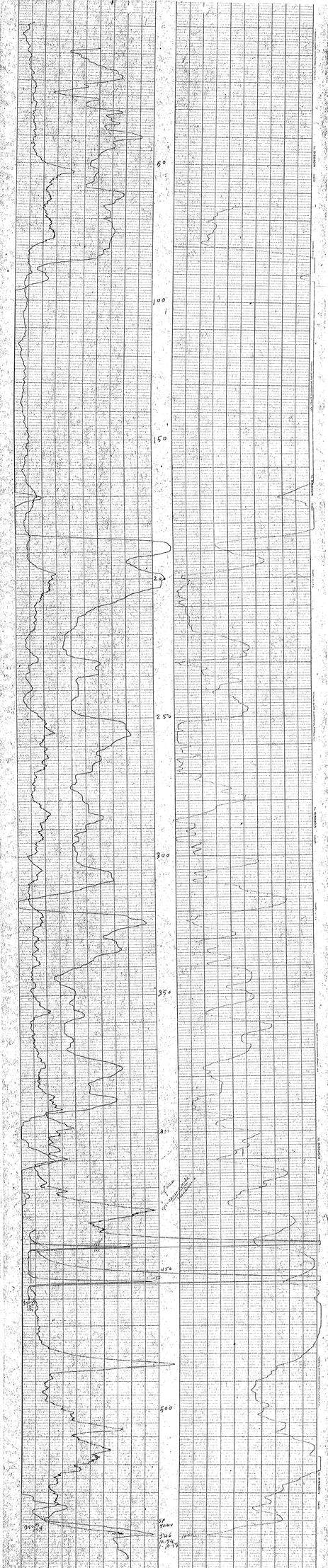
+ 10 −

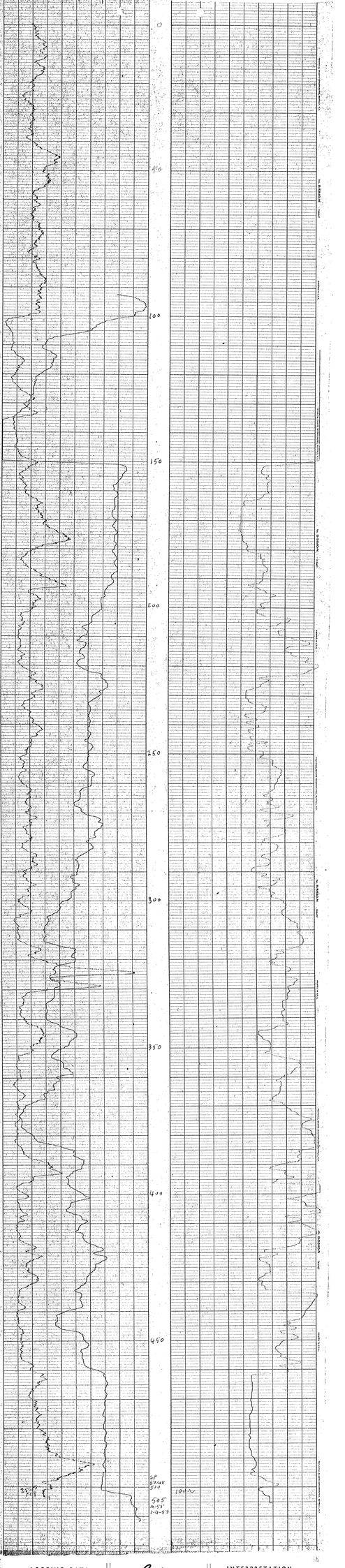
NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	10	9
4	6	8	10	12	12	14
4	8	12	16	20		24

RESISTANCE
OHMS — M


50
100
150
200
250
300
350
400
450
500
550
Top Pay
Bot Pay
Top Pay
Bot Pay
Top Pay
Bot Pay

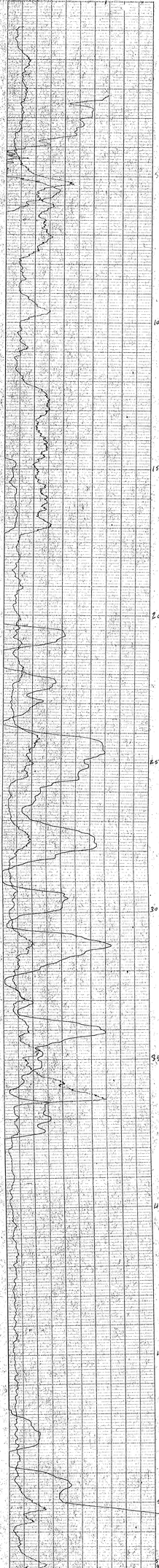


LOGGING DATA

PROBE SIZE: 1 3/8 CALIBRATION: 500
DATE: 1-11-59 FIELD: 1.0
HOGTES: Approved

	TRIAL	TRIAL	TRIAL	TRIAL	TRIAL	TRIAL
	NO.	NO.	NO.	NO.	NO.	NO.
HOLE DEPTH	11-53					
HOLE DIAM.	4.70 IN					
CASING DIAM.	4.70 IN					
CASING DEPTH	505 ft					
MEAS. POINT	5.5 ft					
CURRENT	3 AMP					
SPEED	10 FT/MIN					
GAIN	10					
SENSITIVITY	100					
DELAY	18 MSEC					
SP-MV	120					
MUD RESISTIVITY						
CALIPER						
TIME	10:15					
TIME	11:40					

MUD			
RESISTIVITY			
MUD			
RESISTIVITY			
MUD			
RESISTIVITY			



LOGGING DATA

PROBE SIZE: 1 3/8 CALIBRATION: 900
DATE: 1-10-53 FIELD REQUEST: Gulf Oil Corp.

HOLE DIA.	14.5 in								
MUD WGT.	10.0 #								
MUD VISC.	38 sec								
LOWER SPEED	22 FPM								
UPPER SPEED	25 FPM								
TIME CONSTANT	8 SEC								
SPEED RATIO	1.5 FPM								
SENSITIVITY	6 FPM	FPM	FPM	FPM	FPM	FPM	FPM	FPM	FPM
DEFLECTION	100								
SCALE	10 MV/IN								
MEAS. POINT	11.20								
MUD RESISTIVITY	OHMS/M			MUD RES.					
	OHMS/M			MUD WGT.					
CALIPER MUD WGT.	10.0 #	MUD VISC.	38 SEC	FILTRATE LOSS					
MUD TYPE	Water							I.D.	in
MUD LEVEL	18.0			CASING				CASING	in

LOCATION: SEC. TWP. RGE.
COUNTY: Atlantic STATE: N.J.
FIELD: Pitman
WELL: BREAKDOWN:
CURVE: TOTAL: 13
LOG RUN BY: Walter
OPERATOR: Pat Nolan
PARTY NO.: V11

TIME
DRIVE:
STANDBY: 1
BREAKDOWN: 1
TOTAL: 3

SELF POTENTIAL 5 mv/in

+ ◀ | 10 - ▶ | -

NATURAL GAMMA RAY
COUNTS PER SECOND

Century
GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.
EXPLORATION LOG

COMPANY:
BORE HOLE NO.:
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM FLR
MEAS. MEAS. FROM GL

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
S-ASED TO

LOCATION OF HOLE

ELEVATION
DR
GL
BEARS COUNT
ELEVATION BY CR.

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL GAS EQUILIBRIUM FACTOR.

MINERALIZATION

COUNTS PER SEC.	DEPTH MEASURED	K %	CORR. U%	Th

INTERPRETATION BY:

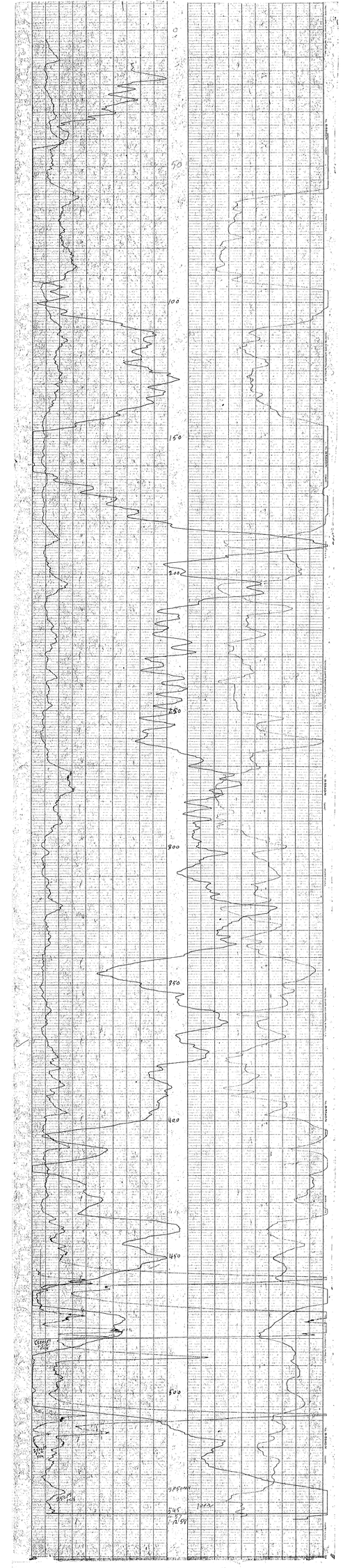
GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
4	8	12	16	20	24

RESISTANCE
OHMS—M



LOGGING DATA

PROBE SIZE: 1 7/8" CALIBRATION: 300
DATE: 1-12-58 FIELD LOCATION: Lagomarsino

HOLE SIZE	10 3/4"				
TOTAL DEPTH	585'				
CASING SIZE	8 5/8"				
CASING DEPTH	545'				
GAMMA SCALE	2.5	100	250	250	
SPEED	5'	100	5'	5'	
PRESET	1.0	FEET	1.0	1.0	
SENSITIVITY	1.0	FEET	0.5	0.5	FEET/IN. FEET/IN. FEET/IN.
DETECTOR SELECTOR	100				
MUD WEIGHT	10	METER			
MUD RESISTIVITY	12.5		METER		FEET BOREHOLE
MUD RESISTIVITY					
CALIBRATOR TIME	13:00	METER			FEET BOREHOLE
TIME	14:00				

LOCATION		TIME	
SEC:	TWP.:	RGE.:	DRIVE: .5
COUNTY: Bell River			FIELD: 1.0
STATE:			STANDOFF: 1.0
AREA:			BREAKDOWN:
CLERK:			TOTAL: 2.5
LOG REC'D BY: Mr. Robertson			OPERATOR: Miller
			PARTY NO.: U61

Century

GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.
EXPLORATION LOG

COMPANY:
HOLE-HOLE NO.:
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM FILE NO.
DRILL MEAS. FROM

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASING TO

LOCATION OF HOLE
ELEVATION
KB
GL
SEABS COUNT
SEABS KB

REMARKS:
280 - 505' - 250 CPS PER
1182 - 485' - 250 CPS PER

INTERPRETATION

RADIOACTIVITY VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR.

MINERALIZATION

ELEVATION FOR MIN.	DEPTH INTERVAL	%	CONC. LBS.	% SULPH.

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIALS MV/IN

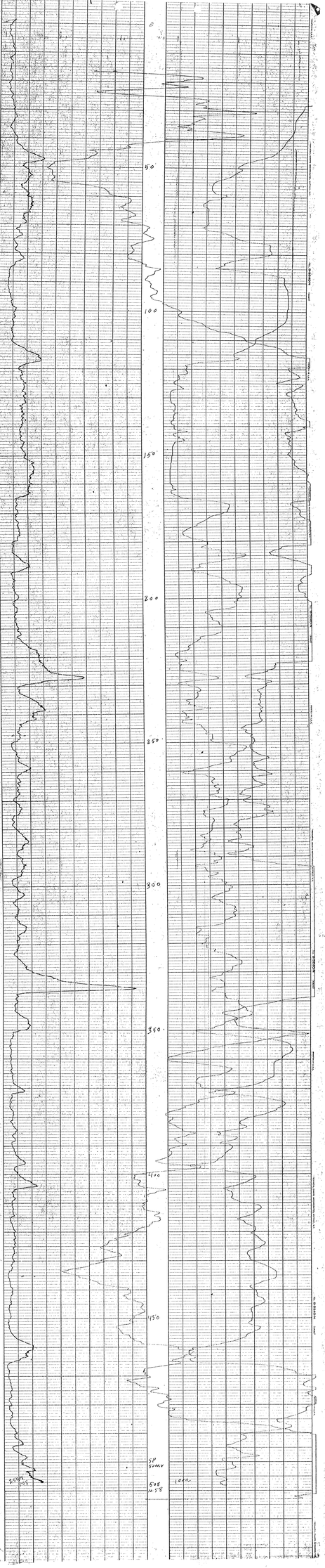
+ 10 - 10 -

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
8	12	16	20	24	

RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 2 5/8 CALIBRATION: Sec
DATE: 7-7 FIELD HEQRTS: Lyd
STATE: Kansas

HOLE SIZE	15 3/4						
BOTTOM DRILLER	1570'						
BOTTOM LOGGER	1573'						
SURFACE CASING	5 5/8						
BOTTOM CASING	1 5						
CLEAR DRILLER	9 min						
CLEAR LOGGER	1 hrs						
MAXIMUM RECORDED TEMP.	1 0						
DATE OF LAST CALIBRATION	1 0						
MAX. RECORDED	12.20						
MUD							
MUD RESISTIVITY							
MUD RESISTIVITY							
CALIPER SIZE							
TIME	12-5						
TIME	12 45						

LOCATION: SEC. TWP. RGE.
COUNTY:
STATE:
AREA:
CLIENT:
LOG RECORDED BY:

TIME
DRIVE: 4
FIELD: 2
STANDBY: 2 1/2
BREAKDOWN:
TOTAL: 8 1/2

OPERATOR: Rich
PARTY NO: 611

Century
GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.
EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM
DRILL MEAS. FROM
FILE NO.
LOCATION OF HOLE
DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO
ELEVATION
KB
DF
RIGREF. COUNT
FLOW RT. CT.

