DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

Idm-E NO. 520

DMEA NO. 2768

Application
- [ ] Denied
- [ ] Withdrawn

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

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

Folder No. 1:

Left Side

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

Right Side

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

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

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

Additional Folders: Folder No. 1 - Correspondence through December 31, 1957
Folder No. 1-A - " From January 1, 1958 to present

Left Side

Folders No. 2 : Reports

- [x] Analysis of Semi-Annual Inspection Reports & FT Semi-annual reps
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

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

Folders No. 3 : Maps (Use pocket folder or envelope)

Folders No. _____ : Settlement Sheets

Folders No. _____ : Drill Logs

Folders No. _____ : Royalty material

17963

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Washington office pertaining to Contract Idm-E520, Docket DMEA-2768 (uranium), dated May 14, 1953, with

Mining Research Corporation
Box 432
Georgetown, Colorado

for the purpose of determining the amount of royalty due the U. S. Government on sales of minerals from property referred to as the Gull Lease and the Lion Group of Claims, et al., located in Fall River County, South Dakota, during the period October 17, 1961, through December 4, 1964.

A certification of discovery or development was issued on February 13, 1957, and, in accordance with Amendments Nos. 2 and 5 of the contract, royalty is payable on all minerals mined or produced from the land described in Article 2 of the contract for a period of 12 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. A Report of Review dated April 26, 1957, indicated accepted costs under the exploration contract amounting to $22,861.95 with the Government's contribution, on an average 82.83 percent basis, being $18,936.31.

The status of the project, the scope of review, and the reasons therefor are stated on page 2.

This review established the total sales of uranium ores for the period to be $847.28. Royalty due the Government at rates specified in the contract is $12.71.

A prior Report of Royalty Review found the sales subject to Government royalty through October 16, 1961, to be $126,727.54, which added to the sales for this subsequent period make a total of $127,574.82. The royalty account as of October 16, 1961, was:

Total Royalty Due	$5,931.96
Total Royalty Paid	5,931.96
Balance of Royalty Due	$ -0-

At December 4, 1964, the royalty account of this project was found to be:

Total Royalty Due	$5,944.67
Total Royalty Paid	5,957.11
Overpayment of Royalty	$ 12.44

C. E. Fisher

December 7, 1964

C. E. Fisher, OME Auditor

STATUS OF PROJECT, SCOPE OF REVIEW
AND REASONS THEREFOR

By quit claim deeds and releases executed during December 1957, the Operator relinquished all of its interests in the properties included in the exploration project contract. The last shipments by the Operator were made during May 1957. Thereafter, shipments by other lessees were made as follows: September 1958 through August 1959 from the Gull Lease by the Montana Chemical & Milling Corporation, Phoenix, Arizona; during February 1960 from Lion No. 1 claim by Matthew J. Brown, Edgemont, South Dakota; and during August and September 1960 from the Gull Lease by M.S.B. Mining Company, Edgemont, South Dakota. The property was inactive from September 1960 until June 1964.

Under the provisions of Annex II, which by Amendment No. 2 was substituted for Article 6 of the contract, the Operator is surety for the payment of the Government's percentage royalty. However, by letter dated June 11, 1960, George F. Barbary, First National Bank Building, Denver, Colorado, an attorney for the Operator, advised that "the stockholders of Mining Research Corporation have heretofore voted a dissolution of the company and that dissolution is nearly completed".

During the period June through September 1964 Mines Development, Inc., furnished OME with copies of ten settlement sheets covering purchases of uranium ore shipped by Robert Gull, Edgemont, South Dakota, from the Gull Lease. This ore was very low grade and the purchaser withheld from settlements and paid to OME royalty at the 1½ percent rate appropriate under the contract. These royalty computations were based on the value of the uranium and vanadium contents of the ore, whereas they should have been based on such values, less hauling charges deducted from the settlements with Robert Gull. This resulted in overpayment of royalty amounting to $12.44.

This review included a thorough examination of the docket file and a tabulation and recomputation of the ten settlement statements covering sales of the aforementioned production by Robert Gull. A summary of the sales during the period this review covers and to date follows:

