FINAL DISTRIBUTION

MADE JUN 28 1957

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION III
224, New Federal House, Denver 2, Colorado

Administrative Audit Difference Statement

Food Machinery & Chemical Corporation
161 East 42nd Street
New York 17, N. Y.

Date: June 27, 1957
Payee's Reference: April 1957
DMEA-3943

Gentlemen:

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

Amount Claimed	$	14,191.26
Difference	$	1,086.42
Amount Approved	$	13,104.84

Disallowance: The reason for the difference was due to:

Incidental allowance reported for 5718 ft @ $0.39 per ft.	$2,230.02
Acceptable Incidental allowance for 5718 ft @ $0.20 per ft. per Amendment #2,	$1,143.60
Amount to be disallowed.	$1,086.42

Reinstated: $500.00 which was withheld from the September 1956 voucher.

Withheld: $500.00 pending resolution of matters relative to closing the account.

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DMEA
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DATE	INITIALS	CODE
7/1/57		110
	Chiy	700

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
4-15-52 D

EXTRA-COPY

DMEA

224 New Customhouse
Denver 2, Colorado

June 26, 1957

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA Docket-3943 (Uranium) Contract Idm-2932
Food Machinery and Chemical Corporation, Westvaco
Mineral Products Division (Sec. 9, T13N, R 9 W) McKinley County, New Mexico - Operator's Monthly
Progress Report for the month of April, 1957

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.

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.

A sandstone lens or tongue which was cored in the interval from 197-219 feet in hole No. 2000-1400 was not identified as Poison Canyon sandstone, therefore the Engineer's report indicates that the core footage should be considered as non-core, at the non-core drilling rate. As the sandstone could not be positively identified prior to drilling, we consider that the Operator complied with the intent of the contract in coring the lens or tongue, which may or may not be a lens or tongue of Poison Canyon sandstone, therefore no disallowance or adjustment is necessary. A relative memorandum dated June 5, 1957, by Howard F. Albee, Geologist, is attached.

In conformance with Amendment No. 2 to the contract, beginning with the ninth hole drilled under Stage II all holes were drilled non-core throughout, and the Incidental Allowance for the

latter drilling was reduced from $0.39 per foot to $0.20 per foot. The Operator reported all Incidental Allowance at the higher rate, therefore the excess reported cost of Incidental Allowance, beginning with the ninth hole under Stage II, is disallowed as follows:

Hole No.	Acceptable Footage	Hole No.	Acceptable Footage
1000-2200	294	2600-3000	345
1800-2200	308	3200-3000	327
2400-2200	324	4000-3000	344
3400-2200	358	4800-3000	495
5000-2200	325	600-3800	251
400-3000	265	1400-3800	300
1200-3000	271	2200-3800	365
2000-3000	327	3000-3800	394
		3800-3800	425
Total			5718 feet

Disallowance:

Incidental Allowance reported for above 5718 feet at 0.39 per foot ---------- $2230.02
Acceptable Incidental Allowance for above 5718 feet at 0.20 per foot ---------- 1143.60
Amount to be disallowed ---------- $1086.42

Reinstate the amount of $500.00 which was withheld from the September, 1956 Voucher.

Withheld an amount of $500.00 pending resolution of matters which are prerequisite to closing the account. The approved contract work has been completed.

Reconciliation with Amount Reported by the Operator on Form MF-104 for April, 1957

Amount reported on Form MF-104 for April, 1957 ---------- $14,491.26
Amount to be disallowed ---------- 1,086.42
Total accepted cost for April, 1957 ---------- $13,404.84

Government Participation at 75 percent ---------- 10,053.63
Amount to be reinstated ---------- $500.00
Amount to be withheld ---------- 500.00
Net deduction or reinstatement ---------- 0.00

Balance due the Operator ---------- $10,053.63

Remarks:

Date of Report----------May 13, 1957
Date Received in Field Office----------May 20, 1957
Date Received in Region Office----------May 27, 1957

Reason for delay: Held pending execution of Amendment No. 2 which changes drilling specifications.

Original signed by
W. H. KING
W. H. King

Enclosures

JDC:hmh
cc: Chmn. Op. Comm. (2)
IMEA, DPC
Barshman) w/copy of Engr's report
Townsend) and Albee memo of 6/5/57
MF-104 file, Reg. III
Chron.

IN REPLY REFER TO:

DMEA
RECEIVED
JUN 6 1957
GEOLOGICAL SURVEY
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 360
Grand Junction, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
JUN 7 - 1957
REGION III
DENVER, COLORADO

June 5, 1957

Memorandum

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

Through: J. William Hasler JWH
E. N. Harshman EMH
A. S. Konselman ASK

From: Howard F. Albee

Subject: Docket DMEA 3943 (Uranium), contract No. Idm-E 932, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division (Sec. 9, T. 13 N., R. 9 W.) McKinley County, New Mexico

A recommendation is requested relative to payment for the cored interval from 197 to 219 feet in hole 2000-1400.

The cored interval of sandstone may be either a lense or a tongue from the underlying Poison Canyon sandstone. Some distance from the drill hole the sandstone in the upper cored interval may converge with the sandstone in the lower cored interval.

On recovery of the first sand in the drill cuttings it would not be possible to determine if it were from a lense high in the Brushy basin or if it were from a local high in the Poison Canyon. Payment for the coring between 197 and 219 feet is therefore recommended.

Howard F. Albee
Howard F. Albee
Geologist

EXTRA COPY
~~FILE COPY~~

HFA/mlr

Enclosure
1 copy graphic log of hole 2000-1400

DMEA
RECEIVED JUL 1 1957

DATE	INITIALS	CODE

DMEA
DEPARTMENT OF THE INTERIOR
MAY 31 1957
REGION III
DENVER, COLORADO

DMEA
DEPARTMENT OF THE INTERIOR
MAY 27 1957
REGION III
DENVER, COLORADO

REGION III

Memorandum

Building 20
Denver Federal Center
Denver 2, Colorado
May 24, 1957

To: Acting Executive Officer, DMEA Field Team, Region III
Through: A. S. Kunselman

EXTRA-COPY
OFFICIAL MEMORANDUM
DMEA
RECEIVED JUN 1 1957
DATE | | CODE

From: W. D. McMillan

Subject: DMEA Docket 3943 (Uranium), Contract Idm-8932, Food Machinery and Chemical Corporation, Westvaco Mineral Products Company, Sec. 9, T. 13 N., R. 9 W., NMPM, McKinley County, New Mexico--Progress Report for the month of April, 1957.

An inspection of progress during April, 1957 was made on May 6, 1957 accompanied by Wayne Cavender, manager of exploration for the operator.

Stage II drilling of 25 holes was completed. A summary of Stage II drilling is presented in Table No. 1.

The non-core and core footages were checked against Stewart Bros. and Parker Drilling Company logs and were found to be correct.

All work was performed according to the contract, with BX core, and all holes penetrating the Poison Canyon sandstone of the Jurassic Morrison Brushy Basin member. Twelve of the holes were deepened to penetrate the Westwater Canyon sandstone at Westvaco expense. Minor mineralization was found in three holes 4800-1400 in the upper Recapture shale, 3800-3800 and 3000-3800, localized in thin shales within or immediately below the Poison Canyon sandstone.

The operator's narrative report is adequate, with geologic-radiometric logs, location maps, NF-104s, and driller's invoice in quintuplicate, and one copy of the driller's logs, which are being retained in this office.

Approved costs are for 8086 feet of non-core drilling at $1.20/ft. ($9,631.20), 386 feet of core drilling at $3.40/ft. ($1,312.40), incidental allowance, 8412 feet at $0.39/ft. ($3,280.68) and 2 percent New Mexico School Tax ($218.87) at a total of $14,443.15.

It is recommended that 75 percent of the approved total cost, amounting to $10,832.36 be approved for payment.

The results of the exploration project do not indicate a discovery, and it is recommended that the contract be terminated.

W. D. McMillan
Mining Engineer

cc: 6-Idm-8932-Chron.
Table No. 1 Attached.

Table No. 1 -- Summary Data on Stage II Drilling

Coordinates	Drilled Driller's Log Non-core	Core	Total	Allow Non-Core	Core	Disallow Non-Core	Core
400-1400	335	10	345	300	5	35	5
1200-1400	224	57	281	224	57	---	---
2000-1400	353	62	415	259	40	94	22
3200-1400	275	40	315	275	39	---	1
4000-1400	416	19	435	283	9	133	10
4800-1400	294	126	420	287	126	7	---
200-2200	225	30	255	225	30	---	---
1000-2200	390	---	390	294		96	---
1800-2200	315	---	315	308		7	---
2400-2200	330	---	330	324		6	---
3400-2200*	480	---	480	358		122	---
5000-2200	495	---	495	325		170	---
400-3000	390	---	390	265		125	---
1200-3000	275	---	275	271		4	---
2000-3000	440	---	440	327		113	---
2600-3000	435	---	435	345		90	---
3200-3000	330	---	330	327		3	---
4000-3000	345	---	345	344		1	---
4800-3000	495	---	495	495		---	---
600-3800	260	---	260	251		9	---
1400-3800	420	---	420	300		120	---
2200-3800	440	---	440	365		75	---

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Table No. 1 -- Summary Data on Stage II Drilling (Cont.)

Coordinates	Drilled Driller's Log			Allow		Disallow	
	Non-core	Core	Total	Non-Core	Core	Non-Core	Core
3000-3800	455	---	455	394		61	---
3800-3800	520	---	520	425		95	---
4600-3800	465	80	545	455	80	10	---
Total	9402	424	9826	8026	386	1376	38

* This hole is plotted on Map No. 204 as a company-financed. This is a draftsman's mistake.

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 April, 1957 Docket No. DMEA 3943 Contract No. Idm-E 932
Operator's Name Food Mach. & Chem. Corp. (Westvaco Min. Prod.) Minerals Uranium
Address Star Route - Box 24 - Grants, New Mexico
Contract Amount, $ 71,928.00 Government Participation: 75 % Amount, $

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling	11,209.80	12,023.36	23,003.05		11,793.25	
Bulldozing						
Crosscutting						
Drifting						
(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					Adjusted for 188' excess non-core drilling for Sept. 1956.	
Sampling and Analysis						
Payroll Taxes						
Liability Insurance					Not adjusted for footage to be reinstated by DMEA for August, 1956.	
(8) Contingencies (specify): $0.39 per foot	3,281.46	2,809.95	6,018.09		2736.63	
TOTALS	14,491.26	14,833.31	29,021.14	13,404.84	14,529.88	27,934.72
				4-	3,165.67	3,165.67

RECEIVED JUL 1 1957 D.M.E.A.

I certify that the above bill is correct and just and that payment therefor has not been received.
Date 5/13/57 *Payee Food Machinery & Chemical Corp. Westvaco Mineral Products Div.
Per [signature] Title Mgr. of Exploration

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:
21+ 1,605.00 1,605.00
12,969.21 26,374.05
10,053.63
Signature [signature] (Authorized Certifying Officer)
Date 6/27/57 Vou. No. DMA 57-142
(See other side)

*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)

4 Previously Disallowed
21+ Previously Reinstated Note Withheld 500.00

(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. Pdm-E 932 in accordance with the terms of the contract.

Signature W. McWilliam (81/0,832,36) Title Min. Engr Date 5/21/57

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Col H King Title Executive Officer Date JUN 26 1957

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

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of April 1957 Docket No. DMEA3943 Contract No. Idn - E 932
Operator's Name Food Mach. & Chem. Corp (Westvaco Mineral Prod.) Minerals Uranium
Address Star Route - Box 24 - Grants, New Mexico

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
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	per'	1,408.01	406	6,360.32	1,834	3.47	14,600	3.50
~~Churn~~ Plug bit	per'	9,801.79	8,008	16,642.73	13,597	1.22	16,100	1.25
~~Auger~~ Incidental	per'	3,281.46	8,414	6,018.09	15,431	0.39	30,700	0.39
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		14,491.26		29,021.14				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								71,928.00
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 May 13, 1957 Operator Food Machinery & Chem. Corp. Westvaco Mineral Prod. Div.

Per W. S. Lavender Title Mgr. of Exploration

REMARKS Adjusted for 188' excess non-core drilling for Sept., 1956.

Not adjusted for footage to be reinstated by DMEA for August, 1956 voucher.

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)

W. M. McClellan

RECEIVED JUL 1 1957 D.M.E.A.

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

May 10, 1957

EXP... RECEIVED DATE CODE

Mr. John F. Shaw
U. S. Bureau of Mines
Room 137, Building 20
Denver Federal Center
Denver 2, Colorado

Re: Progress Report, April, 1957
Docket No. DMEA 3943 (Uranium)
Contract No. Idm-E 932
Food Machinery & Chemical Corp.
Westvaco Mineral Products Division
McKinley County, New Mexico
Section 9, T. 13 N., R. 9 W.

Dear Mr. Shaw:

During April, 1957, the Second Stage drilling program of 25 holes was initiated and completed. All holes were logged radiometrically and geologically and samples were labelled and stored.

All holes penetrated the Poison Canyon sandstone and twelve were deepened, at Westvaco expense, to penetrate the Westwater sandstone.

On April 25, in response to a request from Westvaco, the DMEA granted a change in the contract provisions to substitute non-core drilling for core drilling. Seventeen holes were affected by this change. Poor core recovery was the cause of the contract alteration.

A list of the completed holes is included with this report and descriptions are available from the logs.

Minor mineralization was encountered in three holes. In 4800-4400, the radioactivity occured in the upper Recapture shale. In 3200-3800 and 3000-3800, the mineralization was localized in thin shales within or immediately beneath the Poison Canyon. All mineralization was weak and thin.

The geologic logs show the irregular patterns of sedimentation in the Morrison sandstones. In three holes on the northern edge of the section, the Poison Canyon and Westwater have merged into one single thick sandstone. In another, 400-1400, the Poison Canyon is completely absent due to a pinch-out. Other noticeable sedimentary features are occasional thin sandstones above the Poison Canyon, thin irregular shale lenses in the sandstones and vice versa, and zones of the Poison Canyon that have a very high clay content.

In computing disallowances, the following factors were noted:

Hole 400-1400 --- only sand encountered correlates as Westwater. No Poison Canyon found.

Holes 2000-1400, 4800-1400, 4600-3800 --- contain sand lenses above Poison Canyon.

Holes 4800-1400, 4800-3000, 4600-3800 --- Poison Canyon has merged into Westwater.

Based on the drill information now available, the potential of Section 9 appears unfavorable.

Respectfully submitted,

W. G. Cavender

W. G. Cavender, Exploration Manager
Food Machinery & Chemical Corporation
Westvaco Mineral Products Division
Star Route - Box 24
Grants, New Mexico

WGC:mdc

D.M.B.A. STAGE II DRILLING RESULTS
SECTION 9, T. 13 N., R. 9 W.
April, 1957

Hole Number	Total Depth	Non-core Footage	Core Footage	DMBA Disallowances Non-Core	DMBA Disallowances Core
400-1400	345	335	10	35	5
1200-1400	281	224	57	0	1
2000-1400	415	353	62	115	1
3200-1400	315	275	40	0	1
4000-1400	435	416	19	130	10
4800-1400	420	294	126	7	0
200-2200	255	225	30	0	0
1000-2200	390	390	0	96	0
1800-2200	315	315	0	7	0
2400-2200	330	330	0	6	0
3400-2200	480	480	0	122	0
5000-2200	495	495	0	170	0
400-3000	390	390	0	125	0
1200-3000	275	275	0	4	0
2000-3000	440	440	0	113	0
2600-3000	435	435	0	90	0
3200-3000	330	330	0	3	0
4000-3000	345	345	0	1	0
4800-3000	495	495	0	0	0
600-3800	260	260	0	9	0
1400-3800	420	420	0	120	0
2200-3800	440	440	0	75	0
3000-3800	455	455	0	61	0
3800-3800	520	520	0	95	0
4600-3800	545	465	80	10	0
	9826	9402	424	1394	18

Total Allowable non-core footage - 8008

Total Allowable core footage - 406

STATEMENT

DATE May 10, 1957 19

NAME Westvaco Mineral Products

ADDRESS Box 24, Star Route

Grants, New Mexico

In Account With

Stewart Bros. & Parker

Drilling Company

Phone AT 7-4416 P. O. Box 154

GRANTS, NEW MEXICO

		Amount
Exploration drilling on your Section 9 during April, 1957 as follows:		
8,008 feet plug drilling @ $1.20 per ft.	$9,609.60	
406 feet core drilling @ $3.40 per ft.	1,380.40	
		$10,990.00
2% N. M. School Tax		219.80
TOTAL		$11,209.80

THANKS

STEWART BROS. & PARKER DRILLING CO.

BY H M Stewart

H. M. Stewart, Partner

Hole No.	Sec.	Elevation	Page of	Pages	No. Insets	Date	Logged by
400-1400	9 13/9	6845.1	1 —	3	1	4-7-57	E.C.

Geology

Driller — R.D. Buechfield

Rig # — 14

Description	Probe Reading	Scale Interval	Assay	Graphic Log	Description
	T.H.B. 1.5 .01				
Blowsand					
Qal / Km? Sh. ben sandy				Qal / Km?	
Km / Kd SS. Wht. lt ben. fn. - Med. grain	T.D.P. 345 1.5 .01			Km / Kd	
Kd / Jmb Sh. Blk. Carb.					
Sh. gen. Wat. streaks of fn. Med grain lt gray. ss.				Kd / Jmb	

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

0 20 40 60 80 100 120 140 160 180 200 220 240 260

Hole No. 400-1400
Section 9 - 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
400 – 1400	9 13/9	6845.1	2 → 3	1	4-7-57	E.C.

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Scaler Assay	Graphic log	Description
260		Sh.	Gray											
280														
	Jmb													Jmb
300	Jmw	SS.	Gray	Very shaly – fr. grain										Jmw
	Jmr	See inset for Core log					Core							Jmr
		Sh.	Red Brn.											
320														
340	Jmr													
	TD 345													TD 345
360														

Dotted line Graphic Assay
Solid Line – Probe
0% .20% .60

Footage: 260, 280, 300, 320, 340, 360, 20, 40, 60, 80, 00, 20, 40, 260

Graphic log: 260, 280, 300, 320, 340, 360, 120, 140, 160, 180, 200, 220, 240, 260

Dwg No 792

Hole No. 400-1400
Section 9 13/9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
400-1400	9 12/9	3 3	4-7-57	hse

Footage From	Footage To	Formation	Geology: Description	Samples
300	310		Green, gray, purple sh	

Drawing No. 793

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DATE	INITIALS	CODE

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
1200 - 1400	9 13/9	6846.7	1 / 3	1	4-8-57	E.C.

Geology

Driller - Burchfield
Rig — 14

Footage	Formation	Type of Rock	Color	Description	Fractures	Geiger	Gas	Samples	Probe Depth	Probe Reading	Scale	Scaler Interval	Foot	Assay	Graphic log	Description
0			Blowsand						TH.B.	1.5	.01					
20																
40	Qal / Kd	S.S.	wht. Buff	fn. grain												Qal / Kd
60								T.D.P.	281	1.5	.01					
80																
100																
120																
140	Kd / Jmb	Sh.	Blk.	Arcn.-Carb.												Kd / Jmb
		Sh.	lt.Dk.gray.	Arcn.												
160																
180																
200		Sh	lt.Dk.gray.	- Seams lt.gray. fn. grain S.S.												
220	Jmb / Jmp	S.S.	See inset for Core log					Core								Jmb / Jmp
240																
260																

Dotted line
Graphic Assay
Solid Line - Probe

0% .20% .60

Hole No. 1200-1400
Sec. 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
1200 - 1400	9 13/9	6846.7	2 — 3	1	4-8-57	E.C.

Geology								Probe			Scaler				
Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Depth	Reading	Scale	Foot Interval	Assay	Graphic log	Description	Dotted line Graphic Assay Solid Line - Probe 0% .20% .60
260 ~~0~~		SS		See insert for Core log			Core								
	Jmp														
280 ~~20~~	Jmb	Sh. Red-gray. slt. Arcn.												Jmp Jmb	
	T.D. 281'													T.D. 281	
300 ~~40~~															
320 ~~60~~															
80															
100															
120															
140															
160															
180															
200															
220															
240															
260															

Dwg No. 792

Hole No. 1200-1400
Section 9 13/9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
1200-1400	9 13/9	3 — 3	4-8-57	E.C.

Footage From	Footage To	Formation	Geology: Description	Samples
224	226.5	Jmp	SS. fn. Med grain - lt gry. grn. — slt. Shaly —	
226.5	226.7	Jmp	Sh - DK. grn. —	
226.7	233.5	Jmp	SS. lt. DK. gry. Med to Coarse grain - tr wht Qtz large Amt Chert frags - Slt. Amt. DK. grn. Sh. —	
233.5	234	Jmp	SS. gry grn - fn grain —	
234	234.8	Jmp	Sh. - DK. grn - Very Green —	
234.8	242	Jmp	SS - lt. gry - fn. to med. grain - Some wht Qtz - Hard - few grn. Clay galls —	
242	244	—	Core lost —	
244	254.5	Jmp	SS. - lt. gry. grn. - fn. to med. grain - tr Chert - Qtz frags - Tr. grn. Sh. —	
254.5	258	Jmp	SS. - lt gry. grn. - fn. grain - Tr. grn. Sh.	
258	260.7	Jmp	SS - Med to Coarse grain - Many large Qtz frags - grn mud stone —	
260.7	262	Jmp	SS. - fn. grain - Shaly —	
262	264	—	Core lost —	
264	265	Jmp	SS. - lt gry. grn. - fn. to Med grain - 50% gry. grn. Sh. —	
265	266	Jmp	SS. - lt. gry. grn. Coarse grain - gry mud stone - some chert - Slt. Pyritic —	
266	273	Jmp	SS. - lt. gry. grn. - fn. grain - Slt. amt. grn. Sh. —	
273	274	Jmp	SS. - lt gry - fn. Med grain - gry clay galls —	
274	274.8	Jmp	SS. - lt gry. grn - fn grain - Vert fracs - Wht Qtz in fracs. - Tr. grn Sh. —	
274.8	281	Jmb	Sh - lt. DK. grn —	

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Hole No.	Sec	Elevation	Page of Pages	No. Insets	Date	Logged by
2000-1400	9 13/9	6841.5	1 - 3	1	4-17-57	E.C.

Geology

Driller - R.D. Beachfield
R.g - #14

Footage	Formation	Type of Rock	Color	Description	Structures	Cogenetic Features	Geiger	Scintillation Counter	Probe Cesium	Probe Reading	Scale	Scaler Interval	Scaler Foot	Assay	Graphic log	Description
0		Blowsand														
40	Qal / Kd	S.S.	Buff wht.	fn. grain -												Qal / Kd
140	Kd / Jmb	Sh	Blk.	Carb - Hacm.												Kd / Jmb
		Sh.	gen	Hacm.												
200		S.S.	Hgny.	fn. grain												
				See inset for Core log				Core								
220		Sh.	gen. Ben.	Hacm												
260	Jmb / Jmp															Jmb / Jmp

Dotted line
Graphic Assay
Solid Line - Probe

0% .20% .60

Core

Hole No 2000-1400
Section 9 - 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
2000 – 1400	9-13/9	6841.5	2 – 3	1	4-17-57	E.C.

Geology

Probe

Scaler

Footage | Formation | Type of Rock | Color | Description | Diagnostic Features | Geiger | Samples Taken | Depth | Reading | Scale | Interval Foot | Assay | Graphic log | Description | Dotted line Graphic Assay Solid Line - Probe (0% .20% .60)

260

See inset for Core log

Core

280

Jmp
Jmb

300

Sh. lt. DK. gRn. slt. Arcn.

320

T.H.B. 1.5 .01

397 1.5 .01 T.D.P.

340

4' Samples taken

Jmb
Jma SS. lt. gRy. fn. grain – Argill.

360

SS. lt. gRy. fn. Med. grain Some wht. Qtz.

380

SS. lt gRy fn grain

400

SS. lt. gRy. gRn. fn grain – Argill.

Jma
Jma sh Purple green

420

T.D. 415'

440

Jmp
Jmb
Jmb
Jmw
Jmw
Jmr

TD 415'

200

220

240

260

Hole No 2000-1400
Section 9-13/9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
2000 - 1400	9 (13-9)			

Footage From	Footage To	Formation	Geology: Description	Samples
197	212.5		SS - Lt gray, med grain, massive, friable, some green sh chips in ss	
			- after 205', ss becomes harder, better cemented. At 211, ss very hard	
212.5	219.0		Sh - Dk gray-green, blocky	
259	271.9		SS - coarse, lt gray green, few thin green sh layers, gr sh chips in ss, friable.	
271.9	272.5		Sh - Dk green, sandy	
272.5	278.8		SS - Green-gray, med to fine grain, massive, friable, very shaley at top, sh decreases down	
278.8	279.4		SS - Lt gray, hard, med grain	
279.4	281.1		SS - Lt gray to dk green, fine gr, massive. Very shaley at 280'	
281.1	289		SS - Lt gray, coarse grained, few sh chips in ss, massive, friable	
289	289.5		SS - Ditto, many green sh chips in ss	
289.5	291		SS - Lt gray, coarse, massive	
291.0	291.1		Sh - Green	
291.1	295		SS - Lt gray to green, med gr, massive, last 3' hard and well cemented	
295	299		Sh - Green, gray, purple	

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DATE	INITIALS	CODE

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
3200-1400	9 13/9	6849.6	1 - 3	1	4-16-57	E.C.

