FILE ITEM OR INFORMATION REQUESTED	FRC BOX NO.
4742	87-T

DATE OF REQUEST	ACCESSION NO.	FOR RECORDS CENTER USE ONLY LOCATION OF RECORD(S) TO BE SEARCHED
	64A709	1175/5

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General Services Administration
Federal Records Center, NARS

(City) (State) (Zip Code)

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SERVICE	TOTAL	TIME REQUIRED	SEARCHER'S INITIALS
DOCUMENT			
INFORMATION	1		
RESEARCH			

REMARKS

FOR USE OF REQUESTER

NAME OF REQUESTER: Mrs. Curtain

TELEPHONE NO.

NAME AND ADDRESS OF AGENCY: Minerals Exploration 4450 Interior

RECEIPT OF RECORDS

REQUESTER PLEASE SIGN, DATE, AND RETURN THIS FORM, FOR FILE ITEM(S) LISTED ABOVE, ONLY IF THE BLOCK TO RIGHT HAS BEEN CHECKED BY THE RECORDS CENTER ☐

SIGNATURE	DATE

NO. 11

☆ U.S. GOVERNMENT PRINTING OFFICE: 1965—766-585

REFERENCE REQUEST—FEDERAL RECORDS CENTERS

DMEA Form 9
(Rev. 5/57)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE 19 SEP 1957 Idm-E No. 1133 DMEA NO. 4742

Application (Denied
(Withdrawn
(After disposition, delete items not applicable)

Contract (Terminated - not Certified
(Cancelled
(Terminated - Certified
(Royalty Agreement

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

Folder No. 1:

Left Side

Royalty Audits 1/
Certification of Discovery
✓ Cost Audits 2/
✓ Termination Notice or Agreement
Recision Notice
Assignment of Contract
Contract Amendments
✓ Contract with all exhibits and annexes
Owner's Consent to Lien
Subordination Agreement
✓ Application and attachments
✓ Envelope for maps

Right Side

✓ Project summary
✓ Work completed analysis
All other material filed in chronological order including the following reports if checked:

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

Additional Folders:

Left Side

Folder No. 2 :- 2-A
Analysis of Semi-Annual Inspection Reports
Interim Summary Reports by DMEA Engineers

Right Side

Field Team Semi-Annual Report for Certified Project
Field Team Interim Reports
Operator's Monthly Report with transmittal, narrative, maps, DRILL LOGS

Folder No. 3 : Maps (Use pocket folder or envelope.) & log information other than those submitted with MF104's

Folder No. ____ : Settlement Sheets

Folder No. ____ : Drill Logs

Folder No. ____ : Royalty material

1/ Or reports of royalty review
2/ Or cost reports of review

DMEA FORM 6 REFERENCE SLIP

REV. 12-56 DEFENSE MINERALS EXPLO" "ION ADMINISTRATION

TO:	INITIALS	DATE
1. Mr. Johnson	HEJ	10/30
2. Mr. Selfridge		
3. Mr. Knouse Murphy	[illegible]	10/31
4.		
5.		
FROM: J. L. Chambers JLC		10/30

FOR: Check items for action desired

____ Action ____ Reply for signature of _____

____ Approval ____ Investigate ____ Surname

____ Comment ____ Recommendations ____ Signature

____ Conference ____ Rewrite ____ File

____ Instructions ____ Your information

REMARKS:

INT.-DUP. SEC., WASH., D.C. M25803

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

RECEIVED
OCT 30 1958
O.M.E.

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

Mallester Fuel Company
P.O. Box [illegible]
Mallester, Oklahoma

pertaining to Exploration Project Contract No. I4n-R1133, [illegible] No. [illegible], including Termination Agreement dated August 19, 1958, for the period September 19, 1957 to March 18, 1958, inclusive, covering a project for the exploration of Uranium on property known as Star Claims and Leased Land located in Fall River County, South Dakota, near Edgemont.

My review included an examination of the Monthly Reports (Form MF-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, verification of work performed by reference to Field Team reports and correspondence, 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 reasons given on the attachment to this report.

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

Total cost as billed by Contractor		$47,905.30
Exceptions:		
Prior to this review	$0.00	
Herewith	0.00	0.00
Total Accepted Cost		$47,905.30

The contract calls for a 75 percent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Thirty-five, nine hundred twenty-eight and 98/100ths Dollars is 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.

Amount payable to Operator	$35,928.98
Amount reimbursed	35,428.98
Balance due Operator	$ 500.00

Pd. to Apr. 11/7/58

Donald T. Finch
Donald T. Finch, OME Auditor

October 27, 1958

REASONS FOR REPORT OF REVIEW IN LIEU OF FINAL AUDIT

Mollester Fuel Company

Contract No. 14g-H133 Docket No. [illegible] 4748

(a) The Monthly Reports were supported by documentary proof of that portion ($42,800.00) of the costs which covered work performed at unit rates under independent contract. (Per summary attached.)

(b) The balance ($5,105.30) of the costs incurred were under a contract provision for payment by the Government on the basis of fixed unit costs of work actually performed; and

(c) The administrative cost to the Government of an audit would be excessive in relation to the estimated amount of possible disallowance thereunder.

SCHEDULE OF ACCEPTED COSTS

McAlester Fuel Company

Contract No. I4s-8113 Docket No. [illegible] 4748

Independent Contract

41,990 ft. non-core rotary drilling @ $1.00 per foot	$41,990.00	
61 hours Standby time @ $10.00 per hour	610.00	
Total Independent Contract Costs		$42,600.00

Fixed Unit Costs

Incidental Allowance		
41,990 ft. completed drilling @ 12¢ per foot	$ 5,038.80	
19 chemical analyses @ $3.30 each	66.50	
Total Fixed Unit Costs		5,105.30
Total Accepted Costs		$47,705.30

Government's copy

DMEA
RECEIVED
DATE | INITIALS

Long
App'd. Sol. Off.
Murphy
Chamberlin
Selfridge

TERMINATION AGREEMENT

It is agreed this 19th day of August, 1958, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and the McAlester Fuel Company, hereinafter called the "Operator," parties to that certain Exploration Project Contract No. Idm-E1133 (Docket No. DMEA-4742), dated September 19, 1957, hereinafter called the "Contract," that:

1. Effective March 12, 1958, 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 agreed actual and unit costs of work performed prior to March 12, 1958.

3. The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract, including the rendering of the final report and final account.

4. All rights of the Government respecting certification of discovery or development, percentage royalty and liens to secure the payment thereof, reports (including preservation of Operator's records), accounts, audits, and the right to recover 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 O. Mitterdorf
Administrator, Defense Minerals Exploration Administration

McALESTER FUEL COMPANY

By Tom E. Garrard

Title VICE-PRESIDENT

August 12, 1958

Docket No. DMEA-4742
(Uranium)
Contract No. Idm-E1133
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

JUSTIFICATION FOR TERMINATION

The object of the project was to explore the Fall River and Lakota sandstone members of the Cretaceous Inyan Kara group of sedimentary rocks.

Forty-eight holes, nos. 1 through 50, were drilled under Stage I completed November 12, 1957.

Under Stage II, completed February 14, 1958, 37 holes, nos. 51 through 93, were completed and 2 holes drilled under Stage I were deepened.

Under Stage III, completed March 12, 1958, 9 holes were drilled.

Significant mineralization, although not of ore grade, was found in Stage I deep holes testing the Lakota sandstone. This encouraged the Field Team to recommend additional drilling under Stages II and III.

The following holes are the best ones drilled in the project area:

Hole No.	Depth (Feet)	CPS	eU_3O_8
57	476-482	99	.03
71	451-457	167	.07
94	477-479	150	.06
95	508-511	401	.29
96	456-458	283	.17
101	444-446	96	.03

These holes cover an arial extent of 148 acres. As a result of the drilling the Operator estimates this area contains a 1,000,000 tons of ore of .05% U_3O_8 grade. The thickness of the ore body is estimated to be 3 feet.

In a letter, dated July 26, 1958, the Operator requested additional drilling on the basis that this mineralized area extends to the southeast through the claim area.

J. W. Townsend, in a memo, dated July 29, 1958, to E. N. Harshman, and E. O. Binyon, mentions that although the Operator stated that the proposed drilling was in a new area, the area had already been drilled under Stage I. (Actually 11 holes were drilled - see map submitted with F. T. memo of July 29, 1958, in docket envelope).

In a reply to this, Harshman and J. D. Cooper (for Binyon) disagree with the Operator's theory of ore deposition in the area, and recommend that the contract be terminated. Also, they recommended that no certification be issued as the result of the drilling.

In a memo, dated August 6, 1958, to the Operating Committee, Mr. Townsend agrees with Harshman and Cooper. Mr. Townsend notes that it is doubtful that such low-grade material at 444 to 511-foot depths would be recoverable under any circumstances.

The writer agrees with the findings of the field examiners and Field Team, and therefore concurs in their recommendation that the contract should be terminated without further drilling. Also, that the project should not be certified.

F. M. Murphy, Mining Engineer
Division of Rare and
Miscellaneous Metals

Government's Copy

OFFICIAL FILE COPY
DMEA
RECEIVED NOV 15 1957

DATE	INITIALS	CODE

MF-200
(Revised June 1954)

Docket No. DMEA 4742

Commodity Uranium

Contract No. Idm-E 1133

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

EXPLORATION PROJECT CONTRACT[1]

It is agreed this 19 SEP 1957 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] McAlester Fuel Company, a Delaware corporation, whose mailing address is P. O. Box 783 McAlester, Oklahoma, 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~~ Annex II, and maps, Figure 2 and Figure 4.

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 South Dakota, County of Fall River, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] See Annex I of [5] ..... in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] See Annex I, [7] ..... 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: See Annex I

(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: See Annex I

(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 November 9, 1957 shall commence the work, and on or before May 1, 1958 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall ~~either~~ have completed the work ~~or shall have expended 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. See Annex II.

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 $72,136.00 The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $54,102.00: *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 excess in categories and 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 Annex II.

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. See Annex II.

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 8. See Annex II.

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.*—

See Annex II.

Long
Lange.
Murphy
Knauss
Talbert
Selfridge

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By Frank E. Johnson
ACTING Administrator, Defense Minerals
Exploration Administration

McALESTER FUEL COMPANY
(Operator)

By Tom E. Garrard

Title VICE-PRESIDENT

I, Carl Oman, certify that I am the _____ secretary of the corporation named as Operator herein; that Tom E. Garrard 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.

Carl Oman

[CORPORATE SEAL]

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

EXPLORATION PROJECT CONTRACT
McALESTER FUEL COMPANY
DOCKET NO. DMEA-4742

ANNEX I

The land referred to in Article 2 of the Contract consists of eight parcels of leased land and 249 unpatented lode mining claims, situate in Fall River County, South Dakota.

The eight parcels of leased land are described below and the leases pertaining to the same are all recorded in the official records of Fall River County, South Dakota, as follows:

Lessor: Warner R. Ball and Mrs. Warner R. Ball.

The south 1/2, Section 6; the south 1/2 of the northwest 1/4, the southwest 1/4, the west 1/2 and the southeast 1/4 of the southeast 1/4, Section 5, Lot 2, the east 1/2 of the northwest 1/4, the northeast 1/4, the south 1/2, Section 7; the north 1/2 of the north 1/2, the southeast 1/4 of the northeast 1/4, Section 18; the north 1/2, the northwest 1/4 and the east 1/2 of the southwest 1/4, and west 1/2 of the southeast 1/4, Section 8; all in T. 9 S. Range 4 E, recorded in Book 411 Miscellaneous pages 124-129.

Lessor: Byron J. Cox and Bill Duerson.

The south 1/2 of the northwest 1/4, the east 1/2 of the northeast 1/4, Section 17; the northeast 1/4 of the northeast 1/4, Section 20; all in T. 9 S., Range 4 E, totaling 200.00 acres more or less, recorded in Book 41 Miscellaneous pages 157-162.

Lessor: Frank and Emma Hand.

The southwest 1/4 of the southwest 1/4, Section 8; north 1/2 of the northwest 1/4, west 1/2 of the northeast 1/4, north 1/2 of the southeast 1/4, and the southeast 1/4 of the southeast 1/4, Section 17; all in T. 9 S., Range 4 E., recorded in Book 41 Miscellaneous, pages 146-151.

Lessor: B. H. Lord and Amy Lord.

The southeast 1/4 of the northwest 1/4, the east 1/2 of the southwest 1/4, the west 1/2 of the southeast 1/4, Section 18; all in T. 9 S., Range 4 E., recorded in Book 41 Miscellaneous, pages 141-146.

Lessor: John D. and Margaret J. Manke.

The southeast 1/4 of the northeast 1/4, the southeast 1/4, Section 13; T. 9 S., Range 3 E., BHM, Lots 2, 3, and 4, Section 18; the south 1/2 of the north 1/2, the southwest 1/4, the southwest 1/4 of the southeast 1/4, Section 21; the north 1/2, Section 28; the north 1/2, the north 1/2 and the southwest 1/4 of the southwest 1/4, Section 29; all of Section 30; the east 1/2 of Section 31; the west 1/2 of the west 1/2, Section 32; all in T. 9 S., Range 4 E., BHM, recorded in Book 41 Miscellaneous, pages 162-167.

Lessor: John D. and Margaret J. Manke.

The southwest 1/4 of the northeast 1/4, the east 1/2 of the southeast 1/4, Section 18; the west 1/2 and the southeast 1/4 of the southwest 1/4, Section 17; lot 1, the east 1/2 of the northwest 1/4, the northeast 1/4, the south 1/2, Section 19, the northwest 1/4, the south 1/2, Section 20; all in T. 9 S., Range 4 E., recorded in Book 41 Miscellaneous, pages 129-134.

Lessor: James S. Raby.

The northwest 1/4, the south 1/2, Section 1; the east 1/2 of the northwest 1/4, the west 1/2 and the southeast 1/4 of the northeast 1/4; the east 1/2 of the southwest 1/4, the southeast 1/4, Section 12; all in T. 9 S., Range 3 E., recorded in Book 41 Miscellaneous pp. 134-139.

Lessor: James S. Raby.

The northeast 1/4 of the northwest 1/4, north 1/2 of the northeast 1/4, Section 13, T. 9 S., Range 3 E.,BHM, recorded in Book 41 Miscellaneous pp. 151-156.

Nine Consents to Lien and Subordination Agreements executed by the above-named lessors are attached hereto and made part hereof.

Notices of location of the mining claims are recorded in the Office of the Recorder, Fall River County, South Dakota, as follows:

Claim No.	Book No.	Page No.	Date recorded
Star Nos. 1 through 6	Misc. 40	130-133	3/27/57
Star No. 7	" 40	225	3/27/57
Star Nos. 8 through 190	" 40	133-225	3/27/57
Star Nos. 191 through 245	" 40	230-257	4/5/57
Sam	" 38	622-624	2/27/57
Sam 1	" 38	"	2/27/57
Roy	" 38	"	2/27/57
Roy 1	" 38	"	2/27/57

The location of the leased land and mining claims with reference to section, township, and range are shown on the map entitled, "Figure 2--Star Claim Groups and Leased Land . . .," attached hereto and made part hereof.

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

RECEIVED
SEP 12 1957
D.M.E.A.

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator McAlester Fuel Co.
Docket No. DMEA- 4742
Contract No. Idm-E 1133
Contract Date 19 SEP 1957

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described ~~XXXXXXXXXX~~ 2/

in a Mining Lease, dated February 16, 1957, which was recorded in Book 41 Misc., Pages 151-156, County of Fall River, State of South Dakota, at 10:45 A.M., February 25, 1957.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

none

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this 23 day of August, 1957.

James S Raby James S. Raby	[Seal]	Edgemont, South Dakota	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____
[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator McAlester FuelCo.
Docket No. DMEA- 4742
Contract No. Idm-E 1133
Contract Date 19 SEP 1957

RECEIVED SEP 12 1957

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of Fall River, State of _____, described ~~as follows~~

in a Mining Lease, dated January 31, 1957, which was recorded in Book 41 Misc., Pages 134-139, County of Fall River, State of South Dakota, at 10:45 a.m., February 4, 1957.

_____,

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

none

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this 23 day of August, 1957.

James S Raby [Seal] Edgemont, South Dakota [Address]
James S. Raby

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____
[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator McAlester Fuel Co.
Docket No. DMEA- 4742
Contract No. Idm-E 1133
Contract Date 19 SEP 1957

RECEIVED SEP 12 1957 D.M.E.A.

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described ~~as follows~~

in a Mining Lease, dated February 25, 1957, which was recorded in Book 41 Misc., Pages 162-167, County of Fall River, State of South Dakota, at 10:00 A.M., March 4, 1957.

_____,

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

None

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: None (State "None" or "See Annex No.____")

Dated this 5th day of September, 1957.

Josephine Manke Josephine Manke	[Seal]	Edgemont, South Dakota Edgemont, South Dakota	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-20[illegible] and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator McAlester Fuel Co.
Docket No. DMEA-4742
Contract No. Idm-E 1133
Contract Date 19 SEP 1957

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described ~~as follows~~

in a Mining Lease, dated February 25, 1957, which was recorded in Book 41 Misc., Pages 162-167, County of Fall River, State of South Dakota, at 10:00 A.M., March 4, 1957.

_____,

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

None

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: None (State "None" or "See Annex No.____")

Dated this 5th day of September, 1957.

John D. Manke John D. Manke	[Seal]	Edgemont, South Dakota	[Address]
Margaret J. Manke Margaret J. Manke	[Seal]	Edgemont, South Dakota	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ (Secretary, etc.) of the corporation named herein; that _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____
[Corporate Seal]

MF-205
(Combines and supercedes MF-20[illegible] and MF-203)
June 1956

F[illegible] Government's Use Only
EXPLOR[illegible]ON PROJECT CONTRACT
Operator McAlester Fuel Co.
Docket No. DMEA-4742
Contract No. Idm-E 1133
Contract Date 19 SEP 1957

RECEIVED SEP 12 1957 O.M.E.A.

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of ~~America~~:

Referring to that certain land in the County of Fall River, State of South Dakota, described ~~xxxxxxxxxx~~

in a Mining Lease, dated February 1, 1957, which was recorded in Book 41 Misc., Pages 129-134, County of Fall River, State of South Dakota, at 10:45 A.M., February 4, 1957

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

None

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: None (State "None" or "See Annex No.____")

Dated this 5th day of September, 1957.

John D. Manke John D. Manke	[Seal]	Edgemont, South Dakota	[Address]
Margaret J. Manke Margaret J. Manke	[Seal]	Edgemont, South Dakota	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____
[Corporate Seal]

MF-205
(Combines and supercedes MF-202 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator McAlester Fuel Co.
Docket No. DMEA-4742
Contract No. Idm-E 1133
Contract Date ~~19 SEP 1957~~

RECEIVED
SEP 12 1957
D.M.E.A.

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described ~~xxxxxxxxx2/x~~ in a Mining Lease, dated February 6, 1957, which was recorded in Book 41 Misc., Pages 141-146, County of Fall River, State of South ~~Dakota, at 9:45 A.M., February 18, 1957.~~

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

none

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this 23 day of Aug, 1957.

B. H. Lord	[Seal]	Edgemont, South Dakota	[Address]
Amy Lord	[Seal]	Edgemont, South Dakota	[Address]
	[Seal]		[Address]
B H Lord	[Seal]	Edgemont SD	[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ (Secretary, etc.) of the corporation named herein; that _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-202 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator McAlester Fuel Co.
Docket No. DMEA-4742
Contract No. Idm-E 1133
Contract Date 19 SEP 1957

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described ~~xxxxxxxxxx2/x~~ in a Mining Lease, dated February 7, 1957, which was recorded in Book 41 Misc., Pages 146-151, County of Fall River, State of South Dakota, at 9:45 A.M., February 18, 1957.

_____,
which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

None

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this 26 day of August, 1957

Frank Hand Frank Hand	[Seal]	Hot Springs, South Dakota	[Address]
Emma Hand Emma Hand	[Seal]	Hot Springs, South Dakota	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator McAlester Fuel Co.
Docket No. DMEA-4742
Contract No. Idm-E 1133
Contract Date 19 SEP 1957

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described ~~xxxxxxxxxx~~ in a Mining Lease, dated February 15, 1957, which was recorded in Book 41 Misc., Pages 157-162, County of Fall River, State of South Dakota, at 10:30 A.M., February 27, 1957.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

None

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this 26 day of August, 1957

Byron J. Cox Byron J. Cox	[Seal]	Hot Springs, South Dakota	[Address]
William D. Duerson	[Seal]	c/o Byron J. Cox	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____ [Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

DMEA
DEPARTMENT OF THE INTERIOR

OCT 28 1957
REGION III
DENVER, COLORADO

Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator McAlester Fuel Co.
Docket No. DMEA- 4742
Contract No. Idm-E 1133
Contract Date 19 Sept 1957

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described ~~XXXXXXXXXXXX~~ in a Mining Lease, dated February 15, 1957, which was recorded in Book 41 Misc., Pages 157-162, County of Fall River, State of South Dakota, at 10:30 A.M., February 27, 1957.

_____,
which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

None

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this 22 day of October, 1957.

BY: L. F. Duerson [Seal] Hot Springs, South Dakota [Address]
Agent for estate of W. D. Duerson

_____ [Seal] c/o Byron J. Cox [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____ [Corporate Seal]

MF-205
(Combines and supercedes MF-2[illegible] and MF-203)
June 1956

Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator McAlester Fuel Co.
Docket No. DMEA- 4742
Contract No. Idm-E 1133
Contract Date 19 SEP 1957

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described ~~as follows~~

in a Mining Lease, dated January 30, 1957, which was recorded in Book 41 Misc., Pages 124-129, County of Fall River, State of South Dakota, at 10:45 A.M., February 4, 1957.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

NONE

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: _____ (State "None" or "See Annex No.____")

Dated this 24 day of August, 1957

Warner R Ball Mr. Warner R. Ball	[Seal]	Edgemont, South Dakota	[Address]
Mrs Warner R Ball Mrs. Warner R. Ball	[Seal]	Edgemont, South Dakota	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

EXPLORATION PROJECT CONTRACT
McALESTER FUEL COMPANY
DOCKET NO. DMEA-4742

ANNEX II

Article 13. Changes and added provisions.--

(a) That part of the last sentence of Article 3 beginning with the word "either" is deleted and replaced by the words "have completed the work, except as otherwise provided in Exhibit 'A' with respect to stages of work."

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

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

(d) In addition to the costs of work estimated in Exhibit "A" by categories of actual costs, the costs of work requirements specified in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs set forth in Exhibit "A" include all allowable costs of the work to be performed under the Contract.

(e) In the last sentence of Article 6(c), the words "Article 8" are substituted for the words "Article 9."

(f) Notwithstanding any other provision of the Contract, the allowable unit cost per foot of a drilling item is the average unit cost per foot computed on the basis of all the actual unit costs of said drilling item incurred by the Operator; Provided, That the Government will not contribute to any portion of an average unit cost of a drilling item that exceeds the estimated unit cost of said item set forth in the contract.

EXPLORATION PROJECT CONTRACT
McALESTER FUEL COMPANY
DOCKET NO. DMEA-4742

EXHIBIT "A"

Description of the Work

General Provisions

The object of this project is to explore for uranium ore deposits that might occur in the Fall River and Lakota sandstone members of the Cretaceous Inyan Kara group of sedimentary rocks.

The exploratory work shall consist of non-core rotary drilling of vertical holes to an average depth of approximately 300 feet in the Fall River and upper (Gould channel) Lakota sandstone, and to approximately 550 feet where the underlying lower sandstone strata of the Lakota member are also to be explored.

Holes designated to explore the "Gould" channel sandstone shall not be drilled more than 10 feet below its inferred base; and the holes to explore the total Inyan Kara group shall not be drilled more than 10 feet below the inferred base of the lower Lakota sandstone.

Samples of the cuttings shall be collected for each two feet of hole drilled. The samples shall be examined for physical and geologic characteristics and scanned radiometrically. One-half of each sample shall be stored for Government inspection, and possible use, in heavy paper sample sacks marked to show the hole number and the depth represented. The other half of the sample, for the Operator's use, shall, if it shows significant anomalous radioactivity, be chemically analyzed for its U_3O_8 content. With previous Government approval, the Operator may dispose of the stored portion of the samples.

All holes shall be logged geologically and probed radiometrically by the Operator. The logs shall include lithology, sandstone-mudstone ratio, sandstone thickness, etc., required for control of subsequent drilling and general geologic information. Records of such logging and probing, together with the assay certificates of the cutting samples, shall be submitted with the Operator's monthly progress report. The Operator's report shall also include a map or sketch showing the location of all holes drilled during the reporting period.

The Government will not contribute to the cost of an incomplete hole, or to one that cannot be probed radiometrically.

No hole shall be drilled closer than 100 feet to the outer boundaries of the land described in Annex I.

The Operator shall provide a full-time supervisor and such technical assistance and labor as may be required to complete the project in a satisfactory manner.

Access roads and drill sites shall be prepared with a D-7 Caterpillar dozer or an equivalent unit of any other make.

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

The work shall be performed in three stages. The Operator shall perform all of Stage I work and as much of Stage II and Stage III work as is approved in writing by the Government.

Stage I

Prepare access roads and drill sites, and drill not in excess of 46 holes at the approximate locations shown on the map entitled "Figure 4. Geologic Map Showing Recommended Exploration, . . .," attached hereto and made part hereof.

In the area north of the Cheyenne River, 34 holes shall be drilled in ten lines spaced approximately 1,000 feet apart, the holes being staggered on alternate lines. Holes in each line shall be spaced at intervals of approximately 2,000 feet.

In the area south of the Cheyenne River, 6 holes shall be drilled on each of two lines spaced about 4,000 feet apart. The holes on each line shall be spaced at intervals of approximately 2,000 feet.

On map Figure 4, the holes to penetrate the Fall River and upper Lakota sandstones are designated by an open circle, and those to penetrate the Fall River, upper Lakota, and also the lower Lakota sandstones are designated by either a solid black circle or a circle with a cross center.

It is estimated that 20,300 feet of non-core rotary drilling, 15 hours of bulldozer work, and chemical analyses for the U_3O_8 content of 140 samples will be required to complete this Stage I of the project. However, if these estimates are too low, then additional units of work and funds required may, upon written approval of the Government, be transferred and deducted from Stage III.

Stage II

Prepare access roads and drill sites, and drill not in excess of 60 holes as offsets to those holes previously drilled that showed significant uranium mineralization or encountered sandstone considered to be favorable for uranium deposition.

It is estimated that 20 of the holes will be drilled as offsets to explore the Fall River and upper Lakota sandstone and that 40 holes will be drilled through the lower Lakota sandstone, for an aggregate total of 26,000 feet of non-core rotary drilling.

Holes drilled as offsets to explore the Fall River and upper Lakota sandstones shall not be drilled closer than approximately 200 feet to any other hole; and holes drilled to explore through the lower Lakota shall not be closer than approximately 500 feet to the hole being offset under this Stage II of the Contract.

It is estimated that 26,000 feet of non-core rotary drilling, 15 hours of bulldozer work and chemical analyses of 210 samples will be required to complete this Stage II of the project. However, if these estimates are too low, then additional units of work and funds may, upon the written approval of the Government, be transferred and deducted from Stage III.

Stage III

Prepare access roads and drill sites for offset holes to those holes drilled under Stages I and II which indicated significant uranium mineralization in the sandstones.

Holes drilled as offsets to explore the Fall River and upper Lakota sandstones shall not be closer than approximately 100 feet to any other hole, and holes drilled as offsets to explore through the lower Lakota sandstone shall not be closer than approximately 200 feet to the hole being offset.

Not in excess of 15,000 feet of non-core rotary drilling, 22½ hours of stand-by time for probing drill holes, 10 hours of bulldozer work and chemical analyses of 210 samples for their U_3O_8 content, less any units of such items that have been transferred to Stages I or II, shall be allowed under this Stage III of the Contract.

Estimated Costs

Stage I

Actual Costs

Category (1) - Independent Contracts

Bulldozing, 15 hours @ $12.50/hr.	$ 187.50	
Non-core rotary drilling, 20,300 feet @ $1.00/ft. 1/	20,300.00	
Stand-by time for probing holes, 34½ hours @ $10.00/hr.	345.00	
Categories (2) through (7) None		

Fixed Unit Costs

Incidental allowance 2/ for each foot of drilling completed, 20,300 feet @ $0.12/ft.	2,436.00	
Chemical analyses for U_3O_8 content of 140 samples @ $3.50/sample	490.00	
Estimated total cost, Stage I		$23,758.50

Stage II

Actual Costs

Category (1) - Independent Contracts

Bulldozing, 15 hours @ $12.50/hr.	$ 187.50	
Non-core rotary drilling, 26,000 feet @ $1.00/ft. 1/	26,000.00	
Stand-by time for probing holes, 45 hours @ $10.00/hr.	450.00	
Categories (2) through (7) None		

Fixed Unit Costs

Incidental allowance 2/ for each foot of drilling completed, 26,000 feet @ $0.12/ft.	3,120.00	

Chemical analyses for U_3O_8 content of 210 samples @ $3.50/sample	$735.00	
Estimated total cost, Stage II		$30,492.50

Stage III

Actual Costs

Category (1) - Independent Contracts

Bulldozing, 10 hours @ $12.50/hr.	$ 125.00	
Non-core rotary drilling, 15,000 feet @ $1.00/ft. 1/	15,000.00	
Stand-by time for probing holes, 22½ hours @ $10.00/hr.	225.00	

Categories (2) through (7)
None

Fixed Unit Costs

Incidental allowance 2/ for each foot of drilling completed, 15,000 feet @ $0.12/ft.	1,800.00	
Chemical analyses for U_3O_8 content of 210 samples @ $3.50/sample	735.00	
Estimated total cost, Stage III		$17,885.00

S U M M A R Y

Total estimated cost, Stage I	$23,758.50
Total estimated cost, Stage II	$30,492.50
Total estimated cost, Stage III	$17,885.00
Total estimated cost of project	$72,136.00
Government participation @ 75%	$54,102.00

1/ See Article 13(f).
2/ Includes all costs whatsoever that might otherwise be allowable costs of the project under categories (1) through (7) of Article 6(a), except as otherwise scheduled in Exhibit "A".

2

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

May 7, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 10 1957

DATE	INITIALS	CODE

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Application for DMEA Aid (Uranium) McAlester Fuel Company (Star Claims) Fall River County, South Dakota

Enclosed are the original and two copies of the subject application. One copy of the application is being retained in our file.

The Applicant proposes to explore a mineralized target area based primarily on favorable geologic conditions by an aggregate of 108,500 feet of rotary non-core and diamond core drilling, divided into three stages of work at a total estimated project cost of $165,668.86.

Cursory inspection of the application indicates all items of work to be within reason, with the possible exception that more supervision is proposed than might be necessary.

E. N. Harshman

By E. N. Harshman,
Acting Executive Officer

Encs.

ORIGINAL FILE COPY
RECEIVED MAY 10 1957
CODE

J. G. PUTERBAUGH, PRESIDENT
TOM E. GARRARD, VICE PRESIDENT
E. N. JOYNER, EXECUTIVE VICE PRESIDENT AND TREASURER
C. R. COLE, VICE PRESIDENT
CARL OMAN, SECRETARY
R. H. PATTERSON, ASS'T. SECRETARY AND ASS'T. TREASURER

McALESTER FUEL COMPANY

McALESTER, OKLA.

May 2, 1957

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

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

Dear Mr. Harshman:

I am sending you herewith four copies of an application for aid in an exploration project pursuant to DMEA Order One. These are summarized in MF 103 (revised April 1952) and wherever the summary form did not provide enough room, bound with the form is the detailed information requested thereon.

I believe I had the pleasure of meeting you at the Federal Center when our geologist, Robert Ford of Riverton, was with me, about last January.

The geology was done on this project by Mr. Ford.

Our work in this area has been largely based on publications by the U. S. Geological Survey and Mr. Ford's geological discussion refers to "the enclosed report by Garland B. Gott 'Inferred Relationship of Some Uranium Deposits and Calcium Carbonate Cement in Southern Black Hills, South Dakota'". Unfortunately, we do not have enough of these government reports to enclose at the time this mailing is made; however, the necessary enclosures are currently being sent to you.

Within the main envelopes to which this is attached are the following:

1. Form MF 103 attached to the amplified answers to the questions on the form.

2. Large property map showing the property to be explored with fee land and claim land tied to government surveys.

3. Large map of proposed Stage One drill hole locations.

4. Separate pocket which contains logs of some holes drilled and logged by the AEC and also three copies of contract drill bids on the property.

5. A second pocket is inside each folder, which pocket contains copies of the several leases which, together with the staked claims, make up the McAlester property to be explored.

Most of these lease forms contain as an integral part thereof the sent of the lessors to sign a lien for repayment attaching to future productio the premises. On the one or two which do not contain such consent as part of

lease, we have the rider for attaching thereto.

For the ready reference of your office in checking these applications, I have attached as a front page a filled out copy of MF 103, revised February 1957, and just beneath it is the 103, revised April 1952, which was used as outline in preparing the attached report. The top form gives some ready information which you may like to have on top as a summary sheet but there would be excessive reorganization of the whole attached report if we did not follow the April 1952 form and so both summary sheets are given.

You will note that I am sending a copy of this letter of transmittal to our geologist, Robert Ford, and to our local representative at Edgemont, Max Hartle, who will be glad to cooperate with your field men in any way. Fortunately, all of the property is very readily accessible from good roads.

Very truly yours,

McALESTER FUEL COMPANY

By: Tom E. Garrard
TOM E. GARRARD
Vice President

TEG:is

Attch.

cc: Mr. Robert Ford
P. O. Box 428
Riverton, Wyoming

Mr. Max Hartle
General Delivery
Edgemont, South Dakota

Form MF-103
Revised Feb. 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1035.3
Approval expires June 30, 1958

APPLICATION FOR AID IN AN EXPLORATION PROJECT

PURSUANT TO DMEA ORDER I, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

NAME OF APPLICANT (Full legal name and mailing address as it should appear on contract if one is executed)

McALESTER FUEL COMPANY
P. O. BOX 783
McALESTER, OKLAHOMA

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

APPLICANT NOT TO USE THIS BLOCK

Docket Number	4742
Date Received	5-10-57
Government Participation %	75%
Region	III
Division Code	700

BUSINESS ORGANIZATION (Check one)

- Individual [ ]
- Corporation [ ]
- Partnership [X]
- Other (Specify) [ ]

State in which firm is organized Delaware

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title
J. G. Puterbaugh	Box 783, McAlester, Okla.	President
E. P. Joyner	Box 210, Magnolia, Ark.	Exec. Vice Pres. & Treasurer
Tom E. Garrard	Box 783, McAlester, Okla.	Vice President
Carl Oman	Box 783, McAlester, Okla.	Secretary

Note: by E.M. Murphy. Dunnard Bradstreet rating for company
Financial - AA - (over $1,000,000)
Credit - A1 - (Highest)

Mineral(s) for which you wish to explore Uranium

Estimated Cost of Project $ 57,160.95 Stage II
$55,809.95 Stage I, $~~165,668.86~~ 52,697.96 Stage III

LOCATION OF PROPERTY

Name	County	State
	Fall River County,	South Dakota

GENERAL INSTRUCTIONS

Before filling out this application, please read DMEA Order-I, Amended, "Government Aid in Defense Exploration Projects." To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit four copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 1, existing mine workings and geology in item 2, and the proposed exploration project in item 4. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 2(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals*, of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest DMEA Field Office.*

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.

McAlester Fuel Co.

5-2-57
Dated

Tom E. Garrard
BY (Signature)

Vice President
Title

Attached paper were filled out following Form MF-103, Apr. 52 Revision

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense. U. S. Code, Title 18, Sec. 1001.

INFORMATION REQUIRED WITH THIS APPLICATION

1. *Applicant's Property Rights:*

(a) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all land adjacent to the proposed project area which you own or control. Describe any part of the project land or workings which should not be subject to Government lien for royalty payments. If the land consists of unpatented claims, state the book and page number for each recorded location notice, including amended locations, and the place where recorded (courthouse, recorder's office, county, and state).

(b) State all the names by which you know the property.

(c) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise. If you are not the owner, submit with this application one exact copy of the lease, contract, or other document (with address of owner) under which you control the property.

(d) Describe all liens, mortgages, or other encumbrances on the property.

2. *Physical Description:*

(a) Describe in detail and illustrate with maps or sketches all mining or exploration operations which you know have been or are being conducted upon the lands, including existing mine workings. Describe all production facilities.

(b) State your interest, if any, in operations stated in 2*(a)*.

(c) State, as far as you know, the past and current production, supporting your statement with copies of settlement sheets, mine records, or published data if available.

(d) Describe known ore reserves on the property giving quantities and grades and sampling methods used, supporting your statement with copies of assay certificates and assay maps if available.

(e) Describe by narrative and maps or sketches the geologic features of the property, including ore minerals, geologic formations if known, and type of deposit (vein, bedded, etc.).

(f) State your reasons for expecting to find ore, and if you have sampled the area you propose to explore, show where the samples were taken, describe sampling methods used, and provide copies of assay certificates.

(g) Send with your application at least *two* copies of all geologic or engineering reports, assay maps, or technologic information which you may have, indicating on each whether you require its return to you.

3. *Accessibility of Project:*

(a) To aid DMEA representatives who may be required to examine the property, state the name and address of the person who will meet the DMEA representative; give directions for reaching the property; and describe accessibility of the property including the mine workings.

(b) Name the shipping and supply points and places where employees reside, and state the distances between them and the property.

4. *The Exploration Project:*

(a) Describe fully the proposed exploration project giving individual footages and sizes of openings *for each item of work.* Use narrative, maps, plans, and longitudinal and cross sections as necessary. Show the location of the proposed work as related to geologic features such as veins, ore-bearing beds, contacts of rock formations, etc. Show also the relation of the proposed work to any existing mine workings and to *property boundaries* or to the closest identifiable corner.

(b) If an access road to the project must be built, show the location on the property map and state the length, type, and construction methods proposed.

(c) In the event that an exploration contract with DMEA is executed, how soon will the work start and how many months will be required to complete it? State your anticipated average daily or monthly rate of progress for each type of work.

5. *Experience:*

State your operating experience and background with relation to your ability to carry out this exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of Costs:*

Furnish detailed estimates of the costs *for each item of the work proposed in 4(a)* under the headings listed below with a total for each heading and the estimated total cost of the project. Costs for any work to be performed by an independent contractor should be shown separately under category *(a)* below. Costs for any work that is not to be performed by an independent contractor should be given in detail under categories *(b)* through *(g)*.

(a) Independent contracts. State the cost of any proposed independent contract for the performance of all or any part of the work, expressed in units of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved. Cost estimates should be supported by bids from three contractors if possible. *(Note* – If none of the work is to be contracted, write "none" after this item.)

(b) Personal services. For necessary supervision, engineering and geological services, and labor, include an itemized schedule of numbers, classes, rates of wages, salaries or fees, and periods of employment. State whether these technicians and employees are available.

(c) Operating materials and supplies. List items of material and supplies with their cost. Include under this heading power, water, and fuel, and units of equipment and tools costing less than $50 each.

(d) Operating equipment. List items of operating equipment to be used giving specifications and indicating how each item is to be acquired – i.e., rented, purchased, or provided by the applicant. If it is rented or purchased, state the estimated rental or purchase price. If it is to be furnished by the applicant, give its present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of necessary *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant, which will be used on the exploration project.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration project stating specifications and cost including labor, materials and supervision.

(g) Miscellaneous. For the operating equipment listed in 6*(d)*, describe the type and estimate the cost of repairs and maintenance expected during project operations. Do not repeat initial repairs listed in 6*(e)*. Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories.

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)* State whether you are prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation stated in Sec. 7 of DMEA Order–I, Amended.

(b) Explain to what extent you propose to furnish your share of the costs by providing money, by use of equipment owned by you, or otherwise.

* * * * *

INT.-DUP. SEC., WASH., D.C. 15539

OFFICIAL FILE COPY
MF-103
(Revised April 1952)
DMEA
RECEIVED MAY 10 1957

DATE	INITIALS	CODE

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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

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. .....
Metal or Mineral .....
Date Received .....
Estimated Cost .....
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: McAlester Fuel Company, McAlester, Oklahoma. A Delaware Corporation. J. G. Puterbaugh, President; E. P. Joyner, Executive Vice President and Treasurer; Tom E. Garrard, Vice President; and Carl Oman, Secretary.

(*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.

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

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

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

See ANNEX I and ANNEX II giving recording data on mining claims and recording data and legal land description of leases.

(*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 Owner and Lessee

(*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. See enclosed eight (8) separate leases.

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. See ANNEX I

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 attached text.

(*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.

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

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

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

(*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.

(*c*) The work will start within 20 days and be completed within 9 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.

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?

[X] 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 May 2, 1957

McAlester Fuel Company
(Applicant)

By Tom E. Garard
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

McAlester Fuel Company
Application for Aid in an Exploration Project,
Pursuant to DMEA order 1, under the Defense
Production Act of 1950, as Amended

ANNEX 1

The land referred to in Article 3 of the Application form MF-103 consists of 245 unpatented lode mining claims known as the Star Groups, situated in Fall River County, South Dakota:

Sections 4, 5, 6, 7, 8, 17, 18, 19, 20, 21, 28, 29, 30, 31 and 32 of Township 9 S., Range 4 E.; and
Sections 12 and 13 of Township 9 S., Range 3 E.

Notices of location for the Star Groups of claims are recorded in the Offices of the Recorder for Fall River County at Hot Springs, South Dakota as follows:

Claim	Book No.	Page No.	Date
Star No. 1	M. 40	130	3/27/57
Star No. 2	M. 40	131	3/27/57
Star No. 3	M. 40	131	3/27/57
Star No. 4	M. 40	132	3/27/57
Star No. 5	M. 40	132	3/27/57
Star No. 6	M. 40	133	3/27/57
Star No. 7	M. 40	225	3/27/57
Star No. 8	M. 40	133	3/27/57
Star No. 9	M. 40	134	3/27/57
Star No. 10	M. 40	134	3/27/57
Star No. 11	M. 40	135	3/27/57
Star No. 12	M. 40	135	3/27/57
Star No. 13	M. 40	136	3/27/57
Star No. 14	M. 40	136	3/27/57
Star No. 15	M. 40	137	3/27/57
Star No. 16	M. 40	137	3/27/57
Star No. 17	M. 40	138	3/27/57
Star No. 18	M. 40	138	3/27/57
Star No. 19	M. 40	139	3/27/57
Star No. 20	M. 40	139	3/27/57
Star No. 21	M. 40	140	3/27/57
Star No. 22	M. 40	140	3/27/57
Star No. 23	M. 40	141	3/27/57
Star No. 24	M. 40	141	3/27/57
Star No. 25	M. 40	142	3/27/57
Star No. 26	M. 40	142	3/27/57
Star No. 27	M. 40	143	3/27/57
Star No. 28	M. 40	143	3/27/57
Star No. 29	M. 40	144	3/27/57
Star No. 30	M. 40	144	3/27/57

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 10 1957
DATE | INITIALS | CODE

Claim	Book No.	Page No.	Date
Star No. 31	M. 40	145	3/27/57
Star No. 32	M. 40	145	3/27/57
Star No. 33	M. 40	146	3/27/57
Star No. 34	M. 40	146	3/27/57
Star No. 35	M. 40	147	3/27/57
Star No. 36	M. 40	147	3/27/57
Star No. 37	M. 40	148	3/27/57
Star No. 38	M. 40	148	3/27/57
Star No. 39	M. 40	149	3/27/57
Star No. 40	M. 40	149	3/27/57
Star No. 41	M. 40	150	3/27/57
Star No. 42	M. 40	150	3/27/57
Star No. 43	M. 40	151	3/27/57
Star No. 44	M. 40	151	3/27/57
Star No. 45	M. 40	152	3/27/57
Star No. 46	M. 40	152	3/27/57
Star No. 47	M. 40	153	3/27/57
Star No. 48	M. 40	153	3/27/57
Star No. 49	M. 40	154	3/27/57
Star No. 50	M. 40	154	3/27/57
Star No. 51	M. 40	155	3/27/57
Star No. 52	M. 40	155	3/27/57
Star No. 53	M. 40	156	3/27/57
Star No. 54	M. 40	156	3/27/57
Star No. 55	M. 40	157	3/27/57
Star No. 56	M. 40	157	3/27/57
Star No. 57	M. 40	158	3/27/57
Star No. 58	M. 40	158	3/27/57
Star No. 59	M. 40	159	3/27/57
Star No. 60	M. 40	159	3/27/57
Star No. 61	M. 40	160	3/27/57
Star No. 62	M. 40	160	3/27/57
Star No. 63	M. 40	161	3/27/57
Star No. 64	M. 40	161	3/27/57
Star No. 65	M. 40	162	3/27/57
Star No. 66	M. 40	162	3/27/57
Star No. 67	M. 40	163	3/27/57
Star No. 68	M. 40	163	3/27/57
Star No. 69	M. 40	164	3/27/57
Star No. 70	M. 40	164	3/27/57
Star No. 71	M. 40	165	3/27/57
Star No. 72	M. 40	165	3/27/57
Star No. 73	M. 40	166	3/27/57
Star No. 74	M. 40	166	3/27/57
Star No. 75	M. 40	167	3/27/57
Star No. 76	M. 40	167	3/27/57
Star No. 77	M. 40	168	3/27/57
Star No. 78	M. 40	168	3/27/57
Star No. 79	M. 40	169	3/27/57
Star No. 80	M. 40	169	3/27/57

Claim	Book No.	Page No.	Date
Star No. 81	M. 40	170	3/27/57
Star No. 82	M. 40	170	3/27/57
Star No. 83	M. 40	171	3/27/57
Star No. 84	M. 40	171	3/27/57
Star No. 85	M. 40	172	3/27/57
Star No. 86	M. 40	172	3/27/57
Star No. 87	M. 40	173	3/27/57
Star No. 88	M. 40	173	3/27/57
Star No. 89	M. 40	174	3/27/57
Star No. 90	M. 40	174	3/27/57
Star No. 91	M. 40	175	3/27/57
Star No. 92	M. 40	175	3/27/57
Star No. 93	M. 40	176	3/27/57
Star No. 94	M. 40	176	3/27/57
Star No. 95	M. 40	177	3/27/57
Star No. 96	M. 40	177	3/27/57
Star No. 97	M. 40	178	3/27/57
Star No. 98	M. 40	179	3/27/57
Star No. 99	M. 40	179	3/27/57
Star No. 100	M. 40	180	3/27/57
Star No. 101	M. 40	180	3/27/57
Star No. 102	M. 40	181	3/27/57
Star No. 103	M. 40	181	3/27/57
Star No. 104	M. 40	182	3/27/57
Star No. 105	M. 40	182	3/27/57
Star No. 106	M. 40	183	3/27/57
Star No. 107	M. 40	183	3/27/57
Star No. 108	M. 40	184	3/27/57
Star No. 109	M. 40	184	3/27/57
Star No. 110	M. 40	185	3/27/57
Star No. 111	M. 40	185	3/27/57
Star No. 112	M. 40	186	3/27/57
Star No. 113	M. 40	186	3/27/57
Star No. 114	M. 40	187	3/27/57
Star No. 115	M. 40	187	3/27/57
Star No. 116	M. 40	188	3/27/57
Star No. 117	M. 40	188	3/27/57
Star No. 118	M. 40	189	3/27/57
Star No. 119	M. 40	189	3/27/57
Star No. 120	M. 40	190	3/27/57
Star No. 121	M. 40	190	3/27/57
Star No. 122	M. 40	191	3/27/57
Star No. 123	M. 40	191	3/27/57
Star No. 124	M. 40	192	3/27/57
Star No. 125	M. 40	192	3/27/57
Star No. 126	M. 40	193	3/27/57
Star No. 127	M. 40	193	3/27/57
Star No. 128	M. 40	194	3/27/57
Star No. 129	M. 40	194	3/27/57
Star No. 130	M. 40	195	3/27/57

Claim	Book No.	Page No.	Date
Star No. 131	M. 40	195	3/27/57
Star No. 132	M. 40	196	3/27/57
Star No. 133	M. 40	196	3/27/57
Star No. 134	M. 40	197	3/27/57
Star No. 135	M. 40	197	3/27/57
Star No. 136	M. 40	198	3/27/57
Star No. 137	M. 40	198	3/27/57
Star No. 138	M. 40	199	3/27/57
Star No. 139	M. 40	199	3/27/57
Star No. 140	M. 40	200	3/27/57
Star No. 141	M. 40	200	3/27/57
Star No. 142	M. 40	201	3/27/57
Star No. 143	M. 40	201	3/27/57
Star No. 144	M. 40	202	3/27/57
Star No. 145	M. 40	202	3/27/57
Star No. 146	M. 40	203	3/27/57
Star No. 147	M. 40	203	3/27/57
Star No. 148	M. 40	204	3/27/57
Star No. 149	M. 40	204	3/27/57
Star No. 150	M. 40	205	3/27/57
Star No. 151	M. 40	205	3/27/57
Star No. 152	M. 40	206	3/27/57
Star No. 153	M. 40	206	3/27/57
Star No. 154	M. 40	207	3/27/57
Star No. 155	M. 40	207	3/27/57
Star No. 156	M. 40	208	3/27/57
Star No. 157	M. 40	208	3/27/57
Star No. 158	M. 40	209	3/27/57
Star No. 159	M. 40	209	3/27/57
Star No. 160	M. 40	210	3/27/57
Star No. 161	M. 40	210	3/27/57
Star No. 162	M. 40	211	3/27/57
Star No. 163	M. 40	211	3/27/57
Star No. 164	M. 40	212	3/27/57
Star No. 165	M. 40	212	3/27/57
Star No. 166	M. 40	213	3/27/57
Star No. 167	M. 40	213	3/27/57
Star No. 168	M. 40	214	3/27/57
Star No. 169	M. 40	214	3/27/57
Star No. 170	M. 40	215	3/27/57
Star No. 171	M. 40	215	3/27/57
Star No. 172	M. 40	216	3/27/57
Star No. 173	M. 40	216	3/27/57
Star No. 174	M. 40	217	3/27/57
Star No. 175	M. 40	217	3/27/57
Star No. 176	M. 40	218	3/27/57
Star No. 177	M. 40	218	3/27/57
Star No. 178	M. 40	219	3/27/57
Star No. 179	M. 40	219	3/27/57
Star No. 180	M. 40	220	3/27/57

Claim	Book No.	Page No.	Date
Star No. 181	M. 40	220	3/27/57
Star No. 182	M. 40	221	3/37/57
Star No. 183	M. 40	221	3/27/57
Star No. 184	M. 40	222	3/27/57
Star No. 185	M. 40	222	3/27/57
Star No. 186	M. 40	223	3/27/57
Star No. 187	M. 40	223	3/27/57
Star No. 188	M. 40	224	3/27/57
Star No. 189	M. 40	224	3/27/57
Star No. 190	M. 40	225	3/27/57
Star No. 191	M. 40	230	4/5 /57
Star No. 192	M. 40	230	4/5 /57
Star No. 193	M. 40	231	4/5 /57
Star No. 194	M. 40	231	4/5 /57
Star No. 195	M. 40	232	4/5 /57
Star No. 196	M. 40	232	4/5 /57
Star No. 197	M. 40	233	4/5 /57
Star No. 198	M. 40	233	4/5 /57
Star No. 199	M. 40	234	4/5 /57
Star No. 200	M. 40	234	4/5 /57
Star No. 201	M. 40	235	4/5 /57
Star No. 202	M. 40	235	4/5 /57
Star No. 203	M. 40	236	4/5 /57
Star No. 204	M. 40	236	4/5 /57
Star No. 205	M. 40	237	4/5 /57
Star No. 206	M. 40	237	4/5 /57
Star No. 207	M. 40	238	4/5 /57
Star No. 208	M. 40	238	4/5 /57
Star No. 209	M. 40	239	4/5 /57
Star No. 210	M. 40	239	4/5 /57
Star No. 211	M. 40	240	4/5 /57
Star No. 212	M. 40	240	4/5 /57
Star No. 213	M. 40	241	4/5 /57
Star No. 214	M. 40	241	4/5 /57
Star No. 215	M. 40	242	4/5 /57
Star No. 216	M. 40	242	4/5 /57
Star No. 217	M. 40	243	4/5 /57
Star No. 218	M. 40	243	4/5 /57
Star No. 219	M. 40	244	4/5 /57
Star No. 220	M. 40	244	4/5 /57
Star No. 221	M. 40	245	4/5 /57
Star No. 222	M. 40	245	4/5 /57
Star No. 223	M. 40	246	4/5 /57
Star No. 224	M. 40	246	4/5 /57
Star No. 225	M. 40	247	4/5 /57
Star No. 226	M. 40	247	4/5 /57
Star No. 227	M. 40	248	4/5 /57

Claim	Book No.	Page No.	Date
Star No. 228	M. 40	248	4/5 /57
Star No. 229	M. 40	249	4/5 /57
Star No. 230	M. 40	249	4/5 /57
Star No. 231	M. 40	250	4/5 /57
Star No. 232	M. 40	250	4/5 /57
Star No. 233	M. 40	251	4/5 /57
Star No. 234	M. 40	251	4/5 /57
Star No. 235	M. 40	252	4/5 /57
Star No. 236	M. 40	252	4/5 /57
Star No. 237	M. 40	253	4/5 /57
Star No. 238	M. 40	253	4/5 /57
Star No. 239	M. 40	254	4/5 /57
Star No. 240	M. 40	254	4/5 /57
Star No. 241	M. 40	255	4/5 /57
Star No. 242	M. 40	255	4/5 /57
Star No. 243	M. 40	256	4/5 /57
Star No. 244	M. 40	256	4/5 /57
Star No. 245	M. 40	257	4/5 /57

These claims are shown on the enclosed property map entitled, "McAlester Fuel Company Edgemont Uranium Operations Property Map."

McAlester Fuel Company
Application for Aid in an Exploration Project,
Pursuant to DMEA order 1, under the Defense
Production Act of 1950, as Amended

ANNEX II

The land referred to in Article 3 of the Application form MF-103 consists of eight mining lease agreements with McAlester Fuel Company as "Lessee." The following abstracts of the leases give the Lessor, legal description, and recording data on all leases. The land so controlled are shown on the enclosed property map entitled, "McAlester Fuel Company Edgemont Uranium Operations Property Map."

Lessor: Warner R. Ball and Mrs. Warner R. Ball

Leased Lands: The south 1/2, Section 6; the south 1/2 of the northwest 1/4, the southwest 1/4, the west 1/2 and the southeast 1/4 of the southeast 1/4, Section 5; Lot 2, the east 1/2 of the northwest 1/4, the northeast 1/4, the south 1/2, Section 7; the north 1/2 of the north 1/2, the southeast 1/4 of the northeast 1/4, Section 18; the north 1/2, the northwest 1/4 and the east 1/2 of the southwest 1/4, and west 1/2 of the southeast 1/4, Section 8; all in Twp. 9S. Range 4E.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
4th day of Feb. 1957
at 10:45 A.M., and recorded in
Book 411 Misc. page 124-129

Lessor: Byron J. Cox and Bill Duerson

Leased Lands: The south 1/2 of the northwest 1/4, the east 1/2 of the northeast 1/4, Section 17; the northeast 1/4 of the northeast 1/4, Section 20; all in Twp. 9S, Range 4E, totaling 200.00 acres more or less.
And Four Mineral Claims, called Sam and Sam No. 1, and Ray and Ray No. 1
located in S/2 NW/4, Sec. 17, recorded on page of Book 38 Misc. Registrat of Deeds, Fall River Co., South Dakota, all in Fall River Co., South Dakota, said claims being recorded in Book 38 Misc. on Pages 622-624 inclusive, in the office of the Register of Deeds of Fall River County, South Dakota.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
27th day of Feb. 1957
at 10:30 A.M. and Recorded in
Book 41 Misc. Page 157-162

Lessor: Frank and Emma Hand

Leased Lands: Southwest 1/4 of the southwest 1/4, Section 8; north 1/2 of the

northwest 1/4, West 1/2 of the northeast 1/4, north 1/2 of the southeast 1/4, and the southeast 1/4 of the southeast 1/4, Section 17; all in Twp. 9S. Range 4E.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
18th day of Feb. 1957
at 9:45 A.M. and recorded in
Book 41 Misc., Page 146-151

Lessor: B. H. Lord and Amy Lord

Leased Lands: The southeast 1/4 of the northwest 1/4, the east 1/2 of the southwest 1/4, the west 1/2 of the southeast 1/4, Section 18; all in Twp. 9S. Range 4E.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
18th day of Feb. 1957
at 9:45 A.M.
Book 41 Misc., Pages 141-146

Lessor: John D. amd Margaret J. Manke

Leased Lands: The SE/4 of the NE/4, the SE/4, Section 13; Twp. 9S Range 3E. BHM. Lots 2, 3 and 4, Section 18; the S/2 of the N/2, the SW/4, the SW/4 of the SE/4, Section 21; the N/2, Section 28; the N/2, the N/2 and the SW/4 of the SW/4, Section 29; all of Section 30; the E/2 of Section 31; the W/2 of the W/2, Section 32; all in Twp. 9S Range 4E, BHM.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
4th day of March, 1957
at 10:00 A.M. and recorded in
Book 41 Misc. Page 162-167

Lessor: John D. and Margaret J. Manke

Leased Lands: The southwest 1/4 of the northeast 1/4, the east 1/2 of the southeast 1/4, Section 18; the west 1/2 and the southeast 1/4 of the southwest 1/4, Section 17; lot 1, the east 1/2 of the northwest 1/4, the northeast 1/4, the south 1/2, Section 19; the northwest 1/4, the south 1/2, Section 20; all in Twp. 9S. Range 4E.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
4th day of Feb. 1957
at 10:45 A.M. and recorded
in Book 41 Misc. Page 129-134

Lessor: James S. Raby

Leased Lands: Northwest 1/4, the south 1/2, Section 1; the east 1/2 of the northwest 1/4, the west 1/2 and the southeast 1/4 of the northeast 1/4, the east 1/2 of the southwest 1/4, the southeast 1/4, Section 12; all in Twp. 9S. Range 3E.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
4th day of Feb. 1957
at 10:45 A.M. and recorded in
Book 41 Misc. Page 134-139

Lessor: James S. Raby

Leased Lands: The NE/4 of the NW/4, north 1/2 of the NE/4, Section 13; Twp. 9S Range 3E. BHM.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
25th day of Feb. 1957
at 10:45 A.M. and recorded in
Book 41 Misc. page 151-156

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

Purpose

This application for exploration assistance is made on behalf of McAlester Fuel Company, a Delaware Corporation, with its principal office in the city of Magnolia, County of Columbia, State of Arkansas. The purpose is to request exploration aid for Uranium bearing ores under the above named act.

Applicant's Property Rights

ANNEX 1, following form MF-103, gives all pertinent facts about the applicant's property rights. All unpatented lode claims are listed together with the book and page number for each recorded location notice.

The name or names of each lessor is listed in ANNEX II together with the description of mineral lands leased by the applicant. Book and page numbers for each recorded lease are also given. Copies of each of these leases showing royalty reservation and rights of applicant are enclosed with this application. McAlester Fuel Company has no interest in other lands that may be benefited by the proposed exploration.

A map showing claims and leased lands with reference to Government subdivisions is also enclosed.

Physical Description

a. There are no mine workings or production facilities now existing on the lands covered by this application. Three drill holes are on the northern extremity of the property. Two drilled by private interests and one by the A. E. C. These holes are described under geology and logs are enclosed with this application. The property is eight (8) miles from Edgemont and state and county roads give easy access.

b. There is no past or corrent production from the lands included in this application.

Geologic Features

c. The U. S. Geological Survey currently carrying on geological investigations in the southern Black Hills, under the sponsorship of the A. E. C., has collected much geologic evidence by reconnaissance and detailed mapping. In general this geologic mapping has expressed itself in the possible use of two relationships as a guide for prospecting for concealed deposits of uranium in the southern Black Hills.

(1) Sandstone channel complexes in the Inyan Kara group. At

present there are three definable channels, one located in the uppermost Fall River sandstone, one in the Gould or so-called Fuson channel, and one in a thick section of Lakota sandstone. (See Figures 4 and 5).

(2) Channel sandstones marginal to some of the larger carbonate-cemented sandstones within those channels are favorable environment for the localization of uranium deposits.

For a detailed explanation of the carbonate cement ore guide the writer refers to the enclosed report by Garland B. Gott, "Inferred Relationship of Some Uranium Deposits and Calcium Carbonate Cement in Southern Black Hills, South Dakota."

The planning of exploration on the lands subject to this application is probably best explained if the reader refers to the first three figures of this report showing the land controlled by McAlester Fuel Company, within the Flint Hill and Rumford Quadrangles, and the lands relationship to the known and inferred channel complexes.

Figure No. 1: "Relationship of Uranium Deposits to Thick Fall River Sandstones." This sandstone unit can be traced from the Runge Mine of Pictograph Mining Company on the north, southeastward along the border between the Edgemont and Flint Hill Quadrangles where it contains numerous low grade oxidized uranium deposits. This sandstone member covers the McAlester lands north of the Cheyenne River as a thin veneer of well oxidized sands. Therefore, in those lands north of the River this sandstone unit cannot be considered favorable. South of the River this sandstone probably occurs in its complete section and would not appear to be as throughly oxidized. The writer does not consider this "channel" a priority target. However, the trend of this "channel" in the vicinity of the McAlester lands is similar to the two underlying "channels", explained below, and drill hole exploration must necessarily penetrate these Fall River sands to explore the two deeper "channels" considered more favorable to the deposition of uranium.

Figure No. 2: "Relationship of Uranium Deposits to Conglomeratic Channel Sandstone." This sandstone unit can be more aptly termed a channel. U. S. G. S. mapping resulted in the delineation of this prominent channel extending from the southeast part of the Harney Peak 3 SW quadrangle southeastward to the Cheyenne River in the Flint Hill Quadrangle. South of the Cheyenne River the channel does not outcrop but is inferred to trend south-southeast. The McAlester land covers this trend, known and inferred, for over six (6) miles. The channel sandstone commonly overlies gray to variegated claystones and mudstone (Fuson formation), but locally it fills a channel scoured through these mudstones into underlying sandstones. (See figures 4 and 5).

The sandstone of this channel is medium to coarse grained and gritty to conglomeratic near its base where exposed in the Flint Hill quadrangle. Distinctive types of cross bedding characterize this channel. The channel sandstone is important because of the deposit at the Gould Mine, one of the larger uranium deposits in the southern Black Hills. Calcium-carbonate cement in the channel

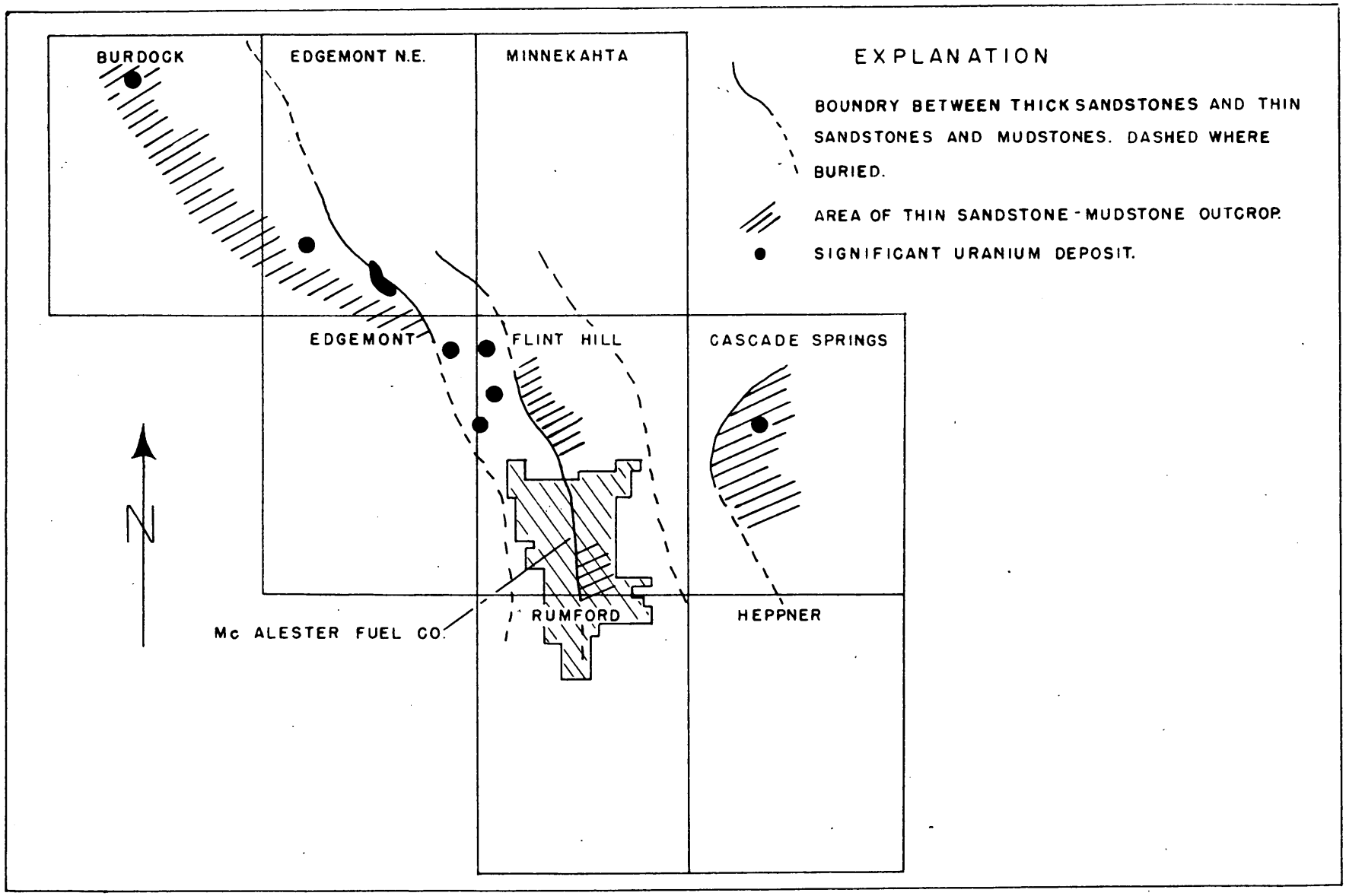


FIGURE I.- Relationship of uranium deposits to thick Fall River sandstones.