Idm-E520 | Mining Research Corporation | DMEA-2768

	Prior Review	This Review	Totals to Date
Short Wet Tons	6,794.68	1,341.16	8,635.84
Short Dry Tons	6,479.72	1,740.19	8,219.91
U_3O_8: Average Assay	.189	.062	.162
Pounds	24,526.99	2,151.77	26,678.76
V_2O_5 Pounds	4,937.27	88.27	5,025.54
U_3O_8: Base Payment	$ 76,128.17	$1,672.27	$ 77,800.44
Premiums	1,712.37	-0-	1,712.37
Development	12,191.92	-0-	12,191.92
Haulage Allowance	3,228.35	-0-	3,228.35
Haulage Charge	-0-	(828.52)	(828.52)
Bonus	31,935.77	-0-	31,935.77
V_2O_5 Payment	1,530.96	3.53	1,534.49
Total Proceeds	$126,727.54	$ 847.28	$127,574.82
Royalty Payable	$ 5,931.96	$ 12.71	$ 5,944.67
Royalty Paid	5,931.96	25.15	5,957.11
Overpayment of Royalty	$ -0-	$ 12.44	$ 12.44

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(1) The files indicate that all production during the period covered by this review has been properly accounted for;

(2) The Operator has not been in possession of the property since 1957 and apparently is no longer a legal entity; and

(3) The administrative cost to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible additional royalty which might be disclosed.

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Washington office pertaining to Contract Idm-2520, Docket DMEA-2768 (uranium), dated May 14, 1955, with

Mining Research Corporation
Box 432
Georgetown, Colorado

for the purpose of determining the amount of royalty due the U. S. Government on sales of minerals from property referred to as the Gull Lease and the Lion Group of Claims, et al., located in Fall River County, South Dakota, during the period May 4, 1960, through October 16, 1961.

A certification of discovery or development was issued on February 13, 1957, and, in accordance with Amendments Nos. 2 and 5 of the contract, royalty is payable on all minerals mined or produced from the land described in Article 2 of the contract for a period of 12 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. A Report of Review dated April 26, 1957, indicated accepted costs under the exploration contract amounting to $22,861.95 with the Government's contribution, on an average 82.85 percent basis, being $18,936.31.

The status of the project, the scope of review, and the reasons therefor are stated on page 2.

This review established the total sales of uranium ores for the period to be $3,532.47. Royalty due the Government at rates specified in the contract is $145.38.

A prior Report of Royalty Review found the sales subject to Government royalty through May 3, 1960, to be $123,195.07, which added to the sales for this subsequent period make a total of $126,727.54. The royalty account as of May 3, 1960, was:

Total Royalty Due	$5,786.58
Total Royalty Paid	5,166.80
Balance of Royalty Due	$ 619.78

At October 16, 1961, the royalty account of this project was found to be:

Total Royalty Due	$5,951.96
Total Royalty Paid	5,951.96
Balance of Royalty Due	$ -0-

October 19, 1961

E. D. Talbert, OME Auditor

STATUS OF PROJECT, SCOPE OF REVIEW
AND REASONS THEREFOR

By quit claim deeds and releases executed during December 1957, the Operator relinquished all of its interests in the properties included in the exploration project contract. The last shipments by the Operator were made during May 1957. Thereafter, shipments by other lessees were made as follows: September 1958 through August 1959 from the Gull Lease by the Montana Chemical & Milling Corporation, Phoenix, Arizona; during February 1960 from Lion No. 1 claim by Matthew J. Brown, Edgemont, South Dakota; and during August and September 1960 from the Gull Lease by M.S.B. Mining Company, Edgemont, South Dakota. The property has been inactive since September 1960.

Under the provisions of Annex II, which by Amendment No. 2 was substituted for Article 6 of the contract, the Operator is surety for the payment of the Government's percentage royalty. However, by letter dated June 11, 1960, George F. Barbary, First National Bank Building, Denver, Colorado, as attorney for the Operator, advised that "the stockholders of Mining Research Corporation have heretofore voted a dissolution of the company and that dissolution is nearly completed".

This review included a thorough examination of the docket file and a tabulation and recomputation of the three settlement statements received from Mines Development, Inc., Edgemont, South Dakota, covering sales of the aforementioned production by the MS.B. Mining Company. A summary of the sales during the period of this review and to date follows:

		Prior Review	This Review	Totals To Date
Short Wet Tons		6,542.985	251.695	6,794.68
Short Dry Tons		6,236.216	243.506	6,479.722
U_3O_8:	Average Assay	.189	.19	.189
	Pounds	23,599.47	927.52	24,526.99
V_2O_5	Pounds	4,937.27	-0-	4,937.27
U_3O_8:	Base Payment	$ 73,241.83	$2,886.34	$ 76,128.17
	Premiums	1,650.83	61.54	1,712.37
	Development	11,728.15	463.77	12,191.92
	Haulage	3,107.53	120.82	3,228.35
	Bonus	31,935.77	-0-	31,935.77
V_2O_5	Payment	1,530.96	-0-	1,530.96
Total Proceeds		$123,195.07	$3,532.47	$126,727.54
Royalty Payable		$ 5,786.58	$ 145.38	$ 5,931.96

The $619.78 balance of royalty due, as stated in the prior Report of Royalty Review, was paid to the Government by a June 6, 1960, personal check of Robert E. Gull, one of the owners of the land from which the applicable production was made.