Geology — Driller - R.D. Burchfield, Rig # 14

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Scaler Assay	Graphic log	Description
0		Blowsand												
20														
40														
60	Qal / Kd	SS. lt. Buff		fa grain - Wet										Qal / Kd
80														
100														
120														
140														
160	Kd / Jmb	Some Blk. Carb. Sh. / Sh. gen		Green										Kd / Jmb
180														
200														
220														
240														
260														

Dotted line Graphic Assay Solid Line - Probe

0% .20% .60

Dwg No. 792

Hole No. 3200-1400

Section 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
3200 - 1400	9 13/9	6849.6	2 — 3	1	4-16-57	E.C.

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Assay	Graphic log	Description
260		Sh.	gen	Green				T.H.B.	1.5	.01				
	Jmb / Jmp	SS.												Jmb / Jmp
280				See inset for Core log			Core							
300														
	Jmp / Jmb	Sh.	gen	See inset for Core log				315	1.5	.01	T.D.P.			Jme / Jmb
320	T.D.	315												T.D. 315
340														
100														
120														
40														
160														
180														
200														
220														
240														
260														

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Dwg No. 792

Hole No. 3200-1400
Section 9 - 13/9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by	
3200 - 1400	9	3 - 3	4-16-57		

Footage From	Footage To	Formation	Geology: Description	Samples
275	278	Jm p	SS - light gray, fine - med grain, massive,	
278	285		SS - Med - coarse, light gray - green, green sh chips in ss, massive.	
285	288		SS — Med - coarse, gray - green, many gray + gray sh layers	
288	304		SS - Lt gray - green, med grain, occassional coarse layers, massive, some sh chips	
			0.3' seam dk gray sh at 300'	
304	309.2	Jm p	SS - Gray, coarse gn, hard ($CaCO_3$ cement ?), massive	
309.2	315	Jm p	Sh - Green, red sh	

Drawing No. 793

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DATE	INITIALS	CODE

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
4000 - 1400	9 13/9	6858.2	1 — 3	1	4-11-57	E.C.

Geology — Driller - R.D. Buechfield, Rig #14

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Scaler Assay	Graphic log	Description
0														
		Blowsand												
20														
40	Qal / Kd													Qal / Kd
		SS	Buff wht.	Fn. Grain										
60														
80														
100														
120														
140														
160	Kd / Jmb													Kd / Jmb
		Sh.	Gray	Slt. Micac.										
180														
200														
220														
240														
260														

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Dwg No. 792

Hole No. 4000-1400
Section 9 13/9

Hole No.	Sec	Elevation	Page of Pages	No. Insets	Date	Logged by
4000 - 1400	9 13/9	6858.2	2 — 3	1	4-11-57	E.C.

Geology

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken
260		Sh.	gen.	slt. green.			
280		S.S.	lt. gray	fn. grain — See inset for Core log.			Core
		Sh.	Dk. gray Red	green.			4' Samples
300							
320	Jmb Jmw	S.S.	lt. gray.	fine to med grain			
		See inset for Core log.					Core
340							
360							4' Samples
380							
400							
420	Jmw Jme	Sh.	Red gray. Red	slt. green			
440	T.D. 435'						

Probe

Depth	Reading	Scale
T.H.B.	1.5	.01
435	1.5	.01 T.D.P.

Scaler

Foot Interval	Assay

Graphic log

Description

Dotted line Graphic Assay
Solid Line - Probe

0% .20% .60

Jmb
Jmw
Jmw
Jme
T.D. 435'

Hole No.
Section

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
4000-1400	9 13/9	3 — 3	4-11-57	E.C.

Footage From	Footage To	Formation	Geology: Description	Samples
283	284.5	Jmp	Core lost	
284.5	285	Jmp	Sh. - Red	
285	286.5	Jmp	Ss. - Green - Green.	
286.5	289.5	Jmp	Ss. - fn. to Med. grain. - 10% gr. Green. Sh. - Small Amt. Qtz.	
289.5	298	Jmb	Sh. - Red - green - slt. Green.	
326	326.7	Jmu	ss. - lt. gry. - fn to Med grain - few Chert frags - Tr. grn. sh.	
326.7	327.4	Jmu	sh - green - Green.	
327.4	330	Jmu	ss. - lt. gry. - fn to Med grain - large Amt grn. Clay balls	
330	333.5	Jmu	ss. - lt. gry. - fn. grain -	
333.5	336	—	Core lost	

Drawing No. 793

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Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
4800 - 1400	9 13/9	6864.1	1 - 3		4-12-57	E.C.

Geology — Driller - R.D. Buechfield, Rig #14

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Scaler Assay	Graphic log	Description
0														
		Blowsand												
20														
40														
60														
	Qal / Kd													Qal / Kd
		SS	Buff wht	fn. grain										
80														
100														
120														
140														
160	Kd / Jmb	Sh.	gray											Kd / Jmb
180		SS.	H.gry.	fn. grain										
		Sh.	gray											
		SS.	H.gry.	fn. grain										
		Sh.	gray											
200		SS.	H.gry.	fn. grain										
		Sh	gray Brn.	Hard										
220														
240	Jmb / Jmp	SS	See inset for Core log											Jmb / Jmp
260														

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Dwg. No. 792

Hole No. 4800-1400
Section 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
4800 - 1400	9 13/9	6864.1	2 - 3		4-12-57	E.C.

Geology

Footage	Formation	Type of Rock	Color	Description	Geiger Characteristic Features	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Assay	Graphic log	Description
260 ~~0~~		S.S.	See inset for Core log				T.H.B.	1.5	.01				
280 ~~20~~													
						Core	411	1.5	.01				
							412	5	.01				
							413	9	.01				
300 ~~40~~							414	3	.1				
							415	8	.01				
							416	1.5	.01				
320 ~~60~~							T.D.P. 420	1.5	.01				
340 ~~80~~													
360 ~~100~~													
		S.S.	lt. DK. grey.	fn. to med. grain									
380 ~~120~~						4' Samples							
		S.S.	lt. grey	fn. grain									
400 ~~140~~													
		S.S.	lt. grey	fn. grain. - Argill.									
	Jmw											JmW	
		Jmz	Sh.	Red grn. Ben.	slt. Aren.							Jmz	
420 ~~160~~													
		T.D. 420'										T.D. 420'	

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Hole No. 4800-1400
Section 9 13/9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
4800 - 1400				

Footage From	Footage To	Formation	Geology: Description	Samples
242	251		SS — Gray, med to coarse, qtz grains, massive, friable, some green shaly layers, finer grain towards base. 60% recov	
251	261		SS - Gray, coarse, many green sh fragments in SS, massive, soft 65% recov	
261	271		SS - ditto — 45% recove	
271	281		SS - Med gr, gray, friable, massive — 8% recov	
281	292.5		SS - Med gr, gray, massive, central 2-3' very coarse, shale chips 40% recov	
292.5	296		SS - Med to fine grained, gray-green, massive	
296	304		SS — Med to coarse, gray, massive	
304	320		SS - Med to fine grn, gray-green, massive, friable, few grn sh bits	
320	348.5		SS - Med to coarse, " " , " , " , sh chips plentiful for top 1'	
348.5	359		SS — Gray-green, frequent grn sh layers and chips, massive, med to coarse grained	
359	366.4		SS - Med grain, massive, gray	
366.4	367		Sh - Dk gray	
367	-368.5		Shaly dk gray sand	

Drawing No. 793

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Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
200 - 2200	9 13/9	6833.0	1 — 2	1	4-19-57	E.C.

Geology

Driller - R.D. Burchfield
Rig - 14

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Assay	Graphic log	Description
0								T.H.B.	1.5	.01				
		Blowsand												
20														
40														
60	Qal / Kd	S.S.	wht. Buff	fine Grain				235	1.5	.01	T.D.P.			Qal / Kd
80														
100														
120	Kd	Sh	Blk	Aren. - Carb.										Kd
140	Jmb	Sh.	Green	Aren.										Jmb
160														
180														
200														
220	Jmb / Jmp	S.S.												Jmb / Jmp
240				See inset for Core log			Core							
260	Jmp / Jmb / T.D. 255'	Sh.	Gren	Slt Aren.										Jmp / Jmb / T.D. 255'

Dotted line
Graphic Assay
Solid Line - Probe
0% .20% .60

Hole No 200-2200
Section 9 13/9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by	
200 - 2200	9 12-9	2 - 2	4-19-57	~~4-19-57~~	WSC

Footage From	Footage To	Formation	Geology: Description	Samples
225	229.5		SS - Lt gray-green, friable, fine grained, minor sh chips	
229.5	235		SS - Ditto, medium grain	
235	245		SS -? Med grain, some green sh layers — 1% recov	
245	247.6		SS - Lt green-gray, coarse gr, massive, friable, numerous sh chips	
247.6	248.5		SS - Gray to green, fine grain, friable, shaley	
248.5	249		SS - Lt gray, fine grain, friable	
249	250		SS-Sh - Lt gray Transition zone	
250 →			Sh Red, green, brown — some sandy layers	

Drawing No. 793

1957
INITIALS CODE

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
1000 - 2200	9 13/9	6833.1	1 — 2	0	4-27-57	E.C.

Geology — Probe — Scaler

Footage | Formation | Type of Rock | Color | Description | Diagnostic Features | Geiger | Samples Taken | Depth | Reading | Scale | Foot Interval | Assay | Graphic log | Description | Dotted line Graphic Assay Solid Line - Probe (0% .20% .60)

Driller - R.D. Burchfield
Rig - #14

0 — Blowsand

20

40 — Qal / Kd — SS. buff wht. fn. grain

60

80

100

120 — Kd / Jmb — Sh. green green

40 — 140

160

180

200

220

240 — Jmb / Jmp — Sh. green green — SS. lt. gray green fine grain - very tight

260

Qal / Kd

Kd / Jmb

Jmb / Jmp

4' Samples

Dwg No. 792

Hole No. 1000-2200
Section 9-13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
1000 - 2200	9 13/9	6833.1	2 - 2	0	4-27-57	E.C.

Geology

Footage	Formation	Type of Rock	Color	Description
260		SS.	lt. gray	fn. to Med. grain Some Calc. Slt. Argill.
280				
	Jmp / Jmb	Sh.	gray. Brn	
300				
320	Jmb / Jmw	SS.	lt. gray	fn. grain
340		Sh.	gray.	Arcn.
		SS.	lt. gray	fn. grain - slt. amount of Qzt3 Cal & chert.
360		SS.		
380	Jmw / Jma	Sh.	gray. Red	
	T.D. 390'			
400				
160				
180				
200				
220				
240				
260				

Diagnostic Features | Geiger | Samples Taken — 4' Samples

Probe

Depth	Reading	Scale
T.H.B.	1.5	.01
389	1.5	.01 T.D.P.

Scaler

Interval Foot	Assay

Graphic log

Description
Jmp
Jmb
Jmb
Jmw
Jmw
Jma
T.D. 390'

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Dwg No. 192

Hole No 1000-2200
Section 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
1800 - 2200	9 13/9	6837.7	1 — 2	0	4-27-57	E.C.

Geology — Driller - R.D. Burchfield, Rig - #14

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Scaler Assay	Graphic log	Description
0		Blowsand												
60	Qal / Kd	SS	Wht. Buff	fn. grain									Qal / Kd	
140	Kd / Jmb	Sh.	Green										Kd / Jmb	
260	Jmb / Jmp	SS	gry.	fine grain - slt. Argill.			4' sample						Jmb / Jmp	

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Dwg No 192

Hole No. 1800-2200
Section 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
1800-2200	9 13/9	6837.7	2 – 2	0	4-27-57	E.C.

Geology: Footage, Formation, Type of Rock, Color, Description, Diagnostic Features, Geiger, Samples Taken

Probe: Depth, Reading, Scale

Scaler: Foot Interval, Assay

Graphic log, Description

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Depth	Reading	Scale
T.H.B.	1.5	.01
263	4	.01
264	3.5	.01
265	1.5	.01
273	2.5	.01
274	2	.01
275	1.5	.01
313	1.5	.01

T.D.P.

Type of Rock: S.S. lt. gray fine to Med. grain --

S.S. lt. gray. Very Argill.

Formation: Jmp, Jmb

Sh green Brown slt. Arcn.

T.D. 315'

4' Sample

Jmp

Jmb

T.D. 315'

Footage: 260, 280, 300, 320

Depth: 260, 280, 300, 320, 80, 100, 120, 140, 160, 180, 200, 220, 240, 260

Dwg No. [illegible]

Hole No 1800-2200

Section 9 13/9

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Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
2400-2200	9 13/9	6844.5	1 — 2	0	4-28-57	E.C.

Geology — Driller - R.D. Breechfield, Rig - #14

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Scaler Scale	Scaler Foot Interval	Scaler Assay	Graphic log	Description
0		Blowsand												
60	Qal / Kd	S.S.	Wht. Buff	fine grain									Qal / Kd	
160	Kd / Jmb	Sh. / Sh.	Blk / Grn.	Green Carb									Kd / Jmb	
180							4 Samples							

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Footage: 0, 20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240, 260

Hole No. 2400-2200
Sec. 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
2400-2200	9 13/9	6844.5	2 — 2	0	4-28-57	E.C.

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Assay	Graphic log	Description
260		Sh.						T.H.B.	1.5	.01				
280	Jmb / Jmp	SS.	lt. gray.	streaks of lt. DK green Green. Sh.										Jmb / Jmp
300		SS.	lt. gray.	fn. to Med. grain										
320		SS.	lt. DK. grg.	fn. grain-slt. Argill.										
340	Jmp / Jmb	Sh.	DK. gray Red					327	1.5	.01	T.D.P.			Jmp / Jmb
	T.D. 330'													T.D. 330

Dotted line Graphic Assay
Solid Line - Probe

0% .20% .60

A' Samples

Hole No. 2400-2200
Section 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
3400-2200	9	6855	1 — 2		4-30-57	MS

13-9

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Scaler Assay	Graphic log	Description	Dotted line Graphic Assay Solid Line - Probe (0% .20% .60)
0	PAL														
20			Drilling blind — blown mud, ss, sh												
40															
60															
80															
100		sh	black												
		ss + sh	gray	interbedded											
120															
		sh	Gray	sandy											
140		ss	Gray + green	shaly											
160															
		sh	black	sandy											
180	Kd / Jmb	sh	black										Kd / Jmb		
		ss + sh	Gray + purple												
200															
		sh	Gray + Green												
220															
240															
260															

Dwg No 792

Hole No. 3400-2200

Section 9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
3400-2200	9 (13-9)	6855	2 — 2		4-30-57	

Geology: Footage | Formation | Type of Rock | Color | Description | Diagnostic Features | Geiger | Samples Taken

Probe: Depth | Reading | Scale

Scaler: Foot Interval | Assay

Graphic log | Description

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Footage	Formation	Type of Rock	Color	Description
260		sh	Gray green	
280				
300				
320				
340	J_{mB} / J_{mP}	ss	Gray	Med-grained
360	J_{mP} / J_{mB}	sh	Gray green red	Sandy
380	J_{mB} / J_{mW}	ss	Gray green	Med-fine ~~coarse~~ grained
400				
420				
440				
460	J_{mW} / J_R	sh	Gray	
480	TD = 480			
240				
260				

Graphic log: J_{mB}, J_{mP}, J_{mP}, J_{mB}, J_{mB}, J_{mW}, J_{mW}, J_{mR}, TD 480

Dwg. No 792

Hole No. 3400-2200
Section 9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
5000-2200	9 13/9	6871.9	1. — 2	0	4-27-57	E.C.

Geology — Driller - R.O. Burchfield, Rig #14

Probe — Scaler

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Depth	Reading	Scale	Foot Interval	Assay	Graphic log	Description
0		Blowsand												
20														
40	Qal / Km	sh	Brn											Qal / Km
60														
80														
100														
120	Km / Kd	ss.	Wht / lt Brn	fine grain										Km / Kd
140														
160														
180														
200														
220	Kd / Jmb	sh.	Blk. / lt. Dk. Gray	Carb.— Flecs										Kd / Jmb
240														
260														

Dotted line Graphic Assay Solid Line - Probe

0% .20% .60

Hole No. 5000-2200

Sec. 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Inserts	Date	Logged by
5000-2200	9 13/9	6871.9	2 - 2	0	4-27-57	E.C.

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Assay
260		Sh.	Gren.	Slt. Green.				T.H.B.	1.5	.01		
280	Jmb / Jmp	SS.	Lt. Gry.	fn. Grain - Slt. Argill.								
		SS.	Lt. Gry.	fn. Med. Grain - Tr. Cheert. Gry.								
300												
		SS.	Lt. Gry.	fn. Grain								
320	Jmp / Jmb	Sh	Lt. DK. Gren.	Slt. Green				343	4	.01		
								344	2.5	.01		
								345	2	.01		
								346	1.5	.01		
340	Jmb / Jmw	SS.	Lt. Gry.	fn. Grain Slt. Argill.								
				"Note" At this Point hole went blind, Samples from here on may be Contaminated because of the us. of heavy drilling mud.								
360								493	1.5	.01	T.D.P.	
380												
400												
420												
440												
460												
480												
500	Jmw / Jme	Sh.	Red. Brn.									
	T.D. 495'											

At Samples

Graphic log — Description

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Jmb
Jmp
Jmb
Jmb
Jmw
Jmw
Jme
T.D. 495'

Hole No. 5000-2200
Sec. No. 9 13/9

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Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
400 - 3000	9 13/9	6826.7	2 — 2	0	4-29-57	E.C.

Geology

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken
260	Jmp / Jmb	Sh.	gen.	slt. Green.			
		Sh.	Red				
280		Sh.	gen.				
	Jmb / Jmw	S.S.	lt. gray	fine grain tr. Red. Green sh.			
300		S.S.	lt. gray	fine to Med. grain Ark.			
320							
340							
360							
380	Jmw / Jmx	Sh.	Purple Brn.				
	T.D. 390'						
400							
420							
80							
00							
20							
40							
60							

Probe

Depth	Reading	Scale
T.H.B.	2	.01
390	2	.01 T.D.P.

Scaler

Foot Interval	Assay

4 Samples

Graphic log

Description

Jmp / Jmb

Jmb / Jmw

Jmw / Jmx

T.D. 390'

Dotted line Graphic Assay
Solid Line - Probe

0% .20% .60

Hole No. 400-3000
Section 9 - 13/9

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DATE	INITIALS	CODE

Hole No.	Sec	Elevation	Page of Pages	No. Insets	Date	Logged by
400 - 3000	9 13/9	6826.7	1 — 2	0	4-29-57	E.C.

Geology

Driller - Dave Hannum
Rig #11

Footage | Formation | Type of Rock | Color | Description | Fractures | Geiger | Samples Taken | Probe Depth | Reading | Scale | Scaler Interval Foot | Assay | Graphic log | Description

Dotted line Graphic Assay
Solid line - Probe
0% 20% 60

0 — Blowsand

20 — Qal / Kd? SS. Wht Buff — fine grain

40

60

80

100

120 — sh. Blk. Carb. - Green

Kd / Jmb — Sh. Red Green

140

160

180

4' Samples

200

220 — Jmb / Jmp SS. lt.gry. gry. fn. grain. to. gran. Red Green Sh.

SS. lt.gry. fn. to Med. grain - Ark.

240

260 — Jmp / Jmb

Qal / Kd?

Kd / Jmb

Jmb / Jmp

Jmp / Jmb

Hole No 400 - 3000
Section 9 - 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
1200 - 3000	9 13/9	6833.2	1 — 2	0	4-29-57	E.C.

Geology — Driller - Dave Hannum. Rig #11

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Assay	Graphic log	Description
0								T.H.B.	1.5	.01				
	Qal / Km?	Sh.	Brn.											Qal / Km?
20				"Note" lost all circulation at 30'. Several Hours to Recover.										
40	Km? / Kd?	S.S.	wht Buff	fine grain										Km? / Kd?
60								274	1.5	.01				
80														
100														
120														
140	Kd / Jmb	Sh.	Blk.	Green.— Carb.—										Kd / Jmb
		Sh.	green											
160														
180		Sh.	green Red											
		Sh	green	Green.										
200														
220														
240	Jmb / Jmp	S.S.	lt.gray.	fine grain — Argill. Ark.										Jmb / Jmp
		S.S.	lt gray	fine to Mod grain — Ark.										
260														

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

41 Samples

Hole No. 1200 - 3000
Sec. from 9 - 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
1200-3000	9 13/9	6833.2	2 — 2	0	4-29-57	E.C.

Geology								Probe			Scaler			
Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Depth	Reading	Scale	Foot Interval	Assay	Graphic log	Description
260		ss.	H.gry.	fine Med. grain - Arak.										
	Jmp / Jmw	sh.	gray.	- slt Arag.			4 Samples							Jmp / Jmb
280	T.D. 275'													T.D. 275'
300														
320														
340														
360														

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Hole No. 1200-3000
Sec. 9-13/9

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DATE	INITIALS	CODE

Hole No	Sec	Elevation	Page of	Pages	No Insets	Date	Logged by
2000 - 3000	9 13/9	6852	1 —	2	0	4-30-57	E.C.

Geology
Driller-R. D. Burchfield
Rig # 14

Probe: Reading, Scale
Scaler: Interval, Assay F.O.

Dotted line Graphic Assay
Solid Line - Probe
0% 20% 60

Depth	Description	Graphic log	Description
0			
20	Qal — Blowsand		Qal
	Sh Brn		
40			
60			
80			Km / Kd
100	Km / Kd — ss white to buff — fine grain		
120			
140			
160			
180	Kd / Jmb — Sh green and red		Kd / Jmb
200			
220			
240			
260			

4 Samples

Dwg No 192

Hole No 2000-3000
Section 9-13/9

Hole No.	Sec.	Elevation	Page of	Pages	No. Insets	Date	Logged by
2000 - 3000	9-13/9		2	2	0	4-30-57	E.C.

Geology

Footage	Formation	Type of Rock	Color	Description
260				
		sh	green	
	Jmb			
280	Jmp	ss	gray	shaly
		sh	green	
		ss	gray	fine to med grain
300				
		sh	gray	sandy
320		ss	gray	shaley
	Jmp / Jmb	sh	green, gray, red	sandy
340				
360				
380	Jmb / Jmw	ss	gray	fine - med grain
400				
420				
	Jmw / Jmb	sh	red green	
440	TD 440			
460				
220				
240				
260				

Probe

Sample	Depth	Reading	Scale
4' Samples	No count		

Scaler

Interval Foot	Assay

Graphic log / Description

Jmb
Jmp
Jmp
Jmb
Jmb
Jmw
Jmw
Jmb
TD 440

Dotted line Graphic Assay
Solid Line - Probe

0% 20% 60

Dwg No

Hole No 2000-3000
Section 9-13/9

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DATE	INITIALS	CODE

Hole No	Sec	Elevation	Page of	Pages	No Insets	Date	Logged by
2600-3000	9 13/9	6850.7	1	2	0	4-29-57	E.C.

Geology

Driller - R.D. Burchfield
Rig #14

Description

Probe: Capacity, Reading, Scale

Scaler: Interval, Assay Fe%

Graphic Log

Description

Dotted line Graphic Assay
Solid Line - Probe

0% 20% 60

Depth	Description
0	Blowsand
20	Qal / Km Sh. Brn.
60	Km / Kd S.S. wht. Buff fine grain
160	Kd / Jmb Sh. BLK. Green-Carb. -
180	Sh. Red Green Green.

4' Samples

Dwg No 792

Hole No 2600-3000
Section 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No Insets	Date	Logged by
2600-3000	9 13/9	6850.7	2 — 2	0	4-29-57	E.C.

Geology

Description

Probe: Depth, Reading, Scale

Scaler: Foot Interval

Assay

Graphic log

Description

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Sample Depth: 260, 280, 300, 320, 340, 360, 380, 400, 420, 440

Sample Depth: 200, 220, 240, 260

Sample Depth: 260, 280, 300, 320, 340, 360, 380, 400, 420, 440

Sample Depth: 260, 280, 300, 320, 340, 360, 380, 400, 420, 440

Sh. Red Green

Sh. green — Very Green.