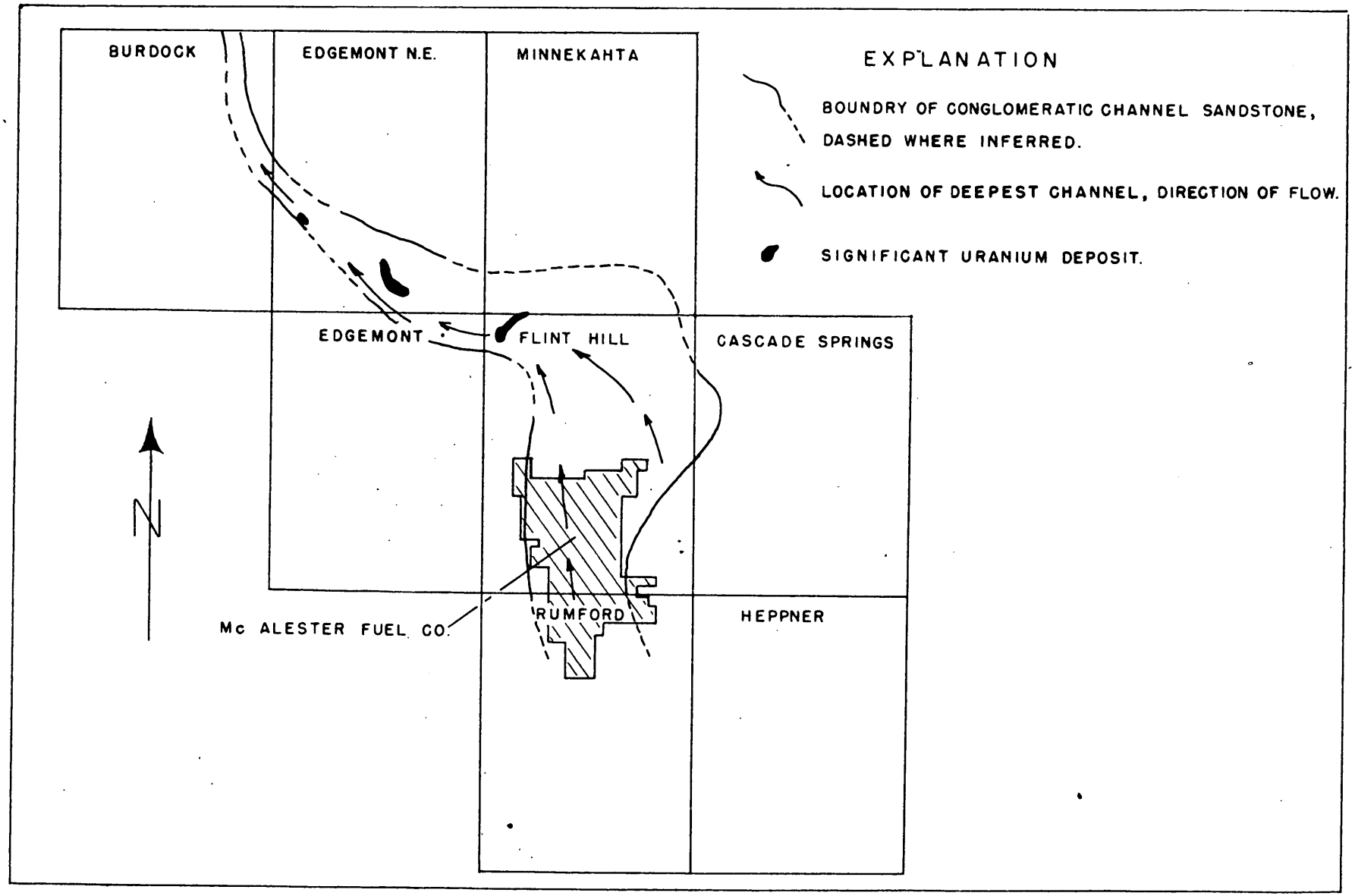


FIGURE 2 - Relationship of uranium deposits to conglomeratic channel sandstone. after USGS

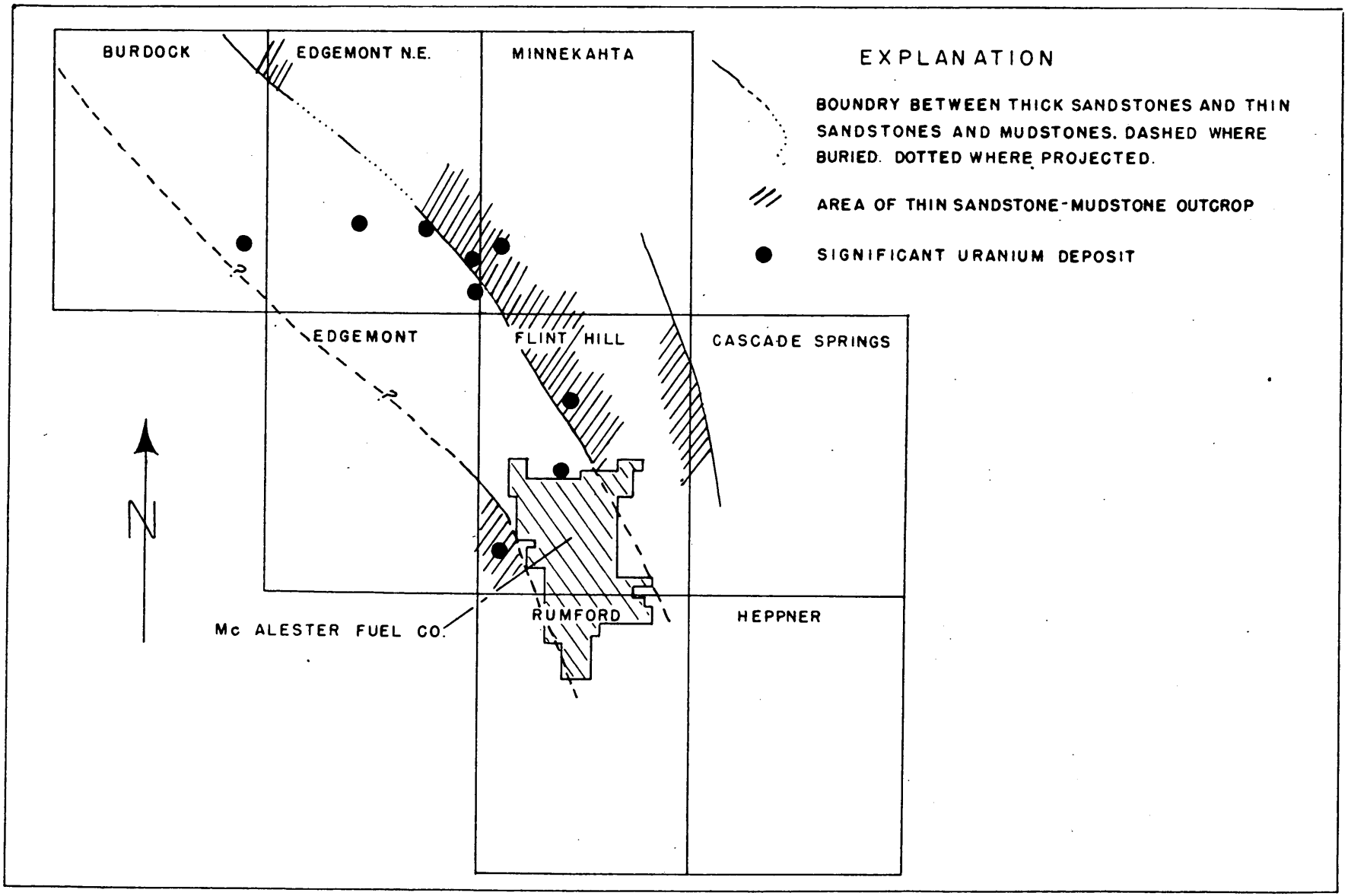


FIGURE 3.- Relationship of uranium deposits to thick Lakota sandstones and marginal thin mudstones. after USGS

is exposed in sections 17 and 18, T. 9 S., R. 4 E., north of the Cheyenne River. McAlester lands cover the buried northern continuation of this channel, from the carbonate cement outcrop, for about three miles. From the extreme north end of the McAlester lands in the Flint Hill Quadrangle northward five miles to the Gould mine the terrain is rugged with canyons cutting the channel complex down to the Lakota formation. Many small oxidized ore showings and anomalies characterize the channel here.

Figure No. 3: "Relationship of Uranium Deposits to Thick Lakota Sandstones and Marginal Thin Mudstones." This map shows the known and inferred trend of the thick Lakota sands as mapped by the U. S. G. S. Known significant uranium discoveries are also shown. This thick sandstone portion of the Lakota formation outcrops east of Cliffton and Dewey in the northwest and strikes southeast into the Flint Hill quadrangle. Numerous uranium occurrences in the Edgemont, N. E. and Minnekahta quadrangles are in the Lakota sands. The Holdup 15 and Toulee are the largest of the known deposits.

The McAlester lands control six miles of these thick sands, known and inferred. The silty marginal phases are thought to have the most potential. One ore body is known in the Lakota sands in the North half of section 6, T. 9 S., R. 4 E. McAlester controls the south half of this section. Also the two drill holes reported in section 7 of the above township, and shown on the accompanying claim map, show two zones of mineralization and ore in the Lakota sands at a total depth of 505' and 535' and 475' and 515' respectively.

Diagramatic cross sections are constructed through the Inyan Kara rocks near the Runge Mine and through the southern Flint Hill quadrangle. These cross sections, labeled figures 4 and 5, will give the reader some ideas of the complex lithology to be expected in the proposed drilling.

d. The McAlester properties north of the Cheyenne River are accessible by U. S. Highway 18 and 85A northeast from Edgemont six (6) miles, thence southeast two (2) miles on county dirt and gravel road from where the road cuts diagonally across the property. The River can be forded during late summer and winter months. Those properties south of the River can be reached by driving south from Edgemont on State Highway 52 thence east on county gravel and dirt road a total of ten (10) miles. The closest supply and resident points are the City of Edgemont. The uranium mill of Mines Development Company at Edgemont will be the closest buyer of uranium ores.

e. Manpower, materials, supplies and equipment for exploration and service of exploration equipment are all available in Edgemont. Mine supplies would be available from other sources to be shipped to Edgemont on the Chicago Burlington Railway. Water is available from the Cheyenne River and electric power from branch lines three (3) miles distant.

The Exploration Project

a. This application for aid in an exploration project is based soley on the proposed exploration for uranium bearing ores.

b. The proposed exploratory work shall all be conducted by rotary

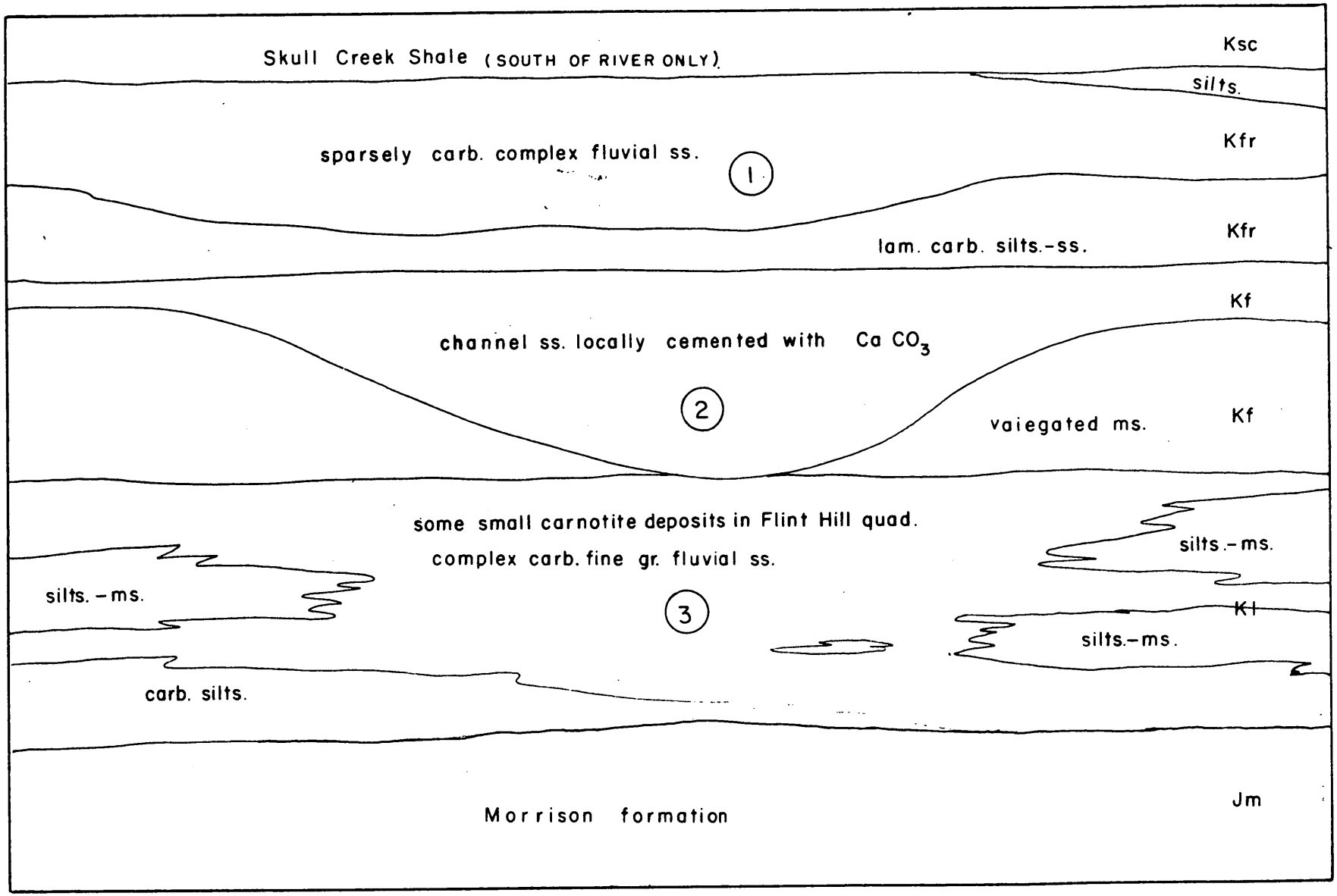


FIGURE 5.- Diagramatic cross section of Inyan Kara rocks in the southern Flint Hills quadrangle area.

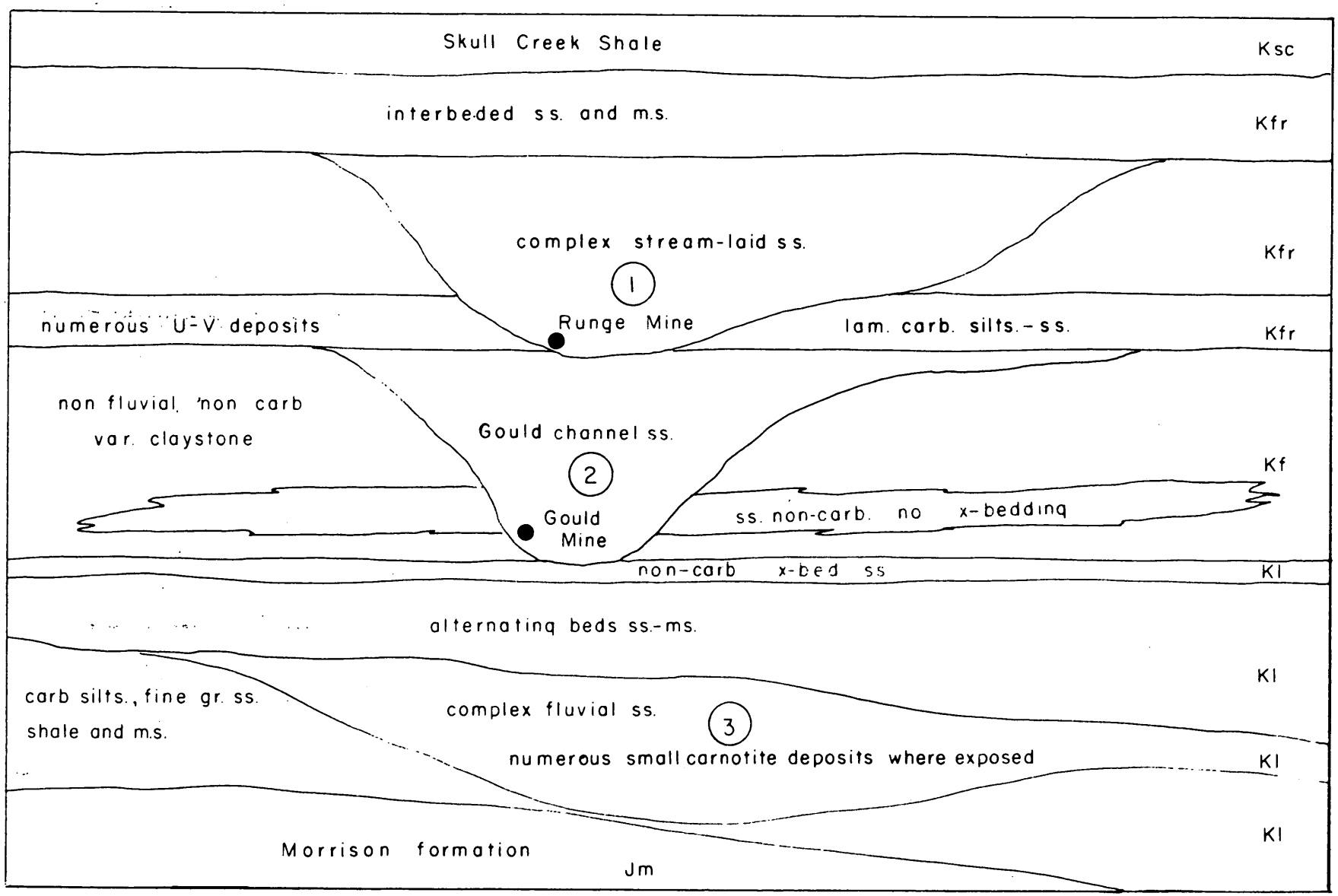


FIGURE 4.- Diagramatic cross section of Inyan Kara rocks in the Edgemont N.E. quadrangle area.

non-core and diamond core drilling to test the "Channel complex" and thick sandstone members of the Fall River, Fuson, and Lakota formations. (See figures 4 and 5).

Drill holes shall be so located as to penetrate: 1. The upper complex fluvial Fall River sandstone or marginal carbonaceous mudstones (figure 1), 2. the conglomeratic Gould channel sandstone or its flood plain (figure 2), or 3. the thick Lakota sandstones and marginal thin mudstones, (figure 3). It is impossible to project the exact depth of these drill holes. It is thought that the drill holes planned to test the upper two horizons only, shall be a maximum of 325 feet deep and average 300 feet in depth.

Drill holes so designated on the accompanying drill hole map as placed to test the thick Lakota sandstones and marginal thin mudstones, are expected to give the maximum of stratigraphic information on all three productive horizons and bottom in the Morrison formation. It is thought, that the deep drill holes will not be greater than 600 feet deep and average 550 feet in depth.

The exploration project is divided into three stages as described hereinafter. It is expected that the operator shall complete Stage I and shall perform as much of the Stage II and III work as is justified and approved by the Government.

Stage I

Prepare drill sites and drill 102 rotary non-core holes aggregating not more than 39,100 feet at the locations indicated on the drill hole map. 68 of these holes will test the Fall River sandstone and the conglomeratic Gould channel and average 300 feet in depth. 34 of these drill holes will test all three potential uranium bearing horizons and average 550 feet deep.

All drill cuttings shall be collected with a Duclone sample collector, or screen when drilled wet, at 2-foot intervals. Samples shall be checked radiometrically for uranium and those indicating significant mineralization will be analized chemically. A portion of all samples shall be properly labeled and stored. Drill holes will be probed for radioactivity.

The operator expects to complete some of the deep drill holes first. These holes are expected to give lithologic control of the Inyan Kara rocks so that interpretation is made easier. It is proposed that all shallow holes be bottomed in the veriegated mudstones beneath the conglomeratic Gould Channel. The deep holes shall be bottomed in the Morrison formation.

Stage II

Upon the completion of Stage I drilling geological studies will be made of the uranium bearing formations. Structure contour maps on the base of the conglomeratic Gould channel, sandstone-mudstone ratio maps of the Fall River and Lakota formations, and sandstone thickness maps will be made to control the Stage II drilling.

It is proposed that Stage II drilling total 40,000 feet. This drilling shall

be divided equally between the number of drill holes to test the Fall River and Gould channel sandstones, and the deeper Lakota sandstones. The operator shall immediately after the Stage I drilling prepare the necessary reports and geologic data before requesting written approval by the Government of the Stage II drilling. The drilling shall be planned in such a manner as to check the significant geologic features discovered during the Stage I drilling.

Stage III

Rotary non-core and diamond core holes aggregating not more than 29,400 feet as offsets to previously drilled mineralized holes are suggested by the operator. It is estimated that a portion of each hole shall be cored to check mineralized zones. Non-core drilling should total 26,000 feet and diamond core drilling 3,400 feet.

c. The work will start within 20 days and be completed within 9 months from the date of an exploration project contract.

d. McAlester Fuel Company has had operating experience in coal and uranium mining. The company is presently operating a group of uranium mines at Meeker, Colorado. The exploration project is planned and will be under the general supervision of Robert Ford, Consulting Mining Geologist, and under the direct field supervision of a graduate geological engineer.

Estimate of Costs

Independent contracts will be let on all drilling and drill site preparation.

Chemical assays and radiometric hole logging shall also be done by contract.

Three independent drill bids are attached hereto as a justification of the unit cost of drilling. The following is the estimated total cost of the project.

Stage I

a. Independent Contracts.		
80 hours of actual operation time, tractor with dozer, including operator @ $13.00/hr.	$ 1,040.00	
39,100 feet of rotary non-core drilling @ 0'-250'= $1.00/ft.; 250'-500'=$1.25/ft.		
102 holes X 250'=25,500 X $1.00	25,500.00	
39,100'-25,500'=13,600' X $1.25	17,000.00	$43,540.00
b. Labor, supervision and consultants.		
1 Consulting Geologist, 20 days	2,000.00	
1 Supervising Geologist, @ $600/month, 3 months	1,800.00	
1 Geologist helper @ $450/month, 3 months	1,350.00	
1 Sampler @ $1.75/hr. plus time and one-half rate over 40 hrs./week worked= $392.00/month, 3 months	1,176.00	
Labor - None		$ 6,326.00

c.	Operating materials and supplies.		
	Sample containers @ $24.00 per 1000		
	20 X $24.00	$ 480.00	$ 480.00
d.	Operating equipment		
	1 Jeep Station Wagon rental @ 0.12¢/mile		
	1,950 miles	$ 234.00	
	1 Pickup truck rental @ 0.10¢/mile		
	1,950 miles	195.00	$ 429.00
e.	Rehabilitation and repairs.		
	None		
f.	New buildings, improvements, installations.		
	None		
g.	Miscellaneous		
	Radiometric hole logging 39,100 feet		
	@ 0.10¢/foot	$ 3,910.00	
	Payroll taxes and insurance, 5.2% X $4,326.00	224.95	
	Accounting	300.00	
	150 chemical analyses @ $4.00 each sample	600.00	$ 5,034.95
	Estimated Total Cost of Stage I		$55,809.95

Stage II

a.	Independent contracts.		
	80 hours of actual operation time, tractor		
	with dozer, including operator @ $13.00/hour	$ 1,040.00	
	40,000 feet of rotary non-core drilling		
	@ 0'-250'=$1.00/foot; 250'-600'=$1.25/foot		
	100 holes X 250'= 25,000' X $1.00	25,000.00	
	40,000'-25,000' = 15,000' X $1.25	18,750.00	$44,790.00
b.	Labor, supervision, and consultants.		
	1 Consulting Geologist, 20 days	$ 2,000.00	
	1 Supervising Geologist @ $600/month, 3 months	1,800.00	
	1 Geologist helper @ $450/month, 3 months	1,350.00	
	1 Sampler @ $1.75/hour, plus time and one-half		
	rate over 40 hour/week worked= 392.00/month,		
	3 months	1,176.00	
	Labor-None		$ 6,326.00
c.	Operating materials and supplies.		
	Sample containers @ $24.00 per 1000		
	20 X $24.00	$ 480.00	$ 480.00

d. Operating equipment.		
1 Jeep Station Wagon rental @ 0.12¢/mile		
2,000 miles	$ 240.00	
1 Pickup truck rental @ 0.10¢/mile		
2,000 miles	200.00	$ 440.00
e. Rehabilitation and repairs.		
None		
f. New buildings, improvements, installations.		
None		
g. Miscellaneous.		
Radiometric hole logging 40,000 feet		
@ 0.10¢/foot	$ 4,000.00	
Payroll taxes and insurance, 5.2% X $4,326.00	224.95	
Accounting	300.00	
150 chemical analyses @ $4.00 each sample	600.00	$ 5,124.95
Estimated Total Cost of Stage II		$57,160.95

Stage III

a. Independent contracts.		
40 hours of actual operation time, tractor		
with dozer, including operator @ $13.00/hour	$ 520.00	
26,000 feet of rotary non-core drilling		
@ 0'-250'=$1.00/foot; 250'-600'=$1.25/foot		
65 holes X 250'= 16,250' X $1.00	16,250.00	
26,000'-16,250'= 9,750' X $1.25	12,187.50	
3,400 feet of diamond core drilling		
@ 0'-250'=$3.00/foot; 250'-600'=$4.00/foot		
1700 ft. core drilling @ $3.00/foot	5,100.00	
1700 ft. core drilling @ $4.00/foot	6,800.00	$40,857.50
b. Labor, supervision, and consultants.		
1 Consulting Geologist, 15 days	$ 1,500.00	
1 Supervising Geologist @ $600/month, 2½ months	1,500.00	
1 Geologist helper @ $450/month, 2½ months	1,125.00	
1 Sampler @ $1.75/hour, plus time and one-half		
rate over 40 hour/week worked=$392.00/month,		
2½ months	980.00	
Labor - None		$ 5,105.00
c. Operating materials and supplies.		
Sample containers @ $24.00 per 1000		
13 X $24.00	$ 312.00	
Core boxes @ $6.00 each (25' per box)		
3,400 ft. core ÷ 25'=136 boxes	816.00	$ 1,028.00

d. Operating equipment.		
1 Jeep Station Wagon rental @ 0.12¢/mile 1,500 miles	$ 180.00	
1 Pickup truck rental @ 0.10¢/mile 1,500 miles	150.00	$ 330.00
e. Rehabilitation and repairs. None		
f. New buildings, improvements, installations. None		
g. Miscellaneous.		
Radiometric hole logging 29,400 feet @ 0.10¢/foot	$ 2,940.00	
Payroll taxes and insurance, 5.2% X $3,605.00	187.46	
Accounting	250.00	
500 chemical analyses @ $4.00 each sample	2,000.00	$ 5,377.46
Estimated Total Cost of Stage III		$52,697.96

Summary

Estimated Total Cost Stage I	$ 55,809.95
Estimated Total Cost Stage II	57,160.95
Estimated Total Cost Stage III	52,697.96
Grand Total:	$165,668.86

LIVINGSTON & WILSON EXPLORATION DRILLING

LONGMONT, COLORADO
PHONE 1333

SHOT HOLE AND DIAMOND CORE DRILLING CONTRACTORS

WALTER W. WILSON

FRED L. LIVINGSTON

February 18, 1957

		1957 CODE

Mr. Robert Ford
Mining Geologist
P. O. Box 428
Riverton, Wyoming

Dear Mr. Ford:

In response to your letter of February 14, we would like to submit the following bid on the proposed work near Edgemont, South Dakota. The following bid is the same amount we did the work for the Longyear Company.

None core rotary drilling

0-250'	$1.00 per foot

Core drilling

0-250'	$2.75 per foot
250-300-	$3.00 per foot

In the event any of the holes will go over the 300' depth, we will do the none core rotary drilling for the same price $1.00 per foot.

Core drilling

300'-400'	$3.25 per foot
400'-500'	$3.75 per foot

We thank you for the opportunity to bid on this work. Should our company be given this work please advise us as soon as possible so we will be able to work it into our drilling program when we will have the equipment available when your company is ready.

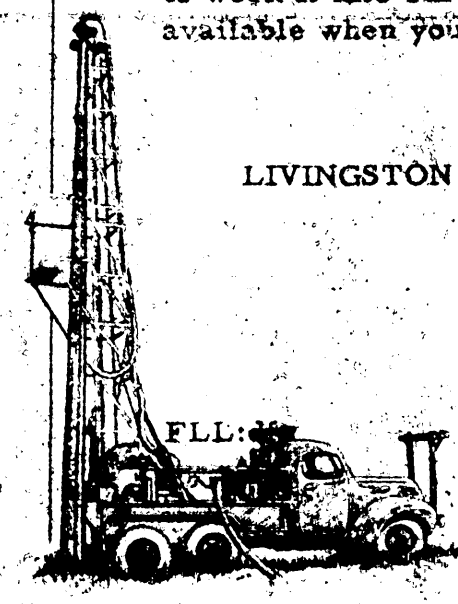
Very truly yours,

LIVINGSTON & WILSON EXPLORATION AND DRILLING CO.

Fred L. Livingston

Fred L. Livingston

FLL:



MANUFACTURERS OF
DIAMOND DRILLS
DRILLING EQUIPMENT
DIAMOND BITS

BRANCH OFFICES
NEW YORK PITTSBURGH
PHILADELPHIA
GRAND JUNCTION, COLO

EXECUTIVE OFFICES & PLANT
221 W. OLIVE STREET
SCRANTON, PA.

SPRAGUE & HENWOOD, INC.

SINCE 1883

CONTRACTORS FOR
DIAMOND DRILLING
SHOT DRILLING · SOIL SAMPLING PRESSURE GROUTING
WATER WELLS & CHURN DRILLING

PLEASE REPLY TO
P O BOX 645
GRAND JUNCTION, COLO.
TELEPHONE 834

April 15, 1957

McAlostor Fuel Company
c/o Robert Ford
P.O. Box 428
Riverton, Wyoming

Gentlemen:

In accordance with our conversations we herewith submit our proposal for exploratory drilling in the Edgemont, South Dakota area. This proposal is based on a minimum drilling program of 35,000 feet.

PROPOSAL

Item 1. Non-Core Drilling
(a) From 0 to 200 feet. . . . . $1.10 per ft.
(b) From 200 to 400 feet. . . . . $1.20 per ft.
(c) From 400 to 600 feet. . . . . $1.30 per ft.

Item 2. Core Drilling recovering BX (1 5/8") size core
(a) From 0 to 200 feet. . . . . $3.50 per ft.
(b) From 200 to 400 feet. . . . . $4.00 per ft.
(c) From 400 to 600 feet. . . . . $5.00 per ft.

Item 3. For any delays required by customer for radiometric logging of for any other reason. . . . . $12.00 per hr. per rig

This proposal is subject to the following conditions:

1. All drill hole locations and access roads to drill sites will be constructed and maintained to accommodate Sprague & Henwood, Inc. truck mounted drills and water trucks. Any bulldozer work required for preparation of sites and roads will be furnished by the customer at no cost to Sprague & Henwood, Inc.

2. Cores will be delivered a drill hole locations, and storage and preservation of cores will be the responsibility of the customer.

3. Upon completion of a hole to the specified bottom depth and prior to moving the drill rig, if the drill and crew are required to stand by while the customer logs said hole with subsurface logging equipment, if the drill and crew are required to perform additional work in the hole for use of subsurface logging equipment, Sprague & Henwood, Inc. will be paid at the rate per hour specified under Idem 3 of proposed schedule.

4. In the event the customer does not have logging equipment available at the time the hole is completed to specified depth, the customer may require that the casing be left in the hole and the drill moved to another site. Sprague & Henwood, Inc. shall be paid at the rate per hour under Item 3 for the time required to return, set up on hole, and pull the casing. If such cashing should be impossible to recover after diligent effort on the part of Sprague & Henwood, Inc., using such equipment normally capable of performing the operation efficiently then the casing left in the hole will be paid for by the McAlester Fuel Company at the fair market value.

5. All work shall be performed in such a manner as to secure maximum core recovery from each hole drilled and to deliver as complete and accurate core samples as are consistent with good drilling practice. The customer may require core runs of five feet when necessary to attain satisfactory core recovery.

6. All holes will be located in the field by the customer.

7. All rights of entry to and exit from the property will be obtained by the customer.

8. Prior to commencement of drilling of each hole, the non-core depth will be established by the Owner. This depth may be changed by the Owner at any time prior to commencement of coring. Once coring has begun, any drilling beyond the depth where coring commenced, will be paid for at coring prices.

9. Non-core drilling will be accomplished by either wet or dry methods at the option of the contractor. Samples will be delivered at the hole location from non-core portions of the hole when available. If circulation is lost or moisture encountered so that samples are not obtainable and additional work such as reaming and casing or any other measure required to obtain circulation for the purpose of obtaining samples, is required, this work will be a chargeable item under Item 3 of schedule of prices.

10. The above prices are based on a minimum drilling program of 35000 feet. If a lesser amount is drilled, 10 cents per foot will be charged for the difference between actual amount drilled and the minimum drilling program. If the drilling program exceeds the planned minimum, drilling prices listed above will be reduced by 10 cents per foot for all drilling over the planned minimum.

11. Payments are to be made monthly based on completed holes, within 15 days after date of invoice. Should payments not be made within the specified period then Sprague & Henwood, Inc. reserves the right to terminate operations. Credit arrangements satisfactory to Sprague & Henwood, Inc. must be made prior to commencement of work.

We thank you for the opportunity of submitting this quotation and trust we may be favored with your order.

Very truly yours,

SPRAGUE & HENWOOD, INC.

by Vincent Dawne, 4554

Robert R. Carver
Western Manager

RRC: jmt

CC: Scranton

PHONES:
RIVERTON UL6-2317
CADPEP 2-6186

Beavers & Harris Drilling Co.

P.O. Box 176 RIVERTON, WYOMING

April 8, 1957

Mr. Robert Ford
Box 428
Riverton, Wyoming

Dear Sir,

We would like to quote the following prices in regard to a drilling program in the Edgemont So. Dakota area.

Type Drilling	Depth Range	Drill/Foot	Standby Time
air or water non core-plug drilling	100-200 ft.	$1.25	$12.50 hr.
	200-500 ft.	$1.50	$12.50
core drilling	0-200 ft.	$3.00	$12.50
	200-500 ft.	$4.00	$12.50

Respectively,

Hugh W. Harris

Hugh W. Harris

h-6

Form - A

COPY

MINING LEASE

THIS AGREEMENT, made and entered into this 30th day of January, 19 57, by and between Warner R. Ball ,hereinafter referred to as "Lessor" (whether one or more) and McAlester Fuel Company, a corporation of the State of Delaware hereinafter referred to as "Lessee"; WITNESSETH:

WHEREAS, the Lessor is the owner of the mineral content, or the owner or Lessee of the surface, and The United States of America is the owner of the balance of the mineral content of certain lands situated in Fall River County, State of South Dakota to-wit:

The south $\frac{1}{2}$, Section 6; the south $\frac{1}{2}$ of the northwest $\frac{1}{4}$, the southwest $\frac{1}{4}$, the west $\frac{1}{2}$ and the southeast $\frac{1}{4}$ of the southeast $\frac{1}{4}$, Section 5; lot 2, the east $\frac{1}{2}$ of the northwest $\frac{1}{4}$, the northeast $\frac{1}{4}$, the south $\frac{1}{2}$, Section 7; the north $\frac{1}{2}$ of the north $\frac{1}{2}$, the southeast $\frac{1}{4}$ of the northeast $\frac{1}{4}$, Section 18; the north $\frac{1}{2}$, the northwest $\frac{1}{4}$ and the east $\frac{1}{2}$ of the southwest $\frac{1}{4}$, the west $\frac{1}{2}$ of the southeast $\frac{1}{4}$, Section 8; all in Twp. 9S. Range 4E.

Totaling 1,955.72 acres.

WHEREAS, Lessee is in the process of exploring for uranium, for the purpose of locating certain of the lands open to location under the United States Mining Laws; and

WHEREAS, Lessee is desirous of leasing from Lessor that portion of the lands of which Lessor owns the mineral content for the purpose of exploring, developing, and marketing uranium and associated minerals;

NOW THEREFORE, in consideration of the premises and other valuable considerations hereinafter mentioned, it is hereby agreed as follows:

1. For and in consideration of the sum of one hundred & no/00 Dollars ($ 100.00) in hand paid and of the covenants and agreements of Lessee herein contained, Lessor does hereby grant and lease to the Lessee the exclusive right and privilege to explore for, develop, mine, extract, remove from the alluvium soil or earth, or any sedimentary formation of rocks, or intrusive or igneous dike, vein, or fissure and dispose of all the uranium, thorium, and any other fissionable material

together with vandium, manganese, and non-fissionable materials associated with fissionable materials hereinafter referred to as "Leased Minerals" in or under the lands above described, insofar as those lands in which the Lessor is the owner of the mineral content, together with the exclusive right to enter upon, for the purpose of exploring and filing claims, to aforesaid minerals, in accordance with the United States Mining Laws and other pertinent laws, rules and regulations, on those lands whereon Lessor is the owner of or controls the surface title, the mineral content of which remains in the United States or others holding thereunder rights to the mineral content. Lessor also grants unto the Lessee the right to use so much of the surface of all the lands described as may be reasonably required in the exercise of the rights herein granted, but Lessee agrees to pay Lessor reasonable damages for injury to Lessor's lands directly occasioned by Lessee's operations thereon and to consult with Lessor in regard to location of roads and camp sites.

Provided that full rights of ingress and egress and way-leaving and haulage through, under and over the lands herein leased is granted to Lessee and these rights and the right to maintain and operate underground mine shafts and installations may be continued in perpetuity after the expiration of this lease without other consideration that the payment of an annual rental of one hundred ($100.00) Dollars.

2. The term of the lease shall be for a period of two (2) years from the date hereof and so long thereafter as payments to Lessor are made hereunder, or as leased minerals, or any of them, shall be mined or marketed hereunder, or operations therefor shall be continued without any cessations thereof of more than ninety (90) days each; it being understood and agreed, however, that notwithstanding anything to the contrary herein contained, if the United States of America, or its duly authorized buyers or representative shall suspend buying of Leased Minerals for a period of time, and there is nor other market the term of this lease shall continue during such period of suspend buying and shall not be subject to cancellation by Lessor for failure of Lessee to market Leased Minerals.

3. On the second anniversary date, when this lease would otherwise expire, and annually thereafter on the anniversary date, Lessee may pay to Lessor a sum of money amounting to $1.00 per acre of demised land wherein Lessor now owns the mineral content, as minimum advance royalty. Such a payment if made will act to extend the term of this lease for an additional year from the date thereof, but Lessee will be entitled to credit on all money so paid on production royalties which may become due in the future, except that if this lease is terminated without such production

of ore, Lessee forfeits any right to the said credit or money.

4. The following royalties shall be paid to Lessor with respect to ores mined and marketed by Lessee from the lands covered by this mining lease:

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
Less than 0.3%	5%	0.65 to 0.75%	9½%
0.3 to 0.35%	5½%	0.75 to 0.85%	10½%
0.35 to 0.45%	6½%	0.85 to 0.95%	11½%
0.45 to 0.55%	7½%	0.95 to 1.50%	12½%
0.55 to 0.65%	8½%	1.50 to 2.50%	13½%

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
2.50 to 3.50%	14½%	6.50 to 7.50%	18½%
3.50 to 4.50%	15½%	7.50 to 8.50%	19½%
4.50 to 5.50%	16½%	8.50 to 9.50%	20½%
5.50 to 6.50%	17½%	9.50 and over	21%

Lessor shall be paid the foregoing applicable royalty percentages of the field market price at the mine, including bonus payments and premiums, but excluding allowances for transportation and development, as paid by the Atomic Energy Commission or other Government authorized agency or mill or in the absence thereof at the current field market price for all crude ores mined and marketed each month by Lessee from--

(i) lands covered by this mining lease, the mineral content of which is owned by the United States of America and the title to the surface of which is owned by Lessor; provided, however, that there shall first be deducted from such royalties to be paid Lessor hereunder, any royalties or payments that are, or may become, payable to any third party (The United States of America) on account of the ownership or control of the minerals by any such third party, it being understood and agreed, further, that the royalties or payments that are or may hereafter be paid, or are or may hereafter be required to be paid, to any other parties on account of their ownership or control of the mineral content of the property, shall be paid by Lessee.

(ii) lands covered by this mining lease, the mineral content of which is owned by Lessor; it being understood and agreed, however, that if Lessor owns less than the entire and undivided fee simple estate to the mineral content thereof the royalties herein provided shall be paid to Lessor only in the proportion which Lessor's interest bears to the entire undivided fee; this limitation however shall not apply where Lessor owns surface but the United States of America owns all mineral rights.

5. Lessee agrees to make payment in full to Lessor or to the account of Lessor at the First National Bank of the Black Hills Bank, at Hot Springs,

South Dakota , on or before the 20th day of the calendar month succeeding the month of payment by Buyer for all said leased minerals mined and marketed from the lands and to furnish sworn monthly statements therewith showing in tons or cubic yards, or such other measure of quantity as may be pertinent to the amount of all minerals mined and marketed. These statements are to be subject to verification by examination of the books and records of Lessee by Lessor or his agents.

6. Lessee agrees that all mining operations and working shall be conducted in such a manner so as to remove all valuable deposits so far as it is economically possible and that all operations hereunder shall be conducted in a good and workmanlike manner and without unnecessary injury to the property of the Lessor.

7. All taxes, assessments and other burdens validly levied or asserted by any legally constituted public authority against Lessee's property and rights shall be paid in full and as due solely by Lessee. Lessee shall pay, as due, all expense, charg liabilities connected in any manner with its operations hereunder, lienable or otherwis and will protect Lessor and all said property from establishment of any such liability connected with such operations and property payable by Lessee. In the event a severance or production tax, or any tax measured by production from the demised claims, shall be imposed during the term of this lease, Lessee shall pay same and in reimbursement deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the percentages that accrue hereunder to Lessor as royalty covering the production on which the said tax is paid. In the case of taxes measured by production which are collected annually, Lessee shall pay same and thereafter deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the total sum paid hereunder to Lessor as royalty on production over the period for which the tax is assessed, bears to the total sum of money subject to royalty payment for the said period. In the event that any sum due from Lessor under the terms of this paragraph cannot be recovered out of royalty, said sum shall be the joint and several personal obligation of Lessor.

8. During proper hours and at all times during the continuance of this lease the Lessor or his representative shall be authorized at their own risk to go through any workings on the lands and to examine, inspect and survey the same and make extracts of all books and weight sheets which show in any way the output from the lands, but as regards underground workings, Lessor may enter these, for safeth reasons only in company with Lessee's superintendent or his representatives.

9. It is expressly understood and agreed that the mining rights and privileges granted (which may be assigned in whole or in part) hereunder shall extend to and include only "leased minerals" and that no rights or privileges respecting oil or gas of any kind or character or other minerals are granted or intended to be granted by this lease.

10. Lessee shall not be required to recognize any transfer or change of ownersh however accomplished or occurred, until 30 days after Lessee shall have been furnishe by registered mail with the original, or a photostatic or certified copy of the recorded instrument or instruments or of the court records evidencing the same, and no transfer or change of ownership shall operate in anywise to enlarge the obligation or diminish the rights of the Lessee.

11. Default on the part of Lessee in full reasonable compliance with all the provisions hereof shall not thereby render this lease null and void, but in such case Lessor may notify Lessee of such breach and Lessee shall have a period of 30 days the after in which to cure such default or if such cannot be cured within such period by exercise of due diligence and all proper methods, Lessee shall have that necessary period after such notice in which to cure such default through timely exercise of suc diligence and methods. If the default has not been cured within the applicable period then upon the expiration of such period this lease shall, at the option of Lessor, terminate if Lessor shall give Lessee written notice thereof within 30 days thereafter.

12. Lessor designates Warner R. Ball of Edgemont, So. Dakota as the party to whom all notices should be directed under the terms of this lease. Lessee designates McAlester Fuel Company, McAlester, Oklahoma, as the party to whom all notices to it should be directed under the terms of this lease.

13. Lessee may at any time and from time to time execute and deliver to Lessor or place of record, release or releases covering all or any portion or portions of the lands described, and thereby surrender this lease as to such portion or portions and terminate from and after the date of surrender all obligations as to acreage surrender

14. Lessor hereby warrants that it has good and valid title as set forth above to the leased premises and all rights necessary to enter into this agreement; that sai premises are free and clear of all liens and encumbrances; that it will, at its own expense, defend the right and title of Lessee in and to the same under this agreement against all persons; and that it will indemnify and hold harmless Lessee for and against any and all expense incurred by Lessee by reason of any dispute, controversy,

litigation or curative title work required as to the right and title of Lessee hereby granted. In the event Lessor shall fail to conduct such defense Lessee may on its own behalf undertake such defense. Lessee may, at its option, deduct any expenses incurred by it in undertaking such defense or incurred by it by reason of any such dispute, controversy, litigation or curative title work, from any royalties or rental payable to Lessor hereunder.

15. Upon the expiration of this lease, Lessee shall, if requested to do so within 30 days thereafter, assign to Lessor its then right, title, and interest, if any, in any mining claim located upon the lands, and quitclaim to Lessor, any mining claim which has been pursued to patent by Lessee upon the lands.

16. Lessee agrees that it will so conduct its operations as to present the least practical interference with farming or ranching operations of Lessor or his tenants; to fence off dangerous excavations or shafts; to keep closed gates closed or to install cattle guards; not to dig assessment pits to validate claims; to notify Lessor of any discoveries of underground water, and to permit Lessor to complete such discoveries as water wells unless this will interfere with exploration or mining.

17. In the event of any forfeiture or other termination of this agreement, Lessee shall have the right to enter and remove from the leased premises all its property of any kind whatsoever situated thereon, including but not limited to all machinery, equipment, materials, buildings, structures, tracks, and improvements, said right to continue for a period of six (6) months, or for such extension thereof as Lessors may grant.

18. Should either party hereto be delayed in or prevented, in whole or in part, from performing any obligation or conditions hereunder or from exercising its rights (including the rights to mine, market and conduct operations therefor) by reason of or as a result of any force majeure, such party shall be excused from performing such obligations or conditions and the term of this lease shall be extended and continued while such party is so delayed or prevented and for 60 days thereafter. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or other industrial disturbances, acts of public enemy, blockades, wars, insurrections, riots, epidemics, landslides, earthquakes, fires, storms, floods, washouts, arrests, title disputes, litigation, restraints of government, either Federal or State, civil or military, civil disturbances, explosions, inability to obtain necessary materials, supplies, labor or permits due to existing or future rules, regulations, orders, laws or proclamations, either Federal or State, civil or military, and causes beyond control of such party.

19. It is specifically agreed that this is a lease in block, and that production royalties paid under paragraph 4, above, will be payable to the person or persons owning the total lands herein leased, subject to release under paragraph 13, in proportion to their ownership of the surface of the said lands, subject, however, to the terms of any assignment by which owners may convey the lands and or their rights to receive royalties herein specified.

Hereby relinquishing and waiving all rights under and by virtue of the homestead exemption laws of said State where said land is situated.

This Agreement shall be binding upon and inure to the benefit of the heirs, successors and assigns of the parties hereto.

Lessor: /s/ Warner R. Ball

/s/ Mrs. Warner R. Ball

McAlester Fuel Company

Lessee: /s/ Tom E. Garrard
By: Tom E. Garrard, Vice-President

STATE OF SOUTH DAKOTA)
) ss.
COUNTY OF FALL RIVER)

BE IT REMEMBERED, That on this 30 day of Jan. A.D., 19 57 , before me, a Notary Public, in and for said County and State, personally appeared

Warner R. Ball & Mrs. Warner R. Ball

to me known to be the identical person described in and who executed the within and foregoing instrument and acknowledged to me that they executed the same as free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

My commission expires Sept. 1, 1957 /s/ Winnie Barker Notary Public

(SEAL)

CORPORATION ACKNOWLEDGMENT

STATE OF SOUTH DAKOTA, County of Fall River, ss:

On this 30 day of Jan. ,A.D., 19 57 , before me, the undersigned, a Notary Public in and for the county and state aforesaid, personally appeared TOM E. GARRARD to me known to be the identical person who signed the name of the maker thereof to the within and foregoing instruments as its VICE-PRESIDENT and acknowledged to me that he executed the same as his free and voluntary act and deed, and as the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth.

Given under my hand and seal the day and year last above written.

My commission expires: Sept. 1, 1957 /s/ Winnie Barker Notary Public

(SEAL)

RECORDING INFORMATION:

Recorded in Book 41 Misc., Page 124 - 129, County of Fall River
State of South Dakota
10:45 A.M., February 4, 1957

DWEA
RECEIVED MAY 10 1957

DATE	INITIALS	CODE

COPY

Form - A

MINING LEASE

THIS AGREEMENT, made and entered into this 15th day of February 1957, by and between BRYON J. COX, a single man, and Bill Duerson, a single man, hereinafter referred to as "Lessor" (whether one or more) and McAlester Fuel Company, a corporation of the State of Delaware hereinafter referred to as "Lessee"; WITNESSETH:

WHEREAS, the Lessor is the owner of the mineral content, or the owner or Lessee of the surface, and The United States of America is the owner of the balance of the mineral content of certain lands situated in Fall River County, State of South Dakota to-wit:

the south ½ of the northwest ¼, the east ½ of the northeast ¼, Section 17; the northeast ¼ of the northeast ¼, Section 20; all in Twp. 9S, Range 4E, totaling 200.00 acres more or less.

And Four Mineral Claims, called Sam and Sam No. 1, and Ray and Ray No. 1,

P.H.R.
T.E.G.

located in S½ NW¼, Sec. 17, recorded on page _____ of Book 38 Misc. Registrar of Deeds, Fall River Co., South Dakota, all in Fall River Co., South Dakota, said claims being recorded in Book 38 Misc., on Pages 622 - 624 inclusive, in the office of the Register of Deeds of Fall River County, South Dakota.

WHEREAS, Lessee is in the process of exploring for uranium, for the purpose of locating certain of the lands open to location under the United States Mining Laws; and

WHEREAS, Lessee is desirous of leasing from Lessor that portion of the lands of which Lessor owns the mineral content for the purpose of exploring, developing, and marketing uranium and associated minerals;

NOW THEREFORE, in consideration of the premises and other valuable consideration hereinafter mentioned, it is hereby agreed as follows:

1. For and in consideration of the sum of one hundred and no/00 Dollars ($) in hand paid and of the covenants and agreements of Lessee herein contained, Lessor does hereby grant and lease to the Lessee the exclusive right and privilege to explore for, develop, mine, extract, remove from the alluvium soil or earth, or any sedimentary formation of rocks, or intrusive or igneous dike, vein, or fissure and dispose of all the uranium, thorium, and any other fissionable material

together with vanadium, manganese, and non-fissionable materials associated with fissionable materials hereinafter referred to as "Leased Minerals" in or under the lands above described, (insofar as that portion of those lands in which the Lessor is the owner of the mineral content is concerned) together with the exclusive right to enter upon, for the purpose of exploring and filing claims, to aforesaid minerals, in accordance with the United States Mining Laws and other pertinent laws, rules and regulations, on those lands whereon Lessor is the owner of or controls the surface title, the mineral content of which remains in the United States or others holding thereunder rights to the mineral content. Lessor also grants unto the Lessee the right to use so much of the surface of all the lands described as may be reasonably required in the exercise of the rights herein granted, but Lessee agrees to pay Lessor reasonable damages for injury to Lessor's lands directly occasioned by Lessee's operations thereon and to consult with Lessor in regard to location of roads and camp sites.

Provided that full rights of ingress and egress and way-leaving and haulage through, under and over the lands herein leased is granted to Lessee and these rights and the right to maintain and operate underground mine shafts and installations may be continued in perpetuity after the expiration of this lease without other consideration than the payment of an annual rental of Fifty ------ Dollars.

2. The term of the lease shall be for a period of two (2) years from the date hereof and so long thereafter as payments to Lessor are made hereunder, or as leased minerals, or any of them, shall be mined or marketed hereunder, or operations thereof shall be continued without any cessations thereof of more than ninety (90) days each; it being understood and agreed, however, that notwithstanding anything to the contrary herein contained, if the United States of America, or its duly authorized buyers or representative shall suspend buying of Leased Minerals for a period of time, and there is no other market, the term of this lease shall continue during such period of suspended buying and shall not be subject to cancellation by Lessor for failure of Lessee to market Leased Minerals.

3. On the second anniversary date, when this lease would otherwise expire, and annually thereafter on the anniversary date, Lessee may pay to Lessor, or deposit to his credit in the First National Bank of Black Hills a sum of money amounting to $1.00 per acre of the demised land wherein Lessor now owns the mineral contents, as minimum advance royalty. Such a payment if made will act to extend the term of this lease for an additional year from the date thereof, but Lessee will be entitled to credit on all money so paid on production royalties which may become due in the future, except that if this lease is terminated without such production

of ore, Lessee forfeits any right to the said credit or money.

4. The following royalties shall be paid to Lessor with respect to ores mined and marketed by Lessee from the lands covered by this mining lease:

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
Less than 0.3%	5%	0.65 to 0.75%	9½%
0.3 to 0.35%	5½%	0.75 to 0.85%	10½%
0.35 to 0.45%	6½%	0.85 to 0.95%	11½%
0.45 to 0.55%	7½%	0.95 to 1.50%	12½%
0.55 to 0.65%	8½%	1.50 to 2.50%	13½%

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
2.50 to 3.50%	14½%	6.50 to 7.50%	18½%
3.50 to 4.50%	15½%	7.50 to 8.50%	19½%
4.50 to 5.50%	16½%	8.50 to 9.50%	20½%
5.50 to 6.50%	17½%	9.50 and over	21%

Lessor shall be paid the foregoing applicable royalty percentages of the field market price at the mine, including bonus payments and premiums, but excluding allowances for transportation and development, as paid by the Atomic Energy Commission or other Government authorized agency or mill or in the absence thereof at the current field market price for all crude ores mined and marketed each month by Lessee from--

(i) lands covered by this mining lease, the mineral content of which is owned by the United States of America and the title to the surface of which is owned by Lessor; provided, however, that there shall first be deducted from such royalties to be paid Lessor hereunder, any royalties or payments that are, or may become, payable to any third party (The United States of America) on account of the ownership or control of the minerals by any such third party, it being understood and agreed, further, that the royalties or payment that are or may hereafter be paid, or are or may hereafter be required to be paid, to any other parties on account of their ownership or control of the mineral content of the property, shall be paid by Lessee.

(ii) lands covered by this mining lease, the mineral content of which is owned by Lessor; it being understood and agreed, however, that if Lessor owns less than the entire and undivided fee simple estate to the mineral content thereo the royalties herein provided shall be paid to Lessor only in the proportion which Lessor's interest bears to the entire undivided fee; this limitation however shall not apply where Lessor owns surface but the United States of America owns all mineral rights.

5. Lessee agrees to make payment in full to Lessor or to the account of Lessor at the First National Bank of D.H. Bank, at Hot Springs, S. D.

, on or before the 20th day of the calendar month succeeding the month of payment by Buyer for all said leased minerals mined and marketed from the lands and to furnish sworn monthly statements therewith showing in tons or cubic yards, or such other measure of quantity as may be pertinent to the amount of all minerals mined and marketed. These statements are to be subject to verification by examination of the books and records of Lessee by Lessor or his agents.

6. Lessee agrees that all mining operations and working shall be conducted in such a manner so as to remove all valuable deposits so far as it is economically possible and that all operations hereunder shall be conducted in a good and workmanlike manner and without unnecessary injury to the property of the Lessor.

7. All taxes, assessments and other burdens validly levied or asserted by any legally constituted public authority against Lessee's property and rights shall be paid in full and as due solely by Lessee. Lessee shall pay, as due, all expense, charges and liabilities connected in any manner with its operations hereunder. In the event a severance or production tax, or any tax measured by production from the demised claims, shall be imposed during the term of this lease, Lessee shall pay same and in reimbursement deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the percentages that accrue hereunder to Lessor as royalty covering the production on which the said tax is paid. ~~In the case of taxes measured by production which are collected annually, Lessee may pay same for the account of both Lessee and Lessor and thereafter may deduct from royalty due Lessor hereunder, or bill Lessor for his share of such taxes.~~ B.J.C. T.E.G.

8. During proper hours and at all times during the continuance of this lease the Lessor or his representative shall be authorized, at their own risk, to go through any workings on the lands and to examine, inspect and survey the same and make extracts of all books and weight sheets which show in any way the output from the lands, but as regards underground workings, Lessor may enter these, for safety reasons, only in company with Lessee's superintendent or his representatives.

9. It is expressly understood and agreed that the mining rights and privileges granted (which may be assigned in whole or in part) hereunder shall extend to and include only "leased minerals" and that no rights or privileges respecting oil or gas of any kind or character or other minerals are granted or intended to be granted by this lease.

10. Lessee shall not be required to recognize any transfer or change of ownership, however accomplished or occurred, until 30 days after Lessee shall have been furnished by registered mail with the original, or a photostatic or certified copy of the recorded instrument or instruments or of the court records evidencing the same, and no transfer or change of ownership shall operate in anywise to enlarge the obligations or diminish the rights of the Lessee.

11. Default on the part of Lessee in full reasonable compliance with all the provisions hereof shall not thereby render this lease null and void, but in such case Lessor may notify Lessee of such breach and Lessee shall have a period of 30 days thereafter in which to cure such default or if such cannot be cured within such period by exercise of due diligence and all proper methods, Lessee shall have that necessary period after such notice in which to cure such default through timely exercise of such diligence and methods. If the default has not been cured within the applicable period then upon the expiration of such period this lease shall, at the option of Lessor, terminate if Lessor shall give Lessee written notice thereof within 30 days thereafter.

12. Lessor designates Bryon J. Cox of Hot Springs, S. D. as the party to whom all notices should be directed under the terms of this lease. Lessee designates McAlester Fuel Company, McAlester, Oklahoma, as the party to whom all notices to it should be directed under the terms of this lease.

13. Lessee may at any time and from time to time execute and deliver to Lessor or place of record, release or releases covering all or any portion or portions of the lands described, and thereby surrender this lease as to such portion or portions and terminate from and after the date of surrender all obligations as to acreage surrendered

14. Lessor hereby warrants that it has good and valid title as set forth above to the leased premises and all rights necessary to enter into this agreement; that said premises are free and clear of all liens and encumbrances; that it will, at its own expense, defend the right and title of Lessee in and to the same under this agreement against all persons; and that it will indemnify and hold harmless Lessee for and against any and all expense incurred by Lessee by reason of any dispute, controversy,

litigation or curative title work required as to the right and title of Lessee hereby granted. In the event Lessor shall fail to conduct such defense Lessee may on its own behalf undertake such defense. Lessee may, at its option, deduct any expenses incurred by it in undertaking such defense or incurred by it by reason of any such dispute, controversy, litigation or curative title work, from any royalties or rental payable to Lessor hereunder.

15. Upon the expiration of this lease, Lessee shall, if requested to do so within 30 days thereafter, assign to Lessor its then right, title, and interest, if any, in any mining claim located upon the lands, and quitclaim to Lessor, any mining claim which has been pursued to patent by Lessee upon the lands.

16. Lessee agrees that it will so conduct its operations as to present the least practical interference with farming or ranching operations of Lessor or his tenants; to fence off dangerous excavations or shafts; to keep closed gates closed or to install cattle guards; not to dig assessment pits to validate claims; to notify Lessor of any discoveries of underground water, and to permit Lessor to complete such discoveries as water wells unless this will interfere with exploration or mining.

17. In the event of any forfeiture or other termination of this agreement, Lessee shall have the right to enter and remove from the leased premises all its property of any kind whatsoever situated thereon, including but not limited to all machinery, equipment, materials, buildings, structures, tracks, and improvements, said right to continue for a period of six (6) months, or for such extension thereof as Lessors may grant.

18. Should either party hereto be delayed in or prevented, in whole or in part, from performing any obligation or conditions hereunder or from exercising its rights (including the rights to mine, market and conduct operations therefor) by reason of or as a result of any force majeure, such party shall be excused from performing such obligations or conditions and the term of this lease shall be extended and continued while such party is so delayed or prevented and for 60 days thereafter. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or other industrial disturbances, acts of public enemy, blockades, wars, insurrections, riots, epidemics, landslides, earthquakes, fires, storms, floods, washouts, arrests, title disputes, litigation, restraints of government, either Federal or State, civil or military, civil disturbances, explosions, inability to obtain necessary materials, supplies, labor or permits due to existing or future rules, regulations, orders, laws or proclamations, either Federal or State, civil or military, and causes beyond control of such party.

18. a. There are presently organized administrative agencies of the United States of America for the purpose of assisting in financing development, exploration, and mining of materials designated as strategic and critical. It is contemplated by the parties hereto that assistance might be or will be sought from such agencies by the Lessee. Such loans are generally known as D.M.E.A. loans, and a lien for repayment will attach to future production from said premises if a loan is granted. If such assistance is sought, the Lessors herein grant consent.

B.J.C.
W.D.D.
T.E.G.

19. It is specifically agreed that this is a lease in block, and that production royalties paid under paragraph 4, above, will be payable to the person or persons owning the total lands herein leased, subject to release under paragraph 13, in proportion to their ownership of the surface of the said lands, subject, however, to the terms of any assignment by which owners may convey the lands and or their rights to receive royalties herein specified.

Hereby relinquishing and waiving all rights under and by virtue of the homestead exemption laws of said State where said land is situated.

This Agreement shall be binding upon and inure to the benefit of the heirs, successors and assigns of the parties hereto.

/s/ Byron J. Cox

Lessor: _____

/s/ William D. Duerson

William Duerson

~~Bill Duerson~~

_____

_____

_____

ATTEST:

/s/ Carl Oman
Secretary

(SEAL)

McAlester Fuel Company

/s/ Tom E. Garrard

Lessee: _____

By: Tom E. Garrard, Vice-President

STATE OF SOUTH DAKOTA)
) ss.
COUNTY OF FALL RIVER)

BE IT REMEMBERED, That on this 15th day of February A.D., 19 57 , before me, a Notary Public, in and for said County and State, personally appeared

Byron J. Cox and William Duerson, also known as William D. Duerson and Bill Duerson,

to me known to be the identical person described in and who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

My commission expires 1-8-61 /s/ Paul H. Russell Notary Public
(SEAL)

CORPORATION ACKNOWLEDGMENT

STATE OF ~~SOUTH DAKOTA~~ OKLAHOMA County of ~~Bennett~~ Pittsburg ss:

On this 15th day of February ,A.D., 19 57 , before me, the undersigned, a Notary Public in and for the county and state aforesaid, personally appeared TOM E. GARRARD to me known to be the identical person who signed the name of the maker thereof to the within and foregoing instruments as its VICE-PRESIDENT and acknowledged to me that he executed the same as his free and voluntary act and deed, and as the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth.

Given under my hand and seal the day and year last above written.

My commission expires: 12/29/57 /s/ Don C. Phelps Notary Public
(SEAL)

Recording Information

Recorded in Book 41 Misc., Page 157 - 162, County of Fall River, State of South Dakota 10:30 A.M., February 27, 1957

OFFICIAL FILE COPY
D M E A
RECEIVED MAY 10 1957

DATE	INITIALS	CODE

Form - A

COPY

MINING LEASE

THIS AGREEMENT, made and entered into this 7th day of February 19 57, by and between Frank and Emma Hand, husband and wife, ,hereinafter referred to as "Lessor" (whether one or more) and McAlester Fuel Company, a corporation of the State of Delaware hereinafter referred to as "Lessee"; WITNESSETH:

WHEREAS, the Lessor is the owner of the mineral content, or the owner or Lessee of the surface, and The United States of America is the owner of the balance of the mineral content of certain lands situated in Fall River County, State of South Dakota to-wit:

Southwest ¼ of the southwest ¼, Section 8; north ½ of the northwest ¼, west ½ of the northeast ¼, north ½ of the southeast ¼, and the southeast ¼ of the southeast ¼, Section 17; all in Twp. 9S. Range 4E.

It being understood that the lands above described are owned, as to surface and minerals, by the Lessor; totaling 320.00 acres.