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(1) The files indicate that the property has been inactive since September 1960 and sales of all production to that date have been properly accounted for;

(2) The Operator has not been in possession of the property since 1957 and apparently is no longer a legal entity; and

(3) The administrative cost to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible additional royalty which might be disclosed.

MME Form 22
Dec. 60

DEPARTMENT OF THE INTERIOR
Office of Minerals Exploration

CHECK SHEET OF EXAMINING ENGINEER

Operator's Name and Address

Mining Research Corporation

Lion Group of Claims, et al

Fall River County, South Dakota

Contract No.	Docket No.
Idm E520	DMEA-2768 (Uranium

Prepared by (Signature)	Date
T. M. Romslo	October 16, 1961

T. M. Romslo

Yes	No		
		1. (a)	Does the Operator stockpile ore subject to royalty repayment?
		(b)	If so, is segregation and identification procedure adequate?
		2. (a)	Does the Operator commingle production subject to DMEA or OME royalties with exempt production?
		(b)	If so, is the allocation of the commingled production equitable?
		3. (a)	Does the Operator stockpile mine or mill rejects (low grade ore, tailing, middlings, etc.) that may have potential value within the royalty payment period?
		(b)	If so, are adequate records maintained on such material to protect the Government's interest?
		4.	Are the assay controls in effect adequate?
		5.	Does the manner of disposing of production give the Government its fair royalty returns?
		6.	Do your periodic examinations of operations indicate the Operator is properly reporting his production of ores subject to DMEA or OME royalties?
		7.	Does the Operator buy from or sell to other Operators?
		8.	Current status of property. (Check one).
			Operating.
			Inactive. Indicated
			Abandoned.

September 1960 Date of last production if not operating.

Comment on items 1(b), 2(b), 3(b), and 4 to 6, if answer is No:

According to AEC records there was no production from this property during the 4th quarter of 1960 and the 1st and 2nd quarters of 1961. Their records for the 3rd quarter of 1961 will not be available at Denver until December.

An on-site inspection will be made probably next month when I am in the vicinity on an application examination.

84861-60

~~Mr. Murphy~~
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OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Office of Minerals Exploration, Washington, D. C., and the Acting Field Officer, Region III, Denver, Colorado, pertaining to Contract No. Idm-8520, Docket No. DMEA-2768 (Uranium), dated May 14, 1953, with

Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

for the purpose of determining the amount of royalty due the U. S. Government on sales of minerals from property referred to as Lion Group of claims, et al., located in Fall River County, South Dakota, during the period August 26, 1957, through May 3, 1960.

A certification of discovery or development was issued on February 13, 1957, and, in accordance with Amendments Nos. 2 and 5 of the contract royalty is payable on all minerals mined or produced from the land described in Article 2 of the contract for a period of 12 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. A Report of Review in lieu of final cost audit dated April 26, 1957, indicated accepted costs under the exploration contract amounting to $22,861.95 with the Government's contribution, ~~on a 90 percent basis,~~ being $18,936.31.

The status of the project, the scope of review, and the reasons therefor are stated on page 2.

This review established the total sales of uranium ore for the period to be $85,733.78. Royalty due the Government at rates specified in the contract is $3,953.06.

A prior Report of Royalty Review found the sales subject to Government royalty through August 25, 1957, to be $37,461.29 which added to the sales for this subsequent period make a total of $123,195.07. The royalty account as of August 25, 1957, was:

Total Royalty Due	$1,833.52
Total Royalty Paid	1,849.79
Overpayment of Royalty	$ 16.27

At May 3, 1960, the royalty account of this project was found to be:

Total Royalty Due	$5,786.58
Total Royalty Paid	5,166.80
Balance of Royalty Due	$ 619.78

C. E. Fisher
C. E. Fisher, OME Auditor

May 3, 1960

STATUS OF PROJECT, SCOPE OF REVIEW
AND REASONS THEREFOR

The mining property known as Gull Lease has been idle since August, 1959. The last sale of ore from the Gull property included in this report was covered by Mines Development, Inc., liquidation No. 1689 covering a shipment of 89.921 SDT by Montana Chemical & Milling Corporation received at the buyer's station on September 1, 1959.