Sh. Red green

Jmb / Jm — SS. lt. gray slt. Pyritic - Tr. green Green Sh. - Hrd. fine grain -

SS. lt. gray. fine to Med. grain

Sh. Red green Green.

SS. lt gray fine to Med. grain

Jm / Jmb — Sh. Red green.

T.D. 435

Probe: TH.B. 1.5 .01

9345 1.5 .01 T.D.P.

4 Samples

Jmb / Jm

Jm / Jm

T.D. 435

Dwg No 792

Hole No 2600-3000
Section 9-13/9

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DATE	INITIALS	CODE

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
3200 - 3000	9 13/9	6852.7	1 of 2	0	4-29-57	E.C.

Driller - R.D. Burchfield
Rig #14.

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Depth	Reading	Scale	Foot Interval	Assay	Graphic log	Description
0		Blowsand												
20	Qal													Qal
	Km.	Sh.	Brn.	Green.										Km
40														
60														
80														
100	Km/Kd	SS.	Light Buff	fine grain -										Km/Kd
120														
140														
160														
180	Kd	Sh.	Blk.	Green - Carb.										Kd
	Jmk	Sh.	Red	Green										Jmk
200														
220														
240														
260														

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

4' Sample
9' Samples

Dwg No 792

Hole No. 3200-3000
Section 9-13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
3200 -3000	9 13/9	6852.7	2/ 2	0	4-29-57	E.C.

Geology

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken
260		Sh.	Red Gen.				
280		Sh.	Gen.	Very Green.			4 Samples
	Jmb						
	Jmp	S.S.	Hard.	fine grain Trace Gen. Sh. Hek.			
300		S.S.	Hard.	fine to Med grain Hek. —			
320		S.S.	Hard.	fine grain — Tr. Gen. Sh.			
	Jmp						
	Jmb	Sh.	Red Green				
	T.D. 330'						
340							
360							
380							
400							
160							
180							
200							
220							
240							
260							

Probe

Depth	Reading	Scale
T.H.B.	2	.01
324	6	.01
325	3	.1
326	4	.1
327	26	.1
328	2	.01
330	2	.01

T.D.P.

Scaler

Foot Interval | Assay

Graphic log

Description

Jmb
Jmp
Jmp
Jmb
T.D. 330'

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Dwg No. 792

Hole No. 3200-3000
Section 9-13/9

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DATE	INITIALS	COPY

Hole No	Sec	Elevation	Page of	Pages	No Insets	Date	Logged by
4000 - 3000	9 $\frac{13}{9}$	6860.2	1	2	0	4-26-57	E.C.

Geology

Driller - R.D. Burchfield
Rig #14

Description

Probe: Depth, Reading, Scale

Scaler: Interval, Assay FOOT

Graphic Log

Description

Dotted line Graphic Assay
Solid Line - Probe

0% 20% 60

0 — Blowsand

20 — Qal / Km — Sh. Brn

40

60

80 — Sh. Gry Very Green.

100

Sh. Gry. Blk.

120 — Km / Kd — S.S. Wht Buff fine grain

140

160

180

200 — Sh. Blk. Green. — Kd / Jmb — Sh. Lt. Dk. Grn Red

220

240 — 41 Samples

260

Dwg No 192

Hole No. 4000-3000
Section 9 - 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
4000 - 3000	9 13/9	6860.2	2 — 2	0	4-26-57	E.C.

Geology: Footage, Formation, Type of Rock, Color, Description, Features, Geiger, Samples

Probe: Depth, Reading, Scale

Scaler: Foot Interval, Assay

Graphic log, Description

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Depth	Reading	Scale
T.H.B.	1.5	.01
317	3	.01
318	3.5	.01
319	4	.01
320	2.5	.01
321	1.5	.01
341	1.5	.01

4' Samples

Footage	Formation	Type of Rock	Color	Description
260		Sh.	Red gen.	
280				
300	Jmb / Jmp	S.S.	lt. gray.	fine grain - Argill.
320		S.S.	lt. gray.	fine grain - Ark.
		S.S.	lt. gray.	50% gren. Arcn. Sh.
340	Jmp	S.S.	lt. gray.	fine Med. grain - Ark. —
	Jmb	Sh.	Red gren.	slt. Arcn.
	T.D. 345'			
360				

Graphic log: Jmb, Jmp, Jmp, Jmb, T.D. 345'

Dotted line Graphic Assay: 260, 280, 300, 320, 340, 360, 120, 140, 160, 180, 200, 220, 240, 260

Hole No. 4000-3000
Section 9-13/9

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DATE	INITIALS	CODE

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
4800 - 3000	9 13/9	6887.2	1 ~ 2	0	4-25-57	E.C.

Driller - R.D. Bunchfield
Rig #14

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Scaler Assay	Graphic log	Description
0		Sh.	Brn.	Green.										
80		SS.	Gry	50% Gry Green Sh.										
140	Km / Kd	Sh.	Blk.	Green										
		SS.	Wht. Buff	Fine grain										Km / Kd
240	Kd / Jmb	Sh.	Blk.	Green. Carb.										Kd / Jmb
		Sh.	Blk.	Gen.										

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Dwg. No. 792

Hole No. 4800-3000
Section 9-13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
4800-3000	9 13/9	6887.2	2 — 2	0	4-25-57	E.C.

"offset 30' South"

Geology: Footage | Formation | Type of Rock | Color | Description | Diagnostic Features | Geiger | Samples Taken

Probe: Depth | Reading | Scale

Scaler: Foot Interval | Assay

Graphic log | Description | Dotted line Graphic Assay Solid Line - Probe (0% .20% .60)

Depth	Reading	Scale	Foot Interval	Assay
T.H.B.	1.5	.01		
490	1.5	.01	T.D.P.	

260 — Sh. lt. dk. gray. Red

280

300

320

340 — Jmb / Jmp — SS lt. gray gen. fn. grain - slt. Argill. -

360 — "Note" — SS Hole went blind at this point — Very poor Samples for next 40'

380

400 — SS. lt. gray fine to med. grain slt. Argill - Arg.

420

440 — SS. lt. gray. fine grain

460

480 — SS. lt. gray. fine grain - to gen. Green. Sh.

500 — Jmp? — Sh. Red Green Green. — T.D. 495'

520

4' Samples

Jmb / Jmp — Jmp? — T.D. 495'

Hole No. 4800-3000
Sec. 9 13/9

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DATE	INITIALS	CODE

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
600-3800	9 13/9	6842.3	1 — 1	0	4-25-57	E.C.

Geology — Driller - Dave Hannum, Rig # 11

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Assay	Graphic log	Description
0		SS	Brn	fine grain				T.H.B.	1.5	.01				
		Sh.	lt. Dk. gray											
20	Km / Kd	? SS	wht. Buff	fine grain										Km / Kd ?
40														
60														
80								260	1.5	.01	T.D.P.			
100														
120	Kd / Jmb	Sh. Sh.	Blk. green	Green.— Carb.										Kd / Jmb
140														
160														
180														
200	Jmb / Jmp	S.S.	lt. gray	fine to Med. grain slt Argill. — Ark.										Jmb / Jmp
220		S.S.	lt gray	fine grain —										
240	Jmp / Jmb	Sh.	gray				4' Samples							Jmp / Jmb
260				T.D. 260'										T.D. 260'

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Hole No. 600-3800
Sec. 9-13/9

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D M E A
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DATE	INITIALS	CODE

Hole No.	Sec	Elevation	Page of Pages	No Insets	Date	Logged by
1400 - 3800	9 13/9	6858.8	1 — 2	0	4-28-57	E.C.

Geology

Driller - ~~[illegible]~~ Dave Hannum
Rig #11

Footage	Formation	Lage & Rock	Color	Description	Footage	Core Number	Core Size	Probe Reading	Scale	Scaler Interval	Scaler Footage	Assay	Graph Log	Description
0														
20		SS.	wht. Buff	fine grain										
40														
60														
80	Kd	sh.	Blk.	Carb. - Green.										Kd
	Jmb	sh.	green											Jmb
100														
20	Jmb													Jmb
	Jmp	SS.	H.gry.	slt. Argill. - fine grain. - tr. wht. Qtz.										Jmp
40		SS.	H.gry.	fine grain										
60							41 Samples							

Dotted line
Graphic Assay
Solid Line - Probe

.0% .20% .60

0 20 40 60 80 100 120 140 160 180 200 220 240 260

Dwg No 792

Hole No. 1400-3800
Section 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No Insets	Date	Logged by
1400-3800	9 13/9	6858.8	2 — 2	0	4-28-57	E.C.

Geology

Footage	Formation	Type of Rock	Color	Description
260		SS.	H.gry. gren.	fine grain Some H. DK. gren. Sh.
280		Sh.	gren.	Hard.
		SS	H.gry.	fn. to Med grain
300	Jmp / Jmb	Sh.	green Red	Very hard
320	Jmb	SS.	H.gry.	fn grain - Streaks of Red gren. Sh.
340	Jmw			
		SS.	H.gry.	fine grain
360		SS.	H.gry.	fine to Med. grain tes. of Rose Chert
380				
400	Jmw			
	Jma	Sh.	Purple	
420	TD			
440				
200				
220				
240				
260				

Features: Cavings; Gas; Samples; Cuttings; Probe Center; Reading; Scale; Scaler Foot Interval; Assay; Graphic log; Description

Probe: T.H.B. 1.5 .01

Scaler: 420 1.5 .01 T.D.P.

4' Samples

Graphic log: Jmp, Jmb, Jmb, Jmw, Jmw, Jma, T.D. 420'

Dotted line Graphic Assay Solid Line - Probe

0% 20% 60

Dwg No 792

Hole No 1400-3800
Section 9 13/9

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CONTROL
DATE
CODE

Hole No.	Sec	Elevation	Page of	Pages	No. Insets	Date	Logged by
2200 - 3800	9 13/9	6914.8	1 ~	2	0	4-25-57	E.C.

Geology

Driller - Dave Hannum
R.S # 11

Footage	Formation	Type of Rock	Color	Description	Diamond Tec. Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Interval Foot	Assay	Graphic log	Description
0		SS.	Brn.											
20														
40		Sh.	Blk.											
60		Sh.	Brn. Red.											
80														
100														
120														
140	Km ? / Kd ?	SS.	Wht. Buff.	fine grain										Km ? / Kd ?
160														
180														
200														
220														
240														
260	Kd / Jmb	Sh.	Blk.	Carb. - Arcn.										Kd / Jmb
		Sh.	Lt. Dk. Brn.	slt. Arcn.										

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Hole No. 2200-3800
Sec. 9-13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
RR00-3800 offset - 40' North	9 13/9	6914.8	2 — 2	0	4-25-57	E.C.

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Scaler Assay	Graphic log	Description
260		Sh.	Gren	Slt. Green				T.H.B.	1.5	.01				
280														
300														
320		Sh.	Red											
340		Sh.	Green											
		Sh.	Red Green					435	1.5	.01	T.D.P.			
360		Sh.	Green	50% lt. gry. fine grain S.S.										
		Sh.	Green	Slt. Green.										
380														
400														
	Jmb												Jmb	
	Jmw	S.S.	lt gry	fn to Med grain - Hard									Jmw	
420		S.S.	lt. gry.	fn. to Med. grain - Soft										
	Jmt	Jmt Sh.	Green Brn.	slt Green									Jmt	
440		Td 440'											T.D. 440'	
460														

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

4' Samples

Hole No. 2200-3800
Section 9 13/9

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Hole No.	Sec	Elevation	Page of	Pages	No. Insets	Date	Logged by
3000 - 3800	9 13/9	6872.8	1 —	2	0	4-26-57	E.C.

Geology

Driller - Dave Hannum
Rig - # 11

Description

Probe: Depth, Reading, Scale
Scaler: Interval, Foot, Assay
Graphic log
Description
Dotted line Graphic Assay
Solid Line - Probe
0% 20% 60

0 — 20 — 40 — 60 — 80 — 100 — 120 — 140 — 160 — 180 — 200 — 220 — 240 — 260

Streaks of Brn. fine grain S.S. & lt. Dk. green Sh.

Km / Kd ?? S.S. wht lt. Buff fine grain

Kd ?

Kd / Jmb Sh. Blk. Green - Carb. Sh. green

Kd / Jmb

Dwg No 192

Hole No. 3000-3800
Section 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No Insets	Date	Logged by
3000-3800	9 13/9	6872.8	2 — 2	0	4-26-57	E.C.

Geology

Footage | Formation | Rock | Color | Description | Geologist | Geologist | Sample Cuts | Probe Reading | Scale | Scaler Foot Interval | Assay | Graphic log | Description

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

260

Sh. Green

280

Jmb
Jmp SS. lt. gray. gra. fa. grain. slt. Argill.-tr. gry. chert-

300

SS. lt. gray fa. grain

320

Sh Green Green.
SS. lt. gray fine to Med. grain

340

360

380

SS. lt. gray slt. Argill.

Jmp
Jmb Sh. Green Red Green.

400

SS lt. gray fine grain

Jmw

420

440

Jmw
Jmr Sh. Red Green

460

T.D. 455'

220

240

260

T.H.B. 1.5 .01

337 4 .01
338 3.5 .01
339 1.5 .01

387 3 .01
388 6 .01
389 6.5 .01
390 1.5 .01

454.7 1.5 .01 T.D.P.

A' Samples

Jmb
Jmp
Jmw
Jmw
Jmr
T.D. 455'

Dwg No 192

Hole No 3000-3800
Section 9 13/9

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DATE	INITIALS	CODE

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
3800 - 3800	9 13/9	6878.2	1 — 2	0	4-26-57	E.C.

Geology — Probe — Scaler

Driller - Dave Hannum
Rig #11

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Scaler Assay	Graphic log	Description
0		SS.	Lt Brn	fn grain										
20														
		Sh.	Lt DK Gry.	Streaks of fn grain SS.										
40														
60														
80														
100														
120	Km/Kd	SS.	Wht. Buff	fn Grain										Km/Kd
140														
160														
180														
200														
220		Sh.	Blk.	Arcn. - Carb.										
240	Kd/Jmb	Sh.	Green											Kd/Jmb
260														

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Dwg No. 792

Hole No. 3800-3800
Section 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
3800 – 3800	9 13/9	6878.2	2 — 2	0	4-26-57	E.C.

Geology

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken
260		Sh.	Grn.				
280							
300							
320							
340	Jmb / Jmp	SS.	Lt. Dk. Gry.	Large Amount Green Grey. Sh. SS. fine Grain			
360		SS.	Lt. Gry.	Tr. Green Sh. - Some Cal. —			
380							
400		Sh.	Grn. Red	Very Green			
		SS.	Lt. Gry.	fn. to Med. Grain: slt. Argill.			
420	Jmp						
		Sh.	Green Red	Green.			
		SS	Lt. Gry. green	fine to Med. Grain. slt. Argill.			
440							
460							
480							
500	Jmw / Jme	SS.	Gry.	Very Hard - Tr. Qtz. frags.			
		Sh.	Purple				
520							

T.D. 520'

Probe

Depth	Reading	Scale
T.H.B.	1.5	.01
519	1.5	.01

T.D.P.

Scaler

Foot Interval	Assay

4' Samples

Graphic log

Jmb / Jmp

Jmp

Jmb

Jmw

Jmw / Jme

T.D. 520'

Description

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Dwg No 192

Hole No 3800-3800
Section 9 13/9

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DATE	INITIALS	CODE

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
4600 - 3800	9 13/9	6900.3	1 — 4	1	4-19-57	E.C.

Geology — Driller - Dave Hannum, Rig # 11

Footage | Formation | Type of Rock | Color | Description | Diagnostic Features | Geiger | Samples Taken | Probe: Depth | Probe: Reading | Scale | Scaler: Foot Interval | Assay | Graphic log | Description | Dotted line Graphic Assay Solid Line - Probe (0% .20% .60)

0 — SS. Brn. fine grain.

20 — Sh. & SS. H. Gray. Blk.

40

60 — Km / Kd — SS. H. Gray cont. fine grain

80

100

120 — 4' Samples

140

160 — Km / Kd

180

200

220

240

260

Dwg. No 792

Hole No. 4600-3800

Section 9 13/9

Hole No	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
4600 - 3800	9 - 13/9	6900.3	2 — 4	1	4-19-57	E.C.

Geology: Footage, Formation, Type of Rock, Color, Description, Diagnostic Features, Geiger, Samples Taken

Probe: Depth, Reading, Scale

Scaler: Foot Interval, Assay

Graphic log, Description, Dotted line Graphic Assay, Solid Line - Probe (0% .20% .60)

Footage	Formation	Type of Rock	Color	Description
260	Kd			
	Jmb	Sh.	green	
280				
300				
		S.S.	Brn.	Very hard - fn. grain
320		Sh.	green	Very green.
340				
360				
	Jmb / Jmp			
380				See inset for Core log
400				
420				
440				
460		S.S.	H. gray.	fine grain - slt. Aragill.
480				
500		S.S.	H. Dk. gray.	fine to Med. grain - Tr. Brn. gray Sh. - Some Qrtz., Calcite —
520				

Samples taken: 4' Samples; Core; 4' Samples

Probe: T.H.B. 1.5 .01; 543 1.5 .01 T.D.P.

Graphic log: Jmb / Jmp

Footage scale: 260, 280, 300, 320, 340, 360, 380, 400, 420, 440, 460, 480, 500, 520

Dwg No 702

Hole No 4600-3800
Section 9 13/9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
4600-3800	9 13/9	6900.3	3 - 4	1	4-19-57	E.C.

Geology

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken
520		SS.	H. gray	fn. grain - Argill. -			4' Sample →
	Jmw	SS.	Brn	fn. grain. Very Hard -			
540	Jmr	Sh.	Red green				
	T.D. 545'						
550							
560							
60							
80							
00							
20							
0							
0							
0							
0							
0							
0							
0							

Probe

Depth	Reading	Scale

Scaler

Interval	Foot	Assay

Graphic log

Description: Jmw, Jmr, T.D. 545

Dotted line Graphic Assay
Solid Line - Probe

0% .20% .60

520, 540, 560, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240, 260

Dwg No. 1112

Hole No 4600-3800
Section 9 13/9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
4600 - 3800	13			

Footage From	Footage To	Formation	Geology: Description	Samples
374	398.5		SS - Light gray-green, ~~some~~ thin green sh layers, med grain usually, massive, friable	
398.5	401'		- Missing	
401	411		SS - Light gray-green, coarse grain, many dk gr sh chips, massive, friable	
411	424		SS - " " " , med grain, massive, friable	
424	438.5		SS - ditto, coarse	
438.5	443.4		SS - Light gray, massive, med-fine gr, minor sh chips. Green sh - .1' thick at 439.2. Friable except for basal 1.4' - hard.	
443.4	445		SS - Lt gray-grn, med-coarse, interbedded gr sh	
445	446		SS - Lt gray, hard cemented med grain	
446	→		SS ? - Coarse grn. — poor recovery	
			Approx 60% rec.	

Drawing No. 79

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

FINAL DISTRIBUTION MADE MAR 14 1957

Administrative Audit Difference Statement

Food Machinery & Chemical Corporation
161 East 42nd Street
New York 17, N. Y.

Date: March 13, 1957
Payee's Reference: September 1957 ← 1956?

Gentlemen:

DMEA-3943

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

Amount Claimed	$	2,916.64
		303.43
Difference	$	1,605.00
Amount Approved	$	1,218.21

The reason for the difference was due to:

Disallowance:

1. Claimed 1,118 ft non-core drilling	1,772.35	
Allowable cost 1260 ft. non-core drilling	1,542.24	
Amount to be disallowed.		230.11
2. Incidental allowance		
Claimed 1506 ft @ 0.39 per ft.	20.34	
Allowable 1,13 ft @ 0.39 per ft.	553.02	
		73.32
Total Amt. to be disallowed.		303.43

Reinstate:

1. 370 ft of core drilling at Inv. Cost.	1,283.16
2. 110 ft non-core drilling at Inv. Cost.	134.64
3. Incidental allowance for 480 ft drilling @ 0.39 per ft.	187.20
Total Amt. to be reinstated.	1,605.00

Withhold $500.00 pending reconciliation of Contract Work.

EXTRA-COPY

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

Very sincerely yours,

N. E. Stokes
Audit Section

DMEA
RECEIVED MAR 18 1957

DATE	INITIALS	CODE
3/18/57	9E	110
"	~~Chkg~~	700

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

CODE

224 New Customhouse
Denver 2, Colorado
March 11, 1957

Memorandum

To: T. A. Christensen

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

Subject: DMEA Docket 3943, (Uranium) Contract Idm-E932
Food Machinery and Chemical Corporation, Westvaco
Mineral Products Division (Sec. 9, T 13 N, R 9 W)
McKinley County, New Mexico - Operator's Monthly
Progress Report for the month of September, 1956

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.

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.

Each of the four holes drilled during September, 1956 penetrated in excess of 10 feet below the base of the Poison Canyon sandstone, which is not in conformance with the contract terms as interpreted by this office. The excess drilling is as follows:

Hole No.	Core	Non-Core	Total Depth	Base of Poison Canyon	Max. Allow. Depth	Excess Core	Excess Non-core
400-4600	15	324	339	300	310	15	14
800-4600	55	395	450	301	311	0	139
1200-4600	45	347	392	374	384	0	8
1600-4600	73	397	470	403	413	15	42
Total	188	1463	1651		1418	30	203

Allowable core footage (188 ft - 30 ft)----158 feet
Allowable non-core footage (1463-203 ft)----1260 feet

The Operator made the proper adjustment on accounting forms MF-104 and MF-104A, for the excess core footage and costs, but due to an arithmetical error did not make proper adjustment for the excess non-core footage and costs. Disallowances are to be made as indicated below.

Disallowances:

1. Non-core drilling, amount reported,
   1448 feet at invoice cost of ———— $1,772.35
   Allowable cost 1260 feet at invoice
   cost, including N.M. School tax ———— 1,542.24
   Amount to be disallowed ———— $ 230.11

2. Incidental Allowance, amount reported,
   1606 feet at $0.39 per foot ———— 626.34
   Allowable cost, 1418 feet at Fixed Unit
   Cost of $0.39 per foot ———— 553.02
   Amount to be disallowed ———— $ 73.32

Total Amount to be disallowed ———— $ 303.43

Results of recent drilling along and near the 4600 E line indicate that the Poison Canyon Sandstone may be lower stratigraphically in that area than had originally been interpreted; therefore, reinstatement is to be made as indicated below for drilling along the 4600 E line, which was disallowed from the August, 1956 voucher. The following relative correspondence is attached:

1. Copy of a letter dated November 27, 1956 from the Operator

2. Copy of a memorandum dated January 3, 1957 by Howard F. Albee, Geologist, U.S. Geological Survey.

Hole No.	Previously disallowed core drilling	Previously disallowed non-core drilling
3650-4600	100	43
4050-4600	100	35
4450-4600	100	22
4850-4600	70	10
Totals	370 feet	110 feet

Reinstate:

1. The cost of 370 feet of core drilling at invoice cost, including N. M. School tax ——— $1,283.16
2. The cost of 110 feet of non-core drilling at invoice cost, including N. M. School tax ——— 134.64
3. Incidental Allowance for 480 feet of drilling at Fixed unit cost of $0.39 per foot ——— 187.20

Total Amount to be reinstated ——— $1,605.00

Withhold an amount of $500.00 pending resumption of contract work. Stage I was completed during September, 1956.

Reconciliation with Amount Reported by the Operator on Form MF-104 for September, 1956

Amount reported on Form MF-104 for September, 1956 ———		$ 2,946.64
Amounts to be reinstated and disallowed		
Reinstate ———	$1,605.00	
Disallow ———	303.43	
Net reinstatement ———		$ 1,301.57
Total accepted cost ———		$ 4,248.21
Government participation at 75 percent ———		3,186.16
Amount to be withheld ———		500.00
Recommended payment to the Operator ———		$ 2,686.16

Remarks

Date of Report ——— January 29, 1957
Date Received in Field Office ——— February 1, 1957
Date Received in Region Office ——— March 6, 1957

Original signed by
E. N. HARSHMAN

E. N. Harshman

Enclosures

JDC;hh
cc: Chmn. Op. Comm. (2)
Shaw (2)
Harshman) w/copy of engr's report,
Townsend) Albee's Memo of 1-3-57, and
) Oper. letter of 11-27-56
MF-104 File E932
Chron.

C
O
P
Y

Grants, New Mexico
November 27, 1956

DMEA
DEPARTMENT OF THE INTERIOR
DEC 26 1956
REGION III
DENVER, COLORADO

Mr. Howard Albee
U. S. G. S.
P. O. Box 360
Grand Junction, Colorado

E932

Dear Howard:

As I told you on the phone yesterday, this Section 9 problem seems to keep coming back to haunt us. Since your last visit, we completed Stage One on the section and obtained some new information which I used to construct some new cross sections and correlations. From these, it can be shown that the original interpretation was incorrect and that the Poison Canyon sandstone is lower stratigraphically in the holes of the 4600 East line.

