DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

Idm-E NO. 932

DMEA NO. 3943

Application
- [ ] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [ ] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [ ] Closing Letter
- [x] Cost Audits
- [x] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [x] Contract Amendments
- [x] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and attachments

Right Side

- [x] Project summary (final)
- [x] Work Completed analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semi-Annual Report for Certified Project
- [x] Final Field Team Report (Tab)
- [x] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [x] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. _____ : Reports
- [ ] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

- [ ] Field Team Semi-Annual Report for Certified Project
- [x] Field Team Interim Reports
- [x] Operator's Monthly Reports with transmittal, narrative and maps.

Folders No. _____ : Maps (Use pocket folder or envelope)

Folders No. _____ : Settlement Sheets

Folders No. _____ : Drill Logs

Folders No. _____ : Royalty material

17963

EMERGENCY MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

RECEIVED AUG 23 1957 U.M.E.A.

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

Food Machinery and Chemical Corporation
161 East 42nd Street,
New York 17, New York

pertaining to Exploration Project Contract No. Idm-8932, Docket No. EMEA-3943, including Amendments Nos. 1 and 2, and Termination Agreement dated July 26, 1957, for the months of July, 1956 to April, 1957, covering a project for the exploration of Uranium on property known as Sec. 9, T 13 N, R 9 W, located in McKinley County, New Mexico.

My review included an examination of the Monthly Reports (Form MP-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, consultation with the Executive Officer, EMEA Field Team, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the following reasons:

(a) the administrative cost to the Government of an audit would be excessive in relation to the estimated amount of possible disallowances thereunder;

(b) the Monthly Reports were supported by documentary proof of the costs claimed under the contract provisions for contribution by the Government on the basis of actual costs incurred;

(c) a major portion ($21,648.69) of the costs incurred covered work performed at unit rates under independent contract; and

(d) the balance ($4,725.36) of the costs incurred were under a contract provision for payment by the Government on the basis of fixed unit costs for work actually performed.

The review disclosed the following facts in regard to the amount paid or to be paid the contractor:

Total cost as billed by Contractor		$29,021.14
Exceptions: (Schedule attached)		
By EMEA Finance Officer	$2,647.09	
Herewith	0.00	2,647.09
Total Accepted Cost		$26,374.05

The contract calls for a 75% participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Nineteen thousand, seven hundred eighty and 55/100ths Dollars

** $19,780.55 **

is considered valid and proper, provided that the Regional Executive Officer, the Administrator, or other competent official has accepted or will accept the project as having otherwise met the terms of the contract.

August 21, 1957

T. H. Brading, Auditor

SCHEDULE OF EXCEPTIONS

FOOD MACHINERY AND CHEMICAL CORPORATION

CONTRACT IDM-E932 | DOCKET IMEA-3943

August, 1956

315 feet of core drilling @ $3.40 per foot	$1,071.00	
2% New Mexico School Tax	21.42	$1,092.42
214 feet of non-core drilling @ $1.20 per foot	$ 256.80	
2% New Mexico School Tax	5.14	261.94
529 feet @ $0.39 per foot (Incidental Allowance)		206.31

Footage drilled in excess of contract requirements

April, 1957

Operator claimed all incidental allowance @ $0.39 per foot. In accordance with Amendment No. 2 dated May 29, 1957, beginning with the ninth hole in Stage II, incidental allowance is reduced from $0.39 per foot to $0.20 per foot.

Incidental allowance claimed for 5,718 feet at $0.39 per foot	$2,230.02	
Incidental allowance per contract for 5,718 feet @ $0.20 per foot	1,143.60	
Amount Disallowed		1,086.42
Total Amount Disallowed		$2,647.09

Disallowances were made by Finance Officer and are approved by Auditor.

Government's copy

Butin
Almquist
Appl. Sci. Div.
Ching
Ellis
Chambers
Martin
Johnson

TERMINATION AGREEMENT

It is agreed this 26th day of July, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Food Machinery and Chemical Corporation (Westvaco Mineral Products Division), hereinafter called the "Operator," parties to Exploration Project Contract Idm-E932 (Docket No. DMEA-3943), dated March 21, 1956, as amended, hereinafter called the "Contract," that:

1. Effective May 1, 1957, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the allowable costs of work performed prior to said effective date.

3. The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract.

4. All rights of the Government provided for in the Contract with respect to certification of discovery or development, percentage royalty and liens for its payment, records and audit, and all rights of the Government to recovery of any overpayment, are preserved.

5. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said Contract, except as otherwise provided in this Termination Agreement.

IN WITNESS WHEREOF, these parties have executed this agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

By C. Mittendorf
Administrator, Defense Minerals
Exploration Administration

FOOD MACHINERY AND CHEMICAL CORPORATION
(WESTVACO MINERAL PRODUCTS DIVISION)

By W. N. Williams

Title President

RECEIVED
AUG 28 1957
D.M.E.A.

DMEA
RECEIVED JUN 20 1957
DATE | CODE

Government's Copy

Butler
Sawyer
Appr. Sol. Off.
Ching
Ellis
Chambers

EXPLORATION PROJECT CONTRACT
FOOD MACHINERY AND CHEMICAL CORPORATION
DOCKET NO. DMEA-3943

Amendment No. 2

It is agreed this 29th day of May, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Food Machinery and Chemical Corporation, hereinafter called the "Operator," parties to that certain Exploration Project Contract No. Idm-E932, Docket No. DMEA-3943, dated March 21, 1956, hereinafter called the "Contract," that effective April 24, 1957, the contract, as amended, is further amended, as follows:

1. In Exhibit "A," under Description of the Work, beginning with the ninth hole drilled under Stage II and continuing until the project is completed or terminated, all holes specified for drilling shall be drilled non-core throughout, and the second and third paragraphs under General Provisions, shall not apply to said drilling. Cuttings from the Poison Canyon sandstone segment (originally specified for coring) shall be collected at appropriate intervals for samples. The samples shall be checked for radioactivity and those indicating significant mineralization shall be analyzed chemically for uranium. A split of each sample analyzed shall be properly labeled and stored for the use of the Government. Upon completion of the project, all stored samples shall be disposed of by the Operator upon authorization of the Government.

2. In Exhibit "A," under Estimated Cost of the Project, Stages II and III, beginning with the ninth hole, the estimated costs for core drilling shall be available for non-core drilling and the maximum allowable average price is reduced from $3.50 to $1.25 per foot for non-core drilling. Also, beginning with the ninth hole in Stage II, the incidental allowance shall be reduced from $0.39 to $0.20 per foot of drilling.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, the fixed unit cost of any item of work, nor any item designated "maximum."

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O. Meitzenberg
Administrator, Defense Minerals Exploration Administration

FOOD MACHINERY AND CHEMICAL CORPORATION

By W. M. Williams

Title Vice President

EXPLORATION PROJECT CONTRACT
FOOD MACHINERY AND CHEMICAL CORPORATION
(WESTVACO MINERAL PRODUCTS DIVISION)
DOCKET NO. DMEA 3943
CONTRACT NO. IDM-E938

AMENDMENT NO. 1

It is agreed this 16th day of May, 1956, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Food Machinery and Chemical Corporation, (Westvaco Mineral Products Division), hereinafter called the "Operator," parties to that certain Exploration Project Contract No. IDM-E938, Docket No. DMEA 3943, dated March 21, 1956, hereinafter called the "Contract," that the Contract is amended as follows, effective as of the date of the Contract:

> Referring to "Article 3" of Exploration Project Contract form MP-200 (Revised June 1954), the date fixed on or before which the Operator shall commence work is extended from April 15, 1956, to August 1, 1956.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, the fixed unit cost of any item of work, nor any item of allowable expense which is expressly designated "maximum."

Executed in sextuplet the day and year first above written.

UNITED STATES OF AMERICA

By W. M. Traver
W. M. Traver
Executive Officer, DMEA
Field Team, Region III

FOOD MACHINERY AND CHEMICAL CORPORATION (WESTVACO MINERAL PRODUCTS DIVISION)

By W. D. Williams

Title Vice President

(Seal)

Docket copy

RECEIVED
APR 23 1956

MF-200
(Revised June 1954)

Docket No. DMEA 3943

Commodity Uranium

Contract No. Idm-E 932

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]

It is agreed this MAR 21 1956 day of ....., 195..., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Food Machinery and Chemical Corporation, a Delaware Corporation (Westvaco Mineral Products Division), whose mailing address is 161 East 42nd Street New York 17, New York, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, and map (Figure 2)

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of New Mexico, County of McKinley, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] Lessee of [5] the rights to Uranium in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] Lease and Agreement—recorded in Book -, page -, official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: None. xxxx Surface owners Nabor and Isabel O. Marquez claim right to uranium ores, based on disputed interpretation of mineral reservation in their deed from Operator's lessor.

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

of the land (lessor, seller, optionor, etc.), are attached, as follows: Attached performance bond is in lieu of Consent to Lien of Santa Fe Pacific Railroad Company and Subordination Agreement of Nabor and Isabel O. Marquez.

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Uranium. The work to be performed is described in Exhibit "A." The Operator on or before April 15, 1956 shall commence the work, and on or before May 15, 1957 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall ~~either~~ have completed the work ~~or shall~~ have incurred ~~allowable~~ costs (see Article 6) in ~~a sum not less than the estimated total allowable cost set forth in Exhibit "A."~~ except as otherwise provided in Exhibit "A" with respect to stages of work.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable.

(c) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $71,925.00. The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $53,946.00: *Provided,* That until the Operator has rendered to the Government his final report, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last

voucher or vouchers such sums as it sees fit not in excess of 10 percent of the estimated total cost of the work or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; but except for any such necessary excesses in categories, subcategories, or items thereunder the Operator is not obligated to incur more than his agreed percentage of the estimated, total allowable cost of the work. **See Article 13**

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums.

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article 9. **See Article 13**

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and related costs incurred.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 8. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 7) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except*, that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer*, sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value therof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½)

percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

(For instance: the royalty on an amount of five dollars ($5.00) per ton would be one and one-half (1½) percent; on an amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 10 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 11. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 12. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 13. *Changes and added provisions.*—

(a) Categories (2) through (7) of Article 6(a) are deleted

(b) To the extent that costs are set forth in Exhibit "A" as "Fixed Unit Costs" they are in lieu of the actual costs that otherwise would be allowable costs of the project under Article 6 of the contract. The Government will contribute to the Fixed Unit Costs as they accrue, on the basis of units of work actually performed. The fixed unit costs include all costs of the work necessary to complete the project.

(c) That part of the last sentence in the first paragraph of Article 6(a) commencing after the semicolon, is deleted.

Phtin
Dwyer
"Appd. Sol. Off."
Ching
Ellis
Chambers
Selfridge
Johnson

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O. Mitterdorf
Administrator, Defense Minerals
Exploration Administration

Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
By W. N. Williams

Vice President

I, Harold Vogel, certify that I am the Assistant secretary of the corporation named as Operator herein; that W. N. Williams who signed this contract on behalf of the Operator, was then Vice President of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Harold Vogel

[CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—70617-1

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EXPLORATION PROJECT CONTRACT
FOOD MACHINERY AND CHEMICAL CORPORATION
(WESTVACO MINERAL PRODUCTS DIVISION)
DOCKET NO. DMRA-3943

ANNEX I

The land referred to in Article 2 of the Contract consists of all of the land in sec. 9, T. 13 N., R. 9 W., N.M.P.M., McKinley County, New Mexico, within the exterior boundaries of said section extended vertically downward.

The land is shown on a map entitled "Figure 2. Sketch Map of Section 9 .....," attached hereto and made a part hereof.

STANDARD FORM 25
REVISED NOVEMBER 1950
PRESCRIBED BY GENERAL
SERVICES ADMINISTRATION
GENERAL REGULATION NO. 5

PERFORMANCE BOND

(See Instructions on Reverse)

DATE BOND EXECUTED

April 18, 1956

PRINCIPAL

FOOD MACHINERY AND CHEMICAL CORPORATION, a Delaware Corporation

SURETY

[illegible] INSURANCE COMPANY, a New Jersey Corporation
of 90 John Street, New York 38, New York

PENAL SUM OF BOND (*express in words and figures*)	CONTRACT NO.	DATE OF CONTRACT
Fifty-Three Thousand, Nine Hundred Forty-six ($53,946.00) Dollars	Ida-I 932 (CMEA Docket No. 3943)	March 21, 1956

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the United States of America, hereinafter called the Government, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the Government, numbered and dated as shown above and hereto attached;

NOW THEREFORE, if the principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Government, with or without notice to the surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

In Presence of:

WITNESS		INDIVIDUAL PRINCIPAL	
1.	as to		[SEAL]
2.	as to		[SEAL]
3.	as to		[SEAL]
4.	as to		[SEAL]

WITNESS		INDIVIDUAL SURETY	
1.	as to		[SEAL]
2.	as to		[SEAL]

Attest:

ASSISTANT SECRETARY

CORPORATE PRINCIPAL
FOOD MACHINERY AND CHEMICAL CORPORATION

BUSINESS ADDRESS
161 East 42 Street, New York, New York

BY

TITLE Executive Vice President

AFFIX CORPORATE SEAL

Attest:

[illegible] R. Hechman, Attorney-in-Fact

CORPORATE SURETY
[illegible] INSURANCE COMPANY

BUSINESS ADDRESS
90 John Street, New York 38, N. Y.

BY

TITLE Stephen [illegible], Assistant Resident Secretary

AFFIX CORPORATE SEAL

STANDARD FORM 25
NOVEMBER 1950 EDITION

16—30441-2

The rate of premium on this bond is [illegible] per thousand.

Total amount of premium charged, $[illegible]

(The above must be filled in by corporate surety)

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, M. E. Gilbert, certify that I am the assistant secretary of the corporation named as principal in the within bond; that Ernest Hart, who signed the said bond on behalf of the principal, was then Executive Vice President of said corporation; that I know his signature, and his signature thereto is genuine; and that said bond was duly signed, sealed, and attested for and in behalf of said corporation by authority of its governing body.

M E Gilbert [CORPORATE SEAL]

INSTRUCTIONS

1. This form shall be used for construction work or the furnishing of supplies or services, whenever a performance bond is required. There shall be no deviation from this form except as authorized by the General Services Administration.

2. The surety on the bond may be any corporation authorized by the Secretary of the Treasury to act as surety, or two responsible individual sureties. Where individual sureties are used, this bond must be accompanied by a completed Affidavit of Individual Surety for each individual surety (Standard Form 28).

3. The name, including full Christian name, and business or residence address of each individual party to the bond shall be inserted in the space provided therefor, and each such party shall sign the bond with his usual signature on the line opposite the scroll seal, and if signed in Maine or New Hampshire, an adhesive seal shall be affixed opposite the signature.

4. If the principals are partners, their individual names shall appear in the space provided therefor, with the recital that they are partners composing a firm, naming it, and all the members of the firm shall execute the bond as individuals.

5. If the principal or surety is a corporation, the name of the State in which incorporated shall be inserted in the space provided therefor, and said instrument shall be executed and attested under the corporate seal as indicated in the form. If the corporation has no corporate seal the fact shall be stated, in which case a scroll or adhesive seal shall appear following the corporate name.

6. The official character and authority of the person or persons executing the bond for the principal, if a corporation, shall be certified by the secretary or assistant secretary, according to the form herein provided. In lieu of such certificate there may be attached to the bond copies of so much of the records of the corporation as will show the official character and authority of the officer signing, duly certified by the secretary or assistant secretary, under the corporate seal, to be true copies.

7. The date of this bond must not be prior to the date of the instrument in connection with which it is given.

U. S. GOVERNMENT PRINTING OFFICE 16—30441-2

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EXPLORATION PROJECT CONTRACT
FOOD MACHINERY AND CHEMICAL CORPORATION
(WESTVACO MINERAL PRODUCTS DIVISION)
DOCKET NO. DMEA-3943

EXHIBIT "A"

DESCRIPTION OF THE WORK

General Provisions

The work consists of exploration by core and non-core drilling to test the Poison Canyon sandstone of the Brushy Basin member of the Morrison formation.

Each hole shall be drilled non-core through the upper formations to a point approximately five feet above the upper contact of the Poison Canyon sandstone. Core drilling shall follow until the hole is bottomed in the underlying claystone at a point approximately five feet below the lower contact of the Poison Canyon sandstone. Drilling depths are expected to average 450 feet and the cored sections of the holes are expected to average 100 feet in length. The minimum size of core shall be BX. All holes shall be reamed and cased as necessary.

All core and cuttings from the cored section of drill holes shall be saved and checked radiometrically for uranium. Sections indicating significant mineralization shall be split for samples, and such samples shall be analyzed chemically for uranium. All the remaining core and cuttings saved shall be properly stored for inspection and disposition by the Government.

All drill holes shall be logged geologically and probed radiometrically, and the record of such logging and probing, together with certified copies of all assay certificates, shall be submitted with the Operator's monthly progress reports.

No hole shall be drilled closer than 100 feet to any boundary of the property.

The project work shall be supervised at all times by competent engineers or geologists.

The location, direction, inclination, and extent of all project work are subject to the approval of the Government.

The work is divided into three successive stages as described hereafter. The Operator shall complete Stage I, and shall perform as much of the work under Stages II and III as the Government approves in writing in advance.

Stage I

The locations of Stage I holes are indicated on the attached map (Figure 2). Drill 18 holes aggregating an estimated 8,100 feet in two discontinuous north-south rows as shown on said map. The two segments to the west are composed of 4 holes each, located 600 feet from the western boundary of the land, and the two segments to the east are composed of 5 holes each, located 660 feet from the eastern boundary of the land. The holes in each segment shall be spaced approximately 400 feet apart. The northernmost and southernmost holes of the two western segments shall be located approximately 200 feet from the northern and southern boundaries respectively. The corresponding holes of the two eastern segments shall be located approximately 400 feet from the northern and southern boundaries respectively. If more than 8,100 feet of drilling are required to complete any holes, under this Stage I, the additional footage and cost required may be transferred and deducted from Stage III footage upon the written approval of the Government.

Stage II

Forty-one tentative locations of Stage II holes are shown on the attached map (Figure 2). However, only 28 holes, aggregating an estimated 12,600 feet, shall be drilled. The pattern of drilling and locations of the holes to be drilled shall be based upon favorable indications resulting from Stage I drilling, and shall be approved in writing by the Government. Holes drilled in this Stage shall be at least 400 feet from any previously drilled hole. If more than 12,600 feet of drilling are required to reach the desired horizon in each hole, the additional footage and cost required may be transferred and deducted from Stage III upon the written approval of the Government.

Stage III

Drill not more than 28 holes aggregating not more than 12,600 feet to offset previously drilled holes that show significant mineralization. These holes shall be drilled at least 100 feet from any previously drilled hole.

ESTIMATED COST OF THE PROJECT

STAGE I

Actual Costs:

Category (1) Independent Contracts

6,300 feet non-core drilling @ $1.25/ft.	$7,875.00	
1,800 feet core drilling @ $3.50/ft.	6,300.00	
Categories (2) through (7) None	-	
		$14,175.00

Fixed Unit Costs: (See Article 13)

Incidental allowance for each foot of core and non-core drilling completed, 8,100 feet @ $0.39/ft.	$3,159.00	
40 chemical sample analyses @ $3.50/sample	140.00	
		$3,299.00
Estimated Total Cost of Stage I		$17,474.00

STAGE II

Actual Costs:

Category (1) Independent Contracts

9,800 feet non-core drilling @ $1.25/ft.	$12,250.00	
2,800 feet core drilling @ $3.50/ft.	9,800.00	
Categories (2) through (7) None	-	
		$22,050.00

Fixed Unit Costs: (See Article 13)

Incidental allowance for each foot of core and non-core drilling completed, 12,600 ft. @ $0.39/ft.	$4,914.00	
60 chemical sample analyses @ $3.50/sample	210.00	
		$5,124.00
Estimated Total Cost of Stage II		$27,174.00

STAGE III

Actual Costs:

Category (1) Independent Contracts

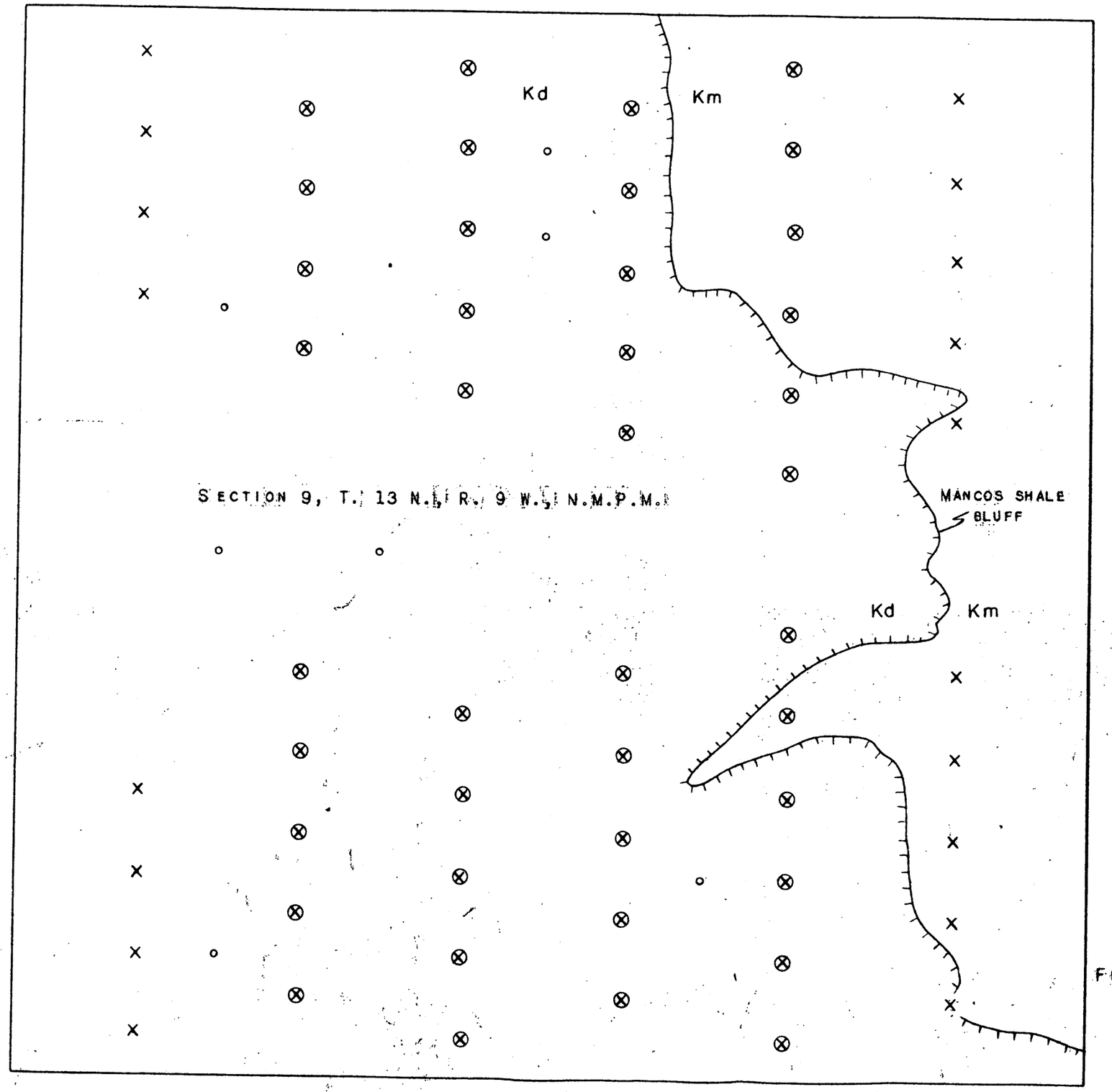
9,800 feet non-core drilling @ $1.25/ft.	$12,250.00	
2,800 feet core drilling @ $3.50/ft.	9,800.00	
Categories (2) through (7) None	-	
		$22,050.00

Fixed Unit Costs: (See Article 13)

Incidental allowance for each foot of core and non-core drilling completed, 12,600 ft. @ $0.39/ft.	$4,914.00	
90 chemical sample analyses @ $3.50/sample	315.00	
		$5,229.00
Estimated Total Cost of Stage III.		$27,279.00

S U M M A R Y

Estimated Total Cost of Stage I	$17,474.00
Estimated Total Cost of Stage II	$27,174.00
Estimated Total Cost of Stage III	$27,279.00
Estimated Total Cost of Project (rounded) . . .	$71,928.00
Government Participation @ 75%	$53,946.00



EXPLANATION

Km	CRETACEOUS MANCOS SHALE
Kd	CRETACEOUS DAKOTA FORMATION
o	EXISTING DRILL HOLE
X	LOCATION OF PROPOSED STAGE I DRILL HOLE
⊗	PROBABLE LOCATION OF STAGE II DRILL HOLE

Note: GEOLOGY AND EXISTING DRILL HOLE LOCATIONS FROM APPLICANTS MAP.

N

600 0 1200 FEET

FIGURE 2. SKETCH MAP OF SECTION 9, T. 13 N., R. 9 W., N.M.P.M., SHOWING EXISTING DRILL HOLES, LOCATION OF PROPOSED STAGE I DRILL HOLES, AND PROBABLE LOCATION OF STAGE II DRILL HOLES, FOOD MACHINERY AND CHEMICAL CORPORATION, McKINLEY COUNTY, NEW MEXICO.

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FEB 2 7 1956

MF-103
(Revised April 1952)

DMEA
Date Rec'd
AUG 1 1955
BUREAU OF MINES
Denver, Colorado

Form Approved.
Budget Bureau No. 42-R1035.2.

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED
AUG - 8 1955

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 3943
Metal or Mineral Uranium
Date Received 8-8-55
Estimated Cost $ 94,870
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
161 East 42nd Street
New York 17, N. Y.

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized. See attachment

(*c*) If a corporation, add to above statement, titles, names and addresses of officers. See attachment

(*d*) If a partnership, add to the above statement the names and addresses of all partners. Not applicable

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract
Section 9, T.13N. R.9W N.M. P.M. in McKinley County,
New Mexico and within Mt. Taylor mining district.

(*b*) State any mine name by which the property is known. None

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Lessee
in accordance with Lease and Agreement with Santa Fe Pacific Railroad Company

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. Uranium Mining Lease and Agreement Attached

(*e*) If you own the land, describe any liens or encumbrances on it Not applicable

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Not applicable

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. See attachment

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. None

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. See attachment

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. See attachment

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power. See attachment

16—66551-1

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Uranium

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. See attachment

(*c*) The work will start within 15 days and be completed within 6 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See attachment See attachment

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? Yes

(*b*) How do you propose to furnish your share of the costs? See attachment

☐ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated July 25, 1955

Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
(Applicant)

By W. N. Williams

W. N. Williams

Vice-President

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.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
161 East 42nd Street
New York 17, New York

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AUG - 8 1955

Attachment to DMEA Form MF-103

Instr. No.		Explanation
1	(b)	Corporation incorporated in the State of Delaware.

(c)

Chairman of the Board	John D. Crummey	San Jose, California
President	Paul L. Davies	San Jose, California
Executive Vice President	Benjamin C. Carter	San Jose, California
Executive Vice President	Ernest Hart	New York, New York
Vice President	Max E. Bretschger	Buffalo, New York
Vice President	Hubert L. Byrd	Lansing, Michigan
Vice President	William de Back	St. Nicolas-Waes, Belgium
Vice President	James M. Hait	San Jose, California
Vice President	Bernard H. Jacobson	Nitro, West Virginia
Controller	James N. Kirkwood	San Jose, California
Treasurer and Secretary	Everett D. Myers	San Jose, California
Vice President	Jack M. Pope	San Jose, California
Vice President	Carl F. Prutton	New York, New York
Vice President	Max Y. Seaton	New York, New York
Vice President	Gerald F. Twist	Los Angeles, California
Vice President	Jackson V. Vernon	Middleport, New York
Vice President	Paul C. Wilbur	San Jose, California
Vice President	William N. Williams	New York, New York
(President - Westvaco Mineral Products Division)		
Vice President	Clifford K. Wilson	San Jose, California

4 (a) Exploration on this property has consisted of reconnaissance geologic mapping performed by applicant. There are no mine workings or facilities.

4 (c) Geologic Features of Area:

Generally this area is on the back slope of the Mesa, which forms the main Grants uranium area. The major uranium mines, namely Poison Canyon, Mesa Top, Garcia, Sec. 25, Sec. 31, Flat Top and Hanosh are in close proximity to this property. The principal ore zones, the Todilto limestone and the Brushy Basin member of the Jurassic Morrison formation underlie this area at relatively shallow depth. There is at present, drilling activity in the immediate area of the subject section.

Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
161 East 42nd Street
New York 17, New York

Attachment to DMEA Form MF-103 Continued

Instr. No.	Explanation
4 (c)	Continued

Geologic Features - Section 9, T. 13 N. R. 9 W:

Section 9 is favorably situated relative to producing mines in the immediate area. A sketch map of this section and an idealized strato-graphic section accompany this application. The Brushy Basin shales of the Morrison formation are shallow in the southwest quarter of the section and are overlain by Dakota sandstone and aluvium. Drilling is being carried on at the present time in the adjoining sections to the south, to the west and to the east. Sedimentary and structural trends from the Garcia and the Poison Canyon areas would intersect the southwest quarter of Section 9. A prominent northerly trending fracture zone also affects the southwest quarter of Section 9. Drilling in the north and particularly in the northeast quarter of the Section would be considerably deeper as this area is overlain also by a part of the Mancos formation, which is immediately above the Dakota sandstone. However, the east side of this section is believed to be reasonably close to the major San Mateo fault, which trends northeasterly through the area.

4 (d) All property is accessible by graveled surfaced New Mexico State Highway 53 and an unimproved dirt road. Section 9 can be reached by travelling west from Grants on U. S. Highway 66 for three miles, then north on State Highway 53 for approximately 18 miles, then northwest on private unimproved Ambrosia Lake Road for approximately 1½ miles. The Anaconda Bluewater mill is located approximately 18 miles from Section 9 by present access roads. Supplies and limited residence are available at Grants, New Mexico.

4 (e) Nine men can be made available to carry out reconnaissance and technical work in connection with this exploration. Applicant now has all material, supplies and equipment in the area necessary to perform the proposed work. Adequate water and power can be obtained in the immediate area. Applicant has set up laboratory equipment at Grants with a full time laboratory technician in charge to handle various forms of sampling work in connection with laboratory radiometric assaying. In addition, facilities of other plants connected with the applicant Company are prepared to handle further analytical work. Chemical analyses can be made by the present staff of applicant Company.

Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
161 East 42nd Street
New York 17, New York

Attachment to DMEA Form MF-103 Continued

Instr. No.	Explanation

5 (b) Applicant wishes to explore the area by drilling on a designated grid with a rotary drill, collecting samples for chemical assay when drilling through promising horizons, probing the holes for radioactivity, and at various intervals, coring the horizons for geological information. The approximate depth of the holes in this area was estimated by projecting the regional dip of the ore horizon, (Brushy Basin member of the Morrison formation) from the nearest outcrop, or from the nearest available drill hole information. Listed below are figures showing the expected depths of the holes and general grid patterns.

Average Depth of Holes	Grid Area	Grid Spacing	No. of Holes	Total Footage	Footage Samples	Footage Cored	Average Depth to Ore Horizon
350	W½	400'	92				
	SE¼	400'	41				
	W½ NE¼	400'	20	53,000	6100	1500	300

5 (d) Applicant is well qualified to undertake the proposed exploration program. Applicant has explored, developed and its subsidiary is now mining 2000 tons per day of trona at Green River, Wyoming. Applicant is mining and processing 125,000 tons annually of dolomite in Newark, California. A subsidiary of applicant, Barium Products, Ltd., has explored and developed, and is now mining barite ores to the extent of 50,000 tons annually. Applicant has explored, developed and mined millions of tons of phosphate rock in the States of Idaho and Utah. In addition, applicant processes into chemicals all these various minerals at plants located throughout the United States. The personnel who have supervised and carried on the work at these various operations will be directly responsible for the uranium exploration program in the Grants, New Mexico area.

Applicant's project engineer stationed at Grants, has been employed by applicant for seven years, is a graduate Mining Engineer from the University of Nevada and has held various positions from Engineer up through Mine Foreman at the Green River trona mine. Applicant's geologist, who is in charge of geology and map interpretation, has been employed by applicant for four years, was formerly a Professor of Geology at Idaho State College, Pocatello, Idaho, is a graduate of the University of Colorado and has been connected with various mining firms throughout the United States. These gentlemen will be assisted in the field by thoroughly competent graduate mining engineers and geologists. A full time consultant with several years experience in uranium exploration has been retained.

Food Machinery and Chemical Corporation
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Attachment to DMEA Form MF-103 Continued

Instr. No.	Explanation
6	Estimate of Costs:
	Estimated cost for contract drilling.....$0.69 per foot (tri-cone rotary drill)
	Estimated total cost of other items listed in 6 (b - h) equivalent to..... 1.10 per foot
	Estimated Total Cost Equivalent to.....$1.79 per foot drilled
	Estimated Totals for 53,000 feet of drilling..$94,870
	The above estimates are based upon recent exploration operations conducted by applicant in the Grants area.
7 (b)	The applicant has a staffed and equipped mineral development department, whose qualifications were listed under Section 5, which would be assigned to this exploration. The applicant is prepared to pay the portion of the cost of this program which is not covered by the Government contribution.

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New York 17, New York

Attachment to DMEA Form MF-103 Continued

Instr. Exp.	Explanation		Dollars Per Foot
8	Estimate of Costs (Additional Detail):		
	Estimated Cost for contract drilling		$ 0.69
	Estimated Cost of other items		
	Salaries	$ .336	
	Consultants	.051	
	Living Costs	.102	
	Hourly Labor	.005	
	Total Personnel	$ .494	$ .494
	Rental		
	Office	$ .017	
	Excavation Machinery	.015	
	Total Rentals		$ .032
	Supplies		
	Office	$ .020	
	Mapping	.010	
	Laboratory	.010	
	Sample Sax, Core Boxes, Etc.	.017	
	Total Supplies		$ .057

Food Machinery and Chemical Corporation
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New York 17, New York

Attachment to DMEA Form MF-103 Continued

Instr. No.	Explanation		
8	Transportation		
	Repairs	$ .020	
	Gas and Oil	.031	
	Car Rental	.035	
	Airline Tickets	.020	
	Total Transportation		$ .106
	Miscellaneous		
	Drill Site Preparation	$ .017	
	Airplane	.045	
	Bookeeping, Clerical, Stenographic	.090	
	Map Preparation and Drafting	.090	
	Tel and Tel	.017	
	Total Miscellaneous		$ .249
	Contingency at 10%		.160
	Total		$ 1.79

GENERALIZED GEOLOGIC COLUMN OF GRANTS, NEW MEXICO AREA

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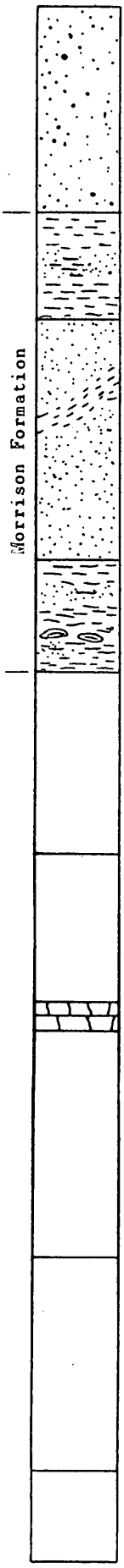

Lithologic Column	Formation and Thickness	Description
	Dakota Sandstone 60' to 120'	Gray to white or buff medium to coarse grained massive sandstone, locally cross bedded. One or two "coat" seams, having maximum thickness of 5 feet each, appear in some areas and are underlain by about 5 feet of buff, medium grained, locally conglomeratic, limonitic, blocky and resistant sandstone. The coal is slightly to moderately radioactive in some areas.
	Brushy Basin Shale 0' to 130'	Pale green, incompetent, gypsiferous mudstone with buff fine to coarse-grained, channel type sand lenses containing mudstone galls and laminae and relict feldspar grains. Weathers to a steep slope littered by huge talus blocks of Dakota. The sand lenses are lithologically identical with those of the underlying westwater. Complex basal and lateral inter-tonguings between westwater and brushy basin are common throughout the northern portion of the Zuni Uplift
	Westwater Canyon Sandstone 50' to 290'	Light red to buff, medium to coarse-grained poorly sorted subangular sandstone with occasional conglomeratic zones which contain rounded, flattened clay galls and boulders up to two feet in diameter, pebbles of chert and fine grained ingneous rock, and silicified and carbonized logs and wood fragments. Cross bedding is prominent. Rich but small carnotite deposits have been formed by replacement of carbonized wood. The base is drawn at the bottom of the lowest major coarse-grained channel sand.
	Recapture Creek Shale 0' to 140'	Interstratified red-brown, chocolate-brown, light green and white siltstone shale and fine grained sandstone with a few ribs of coarse grained channel sand and mottled red and green, thin, dense, unfossiliferous limestone beds usually produces a steep detrital covered slope ore. Where slope is clean it has a knobby color banded, ribbed appearance. Locally weathers into bad lands.
	Bluff Sandstone 220' to 625'	Light green, white to light buff, fine grained, extremely massive color banded, fairly well sorted, subangular. Sandstone with occasional light green, silty arillaceous beds. Weathers into blocky, vertical cliffs. Intertongues and grades laterally into the recapture creek shale.
	Summerville Formation 0' to 185'	Interstratified, red-brown to light green and white, fine grained parallel-bedded, banded sandstone, siltstones and shales. It has a mottled appearance and generally weathers into a steep, talus littered slope with occasional knobby outcrops. The basal ten feet are highly calcareous and contain lenses of limestone almost identical with the underlying Todilto.
	Todilto Limestone 0' to 30'	Dark gray, fine grained, dense, unfossiliferous limestone, thin bedded and platy. Weathers into rubbly, rectangular fragments. Locally contains uranium ore deposits in erratic yellow patches of disseminated carnotite, tyuyamunite, and uranophane associated with small amounts of pitchblende.
	Entrada Sandstone 130' to 280'	Deep red to light buff sandstone. Grains subangular, well sorted frosted. Huge sweeping concave cfoss beds segregated in wedge-shaped units, parallel planes divide the formation into units 5 to 50 feet thick. Erodes into characteristic rounded pedestal rocks, and smooth, virtually unscalable cliffs.
	Carmel Formation 55' to 260'	Dark pink to brown, very fine grained, well sorted, limonite-coated, very poorly parallel bedded, quartzose, silty sandstone. Weathers to a knobby, vertically-fluted, blocky, steep slope, and may form cliffs. Top has a one to two foot zone of leaching and reworking which is usually directly below a thin grit layer.
	Wingate Formation 0' to 120'	Orange to light buff, fine to medium grained sub-rounded, well sorted, poorly cemented, thin bedded, slabby, pure quartzose sandstone with scattered, limonite coated and varicolored chert grains. Locally in vertical cliffs but generally rounded, orange colored knobs. Top usually marked by a one to three foot zone of bleaching and reworking.