WHEREAS, Lessee is in the process of exploring for uranium, for the purpose of locating certain of the lands open to location under the United States Mining Laws; and

WHEREAS, Lessee is desirous of leasing from Lessor that portion of the lands of which Lessor owns the mineral content for the purpose of exploring, developing, and marketing uranium and associated minerals;

NOW THEREFORE, in consideration of the premises and other valuable considerations hereinafter mentioned, it is hereby agreed as follows:

1. For and in consideration of the sum of three hundred twenty Dollars ($ *320.00*) in hand paid and of the covenants and agreements of Lessee herein contained, Lessor does hereby grant and lease to the Lessee the exclusive right and privilege to explore for, develop, mine, extract, remove from the alluvium soil or earth, or any sedimentary formation of rocks, or intrusive or igneous dike, vein, or fissure and dispose of all the uranium, thorium, and any other fissionable material

together with vandium, manganese, and non-fissionable materials associated with fissionable materials hereinafter referred to as "Leased Minerals" in or under the lands above described, insofar as those lands in which the Lessor is the owner of the mineral content, together with the exclusive right to enter upon, for the purpose of exploring and filing claims, to aforesaid minerals, in accordance with the United States Mining Laws and other pertinent laws, rules and regulations, on those lands whereon Lessor is the owner of or controls the surface title, the mineral content of which remains in the United States or others holding thereunder rights to the mineral content. Lessor also grants unto the Lessee the right to use so much of the surface of all the lands described as may be reasonably required in the exercise of the rights herein granted, but Lessee agrees to pay Lessor reasonable damages for injury to Lessor's lands directly occasioned by Lessee's operations thereon and to consult with Lessor in regard to location of roads and camp sites.

Provided that full rights of ingress and egress and way-leaving and haulage through, under and over the lands herein leased is granted to Lessee and these rights and the right to maintain and operate underground mine shafts and installations may be continued in perpetuity after the expiration of this lease without other consideration that the payment of an annual rental of one hundred ($100.00) Dollars.

2. The term of the lease shall be for a period of ~~two (2)~~ one year/s from the date hereof and so long thereafter as payments to Lessor are made hereunder, or as leased minerals, or any of them, shall be mined or marketed hereunder, or operations therefor shall be continued without any cessations thereof of more than ninety (90) days each; it being understood and agreed, however, that notwithstanding anything to the contrary herein contained, if the United States of America, or its duly authorized buyers or representative shall suspend buying of Leased Minerals for a period of time, and there is nor other market the term of this lease shall continue during such period of suspend buying and shall not be subject to cancellation by Lessor for failure of Lessee to market Leased Minerals. D.H. D.H.

3. On the ~~second~~ First anniversary date, when this lease would otherwise expire, and annually thereafter on the anniversary date, Lessee may pay to Lessor a sum of money amounting to $1.00 per acre of demised land wherein Lessor now owns the mineral content, as minimum advance royalty. Such a payment if made will act to extend the term of this lease for an additional year from the date thereof, but Lessee will be entitled to credit on all money so paid on production royalties which may become due in the future, except that if this lease is terminated without such production D.H. D.H.

of ore, Lessee forfeits any right to the said credit or money.

4. The following royalties shall be paid to Lessor with respect to ores mined and marketed by Lessee from the lands covered by this mining lease:

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
Less than 0.3%	5%	0.65 to 0.75%	9½%
0.3 to 0.35%	5½%	0.75 to 0.85%	10½%
0.35 to 0.45%	6½%	0.85 to 0.95%	11½%
0.45 to 0.55%	7½%	0.95 to 1.50%	12½%
0.55 to 0.65%	8½%	1.50 to 2.50%	13½%

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
2.50 to 3.50%	14½%	6.50 to 7.50%	18½%
3.50 to 4.50%	15½%	7.50 to 8.50%	19½%
4.50 to 5.50%	16½%	8.50 to 9.50%	20½%
5.50 to 6.50%	17½%	9.50 and over	21%

Lessor shall be paid the foregoing applicable royalty percentages of the field market price at the mine, including bonus payments and premiums, but excluding allowances for transportation and development, as paid by the Atomic Energy Commission or other Government authorized agency or mill or in the absence thereof at the current field market price for all crude ores mined and marketed each month by Lessee from--

(i) lands covered by this mining lease, the mineral content of which is owned by the United States of America and the title to the surface of which is owned by Lessor; provided, however, that there shall first be deducted from such royalties to be paid Lessor hereunder, any royalties or payments that are, or may become, payable to any third party (The United States of America) on account of the ownership or control of the minerals by any such third party, it being understood and agreed, further, that the royalties or payments that are or may hereafter be paid, or are or may hereafter be required to be paid, to any other parties on account of their ownership or control of the mineral content of the property, shall be paid by Lessee.

(ii) lands covered by this mining lease, the mineral content of which is owned by Lessor; it being understood and agreed, however, that if Lessor owns less than the entire and undivided fee simple estate to the mineral content thereof the royalties herein provided shall be paid to Lessor only in the proportion which Lessor's interest bears to the entire undivided fee; this limitation however shall not apply where Lessor owns surface but the United States of America owns all mineral rights.

5. Lessee agrees to make payment in full to Lessor or to the account of Lessor at the **First National Bank of the Black Hills** Bank, at **Hot Springs, S. D.**

, on or before the 20th day of the calendar month succeeding the month of payment by Buyer for all said leased minerals mined and marketed from the lands and to furnish sworn monthly statements therewith showing in tons or cubic yards, or such other measure of quantity as may be pertinent to the amount of all minerals mined and marketed. These statements are to be subject to verification by examination of the books and records of Lessee by Lessor or his agents.

6. Lessee agrees that all mining operations and working shall be conducted in such a manner so as to remove all valuable deposits so far as it is economically possible and that all operations hereunder shall be conducted in a good and workmanlike manner and without unnecessary injury to the property of the Lessor.

7. All taxes, assessments and other burdens validly levied or asserted by any legally constituted public authority against Lessee's property and rights shall be paid in full and as due solely by Lessee. Lessee shall pay, as due, all expense, charg liabilities connected in any manner with its operations hereunder, lienable or otherwis and will protect Lessor and all said property from establishment of any such liability connected with such operations and property payable by Lessee. In the event a severance or production tax, or any tax measured by production from the demised claims, shall be imposed during the term of this lease, Lessee shall pay same and in reimbursement deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the percentages that accrue hereunder to Lessor as royalty covering the production on which the said tax is paid. In the case of taxes measured by production which are collected annually, Lessee shall pay same and thereafter deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the total sum paid hereunder to Lessor as royalty on production over the period for which the tax is assessed, bears to the total sum of money subject to royalty payment for the said period. ~~In the event that any sum due from Lessee under the terms of this paragraph cannot be recovered out of royalty said sum shall be the joint and several personal obligation of Lessee.~~ T.E.G. F.H. E.H.

8. During proper hours and at all times during the continuance of this lease the Lessor or his representative shall be authorized at their own risk to go through any workings on the lands and to examine, inspect and survey the same and make extracts of all books and weight sheets which show in any way the output from the lands, but as regards underground workings, Lessor may enter these, for safeth reasons only in company with Lessee's superintendent or his representatives.

9. It is expressly understood and agreed that the mining rights and privileges granted (which may be assigned in whole or in part) hereunder shall extend to and include only "leased minerals" and that no rights or privileges respecting oil or gas of any kind or character or other minerals are granted or intended to be granted by this lease.

10. Lessee shall not be required to recognize any transfer or change of ownersh however accomplished or occurred, until 30 days after Lessee shall have been furnishe by registered mail with the original, or a photostatic or certified copy of the recorded instrument or instruments or of the court records evidencing the same, and no transfer or change of ownership shall operate in anywise to enlarge the obligation or diminish the rights of the Lessee.

11. Default on the part of Lessee in full reasonable compliance with all the provisions hereof shall not thereby render this lease null and void, but in such case Lessor may notify Lessee of such breach and Lessee shall have a period of 30 days the after in which to cure such default or if such cannot be cured within such period by exercise of due diligence and all proper methods, Lessee shall have that necessary period after such notice in which to cure such default through timely exercise of such diligence and methods. If the default has not been cured within the applicable period then upon the expiration of such period this lease shall, at the option of Lessor, terminate if Lessor shall give Lessee written notice thereof within 30 days thereafter.

12. Lessor designates Frank Hand of Hot Springs, S. Dakota as the party to whom all notices should be directed under the terms of this lease. Lessee designates McAlester Fuel Company, McAlester, Oklahoma, as the party to whom all notices to it should be directed under the terms of this lease.

13. Lessee may at any time and from time to time execute and deliver to Lessor or place of record, release or releases covering all or any portion or portions of the lands described, and thereby surrender this lease as to such portion or portions and terminate from and after the date of surrender all obligations as to acreage surrende

14. Lessor hereby warrants that it has good and valid title as set forth above to the leased premises and all rights necessary to enter into this agreement; that sai premises are free and clear of all liens and encumbrances; that it will, at its own expense, defend the right and title of Lessee in and to the same under this agreement against all persons; and that it will indemnify and hold harmless Lessee for and against any and all expense incurred by Lessee by reason of any dispute, controversy,

litigation or curative title work required as to the right and title of Lessee hereby granted. In the event Lessor shall fail to conduct such defense Lessee may on its own behalf undertake such defense. Lessee may, at its option, deduct any expenses incurred by it in undertaking such defense or incurred by it by reason of any such dispute, controversy, litigation or curative title work, from any royalties or rental payable to Lessor hereunder.

15. Upon the expiration of this lease, Lessee shall, if requested to do so within 30 days thereafter, assign to Lessor its then right, title, and interest, if any, in any mining claim located upon the lands, and quitclaim to Lessor, any mining claim which has been pursued to patent by Lessee upon the lands.

16. Lessee agrees that it will so conduct its operations as to present the least practical interference with farming or ranching operations of Lessor or his tenants; to fence off dangerous excavations or shafts; to keep closed gates closed or to install cattle guards; not to dig assessment pits to validate claims; to notify Lessor of any discoveries of underground water, and to permit Lessor to complete such discoveries as water wells unless this will interfere with exploration or mining.

17. In the event of any forfeiture or other termination of this agreement, Lessee shall have the right to enter and remove from the leased premises all its property of any kind whatsoever situated thereon, including but not limited to all machinery, equipment, materials, buildings, structures, tracks, and improvements, said right to continue for a period of six (6) months, or for such extension thereof as Lessors may grant.

18. Should either party hereto be delayed in or prevented, in whole or in part, from performing any obligation or conditions hereunder or from exercising its rights (including the rights to mine, market and conduct operations therefor) by reason of or as a result of any force majeure, such party shall be excused from performing such obligations or conditions and the term of this lease shall be extended and continued while such party is so delayed or prevented and for 60 days thereafter. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or other industrial disturbances, acts of public enemy, blockades, wars, insurrections, riots, epidemics, landslides, earthquakes, fires, storms, floods, washouts, arrests, title disputes, litigation, restraints of government, either Federal or State, civil or military, civil disturbances, explosions, inability to obtain necessary materials, supplies, labor or permits due to existing or future rules, regulations, orders, laws or proclamations, either Federal or State, civil or military, and causes beyond control of such party.

18. A. There are presently organized administrative agencies of the United States of America for the purpose of assisting in financing development, exploration, and mining of materials designated as strategic and critical. It is contemplated by the parties hereto that assistance might be or will be sought from such agencies by the Lessee. Such loans are generally known as D.M.E.A. loans, and a lien for repayment will attach to future production from said premises if a loan is granted. If such assistance is sought, the Lessors herein grant consent.

F.H. E. H. T.E.G.

19. It is specifically agreed that this is a lease in block, and that production royalties paid under paragraph 4, above, will be payable to the person or persons owning the total lands herein leased, subject to release under paragraph 13, in proportion to their ownership of the surface of the said lands, subject, however, to the terms of any assignment by which owners may convey the lands and or their rights to receive royalties herein specified.

Hereby relinquishing and waiving all rights under and by virtue of the homestead exemption laws of said State where said land is situated.

This Agreement shall be binding upon and inure to the benefit of the heirs, successors and assigns of the parties hereto.

Lessor: /s/ Frank Hand

/s/ Emma M. Hand

McAlester Fuel Company

Lessee: /s/ Tom E. Garrard
By: Tom E. Garrard, Vice-President

ATTEST:

/s/ Carl Oman
CARL OMAN, Secretary

(SEAL)

STATE OF SOUTH DAKOTA)
) ss.
COUNTY OF FALL RIVER)

BE IT REMEMBERED, That on this 7 day of February ; A.D., 1957 , before me, a Notary Public, in and for said County and State, personally appeared

Frank Hand and Emma Hand

to me known to be the identical persons described in and who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed for th uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

My commission expires 1-8-61 /s/ Paul H. Russell Notary Publ

(SEAL)

CORPORATION ACKNOWLEDGMENT

STATE OF SOUTH DAKOTA, County of Fall River, ss:

On this 4 day of February ,A.D., 1957 , before me, the undersigned, a Notary Public in and for the county and state aforesaid, personally appeared TOM E. GARRARD to me known to be the identical person who signed the name of the maker thereof to the within and foregoing instruments as its VICE-PRESIDENT and acknowledged to me that he executed the same as his free and voluntary act and deed, and as the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth.

Given under my hand and seal the day and year last above written.

My commission expires: 1-8-61 /s/ Paul H. Russell Notary Pub

(SEAL)

RECORDING INFORMATION:

Recorded in Book 41 M, Page 146 - 151, County of Fall River, State of South Dakota 9:45 A.M., February 18, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 10 1957

DATE	INITIALS	CODE

Form - A

COPY

MINING LEASE

THIS AGREEMENT, made and entered into this 6th day of February 1957, by and between B. H. Lord and Amy Lord

,hereinafter referred to as "Lessor" (whether one or more) and McAlester Fuel Company, a corporation of the State of Delaware hereinafter referred to as "Lessee"; WITNESSETH:

WHEREAS, the Lessor is the owner of the mineral content, or the owner or Lessee of the surface, and The United States of America is the owner of the balance of the mineral content of certain lands situated in Fall River County, State of South Dakota to-wit:

the southeast ¼ of the northwest ¼, the east ½ of the southwest ¼, the west ½ of the southeast ¼, Section 18; all in Twp. 9S. Range 4E.

Totaling 200.00 acres.

S.T. Lab
with Doc. 09816
Pat. 1282448
Minerals reserved to U.S.

WHEREAS, Lessee is in the process of exploring for uranium, for the purpose of locating certain of the lands open to location under the United States Mining Laws; and

WHEREAS, Lessee is desirous of leasing from Lessor that portion of the lands of which Lessor owns the mineral content for the purpose of exploring, developing, and marketing uranium and associated minerals;

NOW THEREFORE, in consideration of the premises and other valuable consideration hereinafter mentioned, it is hereby agreed as follows:

1. For and in consideration of the sum of one hundred and no/00 Dollars ($ 100.00) in hand paid and of the covenants and agreements of Lessee herein contained, Lessor does hereby grant and lease to the Lessee the exclusive right and privilege to explore for, develop, mine, extract, remove from the alluvium soil or earth, or any sedimentary formation of rocks, or intrusive or igneous dike, vein, or fissure and dispose of all the uranium, thorium, and any other fissionable material

together with vandium, manganese, and non-fissionable materials associated with fissionable materials hereinafter referred to as "Leased Minerals" in or under the lands above described, insofar as those lands in which the Lessor is the owner of the mineral content, together with the exclusive right to enter upon, for the purpose of exploring and filing claims, to aforesaid minerals, in accordance with the United States Mining Laws and other pertinent laws, rules and regulations, on those lands whereon Lessor is the owner of or controls the surface title, the mineral content of which remains in the United States or others holding thereunder rights to the mineral content. Lessor also grants unto the Lessee the right to use so much of the surface of all the lands described as may be reasonably required in the exercise of the rights herein granted, but Lessee agrees to pay Lessor reasonable damages for injury to Lessor's lands directly occasioned by Lessee's operations thereon and to consult with Lessor in regard to location of roads and camp sites.

Provided that full rights of ingress and egress and way-leaving and haulage through, under and over the lands herein leased is granted to Lessee and these rights and the right to maintain and operate underground mine shafts and installations may be continued in perpetuity after the expiration of this lease without other consideration that the payment of an annual rental of one hundred (100.00) Dollars.

2. The term of the lease shall be for a period of two (2) years from the date hereof and so long thereafter as payments to Lessor are made hereunder, or as leased minerals, or any of them, shall be mined or marketed hereunder, or operations therefor shall be continued without any cessations thereof of more than ninety (90) days each; it being understood and agreed, however, that notwithstanding anything to the contrary herein contained, if the United States of America, or its duly authorized buyers or representative shall suspend buying of Leased Minerals for a period of time, and there is nor other market the term of this lease shall continue during such period of suspend buying and shall not be subject to cancellation by Lessor for failure of Lessee to market Leased Minerals.

3. On the second anniversary date, when this lease would otherwise expire, and annually thereafter on the anniversary date, Lessee may pay to Lessor a sum of money amounting to $1.00 per acre of demised land ~~wherein Lessor now owns the mineral content~~, as minimum advance royalty. Such a payment if made will act to extend the term of this lease for an additional year from the date thereof, but Lessee will be entitled to credit on all money so paid on production royalties which may become due in the future, except that if this lease is terminated without such production

of ore, Lessee forfeits any right to the said credit or money.

4. The following royalties shall be paid to Lessor with respect to ores mined and marketed by Lessee from the lands covered by this mining lease:

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
Less than 0.3%	5%	0.65 to 0.75%	9½%
0.3 to 0.35%	5½%	0.75 to 0.85%	10½%
0.35 to 0.45%	6½%	0.85 to 0.95%	11½%
0.45 to 0.55%	7½%	0.95 to 1.50%	12½%
0.55 to 0.65%	8½%	1.50 to 2.50%	13½%

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
2.50 to 3.50%	14½%	6.50 to 7.50%	18½%
3.50 to 4.50%	15½%	7.50 to 8.50%	19½%
4.50 to 5.50%	16½%	8.50 to 9.50%	20½%
5.50 to 6.50%	17½%	9.50 and over	21%

Lessor shall be paid the foregoing applicable royalty percentages of the field market price at the mine, including bonus payments and premiums, but excluding allowances for transportation and development, as paid by the Atomic Energy Commission or other Government authorized agency or mill or in the absence thereof at the current field market price for all crude ores mined and marketed each month by Lessee from--

(i) lands covered by this mining lease, the mineral content of which is owned by the United States of America and the title to the surface of which is owned by Lessor; provided, however, that there shall first be deducted from such royalties to be paid Lessor hereunder, any royalties or payments that are, or may become, payable to any third party (The United States of America) on account of the ownership or control of the minerals by any such third party, it being understood and agreed, further, that the royalties or payment that are or may hereafter be paid, or are or may hereafter be required to be paid, to any other parties on account of their ownership or control of the mineral content of the property, shall be paid by Lessee.

(ii) lands covered by this mining lease, the mineral content of which is owned by Lessor; it being understood and agreed, however, that if Lessor owns less than the entire and undivided fee simple estate to the mineral content thereof the royalties herein provided shall be paid to Lessor only in the proportion which Lessor's interest bears to the entire undivided fee; this limitation however shall not apply where Lessor owns surface but the United States of America owns all mineral rights.

5. Lessee agrees to make payment in full to Lessor or to the account of Lessor at the Southern Hills Bank, at Edgemont, S. Dakota

, on or before the 20th day of the calendar month succeeding the month of payment by Buyer for all said leased minerals mined and marketed from the lands and to furnish sworn monthly statements therewith showing in tons or cubic yards, or such other measure of quantity as may be pertinent to the amount of all minerals mined and marketed. These statements are to be subject to verification by examination of the books and records of Lessee by Lessor or his agents.

6. Lessee agrees that all mining operations and working shall be conducted in such a manner so as to remove all valuable deposits so far as it is economically possible and that all operations hereunder shall be conducted in a good and workmanlike manner and without unnecessary injury to the property of the Lessor.

7. All taxes, assessments and other burdens validly levied or asserted by any legally constituted public authority against Lessee's property and rights shall be paid in full and as due solely by Lessee. Lessee shall pay, as due, all expense, charg liabilities connected in any manner with its operations hereunder, lienable or otherwis and will protect Lessor and all said property from establishment of any such liability connected with such operations and property payable by Lessee. In the event a severance or production tax, or any tax measured by production from the demised claims, shall be imposed during the term of this lease, Lessee shall pay same and in reimbursement deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the percentages that accrue hereunder to Lessor as royalty covering the production on which the said tax is paid. In the case of taxes measured by production which are collected annually, Lessee shall pay same and thereafter deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the total sum paid hereunder to Lessor as royalty on production over the period for which the tax is assessed, bears to the total sum of money subject to royalty payment for the said period. ~~In the event any sum due from Lessee under the terms of this paragraph cannot be recovered out of royalty, said sum shall be the joint and several personal obligation of Lessee.~~ B.H.L. A.E. T.E.G.

8. During proper hours and at all times during the continuance of this lease the Lessor or his representative shall be authorized at their own risk to go through any workings on the lands and to examine, inspect and survey the same and make extracts of all books and weight sheets which show in any way the output from the lands, but as regards underground workings, Lessor may enter these, for safeth reasons only in company with Lessee's superintendent or his representatives.

9. It is expressly understood and agreed that the mining rights and privileges granted (~~which may be assigned in whole or in part~~) hereunder shall extend to and include only "leased minerals" and that no rights or privileges respecting oil or gas of any kind or character or other minerals are granted or intended to be granted by this lease.

10. Lessee shall not be required to recognize any transfer or change of ownership, however accomplished or occurred, until 30 days after Lessee shall have been furnished by registered mail with the original, or a photostatic or certified copy of the recorded instrument or instruments or of the court records evidencing the same, and no transfer or change of ownership shall operate in anywise to enlarge the obligations or diminish the rights of the Lessee.

11. Default on the part of Lessee in full reasonable compliance with all the provisions hereof shall not thereby render this lease null and void, but in such case Lessor may notify Lessee of such breach and Lessee shall have a period of 30 days thereafter in which to cure such default or if such cannot be cured within such period by exercise of due diligence and all proper methods, Lessee shall have that necessary period after such notice in which to cure such default through timely exercise of such diligence and methods. If the default has not been cured within the applicable period then upon the expiration of such period this lease shall, at the option of Lessor, terminate if Lessor shall give Lessee written notice thereof within 30 days thereafter.

12. Lessor designates D. H. Lord of Edgemont, S. Dakota as the party to whom all notices should be directed under the terms of this lease. Lessee designates McAlester Fuel Company, McAlester, Oklahoma, as the party to whom all notices to it should be directed under the terms of this lease.

13. Lessee may at any time and from time to time execute and deliver to Lessor or place of record, release or releases covering all or any portion or portions of the lands described, and thereby surrender this lease as to such portion or portions and terminate from and after the date of surrender all obligations as to acreage surrendered

14. Lessor hereby warrants that it has good and valid title as set forth above to the leased premises and all rights necessary to enter into this agreement; that said premises are free and clear of all liens and encumbrances; that it will, at its own expense, defend the right and title of Lessee in and to the same under this agreement against all persons; and that it will indemnify and hold harmless Lessee for and against any and all expense incurred by Lessee by reason of any dispute, controversy,

litigation or curative title work required as to the right and title of Lessee hereby granted. In the event Lessor shall fail to conduct such defense Lessee may on its own behalf undertake such defense. Lessee may, at its option, deduct any expenses incurred by it in undertaking such defense or incurred by it by reason of any such dispute, controversy, litigation or curative title work, from any royalties or rental payable to Lessor hereunder.

15. Upon the expiration of this lease, Lessee shall, ~~if requested by Lessor~~ T.E.G. B.H.L. A.L. within 30 days thereafter, assign to Lessor its then right, title, and interest, if any, in any mining claim located upon the lands, and quitclaim to Lessor, any mining claim which has been pursued to patent by Lessee upon the lands.

16. Lessee agrees that it will so conduct its operations as to present the least practical interference with farming or ranching operations of Lessor or his tenants; to fence off dangerous excavations or shafts; to keep closed gates closed or to install cattle guards; not to dig assessment pits to validate claims; to notify Lessor of any discoveries of underground water, and to permit Lessor to complete such discoveries as water wells unless this will interfere with exploration or mining.

17. In the event of any forfeiture or other termination of this agreement, Lessee shall have the right to enter and remove from the leased premises all its property of any kind whatsoever situated thereon, including but not limited to all machinery, equipment, materials, buildings, structures, tracks, and improvements, said right to continue for a period of six (6) months, or for such extension thereof as Lessors may grant.

18. Should either party hereto be delayed in or prevented, in whole or in part, from performing any obligation or conditions hereunder or from exercising its rights (including the rights to mine, market and conduct operations therefor) by reason of or as a result of any force majeure, such party shall be excused from performing such obligations or conditions and the term of this lease shall be extended and continued while such party is so delayed or prevented and for 60 days thereafter. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or other industrial disturbances, acts of public enemy, blockades, wars, insurrections, riots, epidemics, landslides, earthquakes, fires, storms, floods, washouts, arrests, title disputes, litigation, restraints of government, either Federal or State, civil or military, civil disturbances, explosions, inability to obtain necessary materials, supplies, labor or permits due to existing or future rules, regulations, orders, laws or proclamations, either Federal or State, civil or military, and causes beyond control of such party.

18. a. There are presently organized administrative agencies of the United States of America for the purpose of assisting in financing development, exploration, and mining of materials designated as strategic and critical. It is contemplated by the parties that assistance may or will be sought from such agencies by the Lessee. That such loans are generally known as D. M. E. A. loans, and a lien for repayment will attach to future production from said premises. If such assistance is sought, the Lessors herein grant consent.

D.H.L.
A.L.
T.E.G.

19. It is specifically agreed that this is a lease in block, and that production royalties paid under paragraph 4, above, will be payable to the person or persons owning the total lands herein leased, subject to release under paragraph 13, in proportion to their ownership of the surface of the said lands, subject, however, to the terms of any assignment by which owners may convey the lands and or their rights to receive royalties herein specified.

Hereby relinquishing and waiving all rights under and by virtue of the homestead exemption laws of said State where said land is situated.

This Agreement shall be binding upon and inure to the benefit of the heirs, successors and assigns of the parties hereto, and this lease shall not be assigned by the lessee without the written consent of the lessors, but lessors shall not unreasonably withhold consent.

Lessor: /s/ D. H. Lord

/s/ Amy Lord

McAlester Fuel Company

ATTEST:

/s/ Carol Green
Secretary

(SEAL)

Lessee: /s/ Tom E. Garrard
By: Tom E. Garrard, Vice-President

STATE OF SOUTH DAKOTA)
) ss.
COUNTY OF FALL RIVER)

BE IT REMEMBERED, That on this 6th day of February A.D., 1957, before me, a Notary Public, in and for said County and State, personally appeared

D. H. Lord and Ary Lord, his wife

to me known to be the identical persons described in and who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed for th uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

My commission expires 1-8-61 /s/ Paul H. Purcell Notary Publ

(SEAL)

CORPORATION ACKNOWLEDGMENT

STATE OF ~~SOUTH DAKOTA~~ OKLAHOMA, County of ~~Fall River~~ Pittsburg, ss:

On this 11th day of February, A.D., 1957, before me, the undersigned, a Notary Public in and for the county and state aforesaid, personally appeared TOM E. GARRARD to me known to be the identical person who signed the name of the maker thereof to the within and foregoing instruments as its VICE-PRESIDENT and acknowledged to me that he executed the same as his free and voluntary act and deed, and as the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth.

Given under my hand and seal the day and year last above written.

My commission expires: ~~Dec. 29, 1957~~ ~~/s/ Don C. Phelps~~ Notary Pub

(SEAL)

RECORDING INFORMATION:

Recorded in Book M 11, Pages 141-146, County of Fall River, State of South Dakota 9:45 A.M., February 18, 1957.

OFFICIAL FILE COPY
O.I.E.A.
RECEIVED MAY 10 1955

COPY

Form - A

MINING LEASE

THIS AGREEMENT, made and entered into this 25th day of February 1957, by and between JOHN D., and MARGARET J. MANKE of Edgemont South Dakota, hereinafter referred to as "Lessor" (whether one or more) and McAlester Fuel Company, a corporation of the State of Delaware hereinafter referred to as "Lessee"; WITNESSETH:

WHEREAS, the Lessor is the owner of the mineral content, or the owner or Lessee of the surface, and The United States of America is the owner of the balance of the mineral content of certain lands situated in Fall River County, State of South Dakota to-wit:

The SE¼ of the NE¼, the SE¼, Section 13; Twp. 9S Range 3E, BHM. Lots 2, 3, and 4, Section 18; the S½ of the N½, the SW¼, the SW¼ of the SE¼, Section 21; the N½, Section 28; the N½, the N½ and the SW¼ of the SW¼, Section 29; all of Section 30; the E½ of Section 31; the W½ of the W½, Section 32; all in Twp. 9S Range 4E, BHM.

Totaling: 2,484.81 acres.

excluding lots 2, 3, 4 = 23.20
short - 160 acres

WHEREAS, Lessee is in the process of exploring for uranium, for the purpose of locating certain of the lands open to location under the United States Mining Laws; and

WHEREAS, Lessee is desirous of leasing from Lessor that portion of the lands of which Lessor owns the mineral content for the purpose of exploring, developing, and marketing uranium and associated minerals;

NOW THEREFORE, in consideration of the premises and other valuable considerations hereinafter mentioned, it is hereby agreed as follows:

1. For and in consideration of the sum of one hundred and no/00 Dollars ($ 100.00) in hand paid and of the covenants and agreements of Lessee herein contained, Lessor does hereby grant and lease to the Lessee the exclusive right and privilege to explore for, develop, mine, extract, remove from the alluvium soil or earth, or any sedimentary formation of rocks, or intrusive or igneous dike, vein, or fissure and dispose of all the uranium, thorium, and any other fissionable material

together with vanadium, manganese, and non-fissionable materials associated with fissionable materials hereinafter referred to as "Leased Minerals" in or under the lands above described, (insofar as that portion of those lands in which the Lessor is the owner of the mineral content is concerned) together with the exclusive right to enter upon, for the purpose of exploring and filing claims, to aforesaid minerals, in accordance with the United States Mining Laws and other pertinent laws, rules and regulations, on those lands whereon Lessor is the owner of or controls the surface title, the mineral content of which remains in the United States or others holding thereunder rights to the mineral content. Lessor also grants unto the Lessee the right to use so much of the surface of all the lands described as may be reasonably required in the exercise of the rights herein granted, but Lessee agrees to pay Lessor reasonable damages for injury to Lessor's lands directly occasioned by Lessee's operations thereon and to consult with Lessor in regard to location of roads and camp sites.

Provided that full rights of ingress and egress and way-leaving and haulage through, under and over the lands herein leased is granted to Lessee and these rights and the right to maintain and operate underground mine shafts and installations may be continued in perpetuity after the expiration of this lease without other consideration than the payment of an annual rental of 100.00 Dollars.

2. The term of the lease shall be for a period of two (2) years from the date hereof and so long thereafter as payments to Lessor are made hereunder, or as leased minerals, or any of them, shall be mined or marketed hereunder, or operations thereof shall be continued without any cessations thereof of more than ninety (90) days each; it being understood and agreed, however, that notwithstanding anything to the contrary herein contained, if the United States of America, or its duly authorized buyers or representative shall suspend buying of Leased Minerals for a period of time, and there is no other market, the term of this lease shall continue during such period of suspended buying and shall not be subject to cancellation by Lessor for failure of Lessee to market Leased Minerals.

3. On the second anniversary date, when this lease would otherwise expire, and annually thereafter on the anniversary date, Lessee may pay to Lessor, or deposit to his credit in the Southern Hills Bank of Edgemont, South Dak. a sum of money amounting to $1.00 per acre of the demised land wherein Lessor now owns the mineral contents, as minimum advance royalty. Such a payment if made will act to extend the term of this lease for an additional year from the date thereof, but Lessee will be entitled to credit on all money so paid on production royalties which may become due in the future, except that if this lease is terminated without such production

of ore, Lessee forfeits any right to the said credit or money.

4. The following royalties shall be paid to Lessor with respect to ores mined and marketed by Lessee from the lands covered by this mining lease:

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
Less than 0.3%	5%	0.65 to 0.75%	9½%
0.3 to 0.35%	5½%	0.75 to 0.85%	10½%
0.35 to 0.45%	6½%	0.85 to 0.95%	11½%
0.45 to 0.55%	7½%	0.95 to 1.50%	12½%
0.55 to 0.65%	8½%	1.50 to 2.50%	13½%

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
2.50 to 3.50%	14½%	6.50 to 7.50%	18½%
3.50 to 4.50%	15½%	7.50 to 8.50%	19½%
4.50 to 5.50%	16½%	8.50 to 9.50%	20½%
5.50 to 6.50%	17½%	9.50 and over	21%

Lessor shall be paid the foregoing applicable royalty percentages of the field market price at the mine, including bonus payments and premiums, but excluding allowances for transportation and development, as paid by the Atomic Energy Commission or other Government authorized agency or mill or in the absence thereof at the current field market price for all crude ores mined and marketed each month by Lessee from--

(i) lands covered by this mining lease, the mineral content of which is owned by the United States of America and the title to the surface of which is owned by Lessor; provided, however, that there shall first be deducted from such royalties to be paid Lessor hereunder, any royalties or payments that are, or may become, payable to any third party (The United States of America) on account of the ownership or control of the minerals by any such third party, it being understood and agreed, further, that the royalties or payments that are or may hereafter be paid, or are or may hereafter be required to be paid, to any other parties on account of their ownership or control of the mineral content of the property, shall be paid by Lessee.

(ii) lands covered by this mining lease, the mineral content of which is owned by Lessor; it being understood and agreed, however, that if Lessor owns less than the entire and undivided fee simple estate to the mineral content thereof the royalties herein provided shall be paid to Lessor only in the proportion which Lessor's interest bears to the entire undivided fee; this limitation however shall not apply where Lessor owns surface but the United States of America owns all mineral rights.

5. Lessee agrees to make payment in full to Lessor or to the account of Lessor at the Southern Hills Bank, at Edgemont, South Dak.

, on or before the 20th day of the calendar month succeeding the month of payment by Buyer for all said leased minerals mined and marketed from the lands and to furnish sworn monthly statements therewith showing in tons or cubic yards, or such other measure of quantity as may be pertinent to the amount of all minerals mined and marketed. These statements are to be subject to verification by examination of the books and records of Lessee by Lessor or his agents.

6. Lessee agrees that all mining operations and working shall be conducted in such a manner so as to remove all valuable deposits so far as it is economically possible and that all operations hereunder shall be conducted in a good and workmanlike manner and without unnecessary injury to the property of the Lessor.

7. All taxes, assessments and other burdens validly levied or asserted by any legally constituted public authority against Lessee's property and rights shall be paid in full and as due solely by Lessee. Lessee shall pay, as due, all expense, charges and liabilities connected in any manner with its operations hereunder. In the event a severance or production tax, or any tax measured by production from the demised claims, shall be imposed during the term of this lease, Lessee shall pay same and in reimbursement deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the percentages that accrue hereunder to Lessor as royalty covering the production on which the said tax is paid. In the case of taxes measured by production which are collected annually, ~~Lessee may pay same for the account of both Lessee and Lessor and thereafter may deduct from royalty due Lessor hereunder, or bill Lessor for his share of such taxes.~~ J.D.M. M.J.M. T.E.C.

8. During proper hours and at all times during the continuance of this lease the Lessor or his representative shall be authorized, at their own risk, to go through any workings on the lands and to examine, inspect and survey the same and make extracts of all books and weight sheets which show in any way the output from the lands, but as regards underground workings, Lessor may enter these, for safety reasons, only in company with Lessee's superintendent or his representatives.

8. a. At the termination of this lease, the Lessee agrees to execute any and all necessary releases to clear the title of this lease, and record the same. J.D.M. M.J.M. T.E.C.

9. It is expressly understood and agreed that the mining rights and privileges granted (~~which may be assigned in whole or in part~~) hereunder shall extend to and include only "leased minerals" and that no rights or privileges respecting oil or gas of any kind or character or other minerals are granted or intended to be granted by this lease. J.D.M. M.J.M. T.E.G.

10. Lessee shall not be required to recognize any transfer or change of ownership, however accomplished or occurred, until 30 days after Lessee shall have been furnished by registered mail with the original, or a photostatic or certified copy of the recorded instrument or instruments or of the court records evidencing the same, and no transfer or change of ownership shall operate in anywise to enlarge the obligations or diminish the rights of the Lessee.

11. Default on the part of Lessee in full reasonable compliance with all the provisions hereof shall not thereby render this lease null and void, but in such case Lessor may notify Lessee of such breach and Lessee shall have a period of 30 days thereafter in which to cure such default or if such cannot be cured within such period by exercise of due diligence and all proper methods, Lessee shall have that necessary period after such notice in which to cure such default through timely exercise of such diligence and methods. If the default has not been cured within the applicable period then upon the expiration of such period this lease shall, at the option of Lessor, terminate if Lessor shall give Lessee written notice thereof within 30 days thereafter.

12. Lessor designates JOHN D. MANKE of Edgemont, South Dakota as the party to whom all notices should be directed under the terms of this lease. Lessee designates McAlester Fuel Company, McAlester, Oklahoma, as the party to whom all notices to it should be directed under the terms of this lease.

13. Lessee may at any time and from time to time execute and deliver to Lessor or place of record, release or releases covering all ~~any portion or portions~~ of the lands described, and thereby surrender this lease as to such portion or portions and terminate from and after the date of surrender all obligations as to acreage surrendered J.D.M. M.J.M. T.E.G.

14. Lessor hereby warrants that it has good and valid title as set forth above to the leased premises and all rights necessary to enter into this agreement; that said premises are free and clear of all liens and encumbrances; that it will, at its own expense, defend the right and title of Lessee in and to the same under this agreement against all persons; and that it will indemnify and hold harmless Lessee for and against any and all expense incurred by Lessee by reason of any dispute, controversy,

litigation or curative title work required as to the right and title of Lessee hereby granted. In the event Lessor shall fail to conduct such defense Lessee may on its own behalf undertake such defense. Lessee may, at its option, deduct any expenses incurred by it in undertaking such defense or incurred by it by reason of any such dispute, controversy, litigation or curative title work, from any royalties or rental payable to Lessor hereunder.

15. Upon the expiration of this lease, Lessee shall, if requested to do so within 30 days thereafter, assign to Lessor its then right, title, and interest, if any, in any mining claim located upon the lands, and quitclaim to Lessor, any mining claim which has been pursued to patent by Lessee upon the lands.

16. Lessee agrees that it will so conduct its operations as to present the least practical interference with farming or ranching operations of Lessor or his tenants; to fence off dangerous excavations or shafts; to keep closed gates closed or to install cattle guards; not to dig assessment pits to validate claims; to notify Lessor of any discoveries of underground water, and to permit Lessor to complete such discoveries as water wells unless this will interfere with exploration or mining.

17. In the event of any forfeiture or other termination of this agreement, Lessee shall have the right to enter and remove from the leased premises all its property of any kind whatsoever situated thereon, including but not limited to all machinery, equipment, materials, buildings, structures, tracks, and improvements, said right to continue for a period of six (6) months, or for such extension thereof as Lessors may grant.

18. Should either party hereto be delayed in or prevented, in whole or in part, from performing any obligation or conditions hereunder or from exercising its rights (including the rights to mine, market and conduct operations therefor) by reason of or as a result of any force majeure, such party shall be excused from performing such obligations or conditions and the term of this lease shall be extended and continued while such party is so delayed or prevented and for 60 days thereafter. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or other industrial disturbances, acts of public enemy, blockades, wars, insurrections, riots, epidemics, landslides, earthquakes, fires, storms, floods, washouts, arrests, title disputes, litigation, restraints of government, either Federal or State, civil or military, civil disturbances, explosions, inability to obtain necessary materials, supplies, labor or permits due to existing or future rules, regulations, orders, laws or proclamations, either Federal or State, civil or military, and causes beyond control of such party.

18. a. There are presently organized administrative agencies of the United States of America for the purpose of assisting in financing development, exploration, and mining of materials designated as strategic and critical. It is contemplated by the parties that assistance may or will be sought from such agencies by the Lessee. That such loans are generally known as D. M. E. A. loans, and a lien for repayment will attach to future production from said premises. If such assistance is sought, the Lessors herein grant consent.

19. It is specifically agreed that this is a lease in block, and that production royalties paid under paragraph 4, above, will be payable to the person or persons owning the total lands herein leased, subject to release under paragraph 13, in proportion to their ownership of the surface of the said lands, subject, however, to the terms of any assignment by which owners may convey the lands and or their rights to receive royalties herein specified.

Hereby relinquishing and waiving all rights under and by virtue of the homestead exemption laws of said State where said land is situated.

This Agreement shall be binding upon and inure to the benefit of the heirs, successors and assigns of the parties hereto, and this lease shall not be assigned by the lessee without the written consent of the lessors, but lessors shall not unreasonably withhold consent.

Lessor: /s/ John D. Manko

/s/ Margaret J. Manko

McAlester Fuel Company

ATTEST:

/s/ Carl Oman
Secretary

(SEAL)

Lessee: /s/ Tom E. Garrard
By: Tom E. Garrard, Vice-President

STATE OF SOUTH DAKOTA)
) ss.
COUNTY OF FALL RIVER)

BE IT REMEMBERED, That on this 25th day of February A.D., 19 57 , before me, a Notary Public, in and for said County and State, personally appeared

John D. Menke and Margaret J. Menke

to me known to be the identical persons described in and who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

My commission expires 1-8-61 /s// Paul H. Russell Notary Public

(SEAL)

CORPORATION ACKNOWLEDGMENT

STATE OF ~~SOUTH DAKOTA~~ OKLAHOMA, County of ~~Fall River~~ Pittsburg, ss:

On this 25th day of February ,A.D., 19 57 , before me, the undersigned, a Notary Public in and for the county and state aforesaid, personally appeared TOM E. GARRARD to me known to be the identical person who signed the name of the maker thereof to the within and foregoing instruments as its VICE-PRESIDENT and acknowledged to me that he executed the same as his free and voluntary act and deed, and as the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth.

Given under my hand and seal the day and year last above written.

My commission expires: 12/29/57 /s/ Don C. Phelps Notary Public

(SEAL)

RECORDING INFORMATION:

Recorded in Book 41 Misc., Page 162-167, County of Fall River, State of South Dakota 10:00 A.M., March 4th, 1957

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DATE	[illegible]	[illegible]

COPY

Form - A

MINING LEASE

THIS AGREEMENT, made and entered into this 1st day of February 1957, by and between JOHN D. MANKE and MARGARET J. MANKE, husband and wife, hereinafter referred to as "Lessor" (whether one or more) and McAlester Fuel Company, a corporation of the State of Delaware hereinafter referred to as "Lessee"; WITNESSETH:

WHEREAS, the Lessor is the owner of the mineral content, or the owner or Lessee of the surface, and The United States of America is the owner of the balance of the mineral content of certain lands situated in Fall River County, State of South Dakota to-wit:

The southwest ¼ of the northeast ¼, the east ½ of the southeast ¼, Section 18; the west ½ and the southeast ¼ of the southwest ¼, Section 17; lot 1, the east ½ of the northwest ¼, the northeast ¼, the south ½, Section 19; the northwest ¼, the south ½, Section 20; all in Twp. 9S. Range 4E.

Nov. 27, 1916

Totaling 1,280.12 acres.

WHEREAS, Lessee is in the process of exploring for uranium, for the purpose of locating certain of the lands open to location under the United States Mining Laws; and

WHEREAS, Lessee is desirous of leasing from Lessor that portion of the lands of which Lessor owns the mineral content for the purpose of exploring, developing, and marketing uranium and associated minerals;

NOW THEREFORE, in consideration of the premises and other valuable considerations hereinafter mentioned, it is hereby agreed as follows:

1. For and in consideration of the sum of one hundred and no/00 Dollars ($ 100.00) in hand paid and of the covenants and agreements of Lessee herein contained, Lessor does hereby grant and lease to the Lessee the exclusive right and privilege to explore for, develop, mine, extract, remove from the alluvium soil or earth, or any sedimentary formation of rocks, or intrusive or igneous dike, vein, or fissure and dispose of all the uranium, thorium, and any other fissionable material

together with vandium, manganese, and non-fissionable materials associated with fissionable materials hereinafter referred to as "Leased Minerals" in or under the lands above described, insofar as those lands in which the Lessor is the owner of the mineral content, together with the exclusive right to enter upon, for the purpose of exploring and filing claims, to aforesaid minerals, in accordance with the United States Mining Laws and other pertinent laws, rules and regulations, on those lands whereon Lessor is the owner of or controls the surface title, the mineral content of which remains in the United States or others holding thereunder rights to the mineral content. Lessor also grants unto the Lessee the right to use so much of the surface of all the lands described as may be reasonably required in the exercise of the rights herein granted, but Lessee agrees to pay Lessor reasonable damages for injury to Lessor's lands directly occasioned by Lessee's operations thereon and to consult with Lessor in regard to location of roads and camp sites.

Provided that full rights of ingress and egress and way-leaving and haulage through, under and over the lands herein leased is granted to Lessee and these rights and the right to maintain and operate underground mine shafts and installations may be continued in perpetuity after the expiration of this lease without other consideration that the payment of an annual rental of one hundred (100.00) Dollars.

2. The term of the lease shall be for a period of two (2) years from the date hereof and so long thereafter as payments to Lessor are made hereunder, or as leased minerals, or any of them, shall be mined or marketed hereunder, or operations therefor shall be continued without any cessations thereof of more than ninety (90) days each; it being understood and agreed, however, that notwithstanding anything to the contrary herein contained, if the United States of America, or its duly authorized buyers or representative shall suspend buying of Leased Minerals for a period of time, and there is nor other market the term of this lease shall continue during such period of suspend buying and shall not be subject to cancellation by Lessor for failure of Lessee to market Leased Minerals.

3. On the second anniversary date, when this lease would otherwise expire, and annually thereafter on the anniversary date, Lessee may pay to Lessor a sum of money amounting to $1.00 per acre of demised land wherein Lessor now owns the mineral content, as minimum advance royalty. Such a payment if made will act to extend the term of this lease for an additional year from the date thereof, but Lessee will be entitled to credit on all money so paid on production royalties which may become due in the future, except that if this lease is terminated without such production

of ore, Lessee forfeits any right to the said credit or money.

4. The following royalties shall be paid to Lessor with respect to ores mined and marketed by Lessee from the lands covered by this mining lease:

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
Less than 0.3%	5%	0.65 to 0.75%	9½%
0.3 to 0.35%	5½%	0.75 to 0.85%	10½%
0.35 to 0.45%	6½%	0.85 to 0.95%	11½%
0.45 to 0.55%	7½%	0.95 to 1.50%	12½%
0.55 to 0.65%	8½%	1.50 to 2.50%	13½%

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
2.50 to 3.50%	14½%	6.50 to 7.50%	18½%
3.50 to 4.50%	15½%	7.50 to 8.50%	19½%
4.50 to 5.50%	16½%	8.50 to 9.50%	20½%
5.50 to 6.50%	17½%	9.50 and over	21%

Lessor shall be paid the foregoing applicable royalty percentages of the field market price at the mine, including bonus payments and premiums, but excluding allowances for transportation and development, as paid by the Atomic Energy Commission or other Government authorized agency or mill or in the absence thereof at the current field market price for all crude ores mined and marketed each month by Lessee from--

(i) lands covered by this mining lease, the mineral content of which is owned by the United States of America and the title to the surface of which is owned by Lessor; provided, however, that there shall first be deducted from such royalties to be paid Lessor hereunder, any royalties or payments that are, or may become, payable to any third party (The United States of America) on account of the ownership or control of the minerals by any such third party, it being understood and agreed, further, that the royalties or payments that are or may hereafter be paid, or are or may hereafter be required to be paid, to any other parties on account of their ownership or control of the mineral content of the property, shall be paid by Lessee.

(ii) lands covered by this mining lease, the mineral content of which is owned by Lessor; it being understood and agreed, however, that if Lessor owns less than the entire and undivided fee simple estate to the mineral content thereof the royalties herein provided shall be paid to Lessor only in the proportion which Lessor's interest bears to the entire undivided fee; this limitation however shall not apply where Lessor owns surface but the United States of America owns all mineral rights.

5. Lessee agrees to make payment in full to Lessor or to the account of Lessor at the Southern Hills Bank, at Edgemont, So. Dakota

, on or before the 20th day of the calendar month succeeding the month of payment by Buyer for all said leased minerals mined and marketed from the lands and to furnish sworn monthly statements therewith showing in tons or cubic yards, or such other measure of quantity as may be pertinent to the amount of all minerals mined and marketed. These statements are to be subject to verification by examination of the books and records of Lessee by Lessor or his agents.

6. Lessee agrees that all mining operations and working shall be conducted in such a manner so as to remove all valuable deposits so far as it is economically possible and that all operations hereunder shall be conducted in a good and workmanlike manner and without unnecessary injury to the property of the Lessor.

7. All taxes, assessments and other burdens validly levied or asserted by any legally constituted public authority against Lessee's property and rights shall be paid in full and as due solely by Lessee. Lessee shall pay, as due, all expense, charg liabilities connected in any manner with its operations hereunder, lienable or otherwis and will protect Lessor and all said property from establishment of any such liability connected with such operations and property payable by Lessee. In the event a severance or production tax, or any tax measured by production from the demised claims, shall be imposed during the term of this lease, Lessee shall pay same and in reimbursement deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the percentages that accrue hereunder to Lessor as royalty covering the production on which the said tax is paid. In the case of taxes measured by production which are collected annually, Lessee shall pay same and thereafter deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the total sum paid hereunder to Lessor as royalty on production over the period for which the tax is assessed, bears to the total sum of money subject to royalty payment for the said period. In the event that any sum due from Lessor under the terms of this paragraph cannot be recovered out of royalty, said sum shall be the joint and several personal obligation of Lessor.

8. During proper hours and at all times during the continuance of this lease the Lessor or his representative shall be authorized at their own risk to go through any workings on the lands and to examine, inspect and survey the same and make extracts of all books and weight sheets which show in any way the output from the lands, but as regards underground workings, Lessor may enter these, for safeth reasons only in company with Lessee's superintendent or his representatives.

9. It is expressly understood and agreed that the mining rights and privileges granted (which may be assigned in whole or in part) hereunder shall extend to and include only "leased minerals" and that no rights or privileges respecting oil or gas of any kind or character or other minerals are granted or intended to be granted by this lease. T.E.G. J.D.M.

10. Lessee shall not be required to recognize any transfer or change of ownership, however accomplished or occurred, until 30 days after Lessee shall have been furnished by registered mail with the original, or a photostatic or certified copy of the recorded instrument or instruments or of the court records evidencing the same, and no transfer or change of ownership shall operate in anywise to enlarge the obligations or diminish the rights of the Lessee.

11. Default on the part of Lessee in full reasonable compliance with all the provisions hereof shall not thereby render this lease null and void, but in such case Lessor may notify Lessee of such breach and Lessee shall have a period of 30 days thereafter in which to cure such default or if such cannot be cured within such period by exercise of due diligence and all proper methods, Lessee shall have that necessary period after such notice in which to cure such default through timely exercise of such diligence and methods. If the default has not been cured within the applicable period then upon the expiration of such period this lease shall, at the option of Lessor, terminate if Lessor shall give Lessee written notice thereof within 30 days thereafter.

12. Lessor designates John D. Monko of Edgemont, So. Dakota as the party to whom all notices should be directed under the terms of this lease. Lessee designates McAlester Fuel Company, McAlester, Oklahoma, as the party to whom all notices to it should be directed under the terms of this lease.

13. Lessee may at any time and from time to time execute and deliver to Lessor or place of record, release or releases covering all or any portion or portions of the lands described, and thereby surrender this lease as to such portion or portions and terminate from and after the date of surrender all obligations as to acreage surrendered hereunder. On termination of this lease for any reason, Lessee is obligated to place such termination of record. T.E.G. J.D.M.

14. Lessor hereby warrants that it has good and valid title as set forth above to the leased premises and all rights necessary to enter into this agreement; that said premises are free and clear of all liens and encumbrances; that it will, at its own expense, defend the right and title of Lessee in and to the same under this agreement against all persons; and that it will indemnify and hold harmless Lessee for and against any and all expense incurred by Lessee by reason of any dispute, controversy,

litigation or curative title work required as to the right and title of Lessee hereby granted. In the event Lessor shall fail to conduct such defense Lessee may on its own behalf undertake such defense. Lessee may, at its option, deduct any expenses incurred by it in undertaking such defense or incurred by it by reason of any such dispute, controversy, litigation or curative title work, from any royalties or rental payable to Lessor hereunder.

15. Upon the expiration of this lease, Lessee shall, if requested to do so within 30 days thereafter, assign to Lessor its then right, title, and interest, if any, in any mining claim located upon the lands, and quitclaim to Lessor, any mining claim which has been pursued to patent by Lessee upon the lands.

16. Lessee agrees that it will so conduct its operations as to present the least practical interference with farming or ranching operations of Lessor or his tenants; to fence off dangerous excavations or shafts; to keep closed gates closed or to install cattle guards; not to dig assessment pits to validate claims; to notify Lessor of any discoveries of underground water, and to permit Lessor to complete such discoveries as water wells unless this will interfere with exploration or mining.

17. In the event of any forfeiture or other termination of this agreement, Lessee shall have the right to enter and remove from the leased premises all its property of any kind whatsoever situated thereon, including but not limited to all machinery, equipment, materials, buildings, structures, tracks, and improvements, said right to continue for a period of six (6) months, or for such extension thereof as Lessors may grant.

18. Should either party hereto be delayed in or prevented, in whole or in part, from performing any obligation or conditions hereunder or from exercising its rights (including the rights to mine, market and conduct operations therefor) by reason of or as a result of any force majeure, such party shall be excused from performing such obligations or conditions and the term of this lease shall be extended and continued while such party is so delayed or prevented and for 60 days thereafter. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or other industrial disturbances, acts of public enemy, blockades, wars, insurrections, riots, epidemics, landslides, earthquakes, fires, storms, floods, washouts, arrests, title disputes, litigation, restraints of government, either Federal or State, civil or military, civil disturbances, explosions, inability to obtain necessary materials, supplies, labor or permits due to existing or future rules, regulations, orders, laws or proclamations, either Federal or State, civil or military, and causes beyond control of such party.

19. It is specifically agreed that this is a lease in block, and that production royalties paid under paragraph 4, above, will be payable to the person or persons owning the total lands herein leased, in proportion to their ownership of the surface of the said lands, subject, however, to the terms of any assignment by which owners may convey the lands and or their rights to receive royalties herein specified.

Hereby relinquishing and waiving all rights under and by virtue of the homestead exemption laws of said State where said land is situated.

This Agreement shall be binding upon and inure to the benefit of the heirs, successors and assigns of the parties hereto, however, Lessee may make no assignment without consent of Lessor, but such consent may not be unreasonably withheld.

T.E.G.
J.D.M.

Lessor: /s/ John D. Manke

/s/ Margaret J. Manke

McAlester Fuel Company

Lessee: /s/ Tom E. Garrard
By: Tom E. Garrard, Vice-President

STATE OF WYOMING)
NATRONA) ss.
COUNTY OF)

BE IT REMEMBERED, That on this 1st day of February A.D., 1957, before me, a Notary Public, in and for said County and State, personally appeared

John D. Manke and Margaret J. Manke

to me known to be the identical persons described in and who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

My commission expires December 5, 1958 /s/ Mrs. Gertrude S. Jones Notary Public

(SEAL)

CORPORATION ACKNOWLEDGMENT

STATE OF WYOMING County of Natrona ss:

On this 1st day of February ,A.D., 1957, before me, the undersigned, a Notary Public in and for the county and state aforesaid, personally appeared TOM E. GARRARD to me known to be the identical person who signed the name of the maker thereof to the within and foregoing instruments as its VICE-PRESIDENT and acknowledged to me that he executed the same as his free and voluntary act and deed, and as the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth.

Given under my hand and seal the day and year last above written.

My commission expires: December 5, 1958 /s/ Mrs. Gertrude S. Jones Notary Public

(SEAL)

RECORDING INFORMATION:

Recorded in Book 41 M, Pages 129-134, County of Fall River, State of South Dakota 10:45 A.M., February 4, 1957

OFFICIAL FILE COPY
D M E A
RECEIVED MAY 10 1957

DATE	[illegible]	CODE

COPY

Form - A

MINING LEASE

THIS AGREEMENT, made and entered into this 31st day of January, 1957, by and between JAMES G. RAIN of Fall River County, South Dakota, hereinafter referred to as "Lessor" (whether one or more) and McAlester Fuel Company, a corporation of the State of Delaware hereinafter referred to as "Lessee"; WITNESSETH:

WHEREAS, the Lessor is the owner of the mineral content, or the owner or Lessee of the surface, and The United States of America is the owner of the balance of the mineral content of certain lands situated in Fall River County, State of South Dakota to-wit:

Northwest ¼, the south ½, Section 1; the east ½ of the northwest ¼, the west ½ and the southeast ¼ of the northeast ¼, the east ½ of the southwest ¼, the southeast ¼, Section 12; all in Twp. 9S. Range 3E.

It being understood that all the lands above described are owned, as to surface and minerals, by the Lessor; totaling 920.44 acres.

WHEREAS, Lessee is in the process of exploring for uranium, for the purpose of locating certain of the lands open to location under the United States Mining Laws; and

WHEREAS, Lessee is desirous of leasing from Lessor that portion of the lands of which Lessor owns the mineral content for the purpose of exploring, developing, and marketing uranium and associated minerals;

NOW THEREFORE, in consideration of the premises and other valuable considerations hereinafter mentioned, it is hereby agreed as follows:

1. For and in consideration of the sum of one hundred and no/00 Dollars ($ 100.00) in hand paid and of the covenants and agreements of Lessee herein contained, Lessor does hereby grant and lease to the Lessee the exclusive right and privilege to explore for, develop, mine, extract, remove from the alluvium soil or earth, or any sedimentary formation of rocks, or intrusive or igneous dike, vein, or fissure and dispose of all the uranium, thorium, and any other fissionable material

together with vandium, manganese, and non-fissionable materials associated with fissionable materials hereinafter referred to as "Leased Minerals" in or under the lands above described, insofar as those lands in which the Lessor is the owner of the mineral content, together with the exclusive right to enter upon, for the purpose of exploring and filing claims, to aforesaid minerals, in accordance with the United States Mining Laws and other pertinent laws, rules and regulations, on those lands whereon Lessor is the owner of or controls the surface title, the mineral content of which remains in the United States or others holding thereunder rights to the mineral content. Lessor also grants unto the Lessee the right to use so much of the surface of all the lands described as may be reasonably required in the exercise of the rights herein granted, but Lessee agrees to pay Lessor reasonable damages for injury to Lessor's lands directly occasioned by Lessee's operations thereon and to consult with Lessor in regard to location of roads and camp sites.

Provided that full rights of ingress and egress and way-leaving and haulage through, under and over the lands herein leased is granted to Lessee and these rights and the right to maintain and operate underground mine shafts and installations may be continued in perpetuity after the expiration of this lease without other consideration that the payment of an annual rental of one hundred ($100.00) Dollars.

2. The term of the lease shall be for a period of two (2) years from the date hereof and so long thereafter as payments to Lessor are made hereunder, or as leased minerals, or any of them, shall be mined or marketed hereunder, or operations therefor shall be continued without any cessations thereof of more than ninety (90) days each; it being understood and agreed, however, that notwithstanding anything to the contrary herein contained, if the United States of America, or its duly authorized buyers or representative shall suspend buying of Leased Minerals for a period of time, and there is nor other market the term of this lease shall continue during such period of suspend buying and shall not be subject to cancellation by Lessor for failure of Lessee to market Leased Minerals.

3. On the second anniversary date, when this lease would otherwise expire, and annually thereafter on the anniversary date, Lessee may pay to Lessor a sum of money amounting to $1.00 per acre of demised land wherein Lessor now owns the mineral content, as minimum advance royalty. Such a payment if made will act to extend the term of this lease for an additional year from the date thereof, but Lessee will be entitled to credit on all money so paid on production royalties which may become due in the future, except that if this lease is terminated without such production

of ore, Lessee forfeits any right to the said credit or money.

4. The following royalties shall be paid to Lessor with respect to ores mined and marketed by Lessee from the lands covered by this mining lease:

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
Less than 0.3%	5%	0.65 to 0.75%	9½%
0.3 to 0.35%	5½%	0.75 to 0.85%	10½%
0.35 to 0.45%	6½%	0.85 to 0.95%	11½%
0.45 to 0.55%	7½%	0.95 to 1.50%	12½%
0.55 to 0.65%	8½%	1.50 to 2.50%	13½%

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
2.50 to 3.50%	14½%	6.50 to 7.50%	18½%
3.50 to 4.50%	15½%	7.50 to 8.50%	19½%
4.50 to 5.50%	16½%	8.50 to 9.50%	20½%
5.50 to 6.50%	17½%	9.50 and over	21%

Lessor shall be paid the foregoing applicable royalty percentages of the field market price at the mine, including bonus payments and premiums, but excluding allowances for transportation and development, as paid by the Atomic Energy Commission or other Government authorized agency or mill or in the absence thereof at the current field market price for all crude ores mined and marketed each month by Lessee from--

(i) lands covered by this mining lease, the mineral content of which is owned by the United States of America and the title to the surface of which is owned by Lessor; provided, however, that there shall first be deducted from such royalties to be paid Lessor hereunder, any royalties or payments that are, or may become, payable to any third party (The United States of America) on account of the ownership or control of the minerals by any such third party, it being understood and agreed, further, that the royalties or payments that are or may hereafter be paid, or are or may hereafter be required to be paid, to any other parties on account of their ownership or control of the mineral content of the property, shall be paid by Lessee.

(ii) lands covered by this mining lease, the mineral content of which is owned by Lessor; it being understood and agreed, however, that if Lessor owns less than the entire and undivided fee simple estate to the mineral content thereof the royalties herein provided shall be paid to Lessor only in the proportion which Lessor's interest bears to the entire undivided fee; this limitation however shall not apply where Lessor owns surface but the United States of America owns all mineral rights.

5. Lessee agrees to make payment in full to Lessor or to the account of Lessor at the Southern Hills Bank, at Edgemont, S. Dak.

, on or before the 20th day of the calendar month succeeding the month of payment by Buyer for all said leased minerals mined and marketed from the lands and to furnish sworn monthly statements therewith showing in tons or cubic yards, or such other measure of quantity as may be pertinent to the amount of all minerals mined and marketed. These statements are to be subject to verification by examination of the books and records of Lessee by Lessor or his agents.

6. Lessee agrees that all mining operations and working shall be conducted in such a manner so as to remove all valuable deposits so far as it is economically possible and that all operations hereunder shall be conducted in a good and workmanlike manner and without unnecessary injury to the property of the Lessor.

7. All taxes, assessments and other burdens validly levied or asserted by any legally constituted public authority against Lessee's property and rights shall be paid in full and as due solely by Lessee. Lessee shall pay, as due, all expense, charg liabilities connected in any manner with its operations hereunder, lienable or otherwis and will protect Lessor and all said property from establishment of any such liability connected with such operations and property payable by Lessee. In the event a severance or production tax, or any tax measured by production from the demised claims, shall be imposed during the term of this lease, Lessee shall pay same and in reimbursement deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the percentages that accrue hereunder to Lessor as royalty covering the production on which the said tax is paid. In the case of taxes measured by production which are collected annually, Lessee shall pay same and thereafter deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the total sum paid hereunder to Lessor as royalty on production over the period for which the tax is assessed, bears to the total sum of money subject to royalty payment for the said period. ~~In the event that any sum due from Lessor under the terms of this paragraph cannot be recovered out of royalty, said sum shall be the joint and several personal obligation of Lessor.~~ T.B.G. J.R.

8. During proper hours and at all times during the continuance of this lease the Lessor or his representative shall be authorized at their own risk to go through any workings on the lands and to examine, inspect and survey the same and make extracts of all books and weight sheets which show in any way the output from the lands, but as regards underground workings, Lessor may enter these, for safeth reasons only in company with Lessee's superintendent or his representatives.

9. It is expressly understood and agreed that the mining rights and privileges granted (~~which may be assigned in whole or in part~~) hereunder shall extend to and include only "leased minerals" and that no rights or privileges respecting oil or gas of any kind or character or other minerals are granted or intended to be granted by this lease. T.E.G. J.R.

10. Lessee shall not be required to recognize any transfer or change of ownership, however accomplished or occurred, until 30 days after Lessee shall have been furnished by registered mail with the original, or a photostatic or certified copy of the recorded instrument or instruments or of the court records evidencing the same, and no transfer or change of ownership shall operate in anywise to enlarge the obligations or diminish the rights of the Lessee.

11. Default on the part of Lessee in full reasonable compliance with all the provisions hereof shall not thereby render this lease null and void, but in such case Lessor may notify Lessee of such breach and Lessee shall have a period of 30 days thereafter in which to cure such default or if such cannot be cured within such period by exercise of due diligence and all proper methods, Lessee shall have that necessary period after such notice in which to cure such default through timely exercise of such diligence and methods. If the default has not been cured within the applicable period then upon the expiration of such period this lease shall, at the option of Lessor, terminate if Lessor shall give Lessee written notice thereof within 30 days thereafter.