Hole 800-4600 was drilled to the Recapture Shale in order to provide a definite basis for correlation. As shown on the sections, the sandstone designated as Poison Canyon by the DMEA is only a stringer above the true Poison Canyon. Of course, the DMEA decision was determined without the benefit of the new information.

Last week in Denver, I discussed this matter with Harshmann and Bob King. Harshmann agreed with our new interpretation and said the DMEA would recalculate the disallowances.

In order to follow normal procedures, I am submitting the problem to you and am enclosing the cross sections. Except for the four new logs enclosed, all other logs should be available from Hasler. The other information that I showed Harshmann is not available for release, thus it is not enclosed.

If I can be of any further help, please let me know.

Best regards,

W. S. Cavender

WSC:mdc

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

IN REPLY REFER TO:
DMEA
DEPARTMENT OF THE INTERIOR
JAN 7 1957
REGION III
DENVER, COLORADO

[illegible]
[illegible]

[illegible] 1957

Memorandum

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DMEA
RECEIVED MAR 18 1957

DATE	INITIALS	CODE

To: Executive Officer, DMEA Field Team, Region III

Through: J. William [illegible] J. H. [illegible] W132
[illegible] N. [illegible] E. [illegible]
J. F. [illegible] J. F. Hall

From: Howard P. Allen

Subject: Docket No. DMEA 394 (Uranium), contract [illegible] Type,
Food Machinery and Chemical Corporation, Westvaco
Mineral Products Division (Sec. 3, T. 15 N., R. 9 W.),
McKinley County, New Mexico.
Re-evaluation of allowable footage.

In a memorandum from me, dated October 15, 1956, degree to the base of the Poison Canyon sandstone were given in order that the allowable footages for payment purposes could be determined.

Since the memorandum was written, the operator has submitted additional stratigraphic information which shows that my interpretation of the Poison Canyon along the 4,000 east line may have been incorrect.

Hole [illegible] was drilled into the Westwater Canyon specifically for stratigraphic information. A cross-section carried north from this hole shows that the Poison Canyon is lower stratigraphically than had originally been interpreted. This additional interpretation is supported also by a National Lead Company cross-section that trends from a drill hole south of section 3 northerly into the Ambrosia Lake vicinity.

The sandstone that separates the Poison Canyon sandstone from the Westwater Canyon sandstone thins northerly from a thickness of feet at hole [illegible] to [illegible] feet at hole [illegible]. At hole [illegible] five thin sandstone splits are present, any one of which may mark the base of the Poison Canyon. Northerly from [illegible], hole [illegible] has two sandstone splits, hole [illegible] has one split, hole [illegible] has two splits, and hole [illegible] has one split. None of the holes north from [illegible] has been drilled to the Westwater, instead they are bottomed in sandstone (Fig. 1). The holes, except hole [illegible], penetrated the sandstone through a thickness exceeding the usual thickness of the Poison Canyon.

DBEA 3343

1/3/57

Information was recently made available from a drill hole, drilled and logged by Kerr-McGee, that is located about 700 feet northeast from hole 4850-4600 (fig. 1). The hole was drilled to the Recapture and thus has good control on the contacts. The depth to the Poison Canyon sandstone substantiates the stratigraphic interpretation of the graphic sections shown in figure 1.

Inasmuch as the Poison Canyon sandstone is a poorly defined unit for which, in places, the upper and lower contacts cannot be picked without drilling to the Recapture, it is recommended that the drilling disallowances made for holes 3650-4600, 4050-4600, 4450-4600, and 4850-4600 be reconsidered and that allowances be made for the total depths of the holes.

Howard F. Albee
Howard F. Albee,
Geologist

HFA/mlr

Enclosure
(Fig. 1)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DECEMBER 1956 CONTRACT Idm-4932 DOCKET 3943

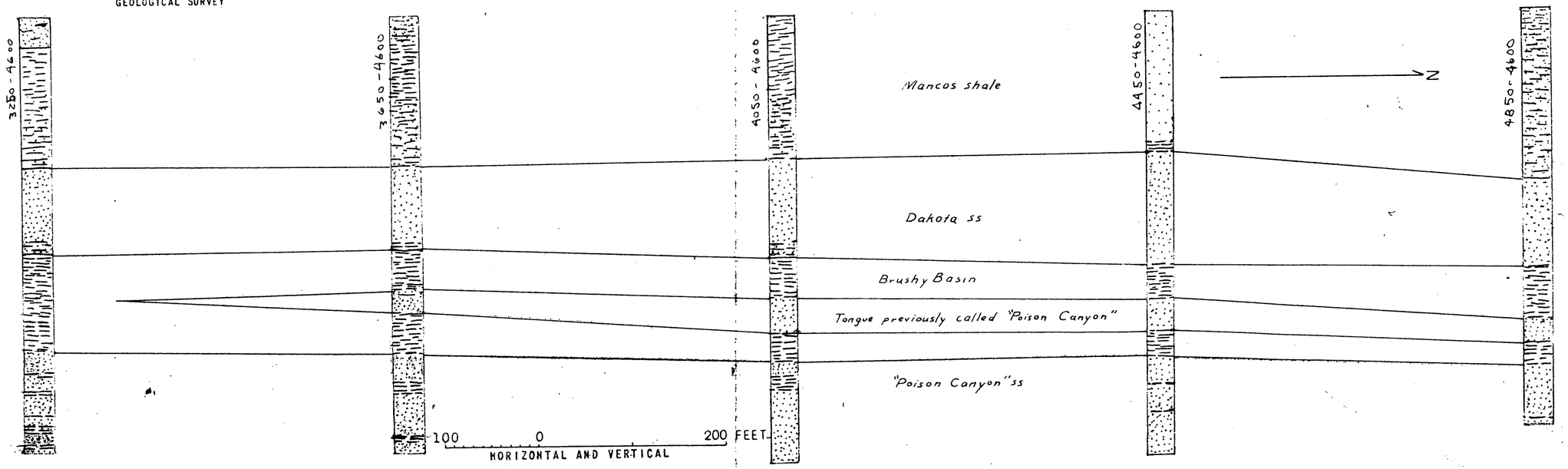

FIGURE 1.—STRATIGRAPHIC SECTION SHOWING THE POSITION OF THE "POISON CANYON" SANDSTONE IN THE NORTHEAST PART OF SECTION 9, T.13 N., R.9 W., FOOD MACHINERY AND CHEMICAL CORPORATION, WESTVACO MINERAL PRODUCTS DIVISION, McKINLEY COUNTY, NEW MEXICO.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

REGION III

DMEA
DEPARTMENT OF THE INTERIOR
FEB 26 1957
REGION III
DENVER, COLORADO

DMEA
DEPARTMENT OF THE INTERIOR
MAR 6 1957
REGION III
DENVER, COLORADO

Building 20
Denver Federal Center
Denver 2, Colorado

February 25, 1957

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MAR 18 1957
INITIALS | CODE

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shaw
Supervising Mining Engineer

From: W. D. McMillan

Subject: DMEA Docket 3943 (Uranium) Contract Idm-E932, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, Sec. 9, T. 13 N., R. 9 W., New Mexico Principal Meridian, McKinley County, New Mexico -- Progress report for September 1956

Inspection of progress during September 1956, was made on October 10, 1956, accompanied by Russel Hayden, project supervisor.

Four holes were drilled through the Poison Canyon member of the Jurassic Brushy Basin formation, completing Stage I of the contract. No uranium mineralization was found in any of the holes.

Steward Brothers and Parker Drilling Company showed the following footages of non-core and core drilling:

Hole Locations North	East	Non-core (feet)	Core (feet)	Total (feet)
400	4,600	324	15	339
800	4,600	395	55	450
1,200	4,600	347	45	392
1,600	4,600	397	73	470
Totals		1,463	188	1,651

Billed by Stewart Bros. and Parker Drilling Company:

1,448	non-core at $1.20	$1,737.60
158	core at $3.40	537.20
1,606	total	$2,274.80
	2 percent New Mex. school tax	45.50
		$2,320.30

Approved costs according to the statement are for 1,260 feet of non-core drilling at $1.20 per foot ($1,512.00), 158 feet of core drilling at $3.40 per foot ($537.20), New Mexico School tax at 2 percent ($40.98) and Incidental Costs--1,418 feet at $0.39 per foot ($553.02) a total of $2,643.70. All work and unit costs were within the contract specifications.

It is recommended that 75 percent of the total amounting to $1,982.40 be approved for payment.

The operator submitted geologic and radiometric logs, location maps, and statements of the drilling contract in quintuplicate. Only one copy of the drilling contractor's logs were received, which are being retained in this office.

W D McMillan

W. D. McMillan
Mining Engineer

cc 6
Idm-R938
Chron.

WDM:gh

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 September, 1956 Docket No. DMEA 3943 Contract No. Idm-E 932
Operator's Name Food Mach. & Chem. Corp. (Westvaco Min. Prod.) Minerals Uranium
Address P. O. Box 250 - Pocatello, Idaho
Contract Amount, $ 71,928.00 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	2,320.30	9,403.06	12,023.36			
Bulldozing						
Crosscutting						
Drifting						
(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): $0.39 per foot	626.34	2,183.61	2,809.95			
TOTALS	2,946.64	11,886.67	14,833.31	4248.21	11,586.67	16,134.88
				11	2,845.67	2,865.67

RECEIVED MAR 18 1957 D.M.E.A.

I certify that the above bill is correct and just and that payment therefor has not been received.
Date 1/29/57 *Payee Food Machinery & Chemical Corp. Westvaco Mineral Products Div.

Per [signature] Title Mgr. of Exploration

*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: 8,721.00 13,269.21
$ 2686.16

Signature [signature]
(Authorized Certifying Officer)

Date 3/13/57 Vou. No. DMA 57-99
(See other side)

Date: Withheld 500.00
Previous Disallowance

(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. Idm-E932 in accordance with the terms of the contract.

Signature Norman McLellan (81 98246) Title Min. Engr. Date 2/19/57

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature E. M. Hershman Title acting Executive Officer Date MAR 11 1957

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

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of September 1956 Docket No. DMEA 3943 Contract No. Dmc-E 932
Operator's Name Food Machinery & Chemical Corp. (Westvaco Min Prod) Minerals Uranium
Address P. O. Box 250, Pocatello, Idaho

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	per'	547.95	158	4,952.31	1428	3.47	1800	3.50
Plug bit	per'	1772.35	1448	7,071.05	5777	1.22	6300	1.25
Incidental	per'	626.34	1606	2,809.95	7205	0.39	8100	0.39
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		2,946.64		14,833.31				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								71,928.00
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 1/29/57 Operator Food Machinery & Chem. Corp. Westvaco Mineral Prod. Div.

Per [signature] Title Mngr. of Exploration

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)

RECEIVED MAR 1957 D.M.E.A.

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

January 28, 1957

Mr. John F. Shaw
U. S. Bureau of Mines
Room 137, Building 20
Denver Federal Center
Denver 2, Colorado

Re: Progress Report - September, 1956
Docket No. DMEA 3943 (Uranium)
Contract Idm-E 932
Food Machinery & Chemical Corp.
Westvaco Mineral Products Div.
Section 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Sir:

During the month of September, 1956, the remaining portion of Stage I drilling was completed. Four holes were drilled and samples labelled and stored. Geologic and radiometric logs were prepared for each hole. The Poison Canyon sandstone was penetrated in each hole.

The completed holes are:

Hole Coordinates	Total Depth	Cored	Mineralization	DMEA Disallowance
400 - 4600	339	15	Barren	15 - Core 14 - NC
800 - 4600	450	55	Barren	139 - NC
1200 - 4600	392	45	Barren	8 - NC
1600 - 4600	470	73	Barren	15 - Core 42 - NC
	1651	188		30 - Core 203 - NC

Total allowable non-core footage - 1448

Total allowable core footage - 158

No mineralization was encountered in any of the holes.

RECEIVED JAN 1957

The accompanying MF - 104's do not include the disallowances for August, 1955.

Respectfully submitted,

W. S. Cavender

W. S. Cavender
Manager of Exploration
Food Machinery & Chemical Corp.
Westvaco Mineral Products Division
P. O. Box 250
Pocatello, Idaho

WSC:mdc

STATEMENT

DATE October 4, 19 56

NAME Westvaco Minerals Products

ADDRESS Box 24, Star Route

Grants, N. M.

In Account With

Stewart Bros. & Parker

Drilling Company

Phone AT 7-4416 P. O. Box 154

GRANTS, NEW MEXICO

		Amount
Drilling for the Month of September 1956 as follows. Section 9, T 13 N. R. 9 W.		
1,448 feet of plug drilling @ $1.20	$1,737.60	
158 feet of core drilling @ $3.40	$537.20	
	$2,274.80	$2,274.80
2% N. M. School Tax		45.50
		$2,320.30

ACCOUNTS MAR 18 1957
DATE INITIALS CODE

STEWART BROS. & PARKER DRILLING CO.

BY H. M. Stewart

H. M. Stewart

Hole No.	Sec.	Elevation	Page of	Pages	No Insets	Date	Logged by
1600-4600	9-13-9	6947	1	3	1	9/28/56	J.A.R.

Geology

Hannum Rio #11

Description

Footage | Formation | Type of Rock | Color | Features | Cagnosit | Geiger | Surface Cover | Probe Center | Reading | Scale | Scaler Interval Foot | Assay | Graphic log | Description

Dotted line Graphic Assay
Solid Line - Probe

0% .20% .60

0 — Km — ss sh, brn-black.

20

40

60

80

00

20

40

60

80 — Km / KD — ss lt gy-white, f grain.

00

20

40

260

Km / KD

0 20 40 60 80 -00 -120 -140 -160 -80 -200 -220 -240 260

Log No. 132

Hole No 1600-4600

Section 9-13-9

Hole No.	Sec.	Elevation	Page of	Pages	No Insets	Date	Logged by
1600-4600	9-13-9	6947	2	3	1	9/28/56	J.A.R.

Geology

Hanmum Rio #11

Footage | Formation | Type of Rock | Color | Description | Cuttings Texture | Geiger | Sample Cover | Probe Depth | Probe Reading | Scale | Scaler Interval | Assay Foot | Graphic log | Description

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

260 — KD / JmB — ss. g-white, f. grain; mudstone

T.H.B. — .01 — no count — 468

280 — 20

300 — 40

320 — 60

340 — 80 — JmB / JmP — ss. gr. f.m. grain

360 — 100 — mudstone; ss. mudstone; ss. — see inset for detailed log

380 — 120 — core

400 — 140 — JmP / JmB — mudstone, green, red, gr.

420 — 160 — core

440 — 180

460 — 200 — JmB / JmW — ss. gr. f. grain

TD 470

480 — 220

500 — 240

260

KD / JmB

JmB / JmP

JmP / JmB

JmB / JmW

TD 470'

Dwg No 792

Hole No 1600-4600

Section 9-13-9

Inset Sheet

Line No.	Sec.	Page of Pages	Date	Logged by
-4600	9-13-9	3 3	9/28/56	J. A. R.

Hannum Rig #22

Footage From	Footage To	Formation	Geology Description	Samples
347	349		core lost	
349	353	Jmp	Mudstone, grn-gray, very soft, aren.	
353	357	Jmp	~~SS~~ Mudstone; SS, l. green-gray, f-m. grain, very crumbly; Mudstone, green	
357	360.6		core lost	
360.6	367	Jmp	SS, l-m. gray, f-m. grain, v. calcar, v. crumbly, chert frag., some green mud.	
367	369.5		core lost	
369.5	371.2	Jmp	SS, l. gray, f-m. grain, v. calcar, chert frag., argill.	
371.2	372.8	Jmp	SS, m. green-gray, f. grain, calcar, chert frag.	
372.8	375	Jmp	Mudstone, green	
375	383		plugged	
383	385.1	Jmp	SS, m-l. gray, f-c. grain, v. calcar, chert frag, argill.	
385.1	391	Jmp	SS, m. greenish-gray, f-c. grain, calcar, chert frag, streaks of green mud.	
391	393	Jmp	SS, l. gray, f-v.c. grain, v. calcar, chert frag, streaks of green mud	
393	395		core lost	
395	397.5	Jmp	same as above	
397.5	403	Jmp	SS, m-l. greenish-gray, f-m. grain, v. calcar, chert frag, streaks of green mud, dk. green in bottom 3"	
403	428	Jmp	Mudstone, green, red, → gray.	

Drawing No. 793

Hole No.	Sec	Elevation	Page of Pages	No. Insets	Date	Logged by
400-4600	9-13-9	6866	1 / 3	1	9/26/56	J.A.R.

Geology — Taylor Rig #7

Footage | Formation | Type of Rock | Color | Description | Diagnostic Features | Geiger | Samples Taken | Probe Depth | Probe Reading | Scale | Scaler Interval Foot | Assay | Graphic log | Description

Dotted line Graphic Assay
Solid Line - Probe
0% 20% 60

0 — Km — ss. sh., brn.

20

40

60 — Km / KD — ss. lgy-white, f grain.

80

100

120

140

160 — KD / JmB — Mudstone, green.

180

200

220 — JmB / JmP — ss. lgy-white, f grain

240 — ss. m. green-gray, f-c grain, pyrite, chert frag, calcar., argill.

260

Km / KD / JmB / JmP

Hole No. 400-4600
Section 9-13-9

Hole No.	Sec	Elevation	Page of	Pages	No. Insets	Date	Logged by
400-4600	9-13-9		2	3	1	9/26/56	J.A.R.

Geology — Taylor Rig #7

Footage | Lithographic | Type of Rock | Color | Description | Fractures | Diagnostic | Geiger | Samples | Probe Depth | Reading | Scale | Scaler Interval Foot | Assay | Graphic log | Description

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

260 — Jmp 55' m. green, gray, f-c. grain, pyrite, chert frag., calcar, argill.

T.H.B. .01 — No count — 338

280 — 20 — 55 m. green-gray, f-m. grain, argill.

300 — 20 — Jmp / JmB mudstone, red

320 — 60 — 55 sh.

see inset for detailed log

340 — 60 — T.D. 339'

360 — 70

20 — 120

40 — 140

60 — 160

80 — 180

00 — 200

20 — 220

40 — 240

60 — 260

core

Jmp / JmB

TD 339'

Hole No. 400-4600
Sec. 9-13-9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
400-4600	9-13-9	3 3	9/26/56	J.H.R.

Taylor Rig #7

Footage From	Footage To	Formation	Geology: Description	Samples
324	326.6		core lost	
326.6	333.7	JmB	Mudstone, green, gray & brown, v. aren.	
333.7	334	Jmw	SS, l. green, f. grain, calcar., 1 large chert frag. (fossil ?)	
334	337	JmB	Mudstone, red & green, v. aren.	
337	339	Jmw	SS, l. gray-green, f. grain, v. muddy, calcar.	

Drawing No. 793

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
800-4600	9 13-9	6891	1 3	1	9/29/56	USC

Hannum - Rig #11

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Depth	Reading	Scale	Foot Interval	Assay	Graphic log	Description
0		Sandstone & Shale	Light gray to white											
100	KD	SS	Lt. gry to white	Fine grain										KD
180	KD JMB		Grn	M. dst.										KD JMB
220			Gry	Sandy Sh.										
240	JMB JMP		Gray	SS										JMB JMP
260														

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

COTE

Dwg. No. 792

Hole No. 800-4600
Section 9-13-9

Hole No.	Sec.	Elevation	Page of	Pages	No Insets	Date	Logged by
800—4600	9 13-9		2	3	1	9/29/56	WRC

Hannum - Rig #11

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Center	Probe Reading	Probe Scale	Scaler Interval	Assay Foot	Graphic log	Description
260								T.H.B.	1.5	.01				
280														
300	JMP						Core	T.H.B. #49	1.5	.01				JMP
	JMB	Grn	sh											JMB
320														
340														
360	JMB													JMB
	JMW	Grn	ss											JMW
380														
400														
420		sh	Grn	Aren.										
440	JMW													JMW
	JMR	sh	Red, grn.											JMR
460	TD 450'													TD 450'

Dotted line Graphic Assay
Solid Line - Probe

0% 20% 60

260 280 300 320 340 360 380 400 420 440 460

Hole No. 800-4600
Section 9-13-9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
800-4600	9 / 13-9	3 / 3	9/29/56	WEC

Footage From	Footage To	Formation	Geology — Description	Samples
			Hannum — Rig #11	
248.0	264.0	NMP	Lt gray - med grn ss, soft - calcar, massive	
264.0	271.8	NMP	Lt gray - coarse grn ss - soft, massive, calcar, mostly qtz - some sh frags	
271.8	274.0	NMP	Lt gray - med grn ss, soft - calcar, massive	
274.0	284.5	NMP	Lt gray coarse ss - soft, massive, calcar - some sh frags over 1/4"	
284.5	299.2	NMP	Lt gray fine to med coarse ss - soft, calcar, massive	
299.2	301.1	NMP	Lt gray - fine ss - hard - calcar - sh increases toward base	
301.1	301.6	NMB	Intermixed green and gray sh and light gray sands	
301.6	303.8	NMB	Shaly, very fine ss - dull green	

Drawing No. 293

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
1200-4600	9-13-9	6941	1 / 3	1	9/28/56	J.A.R.

Geology

Taylor Rio #7

Footage | Formation | Type of Rock | Color | Description | Features | Diagnostic | Geiger | Samples Taken | Probe Depth | Reading | Scale | Scaler Foot Interval | Assay | Graphic log | Description

Dotted line Graphic Assay
Solid Line - Probe

0% .20% .60

0 — Km — 056 sh., brn.

20

40 — Tsh — black

60

80

100

120

140

160 — Km / Kd — ss. light-white, f. grain

180

200

220

240

260 — Kp — JmB

Km / Kd

Dwg No 192

Hole No. 1200-4600
Section 9-13-9

Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
1200-4600	9-13-9	6944	2 3	1	9/28/56	J.F.R.

Geology — Taylor Rig #7

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Probe Scale	Scaler Foot Interval	Scaler Assay	Graphic log	Description
260	KD JmB		Mudstone, green					T.H.B. 385	No count	.01				KD JmB
280 20														
300 40														
320 60														
340 80	JmB JmP			SS. (See inset for detailed log)										JmB JmP
360 100														
380 120	JmP JmB		Mudstone, green											JmP JmB
	TD 392													TD 392
400 140														
420 160														
180														
200														
220														
240														
260														

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

Dwg No 792

Hole No. 1200-4600
Section 9-13-9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
1200-4600	9/15/9	3 3	9/28/56	J.A.R

Taylor Rig #7

Footage From	Footage To	Formation	Geology Description	Samples
332	333		core lost	
333	335.2	Jmp	ss, gray-green, f-m. grain, calcar, chert frag.	
335.2	338	Jmp	ss, " " f-c. grain, " "	
338	342.2	Jmp	ss, " " f-m grain, " " very crumbly, v. shaly.	
342.2	342.2	Jmp	ss, " " f-c grain, " "	
342.2	346.1	Jmp	ss, " " f. grain, " "	
346.1	350	Jmp	ss " ", f-v.c. grain, calcar, " ", many pebble size frag. of Chert & quartzite, streaks of green mud	
350	352	Jmp	ss, " ", f-m. grain, " "	
352	355.7		core lost	
355.7	361.9	Jmp	ss, m. gray f-c. grain, " " "	"
361.9	362.2	Jmp	Mudstone, green.	
362.2	364	Jmp	ss. m. gray-green, f-m. grain, calcar, chert frag, streaks of green mud.	
364	368	Jmp	ss, " ", f-c. grain, " "	
368	372	Jmp	ss, " " f grain, " " very crumbly	
372	374.5	Jmp	ss, l-m. greenish gray, f-c. grain, v. calcar, chert frag, streaks of green mud (firm	
374.5	377	Jmp	Mudstone, green, some pyrite.	

Drawing No. 793

FINAL DISTRIBUTION

MADE OCT 29 1956

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

Administrative Audit Difference Statement

[illegible]
[illegible]
[illegible]

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

[illegible]

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

RECEIVED OCT 31 1956 D.M.E.A.

Amount Claimed $ [illegible]

Difference $ [illegible]

Amount Approved $ [illegible]

The reason for the difference was due to:

[illegible]

(a) [illegible] [illegible]

(b) [illegible] [illegible]

(c) [illegible] [illegible]

[illegible]

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
4-15-52 D

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

October 17, 1956

RECEIVED OCT 31 1956 D.M.E.A.

Memorandum

To: T. A. Christensen

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

Subject: DMEA Docket 3943 (Uranium) Contract Idm-E932, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division (Sec. 9, T13N, R9W) McKinley County, New Mexico - Operator's Monthly Progress Report for the month of August, 1956

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.

Except as otherwise noted below, it is deemed that the Operator has complied with the intent of the contract, and the work for which payment is recommended is acceptable to the Government. We recommend that payment to the Operator be made on the following basis, contingent on your verification of applicable rates and arithmetical accuracy of computations.