W.C.I.

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(Westvaco Mineral Products Division)
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New York 17, N. Y.

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April 4, 1955.

Santa Fe Pacific Railroad Company,
Albuquerque, New Mexico.

Attention: Mr. C. B. McClelland.

Gentlemen:

Returned herewith are two (2) copies of the uranium mining lease and agreement dated March 16, 1955 (lease No. 9442) executed by us.

Our acceptance of this lease is subject to the following interpretation of Sections 1, 3, and 12.

1) "...Lessee accepts this lease subject to and agrees to comply with the provisions of that certain Purchase Agreement between Anaconda Copper Mining Company and Santa Fe Pacific Railroad Company, dated July 14, 1952, which gives Anaconda the first right to purchase any limestone gangue, low-vanadium ores produced by Santa Fe."

It is understood and agreed that this language in no way constitutes an assignment by Santa Fe or an assumption by this Company of all of Santa Fe's rights and obligations under the Anaconda agreement, and that this Company will be deemed to have "complied with" the provisions of the Anaconda agreement if we offer all ore mined by us (of the kind specified in Section 1 of that agreement) for sale to Anaconda (conditioned upon payment to us of the prices and allowances set out in that agreement), and give Anaconda a reasonable opportunity to accept or reject such offers, before we sell it to another buyer or mill it ourselves.

3) "...Lessee agrees to enter into and upon the said premises within sixty (60) days from the date hereof and to work and operate on the leased premises steadily and continuously during the period of this lease in accordance with approved methods so as to discover, mine and remove the greatest amount of uranium-bearing ore possible in a manner proper and necessary to good and economical mining with due regard to the development and preservation of the said premises as mining ground. Lessee further agrees that all work done in and upon said premises and property shall be done in full compliance with the mining laws and regulations of the State, the United States and any other competent public authority."

It is understood and agreed that the sixty-day period requirement applies to our obligation to commence exploration operations on the premises and that the obligation to mine commences only after we have given Santa Fe notice under Section 2 so as to take the lands out of exploration status and place them under mining lease status.

12) "...Lessor has, however, sold and conveyed all of said lands by deed, in which it has expressly reserved and excepted all oil, gas, coal and minerals whatsoever, already found or which may be found upon or under said lands, with the right to prospect for, mine and remove the same, and to use so much of the surface of said lands as shall be necessary and convenient for shafts, wells, tanks, pipe lines, rights of way, railroad tracks, storage purposes and other and different structures and purposes necessary and convenient for the digging, drilling, and working of any mines or wells which may be operated on said lands. Lessee accepts this lease and agreement subject to the terms and provisions of said deed reservation."

It is understood and agreed that the words "subject to the terms and provisions of said deed reservation" do not constitute an assignment by Santa Fe nor an assumption by this Company of any obligation to pay Santa Fe's grantees for appropriating any part of the premises for exploration or mining operations. The obligation referred to immediately above is the one set out in Santa Fe's form of deed immediately following the expressed reservation of mineral rights. This interpretation is not intended to apply to the two later paragraphs in Section 12 under which we agree to pay surface owners damages for harm to crops, and buildings caused by "the erection or construction of facilities to be used in connection with mining operations."

If the above interpretations fit your understanding of the Sections involved, kindly so indicate by signing and returning one copy of this letter with a copy of the fully executed lease.

Very truly yours,

FOOD MACHINERY AND CHEMICAL CORPORATION
(Westvaco Mineral Products Division)

s/ W. N. Williams

W. N. Williams
Vice President

ACCEPTED:
Santa Fe Pacific Railroad Company

By s/ R. S. Ryding
Title Vice President

Lease No. 9442

URANIUM MINING LEASE AND AGREEMENT

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THIS INDENTURE, entered into in duplicate this sixteenth day of March, 1955, by and between SANTA FE PACIFIC RAILROAD COMPANY, a corporation created by Act of Congress approved March 3, 1897, with its principal offices in Albuquerque, New Mexico, first party, hereinafter called the "Lessor," and FOOD MACHINERY AND CHEMICAL CORPORATION (WESTVACO MINERAL PRODUCTS DIVISION), a Delaware corporation, second party, hereinafter called the "Lessee."

WITNESSETH, that the parties hereto, for the considerations hereinafter expressed, covenant and agree as follows:

1. Lessor, upon the terms and conditions and subject to the reservations hereinafter set forth, hereby grants to Lessee the exclusive right and privilege for a period of twelve (12) months, beginning with the date hereof, to search and explore for uranium-bearing ore by methods used and recognized in the industry and, thereafter for a period of five (5) years, to conduct mining operations on areas where uranium ore is discovered on the following described lands situated in the Counties of McKinley, Sandoval and Valencia, State of New Mexico:

NEW MEXICO MERIDIAN, NEW MEXICO

Township twelve North, Range three West

NW¼ and SE¼ section 19 and NW¼ and SE¼ section 31.

Township twelve North, Range four West

Lots 1, 2 and NE¼ section 13 and lots 1, 2 and E½NE¼ section 25.

Township ten North, Range nine West

Section 3, all that part section 9 lying north and east of the right of way of The Atchison, Topeka and Santa Fe Railway Company, subject to easement to the State of New Mexico dated December 1, 1933, for highway right of way, and NE¼NE¼ section 15.

Township eleven North, Range nine West

Sections 17, 21, 29 and 33.

Township thirteen North, Range nine West

Sections 7, 9, 17, 21, 29 and 33.

Township thirteen North, Range ten West

Sections 1, 3, 5, 7, 9, 11, 13, 15 and 17.

Containing in the aggregate thirteen thousand, nine hundred seventy-one and three hundredths (13,971.03) acres,

including the right to construct and maintain thereon at the sole cost and expense of Lessee all works, buildings, plants, waterways, roads, telegraph or telephone lines or other structures necessary and desirable in the exploration, development or conduct of mining operations upon said lands.

SUBJECT to the rights of grantees, vendees and licensees of the surface of said lands under deeds, contracts of purchase or other agreements heretofore made by Lessor and to the obligations of Lessor under the provisions thereof.

SUBJECT ALSO to all leases or agreements now outstanding for use of said lands, or any portion thereof, for agricultural, horticultural, grazing, mining or other purposes, but Lessor represents that there are no such leases or agreements valid and outstanding made by Lessor for the development and production of uranium-bearing ore and associated minerals, as hereinafter defined.

SUBJECT ALSO to the right of Lessor (which right is hereby expressly reserved) to enter into leases, permits, or other agreements with others covering said lands or any portion thereof for any purpose whatsoever not inconsistent with the rights of Lessee hereunder.

SUBJECT ALSO to all existing easements, servitudes and rights of way for canals, ditches, levees, roads, highways, telegraph, telephone and electric power lines, railroads, pipe lines and any other purposes, to any public roads heretofore laid out or established, and to rights of way for ditches and canals which may be constructed under authority of the United States.

Lessee accepts this lease subject to and agrees to comply with the provisions of that certain Purchase Agreement between Anaconda Copper Mining Company and Santa Fe Pacific Railroad Company, dated July 14, 1952, which gives Anaconda the first right to purchase any limestone gangue, low-vanadium ores produced by Santa Fe.

It is understood that the Lessee is hereby granted the right to mine only within the exterior boundaries, extended vertically downward, of the land hereby leased.

2. Lessee agrees on or before the expiration of the first twelve (12) months period above mentioned to surrender to Lessor by an appropriate instrument, in writing, all of the land described above on which uranium ore has not been discovered, retaining only such lands as appear to contain uranium-bearing ore in commercial quantities. Lessee further agrees the retained lands shall be divided into units, to be designated by Lessee, of not to exceed six hundred and forty (640) acres each, conforming as nearly as possible to legal subdivisions, and that all of the terms and covenants of this lease shall separately apply to each such unit as fully as if covered by a separate lease.

3. Lessee agrees to enter into and upon the said premises within sixty (60) days from the date hereof and to work and operate on the leased premises steadily and continuously during the period

of this lease in accordance with approved methods so as to discover, mine and remove the greatest amount of uranium-bearing ore possible in a manner proper and necessary to good and economical mining with due regard to the development and preservation of the said premises as mining ground. Lessee further agrees that all work done in and upon said premises and property shall be done in full compliance with the mining laws and regulations of the State, the United States and any other competent public authority.

4. Lessor reserves the right through its agents or representatives to enter from time to time into and upon all parts of said premises and workings thereon for the purpose of inspection, surveys, or taking samples therefrom, and Lessee agrees to render said agents or representatives proper assistance in making said inspection, surveys or examinations. Lessee shall furnish quarterly reports to the Lessor, including maps, showing all exploration data and all of the mining and exploration work done, or in progress, upon the property, together with assays of the ore encountered, during the preceding quarter.

5. On all ores mined or removed from demised premises for the purpose of milling, treatment, stockpiling, sale, or other disposition, Lessee shall pay to the Lessor a percentage royalty of the mined value per dry ton as set forth in the following schedules:

(a) Lessee shall pay Lessor on all underground ore mined from the demised premises through shaft or tunnel on the following royalty schedule:

Percentage Royalty Schedule

Mine Value Per Dry Ton	Royalty Percentage of Mine Value Per Dry Ton
$ 0.01 to $10.01	10%
$10.01 to $20.01	11%
$20.01 to $30.01	12%
$30.01 to $40.01	13%
$40.01 to $50.01	14%
$50.01 or more	15%

(b) Lessee shall pay Lessor on all open pit ore mined by surface mining methods on the following royalty schedule:

Percentage Royalty Schedule

Mine Value Per Dry Ton	Royalty Percentage of Mine Value Per Dry Ton
$ 0.01 to $10.01	10%
$10.01 to $20.01	14%
$20.01 to $30.01	18%
$30.01 to $40.01	22%
$40.01 to $50.01	26%
$50.01 or more	30%

"MINE VALUE PER DRY TON," wherever used herein, is hereby defined as the dollar value per dry ton of crude ores at the mine as determined by the application to the valuable metal content of such ore of the price schedules for such ores established and currently in effect by the Atomic Energy Commission or other government authorized agencies, but excluding any allowance for transportation or development, and all mine production bonuses. However, if the Government at any time hereafter does not establish or have in effect a price schedule for the purchase of such ores on a fixed or scheduled dollar value per dry ton of crude ores at the mine, or said ores contain salable minerals, some, or all, of which are disposed of to a custom treatment plant or smelter for treatment and sale, then mine value per dry ton shall be the gross value per dry ton of said crude ores paid therefor by the Atomic Energy Commission, or other Government authorized agency, or by a mill or other buyer, less any allowances or reimbursements for the following specific items:

(1) Transportation of ores.

(2) Allowances paid to Lessee by the Atomic Energy Commission or other Government authorized agency for exploration for or development of ores.

Wherever minerals or other products associated with uranium-bearing ore are recovered from the ores which are not included in determining "mine value per dry ton" as heretofore defined, there shall be paid by Lessee to the Lessor for such minerals or other products, a royalty of ten per cent (10%) of the gross value of such products, less milling cost charged to Lessee thereon.

All royalty payments to be made by Lessee to Lessor shall be made on or before the twentieth day of the month next following receipt by Lessee of payments for the products sold or disposed of.

Lessee shall keep accurate account of all mining operations, showing the sales, prices, dates, purchasers, and the whole amount of minerals mined, the amount removed and the gross receipts derived therefrom, together with any bonus or other payments, and furnish to Lessor sworn monthly reports thereon not later than the twentieth day of the succeeding month.

6. In addition to the payments hereinabove mentioned, Lessee shall pay Lessor as rental for the leased premises upon the execution of this lease the sum of One Dollar ($1.00) per acre and thereafter One Dollar ($1.00) per acre a year for each year this lease may be in effect, to be paid annually in advance; provided, however, that beginning with the second year and each year thereafter the rental so paid for any one year shall be credited on the royalty due to Lessor for that year.

7. Lessee shall not subject Lessor or the leased premises to any liability or lien for or on account of any work done or improvements made or materials placed on or used upon said premises, and if by reason of the failure of Lessee to pay bills or expenses incurred by Lessee any lien or liens shall be filed against the leased premises, Lessor may forthwith pay and discharge the same and hold Lessee bound to repay to Lessor all sums so advanced or paid to clear said premises from liens which may be filed as foresaid,

and forever may also at its election declare a forfeiture of this lease. Lessee agrees to post forthwith and keep posted on said property in all places required by law, a notice of nonliability of the Lessor for labor or materials furnished the Lessee, and the Lessor agrees to furnish such notices.

8. Lessee shall file returns with the proper taxing authorities covering the mineral estate hereby leased, the uranium-bearing ore or other minerals produced from the leased premises, and all personal property which may be placed upon said premises by Lessee; and shall pay, before the same shall become delinquent, all taxes, charges, rates and assessments which may, during the term of this lease, be levied upon or assessed in any respect upon or against said mineral estate, ore, mineral products or personal property, together with all increases in such charges, rates or assessments upon the land, by reason of the discovery or production of such minerals or on account of improvements erected upon said land, including buildings, machinery and other fixtures placed thereon by Lessee. Where any such taxes, charges, rates or assessments may be embraced in the general amount of taxes charged upon the leased premises, separately or in conjunction with other property of the Lessor or of the surface owner, and the Lessor shall pay such taxes or refund the same to the surface owner, then Lessee shall promptly repay or refund to Lessor the amount or part of the tax, charge, rate or assessment attributable under this lease to Lessee. All such payments by Lessor on account of Lessee shall bearinterest at the rate of eight per cent (8%) per annum until paid.

9. Lessee shall save harmless and indemnify Lessor against all claims, demands, suits, judgments, expenses and costs of any and every kind on account of the injury to or death of persons or loss of or damage to property arising in any manner out of or in connection with the operations of Lessee hereunder and Lessee shall at Lessee's sole cost and expense defend all such claims, demands or suits; and if at any time Lessee employs any person or persons to work upon the leased premises, Lessee shall comply with the provisions of the Workmen's Compensation Act of New Mexico and all regulations and requirements of competent public authority.

10. At the expiration of this lease, or upon its earlier termination as herein provided, Lessee shall surrender the leased premises in good order and condition and remove therefrom all machinery, tools, and improvements, except such as may become the property of the Lessor under this lease by purchase or otherwise; provided, however, that no such tools, machinery, or improvements shall be removed while Lessee may be in any manner indebted to Lessor under any obligation incurred under this lease. Lessee shall not, however, remove any timbers or improvements which may be necessary or desirable to leave in the workings to protect same from subsidence or as a mining property unless requested by Lessor to do so.

11. Any notice to be given by Lessor to Lessee hereunder shall be deemed to be properly served if the same be deposited in a United States post office, registered mail postpaid, return receipt requested, addressed to Westvaco Mineral Products Division,

Food Machinery and Chemical Corporation, 161 East 42nd Street, New York 17, New York, and any notice to be given by Lessee to Lessor hereunder shall be deemed to be properly served if the same be deposited in a United States post office, registered mail postpaid, return receipt requested, addressed to Lessor at 3[illegible] First Street SW, Albuquerque, New Mexico, or at such other address as Lessor may request.

12. Lessor does not warrant the quiet possession of said lands by the Lessee and Lessor shall in no event become liable for damage arising from any lack or failure of title in the Lessor to said lands or eviction of the Lessee therefrom by title paramount to the title of the Lessor. The Lessor covenants, however, and warrants that it has made no agreement on its part in reference to said lands, or any conveyance thereof which will give to third parties right to interfere in any way with the operations of the Lessee under this lease.

Lessor has, however, sold and conveyed all of said lands by deed, in which it has expressly reserved and excepted all oil, gas, coal and minerals whatsoever, already found or which may be found upon or under said lands, with the right to prospect for, mine and remove the same, and to use so much of the surface of said lands as shall be necessary and convenient for shafts, wells, tanks, pipe lines, rights of way, railroad tracks, storage purposes and other and different structures and purposes necessary and convenient for the digging, drilling, and working of any mines or wells which may be operated on said lands. Lessee accepts this lease and agreement subject to the terms and provisions of said deed reservation.

Lessee agrees (a) to pay all damages to the surface owner's buildings and growing crops caused by the erection or construction of facilities to be used in connection with mining operations; (b) that all pipe lines shall be buried below plow depth where such lines cross cultivated lands; and (c) that where there are fences, to construct gates or cattle guards therein where necessary for Lessee to cross the same, and to keep such gates and cattle guards in repair and the gates closed.

Lessee will also indemnify and save Lessor harmless from any and all claims of or liability to the owner or owners of the surface of the land leased by reason of the failure of Lessee to perform the requirements mentioned in clauses (a), (b) and (c) hereof.

Any amounts which Lessor shall be required to pay to any such surface owner or owners by reason of the failure of the Lessee to perform such obligations shall be refunded by Lessee to Lessor within thirty (30) days after demand therefor, and upon failure to make such payment within said time, all amounts so due shall become a lien upon all property of the Lessee upon said premises and all of the Lessee's interest in any uranium ore produced therefrom and the proceeds thereof.

13. No termination of this lease, whether by lapse of time or otherwise, shall release Lessee from any liability or obligation hereunder, whether of indemnity or otherwise, resulting from any acts, omissions, or events happening prior to the date of such termination.

14. Lessee shall not assign this lease or any interest therein nor sublet any portion of the leased premises except with the written consent of Lessor first had and obtained in each instance.

15. Lessor agrees that if during the term of this lease Lessee has found and is, at the expiration hereof, producing uranium-bearing ore in commercial quantities from the demised premises, Lessor will, upon written request from Lessee, made prior to the expiration date hereof, renew this lease for an additional three-year period, upon the same terms and conditions, including the right to like and successive renewals thereafter, upon the same conditions, subject always during any such extended period to termination whenever uranium-bearing ore in commercial quantities shall cease to be produced for sixty (60) consecutive days; provided, however, that in all instances in which Lessee is required to perform any particular act or to begin or to carry on any operation, except payment of rentals or other money due Lessor, any delay on account of floods, washouts, strikes, lock-outs, the elements, acts of God or the public enemy, or other causes beyond Lessee's control, shall not be computed as any part of the time within which any such act shall be begun or performed. Lessor shall be under no obligation to renew this lease at any time or times if Lessee shall then be in default hereunder, or if this lease has been previously terminated by reason of any such default.

16. Lessee may, at any time, surrender any unit of the leased premises to the Lessor by an appropriate instrument, in writing, duly executed and acknowledged so as to entitle the same to be recorded, and thereupon all rights and obligations of the parties hereto, one to the other, shall cease and determine as to the premises thereby surrendered, provided, however, the Lessee shall have first paid all rentals, taxes or royalties due and shall have performed all obligations of the Lessee hereunder.

17. If Lessor at any time believes that Lessee is in default under the terms and provisions of this lease, it shall notify Lessee in writing of the particular default claimed, and if such default shall not be cured within thirty (30) days after the giving of such notice, Lessor may terminate this lease by written notice to Lessee. In the event Lessee shall fail to make any payment of rentals or royalties or other fixed amounts when due, Lessor may terminate this lease upon ten (10) days' written notice to Lessee and Lessee's failure to pay the full amount due within that time.

18. All of the covenants and agreements of this lease shall extend to and be binding upon and every benefit hereof shall inure to the heirs, executors, administrators, successors or assigns of the parties hereto, as the case may be.

IN WITNESS WHEREOF, this lease and agreement has been executed by the parties thereunto duly authorized the day and year first above written.

SANTA FE PACIFIC RAILROAD COMPANY,

by S/ R. S. Ryding
Vice President

(SEAL)

ATTEST:

LESSOR

S/ R. D. Brown
Assistant Secretary

FOOD MACHINERY AND CHEMICAL CORPORATION
(WESTVACO MINERAL PRODUCTS DIVISION)

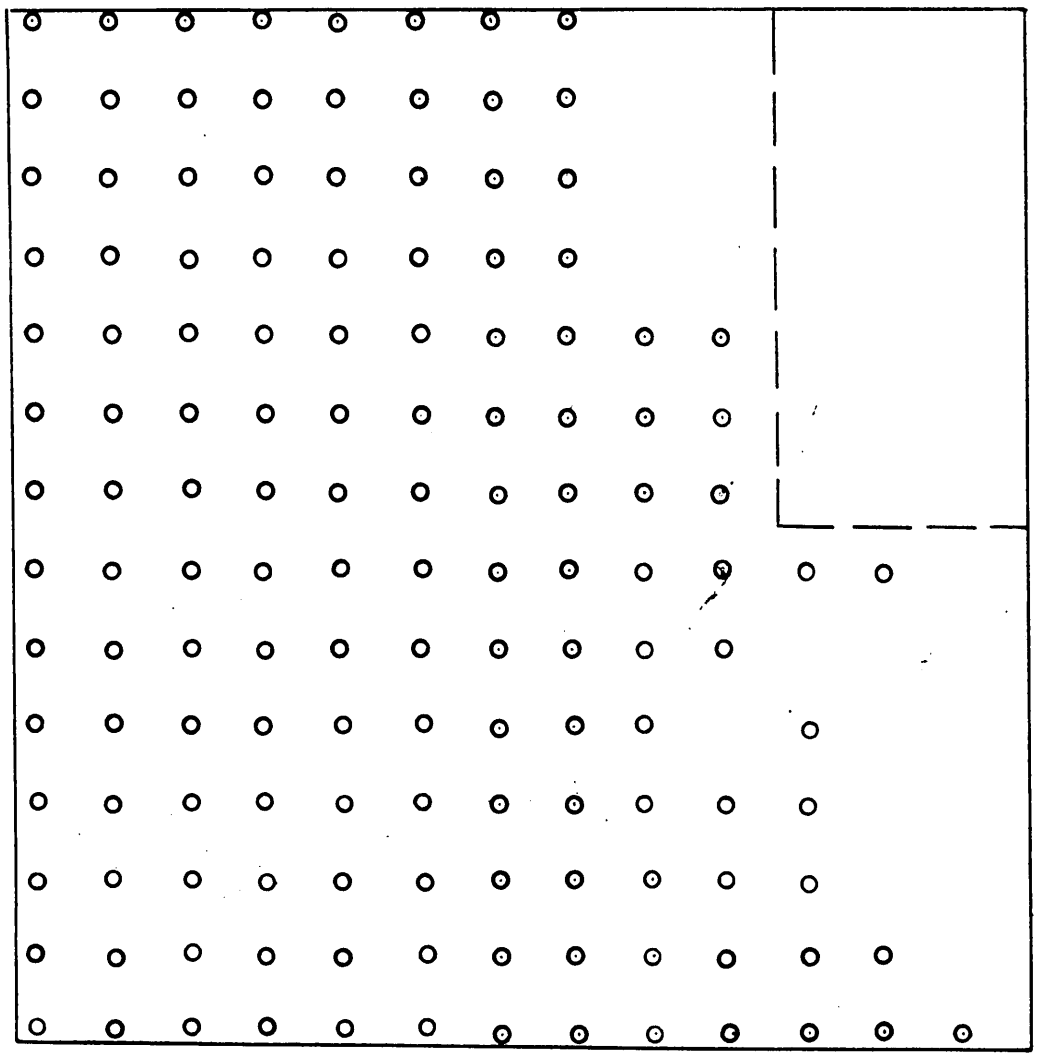
By S/ W. N. Williams
President

(SEAL)

ATTEST:

LESSEE

S/ Lloyd C. Hartman
Assistant Secretary



Section 9 T. 13 N. R. 9 W.

Note – Proposed grid pattern is based upon surface geologic evidence. Sub-surface geology, established by drilling, will control actual grid pattern.

WESTVACO MINERAL PRODUCTS DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
MINERAL DEVELOPMENT DEPARTMENT POCATELLO, IDAHO

PROPOSED GRID PATTERN

MARK	REVISION	DATE	BY	CHECK

THIS PRINT AND ALL INFORMATION THEREON IS OUR PROPERTY, IS CONFIDENTIAL AND MUST NOT BE MADE PUBLIC OR COPIED UNLESS AUTHORIZED BY US. IT IS SUBJECT TO RETURN ON DEMAND.

WESTVACO MINERAL PRODUCTS DIVISION

DRAWN-
DATE-
CHECKED-
APPROVED-

CHARGE-
SCALE-
PRINT DATE

DRAWING NO. 757

"ALBANENE" NO. 195L

WORK ANALYSIS SHEET - DMEA PROJECT

[X] Actual Cost

[ ] Agreed Unit Costs

...ried

Analysis as of Sept. 3 1957

Incl. Voucher ~~for~~ of May 22, 1957

...ood Mahhinery & Chemical Corporation

Docket No. 3943

State McKinley County, New Mex Commodity Uranium

Idm-E No. 932

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting					
Raising					
Shafts					
Winzes					
Drilling (Specify) Core	2,600	$10,114.00	1,519	5,860.31	5,860.31
Non-Core	30,700	46,244.00	13,383	20,513.74	20,513.74
Surface Excavation					
Underground Excavation					
Roads and Trails					
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify) Chem. Analyses		665.00			
Totals		$57,023.00 *		$26,374.05	$26,374.05

Prepared by Michael Ching

* As amended by Amendment No. 2.

71626

Docket

Project Summary Report

By: Michael Ching

Date: September 6, 1957

1. Docket No. DMEA-3943 (Uranium)
   Contract No. Idm-E932

   Operator - Food Machinery & Chemical Corporation, a Delaware corp.
   (Westvaco Mineral Products Division)
   161 East 42nd Street
   New York 17, New York

   Property - Sec. 9, T. 13 N., R. 9 W., McKinley County, New Mexico.
   Performance Bond, dated April 18, 1956, furnished in lieu of Consent to Lien of Santa Fe Pacific Railroad Company and Subordination Agreement of Nabor and Isabel O. Marquez.

2. Contract (Long Form) - dated March 21, 1956
   Final starting date - August 1, 1956
   Actual starting date - July 26, 1956
   Contract completion date - May 15, 1957
   Termination Agreement - dated July 26, 1957, Effective May 1, 1957

   Work Authorized (As amended): Test the Poison Canyon sandstone of the Brushy Basin member of the Morrison formation by core and non-core drilling in 3 stages as follows:

   Stage I - 18 holes aggregating an estimated 8,100 feet, spaced 400 feet apart in 2 discontinuous north-south fences. Drill non-core to top of Poison Canyon and core thereafter.

   Stage II - 28 holes aggregating an estimated 12,600 feet, spaced at least 400 feet from any previously drilled hole. First 9 holes to be cored through the Poison Canyon as in Stage I. Remaining holes to be non-core throughout.

   Stage III - Not more than 28 non-core holes aggregating not more than 12,600 feet, offsetting mineralized holes previously drilled at least 100 feet.

   Estimated Costs:

2,600 ft. core drilling @ $3.50/ft.	$9,100.00
30,700 ft. non-core drilling @ $1.25/ft.	38,375.00
11,700 ft. @ $0.39/ft. incidental allowance	4,563.00
21,600 ft. @ $0.20/ft. incidental allowance	4,320.00
190 chemical analyses @ $3.50/each	665.00

Estimated Total Cost of Project after Amdt. #2.....$57,023.00
Estimated Total Cost of Project prior to Amdt. #2.....$71,928.00
Gov't. Participation @ 75% after Amdt. #2.....$42,767.25
Gov't. Participation @ 75% before Amdt. #2.....$53,946.00

Amendments:

No. 1 - dated May 16, 1956. Extends final starting date from April 15 to August 1, 1956.

No. 2 - dated May 29, 1957. Beginning with 9th hole in Stage II substitutes non-core for core drilling wherever provided for and reduces the allowable cost from $3.50 to $1.25 per foot for the substituted footage. Also reduces the incidental allowance from $0.39 to $0.20 per foot for such footage.

Work Completed

Stage I (18 holes)		
1,113 ft. core drilling @ $3.468/ft.	$3,859.89	
5,375 ft. non-core drilling @ $1.224/ft.	6,579.00	
6,488 ft. @ $0.39/ft. incidental allowance	2,530.32	$12,969.21
Stage II (25 holes)		
406 ft. core drilling @ $3.468/ft.	$1,408.01	
8,008 ft. non-core drilling @ $1.224/ft.	9,801.79	
2,696 ft. @ $0.39/ft. incidental allowance	1,051.44	
5,718 ft. @ $0.20/ft.	1,143.60	$13,404.84

Total Cost of the Project $26,374.05
Government Participation @ 75% $19,780.55

Final Reports Received:

Operator - dated May 27, 1957 - received June 21, 1957
Field Team - dated July, 1957 - received August 5, 1957

3. Auditor's Report of Review - dated August 21, 1957

Total Cost as billed by Operator	$29,021.14
Exceptions	2,647.09
Total Accepted Cost	$26,374.05
Government Participation @ 75%	$19,780.55

4. Certification of Discovery - None

5. Results and Comments:

The ore-bearing rock in the vicinity of the subject property is the Poison Canyon sandstone unit of the Brushy Basin member of the Morrison formation. The Westwater Canyon member underlies the Brushy Basin but has not proven to be a good hostrock for uranium in this immediate area. The Poison Canyon sandstone pinches out completely or interfingers with the Westwater Canyon in the northwestern part of sec. 9, but attains a thickness of 85 feet in the southwestern part of the section. Where known deposits occur this sandstone ranges from 50 to 90 feet thick. In the adjoining sec. 8 an ore deposit of about 80,000 tons

containing 0.22% U_3O_8 was found in the Poison Canyon under Docket 3632.

The drilling under Stages I and II encountered weak mineralization in five holes and failed to penetrate any ore, consequently Stage III work was not approved and the contract was terminated by mutual consent.

Drilling was done with two Failing drills. Because of the soft unconsolidated nature of the Poison Canyon sandstone in this area core drilling results were unsatisfactory, with recovery ranging from 30 to 50%. Consequently, after 8 holes had been drilled in Stage II, all subsequent holes were drilled non-core throughout.

The work was done efficiently by the Operator.

Michael Ching

Michael Ching

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9-6	Ching	700
9-6	Ellis	700
9-6	Talbert	800
12/23	Selfridge	120
		~~110~~
"	Mittendorf	100
		220
		700

DEC 23 1957

Mr. W. N. Williams, Vice President
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
161 East 42nd Street
New York 17, New York

Re: Docket No. DMEA-3943 (Uranium)
Contract No. Idm-E932
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Mr. Williams:

Reference is made to your terminated exploration contract with the Government.

We sincerely regret that the work performed did not result in a certification of discovery or development under the provisions of the contract. In the absence of such certification, the Government retains no claim or lien against the property subject to the contract or any future production therefrom. We, therefore, are closing our books and records on this project. Your attention, however, is called to the provisions of the contract which require the operator to keep and preserve certain records for the period indicated.

Your interest in the DMEA exploration program and participation therein are fully appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

Copy to: Federal Insurance Company

MChing/ism 12-23-57 (9-6-57)
cc: Mr. Ching
Admr.'s Reading File
Contract Adm. & Audit Div.
DMEA PT Reg. 3 (2)

8623

DMEA [redacted]
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9/6	Ching	700
9/6	Ellis	700
9/6	Talbert	800
		120
		~~[illegible]~~
		220
		700

Mr. W. N. Williams, Vice President
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
161 East 42nd Street
New York 17, New York

Re: Docket No. DMEA-3943 (Uranium)
Contract No. Idm-E932
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Mr. Williams:

Reference is made to your terminated exploration contract with the Government.

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Your interest in the DMEA exploration program and participation therein are fully appreciated.

Sincerely yours,

Acting Administrator

Copy to: Federal Insurance Company
MChing/izm 9-6-57
cc: Mr. Ching
Admr.'s Reading File
Contract Adm. & Audit Division
DMEA FT Reg. 3 (2)

8623

DMEA FO
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9-6	Ching	700
9-6	Ellis	700
9-6	Talbert	800
12/23	Selfridge	120
		110
"	Mittendorf	100
		220
12/24	C	700

DEC 23 1957

Mr. Stephen Plum, Assistant Secretary
Federal Insurance Company
90 John Street
New York 38, New York

Re: Docket No. DMEA-3943 (Uranium)
Contract No. Idm-E932
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Mr. Plum:

Enclosed is a copy of a self-explanatory letter of today to the Operator under the above-cited contract.

The property as set forth in the contract is covered by your Performance Bond, dated April 18, 1956, under the captioned name and contract number.

In the absence of certification, the Government retains no claim against the bonding company that assumed the responsibility for performance under the contract.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

Enclosure

MChing/izm 12-23-57 (9-6-57)
cc: Mr. Ching
Admr.'s Reading File
Contract Adm. & Audit Div.
DMEA FT Reg. 3 (2)

8623

DMEA
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9/6	Ching	700
9/6	Ellis	700
9/6	Talbert	800
		120
		110
		220
		700

Mr. Stephen Plum, Assistant Secretary
Federal Insurance Company
90 John Street
New York 38, New York

Re: Docket No. DMEA-3943 (Uranium)
Contract No. Idm-E932
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Mr. Plum:

Enclosed is a copy of a self-explanatory letter of today to the Operator under the above-cited contract.

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In the absence of certification, the Government retains no claim against the bonding company that assumed the responsibility for performance under the contract.

Sincerely yours,

Acting Administrator

Enclosure

MChing/izm 9-6-57
cc: Mr. Ching
Admr.'s Reading File
Contract Adm. & Audit Division
DMEA FT Reg. 3 (2)

8623

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

September 5, 1957
Re: DMEA 3943, Idm-E932
Food Machinery and Chemical Corp.
Westvaco Mineral Products Division
McKinley County, New Mexico
Uranium

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team Final Report.

The contract, granted March 21, 1956, authorized the expenditure of $71,928.00 for the reconnaissance, widely spaced drilling of section 9, an area then believed to be underlain by rocks of the Poison Canyon sandstone unit of the Morrison formation.

Section 9, T. 13 N., R. 9 W., NMPM, is one of 4 sections in a tier explored in 1955 and 1956 under DMEA contracts, as:-

No. Section	Operator	Results
7	Food Mach. & Chem.	No discovery
8	Colamer Corp.	139,982 tons of 0.18% discovered
9	Food Mach. & Chem.	No discovery
10	Colamer Corp.	No discovery

The contract, which approved the drilling of 74 holes totalling 33,300 feet in 3 stages, was justified by the favorably regarded results obtained by the applicant in 7 holes.

Other drilling has shown several large orebodies in the Poison Canyon sandstone in the general area, but unfavorable results have attended much drilling.

Stages I and II were completed, 43 holes totalling 13,383 feet of non-core and 1,519 of core drilling having been drilled at a cost of $26,374.05, of which the Government share is $19,780.54.

Of the 43 holes drilled, 6 are reported to have been mineralized, but the degree of mineralization is not stated. Some holes failed to find the Poison Canyon sandstone and pinchouts are inferred.

Certification is not recommended.

N. E. Nelson

N. E. Nelson

extra

224 New Customhouse
Denver 2, Colorado

August 28, 1957

9/3 Chang 110 700

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket DMEA-3943 (Uranium) Contract Idm-E932
Food Machinery and Chemical Corporation (Sec. 9, T 13 N, R 9 W) McKinley County, New Mexico - FINAL PAYMENT

Enclosed are two copies of a memorandum to T. A. Christensen, dated August 26, 1957, relative to final payment under the terms of the subject contract.

Original signed by
E. N. HARSHMAN

E. N. Harshman

Enclosures

JDC:hmh

cc: Chmn. Op. Comm. (2)
DMEA/DFC
MF-104 file, Reg. III
Corres.file, Reg. III
Chron.