12. Lessor designates JAMES G. RABY of Edgemont, South Dakota, as the party to whom all notices should be directed under the terms of this lease. Lessee designates McAlester Fuel Company, McAlester, Oklahoma, as the party to whom all notices to it should be directed under the terms of this lease.

13. Lessee may at any time and from time to time execute and deliver to Lessor or place of record, release or releases covering all or any portion or portions of the lands described, and thereby surrender this lease as to such portion or portions and terminate from and after the date of surrender all obligations as to acreage surrendered

14. Lessor hereby warrants that it has good and valid title as set forth above to the leased premises and all rights necessary to enter into this agreement; that said premises are free and clear of all liens and encumbrances; that it will, at its own expense, defend the right and title of Lessee in and to the same under this agreement against all persons; and that it will indemnify and hold harmless Lessee for and against any and all expense incurred by Lessee by reason of any dispute, controversy,

litigation or curative title work required as to the right and title of Lessee hereby granted. In the event Lessor shall fail to conduct such defense Lessee may on its own behalf undertake such defense. Lessee may, at its option, deduct any expenses incurred by it in undertaking such defense or incurred by it by reason of any such dispute, controversy, litigation or curative title work, from any royalties or rental payable to Lessor hereunder.

15. Upon the expiration of this lease, Lessee shall, if requested to do so within 30 days thereafter, assign to Lessor its then right, title, and interest, if any, in any mining claim located upon the lands, and quitclaim to Lessor, any mining claim which has been pursued to patent by Lessee upon the lands.

16. Lessee agrees that it will so conduct its operations as to present the least practical interference with farming or ranching operations of Lessor or his tenants; to fence off dangerous excavations or shafts; to keep closed gates closed or to install cattle guards; not to dig assessment pits to validate claims; to notify Lessor of any discoveries of underground water, and to permit Lessor to complete such discoveries as water wells unless this will interfere with exploration or mining.

17. In the event of any forfeiture or other termination of this agreement, Lessee shall have the right to enter and remove from the leased premises all its property of any kind whatsoever situated thereon, including but not limited to all machinery, equipment, materials, buildings, structures, tracks, and improvements, said right to continue for a period of six (6) months, or for such extension thereof as Lessors may grant.

18. Should either party hereto be delayed in or prevented, in whole or in part, from performing any obligation or conditions hereunder or from exercising its rights (including the rights to mine, market and conduct operations therefor) by reason of or as a result of any force majeure, such party shall be excused from performing such obligations or conditions and the term of this lease shall be extended and continued while such party is so delayed or prevented and for 60 days thereafter. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or other industrial disturbances, acts of public enemy, blockades, wars, insurrections, riots, epidemics, landslides, earthquakes, fires, storms, floods, washouts, arrests, title disputes, litigation, restraints of government, either Federal or State, civil or military, civil disturbances, explosions, inability to obtain necessary materials, supplies, labor or permits due to existing or future rules, regulations, orders, laws or proclamations, either Federal or State, civil or military, and causes beyond control of such party.

19. It is specifically agreed that this is a lease in block, and that production royalties paid under paragraph 4, above, will be payable to the person or persons owning the total lands herein leased, subject to release under paragraph 13, in proportion to their ownership of the surface of the said lands, subject, however, to the terms of any assignment by which owners may convey the lands and or their rights to receive royalties herein specified.

Hereby relinquishing and waiving all rights under and by virtue of the homestead exemption laws of said State where said land is situated.

This Agreement shall be binding upon and inure to the benefit of the heirs, successors and assigns of the parties hereto. And this lease shall not be assigned without the written consent of the lessor herein, but that said lessor shall not unreasonably withhold his consent to an assignment.

Lessor: /s/ James G. Roby

_____

_____

_____

_____

McAlester Fuel Company

Lessee: /s/ Tom E. Garrard
By: Tom E. Garrard, Vice-President

STATE OF SOUTH DAKOTA)
) ss.
COUNTY OF FALL RIVER)

BE IT REMEMBERED, That on this 31st day of January A.D., 1957, before me, a Notary Public, in and for said County and State, personally appeared

JAMES S. RADY of Edgemont, South Dakota

to me known to be the identical person described in and who executed the within and foregoing instrument and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

My commission expires January 8, 1961 /s/ Paul H. Russell Notary Public

(SEAL)

CORPORATION ACKNOWLEDGMENT

STATE OF SOUTH DAKOTA, County of Fall River, ss:

On this 31st day of January ,A.D., 19 57 , before me, the undersigned, a Notary Public in and for the county and state aforesaid, personally appeared TOM E. GARRARD to me known to be the identical person who signed the name of the maker thereof to the within and foregoing instruments as its VICE-PRESIDENT and acknowledged to me that he executed the same as his free and voluntary act and deed, and as the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth.

Given under my hand and seal the day and year last above written.

My commission expires: January 8, 1961 /s/ Paul H. Russell Notary Public

(SEAL)

RECORDING INFORMATION

Recorded in Book 41 Misc., Page 134- 139, County of Fall River, State of South Dakota 10:45 A.M., February 4, 1957

COPY

Form - A

MINING LEASE

THIS AGREEMENT, made and entered into this 16th day of February 19 57, by and between JAMES S. RADY, a single man of Edgemont, South Dak. ,hereinafter referred to as "Lessor" (whether one or more) and McAlester Fuel Company, a corporation of the State of Delaware hereinafter referred to as "Lessee"; WITNESSETH:

WHEREAS, the Lessor is the owner of the mineral content, or the owner or Lessee of the surface, and The United States of America is the owner of the balance of the mineral content of certain lands situated in Fall River County, State of South Dakota to-wit:

The NE¼ of the NW¼, north ½ of the NE¼, Section 13; Twp. 9S Range 3E, BHM.

Totaling 120.0 acres more or less

WHEREAS, Lessee is in the process of exploring for uranium, for the purpose of locating certain of the lands open to location under the United States Mining Laws; and

WHEREAS, Lessee is desirous of leasing from Lessor that portion of the lands of which Lessor owns the mineral content for the purpose of exploring, developing, and marketing uranium and associated minerals;

NOW THEREFORE, in consideration of the premises and other valuable considerations hereinafter mentioned, it is hereby agreed as follows:

1. For and in consideration of the sum of one hundred and no/00 Dollars ($ 100.00) in hand paid and of the covenants and agreements of Lessee herein contained, Lessor does hereby grant and lease to the Lessee the exclusive right and privilege to explore for, develop, mine, extract, remove from the alluvium soil or earth, or any sedimentary formation of rocks, or intrusive or igneous dike, vein, or fissure and dispose of all the uranium, thorium, and any other fissionable material

together with vanadium, manganese, and non-fissionable materials associated with fissionable materials hereinafter referred to as "Leased Minerals" in or under the lands above described, (insofar as that portion of those lands in which the Lessor is the owner of the mineral content is concerned) together with the exclusive right to enter upon, for the purpose of exploring and filing claims, to aforesaid minerals, in accordance with the United States Mining Laws and other pertinent laws, rules and regulations, on those lands whereon Lessor is the owner of or controls the surface title, the mineral content of which remains in the United States or others holding thereunder rights to the mineral content. Lessor also grants unto the Lessee the right to use so much of the surface of all the lands described as may be reasonably required in the exercise of the rights herein granted, but Lessee agrees to pay Lessor reasonable damages for injury to Lessor's lands directly occasioned by Lessee's operations thereon and to consult with Lessor in regard to location of roads and camp sites.

Provided that full rights of ingress and egress and way-leaving and haulage through, under and over the lands herein leased is granted to Lessee and these rights and the right to maintain and operate underground mine shafts and installations may be continued in perpetuity after the expiration of this lease without other consideration than the payment of an annual rental of $50.00 Dollars.

2. The term of the lease shall be for a period of two (2) years from the date hereof and so long thereafter as payments to Lessor are made hereunder, or as leased minerals, or any of them, shall be mined or marketed hereunder, or operations thereof shall be continued without any cessations thereof of more than ninety (90) days each; it being understood and agreed, however, that notwithstanding anything to the contrary herein contained, if the United States of America, or its duly authorized buyers or representative shall suspend buying of Leased Minerals for a period of time, and there is no other market, the term of this lease shall continue during such period of suspended buying and shall not be subject to cancellation by Lessor for failure of Lessee to market Leased Minerals.

3. On the second anniversary date, when this lease would otherwise expire, and annually thereafter on the anniversary date, Lessee may pay to Lessor, or deposit to his credit in the Southern Hills Bank of Edgemont, South Dak. a sum of money amounting to $1.00 per acre of the demised land wherein Lessor now owns the mineral contents, as minimum advance royalty. Such a payment if made will act to extend the term of this lease for an additional year from the date thereof, but Lessee will be entitled to credit on all money so paid on production royalties which may become due in the future, except that if this lease is terminated without such production

of ore, Lessee forfeits any right to the said credit or money.

4. The following royalties shall be paid to Lessor with respect to ores mined and marketed by Lessee from the lands covered by this mining lease:

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
Less than 0.3%	5%	0.65 to 0.75%	9½%
0.3 to 0.35%	5½%	0.75 to 0.85%	10½%
0.35 to 0.45%	6½%	0.85 to 0.95%	11½%
0.45 to 0.55%	7½%	0.95 to 1.50%	12½%
0.55 to 0.65%	8½%	1.50 to 2.50%	13½%

Uranium U_3O_8 Settlement Percent	Royalty	Uranium U_3O_8 Settlement Percent	Royalty
2.50 to 3.50%	14½%	6.50 to 7.50%	18½%
3.50 to 4.50%	15½%	7.50 to 8.50%	19½%
4.50 to 5.50%	16½%	8.50 to 9.50%	20½%
5.50 to 6.50%	17½%	9.50 and over	21%

Lessor shall be paid the foregoing applicable royalty percentages of the field market price at the mine, including bonus payments and premiums, but excluding allowances for transportation and development, as paid by the Atomic Energy Commission or other Government authorized agency or mill or in the absence thereof at the current field market price for all crude ores mined and marketed each month by Lessee from--

(i) lands covered by this mining lease, the mineral content of which is owned by the United States of America and the title to the surface of which is owned by Lessor; provided, however, that there shall first be deducted from such royalties to be paid Lessor hereunder, any royalties or payments that are, or may become, payable to any third party (The United States of America) on account of the ownership or control of the minerals by any such third party, it being understood and agreed, further, that the royalties or payments that are or may hereafter be paid, or are or may hereafter be required to be paid, to any other parties on account of their ownership or control of the mineral content of the property, shall be paid by Lessee.

(ii) lands covered by this mining lease, the mineral content of which is owned by Lessor; it being understood and agreed, however, that if Lessor owns less than the entire and undivided fee simple estate to the mineral content thereof the royalties herein provided shall be paid to Lessor only in the proportion which Lessor's interest bears to the entire undivided fee; this limitation however shall not apply where Lessor owns surface but the United States of America owns all mineral rights.

5. Lessee agrees to make payment in full to Lessor or to the account of Lessor at the Southern Hills Bank, at Edgemont, South Dak.

, on or before the 20th day of the calendar month succeeding the month of payment by Buyer for all said leased minerals mined and marketed from the lands and to furnish sworn monthly statements therewith showing in tons or cubic yards, or such other measure of quantity as may be pertinent to the amount of all minerals mined and marketed. These statements are to be subject to verification by examination of the books and records of Lessee by Lessor or his agents.

6. Lessee agrees that all mining operations and working shall be conducted in such a manner so as to remove all valuable deposits so far as it is economically possible and that all operations hereunder shall be conducted in a good and workmanlike manner and without unnecessary injury to the property of the Lessor.

7. All taxes, assessments and other burdens validly levied or asserted by any legally constituted public authority against Lessee's property and rights shall be paid in full and as due solely by Lessee. Lessee shall pay, as due, all expense, charges and liabilities connected in any manner with its operations hereunder. In the event a severance or production tax, or any tax measured by production from the demised claims, shall be imposed during the term of this lease, Lessee shall pay same and in reimbursement deduct from royalty due Lessor hereunder the same proportion of such taxes paid as the percentages that accrue hereunder to Lessor as royalty covering the production on which the said tax is paid. In the case of taxes measured by production which are collected annually, Lessee may pay same for the account of both Lessee and Lessor and thereafter may deduct from royalty due Lessor hereunder, ~~or bill Lessor for his share of such taxes.~~ T.E.G. J.R.

8. During proper hours and at all times during the continuance of this lease the Lessor or his representative shall be authorized, at their own risk, to go through any workings on the lands and to examine, inspect and survey the same and make extracts of all books and weight sheets which show in any way the output from the lands, but as regards underground workings, Lessor may enter these, for safety reasons, only in company with Lessee's superintendent or his representatives.

9. It is expressly understood and agreed that the mining rights and privileges granted (which may be assigned in whole or in part) hereunder shall extend to and include only "leased minerals" and that no rights or privileges respecting oil or gas of any kind or character or other minerals are granted or intended to be granted by this lease.

10. Lessee shall not be required to recognize any transfer or change of ownership, however accomplished or occurred, until 30 days after Lessee shall have been furnished by registered mail with the original, or a photostatic or certified copy of the recorded instrument or instruments or of the court records evidencing the same, and no transfer or change of ownership shall operate in anywise to enlarge the obligations or diminish the rights of the Lessee.

11. Default on the part of Lessee in full reasonable compliance with all the provisions hereof shall not thereby render this lease null and void, but in such case Lessor may notify Lessee of such breach and Lessee shall have a period of 30 days thereafter in which to cure such default or if such cannot be cured within such period by exercise of due diligence and all proper methods, Lessee shall have that necessary period after such notice in which to cure such default through timely exercise of such diligence and methods. If the default has not been cured within the applicable period then upon the expiration of such period this lease shall, at the option of Lessor, terminate if Lessor shall give Lessee written notice thereof within 30 days thereafter.

12. Lessor designates JAMES G. RABY of Edgemont, South Dak. as the party to whom all notices should be directed under the terms of this lease. Lessee designates McAlester Fuel Company, McAlester, Oklahoma, as the party to whom all notices to it should be directed under the terms of this lease.

13. Lessee may at any time and from time to time execute and deliver to Lessor or place of record, release or releases covering all or any portion or portions of the lands described, and thereby surrender this lease as to such portion or portions and terminate from and after the date of surrender all obligations as to acreage surrendered

14. Lessor hereby warrants that it has good and valid title as set forth above to the leased premises and all rights necessary to enter into this agreement; that said premises are free and clear of all liens and encumbrances; that it will, at its own expense, defend the right and title of Lessee in and to the same under this agreement against all persons; and that it will indemnify and hold harmless Lessee for and against any and all expense incurred by Lessee by reason of any dispute, controversy,

litigation or curative title work required as to the right and title of Lessee hereby granted. In the event Lessor shall fail to conduct such defense Lessee may on its own behalf undertake such defense. Lessee may, at its option, deduct any expenses incurred by it in undertaking such defense or incurred by it by reason of any such dispute, controversy, litigation or curative title work, from any royalties or rental payable to Lessor hereunder.

15. Upon the expiration of this lease, Lessee shall, if requested to do so within 30 days thereafter, assign to Lessor its then right, title, and interest, if any, in any mining claim located upon the lands, and quitclaim to Lessor, any mining claim which has been pursued to patent by Lessee upon the lands.

16. Lessee agrees that it will so conduct its operations as to present the least practical interference with farming or ranching operations of Lessor or his tenants; to fence off dangerous excavations or shafts; to keep closed gates closed or to install cattle guards; not to dig assessment pits to validate claims; to notify Lessor of any discoveries of underground water, and to permit Lessor to complete such discoveries as water wells unless this will interfere with exploration or mining.

17. In the event of any forfeiture or other termination of this agreement, Lessee shall have the right to enter and remove from the leased premises all its property of any kind whatsoever situated thereon, including but not limited to all machinery, equipment, materials, buildings, structures, tracks, and improvements, said right to continue for a period of six (6) months, or for such extension thereof as Lessors may grant.

18. Should either party hereto be delayed in or prevented, in whole or in part, from performing any obligation or conditions hereunder or from exercising its rights (including the rights to mine, market and conduct operations therefor) by reason of or as a result of any force majeure, such party shall be excused from performing such obligations or conditions and the term of this lease shall be extended and continued while such party is so delayed or prevented and for 60 days thereafter. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or other industrial disturbances, acts of public enemy, blockades, wars, insurrections, riots, epidemics, landslides, earthquakes, fires, storms, floods, washouts, arrests, title disputes, litigation, restraints of government, either Federal or State, civil or military, civil disturbances, explosions, inability to obtain necessary materials, supplies, labor or permits due to existing or future rules, regulations, orders, laws or proclamations, either Federal or State, civil or military, and causes beyond control of such party.

18. a. There are presently organized administrative agencies of the United States of America for the purpose of assisting in financing development, exploration, and mining of materials designated as strategic and critical. It is contemplated by the parties that assistance may or will be sought from such agencies by the Lessee. That such loans are generally known as D. M. E. A. loans, and a lien for repayment will attach to future production from said premises. If such assistance is sought, the Lessors herein grant consent.

19. It is specifically agreed that this is a lease in block, and that production royalties paid under paragraph 4, above, will be payable to the person or persons owning the total lands herein leased, subject to release under paragraph 13, in proportion to their ownership of the surface of the said lands, subject, however, to the terms of any assignment by which owners may convey the lands and or their rights to receive royalties herein specified.

Hereby relinquishing and waiving all rights under and by virtue of the homestead exemption laws of said State where said land is situated.

This Agreement shall be binding upon and inure to the benefit of the heirs, successors and assigns of the parties hereto, and this lease shall not be assigned by the lessee without the written consent of the lessors, but lessors shall not unreasonably withhold consent.

Lessor: /s/ James S. Raby

McAlester Fuel Company

ATTEST:

/s/ Carl Green
Secretary

Lessee: /s/ Tom E. Garrard
By: Tom E. Garrard, Vice-President

(SEAL)

STATE OF SOUTH DAKOTA)
) ss.
COUNTY OF FALL RIVER)

BE IT REMEMBERED, That on this 16 day of Feb. A.D., 19 57 , before me, a Notary Public, in and for said County and State, personally appeared

(JAMES S. RAEY)

to me known to be the identical person described in and who executed the within and foregoing instrument and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

My commission expires Sept. 1957 /s/ Minnie Dawson Notary Public

(SEAL)

CORPORATION ACKNOWLEDGMENT

STATE OF ~~SOUTH DAKOTA~~ OKLAHOMA, County of ~~Fall River~~ Pittsburg, ss:

On this 16th day of February ,A.D., 1957 , before me, the undersigned, a Notary Public in and for the county and state aforesaid, personally appeared TOM E. GARRARD to me known to be the identical person who signed the name of the maker thereof to the within and foregoing instruments as its VICE-PRESIDENT and acknowledged to me that he executed the same as his free and voluntary act and deed, and as the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth.

Given under my hand and seal the day and year last above written.

My commission expires: 12/29/57 /s/ Don C. Phelps Notary Public

(SEAL)

RECORDING INFORMATION:

Recorded in Book 41 M, Page 151-156, County of Fall River, State of South Dakota 10:45 A.M., February 25, 1957

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After completion of government exploration, private drilling in the vicinity of core hole GS–16 (fig. 4) extended the deposit found by the Geological Survey, and revealed two additional deposits, one of which contains a significant amount of mineralized rock with as much as 3.0 percent eU_3O_8.

CONCLUSIONS

A possible relationship between the relative abundance of calcium carbonate as a cementing material and the concentration of uranium seems to have been confirmed by the results of this preliminary exploration. As inferred, uranium is concentrated in carbonate-poor sandstone marginal to sandstone tightly cemented by calcium carbonate.

If this relationship has a general validity, it should be possible to locate similar deposits by selecting areas for prospecting where poorly cemented and friable sandstone grades into hard, tightly cemented calcareous sandstone.

LITERATURE CITED

Daniels, Farrington, Boyd, C. A., and Saunders, D. F., 1953, Thermoluminescence as a research tool: Science, v. 117, p. 343–349.

Leverenz, H. W., 1950, Introduction to the luminescence of solids: New York, John Wiley and Sons.

Inferred Relationship of Some Uranium Deposits and Calcium Carbonate Cement in Southern Black Hills, South Dakota

By GARLAND B. GOTT

CONTRIBUTIONS TO THE GEOLOGY OF URANIUM

GEOLOGICAL SURVEY BULLETIN 1046–A

This report concerns work done on behalf of the U. S. Atomic Energy Commission and is published with the permission of the Commission

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1956

UNITED STATES DEPARTMENT OF THE INTERIOR

Fred A. Seaton, *Secretary*

GEOLOGICAL SURVEY

Thomas B. Nolan, *Director*

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Gamma-ray log interpretation

[No casing used]

GS hole no.	Hole logged at depth indicated (feet)	Anomaly detected at depth indicated (feet)	Zone of anomaly (thickness in feet)	Counts per minute	Grade (percent) eU_3O_8
2	11.0–75.0				
4	11.0–157.3				
5	10.0–246.1				
6	10.1–180.0				
10	8.4–141.3	118.3–121.5	3.2	300	<0.005
		124.5–125.2	.7	300	<.010
		128.1–129.0	.9	200	<.005
		129.0–133.3	4.3	1,300	.026
15	10.4–183.0				
16	9.4–196.5	110.0–111.0	1.0	1,600	.040
		114.6–115.4	.8	800	.029
		116.0–117.5	1.5	2,400	.058
		117.5–120.7	3.2	540	.011
		120.7–121.9	1.2	1,300	.030
		123.3–124.3	1.0	7,900	.35
		124.3–125.5	1.2	1,000	.023
		125.5–128.2	2.7	300	<.010
		169.1–170.4	1.3	800	.022
17	11.0–130.0				

Polished thin sections of the mineralized core from GS–16 contain fine-grained uraninite in aggregates 1–2 mm in length associated with pyrite, iron oxides, calcite, and clay minerals. The aggregates of uraninite are concentrated around pods of green pyritic clay in a quartzose sandstone. The pyrite near the margins of the pods is euhedral in contrast to the massive pyrite within the pods. The relations of the minerals suggest that the pods of pyritic clay were formed in place before deposition of the uraninite. The occurrence of massive and euhedral pyrite suggests two generations of pyrite, the euhedral type originating, perhaps, at the time of deposition of the uraninite. The relative ages of the pyrite and calcite are not clear. The iron oxides were deposited after the pyrite. The close association of all of these minerals interstitial to the quartz grains suggests that they are essentially contemporaneous.

In addition to the minerals listed above, black prismatic crystals of a uranium mineral were found in rotary cuttings from a privately drilled hole located near GS–16. The crystals are less than 1 mm in length and yield a positive reaction in the flux test for uranium. Under the microscope, the crystals are seen to be dark red, and to have high birefringence, an index of refraction greater than 1.80 and parallel extinction. The crystals are combustible and are insoluble in acid. The X-ray diffraction pattern is not similar to those of the well-known dark uranium minerals. Quantitative spectrographic analyses show that the material contains 3 percent of uranium and 44 percent of vanadium. The combustibility of this mineral indicates that it is most probably one of the organo-metallic compounds.

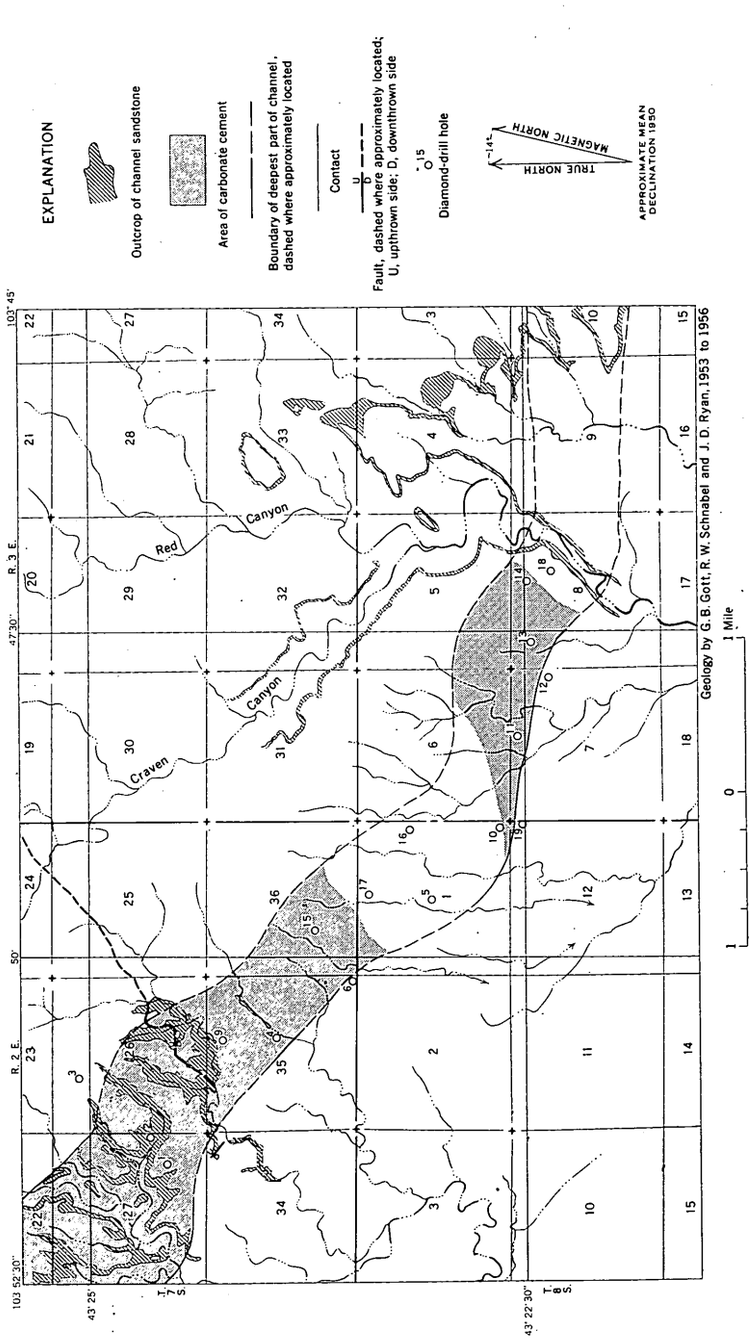

FIGURE 4.—Map showing channel sandstone, distribution of carbonate cement, and location of diamond-drill holes in parts of Edgemont NE and Edgemont quadrangles, Fall River County, S. Dak.

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4. Map showing channel sandstone, distribution of carbonate cement, and location of diamond-drill holes in parts of the Edgemont NE and Edgemont quadrangles, Fall River County, S. Dak	6

25 miles from the southern part of the Flint Hill quadrangle to the southeastern part of the Harney Peak 3 SW quadrangle (fig. 3). Throughout this distance the channel has been scoured as much as 100 feet through or into a sequence of varigated impervious mudstones. The sandstone is fine- to coarse-grained, normally noncarbonaceous, poorly sorted, of extremely variable texture, and cross stratified. The normal type of cross stratification consists of tabular sets of very thinly bedded cross strata from a few inches to two or three feet thick separated by 1- to 2-inch thick horizontal strata. The cross strata generally dip to the northwest. Along most of the length of this channel evidence has been found that indicates that the deepest scour was completely filled and that the stream-borne material was then spread out over a relatively wide plain, in some places several miles wide.

As shown on figure 3 the channel sandstone is in places cemented with calcium carbonate, the most extensive cementation being in the southwestern part of the Edgemont NE quadrangle (fig. 4). Because of the extent of the carbonate cement, this area was selected for the experimental drilling. The sandstone is well cemented where exposed in the northwestern part of this area in secs. 26, 27, and 35, T. 7 S., R. 2 E., but for a distance of 3½ miles to the southeast it is buried beneath younger rocks. Where the sandstone is again exposed in sec. 8, T. 8 S., R. 3 E., it is relatively free of carbonate cement. The immediate objective of the core-drilling, therefore, was to determine the limits of the abundant carbonate cement and the inferred presence of uranium in the area marginal to the area of abundant carbonate.

RESULTS OF EXPLORATION

As a result of exploration within this area, the buried portion of the channel and the extent of the carbonate-rich part of the sandstone were approximately delineated (fig. 4). Within the buried portion of the channel the sandstone was found to be carbonate-free or carbonate-poor through sec. 1, T. 8 S., R. 2 E. Drilling at GS–5, GS–16, and GS–17 penetrated the channel sandstone in the carbonate-poor segment. GS–16 penetrated ore-grade uranium in the top part of the channel sandstone and GS–5 and GS–17 were barren. GS–10 evidently penetrated the channel sandstone near the southeast margin of the carbonate-poor segment and showed low-grade uranium of similar mineralogy to that found in GS–16. GS–11, GS–13, and GS–14 farther to the east penetrated heavy carbonate cementation and were barren. GS–18 penetrated only an insignificant amount of carbonate cement and was also barren of ore-grade material although very sparsely disseminated black uranium minerals were found in the core. The results of the drilling are summarized in the table below.

that the solution depositing the calcium carbonate cement also precipitated variable amounts of uranium and (or) its decay products. Thus, calcium carbonate cement that exhibits variable or banded thermoluminescence would suggest that the original solution from which carbonate was precipitated also carried uranium, and further that such thermoluminescent calcium carbonate, whether banded or not, characterizes rocks through which uranium-bearing solutions have moved.

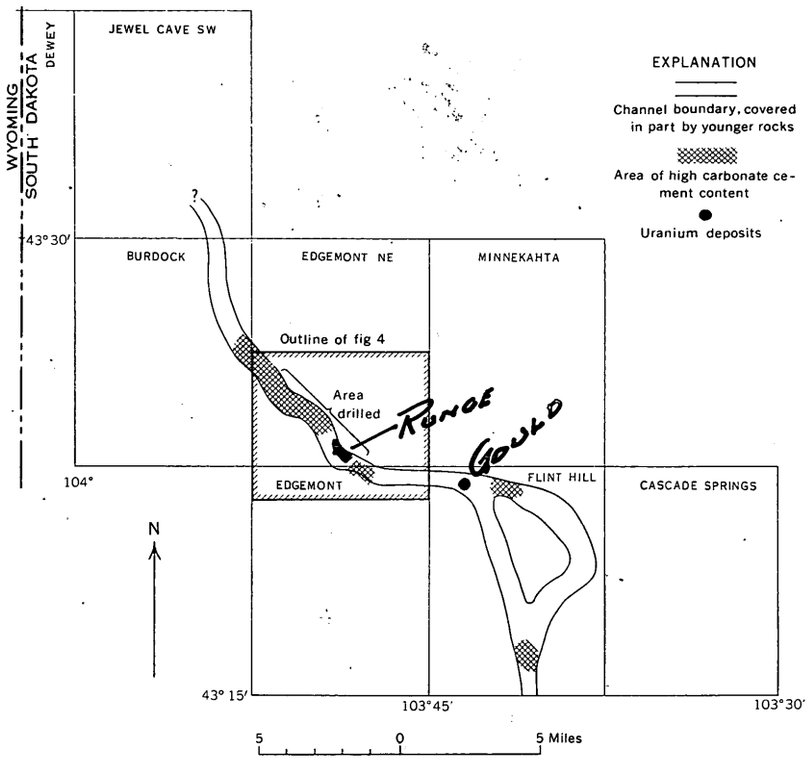

FIGURE 3.—Map showing distribution of carbonate cement and uranium deposits in channel sandstone, Fall River County, S. Dak.

To test the inference that a significant concentration of uranium should be found marginal to a sandstone that is tightly cemented with calcium carbonate, limited exploration by core drilling was done where detailed geologic mapping showed an area in which carbonate-rich sandstone graded into a carbonate-poor sandstone.

A sandstone-filled channel in rocks of the Inyan Kara group had been delineated by detailed surface mapping over a distance of about

CONTRIBUTIONS TO THE GEOLOGY OF URANIUM

INFERRED RELATIONSHIP OF SOME URANIUM DEPOSITS AND CALCIUM CARBONATE CEMENT IN SOUTHERN BLACK HILLS, S. DAK.

By GARLAND B. GOTT

ABSTRACT

Evidence resulting from geologic mapping in the southern Black Hills indicates that the areas marginal to some of the larger carbonate-cemented sandstones are a favorable geochemical environment for the localization of uranium deposits. To determine whether these favorable environments are predictable, a limited experimental core-drilling program was carried out. An extensive deposit was discovered in an area marginal to a sandstone well-cemented with calcium carbonate. The deposit has not yet been developed, but from the available data it appears that there is a significant quantity of mineralized rock present containing as much as 3.0 percent eU_3O_8.

INTRODUCTION

The U. S. Geological Survey is currently carrying on geological investigations in the southern Black Hills under the sponsorship of the Division of Raw Materials of the U. S. Atomic Energy Commission. Principal emphasis has been placed on determining the interrelationships among structure, lithology, and geochemical environment that favor the localization of uranium. It is the purpose of this report to set forth preliminary information on the possible relationships between carbonate cements and uranium deposits, and the possible use of these relationships as a guide for prospecting for concealed deposits in the southern Black Hills. Although any conclusions based on this information must be tentative, the results to date are encouraging and, therefore, of interest to those engaged in the search for uranium deposits.

The results reported here are in part based on work by R. W. Schnabel, E. V. Post, Henry Bell, III, and D. A. Brobst.

PLANNING OF EXPLORATION

A large proportion of the uranium deposits in the southern Black Hills occurs in the areas of maximum change in chemical and physical characteristics of the sandstones of the Inyan Kara group of Early Cretaceous age. The interrelationships between changes of structure,

lithology, permeability, and geochemical environment appear to have been influencing or controlling factors in the localization of many of the deposits. As a result of detailed geologic mapping some inconclusive evidence has been found that suggests that one of the favorable geochemical environments is in transitional areas between carbonate-rich and carbonate-poor sandstones.

The inference that uranium is associated with calcium carbonate cements has also been suggested by the pattern of the thermoluminescence of the cements. For a general reference on the techniques used in thermoluminescence studies see Daniels and others (1953). Although much basic work is needed before the significance of this phenomenon can be evaluated, the banded and concretionary-like patterns in the carbonate cements are suggestive. The pattern of thermoluminescence displayed by nodular-shaped masses of sandstone tightly cemented with calcium carbonate is illustrated in figure 2; figure 1 shows a specimen of tightly carbonate cemented sandstone, and figure 2 shows the distribution of thermoluminescence in the

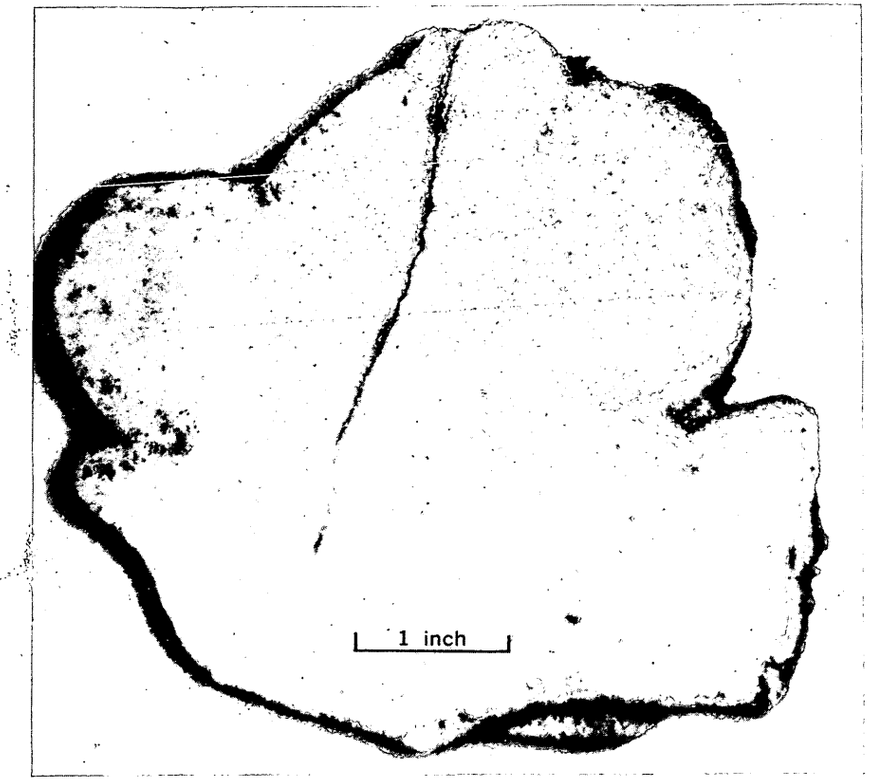

FIGURE 1.—Calcium carbonate cemented specimen.

same specimen. Although in figure 1, the distribution of cement seems to be uniform, the banded pattern of thermoluminescence in figure 2 indicates that the cementation was brought about through various stages of concretionary growth and finally by coalescing of the nodular-shaped masses.

According to Leverenz (1950), thermoluminescence of crystals is proportional to radiation damage. However, the significance of alternating thermoluminescent and nonthermoluminescent bands seems to be open to two interpretations. First, if trace amounts of other elements are present in the calcite crystal lattice, the electron banding in the lattice may be so changed as to permit greater radiation damage for a given amount of radiation. Thus, the intensity of thermoluminescence might reflect the distribution of impurities in the calcite. Alternatively, if the intensity of thermoluminescence is proportional only to the distribution of the radiation source—uranium and (or) its decay products—the banded pattern of thermoluminescence shown in figure 2 could reasonably be interpreted to mean

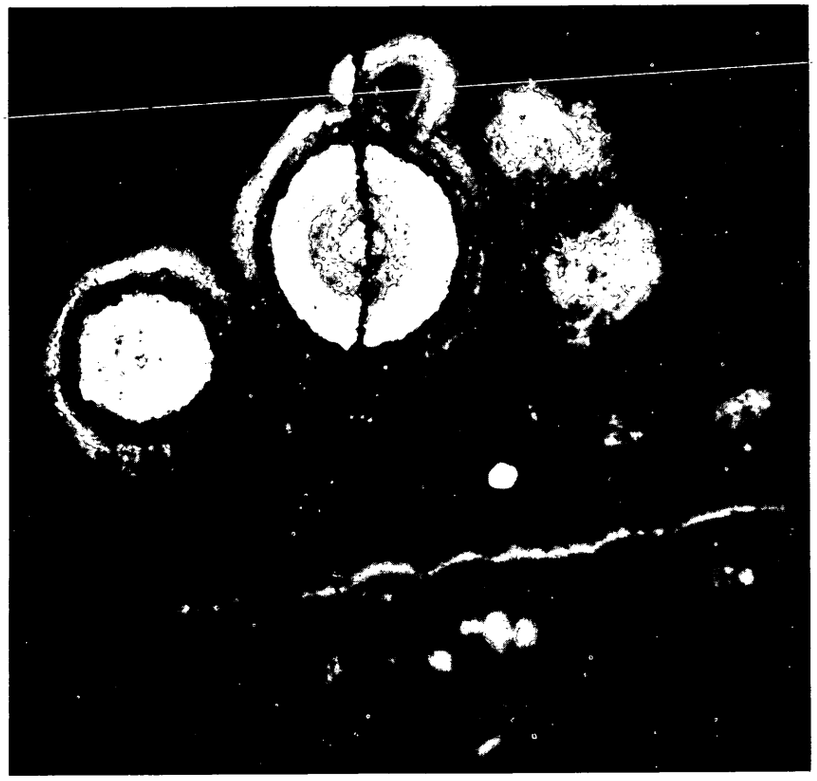

FIGURE 2.—Thermoluminescence of specimen shown in figure 1.

Docket copy

Murphy

Project Summary Report

By: F. M. Murphy January 29, 1959

1. Docket No. DMEA-4742 (Uranium)
Contract No. Idm-E1133

Operator - McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

Operator's Property Rights -

Lessee of the approximately 7,571.730 acres of land which constitute the project area. Nine Consents to Lien and Subordination Agreements were signed by the owners covering a part or the whole of secs. 4, 5, 6, 7, 8, 17, 18, 19, 20, 21, 28, 29, 30, 31, and 32, T. 9 S., R. 4 E., and secs. 1, 12, and 13, T. 9 S., R. 3 E., B.H.M., Fall River County, South Dakota. In addition, the Applicant's unpatented lode mining claims, Star 1 through 247, are included in the project area. A part of these claims cover the above leased tracts presumably to insure the mineral rights; the remainder cover about 964 acres of open land. Hence, the whole project area, a single block, covers about 8,535 acres.

2. Contract dated September 19, 1957

The contract was terminated effective March 12, 1958, by mutual agreement.

Final Reports -

Operator's, dated October 15, 1958, received in Washington October 29, 1958. The report meets the requirements of Article 7(c) of the contract.

Field Team's, dated January 15, 1959, received in Washington January 19, 1959.

3. Work Authorized -

Stage I - 46 holes containing 20,300 feet of non-core drilling.

Stage II - 60 holes containing 26,000 feet of non-core drilling.

Stage III- 15,000 feet of non-core drilling.

Estimated Costs

Bulldozing trails and drill sites, 40 hrs. @ $12.50/hr.	$ 500.00	
Non-core rotary drilling, 61,300 feet @ $1.00/ft.	61,300.00	
Standby time for probing, 102 hrs. @ $10.00/hr.	1,020.00	
Incidental allowance for each foot of drilling, 61,300 feet @ $0.12/ft.	7,356.00	
Chemical analyses for U_3O_8, 560 samples @ $3.50/sample	1,960.00	
Total Estimated Cost		$72,136.00
Government Participation at 75%		$54,102.00

Work Completed - (3 drills used)

Stage I - 46 holes containing 17,581 feet of drilling
Stage II - 37 holes containing 19,579 feet of drilling
Stage III- 9 holes containing 4,830 feet of drilling

Accepted Costs of Work Completed

Non-core drilling, 41990 feet @ $1.00/ft.	$41,900.00	
Standby time, 81 hrs. @ $10.00/hr.	810.00	
Incidental costs, 41,990 feet @ $0.12/ft.	5,038.80	
Chemical assays, 19 @ $3.50 each	66.50	
Total Actual Cost of Project		$47,905.30

4. Work under the contract started November 9, 1957, and was completed on March 12, 1958.

5. Audit Report of Review, dated October 27, 1959.

Total Cost as billed by Operator	$47,905.30
Total Accepted Costs	$47,905.30
Government Participation @ 75%	$35,928.98

6. Certification - not recommended.

7. Excerpts from Joint Final Engineering and Geologic Report by R. U. King, USGS, and Carl Belser, USBM -

The Cheyenne River (with a mean altitude of 3,330 feet) meanders eastward across the middle of the property. Relief in the area is moderate. No bulldozing was required for access roads or drill sites.

The object of the project was to explore for uranium deposits in the potential ore-bearing Fall River and Lakota sandstone members of the Cretaceous Inyan Kara Group of sedimentary rocks.

Uranium deposits are widespread in the Inyan Kara rocks. However, in the immediate vicinity of the subject property only four mines have so far become significant producers: The Gould mine, with about 30,000 tons of yellow oxidized ore from the Upper Lakota sandstone; the Runge mine, which exploits uranium deposits in the Fall River sandstones; and the Accidental and McLeoud mines where significant discoveries have been made in the Lower Lakota sandstone.

The drilling of 92 holes under the subject contract did not result in the discovery of uranium deposits of commercial grade. However, the drilling resulted in outlining a body of mineralized sandstone containing about 1 million tons with a U_3O_8 content of 0.05%. This body is in the Lower Lakota at depths of 450-500 feet below the surface.

The field examiners and Field Team recommend that the project should not be certified.

Comments -

Division of Rare and Miscellaneous Metals:

A review of the reports relating to the subject project indicates that the area was adequately explored. The mineralization discovered in drilling was of the

carnotite type which gives evidence that oxidation extends to the Lower Lakota in the project area. It is possible that if significant uranium deposits existed at one time on the property a part of the values were leached out.

Because of the depth of the mineralized sandstone on the property and because of its low uranium content, it is unlikely that the deposit discovered by DMEA drilling will be mined prior to September 19, 1967, the final date for royalty payments if the project were certified. In view of these factors, the writer concurs in the Field Team's recommendation that the project should not be certified.

F. M. Murphy

F. M. Murphy

DMEA Form 17
Feb. 58

DEFENSE MINERALS EXPLORATION ADMINISTRATION

M

WORK COMPLETED ANALYSIS

After final audit or review report is received, prepare original only and file in official docket

Operator **McAlester Fuel Company**		Actual Cost	✓
State **South Dakota**		Agreed Unit Cost	
Final Report of Audit	✓	Commodity **Uranium**	Docket No. **DMEA-4742**
Final Report of Review	X operators ✓		Contract No. **Idm-E1133**

Operation	Authorized by Contract and Amendments		Completed		Net cost after sale of Government Property
	Units	Cost	Units	Cost	
Drifting & Crosscutting					
Raising					
Shafts					
Winzes					
Drilling (Specify)	61,300'	$69,676.00	41,990'	$47,838.80	$47,838.80
Surface Excavation					
Underground Excavation					
Roads and Trails Bulldozing		500.00		—	—
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify) analyses 4308 @ $3.50/sample		1900.00		66.50	66.50
Totals		$72,136.00		$47,905.30	$47,905.30

* Net cost total must agree with final report of audit or review.

Terminated Aug. 19, 1958
Certification not recommended as grade of uranium too low

Prepared by J. M. Montgomery Date 11/13/58

(X Incomplete)

31398

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
3/1		110
3/1/67	Kirkeno	120
		220

MAR 1 1967

Mr. John D. Manke
P. O. Box E
Edgemont, South Dakota 57735

Re: DMEA-4742 (Uranium)
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota
Contract Idm-E1133

Dear Mr. Manke:

This is in reply to your letter of February 24, 1967, concerning the Government's lien on the property under the subject contract.

Under date of April 22, 1959, you and other owners of leased land under this contract were notified that the Government retained no claim or lien against the property subject to the contract or any future production therefrom, by a copy of a letter of that date to McAlester Fuel Company (copy enclosed).

Sincerely yours,

FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

Enclosure

cc: Director's reading file
Division file
Economic Geology file
OME file
OME reading file
OME Region III

FEJohnson/bih 3/1/67

43683

P. O Box E
Edgemont, South Dakota
February 24, 1967

file ordered C.C.

OFFICIAL COPY
O. M. E.
RECEIVED
FEB 27 1967
DIRECTS CONT.
~~120 M~~
110

Mr. Frank E. Johnson, Chief
Office of Minerals Exploration
Room 4460 Interior Building
U. S. Geological Survey
Department of the Interior
Washington, D. C. 20240

Dear Sir:

I am the owner of certain lands in Fall River County, South Dakota, In 1957, portions of my land, mainly in T9S, R4E, were leased to McAlester Fuel Company, with the lease being cancelled by McAlester in 1959.

I have been informed that according to Mr. William Hasler (OME Region III Office, Denver, Colorado) McAlester Fuel Company entered into a DMEA Contract with the U. S. Government for exploration drilling for uranium on my lands. This was known as the Star Property and was handled under DMEA Document #4742, Contract I-dmE 1133.

Mr. Hasler could find no evidence that the property was ever certified or the DMEA cancelled. I am interested in knowing the status of this DMEA loan and whether or not there are any Government liens, attachments or royalty obligations to my property or minerals in regard to this loan.

Thank you very much.

Sincerely yours,

John D Manke
John D. Manke

jdm:lh

closed - 4/22/59

OFFICIAL FILE COPY

Date	Surname	Code
2/3/59	Murphy	700
2/9	Kowalke	700
Hold until 4/20	Jadlunt	800
4/21	Schlafer	120
		~~110~~
		~~160~~
		220
		700

APR 22 1959

Mr. Frank Hand
and Mrs. Emma Hand
Hot Springs, South Dakota

Re: Docket No. DMEA-4742 (Uranium)
Contract No. Idm-E1133
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. and Mrs. Hand:

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

This correspondence relates to the Consent to Lien and Subordination Agreement signed by you on August 26, 1957, under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

(signed) FRANK E. JOHNSON

ACTING Director

(ph)

Enclosure

FMMurphy/gla
2-3-59
cc to: Director's Reading File
Mr. Murphy
OME Field Team, Region III (2)

Identical letters to:

Byron J. Cox, Hot Springs, South Dakota
William D. Duerson, c/o Byron J. Cox, Hot Springs, South Dakota

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
2/3/59	Murphy	700
2/9	Kubonfe	700
Hold until 4/20	Talbut	800
4/21	Selfridge	120
		110
		~~100~~
4/22	Ce	220
		700

APR 22 1959

Mr. Tom E. Garrard, Vice President
McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

Re: Docket No. DMEA-4742 (Uranium)
Contract No. Idm-E1133
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Garrard:

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.

We appreciate your interest and participation in the DMEA exploration program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

(signed) FRANK E. JOHNSON

ACTING Director

FMMurphy/gla
2-3-59
cc to: Director's Reading File
Div. of Contract Adm. & Audit
FMMurphy
OME Field Team, Region III (2)

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
2/3/59	Murphy	700
2/9	Umbach	700
Hold until 4/20	Talbert	800
4/20	Sellnage	120
		110
		100
		220
		700

APR 22 1959

Mr. James S. Raby

Edgemont, South Dakota

Re: Docket No. DMEA-4742 (Uranium)
Contract No. Idm-E1133
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Raby:

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

This correspondence relates to the two Consents to Lien and Subordination Agreements signed by you on August 23, 1957, under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

(signed) FRANK E. JOHNSON

ACTING Director

Enclosure

FMMurphy/gla
2-3-59
cc to: Director's Reading File
FMMurphy
OME Field Team, Region III (2)

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
2/3/59	Murphy	700
2/9	Kubinke	700
Hold until 4/20	Talbert	800
4/21	Selfridge	120
		~~110~~
		~~100~~
		220
		700

APR 22 1959

Miss Josephine Manke

Edgemont, South Dakota

Re: Docket No. DMEA-4742 (Uranium)
Contract No. Idm-E1133
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Miss Manke:

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

This correspondence relates to the Consent to Lien signed by you on September 5, 1957, under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

(signed) FRANK E. JOHNSON

ACTING Director

Enclosure

FMMurphy/gla
2-3-59
cc to: Director's Reading File
Mr. Murphy
OME Field Team, Region III (2)

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
2/3/59	Murphy	700
2/9	Kilcoyne	700
Hold until 4/20	Talbert	800
4/21	Selfridge	120
		110
		100
		220
		700

APR 22 1959

Mr. John D. Manke
and Mrs. Margaret J. Manke
Edgemont, South Dakota

Re: Docket No. DMEA-4742 (Uranium)
Contract No. Idm-E1133
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. and Mrs. Manke:

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

This correspondence relates to the two Consents to Lien and Subordination Agreements signed by you on September 5, 1957, under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

(signed) FRANK E. JOHNSON

ACTING Director

Enclosure

FMMurphy/gla
2-3-59
cc to: Director's Reading File
FMMurphy
OME Field Team, Region III (2)

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
2/3/59	Murphy	700
		700
Hold until 4/20	Taffurt	800
4/21	Lefurgy	120
		110
		100
		220
		700

APR 22 1959

Mr. B. H. Lord
and Mrs. Amy Lord
Edgemont, South Dakota

Re: Docket No. DMEA-4742 (Uranium)
Contract No. Idm-E1133
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. and Mrs. Lord:

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

This correspondence relates to the Consent to Lien and Subordination Agreement signed by you on August 23, 1957, under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

(signed) FRANK E. JOHNSON

ACTING Director

Enclosure

FMMurphy/gla
2-3-59
cc to: Director's Reading File
FMMurphy
OME Field Team, Region III (2)

43683

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(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
2/3/59	Murphy	700
2/9	Lusonde	700
Hold until 4/20	Talbut	500
4/21	Selfridge	120
		110
		100
		220
		700

APR 22 1959

Mr. and Mrs. Warner R. Ball

Edgemont, South Dakota

Re: Docket No. DMEA-4742 (Uranium)
Contract No. Idm-E1133
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. and Mrs. Ball:

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

This correspondence relates to the Consent to Lien and Subordination Agreement signed by you on August 24, 1957, under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

(signed) FRANK E. JOHNSON

ACTING Director

Enclosure

FMMurphy/gla
2-3-59
cc to: Director's Reading File
FMMurphy
OME Field Team, Region III (2)

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
2/3/59	Murphy	700
2/9	Kidwell	700
Hold until 4/20	Talbot	300
4/21	Selfridge	120
		110
		100
		220
		700

APR 22 1959

Mr. L. F. Duerson
Agent for Estate of W. D. Duerson
c/o Byron J. Cox
Hot Springs, South Dakota

Re: Docket No. DMEA-4742 (Uranium)
Contract No. Idm-E1133
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Duerson:

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

This correspondence relates to the Consent to Lien and Subordination Agreement signed by you on October 22, 1957, under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

(signed) FRANK E. JOHNSON

ACTING Director

Enclosure

FMMurphy/gla
2-3-59
cc to: Director's Reading File
FMMurphy
OME Field Team, Region III (2)

43683

OFFICIAL FILE COPY O. M. E. RECEIVED JAN 23 1959		
DATE	INITIALS	CODE
1/23	C	220
1/26	Murphy	700

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

Date January 22, 1959
DMEA Docket No. 4742
DMEA Contract No. Idm-E1133
Commodity Uranium
Name of Applicant McAlester Fuel Company
Location of property Fall River County, S. Dakota
Estimated cost of project $47,905.30

Memorandum

To: Frederick L. Knouse, Acting Director, OME
Rare and Misc. Minerals Division

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

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

1. Date of subject document: 1/15/59 2. Date received by reviewer: 1/21/59

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 meeting 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 ☒
e. Disagree with Field Team ☐
f. Suggest alternate plan ☐
g. Request another consultation ☐
h. Approval ☐
i. Consult with Mr. _____ at _____ AEC Office

10. Remarks: (Use back of page if necessary). Certification of project as discovery or development not recommended.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado
January 15, 1959

OFFICIAL FILE COPY O. M. E. RECEIVED JAN 19 1959		
DATE	INITIALS	CODE
1/19		220
"		130
1/23		130
1/26	C	220
		700

Memorandum

To: Chairman, Operating Committee, OME

From: OME Field Team, Region III

Subject: Docket No. DMEA 4742 (Uranium) Contract Idm-E1133, McAlester Fuel Company, (Star Claims and Leased Land) Fall River County, South Dakota - FINAL SUMMARY REPORT

Enclosed are the original and two copies of a Joint Final Engineering and Geologic Report, dated January 12, 1959, by R. U. King, Geologist, Geological Survey, and Carl Belser, Mining Engineer, Bureau of Mines, pertaining to the work completed under the subject contract. The original and one copy of the Operator's final report were forwarded by memorandum of October 27, 1958.

The contract was terminated before completion of all work originally provided for by a Termination Agreement, dated August 19, 1958, which was made effective March 12, 1958.

Final payment to the Operator was processed by this office, November 4, 1958, in conformance with the Report of Review of reported project costs by the Contract Administration and Audit Division, OME, dated October 27, 1958.

Exploration work completed consisted of the drilling of 92 holes, aggregating 41,990 feet of non-core drilling. Additional work or service incident to the drilling consisted of 81 hours of drill crew standby time, chemical analysis of 19 samples for U_3O_8 content, and Incidental Allowance for 41,990 feet of acceptable drilling; all at a total accepted cost of $47,905.30, toward which the Government contributed 75 percent, or $35,928.98.

The exploration work completed did not result in the discovery or development of a significant quantity of ore-grade material, therefore, the field examiners recommend that the project not be certified as a discovery or development, in which this office concurs.

Enclosures

FINAL F.T. REPORT

By E. N. Harshman
E. N. Harshman

Reviewed by
OME OPERATING COMMITTEE
1-23-59
(date)

Hmc 1-15-59 Feeds
H/MC

OFFICIAL FILE COPY
O. M. E.
RECEIVED JAN 19 1959

DATE	INITIALS	CODE
1/23	2hR	130
		220

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

OFFICE OF MINERALS EXPLORATION

FINAL REPORT BY FIELD TEAM
REGION III

OME
DEPARTMENT OF THE INTERIOR
JAN 14 1959
REGION III
DENVER, COLORADO

DMEA 4742

Contract Idm-E 1133

McAlester Fuel Company

Star Claims and Leased Land

Fall River County, South Dakota

Uranium

Reviewed by
OME OPERATING COMMITTEE
1-23-59
(date)

Joint Final Engineering and Geologic Report

by

R. U. King, Geologist
U. S. Geological Survey

Carl Belser, Mining Engineer
U. S. Bureau of Mines

January 12, 1959

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Geology	7
Ore deposits	8
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Results of exploration	11
Summary of contract data	12
Summary of accepted project costs	13
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ILLUSTRATIONS

Figure	Follows page
1. Location map, McAlester Fuel Company, Star claims and deeded land, T. 9 S., R. 3 and 4 E., B.H.M., Fall River County, South Dakota, DMEA 4742	3
2. Star Claim groups and leased land, McAlester Fuel Company, Fall River County, South Dakota, DMEA 4742	14
3. Geologic map, showing DMEA exploration, McAlester Fuel Company, Fall River County, South Dakota	14

DMEA 4742
Contract Idm-E 1133

McALESTER FUEL COMPANY
STAR CLAIMS AND LEASED LAND
FALL RIVER COUNTY, SOUTH DAKOTA

INTRODUCTION AND SUMMARY

The McAlester Fuel Company, a Delaware Corporation, with offices at McAlester, Oklahoma, and Edgemont, South Dakota, applied to the Defense Minerals Exploration Administration for aid in exploration of the Star Claims and adjoining tracts of land for uranium. The applicant requested 105,100 feet of non-core rotary drilling and 3,400 feet of diamond core drilling at an estimated total cost of $165,768.86. The program was designed to explore for uranium in the Cretaceous sedimentary rocks, the two principal targets being the upper (Gould Channel) and lower channel sandstones of the Lakota formation.

A field examination was made on the property on June 25, 1957, by D. H. Richter, Geologist, U. S. Geological Survey, and E. O. Binyon, Mining Engineer, U. S. Bureau of Mines. Robert Ford, Geologist, and Max Eartle, local representative of the applicant, accompanied the Examining Team on the examination. As a result of the examination, it was concluded that a very favorable geologic environment for the occurrence of uranium existed at the property. The program, as proposed by the applicant, was too elaborate, and a modified three-stage program consisting of 61,300 feet of non-core drilling at an estimated total cost of $72,393.46 was recommended.

A contract was signed September 19, 1957, authorizing a three-stage program consisting of 61,300 feet of non-core drilling at a total estimated cost of $72,136.00; Government participation at 75 percent or $54,102.00.

Drilling started November 9, 1957. A. R. Ormsbee was the contract driller. Two Mayhews and a Failing drill were used. The Stage I holes were finished on November 12, 1957, with 46 holes comprising 17,581 feet of non-core drilling. Stage II, with 37 holes containing 19,579 feet of non-core drilling, was completed on February 14, 1958, and Stage III, containing 9 holes with 4,830 feet of non-core drilling, was completed March 12, 1958. In all, 92 holes containing 41,990 feet of non-core drilling were completed at a total cost of $47,905.30. Government participation was 75 percent, or $35,928.98, on which final payment has been made.

Two of the 92 holes drilled intersected uranium-bearing sandstone containing better than 0.15 percent U_3O_8, and only 20 holes encountered radioactive material that ranged from 0.01 to 0.15 percent U_3O_8. And although no significant uranium deposits were discovered, the DMEA exploration resulted in outlining a body of mineralized sandstone containing about 1 million tons of 0.05 percent U_3O_8.

A Termination Agreement was made effective August 19, 1958.

It is recommended that a certification of discovery not be issued.

LOCATION AND ACCESSIBILITY

The claims and deeded land, a single tract, are in secs. 4, 5, 6, 7, 8, 17, 18, 19, 20, 21, 28, 29, 30, 31, and 32, T. 9 S., R. 4 E., and secs. 1, 12, and 13, T. 9 S., R. 3 E., B. H. M., Fall River County, South Dakota (figs. 1 and 2). The approximate center of the tract is 8 miles airline, east and slightly south of Edgemont, South Dakota. From Edgemont, that part of the property north of the Cheyenne River is reached by taking U. S. Highway 85A and 18 east 6.1 miles to a junction with a county road, turn right and continue for approximately 3.5 miles to about the north central portion of the property. To reach that part of the property south of the river, take State Highway 52 south for 3-3/4 miles, turn left on a county road and continue on this road for 8.5 miles to approximately the south central portion of the property. The river can be forded during most of the year making both parts of the property accessible from either of the routes described above.

Edgemont, the nearest community, is the site of a uranium mill and a rail point on the Chicago, Burlington, and Quincy Railroad. The town is also served by major truck lines and is a source of labor and small supplies for the surrounding area.

Relief in the area is moderate. The land is mostly mesa country with a gradual slope to the south, cut by two major canyons--Chilson and Brady--with several smaller draws cutting across the property in a southeast direction. The Cheyenne River (with a mean altitude of 3,330 feet), meanders eastward across the middle of the property.

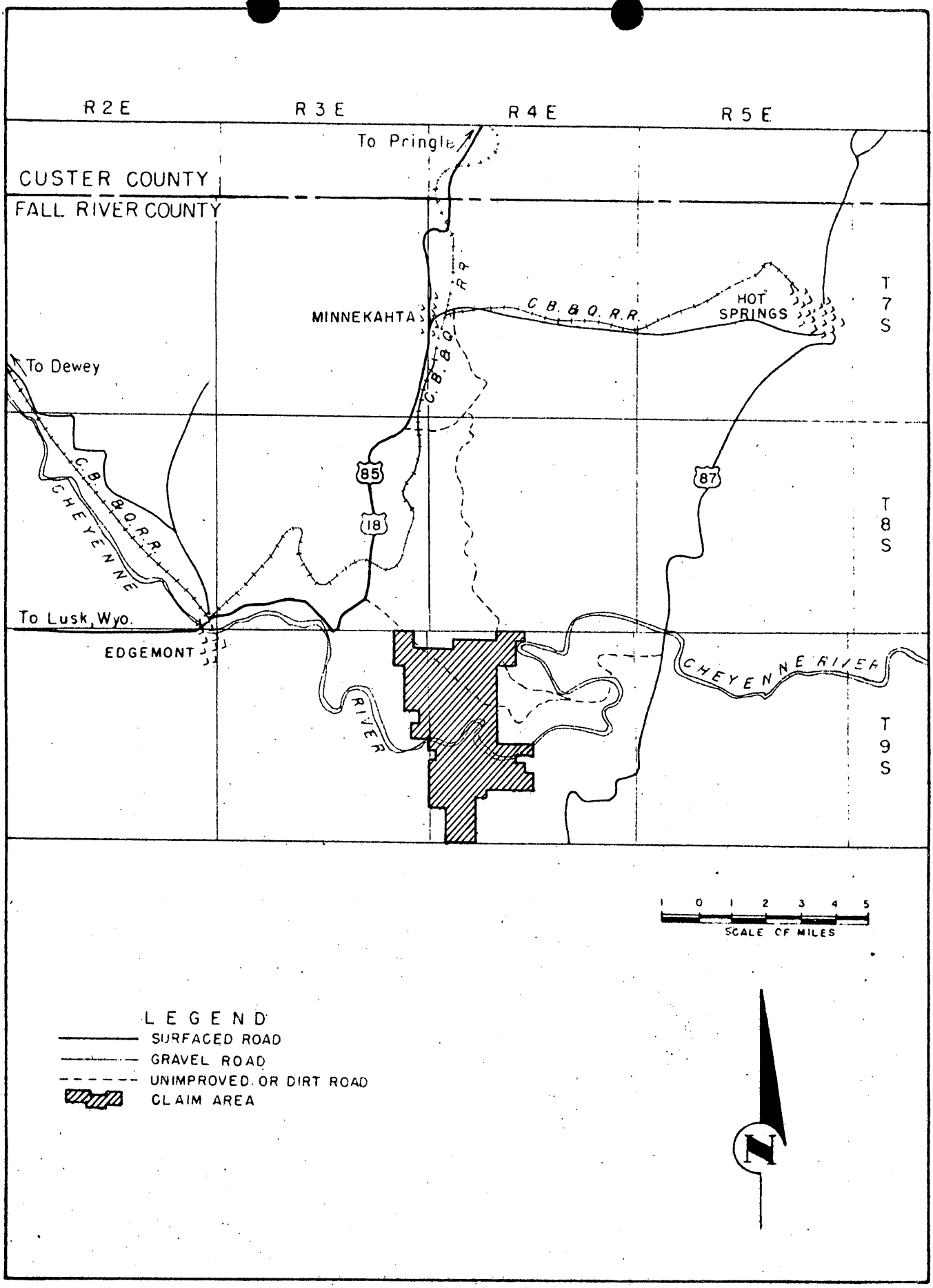

FIGURE 1 - LOCATION MAP, McALESTER FUEL COMPANY, STAR CLAIMS AND DEEDED LAND T.9 S., R.3 and 4 E., B.H.M., FALL RIVER COUNTY, SOUTH DAKOTA. DMEA 4742

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DATE	INITIALS	CODE

Altitudes range from 4,200 feet in the extreme northwest corner to 3,500 feet at the south end of the property; Chilson Canyon is the most outstanding topographic feature having a drop from 3,900 feet at the rim to about 3,400 feet at the canyon floor.

Canyon walls are marked by a considerable growth of Ponderosa pine, while on the flats and mesas grasses and cacti are predominant.

Water is obtainable from the Cheyenne River and from ranch wells and reservoirs. There is no electric power on the property. Gasoline and diesel-driven drilling equipment was used by the operator.