In February 1960 one sale of ore produced from Lion No. 1 claim was made by Mathew J. Brown to Mines Development, Inc., as evidenced by liquidation statement No. 1906. Proper royalty has been received on this shipment in amount of $89.47 computed as follows:

Receiving station value	$991.73	5% royalty	$49.59
Base price subject to AEC royalty	$797.72	5% royalty	39.88
		Total royalty	$89.47

My review included a tabulation and recomputation of all settlement statements received during the period under review. This tabulation is filed as a part of my audit work-papers. A summary of sales to date together with computation of royalty due and paid is shown on the attached Schedule "A". Statement of net additional royalty due is attached as Schedule "B".

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(1) Review of inspection reports submitted by field representatives of Region III, and other correspondence and documents in the files indicates that all production to date has been reported; and

(2) The administrative cost to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible additional royalty which might be disclosed.

Schedule "A"

Idm-8520 | Mining Research Corporation | DMEA-2768

Summary of Sales and Royalty Due

	5/14/53 thru 8/25/57	8/26/57 thru 5/3/60	Totals
Sales			
Short Wet Tons	1,697.910	4,845.075	6,542.985
Short Dry Tons	1,640.556	4,595.660	6,236.216
U_3O_8 - Average assay	.169	.196	.189
" - Pounds	5,551.98	18,047.49	23,599.47
" - Pounds in excess of 4 per SDT	268.54	1,932.56	2,201.10
V_2O_5 - Pounds	4,937.27	-0-	4,937.27
Proceeds			
Base payment - U_3O_8	$16,125.08	$57,116.75	$ 73,241.83
Development allowance	2,704.28	9,023.87	11,728.15
Premium - Excess 4 pounds per SDT	201.39	1,449.44	1,650.83
Haulage allowance	774.50	2,333.03	3,107.53
V_2O_5	1,530.96	-0-	1,530.96
Total Receiving Station Value	$21,336.21	$69,923.09	$ 91,259.30
AEC Production Bonus	16,125.08	15,810.69	31,935.77
Total value subject to royalty	$37,461.29	$85,733.78	$123,195.07
Total Royalty Due	$ 1,853.52	$ 3,953.06	$ 5,786.58
Total Royalty Paid	1,862.33	3,304.47	5,166.80
Balance of Royalty Due	$ * (28.81)	$ 648.59	$ 619.78

* Includes $12.54 applicable to Liquidation No. 517 received subsequent to prior Report of Royalty Review.

Schedule "B"

Idm-E520 | Mining Research Corporation | DMEA-2768

Statement of Net Additional Royalty Due

Lot No.	Proceeds subject to royalty: Rec.Station	Proceeds subject to royalty: AEC Bonus	Royalty: Rate	Royalty: Due	Royalty: Paid	Royalty: Under-payment (Over-payment)
Mining Research Corporation						
517	$ 449.31	$ 250.74	1½%	$ 10.50	$ 35.01	$
544	215.21	215.21	1½	6.46	10.76	
Totals - Mining Research				$ 16.96	$ 45.77	$(28.81)
Montana Chemical & Milling Corp.						
1231	$	$ 132.90	1½%	$ 1.99	$	$
1241		2,282.07	5	114.10		
1247		2,144.49	5	107.22		
1257		347.36	5	17.37		
1260		2,382.57	5	119.13		
1261		912.05	5	45.60		
1297		2,852.57	5	142.63		
1308		2,985.99	5	149.30		
1311		1,330.63	5	66.53		
Sub-totals		$15,370.63		$ 763.87		$ 763.87
1538*	$ 631.29		1½	$ 9.47	$ 24.36	$(14.89)
1539*	607.98		1½	9.12	22.13	(15.01)
1547*	2,013.41		5	100.67	86.43	14.24
1568*	486.05		1½	7.29	17.69	(10.40)
1569*	1,238.95		5	61.95	53.38	8.57
1570*	587.99		1½	8.82	21.38	(12.56)
1577*	845.36		1½	12.68	31.79	(19.11)
1579*	814.30		1½	12.21	31.42	(19.21)
1582*	1,207.98		5	60.40	52.11	8.29
1588*	917.44		3	27.52	36.20	(8.68)
1600*	1,302.59		5	65.13	56.18	8.95
1604*	1,359.60		1½	20.39	51.07	(30.68)
1605*	392.44		1½	5.89	14.74	(8.85)
1648*	1,275.63		5	63.68	53.45	10.23
1670*	625.77		1½	9.39	22.80	(13.41)
1689*	652.78		1½	9.79	24.55	(14.76)
Sub-totals				$ 484.40	$599.68	$(115.28)
Totals - Montana Chemical				$1,248.27	$599.68	$ 648.59
Grand Totals				$1,265.23	$645.45	$ 619.78

* Royalty paid on each of these lots was computed on basis of 5 percent applied to base payment for U_3O_8. Royalty due has been recomputed based on total payments by Mines Development, Inc., including premium payments and development and hauling allowances, at the proper contract rates.