224 New Customhouse
Denver 2, Colorado

August 26, 1957

Memorandum

To: T. A. Christensen

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

Subject: Docket DMEA-3943 (Uranium) Contract Idm-E932
Food Machinery and Chemical Corporation
(Sec. 9, T 13 N, R 9 W) McKinley County, New Mexico,
FINAL PAYMENT

Reference is made to our memorandum of June 26, 1957, whereby we transmitted the final Form MF-104, Operator's Monthly Report and Voucher, for the month of April, 1957, and requested that you withhold the amount of $500.00, from reimbursement to the Operator, pending resolution of matters prerequisite to closing the account.

The Operator's final report has been received, therefore we recommend that final payment to the Operator be made on the following basis, which is in conformance with the Report of Review of reported project expenditures by the Contract Administration and Audit Division, dated August 21, 1957.

Basis for Final Payment

Total accepted cost----------	$26,374.05
Government participation at 75%--------	19,780.55
Total prior payments----------	19,280.55
Balance due the Operator----------	$ 500.00

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

JDC:hmh
cc: Chmn. Op. Comm. (2)
Harshman
Hasler
DMEA/DFC
DMEA/G.Jet.
Townsend
MF-104 file, Reg.III
Corres.file, Reg.III
Chron

$500.00

8/27/57 Donna 58-23

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

August 27, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket No. DMEA-3943 (Uranium), Contract No. Idm-E932
Food Machinery and Chemical Corporation, Westvaco Mineral Products Division (Sec. 9, T 13 N, R 9 W, N.M. P.M.)
McKinley County, New Mexico

The following information supplements the Final Report by DMEA Field Team, Region III, dated August 1, 1957: -

Final payment to the Operator was processed by this office August 26, 1957, in conformance with the Report of Review of reported project expenditures by the Contract Administration and Audit Division, DMEA, dated August 21, 1957.

Accepted units of work completed under the contract consist of the drilling of 43 holes, aggregating 1,519 feet of core drilling and 13,383 feet of non-core drilling at a total accepted cost of $26,374.05, toward which the Government contributed 75%, or an amount of $19,780.55.

E. N. Harshman

By E. N. Harshman
Acting Executive Officer

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 29 1957

DATE	INITIALS	CODE
8/29	C	220
"		700

OFFICIAL FILE COPY

Date	Surname	Code
8/23	Talbert	800
8/23	C	220
	[illegible]	700

AUG 23 1957

Mr. Thomas H. Brading
DMEA Auditor
224 New Customhouse Building
Denver 2, Colorado

Re: Report of Review
Idm-E932, DMEA-3943
Food Machinery and Chemical
Corporation

Dear Mr. Brading:

The recently submitted copies of the Report of Review covering the above-cited project are accepted and normal distribution is authorized.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Director
Contract Administration
and Audit Division

EDTalbert/wb
August 23, 1957

Copy to: Docket
Admr. Reading File
Mr. Chambers

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

August 20, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 3943 (Uranium), Contract No. Idm-E932, Food Machinery and Chemical Corporation (Westvaco Mineral Products Division)(Sec. 9, T 13 N, R 9 W), McKinley County, New Mexico

Enclosed are the Government's and Audit copies of the TERMINATION AGREEMENT which was forwarded by your letter of July 29, 1957 for signature by the Operator.

Copies of the Termination Agreement have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

J. W. Townsend

J. W. Townsend

Enclosures

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 23 1957

DATE	INITIALS	CODE
8/23	Q	220
8/23	Cheng	700

224 New Customhouse
Denver 2, Colorado

August 20, 1957

Memorandum

To: T. H. Brading, DMEA Auditor

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

Subject: Docket No. DMEA 3943 (Uranium), Contract No. 14m-E932, Food Machinery and Chemical Corporation (Westvaco Mineral Products Division) (Sec. 9, T 15 N, R 9 W), McKinley County, New Mexico

The subject Contract was terminated by mutual agreement before completion of all of the work originally provided for in the Contract, by a TERMINATION AGREEMENT, dated July 26, 1957, which was made effective May 1, 1957. A copy of the Termination Agreement is enclosed for your records.

The Operator has rendered a final engineering and geologic report and a final accounting, as required by the Contract. Therefore, final payment of the Operator's account is in order, contingent on release to this office of a Certificate and Report of Audit, or Report of Review of reported project costs, whichever the case indicates.

Acceptable units of work or service completed on a Fixed Unit Cost basis consisted of incidental allowance on 14,902 feet of drilling.

The sum of $500.00 was withheld from reimbursement to the Operator in processing the final accounting report, which was for the month of April, 1957.

Original signed by
J. W. TOWNSEND

J. W. Townsend

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 23 1957

DATE		CODE

Enclosure

JWT:prl

cc: Chmn. Op. Comm. - 2
Barshman
Townsend
Corres. file
Chron.

OFFICIAL FILE COPY DMEA RECEIVED AUG 12 1957		
DATE	INITIALS	CODE
8/12	B.F.	220
"	~~Ching~~	700

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Washington 25, D. C.

Date August 9, 1957

Mine report no. 3943
DMEA Contract No. Idm-E932
Commodity Uranium
Name of applicant Food Machinery & Chemical Corp.
Name of property Westvaco Mineral Products Division
Location of property McKinley County, N. Mex.
Estimated cost of project $94,870.00

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: James Paone, Bureau of Mines Member
Uranium Commodity Committee

Subject: Review of Field Team Report - Final report
(Application, Field Team Report, etc.)

1. Date of subject document: 8/1/57. 2. Date received by reviewer: 8/8/57

3. Prior reports on this property known to reviewer: Yes [ ] No [ ]

4. Prior reports on nearby properties known to reviewer: Yes [ ] No [ ]

5. Information available on past production: Yes [ ] No [ ]

6. Other pertinent factors known to reviewer: Yes [ ] No [ ]

7. Explain items marked yes above:

8. Factors needing special consideration:
   a. Location [ ]
   b. Ownership [ ]
   c. Evidence of mineralization [ ]
   d. Geology [ ]
   e. Proposed exploration method [ ]
   f. Alternate exploration method [ ]
   g. Costs [ ]
   h. _____ [ ]

9. Action advised:
   a. Obtain information from applicant [ ]
   b. Refer to Field Team [ ]
   c. Denial [ ]
   d. Agree with Field Team [x]
   e. Disagree with Field Team [ ]
   f. Suggest alternate plan [ ]
   g. Request another examination [ ]
   h. Approval [ ]
   i. Consult with Mr. _____ at _____ AEC office.

10. Remarks: (Use back of page if necessary) Certification not recommended.

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 6 1957

DATE	INITIALS	CODE
8/8	O.K.	220
8/9	[illegible]	800
8/11	[illegible]	700

284 New Customhouse
Denver 2, Colorado

CERTIFIED MAIL

Mr. Wayne S. Cavender, Mgr. of Exploration
Food Machinery and Chemical Corporation
Westvaco Mineral Products Division
Box 24, Star Route
Grants, New Mexico

Re: Docket No. DMEA-3943 (Uranium)
Contract No. Idm-1932
Food Machinery and Chemical Corporation
Westvaco Mineral Products Division
(Sec. 9, T. 13 N., R. 9 W.)
McKinley County, New Mexico

Dear Mr. Cavender:

Since it is not desirable that all work provided for under the contract be completed, it is considered necessary that the contract be terminated by mutual agreement between the parties concerned.

For that reason, enclosed are the Government's, Audit, Finance Office, and Field Team copies of a proposed Termination Agreement dated July 26, 1957, which, when executed, will terminate the contract May 1, 1957.

If the proposed Termination Agreement is satisfactory, the original and all copies are to be signed by an official of Food Machinery and Chemical Corporation, authorized to sign such an instrument, the signer's title inserted, the corporate seal affixed, and all copies promptly returned to this office.

Upon receipt of the properly executed copies of the Termination Agreement, the Operator's copy will be forwarded to you.

Very truly yours,

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer,
DMEA Field Team, Region III

JWF:bh
Encls.
cc-Chairman, Op. Comm.(2)
Harshman
Hasler
DMEA/DFC
DMEA/Gr.Jct.
Townsend
Corres. File
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado
August 1, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 5 1957

DATE	INITIALS	CODE
8/5	P.K.	220
"	[illegible]	130
		~~170~~
		130
8/9	G.K.	220
"	Chrono	

Memorandum

To: Chairman, Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket No. DMEA-3943 (Uranium) Contract Tdm-E932, Food Machinery and Chemical Corporation (Westvaco Mineral Products Division) (Sec. 9, T.13 N., R.9 W.,N.M.P.M.) McKinley County, New Mexico - FINAL REPORT

Enclosed are the original and two copies of a Joint Final Engineering and Geologic Report, dated July 1957, by H. F. Albee, Geologist, Geological Survey, and W. D. McMillan, Mining Engineer, Bureau of Mines; and transmittal thereof, dated July 30, 1957, from J. William Hasler, pertaining to work completed under the subject contract.

F.T. Final Report

The original and one copy of the Operator's final report were forwarded by memorandum of June 17, 1957.

A Termination Agreement to terminate the contract before completion of all the work provided for is in progress in the Washington Office. Final payment to the Operator and closing of the account are deferred pending execution of the Termination Agreement and release to this office of an Audit Report or Report of Review of reported project costs by the Contract Administration and Audit Division, DMEA.

A supplement to this report will be forwarded after final payment to the Operator has been accomplished.

Tentatively accepted units of work completed under the contract, subject to final audit, consists of drilling 43 holes aggregating 1,519 feet of core drilling, 13,383 feet of non-core drilling, and incidental allowance on a total drilling of 14,902 feet.

The exploration work completed did not result in the discovery or development of a significant quantity of uranium ore, therefore Certification of the project under the provisions of the contract is not recommended.

E. N. Harshman

E. N. Harshman
Acting Executive Officer

Reviewed by
DMEA OPERATING COMMITTEE
8-9-57
(date)

IN REPLY REFER TO:

DMEA

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

JUL 31 1957
REGION III
DENVER, COLORADO

JUL 31 1957

GEOLOGICAL SURVEY
DENVER, COLORADO

July 30, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman

From: J. William Hasler

Subject: Transmittal of joint final engineering and geologic report, DMEA 3943 (Uranium), contract Idm-E 932, Food Machinery and Chemical Corporation (Westvaco Mineral Products Division) Sec. 9, T. 13 N., R. 9 W., N.M.P.M., McKinley County, New Mexico.

Transmitted herewith is a joint final report on the above-referenced contract. This report was prepared by H. F. Albee of the Geological Survey and W. D. McMillan, Bureau of Mines.

Figures 1 and 2 are attached to the report.

J. William Hasler
J. William Hasler,
Geologist

JWH/mlr

Enclosures
Report (10 copies w/ figs. 1 & 2)

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Reviewed by
DMEA OPERATING COMMITTEE
8-9-57
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FINAL REPORT BY EXAMINING TEAM
REGION III

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DMEA 3943

Contract Idm-E 932

Food Machinery and Chemical Corporation

Westvaco Mineral Products Division

Sec. 9, T. 13 N., R. 9 W., N.M.P.M.

McKinley County, New Mexico

Uranium

Joint Final Engineering and Geologic Report

by

H. F. Albee
Geological Survey

W. D. McMillan
Bureau of Mines

July 1957

Reviewed by
DMEA OPERATING COMMITTEE
8-9-57
(date)

DMEA 3943
CONTRACT Idm-E 932
FOOD MACHINERY AND CHEMICAL CORPORATION
WESTVACO MINERAL PRODUCTS DIVISION
SEC. 9, T. 13 N., R. 9 W., N.M.P.M.
McKINLEY COUNTY, NEW MEXICO

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Final Joint Engineering and Geologic Report

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DMEA 3943
CONTRACT Idm-E 932
FOOD MACHINERY AND CHEMICAL CORPORATION
WESTVACO MINERAL PRODUCTS DIVISION
SEC. 9, T. 13 N., R. 9 W., N.M.P.M.
McKINLEY COUNTY, NEW MEXICO

INTRODUCTION AND SUMMARY

Food Machinery and Chemical Corporation of New York City, Westvaco Mineral Products Division, requested DMEA assistance in the exploration of their leased uranium property in sec. 9, T. 13 N., R. 9 W., NMPM, McKinley County, New Mexico.

Their application was for 153 holes on a 400- by 400-foot grid on that part of the ground not covered by the Cretaceous Mancos formation. It was estimated that 53,000 feet would be drilled, of which 1,500 feet would be core drilled in the Poison Canyon sandstone unit of the Jurassic Morrison formation with the holes to be bottomed in the mudstone split between the Poison Canyon and the Westwater Canyon sandstones. The estimated cost of the project was $94,870.00 or $1.79 per foot.

A Region III examining team investigated the property on September 28, 1955 and suggested the applicant drill 7 widely spaced holes to determine the general features of the sub-surface formations.

After drilling these holes the applicant revised his proposal into a two-stage project. Stage I included 28 dry rotary non-core and core holes drilled on a staggered 200- by 800-foot grid, and to be bottomed in the Recapture member of the Morrison formation. Stage II remained as

originally proposed. No cost estimate was given for the revised program, but due to the deeper drilling through the Westwater sandstone member, there would probably be 63,350 feet of drilling at $1.79 per foot, or $113,396.50.

On the basis of the 7 holes drilled by the applicant, the examining team concluded that a portion of sec. 9, T. 13 N., R. 9 W., NMPM warranted further exploration and recommended a 3-stage contract of 74 holes totaling 33,300 feet at an estimated total cost of $71,928.00.

Contract Idm-E 932 was processed and signed on March 21, 1956. Stage I of the contract was started on July 26, 1956 and was completed on September 29, 1956. Stage II of the contract was started on April 8, 1957 and was completed on April 26, 1957.

The work completed in the two stages amounted to 13,383 feet of non-core drilling and 1,519 feet of core drilling. No uranium ore was discovered and stage III was not executed.

ACKNOWLEDGMENTS

Messrs. C. Johnson and W. Tipton, geologists for Westvaco Mineral Products Division, acted as guides to the property, and offered considerable pertinent information. Gene Ealy, geologist for the U.S. Atomic Energy Commission at Grants, New Mexico, was consulted during the field examination.

Russel Hayden, superintendent, and Wayne Cavender, manager of exploration, were helpful during the execution of the contract.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The subject land includes all of sec. 9, T. 13 N., R. 9 W., NMPM, McKinley County, New Mexico (fig. 1), and can be easily reached by traveling west from Grants, New Mexico, on U.S. Highway 66 for 3 miles to New Mexico State Highway 53, thence north for 12 miles to the Ambrosia Lake road which, within a mile passes diagonally across sec. 9. At Bluewater, New Mexico, about 18 miles southwest of the property, Anaconda Mining Company operates a uranium mill. Grants, New Mexico is about the same distance southeast of the property. Albuquerque, the largest city in New Mexico, is 76 miles by rail or highway east of Grants.

The surface on sec. 9 is practically flat except for the northeast portion where a small bluff of the Mancos shale formation is formed by a resistant sandstone strata. The surface is largely covered by loose sand which supports a sparse growth of native grasses, shrubs, and cacti; no timber of any size. The climate is typical of the arid southwest with large variations in temperature and precipitation. Most of the 6- to 8- inches of annual precipitation falls during violent storms in both summer and winter.

Water does not exist on the property, but for purposes of exploration adequate amounts can be obtained from livestock wells and catchment basins within 2 or 3 miles.

Common labor is plentiful in the area, but skilled miners and surface equipment operators are not readily obtained, although the Navajo Indians make competent miner and equipment operators after a short apprenticeship, as they own and operate cars and trucks.

Power for any purpose must be supplied at present by internal combustion engines.

HISTORY, PRODUCTION, AND OWNERSHIP

Prospecting for uranium began in the Ambrosia Lake uranium district of McKinley County, New Mexico after the establishment by the U.S. Atomic Energy Commission of purchase prices in 1948. This prospecting was intensified after the discovery of uranium ore in the Jurassic Todilto limestone in 1950 on Santa Fe land near Haystack Butte, north of Prewitt, New Mexico. After these early discoveries, the outcrops of a number of geologic formations were investigated, which resulted in finding uranium ores in the Cretaceous Dakota, and the Jurassic Morrison formations, including the Poison Canyon and Westwater Canyon sandstone members, which have accounted for most of the recent discoveries and production.

No ore has been produced from sec. 9, T. 13 N., R. 9 W. The nearest production is from the Mesa Top mine of Holly Uranium in sec. 20, T. 13 N., R. 9 W., NMPM, about 1-1/2 miles southwest, where mining to a considerable extent is from the Poison Canyon sandstone member of the Morrison formation.

The property was granted by the Government to the Santa Fe R.R., who leased the uranium mineral rights in March 1955, to Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, for a period of 6 years providing that during the first year exploration resulted in a discovery of uranium ore.

GEOLOGY

Regional Geology

The Grants Uranium Mining District lies on the northeast flank of the Zuni uplift, a broad, elongate, asymmetrical dome. The Zuni uplift, believed to be of early Tertiary age, is about 65 miles long and 40 miles wide, and has a northwest trend.

The productive deposits occur in Jurassic and Cretaceous sedimentary rocks that form a rather continuous outcrop east of Grants westward to Gallup. There are numerous faults and folds in the area and two dominant sets of joints. Table 1, shows a stratigraphic section for the area in the vicinity of sec. 9, T. 13 N., R. 9 W.

Table 1 -- Stratigraphic section for the area in the vicinity of sec. 9, T. 13 N., R. 9 W., McKinley County, New Mexico.

Age	Formational units	Range in thickness (ft.)
Recent	Alluvium	2 - 60
- - - - - - - - - - - - - - - -	Unconformity - - - - - - - - - - - - - - - -	
	Mancos shale and Mesa Verde, undifferentiated	60 - 100
Cretaceous		
	Dakota sandstone	50 - 140

Age	Formational units	Range in thickness (ft.)
- - - - - - - - - - - - - - -	Unconformity - - - - - - - - - - - - - - -	
	Morrison formation:	
	Brushy Basin member (contains the "Poison Canyon sandstone")	130 - 175
Jurassic	Westwater Canyon member	80 - 110
	Recapture member	100 - 110
	Bluff sandstone	240 - 250
	Summerville formation	150 - 160
	Todilto limestone	20 - 3-

Local Geology

In the vicinity of the subject property the Morrison formation is comprised of three members. In ascending order, these are the Recapture, Westwater Canyon, and Brushy Basin members. The Recapture member is mostly a fine- to medium-grained red and brown sandstone with occasional beds of red and gray shale and siltstone and is about 100 feet thick.

Overlying the Recapture is the Westwater Canyon member, which ranges in thickness from 80 to 110 feet as obtained from holes drilled on section 9. It is predominantly a fine- to medium-grained, in places arkosic, sandstone that contains occasional shale and siltstone beds up to 30 feet thick. The sandstone color may be yellowish gray, greenish gray, red, buff or brown. The shale and siltstone color may be gray, gray-green, or red. The Westwater interfingers with the underlying Recapture and the overlying Brushy Basin members.

The Westwater Canyon member is the major ore producing horizon in the Ambrosia Lake area but in the immediate vicinity of section 9 very little mineralized material has been found even though the Westwater Canyon member has been explored fairly extensively. Therefore, no holes drilled with Government assistance were to be cored below the base of the overlying Brushy Basin member.

The Brushy Basin member overlies the Westwater Canyon and is predominantly a greenish-gray shale with minor sandstone lenses and ranges in thickness from 130 to 175 feet.

The "Poison Canyon sandstone"

The known commercial deposits in the vicinity of section 9 are found in a sandstone unit of the Brushy Basin member of the Morrison formation. This unit, called the "Poison Canyon sandstone", pinches out completely or interfingers with the Westwater Canyon in the northwest part of sec. 9, but attains a thickness of about 85 feet in the southwest part of the section. The base of the "Poison Canyon sandstone" lies between 10 and 40 feet stratigraphically above the base of the Brushy Basin and it may be a tongue of the Westwater Canyon member. The thicker parts of the sandstone usually have an east-west trend.

The "Poison Canyon sandstone" is predominantly a fine- to medium-grained white, to light gray, or brown sandstone. Usually shale lenses that may attain a combined thickness of about 30 feet, but normally they are less than 10 feet thick.

Favorability criteria of the "Poison Canyon sandstone"

Usually this sandstone unit is from 35 to 45 feet thick, but where known deposits occur, the sandstone ranges from 50 to 90 feet thick.

Normally the sandstone is yellowish orange to buff or medium brown but in the areas of the known deposits the sandstone has a predominant yellowish gray or gray color. These relations suggest that the ore deposits are related to zones which have been altered. Therefore, exploration was to be confined to these altered zones.

In the altered sandstone zones, the claystone lenses, seams and pebbles are also altered from a red to a greenish gray or gray color. In the vicinity of deposits the carbonaceous material and claystone pebbles and lenses are more abundant. Also, limonite staining is very abundant in the immediate area of mineralized material. The results of the 7 holes drilled upon suggestion of the examining team showed that the "Poison Canyon sandstone" unit was favorable for ore deposition in the northern and southern part of section 9.

ORE DEPOSITS

At the present time there are no productive deposits within a mile of section 9, although an ore body has been found on adjoining section 8 (DMEA docket 3632, contract Idm-E 797).

The known deposits are tabular concentrations that generally follow the bedding. They range in thickness from a knife edge to more than 20 feet and are generally elongate masses that range from a few feet to several hundred feet in width and from a few feet to 3,000 feet or more in length. These mineralized masses locally contain material of ore grade and thickness and these large mineralized masses appear to have an easterly or southeasterly trend.

Ore bodies

The ore bodies range from a few tons to about 100,000 tons, using a grade cut-off of 0.10 percent U_3O_8 or more thick. In the Ambrosia Lake area the ore bodies may average 100,000 tons each, but in other areas they usually average about 10,000 tons each.

On section 9 it was thought that one could expect ore bodies that would contain 50,000 tons each and be from 100 to 200 feet wide and from 300 to 500 feet long.

DMEA drilling disclosed an ore body in the northwest corner of section 8 in the Poison Canyon sandstone east of the Morrison formation by the Colamer Corporation on the State group of claims in section 8, T. 13 N., R. 9 W., NMPM, DMEA docket 3632, contract Idm-E 797 (fig. 2).

The most pronounced standard feature on section 8 is a north-trending normal fault zone lying in the west half of the section. Considerable minor folding has occurred on section 8 and shows that small anticlines coincide with the axes of the thick sandstone zones thus suggesting that these small folds are a result of differential compaction

rather than of original process. The ore deposit contains an estimated reserve of about 80,000 tons of uranium ore that will average 0.22 percent U_3O_8 and 8 feet in thickness. The ore deposit appears to be about 1,000 feet long and averages about 150 feet wide with the long axis trending southeasterly. The depth to the ore body, from the surface, will be about 250 feet.

Section 10, T. 13 N., R. 9 W., NMPM was explored by DMEA under docket No. DMEA 4017, contract Idm-E 940, Colamer Corporation. Both the Poison Canyon sandstone unit and the Westwater Canyon member of the Morrison formation were tested in the Phyllis, Fannie, Jean and Deetta claim groups in the same section with essentially negative results. This contract was completed and terminated without a certification of discovery.

MINABLE ORE RESERVES

There are no known minable ore reserves on section 9, T. 13 N., R. 9 W.

WORK COMPLETED UNDER THE CONTRACT

Contract Idm-E 932 was processed and signed on March 21, 1956. Stage I of the contract was started on July 26, 1956, and was completed on September 29, 1956. Amendment No. 1, on May 16, 1956, extended the date of beginning from April 15, 1956 to August 1, 1956.

On October 18, 1956, the applicant was disallowed 685 feet for excess core and 324 feet for excess non-core footage. The examining team recommended drilling, both core and non-core, to a depth of 10 feet into the underlying Recapture shale. This was to make certain that the holes were not bottomed too shallow in the Poison Canyon unit. This recommendation was made after making a detailed examination of the drill core and cuttings. It was observed that the Poison Canyon tongue is not continuous, as it is known to be at the Poison Canyon mine. The Poison Canyon tongue converges with the underlying and interfingering Westwater member, and other sandstones come in at the same stratigraphic position, and they too converge with the Westwater. In places there is no sand in the Brushy Basin that can be stratigraphically correlated with the Poison Canyon tongue. This stratigraphic problem was not well known at the time of the field examination, and consequently was not fully covered by the contract. Where sandstone, correlative to the Poison Canyon, is absent, or where a drill hole penetrates a sandstone tongue near its pinchout, the bottom of the hole is indeterminable unless the hole is drilled into the underlying Recapture shale member.

A certain amount of drilling into the Westwater must be done before it is ascertained that no sandstone is present in the lower Brushy Basin. The only definite means of correctly interpreting some sections is to drill to the underlying Recapture shale member, inasmuch as there is little or no lithologic difference between the Brushy Basin sandstone and the Westwater sandstone of the Jurassic Morrison formation.

In holes where no Poison Canyon is present it was recommended that payment be made for footage both core and non-core, to a depth of 10 feet into the Recapture shale. In the process of drilling, the geologist may strongly suspect that no "Poison Canyon" is present because of an unusual thickness of Brushy Basin shale before penetrating any sandstone; however, the only test is to penetrate the underlying Recapture shale member.

A re-evaluation of prior drilling in light of additional data obtained between October 17, 1956 and January 3, 1956 disclosed that the Poison Canyon sandstone was stratigraphically lower in the section than was previously supposed, consequently, in a memorandum, dated January 3, 1957, the examining team through H. F. Albee, recommended that certain previously disallowed core and non-core footage should be allowed and payment be made for total depth of certain holes drilled.

On January 28, 1957, the applicant requested drilling deeper into the Westwater Canyon sandstone member in addition to the requirement that only the Poison Canyon sandstone be penetrated, because of recent significant discoveries of uranium ore bodies in the Westwater on other sections of land, the applicant thought it advisable to penetrate and test the Westwater sandstone member for possible discovery of ore deposits.

A memorandum to the Executive Officer, dated February 20, 1957 by H. F. Albee, U.S. Geological Survey, recommended denial of the applicant's request to deepen Stage II holes to penetrate the Westwater Canyon member of the Morrison formation. The recommendation was based largely upon negative results from drilling the Westwater in several adjoining sections, namely sections 2, 3, 4, 5, 8, and 10, T. 13 N., R. 9 W.

An amendment to substitute non-core drilling at $1.25 per foot for core drilling at $3.50 per foot was approved for the balance of Stage II drilling on April 29, 1957, due to poor core recovery. The change in specifications effected 17 (68%) of the 25 Stage II holes. Stage II of the contract was started on April 8, 1957, and was completed on April 26, 1957.

The work completed amounted to 13,383 feet of non-core drilling and 1,519 feet of core drilling in 43 holes, as follows:

Stage	No. holes	Non-core feet	Core feet	Total feet
I	18	5,375	1,113	6,488
II	25	8,008	406	8,414
	43	13,383	1,519	14,902

No uranium ore was discovered during Stage I and Stage II work, consequently Stage III was not executed. Table No. 2 presents the summary data on holes drilled and figure 2 shows the hole locations.

EXPENDITURES UNDER THE CONTRACT

Stage I

5,375 feet of non-core drilling at $1.224/ft.	$ 6,579.00
1,113 feet of core drilling at $3.468/ft.	3,859.89
6,488 feet of incidental allowance at $0.39/ft.	2,530.32
Total Stage I	$12,969.21

Stage II

8,008 feet of non-core drilling at $1.224/ft.	$ 9,801.79
406 feet of core drilling at $3.468/ft.	1,408.01
2,696 feet for incidental allowance at $0.39/ft.	1,051.44
5,718 feet for incidental allowance at $0.20/ft.	1,143.60
Total Stage II	$13,404.84
Total cost of project	$26,374.05
Government participation at 75%	$19,780.54

Summary of unit costs

Rotary non-core drilling	$1.224/ft.
Diamond core drilling	$3.468/ft.

EFFICIENCY OF OPERATIONS

The work was done with two Stewart Bros. and Parker Drilling Company Failing drills under supervision of Mr. Russell Hayden and Wayne S. Cavender, general superintendent and exploration manager, respectively, of the applicant.

All the work was in accordance with the terms of the contract.

CONCLUSIONS AND RECOMMENDATIONS

Exploration under the subject contract did not indicate any significant radiometric anomalies.

The operator has submitted an adequate final report. It is recommended that the contract be terminated without a certificate of discovery.

TABLE 2

Summary Data on Holes Drilled
DMEA 3943 Contract Idm-E 932

Coordinates North	Coordinates East	Approved Footages Non-core	Approved Footages Core	Approved Footages Total
		Stage I		
200	600	185	75	260
600	600	215	55	270
1000	600	225	75	300
1400	600	235	70	305
3850	600	252	40	292
4250	600	240	38	278
4650	600	273	--	273
5050	600	280	--	280
2000	4600	352	100	452
3250	4600	366	104	470
3650	4600	375	100	475
4050	4600	385	100	485
4450	4600	380	100	480
4850	4600	352	98	450
400	4600	310	--	310
800	4600	256	55	311
1200	4600	339	45	384
1600	4600	355	58	413
Total Stage I		5,375	1,113	6,488
		Stage II		
400	1400	300	5	305
1200	1400	224	57	281
2000	1400	259	42	301
3200	1400	275	39	314
4000	1400	283	9	292
4800	1400	287	126	413
200	2200	225	48	273
1000	2200	294	--	294
1800	2200	308	--	308
2400	2200	324	--	324
3400	2200	358	--	358
5000	2200	325	--	325

TABLE 1 (cont.)

Coordinates		Approved Footages		
North	East	Non-core	Core	Total
400	3000	265	--	265
1200	3000	327	--	327
2600	3000	345	--	345
3200	3000	327	--	327
4000	3000	344	--	344
4800	3000	495	--	495
600	3800	251	--	251
1400	3800	300	--	300
2200	3800	365	--	365
3000	3800	394	--	394
3800	3800	425	--	425
4600	3800	455	80	535
Total Stage II		8,008	406	8,414

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JULY 1957 CONTRACT 1dm-E932 DOCKET 3943

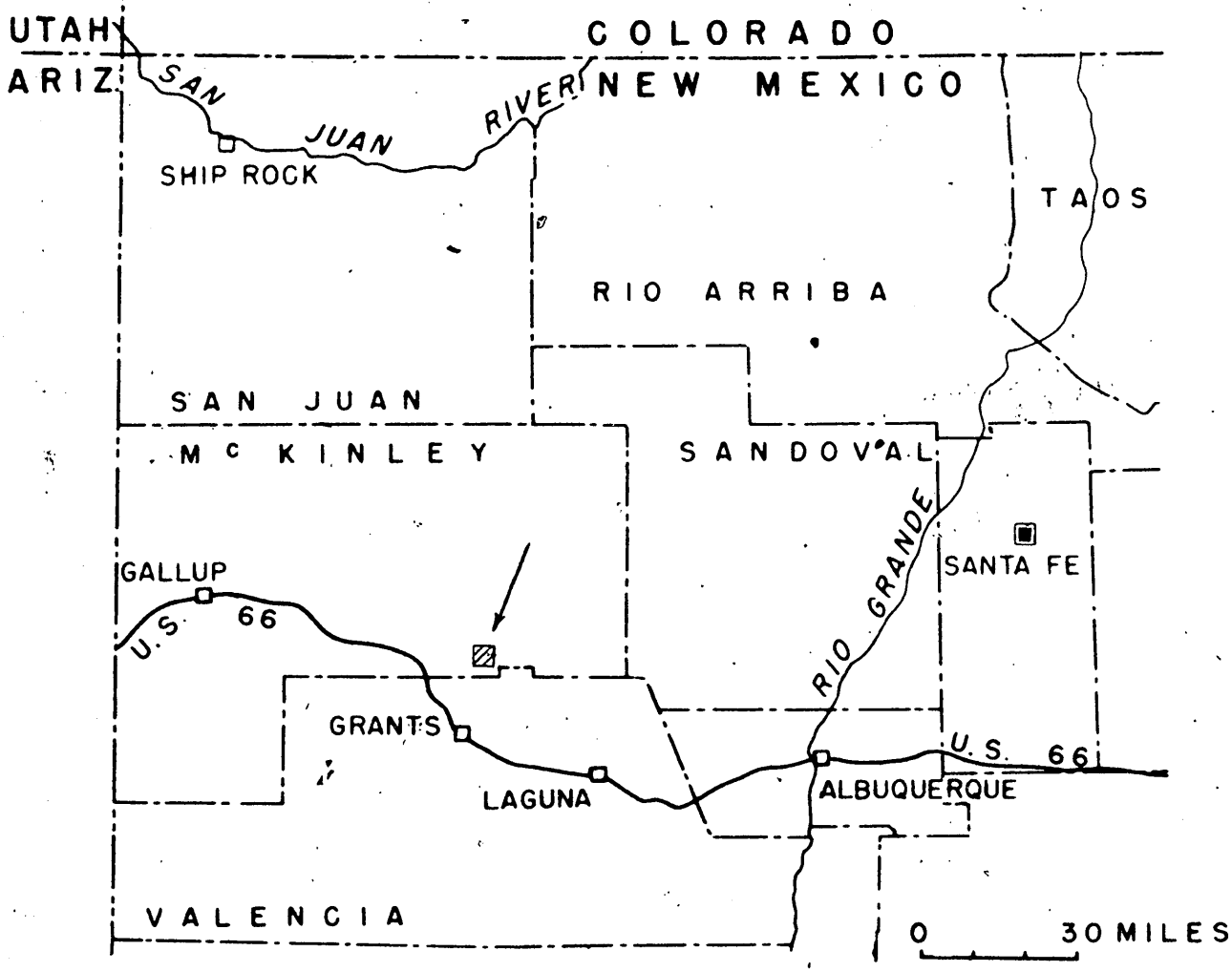

FIGURE 1.—LOCATION MAP OF SEC. 9, T.13 N., R.9 W., N.M.P.M., FOOD MACHINERY AND CHEMICAL CORPORATION, WESTVACO MINERAL PRODUCTS DIVISION, McKINLEY COUNTY, NEW MEXICO.

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7/25	Ellis	700
7-25	Chambers	800
7/26	Martin	130
7/26	Johnson	110
"	Hattendorf	100
7/29	P.K.	220
		700

JUL 29 1957

Mr. William H. King
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-3943 (Uranium)
Contract No. Idm-1932
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Mr. King:

In accordance with our teletype of July 3, 1957, we are enclosing the original and four copies of a Termination Agreement between the Government and the subject Operator, signed by the Administrator. Also enclosed are two extra copies of the agreement for the use of the Field Team.

If you and the Operator find the agreement in order please have it executed by the Operator as indicated and make the usual distribution thereafter.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee (SHB)

Enclosures

APPROVED:

Frank D. Lamb (SHB)
Member, Bureau of Mines

Thor H. Kiilsgaard (SHB)
Member, Geological Survey

MChing/izm 7-25-57
cc to: Mr. Ching
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

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(12-56)

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Date	Surname	Code
7-15	Ching	700
7-15		140

July 15, 1957

Memorandum

To: Associate Solicitor, Division of Mineral Resources

From: Frederick L. Knouse, Acting Director
Division of Rare and Miscellaneous Metals

Subject: Termination Agreement
Docket No. DMA-3943 (Uranium)
Contract No. Dm-1932
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Will you kindly prepare a Termination Agreement between the Government and the subject Operator in accordance with the attached draft.

The contract completion date is May 15, 1957. The Operator reports that the project was completed on April 30, 1957, and presented a final voucher, dated May 22, 1957. A final report and final account has been rendered.

F. L. Knouse

F. L. Knouse

Attachment

MChing/izm 7-15-57
cc to: Mr. Ching

8623

DRAFT 7-15-57
MChing/izm

TERMINATION AGREEMENT

It is agreed this _____ day of _____, 1957 between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Food Machinery and Chemical Corporation (Westvaco Mineral Products Division), hereinafter called the "Operator," parties to Exploration Project Contract Idm-E932 (Docket No. DMEA-3943), dated March 21, 1956, as amended, hereinafter called the "Contract," that:

1. Effective as of the close of business on April 30, 1957, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the costs of work performed prior to said effective date.

3. The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract.

4. All rights of the Government provided for in the Contract with respect to certification of discovery or development, percentage royalty and liens for its payment, records, audit, and recovery of any overpayment, are preserved.

5. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said Contract, except as otherwise provided in this termination agreement.