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	NOTES THICKNESS	% eU3O8	GRAMS U/ft.	% U+Th

INTERPRETATION BY:

GEOLOGIC TOPS

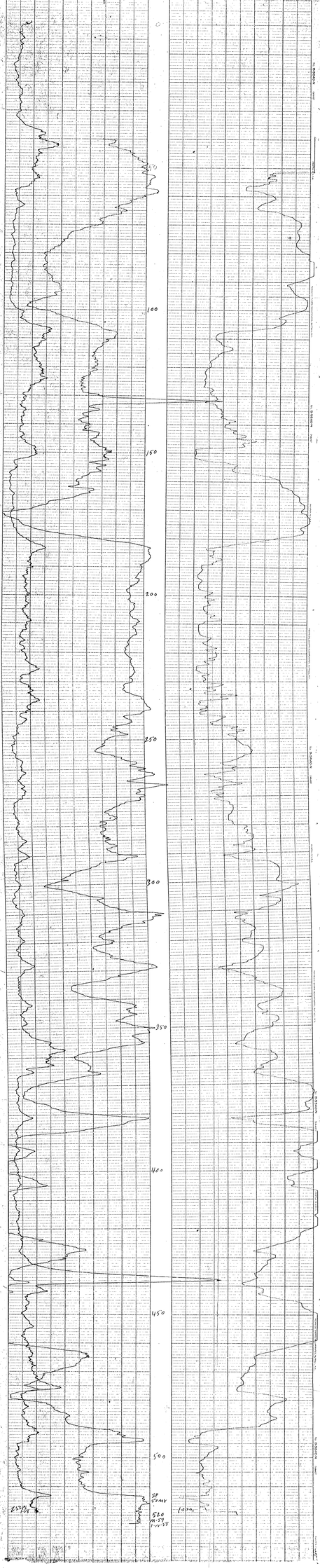
FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1 5/8

CALIBRATION: 500

DATE: 1-16-58

FIELD SHOOTING: [illegible]

	TRACK	1	2	3	4
		1 DIV	1 DIV	1 DIV	1 DIV
HOLE SIZE	14 IN	4			
CASING SIZE	10 IN	4			
CASING DEPTH	520 FT	4			
MUD DENSITY	9.2 LB	4			
MUD VISCOSITY	50 SEC				
MUD RESISTIVITY	1.0 OHM				
MUD TEMPERATURE	60 F				
MUD PH	10				
MUD RESISTIVITY	1.20 OHM				
MUD RESISTIVITY					
MUD RESISTIVITY					

MUD RESISTIVITY: MUD TEMP: FILE NO.: SALINITY:

CALIBRATOR TYPE: 1 3/4 CALIBRATOR SERIAL NO.: 1625 CALIBRATOR DATE: 1-17-58 CALIBRATOR TIME: 1-17-58 CALIBRATOR TIME: 1-17-58 TO: 1-17-58

LOCATION

SEC. TWP. RGE.

COUNTY: All Areas

STATE: S.D.

AREA:

CURRENT:

LOG REC'D BY:

TIME

DRIVE: 7

FIELD:

STANDBY: 4.5

BREAKDOWN:

TOTAL: 6 hrs

OPERATOR: [illegible]

PARTY NO.: 61

Century

GEOPHYSICAL CORP.
TULSA, OKLA. U.S.A.

EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.
LOG MEAS. FROM FEET
DRLG. MEAS. FROM NO.

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
GR
KB
DERR. COUNT
DIGGER PIT CT.

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH THICKNESS	% U3O8	GRAM CPS.	% U3O8

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL 5 MV/DIV

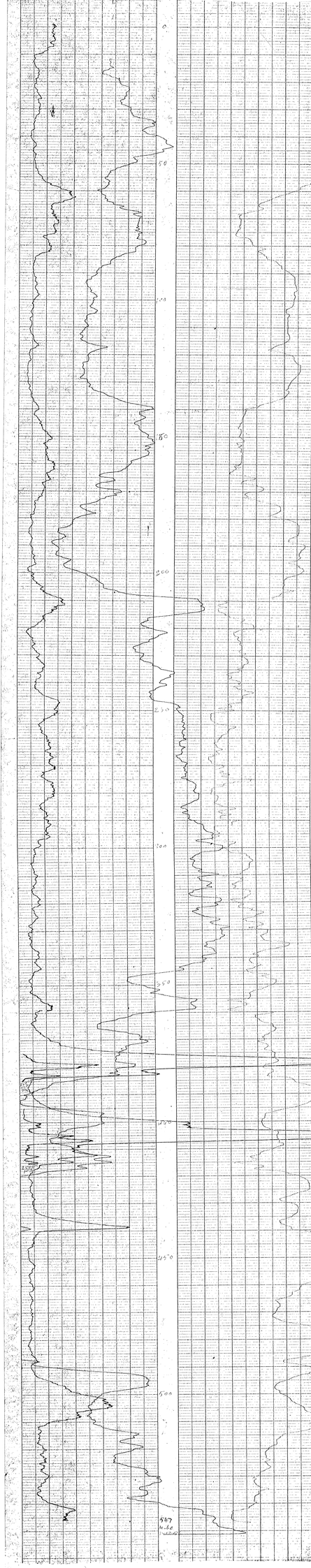
+ 10 −

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4 5 6 7 8 9
4 6 8 10 12 14
4 8 12 16 20 24

RESISTANCE
OHMS — M

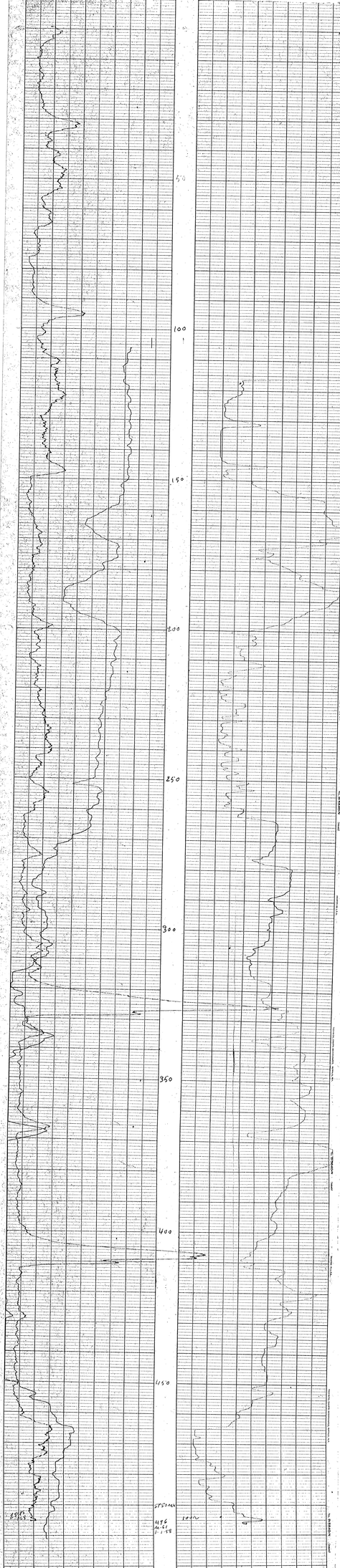


LOGGING DATA

PROBE SIZE: 3.5 CALIBRATION: 1.6 C.

DATE: 1-1-65 FIELD HOURS: 1 hr. 30 min.

	MAIN	AUX.	AUX.	AUX.	AUX.	AUX.
HOLE SIZE	4.06					
MUD WT.	10.0					
MUD VISCOSITY	35.0					
SURFACE CASING	8 5/8" @ 577					
CASING SIZE	5.5					
CASING WEIGHT	23					
CASING DEPTH	0					
MUD RESISTIVITY	1.0					
MUD RESISTIVITY TEMP.	75					
MUD RESISTIVITY TEMP.	75					
MUD RESISTIVITY TEMP.	75


100
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1800
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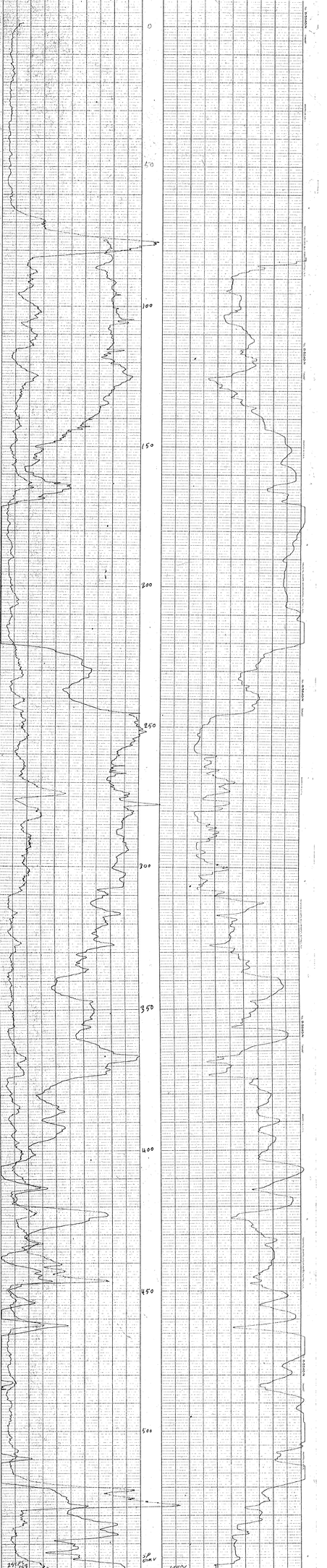
1900
1950
2000
2050
2100



0
50
100
150
200
250
300
350
400
450
500

LOGGING DATA

PROBE SIZE: 1½

DATE: 1-16-55

CALIBRATION: FIELD
HOURS:

	MEASURE	BEFORE	AFTER	BEFORE	AFTER	BEFORE	AFTER
HIGH SCALE	10.0						
LOW SCALE	11.75						
SHORT SPACING	5.50						
LONG SPACING	5.50						
SHORT SPACING	2.5						
LONG SPACING	9						
BATTERY VOLTAGE	12						
CALIBRATOR SETTING	10						
CALIBRATOR SETTING	10						
BELL JAR WATER LEVEL	10	WATER					
MUD LEVEL	12.0						
MUD SALINITY							

CALIPER SETTING	MEASURE	BEFORE	AFTER	BEFORE	AFTER
FIRST	11.0				
SECOND	11.0				

SEC. TWP. AGE. DRIVE:
COUNTY: Clearfield FIELD: 1.5
STATE: STANDOFF: 6.5
CLIENT: BREAKDOWN:
TOTAL: 6.0
LOG SEC'D BY: OPERATOR: Hazelle

PARTY NO.: C-11

Century
GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.
EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.
LINE 'MEAS.' FROM FEET
DRILL MEAS. FROM NO.
DATE:
FOOTAGE
TOTAL DEPTH (OB)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
DATED TO
LOCATION OF HOLE
ELEVATION
KB
DF
MEERS COUNT
CLEAR PO CT.

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

URANIUM PER SEC.	DATE PROGRAMMED	%	U3O8	% U3O8

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL 50 MV

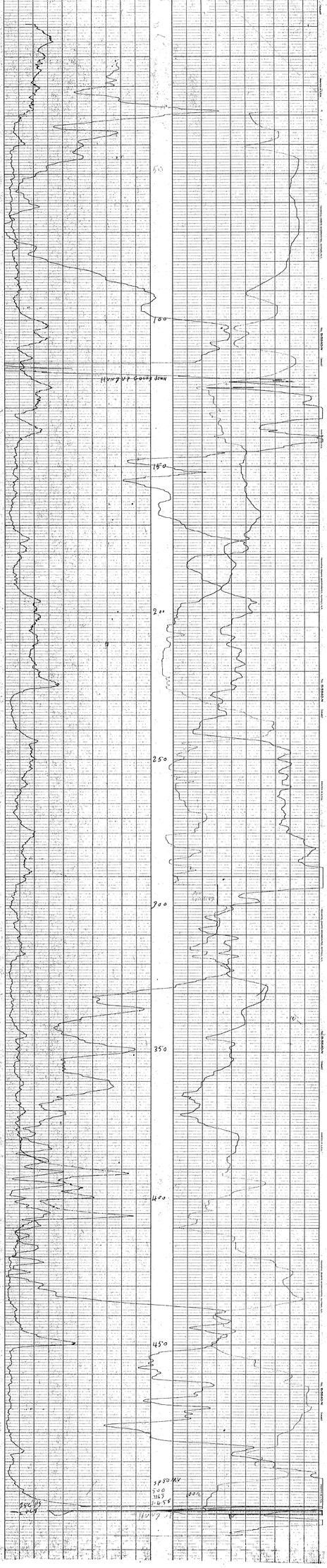
+ ×10 −

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
4	8	12	16	20	24

RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1 3/8 CALIBRATION: 900
DATE: 1-14-59 FIELD: HOURS: 9 [illegible]

	PRIOR RUN							
HOLE DIA.	11-68							
MUD WT.	11 lbs							
SURFACE TEMP.	84°							
SURFACE PRESS.	59							
GAMMA SCALE	2	CPS						
CURVE SENS.	10	ERTR						
SPEED	10	FT/MIN	FT/M	FT/M	FT/M	FT/M	FT/M	FT/M
SENSITIVITY	100							
RELAY	10	MAGN						
BORE HOLE MEDIUM	H2O -		WATER					
MUD	REMOVEABLE					DRY CAKE		
CASING	NONCASED					BALANCED		
CASING DIA.		WGT/FT	LESS COLLAR		FITTED COLLAR			
TIME	1945		UNDER WAY				I.D.	IN
TIME	1945		OFF LOC.				DIA.	IN

LOCATION

SEC.	TWP.	RGE.	TIME		
COUNTY	[illegible]		DRIVE:	1.5	
STATE:	[illegible]		FIELD:	1.0	
AREA:	[illegible]		STANDBY:	6.5	
CLEARFIELD, PA.			BREAKDOWN:		
			TOTAL:	9.0	

LOG REC'D BY: [illegible] OPERATOR: [illegible]

PARTY NO. 111

Got HUNT UP at 500' Had to PULL on the CABLE to get out

Century

GEOPHYSICAL CORP.
TULSA, OKLA. U.S.A.

EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM ..... FEET
PERM. MEAS. FROM ..... FEET

DATE:
PORO48:
TOTAL DEPTH (DB)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
GL
KB
DEGREES COUNT CLOCK AT CT

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH THICKNESS	%	GRAM CYR.	% GU/Ft

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL 4/in

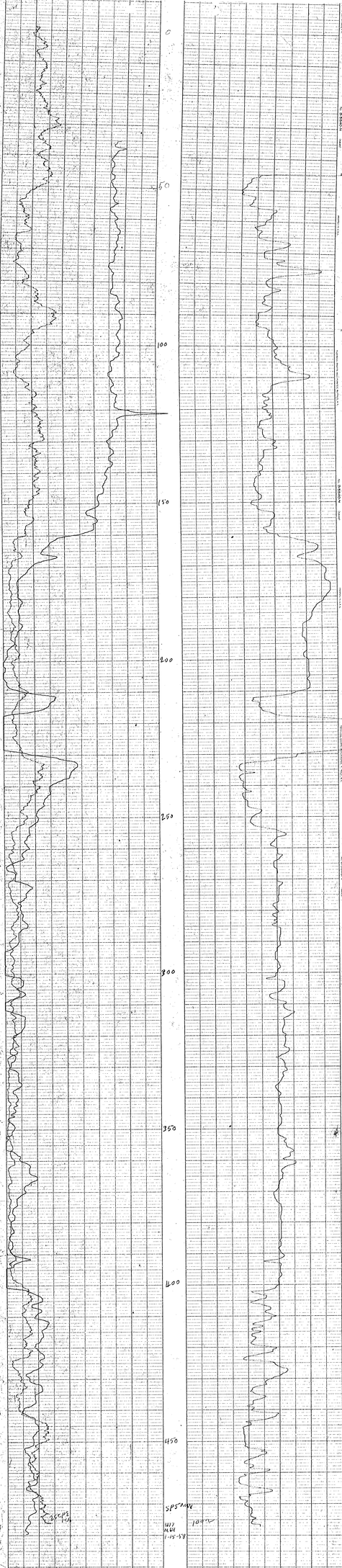
+ 10 −

NATURAL GAMMA -RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9	
4	6	8	10	12	14	
4	8	12	16	20	24	

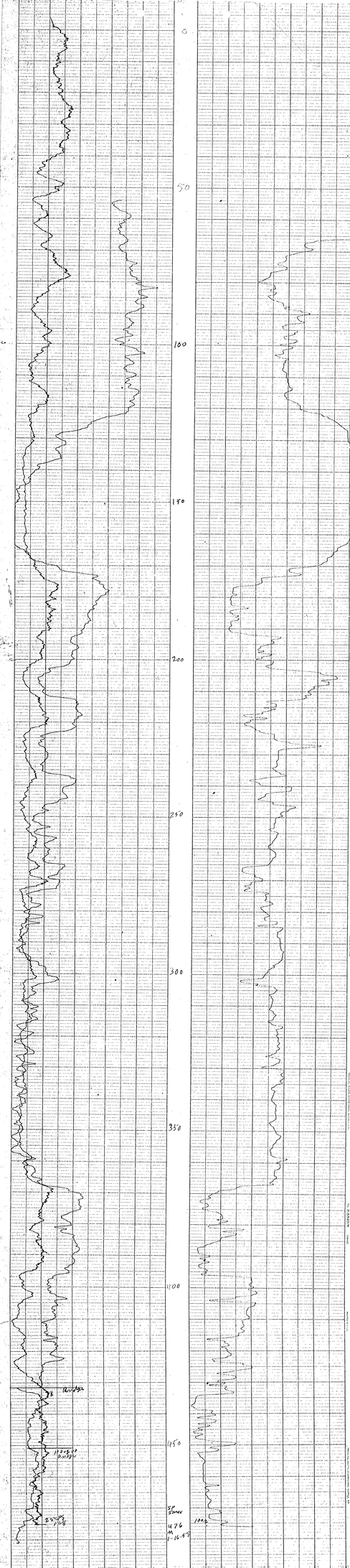
RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1 3/8 CALIBRATION: 3.6
DATE: 1-15-58 FIELD: Hopkins Hopkins

	MAIN						
HOLE NO.	14						
HOLE DIAM.	11						
DEPTH	1130						
DRILLER DEPTH	1130						
DRAWN DEPTH	1130						
CASING DEPTH	22						
CASING DIAM.	8						
DRILLER DEPTH	1.6	FEET	FEET	FEET	FEET	FEET	FEET
RESISTIVITY	16						
DRILLER DIAM.	15						
DRILLER DEPTH	1.6	METER	METER	METER	METER	METER	METER
MUD RESISTIVITY							
MUD RESISTIVITY							
MUD RESISTIVITY						


0
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2200
2250
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2800
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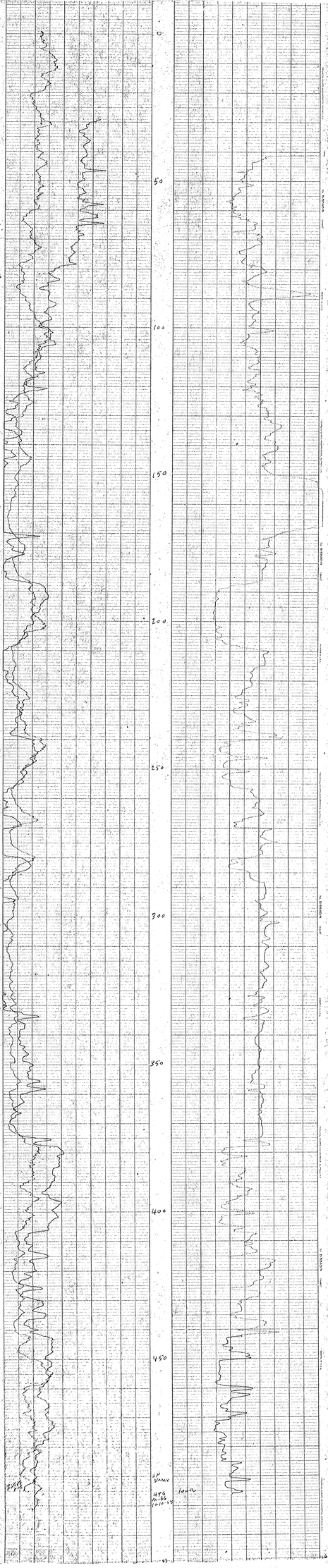
2950
3000
3050



LOGGING DATA

PROBE SIZE:

CALIBRATION: FIELD / MODULES:

DATE:

	INITIAL	RD	RD	RD	RD	RD	RD
HOLE SIZE	15.5						
MUD WT.	9.5						
DRILLER DEPTH	525 ft						
LOGGER DEPTH	525 ft						
CASING SIZE	5 3/4 in						
CASING DEPTH	525 ft						
CONDITIONS	300						
SPEED	10 FT/MIN	FT/M	FT/M	FT/M	FT/M	FT/M	FT/M
SENSITIVITY	100						
SELF POT.	10 MV/CM						
MEAS. POINT	16.5	WITH					
REMARKS	RESISTIVITY			DIAM.			
	VISCOSITY			DRILLER			
DRILLER	TIME	DATE	TIME	DRILLER			
TIME	1410		TIME		I.D.	IN	
TIME	2010		TIME		DIAM.	IN	

LOCATION		TIME	
SEC.	TWP.	RGE.	DRIVE: 1.0
COUNTY: Jefferson			FIELD: 1.0
STATE: Colorado			STANDBY:
AREA: Golden			BREAKDOWN:
CLIENT:			TOTAL: 2.0
OPERATOR: Miller			
LOGGED BY:			
PARTY NO: 611			

SELF POTENTIAL 5 MV/IN

+ 10 — 0 −

NATURAL GAMMA RAY
COUNTS PER SECOND

Century

GEOPHYSICAL CORP.
TULSA, OKLA. U.S.A.

EXPLORATION LOG

COMPANY: JOSE HOLENO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM FILE
DRILL MEAS. FROM INC.

DATE:
VOLTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
GL
KB
SEGRS. COUNT
15,000 PER CY.

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DATE THICKNESS	% U3O8	COND. CPS	% EU3O8

INTERPRETATION BY:

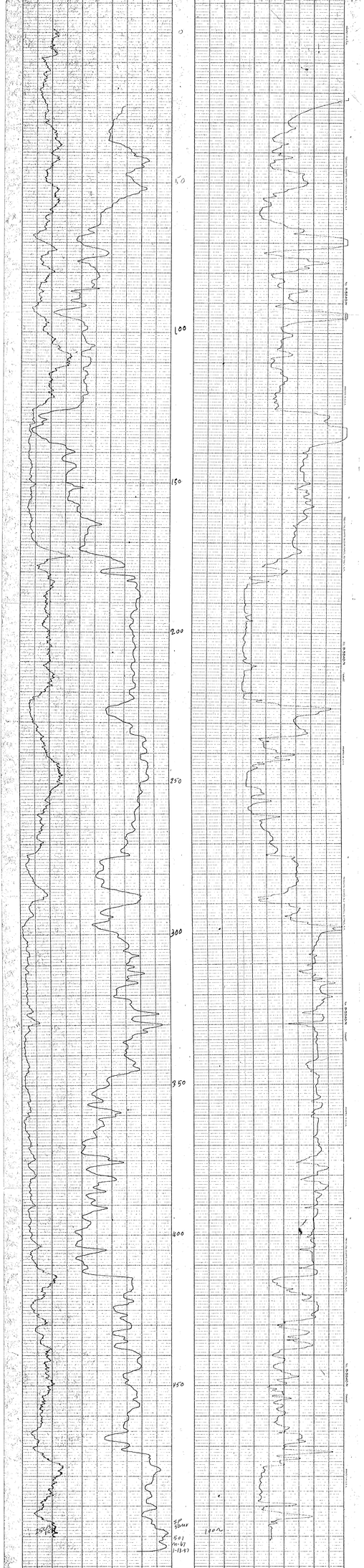
GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
4	8	12	16	20	24

RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 3 5/8 CALIBRATION: 501

DATE: 1-13-57 FIELD HOURS: 5:45 PM

HOLE DIA.	6 1/4								
MUD WT.	9.4								
MUD VISC.	50								
SURFACE CASING	8 5/8	CSG							
SURFACE PIPE	5	DRL							
SURFACE TEMP.	70	FSTM							
RESISTIVITY	10	FSTM	FSTM	FSTM	FSTM	FSTM	FSTM	FSTM	FSTM
MUD RESIST.	10								
MUD WT.	10								
MUD VISC.	10	MUD							
	10.50			MUD					
MUD FILTRATE	RESISTIVITY					DATE			
	TEMPERATURE					RELAPSED			
CALIPER SETTING	1600	BATTERY	LEAD	PAPER SCALE					
TIME	1200		LEAD	TIME					

LOCATION: SEC. TWP. RGE.

COUNTY: Nueces

STATE: Texas

AREA: Agua Dulce

CLIENT: Independent

LOG REC'D BY: Schlumberger

TIME: DRIVE: 1.5; FIELD: 1.5; STANDBY: 0.0; BREAKDOWN: 0.0; TOTAL: 3.0

OPERATOR: Miller

PARTY NO.: 1-11

Century

GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.

EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM: DRILL MEAS. FROM: FILE NO.

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASIN ID

LOCATION OF HOLE

ELEVATION: KB / DF / GL

DEGREE COUNT (TUBE AT C)

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUISERIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH TRACKER	% U3O8	CORR. CPS.	% Eq.

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL 5 MV/DIV

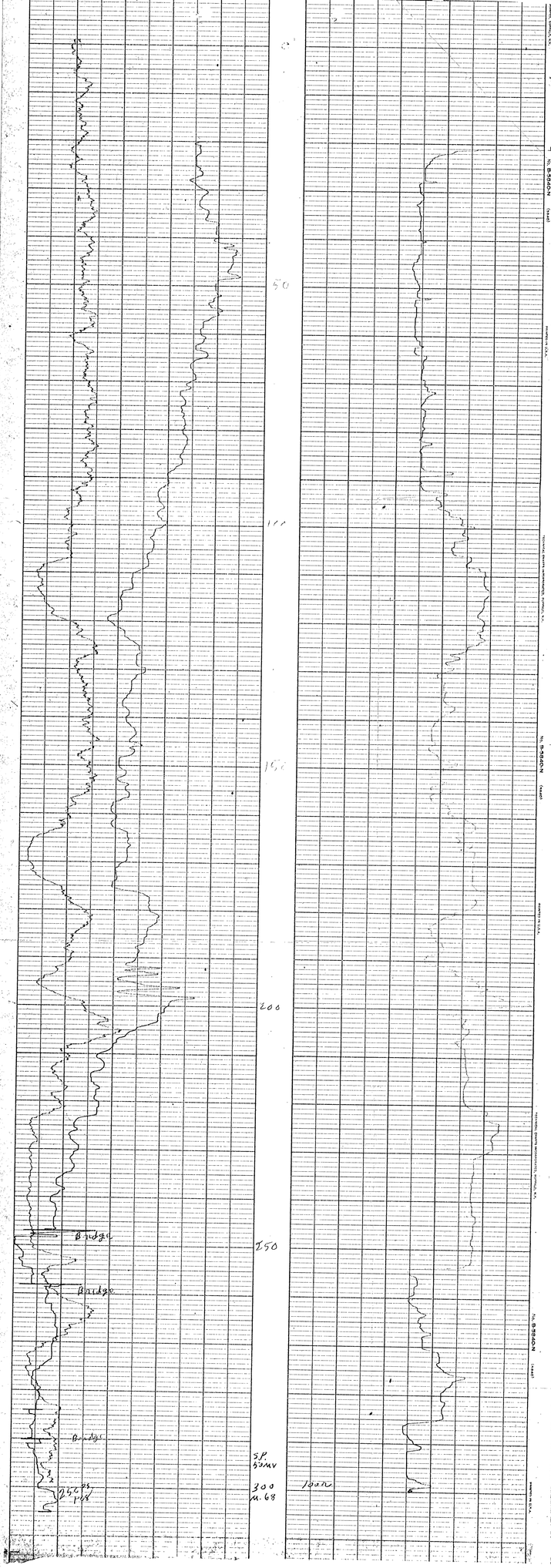
+ 10 -

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4 5 6 7 8 9
8 6 8 10 12 14
4 8 12 16 20 24

RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1 7/8 CALIBRATION: Sec
DATE: 1-5-55 FIELD HIDQTRS: Edgemont

	INITIAL RUN	RE-RUN	RE-RUN	RE-RUN	RE-RUN	RE-RUN	RE-RUN
HOLE NO.	no 65						
HOLE DIA.	4 1/4 IN						
DRILLED DEPTH	300 FT						
LOGGED MUD DEPTH	300 FT						
GAMMA SCALE	25 CPS						
TIME CONSTANT	3 SEC						
LOGGING SPEED	10 FT/M	FT/M	FT/M	FT/M	FT/M	FT/M	FT/M
RESISTANCE SCALE	100						
SELF POT SCALE	10 MV/IN						
BORE HOLE MEDIUM	H2O	WATER					
MUD READINGS	RESISTIVITY			TYPE CAKE			
	VISCOSITY			GALINITY			
CALIPER SCALE	MV/IN	LEG SIZE		PAPER SCALE			
TIME IN	1409	CASED TO					
TIME OUT	1440	CORE INT.			I.D. DIA'M	IN	IN

LOCATION
SEC. TWP. RGE.
COUNTY: Natrona
STATE: Wyo.
AREA: Casper
CLIENT: Wilkerson
LOG REC'D BY:

TIME
DRIVE: 4
FIELD: 6
STANDBY:
BREAKDOWN:
TOTAL: 1.5
OPERATOR: Miller
PARTY NO: 11A

Century
GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.
EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM ..... FILE
DRLG. MEAS. FROM ..... NO.