The climate is marked by moderate to mild summers and falls and short periods of sub-zero temperatures in the winter. Fairly heavy snow and rainfall occur in the winter and early spring and for short periods may limit travel on the dirt roads. Outside operation can be carried on for 10 to 11 months of the year without much difficulty.

HISTORY AND PRODUCTION

The Star claims were located in February and March 1957 and recorded in March and April of that year. The leases on the deeded land were signed on January 30 and 31, and February 1, 6, 7, 15, 16, and 25, 1957. There has been no production from the property.

OWNERSHIP AND EXTENT

The land held by the applicant under lease and by claim location includes a total area of approximately 8,535 acres in a contiguous tract (fig. 2). Of this 4,131.83 acres are owned by unpatented lode claims located by the applicant for the most part over land which is also included in the leases. Presumably the claims located on the deeded land, that is included in the leases, are located for mineral rights. A total of 7,571.73 acres are held under eight separate leases. This, plus 964 acres (more or less), included by the lode claims brings the total to 8,535 acres. A list of the lessors with the acreages is given below:

Lessor	Acres	T. 9 S., R. 4 E., B.H.M. Sections
John D. and Margaret J. Manks	1,288.12	17, 18, 19, 20
John D. and Margaret J. Manks	2,484.81	(18, 21, 28, 29, 30, 31, 32 (13 (T. 9 S., R. 3 E.)
Warner R. Ball	1,955.72	5, 6, 7, 8, 18
B. H. and Amy Lord	200.00	18
Frank and Emma Hand	320.00	8, 17
James S. Raby	120.00	13 (T. 9 S., R. 3 E., B.H.M.)
James S. Raby	920.44	1, 12 (T. 9 S., R. 3 E., B.H.M.)
Byron J. Cox & Bill Duerson	200.00	17, 20
	82.64	Sam, Sam 1, Roy, and Roy 1 Claims.
Total	7,571.73	

A check of the list of claims submitted by the applicant was made at the Fall River County Office of Register of Deeds, Hot Springs, South Dakota, and, except for the omission of the Stars 246 and 247 from the list, the claims were found to be recorded as listed. The claims, book, and page numbers, and date recorded are given below:

Claim No.	Book No.	Page No.	Date Recorded
Star 1 through 6	Misc. 40	130 through 133	3/27/57
Star 7	Misc. 40	225	3/27/57
Star 8 through 190	Misc. 40	133 through 225	3/27/57
Star 191 through 245	Misc. 40	230 through 257	4/3/57
* Star 246 and 247	Misc. 40	257, 258	5/1/57

* A minor discrepancy between the claim map and the lease from John D. and Margaret J. Manks dated February 1, 1957, was noted. On the property map the applicant had not included the SW$\frac{1}{4}$ of the NW$\frac{1}{4}$ of section 19 (actual scaled measurement, 1,000 feet by 1,140 feet), whereas in the lease this tract is included in the list of lands--section 17; lot 1, and the east $\frac{1}{2}$ of the NW$\frac{1}{4}$, the NE$\frac{1}{4}$ and the S$\frac{1}{2}$ section 19.

The applicant, while staking the Star claims in the manner prescribed by South Dakota laws, did not do the discovery work on any of the claims. When questioned concerning this, the geologist, Mr. Robert Ford, stated that he had been advised by an attorney that no discovery work was now required by the State of South Dakota and, therefore, none had been done.

GEOLOGY

The McAlester Fuel Company's property is near the southeastern boundary of the Edgemont uranium district in the southern Black Hills of South Dakota. The sedimentary rocks of lower Cretaceous age that are exposed on the property are known as Inyan Kara group (fig. 3). These rocks, which form some of the prominent outer peripheral hogbacks typical of the Black Hills country, contain most of the uranium-vanadium deposits of the region. The Inyan Kara group overlies the Jurassic Morrison formation and in the southern part of the property is overlain by the lower Cretaceous Skull Creek shale. A thin mantle of gravel and alluvium covers much of the area.

The Inyan Kara group is divided into the Fall River and Lakota formations. The upper member or Fall River consists predominantly of fine-grained sandstone with minor beds of siltstone and mudstone. The Lakota formation, which includes formations formerly known as the Fuson mudstone and Minnewaste limestone, consists chiefly of sandstone, siltstone, and mudstone. The Lakota formation is further subdivided into an upper "Gould channel" sandstone and a "lower Lakota" sandstone. Discontinuity and interfingering of the different rock types is characteristic of the Cretaceous rocks in this area with consequent lithologic sequence change from place to place.

The major structural feature of the area is the southward dipping homocline marginal to the Black Hills uplift. The regional dip is complicated by superimposed north-trending anticlines, monoclines, and structural terraces.

ORE DEPOSITS

Uranium deposits are widespread in the Inyan Kara rocks both to the north and west of the property, and radioactivity anomalies, a primary guide to uranium, are noted in drill holes on the property. Deposits of commercial grade and size, however, are few in the immediate vicinity, and only four mines have so far become significant.

The Gould mine, from which about 30,000 tons of yellow oxidized ore has been produced, is in the "Gould channel" sandstone. The Runge mine exploits uranium deposits in the Fall River sandstone, from which a considerable tonnage of black unoxidized ore has been obtained. Two other mines, the Accidental and the McLeoud, have made significant discoveries in the "lower Lakota" sandstone.

The localization of ore is thought to be controlled chiefly by lithologic, structural, and geochemical factors such as: heterogeneity, thickness, continuity, and cementation; structural terraces and changes in dip; and carbonate cement, position and movement of ground water, and carbon content, respectively.

The ore body of the Gould mine is in a fine- to coarse-grained conglomeratic sandstone in the upper Lakota beds, whereas the uranium deposits of the Runge mine are in lower Lakota beds of fine- to medium-grained sandstone containing pockets and lenses of carbonaceous trash.

The property of the McAlester Fuel Company is in an area of favorable lithology and geologic structure, and a geochemical environment favorable for the locallization of uranium was believed to exist in the

area. The Inyan Kara rocks range in thickness from 450 to 550 feet ~~in thickness~~ and contain three channel sandstones--a Fall River medium-grained carbonaceous sandstone, a coarse-grained sandstone in the upper Lakota (Gould channel) group, and a medium-grained sandstone in the lower Lakota.

Structurally the property is favorably situated on gently dipping beds along the east limb of the asymetrical Chilson anticline (fig. 3).

Geochemically the property is also favorably situated. Exposures in Brady Canon indicate a relatively high carbonate-cement content in the upper Lakota "Gould channel" sandstone, and drilling in nearby areas indicate the water table is closely related to the level of the Cheyenne River (elevation 3,400').

Direct evidence of possible significant deposits of uranium in the underlying rocks is found in the presence of one small deposit on the property and several within the immediate vicinity. These small deposits were in the lower Lakota channel sandstones, and contained oxidized type ores. Also, two drill holes put down by previous lessees, intersected radioactive zones at depths between 450 and 550 feet, in the lower Lakota sandstone beds.

THE PROJECT

Original Program and Modifications

The applicant proposed a three-stage drilling program requiring 105,100 feet of non-core drilling and 3,400 feet of core drilling at a total estimated cost of $165,768.86. The property was examined on June 25, 1957, and a modified drilling program recommended. A three-stage contract was signed on September 19, 1957, calling for 61,300 feet of non-core drilling at a total estimated cost of $72,136.00. Government participation was 75 percent, or $54,102.00. Work was started November 9, 1957. The independent contractor was A. R. Ormsbee, who used two Mayhews and one Failing drill. Samples were washed out by water or blown out by air and each two feet of drillings was caught as a separate sample. Century Geophysical Corporation logged the holes. Stage I holes were finished November 12, 1957. Stage II holes were finished February 12, 1958, and Stage III holes were completed March 12, 1958. No amendments were made to the contract. A Termination Agreement was signed on August 19, 1958.

Description of Work Completed

No bulldozing was required for roads or drill sites. Stage I had a total of 46 drill holes containing 17,581 feet of drilling. Stage II amounted to 37 holes containing 19,579 feet of drilling and included deepening of two Stage I holes, and Stage III amounted to 9 holes containing 4,830 feet of drilling. The location of the holes is shown in

figure 3. Standby time amounted to 81 hours, and 19 assays were made. No difficulties were encountered, each stage of drilling taking only a few days to complete.

RESULTS OF EXPLORATION

Although the drilling of 92 holes under the contract did not result in the discovery of uranium ore deposits of commercial grade, a large body of weakly mineralized sandstone was outlined. This low grade deposit, in the northern part of the property (fig. 3), is in the lower Lakota sandstone, at depths ranging from about 450 to 500 feet below the surface or at an elevation of about 3,600 feet above sea level. The area containing the drill holes that encountered the highest radioactivity is roughly rectangular, measuring about 3,000 feet by 2,000 feet (fig. 3). The radioactive zones range from 2 feet to 28 feet in thickness, but probably average about 3 feet in thickness. The weighted average grade calculated from the best 6 of the 20 holes in the area is 0.095 percent U_3O_8 for a 3.5-feet thick deposit. A more realistic figure based on the estimated uranium content of the entire 20 holes is 0.05 percent U_3O_8. A deposit thus defined would contain about 1,000,000 pounds of U_3O_8. Material of the grade (0.05 percent) and at the depths (450 feet) indicated is not commercial at present nor likely to be in the foreseeable future.

The U_3O_8 content of 19 sludge samples determined by chemical analysis ranges from 0.01 to 0.07 percent. The disequilibrium between the uranium content and that estimated from radioactivity measurements may indicate some leaching of uranium from the target area.

SUMMARY OF CONTRACT DATA

Stage I (46 holes)

Actual Costs

Category (1) - Independent Contracts

Bulldozing, 15 hours at $12.50/hr.	$ 187.50	
20,300 feet non-core drilling at $1.00/ft.	20,300.00	
$34\frac{1}{2}$ hours standby time at $10.00/hr.	345.00	
Fixed Unit Costs		
20,300 feet incidental allowance at $0.12/ft.	2,436.00	
140 assays for U_3O_8 at $3.50 each	490.00	
Estimated total cost, Stage I		$23,758.50

Stage II (60 holes)

Actual Costs

Category (1) - Individual Contracts

15 hours bulldozing at $12.50/hr.	187.50	
26,000 feet non-core drilling at $1.00/ft.	26,000.00	
45 hours standby time at $10.00/hr	450.00	
Fixed Unit Costs		
26,000 feet incidental allowance at $0.12/ft.	3,120.00	
210 samples for U_3O_8 at $3.50 each	735.00	
Estimated total cost, Stage II		30,492.50

Stage III (15,000 feet of holes)

Actual Costs

Category (1) - Independent Contracts

10 hours bulldozing at $12.50/hr.	$ 125.00	
15,000 feet non-core drilling at $1.00/ft.	15,000.00	
22½ hours standby time at $10.00/hr.	225.00	
Fixed Unit Costs		
15,000 feet incidental expense at $0.12/ft.	1,800.00	
210 samples for U_3O_8 at $3.50 each	735.00	
Total estimated cost, Stage III		$17,885.00
Total estimated cost of project		$72,136.00
Government participation at 75 percent		$54,102.00

SUMMARY OF ACCEPTED PROJECT COSTS

Stage I (46 holes)

17,581 feet non-core drilling at $1.00/ft.	$17,581.00	
24 hours standby time at $10.00/hr.	240.00	
17,581 feet incidental expense at $0.12/ft.	2,109.72	
13 chemical assays for U_3O_8 at $3.50 each	45.50	
Total actual cost, Stage I		$19,976.22

Stage II (37 holes)

19,579 feet non-core drilling at $1.00/ft.	$19,579.00	
43 hours standby time at $10.00/hr.	430.00	
6 chemical assays for U_3O_8 at $3.50 each	21.00	
19,579 feet incidental allowance at $0.12/ft.	2,349.48	
Total actual cost, Stage II		22,379.48

Stage III (9 holes)

4,830 feet non-core drilling at $1.00/ft.	$ 4,830.00	
4,830 feet incidental allowance at $0.12/ft.	579.60	
14 hours standby time at $10.00/hr.	140.00	
Total actual cost of Stage III		$ 5,549.60
Total actual cost of project		$47,905.30
Government participation, 75 percent or		$35,928.98

CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the property has been adequately explored under the DMEA drilling project and that significant uranium deposits are not likely to be present on this property.

It is recommended that the Government not participate in any further exploration of the property and that no certification of discovery be issued.

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10/30	Alley	800
10/30	Talbert	800
10/31	C	220
	C	~~200~~
		700

OCT 30 1958

Mr. Donald T. Finch
OME Auditor
224 New Customhouse
Denver 2, Colorado

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

Dear Mr. Finch:

Your report of review on the above-cited project is acceptable and normal distribution is authorized.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers
Contract Administration
and Audit Division

AMAlley/ama
October 30, 1958

Copy to: Docket
Director's Reading File
Mr. Chambers

8623

224 New Customhouse
Denver 2, Colorado

October 27, 1958

10/29 C 220
Murphy 700

Memorandum

To: Donald T. Finch, OME Auditor, Region III

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

Subject: Docket No. DMA 4742 (Uranium), Contract No. Idm-E1133
McAlester Fuel Company (Star Claims and Leased Lands)
Fall River County, South Dakota

The subject contract was terminated by mutual agreement effective March 12, 1958. A copy of the Termination Agreement is enclosed for your records.

The Operator has rendered a final engineering and geologic report and 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 the 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 41,990 feet of non-core drilling in three stages, and chemical analyses of 19 samples for U_3O_8 content.

The sum of $500.00 was withheld from reimbursement to the Operator in processing its final accounting report, which was for the month of March, 1958.

Original signed by
E. N. HARSHMAN

E. N. Harshman

Enc.

JFT:bk
cc: Chem. Op. Comm. (2)
Harshman
Marshall, OME/RFO
Corres. File
Cooper
Chron.

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

October 27, 1958

Memorandum

To: Chairman, Operating Committee, OME

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

Subject: Docket No. DMEA 4742 (Uranium), Contract Idm-E1133
McAlester Fuel Company (Star Claims and Leased Lands)
Fall River County, South Dakota

Enclosed are two copies of the final narrative report submitted in the name of the Operator, pertaining to work completed under Contract No. Idm-E1133.

The Field Team's final summary report will be submitted as soon as the final engineering and geologic report by the Field Examiners is available and when the final audit of reported costs is released by the Contract Administration and Audit Division, OME, Region III, so that the account can be closed.

E. N. Harshman

E. N. Harshman

Encls.

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ORR'S FINAL REPORT

ROBERT FORD
MINING GEOLOGIST

P.O. BOX 428

W.O.

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

BLAKE FOX
PETROLEUM GEOLOGIST

UL6-3463

October 17, 1958

OME
DEPARTMENT OF THE INTERIOR
OCT 20 1958
REGION III
DENVER, COLORADO

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

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

Dear Mr. Harshman:

Enclosed are five (5) copies of the final report on the Star claims and Leased Lands for McAlester Fuel Company as required under 7c of the above named contract.

This will complete the requirements for the Operator under the contract and except for the report of audit and audit review will complete all matters necessary to terminate the contract.

Let me thank you for your splendid cooperation and help and that of your associates who worked with you on this contract.

Sincerely yours,

Robert Ford

RF:cjb
CC: Mr. Tom Garrard

(5)

OME
DEPARTMENT OF THE INTERIOR
OCT 20 1958
DENVER, COLORADO

FINAL REPORT
ON THE
STAR CLAIMS AND LEASED LANDS
CONTRACT Idm-E1133
DMEA DOCKET NO. 4742
McALESTER FUEL COMPANY

By

EORD AND FOX
CONSULTING GEOLOGISTS

October 15, 1958

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O. M. E.
RECEIVED OCT 29 1958

DATE	INITIALS	CODE

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

UL6-3463

FINAL REPORT
ON THE
STAR CLAIMS AND LEASED LANDS
CONTRACT Idm-E1133
DMEA DOCKET NO. 4742
McALESTER FUEL COMPANY

PURPOSE

This final report on exploration assistance is made on behalf of McAlester Fuel Company in compliance with Article 7c of the above named contract. The Termination Agreement was signed under the date of August 19,1958. This final report includes a geological evaluation and summary of all work completed under the subject contract.

CONTRACT

The exploration contract was divided into three stages of drilling. The contract called for a total estimated allowable cost of the project of $72,136.00 with the Government contribution not to exceed $54,102.00.

STAGE I

Stage I exploration was completed on November 12, 1957. Forty-eight (48) rotary non-core holes were drilled totaling 19,374 feet. 17,581 feet of drilling was charged to the DMEA account against a total allowable of 20,300 feet. The total reported cost of Stage I exploration was $19,976.22.

STAGE II

Stage II drilling was completed on February 14, 1958. The drilling was restricted to the same property as the Stage I drilling and was confined to

offset drilling from mineralized holes and favorable sands. Thirty-seven (37) non-core holes were drilled and two Stage I drill holes deepened. Drilling under Stage II totaled 19,579 feet. The total allowable Stage II drilling under the Contract was 26,000 feet. The total reported cost of exploration was $22,379.48.

STAGE III

Stage III drilling was completed March 12, 1958, and consisted of nine rotary non-core holes as offsets to previously drilled mineralized holes. The Stage III drill holes totaled 4,830 feet of the authorized 15,000 feet of non-core drilling. The total reported cost of Stage III was $5,549.60.

The work accomplished in all stages of the subject contract was 41,990 feet of rotary non-core drilling. 81 hours of drill standby time and 19 chemical analysis. The total cost of the project was $47,905.26 against total authorized contract monies of $72,136.00. Drilling totaled 19,310 feet less than that allowed under the contract.

SUSPENSION OF OPERATIONS

The last work performed under the contract was on March 12, 1958. At that time the operator concluded that to proceed with offset drilling in the area of mineralization was not warranted. The mineralization, although significant, was not in an environmental setting condusive to the precipitation of large amounts of uranium. Oxidation had extended to the Morrison formation and liberated the uranium previously held in the sandstones drilled.

On the basis of this geological information a suspension of operations was requested, on May 8, 1958. A proposal "Amendment No. 1", was made on

July 19, 1958, in which a request was made to continue the exploration of the Star claims and leases in a more favorable area. This proposal was not accepted by the DMEA and on August 26 that office requested that the Operator accept the "termination agreement" which was executed and returned to the DMEA on September 10, 1958.

STAR CLAIMS AND LEASES

LOCATION

The Star claims and leases are located in Fall River County, South Dakota about nine miles southeast of Edgemont. The claims and leases have all been subordinated under Contract Idm-E 1133. The claims and leased lands are located largely in the west one half (½) of T9S, R4E; and Sections 1, 12 and 13 of T9S, R3E.

PREVIOUS WORK

Past work on the Star claims and leases has been described above and was restricted to the DMEA sponsored exploration and some additional drilling at expense of the operator. All drill holes are shown on the accompanying map together with the designation of being ore or mineral bearing.

The following is a list of all drill holes on the property together with the average counts per second and peak readings. The equivalent uranium content is interpreted from a chart included with this report, where thickness and average cps are sufficient to warrant such interpretation. Peak readings are given, together with the thickness of the anomalous zone, where the mineralization does not approach ore grade but where the mineralized zones are important in the structural and geological interpretations.

STAGE I DRILLING

Hole No.	Depth	Average CPS	Peak CPS	%U_3O_8
1	465			
2	485			
	288-302		130	
3	513			
	345-359		160	
4	460			
	305-320		45	
	405-418		80	
5	468			
	353-364		22	
6	520			
	382-400		110	
7	250			
8	500			
	440-452		38	
	475-488		38	
9	200			
10	485			
	440-465		20	
11	140			
12	170			
13	230			
14	300			
15	560			
	495-517		110	
16	500			
17	500			
18	520			
	475-483		52	
	425-433		32	
19	180			
20	495			
21	240			
22	180			
23	500			
24	180			
25	180			
26	500			
27	498			
28	148			
29	436			
	420-429		28	
	350-361		50	
30	470			
31	180			
32	140			
33	500			
34	450			
35	534			
36	520			

Hole No.	Depth	Average CPS	Peak CPS	$\%U_3O_8$
37	500			
38	500			
39	500			
40	560			
41	400			
42	530			
43	545			
44	530			
45	575			
46	600			
	192-200		30	
47	260			
	180-188		45	
48	275			
	220-225		60	

STAGE II DRILLING

Hole No.	Depth	Average CPS	Peak CPS	$\%U_3O_8$
7	510			
9	520			
	479-496		85	
51	485			
52	480			
53	500			
54	545			
	419-443		200	
	446-455		240	
55	510			
56	536			
57	545			
	453-463		110	
	476-482	99	170	.03%
	503-515		100	
58	515			
59	526			
60	555			
	369-388		140	
	395-415		130	
61	500			
62	550			
63	515			
64	480			
65	480			
66	500			
67	505			
68	300			
69	300			
70	300			

Hole No.	Depth	Average CPS	Peak CPS	$\%U_3O_8$
71	536			
	451-457	167	240	.07%
	491-515		210	
72	552			
	433-444		55	
	521-530		105	
73	550			
	432-434	186	305	.08%
	495-501		160	
74	552			
	463-473		55	
75	540			
76	545			
77	536			
	427-442		55	
	449-458	118	265	.045%
78	555			
79	538			
81	510			
82	545			
84	515			
	321-329		40	
85	555			
	420-425		110	
86	514			
	325-331		50	
87	515			
	350-364		35	
88	470			
93	545			

STAGE III DRILLING

Hole No.	Depth	Average CPS	Peak CPS	$\%U_3O_8$
94	540			
	425-931		50	
	434-436	55	85	.015%
	461-480		135	
95	531			
	508-511	260		.15%
96	546			
	456-458	283	340	.17%
97	545			
	398-405	150		
98	549			
	374-381		140	
99	541			
	420-437		135	
100	522			
	400-428		115	
101	428			

Hole No.	Depth	Average CPS	Peak CPS	%U_3O_8
	444-446	96	110	.03%
102	534			
	438-447		85	

GEOLOGY

The greater portion of the subject claim group is underlain by three sandstone horizons. 1) Upper Fall River sandstone, 2) the Gould Channel sandstone, and 3) the deep Lakota sandstone. These sandstone "channels" were adequately described in the original application for DMEA aid and in the MF series maps and TEI publications by the United States Geological Survey.

The attached map shows the Star claims and leases and the significant deep hole tests of the Lakota sandstone "channel". Past drilling has dimmed the chance of significant discoveries in either the Fall River or Gould channel sandstone. Extreme oxidation and lack of reducing environment for the uranium salts has proven unfavorable for ore deposits in these shallow sandstone units.

Significant mineralization, from past DMEA drilling, was discovered in the Lakota sandstone, however. The outline of known mineralization is shown on the accompanying map. The following drill holes show significant mineralization. The grade is an interpretation as per the correlation chart accompanying this report.

Hole No.	Depth	CPS	%U_3O_8
57	476-482	99	.03
71	451-457	167	.07
94	477-479	150	.06
95	508-511	401	.29
96	456-458	283	.17
101	444-446	96	.03

The above mineralized holes are not all shown on the accompanying cross section, but the plan map shows an outline of the mineralized area as proven by these and other drill holes. An average grade of .05% U_3O_8 calculated to be three feet thick equals 1,289,376 lbs. of contained U_3O_8. The potential of the mineralized area was over 1,000,000 tons of ore. Extreme oxidation and leaching of the ores resulted in the low grade ores found in the drilling. The drill holes were dry, and mineralization is of the carnotite type which gives evidence to the oxidation.

In the absence of other localizing agents, such as pyrite, carbon, or vanadium, the gravity flow of water should have oxidized and removed the uranium down dip, i. e., southeast, to a water table or less permeable zone where a reducing environment could have precipitated uranium in significant quantities.

As an aid in seeing the geologic interpretations please view the accompanying "Geological Cross Section". Cross Sections A-A' and B-B' are at right angles to the strike of the formation, and show a 20^0 dip or approximately 40 feet vertical in 1,000 feet horizontal. This steep regional dip eastward from the axis of Chilson Anticline, and the oxidation known in the mineralized drill holes, accounts for the lack of a commercial uranium discovery.

Respectfully submitted,

October 15, 1958

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado
September 12, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 15 1958

DATE	INITIALS	CODE
9/15	C	220
	Murphy	700

Memorandum

To: Chairman, Operating Committee, DMEA

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

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

Enclosed are the Government's and Audit copies of the TERMINATION AGREEMENT, which was forwarded by your letter of August 20, 1958 for signature by the Operator.

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

E. N. Harshman

E. N. Harshman

Enclosures

224 New Customhouse
Denver 2, Colorado
August 26, 1958

8/29 C 220
700
(Murphy)

CERTIFIED MAIL

Mr. Robert Ford
Ford & Fox, Consulting Geologists
206 South Broadway
P. O. Box 488
Riverton, Wyoming

Re: Docket No. DMEA 4742 (Uranium)
Contract 14s-01133
McAlester Fuel Company
(Star claims and Leased lands)
Fall River County, South Dakota

Dear Mr. Ford:

Reference is made to your letter of July 19, 1958, wherein you request that the contract be amended to provide for additional exploration to the cost of the original Stage I drilling.

After thorough review of your request, and other data available to the Government, it is the decision of the Government that the additional work is not warranted, therefore your request for an amendment to provide the additional work is denied.

As all approved work has been completed and the additional work will not be approved, we are enclosing the Government's, Audit, Finance Office, and Field Team copies of a proposed TERMINATION AGREEMENT, which has been prepared to terminate Contract 14s-01133, effective March 12, 1958.

If the proposed Termination Agreement is satisfactory, all copies are to be signed by an official of McAlester Fuel Company 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 which, the "Operator's Copy" will be forwarded to you.

In the event the proposed Termination Agreement is not satisfactory, all copies are to be promptly returned to this office, together with your objections thereto.

Very truly yours,

Original signed by
J. W. TOWNSEND

J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team, Region III

JDC:hsh
cc: Chem. Op. Comm. (2)
Harshman
Binyon, DMRA/DFC
Corres. file, Reg. III
Cooper
Chron

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8/19	Murphy	700
8/19	Kushnick	700
8-19	Chambers	800
8/19	[illegible]	130
8/19	Yopes	130
8/19	[illegible]	110
"	Hetherington	100
8/20	[illegible]	~~310~~ 220
		700

AUG 20 1958

Mr. J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4742 (Uranium)
Contract No. Idm-E1133
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Townsend:

Enclosed are the original and four copies of a proposed Termination Agreement to the subject contract, signed by the Administrator for the Government. Also enclosed are two extra copies for Field Team use.

If you and the Operator find the proposed agreement in order, please have an authorized representative of the company sign the original and four copies. Thereafter, kindly distribute the copies in the usual manner.

This agreement has been prepared in accordance with your recommendations submitted August 6, 1958. With regard to certification of the project, our decision on this matter will be made within the six-month period after receiving the Operator's and Field Team's final reports on the project.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (GCS)

Enclosures
APPROVED:

P. F. Yopes (PFY)
Member, Bureau of Mines

Frank D. Lamb (FDL)
Member, Geological Survey

FMMurphy/izm 8-19-58
cc: Mr. Murphy
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado
August 6, 1958

OFFICE OF DMEA
RECEIVED AUG 8 1958
DATE INITIAL CODE
8/8 C 220
8/11 7M14 130 700

Memorandum

To: Chairman, Operating Committee, DMEA

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

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

Enclosed are the original and two copies of a joint memorandum, dated August 5, 1958, from E. O. Binyon, Mining Engineer, Bureau of Mines, and E. N. Harshman, Geologist, Geological Survey, and Member of the DMEA Field Team, Region III. The memorandum report pertains to a request from the Operator, dated July 26, 1958, for an amendment to the contract to provide for additional primary drilling to extend the Stage I drilled area to the east and southeast.

Two copies of the Operator's request, with supporting data, were forwarded to you by copies of the memorandum to the field examiners, dated July 29, 1958, requesting their recommendations in the matter.

For reasons stated, the field examiners do not consider the proposed additional work to be warranted and recommend that the Operator's request be denied and that the contract be terminated, in which this office concurs.

Regarding the issuing of a certification of discovery or development, the field examiners state that it appears to not be warranted, even though the Operator estimates ore reserves as 1,000,000 tons of 0.05% U_3O_8.

I concur in their doubt as to practicability of certifying the project, as it appears doubtful that such low grade material at that depth would ever be considered recoverable ore under any circumstances. However, the size of the deposit may have an important bearing on the matter, thus resolving itself into a policy matter only to be determined at the Washington level.

In the event a termination agreement is prepared to terminate the contract in its present status, it should be made effective February 25, 1958, as the last work was performed under the contract on February 24, 1958.

J. W. Townsend

Enclosures

WC

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
AUG 5 - 1958
REGION III
DENVER, COLORADO

RECEIVED AUG 8 1958 D.M.E.A.

August 5, 1958

Memorandum

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

From: E. O. Binyon
E. N. Harshman

Subject: DMEA Docket 4742 (Uranium), Contract Idm-E 1133, McAlester Fuel Company (Star claims and leased lands), Fall River County, South Dakota

In a letter dated July 26, 1958, Robert Ford, consultant for the operator, requests that contract Idm-E 1133 be amended to allow a suspension of operations from May 1, 1958, to September 1, 1958, and that 10 additional Stage I holes be approved in an area where he believes unoxidized ore bodies may be found.

The theory that uranium can be leached from deposits above the water table, migrate down dip, and be redeposited under reducing conditions at or slightly below the water table has been applied, with some success, in exploration for uranium deposits in the Black Hills area. Data presented in Ford's request and data from drilling completed to date do not support the conclusion that leaching, migration, and deposition have taken place in the manner postulated in the request for additional Stage I work.

Ford relates his solution, migration and deposition cycle to the present water table but presents little or no data to show the actual ground water conditions in the area. Although his statement that the holes in the postulated leached area are "dry" and those in the postulated deposition are "wet", the century resistivity logs do not confirm this statement.

Both north and east of the property, canyons have been eroded below the base of the potential ore-bearing interval in the Lakota formation. This condition would cause ground water north of the property to be tributary to the intervening canyon and limit the amount of water available for solution, migration and redeposition of uranium.

From a more practical viewpoint it should be noted that contrary to Ford's statement that drilling is proposed in a new area, three Stage I holes (nos. 16, 20, and 23) have been drilled in the postulated area of redeposition--all three holes were barren.

For the reasons outlined above we recommend that the applicant's request for a suspension and additional Stage I drilling be denied, and that the contract be terminated. Although Ford estimates reserves at over 1,000,000 tons of ore (0.05% U_3O_8) containing 1,289,376 pounds of uranium at depths of 450 to 510 feet it does not appear that a Certification of Discovery should be issued.

James D Cooper
for E. O. Binyon

E. N. Harshman
E. N. Harshman

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 1 1958

DATE	INITIALS	CODE
8/1	C	220
8/1	[illegible]	800
	[illegible]	[illegible]

224 New Customhouse
Denver 2, Colorado
July 29, 1958

Memorandum

To: E. N. Marshman - w/enclosure
DMEA/DFC (Binyon) - "

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

Subject: Docket No. DMEA 4742 (Uranium), Contract No. Idm-K1133, McAlester Fuel Company (Star claims and leased lands), Fall River County, South Dakota

Enclosed is a letter from the subject Operator, dated July 26, 1958, and work proposal with two attached maps, wherein the Operator requests that the contract be amended to provide for extension of Stage I drilling easterly, which is not presently provided for in the contract.

The Operator states that the proposed additional drilling is in a new area. However, review of the project work to date indicates that the area was partially drilled under Stage I during November, 1957. In addition, it appears that Stage I holes 19 and 22 have already been drilled at the approximate locations of two of the new holes proposed by the Operator. If you are so inclined, it appears that some of the proposed holes could be considered as offsets to holes previously drilled under Stage I.

The Operator's request contains no cost analysis for the new work. Therefore, we assume that the unit costs presently provided for in the contract would be applicable.

Please review the Operator's request and attached maps, and, consistent with travel restrictions outlined in the Regional Director's memorandum of July 18, 1958, submit to this office a joint memorandum containing your recommendations relative to the proposed additional work and, if applicable, relative to an amendment to the contract to provide for the additional work.

Original signed by
J. W. TOWNSEND

J. W. Townsend

JDC:prl
cc: Chmn.Op.Comm.-2) w copy of Operator's
Corres. file) request, work proposal, and attached maps.

Cooper
Chron.

2 maps in envelope-packet

ROBERT FORD
MINING GEOLOGIST

P.O. BOX 428

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

BLAKE FOX
PETROLEUM GEOLOGIST

UL6-3463

July 26, 1958

DMEA
DEPARTMENT OF THE INTERIOR
JUL 28 1958
REGION III
DENVER, COLORADO

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

Re: Docket No. 4742
Contract No. Idm-E 1133
McAlester Fuel Company

Dear Mr. King:

Enclosed you will find the original and five (5) copies of a request for continuing the above named contract. This request is in the form of Amendment No. 1 to the subject contract.

McAlester Fuel Company has asked that Stage III drilling be discontinued. That is, offsets to previously mineraled drill holes no longer be made a directive of Stage III. We are asking for five to six thousand feet of drilling in an area that has not previously been drilled. This request is supported by geological evidence from the past drilling. You are aware that to date the total expenditure of this contract has been $47,905.26 against the total authorized monies of $12,136.00. I hope this request meets with your approval.

Sincerely yours,

Robert Ford

RF:cjb
encl
CC: Mr. Tom Garrard
McAlester Fuel Company
McAlester, Oklahoma

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 8 1958
DOCUMENT CONTROL CODE
UL6-3468

July 19, 1958

DMEA
DEPARTMENT OF THE INTERIOR
JUL 28 1958
REGION III
DENVER, COLORADO

PROPOSED AMENDMENT NO. 1 FOR EXPLORATION
ON THE
STAR CLAIMS AND LEASED LANDS
Contract Idm-E 1133
DMEA Docket No. 4742
McAlester Fuel Company

PURPOSE

This application for exploration assistance is made on behalf of McAlester Fuel Company, McAlester, Oklahoma. The report is intended as a supplemental work request made as an amendment to the subject contract. The original contract covered the Star claims and leases, as does this request. The last report submitted was dated March 15, 1958 and covered Stage III drilling, at which time a suspension of operations was requested.

CONTRACT

The exploration contract was divided into three stages of drilling. The contract also called for a total estimated allowable cost of the project of $72,136.00 with the Government contribution not to exceed $54,102.00.

Stage I exploration was completed on November 12, 1957. Forty-eight rotary non-core holes were drilled totaling 19,374 feet, 17,581 of drilling was charged to the DMEA account against a total allowable of 20,300 feet.

Stage II drilling was completed on February 14, 1958. The drilling was restricted to the same property as the Stage I and was confined to offset drilling from mineralized holes and favorable sands. Thirty-seven non-core holes were drilled and two Stage I drill holes deepened. Drilling under Stage II totaled 19,579 feet. The total allowable Stage II drilling under the contract was 26,000 feet.

Stage III drilling was completed March 12, 1958, and consisted of nine rotary non-core holes as offsets to previously drilled mineralized holes. The Stage III drill holes totaled 4,830 feet of the authorized 15,000 feet of non-core rotary drilling.

The work accomplished in all stages of the subject contract was 41,990 feet of rotary non-core drilling, 81 hours of drill standby time and 19 chemical analysis. The total cost of the project to date has been $47,905.26

against total authorized contract monies of $72,136.00. Drilling to date is 19,310 feet less than total allowable under the contract.

SUSPENSION OF OPERATIONS

The last work performed under the contract was on March 12, 1958, and was reported to the Denver offices of the DMEA on March 15, 1958. Said report and letter of May 8, 1958, made known the fact that operations were suspended pending a final review and study of all data.

This proposed "Amendment No. 1", if approved, is also a request for suspension of operations from May 1, 1958 to September 1, 1958, at which time it is proposed to start exploration on the Star claims and leases as outlined herein.

STAR CLAIMS AND LEASES

LOCATION

The Star claims and leases are located in Fall River County, South Dakota about nine miles southeast of Edgemont. The claims and leases have all been subordinated under Contract Idm-E 1133.

PREVIOUS WORK

Past work on the Star claims and leases has been described above and was restricted to the DMEA sponsored exploration under Stages I, II and III.

GEOLOGY

The greater portion of the subject claim group is underlain by three sandstone horizons. 1) Upper Fall River sandstone, 2) the Gould Channel sandstone, and 3) the deep Lakota sandstone. These sandstone "channels" were adequately described in the original application for DMEA aid, and proposals and recommendations for Stage II dated December 19, 1957.

The attached map shows the Star claims and leases and the significant deep hole tests of the Lakota sandstone "channel". Past drilling has dimmed the chance of significant mineralization in either the Fall River, or Gould channel sandstones. Extreme oxidation and lack of reducing environment for the uranium salts has proven unfavorable for ore deposits in these shallow

sandstone units.

Significant mineralization, from past DMEA drilling, was discovered in the Lakota sandstone, however. The outline of known mineralization is shown on the accompanying map. The following drill holes show significant mineralization. The grade is an interpretation as per the progress report on Stage III dated March 15, 1958.

Hole No.	Depth	CPS	%U_3O_8
57	476-482	99	.03
71	451-457	167	.07
94	477-479	150	.06
95	508-511	401	.29
96	456-458	283	.17
101	444-446	96	.03

The above mineralized holes, and others so indicated on the map, represent an arial extent of 148 acres. An average grade of .05% U_3O_8 calculated to be three feet thick equals 1,289,376 lbs. of contained U_3O_8. The potential of the mineralized area was over 1,000,000 tons of ore. Extreme oxidation and leaching of the ores resulted in the low grade ores found in the drilling. The drill holes were dry and mineralization is of the carnotite-type which gives evidence to the oxidation.

<u>In the absence of other localizing agents, such as pyrite, carbon, or vanadium, the gravity flow of migrating mineral solutions should be down dip, i. e., southeast, to the water table where a change from oxidizing to reducing environment could have precipitated uranium in significant quantities</u>.

Recent discoveries near Hulett and the deep discoveries near Edgemont suggest that the lower Lakota sandstones to the south and east of the mineralized area warrants exploration. Exploration is herein requested as an Amendment to the subject contract which now restricts, as Stage III, exploratory drilling to offsets of mineralized drill holes. The Operators do not wish to explore the low grade mineralization by continuing offsets in Stage III drilling. A request is made that the Government authorize new exploration from the unused funds originally allowed under the contract. The exploration should be confined to drilling in the area requested.

The attached drill hole location map shows only those drill holes that cut the Lakota "channel" sandstone. Mineralization is shown cross hatched, structure contours are drawn on the top of the Morrison formation,

and a zone of water saturated sandstones on the same horizon as the mineralization is shown stippled.

The structure at the base of the Lakota or top of the Morrison formation shows a fold associated with the trend of mineralization. This fold is downwarped on the east side, the flexure is contiguous with the mineralization as now known. It is proposed that this trend be followed southeastward into the area of ground water saturation and sand silt facies change as shown on the cross sections A-A' and B-B'. The saturation that accompanies this facies change has proven an apt reducing zone for uranium mineralization.

Recommended drill holes are shown on the attached map. The total 1st Stage drilling requested, under this proposed amendment, is 10 holes averaging 500 feet deep or 5,000 feet of exploration drilling.

Respectfully submitted,

Robert Ford

Robert Ford

July 19, 1958

INING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

UL6-3463

7/21 C 220 July 9, 1958
7/21 800
" ~~1000~~ 700

4742

DMEA
DEPARTMENT OF THE INTERIOR
JUL 11 1958
REGION III
DENVER, COLORADO

Mr. J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Dear Mr. Townsend:

With reference to your letter of July 7 and as per our telephone conversation on this date, I advise you that we have just completed a study of the McAlester Fuel Company properties in Fall River County, South Dakota and will request further work under the terms of the contract. This will be in your office as soon as possible.

Sincerely yours,

Robert Ford

RF:cjb

7/16/58 - Copies distributed to:
Chrm. Op. Comm. (2)
Harshman
DMEA/DFC (Binyon)
Corres. File, Reg. III
Cooper

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 1958

7/10 C 220
7/11 800
~~7/14 700~~

224 New Customhouse
Denver 2, Colorado
July 7, 1958

Mr. Robert Ford
P. O. Box 428
Riverton, Wyoming

Re: Docket No. DMEA 4742 (Uranium)
Contract Idm-81133
McAlester Fuel Company
(Star claims and Leased lands)
Fall River County, South Dakota

Dear Mr. Ford:

Reference is made to your letter of May 8, 1958, and to our reply of May 13, 1958, concerning possible extension of the contract completion date from May 1, 1958, to July 1, 1958, in order to allow sufficient time to evaluate the results of DMEA work and other work performed at the project area.

The authority under which DMEA has been operating expired on June 30, 1958. This will not affect the status of the contracts in force. However; due to reduction of administrative funds it is necessary that we close out all completed contracts at the earliest possible date; therefore, if approval for additional work is not to be requested, you should so inform this office and request that the contract be terminated in its present status without requiring performance of the balance of work originally provided for.

Your immediate attention in this matter and reply to this office will be appreciated.

Very truly yours,

Original signed by
J. W. TOWNSEND

J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team, Region III

cc: McAlester Fuel Co.
P. O. Box 783
McAlester, Oklahoma

JDC:hmh

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC (Binyon)
Corres.file, Reg.III
Cooper
Chron

DMEA
RECEIVED MAY 19 1958

5/19 C 220
5/19 400 800
~~5/20 400 700~~

204 New Customhouse
Denver 2, Colorado
May 16, 1958

Mr. Tom E. Garrard, Vice President
McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

Re: Docket No. DMEA 4742 (Uranium)
Contract IAm-E1133
McAlester Fuel Company
(Star claims and Leased lands)
Fall River County, South Dakota

Dear Mr. Garrard:

Form MF-104, Operator's Monthly Report and Voucher, for March, 1958, has been received in this office and is being processed for payment.

All of the currently approved work has been completed, therefore an amount of $500.00 is withheld from reimbursement to McAlester Fuel Company, pending possible performance of additional work. If additional work is not approved by the Government, and performed by McAlester Fuel Company, the amount of $500.00 shall continue to be withheld pending resolution of matters prerequisite to closing the account which include:

1. Execution of a suitable agreement by the parties to the contract to terminate the the contract in its present status without requiring performance of the balance of work provided for.

2. Rendering to the Government a final report in accordance with Article 7(a) of the contract form.

3. Release to this office of a Certificate of Audit and Audit Report or Report of Review of the reported project costs by the Contract Administration and Audit Division, DMEA.

Yours very truly,

Original signed by
E. N. HARSHMAN

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

JPC:hmh

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC
Townsend
Corres.file,Reg.III
Chron

cc: Robert Ford
P.O. Box 428
Riverton, Wyoming

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 15 1958

DATE		NOTE
5/15	C	220
5/15	400	800
	~~1444~~	~~700~~

224 New Customhouse
Denver 2, Colorado
May 13, 1958

Mr. Robert Ford
Ford & Fox, Consulting Geologists
P. O. Box 428
Riverton, Wyoming

Re: Docket No. DMEA 4742 (Uranium)
Contract No. Idm-K1133
McAlester Fuel Company
(Star claims and leased lands)
Fall River County, South Dakota

Dear Mr. Ford:

Receipt is acknowledged of your letter of May 8, 1958, wherein you request an extension of the date presently fixed in the contract, on or before which the work shall be completed, from May 1, 1958 to July 1, 1958.

You state that the time extension is necessary in order to provide time for you to investigate and evaluate the results of drilling on ground adjacent to that subordinated under the contract. Since the extension of time requested would not provide sufficient time to complete any additional work that you might request, it is considered that the practical approach to the problem would be to hold your request in deferment pending a final decision regarding future operations under the contract.

If additional work is eventually proposed and acted on favorably by the Government, an extension of the completion date will also involve providing for a suspension of operations; in conjunction with which, the following information would be required:

1. The date the last work under the contract was performed.

2. The date on or before which operations will be resumed.

3. The date on or before which any additional work proposed would be completed.

Please keep us informed as to the progress made in evaluating the results of the work on adjacent property and advise us as to your decision regarding future work, as it is not our desire to maintain the contract for any great period of time in an indefinite status.

When your decision has been reached, if additional work is not proposed, you should request the Government's approval for termination of the contract in its present status without completion of the balance of work originally provided for.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

cc: Mr. Tom Garrard
McAlester Fuel Company
P. O. Box 735
McAlester, Oklahoma

JWT:prl

cc: Chmn. Op. Comm.-2) w/copy of
Harshman) Operator's
NRDA/DFC-Kinyon) letter of
Corres. file) May 8.
Townsend
Chron.

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

UL6-3468

May 8, 1958

DMEA
DEPARTMENT OF THE INTERIOR
MAY 9 1958
REGION III
DENVER, COLORADO

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

Re: Contract No. DMEA 4742
Docket No. Idm-E 1133
McAlester Fuel Company

Dear Mr. King:

McAlester Fuel Company requests extension of the completion date of the above named contract from May 1, 1958 to July 1, 1958. The change is needed to further assess the results of past drilling and to investigate recent exploration completed immediately north of Sections 5 and 6, T9S, R4E.

McAlester Fuel Company asks that this extension be made "Amendment No. 1" of the subject contract. The last narrative report was sent your office on March 15 and the March cost accounting is now being processed by your office for payment. Before reviewing the exploration results and requesting termination with the final report it is thought that time should be granted to study the neighboring exploration and development.

Very truly yours,

Robert Ford

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 15 1958
DATE

RF:cjb
CC: Mr. Tom Garrard
McAlester Fuel Company
McAlester, Oklahoma

	INITIALS	CODE
5/9	C	220
5/9	[illegible]	800
	~~7 MR~~	~~700~~

224 New Customhouse
Denver 2, Colorado
May 6, 1958

Mr. Tom E. Garrard, Vice President
McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

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

Dear Mr. Garrard:

We are returning herewith all copies of voucher and accounting Forms MF-104 and MF-104A for the month of March 1958, because the forms have not been properly prepared.

Enclosed is a sample copy of each form which illustrates the proper method of reporting units and costs for each stage of work under the contract. Also enclosed are seven blank copies of each form for your use in making the necessary revisions.

Please prepare revised forms for March 1958, using the sample forms as a guide and forward the signed original and four signed copies of each form to this office as soon as possible so that we may continue to process the voucher for payment.

Yours very truly,

Original signed by
E. N. HARSHMAN

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

JDC:hmh

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC
Townsend
Corres.file,Reg.III - w/copy Sample Forms MF-104 & MF-104A
Chron

cc: Robert Ford, - w/copy Sample Forms MF-104 & MF-104A
Consulting Geologist
P. O. Box 428
Riverton, Wyoming

UMF
RECEIVED APR 10
DATE
4/10
4/10
4

224 New Customhouse
Denver 2, Colorado
April 7, 1958

Mr. J. G. Puterbaugh, President
MCAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

Docket No. DMEA 4742 (Uranium)
Contract Idm-E1133
McAlester Fuel Company
(Star claims and Leased lands)
Fall River County, South Dakota

Dear Mr. Puterbaugh:

MF-104, Operator's Monthly Report and Voucher, for January 1958, has been received in this office and is being processed for payment.

The cost for 545 feet of drilling is reported for hole M-93; however, a check of the radiometric and lithologic logs indicates that only 532 feet of drilling was performed in this hole. The reported cost, including Incidental Allowance for 13 feet of drilling is disallowed.

You will be further advised of the disallowance by means of an Administrative Audit Difference Statement, which will be forwarded to you by the Finance Office, Region III. Please make the necessary adjustments of units and costs on the next reports submitted on voucher and accounting Forms MF-104 and MF-104A.

Yours very truly,

Original signed by
E. N. HARSHMAN

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

JDC:hmh

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC
Townsend
Corres.file,Reg.III
Chron

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado
March 5, 1958

RECEIVED 7 1958

3/7 C 220
11 FMM 700

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

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

Enclosed are the following pertaining to operations under the subject contract:

1. Three copies of the Field Team's letter of March 3, 1958 confirming verbal approval issued February 11, 1958 for the drilling of six offset holes under Stage III of the contract.

2. Two sets of data consisting of the Operator's letters of February 10 and February 19, 1958 pertaining to the drilling.

3. Three copies of a joint memorandum, dated February 26, 1958, from E. O. Binyon, Mining Engineer, Bureau of Mines, and D. H. Richter, Geologist, Geological Survey, recommending the additional drilling.

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

W H King
W. H. King

Enclosures

Note - map attached to 2nd letter, March 5, shows all holes. FMM

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

DMEA
DEPARTMENT OF THE INTERIOR
FEB 24 1958
REGION III
DENVER, COLORADO

UL6-3468

February 20, 1958

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

Re: Docket No. DMEA 4742 (Uranium)
Contract No. Idm-R 1133
McAlester Fuel Company

Dear Mr. King:

Under the terms of the above named contract this letter is a request for additional drilling under the Stage III program. To date we have completed holes 94, 95 and 96 as shown on the accompanying drill hole location map. All holes were favorably mineralized. A copy of the drill hole log from hole 95 is attached hereto. This log shows significant mineralization from 500 to 520 feet. Four (4) feet from 508 to 512 shows ore grade material. Dry air caught samples from this zone may assay as high as 1.5% U_3O_8. We are therefore requesting offset holes to No. 95 and a north offset to hole No. 71 which is apparently in the trend of the higher grade mineralization. The following drill holes are requested.

Hole No.	Hole Offset	Depth	N. Coordinate	E. Coordinate
100	71 north	545'	368,650	1,105,000
101	95 north,	545'	368,650	1,105,250
102	95 east	545'	368,400	1,105,500

The three holes above requested total 1,635 feet. If these are approved the total approved drilling for Stage III under the subject contract will be 4,905 feet.

Very truly yours,

Robert Ford

RF:cjb
encl

CC: Mr. E. N. Harshman
U. S. G. S., DMEA
Building 25
Denver Federal Center
Denver, Colorado

Mr. E. O. Benyon
Bureau of Mines, DMEA
Denver Federal Center
Denver, Colorado

Mr. Tom Garrard
McAlester Fuel Company
McAlester, Oklahoma

Mr. Max Hartle
P. O. Box 896
Edgemont, South Dakota

[illegible] Kay Gatehouse
Denver 2, Colorado

March 3, 1958

Mr. Robert Ford
Consulting Geologist
P. O. Box [illegible]
Riverton, Wyoming

Re: Contract No. [illegible] (Uranium)
Contract No. [illegible]
Hollister Fuel Company
(Star claims and Lakeset lands)
Fall River County, South Dakota

Dear Mr. Ford:

In reference to your requests of February 10 and 19, 1958, this confirms verbal approval by the Government, given February 11, 1958, for the drilling of the following six offset holes under the provisions of Stage III of the Contract:

Stage II Hole to be Offset	Reference No. of Approved Offset Hole	Location of Approved Offset Hole	Approximate Depth of Approved Offset Hole
56	96	850 ft. S. of 56	545 feet
	97	850 ft. E. of 56	545 feet
72	95	850 ft. S. of 72	545 feet
	94	850 ft. W. of 72	545 feet
73	93	850 ft. S. of 73	545 feet
	92	850 ft. W. of 73	545 feet
Totals	6 holes		3,270 feet.

In addition to the approval of the above listed six offset holes, the Government also concurs in omitting from the drilling hole No. 60, approval for the drilling of which was confirmed by the DMEA Field Team, Region III, under date of January 28, 1958.

Nothing in this confirmation of 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,

DSSA Field Team, Region III

By W. E. King
W. E. King

By E. M. Hardman
E. M. Hardman

cc: Mr. Tom E. Garrard
Vice President
McAlester Fuel Company
P. O. Box 703
McAlester, Oklahoma

JWT:prl

cc: Chem. Op. Comm. (3)
Finance Office, Region III
Amendment file, Region III
Hardman
DSSA/DFC (Blayon)
Corres. file
Townsend
Chron.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
FEB 27 1958
REGION III
DENVER, COLORADO

February 26, 1958

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: E. O. Binyon
D. H. Richter

Subject: Docket DMEA 4742 (Uranium), Contract Idm-E 1133, McAlester Fuel Company (Star claims and leased lands), Fall River County, South Dakota

On February 4, 1958, the operator was given verbal authorization to deepen Stage I holes 7 and 9 and to drill hole 93 under the provisions of Stage II of the subject contract. Upon completion of this work, the operator in a letter of February 10, 1958, requested (1) an additional 6 holes, under Stage II, and (2) the deletion of hole 80, which had been authorized earlier under Stage II.

The additional 6 holes were designed to test on 500-foot offsets zones of slight mineralization (0.02-0.06 percent eU_3O_8) in the lower Lakota formation encountered in holes 7, 75, 77, and relatively higher grade mineralization (0.09 percent eU_3O_8) in hole 71. Examination of the available data, now indicates that the highest anomalous radioactivity is in the vicinity of holes 54, 71, and 73 with a fairly rapid decrease in radioactivity to the east, south, and west; the anomaly may continue to the north beyond the property boundary. Although drilling in this area has been on a wide spaced 500-foot grid, it appears that sufficient holes

have been drilled to adequately outline the area of strongest mineralization and that additional drilling on 500-foot centers would not be to the best interest of the Government, nor would it materially add to the general information now at hand. The situation was discussed with the operator on February 11, 1958, who, without strong geologic convictions to substantiate the additional Stage II work, agreed to terminate the Stage II drilling. At the same time it was mutually agreed upon and verbally recommended to drill six Stage III 250-foot offset holes around the principal mineralized holes found under Stage II.

No recommendations were made concerning hole 80; completion or deletion of the hole was left to the discretion of the operator.

Details of the work approved are as follows:

Stage II hole to be offset	Offset holes	Location	Approximate depth (feet)
54	96 (54N)	250' N of 54	545
	97 (54S)	250' S of 54	545
71	95 (71E)	250' E of 71	545
	94 (71W)	250' W of 71	545
73	99 (73E)	250' E of 73	545
	98 (73W)	250' W of 73	545
Totals	6		3,270

D. H. Richter

D. H. Richter, Geologist

E. O. Binyon

E. O. Binyon, Mining Engineer

DHRichter:arh

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

UL6-3468

February 19, 1958

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

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

Re: Docket No. DMEA 4742 (Uranium)
Contract No. Idm-E 1133
McAlester Fuel Company

Dear Mr. King:

Under the terms of the above named contract, this letter is a request for drilling under the Stage III program. The following drill holes are requested on the basis of mineralization and on the basis of significant mineralization found in the Stage II drilling and so reported in my report on Stage II drilling dated February 15, 1958.

Hole No.	Hole Offset	Depth	N. Coordinate	S. Coordinate
94	71 west	545'	368,400	1,104,750
95	71 east	545'	368,400	1,105,250
96	54 north	545'	368,150	1,105,000
97	54 south	545'	367,650	1,105,000
98	73 west	545'	367,400	1,104,750
99	73 east	545'	367,400	1,105,250

These six requested holes total 3,270 feet and are the first requested drill holes of the Stage III program.

Very truly yours,

RF:cjb
encl 5
CC: Mr. Tom Garrard, Vice President
McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

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

UL6-3468

February 10, 1958

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

Re: Docket No. DMEA 4742 (Uranium)
Contract No. Idm-E 1133
McAlester Fuel Company
Fall River County, South Dakota

Dear Mr. King:

Verbal authorization given February 4, 1958, to deepen holes 7 and 9 and drill hole 93 was received from Mr. Richter. This drilling has been completed and McAlester Fuel Company is herein requesting additional drilling under Stage II of the subject contract.

Drill hole 93 as shown on the accompanying map was drilled to the Morrison contact without significant mineralization. Drill holes 7 and 9 were deepened with significant mineralization in the zone expected. No offsets are being asked for drill hole 9 at this time. Drill hole 7 contained mineralization comparable to hole 72 and offsets to the north and east are requested. Offsets to hole 71 are requested 500' east and 500' west, 500' east offsets to holes 75 and 77 are also requested.

Information from holes 81, 82 and 84 show the inadvisability of drilling hole 80. Therefore, it is requested that hole 80 be deleted from your confirmation of January 28. To date it is estimated that the total drilled and confirmed Stage II drilling is 18,742 feet. Hole 80 has been omitted from this total. A request is made that the following holes constitute the final drilling under Stage II of the subject contract.

Hole No.	Hole Offset	Depth	N. Coordinate	E. Coordinate
89	7	545	367,900	1,106,500
90	7	545	368,400	1,106,000
94	75	540	367,400	1,106,500
95	77	540	366,400	1,106,500
96	71	540	368,400	1,104,500
97	71	540	368,400	1,105,500

It is estimated that the total footage drilled under Stage II, if the above requested holes are completed, will be 21,992 feet.

Very truly yours,

REF:ejb
CC: Mr. E. N. Harshman
U. S. G. S., IMEA
Building 25
Denver Federal Center
Denver, Colorado

Mr. E. O. Benyon
Bureau of Mines, IMEA
Denver Federal Center
Denver, Colorado

Mr. Max Hartle
P. O. Box 896
Edgemont, South Dakota

Mr. Tom Garrard
McAlester Fuel Company
McAlester, Oklahoma

DMEA RECEIVED MAR 7 1958		
DATE	INITIALS	CODE
3-7	C	220
"	FMM	700

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

March 5, 1958

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

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

Enclosed are the following, pertaining to operations under the subject contract:

1. Three copies of the Field Team's letter of March 3, 1958 confirming verbal approval issued on February 25, 1958 for the drilling of three offset holes under Stage III of the contract.

2. Two copies of the Operator's request, dated February 20, 1958, for approval of the drilling.

3. Three copies of a joint memorandum, dated February 27, 1958, from D. H. Richter, Geologist, Geological Survey, and E. O. Binyon, Mining Engineer, Bureau of Mines, recommending the work approved.

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

W. H. King

W. H. King

Enclosures

[illegible] New Customhouse
Denver 2, Colorado
March 3, 1958

Mr. Robert Ford
Consulting Geologist
P. O. Box [illegible]
Riverton, Wyoming

Re: Docket No. DMEA 4742 (Uranium)
Contract No. Ida-[illegible]
Hallester Fuel Company
(Four claims and leased lands)
Fall River County, South Dakota

Dear Mr. Ford:

In reference to your request, dated February [illegible], 1958, this confirms verbal approval by the Government, given on February [illegible], 1958, for you to drill the following listed three offset holes under the provisions of Stage III of the Contract:

Stage II & III Hole to be Offset	Reference No. of Approved Offset Hole	Location of Approved Offset Hole	Approximate Depth of Approved Offset Hole
71	100	[illegible] ft. E. of 71	5[illegible] feet
95	101	[illegible] ft. E. of 95	[illegible] feet
	102	[illegible] ft. E. of 95	[illegible] feet
Totals	3 holes		1,655 feet.

Nothing in this confirmation of 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."

JWF:pl
cc: Comm. Op. Comm. (3)
Finance Office, Region III
Amendment file, Region III
Karlsson
DMEA/DPC (Bingen)
Corred. file
Terrasand

Very truly yours,

DMEA Field Team, Region III

By W. H. King
W. H. King

By E. H. Hartman
E. H. Hartman

cc: Mr. Wm. E. Garrard
Vice President
Hallester Fuel Company
P. O. Box 785
Hallester, Oklahoma

Chron.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
MAR 3 - 1958
REGION III
DENVER, COLORADO

DMEA
RECEIVED
MAR 7 1958

DATE	INITIALS	CODE

February 27, 1958

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: D. H. Richter
E. O. Binyon

Subject: Docket DMEA 4742 (Uranium) Contract Idm-E 1133, McAlester Fuel Company (Star claims and leased lands), Fall River County, South Dakota

In a letter dated February 20, 1958, and in a telephone conversation of February 25, 1958, the operator notified the Field Team that the six (nos. 94-99) Stage III drill holes authorized February 11, 1958, had been completed. One of these holes--no. 95, the 250-foot east offset of hole 71--encountered at a depth of 508 feet, about 3 feet of 0.14 percent eU_3O_8, the highest grade material yet found under the program. The other holes apparently were only mineralized.

The operator also requested in his letter approval to drill three additional Stage III offset holes to the north, northwest, and east of hole no. 95. Although the depth of the mineralized horizon now precludes consideration of 0.14 percent eU_3O_8 as significant, the possibility remains, because of the increase in grade to the northeast, that a significant deposit may be present in the area. On this basis the additional three offset holes as requested by the operator are recommended. However, it also appears rather certain now, that if

these holes fail to show an appreciable increase in grade and thickness of mineralization, further work with Government participation cannot be justified.

Specifications of the three recommended additional Stage III holes are as follows:

Holes to be offset	Offset holes	Location	Approximate depth (feet)
	100	250' N of 71	545
95	101	250' N of 95	545
71	102	250' N of 95	545
Totals	3		1,635

On February 25, 1958, the operator was advised, by E. N. Harshman, of the Government's approval of the additional Stage III drilling recommended above.

E. O. Binyon

E. O. Binyon, Mining Engineer

D. H. Richter

D. H. Richter, Geologist

DHRichter:arh

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

FEB 18 1958

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

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

Enclosed are three copies of confirmation of verbal work approval issued by the DMEA Field Team, Region III.

Also enclosed are two copies of the Operator's letter of January 31, 1958, with attached data, and three copies of a joint memorandum, dated February 10, 1958, from E. O. Binyon, Mining Engineer, Bureau of Mines, and D. H. Richter, Geologist, Geological Survey, pertaining to the work approved.

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

W H King
W. H. King

Enclosures

Map & log info in Folder #3

ORIGINAL FILE COPY
DMEA
RECEIVED FEB 21 1958
CODE
2/21 C 220
" " 700

224 New Customhouse
Denver 2, Colorado

February 14, 1958

Mr. Robert Ford
Consulting Geologist
P. O. Box 428
Riverton, Wyoming

Re: Docket No. DMEA 4742 (Uranium)
Contract No. Idm-E1153
McAlester Fuel Company
(Star claims and Leased Lands)
Fall River County, South Dakota

Dear Mr. Ford:

In reference to your letter of January 31, 1958, with attached data, which constitutes your request for the Government's approval of additional drilling under Stage II of the Contract, confirmation of Field Team approval for additional drilling under the provisions of Stage II of the Contract, issued February 4, 1958, is as follows:

1. In lieu of holes Nos. 89 and 90, requested by you, reoccupy Stage I hole No. 7 and extend it to the Lakota-Morrison contact.

2. In lieu of holes Nos. 91 and 92, requested by you, reoccupy Stage I hole No. 9 and extend it to the Lakota-Morrison contact.

3. Drill hole No. 93 to the Lakota-Morrison contact at the approximate location requested by you.

Nothing in this confirmation of verbal 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,

DMEA Field Team, Region III

By W H King
K. H. King

By E. N. Harshman
E. N. Harshman

JWT:prl
cc: Chmn. Op. Comm. (3)
Finance Office, Region III
Amendment file, Region III
Harshman
DMEA/DFC (Binyon)
Corres. file
Townsend
Chron.
cc: Mr. Tom E. Garrard, Vice President
McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
FEB 13 1958
REGION III
DENVER, COLORADO

RECEIVED FEB 21 1958 D.M.E.A.

February 10, 1958

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman EMH

From: E. O. Binyon
D. H. Richter

Subject: Docket DMEA 4742 (Uranium), Contract Idm-E 1133, McAlester Fuel Company (Star claims and leased lands), Fall River County, South Dakota

On January 31, 1958, the operator requested that an additional five holes, totaling 2,725 feet, be approved for Stage II work under the subject contract. These five holes are east and southeast of the area in which Stage II drilling has recently been completed.

Briefly, the reasons for the additional Stage II holes, as given by the operator in his letter and in a later telephone conversation, are as follows:

1) Increase in grade of mineralization eastward from area of recently completed Stage II drilling.

2) Color boundary in Lakota sandstone striking SE along a line that projects through holes 71, 54, 78, and 77, with drab-colored sands to the east and pink sands to the west.

3) Possible major lithologic facies change, in the lower Lakota formation, from predominantly sandstone in the area recently drilled under Stage II, to predominantly mudstone in the same interval 3,000 feet to the southeast and east. The operator believes that ground water conditions between these two areas may have had a pronounced effect on the deposition of uranium.

From the information available to the examiners, the operator's first reason for drilling eastward appears to be without basis. The area of strongest mineralization (holes 54, 71, 73) now appears to be west of the area, in which drilling is requested, with a halo of lesser mineralization extending to the northwest and southeast. The operator's other reasons, i.e., the color and facies change, however, merit consideration, and we have accordingly recommended a limited amount of drilling in an attempt to roughly test areas where these facies changes may have influenced ore deposition, or as in the case of the color change may be a manifestation of ore.

The work recommended consists of deepening Stage I holes 7 and 9, which were only drilled through the upper Lakota Gould channel, to the Lakota-Morrison contact and drilling hole 93--located 1,000 feet south of Stage I hole 8--to the Lakota-Morrison contact. The deepening of the two Stage I holes would effectively and economically substitute for four of the new holes requested by the operator. Total footage required for this work would be 1,185 feet (640 feet to deepen holes 7 and 9, and 545 feet in hole 93). In discussing this modified plan with the operator, the examiners were informed that deepening of the old holes was feasible.

On February 4, 1958, with DMEA Field Team, Region III authorization, the operator was advised of the Government's approval of the additional Stage II drilling recommended above.