IN WITNESS WHEREOF, these parties have executed this agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

By
~~Administrator, Defense Minerals~~
Exploration Administration

By_____
Food Machinery and Chemical Corp.
(Westvaco Mineral Products Division)

Title_____

MEA Form 7
12-56)

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Date	Surname	Code
7/2	Ching C	700
"	Ellis	700
"	Selfridge	130
7/3	Yoggy	130
7/3	Nelson	130
"	Johnson	110
"	Bartenday	100
7/3	C	220
		700

JUL - 3 1957

T E L E T Y P E

Department of the Interior

DMEA

14X4401(01) Revolving Fund, Defense Production Act, (Transfer to Office of Secretary)

WILLIAM H. KING, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURTT JULY 1 FOOD MACHINERY AND CHEMICAL CORPORATION DOCKET 3943. WE WILL PREPARE NECESSARY TERMINATION AGREEMENT.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (248)

MChing/gla
7-3-57
cc to: Admr.'s Reading File
Operating Committee
Code 700, Mr. Ching
THKiilsgaard, Rm. 5224
Confirmation to Region III

8623

Mr. Delfrange:

In view of our record of request for Step III, or disposal of Step III by quit tenure on last 3 lots of Step II in market was dealt paragraph 18 Grievant Jones' response 18 appears clear (only)

a [illegible] Treasurer for
appropriate would be appropriate

Form 7-
(6)

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Date	Surname	Code
7/2	Ching	700
"	Ellis	700
7/2	Selfridge	130
		110
		100
		220
		700

Department of the Interior

DMEA

14X4401(01)Revolving
Fund, Defense Production Act,
(Transfer to Office of Secretary)

WILLIAM H. KING, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURTT JULY 1 FOOD MACHINERY AND CHEMICAL CORPORATION DOCKET 3943. CONTRACT TERMINATION BY MUTUAL AGREEMENT NOT NECESSARY SINCE STAGE 2 WORK COMPLETED UNDER TERMS OF CONTRACT, OPERATOR UNDERSTANDS AND AGREES THAT STAGE 3 WILL NOT BE UTILIZED AND ACKNOWLEDGES THIS IN ITS FINAL REPORT OF MAY 27.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE

MChing/gla
7-2-57
cc to: Admr.'s Reading File
Operating Committee
Code 700, Mr. Ching
THKiilsgaard, Rm. 5224
Confirmation, Region III

NOTE: Mr. Rubin was consulted

8623

D.M.E.A

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DN 235 BUR MINES 7-1-57 10-26

CHAIRMAN OPERATING COMMITTEE DMEA

RE DOCKET DMEA 3943 CONTRACT IDM E932 FOOD MACHINERY AND CHEMICAL CORPORATION, OPERATOR S FINAL REPORT FORWARDED BY OUR MEMORANDUM OF JUNE 17, 1957. ALL APPROVED WORK COMPLETED. HOWEVER, ALL WORK PROVIDED UNDER CONTRACT NOT COMPLETED. DO YOU CONSIDER TERMINATION OF CONTRACT NOT COXXXX
CONTRACT BY MUTUAL AGREEMENT NECESSARY /Q/ PLEASE TELETYPE ADVICE.

W H KING

Denver, Colorado

JUL 1 1 59 PM '57
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D.C.

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RECEIVED JUL 1957

DATE		CODE
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11		700

224 New Customhouse
Denver 2, Colorado

June 26, 1957

Mr. W. H. Williams, Vice President
Food Machinery & Chemical Corporation
Westvaco Mineral Products Division
161 East 42nd Street
New York 17, New York

Re: Docket DMEA-[illegible] (Amended)
Contract Ism-[illegible]32
Food Machinery and Chemical
Corporation, Westvaco Mineral
Products Division
(Sec. 9, T13N, R9W)
McKinley County, New Mexico

Dear Mr. Williams:

Form MP-104, Operator's Monthly Report and Voucher for April, 1957, has been received in this office and is being processed for payment.

In accordance with the provisions of Amendment No. 2, the allowable cost of Incidental Allowance, beginning with the ninth hole drilled under Stage II, is reduced from $0.35 to $0.20 per foot. The excess cost for Incidental Allowance reported on Form MP-104 for April 1957, is disallowed.

The amount of $500.00 which was withheld from the September 1956 Voucher is reinstated, and an equal amount is withheld from the April, 1957 Voucher, pending release to this office of an Audit Report or Report of Review of the reported project expenditures by the Contract Administration and Audit Division, DMEA.

JDC:hmh
cc: Chmn. Op. Comm. (2)
Harshman
Hasler
DMEA, DFC
DMEA, G.Jct.
Townsend
Corres. file, Reg. III
Chron.

Yours very truly,

Original signed by
W. H. KING

W. H. King
Executive Officer, DMEA
Field Team, Region III

cc: Mr. Wayne S. Cavender, Manager of Exploration
Food Machinery and Chemical Corporation
Box 24, Star Route, Grants, New Mexico

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

FILE COPY
DMEA
RECEIVED JUN 28 1957

DATE	INITIALS	CODE
6/28		220
6/28	Chang	700

June 25, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3943 (Uranium), Contract No. Idm-E932, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division (Sec. 9, T 13 N, R 9 W), McKinley County, New Mexico

Enclosed are the Government's, Division, and Audit copies of Amendment No. 2 to Contract No. Idm-E932, which was forwarded by your letter of May 31, 1957, for signature by the Operator.

Copies of the Amendment have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

W. H. King

W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 21 1957

DATE	INITIALS	CODE
6/21	C	220
6/24	[illegible]	800
"	[illegible]	700

June 17, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3943 (Uranium), Contract No. Idm-E932, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division (Sec. 9, T 13 N, R 9 W), McKinley County, New Mexico

Enclosed are the original and one copy of a final report submitted by the Operator pertaining to work completed under the subject contract.

The Operator's final accounting report has been received. However, it was necessary to defer processing of the report pending receipt of clarifying information.

W. H. King

W. H. King

Enclosures

DMEA
DEPARTMENT OF THE INTERIOR
JUN 17 1957
REGION III
DENVER, COLORADO

Westvaco Mineral Products Division
Food Machinery & Chemical Corporation
Star Route - Box 24, Grants, New Mexico

FINAL REPORT

Docket No. DMEA 3943 (Uranium)
Contract Idm - E 932

Section 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

May 27, 1957

OP's. FINAL REPORT

PURPOSE

On March 21, 1956, Westvaco Mineral Products Division of Food Machinery and Chemical Corporation was awarded Contract Idm-E 932, Docket No. 3943 with the Defense Minerals Exploration Administration for the purpose of exploration for uranium ore deposits. Under terms of the contract, the project was to be completed by May 15, 1957.

Three stages of exploration drilling were established with the DMEA providing 75% of the funds and Westvaco furnishing 25%. The area to be explored was Section 9, T. 13 N., R. 9 W., McKinley County, New Mexico.

Under the contract, a final report is required upon completion of the project, thus it is the purpose of this report to review and summarize the information obtained from the exploration work.

LOCATION AND TOPOGRAPHY

Section 9, T. 13 N., R. 9 W. is approximately 14 miles north of the town of Grants, New Mexico, and can be reached by way of State Highway 53. It is in the southeastern end of the Ambrosia Lake basin.

Topographically, the section is flat with the exception of a small mesa along the eastern edge. The surface has an average elevation of 6850 feet and a relief of approximately 130 feet.

GEOLOGY

Stratigraphy

The stratigraphy encountered on Section 9 comprises only three formations with only one, the Mancos, cropping out at the surface. Briefly, the stratigraphic column is as follows:

Mancos: Upper and Lower Cretaceous -- Outcropping only on the eastern side of the section, the Mancos is composed of interstratified lenses of yellow-brown, silty sandstone and black carbonaceous sandy shales. The maximum thickness encountered in any hole was 180 feet.

Dakota: Lower Cretaceous -- Underlying the Mancos is the Dakota formation. Dominantly white to buff to gray, fine to medium grained sandstone, the Dakota also contains numerous irregular lenses of sandy black barbonaceous shales, particularly in the basal part. Thicknesses up to 120 feet were found in the drill holes.

Morrison: Upper Jurassic -- Although classified as one formation, Morrison has been subdivided as follows:

a. Brushy Basin -- Underlying the Dakota are the Brushy Basin gray to green, sandy siltstones and shales. Ranging in thickness from 40 to 150 feet, the shales frequently contain lenses of fine to medium grained, gray to green sandstones. Megascopically, the sandstones appear identical to the underlying Poison Canyon and Westwater Canyon sandstones.

Shale layers between the Poison Canyon and the Westwater Canyon are frequently present and have been classified

as Brushy Basin. Lithologically, the shales are the same; however, red colorations are often present in the lower layers.

b. Poison Canyon and Westwater Canyon -- Although some stratigraphers classify these sandstones as separate formations or members, extensive drilling in the Ambrosia Lake district has proved that the Poison Canyon is actually an upper tongue of the Westwater Canyon with a shale layer as a divider. At irregular intervals, the two sandstones coalesce to form one thick sandstone.

The sands of the Poison Canyon and Westwater Canyon are light gray, fine to coarse grained, and may be slightly calcareous and/or pyritic. Some facies are very arkosic in appearance and contain numerous green clay galls and chert fragments. Thin shale seams and partings are commonly enclosed in the sandstones. The Poison Canyon ranges in thickness from 5 to 95 feet.

c. Recapture Creek -- Beneath the Westwater Canyon sandstones are the variegated shales of the Recapture Creek member. No DMEA financed holes have penetrated to this horizon.

Structure

Regionally, Section 9 is on the northeast flank of the Zuni Uplift. The sedimentary formations are relatively flat with only a slight dip to the northeast. Cross sections indicate little in the way of thickening trends, with one exception -- to the

north, the Westwater Canyon thickens and coalesces with the Poison Canyon.

Other fractures shown by the cross sections are the pinch-outs of the Poison Canyon and the "shaley" zones in the sandstones.

Although, minor faulting is probably present, no indications of major faulting were found.

Mineralization

The potential ore-bearing horizons of Section 9 are the Poison Canyon and Westwater Canyon sandstones of the Morrison formation. Mineralogically, coffinite is the dominant ore mineral in this area and is found in association with black bituminous material. Some yellow secondary minerals occur as joint and fracture coatings.

None of the DMEA holes penetrated ore grade (over 0.20% U_3O_8) rock, and only five holes encountered weak mineralization. Westvaco drilling found weak mineralization in two holes.

No pattern of mineralized holes was noted on the Section. The holes are irregular and widespread and the mineralization occurs in either of the sandstones and/or in the Brushy Basin shales. Most mineralization does not exceed four feet in thickness, although one 11 foot thickness was found.

Assay results confirmed the low uranium value indicated by the probe.

DRILLING

Under Stage I, the DMEA authorized the drilling of 18 holes for uranium exploration. As specified by the DMEA, the holes

were drilled in two north-south rows along the east and west edges of the section. Each hole was drilled non-core to the top of the Poison Canyon sandstone, cored through the sandstone, and bottomed in the underlying shales. Samples and core were logged and stored.

After completion of Stage I, a Stage II drilling program of 25 holes was authorized by the DMEA. These holes were drilled in four north-south rows, spaced 800 feet apart. (See map.) This widespread grid was designed to allow maximum exploration for the alloted footage.

In addition to the DMEA drilling, Westvaco has financed eight holes on Section 9. Other Westvaco exploration involved the deepening of many DMEA holes to test the Westwater Canyon sandstone.

Stage III was not utilized due to the negative results obtained in stages I and II.

COSTS AND STATISTICS

Expenditures (Under DMEA)

Non-core drilling @ $1.224 per foot	$ 16,380.79
Core drilling @ $3.468 per foot	5,267.90
Incidental allowance @ $0.390 per foot	4,725.36
	$ 26,374.05
DMEA Share -- 75%	19,780.54
Westvaco Share -- 25%	6,593.51
	$ 26,374.05

Statistics

	Stage I	Stage II
Holes drilled	18	25
Ore bearing	0	0
Mineralized	2	3
Barren	16	22

Non-core footage	13,383
Core footage	1,519
	14,902

Project initiated	April 17, 1956
Project completed	April 30, 1957

CONCLUSIONS

The exploratory drilling did not encounter ore grade rock; however, due to the hole spacings and the sinuous nature of the adjacent ore bodies, it is possible that the ore bearing areas were not penetrated.

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.2

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FINAL REPORT

OPERATOR'S UNIT COST AND PROGRESS REPORT

~~Month of~~ May 22, 1957 195 Docket No. DMEA 3943 Contract No. Idm-E 932

Operator's Name Food Machinery & Chem. Corp. (Westvaco Min. 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'			5,267.90	1,519	3.468	14,600	3.50
~~Chem~~ Plug Bit	per'			16,380.79	13,383	1.224	16,100	1.25
~~Mngr~~ Incidental	per'			4,725.36	14,902	0.390	30,700	.39
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS				26,374.05			TOTAL COSTS AUTHORIZED BY CONTRACT	
Operating Equipment Purchased							$71,928.	
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS				26,374.05				

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 22, 1957 Operator Food Machinery & Chem. Corp. Westvaco Mineral Prod. Div.

Per [signature] Title Mngr. of Exploration

REMARKS: Adjusted for contract change for incidental allowance.

Adjusted for final disallowances 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)

RECEIVED JUN 7 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

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

Budget Bureau No. 42-R1036.5

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

FINAL REPORT

OPERATOR'S MONTHLY REPORT AND VOUCHER

~~Month of~~ May 22, 1957 Docket No. DMEA 3943 Contract No. Idm-E 932

Operator's Name Food Mach. & Chem. Corp. (Westvaco Min. Prod. Dv.) 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	---	----	21,648.69			
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:				Adjusted for final disallowances for August, 1956, voucher.		
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance				Adjusted for contract change for incidental allowance.		
(8) Contingencies (specify): 0.39 per foot	---	----	4,725.36			
TOTALS			26,374.05			

RECEIVED JUN 21 1957 D.M.E.A.

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

Date May 22, 1957 *Payee Food Machinery & Chemical Corp. Westvaco Mineral Products Division

Per [signature] Title Mngr. 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:

$

Signature
(Authorized Certifying Officer)

Date Vou. No.
(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. ..... in accordance with the terms of the contract.

Signature ..... Title ..... Date .....

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature ..... Title ..... Date .....

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).

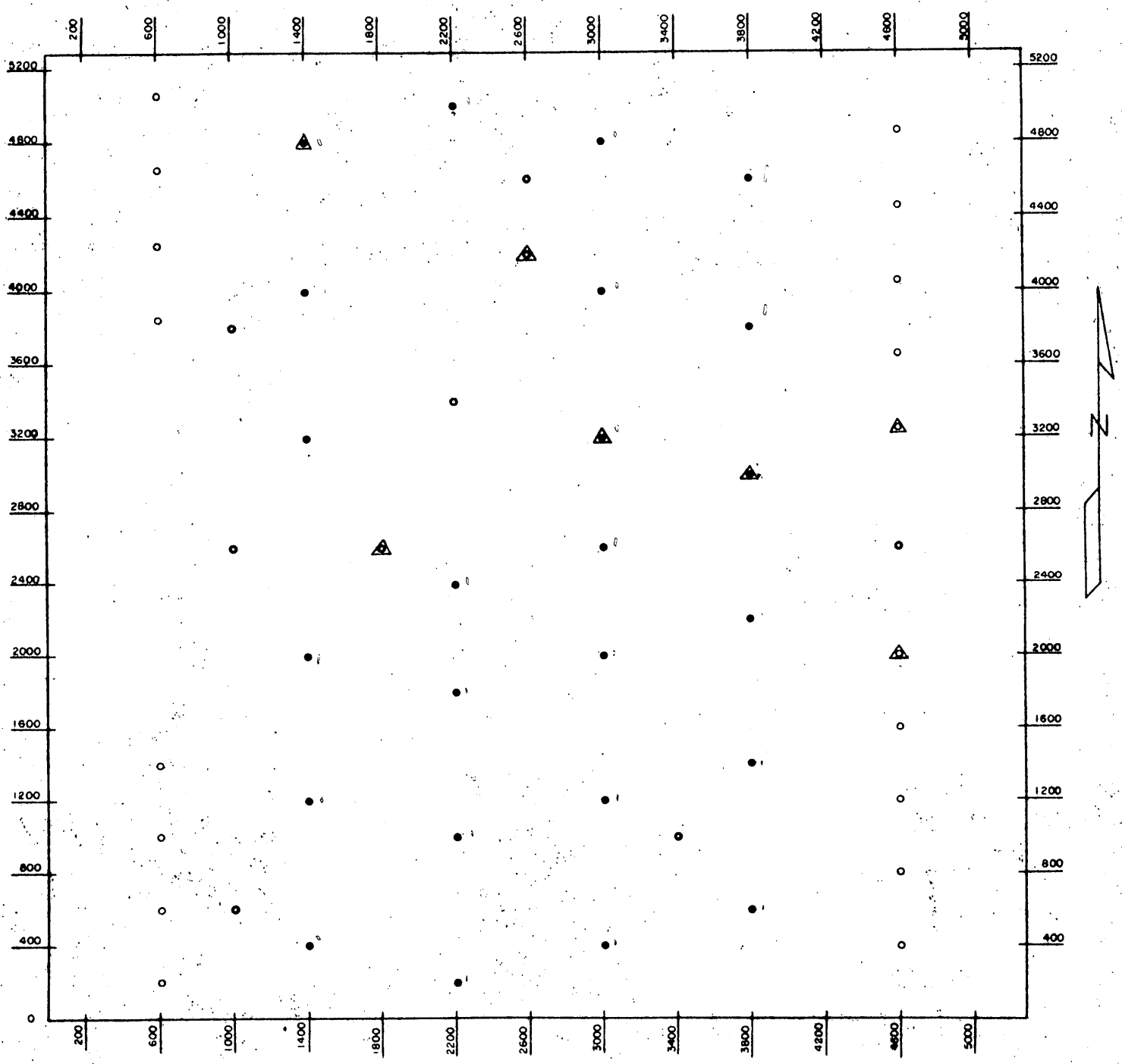
Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported 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.

GPO 872893



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

OFFICIAL FILE COPY
D M E A
RECEIVED JUN 21 1957

DATE	INITIALS	CODE

orm 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5-27	Ching	700
5-27	Ellis	700
5-27	Chandler	800
5/29	GCS	130
"	Rutendorf	100
		225
5/31	C	220

MAY 31 1957

Mr. D. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-3943 (Uranium)
Contract No. Idm-2932
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Mr. Harshman:

In accordance with our teletype of April 24, 1957, we are enclosing the original and five copies of a proposed Amendment No. 2 to the subject contract, signed by the Administrator. Also enclosed are two extra copies of the amendment for the use of the Field Team.

If you and the Operator find the proposed amendment in order please have it executed as indicated by the Operator, and make the usual distribution thereafter.

Please note that because of the change from core to non-core drilling the incidental allowance has been reduced accordingly.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

Thos. D. McMahon (GCS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

MChing/izm 5-27-57
cc to: Mr. Ching
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 17 1957

DATE		CODE
5/17	JWB	220
5/20		800
		225
		~~225~~

224 New Customhouse
Denver 2, Colorado

May 13, 1957

Mr. W. S. Cavender, Manager of Exploration
Food Machinery and Chemical Corporation
Westvaco Mineral Products Division
Star Route - Box 24
Grants, New Mexico

Re: Docket DMEA-3943 (Uranium)
Contract 10m-E932
Food Machinery and Chemical Corporation
Westvaco Mineral Products Division
(Sec. 9, T 13 N, R 9 W)
McKinley County, New Mexico

Dear Mr. Cavender:

Reference is made to your letter of May 10, 1957, regarding reinstatements which were made in connection with the processing of Form MF-104, Operator's Monthly Report and Voucher for September, 1956.

The original of R-III-B & F Form No. 4, Administrative Audit Difference Statement, which includes detailed information regarding the amounts reinstated was forwarded to the New York office of Food Machinery and Chemical Corporation on March 13, 1957, by the Finance Office, Region III. We are enclosing a photocopy of the form for your records.

Yours very truly,

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

Enclosure

JDC:hh
cc: Chma. Op. Comm. (2)
Harshman
Konselman (2)
Townsend
Corres. File, Reg. III
Chron.

w/copy of Oper. let. of 5/10/57

May 10, 1957

DMEA
DEPARTMENT OF THE INTERIOR
MAY 15 1957
REGION III
DENVER, COLORADO

Finance Office
DMEA - Region III
New Customhouse
Denver 2, Colorado

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

Gentlemen:

On March 12, 1957, Westvaco Mineral Products Division was notified by Mr. E. N. Harshman, Acting Executive Officer, that reinstatements would be made for disallowances on the August, 1956, voucher. These reinstatements were for holes 3650-4600, 4050-4600, 4450-4600, and 4850-4600. He further stated that Westvaco would be advised on these matters by the Finance Office, Region III.

To date, Westvaco has received no information from the Finance Office. As the lack of this data is causing auditing difficulties, your prompt attention to this matter will be appreciated. Thank you.

Yours truly,

W. S. Cavender

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

WSC:mdc

OFFICIAL FILE COPY
DMEA
RECEIVED 1957
CODE

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5-14	Ching	700
"	Ellis	700
		225

May 14, 1957

Memorandum

To: The Files

From: Michael Ching, Mining Engineer
Rare and Miscellaneous Metals Division

Subject: Justification for Amendment No. 2
Docket No. DMEA-3943 (Uranium)
Contract No. Idm-E932
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Under the subject contract Stage I comprising 18 holes, has been completed. The Field Team has authorized the drilling of 25 holes under Stage II.

The information available indicates that the Operator completed eight holes of Stage II in accordance with the existing contract specifications. At this point it was concluded that core drilling results had been unsatisfactory, with core recovery ranging from 30 to 50 percent. The poor recovery is caused by the soft unconsolidated nature of the Poison Canyon sandstone in this area.

It is concluded that better information can be obtained at less cost by substituting non-core drilling for core drilling in the holes yet to be drilled.

On April 22, 1957 authority was given the Field Team to allow such substitution and on April 25 the Field Team authorized the Operator to make such substitution.

Amendment No. 2 will formalize the change in specifications, effective as of April 25. The Independent Contract cost for non-core drilling will remain unchanged at $1.25 per foot. However, since much of the Incidental Allowance of $0.39 per foot of drilling is due to the originally contemplated core drilling, the Incidental Allowance should be modified with the change in specifications.

The basis for the Incidental Allowance of $0.39 per foot of drilling is shown in my memorandum to the files, dated March 12, 1956. The following table shows the original figures and the figures as now modified, applicable to Stage I only, but representative of all three stages:

	Original Incidental Costs	Modified Incidental Costs
Non-core drilling, feet	6,300	8,100
Core drilling, feet	1,800	-
Time factor, months	3	1.5
Labor & supervision	$2,400.00	$1,200.00
Operating materials & supplies	340.00	170.00
Depreciation on equipment	180.00	90.00
Miscellaneous	270.00	135.00
Total	$3,190.00	$1,595.00
Cost per foot of drilling	$0.39	$0.20

Michael Ching

Michael Ching

OFFICIAL FILE COPY DMEA RECEIVED MAY 16 1957		
DATE	INITIALS	CODE
5/16	JDCJ	220
5/16	[illegible]	800
		225

224 New Customhouse
Denver 2, Colorado

May 13, 1957

Mr. W. E. Cavender
Food Machinery and Chemical Corporation
Westvaco Mineral Products Division
Star Route, Box 24
Grants, New Mexico

Re: Docket DMEA-1943 (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

Dear Mr. Cavender:

The completion date for all authorized work under Contract Idm-E932 is May 15, 1957. If, for reasons beyond your control you are unable to complete all of the work by May 15, 1957, you should immediately submit to this office for consideration by the Government, the original and five copies of a request for extension of the completion date for such specific additional time as will be required.

Yours very truly,

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

JDC:hh
cc: Chmn. Op. Comm. (2)
Harshman
Hasler
Konselman (2)
Townsend
Corres. file, Reg. III
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 8 1957

DATE	INITIALS	CODE
5/8	C	220
		225

May 6, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 3943 (Uranium), Contract No. Idm-E932, Food Machinery and Chemical Corporation (Westvaco Mineral Products Division), (Sec. 9, T 13 N, R 9 W), McKinley County, New Mexico

Supplementing material forwarded by our memorandum of May 1, 1957, enclosed are the original and three copies of a memorandum from W. D. McMillan, Mining Engineer, Bureau of Mines, relative to substitution of non-core drilling for core drilling.

E. N. Harshman

E. N. Harshman

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DMEA
DEPARTMENT OF THE INTERIOR
MAY 3 - 1957
REGION III
DENVER, COLORADO

REGION III

Building 20
Denver Federal Center
Denver 2, Colorado
May 3, 1957

W.O.

Memorandum

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

Through: A. S. Konselman ASK
Mining Engineer

From: W. D. McMillan

Subject: Docket 3942 (Uranium) Contract Idm-E932, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, Section 9, T. 13 N., R. 9 W., NMPM, McKinley County, N. M. Substitution of non-core drilling for core drilling in Stage II.

The operator has requested this substitution on the basis of the poor core recovery on holes already drilled and that better information with adequate sampling can be obtained at less cost.

The substitution of non-core drilling for core drilling as presently specified in the subject contract is therefore recommended.

W D McMillan

W. D. McMillan
Mining Engineer

WDM/mw
Idm-E932
cc: 9
Chron

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 8 1957

DATE	INITIALS	CODE

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 3 1957

DATE	INITIALS	CODE
5/3	C	220
		225

May 1, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 3942 (Uranium), Contract No. Idm-E932, Food Machinery and Chemical Corp. (Westvaco Mineral Products Division) (Sec. 9, T 13 N, R 9 W), McKinley County, New Mexico

In reference to your teletype of April 24, 1957 and prior communications, enclosed is the following material pertaining to an amendment to the Contract to provide for non-core drilling in lieu of core drilling:

1. Original and three copies of the Operator's request, dated April 24, 1957.

2. Original and three copies of a memorandum, dated April 26, 1957, from Howard F. Albee, Geologist, Geological Survey.

3. Original and three copies of the Operator's letter of April 29, 1957.

The Operator states that the change in drilling specifications will affect seventeen of the presently approved twenty-five Stage II holes.

Stage I drilling averaged 61.8 feet core and 298.6 feet non-core, for a total average depth of 360.4 feet per hole. Therefore, the change in specifications will involve about 1,050 feet of core drilling of the remaining seventeen presently approved holes.

Circumstances relative to drilling under Stage III are unknown. However, we recommend that provision be incorporated in the amendment pertaining to Stage III drilling so that if necessary the Government, when approving the drilling, can also approve it to be non-core throughout.

E. N. Harshman

E. N. Harshman

April 29, 1957

DMEA
DEPARTMENT OF THE INTERIOR
MAY 1 1957
REGION III
DENVER, COLORADO

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

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

Dear Mr. Harshman:

This is to acknowledge your telegram of April 25, 1957, granting approval to substitute non-core drilling for core drilling in contract Idm-E 932.

The change in specifications will effect 17 (68%) of the 25 Second Stage holes.

Yours truly,

W S Cavender

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

WSC:mdc

ORIGINAL FILE COPY
DMEA
RECEIVED MAY 30 1957
DATE | INITIALS | DESTINATION

DMEA
APR 29 1957
REGION III
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 360
Grand Junction, Colorado

IN REPLY REFER TO:
MINERAL DEPOSITS
DMEA
RECEIVED
APR 29 1957
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

April 26, 1957

Memorandum

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

Through: J. William Hasler
E. N. Harshman
J. F. Shaw

From: Howard F. Albee

Subject: Substitution of non-core for core drilling, Docket No. DMEA 3943 (Uranium), contract No. Idm-E 932, Food Machinery and Chemical Corp., (Westvaco Mineral Products Division), Sec. 9, T. 13 N., R. 9 W., NMPM, McKinley County, New Mexico

Core recovery is so poor under stage II work (as low as 30%) that the operator has requested non-core drilling be substituted for core drilling.

Better information can be obtained at less cost with non-core drilling and adequate sampling than with core drilling if the recovery of core is low. The substitution of non-core for core drilling is therefore recommended.

Howard F. Albee
Howard F. Albee,
Geologist

HFA/mlr

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 3 1957

DATE	INITIALS	CODE

April 24, 1957

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

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

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

Dear Mr. Harshman:

On April 8, 1957, drilling was started on Section 9, T. 13 N., R. 9 W., under the provisions of Stage II of the DMEA contract. As specified in the contract, the Poison Canyon sandstone has been drilled with diamond bits to obtain core samples.

To date, the results of the core drilling have been unsatisfactory and average core recovery has been from 30 to 50%. This poor recovery is caused by the soft unconsolidated nature of the Poison Canyon in this area.

The cuttings from the core drilling are inferior to non-core cuttings for interpretive purposes. Therefore, in order to obtain a maximum amount of information for the expenditures involved, Westvaco requests that the DMEA change the stipulations of the contract to allow the company to discontinue core operations and complete the remaining drilling as non-core.

Very truly yours,

W. S. Cavender

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

GENERAL FILE COPY
DMEA
RECEIVED MAY 3 1957
DATE | INITIALS | CODE

WSC:mdc

Mr. George Selfridge

OFFICIAL FILE COPY
D M E A
RECEIVED APR 25 1957

DATE	INITIALS	CODE
4/25	C	220
		225

DN 235 BUR MINES 4-25-57 8-55

CHAIRMAN, OPERATING COMMITTEE, DMEA

RE DOCKET DMEA -3943, CONTRACT IDM-E932, FOOD MACHINERY AND CHEMICAL CORP. AFTER OBTAINING CONCURRENCE FROM FIELD EXAMINERS AND ON THE STRENGTH OF YOUR TLXX TELETYPE OF APRIL 24, WE HAVE ADVISED THE OPERATOR TO PROCEED WITH NON-CORE DRILLING IN THE BALANCE OF APPROVED STAGE 11 HOLES IN LIEU OF PARTIAL CORE DRILLING. SUPPORTING MEMORANDUM FROM FIELD EXAMINERS WILL BE FORWARDED AS SOON AS AVAILABLE. IF THIS ARRANGEMENT IS NOT SATISFACTORY, PLEASE TELETYPE INSTRUCTIONS.

E N HARSHMAN

Denver, Colo.

APR 25 12 46 PM '57
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D.C.

orm 7

OFFICIAL FILE COPY

Date	Surname	Code
4/24	Ching	700
4/24	Ehlig	700
4/24	Selfridge	130
"	[illegible]	110
"	Mittendorf	100
		200
		225
4/25	C	220

Kiilsgaard

Lamb

APR 24 1957

Department of the Interior

BIA

1[illegible]01(01) Revolving Fund,
Defense Production Act, Interior (Transfer
to Office of Secretary)

T E L E T Y P E

D. H. MAS[illegible]
ACTING [illegible] OFFICER
[illegible], [illegible] 3
22[illegible] [illegible] BUILDING
DENVER, COLORADO

REQUEST APRIL 22 FOR MACHINERY AND CHEMICAL CORPORATION DOCKET 3943.

WILL PREPARE ALLOCATION UPON RECEIPT OPERATORS REPORTS AND SUBMITTING

MEMORANDUM FROM DENVER.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (HS)

MChing/izm 4-24-57
cc to: Mr. Ching
Admr.'s Reading File
Code 700
Operating Committee
THKiilsgaard, 5224

8623

DMEA

OFFICIAL FILE COPY
DMEA
RECEIVED APR 23 1957

DATE	INITIALS	CODE
4/23	C	220
		225
IDM-		

DN 235 BUR MINES 4-22-57 4-10

CHAIRMAN, OPERATING COMMITTEE, DMEA

REURTT 4-22, DOCKET DMEA-3943, CONTRACT IDM-3932, FOOD MACHINERY AND CHEMICAL CORP. ARE WE TO ASSUME THAT YOU WILL PREPARE AMENDMENT REDUCING DRILLING SPECIFICATIONS. PLEASE TELETYPE ADVICE.

E N HARSHMAN, ACTING EXECUTIVE OFFICER

CORR CONTRACT IDM-E932

Denver, Colorado

Apr 22 8 00 AM '57

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

Form 7
56)

OFFICIAL FILE COPY

Date	Surname	Code
4-19	Ching	700
4-19	Knowd	700
4/19	Selfridge	130
"	Johnson	110
"	Matteudy	100
		225
4/22	C	220

APR 22 1957

Department of the Interior

DMA

14X4401(01) Revolving Fund,
Defense Production Act, Interior
(Transfer to Office of Secretary)

Lamb
Kilsgaard

TELETYPE

E. H. MARSHAL
ACTING EXECUTIVE OFFICER
DMA FIELD TEAM, REGION 3
224 NEW CUSTOMHOUSE BUILDING
DENVER, COLORADO

REQUEST APRIL 18 FOOD MACHINERY AND CHEMICAL CORPORATION REQUEST 3943. BUNCOMBE SPRINGING MAY BE SUBSTITUTED FOR CORE SPRINGING IN STAGES 2 AND 3 PROVIDED NOT MORE THAN 20 HOURS ALLOWED UNDER EACH STAGE.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (28)

MChing/izm 4-19-57
cc to: Mr. Ching
Admr.'s Reading File
Operating Committee
Confirmation copy to Reg. 3
THKiilsgaard, 5224

8623

EXTRA COPY DMEA RECEIVED APR 11 1957		
DATE	INITIALS	CODE
4/11	[illegible]	110
"	[illegible]	700

224 New Customhouse
Denver 2, Colorado

April 9, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

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

Enclosed are two copies of a letter dated April 3, 1957, from the subject Operator, stating that no work was performed during the month of March, 1957. Accounting forms MF-104 and MF-104A were not submitted by the Operator.

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

Enclosures

JEC:hh
cc: Harshman)
Shaw (2)) w/copy of
Townsend) Oper. letter
MF-104 File E932)
Corres. File E932)
Chron.

LD MEA

OFFICIAL FILE COPY
DMEA
RECEIVED APR 19 1957

DATE	INITIALS	CODE
19	C	220
		225

DN 235 BUR MINES 4-18-57 4-34

CHAIRMAN, OPERATING COMMITTEE, DMEA

RE DOCKET DMEA -3943, CONTRACT IDM-E932, FOOD MACHINERY AND CHEMICAL CORP. OPERATOR REQUESTED BY TELEPHONE TO SUBSTITUTE NONCORE DRILLING AT $1.25 PER FOOT FOR CORE DRILLING AT $3.50 PER FOOT BECAUSE OF INABILITY TO OBTAIN CORE RECOVERY HIGHER THAN 30 LXX PERCENT. FIELD EXAMINERS AND THIS OFFICE CONCUR. WILL FORWARD OPERATOR S REQUEST AND MEMORANDUM OF CONCURRENCE WHEN RECEIVED IN THIS OFFICE. PLEASE TELETYPE YOUR DECISION SO TAXX THAT IF FAVORABLE, WE CAN ADVISE OPERATOR OF APPROVAL FOR SUBSTITUTION TO ELIMINATE DELAY TO PROJECT OPERATIONS.

E N HARSHMAN, ACTING EXECUTIVE OFFICER

Denver, Colorado

APR 19 8 49 AM '57
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

April 3, 1957

EXTRA COPY
DMEA
RECEIVED APR 11 1957
DATE | INITIALS | CODE

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

Re: Progress Report - March, 1957
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:

The approved Second Stage drilling program was received by Westvaco during the month; however, no drilling was completed.

It is anticipated that the program will be started in the very near future.

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

DMEA
DEPARTMENT OF THE INTERIOR
APR 5 - 1957
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY DMEA RECEIVED MAR 14 1957		
DATE	INITIALS	CODE
3/14	C	220
3/15	[illegible]	800
		225

224 New Customhouse
Denver 2, Colorado

March 12, 1957

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

Re: Docket DMEA-3943 (Uranium)
Contract Idm-2932
Food Machinery and Chemical Corporation
Westvaco Mineral Products Division
(Sec. 9, T 13 N, R 9 W)
McKinley County, New Mexico

Dear Mr. Cavender:

Form MF-104, Operator's Monthly Report and Voucher for September, 1956 has been received in this office and is being processed for payment. The following deductions and reinstatement have been recommended by this office:

Disallowance:

Although you made a proper calculation of the excess non-core footage drilled during the month of September, 1956, you did not make the correct adjustment of non-core footage and costs in preparing Forms MF-104A.

We have made the proper calculation, which results in a net disallowance of the invoice cost plus Incidental Allowance for 188 feet of non-core drilling.

Reinstatement:

Based on the results of recent drilling in the Northeast part of the property we have reconsidered the August, 1956 disallowances for drilling along the 4600 E line. The costs disallowed from the August, 1956 Voucher for holes 3650-4600, 4050-4600, 4450-4600, and 4850-4600 are recommended for reinstatement.

Amount Withheld:

An amount of $500.00 is withheld pending resumption of work under the contract. If contract work is not resumed this amount will continue to be held pending resolution of matters prerequisite to closing the account.

You will be advised of the amounts disallowed, reinstated, and withheld by means of an Administrative Audit Difference Statement, which will be mailed to you by the Finance Office, Region III.

Yours very truly,

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer, NYEA
Field Team, Region III

JDC:hh

cc: Chmn. Op. Comm. (2)
Harshman
Shaw (2)
Townsend
Corres. File E932
Chron.

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

224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 1 1957

DATE	INITIALS	CODE
3-1	C	220
		225

February 27, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 3943 (Uranium), Contract No. Idm-E932, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division (Sec. 9, T 13 N, R 9 W), McKinley County, New Mexico

Enclosed are four copies of project work approval, issued by the DMEA Field Team, Region III.

Also enclosed are three copies of the Operator's request for approval of the Stage II drilling and four copies of a memorandum, dated February 20, 1957, from Howard F. Albee, Geologist, Geological Survey, pertaining to the drilling requested.

Copies of the work approval have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

E. N. Harshman

E. N. Harshman

Enclosures

OFFICIAL FILE COPY
D M E A
RECEIVED MAR 1 1957

DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado

February 27, 1957

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

Re: Docket No. DMEA 3443 (Remainder)
Contract No. 16s-1958
Food Machinery and Chemical Corporation
Westvaco Mineral Products Division
(Sec. 9, T 13 N, R 9 W)
McKinley County, New Mexico

Dear Mr. Cavender:

Reference is made to your request of January 28, 1957 for the Government's approval for the drilling of twenty-eight (28) holes under Stage II of the Contract through the Westwater member instead of only penetrating the Poison Canyon member as presently provided for in the Contract.