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE
ELEVATION
KB
GL
BKGRD. COUNT
SLUSH PIT CT.

REMARKS:

INTERPRETATION

RADIOMETRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH THICKNESS	% KO	CON.R. CPS.	% U3O8

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIALS 53 MV

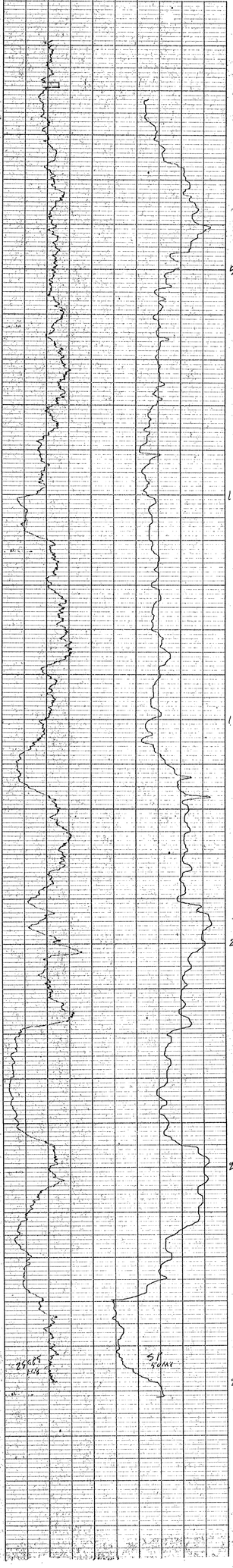
+ ◀ 10 ▶ −

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
4	8	12	16	20	24

RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1 3/8 CALIBRATION: [illegible]

DATE: 1-7-58 FIELD HDQTRS: [illegible]

	INITIAL RUN	RE-RUN	RE-RUN	RE-RUN	RE-RUN	RE-RUN
HOLE DIA.	6 1/4					
CASED HOLE DIA.	4 1/2 IN					
LOGGED DEPTH	299 FT					
GAMMA SCALE	25 CPS					
TIME CONSTANT	3 SEC					
PAPER SPEED	10 FT/IN					
LOGGING SPEED	10 FT/M	FT/M	FT/M	FT/M	FT/M	FT/M
RESISTIVITY SCALE	100					
SELF POT SCALE	10 MV/IN					
BORE HOLE MEDIUM	H2O	WTR				
MUD READINGS	RESISTIVITY			PIPE RADE		
	VISCOSITY			GALLINITY		
CALIPER SCALE	MV/IN	LEG DIR.		PAPER SCALE		
TIME IN	1700	CASED HOLE			I.D.	IN
TIME OUT	1735	CORE UNIT			DIAM	IN

LOCATION	TIME
SEC: TWP. RGE.	DRIVE: [illegible]
COUNTY: Cat River	FIELD: [illegible]
STATE: SD	STANDBY: .4
AREA: Banks	BREAKDOWN:
CLIENT:	TOTAL: 1.6
LOG REC'D BY: Mcclure	OPERATOR: Miller
	PARTY NO: 611

Century

GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.

EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM ..... FILE .....
DRLG. MEAS. FROM ..... NO. .....

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
KB
GL
DRGRD. COUNT .....
FLUSH PIT CT. .....

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH THICKNESS	% K_2O	CORR. CPS.	% U_3O_8

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL MV/IN

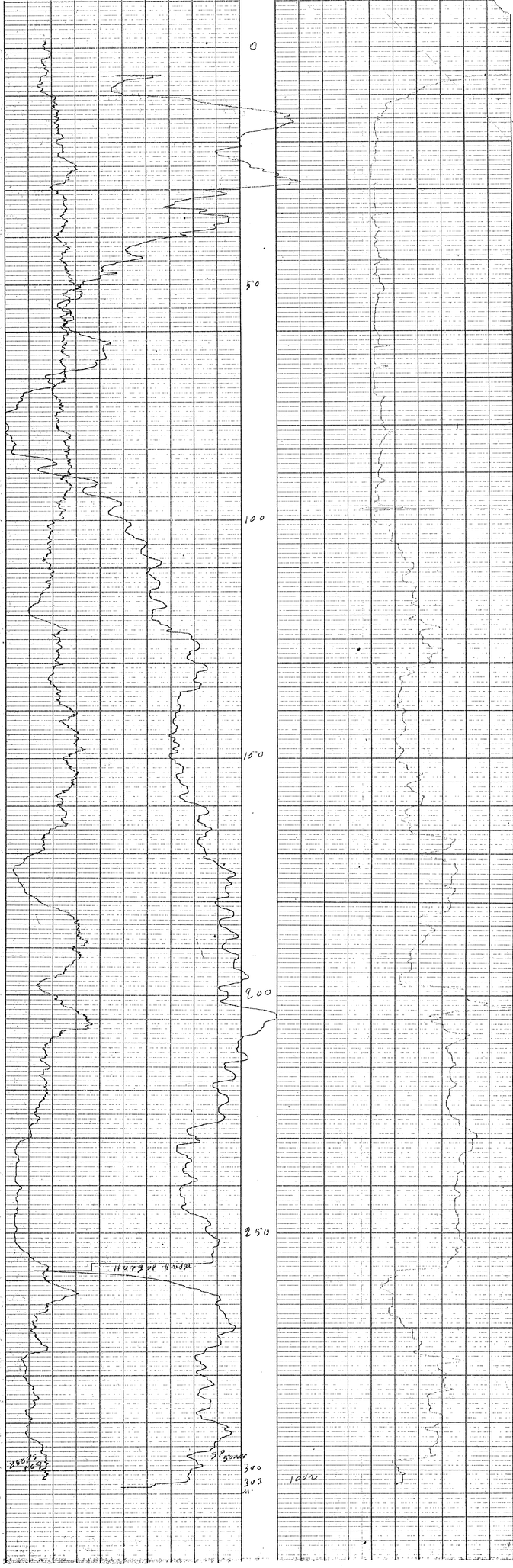
+ ◀ 16 ▶ −

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
4	8	12	16	20	24

RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1 CALIBRATION: 50
DATE: 7-5-55 FIELD HOOTS: Coopernoll

	INITIAL RUN	RE-RUN	RE-RUN	RE-RUN	RE-RUN	RE-RUN	RE-RUN
HOLE NO.	M-10						
HOLE SIZE	12 1/4 IN						
DRILLER DEPTH	305 FT						
LOGGED DEPTH	302 FT						
GAMMA SCALE	50 CPS						
TIME CONSTANT	3 SEC						
PAPER SPEED	10 FT/IN						
LOGGING SPEED	10 FT/M	FT/M	FT/M	FT/M	FT/M	FT/M	FT/M
RESISTANCE SCALE	100						
SELF POT SCALE	10 MV/IN						
BORE HOLE MEDIUM	H2O		WATER				
MUD	RESISTIVITY					TYPE BASE	
READINGS	VISCOSITY					SALINITY	
CALIPER SCALE	MV/IN	LOG SIZE		PAPER SCALE			
TIME IN	1700	CASED INT.			I.D.	IN	
TIME OUT	1730	CORE INT.			DIAM	IN	

LOCATION		TIME	
SEC.	TWP. RGE.	DRIVE:	5
COUNTY: Gallatin		FIELD:	5
STATE: Ill		STANDBY:	
AREA: Alaska		BREAKDOWN:	
CLIENT: Pinkerton		TOTAL:	1.5
LOG REC'D BY:		OPERATOR: Miller	
		PARTY NO: U11	

Century
GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.
EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM ..... FILE .....
DRLG. MEAS. FROM ..... NO. .....

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE
ELEVATION
KB
GL
BKGRD. COUNT .....
SLUSH PIT CT. .....

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH THICKNESS	K KO	CORR. CPS.	% U_3O_8

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL 50 MV

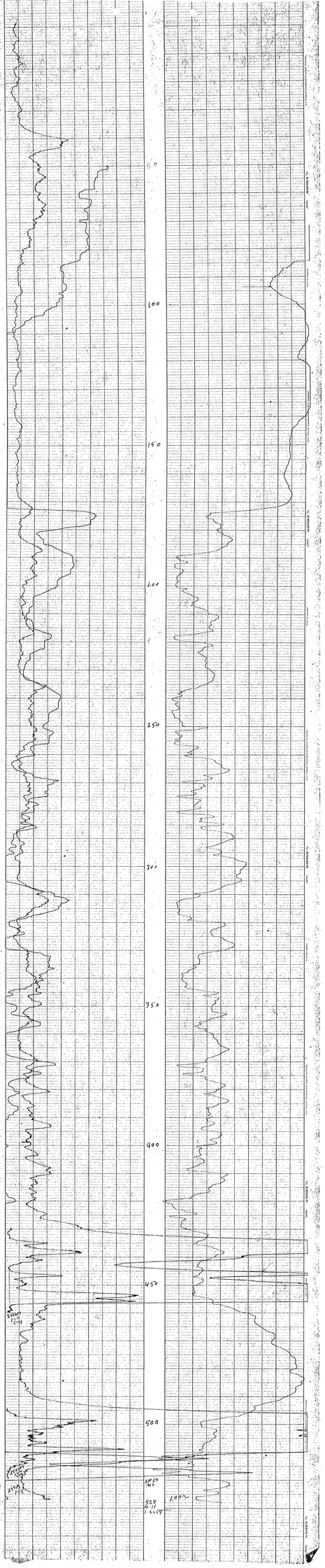
+ 10 MV −

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
4	8	12	16	20	24

RESISTANCE
OHMS — M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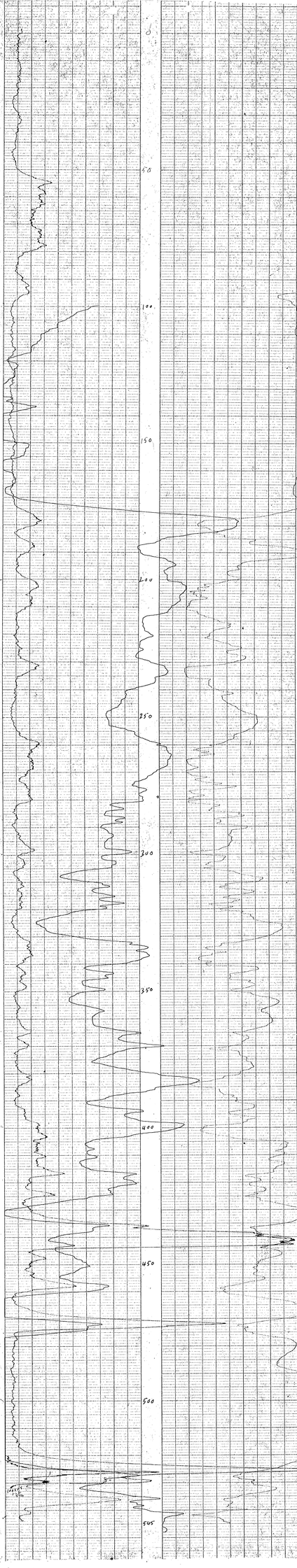


LOGGING DATA

PROBE SIZE: 1 3/8 CALIBRATION: Zero
DATE: 1-25-58 FIELD INSPECTOR: Ed Gilmore

HOLE SIZE	6 1/2"							
MUD WEIGHT	9.1 lb/gal							
MUD VISCOSITY	41 sec							
MUD FLUID LOSS	15.5 cc							
MUD RESISTIVITY	3.45 Ω m @ 72°							
MUD CAKE	2.5 mm @ 60°							
CASING SIZE	8 DEG.							
CASING DEPTH	10 FEET							
MATRIX DENSITY	2.65 g/cc							
MATRIX DELTA-T	56							
FLUID DELTA-T	189							
MATRIX	1.25"	MUD						
MUD RESISTIVITY	PERMEABILITY			MUD RESISTIVITY				
CALIPER	1.5"	MATRIX	MUD	CALIPER				
TIME CONSTANT	1.5							
TIME CONSTANT	1.250							

LOCATION: TIME:
SEC: TWP: RGE: DRIVEL: 5
COUNTY: Jefferson FIELD: 10
STATE: Texas STANDOFF: 10
AREA: BREAKDOWN:
CLIENT: TOTAL: 1.5
Sun Gulf
LOG REC'D BY: OPERATOR: Al Ho
PARTY NO.: 6 11

SELF POTENTIAL 5 2 3/4

+ 10 −

NATURAL GAMMA RAY
COUNTS PER SECOND

Century

GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.

EXPLORATION LOG

COMPANY:
HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM FT. ABOVE
GRND. MEAS. FROM FT. ABOVE

LOCATION OF HOLE

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

ELEVATION
KB
DF
GL

MEAS. POINT
(ELEV. ABV. GL)

REMARKS:
600 - 532 - 1000 CPS Ra

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

LEVEL PER SEC.	DEPTH THICKNESS	%	GAMMA CPS.	% EU/U

INTERPRETATION BY:

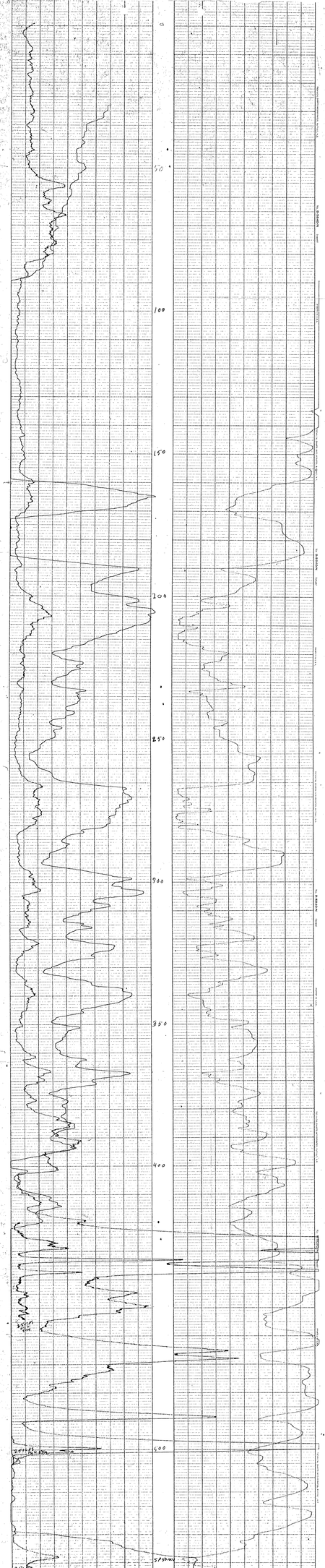
GEOLOGIC TOPS

FORMATION	DEPTH	THICKNESS

CALIPER IN/IN

4	5	6	7	8	9
6	8	10	12	14	
4	8	12	16	20	24

RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1.75 CALIBRATION: 3.0

DATE: 1-23-55 FIELD HOUSTON-Sunset

	PRIMARY	SEC.	SEC.	SEC.	SEC.	SEC.
	1	2	3	4	5	6
HOLE SIZE	7 7/8					
MUD WT.	9.1					
DRILLER DEPTH	5'59 ft					
LOGGER DEPTH	5'59 ft	10 3½			552	
SONDE TYPE	2.5 inch	0250				
SONDE CENTERED	8 inch	6 in				
PROBE TYPE	1.75 inch	10 1/4				
SENSITIVITY	1.0	10	10	10	10	10
RESISTIVITY MULTIPLIER	1.0					
MULTI-SPOT	1.0					
ROOT HOLE DEPTH	112 ft	NOTE	Found			
LOG RESISTIVITY			FILM SIZE			
LOG GAMMA			GAMMA			

CALIBRATED FROM	TO	MINUTES	LOGGER TIME	PROBE TIME		
1130					CPS	CPM
1130					BKGD	BK

LOCATION

SEC. TWP. RGE.