E. O. Binyon

E. O. Binyon, Mining Engineer

D. H. Richter

D. H. Richter, Geologist

DHRichter:arh

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

UL6-3468

January 31, 1958

DMEA
DEPARTMENT OF THE INTERIOR
FEB 3 - 1958
REGION III
DENVER, COLORADO

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

Re: Docket No. 4742
Contract No. Idm-E 1133
McAlester Fuel Company

Dear Mr. King:

Under the terms of the above named contract this letter is a request for additional drilling under Stage II. To date Stage II drilling has been approved by your office in the amount of 19,090 feet as per your letters of January 8 and January 28, 1958.

Under paragraph one of Stage II in the subject contract, McAlester Fuel Company is requesting additional offset drilling from holes of significant mineralization.

The attached map shows all holes drilled and approved to date. Of those holes approved only holes 80, 83, 85, 86, 87 and 88 remain undrilled at this writing. Attached drill logs for holes number 71, 72, 73, 76 and 78 will show signigicant mineralization. Hole 77 was equally well mineralized.

The mileralized holes are all bordering an undrilled area to the east, particularly the SW¼ Sec. 6 and the S½ Sec. 5. It is interesting that the mineralization is increasing going eastward, and that a definite color change in the sands of the mineralized area is noticeable. At present there is insufficient data to correctly map this zone of color change and successfully predict the trend. Apparently, however, the present known position of the color change is a gradational contact striking through holes 71, 54, 78 and 77. West of this line the sandstones are pink. Eastward the pink sands grade into predominantly gray sands at the mineralized horizon and the zones of radioactivity are confined to this contact.

Visible carnotite uranium mineralization was found in drill hole 71. Careful hole probing comparison between those holes drilled dry and those filled with water, mud and cuttings indicate the correlation chart presented in my report of December 16 is conservative by at least 20% and perhaps greater. No assay values have been returned from the last mineralized holes.

The following drill holes are requested to check as much of the eastern trend of mineralization as possible. All holes are offsets of previously drilled mineralized holes.

Hole No.	Hole Offset	Depth	N. Coordinate	E. Coordinate
89	72	545'	367,900	1,106,500
90	71	545'	368,400	1,106,000
91	10	545'	367,900	1,109,000
92	76	545'	366,900	1,108,000
93	15	545'	365,900	1,107,000

These five requested holes total 2,725 feet and will bring the total authorized drilling of Stage II to 21,815 feet. Should this drilling be authorized it is expected that all Stage II drilling shall be completed and reports and cost data submitted to the Denver office by February 12.

Very truly yours,

RF:cjb
OC: Mr. E. N. Harshman
U. S. G. S., DMEA
Building 25
Denver Federal Center
Denver, Colorado

Mr. E. O. Benyon
Bureau of Mines, DMEA
Denver Federal Center
Denver, Colorado

Mr. Max Hartle
Box 896
Edgemont, South Dakota

Mr. Tom Garrard
McAlester Fuel Company
McAlester, Oklahoma

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

JAN 30 1958

DMEA
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Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

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

Enclosed are three copies of a letter from this office, dated January 28, 1958, wherein the DMEA Field Team, Region III, confirms verbal approval for the drilling of eleven holes and the drilling of seven additional holes under Stage II of the contract.

Also enclosed are three copies of the Operator's letter of January 20, 1958, constituting a request for the Government's approval for the work, and three copies of a joint memorandum, dated January 24, 1958, from R. U. King, Geologist, Geological Survey, and E. O. Binyon, Mining Engineer, Bureau of Mines, pertaining to the drilling approved.

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

W H King
W. H. King

Enclosures

Maps & log information in folder #3

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 3 1958
DATE | INITIALS | CODE

224 New Customhouse
Denver 2, Colorado
January 28, 1958

Mr. Robert Ford
Consulting Geologist
P. O. Box 428
Riverton, Wyoming

Re: Docket No. DMEA 4742 (Uranium)
Contract No. Ion-E1133
McAlester Fuel Company
(Star claims and Leased Lands)
Fall River County, South Dakota

Dear Mr. Ford:

In reference to your letter of January 20, 1958, which supersedes your letter of January 14, 1958, and consistent with provisions in the Contract, this confirms verbal approval by the Government, issued by this office January 17, 1958, for the drilling of eleven (11) holes as originally requested by you, and approves the drilling of seven (7) additional holes, making a total of eighteen (18) holes approved for drilling under Stage II of the Contract.

The locations of the eighteen approved holes are indicated by the symbol of a circle with numbers 71 to 88, inclusive, affixed, on the map entitled, "Figure 4B - Geologic Map, Showing Recommended Exploration, McAlester Fuel Company, Fall River County, South Dakota," which is attached hereto and made a part of this confirmation of prior verbal approval and approval for additional drilling.

Nothing in this letter 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,

DMEA Field Team, Region III

By W. H. King
W. H. King

By E. N. Harshman
E. N. Harshman

J.T:gal

cc: Chm. Op. Comm. (3)
Finance Office, Region III
Amendment file, Region III
Harshman
DMEA/DFC (Binyon)

cc: Mr. Tom B. Garrard, Vice President
McAlester Fuel Company
P. O. Box 785
McAlester, Oklahoma

Corres. File
Townsend
Chron.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
JAN 28 1958
REGION III
DENVER, COLORADO
OFFICIAL FILE COPY

W.O.

January 24, 1958

DMEA
RECEIVED FEB 3 1958

DATE	INITIALS	CODE

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman EMH

From: R. U. King
E. O. Binyon

Subject: Docket No. DMEA 4742 (Uranium), Contract No. Idm-E 1133, McAlester Fuel Company (Star claims and ~~leased lands~~), Fall River County, South Dakota

The operator of the subject contract project requested by letter dated January 14, 1958, additional drilling under Stage II of 11 holes totalling 5,895 feet. Subsequently, on January 17, 1958, he requested verbally to drill 7 more holes totalling 3,815 feet. This was followed by a letter dated January 20, 1958, in which was listed all of the 18 holes referred to and in which he requested that request of January 20 replace the proposal of January 14, 1958.

In the letter of January 20, 1958, the operator requests approval of 18 proposed Stage II holes as offsets to holes 5, 6, 54, 56, 57, 58, and 61. The total drilling requested amounts to 9,690 feet.

In view of the weak mineralization found in 7 out of 10 holes drilled in the northwestern part of the property, and the favorable lithology of the sandstone in this localized area, the

requested Stage II offset drill holes appear warranted, to more adequately explore what now appears to be the most favorable area. The Stage I and II holes for which offsets are recommended gave radiometric anomalies of 23 to 240 cps, or from 0.01 to 0.1 percent equivalent uranium.

It should be noted that with the completion of these holes the minimum spacing allowable for Lakota sandstone (deep) tests is being approached, and therefore further drilling with few exceptions in this area will not be possible under Stage II of the contract.

It is recommended that the operator's request to drill the following Stage II offset holes be approved. Approximate locations of the recommended holes are shown on the accompanying maps (fig. 4B).

Offset hole No.	Hole being offset	Est. Max. depth	N. Coordinate	E. Coordinate
71	54	* 545 ft.	368,400	1,105,000
72	"	" "	367,900	1,105,500
73	"	" "	367,400	1,105,000
71	"	" "	367,900	1,104,500
75	57	540 "	367,400	1,106,000
76	"	" "	366,900	1,106,500
77	"	" "	366,400	1,106,000
78	"	" "	366,900	1,105,500
79	5	545 "	368,400	1,104,000
80	"	" "	367,400	1,104,000
81	"	" "	367,900	1,103,500
82	56	540 "	366,900	1,104,500
83	"	" "	366,400	1,104,000
84	"	" "	366,900	1,103,500
85	6	" "	366,400	1,105,000
86	55	515 "	366,400	1,102,000
87	61	" "	365,900	1,103,000
88	"	525 "	363,900	1,103,000

Est. max. footage 9,690 ft.

* Depth is to Morrison contact.

R U King

R. U. King
Geologist

E O Binyon

E. O. Binyon
Mining Engineer

RUKing:mp

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

UL6-3468

January 20, 1958

DMEA
DEPARTMENT OF THE INTERIOR
JAN 22 1958
REGION III
DENVER, COLORADO

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

Re: Docket No. 4742
Contract No. Idm-E 1133
McAlester Fuel Company

Dear Mr. King:

The enclosed formal request for additional Stage II drilling under the subject contract will replace that proposal made by me dated January 14, 1958. May I suggest that this proposal of January 20 replace the January 14 proposal in your files.

The enclosed proposal includes those offset holes to previously drilled holes 5, 6 and 57 suggested by your staff. You will note that copies have been sent Mr. Harshman and Mr. Benyon and four (4) copies are enclosed for your office.

Very truly yours,

Robert Ford

RF:cjb
CC: Mr. E. N. Harshman
Mr. E. O. Benyon
Mr. Max Hartle
Mr. Tom Garrard

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

UL6-3468

January 20, 1958

DMEA
DEPARTMENT OF THE INTERIOR
JAN 22 1958
REGION III
DENVER, COLORADO

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

Re: Docket No. 4742
Contract No. Idm-E 1133
McAlester Fuel Company

Dear Mr. King:

Under the terms of the above named contract and as discussed during our meeting in Denver on December 20, 1957, this letter is a request for additional drilling under Stage II. You will recall that in answer to my proposal for work under Stage II, dated December 19, 1957, your office subsequently approved twenty (20) drill holes totaling 9,400 feet.

Under paragraph one of Stage II in the subject contract McAlester Fuel Company is requesting additional offset drilling from mineralized holes or those holes intersecting favorable sands.

The following is a listing of Stage II holes drilled to date, with thickness of the Gould channel sands, Morrison formation contact, mineralization, and sandstone-mudstone ratio of the Lakota formation. This is not intended to be a formal report of work completed under Stage II. However, if the reader will refer this information to maps included with the "Proposals and Recommendations" dated December 19, and the cross sections included with the "Progress Report" dated December 18, this tabulated information can readily be interpreted. A map is attached showing the location of the Stage II holes drilled to date.

Hole No.	Depth	Gould ss.	Mineralization	ss-ms ratio	Morrison Contact
51	485'	86'-134'	None	75	478'
52	480'	94'-118'	285'-294'-23cps	80	468'
53	500'	72'-105'	None	80	490'
54	545'	95'-165'	420'-435'-25cps 435'-442'-200cps 446'-455'-240cps 478'-486'-30cps	78	542'
55	510'	100'-152'	320'-330'-22cps	65	504'
56	536'	78'-118'	356'-365'-77cps	81	505'
57	545'	145'-182'	452'-463'-100cps 465'-480'-160cps 483'-488'-35cps 504'-520'-100cps	92	538'

Hole No.	Depth	Gould ss.	Mineralization	ss-ms ratio	Morrison Contact
58	515'	85'-112'	331'-337'-23cps	62	504'
61	500'	78'-122'	318'329'- 50cps	64	
63	515'	44'-128'	380'-405'-15cps	63	
68	300'	195'-254'	None		
69	300'	190'-245'	None		
70	300'	198'-257'	m None		

The following drill holes are requested as offsets to favorably mineralized drill holes 54, 57, 56, 5 and 6.

Hole No.	Depth	N. Coordinate	E. Coordinate
71	545'	368,400	1,105,000
72	545'	367,900	1,105,500
73	545'	367,400	1,105,000
74	545'	367,900	1,104,500
75	540'	367,400	1,106,000
76	540'	366,900	1,106,500
77	540'	366,400	1,106,000
78	540'	366,900	1,105,500
79	545'	368,400	1,104,000
80	545'	367,400	1,104,000
81	545'	367,900	1,103,500
82	540'	366,900	1,104,500
83	540'	366,400	1,104,000
84	540'	366,900	1,103,500
85	540'	366,400	1,105,000

These fifteen requested holes are offset holes to mineralized drill holes in an area strongly mineralized. Holes 54 and 57 have the strongest mineralization of any drill holes to date. Logs of these two holes are attached hereto.

The following listed holes are requested as offsets to drill holes 58 and 61 which penetrated favorable sandstone units and minor mineralization.

Hole No.	Depth	N. Coordinate	E. Coordinate
86	515'	366,900	1,102,000
87	515'	365,900	1,103,000
88	525'	363,900	1,103,000

McAlester Fuel Company would appreciate your early response to this request for additional drilling under Stage II of their contract.

Very truly yours,

Robert Ford

RF:cjb

Copies sent to:

Mr. E. N. Harshman
U. S. G. S., DMEA
Building 25
Denver Federal Center
Denver, Colorado

Mr. E. O. Benyon
Bureau of Mines, DMEA
Denver Federal Center
Denver, Colorado

Mr. Max Hartle
Box 896
Edgemont, South Dakota

Mr. Tom Garrard
McAlester Fuel Company
McAlester, Oklahoma

224 New Customhouse
Denver 2, Colorado

January 13, 1958

1/16 gb 220
1/16 800
" ~~Murphy~~ 700

Mr. Tom. E. Garrard, Vice President
McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

Re: Docket DMEA-4742 (Uranium)
Contract Idm-E1133
McAlester Fuel Company
(Star claims and leased land)
Fall River County, South Dakota

Dear Mr. Garrard:

Form MF-104, Operator's Monthly Report and Voucher for the month of November 1957, has been received in this office and is being processed for payment. Your attention is directed to the following discrepancies.

1. The cost of analyses has not been reported in accordance with the provisions contained in Item d. of Annex II, attached to the contract.

2. The amount reported under "Unit Cost Contingency" (Incidental Allowance) contains an arithmetical error.

Please make the necessary adjustments in the Monthly Total column and Totals to Date column of Form MF-104 and also in the applicable columns of Form MF-104A on the next monthly accounting report and voucher submitted to this office.

If you have any question regarding the matter, please feel free to contact this office.

JDC:jy

cc: Chm.Op.Comm. (2)
DMEA,DFC
Harshman
Townsend
Corres. file
Chron.

Very truly yours,

Original signed by
W. H. KING

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

Copy to:
Mr. Robert Ford, Geologist
P. O. Box 428
Riverton, Wyoming

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

January 13, 1958

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

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

Enclosed are three copies of confirmation of verbal work approval issued by the DMEA Field Team, Region III, pertaining to work under Stage II of the contract.

Also enclosed are two copies of the Operator's letter of December 19, 1957, and three copies of a joint memorandum, dated January 3, 1958, from R. U. King, Geologist, Geological Survey, and E. O. Binyon, Mining Engineer, Bureau of Mines, pertaining to the matter.

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

W. H. King

W. H. King

Enclosures

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~~Murphy~~ 700

Maps in Folder # 3

FILE COPY
DMEA
RECEIVED
JAN 13 1958

224 New Customhouse
Denver 2, Colorado

January 8, 1958

Mr. Robert Ford,
Consulting Geologist,
McAlester Fuel Company,
P. O. Box 428,
Riverton, Wyoming

Re: Docket No. DMEA 4742 (Uranium)
Contract No. Idm-E1133
McAlester Fuel Company
(Star claims and Leased lands)
Fall River County, South Dakota

Dear Mr. Ford:

In reference to your letter of December 19, 1957, this confirms verbal approval by the Government, issued December 30, 1957, for you to drill twenty (20) holes under the provisions of Stage II of the Contract.

A listing of the approved holes by numbers and approximate coordinate locations is attached. Also, the approximate locations of the approved holes are indicated on the map entitled, "Figure 4A.-Geologic Map, Showing Recommended Exploration, McAlester Fuel Company, Fall River County, South Dakota," which is also attached hereto and made a part of this confirmation of verbal work approval.

Approved holes Nos. 51 through 67 will be drilled to explore the lower sandstone of the Lakota member and holes Nos. 68, 69, and 70 will be drilled to explore the Fall River sandstone member only.

In conjunction with performance of the drilling of the above approved twenty holes, the following incidental charges are approved:

Bulldozing access roads and drill sites - Not to exceed 10 hours;

Standby time for probing holes - Not to exceed 15 hours;

Chemical analysis of samples for U_3O_8 content - Not to exceed 70 samples.

If the foregoing incidental charges are found to be insufficient to obtain the desired results, you may forward for the Government's consideration a request for appropriate increases.

Nothing in this confirmation of verbal 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,

DMEA Field Team, Region III

By W H King
W. H. King

By E N Harshman
E. N. Harshman

Enclosures

J.T:prl

cc: Chum. Op. Comm. (3)
Finance Office, Region III
Amendment file, Region III
Harshman
DMEA/DFC (Binyon)
Corres. file
Townsend
Chron.

IN REPLY REFER TO:

DMEA

DEPARTMENT OF THE INTERIOR

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

OFFICIAL FILE COPY
JAN 17 1958
DMEA
RECEIVED JAN 16 1958
DATE | INITIALS | CODE

January 3, 1958

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Bardsman

From: R. U. King
E. O. Binyon

Subject: Docket No. DMEA 4742 (Uranium), Contract No. Ida-I 1133, McAlester Fuel Company (Star claims and Leased lands), Fall River County, South Dakota

In a letter dated December 19, 1957, the operator of the subject contract project proposes to drill 60 Stage II holes as offsets to Stage I holes, because of favorable lithology of the Gould Channel sandstone and of the Lakota sandstone. During a conference on December 20, 1957, the operator's geologist, Robert Ford, indicated that additional objectives included reducing the drill spacing as much as possible and offset drilling around holes that encountered uranium mineralization. The referenced proposal is taken to constitute his request for approval of Stage II exploration.

The operator completed 46 holes, totalling 17,581 feet under Stage I of the contract, and drilled two holes on company account. Twelve holes encountered weak uranium mineralization in the Lakota sandstone, and one hole picked up similarly weak mineralization in the overlying Fall River sandstone. Gamma-ray logs indicate the equivalent uranium oxide content ranges from 0.008 to 0.06 percent.

Results of Stage I exploration show two and possibly three Gould sandstone channels, which in neighboring areas have constituted favorable geologic structures for the occurrence of uranium. The channels trend south to south-southeast. Some additional drilling of the Gould channel sandstone to explore the central part and flanks of the "channel" is probably desirable in view of the wide spacing (1,400 feet) of the Stage I holes. But it is felt that such exploration could be justified only if combined with exploration of deeper targets. Therefore no Stage II drill holes are recommended solely on the basis of favorable Gould Channel sandstone.

Based on lithologic logs of drill cuttings and electric logs the operator postulates a correlation between the mineralization in the Lakota sandstone and the sandstone-mudstone ratio in the Lakota. From the pattern of mineralized drill holes he concludes that the mineralization occurs along a northwest-trending zone and is related to a parallel trend of constant sandstone-mudstone ratio. Although 15 holes, including 3 previously drilled holes (AEC-4, BT-1, and BT-2) are grouped in an elongate northwesterly trending area, two holes, nos. 10 and 29, are sufficiently distant from the other holes as to lend serious doubt to the significance of the postulated trend. However due to the persistent mineralization found in these holes it is concluded that further exploration for ore-grade material in the Lakota is warranted.

The operator also concludes from Stage I drilling and detailed mapping of the area, that the Lakota is most favorable for ore where the sandstone-mudstone ratio is greater than 80 (100 means equal amounts of sandstone and mudstone), and that the zone of water saturation is a favorable geologic horizon for the occurrence of uranium. Such favorable geologic conditions are postulated to exist in the area between the Cheyenne River and the line of holes nos. 35-40.

Three holes are proposed to offset hole no. 46, to further explore the mineralization in the Fall River sandstone. It is recommended that these three holes be approved.

To Further explore the Lakota sandstone for ore-grade material in the northern part of the property in the area where weak mineralization has been found, 17 offset holes are recommended to offset holes nos. 2, 3, 4, 5, 6, 8, 15, 18, 29, 47, and 48.

To explore the Lakota sandstone for uranium in the area between the Cheyenne River and the line of holes nos. 35-40, four holes are recommended as offsets to holes nos. 37, 38, and 39. It is felt that the four offset holes are necessary in order to test the Gould, and Lakota sandstones at a sufficiently close spacing to adequately explore the area.

Coordinates of the collars of the recommended Stage II offset holes with hole number, holes being offset and estimated maximum length, are shown on the following table. Approximate locations of the recommended Stage II holes in relation to Stage I exploration are shown on the accompanying map (fig. 4A).

R. U. King, Geologist

E. O. Binyon, Mining Engineer

Contract No. Idm-E1133

Recommended Stage II Drilling

Reference No. of Approved Stage II Offset Holes	Reference No. of Stage I Holes to be Offset	Coordinate Location of Stage II Offset Holes		Maximum Depth of Offset Holes Feet
51	47, 48	N 369,900	E 1,100,000	500 feet
52	47, 48	369,900	1,101,000	" "
53	2, 3, 4, 5	367,900	1,103,000	" "
54	5, 6	367,900	1,105,000	" "
55	2, 4, 48	366,900	1,101,000	" "
56	4, 5, 6	366,900	1,104,000	" "
57	6, 8, 15	366,900	1,106,000	" "
58	4	365,900	1,102,000	" "
59	4, 18	365,900	1,104,000	" "
60	6, 15, 18	365,900	1,105,000	" "
61	4, 18	364,900	1,103,000	" "
62	15, 18	364,900	1,106,000	" "
63	29	362,900	1,103,000	" "
64	37	353,600	1,109,000	" "
65	37, 38	353,600	1,110,000	" "
66	38	353,600	1,111,000	" "
67	38, 39	353,600	1,112,000	" "
68	46	349,100	1,115,000	300 feet
69	46	348,600	1,114,500	" "
70	46	348,600	1,115,500	" "
Totals 20 holes				9,400 feet

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

UL6-3468

December 19, 1957

DMEA
DEPARTMENT OF THE INTERIOR
1957
REGION III
DENVER, COLORADO

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

Re: Contract No. Idm-E 1133
Docket No. DMEA 4742
McAlester Fuel Company

Dear Mr. King:

Attached hereto is the original and four copies of proposals and recommendations for continuance of the above named contract. This report together with the report of work accomplished under Stage I dated December 16, 1957, will give your staff the complete records of exploratory work to date.

We would greatly appreciate your prompt reply to the requested stage II drilling.

Sincerely yours,

RF:cb
CC: Mr. Tom Garrard
McAlester Fuel Company
McAlester, Oklahoma

Mr. Max Hartle
Box 896
Edgemont, South Dakota

ROBERT FORD
MINING GEOLOGIST

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

DMEA
DEPARTMENT OF THE INTERIOR
DEC 20 1957
REGION III
DENVER, COLORADO

UL6-3468

December 19, 1957

PROPOSALS AND RECOMMENDATIONS
FOR CONTINUANCE
Contract No. Idm-K 1133 Docket No. 4742
McAlester Fuel Company

Introduction

The following proposals and recommendations for Stage II drilling are made in accordance with the provisions of Stage II of the above named contract.

The progress report for the completion of Stage I drilling was submitted under the date of December 18, 1957. The progress report contained assay data, drill logs, drill hole location map, and geological cross sections. A total of 19, 374 feet was drilled in Stage I of which 17,581 feet was chargeable to the DMEA under provisions of the contract.

Stage I drilling totaled 48 drill holes, 46 of which were DMEA contract holes. Thirteen drill holes were mineralized. Favorable geology of the Gould channel sandstone and the Lakota formation warrant additional drilling.

Gould Channel Sandstone

The Gould channel sandstone, or unit S_4 on the MF series maps, underlies most of the property under DMEA contract. Geological cross sections submitted with the report on Stage I drilling shows this sandstone unit. The channel sandstone is not as easily identified in drill hole cuttings as in outcrops. Considerable emphasis was given the electric logs for identification of the Gould channel sandstone. The channel sandstone thickness in holes 9, 11, 12 and 13 may be less than shown of the geologic cross sections. Lithology logs show less sandstone than the electric resistivity logs of these drill holes.

An isopach map of the Gould channel sandstone is enclosed and shows the trends of the thicker more favorable zones of this channel sandstone. The map shows a thick section of channel sandstone trending south-southeast from the center of the west half of Sec. 1, T9S, R3E, and another thick channel trend southward from the center of Sec. 6, T9S, R4E. Twenty drill holes are located in these two channel trends to check the Gould sandstone only for possible mineralization.

Lakota Sandstone Formation

The Lakota formation averages 300 to 350 feet thick over the property in discussion. Geological cross sections submitted with the report on Stage I drilling shows this formation. The typical Lakota formation consists of sandstones, mudstones, and silts.

Ten mineralized drill holes are in the Lakota formation. An attempt to correlate this mineralization with the sandstone - mudstone ratio of the Lakota formation appears successful. The sandstone-mudstone ratio chart attached hereto has been interpreted by a contour map based on the ratio of sandstone to mudstone in each drill hole. A ratio of 100 means equal amounts and a ratio of 50 means one-half as much sandstone as mudstone in the Lakota formation drilled.

Mineralization in the Lakota formation seems confined to those areas where the ratio is 80 or above. Drill holes have been so placed as to check these zones of the Lakota formation for possible mineralization.

An important factor is the line of mineralized Lakota drill holes number 2, 3, 4, 5, 6, 15 and 18 paralleling a "low" ratio area between two high sandstone mudstone ratio "highs".

Drill Hole Depths

Drill holes designated to test the Gould channel sandstones shall not be drilled less than 10 feet below the inferred contact.

Lakota formation drill holes should be drilled to the Morrison formation or within 50 feet of the inferred contact.

The 60 drill holes located on the attached maps will not constitute greater than 26,000 feet.

Respectfully submitted,

RF:cjb

SANDSTONE MUDSTONE RATIO*

LAKOTA FORMATION

*Based on electric log interpretation of Stage I drill holes and expressed in the ratio of sandstone to mudstone.

Hole No.	Sandstone thickness	Mudstone thickness	Ratio
1	160	140	111
2	120	130	92
3	170	180	94
4	150	150	100
5	130	150	80
8	80	220	125
10	180	305	59
15	135	165	81
16	160	130	123
17	140	150	93
18	200	130	154
20	120	140	85
23	115	135	85
26	100	115	87
27	190	160	118
29	120	110	109
30	130	170	76
33	100	210	88
34	80	210	38
35	95	185	51
36	100	160	62
37	90	95	94

Hole No.	Sandstone thickness	Mudstone thickness	Ratio
38	140	100	140
39	120	110	109
40	130	225	58
41	20	80	25
42	90	170	52
43	90	125	72
44	150	145	103
45	180	155	175
46	180	140	150

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
11/26	Robin	
✓	Dunger	
	Murphy	700
	Ellis	700
11/27	Selfridge	120
"	Johnson	110
		100
11/29	GR	220
		700
11/25	Mitchenday	100

NOV 29 1957

Paul H. Russell, Esq.
Box 514
Edgemont, South Dakota

Re: Docket No. DMEA-4742 (Uranium)
McAlester Fuel Company
Star Claims and leased lands
Fall River County, South Dakota
Contract No. Idm-E1133

Dear Mr. Russell:

Your letter dated September 4, 1957, to the Acting Executive Officer, Region III, asked two questions concerning the Consent to Lien and Subordination Agreement form.

First, you wish to know whether paragraph numbered 2 of the form is to be read literally; that is, whether the Government is granted a lien upon the land as well as upon the production of minerals. The answer is that the paragraph is to be read literally, and that the Government is granted a lien upon the land as well as upon any production of minerals therefrom. See also paragraph numbered 3, in which the signer subordinates his interest in the land as well as in any production.

Secondly, your letter asked what is meant by the reference in paragraph numbered 6 of the form to the "assignments of the contract" and to whom such assignments might be made. You will note that the last sentence in Article 1 of the contract form, MF-200 (Revised June 1954), on which the subject contract was written, provides that the contract shall not be assigned without the written consent of the Government. Assignments of contracts are usually made by the Operator for his own convenience, and not for the convenience of the Government. Requests to the Government for approval of assignments of contracts are not numerous; and very few contracts have been assigned more than once.

We are enclosing a booklet of "Questions and Answers" that may be helpful to you. Part VIII, starting on page 14, deals with repayment to the Government and security.

FROM SOLICITOR

NOV 26 1957

FOR SIGNATURE

8623

We regret that your request for our interpretation of the form was overlooked. If you have any further questions, we shall be pleased to give them a prompt consideration.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

Enclosure

HCRubin/emd
11/26/57

Copy to: DMEA Docket
Adm. Reading File
Field Team, Region III (2)
E. W. Ellis
R. P. Dwyer
H. C. Rubin
chron.
pending

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
11-25	Murphy	7700
		140

November 25, 1957

Memorandum

To: Associate Solicitor, Division of Mineral Resources

From: Ernest Wm. Ellis, Director
Division of Rare and Miscellaneous Metals

Subject: Docket No. DMEA-4742 (Uranium)
Contract No. Idm-E1133
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

DMEA 4742

INTERIOR DEPT.
NOV 25 1957
SOLICITOR

Will you kindly prepare an answer to the Applicant's letter, dated September 4, 1957, relating to an interpretation of paragraphs 2 and 6 of DMEA application form MF-205.

Ernest Wm. Ellis

Ernest Wm. Ellis

No. It's the lien form the letter concerns about.

FMMurphy/izm 11-25-57
cc: Mr. Murphy

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

November 22, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED NOV 25 1957

DATE	INITIALS	CODE
11/25	C	220
4	~~FMM~~	700

Memorandum

To: Chairman, Operating Committee, DMEA

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

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

Reference is made to Mr. Russell's letter of September 4, 1957, which was forwarded to you by our memorandum of September 5, 1957, for direct reply to him.

In conjunction with this matter, enclosed are the original and one copy of Mr. Russell's letter of November 21, making further inquiry to the matter since he did not receive a reply to his prior letter. Also enclosed are two copies of a letter from this office dated November 22 to Mr. Russell, acknowledging his letter of November 21 and advising of its disposition.

E. N. Harshman

E. N. Harshman

DMEA
DEPARTMENT OF THE INTERIOR
NOV 22 1957
REGION III
DENVER, COLORADO

PAUL H. RUSSELL
ATTORNEY AT LAW
BOX 514
EDGEMONT, SOUTH DAKOTA
TEL. MOHAWK 2-7751

OFFICIAL FILE COPY
DMEA
RECEIVED NOV 25 1957

DATE	INITIALS	CODE

Nov. 21, 1957

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

Re: Docket No. DMEA 4742 (Uranium)
Star Claims and leased lands
Fall River County, S. Dak.
McAlester Fuel Company

Dear Mr. Harshman:

I wrote you September 4, 1957, requesting an opinion concerning certain clauses in Form MF-205, Consent to Lien, from your legal department in Washington. McAlester Fuel Company have inquired how soon we may expect to receive this legal interpretation or opinion.

Will appreciate hearing from you as soon as possible whether or not we may expect to receive this opinion soon.

Thank you.

Yours very truly,

Paul H. Russell

Paul H. Russell

PHR:B

OFFICIAL FILE COPY
DMEA
RECEIVED
DATE

224 New Customhouse
Denver 2, Colorado

November 22, 1957

Mr. Paul H. Russell,
Attorney at Law
Box 514
Edgemont, South Dakota

Re: Docket No. DMEA 4742 (Uranium)
(Star Claims and leased lands)
Fall River County, South Dakota
McAlester Fuel Company

Dear Mr. Russell:

Reference is made to your letter of November 21, 1957, referring to your letter of September 4, 1957, wherein you request an opinion concerning certain clauses on Form MF-205, Consent to Lien and Subordination Agreement.

Your letter of September 4, 1957, was forwarded to the Washington Office, DMEA, for reply direct to you; and since our files do not contain a record of a reply from them, we are also forwarding your letter of November 21 to the Washington Office, DMEA, for reply direct to you.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

JWT:bh
cc-Chairman, Op. Comm. (2)
Harshman
DMEA/DFC (Binyon)
Townsend
Corres. File
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED NOV 15 1957

DATE	INITIALS	CODE
11/15	gb	220
11/18	B	215
11/[illegible]	[illegible]	700

November 12, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4742 (Uranium), Contract No. Idm-E1133, McAlester Fuel Company (Star Claims and Leased Lands), Fall River County, South Dakota

Enclosed are the following pertaining to the subject matter:

1. The Government's and Audit copies of Contract No. Idm-E1133, which was forwarded by your letter of September 18, 1957 for insertion of a suitable starting date in Article 3, and signature by the Operator.

2. Three copies of a letter from this office, dated November 12, 1957, by which we forwarded the Operator's copy of the contract, blank report forms, and provided information relative to corresponding with this office on matters in conjunction with the contract.

3. Two copies of the Operator's letter of October 24, 1957 forwarding executed copies of Consent to Lien.

4. Two copies of the Operator's letter of November 6, 1957, whereby the executed copies of the contract were returned to this office and advice was given as to the date work would commence.

Relative to the second paragraph of your letter of September 18, we have attached to each copy of the contract Form MF-205, Consent to Lien and Subordination Agreement, executed by the father of W. D. Duerson (Bill Duerson) as Agent of his Estate, which supplements the Form MF-205 signed by Byron J. Cox, which is one of the nine Consent to Lien and Subordination Agreements referred to on page 3 of Annex I. The supplemental Form MF-205 pertains to the land described on the first page of Annex I under the caption, "Lessor: Byron J. Cox and Bill Duerson."

The contract, dated September 19, 1957, provides for work estimated to cost $72,136.00, toward which the Government will contribute 75%, or an amount not in excess of $54,102.00.

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

E. N. Harshman

E. N. Harshman

Enclosures

224 New Customhouse
Denver 2, Colorado

CERTIFIED MAIL

NOV 12 1957

McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

Re: Docket No. DMEA 4742 (Uranium)
Contract No. I4m-X1133
(Star claims and Leased Lands)
Fall River County, South Dakota
McAlester Fuel Company

Gentlemen:

Enclosed herewith is the "Operator's Copy" of Exploration Project Contract No. I4m-X1133, Docket No. DMEA 4742.

Also enclosed are six copies of form MF-104, "Operator's Monthly Report and Voucher," and six copies of form MF-104A, "Operator's Unit Cost and Progress Report." At the end of the first calendar month after work is commenced, and monthly thereafter, you are required to submit the original and four copies of each form to the

Executive Officer
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado.

The extra copy is for your records.

Forms MF-104 and MF-104A are to be combined into five sets of one of each form. Each set of the combined forms is to be accompanied by a map or sketch showing the location and extent of work performed and a signed narrative report which describes the work performed, conditions encountered, and results of the work. The monthly accounting report will not be processed for reimbursement unless it is accompanied by a signed narrative report and other required or pertinent data. Additional copies of forms MF-104 and MF-104A will be forwarded to you each month on receipt of your report for the prior month.

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 on the project and review your accounts,

the report forms will be forwarded to this office for ive examination and vouchering. If the report is in order, ter will be issued by the Treasury Department for the Government's of the approved costs. If you have any difficulty in completing forms and the reports, please call on 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, or have been, drilled in compliance with the conditions under the "General Provisions" section of Exhibit "A" of the contract and the special conditions pertaining to the drilling under each stage. Therefore, your monthly report should include only such holes which are completed to that extent and the required records made a part of your claim for reimbursement.

The contract is prepared on form NF-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 average unit cost established for work under Category (1) and fixed unit 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. The costs recorded under item (1) on form NF-104 for such work must be supported each month by a signed or certified copy of the billing from the subcontractor. Amounts reported on the basis of the "Fixed Unit Costs" require no documentation, as they are otherwise verified.

In reference to ANNEX XI (f) of the contract pertaining to the average unit cost of the drilling, if excess costs are suspended by reason of exceeding the maximum unit cost of the drilling described under Category (1), the excess costs will be held in suspense and be reinstated by this office to the extent suspended funds are available, in the event the unit costs for any month should cause the average unit cost to fall below the maximum average unit cost established in the contract for the drilling.

In the event you desire to perform the work under Category (1) on company account instead of subcontracting it, as provided in the contract, it will be necessary that you request and obtain an appropriate amendment to the contract before reimbursement can be made to you for the Government's portion of the allowable incurred costs.

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. Each request for action by this office must pertain to one matter only. Such requests are <u>not</u> to be incorporated in your narrative report accompanying monthly progress report forms NF-104 and NF-104A.

The locations of the holes to be drilled under Stage I are indicated as approximate on the map, "Figure 4," which is attached to the contract. Should conditions encountered necessitate any appreciable change in the location of any of the holes, approval of this office for the change must be obtained prior to performance of the drilling. Otherwise, the drilling 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 has been completed, or sufficiently so to permit evaluation of the results of the work, 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 sextuplicate, 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 operations 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 <u>requirement and imperative that you notify this office in writing the date work actually commences under the contract</u>.

JWT:pel

Very truly yours,

Original signed by
E. N. HARSHMAN
Acting

Executive Officer
DMEA Field Team, Region III

cc: Chem. Op. Comm. (3)
Finance Office, Region III
Amendment file, Region III
Harshman
DMEA/RWC (Binyon)
Townsend
Cerres. file
Chren.

J. G. PUTERBAUGH, PRESIDENT
TOM E. GARRARD, VICE PRESIDENT

E. P. JOYNER, EXECUTIVE VICE PRESIDENT AND TREASURER
C. R. COLE, VICE PRESIDENT

CARL OMAN, SECRETARY
R. H. PATTERSON, ASS'T SECRETARY AND ASS'T TREASURER

McALESTER FUEL COMPANY

McALESTER, OKLA.

DMEA
DEPARTMENT OF THE INTERIOR
OCT 28 1957
REGION III
DENVER, COLORADO

October 24, 1957

Mr. J. W. Townsend, Executive Officer,
DMEA Field Team
224 New Customhouse,
Denver, Colorado.

Re: Docket No. DMEA-4742 (Uranium)
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Townsend:

I am sending you herewith five (5) copies of the Consent to Lien and Subordination Agreement as per my letter to you dated October 23, 1957, signed by the father of W. D. Duerson as agent for the estate.

Very truly yours,

Tom E. Garrard

TOM E. GARRARD,
Vice President.

TEG:BF
Encl.

cc: Mr. Max Hartle
Box 896
Edgemont, So. Dak.

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

ORIGINAL COPY
DMEA
RECEIVED OCT 28 1957
DATE | INITIALS | CODE
10/28 | gb | 220

October 25, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4742 (Uranium), McAlester Fuel Company (Star claims and Leased Lands), Fall River County, South Dakota

Enclosed are two copies of the Applicant's letter of October 23, 1957, which is in reference to matter discussed in the second paragraph of your letter of September 18, 1957, forwarding copies of proposed Exploration Project Contract No. Idm-E1133 to this office.

E. N. Harshman

E. N. Harshman

Enclosures

J. G. PUTERBAUGH PRESIDENT
TOM E. GARRARD VICE PRESIDENT

E. P. JOYNER EXECUTIVE VICE PRESIDENT AND TREASURER
C. R. COLE, VICE PRESIDENT

CARL OMAN, SECRETARY
R. H. PATTERSON, ASS'T SECRETARY AND ASS'T TREASURER

McALESTER FUEL COMPANY

McALESTER, OKLA.

DMEA
DEPARTMENT OF THE INTERIOR
OCT 25 1957
REGION III
DENVER, COLORADO

October 23, 1957

Mr. J. W. Townsend, Executive Officer
DMEA Field Team
224 New Custom House
Denver, Colorado

Dear Mr. Townsend:

RE: Docket No. DMEA-4742 (Uranium)
Star Claims and Leased Lands
Fall River County, South Dakota.

In your letter transmitting to us copies of proposed contracts under above subject, you stated that we should advise you when the estate of W. D. Duerson was probated.

The way I understand from our attorney at Edgemont, the father of W. D. Duerson was appointed agent for the estate and that Mr. Allen Wilson, Hot Springs, South Dakota, is attorney for the estate.

Mr. Max Hartle of McAlester Fuel Company will contact these people regarding the lien.

Very truly yours,

Tom E. Garrard

TOM E. GARRARD
Vice President

TEG:is

cc: Mr. Max Hartle

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 25 1957

DATE	INITIALS	CODE
9/25	B	220
9/26	[illegible]	[illegible]

224 New Customhouse
Denver 2, Colorado

September 23, 1957

CERTIFIED MAIL

McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

Re: Docket No. DMEA-4742 (Uranium)
McAlester Fuel Company
(Star Claims and Leased Lands)
Fall River County, South Dakota
Proposed Exploration Project
Contract No. Idm-E1133

Gentlemen:

Enclosed are the Government's, Audit, Finance Office, and Field Team copies of Proposed Exploration Project Contract No. Idm-E1133, 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, all copies are to be signed by an official of McAlester Fuel Company, authorized to sign such an instrument, the signer's title inserted, the signature attested to by the Secretary of the Company, the corporate seal affixed, and all copies promptly returned to this office.

In the event the Contract is not satisfactory, all copies are to be returned promptly to this office, together with your comments on or objections to the Contract.

Your attention is especially directed to three provisions in the Contract:

1. The Government will not contribute to the costs of any of the work that is provided for in the Contract which is performed prior to the date of the Contract.

2. The contract requires completion of the exploration work by the date fixed therefor. Approval must be obtained from this office for any suspension of work which may result in failure to complete the work by the date specified.

3. Royalty is due the Government on all production from the land described in the Contract, beginning on the date of the Contract.

A condition for resolution in the future is that when the estate of Mr. William D. Duerson has been probated, it will be necessary that you then obtain Consent to Lien and Subordination Agreement signed by the heirs of Mr. Duerson's estate. When you have knowledge that the estate has been probated, please advise this office.

If the Contract is satisfactory, and upon return of all copies properly signed, the "Operator's Copy" of the Contract will be forwarded to you, together with blank report forms and instructions relative to reporting on work performed under the Contract. Also, instructions will be given as to the procedure to be followed in corresponding with this office in matters concerning operations under the Contract.

When the signed copies of the Contract are returned, please advise the date on or before which work will be commenced, for our insertion in Article 3 of the Contract form.

Very truly yours

Original signed by
J. W. TOWNSEND

J. W. Townsend
Alternate Acting Executive Officer,
DMEA Field Team, Region III

Enclosures

JWT:bh

cc-Chairman, Op. Comm. (2)
Harshman
DMEA/DFC (Binyon)
Townsend
Docket
Chron.

A Form 7
(-56)

OFFICIAL FILE COPY

Date	Surname	Code
9/20	Murphy	700
9/20	Ellis	700
9/20	GCS	130
"	Johnson	110
9/23	C	226
		700

9/20 Jones 130
9/20 Johnson 130

SEP 20 1957

Department of the Interior

DMEA

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

T E L E T Y P E

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

RE DMEA 4742, MCALESTER FUEL COMPANY, IN

ANNEX I, PARAGRAPH ONE, CHANGE FIGURE 245 to 249.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE

FMMurphy/izm 9-20-57
cc: Mr. Murphy
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

DME[redacted] 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9-16	Murphy	200
9-16	Kustner	700
9/18	GCS	130
"	Duerson	110
		~~700~~ 342
9/16	Talbert	800
9/19	B	215
9/19	C	220
		700

SEP 18 1957

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

Re: Docket No. DMEA-4742 (Uranium)
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. King:

Enclosed are the original and four copies of a proposed long-form contract signed by the Acting Administrator for the Government. Attached to each contract form MF-200 are Annex I (3 pages), Annex II (1 page), nine (9) Consent to Lien and Subordination Agreements, Exhibit "A" (6 pages), and two (2) maps Figure 2 and Figure 4. Also enclosed are two extra copies of Annex I and II, Exhibit "A," and the maps for Field Team use.

You will note that the signature of William D. Duerson is lacking on the Consent to Lien and Subordination Agreement signed by Byron J. Cox, a co-holder of the land. Enclosed are two copies of a letter, dated August 26, 1957, by Paul H. Russell, Attorney at Law, which explains this ommission. However, the Applicant should be informed that when the estate of Mr. William D. Duerson has been probated, it should endeavor to obtain a Consent to Lien and Subordination Agreement signed by the heirs of Mr. Duerson's estate.

If you and the Applicant find the proposed contract in order, please insert in Article 3 of the contract form the date work shall commence, then have an authorized representative of the company sign the original and all copies. Thereafter, kindly distribute the copies in the usual manner.

If any part of the proposed contract does not meet with your approval and the Applicant's and cannot be amended within your delegated authority, then the original

8623

and all copies, including the extra copies, are to be returned to this office with the proposed changes for consideration.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHB)

Enclosures

APPROVED:

P. F. Yopes (JHB)
Member, Bureau of Mines

N. E. Nelson (JHB)
Member, Geological Survey

FMMurphy/izm 9-16-57
cc: Mr. Murphy
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

Mr. Selfridge -

Change Page 1 of Exhibit A as we discussed.

Frank E. Johnson

EXPLORATION PROJECT CONTRACT
McALESTER FUEL COMPANY
DOCKET NO. DMEA-4742

EXHIBIT "A"

Description of the Work

General Provisions

The object of this project is to explore for uranium ore deposits that might occur in the Fall River and Lakota sandstone members of the Cretaceous Inyan Kara group of sedimentary rocks.

The exploratory work shall consist of non-core rotary drilling of vertical holes to an average depth of approximately 300 feet in the Fall River and upper (Gould channel) Lakota sandstone ~~members~~, and approximately 550 feet where the underlying lower sandstone stratum of the Lakota member is also to be explored.

Holes designated to explore the "Gould" channel sandstone shall not be drilled more than 10 feet below its inferred base; and the holes to explore the total Inyan Kara group shall not be drilled more than 10 feet below the inferred base of the lower Lakota sandstone ~~stratum~~.

Samples of the cuttings shall be collected for each 2 feet of hole drilled. The samples shall be examined for physical and geologic characteristics and scanned radiometrically. One-half of each sample shall be stored, in heavy paper sample sacks marked to show the hole number and the depth, for Government inspection and use. If the other half of the sample shows significant anomalous radioactivity, the Operator shall have it chemically analyzed for its U_3O_8 content. With previous Government approval, the Operator may dispose of the Government's portion of the samples.

September 9, 1957

Mr. Ernest Wm. Ellis, Director
Division of Rare and Miscellaneous Metals
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-4742 (Uranium)
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Ellis:

Enclosed please find nine (9) sets of the Consent To Lien and Subordination Agreement which have been signed by the lessors, as you require.

Sincerely yours,

Elsie P. Hartle

for/ MAX HARTLE, Agent
McAlester Fuel Company
P. O. Box 896
Edgemont, S. D.

OFFICIAL FILE COPY
D M E A
RECEIVED 1957

DATE		CODE
9/12	Q	220
"	FMM	700

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

OFFICIAL FILE COPY DMEA RECEIVED SEP 9 1957		
DATE	INITIALS	CODE
9/9	C	220
4	~~CM~~	~~700~~

In Legal

September 5, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4742 (Uranium), McAlester Fuel Company (Star claims and leased lands), Fall River County, South Dakota

Enclosed are the original and two copies of a letter from the Applicant's attorney, dated September 4, 1957, requesting interpretation of the language in form MF-205, Consent to Lien and Subordination Agreement.

It is believed that the matter can be handled in a better fashion by your office. Therefore, it is forwarded for a direct reply to the writer, with a copy of the interpretation to this office.

E. N. Harshman

E. N. Harshman

Enclosures

W O

PAUL H. RUSSELL
ATTORNEY AT LAW
BOX 514
EDGEMONT, SOUTH DAKOTA
TEL. MOHAWK 2-7751

DMEA
PARTMENT OF THE INTERIOR
SEP 5 - 1957
REGION III
DENVER, COLORADO

Sept. 4, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 9 1957

DATE	INITIALS	CODE

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

Re: Docket No. DMEA 4742 (Uranium)
Star Claims and leased lands
Fall River County, S. Dak.
McAlester Fuel Company

Dear Mr. Harshman:

Relative to the DMEA application of McAlester Fuel Company, Mr. Max Hartle, their local representative, and I have been attempting to secure consent agreements from the landowners (Form MF-205, Consent to Lien), and we have been having some difficulty relative to the interpretation of the language in Paragraph 2 of the form. On August 21, 1957, I called your Mr. Townsend and talked to him at length about the interpretation of the language in this paragraph of the consent agreement. He advised me that in spite of the language in Paragraph 2, the intention of the Government was to place a lien only upon the production of minerals and not upon the land itself. We also had a question relative to Paragraph 6, as to how far and to whom the assignments of this contract would be made. Mr. Townsend advised me that if we would write you a letter asking for a legal interpretation of these points, that such an interpretation would be furnished by your legal branch in Washington. Such a letter of interpretation might greatly assist us in convincing the landowners that the lien as intended would not affect the title to their lands, especially in case they sold.

We would appreciate your securing for us this legal interpretation as to the intent of the Government relative to these liens, and the effect they would have on the titles to the land. Will you please have this opinion directed to me, and please also furnish us with a copy that could be used by McAlester Fuel Company? Thank you.

Yours very truly,

Paul H. Russell

Paul H. Russell

PHR:b

BLAKE FOX
PETROLEUM GEOLOGIST

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

P.O. BOX 428

UL6-3468

September 3, 1957

Mr. Ernest Wm. Ellis, Director
Division of Rare and Miscellaneous Metals
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-4742 (Uranium)
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Ellis:

In reference to your letter to Mr. J. G. Puterbaugh, dated August 28, I have been asked to explain the current practice and proceedure in staking claims for uranium hearing rocks in the State of South Dakota.

About two years ago the State of South Dakota revised their mining statutes about lode claim location. This change eliminated the necessity to validate lode mining claims with the customary pit or drill hole. This does not mean that no discovery is necessary, but rather that the "scooping" of a pit or several shallow drill holes, as is the custom, does nothing but agitate the surface owners or leasee of the surface.

The statute does not preclude the necessity of making mineral discovery and therefore local custom, since the change in mining law, has been the discovery of mineral in place in sufficient quantity to justify the "prudent man" to continue exploration or development.

I feel that we have made sufficient discovery to justify further exploration. The whole of the Star Claims in Township 9 South, Ranges 3 and 4 East are directly underlain by the fluviate sandstone of the "Fall River Channel." These sands are cemented by limonite and calcium carbonate and consistantly produce effective radioactive anomalies and mineraligation. I therefore feel, and so does McAlester Fuel Company who acted on the advice of South Dakota Mining attorneys, that their discovery is sufficient, recognized, and complies with State and Federal statutes and local custom.

Very sincerely yours,

Robert Ford

RF:cjh

cc: McAlester Fuel Company

Mr. Long:
Just received this, so brought it to your office
Murphy

J. G. PUTERBAUGH, PRESIDENT
TOM E. GARRARD, VICE PRESIDENT
E. P[illegible]NER, EXECUTIVE VICE PRESIDENT AND TREASURER
C. R. COLE, VICE PRESIDENT
[illegible]L OMAN, SECRETARY
R. H. PATTERSON, ASS'T. SECRETARY AND ASS'T. TREASURER

McALESTER FUEL COMPANY

McALESTER, OKLA.

RECEIVED
SEP - 4 1957
ASSOC. SOLICITOR
MINERAL RESOURCES

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 3 1957

DATE	INITIALS	CODE
9-3	C	220
9-3	FMM	700

August 31, 1957

Mr. Ernest Wm. Ellis, Director
Division of Rare and Miscellaneous Metals
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-4742 (Uranium)
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Ellis:

Please refer to your letter to me under above subject, dated August 28, in which you raise the question as to the evidence of discovery work on the subject claims.

I think that there has been some misunderstanding about this matter between your field men and our geologist, Mr. Robert Ford. What Mr. Ford was undoubtedly trying to explain to your field men is that under South Dakota state law, the digging of the customary "discovery" pit or the drilling of a hole are both obviated by South Dakota law and, therefore, the field examiners would not see evidence of such work because it was not necessary.

We understand that the "prudent man" rule holds so that finding of mineralized, mineral-bearing rock in place without the necessity of any type of excavation is adequate to prove up the claim. Our field crews have been all over this area and I am assured that none of the claims has any lack of verifiable uraniferous rock, which constitutes adequate discovery.

I have not personally visited many of the claims but I have just discussed the matter with Mr. Ford and requested him to give you his assurance and that of the field geologist and crew who have made an on-the-ground study of the terrain.

In the penultimate paragraph of your letter, you wish to know whether the Star claims are located on open, unoccupied public domain in respect to the mineral rights. This is correct. As regards the surface of the claims, in substantially all cases, this is owned separately. You will find that in the description of the signed leases the surface area of the claims is included to the end that we have permissive grants from the surface land owners to enter upon the claims and do the work indicated thereon, or either exploration or mining.

In many of the areas where the lands are leased, the lessors own the mineral rights and have granted them to McAlester Fuel Company under the lease; as stated where they do not own the mineral rights but the mineral rights are owned by the U. S. Government and the later open to mineral exploration, then lessors

have granted to us surface rights for exploration and mining purposes.

I am assured that the executed Consents to Lien, etc., have been forwarded to you already directly by field representatives.

We are also told by them that they have received the additional copies of Consent to Lien which we requested your office to forward them directly and we wish to express our appreciation to you for your cooperation in the expiditing of this application. We shall be happy to cooperate with you in any matter which needs our further attention so that you can promptly give us favorable consideration.

Very truly yours,

J. G. Puterbaugh

J. G. PUTERBAUGH
President

TEG:is

cc: Mr. Bob Ford

Mr. Max Hartle

Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8/28	Murphy	700
8/28	Ellis	100
8/28	P	220
		700

AUG 28 1957

Mr. J. G. Puterbaugh, President
McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

Re: Docket No. DMEA-4742 (Uranium)
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Puterbaugh:

During the field examination of the subject property our field men noted that the Star claims had been staked properly, but there was no evidence that the discovery work on the claims had been done. When questioned concerning this, your geologist, Mr. Robert Ford, stated that he had been advised by an attorney that no discovery was now required by the State of South Dakota and therefore none had been done.

Mr. Ford's statement raises some doubts as to the legality of the claims, since, discovery of mineral-bearing rock in place is essential to a valid location; see Title 30 U.S. Code Sec. 23. This requirement cannot be waived by State law under Title 30 U.S. Code Sec. 22.

Accordingly, we require a more detailed statement regarding your company's rights and interest in the Star claims; i.e., whether there is a discovery within the boundary of each claim, and whether the lessors have the mineral rights on the lands leased to the company and whether the latter are open to mineral location.

It is assumed that the Star claims located on other than leased lands are on open, unoccupied public domain; however, will you kindly verify this assumption.

Upon receipt of the above-additional information and the executed Consent to Lien and Subordination Agreement forms, forwarded to you with our letter of August 13, 1957, and finding the material in order, we will promptly continue to process the captioned application.

Sincerely yours,

SIGNED

Ernest Wm. Ellis, Director
Division of Rare and
Miscellaneous Metals

FMMurphy/izm 8-28-57
cc to: Mr. Murphy
Admr.'s Reading File
THKiilsgaard, 5224
DMEA FT Reg. 3(2)

8623

PAUL H. RUSSELL
ATTORNEY AT LAW
BOX 514
EDGEMONT, SOUTH DAKOTA
TEL. MOHAWK 2-7751

RECEIVED
SEP 12 1957
D.M.E.A.

Aug. 26, 1957

McAlester Fuel Company
McAlester, Oklahoma

Dear Sirs:

This is to advise that on February 15, 1957, you entered into a mining lease with Byron J. Cox, a single man, and Bill Duerson, a single man. This lease covered the following described premises, to-wit: S½NW¼, E½NE¼, Sec. 17; NE¼NE¼, Sec. 20; Township 9 S., R. 4, East B. H. M., in Fall River County, South Dakota; also four unpatented lode mining claims described as Ray and Ray No. 1, and Sam and Sam No. 1, all located in S½NW¼, Sec. 17, T. 9 S., R. 4, East B. H. M., in Fall River County, South Dakota.

The minerals on the claims were reserved to the Government; the surface belongs to Byron J. Cox. These four claims were located by Byron J. Cox and Bill Duerson, who each own an undivided one half interest therein. Mr. Bill Duerson was recently killed in an accident, and his small estate is now being probated by summary or short term probate, which does not require an administrator to be appointed. Until the final decree is entered determining heirship, there is no one legally qualified or authorized to sign a consent to lien agreement for a D.M.E.A. loan on these premises for the Bill Duerson estate.

Yours very truly,

Paul H. Russell

PHR:b

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

AUG 1957

Memorandum

To: Administrator, DMEA
Attention: Mr. E. W. Ellis

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-4743 Alaster Fuel Company (Uranium)

In reviewing the docket on the above-identified case, we note the statement, starting on the bottom of page 6 of the On-Site Examination Report, that the Applicant has not performed discovery work on the 243 unpatented lode claims involved in the application. This statement raises some doubts as to the legality of the claims, since, as you know, discovery of mineral-bearing rock in place is essential to a valid location (30 U.S.C. 23). This requirement cannot be waived by State law (30 U.S.C. 22).

Accordingly, we are returning the docket in order that you may obtain from the Applicant a more detailed statement regarding his rights and interest in the land which is the subject of the application; i.e., whether the lessors have the mineral rights to the demised premises and whether the latter are open to mineral location, and whether there is a discovery within the boundaries of each claim.

It is assumed that the lodes located on other than leased land are on open, unoccupied public domain; however, such assumption should be verified.

Robert P. Dwyer

Attachments

RWLong/emd
Copy to: Solicitor's Docket (2)
DMEA Docket
E. W. Ellis
R. P. Dwyer
R. W. Long
chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8/19	Murphy	700
20	Puterbaugh	100
8/20		220
		700

AUG 20 1957

Mr. Max Hartle
McAlester Fuel Company
P. O. Box 896
Edgemont, South Dakota

Re: Docket No. DMEA-4742 (Uranium)
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Hartle:

In accordance with Mr. Garrard's letter, dated August 16, 1957, addressed to Mr. F. L. Knouse, we are enclosing 20 blank copies of the form mentioned.

Sincerely yours,

SIGNED

Ernest Wm. Ellis, Director
Division of Rare and
Miscellaneous Metals

Enclosures

Copy to: Mr. J. G. Puterbaugh

FMMurphy/izm 8-19-57
cc to: Mr. Murphy
Admr.'s Reading File
DMEA FT Reg. 3 (2) w/2cc's incoming letter

8623

J. G. PUTERBAUGH, PRESIDENT
TOM E. GARRARD, VICE PRESIDENT
E. [redacted]OYNER, EXECUTIVE VICE PRESIDENT AND TREASURER
C. R. COLE, VICE PRESIDENT
[redacted]ARL OMAN, SECRETARY
R. H. PATTERSON, ASS'T. SECRETARY AND ASS'T. TREASURER

McALESTER FUEL COMPANY

McALESTER, OKLA.

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 1957
DATE | CODE
8/19 | 220
700
700

August 16, 1957

AIR MAIL

Mr. F. L. Knouse, Acting Director,
Division of Rare and Miscellaneous Metals,
Defense Minerals Exploration Administration,
Department of the Interior,
Washington 25, D. C.

Re: Docket No. DMEA-4742 (Uranium)
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Knouse:

We have your letter under above subject dated August 13, 1957, in which you are transmitting 8 sets of Forms MF-205 which you will require to have filled out in order for you to continue your processing of our application.

We have leases which indicate that there are no encumbrances on any of the property, but we may find on applying for signature of these forms that one or two of the properties is already under mortgage. I am not sure whether we shall or not, and in the event we make a positive finding in the premises, I would suppose that you will require further study and correspondence with us and ourselves with our agents in South Dakota to get further copies of the forms executed by the mortgagors and in your hands.

In order to minimize the delay and extra correspondence, if you are going to require additional forms for possible mortgagors (as stated, I am not advised that any do exist but we may find that they do exist), may I suggest that you send us 20 blank copies of the forms so that we can have them filled out and short circuit some of the otherwise necessary correspondence and delay.

If it is agreeable for you to send the forms, kindly send them to the following:

Mr. Max Hartle
McAlester Fuel Company
P. O. Box 896
Edgemont, South Dakota

Mr. Hartle is already advised and will be further advised by copy of this letter how to handle the matter with a maximum of dispatch. Thanking you in advance for this assistance, I am

Very truly yours,

McALESTER FUEL COMPANY

Tom E. Garrard

TOM E. GARRARD,
Vice President.

TEG:BF
cc: Mr. Max Hartle

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

IN REPLY REFER TO:

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 16 1957

DATE	INITIALS	CODE
8/16	P	220
	~~FMM~~	~~700~~
Complete		

August 15, 1957

Memorandum

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

From: W. P. Williams, U. S. Geological Survey

Subject: Review of field examination report, DMEA 4742 (uranium), McAlester Fuel Company, Star claims and leased lands, Fall River County, South Dakota

The examining team report that geologic conditions on the applicant's property appear to be favorable for the presence of new uranium ore reserves. They state that favorable lithology, geologic structure, and a good geochemical environment for uranium minerals are present on the property.

One small deposit has, so far, been mined on the subject property. Two large deposits, however, are located within 5 miles of the property.

The applicant proposed a very extensive exploration drilling project. The examining team recommend a reduced and modified project that would take better advantage of the geologic features of the property.

The examining team conclude that conditions on the property are favorable enough to warrant further exploration. I agree with their findings and recommend approval of a DMEA contract that would provide for the examining team's proposed project.

W. P. Williams

W. P. Williams

Form 7
(2-56)

OFFICIAL FILE COPY

Date	Surname	Code
8/12	Murphy	700
8/12	Kirburg	700
13	Wednesday	100
8/13	P	220
		700

AUG 13 1957

Mr. J. G. Puterbaugh, President
McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

Re: Docket No. DMEA-4742 (Uranium)
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Puterbaugh:

It is noted in some of the copies of the mining leases submitted with the above-referenced application that, in the event a DMEA contract is entered into, the lessors agree to grant a consent to lien on the land involved. However, we require that such a consent to lien shall be in the form of an executed document apart from the lease.

Enclosed are eight (8)sets of the forms which we will require to continue processing the subject application. The forms should be signed by the parties indicated and returned to this office as soon as possible. We require five (5) executed copies for each set. The extra copy in each set enclosed may be retained by the signers.

As soon as the executed copies of the Consents to Lien and Subordination Agreements are received, we will promptly continue to process the subject application.

Sincerely yours,

SIGNED
E. L. Knouse, Acting Director
Division of Rare and
Miscellaneous Metals

FMMurphy/gla
8-12-57
cc to: Admr.'s Reading File
Code 700, Mr. Murphy
THKiilsgaard, Rm. 5224
DMEA Field Team, Region III (2)

8623

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 13 1957

DATE	INITIALS	CODE
8/13	G	220
8/14	EMM	200

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

Date August 13, 1957

DMEA Docket No. 4742
DMEA Contract No.
Commodity Uranium
Name of applicant McAlester Fuel Comapny
Name of property Star Claims & Leased Lands
Location of property Fall River County, South Dakota
Estimated cost of project $72,393.46

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
(Application, Field Team Report, etc.)

1. Date of subject document: 8/2/57. 2. Date received by reviewer: 8/13/57

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 ☒
      i. Consult with Mr. _____ at _____ AEC office.
   e. Disagree with Field Team ☐
   f. Suggest alternate plan ☐
   g. Request another examination ☐
   h. Approval ☐

10. Remarks: (Use back of page if necessary)

Agree with approval of modified program as proposed by Field Team.

DOCKET COPY

MF-200
(Revised June 1954)

Docket No. DMEA-4742

Commodity Uranium

Contract No. Idm-E

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

EXPLORATION PROJECT CONTRACT[1]

It is agreed this ..... 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] McAlester Fuel Company, a Delaware corporation, whose mailing address is P. O. Box 783 McAlester, Oklahoma, 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 maps Figure 2 and Figure 4.

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 South Dakota, County of Fall River, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] See Annex I of [5] ..... in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] See Annex I, [7] ..... 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: See Annex I

(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: See Annex I

(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 shall commence the work, and on or before May 1, 1958 (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."

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 $72,136.00 The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $54,102.00: *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.

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.

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

(a) That part of the last sentence of Article 3 beginning with the word "either" is deleted and replaced by the words "have completed the work, except as otherwise provided in Exhibit 'A' with respect to stages of work."

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

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

(d) In addition to the costs of work estimated in Exhibit "A" by categories of actual costs, the costs of work requirements specified in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs set forth in Exhibit "A" include all allowable costs of the work to be performed under the Contract.

(e) In the last sentence of Article 6(c), the words "Article 8" are substituted for the words "Article 9."

(f) Notwithstanding any other provision of the Contract, the allowable unit cost per foot of a drilling item is the average unit cost per foot computed on the basis of all the actual unit costs of said drilling item incurred by the Operator: <u>Provided</u>, That the Government will not contribute to any portion of an average unit cost of a drilling item that exceeds the estimated unit cost of said item set forth in the contract.

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.*—

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By .....

.....
(Operator)

By .....

.....

I, ..., certify that I am the ..... secretary of the corporation named as Operator herein; that ..... who signed this contract on behalf of the Operator, was then ..... 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.

.....

[CORPORATE SEAL]

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

DRAFT
8/14/57
FMMurphy/gla

EXPLORATION PROJECT CONTRACT
McALESTER FUEL COMPANY
DOCKET NO. DMEA-4742

ANNEX I

The [redacted] land mentioned in Article 2 of the contract consists of 8 parcels of leased land and ~~247~~ 243 unpatented lode mining claims, situate in Fall River County, South Dakota.