The Government does not consider the Westwater member sufficiently favorable for ore deposition in significant quantities to warrant Government participation in the cost of drilling to penetrate that formation. Therefore, your request for the deeper drilling is denied.

The Government's approval for drilling under Stage II of the Contract to penetrate the Poison Canyon member of the Morrison formation, as provided for in the Contract, is as follows:

Coordinate Location of 25 Holes Approved
for Drilling Under Stage II

North - East	North - East	North - East
400 - 1400	1800 - 2800	3800 - 3800
1200 - 1400	2400 - 2800	4000 - 3000
2000 - 1400	3400 - 2800	4800 - 3000
3000 - 1400	5000 - 2800	600 - 3800
4000 - 1400	400 - 3000	1400 - 3800
4800 - 1400	1200 - 3000	2200 - 3800
800 - 2800	2000 - 3000	3000 - 3800
1000 - 2800	2800 - 3000	3800 - 3800
		4600 - 3800.

The above Stage II holes shall be drilled in conformance with all provisions in the Contract pertaining thereto.

The approximate locations of the twenty-five (25) approved holes are shown on the map entitled, "Figure 2. Map of Sec. 9, T. 13 N., R. 9 W. Showing Location of Proposed Stage II Drill Holes, Food Machinery & Chemical Corporation, Westvaco Mineral Products Division, McKinley County, New Mexico," which is attached hereto and made a part of this work approval.

Nothing in this work approval shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, the fixed unit cost of any item of work, nor any item of allowable cost which is expressly designated "maximum."

Very truly yours,

NMRA Field Team, Region III

By E. M. Harshman

E. M. Harshman
Acting Executive Officer

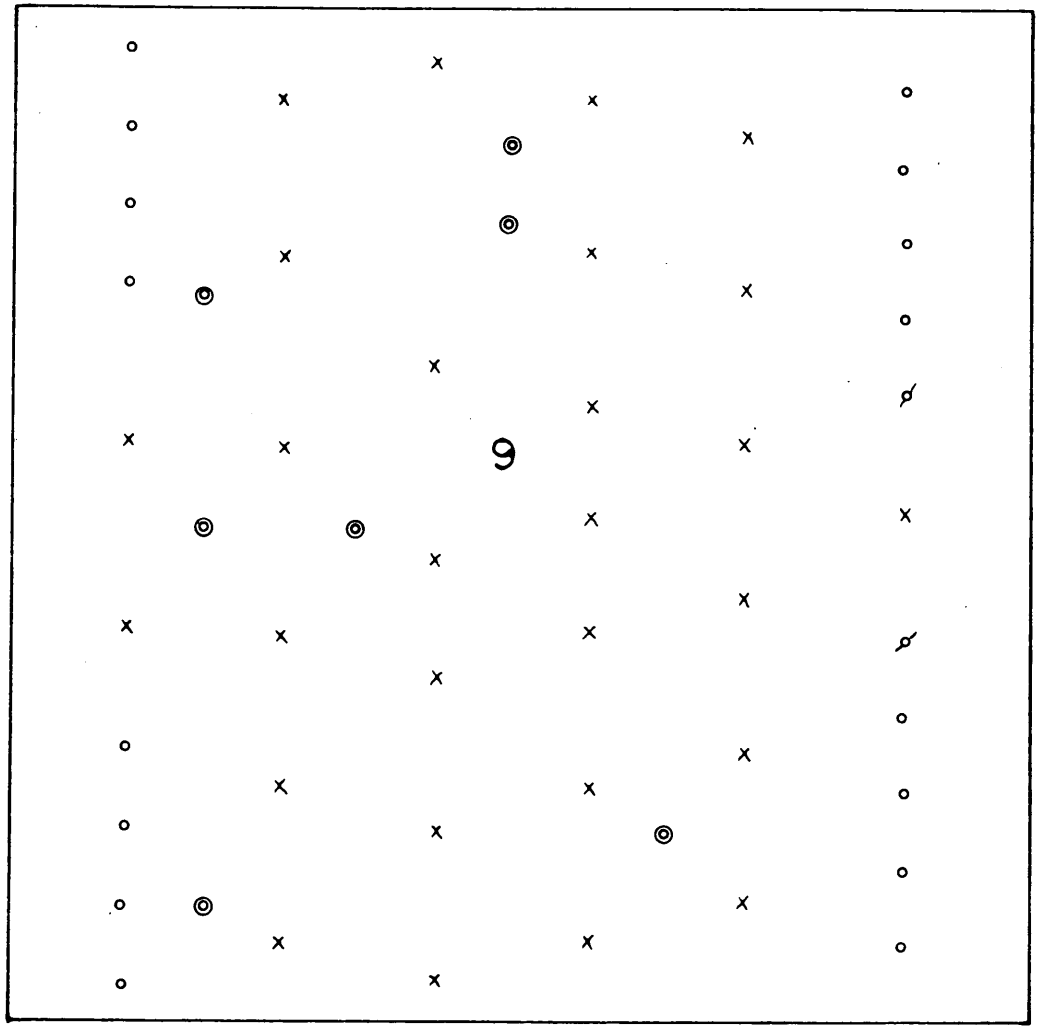
Enclosure

JWT:prl

cc: Chairman, Cty. Comm. (4)
Finance Office, Reg. III
Amendment file, Reg. III
Harshman
Shaw (2)
Mesler
Townsend
Corres. file
Chron.

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
FEBRUARY 1957 DOCKET 3943



EXPLANATION

DRILL HOLES

◎ WESTVACO HOLES (BARREN)

○ DMEA HOLES (BARREN)

○ MINERALIZED

X LOCATION OF REQUESTED STAGE II DRILL HOLE

1000 0 1000 FEET

FIGURE 2. MAP OF SEC. 9, T. 13N., R. 9W. SHOWING LOCATION OF PROPOSED STAGE II DRILL HOLES, FOOD MACHINERY & CHEMICAL CORPORATION, WESTVACO MINERAL PRODUCTS DIVISION, McKINLEY COUNTY, NEW MEXICO

RECEIVED
MAR 1
C.M.E.A.

IN REPLY REFER TO:
MINERALS 7S

RECEIVED
FEB 25 1957
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA
DEPARTMENT OF THE INTERIOR

FEB 26 1957
REGION III
DENVER, COLORADO

P. O. Box 360
Grand Junction, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 1 1957

DATE	INITIALS	CODE
	To:	Executive Officer, DMEA Field Team, Region III
	From:	Howard F. Albee
	Subject:	Docket No. 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.

February 20, 1957

Through: J. William Hasler JWH
E. N. Harshman
J. F. Shaw JFS

The operator requested by letter of January 28, 1957, approval for drilling under stage II of the contract. In connection with the request the operator also requests that the holes be drilled to explore the Westwater member of the Morrison formation and that funds allotted to core drilling be converted to non-core drilling to provide for the increased drilling depth.

Figure 1 was prepared from information made available through Allen Corey, U. S. Geological Survey. The map shows the known drilling and results in all of the sections around section 9. The information in sections 2 and 3 is not complete and the depth of drilling can only be assumed. However, as the drilling in sections 4 and 5 bottomed in the Recapture member of the Morrison formation, the drilling in sections 2 and 3 probably did likewise due to the proximity of the Ambrosia Lake ore bodies to the north, (Fig. 2, docket 4411, contract Idm-E 1052). Part of the holes in sections 8 and 10 were drilled through the Westwater. The result of testing the Westwater in these sections has been negative insofar as an ore body is concerned.

Three possibilities for the occurrence of ore bodies in section 9 existed: Ore in the Brushy Basin, ore from an extension of the Ambrosia Lake belt of mineralized ground in the Westwater, or an ore body satellitic to the Ambrosia Lake belt. Inasmuch as the sections northerly from section 9 have been drilled with negative results it is apparent that the Ambrosia Lake mineralized belt does not tongue out southerly into section 9. The

possibility of ore bodies in either the Brushy Basin or Westwater, however, still exists, but examination of figure 1 shows the probability of occurrence of such ore bodies, especially in the Westwater, to be poor.

Four drill holes in the section have penetrated the Westwater and bottomed in the Recapture. The logs of these holes show the color, lithology, and thickness of the Westwater to be favorable for the occurrence of ore bodies. However, all evidence in the area of section 9 points to the so called "Poison Canyon" sandstone as being the ore bearing host and not the Westwater. Therefore, the Westwater would not be favorable as a host rock.

Twenty-five holes have been drilled in section 9. Some of these holes did not go completely through the "Poison Canyon" sandstone because of confusion as to which Brushy Basin sandstone was the "Poison Canyon". The logs of the drill holes that did penetrate the "Poison Canyon", however, show it to be generally favorable as a uranium host rock in color, lithology, and thickness.

Inasmuch as the "Poison Canyon" is indicated as being the host rock in the area and large parts of the section have not been tested, 25 stage II drill holes are recommended to test the "Poison Canyon" sandstone only. The drill pattern recommended is shown on figure 2.

The coordinates of the recommended holes are;

North - East	North - East
400 - 1400	1200 - 3000
1200 - 1400	2000 - 3000
2000 - 1400	2600 - 3000
3000 - 1400	3200 - 3000
4000 - 1400	4000 - 3000
4800 - 1400	4800 - 3000
200 - 2200	600 - 3800
1000 - 2200	1400 - 3800
1800 - 2200	2200 - 3800
2400 - 2200	3000 - 3800
3400 - 2200	3800 - 3800
5000 - 2200	4600 - 3800
400 - 3000	

Three of the 28 holes shown on figure 2 are not recommended. The coordinates of these holes are N 2000 - E 600, N 3000 - E 600, and N 2600 - E 4600.

If less holes were drilled or, in effect, if the spacing were greater it would only serve to test the favorableness of the ore bearing sandstone, which has already been done. If more holes were necessary or, in

in effect, if the spacing had to be less to pick up a mineral deposit, then an ore body in that deposit would likely be too small to be economic.

Howard F. Albee

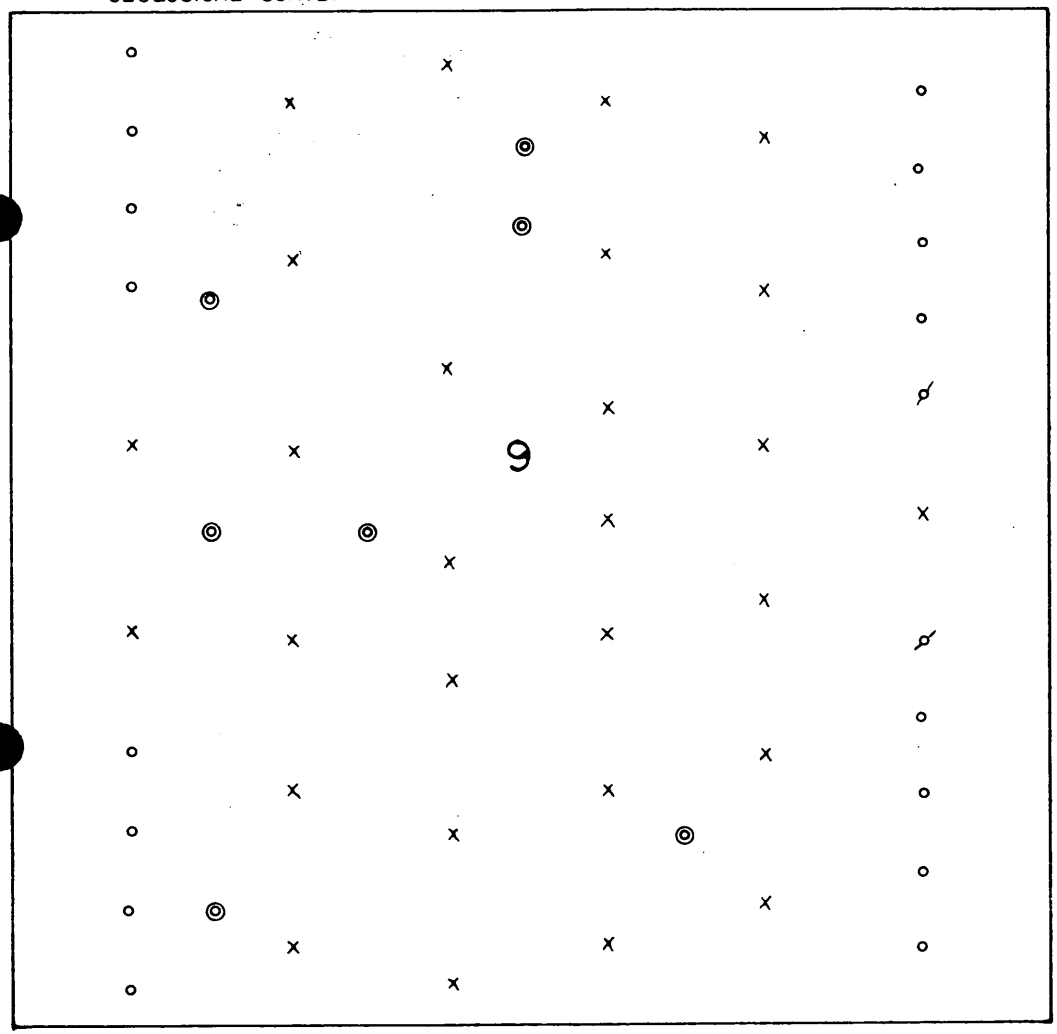
Howard F. Albee,
Geologist

HFA/mlr

Enclosures
Fig. 1 (12 copies)
Fig. 2 (24 copies)

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
FEBRUARY 1957 DOCKET 3943



EXPLANATION

DRILL HOLES

◎ WESTVACO HOLES (BARREN)

○ DMEA HOLES (BARREN)

○ MINERALIZED

X LOCATION OF REQUESTED STAGE II DRILL HOLE

1000 0 1000 FEET

FIGURE 2. MAP OF SEC. 9, T. 13N., R. 9W. SHOWING LOCATION OF PROPOSED STAGE II DRILL HOLES, FOOD MACHINERY & CHEMICAL CORPORATION, WESTVACO MINERAL PRODUCTS DIVISION, McKINLEY COUNTY, NEW MEXICO

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

January 28, 1957

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
FEB 1 1957
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY
D M E A
RECEIVED MAR 1 1957
DATE | INITIALS | CODE

Re: Stage II Proposal
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:

The footage disallowances for Stage I are now being determined and Westvaco wishes to submit the proposal for Stage II.

Recent exploration activities in the area surrounding Section 9 have indicated that the Westwater sandstone has a much greater potential as an ore bearer than it was considered to have at the time the DMEA application was submitted. Therefore, in view of this recent information, Westvaco would like to propose extension of the drilling depths to enable penetration of the Westwater. This additional cost could be defrayed by permitting the funds alloted to core drilling to be converted to non-core drilling. By drilling to the Westwater, the efficiency of the exploration program would be greatly increased.

The 28 proposed holes and their coordinates are:

	Est. Depths		Est. Depths
2000 - 600	415	2000 - 1400	415
3000 - 600	415	3000 - 1400	415
400 - 1400	415	4000 - 1400	415
1200 - 1400	415	4800 - 1400	425

	Est. Depths		Est. Depths
200 - 2200	415	3200 - 3000	425
1000 - 2200	415	4000 - 3000	425
1800 - 2200	415	4800 - 3000	425
2400 - 2200	415	600 - 3800	415
3400 - 2200	425	1400 - 3800	415
5000 - 2200	425	2200 - 3800	425
400 - 3000	415	3000 - 3800	425
1200 - 3000	415	3800 - 3800	425
2000 - 3000	415	4600 - 3800	425
2600 - 3000	425	2600 - 4600	470
		Total	11,790

In total, the proposed holes comprise 11,790 non-core feet. Under the provisions of the contract, Stage II is alloted $22,050 for 9,800 non-core feet and 2800 core feet. This allotment could be converted to 17,640 non-core feet (at $1.25 per foot). However, as the contract specifies 28 Stage II holes, Westvaco is requesting only that number with their estimated footage.

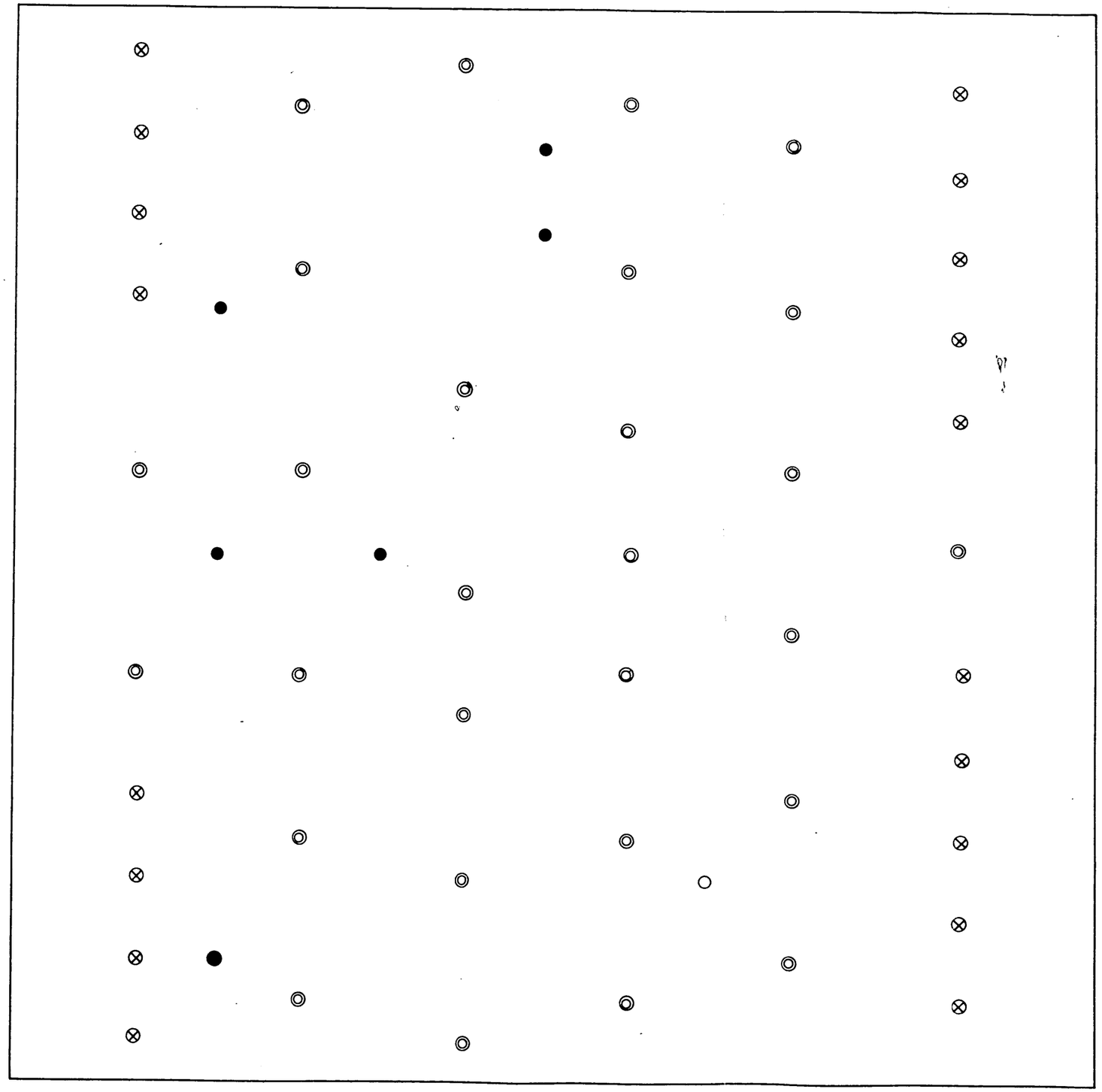
The proposed holes are placed in a pattern designed to cover any "open" areas. To date, the only mineralized holes found are 2000-4600 and 3250-4600.

Respectfully submitted,

W. S. Cavender

W. S. Cavender, Mgr. of Explor.
Food Mach. & Chem. Corp.
Westvaco Mineral Products Div.
P. O. Box 250
Pocatello, Idaho

WSC:mdc



EXPLANATION

⊗ Stage I Holes

◎ Proposed Stage II Holes

● Other Holes

N

0 600 1200 ft.

Scale of Feet

FOOD MACHINERY & CHEMICAL CORP.
WESTVACO MINERAL PRODUCTS DIVISION
MINERAL DEVELOPMENT DEPARTMENT

STAGE II DRILLING PROPOSAL
Section 9, T. 13 N., R. 9 W., N.M.P.M.

1/28/57
M.D.C.

MAP NO. 203

OFFICIAL FILE COPY
D M E A
RECEIVED MAR 1 1957

DATE	INITIALS	CODE

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

224 New Customhouse
Denver 2, Colorado

February 1, 1957

Memorandum

To: E. N. Harshman - w/enclosure
John F. Shaw - " "

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3943 (Uranium), Contract No. Idm-E932, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division (Sec. 9, T 13 N, R 9 W), McKinley County, New Mexico

Enclosed is a copy of the Operator's letter of January 28, 1957, with attached map, which constitutes a request for approval for drilling under Stage II of the Contract.

In connection with the drilling of the twenty-eight (28) Stage II holes, the Operator requests that the holes be drilled to explore the Westwater formation and that core drilling footage and funds be converted to non-core drilling to provide for the drilling to the increased depth.

According to the Operator's estimate of the drilling footage involved for the deeper drilling and the footage obtained by converting core drilling to non-core drilling, it appears that there will be insufficient footage for all of the twenty-eight (28) holes requested.

Please submit a joint memorandum report of your recommendations in the matter.

Original signed by
J. W. TOWNSEND

for W. M. Traver

Enclosure

JWT:prl

cc: Chairman, Op. Comm. (2)
Hasler - w/copy of Operator's request.
Townsend
Corres. file
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 4 1957

DATE	INITIALS	CODE
2-4	C	220
2/4	[illegible]	800
2/5	[illegible]	225

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

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 25 1957

DATE	INITIALS	CODE
1·25	C	220
1/28	[illegible]	800
January 22, 1957		225

22h New Customhouse
Denver 2, Colorado

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

Re: Docket DMEA-3943 (Uranium)
Contract Ida-2932
Food Machinery and Chemical Corp.
(Sec. 9, T. 13 N., R. 9 W.)
McKinley County, New Mexico

Dear Mr. Hayden:

In your letters dated November 2, 1956 and December 5, 1956 to Mr. John F. Shaw, you stated that all Stage I work has been completed. We have not as yet received your monthly report and voucher for the last work which apparently was performed during September, 1956.

We have received recommendations from the field relative to possible reinstatement of disallowed drilling costs for drilling performed during August, 1956 along the 4600 East line, and we would prefer to make the reinstatement in conjunction with the September, 1956 voucher. If you agree with this procedure, we request that you submit the September, 1956 monthly report and voucher to Mr. Shaw as soon as possible. Do not make adjustment on the accounting Forms MF-104 and MF-104A to reflect the disallowances from the August, 1956 voucher. Proper adjustment can be made from a subsequent voucher after the exact amount of reinstatement is determined.

If you are not agreeable to the above procedure, you may submit a separate (replain) voucher for the costs disallowed from the August, 1956 voucher for drilling along the 4600 East line. The regular monthly reporting Forms MF-104 and MF-104A are the proper forms to use.

We will appreciate advice from you as to which procedure you prefer, and the date on or before which the voucher, or vouchers, will be submitted to Mr. Shaw's office. If you require any additional information, please feel free to contact this office or Mr. Shaw's office.

Very truly yours,

Original signed by
W. M. TRAVER
W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Copies to:
Mr. W. S. Cavender, Manager of Exploration
Grants, New Mexico

Mr. W. H. Williams, Vice President
New York 17, New York

JDC:jy
cc: Chm. Op. Comm. (2)
Harshman
Shaw (2)
Townsend
Corresp. E932
Chron.

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

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 25 1957

DATE	INITIALS	CODE
January 22, 1957		
1:25	C	220
1:5		800
		225

22d New Customhouse
Denver 2, Colorado

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

In: Docket DMEA-3943 (Uranium)
Contract Idm-8932
Food Machinery and Chemical Corp.
Westvaco Mineral Products Division
(Sec. 9, T. 13 N., R. 9 W.)
McKinley County, New Mexico

Dear Mr. Hayden:

Reference is made to your undated letter addressed to Mr. John F. Shaw, U. S. Bureau of Mines, Denver Federal Center, Denver, Colorado, which was received in this office January 21, 1957, wherein you request the Government's approval for drilling under Stage II of the contract.

You request approval to drill on through the Westwater sandstone instead only of drilling through the Poison Canyon sandstone as presently provided for in the contract.

Approval for the deeper drilling will require that the contract be amended to provide for such. Preparation of an amendment of the nature involved is not within the authority delegated to this office. Therefore, it must necessarily be forwarded to the Washington Office, DMEA, for their consideration and appropriate action.

In the matter of request for approval of work under Stage II, please refer to the second paragraph on the last page of the letter from this office, dated April 30, 1956, whereby we forwarded the Operator's copy of the contract, forms, and instructions for reporting on work to be performed under the contract and procedures to be followed in conjunction with the contract.

Your request in its present form cannot be acted upon by this office because you did not include an estimate of the footage involved with the deeper drilling. Therefore, please resubmit your request in detail, outlining the changes you propose.

In the matter of correspondence concerning DMEA contracts except for Form MF-104, Monthly Progress Report and Voucher, and correspondence pertaining thereto, all other correspondence relative to matters concerned with administration of the contract, amendments, work approvals, etc., is to be directed to this office. Your attention to that procedure in the future will be appreciated.

Very truly yours,

Original signed by
W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Copy to:
Mr. W. S. Cavender, Manager of Exploration
Grants, New Mexico

JWT:jy
cc: Chm. Op. Comm. (2))
Harshman)
Shaw (2)) w/copy of Oper's.
Hasler undated letter
Townsend)
Corresp. E932)
Chron.

OFFICIAL COPY

January 15, 1957

DMEA
RECEIVED JAN 25 1957

DATE	INITIALS	CODE

DMEA
JAN 21 1957
REGION III
DENVER, COLO.

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

RECEIVED
JAN 18 1957
Div. of Mineral Technology
BUREAU OF MINES
Denver Experiment Station
Denver, Colorado

Re: Stage II proposal
Docket No. DMEA 3943 (Uranium)
Contract Idm-E 932
Feed Machinery & Chemical Corp.
Westvaco Mineral Products Div.
Section 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Sir:

The footage disallowances for Stage I are now being determined and Westvaco wishes to submit the proposal for Stage II.

Recent exploration activities in the area surrounding Section 9 have indicated that the Westwater sandstone has a much greater potential as an ore bearer than it was considered to have at the time the DMEA application was submitted. Therefore, in view of this recent information, Westvaco would like to propose extension of the drilling depths to enable penetration of the Westwater. This additional cost could be defrayed by permitting the funds alloted to core drilling to be converted to non-core drilling. Another solution would be to transfer sufficient footage to Stage II from Stage III. In either case, the extra footage could prove very valuable and informative.

The proposed holes and their coordinates are:

2000 - 600	2000 - 1400
3000 - 600	3000 - 1400
400 - 1400	4000 - 1400
1000 - 1400	4000 - 1400

200 - 2200	3200 - 3000
1800 - 2200	4000 - 3000
2400 - 2200	4800 - 3000
3400 - 2200	600 - 3800
4200 - 2200	1400 - 3800
5000 - 2200	2200 - 3800
400 - 3000	3000 - 3800
1200 - 3000	3800 - 3800
2000 - 3000	4600 - 3800
2600 - 3000	

Respectfully submitted,

R. J. Hayden

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

RJH:mdc

224 New Customhouse
Denver 2, Colorado

December 18, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Gamma-ray log interpretations

Enclosed are four copies each of gamma-ray log interpretations for the following DMEA contracts.

Docket DMEA 3854, Contract Idm-E967, Four Corners Exploration Co., McKinley County, New Mexico
Docket DMEA 3928, Contract Idm-E926, Pacific Uranium, Green River, Utah, (Private holes - Pacific Uranium)
Docket DMEA 3939, Contract Idm-E934, Westvaco Mineral Products, McKinley County, New Mexico
Docket DMEA 3943, Contract Idm-E932, Westvaco Mineral Products, McKinley County, New Mexico
Docket DMEA 3989, Contract Idm-E933, Westvaco Mineral Products, McKinley County, New Mexico
Docket DMEA 4041, Contract Idm-E969, America Leduc Uranium, Outlaw Mesa, Colorado
Docket DMEA 4071, Contract Idm-E940, Colamer Corporation, McKinley County, New Mexico
Docket DMEA 4073, Contract Idm-E987, Simpson Mining Co., Beaver Mesa, Colorado - Utah
Docket DMEA 4222, Contract Idm-E1003, Radium King, La Sal Creek, Utah
Private holes, Barker Graham, Beaver Mesa, Utah

mr. chiang

1 copy here.

/s/ W. M. Traver

W. M. Traver

c
o
p
y

E932

Westvaco Mineral Products
McKinley County, N. Mex.
Sec. 9; T. 13 N.; R. 9 W.
IMEA DOCKET NO. 3943

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_eU_3O_8$	Remarks
400-4600	339.0	None	130.0-330.0	Barren						
600-600X	265.0	None	108.0-258.0	Barren						
1000-600X	300.0	None	84.0-294.0	Barren						
1200-4600	392.0	None	194.0-394.0	269.8 - 271.6	1.8	220			<0.005	
				379.2 - 380.1	0.9	300			<0.010	
1400-600X	332.0	None	74.0-324.0	134.4 - 135.9	1.5	240			<0.005	
1600-4600	470.0	None	200.0-468.0	334.7 - 335.5	0.8	350			<0.010	
				335.5 - 336.4	0.9	230			<0.005	
				375.3 - 376.6	1.3	550			0.013	
				376.6 - 377.9	1.3	300			<0.010	
				400.6 - 401.7	1.1	240			<0.005	
				433.5 - 434.6	1.1	360			<0.010	
2000-4000	452.0	None	237.0-437.0	323.5 - 325.2	1.7	230			<0.005	
				325.8 - 326.0	1.1	260			<0.010	
				380.3 - 382.6	1.7	320			<0.010	
				382.6 - 383.6	1.0	720			0.022	
				383.6 - 384.6	1.0	280			<0.010	
				389.0 - 390.5	1.5	200			<0.005	
				390.5 - 391.6	1.1	1,500			0.038	
				391.6 - 392.7	1.1	460			0.011	
				411.0 - 412.1	1.1	220			<0.005	
3250-4600	470.0	None	246.0-466.0	258.5 - 259.7	1.2	210			0.005	
				345.8 - 346.7	0.9	320			0.010	
				388.4 - 389.3	0.9	320			0.010	
3650-4600	475.0	None	218.0-468.0	317.2 - 317.8	0.6	430			0.014	
				352.2 - 353.4	1.2	300			<0.010	
				394.2 - 395.2	1.0	250			0.005	

* From top to bottom depths

Westvaco Mineral Products
McKinley County, N. Mex.
Sec. 9; T. 13 N.; R. 9 W.
DMEA DOCKET NO. 3943

GAMMA-RAY LOG INTERPRETATION

Hole No.	Depth Drilled	Depth Cased	Depth Logged From* To	Anomaly Detected From* To	Anomaly Thickness	Counts per minute	CPM Corrected for Casing	CPM Corrected for G-M Tube	Grade $\%_e U_3O_8$	Remarks
3850-600X	357.0	None	112.0-362.0	156.9 - 157.7	0.8	400			0.011	
				240.5 - 242.2	1.7	320			0.010	
				277.6 - 278.6	1.0	360			0.010	
				290.2 - 291.4	1.2	220			0.005	
4050-4600X	485.0	None	230.0-480.0	331.0 - 332.1	1.1	280			0.010	
				332.1 - 333.0	0.9	200			0.005	
				357.2 - 358.7	1.5	260			0.005	
				358.7 - 360.7	2.0	210			0.005	
				377.6 - 378.3	0.7	240			0.010	
4250-600X	345.0	None	99.0-349.0	152.8 - 153.6	0.8	290			0.010	
4450-4600X	480.0	None	234.0-484.0	299.0 - 299.8	0.8	230			0.005	
4650-600X	490.0	None	128.0-478.0	173.4 - 174.3	0.9	3,700			0.14	
				174.3 - 177.1	2.8	240			0.005	
				215.1 - 217.0	1.9	260			0.005	
				398.7 - 399.8	1.1	360			0.010	
				399.8 - 400.9	1.1	210			0.005	
				405.5 - 406.3	0.8	470			0.013	
				425.7 - 426.6	0.9	230			0.005	
4850-4600X	450.0	None	250.0-450.0	384.2 - 386.0	1.8	210			0.005	
5050-600X	435.0	None	134.0-434.0	178.6 - 179.5	0.9	340			0.010	
				232.2 - 234.6	2.4	200			0.005	
				270.5 - 271.5	1.0	280			0.010	
				390.9 - 391.9	1.0	1,020 RF3			0.035	
				391.9 - 392.9	1.0	240			0.005	
				400.2 - 401.3	1.1	220			0.005	

* From top to bottom depths

RECEIVED
DEC 28 1966
ENGINEERING

12-14-56

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

224 New Customhouse
Denver 2, Colorado

December 11, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA Docket No. 3943 (Uranium), Contract No. Idm-E932 Food Machinery and Chemical Corporation, Westvaco Mineral Products Division (Sec 9, T13N, R9W) McKinley County, New Mexico

Enclosed are two copies of a letter dated December 5, 1956, from the subject Operator to Mr. John F. Shaw, covering progress for November, 1956. No DMEA contract work was performed during the period, therefore Forms MF-104 and MF-104A were not submitted by the Operator.

W. M. Traver

Enclosures

JDC:ewa
cc: Harshman)
Shaw (2))
Townsend) w/copy Oper. letter
Corresp. E934)
MF-104 File E934)
Chron.

December 5, 1956

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

Re: Progress Report - November, 1956
Docket No. DMEA 3943 (Uranium)
Contract No. Idm - 8 932
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 November, no drilling was done on Section 9. The First Stage has been completed; however, the Second Stage proposal has not yet been submitted. Delay of the drilling program has been due to pending clarification by the DMEA of certain expenditures under the contract with Westvaco.

Respectfully submitted,

R. J. Hayden

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

RJHmdc

DMEA
DEPARTMENT OF THE INTERIOR
DEC 10 1956
REGION III
DENVER, COLORADO

11-14-56

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

RECEIVED NOV 13 1956 D.M.E.A.

224 New Customhouse
Denver 2, Colorado

November 8, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3943 (Uranium) Contract Idm-E932, Food Machinery and Chemical Corporation, Westvaco Minerals Products Division (Sec. 9, T. 13 N., R. 9 W.) McKinley County, New Mexico - Progress Report, October, 1956

Enclosed are two copies of a letter dated November 2, 1956, from the subject Operator which states that no work was performed under Contract Idm-E932 during October, 1956.

According to information contained in the Operator's letter, some drilling apparently was performed during September, 1956, completing Stage I. The Monthly Report and Voucher covering September, 1956 drilling has not been received in this office.

Original signed by
W. M. TRAVER

W. M. Traver

Enclosures

JDC:jy
cc: MF-104 File E932)
Corresp. File)
Harshman) w/copy Oper. let. of 11-2-56
Shaw (2))
Townsend)
Chron.

COPY

November 2, 1956

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

Re: Progress Report - October, 1956
Docket No. DMEA 3943 (Uranium)
Contract No. Idm-E932
Food Mach. & Chem. Corp.
Westvaco Mineral Products Div.
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Sir:

During the month of October, no drilling was done on Section 9. The first stage has been completed; however, the second stage proposal has not yet been submitted. Delay of the drilling program has been due to clarification by the DMEA of certain clauses in the contract with Westvaco.

Respectfully submitted,

/S/ R. J. Hayden

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

RJH:mdc

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

RECEIVED
OCT 22 1956

224 New Customhouse
Denver 2, Colorado

October 18, 1956

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

Re: Docket DMEA 3943 (Uranium)
Contract Idm-2932
Food Machinery and Chemical Corp.
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Mr. Hayden:

Form MF-104, Operator's Monthly Report and Voucher for August, 1956, has been received in this office and is being processed for payment. Processing has been deferred pending a complete review of the drilling performed during August.

It has been administratively determined that a maximum of 10 feet may be drilled below the lower contact of Poison Canyon sandstone where the Poison Canyon is present. Where the Poison Canyon sandstone is not present, the allowable footage is determined for each hole on the basis of information available.

The following tabulation shows the excess core and non-core footage which has been disallowed in accordance with information available in this office.

Hole No.	Total Depth	Base of Poison Canyon	Max. Allow. Depth	Excess Core	Excess Non-Core
1000-600	300	295	300	0	0
1400-600	332	295	305	27	0

Hole No.	Total Depth	Base of Poison Canyon	Max. Allow. Depth	Excess Core	Excess Non-Core
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
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	685	324

The invoice cost, plus Incidental Allowance for the above excess core and non-core footage has been disallowed. Please make the necessary corrections on your future reports on Forms MF-104 and MF-104A, deducting footage and costs which have been disallowed.