COUNTY: Hennepin FIELD:

STATE: Minn. SEARCH:

AREA: BREAKDOWN:

CLIENT: TOTAL:

(CO. SEC. TWP. RGE.)

OPERATOR: Miller

PARTY NO. 611

TIME

DRIVE: 1 3/4

1 3/4

STANDBY: 1 3/4

TOTAL: 1.7

Century

GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.

EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM FILE NO.
DRILL MEAS. FROM

DATE:
PONTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASING TO

LOCATION OF HOLE

ELEVATION
KB
DF
BEGINS COUNT
CLOSE AT CC

REMARKS:

5'05' - 4.96 2.58 CPS Ref

5'55' - 5.60 2.58 CPS Ref

INTERPRETATION

BASED ON RELATIVE VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

CONTACT PER SEC.	DEPTH THICKNESS	% AD	GRADE % U.P.R.	% U+CR

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL

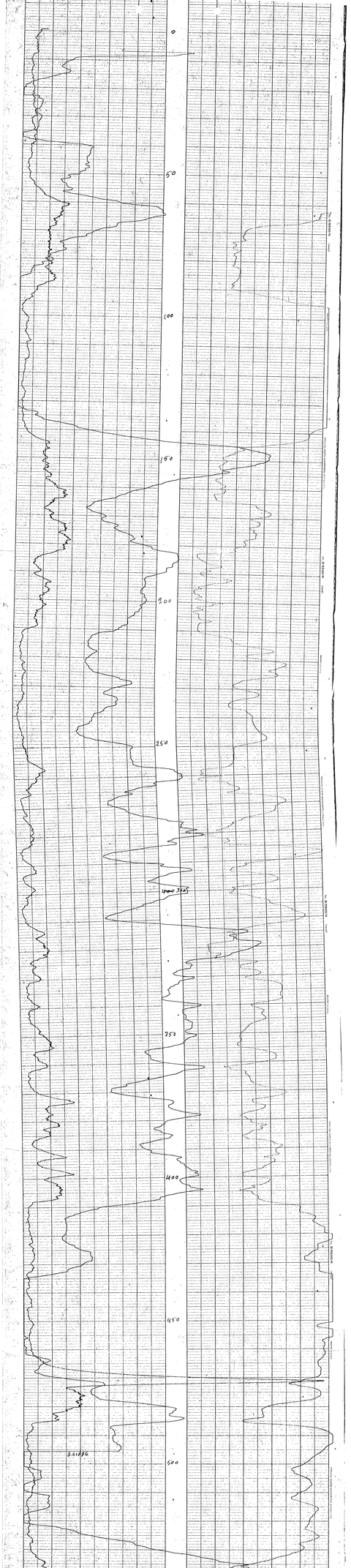
+ ◀ 10 ▶ −

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
4	8	12	16	20	24

RESISTANCE
OHMS — M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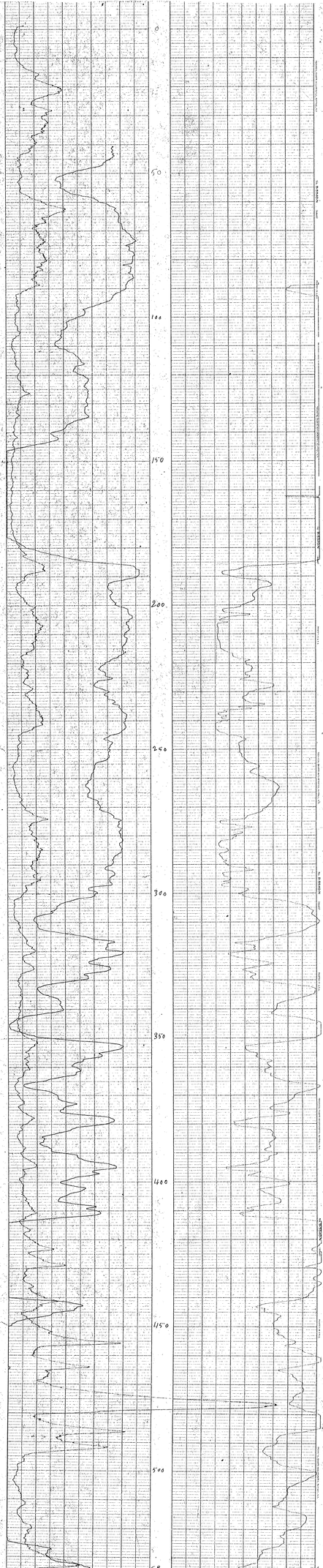
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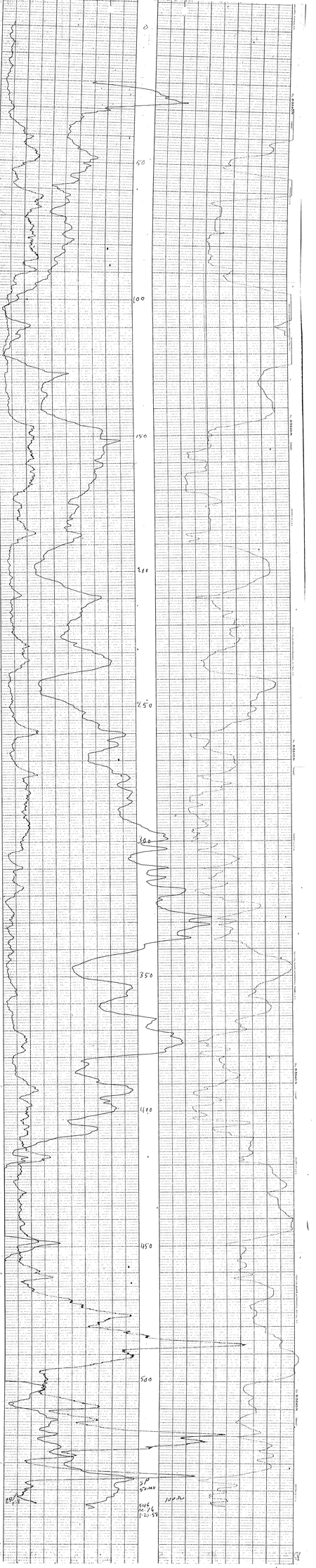
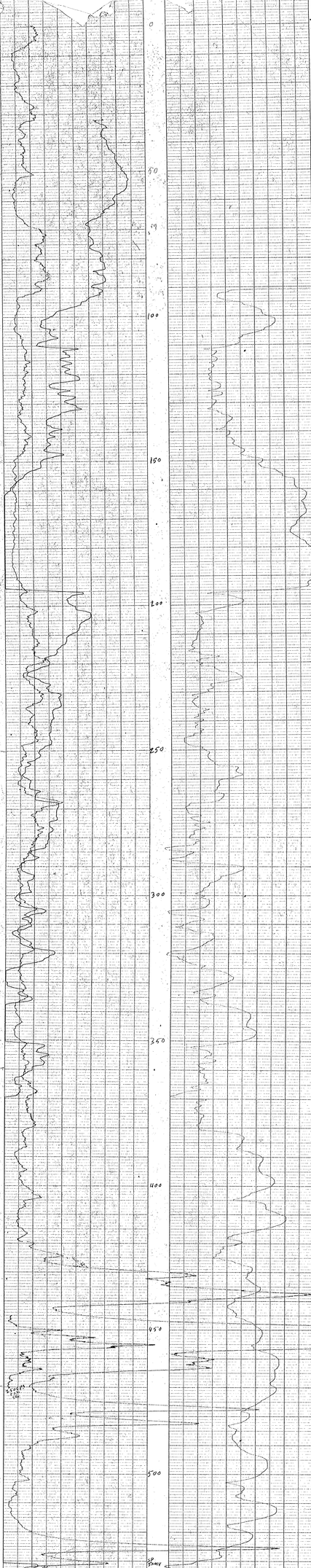


LOGGING DATA

PROBE SIZE: 1 3/4		CALIBRATION:	
DATE: 1-27-59		FIELD:	
		HIGHTS:	



LOGGING DATA

PROBE SIZE: 3.8 CALIBRATION: 2010

DATE: 1-21-58 FIELD HOURS: 8:00 to 4:00

	BIT	CSG.	BIT	CSG.	BIT	CSG.	BIT	CSG.
HOLE SIZE	11-17							
CASING SIZE	13.375 in							
DRILLER TOTAL DEPTH	562							
DRILLER CASING DEPTH	562							
LOGGER TOTAL DEPTH	563							
LOGGER CASING DEPTH	562							
DRILL PIPE SIZE	5 in							
DRILL COLLAR SIZE	5 in							
DRILLING FLUID	10 PPG							
DRILLING FLUID LEVEL	10 PPG							
RECORDED BY	BCC							
WITNESSED BY	BCC							
RUN NO.	ONE							
TIME STARTED	1:45							
TIME FINISHED	1:57							
CALIBRATOR TIME	1:45							
CALIBRATOR SIZE	1:57							
LOCATION SEC.	TWP.	RGE.						
COUNTY: Bonneville								
STATE: Ida								
AREA:								
CLIENT:								
LOG REC'D BY: Bonneville								

DRIVE:			
FIELD:			
STANDBY:			
BREAKDOWN:			
TOTAL:	6-3		
OPERATOR:	Miller		
PARTY NO:	6111		

SELF POTENTIAL 50 MV

+ 0 | C — 0 —

NATURAL GAMMA RAY
COUNTS PER SECOND

Century

GEOPHYSICAL CORP.
TULSA, OKLA. U.S.A.
EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.
SDE MEAS. FROM
STD. MEAS. FROM
DATE
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
GR
DRILL FLOOR
GROUND ABOVE SEA LEVEL

REMARKS:

LTC-HWS - 2 SEC 32 FT

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

GEOLOGIC TOP REF.	DEPTH INTERVALS	%	GRAM CM.	% GRAM

INTERPRETATION BY:

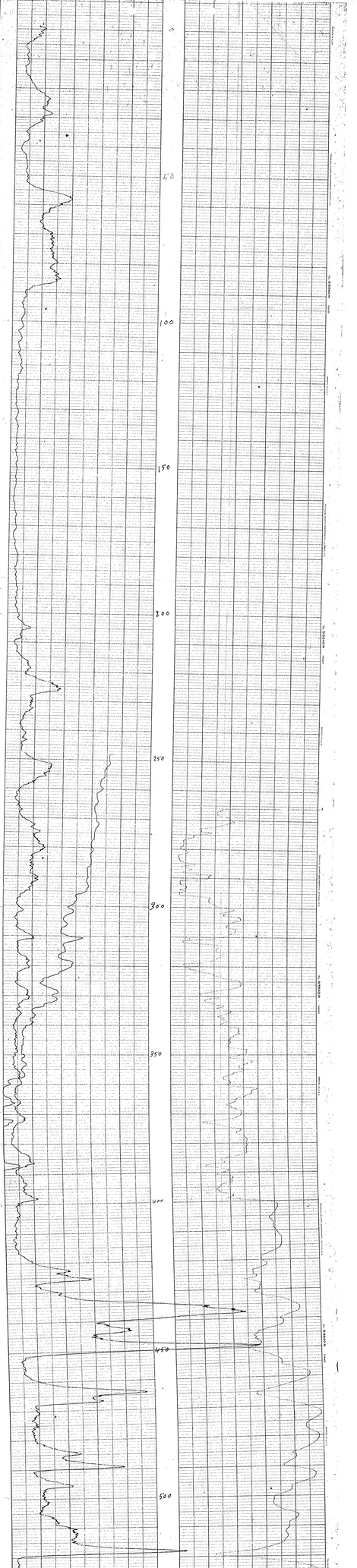
GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