Because of indefinite geologic contacts indicated on the lithologic logs accompanying the August, 1956 monthly report, it was necessary to conduct a field examination of the drill core and cuttings in order to determine the allowability of drill footage and costs. In conformance with the attached field geologist's report and recommendations, core and non-core footage is to be disallowed as indicated in the tabulation below.

Hole No.	Total Depth	Base of Poison Canyon	Max. Allow Depth	Excess core	Excess N. C.
1000-600	300	295	300	0	0
1400-600	332	295	305	27	0
3850-600	355	282	292	63	0
4250-600	345	268	278	67	0
4650-600	490	263	273	100	117
5050-600	435	270	280	58	97

Hole No.	Total Depth	Base of Poison Canyon	Max. Allow Depth	Excess core	Excess N.C.
2000-4600	452	Not Present	452	0	0
3250-4600	470	Not Present	470	0	0
3650-4600	475	322	332	100	43
4050-4600	485	340	350	100	35
4450-4600	480	348	358	100	22
4850-4600	450	360	370	70	10
Excess footage to be disallowed- - - - - - -				685	324

Disallow

a) The invoice cost, including N.M. school tax, for 685 feet of core drilling- - - - - - $2,375.58

b) The invoice cost, including N.M. school tax, for 324 feet of non-core drilling- - - 396.58

c) Incidental allowance for 1009 feet of drilling at $0.39 per foot- - - - - - - - - - - - - 393.51

Total amount to be disallowed $3,165.67

Reconciliation with Amount Reported by the Operator on Form MF-104 for August, 1956

Total amount reported on Form MF-104 for August, 1956- -$10,739.53
Amount to be disallowed- 3,165.67
Total accepted cost for August, 1956- - - - - - - - - - $ 7,573.86

Government participation at 75 percent- - - - - - - $ 5,680.40

Remarks

Date of Report - - - - - - - - - - - - - September 5, 1956
Date Received in Field Office- - - - September 13, 1956
Date Received in Region Office- - - September 19, 1956

J. W. Townsend

J. W. Townsend

Enclosures
JDC:jy
cc: MF-104 File E932
Sec. Op. Comm. (2)
Shaw (2)
Harshman)
Hasler) w/copy engr's report & Geol. report
Townsend)
Chron.

MINERAL DEPOSITS

IN REPLY REFER TO:

DMEA
RECEIVED
OCT 11 1956

U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA
DEPARTMENT OF THE INTERIOR
OCT 11 1956
REGION III
DENVER, COLORADO

[illegible]

[illegible]

To: [illegible] Field Team, Region III

Through: J. [illegible]
[illegible]

From: Edward [illegible]

Subject: Aeromagnetic Survey, Project DMA 3[illegible] (Uranium), [illegible]
Lease 132, Food Machinery and Chemical Corporation,
Sec. 1, T. 13 N., R. [illegible] E., McKinley County, New Mexico

RECEIVED
OCT 31 1956
D.M.E.A.

Drill holdings and core from this property have been examined in the field and several U.S., [illegible] and independent geologists have been consulted.

It is my opinion, and this was also the opinion of other geologists, that the Poison Canyon Dome is not continuous away from the type dome by at the Poison Canyon mine. The magnetic anomalies with the northwest trend and other anomalies come so at the same stratigraphic position that they can converge with the northwest. In places there is no [illegible] in the Brushy basin that can be stratigraphically correlated with the Poison Canyon dome. Dike stratigraphic position was not well known, as the time of the initial field examination, and consequently was not adequately covered by the contract. Where evidence correlates to the Poison Canyon dome or where a drill hole penetrates a mineralized dome near its projected, the bottom of the hole is indeterminable unless drilled into the Westwater Canyon.

A certain amount of drilling into the Westwater Canyon would be desirable if it is established that the mineralized dome is present in the Brushy Basin. The only definite means of correctly interpreting these anomalies is drill to the structure, because there is little or no lithologic difference between the Brushy Basin and the Westwater Canyon members of the Jurassic Morrison Formation.

The location of the lower surface of the Brushy Basin Poison Canyon dome in the contract has been determined as follows:

Hole Number	Contact with underlying Dome
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

DMEA 3943 10/10/56

Hole number	Contact with underlying sandstone
4250-600	268
4650-600	263
5050-600	270
2000-4600	None - No Jmb sandstone
3250-4600	None - No Jmb sandstone
3650-4600	322
4050-4600	340
4450-4600	348
4850-4600	360

These contacts, except in hole 1000-600, are considerably shallower than those given by the operator. For payment purposes it is recommended that the operator be allowed to drill at least 10 feet below the Brushy Basin sandstone contact in order that the hole not be stopped in a thin and split. However, in the following holes no core was taken from the "Poison Canyon" sandstone:

Coordinates	Coordinates
4650-600	4050-4600
5050-600	4450-4600
3650-4600	

The operator assumed that the lower sandstones were "Poison Canyon". We cannot recommend payment for footage, either core or non-core, for more than ten feet below the previously tabulated contact depths; however, it is recommended that payment be made for the footage, either core or non-core, to ten feet below these tabulated contacts.

In holes 3250-4600 and 2000-4600, where no "Poison Canyon" is present, it is recommended that payment be made for the footage, both core and non-core, to depth of 10 feet into the Recapture shale. In the process of drilling these holes the geologist may strongly suspect that no "Poison Canyon" is present because of the unusual thickness of the Brushy Basin shale before penetrating a sandstone; however, he can not be sure until the Recapture has been penetrated.

Holes 1000-600 and 1400-600 appear to be all right except that 1400-600 was drilled deeper than ten feet below the contact.

Howard F. Albee
Howard F. Albee,
Geologist

HFA/mlr

DMEA
DEPARTMENT OF THE INTERIOR

SEP 19 1956
REGION III
DENVER, COLORADO

REGION III

Building 20
Denver Federal Center
Denver 2, Colorado
September 18, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shaw JS by [illegible]
Supervising Mining Engineer

RECEIVED OCT 31 1956 D.M.E.A.

From: W. D. McMillan

Subject: DMEA Docket 3943 (Uranium) Contract Ida-8932, Food Machinery and Chemical Corporation, Westvaco Minerals Products Co., Sec. 9, T. 13 N., R. 9 W., NMPM, McKinley County, New Mexico -- Progress report for August 1956

An inspection of progress was made on September 5, 1956, accompanied by Russell J. Hayden, project supervisor.

Stewart Bros. and Parker Company's drill logs for twelve holes show 1140 feet of core-bit drilling and 3989 feet of plug bit drilling, the same as claimed by the operator.

Approved costs for August are:

1140 feet of core-bit drilling at $3.40 a foot	$3876.00
3989 feet of plug bit drilling at $1.20 a foot	$4714.80
Total drilling	$8590.80
2% New Mexico School Tax	171.82
Incidental allowances, 5069 feet at $0.39 a foot	1976.91
Total approved costs	$10739.53

The approved unit costs are less than the contract costs. It is recommended that 75 percent of the approved total costs amounting to $8054.65 be approved for payment.

The narrative report, location map and geologic logs are adequate. Core-bit drilling was done with NX bits. Only two of the 12 holes showed slight uranium mineralization.

The drilling contractor's logs and one set of the geologic logs are being retained in this office.

W. D. McMillan
W. D. McMillan
Mining Engineer

WDM/mr cc: 6
Ida-8932 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 OCT 31 1956 DMEA

Month of August, 1956 Docket No. DMEA 3943 Contract No. Idm E 932
Operator's Name Food Mach. & Chem. Corp. (Westvaco Min. Pord.) Minerals Uranium
Address Box 250 Pocatello Idaho
Contract Amount, $71,928.00 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	8762.62	949.44	9703.06			0
Bulldozing						
Crosscutting						
Drifting						
(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):						
0.39 per' for 5069'	1976.91	206.70	2183.61			
				7573.86		8721.00
TOTALS	10739.53	1147.14	11886.67	—	1147.14	—

DMEA
DEPARTMENT OF THE INTERIOR
SEP 19 1956
REGION III
DENVER, COLORADO

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

Date 9/5/56 *Payee Food Mach. & Chem. Corp. Westvaco Min. Prod. Div.

Per Russell J. Hayden Title Project Engineer

*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:

$5680.40

Signature
(Authorized Certifying Officer)

Date 10/19/56 Vou. No. DMA 57-49

(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. Idm-E932 in accordance with the terms of the contract.

Signature Wm. C. Mullan (8 8054.65) Title Ind. Engr. Date 9/17/56

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: by ADK

Signature [illegible] Title Acting Executive Officer Date OCT 17 1956

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

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of August 1956 Docket No. DMEA 3943 Contract No. Idm-B 932
Operator's Name Food Mach. & Chem. Corp (Westvaco Min. Prod.) Minerals Uranium
Address Box 250 Pocatello Idaho

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
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	per'	3953.52	1140	4404.36	1270	3.47	1800	3.50
xxxx plug bit	per'	4809.10	3929	5298.70	4329	1.22	6300	1.25
xxxIncidental	per'	1976.91	5069	2183.61	5599	0.39	8100	0.39
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		10,739.53		11,886.67				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								71,928.00
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 9/5/56 Operator Food Mach. & Chem Corp. Westvaco Min. Prod. Div.

By Russell J. Hayden Title Project Engineer

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) Wm C Milton

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

STATEMENT

DATE September 3, 1956 19

NAME Westvaco Mineral Products

ADDRESS Box 24, Star Route

Grants, New Mexico

In Account With

Stewart Bros. & Parker

Drilling Company

Phone AT 7-4416 P. O. Box 154

GRANTS, NEW MEXICO

RECEIVED OCT 31 1956 L.M.E.A.

		Amount
Exploration drilling on Section 9 during August, 1956 as follows:		
3,929 feet plug drilling @ $1.20 per foot	$4,714.80	
1,140 feet core drilling @ $3.40 per foot	3,876.00	
		$8,590.80
2% N. M. School Tax		171.82
TOTAL		$8,762.62

THANKS

STEWART BROS. & PARKER DRILLING CO.

By H. M. Stewart

H. M. Stewart, Partner

September 7, 1956

RECEIVED
OCT 31 1956
D.M.E.A.

Mr. John F. Shaw
U. S. Bureau of Mines
Room 137, Building 20, Denver Federal Center
Denver 2, Colorado

Re: Progress Report
Docket No. DMEA 3943 (Uranium)
Contract Idm-E932
Food Machinery & Chem. Corp.
Westvaco Mineral Products Div.
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Sir:

Stage one drilling on section 9 continued during August with 12 holes being completed, bringing the total for the section to 14. All holes were logged geologically and radiometrically, and samples were labeled and stored. The accompanying map shows the hole locations, the total depths, the depths to the top and bottom of the Poison Canyon sandstone (the ore horizon), and whether or not the hole contained mineralization. Geologic logs for each hole are enclosed with this report. Each log includes a detailed description of the Poison Canyon core taken from the hole.

Drilling:

During the month 5069 feet were drilled with 1140 feet of coring and 3929 feet of plug. Cuttings samples were taken at 4 foot intervals down to the ore horizon. Below is a list of the completed holes. Detailed information is provided on the accompanying geologic logs.

Hole Co-ordinates	Total Depth	Cored Footage	Mineralization
1000-600	300	75	none
1400-600	332	97	none
3850-600	355	103	none
4250-600	345	105	none
4650-600	490	100	none
5050-600	435	58	none

Hole Co-ordinates	Total Depth	Cored Footage	Mineralization
2000-4600	452	100	slight
3250-4600	470	104	slight
3650-4600	475	100	none
4050-4600	485	100	none
4450-4600	480	100	none
4850-4600	450	98	none
12 holes	5069	1140	

Geology:

Our geologic interpretation of the drill hole information is shown on the cross sections accompanying this report (Drawing 9-3). An increase in thickness of the Brushy Basin sand along the 600 line between 200N-600E and 1000N-600E is thought to be an interesting structure and deserves future exploration. The sandstone in this area appears favorable both in thickness and grain size for a possible ore body.

In the interval between 3250-4600 and 4350-4600 the Poison Canyon sandstone and the Westwater merge. In these holes drilling extended below the Poison Canyon sandstone to enable correlation of the stratigraphic horizons.

Respectfully submitted,

R. J. Hayden

R. J. Hayden, Project Engineer
Food Machinery & Chemical Corporation
Westvaco Mineral Products Division
P. O. Box 250
Pocatello, Idaho

Hole No.	Sec.	Elevation	Page of	Pages	No. Insets	Date	Logged by
1000-600	13-9	6862	1	3	1	8/2/56	J.A.R.

Taylor Rio #7

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe Depth	Probe Reading	Scaler Scale	Scaler Foot Interval	Assay	Graphic log	Description
0	QAL	Blow sand												QAL
20	QAL / KD	SS.	l. gy	f-m. grain										QAL / KD
40														
60														
80														
100		Ss.	m. gy	f-m. grain										
		Sh	black	carboni f.										
120														
	KD		m. gy	f-m. grain										KD / Jmb
				limestone, green										
140														
160														
180														
		SS.	l. green											
		Sh.	brn-red											
200														
220	Jmb / Jmp	SS.		(see Inset for detailed log)										Jmb / Jmp
240														
260														

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

.01 mr/hr

core

Hole No. 1000-600
Section 9-13-9

Hole No.	Sec.	Elevation	Page of	Pages	No. Insets	Date	Logged by
1000-600	13-9	6862	2	3	1	8/2/56	J.A.R.

Taylor Rig #7

Geology: Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Samples Taken	Probe: Depth	Probe: Reading	Probe: Scale	Scaler: Foot Interval	Assay	Graphic log	Description	Dotted line Graphic Assay Solid Line - Probe (0% .20% .60)
260	Jmp	ss.		(see Inset for detailed log)				THB ↓ 292	.5	.01				Jmp	
280 / 20							core		No count						
300 / 40	Jmp? Jmb	mudstone												Jmp Jmb	
	T.D. 300'													T.D. 300'	
320 / 60															
340 / 80															
00															
20															
40															
60															
80															
00															
20															
40															
260															

Dotted line Graphic Assay Solid Line - Probe

0% .20% .60

260 280 300 320 340 00 20 40 60 80 00 20 40 260

Dwg No 1092

Hole No

Section

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
1000-600	9-13-9	3 of 3	8/2/56	W & J.A.R.

Taylor Rig #7

Footage From	Footage To	Formation	Geology Description	Samples
225.0	233.0	Jmp	S.S., lt grey, fn-med grain, argill.	
233.0	235.0	Jmp	LOST CORE	
235.0	237.2	Jmp	S.S., lt grey, med-coarse grain.	
237.2	241.3	Jmp	S.S., lt grey, fn-med grain, streaks of gr. sh.	
241.3	245.0	Jmp	LOST CORE	
245.0	247.7	Jmp	S.S., lt grey, fn-med grain, argill.	
247.7	254.1	Jmp	S.S., lt grey-green, med-coarse gr., argill, ark.(?)	
254.1	255.0	Jmp	LOST CORE	
255.0	279.6	Jmp	S.S., lt grey, fn-coarse gr., argill., ark.(?), streaks of green sh.	
279.6	279.4	Jmp	S.S., lt grey, fn-med. gr. streaks of green sh., calcar, some pyrite in bott. 3"	
279.4	280.1	Jmp	Mudstone, lt. green, some pyrite,	
280.1	281.5	Jmp	SS, greenish-gray, f-m. grain, some pyrite, frag. of blk & red chert.	
281.5	284.2	Jmp	SS. m. gray, f-m grain, v. argill., chert frag.	
284.2	298	Jmp	SS, m-l. gray, f-c. grain, blk & red chert frag., argill, lumps of gy mud in bott 1'	
298	300	Jmp	Mudstone, blue & red.	

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
1400 -600	9 13-9	3 3	8/2/56	J.A.R.

Footage From	Footage To	Formation	Geology: Description	Samples
			Hannum Rig #11	
235	235.8	Jmp	SS. l. greenish-gray, f-m. grain, v. argill, some pyrite	
235.8	245.9	Jmp	SS. m. gray, f-c grain, v. calcar, little pyrite many frag. of black chert.	
			Streaks of green mud.	
245.9	250.7	Jmp	SS. m. gray, f-m. grain, streaks of green mud, few frag. of black chert, calcar.	
250.7	251.7	Jmp	Mudstone, green.	
251.7	261.5	Jmp	SS. m. gray, f-c grain, calcar, streaks of green mud, frag. of black and red chert	
261.5	264	Jmp	SS. m. gray, m-vc grain, lumps of green mud, calcar, abundt. pyrite, black & red chert frag.	
264	264.5	Jmp	Mudstone, green.	
264.5	265	Jmp	Mudstone, green, v. sandy, sand f-c grain.	
265	271.2	Jmp	SS, m. gray, f-m. grain, streaks of green mud, calcar, little pyrite.	
271.2	274.9	Jmp	SS, " " f-v.c. grain, "	
274.9	276.7	Jmp	Mudstone, green, v. argil.	
276.7	277.3	Jmp	Mudstone, dk. gray & lumps of white, vc calcar.	
277.3	278.6	Jmp	Mudstone, green, v. argil.	
278.6	279.3	Jmp	SS, m. grey, f-m. grain, v. argill., streaks of green mud	
279.3	295	Jmp	SS, m. grey, f-c grain, argill. frag. blk. chert, streaks of green mud, vc calcar	
295	298	Jmp	Mudstone, m-greenish gray, argil. in top	
298	298.5	Jmp	Mudstone, red	
298.5	305	Jmp	Mudstone, greenish-gray	
305	306		Lost core	
306	309.5	Jmp	Mudstone, gray	
309.5	310		Lost core	
310	311		Mudstone, red & green	
311	318		Mudstone, green.	
318	332	Jmp	Mudstone, green, argil. fair narrow ss. lenses.	

Drawing

Hole No.			Type	Hole No.		Logged by
1400-600	4-13-9	6862	1	-3	1	8/3/56 W & J.A.R.

Hannum, rig 11

Probe Recce Pass

THB 0 — 332 | 008 — 008 | X — 1/2

Qal / Kd s.s. lt gy-wh. Fn-med. gr.

Sh. blk-dk gy, carbon., carbon..

Kd / Jmb Sh. lt gy-gr.

Jmb / Jmp s.s. lt gy See inset for detailed log.

Blow sand

Qal / Kd

Kd / Jmb

Jmb / Jmp

no count

Core

0 20 40 60 80 100 120 140 160 180 200 220 240 260

Hole No.

Section

Hole No	Sec.	Elevation	Page of	Pages	No Insets	Date	Logged by
1400 - 600	9-13-9	6862	2	3	1	8/3/56	N & JAR

Geology

Stage	Formation	Rock	Color	Description	Core Recovery	Core Depth	Core	Probe Reading	Scaler Scale Reading	Scaler Interval	Scaler Assay Est.	Graphic Log	Graphic Log Scale	Dotted line Graphic Assay Solid Line - Probe 0% .60	Depth
						no count									260
															280 ~~20~~
	Jmp / Jmb	Sh.	Hgr.-pump	aren., see insel for detailed log.									Jmp / Jmb		300 ~~40~~
															320 ~~60~~
	TD 332												TD 332		340 ~~80~~
															20
															40
															60

Hole No.	Sec.	Elevation	Page of	Pages	No. Insets	Date	Logged by
3850-600'	13-9	6855	1	3	1	8/7/56	J.A.R.

Geology

Taylor Rig #7

Description

Footage | Formation | Rock | Color | Geologic Features | Geiger | Taylor | Probe Reading | Scale | Scaler Interval | Assay Foot | Graphic log | Description

Dotted line Graphic Assay
Solid Line - Probe
0% 20% 60

0 — ΦAL Blue sand

20

40 — ΦAL

Ka Shy grav., brown

Km

KD SS l. gy. f-m. grain.

60

80

100

SS gy, f-m grain
ash, blk., carbonif.

120

140

KD

JmB Mudstone, green

160

JmB

JmP SS (see inset for detailed log)

Core

ΦAL

Km

Km

KD

KD

JmB

JmB

JmP

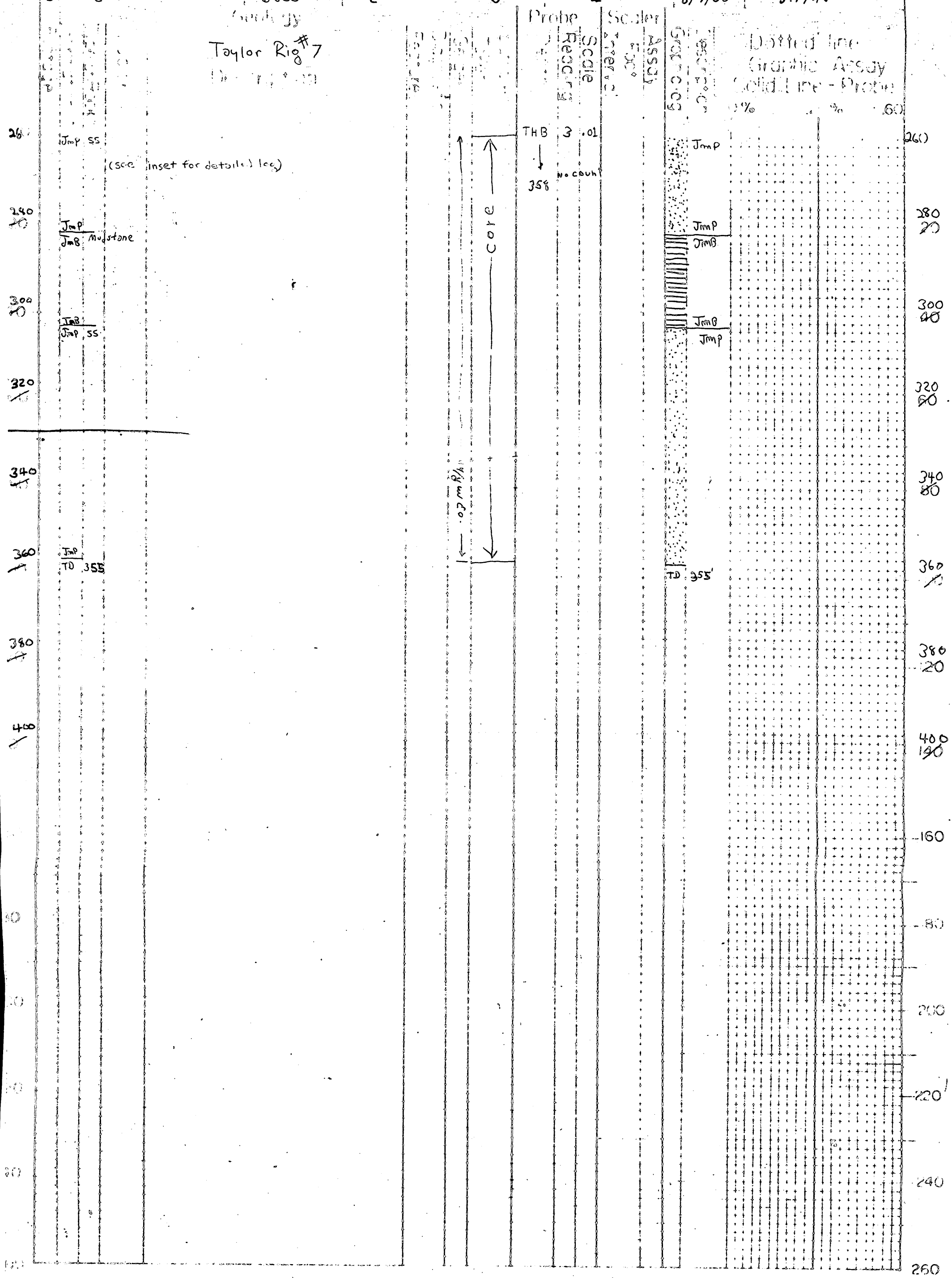
3850-600
9-13-9

Hole No.	Sec.	Elevation	Page of	Pages	Insert	Date	Logged by
3850-600	9-13-9	6855	2	3	1	8/7/56	J.A.R.