If you have any question regarding the above, please feel free to contact this office.

Very truly yours,

J. W. Townsend

J. W. Townsend
Acting Executive Officer,
DMLA Field Team, Region III

Copy to:
Mr. W. N. Williams, Vice President
161 E. 42nd Street
New York 17, New York

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

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

RECEIVED
SEP 27 1956

224 New Customhouse
Denver 2, Colorado

September 25, 1956

Memorandum

To: W. B. Gandik, through E. N. Harshman and J. W. Hasler

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3943 (Uranium) Contract Idm-E932, Food Machinery and Chemical Corporation (Sec. 9, T13N, R9W) McKinley County, New Mexico

Enclosed is one set of lithologic logs for all holes drilled during August, 1956 under the subject contract. One copy each of the Engineer's report and Operator's narrative are also enclosed. A study of the logs in this office indicates the necessity of a field study of the cuttings and core for the purpose of determining the allowability of questionable footage in a number of the holes.

The contract stipulates that each hole is to be cored through the Poison Canyon sandstone interval, and approximately 5 feet into an underlying claystone, at which point the hole is to be bottomed. The lithologic logs indicate that a number of holes went directly from the Poison Canyon sandstone into the Westwater sandstone, and that in some of the holes the contact between the two sandstones was not accurately determined by the company geologist.

We request that you make a field examination of the drill cuttings and core, if you have not already done so, and supply us with the following information

1) Location of the lower contact of the Poison Canyon sandstone in each hole. If the contact cannot be accurately determined in certain holes, please explain.
2) Your recommendations as to the allowable lower limit for contract drilling in each hole.

This office has tentatively set a maximum limit of ten feet of drilling below the lower contact of the Poison Canyon sandstone. Your recommendations for any drilling beyond that limit are to be reasonably justified and explained.

Please note that no core was taken from the Poison Canyon sandstone in Holes 4650-600 and 5050-600. The circumstances would have to be unusual in order to recommend payment for any of the footage in these two holes inasmuch as the contract terms have not been fulfilled.

Payment on the Operator's August, 1956 voucher is deferred pending receipt of your recommendations. You are requested to expedite your reply.

W. M. TRAVER

W. M. Traver

Enclosures

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

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

RECEIVED
SEP 22 1956

224 New Customhouse
Denver 2, Colorado

September 18, 1956

Mr. Russell J. Hayden, Project Engineer
P. O. Box 250
Pocatello, Idaho

Re: Docket DMEA 3943 (Uranium)
Contract Idm-E932
Food Machinery and Chemical Corp.
Westvaco Mineral Products Division
Sec. 9, T13N, R9W
McKinley County, New Mexico

Dear Mr. Hayden:

Receipt is acknowledged of a revised log of hole No. 200-600 and your undated letter of transmittal.

There still appears to be a discrepancy between the graphic log and the inset sheet for the hole. The revised log indicates the lower contact of the Poison Canyon sandstone at approximately 243 feet. The original log and the inset sheet show the lower contact at 253.2 feet. Please advise this office as to the actual position of the upper and lower contacts of the Poison Canyon sandstone. It will not be necessary to submit another revised log of the hole.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

C:jy
: Corresp. E932
Sec. Op. Comm. (2)
Shaw (2)
Chron.

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

224 New Customhouse
Denver 2, Colorado

August 23, 1956

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

Re: Docket DMEA 3943 (Uranium)
Contract Idm-E932
Food Machinery and Chemical Corporation
Sec. 9, T. 13 N., R. 9 W., NMPM
McKinley County, New Mexico

Dear Mr. Hayden:

Form MF-104, Operator's Monthly Report and Voucher for July, 1956, has been received in this office and is being processed for payment.

Your attention is directed to a possible error in the graphic log submitted for hole No. 200-600. The log indicates that 65 feet of core drilling was performed in the hole, whereas the driller's log, drilling contractor's invoice and your narrative report indicate that 75 feet was cored.

If the graphic log is incorrect, please submit a revised log showing the correct core footage. If the supporting data is in error, you must make the necessary adjustment of footage and costs on a subsequent voucher, with an explanatory note under "Remarks" on Form MF-104A and also in your narrative report for the period.

Very truly yours,

RECEIVED

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

JDC:jy
cc: Corresp. E932
Sec. Op. Comm. (2)
Shaw (2)
Townsend
Chron.

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

RECEIVED
JUL 5 - 1956

224 New Customhouse
Denver 2, Colorado

July 3, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3943 (Uranium), Contract Idm-E932 (Sec.9,T.13 N.,R.9 W.)
Docket DMEA 3989 (Uranium), Contract Idm-E933 (Sec.29,T.13 N.,R.9 W.)
Docket DMEA 3939 (Uranium), Contract Idm-E934 (Sec.7,T.13 N., R.9W.)
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division), McKinley County, New Mexico

In conjunction with the matter discussed in our air mail letter of June 21, 1956 we are enclosing the original and two copies of a letter from George W. Heim, the Operator's geologist, dated June 26, 1956 wherein it is stated that they have decided not to request permission to change the analysis method for samples taken from chemical to X-ray.

It appears that the entire matter should be closed until reopened by them.

W. M. Traver

Enclosures

-120.

RECEIVED
JUL 5 - 1956

FOOD MACHINERY AND CHEMICAL CORPORATION

FOOD MACHINERY AND CHEMICAL CORPORATION

WESTVACO MINERAL PRODUCTS DIVISION

MINERAL DEVELOPMENT DEPARTMENT

TELEPHONE: POCATELLO 4678

PLEASE REPLY TO
P. O. BOX 250
POCATELLO, IDAHO

June 26, 1956

DMEA
Date Rec'd
JUN 27 1956
BUREAU OF MINES
Denver, Colorado

Mr. William M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Customs Building
Denver 2, Colorado

Dear Mr. Traver:

With further reference to our inquire of May 29, 1956, regarding the possibility of using X-ray in lieu of chemical analysis on uranium samples taken under DMEA program, it has been decided not to request permission to make this change at the present time, as the contracts are in force and the possible length of time required to secure approval might permit use on only a portion of the samples involved.

With best regards,

George W. Heim

G. W. Heim

GWH:DL
cc: OAPower
HBFowler
RJHayden

6-26-56

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

RECEIVED
JUN 25 1956

224 New Customhouse
Denver 2, Colorado

June 21, 1956

AIR MAIL

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3943 (Uranium) Contract Idm-E932 (Sec.9, T.13 N., R.9 W.)
Docket DMEA 3989 (Uranium) Contract Idm-E933 (Sec.29, T.13 N., R.9 W.)
Docket DMEA 3939 (Uranium) Contract Idm-E934 (Sec.7, T.13 N., R.9 W.)
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division), McKinley County, New Mexico

In conformance with advice to you in the second paragraph of our memorandum of June 13, 1956, we are enclosing the original and two copies of a memorandum dated June 19, 1956, from L. B. Riley, Denver Coordinator, G. & P. Branch, Geological Survey, relative to the Xray method of sample analysis.

Mr. George W. Hain, the Operator's Engineer, was in this office today and advised that they tentatively estimate the Xray method of sample analysis will effect a saving of about two-thirds of the cost estimated for chemical analysis under the three contracts. Mr. Hain also advised that his company will further consider the matter of substituting Xray analysis for chemical analysis; and if they decide to proceed with the matter, they will submit a formal request for an amendment to each of the contracts and supply an analysis of the modifications desired and the costs involved.

For advance information Mr. Hain was asked to have his laboratory prepare and furnish an accurate estimate of the costs involved in using the Xray method of analysis under the three contracts.

W. M. TRAVER

Encls.

W. M. Traver

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA
Date Rec'd.
JUN 20 1956

RECEIVED
JUN 25 1956

BUREAU OF MINES
Denver, Colorado

June 19, 1956

Memorandum

To: E. Nelson Harshman, DMEA Field Team

From: L. B. Riley, Denver Coordinator
G & P Branch, Denver

Subject: Comments on analytical problem of Westvaco Mineral Products

The problem raised in the above company's letter of May 29 is essentially whether uranium analysis using fluorescent x-ray spectrometric methods ("XRS" in the description attached to their letter) can be substituted for work performed under a DMEA contract.

The Geochemistry and Petrology Branch has not used this method routinely for uranium analysis. This should not be taken as any reflection on the method for this use; the method and equipment has been employed for other types of investigation that could use its unique characteristics more advantageously.

Perhaps the following may be helpful. A large number of the uranium analyses made in our laboratories here in Denver, on samples submitted by exploration geologists, must be quite similar to the samples of concern to DMEA. If we had sample capacity in an "XRS" unit available for routine uranium analyses and were considering substituting this method I am sure we would set up some form of chemical control system. This might well take the form of running every tenth

sample by a chemical method (volumetric or fluorimetric), for a sufficient period to firmly establish the new method on a routine basis. Such a scheme would have advantages over a separate comparative study of a few samples, such as would be (and, in the Grants, N. M., case apparently, has been) made before considering the introduction of the method. Any differences found could result in imporvements either in the new or in the old method.

The need for this routine testing of the new method seems obvious. Even the fact that it is successfully used elsewhere, or for one type of ore, or for one range, does not prove its universal applicability. The difficulties analytical chemists had in the late '40s with uranium, and to somewhat less extent with thorium make for caution.

It is always necessary to be cautious in economizing on assaying if this economy results in expensive inaccuracy.

L. B. Riley

LBRiley:arh

Mr. Cheng -
Call Chemist U.S.G.S.
Frank Grimaldi
Code 142
(Naval Gun Fact.)
Ext - 523

Information
of K-ray
determination

Results:
Believe the method practical
accuracy probably 5 to 10%
of total analysis.
Not much experience with
method.

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

RECEIVED
JUN 18 1956

[illegible] New Customhouse
Denver 2, Colorado

June 13, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3943 (Uranium), Contract Ida-2950 (Sec. 9, T. 13 N., R. 9 W.);
Docket DMEA 3969 (Uranium), Contract Ida-2953 (Sec. 29, T. 13 N., R. 9 W.);
Docket DMEA 3939 (Uranium), Contract Ida-2954 (Sec. 7, T. 13 N., R. 9 W.)
All in McKinley County, New Mexico; Food Machinery and Chemical Corporation, Westvaco Mineral Products Division

Enclosed are the original and three copies of a letter dated May 29, 1956 with attachments, from George W. Heim, the Operator's representative, wherein he requests advice as to whether or not it would be permissible to use X-ray method in lieu of chemical method for analyzing samples taken under the subject DMEA contracts.

The matter was referred to the Geological Survey laboratory at Denver Federal Center and they advise that they would recommend use of the X-ray method for sample analyses, provided that every tenth sample be analyzed chemically, as a check. We have been further advised by the laboratory personnel that they will prepare a written memorandum on the matter, which we will forward to you immediately when received.

Information presently available to us indicates that an X-ray analysis can be made for about $5.00 each, which would result in a saving of presently apportioned funds sufficient to permit chemical check analysis of every tenth sample. In the event the X-ray analysis is to be authorized on the basis recommended, we further recommend that it be stipulated that the chemical check analyses be made by a different laboratory other than the one making the X-ray analyses.

The DMEA Field Team, Region III, is in accord with the recommendation from the Geological Survey laboratory, and we will

appreciate prompt advice from you by teletype as to whether or not the change should be authorized, if so, and if amendments to the contracts are necessary the will prepare and execute the amendments.

W. M. Tweaver

W. M. Tweaver

Enclosures

DMEA
Date Rec'd
MAY 31 1956
BUREAU OF MINES
Denver, Colorado

RECEIVED
JUN 18 1956

FOOD MACHINERY AND CHEMICAL CORPORATION

WESTVACO MINERAL PRODUCTS DIVISION

MINERAL DEVELOPMENT DEPARTMENT

PLEASE REPLY TO
P. O. BOX 250
POCATELLO, IDAHO

May 29, 1956

Mr. W. M. Traver, Chief DMEA Field Team
U. S. Bureau of Mines
New Customs Building
Denver, Colorado

Refer To: Docket No. 3939
Docket No. 3943
Docket No. 3989

Dear Bill:

Pursuant to our telephone conversation regarding the possibility of using X-ray methods of analysis on samples taken under the above listed DMEA contracts in place of chemical analysis, the Westvaco Research Laboratory at Newark, California, has furnished us data regarding the X-ray method.

We enclose a description of the method and a table showing comparison of results by X-ray and chemical methods. The procedure has been published by personnel of the Monsanto Chemical Company, who worked in a contract laboratory of the Atomic Engergy Commission, and is described in the following reference.

Pish and Huffman, Aval. Chem. 27, 1875 (1955)

After you have had a chance to review this material, we would appreciate your advising us as to whether or not it would be permissible for the X-ray method of analysis to be used on samples taken under the DMEA contracts.

With best personal regards,

George W. Heim

George W. Heim

GWH:DL
Encl.

RECEIVED
JUN 18 1956

KCVincent
WMPearson

H. B. Fowler - Pocatello
(3)
W. M. Pearson

May 22, 1956

XRS Analysis of Uranium Ores

Jim Robertson referred your memo of May 18 to me for reply. The accompanying table and method are in answer to the request in George Heim's memo of May 15. The comparison of uranium values in the table for the two methods, while meager in some respects, is fairly convincing as to the validity of the XRS internal standard method. Three of the XRS determinations appear to be low, but radiometric determinations suggest that only one, #5386, is significantly low. Our experience here indicated that the wet method tends to yield high results. We can readily add more data to the table by running the XRS method on a number of samples assayed by the wet method both here and elsewhere. If you anticipate a considerable number of samples for analysis, then it would certainly be worth our while to get the XRS method accepted, for the time and effort saved by that method is substantial.

The description of the method needs no comment. Quantitative analysis by fluorescent X-ray spectrometry is a widely used technique. A procedure for uranium analysis based on this principle has been published by Monsanto personnel from a contract laboratory of the A.E.C. (see Pish and Huffman, Anal. Chem. 27, 1875 (1955)). Let us know if there is anything further we can do in this matter.

COPY

WMP:AMP

RECEIVED
JUN 18 1956

Analysis of Uranium Ores from Grants, N. M. by Two Methods

Sample	U_3O_8, % XRS, Int. Std.	U_3O_8, % Wet Chem.
#6450 2055-335 (213'-215')	0.0775	0.098
#5376 2260-315 (215'-216')	0.148	0.153
#5375 2260-315 (214'-215')	0.195, 0.185	0.192
#5389 2260-315 (222'-223')	0.158	0.203
#5386 2260-315 (219'-220')	0.145	0.185
#5388 2260-315 (221'-222')	0.347	0.370
#5385 2260-315 (217.5'-219')	0.522, 0.518 0.47*	0.506
#5377 2260-315 (216'-217.5')	1.042, 1.000	1.045
S.S. 0.46% U_3O_8**	0.435	0.465
AEC Std. #4 (0.18% U_3O_8)	0.180	0.184
AEC Std. #5 (0.11% U_3O_8)	0.105	0.123

* Check determination by different operator at a later time.

** Analyzed sample obtained from the laboratory of Haystack Mountain Development Co., Prewitt, N. M.

COPY

XRS Internal Standard Method for U_3O_8 Determination in Ores

This method was developed by Cope and Lingard of the Engineering and Mining Experiment Station, South Dakota School of Mines, and was presented at the Fourth Annual X-Ray Symposium at Denver in August, 1955. They required a rapid assay method for a large number of ores and found that the XRS internal standard method was quite satisfactory. They had working curves for ores containing up to 10% U_3O_8. We have been concerned with ores containing less than 1% U_3O_8 and so have not worked in the higher ranges. However, we would anticipate no problems.

RECEIVED
JUN 18 1956

Our work was done on a Norelco instrument, but other equipment would probably be satisfactory also. A tungsten target tube operated at 35 KV and 35 MA with rock salt analyzing crystal was used. The $L\alpha$ peak of uranium at 18.5° 2θ and the $K\alpha$ peak at 16.9° 2θ of yttrium, the internal standard, were measured. Counting of peak and background intensity was done by setting the goniometer to the desired angle and then letting the recorder run until the integrated counts would assure the desired accuracy, i.e., 4556 counts for 1% probable error in counting. The somewhat wavy line of the recording was averaged with a straightedge. By using high damping factors the deviation of the recording from the average could be decreased at the expense of time required for attainment of equilibrium. It is a matter of personal choice and should have little effect on the value measured. Appropriate scale factors were chosen to keep peak heights within the range of the chart, usually 4 or 8.

COPY

Standards were prepared from pure quartz and analyzed uranium solutions, measured quantities of each being ground in a motor-driven mortar while the slurry was dried with heat lamps. The product was handled as standard ore of known assay.

The following is a stepwise procedure for analyzing an unknown ore:

The sample should be examined qualitatively through the range, 15-20° 2θ (rock salt crystal analyzer) for the presence of uranium and yttrium.

If uranium is present and yttrium is absent, this internal standard procedure may be used.

To 1.000 g. of finely ground sample add 1.00 ml. of $Y(NO_3)_3$ solution in alcohol. The yttrium solution contained about 8 mg. Y_2O_3 per milliliter. The actual concentration was unimportant so long as both standards and unknowns were analyzed using the same solution.

Grind in the motor-driven mortar until dry but for at least 15 minutes. A heat lamp directed at the mortar will facilitate drying.

The total quantity of treated ore usually will just fill the shallow side of the Norelco sample holder. More sample may be treated, if necessary, maintaining the same proportion of internal standard to ore.

Count the peak and background intensities for the desired length of time, about 4 minutes in most of our ores.

Uranium peak at 18.5, background at 19.2 and 18.0° 2θ
Yttrium peak at 16.9, background at 17.4 and 16.5° 2θ

Average the background counts for each peak and subtract to determine the net count for that peak.

Calculate the ratio: uranium net peak count to yttrium net peak count.

Refer to curve plotted with ratio values versus U_3O_8 content, or multiply the ratio found by the slope of the curve which is linear, at least up to 1% U_3O_8.

The slope will vary with the concentration of the $Y(NO_3)_3$ solution.

Standards should be checked occasionally to see that the yttrium solution remains constant.

COPY

224 New Customhouse
Denver 2, Colorado

June 13, 1956

Food Machinery and Chemical Corporation
Westvaco Mineral Products Division
Mineral Development Department
P. O. Box 250
Pacatello, Idaho

Attention: Mr. George W. Hein

Re: Docket DMEA 3939 (Uranium)
Contract Idm-E934
Docket DMEA 3943 (Uranium)
Contract Idm-E932
Docket DMEA 3989 (Uranium)
Contract Idm-E-933

Gentlemen:

Reference is made to your letter of May 29, 1956, wherein you inquire whether or not it would be permissible to use X-ray method in lieu of chemical method for analyzing samples taken under the referenced DMEA Contracts.

Matters of this nature must be forwarded to the Washington Office, DMEA, for their consideration and appropriate action. Therefore, we hope it will be possible for us to advise you of the Government's decision in the matter at an early date.

Very truly yours,

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

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

June 12, 1956

Memorandum

To: Hazel Berry, Operating Committee

From: Grace L. Ault, Rare and Miscellaneous Metals Division

Subject: Amendments to two contracts

Mr. Ching has reviewed and approved the following amendments which were executed in Region III:

DMEA-3939, Food Machinery and Chemical Corp. (Uranium)
Contract No. Idm-E934
Dated May 16, 1956
Amendment No. 1

DMEA-3943, Food Machinery and Chemical Corp. (Uranium)
Contract No. Idm-E932
Dated May 16, 1956
Amendment No. 1

He has indicated that neither of these amendments require further review by the Legal Division.

/s/ Grace L. Ault

Grace L. Ault

Date 6-11-56

To: Mr.Ching

Commodity Uranium

Docket No. DMEA- 3943 Food Machinery and Chemical Corporation

Contract No. Idm-E 932

Attached is Amendment No. 1, dated May 16, 1956

to be reviewed.

Approved Michael Ching

Other action —

Please return this slip to me for my records.

Grace Ault

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

224 New Customhouse
Denver 2, Colorado

June 8, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 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

Enclosed are the original and two copies of Amendment No. 1 to Contract Idm-E932, which has been prepared and executed under authority delegated to this office to extend the date fixed on or before which the Operator shall commence work from April 15, 1956 to August 1, 1956.

Also enclosed are four sets of data relative to the matter.

Copies of the Amendment have been distributed to the Operator, the Finance Office, Region III, and other offices concerned.

W. M. Traver

Enclosures

Surname copies

700

Ching
Ellis
Martin
Jefferson
Whitecloud

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

JUN - 7 1956

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Food Machinery and Chemical Corporation
Westvaco Mineral Products Division
Docket No. DMEA-3943 (Uranium)
Contract No. Idm-E932 (sec. 9, T. 13 N., R. 9 W.)
Docket No. DMEA-3989 (Uranium)
Contract No. Idm-E933 (sec. 29, T. 13 N., R. 9 W.)
Docket No. DMEA-3939 (Uranium)
Contract No. Idm-E934 (sec. 7, T. 13 N., R. 9 W.)
All in McKinley County, New Mexico

Dear Mr. Traver:

In connection with your memorandum of May 28, 1956, and enclosures, relating to the captioned contracts, we are enclosing two copies of a memorandum to the Administrator from the Associate Solicitor, Division of Mineral Resources, which is self-explanatory.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee

Enclosures

APPROVED:

/s/ Robert W. Geehan
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

MChing/gla
6-6-56

cc to: Admr.'s Reading File
Operating Committee
Docket

Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, CSA
Code 700 (3)
Mr. Ching

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

JUN 5 1956

Memorandum

To: The Administrator, DMEA
Attention: Chief Rare and Miscellaneous Metals Division

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-3943 (Uranium), Contract Idm-E932, (Sec. 9, T. 13 N., R. 9 W.);
Docket No. DMEA-3989 (Uranium), Contract Idm-E933, (Sec. 29, T. 13 N., R. 9 W.);
Docket No. DMEA-3939 (Uranium), Contract Idm-E934, (Sec. 7, T. 13 N., R. 9 W.);
All in McKinley County, New Mexico;
Food Machinery and Chemical Corporation, Westvaco Mineral Products Division

Pursuant to your request, we have reviewed the memorandum of Mr. J. W. Townsend, Acting Executive Officer, DMEA Field Team, Region III, dated May 28, 1956, and the enclosures thereto.

The litigation referred to in the letter of the Assistant Counsel for the Operator dated May 22, 1956, and the agreement simply dissolve the claim or encumbrance mentioned in Article 2(b)(2) of the DMEA contract; it is not necessary to take any action in the matter. However, it is suggested that the documents mentioned in Mr. Townsend's memorandum be filed in that part of the file containing the DMEA contract documents.

Robert P. Dwyer

PIndritz/wog
June 4, 1956
Copy to: DMEA Docket
Solicitor's Docket (2)
EWEllis (2)
GCSelfridge
RPDwyer
PIndritz
Contract Idm-E933
Contract Idm-E934
Contract Idm-E932
Chron.

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

RECEIVED
MAY 31 1956

224 New Customhouse
Denver 2, Colorado

May 28, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket DMEA 3943 (Uranium), Contract Idm-E932, (Sec. 9, T. 13 N., R. 9 W.);
Docket DMEA 3989 (Uranium), Contract Idm-E933, (Sec. 29, T. 13 N., R. 9 W.);
Docket DMEA 3939 (Uranium), Contract Idm-E934, (Sec. 7, T. 13 N., R. 9 W.); All in McKinley County, New Mexico; Food Machinery and Chemical Corporation, Westvaco Mineral Products Division.

Enclosed for your records are the original and two copies of a letter from the Assistant Counsel for Food Machinery and Chemical Corporation, and three copies of an Agreement pertaining to the right to extract uranium from the land involved under the three subject contracts.

If there is any action to be initiated by this office, please advise us.

J. W. Townsend

Enclosures

DMEA
Date Rec'd.

MAY 25 1956

BUREAU OF MINES
Denver, Colorado

RECEIVED
MAY 31 1956

FOOD MACHINERY AND CHEMICAL CORPORATION

CHEMICAL DIVISIONS

161 EAST 42ND STREET
NEW YORK 17, N. Y.

May 22, 1956

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
United States Department of the Interior
224 New Customhouse
Denver 2, Colorado

Re: Exploration Project Contract
Nos. Idm-E 932 (DMEA Docket No.3943),
Idm-E 933 (DMEA Docket No.3989) and
Idm-E 934 (DMEA Docket No. 3939).

Dear Mr. Traver:

You will recall that at the time these contracts were executed, we mentioned in sub article 2 (b)(2) that Nabor Marquez and Isabel O. Marquez, his wife, had made a claim upon the right to extract uranium from the parcels covered by these contracts. In my letter to you of April 18, 1956, I mentioned that an action for declaratory judgment had been commenced in order to remove this claim.

I now wish to advise that the United States District Court in Albuquerque has granted us a judgment in this case and that this claim can now be disregarded.

Shortly after the judgment was entered, Mr. and Mrs. Marquez entered into an agreement with Santa Fe Pacific Railroad Company (our lessor) which will have the general effect of assuring all parties concerned that there is no

doubt as to the right of Santa Fe and its lessees to explore, develop, mine, etc., on these parcels. I enclose three photostatic copies of this agreement for your files.

Very truly yours,

FOOD MACHINERY AND CHEMICAL CORPORATION

Clarence R. Peterson

Clarence R. Peterson
Assistant Counsel
Chemical Divisions

CRP:job
Encls.

[redacted] AGREEMENT

THIS AGREEMENT, made and entered into this 14th day of May, 1956, by and between NABOR MARQUEZ and ISABEL O. MARQUEZ, his wife, (hereinafter for convenience collectively called the "Land Owner"), first parties, and SANTA FE PACIFIC RAILROAD COMPANY, a corporation (hereinafter for convenience called "Santa Fe Pacific"), second party.

W I T N E S S E T H

RECITALS:

Land Owner is the owner of the following described premises included in certain deed or deeds of conveyance given by Santa Fe Pacific, hereinafter referred to as "described premises," and situated in the County of McKinley, State of New Mexico, to wit:

NEW MEXICO MERIDIAN, NEW MEXICO

Township thirteen North, Range nine West

Sections 1, 3, 5, 7, 9, 11, 13, 15, 17, 21, 23, 29 and 33.

B

RECEIVED
MAY 0

Subject, however, to exceptions and reservations of minerals and rights of entry to prospect for, mine and remove the same and to use so much of the surface of said lands as may be necessary and convenient contained in said deed or deeds of conveyance of the described premises given by Santa Fe Pacific.

Santa Fe Pacific has licensed or leased, or proposes to license or lease, the described premises for the purpose of prospecting for uranium and associated minerals and mining and removing the same.

It is desired at this time to avoid any future dispute as to what surface uses are permissible with respect to the described premises under said rights of entry and surface use, expressed or implied, and as to what uses would or might be considered excessive thereunder, and to provide an equitable consideration to the Land Owner for the right to make such uses.

AGREEMENT:

NOW, THEREFORE, it is mutually understood and agreed between the parties hereto as follows:

Section 1. In consideration of the mutual benefits and of the sum of Ten Dollars ($10.00) paid by Santa Fe Pacific to the Land Owner, receipt whereof is hereby acknowledged, the Land Owner hereby confirms, extends, and grants to Santa Fe Pacific, its lessees, licensees, successors and assigns, the easements and rights to enter upon the described premises and to prospect for, mine, store and remove uranium and associated minerals, using any means or methods of mining, stripping, quarrying, drilling or any other or different process of extraction or development, and to construct, maintain and use upon, within, and over said premises, machinery, tanks, engines, pipe, power and telephone lines, water wells, not including water from Land Owner's wells, roadways, and, without limitation by reason of the foregoing enumeration, any and all other structures, equipment, fixtures, appurtenances, or facilities (all the above being included under the term "facilities") necessary or convenient in prospecting for and developing, producing, storing, transporting and marketing uranium and associated minerals produced from any portion of the described premises.

Section 2. Santa Fe Pacific agrees, so long as it is receiving royalties upon uranium ore production from the described premises, to pay or cause to be paid to the Land Owner the value on the premises of two per cent (2%) of all the uranium ore hereafter produced, saved and marketed therefrom. Said value shall not include any bonuses, development or haulage allowances or other special payment provided for by statute or by regulation or order of any governmental agency. The said two per cent (2%) shall be in lieu of any other payment expressed or implied in deed or deeds of conveyance of the described premises given by Santa Fe Pacific.

Section 3. Nothing herein contained shall be construed as a covenant to mine by Santa Fe Pacific, its lessees or licensees, or as a grant of any mineral right to the Land Owner.

Section 4. The easements, rights and uses herein shall be binding upon the described premises and each and every part thereof, and the present and future owners thereof, and shall continue for the benefit of the present or future owners of the uranium rights in the described premises and each and every part thereof, and their lessees and licensees.

Section 5. Santa Fe Pacific agrees (a) to pay or cause to be paid all damage to the Land Owner's buildings and growing crops caused by the erection or construction of facilities to be used in connection with mining operations; (b) that all pipe lines shall be buried below plow depth where such lines cross cultivated land; and (c) that where there are fences, to construct gates or cattle guards therein where necessary for Santa Fe Pacific, or its licensees or lessees, to cross same, and to keep such gates and cattle guards in repair and gates closed.

Section 6. This agreement and the easements, rights and uses granted herein shall terminate upon the termination of the license or lease; provided, however, that such termination shall not terminate the rights of entry and of surface use expressed or implied in the deed or deeds of conveyance from Santa Fe Pacific.

Section 7. This agreement shall inure to the benefit of, and shall be binding upon the heirs, executors, administrators and assigns of the Land Owner, and the successors and assigns of Santa Fe Pacific.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first above written.

SANTA FE PACIFIC RAILROAD COMPANY

By _____

President

ATTEST:

SEAL

Assistant Secretary

_____

_____

STATE OF ILLINOIS,)
: ss.
COUNTY OF COOK,)

On this 16th day of May, 1956, before me appeared R. D. Lutton, to me personally known, who, being by me duly sworn, did say that he is the President of the SANTA FE PACIFIC RAILROAD COMPANY, a corporation organized and existing under and by virtue of an Act of Congress approved March 3, 1897, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its board of directors, and said R. D. Lutton acknowledged said instrument to be the free act and deed of said corporation.

WITNESS my hand and notarial seal this 16th day of May, A. D. 1956.

Oscar M. Carlso
Notary Public

SEAL

My commission expires
October 28, 1958

RECEIVED
MAY 3 1 1956

STATE OF NEW MEXICO,)
: ss.
COUNTY OF [illegible])

On this 14th day of May, 1956, before me personally appeared NABOR MARQUEZ and ISABEL O. MARQUEZ, his wife, to me known to be the persons described in and who executed the foregoing instrument and acknowledged that they executed the same as their free act and deed.

WITNESS my hand and notarial seal this 14th day of May, A. D. 1956.

Olga Hengebauer
Notary Public

SEAL

My commission expires
[illegible] 1958

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

RECEIVED
MAY 23 1956

224 New Customhouse
Denver 2, Colorado

May 21, 1956

Mr. R. J. Hayden, Project Engineer
Food Machinery and Chemical Corporation
Westvaco Mineral Products Division
P. O. Box 850
Pocatello, Idaho

Re: Docket DMEA 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

Dear Mr. Hayden:

Consistent with advice to you in our letter of May 15, 1956, we are enclosing the original and five copies of proposed Amendment No. 1 to Contract Idm-E932, wherein the date fixed for the start of the project work is extended from April 15, 1956, to August 1, 1956.

If the Amendment is satisfactory to you, all copies are to be signed by an official of the Corporation authorized to do so, his title inserted, the corporate seal affixed, and all copies promptly returned to this office.

Upon signature by the Executive Officer, DMEA Field Team, Region III, for the Government, your copy of the Amendment will be forwarded to you.

Very truly yours,

J. W. Townsend

J. W. Townsend
Acting Executive Officer
DMEA Field Team, Region III

Enclosures

JWT:prl
cc: Chairman, Oper. Comm. (2)
Harshman
Shaw (2)
Hasler
Townsend
Corres. file
Chron

COPY

224 New Customhouse
Denver 2, Colorado

May 15, 1956

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

Re: Docket DMEA 5943 (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

Dear Mr. Hayden:

Reference is made to your letter of May 3, 1956, wherein you request a recess of operations pertaining to work under the subject contract until about August 1, 1956, to enable you to carry on more efficiently first Stage work under other DMEA contracts.

Inasmuch as no reportable work has been performed under the contract, we will prepare an amendment to extend the date on or before which work is to be commenced from April 15, 1956, to August 1, 1956.

If it becomes necessary, the date for completion of the project work will be extended for a comparable period at a later date upon your request.

When the amendment has been prepared, it will be forwarded to you for signature by an authorized official of the corporation.

Very truly yours,

/s/ W. M. Traver
W. M. Traver
Executive Officer
DMEA Field Team, Region III

DMEA
Date Rec'd
MAY 10 1956
BUREAU OF MINES
Denver, Colorado

REGION III

Building 20
Denver Federal Center
Denver 2, Colorado
May 9, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shea
Supervising Mining Engineer

From: W. D. McMillan

Subject: DMEA Docket 3943 (Uranium) Contract IAm-2932,
Sec. 9, T. 13 N., R. 9 W. NMPM
DMEA Docket 3959 (Uranium) Contract IAm-2934,
Sec. 7, T. 13 N., R. 9 W. NMPM
Food Machinery and Chemical Company, Westvaco
Minerals Project Division, McKinley County, New Mexico

The subject contracts were examined on May 2, 1956, accompanied by Russell Ragsdale, representative of the applicant.

The only work done to date consists of topographic surveys and staking of Stage I drill holes on the proposed grids. An excellent job was done at company expense.

The applicant is requesting that they be permitted to resume drilling operations on the subject contracts until they have completed Stage I of Contract IAm-2933.

It is recommended that this request be granted.

W. D. McMillan
Mining Engineer

WDM/mr
IAm-2932
IAm-2934
Chron

May 3, 1956

RECEIVED
MAY 1 1 1956

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver, Colorado

Re: Request for Recess
Docket DMEA 3943 (Uranium)
Contract Idm-E932
Food Machinery Chemical Corporation
Westvaco Mineral Products Division
Section 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Sir:

A recess of exploration operations is requested for Section 9, T. 13 N., R. 9 W., until about August 1, 1956. During this time exploration will be conducted on Section 29, T. 13 N., R. 9 W., and Section 7, T. 13 N., R. 9 W. The Company's reasons for requesting this recess are as follows:

1. It is felt that by concentrating our efforts on one section at a time a better evaluation of the sections will be gained.

2. By confining the first stage drilling and exploration to one section, greater over-all efficiency of personnel and equipment will be gained.

3. We will be able to utilize more efficiently the time between the completion of the first stage and authorization of the second stage in the two previously explored sections. Barring unforseen difficulties we will have completed by August 1, 1956, the first stage drilling on Section 7, Docket No. 3939, Contract

Idm-E934, and will be well along on the first stage drilling on Section 29, DMEA 3989, Contract Idm-E933. At that time we feel we will be in a position to most effectively conduct the first stage drilling on Section 9.

We will appreciate any consideration you may give this request.

Respectfully submitted,

R. J. Hayden

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

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

RECEIVED
MAY 7 - 1956

224 New Customhouse
Denver 2, Colorado

May 4, 1956

Mr. George Hein
Food Machinery and Chemical Corporation
Westvaco Mineral Development Department
P. O. Box 250
Pocatello, Idaho

Re: DMEA Docket 3943, Contract Idm-E932
DMEA Docket 3989, Contract Idm-E933
DMEA Docket 3939, Contract Idm-E934

Dear George:

With reference to the captioned exploration project contracts and in compliance with your request by telephone yesterday, please find enclosed twelve additional copies of standard forms MF-104 and MF-104A for use in preparing your monthly progress reports. We are requesting J. F. Shaw by copy of this letter to provide you with a like number of extra copies of the two forms each month upon receipt of your completed report. You should advise Mr. Shaw if the reports are to be prepared in your office and if the extra forms should be mailed there.

With further reference to your inquiries regarding operation of the three contracts; if they are to be administered from your office, you should request Photostats of the contracts which were mailed on April 20, 1956 to your New York office. You should also request copies of the transmittal letters of the three contracts as they are not identical and are important, since they incorporate definite instructions with regard to operation of the projects and reporting procedures.

With regard to your proposed plan, after the preliminary work is finished on all three projects for concentrated work by using all contract drill equipment to complete the first stage of one of the projects and then move on to start the first stage of a second contract while the completed results of the first operation are being evaluated, and so on, through the three contracts, there is no objection to this proposal.

However, you should request authority of the Region III Field Team for approval of this program. Your request should be in sextuplet and should supply the date on which work was stopped on the projects that will be inoperative, and an approximate date on which work will be resumed. If an amendment is required, it will be prepared under the authority delegated to

the Region III Field Team; and if not, written authorization for the suspension of operations will be given.

We will be glad to furnish any other assistance we can regarding work to be performed, but believe you will find most of the points covered in the contract transmittal letters referred to in the second paragraph above.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Encls.

WMT:bh

cc-Chairman, Op. Comm. (2)
Harshman
Shaw (2)
Hasler
Townsend
Corres. File E-932
Corres. File E-933
Corres. File E-934
Chron.