CALIPER MV/IN

4	5	6	7	8	9
4	6	8	10	12	14
4	8	12	16	20	24

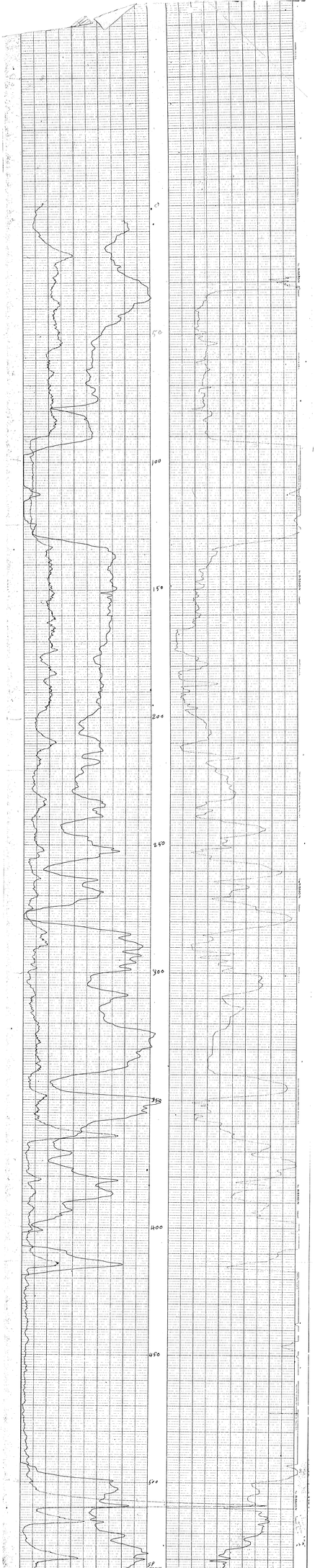
RESISTANCE
OHMS — M



LOGGING DATA

PROBE SIZE: 1 3/8 CALIBRATION: 1.0
DATE: 1-23-55 FIELD PROFILES: 5 of 5 closed

HOLE SIZE	10 1/2						
MUD WT.	12 lbs						
MUD VISCOSITY	38						
MUD RESISTIVITY	2.5 Ω						
SAMPLE	3						
CASING SIZE	8						
CASING DEPTH	12						
MATRIX							
DENSITY	2.65						
MUD RESISTIVITY	1.0						
HOLE CONDITION	GOOD						
MAX. RECORDED	1.0						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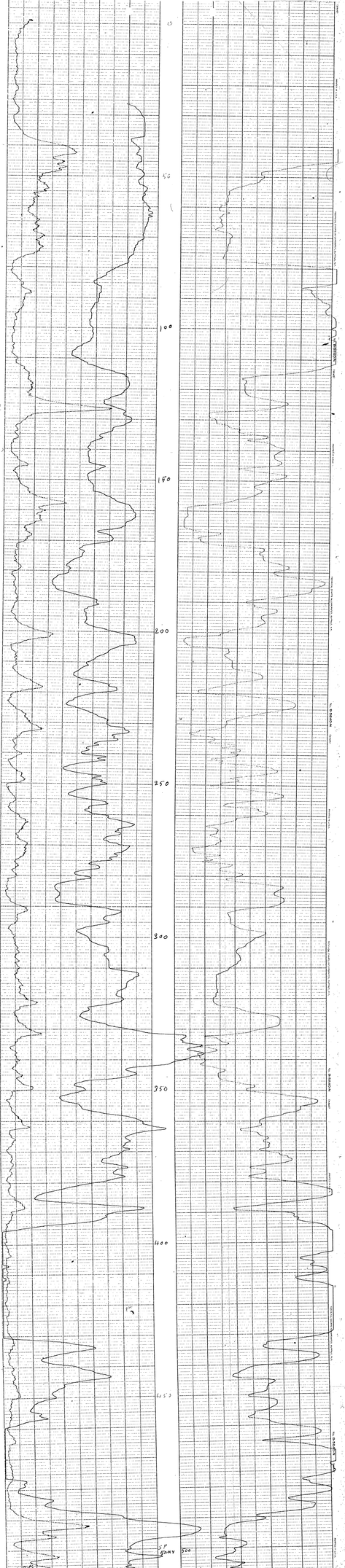


LOGGING DATA

PROBE SIZE: 1 x 8 CALIBRATION: 5.0

DATE: 1-29-53 FIELD HOURS: 2 Hours

	CENTRAL BOX	BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
HOLE SIZE	10 3/4					
MUD WT.	10.0 lbs					
DRILLER DEPTH	470 ft					
LOGGER DEPTH	509 ft					
BOTTOM DEPTH	509 ft					
CASING	9 ins					
DRILL PIPE	1 inch					
TUBING	1 inch	INCH	INCH	INCH	INCH	INCH
DRILLING RESISTANCE	100					
DRILL PIPE RESISTANCE	1.5	MOHM				
MUD WT. MEASUR	10.0	MEDIA				
MUD RESISTANCE	RESISTANCE / SUSCEPTIBILITY			RESISTIVITY		
CALIPER TIME	0750	BEFORE LOG		AFTER LOG		
GAMMA TIME	0750	BEFORE LOG		AFTER LOG		
SPN TIME	0750	BEFORE LOG		AFTER LOG		

LOCATION

SEC. TWP. RGE.
COUNTY: Washington
STATE: Ohio
AREA:
CLIENT: Mr. Gates
LOG REC'D BY:

TIME

DRIVE:
FIELD:
STANDBY:
BREAKDOWN:
TOTAL: 3.4

OPERATOR: Mr. Fox

PARTY NO. 1

Century

GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.

EXPLORATION LOG

COMPANY:
HOME HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM FILE
DRILL MEAS. FROM NO.

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
KB
MGRS. COUNT
DRILL RT. CT.

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH THICKNESS	%	GRAM OFE	% EU3O4

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTH	THICKNESS

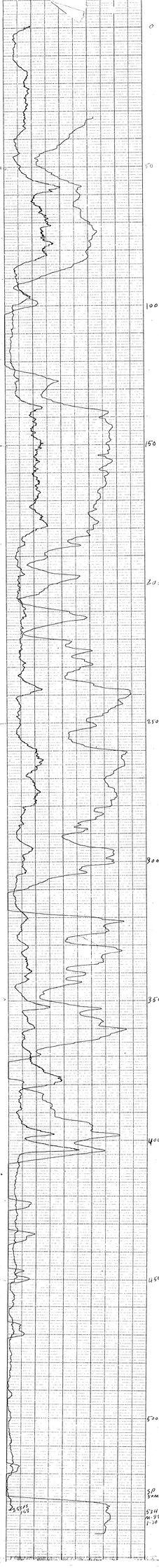
SELF, POTENTIAL MV/IN

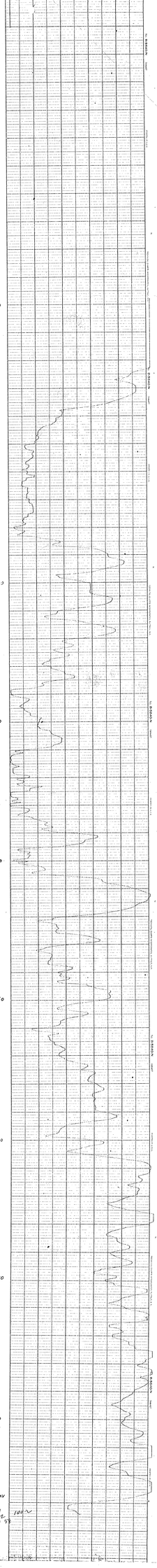
+ 10 — 10 −

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4 5 6 7 8 9
4 6 8 10 12
4 8 12 16 20





LOGGING DATA

PROBE SIZE: 1 3/4 CALIBRATION: 2.0
DATE: 1-30-59 HOOTER: 1 3/4 Sprcl

HOLE SIZE							
CASING SIZE							
CASING DEPTH							
DRILLER DEPTH							
DRILLER TD							
LOGGER DEPTH							
LOGGER TD							
CHANGE							
DATE							
TIME							
RECORDER SPEED							
MAX. MV							
MAX. HOLE DIAM.							
REMARKS							

SEC.	TWP.	RGE.	DRIVE
COUNTY			FIELD
STATE			STANDBY
AREA			BREAKDOWN
CLIENT			ROYAL
LOG REC'D BY:			OPERATOR:

PARTY NO.

LOCATION			TIME	
SEC.	TWP.	RGE.	DRIVE	
COUNTY			FIELD	
STATE			STANDBY	
AREA			BREAKDOWN	
CLIENT			ROYAL	
LOG REC'D BY:			OPERATOR:	

PARTY NO.

Century

GEOPHYSICAL CORP.
TULSA, OKLA. U.S.A.
EXPLORATION LOG

COMPANY:
BORE HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.
SEC. MEAS. FROM FILE
COL. MEAS. FROM
DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO
REMARKS:

LOCATION OF HOLE

ELEVATION
KB
DF
GL
REFER DATUM
DILSON AIR CO.

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH FROM-TO	%	CORR. FACTOR	DATE

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL SPMV

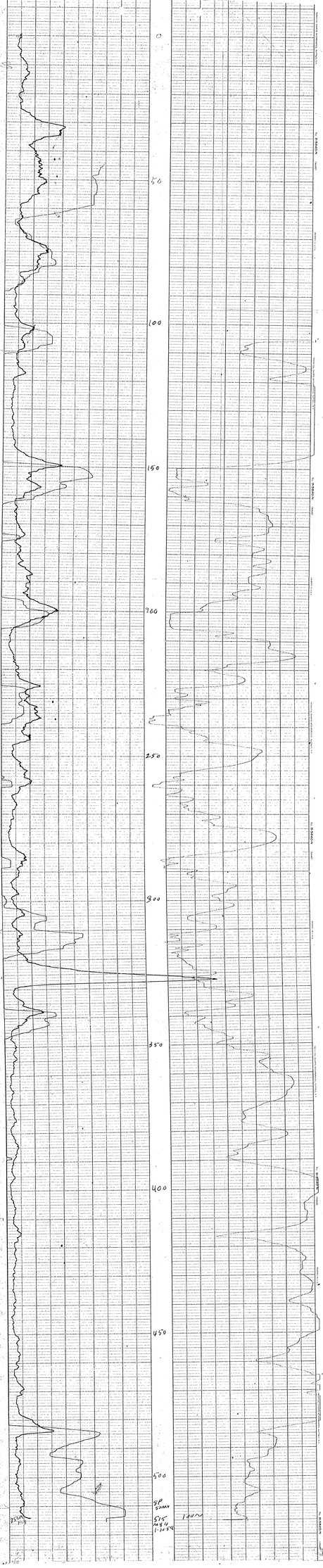
+ ◀ 10 - ▶ -

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

4	5	6	7	8	9		
4	6	8	10	12	14		
4	8	12	16	20	24		

RESISTANCE
OHMS—M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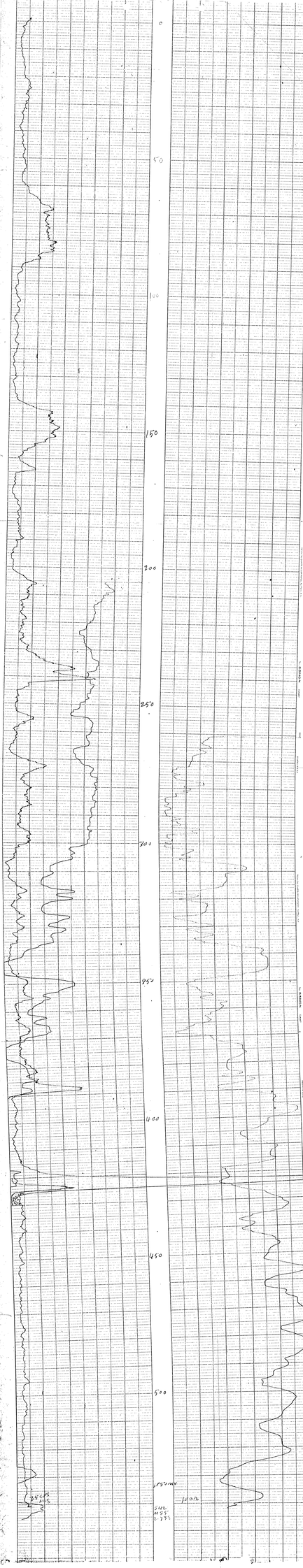
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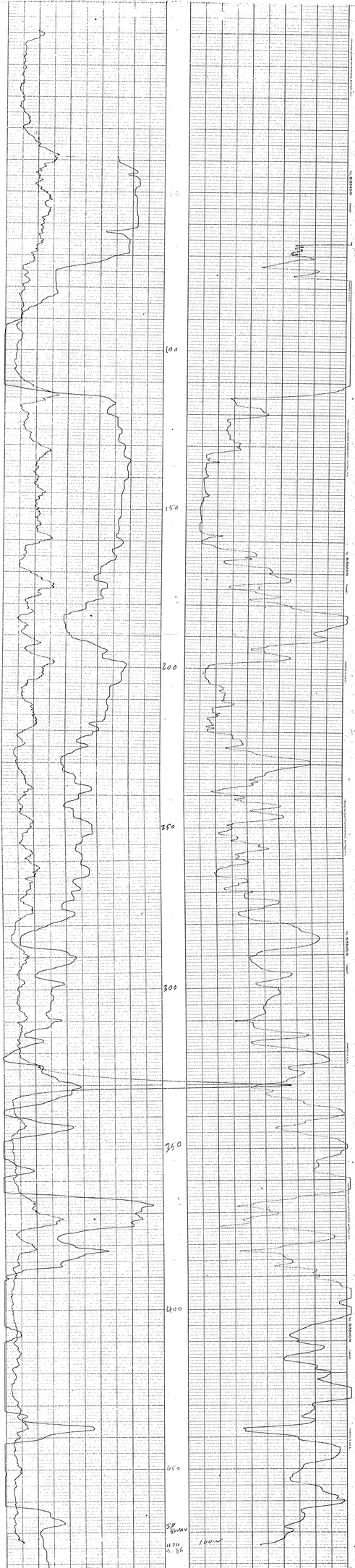


LOGGING DATA

PROBE SIZE: 3.5 CALIBRATION: 5.0 H2O

DATE: 5-5-53 HIGH/LOW: 5/1 11-14

	METAL RUN	PA	PB	PC	PD	PE	PF
HOLE NO.							
HOLE DIAM.	5 1/2 in						
DRILLER TD	1182						
LOGGER TD	1184						
DRILL PIPE							
DRILL COLLARS	3						
DRILL PIPE	1	FROM					
DRILL COLLARS		FROM	FROM	FROM	FROM	FROM	FROM
DRILLING FLUID	1	WATER					
DENSITY	1.06		WATER				
VISCOSITY							
MUD RESISTIVITY				MUD TEMP.			
MUD RESISTIVITY				BACKLIGHT			
CALIPER HOLE							
TIME	1615	WATER LEVEL		CASED TO		S.D.	
TIME	1700			TIME			
TIME				TIME			

LOCATION	TIME
SEC.	DRIVE:
COUNTY:	FIELD:
STATE:	SEASON:
AREA:	BREAKDOWN:
CLIENT:	TOTAL:
LOG REC'D BY:	OPERATOR:
	PARTY NO:

Century

GEOPHYSICAL CORP.
TULSA, OKLA., U.S.A.

EXPLORATION LOG

COMPANY:
WORK HOLE NO.
FIELD
COUNTY
LOCATION: SEC. TWP. RGE.