The list of lessors, their lands, and recording data of the leases follows:

Lessor: Warner R. Ball and Mrs. Warner R. Ball

Leased Lands: The south 1/2, Section 6; the south 1/2 of the northwest 1/4, the southwest 1/4, the west 1/2 and the southeast 1/4 of the southeast 1/4, Section 5; Lot 2, the east 1/2 of the northwest 1/4, the northeast 1/4, the south 1/2, Section 7; the north 1/2 of the north 1/2, the southeast 1/4 of the northeast 1/4, Section 18; the north 1/2, the northwest 1/4 and the east 1/2 of the southwest 1/4, and west 1/2 of the southeast 1/4, Section 8; all in Twp. 9S. Range 4E.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
4th day of Feb. 1957
at 10:45 A.M., and recorded in
Book 411 Misc. page 124-129

Lessor: Byron J. Cox and Bill Duerson

Leased Lands: The south 1/2 of the northwest 1/4, the east 1/2 of the northeast 1/4, Section 17; the northeast 1/4 of the northeast 1/4, Section 20; all in Twp. 9S, Range 4E, totaling 200.00 acres more or less.
And Four Mineral Claims, called Sam and Sam No. 1, and Ray and Ray No. 1
located in S/2 NW/4, Sec. 17, recorded on page of Book 38 Misc. Registrat of Deeds, Fall River Co., South Dakota, all in Fall River Co., South Dakota, said claims being recorded in Book 38 Misc. on Pages 622-624 inclusive, in the office of the Register of Deeds of Fall River County, South Dakota.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
27th day of Feb. 1957
at 10.30 A.M. and Recorded in
Book 41 Misc. Page 157-162

northwest 1/4, West 1/2 of the northeast 1/4, north 1/2 of the southeast 1/4, and the southeast 1/4 of the southeast 1/4, Section 17; all in Twp. 9S. Range 4E.

Recording data: State of South Dakota) ss
County of Fall River)
FILED FOR RECORD
18th day of Feb. 1957
at 9:45 A.M. and recorded in
Book 41 Misc., Page 146-151

Lessor: [illegible] Lord and Amy Lord

Leased Lands: The southeast 1/4 of the northwest 1/4, the east 1/2 of the southwest 1/4, the west 1/2 of the southeast 1/4, Section 18; all in Twp. 9S. Range 4E.

Recording data: State of South Dakota) ss
County of Fall River)
FILED FOR RECORD
18th day of Feb. 1957
at 9:45 A.M.
Book 41 Misc., Pages 141-146

Lessor: John D. and Margaret J. Manke

Leased Lands: The SE/4 of the NE/4, the SE/4, Section 13; Twp. 9S Range 3E, W.M. Lots 2, 3 and 4, Section 18; the S/2 of the N/2, the SW/4, the SE/4 of the SE/4, Section 21; the N/2, Section 28; the N/2, the N/2 and the SW/4 of the SW/4, Section 29; all of Section 30; the E/2 of Section 31; the W/2 of the W/2, Section 32; all in Twp. 9S Range 4E, BHM.

Recording data: State of South Dakota) ss
County of Fall River)
FILED FOR RECORD
4th day of March, 1957
at 10:00 A.M. and recorded in
Book 41 Misc. Page 162-167

Lessor: John D. and Margaret J. Manke

Leased Lands: The southwest 1/4 of the northeast 1/4, the east 1/2 of the southeast 1/4, Section 18; the west 1/2 and the southeast 1/4 of the southwest 1/4, Section 17; lot 1, the east 1/2 of the northwest 1/4, the northeast 1/4, the south 1/2, Section 19; the northwest 1/4, the south 1/2, Section 20; all in Twp. 9S. Range 4E.

Recording data: State of South Dakota) ss
County of Fall River)
FILED FOR RECORD
4th day of Feb. 1957
at 10:45 A.M. and recorded
in Book 41 Misc. Page 129-134

Lessor: James S. Raby

Leased Lands: Northwest 1/4, the south 1/2, Section 1; the east 1/2 of the northwest 1/4, the west 1/2 and the southeast 1/4 of the northeast 1/4, the east 1/2 of the southwest 1/4, the southeast 1/4, Section 12; all in Twp. 9S. Range 3E.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
4th day of Feb. 1957
at 10:45 A.M. and recorded in
Book 41 Misc. Page 134-139

Lessor: James S. Raby

Leased Lands: The NE/4 of the NW/4, north 1/2 of the NE/4, Section 13; Twp. 9S Range 3E. BHM.

Recording data: State of South Dakota)
County of Fall River) ss
FILED FOR RECORD
25th day of Feb. 1957
at 10:45 A.M. and recorded in
Book 41 Misc. page 151-156

Insert see page 4

The mining claims are recorded by the Operator in the Office of the Recorder, Fall River County, South Dakota, as follows:

Claim No.	Book No.	Page No.	Date Recorded
Star Nos. 1 through 6	Misc. 40	130 through 133	3/27/57
Star No. 7	" 40	225	3/27/57
Star Nos. 8 through 190	" 40	133 through 225	3/27/57
Star Nos. 191 through 245	" 40	230 through 257	4/5/57
~~Star Nos. 246-247~~	~~" 40~~	~~257-258~~	~~3/27/57~~

The locations of the leased land and mining claims with reference to section, township, and range are shown on the map entitled, "Figure 2 - Star Claim Groups and Leased Land - - - -" attached hereto and made part hereof.

Eight Consents to Lien and Subordination Agreements executed by the above-named lessors are attached hereto and made part hereof.

INSERT after lease data on pg 3. Tom

DRAFT
8//14/57
FMMurphy/gla

EXPLORATION PROJECT CONTRACT
McALESTER FUEL COMPANY
DOCKET NO. DMEA-4742

EXHIBIT "A"

Description of the Work

General Provisions

The object of this project is to explore for uranium ore deposits that might occur in the Fall River and Lakota sandstone members of the Cretaceous Inyan Kara group of sedimentary rocks, which underlie the land described in Annex I of this Contract.

The exploratory work shall consists of non-core rotary drilling vertical holes to an average depth of about 300 feet to explore the Fall River and upper (Gould channel) Lakota sandstone members, and holes to an average depth of about 550 feet where the underlying lower sandstone stratum of the Lakota member is also to be explored.

Holes designated to explore the "Gould" channel sandstone shall not be drilled more than 10 feet below its inferred base; and the holes to explore the total Inyan Kara group shall not be drilled more than 10 feet below the inferred base of the lower Lakota sandstone stratum.

Samples of the cuttings shall be collected for each two feet of hole drilled. The samples shall be examined for physical and geologic characteristics and scanned radiometrically. One-half of each sample shall be stored for Government inspection, and possible use, in heavy paper sample sacks marked to show the hole number and the depth

represented. The other half of the sample, for the Operator's use, shall, if it shows significant anomalous radioactivity, be chemically analyzed for its U_3O_8 content. With previous Government approval, the O erator may dispose of the Government's portion of the samples.

All holes shall be logged geologically and probed radiometrically by the Operator. The logs shall include lithology, sandstone-mudstone ratio, sandstone thickness, etc., required for control of subsequent drilling and general gedogic information. Records of such logging and probing, together with the assay certificates of the cuttings samples, shall be submitted with the Operator's monthly progress report. Also, the Operator's report shall include a map or sketch showing the location of all holes drilled during the reporting period.

The Government will not contribute to the cost of an incomplete hole, one that cannot be probed radiometrically, nor to one drilled closer than 100 feet to the outer boundaries of the property covered by this Contract.

The Operator shall provide a full-time supervisor and such technical assistance and labor as may be required to complete the project in a satisfactory manner.

The bulldozer work shall be performed with a D-7 Caterpillar dozer or an equivalent unit of any other make.

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

The work shall be performed in three stages. The Operator shall perform all of Stage I work and as much of Stage II and Stage III work as is approved of in writing by the Government.

Stage I

The work under Stage I shall consist of preparing access roads and drill sites, and drilling not more than 46 holes at the locations approximately shown on the map entitled "Figure 4. Geologic Map Showing Recommended Exploration, - - - ," attached hereto and made part hereof.

In the area north of the Cheyenne River, 34 holes shall be drilled along ten lines spaced about 1,000 feet apart, the holes being staggered on alternate lines. Holes in each line shall not be closer than approximately 2,000 feet.

In the area south of the Cheyenne River, 6 holes shall be drilled on each of two lines spaced about 4,000 feet apart. The holes on each line shall be at intervals of approximately 2,000 feet.

On map Figure 4, the holes to penetrate the Fall River and upper Lakota sandstones are designated by an open circle, and those to penetrate the Fall River,

upper Lakota, and also the lower Lakota sandstones are designated by either a solid black circle or a circle with a cross center.

It is estimated that to complete the 46 holes will require 20,300 feet of non-core rotary drilling including incidental costs, and that chemical analyses for the U_3O_8 content of 140 samples and 15 hours of bulldozer work will be required. However, if these estimates are too low, then a part of such units of work and costs pertaining thereto may be transferred from Stage III with a corresponding reduction in that stage.

Stage II

The work under Stage II shall consist of preparing access roads and drill sites, and drilling not in excess of 60 holes as offsets to those holes previously drilled that showed significant uranium mineralization or encountered sandstone considered to be favorable for uranium deposition.

It is estimated that 20 of the holes will be drilled as offsets to explore the Fall River and upper Lakota sandstone and that 40 holes will be drilled through the lower Lakota sandstone, for an aggregate total of 26,000 feet of non-core rotary drilling.

Holes drilled as offsets to explore the Fall River and upper Lakota sandstones shall not be drilled closer than approximately 200 feet to any other hole;

and holes drilled to explore through the lower Lakota shall be no closer than approximately 500 feet to the hole being offset under this Stage II of the contract.

If the estimated units shown under "Estimated Costs" for bulldozer hours and the drilling footage are not sufficient to complete the 60 holes, and additional analyses of samples are required, then part of such units of work and costs pertaining thereto may be transferred from Stage III with a corresponding reduction in that stage.

Stage III

The work under Stage III shall consist of bulldozing access roads and preparing drill sites for offset holes to those holes drilled under Stage I and Stage II that ~~penetrated~~ indicated significant uranium mineralization in the sandstones.

Holes drilled as offsets to explore the Fall River and upper Lakota sandstones shall not be closer than approximately 100 feet to any other hole, and holes drilled as offsets to explore through the lower Lakota sandstone shall not be closer than approximately 200 feet to the hole being offset.

Not in excess of 15,000 feet of non-core rotary drilling, 22½ hours of stand-by time for probing drill holes, 10 hours of bulldozer work, and chemical analyses

of 210 samples for their U_3O_8 content, less any units of such items that have been transferred to Stages I or II, shall be allowed under this Stage III of the contract.

Estimated Costs

Stage I

Actual Costs

Category (1) - Independent Contracts 1/		
Bulldozing, 15 hours @ $12.50/hr.	$ 187.50	
Non-core rotary drilling, 20,300 feet @ $1.00/ft. 2/	20,300.00	
Stand-by time for probing holes 34½ hours @ $10.00/hr.	345.00	
Fixed Unit Costs		
Incidental allowance 3/ for each foot of drilling completed, 20,300 feet @ $0.12/ft.	2,436.00	
Chemical analyses for U_3O_8 content of 140 samples @ $3.50/sample	490.00	
Total Stage I		$23,758.50

Stage II

Actual Costs

Category (1) - Independent Contracts 1/		
Bulldozing, 15 hours @ $12.50/hr.	$ 187.50	
Non-core rotary drilling, 26,000 feet @ $1.00/ft. 2/	26,000.00	
Stand-by time for probing holes, 45 hours @ $10.00/hr.	450.00	

Fixed Unit Costs		
Incidental allowance 3/ for each foot of drilling completed, 26,000 feet @ $0.12/ft.	$ 3,120.00	
Chemical analyses for U_3O_8 content of 210 samples @ $3.50/sample	735.00	
Total Stage II		$30,492.50
Stage III		
Actual Costs		
Category (1) - Independent Contracts 1/		
Bulldozing, 10 hours @ $12.50/hr.	$ 125.00	
Non-core rotary drilling, 15,000 feet @ $1.00/ft. 2/	15,000.00	
Stand-by time for probing holes, 22½ hours @ $10.00/hr.	225.00	
Fixed Unit Costs		
Incidental allowance 3/ for each foot of drilling completed, 15,000 feet @ $0.12/ft.	1,800.00	
Chemical analyses for U_3O_8 content of 210 samples @ $3.50/sample	735.00	
Total Stage III		$17,885.00

S U M M A R Y

Total Estimated Cost Stage I	$23,758.50
" " " Stage II	30,492.50
" " " Stage III	17,885.00
Total Estimated Cost of Project	$72,136.00
Government Participation @ 75%	$54,102.00

1/ See Article 13(c)

2/ See Article 13(f)

3/ Includes all costs whatsoever that might otherwise be allowable costs of the project under Categories (1) through (7) of Article 6(a), except as otherwise scheduled in Exhibit "A."

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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August 5, 1957

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Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA 4742 (Uranium) McAlester Fuel Company (Star Claims and Leased Lands) Fall River County, South Dakota - Joint Report of Examination

Enclosed are the original and two copies of the Joint Report of Examination on the subject property by E. O. Binyon, USBM, and D. H. Richter USGS.

The field examiners conclude that the probability for making a significant discovery is sufficiently promising to justify Government participation. Accordingly, they recommend that the Applicant's work proposal be approved, as modified by them, in which the Field Team concurs.

Also enclosed are eight extra copies of Figure 4 for use in the preparation of the contract.

As agreed, we will appreciate the Legal Section of the Washington Office preparing all necessary Forms MF-205, Consent to Lien, for our forwarding to the proper persons.

E. N. Harshman

E. N. Harshman
Acting Executive Officer

Reviewed by
DMEA OPERATING COMMITTEE
B 12-57
(date)

ON-SITE EXAM. REPORT

FOR UNITED STATES GOVERNMENT USE ONLY

DMEA
DEPARTMENT OF THE INTERIOR
AUG 2 - 1957
REGION III
DENVER, COLORADO

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
AUG 5 1957

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DMEA 4742

McAlester Fuel Company

Star claims and Leased Land

Fall River County, South Dakota

Uranium

Joint Engineering and Geological Report

by

D. H. Richter, Geologist
Geological Survey

E. O. Binyon, Mining Engineer
Bureau of Mines

August 2, 1957

3 Maps in Docket envelope.

Reviewed by
DMEA OPERATING COMMITTEE
8-12-57
(date)

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DMEA 4742

McALESTER FUEL COMPANY
STAR CLAIMS AND LEASED LAND
FALL RIVER COUNTY, SOUTH DAKOTA

INTRODUCTION AND SUMMARY

The McAlester Fuel Company, a Delaware Corporation, with offices at McAlester, Oklahoma, and Edgemont, South Dakota, applied to the Defense Minerals Exploration Administration for aid in exploration of the Star claims Nos. 1 through 247 and adjoining tracts of deeded land for uranium. These claims and deeded land are in secs. 4, 5, 6, 7, 8, 17, 18, 19, 20, 21, 28, 29, 30, 31, and 32, T. 9 S., R. 4 E., and secs. 1, 12, and 13, T. 9 S., R. 3 E., B.H.M., Fall River County, South Dakota. The applicant has requested exploration of the property by a three-stage program consisting of 105,100 feet of non-core rotary drilling, and 3,400 feet of diamond core drilling, at an estimated total cost of $165,768.86 (applicant's total of $165,668.86 is incorrect). As proposed the program is designed to explore the Cretaceous Fall River and Lakota formations of the Inyan Kara group; the two principal targets being the upper (Gould Channel) and lower channel sandstones of the Lakota formation.

A field examination was made of the property on June 25, 1957, by D. H. Richter, geologist, U. S. Geological Survey, and E. O. Binyon, mining engineer, U. S. Bureau of Mines. Robert Ford,

geologist, and Max Hartle, local representative, of the applicant accompanied the examining team on the examination.

As a result of the examination the examining team is of the opinion that, on the basis of the very favorable geologic environment the property warrants some exploratory work. The program as proposed by the applicant seems to be too elaborate and it is believed that a modified drilling program will adequately explore the most favorable areas. The modified program recommended for DMEA participation consists of three stages of non-core drilling, totalling 61,300 feet at an estimated cost of $72,393.46; Government participation at 75 percent is $54,295.10.

ACKNOWLEDGEMENTS

Thanks are due Garland B. Gott, U. S. G. S. geologist, who gave freely of his time in discussing the exploration program and Robert B. Ford and Max Hartle, the applicant's representatives, who conducted the examiners over the property. Ray Barkeley, A.E.C. geologist in Hot Springs, South Dakota, was consulted during the examination.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The claims and deeded land, a single tract, are in secs. 4, 5, 6, 7, 8, 17, 18, 19, 20, 21, 28, 29, 30, 31, and 32, T. 9 S., R. 4 E., and secs. 1, 12, and 13, T. 9 S., R. 3 E., B.H.M., Fall River County,

South Dakota (figs. 1 & 2). The approximate center of the tract is 8 miles airline, east and slightly south of Edgemont, South Dakota. From Edgemont, that part of the property north of the Cheyenne River is reached by taking U. S. 85A and 18 east 6.1 miles to a junction with a county road, turn right and continue for approximately 3.5 miles to about the north central portion of the property. To reach that part of the property south of the river take State Highway 52 south for 3-3/4 miles, turn left onto a county road and continue on this road for 8.5 miles to approximately the south central portion of the property. The river can be forded during most of the year making both parts of the property accessible from either of the routes described above.

Edgemont the nearest community is the site of a uranium mill and a railpoint on the Chicago Burlington and Quincy railroad. The town is also served by several major truck lines and is a source of labor and small supplies for the surrounding area.

Relief in the area included by the application is moderate. The land is mostly mesa country with a gradual slope to the south, cut by two major canyons--Chilson and Brady--with several smaller draws cutting across the property in a southeast direction. The Cheyenne River (with a mean altitude of 3,330 feet) meanders eastward across the middle of the property.

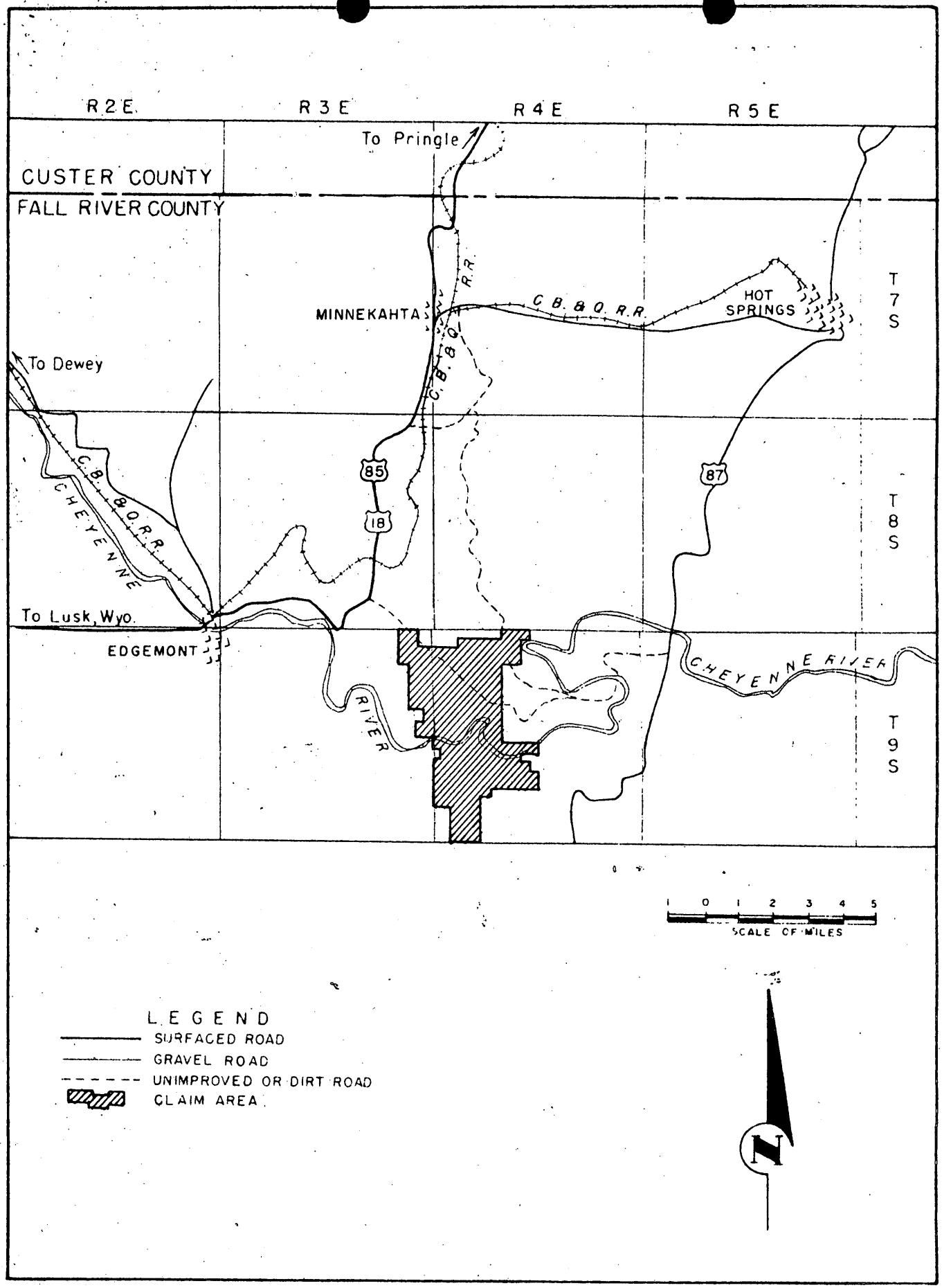

FIGURE 1 - LOCATION MAP, McALESTER FUEL COMPANY, STAR CLAIMS AND DEEDED LAND T.9 S., R.3 and 4 E., B.H.M., FALL RIVER COUNTY, SOUTH DAKOTA. DMEA 4742

Altitudes range from 4,200 feet in the extreme northwest corner to 3,500 feet at the south end of the property. Chilson Canyon is the most outstanding topographic feature on the property having a drop from 3,900 feet at the rim to about 3,400 feet at the canyon floor.

Canyon walls are marked by a considerable growth of Ponderosa pine, while on the flats and mesas grasses and cacti are predominant.

Water is obtainable from the Cheyenne River and possibly from the farm and ranch wells or reservoirs. There is no electric power on the property. Gasoline or diesel driven drilling equipment will be used for exploration.

The climate is marked by moderate to mild summers and falls and short periods of sub-zero temperatures in the winter. Fairly heavy snow and rainfall occur in the winter and early spring and for short periods may limit travel on the dirt roads. Outside operation can be carried on for 10 to 11 months of the year without too much difficulty.

OWNERSHIP

The land held by the applicant under lease and by claim location includes a total area of approximately 8,535 acres in a contiguous tract (fig. 2). Of this, 4,131.83 acres are claimed by

unpatented lode claims located by the applicant for the most part over land which is also included in the leases. Presumably the claims located on the deeded land, that is included in the leases, are located for mineral rights and the remainder (not included in the acreage of deeded land) have both the surface and mineral rights. A total of 7,571.73 acres are held under 8 separate leases, this plus 964 acres (more or less) included by the lode claims bring the total to 8,535 acres. A list of the lessors with the acreages is given below.

Lessor	Acres	T. 9 S., R. 4 E., B.H.M. Sections
John D. and Margaret J. Manke	1,288.12	17, 18, 19, 20
John D. and Margaret J. Manke	2,484.81	18, 21, 28, 29, 30, 31, 32 13 (T. 9 S., R. 3 E.)
Warner R. Ball	1,955.72	5, 6, 7, 8, 18
B. H. and Amy Lord	200.00	18
Frank and Emma Hand	320.00	8,17
James S. Raby	120.00	13 (T. 9 S., R. 3 E., B.H.M.)
James S. Raby	920.44	1, 12 (T. 9 S., R. 3 E., B.H.M.)
Byron J. Cox, Bill Duerson	200.00	17, 20
	82.64	Sam, Sam 1, Ray and Ray 1 mining claims
Total	7,571.73	

A check of the list of claims as submitted by the applicant was made at the office of Register of Deeds Hot Springs, South Dakota, and, except for the omission of the Star 246 and Star 247 from the list, the claims were found to be located and recorded as listed. The claims, book, and page numbers and date recorded are given below:

Claim No.	Book No.	Page No.	Date Recorded
Star 1 through 6	Misc. 40	130 through 133	3/27/57
Star 7	" 40	225	3/27/57
Star 8 through 190	" 40	133 through 225	3/27/57
Star 191 through 245	" 40	230 through 257	4/5/57

The Star claims numbered 246 and 247 are recorded in Miscellaneous Book 40 on pages 257 and 258 as of May 1, 1957. A minor discrepancy between the claim map and the lease from John D. and Margaret J. Manke dated February 1, 1957, is noted. On the property map the applicant has not included the SW 1/4 of the NW 1/4 of section 19 (actual scaled measurement 1000' x 1140') whereas in the lease this tract is included in the list of lands--section 17; lot 1, the east 1/2 of the northwest 1/4, the northeast 1/4 and the south 1/2 section 19.

The applicant, while staking the Star claims in the manner prescribed by South Dakota laws, did not do the discovery work on

any of the claims. When questioned concerning this the geologist, Mr. Robert Ford, stated that he had been advised by an attorney that no discovery work was now required by the State of South Dakota and therefore none had been done.

HISTORY AND PRODUCTION

The Star claims were located in February and March 1957 and recorded in March and April of that year. The leases on the deeded land were signed on January 30 and 31, and February 1, 6, 7, 15, 16, and 25, 1957.

There has been no production from the property.

PRESENT STATUS

The applicant has done no work on the property other than to stake the claims. There is no mining or milling equipment on the property. Three holes have been drilled on the property, two by previous lessees and one by the A.E.C.

GEOLOGY

General statement

The Star claims and leased land of the McAlester Fuel Company are near the southeastern boundary of the Edgemont uranium district

in the southern Black Hills of South Dakota. The principal consolidated rocks exposed on the property consist of a series of lower Cretaceous sedimentary formations that are known collectively as the Inyan Kara group. This group, which forms some of the pronounced outer peripheral hogbacks to the Black Hills, contains the majority of the known uranium-vanadium ore deposits of both the southern and northern Black Hills. The Inyan Kara group overlies the Jurassic Morrison formation and in the southern part of the property is conformably overlain by the lower Cretaceous Skull Creek shale. Thin deposits of Quaternary terrace gravels and alluvium locally cover the Cretaceous rocks.

The Inyan Kara group is now divided into two principal formations--the Fall River and Lakota. The Fall River or uppermost member of the Inyan Kara consists predominantly of fine-grained sandstone with minor intercalations of siltstone and mudstone. The Lakota formation, which now includes the old Fuson mudstone formation and the thin discontinuous Minnewaste limestone, is primarily a series of sandstones, siltstones, and mudstones. Interfingering of the different rock types within the formations is common, and the lithologic sequence changes frequently throughout the area.

Structural deformation throughout the area is a result of the Laramidian (?) Black Hills uplift and in general the attitude of the

strata depends upon their position with respect to the elongate Black Hills dome. Superimposed on this regional homocline are a number of north-trending anticlines, monoclines, and structural terraces which locally greatly affect the regional dip of the strata.

Occurrences of uranium minerals are common in the Inyan Kara group to the north and west of the subject property, and drilling on the property indicates relatively strong anomalous radioactivity at depths of 460 to 540 feet in the Lakota formation. Minable ore-grade deposits in the general area are rare, however, and at the present time only two mines--the Gould and Runge--are producing significant amounts of ore. The Gould mine, from which approximately 30,000 tons of yellow oxidized-type ore has been shipped, is in the so-called Gould channel sandstone in the upper Lakota formation. The Runge mine, on the other hand, is in the channel sandstone of the Fall River formation and is currently shipping 4,500 tons of black unoxidized-type ore monthly. Two noteworthy occurrences of uranium minerals in the lower Lakota sandstones are the Accidental mine, from which 500 tons have been produced, and the McLeoud mine which is now undergoing development. Recent drilling near the Runge mine has reportedly disclosed a large unoxidized-type ore body in the lower sandstones of the Lakota formation, probably at the present water table level.

Extensive field investigations by the U. S. Geological Survey[1/] during the past three years have yielded considerable information regarding various relationships between geology and uranium deposition in the southern Black Hills. Moreover, some of these interrelationships, which are listed below, appear to have been controlling, or at least influencing, factors in the localization of uranium minerals:

Lithologic controls

1. Sandstone-filled channels.--The uranium deposits are restricted to three distinct types of sandstone referred to as A, B, and C. Type A, the Gould channel sandstone, is characterized by its heterogeneity: it is fine- to coarse-grained, conglomeratic and non-carbonaceous. The Gould deposit occurs in this type of upper Lakota sandstone. Type B sandstone forms large units that truncate and overlap underlying lenses and also appears to grade laterally into finer-grained facies. Type B is fine- to medium-grained, homogeneous in texture and structure and contains scattered pockets and lenses of carbonaceous trash. Type B, which is best developed in the lower part of the Lakota formation and the Fall River formations, contains the large

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1/ Bell III, H. et al., Lithologic and structural controls of uranium deposition in the southern Black Hills, South Dakota: U. S. Geol. Survey Prof. Paper 300, p. 345-349, 1956.

ore deposits of the Runge mine. Type C sandstone occurs in a series of alternating thin carbonaceous siltstones and mudstones in the lower part of the Fall River formation. No large ore deposits are known to occur in this type.

2. Other lithologic factors which certainly influence the localization within the channels are porosity and permeability, which, in turn, are dependent upon the heterogeneity, thickness, continuity, and cementation of the sandstones.

Structural controls

1. Structural terraces and areas of local flattening of dip are apparently favorable structures for uranium localization. Steeply dipping structures are unfavorable.

Geochemical controls

1. Carbonate-cemented sandstones.--Recent work[1/] by the U. S. Geological Survey indicates that the solutions depositing calcium carbonate in the sandstones of the Inyan Kara rocks also carried uranium and that geochemically favorable environments for the localization of uranium deposits are marginal to large areas of carbonate-cemented sandstone.

1/ Gott, G. B., Inferred relationship of some uranium deposits and calcium carbonate cement in southern Black Hills, South Dakota: U. S. Geol. Survey Bull. 1046-A. 1956.

2. Ground water.--Recent subsurface exploration and mineralogical studies strongly suggest that both uranium and vanadium have been moved in Recent time by vadose water and precipitated down dip at the true or perched ground water level, or in some other favorable environment for the deposition of uranium minerals.

3. Carbonaceous material.--The black, relatively unoxidized-type ores with a high V/U ratio are generally concentrated in areas that contain an abundance of carbonaceous trash. In some deposits pyrite may also act as a reducing agent for the stabilization and/or precipitation of uranium minerals in the low valence uranous state (U^{4+}).

McAlester Fuel Company property

The lands controlled by the McAlester Fuel Company have been located with considerable care and planning. Favorable lithology, structure, and geochemical environment for the localization of uranium mineralization are, or have been, present on the property. However, knowing the paucity of large uranium deposits in the Edgemont area, it is still a matter of conjecture whether these three main controlling factors influenced the deposition of significant uranium ore-bodies on the subject property.

The Inyan Kara group on the McAlester Fuel Company property ranges between 450 and 550 feet in thickness and contains three channel sandstones--a Fall River Type B sandstone, an upper Lakota Type A sandstone, and a lower Lakota Type B sandstone--all of which contain significant uranium deposits elsewhere in the Edgemont district (fig. 3 A B & C). The two sandstones in the Lakota formation are ideally covered by the subject property and probably represent, by far, the best lithologic target in the area. Although both of these sandstones are well exposed in the Cheyenne River valley and to some extent in a few canyons to the north of the Cheyenne, large areas in geochemically favorable areas north of the Cheyenne are covered by Fall River rocks and south of the Cheyenne by both Fall River and Skull Creek rocks. The Fall River channel sandstone, on the other hand, is relatively thin and well exposed by erosion over most of the subject property and therefore does not appear to have the potential of the Lakota sandstones.

Structurally the subject property is favorably located on the gently-dipping beds on the east limb of the assymetrical Chilson anticline. The strata have a consistent NE strike and dip 2-4° SE.

An area of relatively high carbonate-cement content in the upper Lakota Gould sandstone, exposed in Brady canyon, indicates a favorable geochemical environment and further enhances the uranium potential of this lithologic unit on the McAlester Fuel Company

property (figs. 3 & 4). The geochemically favorable area would lie up dip, to the north of the carbonate cement exposures, in an area covered by Fall River rocks and not transected by deep canyons. An additional possible favorable geochemical criterion in the area is the permanent water table. Drilling by the Holly Corporation, just west of the McAlester Fuel Company property, indicates that north of the Cheyenne River the permanent water table occurs in the channel sandstone in the lower part of the Lakota formation and south of the river probably transects both the lower and upper Lakota channel sandstones. In the immediate area along the river, available information indicates that the water table is 25 to 50 feet below the surface.

Although no large uranium deposits are exposed on the subject property, one small deposit has been mined on the subject property and several occur very near the subject property. These small mined deposits, usually highly oxidized, were in rim exposures of the lower Lakota channel sandstone. Two holes (Ball-Twidell 1 and 2) 300 feet apart, drilled by a former lessee, intersected a number of radioactive zones at depths between 480 and 540 feet in Ball-Twidell No. 1 and between 460 and 520 feet in Ball-Twidell No. 2. Maximum radioactivity of 2,400 counts/second (120X background) was recorded in hole no. 1 and 1,500 counts/second (75X background) in hole no. 2.

These radioactive zones are also in the lower Lakota channel sandstones, possibly at or near the present water table level.

In summarizing, it is apparent that the subject property overlies an area geologically favorable for the occurrence of uranium and warrants further exploration.

ORE RESERVES

There are no known ore reserves on the property.

APPLICANT'S PROPOSED EXPLORATION PROGRAM AND COSTS

The applicant proposes to explore the Inyan Kara group for uranium ore deposits in a three-stage program consisting of 105,100 feet of non-core drilling and 3,400 feet of core drilling. The primary targets, in order of decreasing importance, are:

1. The Gould channel sandstone in the upper part of the Lakota formation.
2. The thick channel sandstones in the lower part of the Lakota formation.
3. The Fall River channel sandstone.

Stage I of the applicant's program consists of 102 non-core holes aggregating 39,100 feet. Sixty-eight of these holes will test only the Fall River and Gould channel sandstones and the remaining 34 holes will explore all 3 of the target horizons. The principal

objective of Stage I drilling is to gain geologic information, for the preparation of structure contour maps, sandstone--mudstone ratio maps, and isopachous maps, to control subsequent Stage II exploration.

Stage II consists of 40,000 feet of non-core drilling to explore the significant geologic features delineated by the Stage I drilling.

Stage III consists of 26,000 feet of non-core and 3,400 feet of core drilling to offset mineralized holes found under the previous stages.

The applicant's estimated cost of the program is as follows:

Stage I

Independent Contracts

Drilling, rotary non-core

102 holes, 0'-250'	25,500 ft. at $1.00/ft.	$25,500.00	
250'-500'	13,600 ft. at $1.25/ft.	17,000.00	
102 holes	39,100 ft.	$42,500.00	
Bulldozer operations			
80 hours at $13.00/hr.		1,040.00	
Total Independent Contracts			$43,540.00

Labor, Supervision, Consultants

1-consulting geologist 20 days at $100.00/day	$ 2,000.00	
1-supervising geologist 3 mos. at $600.00/mo.	1,800.00	
1-geologist helper 3 mos. at $450.00/mo.	1,350.00	
1-sampler ($1.75/hr. plus time and one-half over 40 hrs/week worked) 3 mos. at $392.00/mo.	1,176.00	
Total Labor, Supervision, Consultants		$ 6,326.00

Operating Materials and Supplies		
Sample containers 20M at $24.00/1,000	$ 480.00	
Total Operating Materials and Supplies		$ 480.00
Operating Equipment		
1-Jeep station wagon rental at 12¢/mile 1,950 miles	$ 234.00	
1-Pickup truck rental at 10¢/mile 1,950 miles	195.00	
Total Operating Equipment		$ 429.00
Rehabilitation and Repairs	None	---
New Buildings, Improvements, Installations	None	---
Miscellaneous		
Radiometric hole logging 39,100 feet at 10¢/ft.	$ 3,910.00	
Payroll taxes and insurance 5.2% of $4,326.00	224.95	
Accounting $100.00/mo. for 3 mos.	300.00	
150 chemical analyses at $4.00/sample	600.00	
Total Miscellaneous		$ 5,034.95
Contingencies	None	
Total estimated cost, Stage I		$55,809.95

Stage II

Independent Contracts

Drilling, rotary non-core

100 holes, 0'-250'	25,000 ft. at $1.00/ft.	$25,000.00	
250'-600'	15,000 ft. at $1.25/ft.	18,750.00	
100 holes	40,000 ft.	$43,750.00	

Bulldozer operations

80 hours at $13.00/hr.	$ 1,040.00	
Total Independent Contracts		$44,790.00

Labor, Supervision, Consultants

1-consulting geologist 20 days at $100.00/day	$ 2,000.00	
1-supervising geologist 3 mos. at $600.00/mo.	1,800.00	
1-geologist helper 3 mos. at $450.00/mo.	1,350.00	
1-sampler ($1.75/hr. plus time and one-half over 40 hr. week worked) 3 mos.	1,176.00	
Total Labor, Supervision, Consultants		$ 6,326.00

Operating Materials and Supplies

Sample containers 20M at $24.00/1,000	$ 480.00	
Total Operating Materials and Supplies		$ 480.00

Operating Equipment

1-Jeep station wagon rental at 12¢/mile 2,000 miles	$ 240.00	
1-Pickup truck rental at 10¢/mile 2,000 miles	200.00	
Total Operating Equipment		$ 440.00

Rehabilitation and Repairs	None	---
New Buildings, Improvements, Installations	None	---

Miscellaneous		
Radiometric hole logging 40,000 ft. at 10¢/ft.	$ 4,000.00	
Payroll taxes and insurance 5.2% of $4,326.00	224.95	
Accounting $100.00/mo. for 3 mos.	300.00	
150 chemical analyses at $4.00/sample	600.00	
Total Miscellaneous		$ 5,124.95
Contingencies	None	
Total estimated cost, Stage II		$57,160.95
Stage III		
Independent Contracts		
Drilling, rotary non-core		
65 holes, 0'-250' 16,250 ft. at $1.00/ft.	$16,250.00	
250'-600' 9,750 ft. at $1.25/ft.	12,187.50	
65 holes 26,000 ft.	$28,437.50	
Drilling, diamond core		
10 holes, 0'-250' 1,700 ft. at $3.00/ft.	$ 5,100.00	
250'-600' 1,700 ft. at $4.00/ft.	6,800.00	
10 holes 3,400 ft.	$11,900.00	
Bulldozer operations		
40 hours at $13.00/hr.	$ 520.00	
Total Independent Contracts		$40,857.50

Labor, Supervision, Consultants		
1-consulting geologist 15 days at $100.00/day	$ 1,500.00	
1-supervising geologist 2-1/2 mos. at $600.00/mo.	1,500.00	
1-geologist helper 2-1/2 mos. at $450.00/mo.	1,125.00	
1-sampler ($1.75/hr. plus time and one-half over 40 hr. week worked) 2-1/2 mos. at $392.00/mo.	980.00	
Total Labor, Supervision, Consultants		$ 5,105.00
Operating Materials and Supplies		
Sample containers 13M at $24.00/1,000	$ 312.00	
Core boxes at $6.00 each (25 ft. per box) 136 boxes	816.00	
Total Operating Materials and Supplies		$ 1,128.00
Operating Equipment		
1-Jeep station wagon rental at 12¢/mile 1,500 miles	$ 180.00	
1-Pickup truck rental at 10¢/mile 1,500 miles	150.00	
Total Operating Equipment		$ 330.00
Rehabilitation and Repairs	None	---
New Buildings, Improvements, Installations	None	---
Miscellaneous		
Radiometric hole logging 29,400 ft. at 10¢/ft.	$ 2,940.00	
Payroll taxes and insurance 5.2% of $3,605.00	187.46	

Accounting at $100.00/mo for 2-1/2 mos.	$ 250.00	
500 chemical analyses at $4.00/sample	2,000.00	
Total Miscellaneous		$ 5,377.46
Contingencies	None	
Total estimated cost, Stage III		$52,797.96
Estimated total cost Stage I	$55,809.95	
Stage II	57,160.95	
Stage III (error of $100.00)	52,797.96	
Grand total		$165,768.86

EXAMINERS'RECOMMENDED EXPLORATION PROGRAM AND COSTS

Although the examiners believe that the subject property warrants additional exploration, the applicant's proposed program appears to be too elaborate in view of the exceedingly large area to be explored and relatively small size of ore deposits discovered to date in the district. Moreover, the applicant's proposed Stage I exploration is essentially designed to delineate smaller favorable lithologic, structural, and environmental areas for subsequent work and is not concerned directly with locating mineralized zones.

With these thoughts in mind and taking into consideration the relative importance of the three targets designated by the applicant, the examiners have modified the proposed program to consist of both exploration for uranium mineralization and further geologic information. This modified program, which from the engineer's viewpoint

digresses with his interpretation of DMEA policy, is based solely on favorable geology and is recommended for approval in lieu of a denial without prejudice.

The recommended program is as follows (fig. 4):

Stage I. (1) Explore the thick part of the upper Lakota Gould channel sandstone up dip from the area of carbonate cement north of the Cheyenne River for uranium mineralization by 27 vertical drill holes on 2,000-foot alternating centers along a 1,000-foot NS-EW grid pattern, as shown on figure 4. Every other hole in the pattern (total of 7 holes) should be drilled through the entire Inyan Kara section, for geologic information which would delineate areas for any subsequent Stage II drilling. Average maximum depth of Gould channel holes is 300 feet and for the entire Inyan Kara holes 550 feet, for a total of 9,850 feet of drilling.

(2) Explore the entire Inyan Kara section by four EW fences (two north and two south of the Cheyenne River), consisting of 19 vertical drill holes on 2,000-foot centers. The two fences north of the Cheyenne River will be E-W extensions of the drill grid over the Gould channel. The purpose of this drilling is, in conjunction with the deep holes under Item 1, to delineate favorable geologic areas

for any subsequent Stage II drilling. Average maximum depth of the holes will be approximately 550 feet, for a total of 10,450 feet of drilling.

Stage II. (1) Assuming that 20 percent, or 5 holes, of Stage I, item (1) will be mineralized, and allowing 4 offset holes (100- to 200-foot offsets) per mineralized hole, the total number of holes will be 20, at an average maximum depth of 300 feet, for a total of 6,000 feet of drilling.

(2) 20,000 feet of drilling to explore for uranium mineralization in favorable zones delineated under Stage I, item (2) and the seven deep holes of item (1). Holes drilled under this item should have a minimum spacing of 500 feet.

Stage III. 15,000 feet of drilling to offset mineralized holes (100- to 200-foot offsets) found under Stage II, item (2).

No provisions are made for core drilling. It is the opinion of the examiners that the results of the radiometric logs together with the chemical analyses of drill cuttings will be sufficiently reliable to delineate any ore-bearing horizons encountered in the drilling.

The following items are included for aid in contract preparation:

(1) The Gould channel holes should not be drilled more than 10 feet below the base of the Gould channel sandstone and the

Inyan Kara holes should not be drilled more than 10 feet below the base of the Lakota formation.

(2) All holes should be lithologically logged for compiling structure contour maps, sandstone-mudstone ratio maps, and sandstone thickness maps for both controlling any subsequent drilling and general geologic information.

(3) All holes should be radiometrically probed.

(4) Drill cuttings should be taken at 2-foot intervals and checked for radioactivity. Those samples showing anomalous radioactivity and/or promising mineralogy should be quartered, split, and assayed chemically for U_3O_8.

The cost estimate of the recommended program is based on 2 drill rigs drilling 500 feet (250 each) per day for 26 days per month and it will require 123 days or 5 months to complete the drilling under all three stages. A half month will be required to complete the final report making a total of 5-1/2 months for completion of the program. The bid by Livingston and Wilson Exploration Drilling, the lowest of the bids submitted, of $1.00 per foot for rotary non-core drilling has been used.

The 3,400 feet of core drilling included under Stage III of the application is, in the opinion of the examining team, not necessary inasmuch as the probe results will give the desired

information on any radioactive mineralized horizons and the cuttings from the holes will give the data on lithology.

Holes average depth and total footage to be drilled under each stage are:

	No. of holes	Average depth (feet)	Total Footage (feet)
Stage I Item 1	20	300 (Approx.)	6,000
	7	550	3,850
Item 2	19	550	10,450
Total Stage I	46		20,300
Stage II* Item 1	20	300	6,000 ✓
Item 2	40	500	20,000 ✓
Total Stage II	60		26,000
Stage III*	30	500	15,000
Total Stages I, II, and III	136		61,300

* Number of holes to be drilled under Stages II and III is only approximate.

Estimated costs of the recommended program are as follows:

Independent Contracts

Rotary non-core drilling

Stages I, II, and III 61,300 feet at $1.00/ft.	$61,300.00
Standby time (probing) 136 holes (Aver. time 45 min.) 102 hours at $10.00/hr.	1,020.00
Bulldozer-preparation of drill sites and roads Stage I, II, and III 5 days 40 hours at $12.50/hr.	500.00
Total Independent Contracts	$62,820.00

Incidental Allowances

Labor, Supervision, Consultants

Labor - 1 sampler at $1.75/hr. plus time and one-half for all over 40 hours - or $392.00/mo. for 5 months	$ 1,960.00	
Supervision Consultants		
1-geologist at $600.00/mo. for 5-1/2 mos.	3,300.00	
1-consultant part time $700.00/mo. for 1-1/4 months	875.00	
Total Labor, Supervision and Consultants		$ 6,135.00
Operating Materials and Supplies		
Sample sacks 30 thousand at $10/M	$ 300.00	
Engineering and office supplies $15/mo. for 5 mos.	75.00	
Total Operating Materials and Supplies		$ 375.00
Operating Equipment		
1-vehicle for transportation 1,100 miles at $0.07/mile	$ 77.00	
Radiometric logging equipment with counter $60.00/mo. for 5 mos.	300.00	
Total Operating Equipment		$ 377.00
Rehabilitation and Repairs		None
New Buildings, Improvements, Installations		None

Miscellaneous		
Accounting $50.00 per month for 5-1/2 months	$ 275.00	
Payroll taxes, insurance and compensation 5.2% of $6,135.00 rounded	$ 319.00	
Total Miscellaneous		$ 594.00
Contingencies 10% $1,346.00 (rounded)	$ 135.00	
Total Contingencies		$ 135.00
Total Incidental Allowances		$ 7,616.00
Total Incidental Allowances per foot $0.1242		
Analyses Stage I 140 samples at $3.50 each	$ 490.00	
Stage II 210 samples at $3.50 each	735.00	
Stage III 210 samples at $3.50 each	735.00	
		$ 1,960.00
Total estimated cost of project		$72,396.00
Government participation at 75 percent		$54,297.00

Stage I

Independent Contracts

Rotary non-core drilling Item 1 (20 holes at 300') (7 holes at 550')		
9,850 ft. at $1.00/ft.	$ 9,850.00	
Item 2 (19 holes at 550')		
10,450 ft. at $1.00/ft.	10,450.00	
Total drilling	$20,300.00	
Standby time for probing 46 holes at 3/4 hours/ hole 34-1/2 hours at $10.00/hr.	$ 345.00	

Bulldozer - Drill site preparation and roads 15 hours at $12.50 per hr.	$ 187.50	
Total Independent Contracts		$20,832.50
Incidental Allowances		
20,300 feet at $0.1242/ft.		$ 2,521.26
Analyses 140 samples at $3.50 each		490.00
Total Stage I		$23,843.76
Government participation at 75 percent		$17,882.82
Stage II		
Independent Contracts		
Rotary non-core drilling Item 1 (20 holes at 300') Item 2 (40 holes at 500') 26,000 ft. at $1.00/ft.	$26,000.00	
Standby time for probing 3/4 hr/hole 45 hours at $10.00/hr.	450.00	
Bulldozer - Drill site preparation and roads 15 hours at $12.50/hr.	187.50	
Total Independent Contracts		$26,637.50
Incidental Allowances		
26,000 feet at $0.1242		$ 3,229.20
Analyses 210 samples at $3.50 each		735.00
Total Stage II		$30,601.70
Government participation at 75 percent		$22,951.28

Stage III

Independent Contracts

Rotary non-core drilling		
30 holes at 500', 15,000 ft. at $1.00/ft.	$15,000.00	
Standby time for probing 3/4 hr. per hole 22-1/2 hours at $10.00/hr.	225.00	
Bulldozer - Drill site preparation and roads 10 hrs. at $12.50 per hr.	125.00	
Total Independent Contracts		$15,350.00

Incidental Allowances

15,000 feet at $0.1242 per ft.	$ 1,863.00
Analyses 210 samples at $3.50 each	735.00
Total Stage III	$17,948.00
Government participation at 75 percent	$13,461.00

Summary of cost

Stage I	20 holes at 300 feet, 6,000 ft.) 7 holes at 550 feet, 3,850 ft.) 19 holes at 550 feet, 10,450 ft.)	$23,843.76
Stage II*	20 holes at 300 feet, 6,000 ft.) 40 holes at 500 feet, 20,000 ft.)	$30,601.70
Stage III*	30 holes at 500 feet, 15,000 ft.)	$17,948.00
		$72,393.46
	Government participation at 75 percent	$54,295.10

* Number of holes are only approximations

69,300'

As stated all holes shall be logged lithologically and probed radiometrically. Copies of both the lithologic and radiometric logs shall accompany the operators monthly reports. Also copies of the driller's reports, and analytical results with invoices and an invoice covering the bulldozer work shall be submitted with each monthly report.

CONCLUSIONS AND RECOMMENDATIONS

The McAlester Fuel Company property overlies a very favorable geologic area, where lithology, structure, and the geochemical environment appear to be ideal for the localization of uranium minerals.

It is recommended that the carefully staged and modified program proposed by the examining team at a total cost of $72,393.46 (Government participation at 75 percent $54,295.10) be approved.

8/12/57

Mr. Ellis:

Mrs. Bain, Congressman Albert's office (Oklahoma) wants to know the status of DMEA-4742, McAllister Fuel Co. (uranium).

I told her someone from Rare Metals Div. would call back.

T.190, X692

fw

Called back
11:01 AM. 8/12/57
[illegible]

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 7 1957

DATE	INITIALS	CODE
8/7	P.K.	220
"	FMM	700

224 New Customhouse
Denver 2, Colorado

August 5, 1957

Mr. Tom E. Garrard,
Vice President
McAlester Fuel Company
McAlester, Oklahoma

Re: Docket DMEA-4742 (Uranium)
McAlester Fuel Company
(Star claims and Leased Lands)
Fall River County, South Dakota

Dear Mr. Garrard:

This will acknowledge receipt of your letter, dated August 2, 1957, requesting the present status of your DMEA application.

The Report of Examination on your property is being forwarded the Washington Office, DMEA, this date, and they will advise you of their final action.

Rec'd. & sent to O.C. 8/7

In the event that you do not hear from them in a reasonable time, it is suggested that you write Mr. C. O. Mittendorf, Administrator, Defense Minerals Exploration Administration, U. S. Department of the Interior, Interior Building, Washington 25, D. C.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

HMC:jy
cc: Chm. Op. Comm. (2)
Harshman
Docket 4742
Chron.
} w/copy of Applicant's ltr.

J. G. PUTERBAUGH, PRESIDENT
TOM E. GARRARD, VICE PRESIDENT

E. P. JOYNER, EXECUTIVE VICE PRESIDENT AND TREASURER
C. R. COLE, VICE PRESIDENT

CARL OMAN, SECRETARY
R. H. PATTERSON, ASS'T. SECRETARY AND ASS'T TREASURER

McALESTER FUEL COMPANY

McALESTER, OKLA.

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

August 2, 1957

AIR MAIL

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

Re: Docket DMEA 4742 (Uranium)
McAlester Fuel Company
(Star Claims and Leased Lands)
Fall River County, South Dakota

Dear Mr. Harshman:

We appreciate the expedition with which the D.M.E.A. was able to examine our subject lands last June and while we know that you are always anxious to expedite these matters, we would really appreciate hearing from you as to about when we may expect D.M.E.A. action on our application.

We all realize that it is especially difficult to prosecute exploration work later in the year when the weather becomes very rough indeed in the fall and winter, and we would like to get as much as possible done one way or another before this bad weather sets in.

Any information you can give us in the premises will be deeply appreciated.

Very truly yours,

Tom E. Garrard

TOM E. GARRARD,
Vice President.

TEG:BF

cc: Mr. Robert Ford
Box 428
Riverton, Wyoming

Mr. Max Hartle
Box 896
Edgemont, So. Dak.

5/31 JWJ 220
700

May 28, 1957

Memorandum.

To: Acting Executive Officer, DMEA Field Team, Reg. III

From: Act., Supt., Denver Experiment Station, Reg. III

Subject: Docket DMEA 4742 (Uranium) McAlester Fuel Company (Star claims and Leased Lands) Fall River County, S. D.

The application for McAlester Fuel Company, Docket DMEA 4742, in the amount of $165,668.86, was received in this office on May 28.

A field examination will be made and suitable report prepared by an engineer from the Denver office.

JOHN F. SHAW

John F. Shaw

cc: Act. Exec. Officer (2)
E. N. Harshman
A S Konselman

DMEA
DEPARTMENT OF THE INTERIOR
MAY 28 1957
REGION III
DENVER, COLORADO

WO (2)

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 29 1957

DATE	INITIALS	CODE
5/29	C	220
	~~4 FMM~~	~~700~~
	W/enclosures, Items 1-5	Below

224 New Customhouse
Denver 2, Colorado

May 27, 1957

Memorandum

To: W. H. King
H. N. Marshman } W/enclosures, Items 1-5 Below

From: DMEA Field Team, Region III

Subject: Docket DMEA 4742 (Uranium) McAlester Fuel Company (Star Claims and Leased Lands) Fall River County, South Dakota

Enclosed is the following material relating to the subject docket.

1. Copy of application for Government assistance in exploration work under the DMEA program.
2. Memorandum of Review by James Paone, USBM.
3. Memorandum of Review by N. E. Nelson, USGS.
4. Letter of transmittal of the foregoing to this office, dated May 22, 1957, from the Chairman, Operating Committee, DMEA.
5. Routing Control Sheet.

A joint report of recommendations based on available information or a joint report of findings and recommendations based on a field examination is requested.

If the field examiners view the project proposal favorably, the Applicant should be instructed that we will require executed copies of Form MF-205 signed by the same lessors as shown on the copies of the Mining Leases enclosed with the application.

Please note the Chairman's comments regarding the omission of certain lands from the leases and also the request that the ownership of all land proposed for subordination should be clarified.

Twelve extra copies of each map used in the joint report which show the land to be subordinated and the location and extent of recommended work, relative to property boundaries, should be submitted if Government participation is recommended.

The Bureau of Mines' copy of the application should be returned to this office with the joint report of examination. Mr. Harshman will forward the Survey's copy of the application to the Washington office.

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer

Enclosures

MEM:ek

cc: Min. Op. Comm. (2)
King
Reichert
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5-21	Ellis	700
5-21	Murphy	700
5/22	Jellenberg	130
5/22	Lamb	130
5/22	Kilgoar	130
	Mittendorf	100
		220

MAY 22 1957

Mr. J. G. Puterbaugh, President
McAlester Fuel Company
P. O. Box 783
McAlester, Oklahoma

Re: Docket No. DMEA-4742 (Uranium)
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Puterbaugh:

The application for assistance in exploring your property, under the captioned docket number, has been reviewed by the Division of Rare and Miscellaneous Metals of the Defense Minerals Exploration Administration. It has been referred to:

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

The Regional Office will contact you in regard to your project if additional information is required.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FMMurphy/dlm 5-21-57
cc to : Mr. Murphy
Admr.'s Reading File
DMEA FT, Region III (2)

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5-21	Murphy	700
5-21	Ellis	700
5/22	Selfridge	130
"	Matthews	100
5/23	C	220
		700

MAY 22 1957

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

Re: Docket No. DMEA-4742 (Uranium)
McAlester Fuel Company
Star Claims and Leased Lands
Fall River County, South Dakota

Dear Mr. Harshman:

The captioned application is referred to Region III Field Team for investigation, a field examination if deemed advisable, and recommendations.

Enclosed are copies of memoranda, dated May 10 and 16, 1957, by James Paone, USBM, and N. E. Nelson, USGS, respectively, relating to the application. Also enclosed for Field Team use are two copies of the application.

In the event the Field Team concludes a project to explore the subject property appears to be warranted, it should advise the Applicant that we will require executed copies of form MF-205 signed by the same lessors as shown on the copies of the mining leases submitted with the application.

Checking the leases shows that the following lands are not included:

Range 4 East

Section 4	W½ and the NW¼ of NE¼
" 5	S½ of NE¼ and the NE¼ of SE¼
" 7	W½ of NW¼
" 8	SE¼ of SE¼
" 17	NE¼ of SW¼ and the SW¼ of SE¼
" 18	W½ of SW¼ and the SW¼ of NW¼
" 19	W½ of NW¼
" 20	W½ of NE¼ and the SE¼ of NE¼

8623

Range 3 East
Section 12 NE¼ of NE¼

With the exception of section 18, the above areas are covered by the Star claims. However, the ownership of the areas should be clarified, as the Star claims are also shown on lands covered by leases.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (DLB)

Enclosures

APPROVED:

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

Thor H. Kiilsgaard (DLB)
Member, Geological Survey

FMMurphy/dlm 5-21-57
CC to Mr. Murphy
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

IN REPLY REFER TO:

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

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 17 1957

DATE	INITIALS	CODE
5-17	C	220
5-17	Ellis	700

comments complete

May 16, 1957

Re: DMEA 4742
McAlester Fuel Co.
Star Groups (245 claims)
Fall River Co., So. Dakota
$165,668.86 - Uranium

Memorandum

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

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

Subject: Review of application.

The applicant requests assistance in tracing, by a 3 stage drilling program, 3 inferred buried uranium-bearing channels in the Fall River, Fuson and Lakota formations.

The applicant probably has done no work on the large property. Radiographs of 3 drill holes are part of the application and it may be assumed, tend to justify the application, but their locations are not, I believe, shown on the maps. One hole, SHR 4 is checked as 'favorable' by the AEC reviewer.

No ore is known to occur in the property but several mines and prospects in the favorably regarded formations are thought to indicate a series of more or less superimposed channels which, if the deductions are correct, may traverse in part or wholly the six-mile long property of the applicant.

The assumptions are bold, especially as for deposits in the deeply buried Lakota sandstone, but the proposal merits consideration and possibly an examination.

Referral of the application to the Field Team for appropriate action is recommended.

N. E. Nelson

N. E. Nelson

OFFICIAL FILE COPY DMEA RECEIVED MAY 13 1957		
DATE	INITIALS	CODE
5/14	JWY	220
5/14	Jm Ellis	700

May 10, 1957

4742

Uranium

McAlester Fuel Co.

Fall River County, S. Dakota

$165,668.86

Ernest William Ellis, DMEA Member
Uranium Commodity Committee
James Paone, Bureau of Mines Member
Uranium Commodity Committee

JP

Application

5/10/57 5/10/57

Yes [ ] No [ ]

Yes [ ] No [ ]

Yes [ ] No [ ]

Yes [ ] No [ ]

Proposed exploration method [ ]
Alternate exploration method [ ]
Costs [ ]
[ ]

Discuss with Field Team [ ]
Suggest alternate plan [ ]
Request another commitee [ ]
Approval [ ]

AEC office.

(Use back of page if necessary) Appears to be an elaborate program.

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

May 8, 1957

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Application for DMEA Aid (Uranium) McAlester Fuel Co. (Star claims) Fall River County, South Dakota

Enclosed are three copies of a letter, dated May 6, 1957, from the Applicant, providing supplemental information to the subject application.

One copy of this supplemental information is being retained in our file.

E. N. Harshman

By E. N. Harshman
Acting Executive Officer

Enclosures

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 13 1957

DATE	NAMES	CODE
5/13	C	220
~~5/14~~	~~Ellis~~	~~700~~

McALESTER FUEL COMPANY
McALESTER, OKLAHOMA

DMEA
DEPARTMENT OF THE INTERIOR
MAY 8 - 1957
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY
D M E A
RECEIVED MAY 13 1957
CODE

May 6, 1957

AIR MAIL

Mr. E. N. Harshman
Acting Executive Office
DMEA, Region III
224 New Custom House Building
Denver, Colorado

Dear Mr. Harshman:

Under date of May 2, 1957, McAlester Fuel Company submitted an application for aid in an exploration project on a property located in Fall River County, South Dakota.

We would appreciate it if you will have this letter appended to our application as an amplification of our response to the section 5, item d, "Operating Experience and Background of the Applicant."

McAlester Fuel Company was founded in 1902 as a coal-sales organization and was for years the leading marketer of coal from Oklahoma and Arkansas and of Texas Lignite. The company operated numerous producing mines in this region, but with the increasing dominance of the fuel market by oil and gas, mines and coal sales have become the smaller part of our business; however, some few years ago we completed the purchase of some 11,000 acres of Texas Lignite land and helped the Texas Power and Light Company and the Aluminum Company of America design and install a mine for the production of 2,700,000 tons per year of lignite for the first steam power plant installed to power an aluminum smelter, a three-way venture which has set the pattern for the recent expansion in the aluminum industry.

In 1925 McAlester Fuel Company installed and operated lignite mines for the Texas Power and Light Company at Malakoff, Texas, on which the system base load was carried. These mines were operated by us for their owners about fifteen years, until absurdly low gas prices shut them down.

During World War II, McAlester Fuel Company was the prime contractor in designing and installing two large coal mines for the operation of the two steel plants built in Texas by the DPC, by furnishing coking coal for these plants.

McAlester Fuel Company has a wholly-owned subsidiary, Windsor Coal Company, which has been operating a strip mine in Missouri, producing around 200,000 tons per year, for about twenty years.

As the coal business has declined, most of our activities have shifted into gas and oil exploration and production until we have wells in Texas, Arkansas, Louisiana, Oklahoma, New Mexico, Wyoming, Montana, and Indiana, with a net production to our account amounting to over 1,500,000 barrels per year.

In 1956 we acquired an interest in, and now serve as operator of, a uranium property on Uranium Peak near Meeker, Colorado, where we have discovered, drilled out, and partially stripped, preparatory to loading and shipping, some valuable ore bodies.

We hope you will consider this record of long-time, successful, substantial business and mining activity as entirely adequate for the purposes of our DMEA application of May 2, 1957.

Respectfully submitted,

McALESTER FUEL COMPANY

BY: Tom E. Garrard
TOM E. GARRARD
Vice Pres.

TEG:is

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

May 10, 1957

Mr. J.G. Puterbaugh, President,
McAlester Fuel Company,
P.O. Box 783,
McAlester, Oklahoma

Subject: DMEA 4742
Re: Exploration Assistance

Dear Mr. Puterbaugh:

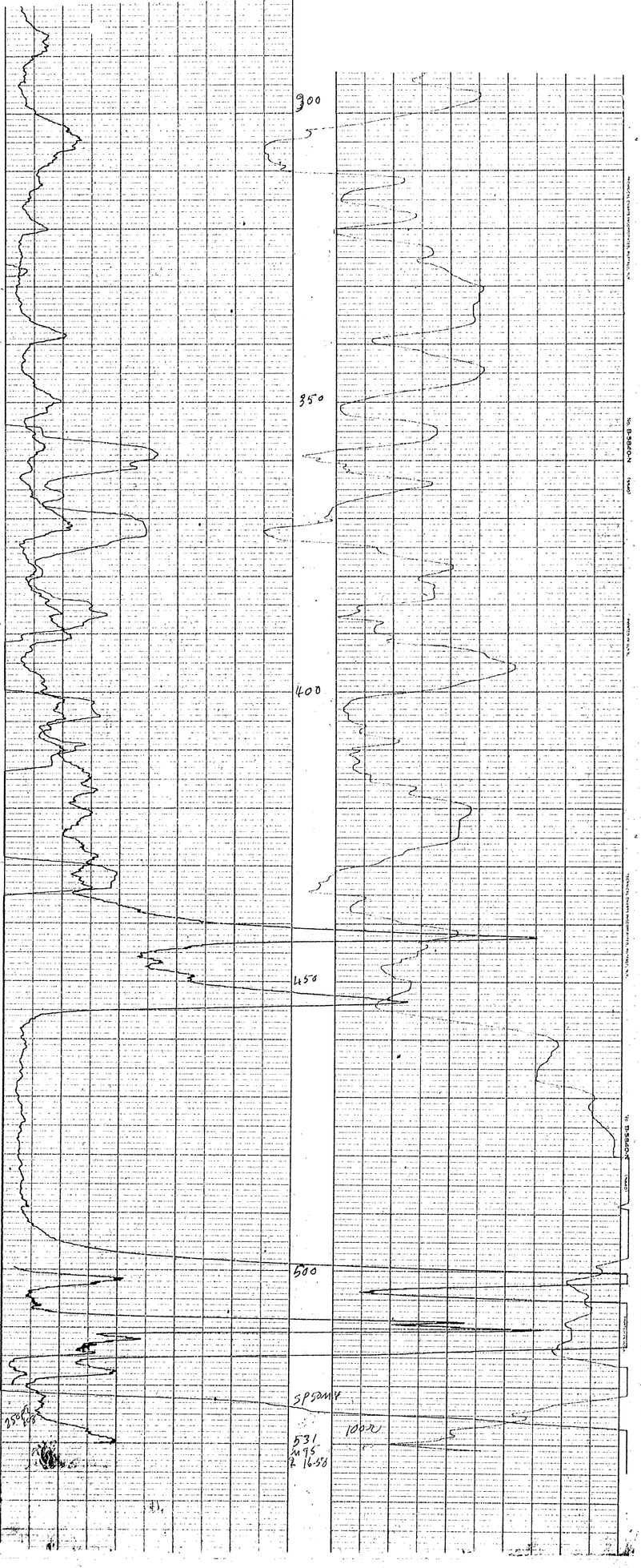
Your application for exploration assistance, dated May 2, 1957, submitted to our office at Denver, Colorado, has been assigned Docket Number DMEA 4742 and referred to the Rare & Miscellaneous Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Chief
Operations Control and
Statistics Division

Copy to: Region III.