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

RECEIVED
APR 23 1956

224 New Customhouse
Denver 2, Colorado

April 20, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3943 (Uranium), Contract Idm-E932, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, (Section 9, T. 13 N., R. 9 W.), McKinley County, New Mexico

Enclosed are the Government's, Division, and Docket copies of Exploration Project Contract Idm-E932, which were forwarded by your letter of March 21, 1956, for signature by the Operator.

A Performance Bond was supplied by the Applicant in lieu of the originally required Consent to Lien. The copy of the Performance Bond has been attached to each copy of the Contract and applicable change made under Article 2 of the Contract. In a telephone conversation with Mr. Ching, it was indicated that your office was aware and approved of the change.

We are also enclosing a copy of the Applicant's letter of April 18, 1956, whereby the executed copies of the Contract were forwarded to this office, and two copies of a letter from this office by which we forwarded the "Operator's Copy" of the Contract, together with forms and instructions relative to reporting on work performed under the Contract.

W. M. Traver

Enclosures

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

RECEIVED
APR 23 1956

224 New Customhouse
Denver 2, Colorado

CERTIFIED MAIL

April 20, 1956

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

Re: Docket DMEA 3943 (Uranium)
Contract Km-8932
Food Machinery and Chemical Corporation
Westvaco Mineral Products Division
Section 9, T. 15 N., R. 9 W.,
McKinley County, New Mexico

Gentlemen:

Enclosed herewith is your copy of Exploration Project Contract Km-8932, Docket DMEA 3943.

Also enclosed are six copies of form MP-104, "Operator's Monthly Report and Voucher," and six copies of form MP-104A, "Operator's Unit Cost and Progress Report." At the completion of the first calendar month of operation and monthly thereafter, you are required to submit five copies of the forms to Mr. John F. Shaw, U.S. Bureau of Mines, Room 137, Building 20, Denver Federal Center, Denver 2, Colorado, each copy complete with all pertinent and supporting data. The sixth form is for your records.

Form MP-104, "Operator's Progress Report and Voucher," must be accompanied by maps or sketches showing the location and extent of work performed and a narrative report describing the work performed and conditions encountered. The monthly accounting report will not be processed for payment unless it is accompanied by a signed narrative report and other pertinent data. Additional copies of forms MP-104 and MP-104A will be forwarded to you each month on receipt of your report for the prior month.

The U.S. Geological Survey and the U.S. Bureau of Mines maintain a field office in the A.E.C. Compound at Grand Junction, Colorado. DMEA representatives of the two Services can be contacted as follows:

J. W. Hasler, U. S. Geological Survey,
Telephone, Grand Junction 3000, Extension [illegible];

M. H. Salsbury, U. S. Bureau of Mines,
Telephone, Grand Junction 3000, Extension 274.

Both men can be reached by mail at

Post Office Box 360,
Grand Junction, Colorado.

For your information and in reply to many questions that have been asked, after forms MF-104 and MF-104A are received, an engineer will check progress and approve your accounts, after which they will be sent to the Regional Office, Region III, U.S. Bureau of Mines, 254 New Customhouse, Denver 2, Colorado, for auditing and vouchering. If the report is in order, a check will be issued by the Treasury Department for the Government's portion of the costs. If you have any difficulty in completing these forms and the reports, please call on either the field representatives, Mr. Shaw, or this office for assistance.

In the matter of your claim for reimbursement of drilling costs under the terms of the contract, reimbursement to you will be on the basis of a hole or holes completed to the objective, which has been drilled in compliance with conditions under the "General Provisions," section of Exhibit "A" and the special conditions pertaining to the drilling under each Stage. Therefore, your monthly report should include only such holes that are completed to that extent and the required records made a part of your claim for reimbursement.

The contract is prepared on form MF-200 and under its provisions and as outlined in Exhibit "A" of the contract, the allowable costs are a combination of actual costs with a maximum unit cost established for work under "Category (1)" and fixed costs for performing the remaining items of work or services. Under the provisions of Exhibit "A", the work under "Category (1)" is to be performed by subcontract. Your claim on form MF-104 for reimbursement of the costs of such work must be supported each month by a signed copy of the billing from the subcontractor, or submit for our records a certified copy of the subcontract.

Your requests to this office for work approval, changes in the contract, or any other communication pertaining to operations under the contract, must be in writing, of which please supply the original and five copies, each copy complete with maps or other pertinent data.

The location of the holes to be drilled under Stage I are indicated on the map, Figure 2, attached to the contract. Should terrain or other conditions necessitate any material change in the location of any of the holes, approval of this office for the change must be obtained prior to performance of the work. Otherwise, the work may not be acceptable for reimbursement to you under the terms of the contract.

Your attention is directed to the provision that work under both Stages II and III is contingent upon results of the work completed under the prior Stage and that performance of the work is subject to the prior written approval of the Government.

When the work under a stage is completed, you must request approval from this office for the work you propose to perform under the next stage. Your request for the work approval must be in triplicate, each copy complete with a map showing the locations of holes previously drilled and the locations of the holes you propose to drill under the next stage. Your request should be complete with drill logs, results of radiometric probing, chemical analyses, and any other pertinent data concerned with the prior work which will be of value to the Government in appraising the work performed under the prior stage.

You should anticipate a suspension of operation between stages of work to enable the Government geologist and engineer to evaluate the results of the work performed and make their recommendations to this office relative to the additional work you propose.

To eliminate as much delay to operations as possible, if that is of serious consideration, you should expedite forwarding of the results of the work completed and your request for the Government's approval of the additional work you propose.

No oral statement of any person shall be construed to modify or change the terms of the contract. Field representatives of the Government are not authorized to approve any changes in the work program or contract provisions. Such approval can only be given by the Washington Office, DMEA, or by the DMEA Field Team, Region III.

It is a regulation that reimbursement for the cost of work accomplished prior to the date of the contract will not be allowed. It is a requirement and imperative that you notify this office in writing the date work actually commences under the contract, with a copy of your letter to Mr. Shaw.

Very truly yours,

W. M. Tonner
Executive Officer, DMEA
Field Team, Region III

JWT:prl
cc: Chairman, Oper. Comm. (2)
Finance Office, Region III
Investment file
Encl: [illegible]

Harshman
Shaw (2)
Healer
Townsend
Corres. file Chron.

FOOD MACHINERY AND CHEMICAL CORPORATION

CHEMICAL DIVISIONS

RECEIVED APR 23 1956

April 18, 1956

161 EAST 42ND STREET
NEW YORK 17, N. Y.

DMEA
Data Rec'd.
APR 19 1956
BUREAU OF MINES
Denver, Colorado

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
United States Department of the Interior
224 New Customhouse
Denver 2, Colorado

Re: Proposed Exploration Project Contract Nos. Idm-E 932 (DMEA Docket No. 3943), Idm-E 933 (DMEA Docket No. 3989) and Idm-E 934 (DMEA Docket No. 3939).

Dear Mr. Traver:

Returned to you herewith in quintuplicate are fully executed Contracts Nos. Idm-E 932, 933 and 934, together with Performance Bonds submitted in lieu of Consents to Lien and/or Subordination Agreements.

I have taken the liberty of changing subarticle 2 (c) to show that a bond is furnished in place of the Consent and/or Subordination Agreement.

Also, I felt it was necessary to mention in subarticle 2 (b)(2) that a claim has been made by the surface owners that the mineral reservation in the deed by which they were granted the land by Santa Fe Pacific Railroad Company (our lessor) was not sufficient to reserve to Santa Fe the rights to uranium ore that might be found in the property. We, of course, dispute this claim, as does Santa Fe, and in order to settle the matter once and for all we have commenced suit in the United States District Court in Albuquerque praying for a declaratory judgment to the effect that there is no merit to the claim of the surface owners. This action, Food Machinery and Chemical Corporation and Santa Fe Pacific Railroad Company vs. Nabor Marquez and Isabel O. Marquez, his wife, is Docket No. 3068 Civil in the District Court.

In view of the adversary nature of this question, it was obvious that we would not be able to obtain a Subordination Agreement from the claimants, except perhaps at some exorbitant consideration. The Performance Bond will, of course, protect the government against the exceedingly remote contingency of loss in the event that this company is prevented, by reason of this claim, from proceeding with development and production.

RECEIVED
APR 23 1956

Mr. W. M. Traver,
United States Department of the
Interior

April 18, 1956

Please accept our apologies for the delay in returning these contracts to you. It was occasioned by somewhat over-extended lines of communication within the company, together with our unexpectedly discovering that our lessor, Santa Fe Pacific, was not willing to execute a Consent to Lien in the form prescribed.

Very truly yours,

FOOD MACHINERY AND CHEMICAL CORPORATION

Clarence R. Peterson

Clarence R. Peterson
Assistant Counsel
Chemical Divisions

CRP:DW
ENCS

Ching
Ellis

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

April 18, 1956

Memorandum

To: The Files

From: Michael Ching, Mining Engineer
Rare and Miscellaneous Metals Division

Subject: Long Distance call to W. M. Traver regarding the three Food Machinery and Chemical Company contracts under Dockets Nos. DMEA-3939, 3943, and 3989

This call resulted from Traver's teletype of April 16, 1956, requesting instructions as to what action to take as a consequence of the Operator starting work before returning the executed copies of the contracts and the requested Consents to Lien.

Clarence R. Peterson of Operator's New York office had advised Traver by telegram, dated April 17, that the three contracts had been executed and would be mailed immediately with Performance Bonds in lieu of Consents to Lien and Subordination Agreements.

In our phone conversation Traver was advised that the Operator intended (1) to insert a statement under Article 2 (b) (2) of the contract that a disputed claim by the surface owners to uranium ores existed; and, (2) to add a statement to Article 2 (c) that a Performance Bond was furnished in lieu of Consent to Lien of Santa Fe Pacific Railroad Company and any Subordination Agreement that might be required by the Government.

Mr. Traver was advised that these additions would be satisfactory if no other alterations or additions were made to the contract and a satisfactory Performance Bond was received. He was also advised that since the contracts were dated March 21, 1956, if they are satisfactorily executed by the Operator, there should be no objection to the fact that work was started before the executed contracts were returned by the Operator. These views were verbally acquiesced in by Mr. Ruben of the Associate Solicitor's office.

/s/ Michael Ching

Michael Ching

Copies of two telegrams
Originals in Docket DMEA- 3939
Food Machinery and Chemical Corp.

DN 235 BUR MINES 4-16-56 1-37

CHAIRMAN, OPERATING COMMITTEE, DMEA

RE OUR LETTERS OF MARCH 26, 1956, TO FOOD MACHINERY AND CHEMICAL CORP., DOCKETS DMEA 3939, 3942, AND 3989. APPLICANT ADVISES BY TELEGRAM TODAY THAT WORK HAS BEEN COMMENCED UNDER ALL THREE CONTRACTS PRIOR TO PROVIDING CONSENT TO LIEN FORMS AND RETURN OF EXECUTED COPIES OF CONTRACTS AS STIPULATED IN THE THIRD PARAGRAPH OF OUR LETTERS OF MARCH 26. PIEASE TELETYPE INSTRUCTIONS AS TO WHAT ACTION WE SHOULD INITIATE.

W. M. TRAVER

- - -

WESTERN UNION
MSS PD WESTVACO CHEMICAL DIVISIONS 4/17/56

WILLIAM TRAVER
DMEA
224 NEW CUSTOMHOUSE
DENVER, COLORADO

CONTRACTS ON DOCKETS 3939, 3943 and 3989 EXECUTED.

WILL MAIL IMMEDIATELY WITH PERFORMANCE BONDS IN LIEU

CONSENTS AND SUBORDINATION AGREEMENTS. HAVE ADVISED

CHING.

CLARENCE R. PETERSON
FMC

Legal Department

c
o
p
y

Originals in Docket DMEA-3939
cc to: Docket DMEA-3943
" DMEA-3989
Code 700 - 3 copies for same numbers

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

224 New Customhouse
Denver 2, Colorado

CERTIFIED MAIL

March 26, 1956

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

Re: Docket DMEA 3943 (Uranium), Food Machinery and Chemical Corporation, (Sec. 9-T.15N.-R.9W. N.M. P.M.) McKinley Co., New Mexico; Proposed Exploration Project Contract Idm-E932

Gentlemen:

Enclosed are the Government's, Division, Docket, Field Team, and Finance Office copies of proposed Exploration Project Contract No. Idm-E932, which has been prepared pursuant to your application for Government assistance in exploration work under the Defense Minerals Exploration Administration program.

If the contract is satisfactory to you, all copies are to be signed by an official of the Corporation authorized to do so, his signature attested to by the Secretary of the Corporation, the corporate seal affixed, and all copies promptly returned to this office.

The contract is released to you for signature and the Government's participation in the costs of the exploration work under the terms of the contract is subject to your providing the executed copies of form "MF-203, Consent to Lien," that was requested by the DMEA office in Washington. When the required Consent to Lien forms and the properly executed copies of the contract have been received in this office, the Operator's Copy of the contract will be forwarded to you, together with forms and instructions relative to reporting on work performed under the contract.

Your attention is directed to the provision under Article 3 of the contract form that work is to be commenced prior to April 15, 1956. Therefore returning the executed copies of the contract and providing the Consent to Lien forms should be expedited all possible.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

JWT:prl
cc: Chairman, Oper. Comm. (2)
Marshman
Shaw (2)
Hasler
Enclosures

Townsend
Corres. file

FOOD MACHINERY
AND CHEMICAL
CORPORATION

WESTVACO MINERAL PRODUCTS DIVISION

Chrysler Building East
161 East 42nd Street
New York 17, New York

Telephone Murray Hill 7-7400

Mr. E. Wm. Ellis, Chief
Rare and Miscellaneous Metals Division
Defense Materials Exploration Administration
Washington 25, D. C.

Dear Mr. Ellis:-

With reference to our applications for DMEA assistance which are identified as your dockets No. 3939, No. 3943, and No. 3989, we regret our delay in submitting the necessary Consent-to-Lien (MF-203) forms.

Every effort is being made to expedite the clarification of certain pertinent details; so that these documents may be properly completed and forwarded to you. We intend to proceed with the exploration of these properties as soon as possible. Meanwhile, please hold our cases in abeyance pending receipt of corresponding Consent-to-Lien forms.

Very truly yours,

WESTVACO MINERAL PRODUCTS DIVISION

/s/ W. N. Williams

W. N. Williams,
President

WNW:dml

c
o
p
y

700

FILE COPY
Surname:
Ching
Selfridge

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

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

MAR 21 1956

Re: Docket No. DMEA-3943 (Uranium)
Feed Machinery and Chemical Corp.
(Westvaco Mineral Products Division)
Sec. 9, T. 13 N., R. 9 W.
McKinley County, New Mexico

Dear Mr. Traver:

Enclosed are the original and five copies of a proposed long-form contract between the Government and the Feed Machinery and Chemical Corporation, signed by the Administrator. The contract consists of Form MF-300, Annex I, Exhibit "A", and map (Figure 2). Also enclosed are two extra copies each of Annex I, Exhibit "A", and map (Figure 2) for the use of the Field Team.

The Applicant has been delayed in securing the required Consent to Lien, but six copies will be forwarded to you as soon as received.

If you find the contract in order, it is ready for forwarding to the Applicant for signature subject to attachment of the Consent to Lien.

The costs suggested in the Report of Examination have been generally followed. The allowance per sample for chemical analyses was reduced from $5.00 to $3.50 since the latter figure has usually been used in the past for uranium determination alone. Labor and supervision costs per month were increased from $500 to $800 in order to be consistent with other proposed Feed Machinery contracts and with a number of other exploration contracts.

P.S. Please note stages are successive, therefore, each stage must be completed before starting work on the next stage, unless the contract is amended.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

APPROVED:

/s/ Robert W. Geehan
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

MChing/izm 3-15-56
CC to: Docket
Code 700
Mr. Ching
Admr.'s Reading File
Operating Committee
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

P.G.H.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

MAR - 6 1956

Memorandum

To: The Administrator, DMEA
Attention: Chief, Rare & Miscellaneous Metals Div.

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-3943, Food Machinery and Chemical Corporation (Westvaco Mineral Products Division) (Uranium)

As requested in Mr. Ellis' memorandum of February 23, 1956, the attached contract has been drafted.

The Consent to Lien of the lessor, which is being acquired by the applicant, should be attached to the contract prior to execution.

Evidence of the extension of the period in the lease for exploration, referred to in Mr. Ellis' memorandum of February 23, should be furnished to the Government prior to the execution of the contract. In file

Robert P. Dwyer

Attachments

Docket Copy
700

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

March 12, 1956

Memorandum

To: The Files

From: Michael Ching, Mining Engineer
Rare and Miscellaneous Metals Division

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

The Report of Examination, dated February 6, 1956, contains detailed estimated costs for the proposed core and non-core drilling. The estimated costs for drilling under Independent Contracts are $1.25 per foot for non-core drilling and $3.50 per foot for core drilling. For an average depth of 450 feet these costs are reasonable and have been incorporated without change under Actual Costs in the Contract. The report made no provisions for bulldozing, presumably because drill sites and access roads will require very little, if any, preparation.

Under Fixed Unit Costs, the unit cost for chemical sample analyses was reduced from $5.00 to $3.50 per sample inasmuch as uranium is the only element in which the Government has an immediate interest, and the $3.50 price has generally been used in the past for uranium alone.

The unit cost for incidental expenses per foot of drilling was arrived at by using the same time element (3 months) and the same basic rates suggested for Stage I in the Report of Examination, except that a field assistant, sampler, and general handyman at $300 per month was added, making the total cost for labor and supervision amount to $800 per month instead of $500 per month. This is a reasonable figure for an operation of this size and is consistent with two other proposed Food Machinery contracts and with a number of other exploration contracts. Details of the incidental allowance, applicable to Stage I only, but representative of all three stages, are as follows:

	Total Cost	Cost Per Foot
Labor and supervision	$2,400.00	$0.30
Operating materials and supplies	340.00	0.04
Depreciation on equipment	180.00	0.02
Miscellaneous	270.00	0.03
TOTAL	$3,190.00	$0.39

Michael Ching

Michael Ching

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

MAR 1956

Memorandum

To: The Administrator, DMEA
Attention: Chief, Rare & Miscellaneous Metals Div.

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-3943, Food Machinery and Chemical Corporation (Westvaco Mineral Products Division) (Uranium)

As requested in Mr. Ellis' memorandum of February 23, 1956, the attached contract has been drafted.

The Consent to Lien of the lessor, which is being acquired by the applicant, should be attached to the contract prior to execution.

Evidence of the extension of the period in the lease for exploration, referred to in Mr. Ellis' memorandum of February 23 should be furnished to the Government prior to the execution of the contract.

Robert P. Dwyer

Attachments

HCRubin/cmd

Copy to: DMEA Docket
Solicitor's Docket (2)
E. W. Ellis
G. C. Selfridge
R. P. Dwyer
H. C. Rubin
chron.

3/1/56

RECEIVED
FEB 29 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

February 29, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket 3943, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, Sec. 9, T. 13 N., R. 9 W., NMPM, McKinley County, New Mexico

I have reviewed the report of examination, Food Machinery and Chemical Corporation, DMEA Docket 3943, dated February 15 and received in this office February 23. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The examining team conclude that the northern- and southernmost parts of Sec. 9, T. 13 N., R. 9 W., warrant further exploration and recommend a three-stage drilling project at a total estimated cost of $67,999.00, with Government participation at $50,999.25.

Stage I would consist of 18 plug and core holes 400 feet apart in two north-south rows, one row 600 feet from the west side, and one row 660 feet from the east side of the subject section. Stage II would consist of 28 plug and core holes drilled 400 feet apart and in staggered rows 800 feet apart in areas indicated to be favorable in Stage I drilling. Stage III would consist of 28 plug and core holes which would offset any ore holes found in Stages I and II.

The results of the seven holes drilled upon suggestion of the examining team did not reveal evidence of mineralization, but the Field Team bases the justification of the project upon such results.

The proposed Stage I holes diminish in their purpose and scope in the fence-like manner in which they are shown on Figure 2 of the field examiners' report and, therefore, the proposed Stage II holes appear to lose all effectiveness as the follow-up stage. Stage III seems to slide from the exploration into the development class.

The Field Team should determine if they are undertaking any obligation or competing with consulting firms in suggesting that the applicant drill holes in certain locations to determine the favorability of the area.

It is advisable that the Field Team be requested to review the drill-hole pattern with the possibility of developing a more efficient plan for prospecting the area. It is difficult to concur in the recommendation for Federal approval of an exploration project on Section 9.

Mr. Hosted concurs in the recommendation of the field examiners.

The report is being forwarded to the Chief, Division of Minerals, in accordance with the routing slip attached thereto.

John E Crawford

John E. Crawford

FEB 27 1956 lym

RECEIVED
FEB 28 1956

FOOD MACHINERY
AND CHEMICAL
CORPORATION

WESTVACO MINERAL PRODUCTS DIVISION

February 24, 1956.

CHRYSLER BUILDING EAST
161 EAST 42ND STREET
NEW YORK 17, N. Y.

CABLE "CAUSTIC" NEW YORK
TELEPHONE MURRAY HILL 7-7400

DMEA-3943

Mr. Ernest W. Ellis, Chief,
Rare & Miscellaneous Metals Div.,
U.S.Department of the Interior,
Washington 25, D.C.

Dear Mr. Ellis:

At the request of Mr. Phillip Groggins of our company, we are sending you herewith a copy of the amendment which extends until March 16, 1957 our agreement with the Santa Fe Pacific Railroad Company covering a tract of land in New Mexico on which we are conducting uranium exploration operations.

Mr. Groggins indicated that you had asked whether we are prepared to accelerate our development work promptly following approval of our DMEA applications. We wish to advise you that we are ready to proceed with the work without any delay.

Sincerely yours,

WESTVACO MINERAL PRODUCTS DIVISION

W. N. Williams

W.N.Williams
President

LBT
Attach.

Copies in
DMEA-3939
DMEA-3988
DMEA-3989

RECEIVED
FEB 27 1956

Route List

M.E.Gilbert (Orig.) - NY
V.E.Cuneo - NY
L.F.Silano - NY
Legal Dept. - NY
W.N.Williams - NY
O.A.Power - Poc

NY 112-A
(Supplementing NY 112)
Lease No. 9442

URANIUM MINING LEASE AND AGREEMENT

between

SANTA FE PACIFIC RAILROAD COMPANY

and

FOOD MACHINERY AND CHEMICAL CORPORATION
(WESTVACO MINERAL PRODUCTS DIVISION)

Dated: January 9, 1956

Re: Supplement to Lease No. 9442
Extension of period of time
from 12 months to 24 months
from March 16, 1955.

Lease No. 9442

SUPPLEMENT to Uranium Mining Lease and Agreement heretofore entered into in duplicate on the 16th day of March, 1955, by and between SANTA FE PACIFIC RAILROAD COMPANY, a corporation created by Act of Congress approved March 3, 1897, with its principal offices in Albuquerque, New Mexico, first party, hereinafter called the "Lessor", and FOOD MACHINERY AND CHEMICAL CORPORATION (WESTVACO MINERAL PRODUCTS DIVISION) a Delaware corporation, second party, hereinafter called the "Lessee".

WHEREAS, Lessor and Lessee mutually desire to extend the period of time from twelve (12) months to twenty-four (24) months from March 16, 1955, during which Lessee may search and explore for uranium-bearing ore on the lands described in said Lease and Agreement.

IT IS, THEREFORE, MUTUALLY AGREED that the words "twelve (12) months" appearing on the fourth line of Paragraph 1 and in the second line of Paragraph 2 be changed to read "twenty-four (24) months", and that Paragraph 6, on page 5, shall read as follows:

> "6. In addition to the payments hereinabove mentioned, Lessee shall pay Lessor as rental for the leased premises upon the execution of this lease the sum of One Dollar ($1.00) per acre, and commencing March 16, 1957, the sum of One Dollar ($1.00) per acre a year for each year this lease may be in effect, to be paid annually, in advance; provided, however, that beginning with March 16, 1957, and each year thereafter the rental so paid for any one year shall be credited on the royalty due to Lessor for that year."

Except as altered hereby, all of the terms, covenants and agreements of said original lease shall remain in full force and effect.

IN WITNESS WHEREOF, this supplemental agreement has been executed in duplicate by the parties thereunto duly authorized this 9th day of January, 1956.

SANTA FE PACIFIC RAILROAD COMPANY

BY /s/ R. S. Rydin

VICE-PRESIDENT

LESSOR

ATTEST:

/s/ W. L. Camp

ASST. SECRETARY

FOOD MACHINERY AND CHEMICAL CORPORATION

BY /s/ Ernest Hart

EXECUTIVE VICE PRESIDENT

LESSEE

ATTEST:

/s/ Harold Vogel

ASST. SECRETARY

FEB 27 1956

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

RECEIVED
FEB 27 1956

224 New Customhouse
Denver 2, Colorado

February 23, 1956

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3943 (Uranium) Food Machinery and Chemical Corporation, (Westvaco Mineral Products Division), Sec. 9, T. 13 N., R. 9 W., NMPM, McKinley County, New Mexico

As mentioned in our letter of February 15 on the subject docket, enclosed are the nine copies of Figure 2 for possible use in the contract.

W. M. Traver

Enclosures

W. M. Traver

700

FILE COPY
Surname:
Ching
Ellis

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

FEB 23 1956

Memorandum

To: Associate Solicitor, Division of Mineral Resources

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-3943 (Uranium)
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
sec. 9, T. 13 N., R. 9 W., N.M.P.M
McKinley County, New Mexico

Will you kindly prepare a long-form contract between the Government and Food Machinery and Chemical Corporation in accordance with the attached draft.

In the interest of uniformity for this Division, it is requested that the form and headings for Exhibit "A" follow those shown in the draft unless you have objections from a legal standpoint.

The required Consent to Lien of Santa Fe Pacific Railroad Company is being secured by the Applicant, but has not, as yet, been received.

The required copies of the map (Figure 2) will be made available by the Field Team within a few days.

In connection with the Uranium Mining Lease and Agreement between the Applicant and Santa Fe Pacific Railroad Company, the twelve-month exploratory period ends on March 16, 1956; however, the Applicant's Washington representative has assured us that the exploratory period has been extended and that evidence of such extension will be provided us shortly. Such extension will also apply to land covered by Docket Nos. DMEA-3939 and 3989.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

Attachments

MChing/izm 2-23-56
cc to: Docket
Code 700

2-23-56 lgm

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
FEB 24 1956

February 23, 1956

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: W. P. Williams, U. S. Geological Survey

Subject: Review of field examination report, DMEA 3943, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, Sec. 9, T. 13 N., R. 9 W., NMPM, McKinley County, New Mexico.

The subject property is located east of, and adjacent to, section 8 where Colamer Corporation recently made a discovery under DMEA Contract Idm-E797, Docket 3632.

The property was examined in the field on September 28, 1955. At that time the examining team informed the applicant that final appraisal for DMEA purposes would not be forthcoming unless the applicant completed some preliminary drilling. The applicant complied and drilled seven holes for his own account.

The examining team recommends approval of the application. In reviewing the examining team's recommendations for hole spacing and location, a confusing situation is noted. In DMEA 3939, Westvaco, located in section 7 of the same township, the same general geologic conditions prevail and the drilling project is intended to seek for the same size ore bodies in the same zone as in section 9. First stage holes in section 7 are on 800-foot centers in a staggered grid pattern with Stage II and III holes grouped around previously-drilled favorable or mineralized holes. The applicant proposed a similar stage I in section 9 but the examining team, instead, proposes two north-south lines of holes, with one line near the west section boundary, and the other line near the east section boundary. The holes are to be 400 feet apart. Such a pattern leaves the entire portion of the section between the two lines of holes completely untouched -- for a distance in an east-west direction of 4,000 feet. Then the report states, "Stage II would consist of . . . holes . . . in areas indicated to be favorable by Stage I drilling," and an attached map shows the locations of Stage II drill holes on 800-foot centers scattered through the vast northcentral and southcentral parts of the section where no Stage I holes are to be drilled.

In view of recent discoveries in the Westwater Canyon member it seems that at least some of the holes should penetrate the Westwater Canyon as proposed by the applicant. The statement, "little mineralized material has been found even though the Westwater Canyon member has been explored fairly extensively," is hard to accept when only the seven holes in section 9 and five holes in section 7 drilled by the applicant is the only exploration completed on the two sections to date. at least 15 holes in Sec. 8.

I agree with the examining team's recommendation that the application be approved. It may be advisable to ask the Field Team to reconsider the problem of drill hole spacing and pattern in view of the several applications from T. 13 N., R. 9 W., McKinley County, New Mexico.

W P Williams

W. P. Williams

2-27-56 dgm

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

RECEIVED
FEB 20 1956

February 15, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination, Docket DMEA 3943 (Uranium), Food Machinery and Chemical Corporation, (Westvaco Mineral Products Division), Sec. 9, T. 13 N., R. 9 W., NMPM, McKinley County, New Mexico

Enclosed are the original and three copies of the Joint Report of Examination on the subject property.

The field examiners conclude that the northern and southern most parts of Sec. 9, T. 13 N., R. 9 W. warrants further exploration through the "Poison Canyon sandstone" unit of the Jurassic Morrison Brushy Basin formation. They recommend that DMEA participate in the cost of a three-stage drilling project at a total estimated cost of $67,999.00, Government's participation, $50,999.25. We concur in this recommendation.

Extra copies of Figure 2 for possible use in the contract have been ordered and will be forwarded you in a few days.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
2-24-56
(date)

DMEA
Date Rec'd.

FEB 14 1956

Region III

BUREAU OF MINES
Denver, Colorado

Building 20
Denver Federal Center
Denver 2, Colorado
February 13, 1956

TRANSMITTED

FEB 15 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw
E. N. Harshman

Subject: DMEA Docket 3943, 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

Enclosed are the original and 9 copies of a Joint Examination report by D. D. Haynes, Geologist, U. S. Geological Survey, and Glen Walker, Mining Engineer, U.S. Bureau of Mines covering examination of the subject property.

The applicant requested Government assistance to explore for uranium on Sec. 9, T. 13 N., R. 9 W., which they hold on lease from the Santa Fe Railroad. The property is in the Grants Mining District, McKinley County, New Mexico. The applicant proposed 153 drill holes on a 400- by 400-feet grid totaling 53,000 feet of plug-bit and core drilling which is estimated to cost $94,870.00. After the applicant drilled 7 widely-spaced exploratory holes, the proposal was re-evaluated on the basis of the information gained and the original proposal was revised to a two-stage program. This program, because of greater depth of the ore horizon, is estimated to require 63,350 feet of drilling, which is estimated to cost $113,396.50.

The examining team concludes that the preliminary exploratory drilling has shown that favorable thickness, alteration zones, and limonite staining exist in the "Poison Canyon sandstone" unit and that the northern and southern end of Sec. 9 are favorable for ore deposition. They propose a revised program of plug-bit and core drilling consisting of 18 drill holes in 2 north-south fences on either side of the section as Stage I, 28 plug-bit and core holes in a 400-800 foot pattern in areas indicated as favorable by Stage I drilling, and 28 more plug-bit and core holes at 100-feet or greater spacing as offsets around ore hole found by drilling in Stages I and II. The revised program consists of 74 drill holes involving an estimated 25,900 feet of plug-bit and 7,400 feet of core drilling and is estimated to cost $67,999.00 with the Government's portion being $50,999.25.

It is recommended that the program proposed by the examining team be approved and a contract be prepared.

Reviewed by
DMEA OPERATING COMMITTEE
2-24-56
(Date)

E. N. Harshman
Member Field Team

for John F. Shaw
Supervising Mining Engr.

Enc 9
EN Harshman
DMEA 3943
Chron.

DMEA
Date Rec'd.
FEB 14 1956
BUREAU OF MINES
Denver, Colorado

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FEB 20 1956

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. BOX 360
GRAND JUNCTION, COLORADO

January 24, 1956

TRANSMITTED
FEB 15 1956

Memorandum

To: E. N. Harshman, DMEA Field Team, Region III

From: J. William Hasler

Subject: DMEA 3943, Food Machinery and Chemical Corporation, (Westvaco Mineral Products Division), Sec. 9, T. 13 N., R. 9 W., NMPM, McKinley County, New Mexico

Transmitted herewith is a geologic and engineering report by D. D. Haynes, geologist, U. S. Geological Survey, and Glen Walker, mining engineer, U. S. Bureau of Mines.

As a result of a field examination made on September 28, 1955, the Food Machinery and Chemical Corporation, New York City, requested DMEA assistance to explore for uranium on Sec. 9, T. 13 N., R. 9 W., a lease in McKinley County, New Mexico. The application was referred to the field and the field examination was made. At the time of the initial field examination the examining team suggested that the applicant drill a few preliminary holes to obtain general geologic data, whereby a more accurate appraisal of the section might be made. The drilling was completed and a re-evaluation of the application was completed.

The Grants Mining District lies on the northeast flank of the Zuni uplift, a broad, elongate, asymmetrical dome. Productive uranium deposits occur in Jurassic and Cretaceous sedimentary rocks that form a rather continuous outcrop east of Grants westward to Gallup, New Mexico. The Todilto

Reviewed by
DMEA OPERATING COMMITTEE
2-24-56
(date)

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limestone and Morrison formation of Jurassic age and the Dakota sandstone of Cretaceous age contain the majority of uranium ore deposits. The rocks in Sec. 9 are those of the Morrison formation and the deposits of which we are concerned in this report are found in the Poison Canyon sandstone unit of the Brushy Basin member of the Morrison formation.

The ore bodies found in the Poison Canyon sandstone unit range from a few tons to about 100,000 tons. The deposits in Sec. 9 might contain as much as 50,000 tons each and may be from 100 to 200 feet wide and from 300 to 500 feet long. These deposits may be typical Poison Canyon sandstone deposits that occur in clusters and can be rather easily mined from a shaft or an incline. The preliminary drilling in Sec. 9 indicates that the ore-bearing sandstone is favorable for ore deposition, in that it has a greater than normal thickness, as well as bleaching, which is associated with ore deposits in the Grants area.

It is concluded that the chances of finding uranium ore deposits in Sec. 9 are good and that the application for assistance be approved. The program herein outlined has met with the approval of the company and it is suggested that it be carried out. I concur with the conclusions and recommendations of the examining team.

The Atomic Energy Commission in the Grants area was consulted relative to the appraisal of the property.

Enclosed are the required number of maps, as well as the applicant's brochure.

J. William Hasler

J. William Hasler,
Geologist

JWH/mlr
Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
FEB 20 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

JOINT REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

TRANSMITTED
FEB 15 1956

On Site Rpt

DMEA 3943

FOOD MACHINERY AND CHEMICAL CORPORATION

Westvaco Mineral Products Division

McKinley County, New Mexico

Uranium

Joint Engineering and Geologic Report

By

D. D. Haynes, Geologist
Geological Survey

Glen Walker, Mining Engineer
Bureau of Mines

February 6, 1956

Reviewed by
DMEA OPERATING COMMITTEE
2-24-56
(date)

DMEA 3943

FOOD MACHINERY AND CHEMICAL CORPORATION
WESTVACO MINERAL PRODUCTS DIVISION
Sec. 9, T. 13 N., R. 9 W., N.M.P.M.
McKINLEY COUNTY, NEW MEXICO

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FEB 20 1958

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I.	Stratigraphic section for the area in the vicinity of Sec. 9, T. 13 N., R. 9 W., McKinley County, N. Mex.	5

DMEA 3943

FOOD MACHINERY AND CHEMICAL CORPORATION
Westvaco Mineral Products Division
Sec. 9, T. 13 N., R. 9 W., N.M.P.M.
McKinley County, New Mexico

SUMMARY AND INTRODUCTION

Westvaco Mineral Products Division of Food Machinery and Chemical Corporation of New York City requested DMEA assistance in the exploration of uranium deposits on sec. 9, T. 13 N., R. 9 W., held under lease in McKinley County, New Mexico.

The applicant proposed drilling 153 holes on a 400- by- 400-foot grid on that part of the ground not covered by the Cretaceous Mancos formation. It was estimated that a total of 53,000 feet would be drilled, of this 1,500 feet would be cored in the Poison Canyon sandstone unit of the Jurassic Morrison formation. The holes were to be bottomed in the mudstone split between the "Poison Canyon" and the Westwater Canyon sandstones. The cost of the project was estimated at $94,870.00 or $1.79 per foot. After drilling 7 widely spaced holes that were suggested by the examining team the applicant revised his proposal into a two-stage project. Stage I included 28 dry rotary and core holes drilled on a staggered grid of 800- by- 800-feet. These holes were to be bottomed in the Recapture member. Stage II remained as originally proposed. No cost estimate was given for the revised program, but due to the deeper drilling through the Westwater sandstone member, there would very probably be 63,350 feet of drilling at $1.79 per foot or $113, 396.50.

A Region III DMEA examining team investigated the property on September 28, 1955 and suggested the applicant drill 6 or 7 widely-spaced holes to determine general geologic features of the sub-surface formations. On the information obtained from these preliminary holes it is believed

that a portion of sec. 9 warrants further exploration. It is therefore, recommended that a 3-stage project be approved which consists of 74 plug-bit and core holes totaling 33,300 feet and estimated to cost $67,999.00.