LOG MEAS. FROM FEET
STDD. MEAS. FROM FEET

DATE:
FOOTAGE
TOTAL DEPTH (DR)
HOLE DIAM.
LOGGING SPEED
TIME CONSTANT
MUD TYPE
CASED TO

LOCATION OF HOLE

ELEVATION
KB
GL
BKGRD. COUNT
SLUSH PIT CK

REMARKS:

INTERPRETATION

RADIO METRIC % VALUES COMPUTED WITHOUT BENEFIT OF LOCAL ORE EQUILIBRIUM FACTOR

MINERALIZATION

COUNTS PER SEC.	DEPTH THICKNESS	% U3O8	GRAM-CPS.	% U3O8

INTERPRETATION BY:

GEOLOGIC TOPS

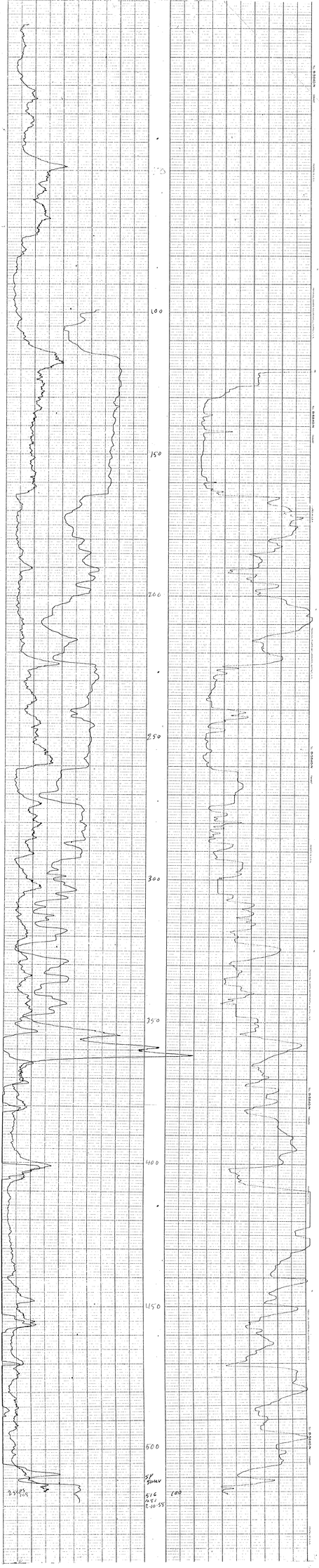
FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL

NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

RESISTANCE
OHMS — M

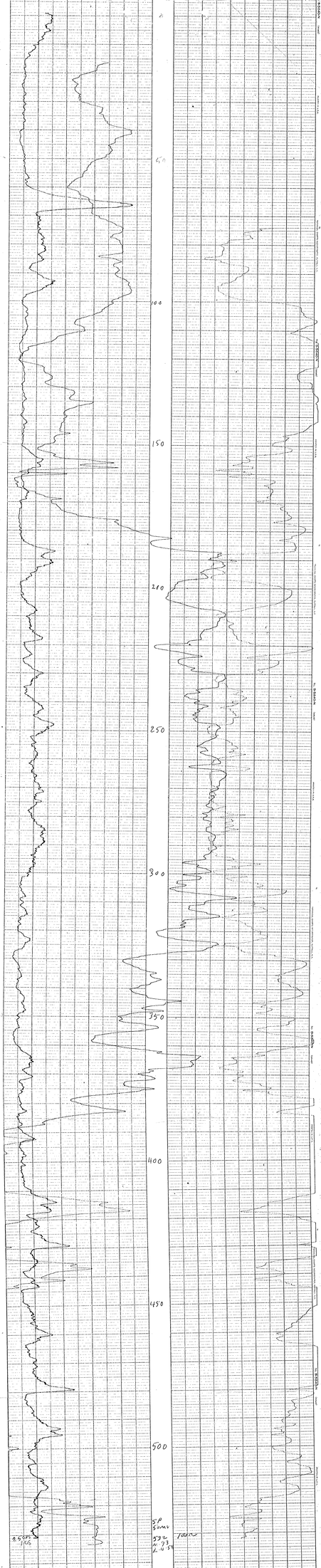


LOGGING DATA

PROBE SIZE: 4.5 CALIBRATION: See
DATE: 2-20-58 FIELD HOOTRS: 5 [illegible]

	UNITS	DIV.	DIV.	DIV.	DIV.	DIV.
HOLE	150.3 ft					
MUD	10.0 lb					
MUD VISC.	40.0 sec					
MUD RESIST.	0.75 Ω					
MUD SAMPLE	5.16					
MUD TEMP.	5 DEG					
CASING	5 DEG					
CASING RESISTIVITY	1.5 OHM					
MUD RESISTIVITY	1.5 OHM					
MUD SAMPLE	1.5 OHM					
MUD TEMP.	1.5 OHM	OHM	OHM	OHM	OHM	OHM

MUD RESISTIVITY			
MUD SAMPLE			
MUD TEMP.			
CASING RESISTIVITY			
CASING TEMP.		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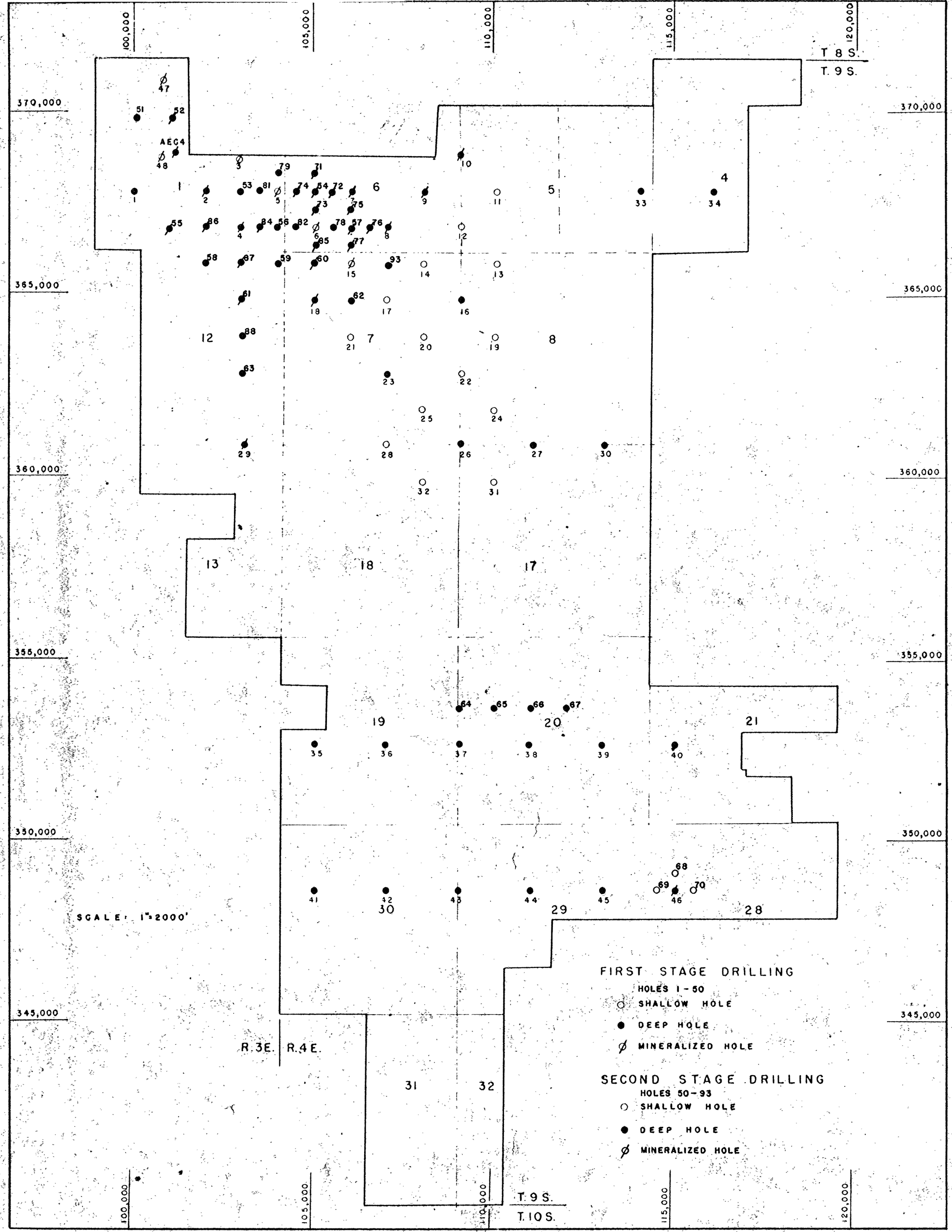
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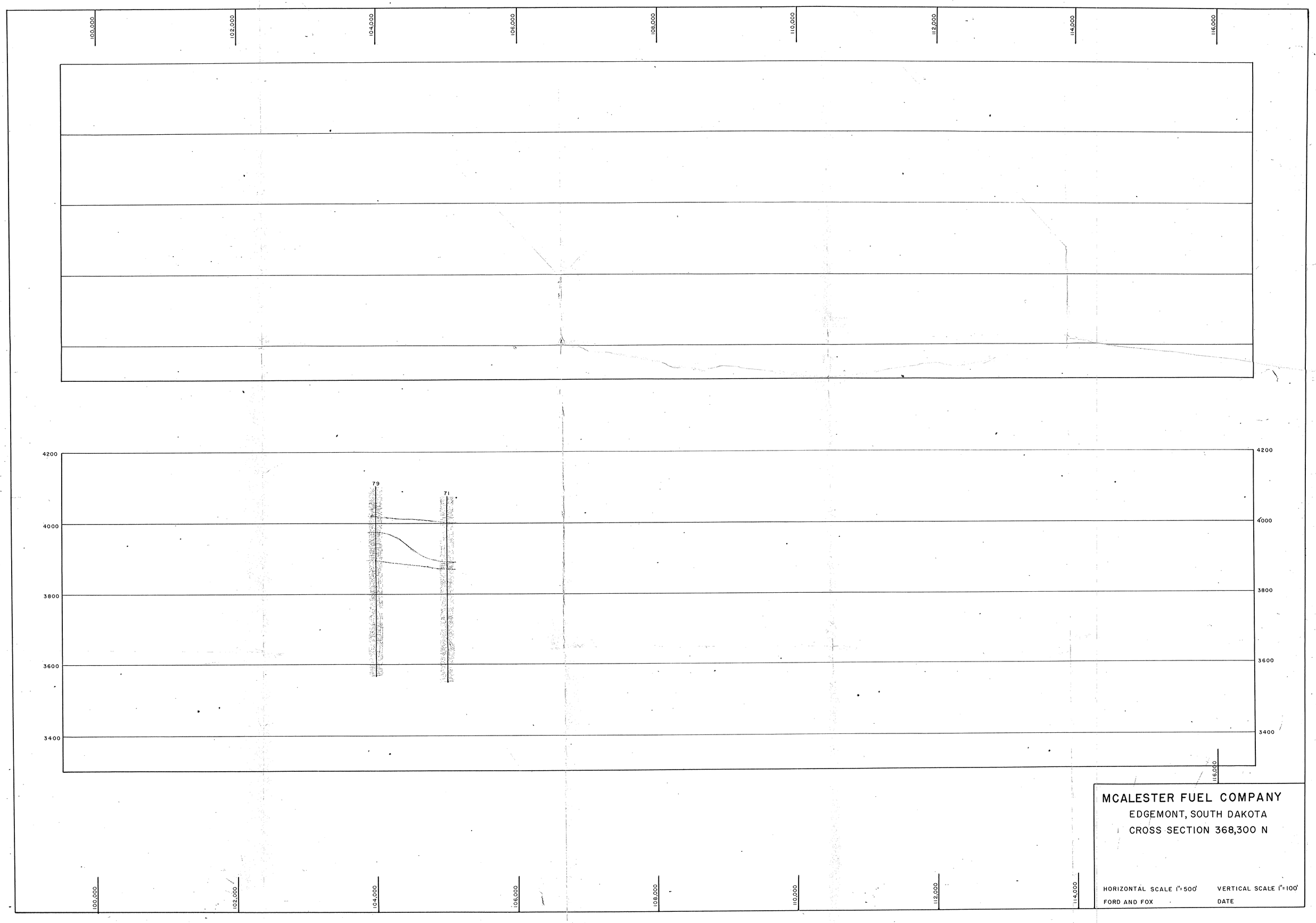
T 8 S.
T. 9 S.
370,000
365,000
360,000
355,000
350,000
345,000
AEC4
SCALE: 1"=2000'
R.3E.
R.4E.
T.9 S.
T.10S.
FIRST STAGE DRILLING
HOLES 1 - 50
SHALLOW HOLE
DEEP HOLE
MINERALIZED HOLE
SECOND STAGE DRILLING
HOLES 50 - 93
SHALLOW HOLE
DEEP HOLE
MINERALIZED HOLE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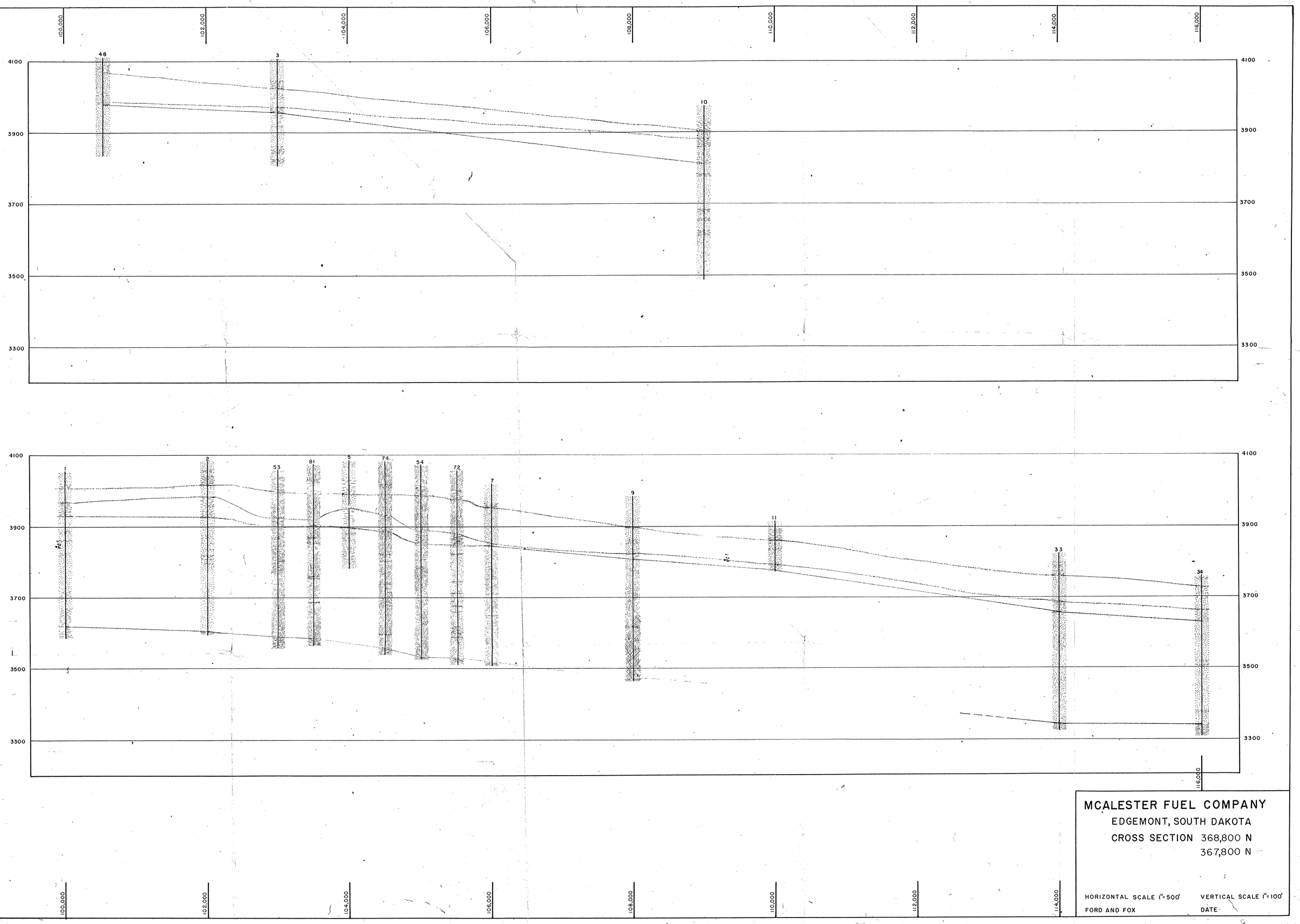
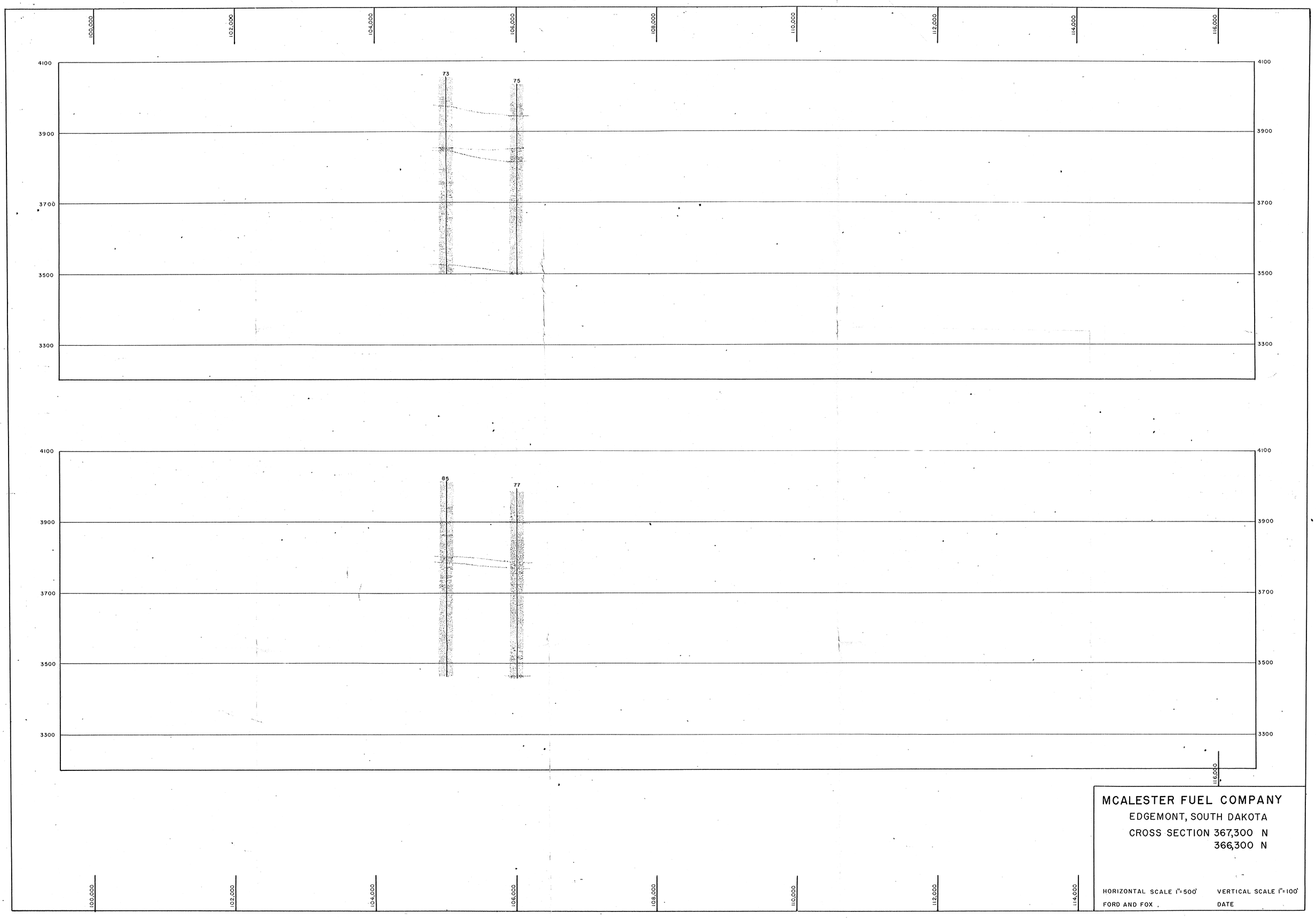
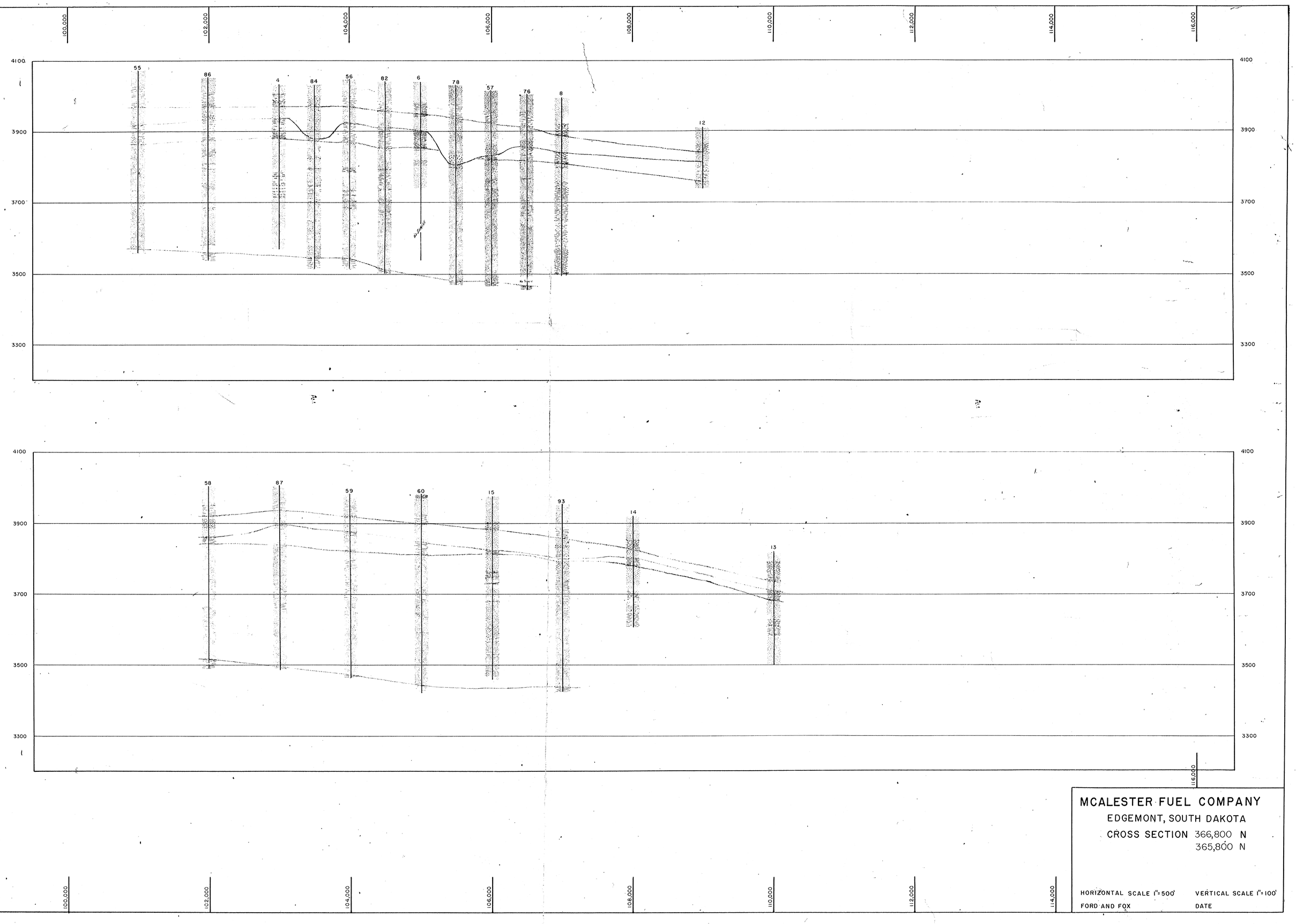
102,000
104,000
106,000
108,000
110,000
112,000
114,000
116,000
4200
4000
3800
3600
3400
79
71
MCALESTER FUEL COMPANY
EDGEMONT, SOUTH DAKOTA
CROSS SECTION 368,300 N
HORIZONTAL SCALE 1"=500'
VERTICAL SCALE 1"=100'
FORD AND FOX
DATE