Checked by

Taylor Rig #7

Probe Recorder | Scaler Scale | Assay | Geologic Cross Section | Dotted line Gamma Assay Solid line - Probe



Hole No. 3850-600

Sec. from 9-13-9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
3850-600	13-9	3 3	8/7/56	JAR

Footage From	Footage To	Formation	Geology: Description	Samples
			Taylor Rig #7	
252	255.5	Jmp	SS., l. greenish-gray, f-m. grain, v. calcar, streaks of green mud, chert frag.	
255.5	260	Jmp	SS, m. greenish-gray, "	"
260	262		core lost	
262	262.3	Jmp	SS, m. greenish-gray, f-m. grain, calcar, argill, chert frag.	
262.3	263	Jmp	Mudstone, green, v. aren.	
263	268.1	Jmp	Mudstone, variegated, green & red, aren, abundant pyrite in bot 1"	
268.1	271.4	Jmp	SS, m. greenish-gray, f-m. grain, streaks of green mud, chert frag.	
271.4	272		core lost	
272	272.2	Jmp	SS, m-l. greenish-gray, f-m. grain, much green mud, chert frag.	
272.2	274	Jmp	mudstone, green, v. aren.	
274	277.8	Jmp	SS, l. gray-m. greenish-gray, f-c. grain, calcar, chert frag, argill.	
277.8	281.9	Jmp	SS, m. gray, f-v.c. grain, chert frag., calcar, argill, some pebble-size chert frag.	
281.9	300	Jmp	Mudstone, greenish-gray-m. gray, few red streaks	
300	302.8		core lost	
302.8	303	Jmp	Mudstone, grayish-green, v. aren.	
303	304.8	Jmp	SS, l. gray, f-m. grain, calcar, streaks of green mud, chert frag.	
304.8	312	Jmp	SS. l.-m. greenish-gray, f-c. grain, calcar, streaks of green mud, chert frag.	
312	314		core lost	
314	316.2	Jmp	SS, f-m. grain, lumps of green mud, chert frag	
316.2	318	Jmp	SS, m. greenish-gray, f-m. grain, calcar, argill., chert frag.	
318	322	Jmp	SS, grayish-green, f-c. grain, v. argill, much green mud, chert frag	
322	323.8		core lost	
323.8	342	Jmp	SS, m. greenish-gray, f-v.c. grain, few thin streaks of f. green sand calcar, chert frag	
342	345.1	Jmp	SS, m. greenish-gray, f-c. grain, argill, streaks of green mud chert frag, few pyrite frag.	
345.1	346.4	Jmp	Mudstone, green, v. aren. coarse qtz. grains, few pyrite frag.	
346.4	348	Jmp	SS, grayish-green, f. grain, v. argill, much green mud	
348	352		core lost	
352	353	Jmp	SS, grayish-green f. grain, v. argill.	
353	355		core lost	

Drawing No. 793

Hole No.	Sec	Elevation	Page of	Pages	No Insets	Date	Logged By
4250 -600	13-9	6844	1	3	1	8/9/56	J.A.R.

Geology

Hannum Rig #11

Description

Probe: Scale Reading

Scaler: Interval Foot

Assay

Graphic Log

Description

Dotted line Graphic Assay
Solid Line - Probe
0% .20% .60

0

ΦAL Blowsand

20

40

ΦAL
KD SS. 1-m. gr
Sh black carbonif.

60

80

120

140

KD
JmB mudstone, green

160

JmB
JmP SS.

(see inset for detailed log)

JmB
JmP

KD

ΦAL

ΦAL
KD

JmB
JmP

4250 -600
9-13-9

Hole No.	Sec	Elevation	Page of	Pages	No Insets	Date	Logged by
4250 -600	9 13-9	6844	2	3	1	8/9/56	J.A.R.

Hannum Rig #11

Footage	Formation	Type of Rock	Color	Geology Description	Probe Reading	Scaler Reading	Assay
260	JmP	59			TH3	4 .01	
	JmB	Mudstone		(see inset for detailed log)	↓ 348	No count	
280 ~~20~~	Jm3						
	JmW?	SS					
300 ~~40~~							
320 ~~60~~							
340 ~~80~~							
	TD 345'						
360 ~~100~~							
~~380~~ ~~120~~							
~~140~~							
~~160~~							
~~180~~							
~~200~~							
~~220~~							
~~240~~							
~~260~~							

Geiger Counter: 0.3 mR/hr — 0 — 0

Geology Section: JmP, JmB, JmW?, TD 345'

Dotted line Graphic Assay Gold line - Probe

0% .60

260 280 ~~20~~ 300 ~~40~~ 320 ~~60~~ 340 ~~80~~ 360 ~~100~~ 380 ~~120~~ ~~140~~ ~~160~~

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
4250 - 600	9 13-7	3 · 3	8/9/56	J.A.R.

Hannum Rig #11

Footage From	Footage To	Formation	Geology: Description	Samples
240	260	Jmp	ss, m-l. gray, f-m. grain, few coarse qtz. frag. in bottom 1', streaks of green mud, calcar, frag of red & black chert.	
260	261.5	Jmp	core lost	
261.5	266	Jmp	ss, m. gray, f-c. grain, few pebble-size qtz. frag., argill., frag. of blackened chert	
266	268.3	Jmp	ss, l. gray, " " v. argill., "	" v. calcar.
268.3	270	Jmo	Mudstone, variegated, green & red, aren.	
270	272	Jmo	Mudstone, gray-green	
272	278.5		core lost	
278.5	281.7	Jmo	Mudstone, gray-green	
281.7	282.6	Jmo	Mudstone, red-brown	
282.6	285	Jmo	Mudstone, gray-green	
285	286.6		core lost	
286.6	294	Jmw	ss, l-m. gray, f-m. grain, streaks of green mud, few coarse qtz. frag., chert frag.	
294	295.5	Jmw	ss, l. gray, f-m. grain, v. calcar., clean	
295.5	300.5	Jmw	ss, m. gray, f-c. grain, v. argill., crumbly in bottom 2', large chert frag.	
300.5	307	Jmw	core lost	
307	308.9	Jmw	ss, l-m. gray, f-m. grain, streaks of green mud, chert frag.	
308.9	315	Jmw	ss, m. gray, f-v.c. grain, calcar, argill., abundt. chert.	
315	317.5		core lost	
317.5	319.1	Jmw	ss, m. gray, f-m. grain, v. argill., chert frag.	
319.1	325	Jmw	ss, gray-green, f. grain (coarse in top 1') argill	
325	326.2		core lost	
326.2	334.5	Jmw	ss, m. gray, f-v.c. grain, chert frag, calcar., streaks of green mud.	
334.5	335.7	Jmw	Mudstone, green, v. aren., few pyrite flakes	
335.7	339.1	Jmw	ss, green-gray, f. grain, much green mud	
339.1	345	Jmw	ss, m. gray, f. grain, streaks of green mud.	

Drawing No. 793

Hole No.	Sec.	Elevation	Page of	Pages	No. Liners	Date	Logged by
4650-600	13-9	6861	1	3	1	8/10/56	J.A.R.

Geology

Taylor Rig #7

Description

Probe Read Scale

Scaler Assay

Grad. Cols.

Dotted line Graphic Assay
Solid line - Probe

0% 60

0

20

40

60

80

100

120

140

160

180

200

220

240

260

ΦAL Blowsand

ΦAL
KD SS. l.gy-buff, f-m. grain.

+sh blk. carbonif.
+SS white-l.gy, f-m. grain.

+SS m.-dk. gy, f-m. grain.

KD
JmB Mudstone, green

JmB
Jmp SS. l-m.gy, f-m. grain, argill.

+SS. m.gy. f-c. grain, argill. frag. of chert

ΦAL

ΦAL
KD

KD
JmB

JmB
Jmp

Hole No. 4650-600
Section 9-13-9

Hole No.	Sec	Elevation	Page of	Pages	No. Insets	Date	Logged by
4650-600	9-13-9	6861	2	3	1	8/10/56	J.A.R.

Geology

Taylor Rig #7

Description

Probe Reading | Scaler Scale | Interval | Assay Foot

Dotted line Graphic Assay
Solid line - Probe

0% 20% 60

Depth	Formation	Lithology	Color	Description
260	Jmp	ss	m.gy.	f-c grain, frag. of chert
	Jmb			mudstone, green-gray
280				
300	Jmb / Jmw	ss.		(see inset for detailed log)
320				
340				
360				
380				ss. greenish gy - l. brownish gy f-m. grain.
400				
420	Jmw	sh	brown, green.	
440				
460				
480				
500	T.D. 490'			
520				

Core

½' wet cutting samples

THB → 404, 405, 406 → 478

Probe Reading	Scaler Scale
3	.01
No count	
4	.01
5	.01
2	.01
No count	

Graphic Assay

Jmp / Jmb

Jmb / Jmw

Jmw

T.D. 490'

4650-600
9-13-9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
4650-600	9-13-9	3 of 3	8/ 156	J.A.R.

Taylor Rig #7

Footage From	Footage To	Formation	Geology: Description	Samples
290.0	291.8	Jaw	S.S., lt gray, m-coarse grained, argill.	
291.8	293.0	Jaw	S.S., lt gray, fn grained	
293.0	295.2	Jaw	S.S., lt gray, fn - very coarse grained, argill. (lt. green)	
295.2	297.4	Jaw	S.S., lt gray, fn grained, poorly cemented, bands of green sh.	
297.4	298.5	Jaw	Sh, med - drk, blue-green, arca.	
298.5	299.0	Jaw	S.S., lt gray - white, fn grained	
299.0	300.0		Core Lost	
300.0	302.4	Jaw	S.S., lt gray, med.-coarse grained	
302.4	305.8	Jaw	S.S., lt gray, med - very coarse grained, argill (med-drk green sh.), arkosic.	
305.8	306.0	Jaw	S.S., lt gray-white, fn-grained, pyritic	
306.0	310.0		Core Lost	
310.0	314.2	Jaw	S.S., lt gray-green, fn-coarse grained, arkosic, argill.	
314.2	317.0	Jaw	S.S., lt gray, fn-coarse grained, argill.	
317.0	320.0		Core Lost	
320.0	320.4	Jaw	S.S., lt gray-brown, fn grained, unconsolidated	
320.4	322.0	Jaw	S.S., lt gray-white, fn. grained, argill, pyritic	
322.0	324.0	Jaw	S.S., lt brownish gray, fn grained, unconsolidated, argill.	
324.0	330.0		Core Lost	
330.0	332.4	Jaw	S.S., lt gray, fn-med grained, pyritic,	
332.4	340	Jaw	S.S., lt gray, fn-coarse grained, argill.	
340	345		core lost	
345	350	Jaw	SS, lt. gray, f-m. grain, argill.	
350	353		core lost	
353	354.1	Jaw	SS, lt. gray, f. grain, argill.	
354.1	359	Jaw	SS, m. gray, f. grain, argill.	
359	360	Jaw	SS, lt. gray, f. grain, v. argill.	
360	367.5		core lost	
367.5	370	Jaw	SS. m. gray, f-m. grain, layers of green mud	
370	370.5		core lost	
370.5	371.2	Jaw	SS, lt. gray, f-m. grain,	
371.2	378	Jaw	SS. grayish-green, f. grain, argill.	
378	380	Jaw	SS, m. gray, m. grain, calcar, argill.	
380	381.6		core lost	
381.6	387.8	Jaw	SS, m. gray, f-m. grain; few layers of coarse grain SS.	
387.8	390	Jaw	SS, lt. gray, f. grain. banded appearance.	

Drawing No. 793

Hole No.	Sec.	Elevation	Page of	Pages	No Inserts	Date	Logged by
5050-600	9-13-9	6865	1	3	1	8/13/56	J.A.R.

Geology

Hannum Rig #11

Description

Probe: Reading

Scaler: Scale, Interval, Assay Fac.

Graphic Log: Description

Dotted line Graphic Assay
Solid line - Probe

0% 30% 60

0
20
40
60
80
100
120
140
160

QAL Blowsand

QAL
KD ss. lgy-brown, f-m. grain.

Sh. dkgy-blk. carbon.

KD
JmB mudstone, green

JmB
Jmp ss, m.gy-gry-green, f-c. grain.

4" cutting sample

QAL

QAL
KD

KD
JmB

JmB
Jmp

5050-600
9-13-9

5050-[illegible] 9-13-9 6865 2 3 1 8/13/56 J.A.R.

Hannum Rig #11

Depth	Lithology	Sample	Log	Depth
260	Jmp SS m-gy-gy-green, f-c-grain	THB 2 .01 ↓ 391 ↓ 425 NO COUNT 3 .1 NO COUNT	Jmp	260
	Jmg Mudstone, green		Jmg	
280	Jmg / Jmp SS & mudstone, gray-green		Jmg / Jmp	280
	Jmw SS green-gy + brn		Jmp / Jmw	
300		4' cutting samples		300
320				320
340				340
360	(see inset for detailed log)	core		360
380				380
400	Jmg / Jmg mudstone, green-gray	4' cutting samples	Jmw / Jmg	400
420	Jmg / Jmw SS		Jmg / Jmw	420
	(see inset for detailed log) Jmw / Jmg mudstone, red-brown	core	Jmw / Jmr	
440	TD 435'		TD 435'	440
460				460
480				480
500				500

5050-[illegible]

Inset Sheet

Hole No	Sec.	Page of Pages	Date	Logged by
5050 - 600	9-13-9	3 of 3	8/13/56	J.A.R.

Footage From	Footage To	Formation	Geology: Description	Samples
			Hannum Rig # 11	
350	355.8	Jaw	SS., m. gray, f-m. grain, little green mud, calcar.	
355.8	356	Jaw	SS, l. gray, f. grain, abundt. pyrite	
356	360	Jaw	SS, m. gray, f-m. grain, calcar., little green mud, pyrite	
360	360.4	Jaw	core lost	
360.4	361	Jaw	SS, m. gray, f. grain, streaks of green mud, pyrite	
361	362.5	Jaw	SS, m. gray, m-f. grain, little green mud, pyrite, chert frag.	
362.5	368.2	Jaw	SS, m. gray, f. grain, streaks of green mud, little pyrite.	
368.2	369.8	Jaw	Mudstone + SS. Mudstone, green, SS. l. gray, m. grain, calcar, pyrite	
369.8	374.5	Jaw	SS., m. gray, f. grain, little pyrite, argill.	
374.5	388	Jaw	SS, m. gray, grn.-gray, f-m. grain, few layers of coarse sand, streaks of green mud, chert frag, little pyrite	
388	390.4	Jaw	SS, l. gray, f-c. grain, much green mud, v. calcar., chert frag., abundt. pyrite.	
390.4	391.9	Jaw	Mudstone, green, v. aren. in bott. 1' (contact ≈ 390.4. black o. sand	
391.9	392.9	Jaw	SS, green-gray, much mud, f. grain.	
392.9	393	Jaw	Mudstone, green	
393	420		~~Nogec~~	
420	422		core lost	
422	423.7	Jaw	SS, brown, f. grain	
423.7	426.8	Jaw	SS, brown, f-c. grain, argill.	
426.8	430.2	Jaw	SS, brown, f. grain, streaks of black sand.	
430.2	435	Jaw	Sh. red-brown & gray	

Drawing No. 793

Hole No.	Sec.	Elevation	Page of Pages	No Insets	Date	Logged by
2000-4600	9 / 13-9	6942'	1 / 3	1	8-20-56	RMM

Geology — Taylor, Fig 7

Footage	Formation	Type of Rock	Color	Description	Diagnostic Features	Geiger	Sources Tube	Probe Depth	Probe Reading	Scaler Scale	Scaler Interval	Assay F.O.P.	Graphic Log	Dotted line Graphic Assay Solid line - Probe
0	Kmt	ss.	gy-brn	argill, f.a.-med-gr. fossiliferous.									Kmt	0% 60
20	Trac Horsetown?													
40	Kmt / Kms	sh.	black	arenaceous, carbonaceous.									Kmt / Kms	
60														
80	Kms / Kd	~~ss.~~	~~lt.gy~~	~~fn-med-gr.~~ sh. grey brown.										
100														
120														
140														
160	Kms / Kd	ss.	lt-lt.gy	fn-med-gr.									Kms / Kd	
180														
200														
220														
240		sh.	dk.gy	v cry oren, ~~ete~~ carbonaceous.										
260														

2000-4600
9-13-9

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Hole No.	Sec.	Elevation	Page of Pages	No. Insets	Date	Logged by
2000-4600	9 13-9	6942'	2 3	1	8-28-86	RMM

Geology — Rig 7, Taylor.

Footage	Formation	Type of Rock	Color	Description	Fect Res	Oscillograms	Gamma	Caliper	Probe Depth	Probe Reading	Scale	Scaler Interval	Assay Foot	Graphic Log	Description
250	Kd	ostrich	lt gy	interbedded ss & sh.					THB 0	.02 mmho. .03 "					Kd
280 20	Kd / Jmb	sh	gy-gr.	aren, calc. mudstone					380 390.5 384.0 391.5 392 392.5 393 393.5 394 394.5	.02 .05 .07 .07 .07 .05 .04 .03 .03 .03					Kd / JmB
300 20									389.5 390.0 390.5 391.0 391.5 392 392 437 TD	.03 .04 .4 .4 .4 .02 .02 .03 mmho.					
320 60															
340 50															
360 10	Jmb / Jmp	ss.	gy-gr.	f-m grained. gv. see inset for core log.											JmB / Jmp
380 20															
400															
420 10															
440 20	Jmp / Jmw	ss	green-gray,	f-m. grain.											JmP / JmW
460 10	TD 457														TD 452
480															
500															
520															
540															

Dotted line Graphic Assay
Solid Line - Probe
0% 20% 60

Sil/fround in core seems at 381-384, 389-393

COV

2000-4600
9-13-9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
2000-4600	9-13-9	3 of 3	5/[illegible]	JAR

Footage From	Footage To	Formation	Geology: Description	Samples
			Taylor Rig #7	
362	363	Jmp	ss, m. gray f-c. grain, calcar., argill., chert frag, streaks of green mud.	
363	372	Jmp	" " f-c. grain, " "	
372	373.2	Jmp	" " f-c. grain, " "	
373.2	375.7	Jmp	" " f-c. grain, " "	
375.7	376.1	Jmp	ss, l-m. gray f. grain, v. calcar.	
376.1	381	Jmp	Mudstone, green, v. arg. in last 3'	
381	382	Jmp	ss, green-gray, v. argill, f. grain.	
382	386.5	Jmp	Mudstone, green	
386.5	387	Jmp	ss. green-gray, f. grain, v. argill.	
387	389.6	Jmp	Mudstone, green.	
389.6	392	Jmp	ss, green-gray, f-c. grain, [illegible], calcar, v. argill.	
392	393.4		core lost	
393.4	396.2	Jmp	ss, m. gray, f-c. grain, argill, calcar, streaks of green mud, abund. chert frag.	
396.2	399.4	Jmp	ss, l. gray, f-c. grain, lens of green mud, v. calcar.	
399.4	406	Jmp	Mudstone, green, v. arg. in top 6'	
406	412		Mudstone, mottled green, red	
412	418		Mudstone, red, lenses bags of green mud	
418	422	Jmp	ss, green-gray, f. grain, v. argill.	
422	425	Jmp	ss, [illegible] grain, calcar.	
425	441	Jmp	ss, " " f-c. grain, " "	
441	442	Jmp	Mudstone, green	
442	445	Jmp	core lost	
445	447	Jmp	Mudstone, [illegible]	
447	450	Jmp	ss, green-gray, f. grain.	
450	452	Jmp	ss, [illegible], green, f-m. grain.	

Drawing No. 793

Hole No.	Sec	Elevation	Page of Pages	No. Insets	Date	Logged by
3250-4600	9 13-9	6924'	1 / 3	1	Aug. 27	R. Mmb. Jr.

Geology — Hannum, Rig 11

Depth	Formation	Symbol	Color	Description
0	Tres Hermanos	Kmt ss	gray-brn	fn.-med. gr. very argill locally, + thin bedded.
20				
	Mancos	Kms sh.	dk.gy-blk	aren, carb
40		sh	blk.	carb, sltly aren.
60				
80		sh	dk.gy	carb, arenaceous.
		Kms / Kd ss	lt.gy-wht.	fn.-med. gr.
		ss.	dk.gy	argill (blk. carb.sh.) fn.-med. gr.
		Kd / Jmb sh	gy-gr.	sltly aren. calc.

Probe — Scaler — Graphic Log — Dotted line Graphic Assay, Solid Line - Probe (0% 20% 60)

Kmt — Kms — Kms — Kms — KD — KD — JmB

3250-4600
9-13-9

Hole No	Sec	Elevation	Page of	Pages	No Insets	Date	Logged by
3250-4600	13-9	6924'	2	3	1	Aug. 23	RMM.

Geology

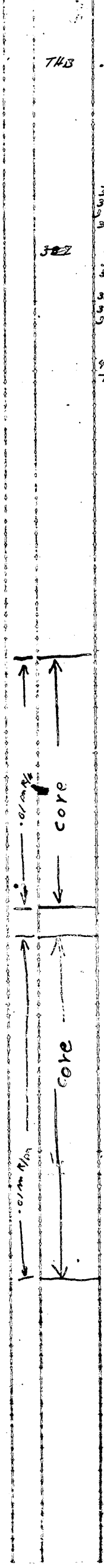
Hanson, R19 11

Description

Probe Scaler

Dotted line Graphic Assay
Solid line - Probe
0% .20% .60

Depth	Lithology	Description	Sample	Probe	Scaler	Graphic Log
260	Jmb sh. gy-gr.	calc. ~~argill~~ green muds tone	THB	.02 m/hr.		Jmb
				0 .02 m/hr		
280				345 .02		
				346 .07		
				347 .07		
				348.3 .02		
				.02		
			382	387 .02 m/hr		
				388.4 .02 m/hr		
300				388.6 .06 m/hr		
				389 .06		
				389.5 .06		
				390 .02		
				466 .02 m/hr		
				TDP 466		
320						
340						
360	Jmb / Jmp	ss. gy-gr. fn-cor.g. see inset for core log.				Jmb / Jmp
380						
400		see inset for detailed log				
420						
440	Jmp / Jmd	mudstone, green+red				Jmp / Jmd
	Jmd / Jmp					Jmd / Jmp / Jmw
460	Jmw	ss. l. green gy. f. grain.				
	TD 470'					TD 470'
480						



Hole No. 3250-4600
Date 9-13-9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
3250-4600	9-13-9	3 of 3	8/27/56	J.A.R.

Hannum Rig #11

Footage From	Footage To	Formation	Description	Samples
361	362.9	Jmp	SS, l-m. gray, f. grain, calcar, argill.	
362.9	363	Jmp	Mudstone, green	
[illegible]	364.7	Jmp	SS, m. gray, f-c grain, calcar, argill., abunt. chert frag.	
364.7	365	Jmp	SS, m. gray, f. grain, calcar.	
365	369	Jmp	SS, m. gray, f-v.c. grain, few lenses of green mud, abunt chert frag, calcar.	
369	371		core lost	
371	381	Jmp	SS, l-m. gray, f-m. grain, argill, calcar	
381	384.5		core lost	
384.5	386.5	Jmp	SS, l. gray, f-m. gray, v. calcar, argill.	
386.5	387.7	Jmp	Mudstone, gray-brown, very soft, v. argill.	
387.7	390.6	Jmp	SS, m. gray f-v.c. grain, v. argill, chert frag.	
390.6	393	Jmp	SS, green-gray, f. grain, v. argill calcar.	
393	395.8		core lost	
395.8	398	Jmp	Mudstone, green, v. argill.	
398	405	Jmp	SS, l. gray, f-c grain, argill, calcar.	
405	410		(plugged) mudstone	
410	414.2		core lost (mudstones)	
414.2	416.2	Jmp	SS, m. gray f-c. grain, streaks of green mud, calcar, abunt chert frag.	
416.2	420	Jmp	SS, green-gray, f. grain, argill., calcar.	
420	422.5		core lost	
422.5	423.8	Jmp	SS, m. gray, f-c. grain, argill, calcar, chert frag.	
423.8	426.6	Jmp	" " f-m. grain, " , few lenses green mud	
426.6	429	Jmp	" " f-c. grain, "	
429	430	Jmp	SS, green-gray, f-m. grain, much green mud, calcar.	
430	[illegible]		core lost	
[illegible]	433	Jmp	Mudstone, green, v. argill.	
[illegible]	[illegible]	Jmp	SS, m. gray, f-c. grain, argill, calcar, abunt chert frag.	
[illegible]	[illegible]		core lost	
[illegible]	447.7	Jmp	SS, l. gray, f-c. grain, calcar, abundant frag, argill.	
[illegible]	[illegible]	Jmp	Mudstone, gray, v. argill.	
[illegible]	[illegible]	Jmp	[illegible]	
[illegible]	450	Jmp	[illegible]	
450	453.8		core lost	
453.8	460	Jmp	SS, l. gray, f-m. grain, calcar.	
460	468		core lost (mudstone)	
468	470	Jmp	SS, l. greenish-gray, f. grain, v. argill.	

Drawing No. 793

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Hole No	Sec	Elevation	Page	of	Pages	No Insets	Date	Logged by
3650-4600	9-13-9	6983	1		3	1	8/23/56	J.A.R.

Geology

Taylor Rig #7

Description

Probe Reading | Scale | Scaler Interval | Assay | Geologic Log | Description

Dotted line Graphic Assay
Solid Line - Probe

0% 20% 60

Km ss sh. brown

Tsh black

Tsh ss, dk. gray

Km / KD ss. lm. gray, f. grain

Tsh black

KD / JmB mudstone, green.