ACKNOWLEDGMENT

Messrs. C. Johnston and W. Tipton, geologists for Westvaco Mineral Products, acted as guides to the property and offered considerable pertinent information. Mr. G. Ealy, geologist for USAEC at Bluewater, New Mexico was consulted during the field examination.

LOCATION, TOPOGRAPHY AND PHYSICAL FEATURES

The subject land includes all of sec. 9, T. 13 N., R. 9 W., New Mexico Principal Meridian in McKinley County, New Mexico (figure 1). It can be easily reached by traveling west from Grants, New Mexico, on U. S. Highway 66 about 3 miles to New Mexico Highway 53 (San Mateo road), then north, or right, about 12 miles to the Ambrosia Lake road which, within about a mile, passes diagonally across sec. 9. At Bluewater, New Mexico, the Anaconda Copper Mining Co., operates a uranium mill. It is about 18 miles southwest of the property. Albuquerque, the largest city in New Mexico, is about 70 miles by rail or highway east of Grants.

The surface on Section 9 is practically flat except for the northeast portion where a small bluff of the Mancos formation is formed by a resistant sandstone strata. The surface is largely covered by loose sand which supports a very sparse growth of short, native grasses and cactus; no timber of any size exists.

The climate is typical of the arid southwest with large variations in temperature and precipitation. Most of the 6- to- 8-inches of annual

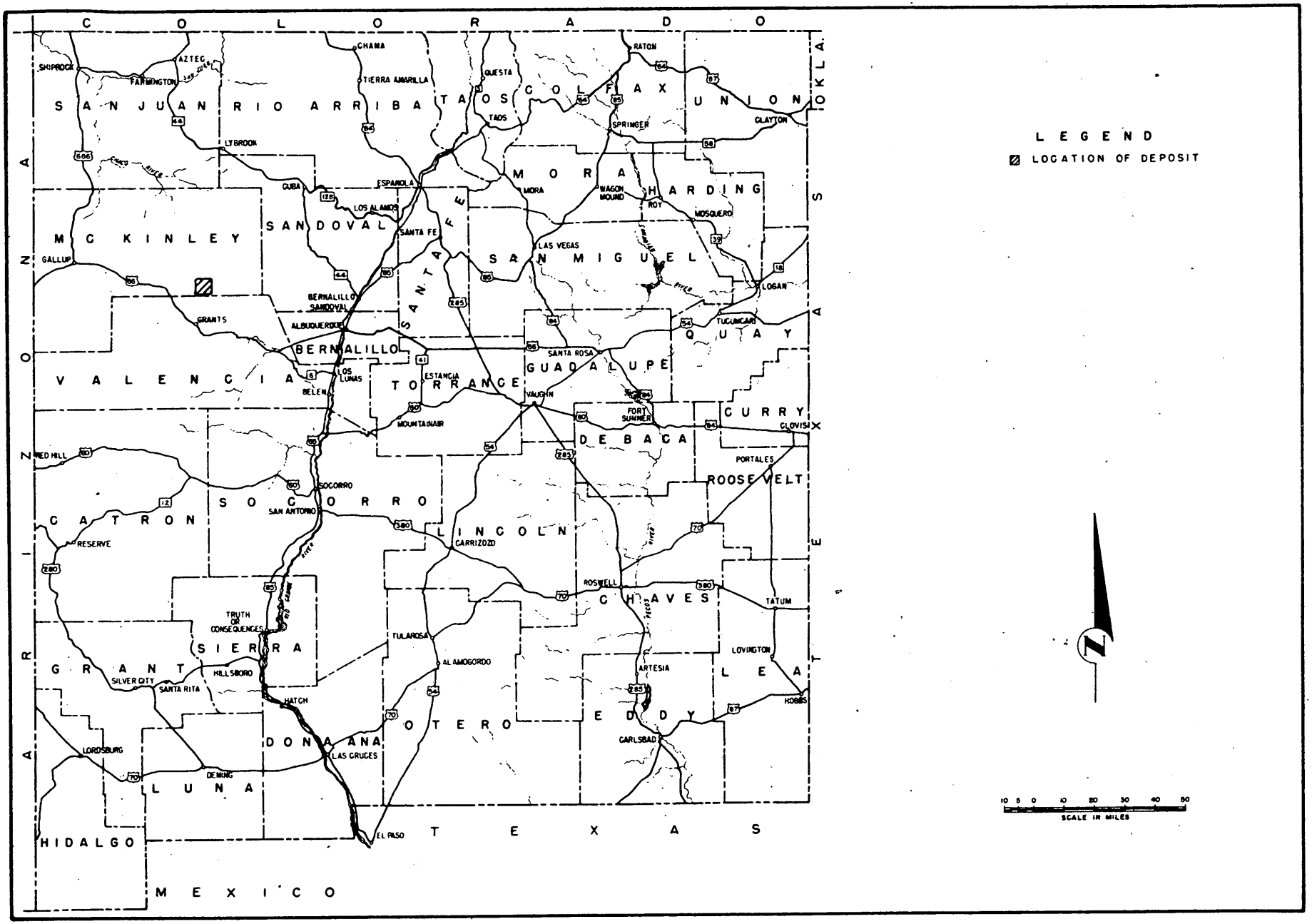


FIGURE 1 - LOCATION MAP, WESTVACO MINERAL PRODUCTS DIVISION OF FOOD MACHINERY AND CHEMICAL CORPORATION
MCKINLEY COUNTY, NEW MEXICO. DMEA 3943

moisture falls during violent storms in both summer and winter.

Water does not exist on the property and a permanent supply would have to be developed; however, for purposes of exploration, adequate amounts can be obtained from livestock wells and catchment basins within 2 or 3 miles.

Common labor is plentiful in the area, but skilled underground miners are not readily obtained. It is reported that the Navajo Indians make satisfactory underground workmen after a short apprenticeship.

Currently power, for any purpose, must be supplied by internal combustion engines as adequate public utilities are not available.

HISTORY, PRODUCTION AND OWNERSHIP

Uranium-bearing minerals were first noted in the district during the field season of 1949 by a group of students from the University of California. This occurrence was in the Jurassic Todilto limestone north of Prewitt, New Mexico. In the spring of 1950, Paddy Martinez found mineralized material along the Todilto outcrop near Haystack Butte on Santa Fe R.R. land. After these early discoveries, the outcrops of a number of geologic formations were investigated which resulted in finding ore in the Cretaceous Dakota and the Jurassic Morrison formations, as well as the Todilto limestone. To date most of the production has come from the Todilto Limestone and the "Poison Canyon", a local term given to a Brushy Basin sandstone lens. Recently a number of very large uranium deposits have been reported in the Westwater Canyon member of the Morrison formation. These later discoveries are, however, 4 to 8 miles northwest of the subject property in the Ambrosia Lake area.

Section 9 has produced no uranium ore. The nearest production is from the Mesa Top mine of the Holly Uranium Company in Sec. 20, T. 13 N., R. 9 W., about 1-1/2 miles southwest. This deposit is in the "Poison Canyon sandstone" and contains several thousand tons.

The property was granted by the Government to the Santa Fe Railroad, who leased the uranium mineral rights in March 1955, to the Food Machinery and Chemical Company, Westvaco Mineral Products Division, for a period of 6 years provided that during the first year exploration results in an ore discovery.

GEOLOGY

Regional Geology

The Grants Uranium Mining District lies on the northeast flank of the Zuni uplift, a broad, elongate, asymmetrical dome. The Zuni uplift, believed to be of early Tertiary age, is about 65 miles long and 40 miles wide, and has a northwest trend.

The productive deposits occur in Jurassic and Cretaceous sedimentary rocks that form a rather continuous outcrop east of Grants westward to Gallup. There are numerous faults and folds in the area and two dominant sets of joints.

The productive uranium deposits in the Grants district occur in the Todilto limestone and Morrison formation of Jurassic age and the Dakota sandstone of Cretaceous age. This report will be concerned only with those deposits in the Morrison formation.

Table I. -- Stratigraphic section for the area in the vicinity of Sec. 9, T. 13 N., R. 9 W., McKinley County, New Mexico.

Age	Formational units	Range in thickness (ft.)
Recent	Alluvium	2 - 60
- - - - - - - - - - - - - -	Unconformity -	
	Mancos shale and Mesa Verde, undifferentiated	60 -100
Cretaceous		
	Dakota sandstone	50 -140
- - - - - - - - - - - - - -	Unconformity -	
	Morrison formation:	
	Brushy Basin member (contains the "Poison Canyon sandstone")	130 -175
Jurassic		
	Westwater Canyon member	80 -110
	Recapture member	100 -110
	Bluff sandstone	240 -250
	Summerville formation	150 -160
	Todilto limestone	20 - 30

Local Geology

In the vicinity of the subject property the Morrison formation is comprised of three members. In ascending order these are the Recapture, Westwater Canyon, and Brushy Basin members. The Recapture member is mostly a fine- to medium-grained red and brown sandstone with occasional beds of red and gray shale and siltstone and is about 100 feet thick.

Overlying the Recapture is the Westwater Canyon member, which ranges in thickness from 80 to 110 feet in holes drilled on section 9. It is predominantly a fine- to medium-grained, in places arkosic, sandstone that contains occasional shale and siltstone beds up to 30 feet thick. The sandstone color may be yellowish gray, greenish gray, red, buff or brown. The shale and siltstone color may be gray, gray-green, or red. The Westwater interfringes with the underlying Recapture and the overlying Brushy Basin members.

The Westwater Canyon member is the major ore producing horizon in the Ambrosia Lake area but in the immediate vicinity of section 9 very little mineralized material has been found even though the Westwater Canyon member has been explored fairly extensively. Therefore, no holes drilled with Government assistance shall be cored below the base of the overlying Brushy Basin member.

The Brushy Basin member overlies the Westwater Canyon and is predominantly a greenish-gray shale with minor sandstone lenses. It ranges in thickness from 130 to 175 feet.

The "Poison Canyon sandstone"

The known commercial deposits in the vicinity of section 9 are found in a sandstone unit of the Brushy Basin member of the Morrison formation. This unit, called the "Poison Canyon sandstone", pinches out completely or interfingers with the Westwater Canyon in the northwest part of section 9, but attains a thickness of about 85 feet in the southwest part of the section. The base of the "Poison Canyon sandstone" lies between 10 and 40 feet stratigraphically above the base of the Brushy Basin. It may be a tongue of the Westwater Canyon. The thicker parts of the sandstone usually have an east-west trend.

The "Poison Canyon sandstone" is predominantly a fine- to medium-grained white, to light gray, or brown sandstone. Usually shale lenses that may attain a combined thickness of about 30 feet, but normally they are less than 10 feet thick are present in the sandstone.

Favorability criteria of the "Poison Canyon sandstone"

Usually this sandstone unit is from 35 to 45 feet thick, but where known deposits occur, the sandstone ranges from 50 to 90 feet thick.

Normally the sandstone is yellowish orange to buff or medium brown but in the areas of the known deposits the sandstone has a predominant yellowish gray or gray color. These relations suggest that the ore deposits are related to zones which have been altered. Therefore, exploration should be confined to these altered zones.

In the altered sandstone zones, the claystone lenses, seams and pebbles are also altered from a red to a greenish gray or gray color. In the vicinity of deposits the carbonaceous material and claystone pebbles and lenses are more abundant. Also, limonite staining is very abundant in the immediate area of mineralized material. The results of the 7 holes drilled upon suggestion of the examining team showed that the "Poison Canyon sandstone" unit is favorable for ore deposition in the northern and southern part of Section 9.

Uranium deposits

At the present time there are no productive deposits within 2 miles of section 9, although mineralized material of ore grade and thickness has been found on adjoining Section 8 (DMEA docket 3632, contract Idm E-797). The known deposits are tabular concentrations that generally follow the bedding. They range in thickness from a knife edge to more than 20 feet

and are generally elongate masses that range from a few feet to several hundred feet in width and from a few feet to 3000 feet or more in length. These mineralized masses locally contain material of ore grade and thickness. These large mineralized masses appear to have an easterly or southeasterly trend.

Ore bodies

The ore bodies range from a few tons to about 100,000 tons, using a grade cut-off of 0.10 percent U_3O_8 one foot or more thick. In the Ambrosia Lake area the ore bodies may average 100,000 tons each, but in other areas they usually average about 10,000 tons each.

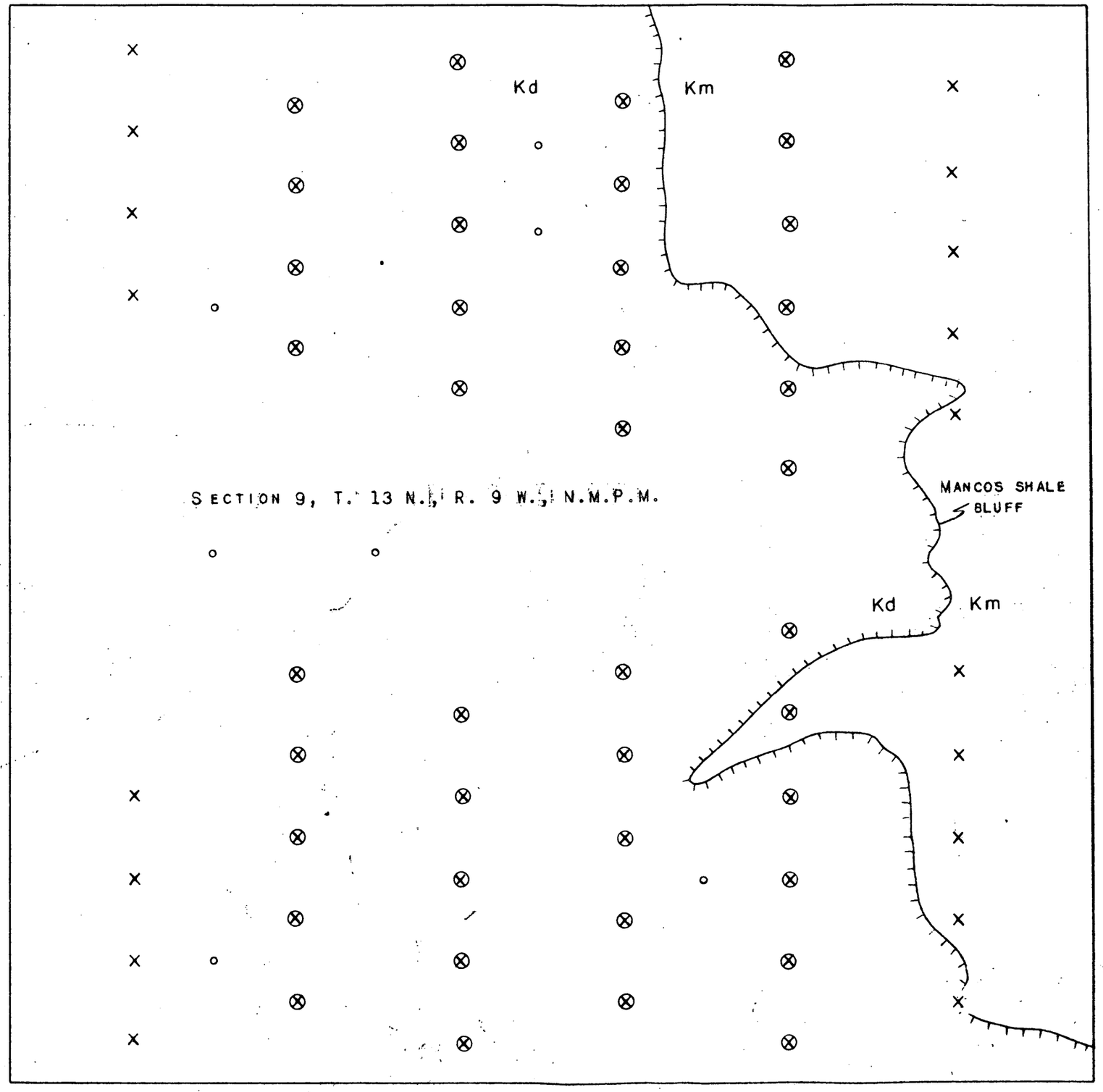
On Section 9 it might be reasonable to expect ore bodies that would contain 50,000 tons each and be from 100 to 200 feet wide and from 300 to 500 feet long. These ore bodies usually occur in clusters that may be mined from one shaft or incline.

MINABLE ORE RESERVES

There are no known minable ore reserves on the property.

PRESENT STATUS

The only work of an exploratory nature conducted on the property is the drilling of 7 widely spaced preliminary holes as suggested by the DMEA examining team. The location of these holes are shown on figure 2. The results of this work indicate there are probably two trends of favorable "Poision Canyon sandstone" which should cross section 9 in an east-west direction.



EXPLANATION

Km	CRETACEOUS MANCOS SHALE
Kd	CRETACEOUS DAKOTA FORMATION
o	EXISTING DRILL HOLE
X	LOCATION OF PROPOSED STAGE I DRILL HOLE
⊗	PROBABLE LOCATION OF STAGE II DRILL HOLE

Note: GEOLOGY AND EXISTING DRILL HOLE LOCATIONS FROM APPLICANTS MAP.

N

600 0 1200 FEET

FIGURE 2. SKETCH MAP OF SECTION 9, T. 13 N., R. 9 W., N.M.P.M., SHOWING EXISTING DRILL HOLES, LOCATION OF PROPOSED STAGE I DRILL HOLES, AND PROBABLE LOCATION OF STAGE II DRILL HOLES, FOOD MACHINERY AND CHEMICAL CORPORATION, McKINLEY COUNTY, NEW MEXICO.

RECEIVED
FEB 20 1956

PROJECT PROPOSALS

The applicant proposed a combination core and dry rotary drilling program consisting of 28 first stage holes and 153 second stage holes. Stage I holes to be 800 feet apart in staggered rows 800 feet apart; Stage II holes on a 400-foot square grid pattern. The holes were estimated to be 350 feet deep on an average and would, therefore, total 63,350 feet, 1500 feet of which was to be cored. The total cost of the program, as revised by the applicant, was not mentioned, but it may be estimated from the unit cost given as $113,396.50.

The examining team proposes to confine the exploration program to the "Poison Canyon sandstone" lens in the Jurassic Morrison Brushy Basin formation, (figure 2).

Stage I will consist of 18 plug and core holes drilled 400 feet apart in two north-south rows, one row 600 feet from the west side and one row 660 feet from the east side of Sec. 9, T. 13 N., R. 9 W. These holes would be an average of 450 feet in depth with approximately 100 feet of BX coring in each. No holes should be closer than 200 feet to the property lines.

Stage II would consist of 28 plug and core holes drilled 400 feet apart and in staggered rows 800 feet apart in areas indicated to be favorable by Stage I drilling. It is estimated that these holes would also be about 450 feet deep and would have the bottom 100 feet cored BX or larger.

Stage III would be identical to Stage II in number, type and footage of hole, but the holes would be spaced no closer than 100 feet to mineralized ore holes drilled in Stages I and II.

In general, all holes should be cored BX or larger from 5 feet above the upper contact of the "Poison Canyon sandstone" to 5 feet below its lower contact. All holes should be probed and logged radiometrically as well as having a geologic log. Both of these types of logs should accompany the monthly reports. The core should be placed in boxes marked with their corresponding depths and all mineralized core should be split and analyzed chemically; one half the split core should be retained for Government use. A plan map of the property should be prepared by the Operator, showing the location, elevation of collar, and top and bottom of the "Poison Canyon sandstone" in all holes.

PROJECT COSTS

Stage I

Independent contracts:		
18 holes/6300 feet, plug drilling at $1.25/ft.	$ 7875.00	
18 holes/1800 feet, core drilling at 3.50/ft.	6300.00	
Total		$14,175.00
Labor and supervision:		
1 geologist at $500.00/mo. for 3 mos.	1500.00	
Total		1,500.00
Operating supplies:		
Fuel for pickup truck, $30.00/mo. for 3 mos.	90.00	
200 paper core boxes, at $1.25	250.00	
Total		340.00
Operating equipment:		
Depreciation on Geiger probe, at $10.00/mo. for 3 mos.	30.00	
Depreciation on pickup truck at $50.00/mo. for 3 mos.	150.00	
Total		180.00
Rehabilitation and repairs: None		
New buildings and improvements: None		
Miscellaneous:		
20 chemical analyses at $5.00	100.00	
Accounting at $50.00/mo. for 3 mos.	150.00	
Insurance and taxes 5% of $1500.00	75.00	
Total		365.00
Total Stage I		$16,520.00

Division of Project Costs

	Total	Plug-Bit	Core Drilling
Independent Contracts			
6300 feet of plug-bit at $1.25	$ 7,875.00	$ 7,875.00	
1800 feet of core drilling at $3.50	6,300.00		$ 6,300.00
Labor and Supervision			
1 Geologist at $500.00/mo. for 3 mo.	1,500.00	750.00	750.00
Operating Supplies			
Fuel for pickup truck $30.00 per mo. for 3 mos.	90.00	45.00	45.00
200 paper core boxes at $1.25	250.00		250.00
Operating Equipment			
Depreciation on Geiger probe at $10.00 per mo. for 3 mos.	30.00		30.00
Depreciation on pickup truck at $50.00 per mo. for 3 mos.	150.00	75.00	75.00
Miscellaneous			
Accounting at $50.00 per mo.	150.00	75.00	75.00
Insurance and Taxes	75.00	37.50	37.50
Total Stage I (less analyses)	$ 16,420.00	$ 8,857.50	$ 7,562.50
Cost per foot		1.41	4.20

20 Chemical analyses at $5.00 - $100.00

Total Stage I $ 16,520.00

Summary of Costs

Stage I

6300 feet of plug-bit drilling at $1.41	$ 8,883.00
1800 feet of core drilling at $4.20	7,560.00
20 chemical assays at $5.00	100.00
Total Stage I	$16,543.00
Amount of Government Participation	$12,407.25

Stage II

9800 feet of plug-bit drilling at $1.41	$13,818.00
2800 feet of core drilling at $4.20	11,760.00
30 chemical analyses at $5.00	150.00
Total Stage II	$25,728.00
Amount of Government Participation	$19,296.75

Stage III

9800 feet of plug-bit drilling at $1.41	$13,818.00	
2800 feet of core drilling at $4.20	11,760.00	
30 chemical analyses at $5.00	150.00	
Total Stage III	$25,728.00	
Amount of Government Participation	$19,296.75	
Total Cost of Contract		$67,999.00
Total Amount of Government Participation		$50,999.25

CONCLUSIONS AND RECOMMENDATIONS

From available information it is concluded that the northern and southernmost parts of Sec. 9, T. 13 N., R. 9 W. warrants further exploration through the "Poison Canyon sandstone" unit of the Jurassic Morrison Brushy Basin formation. In these areas preliminary drilling indicates the sandstone is above normal thickness and also it has a color and texture usually associated with areas favorable for the occurrence of uranium ore deposits.

It is therefore, recommended that DMEA participate in the cost of a three-stage drilling project totaling $67,999.00. The Government's portion will be $50,999.25.

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

September 2, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: J. F. Shaw
J. W. Hasler

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3943, (Uranium), Food Machinery and Chemical Corporation, Section 9, T. 13 N., R. 9 W., McKinley County, New Mexico

Enclosed is a copy of a letter from the Chairman of the Operating Committee and a review of the subject application by John Crawford and W. P. Williams.

W. M. Traver

W. M. Traver

Enclosures

HMC:sb
cc: Sec. Op. Comm. (2)
Docket 3943
Harshman
Chron.

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

RECEIVED
SEP - 9 1955

September 2, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: J. F. Shaw
J. W. Hesler

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3943, (Uranium), Food Machinery and Chemical Corporation, Section 9, T. 13 N., R. 9 W., McKinley County, New Mexico

Enclosed is a copy of a letter from the Chairman of the Operating Committee and a review of the subject application by John Crawford and W. P. Williams.

W. M. Traver

Enclosures

HMC:ab
cc: Sec. Op. Comm. (2)
Docket 3943
Harshman
Chron.

urname copy

700

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

Ching
Ellis
Yogo
Kulgaard
Selfridge

AUG 31 1955

Mr. W. N. Williams, Vice President
Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
161 East 42nd Street
New York 17, New York

Re: Docket No. DMEA-3943 (Uranium)
Sec. 9, T. 13 N., R. 9 W.,
McKinley County, New Mexico

Dear Mr. Williams:

The application for assistance in exploring the subject property under the captioned docket number has been reviewed by the Rare and Miscellaneous Metals Division.

The DMEA Field Team, Region III, Mr. W. M. Traver, Executive Officer, 22h New Customhouse Building, Denver, Colorado, will make a field examination of your property if it has not already done so.

Any assistance you may give the members of the Field Team during the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

MChing/gla
8-29-55
cc to: Admr.'s Reading File
Docket
Code 700
Mr. Ching
DMEA Field Team, Region III (2)

rname copy

70

Ching
Ellis
Selfridge

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

AUG 31 1955

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-3943 (Uranium)
Food Machinery and Chemical Corporation
Sec. 9, T. 13 N., R. 9 W.,
McKinley County, New Mexico

Dear Mr. Traver:

Enclosed are copies of memoranda from John E. Crawford, dated August 11, and W. P. Williams, dated August 19, 1955, members of the Uranium Commodity Committee.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (2/3)

Enclosures

P. F. Yopes
Member, Bureau of Mines (2/3)

Thor H. Kiilsgaard
Member, Geological Survey (2/6)

MChing/gla
8-29-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700
Mr. Ching

R.C.L.

8/30/55 gla

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

RECEIVED
AUG 29 1955

August 25, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Appraisal relative to necessity for a field examination. Docket DMEA 3943, (Uranium), Food Machinery and Chemical Corporation, Westvaco Minerals Products Division, Sec. 9, T. 13 N., R. 9 W., McKinley County, New Mexico

Enclosed are four copies of a memorandum report on the subject docket from the Grand Junction office.

A field examination is indicated and the Bureau of Mines brochure has been forwarded to the engineer.

W. M. Traver

W. M. Traver

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Colorado Plateau District
P. O. Box 360
Grand Junction, Colorado

August 22, 1955

Memorandum

To: Executive Officer, Region III

Through: E. N. Harshman

RECEIVED
AUG 29 1955

From: J. William Hasler, USGS
M. H. Salsbury, USBM

Subject: Appraisal relative to necessity for a field examination. DMEA 3943 FOOD MACHINERY AND CHEMICAL CORPORATION, WESTVACO MINERALS Products Division, Sec. 9, T. 13 N., R. 9 W., McKinley County, New Mexico.

The program set forth in this application is very similar to the one proposed by the same company in sec. 7. The area is also a like prospect for exploration for uranium. It is recommended that field examination be made and the date will be set as soon as possible.

Sec. Opr. Comm. (2)

RECEIVED
AUG 29 1955

August 25, 1955

Memorandum

To: John F. Shaw

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA-3943 (Uranium), Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, Section 9, T. 13 N., R. 9 W., McKinley County, New Mexico

The subject application in the amount of $94,870.00 is enclosed herewith. The brochure consists of the following:

1. Form MF-103 and attached information and maps
2. Copy of Executive Officer's memo to the Secretary Operating Committee dated August 22
3. Copy of Executive Officer's memo of August 22 Transmitting the brochure to this office

Please refer to Docket DMEA 3939 submitted by the same organization. These applications cover properties that are within a reasonably close proximity. You may consider it advisable to recommend that one contract covering both dockets be prepared.

A field investigation and suitable report are required. The completed report should be sent direct to the Executive Officer with a copy of the memo of transmittal to this office.

W. H. KING

W. H. King

Copy to: E. N. Harshman
W. M. Traver (3)

8/

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

224 New Customhouse
Denver 2, Colorado

August 22, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3943 (Uranium), Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, Section 9, T.13N., R.9W., McKinley County, New Mexico

The USGS weekly report indicates that a field examination is required on the subject application.

One copy of the brochure has been forwarded to the Bureau of Mines and a field examination has been requested.

W. M. Traver

W. M. Traver

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

224 New Customhouse
Denver 2, Colorado

August 22, 1955

Memorandum

To: W. H. King

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3943 (Uranium), Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, Section 9, T.13.N., R.9W., McKinley County, New Mexico

Enclosed is the subject application in the amount of $94,870.00.

A field investigation and suitable report are requested.

W. M. TRAVER,

Enclosures

W. M. Traver

HMC:pw

cc: DMEA-3943
Chron
Harshman
Hasler
Sec.Op.Comm. (2)

8/22/55

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
AUG 19 1955

August 19, 1955

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: W. P. Williams, U. S. Geological Survey

Subject: Review of DMEA application, Docket No. 3943, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, Sec. 9, T. 13 N., R. 9 W., McKinley County, New Mexico.

The applicant proposes to explore for uranium on the major portion of a land section by means of a total of 153 drill holes placed on a rectangular grid pattern.

The ore host, the Poison Canyon sandstone in the Brushy Basin member of the Morrison formation, does not crop out on the property. Drill holes, collared in the Dakota and Mancos formations and in Quaternary alluvium would average about 350 feet in depth.

This application, in sec. 9, is one mile east of DMEA 3939 in sec. 7--also Westvaco Mineral Products Division. Active DMEA exploration is now being performed on the intervening sec. 8 by Colamer Corporation, DMEA 3632.

Poison Canyon sandstone ore deposits are found in thicker, altered zones that have a northerly trend. Westvaco application DMEA 3939 and Colamer Corporation, DMEA 3632, appear to lie within such a favorable zone. The thick, altered, favorable sands outcrop about a mile south at the Poison Canyon mine. The site of the subject area appears to lie east of the favorable zone. Thus, it appears that Westvaco application, DMEA 3939, is more favorable than the subject application.

It seems advisable to defer action on this application until drilling is completed by Colamer Corporation on adjoining section 8. It may be well to ask the Field Team to review the application with regard to possible recent drilling near section 9 by private interests of which I am not aware.

WPWilliams

W. P. Williams

8/12/55 glc

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

August 11, 1955

Memorandum

RECEIVED
AUG 12 1955

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Application for assistance, DMEA Docket 3943, Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, Section 9, T-13-N, R-9-W, McKinley County, New Mexico

I have reviewed the application for assistance, Food Machinery and Chemical Corporation, DMEA Docket 3943, and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The applicant wishes to explore Section 9, T-13-N, R-9-W on the back slope of the main Grants uranium area in McKinley County, New Mexico, by (1) drilling on a designated grid with a rotary drill; (2) collecting samples for chemical assay when drilling through promising horizons; (3) probing holes for radioactivity; and (4) at various intervals, coring the horizons for geological information.

This application is similar in all respects except drill hole pattern to DMEA docket 3939, also submitted by the applicant. The justification by the applicant to explore this section is that it is situated favorably relative to producing mines in the immediate area. Study of the map submitted by the applicant will show that the subject section is located at least 1½ to 5 miles from producing mines, and it is doubtful that the ore bodies would extend continuously for that distance as is inferred by the applicant.

A careful study of the applicant's estimate of costs reveals items questionable or excessive for an exploration program; for example, telephone and telegraph costs are listed at $910.00, airline tickets at $1,060.00, airplane at $2,385.00, and $1,060.00 for office supplies.

Insofar as the estimated cost of drilling 53,000 feet is $36,570.00 by contract agreement, $17,800.00, exclusive of consultants, living costs, and hourly labor, seems excessive for salaries.

Mr. Hosted and I believe that based on information submitted, the applicant is requesting aid for prospecting rather than exploration inasmuch as no evidence was presented showing that favorable ore-bearing horizons or mineralized land exists within subject area.

We further believe that a few holes drilled at the applicant's expense might reveal information indicating that an exploration project would be warranted.

We suggest that the Field Team review the application, but hesitate to recommend a Field Team examination because this appears to be a prospecting venture.

This application is being forwarded to Mr. Thor Kiilsgaard, USGS, as was requested by Mr. Ernest William Ellis.

John E Crawford

John E. Crawford

August 9, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region III.

DMEA-3943 Food Machinery & Chemical Corp.

Robert E. Adams,
Chief, Operation's Control
and Statistics Division

August 9, 1955
Subject: DMEA-3943
Re: Exploration Assistance

Food Machinery and Chemical Corp.
Westvaco Mineral Products Division
161 East 42nd St.
New York 17, New York

Gentlemen:

The receipt of your application dated July 25, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3943 and referred to the Rare and Miscellaneous Metals Division.

Kindly identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

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

RECEIVED
AUG - 8 1955

224 New Customhouse
Denver 2, Colorado

August 2, 1955

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA assistance (Uranium), Food Machinery and Chemical Corporation, Westvaco Mineral Products Division, Section 9, T-13-N, R-9-W, McKinley County, New Mexico

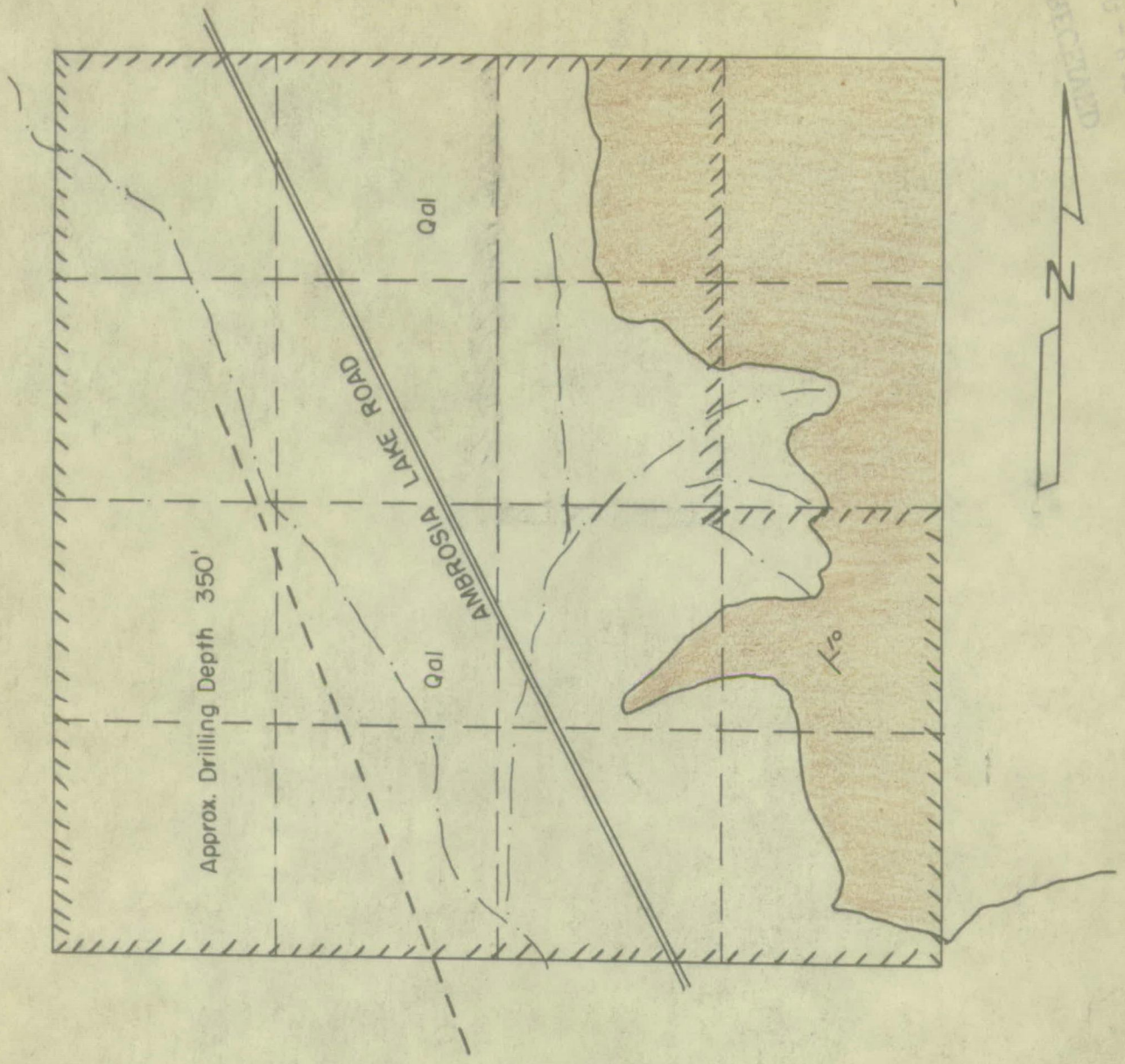
Enclosed are two copies of the subject application in the amount of $94,870.00 for an estimated total of 53,000 feet of drilling.

One copy of the application is being forwarded to J. W. Hasler at the Grand Junction office. One copy is being retained in our files.

W. M. Traver

Enclosures

W. M. Traver



Section 9 T. 13 N. R. 9 W.

LEGEND

	Playa Streams
	Km Mancos Formation
	Area to be Drilled

WESTVACO MINERAL PRODUCTS DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
MINERAL DEVELOPMENT DEPARTMENT POCATELLO, IDAHO

MARK	REVISION	DATE	BY	CHECK

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WESTVACO MINERAL PRODUCTS DIVISION

DRAWN- M.D.
DATE-
CHECKED-
APPROVED-

CHARGE-
SCALE-
PRINT DATE 7-7-'55

DRAWING No. 751

"ALBANENE" NO. 195L

Food Machinery and Chemical Corporation
(Westvaco Mineral Products Division)
161 East 42nd St.
New York 17, N. Y.

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