MCALESTER FUEL COMPANY
EDGEMONT, SOUTH DAKOTA
CROSS SECTION 368,800 N
367,800 N

HORIZONTAL SCALE 1"=500'
VERTICAL SCALE 1"=100'
FORD AND FOX
DATE


100,000
102,000
104,000
106,000
108,000
110,000
112,000
114,000
116,000
4100
3900
3700
3500
3300
73
75
85
77
MCALESTER FUEL COMPANY
EDGEMONT, SOUTH DAKOTA
CROSS SECTION 367,300 N
366,300 N
HORIZONTAL SCALE 1"=500'
VERTICAL SCALE 1"=100'
FORD AND FOX .
DATE



MCALESTER FUEL COMPANY

EDGEMONT, SOUTH DAKOTA

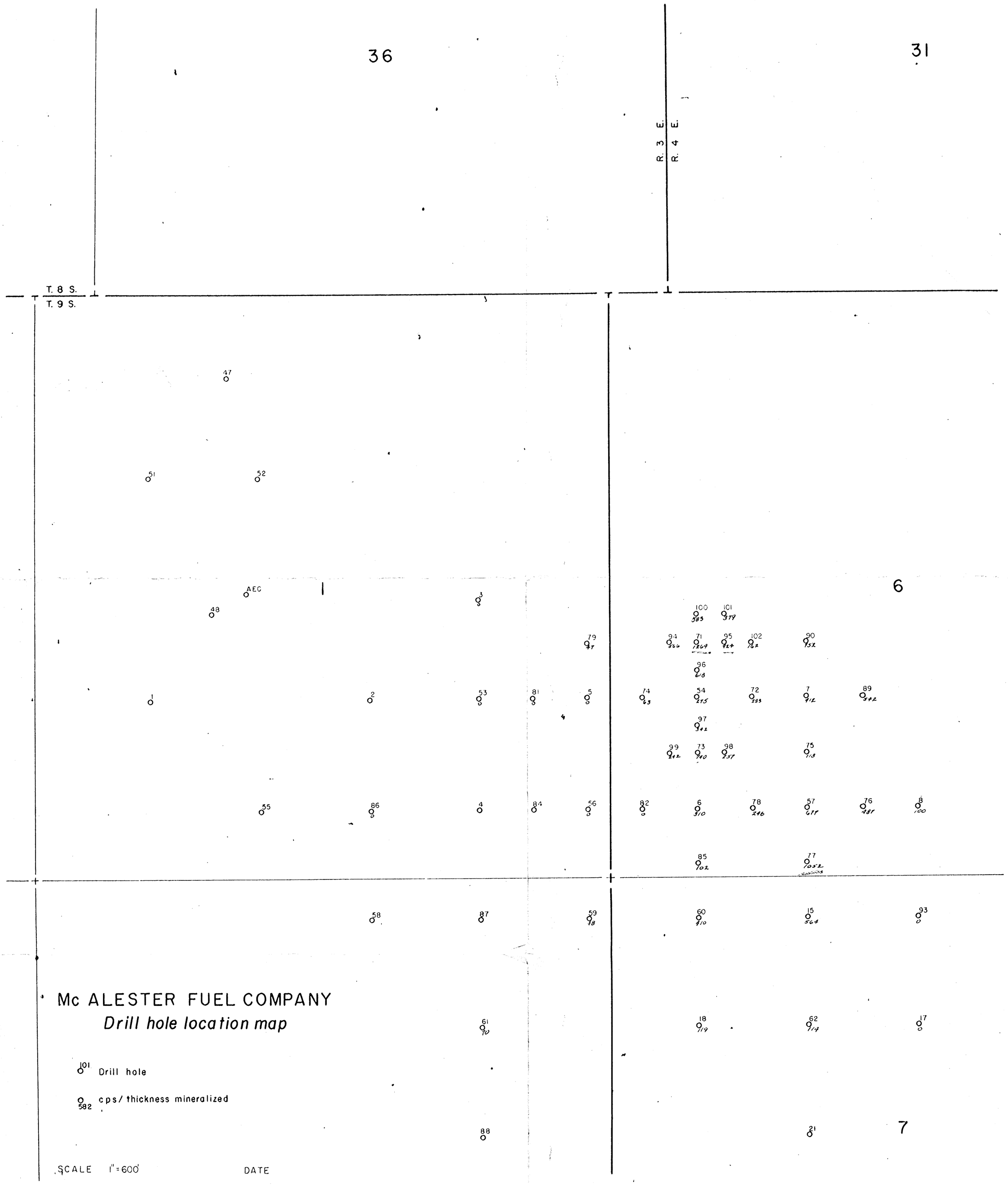
CROSS SECTION 366,800 N
365,800 N

HORIZONTAL SCALE 1"=500'

VERTICAL SCALE 1"=100'

FORD AND FOX

DATE


36
31
R. 3 E.
R. 4 E.
T. 8 S.
T. 9 S.
6
7
AEC
Mc ALESTER FUEL COMPANY
Drill hole location map
Drill hole
cps/ thickness mineralized
SCALE 1"=600'
DATE