Km

KD

KD

JmB

0 20 40 60 80 100 120 140 160 180 200 220 240 260

Hole No 3650-4600

Section 9-13-9

Hole No.	Sec.	Elevation	Page of	Pages	No. Insets	Date	Logged by
3650-4600	9-13-9	6923	2	3	1	8/23/56	JAR

Geology: Footage; Formation; Type of Rock; Color; Description; Diagnostic Features; Geiger; Samples Taken

Probe: Depth; Reading; Scale

Scaler: Foot Interval; Assay

Graphic log; Description

Dotted line Graphic Assay Solid Line - Probe (0% .20% .60)

Footage	Formation	Type of Rock	Color	Description
260	Jmb		Mudstone, green.	
280 / 20				
300 / 40		ss	mudstone, red	
		ss	lgy-gr. f-m. grain.	
320 / 60			mudstone, green.	
340 / 80				
360 / 100	Jmb / Jmp	ss.		
380 / 120				
400 / 140	Jmp / Jmb		mudstone, green	
	Jmb / Jmp	ss.		
420 / 160				see inset for detailed log
440 / 180				
460 / 200	Jmp / Jmb		mudstone, gr.	
	Jmw	ss.	lgy-gr.	
480 / 220	TD	475		
500 / 240				

Probe readings: THB 2 .01 → 473; no count

Scaler: core .01 mR/hr; core .01 mR/hr

Graphic log: Jmb; Jmb / Jmp; Jmp / Jmb; Jmb / Jmp; Jmp; Jmb; Jmw; TD 475'

Hole No. 3650-4600
9-13-9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
3650 - 4606	9-13-9	3 3	8/23/56	J.A.R.

Footage From	Footage To	Formation	Geology: Description	Samples
365	367	Jmp	SS, m. gray, f-c. grain, argill, calcar, chert frag, some pyrite,	
367	368.5	Jmp	SS, " " f-m grain, " "	
368.5	369	Jmp	SS, " " f-c. grain, "	
369	375	Jmp	SS, m. gray, f-m. grain, much green mud, chert frag, calcar.	
375	375.6		core lost	
375.6	376	Jmp	SS m gray, f-m. grain, much green mud, chert frag, calcar.	
376	376.5	Jmp	SS, m. gray, f-c grain, " " "	
376.5	385	Jmp	SS, m. gray, f-m. grain, argill, calcar., little pyrite.	
385	387	Jmp	SS, l. gray, f-m. grain, calcar., s. argill.	
387	392.5	Jmp	SS, m. gray, f-m grain, streaks of green mud, calcar.	
392.5	396.6	Jmp	SS, m. gray, f-c. grain, " "	
396.6	397.2	Jmp	SS, l. gray, f-c. grain, much green mud, v. calcar, abundt pyrite.	
397.2	399	Jmp	Mudstone, green, abundt. pyrite in top 3"	
399	409		plugged	
409	425	Jmp	SS, m. gray, f-v.c. grain, streaks of green mud, chert frag. calcar. little pyrite	
425	426.1		core lost	
426.1	427.6	Jmp	SS, m. gray, f-c. grain, streaks of green mud, chert frag, calcar., little pyrite	
[illegible]	431	Jmp	" " f-m. grain, " "	
431	431.5	Jmp	SS, l. gray, f-m. grain, v. calcar.	
431.5	433.5	Jmp	SS m gray, f-m. grain, calcar., streaks of green mud, chert frag, little pyrite	
433.5	435	Jmp	SS, " " f-c. grain, " "	
435	438.3		core lost	
438.3	439	Jmp	SS, m. gray, f-c. grain, streaks of green mud, chert frag, calcar.	
439	449	Jmp	SS, m. greenish-gray, m-f. grain, calcar, very crumbly and muddy from 443-445	
449	455	Jmp	SS, m. gray, f-c. grain, streaks of green mud, chert frag, calcar. v. little pyrite	
455	456		core lost	
456	457.3	Jmp	SS, l. gray, f-c. grain, v. calcar, chert frag.	
457.3	459	Jmp	Mudstone, green & red, aren	
459	461.5	Jmp	Mudstone, green, v. aren.	
461.5	465	Jmp	SS, l. gray & green, f. grain, very muddy	
465	469		core lost	
469	475	Jmp	SS, green-gray, f-grain, few lenses of green mudstone, calcareous argill	

Drawing No. 793

Hole No	Sec	Elevation	Page of	Pages	No Insets	Date	Logged by
4050-4600	9-13-9	6917'	1	3	1	8/20/56	J.A.R.

Geology

Taylor Rig #7

Description

Probe Reading | Scaler Scope | Scaler Assay

Dotted line - Gamma Assay
Solid line - Probe

0% 10% 60

Km Sh brown

Tsh blk.

Tsh+ss, gy

Km / KD ss. l. gy. f-m. grain.

Tss+sh. dk. gy.

Km

KD

KD

0 20 40 60 80 100 120 140 160 180 200 220 240 260

Hole No 4050-4600
Section 9-13-9

Hole No.	Sec	Elevation	Page of Pages	No Insets	Date	Logged by
4050-4600	9-13-9	6917'	2 / 3	1	8/20/56	J.A.R.

Geology — Taylor Rio #7

Description

Dotted line Graphic Assay Solid Line - Probe

Probe: Depth; Reading; Scale. Scaler: Interval; Assay F8°

Graphic log

Depth | Formation | Lithologic | Coal | Description | Features | Charges | Geology | Samples

260 — Jmg — mudstone, green — THB ↓ 480 — 1 — .01 — NO COUNT — Jmg

280 — 20

300 — mudstone, red — 40

ss. l-gr. f-m-grain

320 — 60

340 — mudstone, green — 80

360 — 100

380 — Jmb / Jmp ss — 120

(see inset for detailed log) — Jmf / Jmd mudstone, red — 140

400 — Jmb / Jmp ss — 160

420 — 180

440 — 200

460 — Jmf / Jmw? ss — 220

480 — T.D. 485' — 240

500 — 260

4' cutting samples

.01 m R/hr

core

Jmb / Jmp

Jmp / Jmb

Jmb / Jmf

Jmp? / Jmw?

TD 485'

Hole No	Date	Page of Pages	
4550 - 4600	19-10-9	3	3

Depth From	Depth To	Formation	Description
376.3	378.2	Jap	SS, m. gray, f-m. grain, calcar., chert frag.
378.2	378.8	Jap	SS, green-gray, f. grain, argill.
378.8	385	Jap	SS, m. gray, f-c grain, argill. chert frag. calcar., stringers
385	385.9	Jap	SS, l-m. gray, f-m. grain, v. calcar. argill.
385.9	394.4	Jap	Mudstone, greenish v. green in bottom 6'
394.4	395		core lost
395	405		plugged
405	413.3	Jap	SS, m. gray, f-v.c. grain, many chert frag, calcar., s. argill.
413.3	414.6	Jap	SS, l. gray, f-v.c. grain, v. calcar., chert frag.
414.6	421.2	Jap	SS. m. gray, f-vc grain, calcar,
421.2	425	Jap	SS, m gray, f-m. grain, calcar, argill., streaks of green mud
425	428	Jap	SS, l. gray, f-v.c. grain, many streaks & lumps of green mud, v. calcar, chert frag. & pyrite
428	433	Jap	SS, m. gray, f-m. grain, (coarse grained in bott. 6") streaks of green mud, calcar.
433.1	436		core lost
436	440	Jap	SS, m. gray f-c. grain, streaks of green mud, calcar, chert frag.
440	444.3	Jap	SS, m. gray, f-v.c. grain, many streaks of green mud, calcar, chert frag.
444.3	450	Jap	SS, m. gray, f-m. grain, (some bands of v.c. grain) argill, calcar. chert frag.
450	454.4		core lost
454.4	457	Jap	SS, m. gray, f-c. grain, calcar. streaks of green mud
457	460	Jap	SS, m. gray, f. grain, banded appearance, argill.
460	466		core lost
466	470	Jap	SS, m. greenish-gray, f. grain, streaks of green mud
470	471.5		core lost
471.5	474.2	Jap	SS, m. gray, f-m. grain, streaks of green mud.
474.2	480	Jap	SS, m. gray, f. grain (few bands of c. grain), streaks of green mud, banded appearance
480	481		core lost
481	485	Jap	SS, m. gray, f-m. grain, calcar, streaks of green mud

Drawing No.

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Hole No.	Sec.	Elevation	Page of Pages	No Insets	Date	Logged by
4450-4600	9-13-9	6917	1 of 3	1	8/17/56	N

Hannum, rig 11

Footage	Formation	Lithologic Rock	Color	Description	Diagnostic Features	Geiger	Surface Cover	Probe Depth	Probe Scale Reading	Scaler Interval	Scaler Foot Assay	Graphic log	Description
0	Ka	s.s.	ltgy-wh	Fn-mcd gr.									KD
20													
40													
60													
80													
100													
120													
140		sh.	blk	carbon.(?)									
160		s.s.	ltgy	fn-mcd gr.									
180													
200													

Dotted line Graphic Assay
Solid Line - Probe
0% 20% 60

4450-4600
9-13-9

Hole No	Sec	Elevation	Page of	Pages	No. Insets	Date	Logged by
4450-4600	9-13-9	6917	2	3	1	8/17/56	N

Geology — Description

Probe — Reading — Scaler

Interpreted Geologic Section — Probe

260 — KD

280 — Kd / Jmb — sh. green aren.

300

ss. lt gy fn-med gr.

320

340

sh. lt green aren.

360

Jmb / Jmp — ss. lt gr-gy see inset for detail log.

380

400

420

440

460

480 — TD 480

500

THB 0 → 480

.06 → .06

no count

Cored 100'

Kd / Jmb

Jmb / Jmp

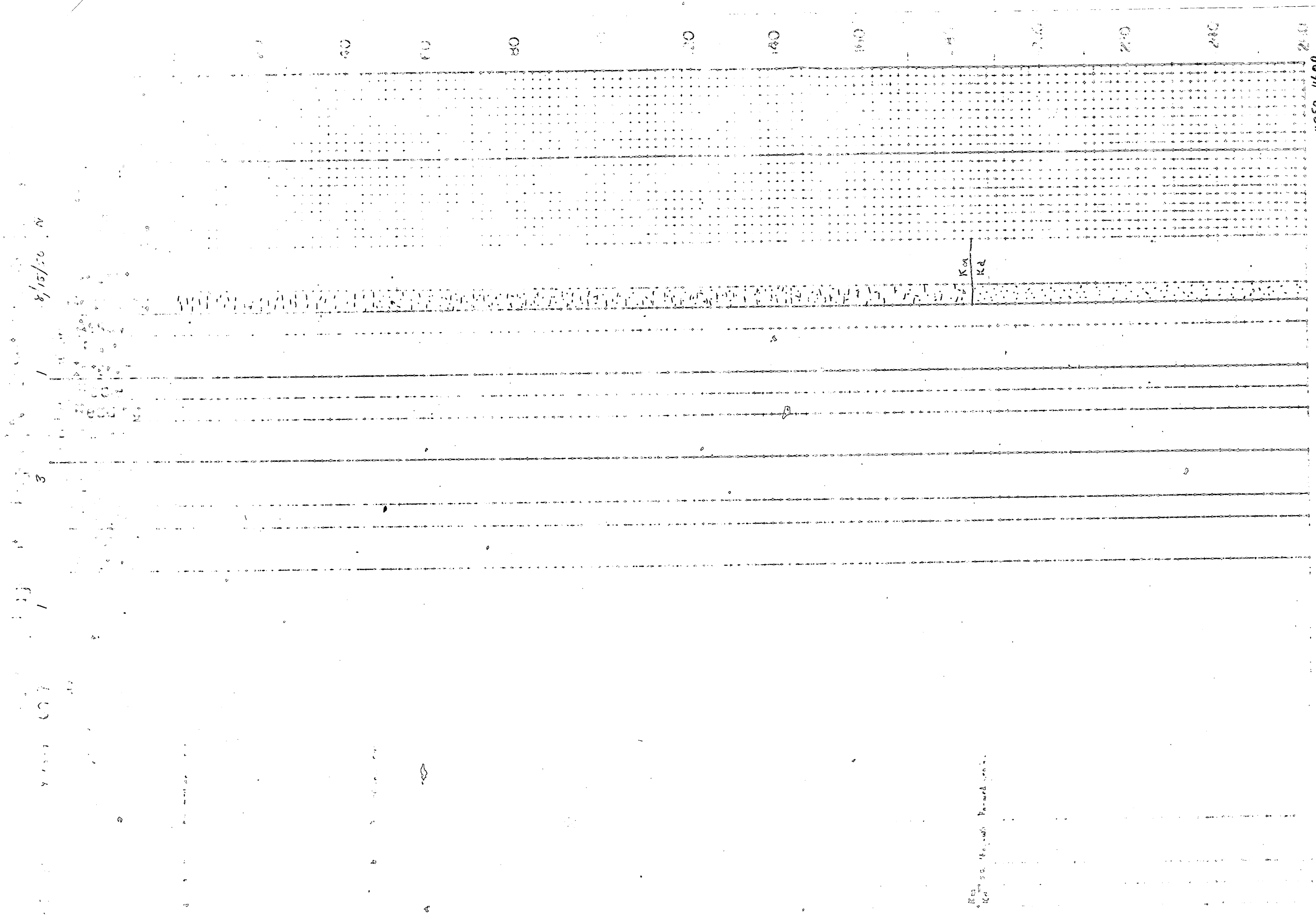
TD 480

Hole No 4450-4600
Sec T R 9-13-9

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
4450 - 4600	9-13-9	3 of 3	8/17/56	TV

Footage From	Footage To	Formation	Geology: Description	Samples
380.0	394.2	Jap	S.S., lt gray-green, fn-~~med~~ coarse grain, inclusions of bright green sh	
394.2	396.8		S.S., lt gray, fn-med grain, banded with thin layers of green sh.	
396.8	398.7		S.S., lt gray, fn-coarse grain, argill.	
398.7	409.2		S.S., lt gray-white, fn grained, argill.	
409.2	404.5		S.S, lt gray-white, coarse grained, arkosic (?), pyritic.	
404.5	406.3		Sh, lt gray-green, bands of pyrite	
406.3	408.0		Sh, very lt gray, pyritic	
408.0	410.0		S.S., lt gray, fn. grained, argill.	
410.0	412.9		S.S., med gray, fn-med grained, inclusions of green sh., arkosic (?)	
412.9	413.7		S.S., lt gray-green, very argill, pyritic	
413.7	431.0		S.S., lt gray, fn grained, inclusions of ~~pebble arkos~~ pepple arkose (?)	
431.0	431.5		Sh, green, inclusions of fn. lt gray S.S.	
431.5	433.0		S.S., lt gray-green, fn-coarse grained, argill.	
433.0	434.1		S.S., lt green-gray, fn-med grained, very argill.	
434.1	435.2		S.S., lt gray-white, fn grained, carbonaceous.	
435.2	436.9		S.S., lt green-gray, fn grained, argill,	
436.9	440.0		S.S., lt gray-green, large inclusions green sh, coarse grained arkose, (?) fn-coarse grained	
440.0	480.0		S.S., lt gray, fn-coarse grained, argill, arkosic (?)	



B-13-6
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4850-4600 4-13-8 6917 2 3 1 8/15/56

THR .06 Ag.

Kd / Jmb sh. gr. anch.

Jmb / Jmp s.s. lt. gy. fg-coarse grain., see inset for detail log

Jmp / Jmb sh. gray anch.

Jmb / Jmp s.s. lt-med gy. fg-coarse grain, see inset for detail log

TD 4850

Core 20 cored

4850-4600
1-13-8

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
4850'-4600'	9 13-9	3 3	8/15/56	R. MM & DAB.

Footage From	Footage To	Formation	Geology: Description	Samples
342	346	Jnp	ss. fn-med.gr. gy-gr. sltly arkosic	
346	350	Jnp	ss. med-coa.gr. dk.gy-gr. arkosic, Kaolinite(?) blebs, pyrite, abund. coarse orthoclase feldspars	
350	359.5	Jnp	ss fn-med.gr lt.gy-gr. sltly arkosic, fn-med.gr (some coarse ss 50% vecanty)	
359.5	370	Jnp	sh. gy-gr. v.rel. mottled, pyriteferous, thin laminated to massive, arg, calc.	
380	388	"	" " " " " " " " "	
388	392.5	Jnp	ss fn-med.gr sltly arkosic gy-gr.	
392.5	405	Jnp	ss. med.-coa.gr. small pyrite tr. carb. mat	
405	416.5	Jnp	ss fn-med.gr gy-gr.	
416.5	420	Jnp	ss. med-coa.gr. med.gy, argill-gn. clay galls	
420	422.5	Jnp	ss. fn-gr. ss med-g.g. silty	
422.5	424	Jnp	ss fn-med.gr very arkosic gn. sandstone pyrite	
424	433	Jmw	med-coa gr. gn arkosic ss	
433	440	Jmw	argillaceous sandstone med.coa.gr. pyrite green	
440	442	Jmw	med-coa.gr. sandstone, sltly arkosic med-lt.gy.	
442	443	Jmw	sh, arenac. calcareous, pyritic, green	
443	450	Jmw	ss. med.coa.gr. gray arkosic ss.	

Drawing No. 793

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August 23, 1956

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA Docket 3943 (Uranium) Contract Idm-E932, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division (Sec. 9, T13N, R9W) McKinley County, New Mexico - Operator's Monthly Progress Report for the month of July, 1956

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

It is deemed 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 as reported on Form MF-104, contingent on your verification of the correctness of applicable rates and arithmetical accuracy of computations.

A descrepancy is noted between the graphic log for hole No. 200-600 and the driller's log and other supporting data. The graphic log indicates that only 65 feet was cored in the hole, whereas the driller's log, drilling invoice and Operator's narrative report indicate that 75 feet was cored. The Operator has been requested to submit a corrected log for the hole, or, if the supporting data is in error, to make the proper adjustments of footage and costs on a subsequent voucher.

Remarks

Date of Report- - - - - - - - - - - - - - - - August 2, 1956
Date Received in Field Office- - - - - - - August 6, 1956
Date Received in Region Office- - - - - - August 21, 1956

W. M. TRAVER

W. M. Traver

Enclosures

JDC:jy
cc: MF-104 File E932
Sec. Op. Comm. (2)
Shaw (2)
Chron.

DMEA
Date Rec'd
AUG 21 1956

RECEIVED
SEP - 7 1956

BUREAU OF MINES
Denver Federal Center
Denver 2, Colorado

REGION III

August 20, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shaw
Supervising Mining Engineer

From: W. D. McMillan

Subject: DMEA 3943 (Uranium) Contract Idm-5932, Food Machinery and Chemical Company, Westvaco Minerals Products Division, Sec. 9, T. 13 N., R. 9 W., NMPM, McKinley County, New Mexico - Progress report for July 1956

An inspection of progress was made on August 8, 1956, accompanied by Russel J. Hayden, project engineer and W. S. Cavender, geologist.

Drilling on the subject contract commenced on July 26, 1956, and two holes were completed on July 31, 1956.

Stewart Bros. and Parker drill logs show 400 feet of plug bit drilling and 130 feet of core bit drilling, the same as claimed by the operator.

Approved costs for July 1956 are:

400 feet of plug bit drilling at $1.20/ft.	$480.00
130 feet of core bit drilling at $3.40/ft.	442.00
2% New Mexico School Tax	18.44
Incidentals - 530 feet at $0.39	206.70
	$1147.14

It is recommended that 75 percent of the approved total or $860.36 be approved for payment.

The narrative report, location map, and geologic logs are adequate. Core bit drilling was done with BX bits. No mineralization was found. The drilling contractor's logs and one set of geologic logs are being retained in this office.

W. D. McMillan
Mining Engineer

WDM/mw cc: 6
Idm-5932 Chron

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.5

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OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of July 6 3943 Contract Idm E -932
Operator's Name Food Mach. & Chem. Corp. (Westvaco Min. Prod.) Minerals Uranium
Address Box 250, Pocatello, Idaho
Contract Amount, $ 71,928.00 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:	940.44	00.00	940.44			
Drilling						
Bulldozing						
Crosscutting						
Drifting						
(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): 0.39 per ft (-530)	206.70	00.00	206.70			
	1147.14		1147.14			
TOTALS				1147.14	—	1147.14

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

Date 8/27/56 *Payee Food Mach. & Chem. Corp. Westvaco Min. Products Div.

Per Russell F. Hayden Title Project Engineer

*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:

$ 860.36

Signature
(Authorized Certifying Officer)

Date 8/27/56 Vou. No. 57-24

(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. Idm-E932 in accordance with the terms of the contract.

Signature [illegible] ($ 860.36) Title Min. Engr. Date 8/10/56

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature [illegible] Title Executive Officer Date AUG 23 1956

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

RECEIVED
SEP - 7 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of July 1956 Docket No. DMEA 3943 Contract No. Idm-B-932
Operator's Name Food Mach. & Chem. Corp. (Westvaco Min. Prod.) Minerals Uranium
Address Box 250, Pocatello, Idaho

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	per'	450.84	130	450.84	130	3.468	1800	3.50
Churn Plug bit per '		489.60	400	489.60	400	1.224	6300	1.25
Auger Incidental per'		206.70	530	206.70	530	0.39	8100	0.39
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		1147.14		1147.14				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								71,928
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 8/2/56 Operator Food Mach. & Chem. Corp. Westvaco Min. Prod. Div.

Per Russell J. Hayden Title Project Engineer

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) Wm McMillan

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

Aug. 1, 1956

RECEIVED
SEP 17 1956

Mr. John P. Shaw
U. S. Bureau of Mines
Room 137, Building 20, Denver Federal Center
Denver, Colorado

Re: Progress Report
Docket No. DMEA 3943 (Uranium)
Contract #Idm E932
Food Machinery & Chemical Corp.
Westvaco Mineral Products Div.
Sec. 9, T 13 N., R 9 W
McKinley County, New Mexico

Dear Sir:

Drilling on Sec. 9, T 13 N, R 9 W, commenced on July 26. Two holes were drilled during the month of July, logged radiometrically, and all samples were logged geologically, labelled and stored. For data on these holes, see Monthly Progress Map No. 9-1. Shown on this map are depths to the top and the bottom of the Poison Canyon sandstone, (the ore horizon in this area), total depths, and whether or not mineralization was encountered. For detailed logs of these holes, see the log sheets enclosed. The Poison Canyon sandstone was cored in all holes, and a detailed log of the sandstone accompanies the general geologic log.

Accompanying this report is the Monthly Progress Map 9-1.

Drilling

A total of 530 feet was drilled in this section during the month of July, of which 400 feet was plug drilling and 130 feet was core drilling. Three drill days were required to complete the two holes. All holes were drilled wet to the ore horizon and cored. Cuttings samples were taken at four foot intervals for the logging of formations above the ore horizon.

The following holes were completed during the month of July. Detailed information for the following table may be obtained in the geologic logs accompanying this report.

Hole Co-ordinates	Total Depth	Cored	Mineralization
200-600	260	75	none
600-600	270	55	none
TOTAL	530 feet	130 feet	

Geology

Since only two holes were drilled this month, information for geologic interpretations is insufficient.

Respectfully submitted,

R. J. Hayden

R. J. Hayden
Project Engineer
Food Machinery and Chemical Corp.
Westvaco Mineral Products Div.
P. O. Box 250
Pocatello, Idaho

STATEMENT

DATE August 1, 1956 19

NAME Westvaco Mineral Products

ADDRESS Box 24, Star Route

Grants, New Mexico

In Account With

Stewart Bros. & Parker

DRILLING CONTRACTORS

Phone ~~6-6145~~ AT7-4416 P. O. Box ~~249~~ 154

~~ODESSA, TEXAS~~

Grants, New Mexico

		Amount
Exploration drilling on Section 9 during July, 1956 as follows:		
400 feet plug drilling @ $1.20 per foot	$480.00	
130 feet core drilling @ $3.40 per foot	442.00	
		$922.00
2% New Mexico School Tax		18.44
TOTAL		$940.44

THANKS

STEWART BROS. & PARKER DRILLING CO.