3571



LOGGING DATA

PROBE SIZE: 1 3/4" CALIBRATION: 300

DATE: 2-16-59 FIELD HIDOTRS: Gadsenport

	INITIAL RUN	RE-RUN	RE-RUN	RE-RUN	RE-RUN	RE-RUN	RE-RUN
HOLE NO.	M95						
HOLE DIA.	4 7/8 in						
DRILLED DEPTH	532 FT					551	
LOGGED DEPTH	531 FT 20						
GAMMA SCALE	25 CPS	250					
TIME CONSTANT	8 SEC	2					
PAPER SPEED	10 FT/IN	10					
LOGGING SPEED	10 FT/IN	5 FT/IN	FT/IN	FT/IN	FT/IN	FT/IN	FT/IN
RESISTANCE SCALE	100						
SELF POT SCALE	10 MV/IN						
BORE HOLE MEDIUM	WATER						
MUD READINGS	RESISTIVITY			EFFE BASE			
	VISCOSITY			SALINITY			
CALIPER SCALE	MV/IN	LEG SIZE		PIPER SCALE			
TIME IN	1700	CASED TO			I.D.	IN	
TIME OUT	1800	CORE INT.			DIAM	IN	

LOCATION		TIME	
SEC.	TWP.	RGE.	DRIVE:
COUNTY	Gallatin		FIELD: 1.0
STATE	S.D.		STANDBY: 1.3
AREA:			BREAKDOWN:
CLIENT:	Pittsburgh Plate Glass		TOTAL: 2.3
LOG REC'D BY:			OPERATOR: Miller
			PARTY NO: V11

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

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

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

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

LOCATION OF HOLE

ELEVATION
KB
GL
BKGRD. COUNT
SLUSH PIT CT.

REMARKS:
500 - 500 - 2500 CPS PCC

INTERPRETATION

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

MINERALIZATION

COUNTS PER SEC.	DEPTH THICKNESS	X XD	CORR. CPS.	% U_3O_8

INTERPRETATION BY:

GEOLOGIC TOPS

FORMATION	DEPTHS	THICKNESS

SELF POTENTIAL 5 MV/IN

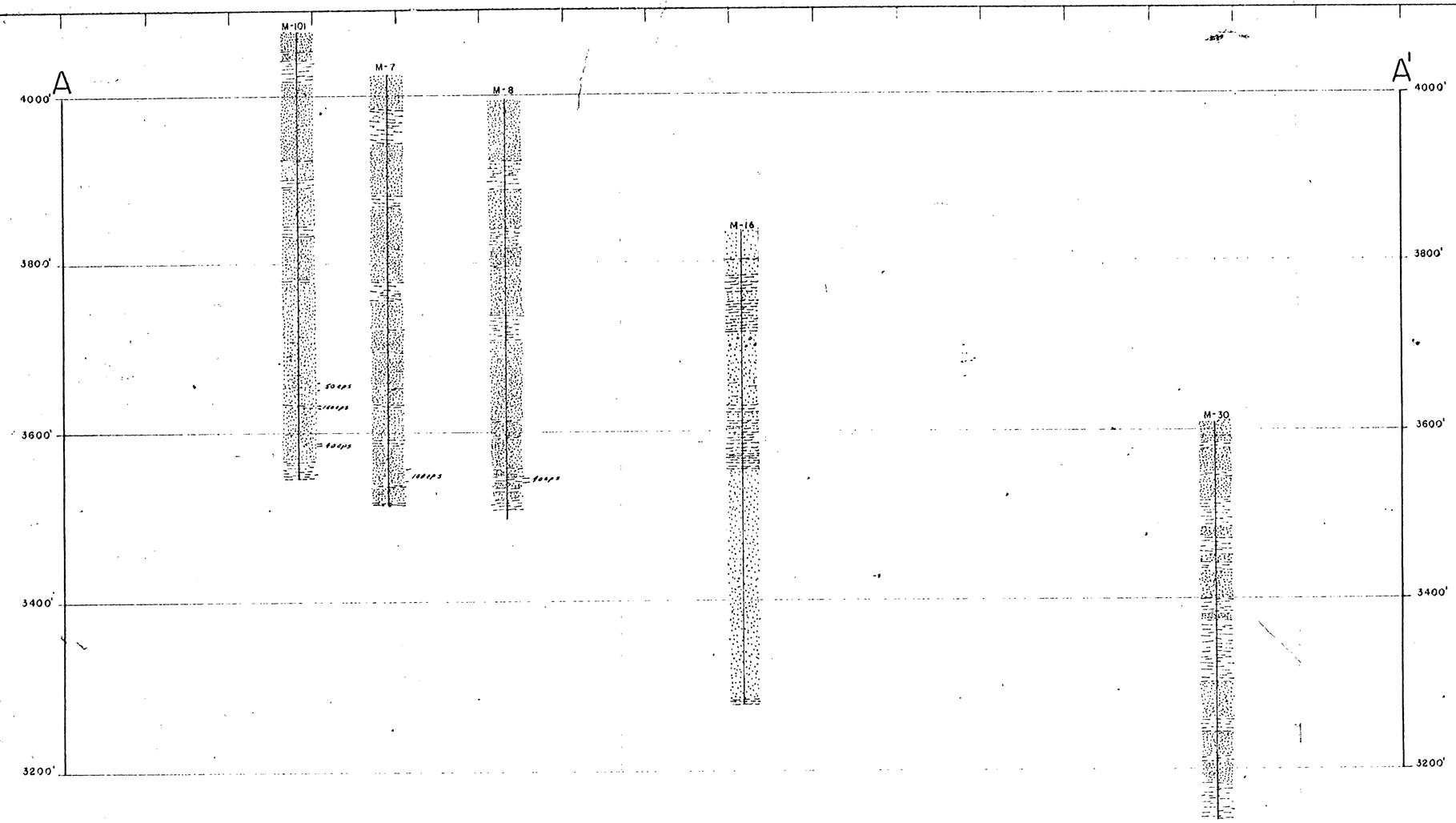
+ 10 MV −

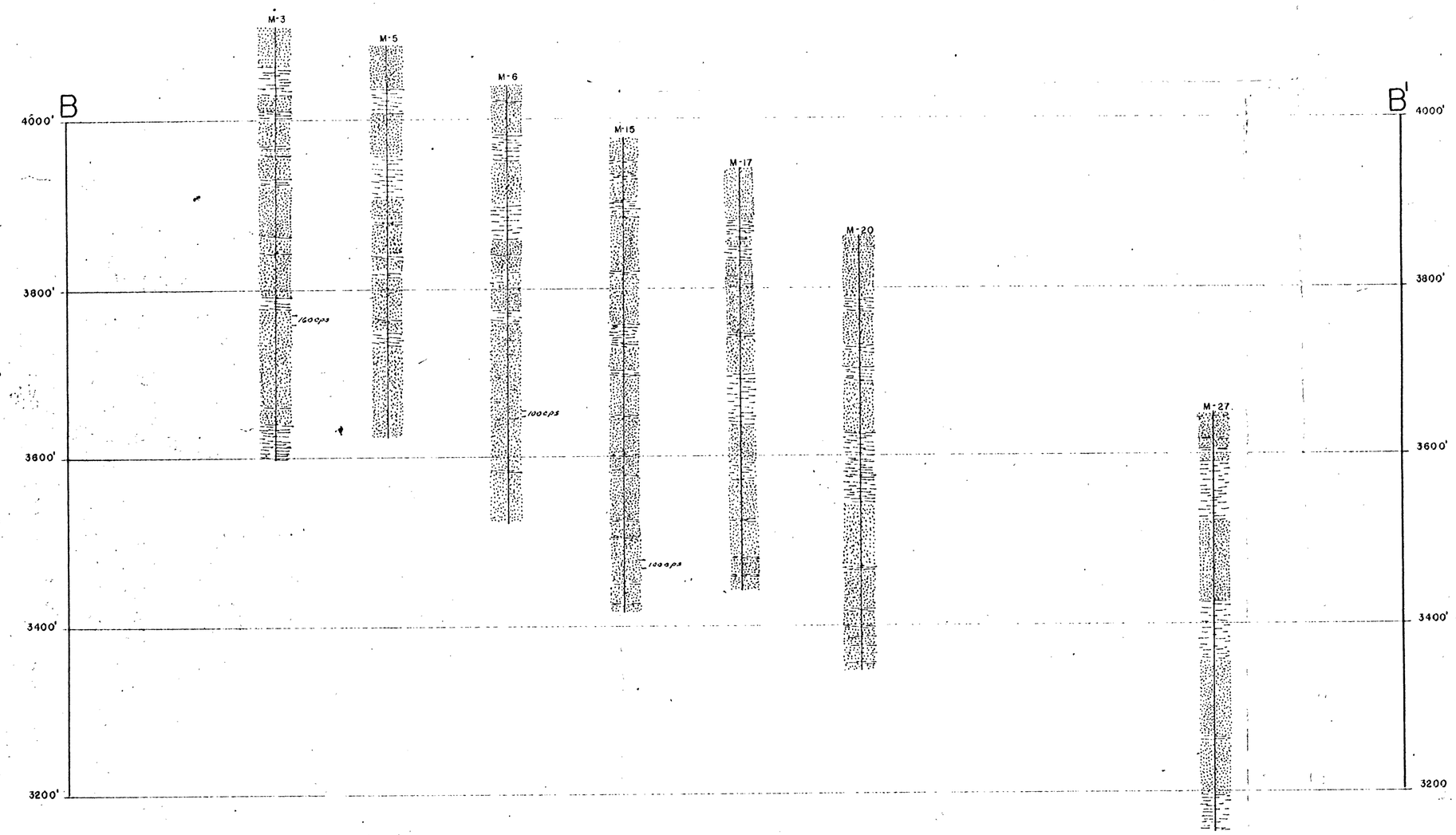
NATURAL GAMMA RAY
COUNTS PER SECOND

CALIPER MV/IN

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

RESISTANCE
OHMS — M





GEOLOGICAL CROSS SECTION

MCALESTER FUEL COMPANY

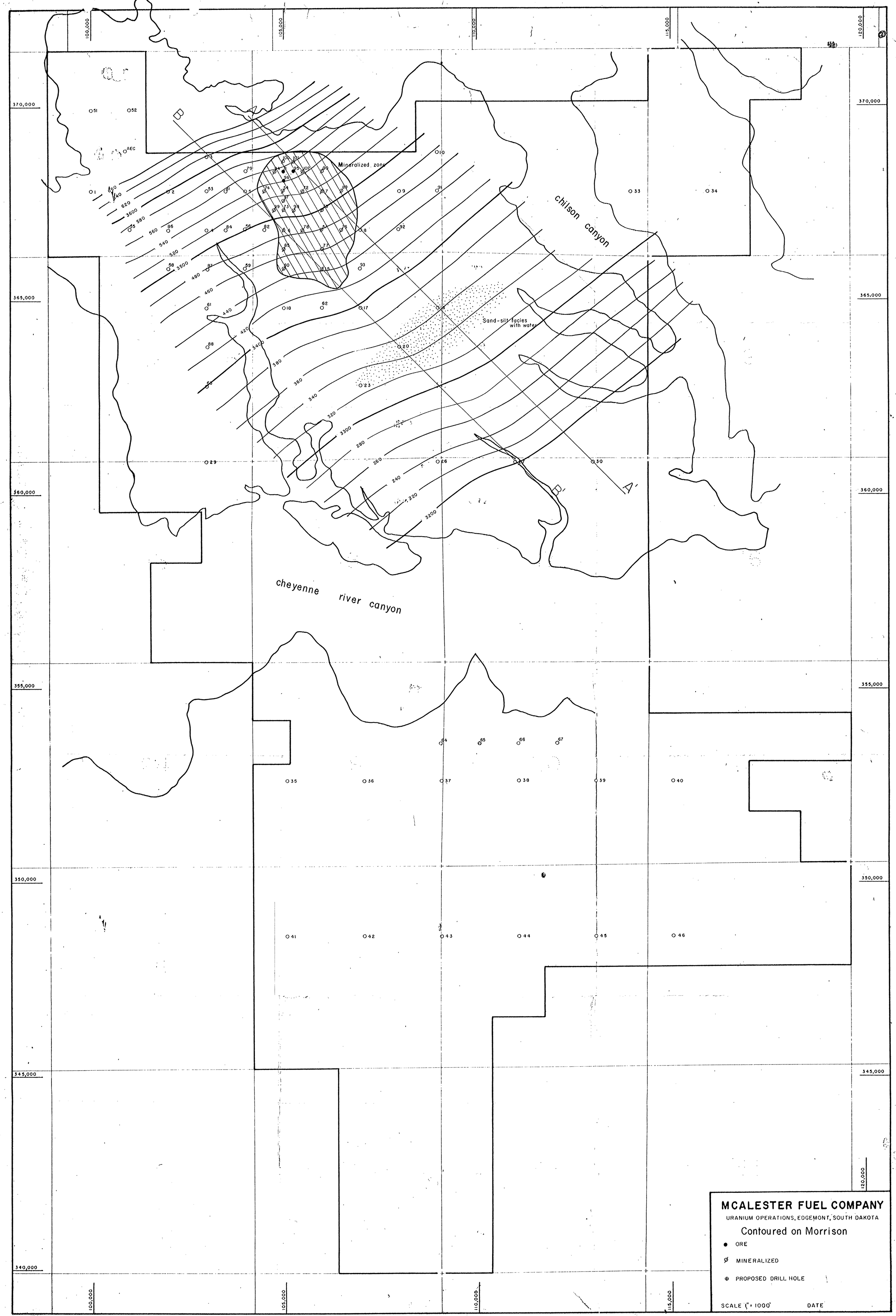
EDGEMONT, SOUTH DAKOTA

ELEVATION SEA LEVEL DATUM

VERTICAL SCALE 1"=100'
HORIZONTAL SCALE 1"=1000'

DATE

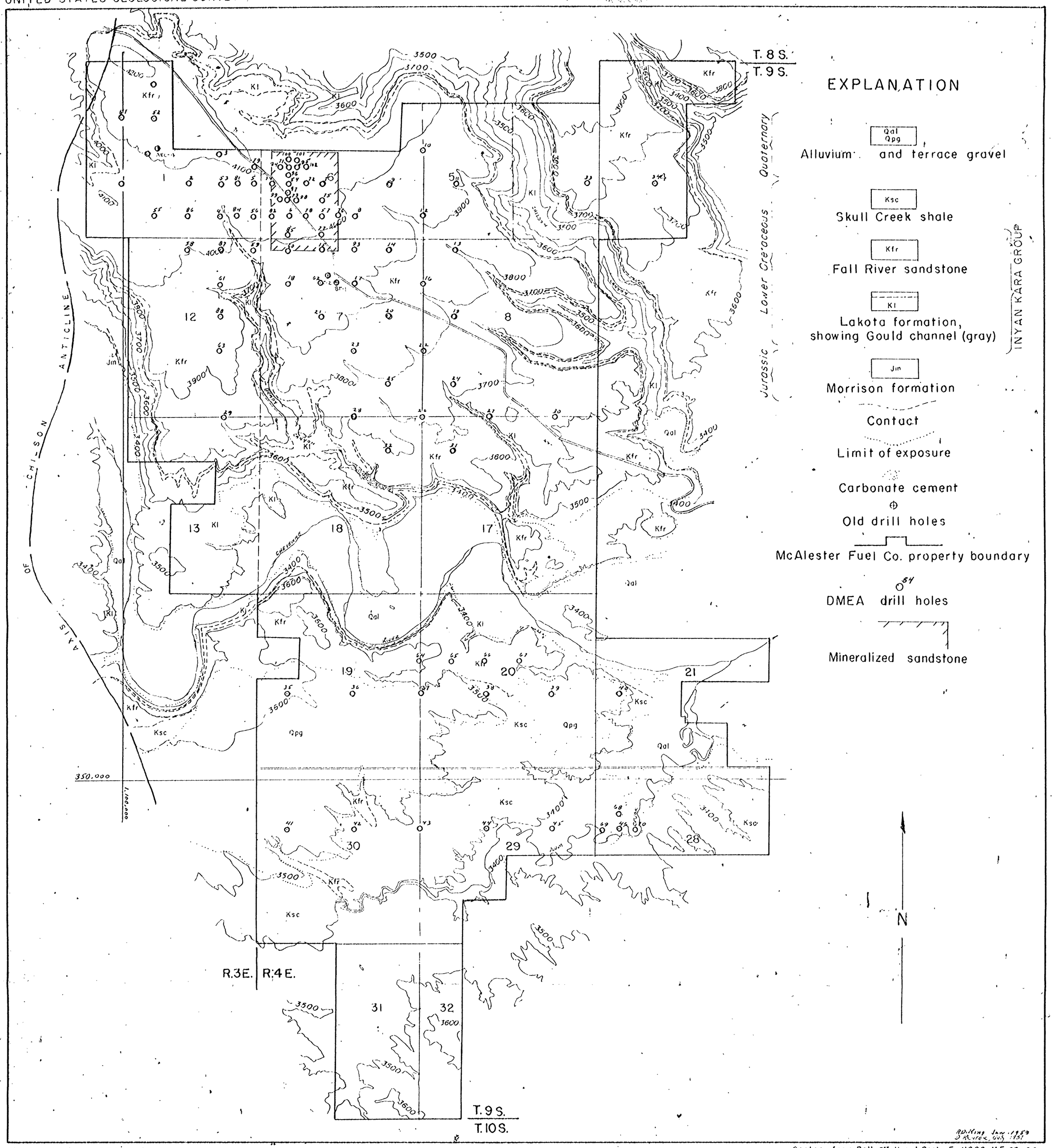
Ford & Fox


Mineralized zone
Sand-silt facies with water
chilson canyon
cheyenne river canyon
A
A'
B
B'
AEC
100,000
105,000
110,000
115,000
120,000
370,000
365,000
360,000
355,000
350,000
345,000
340,000
MCALESTER FUEL COMPANY
URANIUM OPERATIONS, EDGEMONT, SOUTH DAKOTA
Contoured on Morrison
ORE
MINERALIZED
PROPOSED DRILL HOLE
SCALE 1" = 1000'
DATE

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

FINAL REPORT
DMEA 4742, CONTRACT Idm-E 1133

PREPARED FOR O M E



Topography from U.S.G.S. quadrangle maps

Geology from Bell III, H and Post, E., U.S.G.S. MF 63-66

FIGURE 3 GEOLOGIC MAP, SHOWING DMEA EXPLORATION, McALESTER FUEL COMPANY, FALL RIVER COUNTY, SOUTH DAKOTA

Scale 1" = 2000'

0 2000 4000 FEET

Contour Interval 100 feet

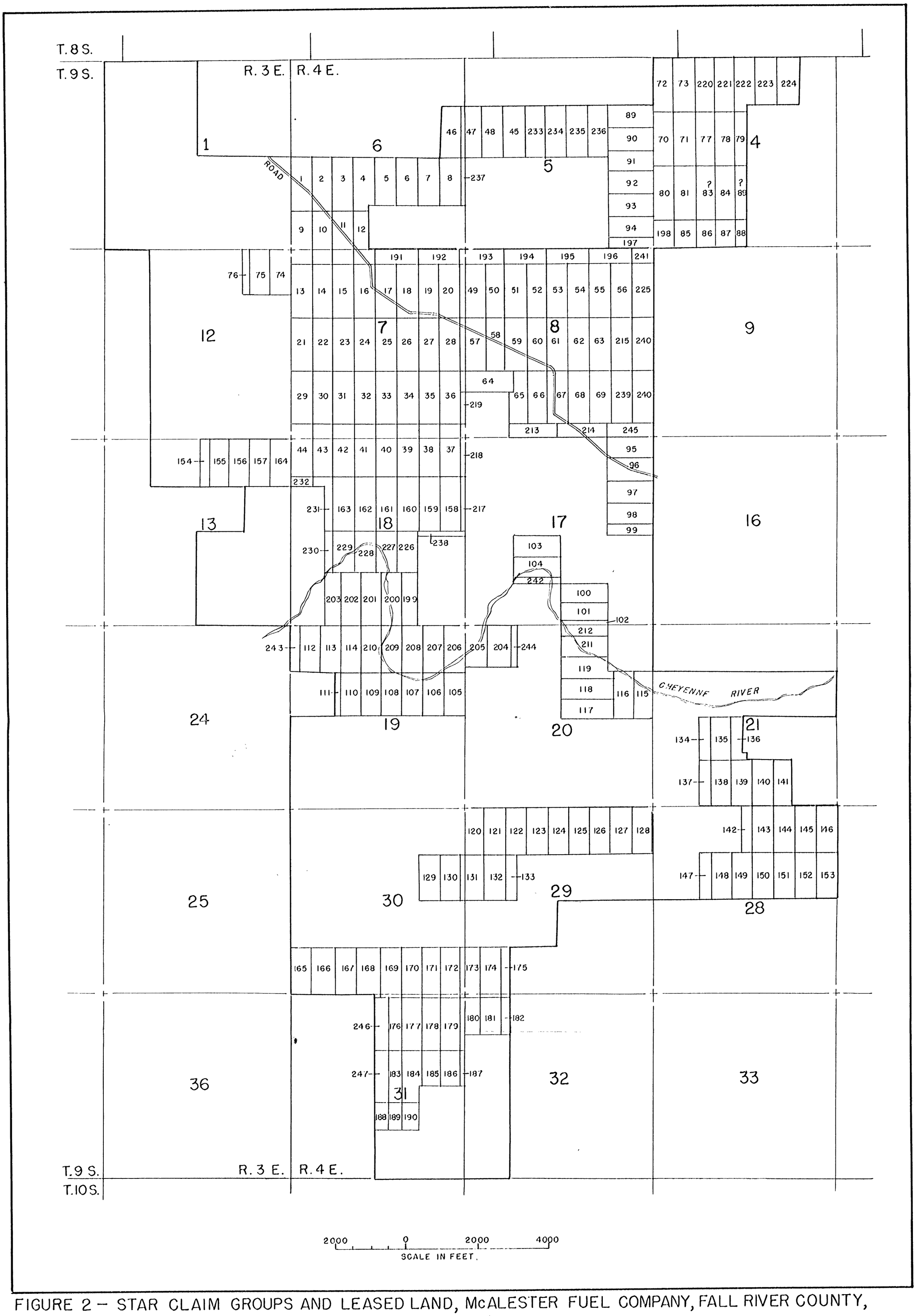
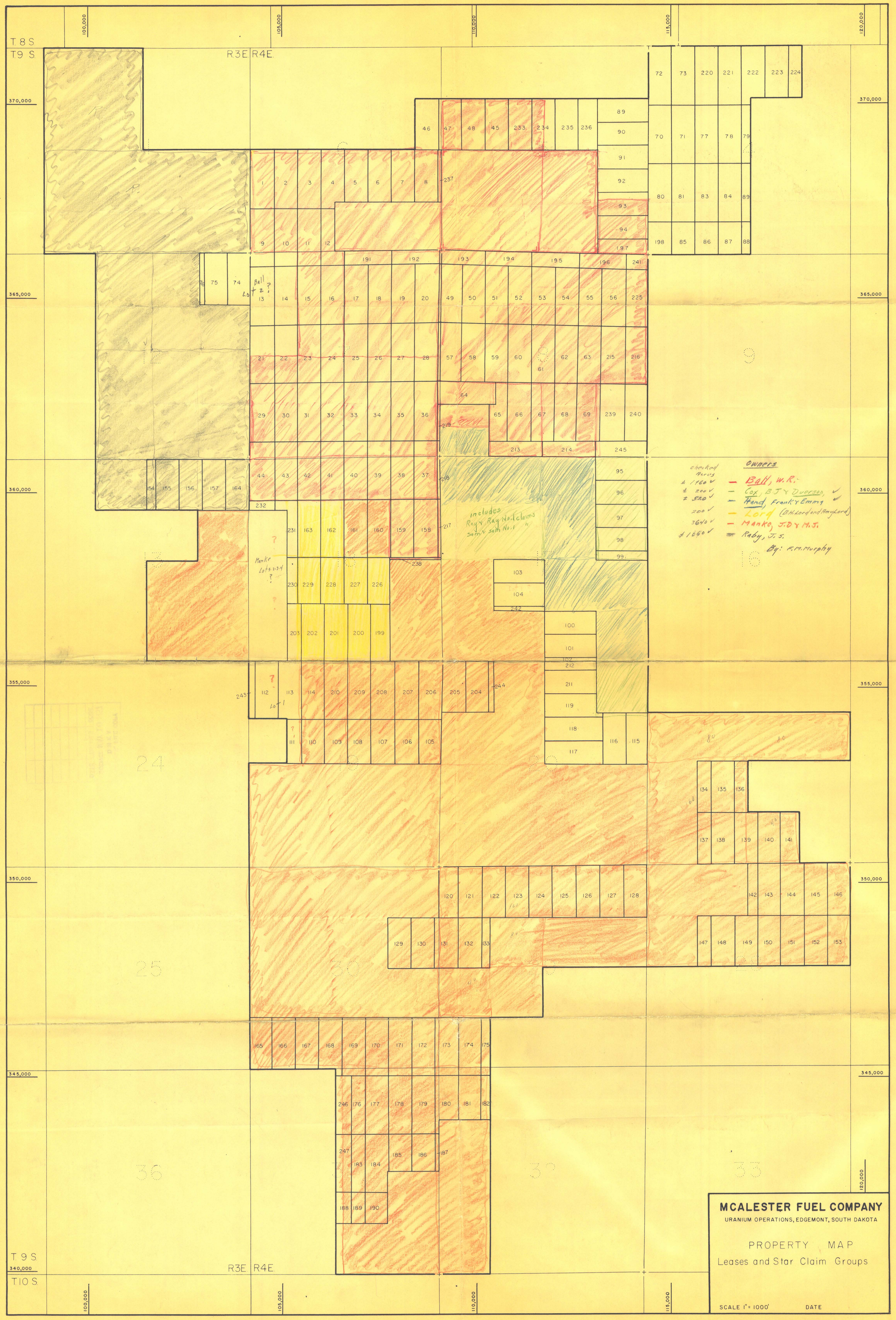
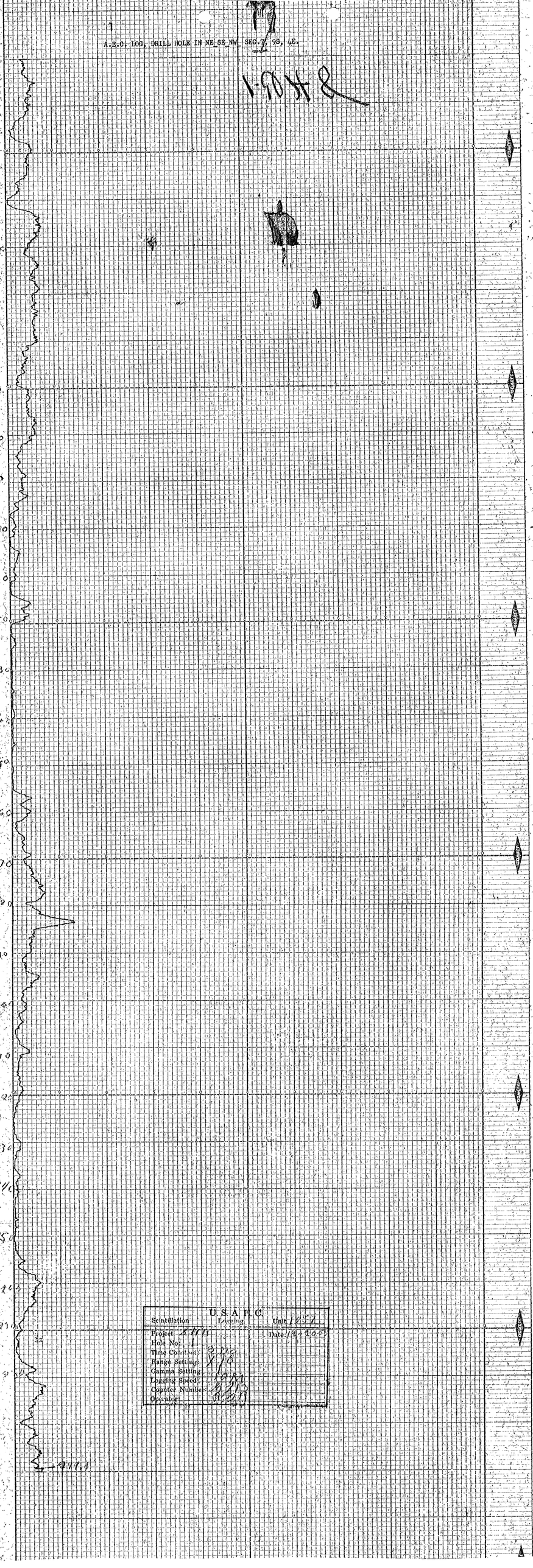
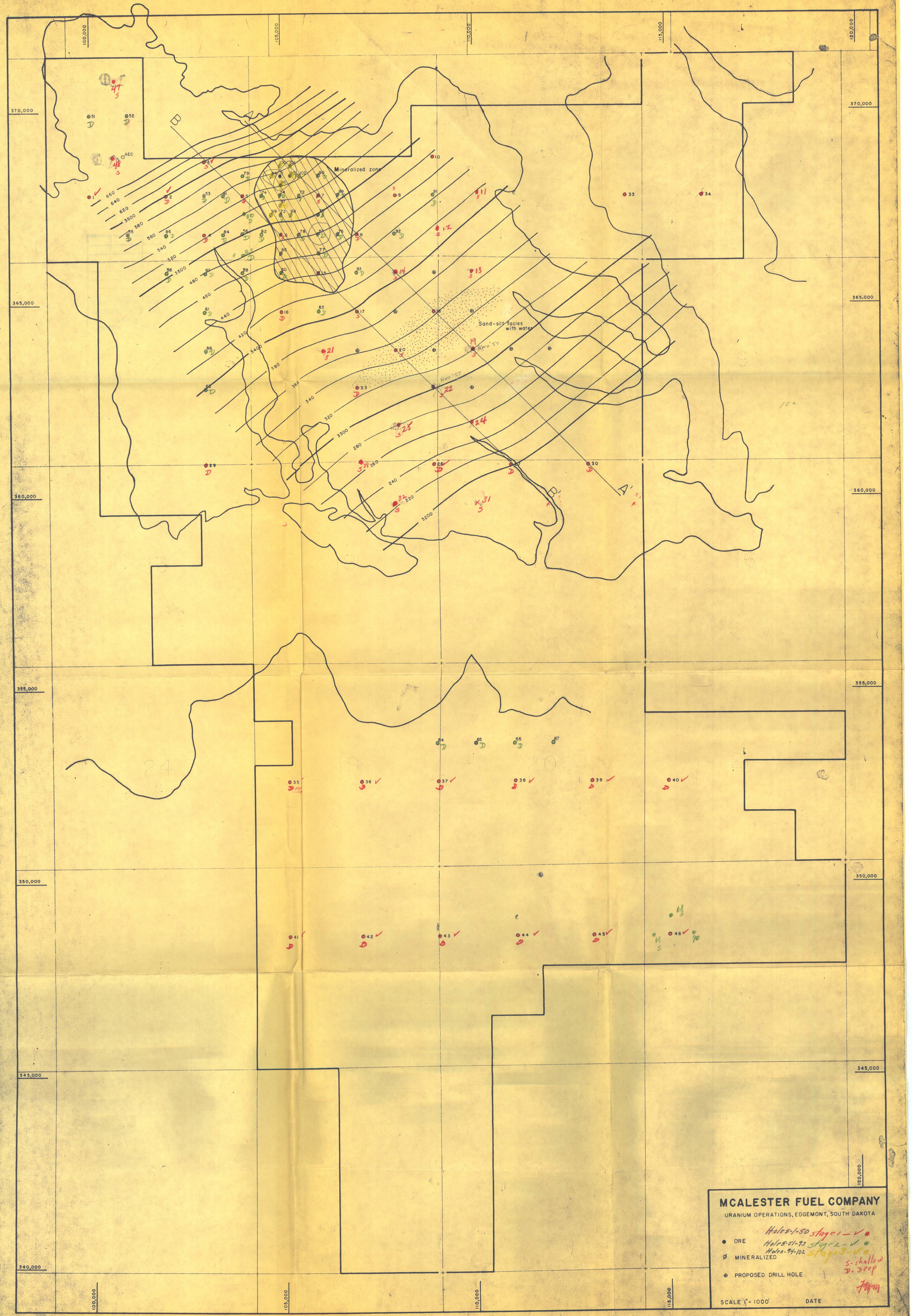


FIGURE 2 – STAR CLAIM GROUPS AND LEASED LAND, McALESTER FUEL COMPANY, FALL RIVER COUNTY, SOUTH DAKOTA. DMEA 4742

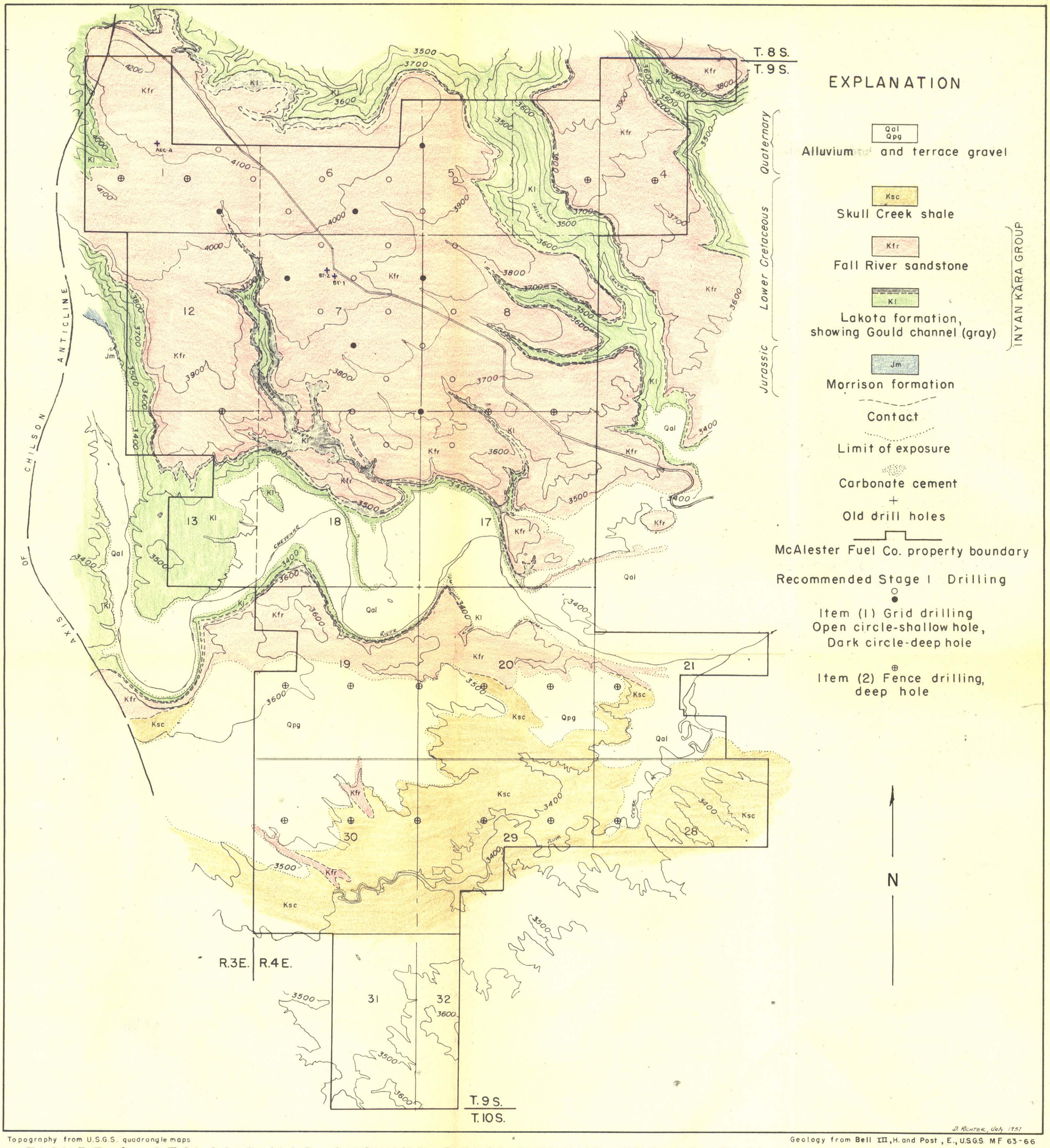

T. 8 S.
T. 9 S.
R. 3 E. R. 4 E.
T. 10 S.
100,000
105,000
110,000
115,000
120,000
370,000
365,000
360,000
355,000
350,000
345,000
340,000
Ball Lot 2 ?
Manke Lots 2-3-4 ?
includes Ray & Ray No. 1 claims Sam & Sam No. 1 "
checked Acres
Owners
± 1960 ✓ — Ball, W. R.
± 200 ✓ — Cox, B J & Duersen, ✓
± 520 ✓ — Hand, Frank & Emma ✓
200 ✓ — Lord (B.H. Lord and Amy Lord)
3640 ✓ — Manke, J.D. & M.J.
± 1060 ✓ — Raby, J. S.
By: F.M. Murphy
MCALESTER FUEL COMPANY
URANIUM OPERATIONS, EDGEMONT, SOUTH DAKOTA
PROPERTY MAP
Leases and Star Claim Groups
SCALE 1" = 1000'
DATE

A.E.C. LOG, DRILL HOLE IN NE SE NW SEC. 7, 2S, 4E.





2 maps submitted w/ FT memo of 7-29-58



Topography from U.S.G.S. quadrangle maps

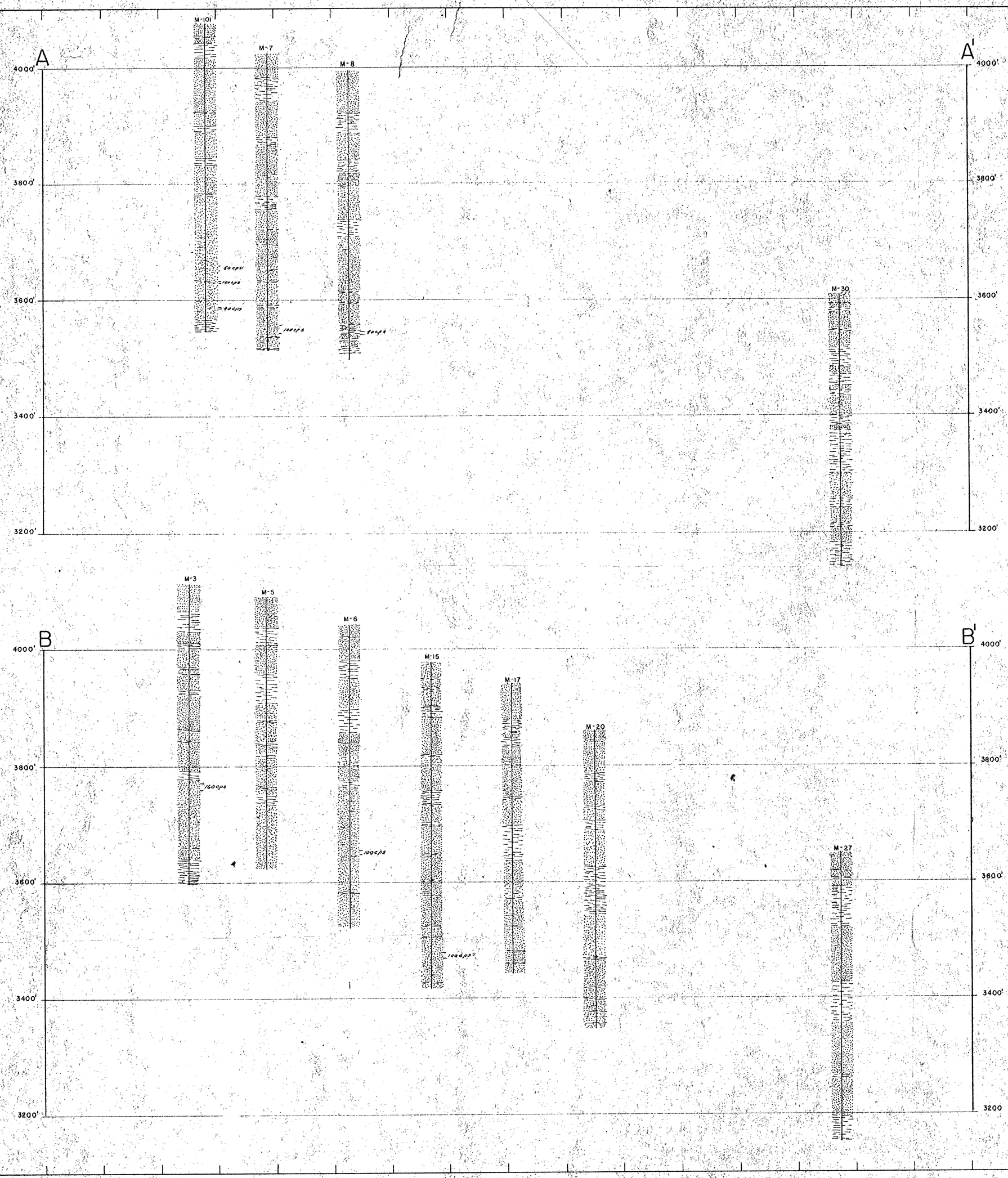
Geology from Bell III, H. and Post, E., U.S.G.S. MF 63-66

FIGURE 4. GEOLOGIC MAP, SHOWING RECOMMENDED EXPLORATION, McALESTER FUEL COMPANY, FALL RIVER COUNTY, SOUTH DAKOTA

Scale 1" = 2000'

0 2000 4000 FEET

Contour Interval 100 feet



GEOLOGICAL CROSS SECTION

MCALESTER FUEL COMPANY

EDGEMONT, SOUTH DAKOTA

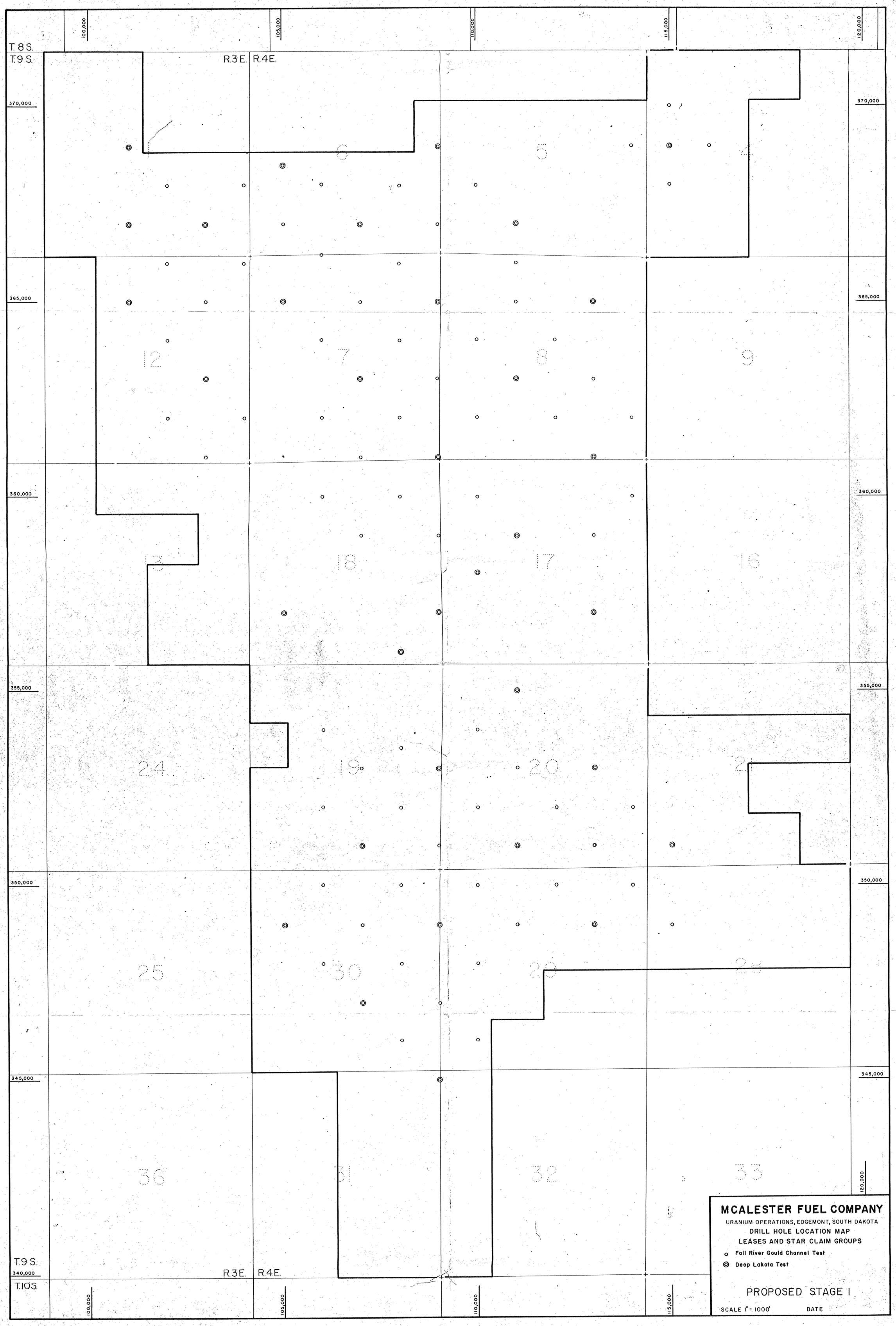
ELEVATION SEA LEVEL DATUM

VERTICAL SCALE 1" = 100'

HORIZONTAL SCALE 1" = 1000'

DATE

Ford & Fox


T. 8 S.
T. 9 S.
R. 3 E.
R. 4 E.
100,000
105,000
110,000
115,000
120,000
370,000
365,000
360,000
355,000
350,000
345,000
340,000
T. 10 S.
6
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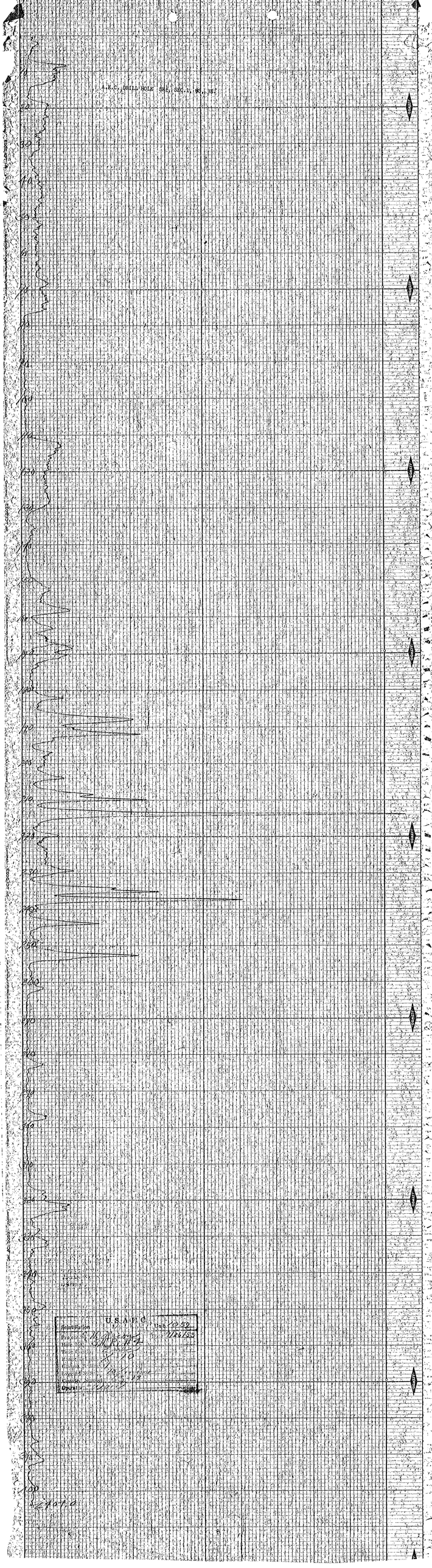
33
MCALESTER FUEL COMPANY
URANIUM OPERATIONS, EDGEMONT, SOUTH DAKOTA
DRILL HOLE LOCATION MAP
LEASES AND STAR CLAIM GROUPS
o Fall River Gould Channel Test
◎ Deep Lakota Test
PROPOSED STAGE I
SCALE 1" = 1000'
DATE


A.E.C. DRILL HOLE SHS, SEC. 1, R6, 38T
U.S.A.E.C.
Distribution
Date
Hole No.
Title
Key
Geologist
Engineer
Operator
Depth
Scale

ORE ___ ✓ FAV.
MIN. ✓ ___ UNFAV.
BARREN ___

U.S.A.E.C. 1 of 3

HOLE NO. SHR 4

PROJECT Southern Hills Reconnaisance

LOCALITY Edgemont CLAIM Lord-Raby

COLLAR ELEV. 4118.0 DEPTH 447'

COORDINATES ___

DATE COMPLETED ___

LOGGED BY E.G.E. DATE ___

RECOVERY 78.2 %

RECOVERY	GEOLOGIC COLUMN	COLOR	BEDDING	TEXTURE	GRAIN COATINGS	CARBON	ORE MINERALS	MISCELLANEOUS	DEPTH
								Plug Bit	0
		L GY		F To M	Lim Hem			Slightly Friable	
10/10		L To M GY	Mas						20
								S. Pyrite fissile	
5.3/9		L GY	Thin	VF		Spx + Sms		S. Gypsum As Sms Cut Ms Split	
		L To Drk Gy			S. CO_3			50-50 SS & MS Ab FeS_2 S Crossbedding S. Thicker sections of sand Ms high in Carbon Moderately Indurated Slightly Micaceous	
10/14									40
18/18									
									60
10.9/11									
11/11					Hem & Lim			STS becomes Sdy	
		M Gy To L Or	Mas	F				Few clay galls S Friable Zones	80
19.6/20		L Gy		F To M To C	S Jer. Hem. & Lim			Ab interstial Clay graded Bedding Cross bedded ab friable zone	
								→ Coarse zone	
								→ Coarse zone S. zones often pebbly	100
19.8/20								→ coarse zone ab clay galls	
		M To Drk Gy	Thin		S. Hem.			Lower Coarse zone Well Indurated Fissile Some Mica	
								← Middle STS Zone	120
13.3/16						Spx		Unconsolidated	
		or To yw	Th	F To M C	ab Hem & Lim			← Pebble Cond. with ab. white clay	140
10.8/14		L To M Gy	Mas	F				S. Green mud As partings & galls	
								Ms, STS & SS Mixed - Mot Some interstial Ms	
		Blk	Th			ab PS Spx		ab. Carbonaceous material Sandy Sections ab. pyrite fissile	
11/11		Drk Rd N To Drk Gy	Thin Thin	F	Hem S. CO_3			Ostracods SS & WS & STS S. Lime fragments 50-50 SS & STS	160
		M To Drk Gy	Thin Thin		ab CO_3 S. CO_3	Spx		High Lime zone Fissile - Some Gypsum Some Ostracods	
		Or To L-yw	Mas	VF To F	Hem & Lim			Some wh Clay particles ore clay galls	
		To Brn		Thin				← Ms Split ← Drk Rd Sand	180
18.3/20		L Gy M Gy						Ab. Interstitial Ms - S. Pyrite	190
		Blk Gn To Drk Gy						S To ab Fess	200

ORE ___ ✓ FAV.
MIN. ___ ___ UNFAV.
BARREN ___

U.S.A.E.C. 2 of 3

HOLE NO. SHR 4

PROJECT Southern Hills Reconnaisance

LOCALITY Edgemont CLAIM Lord-Raby

COLLAR ELEV. 4118.0 DEPTH 447'

COORDINATES ___

DATE COMPLETED ___

LOGGED BY ___ DATE ___

RECOVERY 78.5 %

RECOVERY	GEOLOGIC COLUMN	COLOR	BEDDING	TEXTURE	GRAIN COATINGS	CARBON	ORE MINERALS	MISCELLANEOUS	DEPTH
								STS Split L Gy Slightly Fissile	220
		L To M Gy	Mas	F	S Hem	Spx & Sms		S graded bedding Ms Split	
10.6/17				M				Ms. Split Ab interstitial clay particles	
		Drk Gy	Thin			Spx		Fissile S. FeS_2	220
		L Gy	Thin	F		Spx		S Graded bedding	
13/13		Gr To Gy		F		Spx & Sms		Fissle No FeS_2 SS Splits	
								S clay	
		L To M Gy	Mas	F To M		Spx & Sms		Ms Splits S interstial clay Friable	240
19.6/20									
								Ms Split	
		L To M Gy To Pink	Mas	F To M	S. Hem	Spx & Sms		Ms Split S interstial clay S. Friable zones	260
14/19									
20/20								Ms Split	280
20/21								Ms Split	300
			Thin	F				Fissile	
15/15		Fo M Gy	Thin	F To M		Spx + Sms		Ms Split LS Split	320
								Fissile	
		M To Drk Gy	Mas	F To M		Spx & Sms		Silts Split No interstitial clay Silts Split	
			Thin						
12.6/13		L Gy	Mas	F To M		Spx & Sms		Ms Split $CaCO_3$ Ab interstitial clay	340
								Friable	
			Thin					S Fissility	
20/20		L To M	Mas	F To C		Spx & Sms		Ms Split S To Ab interstitial clay	360
		Gy							
20/20								Ms Split	380
10/10								Ms Split	
								$CaCO_3$ Ms Split $CaCO_3$	400

ORE ___
MIN. ___
BARREN ___

U.S.A.E.C. 3 of 3

HOLE NO. SHR #4

PROJECT Southern Hills Reconnaisance

LOCALITY Edgemont CLAIM Lord-Raby

COLLAR ELEV. 4118.0 DEPTH 447'

COORDINATES ___

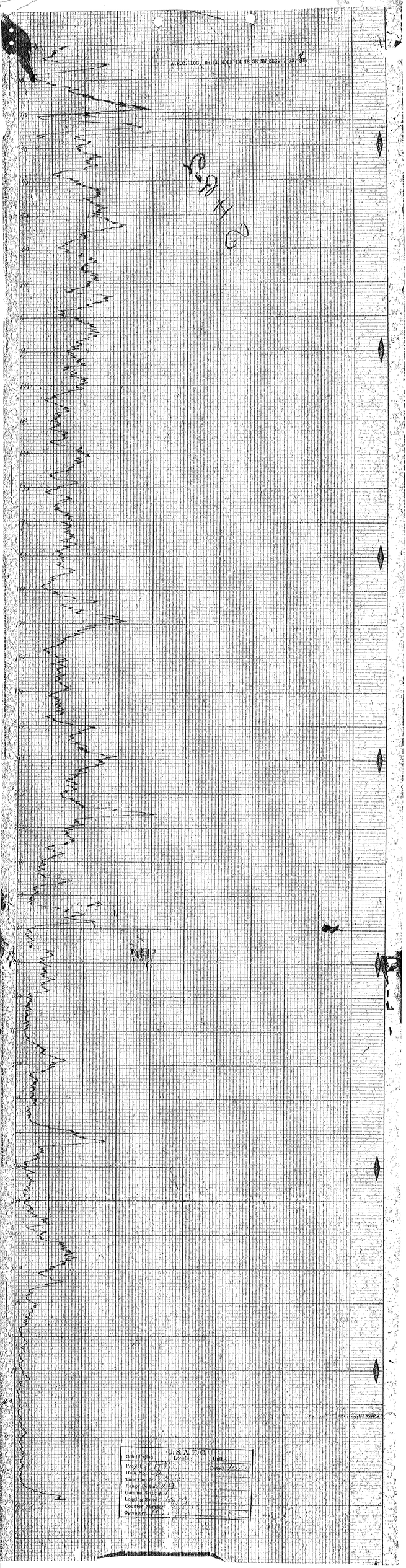
DATE COMPLETED ___

LOGGED BY ___ DATE ___

RECOVERY 78.2 %

RECOVERY	GEOLOGIC COLUMN	COLOR	BEDDING	TEXTURE	GRAIN COATINGS	CARBON	ORE MINERALS	MISCELLANEOUS	DEPTH
									400
16/16		L To M Gy	Mas	F To M		Spx & Sms		$CaCO_3$ Spots S. To Ab interstitial clay Particles	
12/12								Clay Galls C Seam	420
8/8									
2/2		L Gy	Thin Thin	F-M				Ab Sand S. Clay	
			Thin					S. Fissility	
		White	Thin	M				Quartzite	
						SPX		S. Fissility	
		L To M Gy		F To C		Spx + Sms		FeS_2	
		GN To Gy	Mas					FeS_2 $CaCO_3$ S. Fissility	440
15/16									

A.E.C. LOG, DRILL HOLE IN NE SE NW SEC. 7 T3 R8.



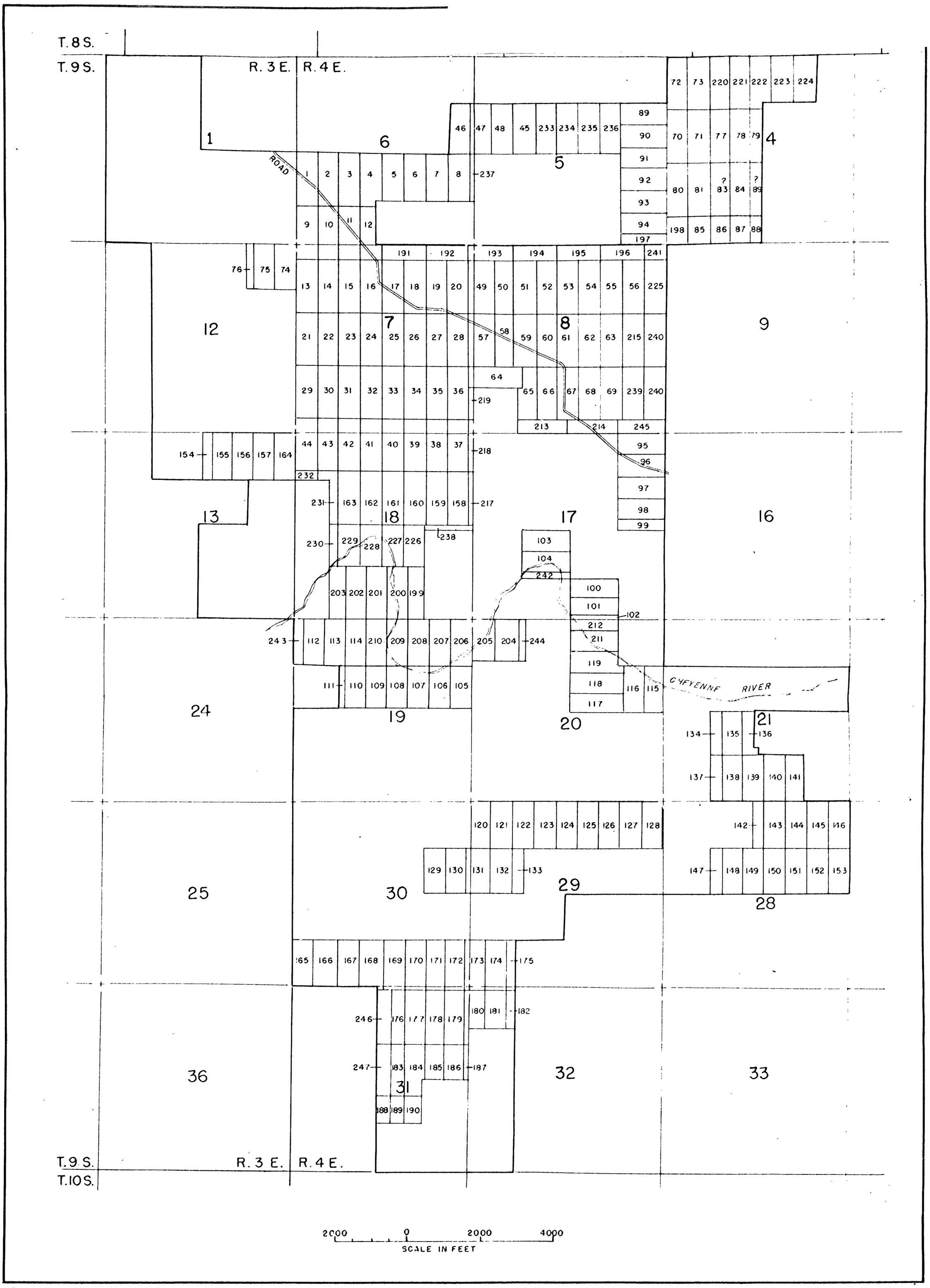
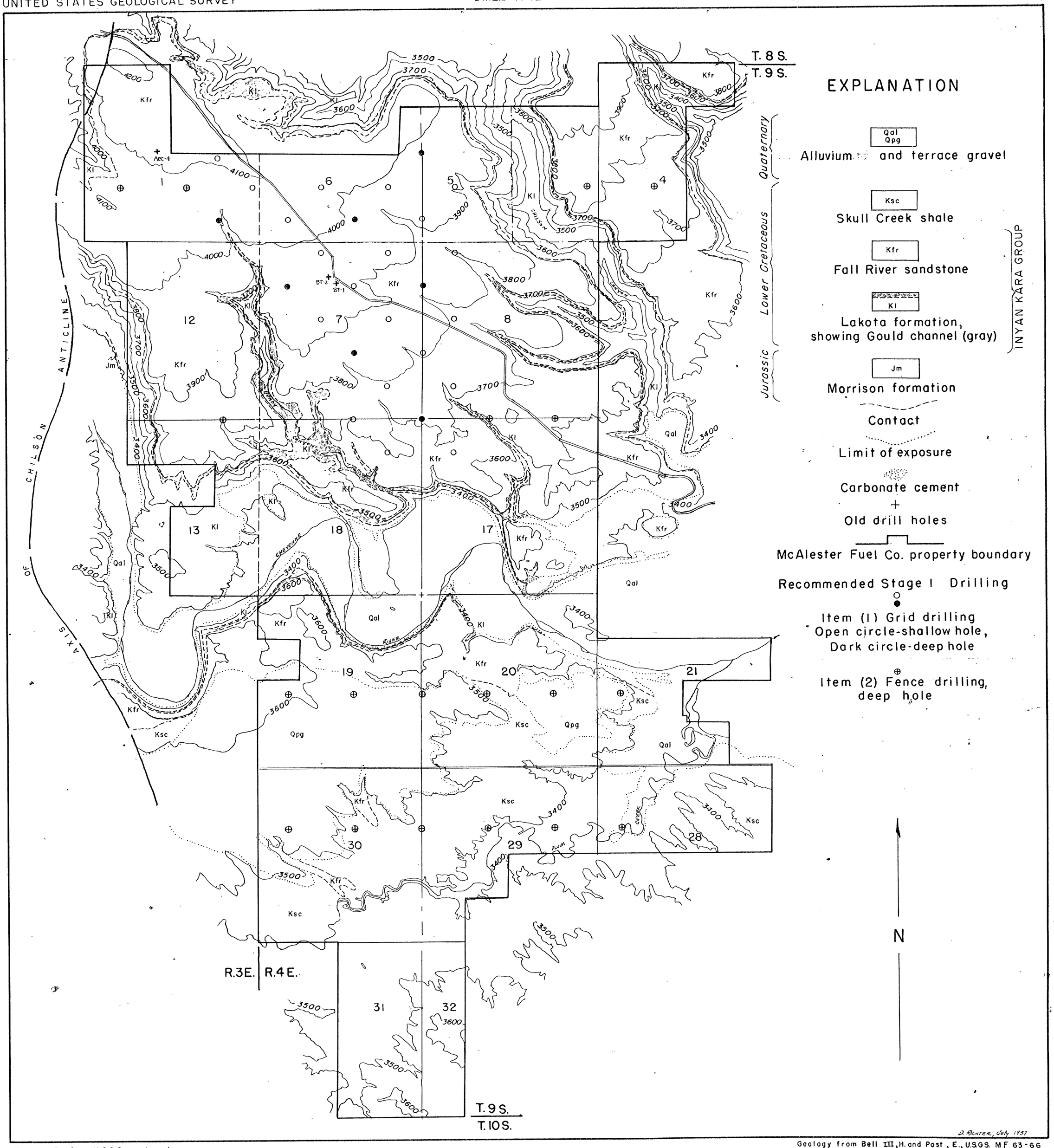


FIGURE 2 – STAR CLAIM GROUPS AND LEASED LAND, McALESTER FUEL COMPANY, FALL RIVER COUNTY, SOUTH DAKOTA. DMEA 4742



Topography from U.S.G.S. quadrangle maps

Geology from Bell III, H. and Post, E., U.S.G.S. MF 63-66

FIGURE 4. GEOLOGIC MAP, SHOWING RECOMMENDED EXPLORATION, McALESTER FUEL COMPANY, FALL RIVER COUNTY, SOUTH DAKOTA

Scale 1" = 2000'

0 2000 4000 FEET

Contour Interval 100 feet