By H M Stewart

H. M. Stewart, Partner

Hole No	Elev	Elevation	Page of	Pages	No Insets	Date	Logged by
200-600	9-13-9		1	2	1	7/30/56	W

Geology

Taylor, rig 7

Description

Probe Scaler

Dotted line Graphic Assay
Solid line - Probe

0% 20% 60

Depth	Lithology	Description
20	Qal. / Kd	s.s. wh.-lt yel. fn grain.
80		s.s. lt-gy-wh. fn grain, carbon mat.
100		s.s. med gy-brn. fn. grain, carbonaceous mat.
		s.s. lt gy fn. grain, argill.
120	Kd / Jmb	sh. lt gy-g
160		sh. lt gy-pur mottled, streaks of lt gy, fo grained s.s.
180		s.s. lt gy fo-med gr.
		sh. lt gy-red mottled surface
200	Jmp / Jmp	s.s. lt gy fo-med gr. see Inset for detailed log.
260	Jmp / Jmb	sh. lt gy-purp

TD 260

Probe Reading: THB 0 – r 26a; .006 .006

Scaler: cps/hr cps/hr

Geophysics: Blow Sand; Qal / Kd; Kd / Jmb; Jmb / Jmp; Jmp / Jmb

no count

Core

TD 260

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
200-600	9-13-9	2 2	7/30/56	W

Footage From	Footage To	Formation	Geology Description	Samples
201	211.2	Jmp	S.S., lt. grey, fn-med gr.	
211.2	215.0		LOST CORE	
215.0	216.3	Jmp	S.S., lt grey, fn-med gr.	
216.3	222.6	Jmp	S.S., lt. grey, fn-coarse gr., streaks of bright green sh., ark.	
222.6	225.0		LOST CORE	
225.0	233.2	Jmp	S.S., lt-med grey, med-coarse gr. streaks of bright green sh, ark.	
233.2	235.0		LOST CORE	
235.0	244.6	Jmp	S.S., lt grey, fn-med gr., streaks of bright green shale	
244.6	253.2	Jmp	S.S., lt grey-green, fn-med grain, streaks green shale	
253.2	260.0	Jmb	Sh., green & purple mottled.	

Drawing No. 793

600-600 9-13-9 1 3 1 7/31/56 IV

THB .008 mr/hr
0
270 .008 mr/hr

Qal / Kd ss. lt gy-wh. fn-med gr.

Kd / Jmb sh. blk streaks lt brn. ss. fn-med gr.

sh. green aren.

s.s. lt grey streaks of blk & gr. sh.

sh. green aren
sh. red

Jmb / Jmp s.s. lt grey See inset for detailed core

no count

Core

Qal / Kd

Kd / Jmb

Jmb / Jmp

120

180

160

Hole No	Sec	Elevation	Page of	Pages	No Insets	Date	Logged by
66C-46C							

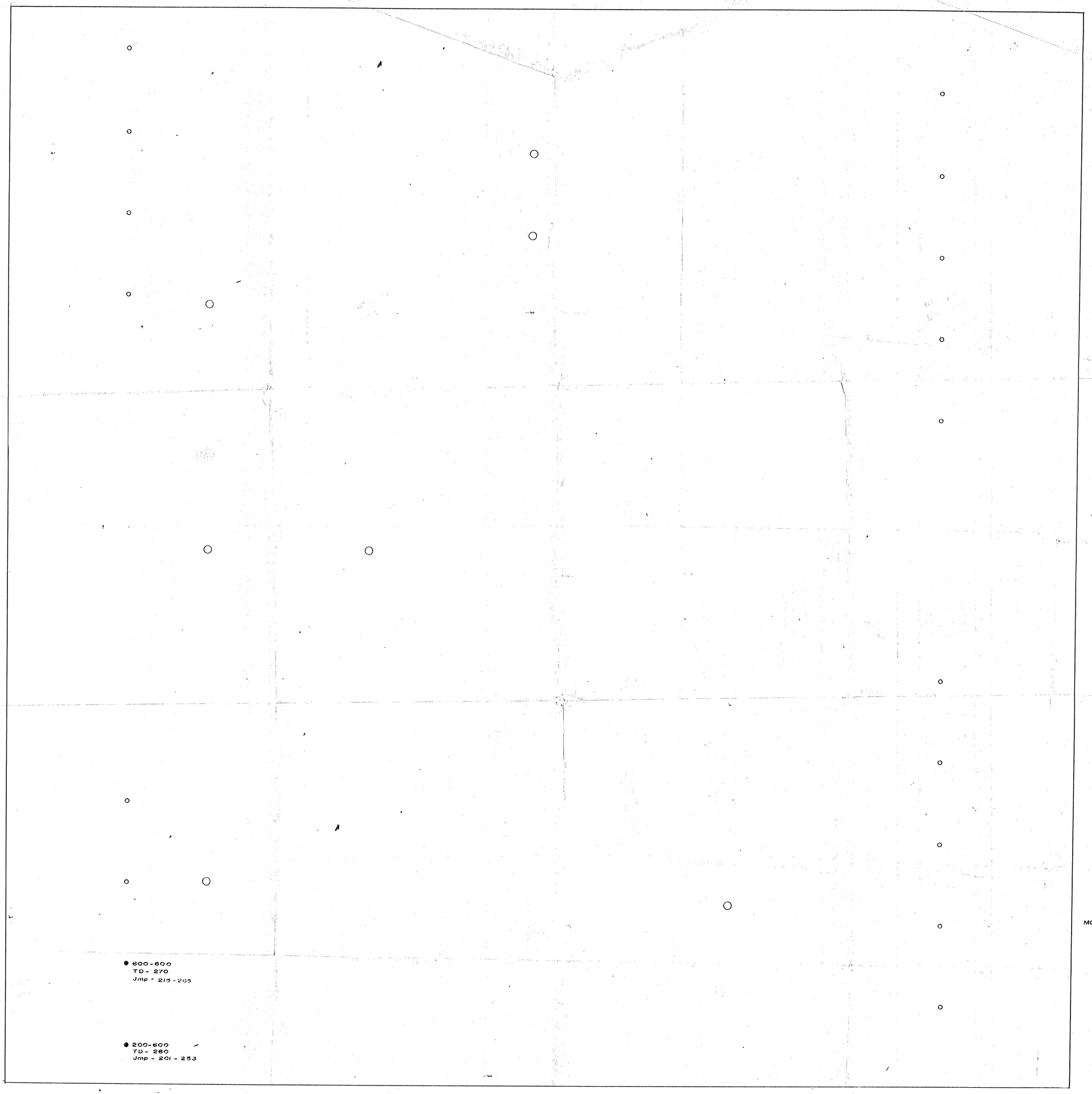
Geology									Probe		Scaler				Dotted line Graphic Assay Solid Line - Probe
Depth Scale	Formation	Depth Scale	Coal	Description	Electric Log	Geiger	Sample	Depth	Scale Reading	Assay Foot Interval	Graphic Log	Description	0%	60%	60
0	Jms														0
20															20
40															40
60															60
80															80
100															100
120															120
140															140
160															160

Inset Sheet

Hole No.	Sec.	Page of Pages	Date	Logged by
60.0-600	9-13-9	3 of 3	7-31-56	TV

Footage From	Footage To	Formation	Geology: Description	Samples
215.	226.9		S.S., lt grey-green, Fn grained, argill.	
226.9	230.0		S.S. lt grey, med-coarse grained, argill., pods bright green sh, arkosic	
230.0	235.0		CORE LOST	
235.0	248.4		S.S, lt. grey, med-coarse grained, argill, pods of bright green shale, arkosic	
248.4	248.7		Sh, bright green	
248.7	258.3		S.S. lt grey med-coarse grained, argill, pods of bright green sh, ark,	
258.3	266.2		S.S. lt grey, Fn-med grained, argill, pods of bright gr. sh,	
266.2	270.0		Sh, lt grey-purple mottled,	

Drawing No. 793



○ WESTVACO HOLES DRILLED PREVIOUSLY

○ PROPOSED DMEA HOLES

● DMEA HOLES DRILLED DURING JULY

S SLIGHT MINERALIZATION

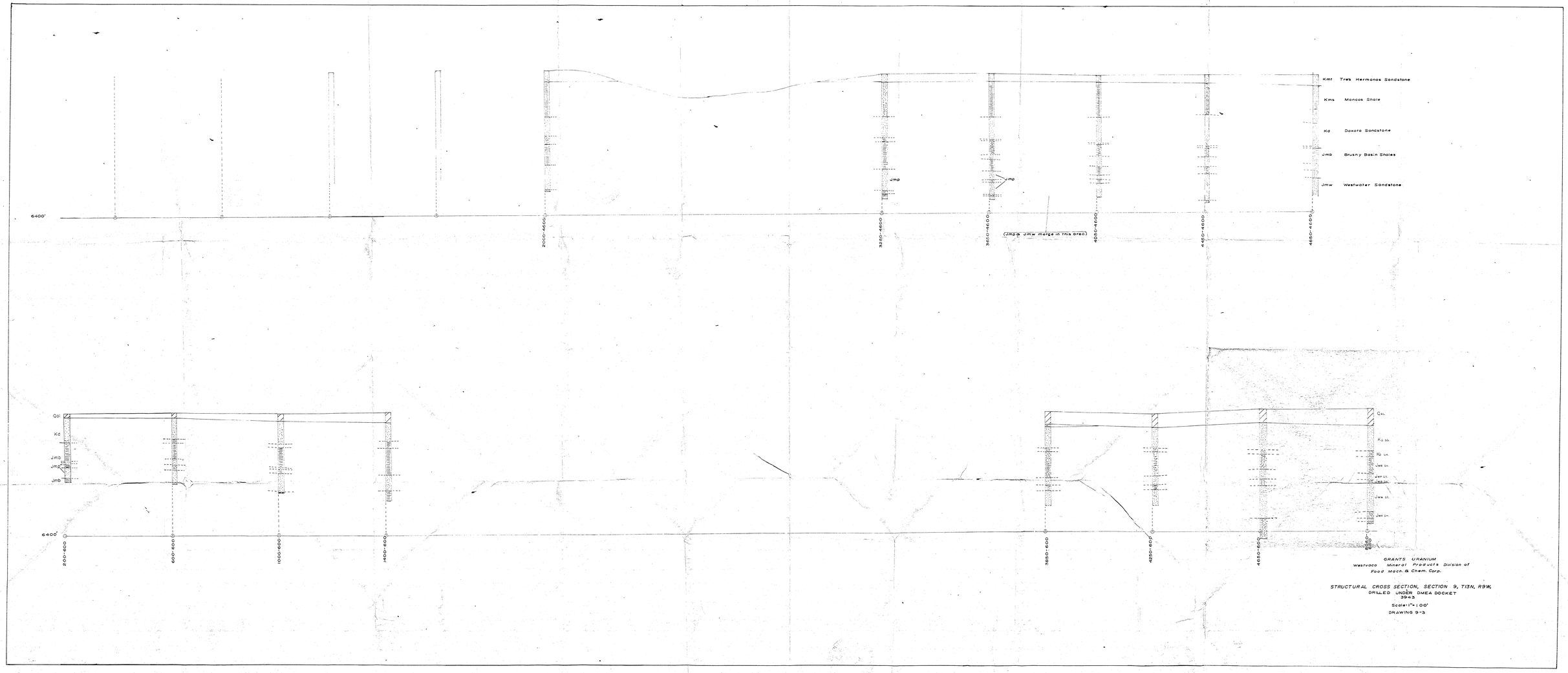
M MINERALIZATION

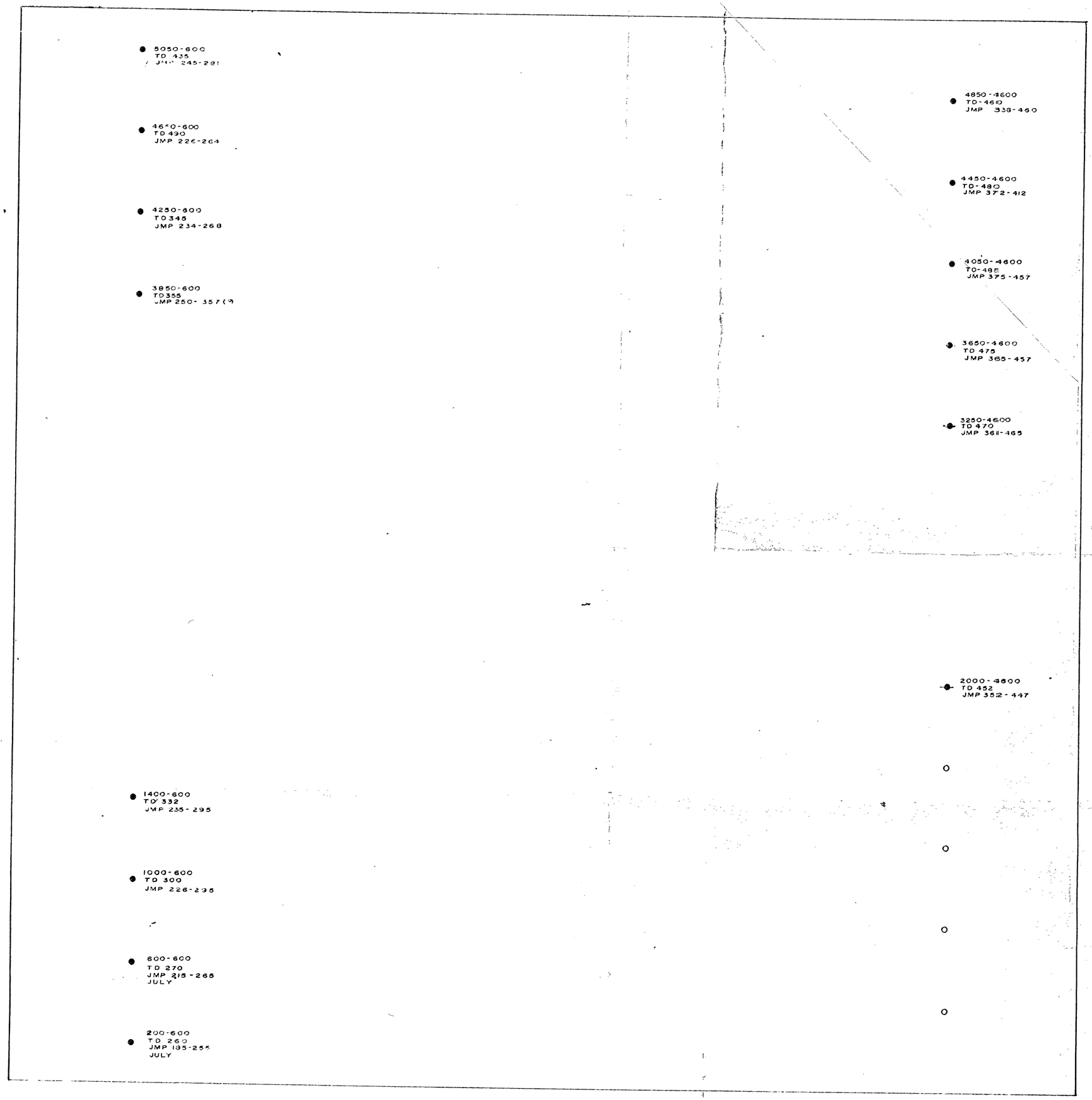
ORE GRADE ROCK ENCOUNTERED

GRANTS URANIUM
WESTVACO MINERAL PRODUCTS DIVISION OF
FOOD MACH & CHEM. CORP.

MONTHLY PROGRESS MAP SECT. 9, T 13 N, R 9 W, NMPM
DRILLED UNDER DMEA DOCKET
3943
SCALE 1" = 200'

DRAWING D-1


Kmt Tres Hermanos Sandstone
Kms Mancos Shale
Kd Dakota Sandstone
Jmb Brushy Basin Shales
Jmw Westwater Sandstone
6400'
2000'-4600'
3250'-4600'
3600'-4600'
4050'-4600'
4450'-4600'
4850'-4600'
Jmp
Jmp
(Jmp & Jmw merge in this area)
Qal
Kd
Jmb
Jmp
Jmb
6400'
200'-600'
600'-600'
1000'-600'
1400'-600'
3850'-600'
4250'-600'
4650'-600'
Qal
Kd ss.
Kd sh.
Jmb sh.
Jmw ss.
Jmw sh.
Jmw ss.
Jmw sh.
GRANTS URANIUM
Westvaco Mineral Products Division of
Food Mach. & Chem. Corp.
STRUCTURAL CROSS SECTION, SECTION 9, T13N, R9W,
DRILLED UNDER, DMEA DOCKET
39-43
Scale: 1"=100'
DRAWING 9-3



N

● MINERALIZED HOLES

● 3650-4600 — HOLE CO-ORDINATE
TD 475 ——— TOTAL DEPTH
JMP 365-457 — CONTACTS OF POISON CANYON SS.

O HOLES TO BE DRILLED

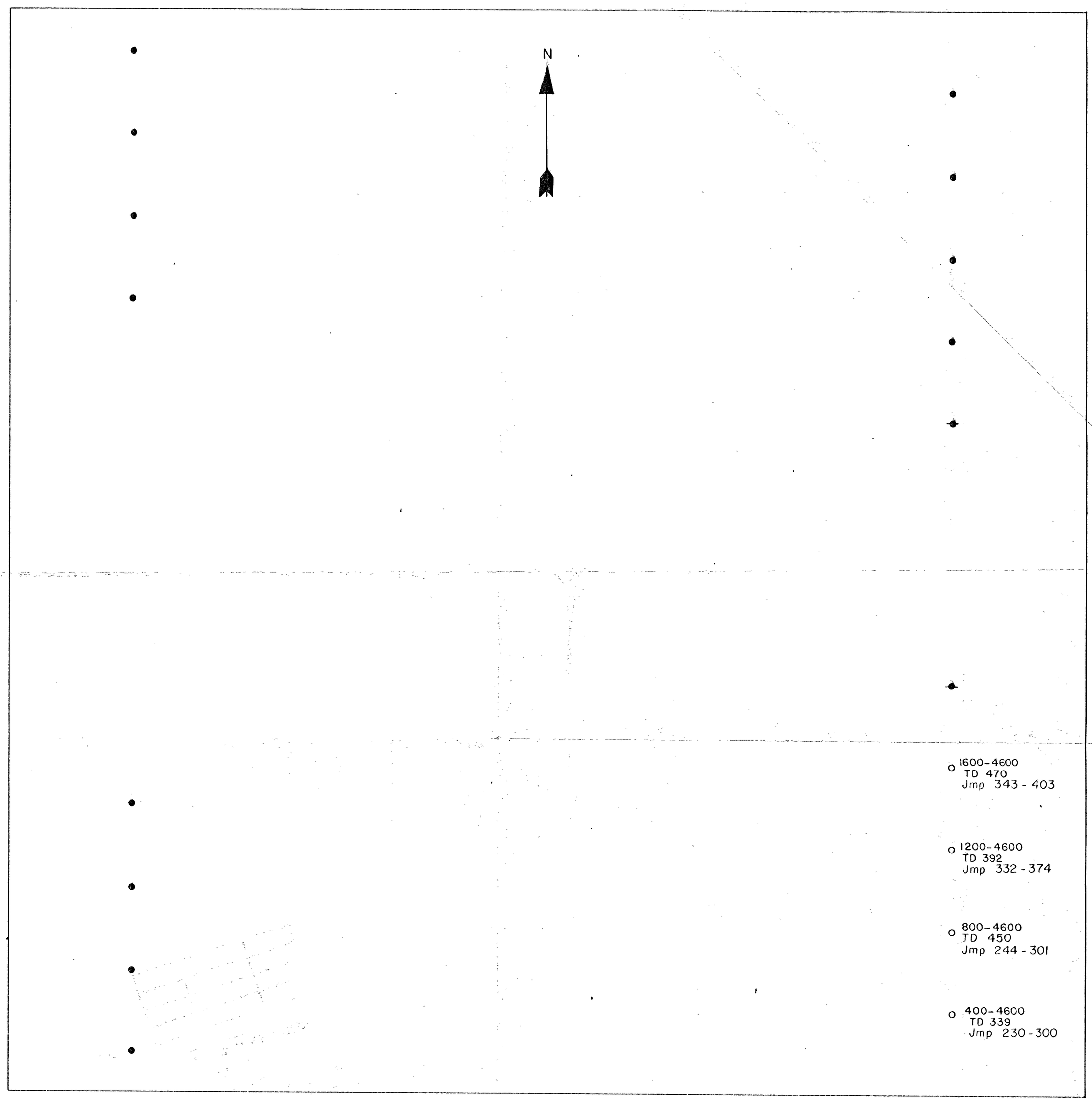
0 400 800

MONTHLY PROGRESS REPORT
GRANTS URANIUM
DOCKET NO. DMEA 3943
SECTION 9, T.13N. R.9W.

AUGUST 1956

DRAWING 9-2

DRAWN BY D.A.B



LEGEND

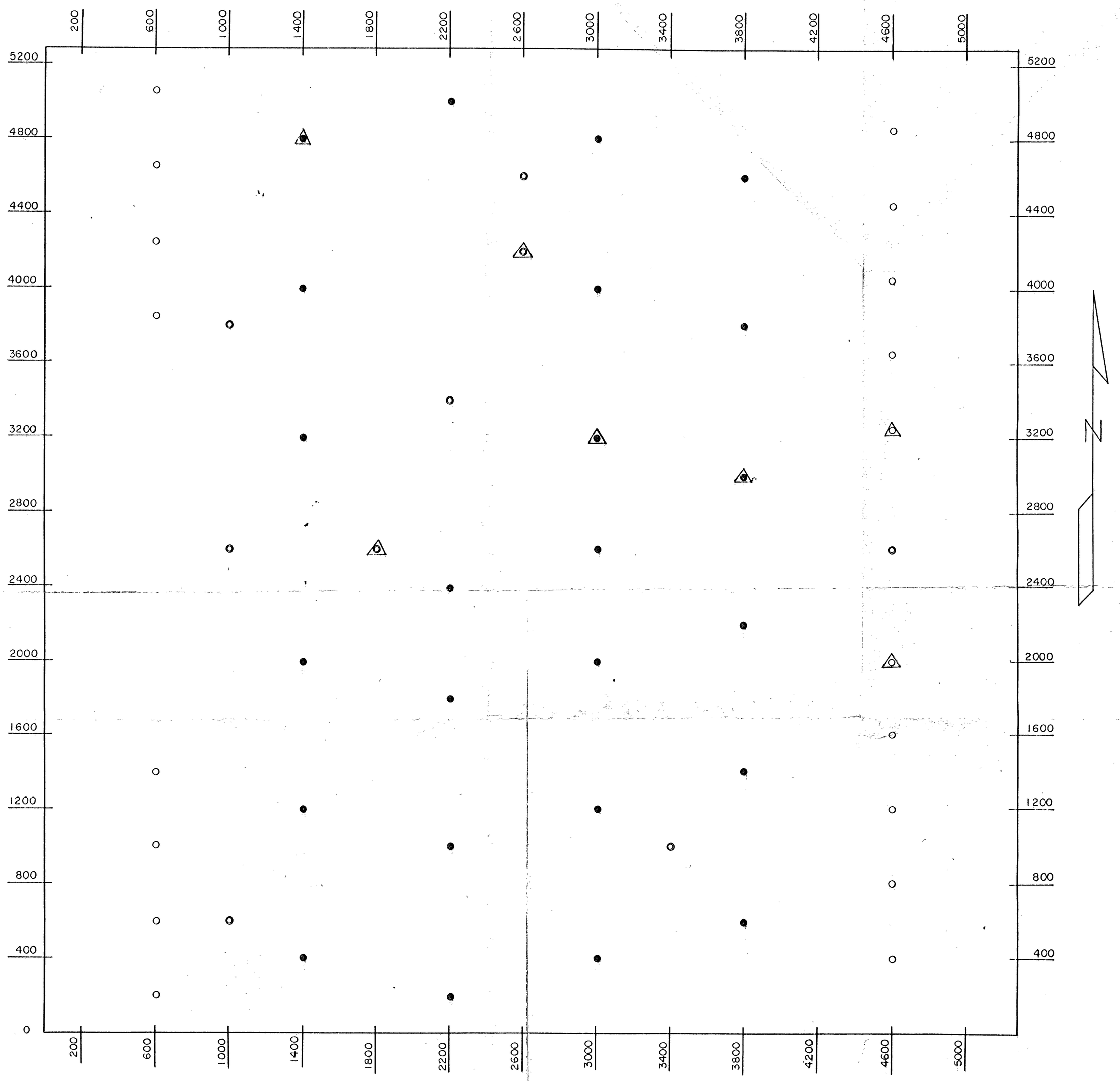
- ● Holes Drilled During July and August
- ⊕ Mineralized Holes
- o Holes Drilled During September

WESTVACO MIN. POD. DIV.
FOOD MACH. & CHEM. CORP.

1" = 400'

GRANTS URANIUM
MONTHLY PROGRESS REPORT
DOCKET NO. DMEA 3943
SECTION 9, T. 13N. R. 9 W.

SEPTEMBER 1956
DRAWING 199



LEGEND

- ○ DMEA FIRST STAGE DRILL HOLES
- ● DMEA SECOND STAGE DRILL HOLES
- ◎ WESTVACO FINANCED HOLES
- △ MINERALIZED HOLES

0 400 800
Scale of Feet

Food Machinery & Chemical Corp.
Westvaco Mineral Products Div.
Mineral Development Dept.

DRILL HOLE MAP

SECTION 9, T. 13 N., R. 9 W.

5/10/57
MDC

MAP NO. 204