MME Form 22
April 59

DEPARTMENT OF THE INTERIOR
Office of Minerals Exploration

CHECK SHEET OF EXAMINING ENGINEER

Operator's Name Mining Research Corporation

Address 4215 Balsom Street

Wheatridge, Colorado

Exploration Contract No. Idm-E520 Docket No. DMEA-2768

		Check One Yes	Check One No.
1.	(a) Does the Operator stockpile ore subject to royalty repayment?		X
	(b) If so, is segregation and identification procedure adequate?		
2.	(a) Does Operator commingle production subject to DMEA or OME royalties with exempt production?		X
	(b) If so, do you consider the allocation of the commingled production equitable?		
3.	(a) Does the Operator stockpile mine or mill rejects (low grade ore, tailing, middlings, etc.) that may have potential value within the royalty payment period?		X
	(b) If so, are adequate records maintained on such material to protect the Government's interest?		
4.	Do you consider the assay controls in effect are adequate?	X	
5.	Do you consider that the manner of disposing of production gives the Government its fair royalty returns?	X	
6.	Do your periodic examinations of operations indicate the Operator is properly reporting his production of ores subject to DMEA or OME royalties?	X	
7.	Does the Operator buy from or sell to other Operators?		X
8.	Comment on any item 2 (b) to 6 if answer is No.		

See Acting Director's letter to the Operator's attorney dated 4/26/60.

Hugh M. Connors

May 4, 1960
Date

Hugh M. Connors
~~Mining Engineer~~
Acting Field Officer, OME, Region III

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DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

FIRST REPORT OF ROYALTY REVIEW

I have reviewed the files of the Executive Officer, DMEA Field Team, Region III, Denver, Colorado, pertaining to Contract Idm-E520, Docket No. DMEA-2768 (Uranium) dated May 14, 1953, including Amendments Nos. 1 through 7, with

Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

for the purpose of determining the amount of royalties due the United States Government on the sale of Uranium and Vanadium ores produced from Lion group of Claims, et al, located in Fall River County near Edgemont, South Dakota, during the period May 14, 1953 through August 25, 1957.

A Certificate of Discovery or Development was issued February 13, 1957, and in accordance with the contract as amended, royalty is payable on all minerals mined or produced from the land described in Article 2 of the contract for a maximum period of 12 years from the date of the contract. A Report of Review dated April 26, 1957, by T. H. Brading, DMEA Auditor, indicated the accepted costs under the exploration contract amounting to $22,861.95, with the Government's contribution on an average basis of 82.83% being $18,936.31.

The scope of review and the reasons therefor are stated on page 2.

My review established the total net sales of Uranium-Vanadium ores to be $37,461.29. (See Schedule I attached.) Royalty due the United States Government at the contract rates of 1½ to 5% is $1833.52. The royalty paid and balance due are as follows:

Total Royalty Due	$1,833.52
Total Royalty Received	1,849.79
Overpayment (See Schedule I attached)	$ 16.27

EXTRA COPY
DMEA
RECEIVED SEP 23 1957

DATE	INITIALS	CODE
9/25	CBHR	100
"	[illegible]	110
		120
		900

September 13, 1957

Donald T. Finch, Auditor.

DESCRIPTION OF REVIEW

AND STATEMENT OF JUSTIFICATION

CONTRACT NO. Idm-2320 DOCKET NO. RMRA-2768

My review included a tabulation and recomputation of all ore settlement sheets for sales of Uranium-Vanadium ores.

All royalty receipts were reconciled with the records of the Finance Office, Region III.

Correspondence with the Field Operations Office of the Atomic Energy Commission confirmed the total U_3O_8 sales.

There remains a balance of U_3O_8 eligible for production bonus, as tabulated below:

Original total available			10,000 lbs.
Total sales (See Schedule I)			5,551.98 "
Balance available			4,448.02 lbs.
Balance per A.E.C. confirmation		4,758.65	
Less: Production Bonus not claimed			
Mines Development Liq. No. 517	167.16 lbs.		
Mines Development Liq. No. 544	143.47 "	310.63	
Balance as above			4,448.02 lbs.

The review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(a) All sales of Uranium-Vanadium ores were reconciled with the A.E.C. records.

(b) The Examining Engineer is of the opinion the Operator is properly reporting his production of ores subject to RMRA royalty.

(c) The administrative cost to the Government of an on-site audit at this time would be excessive in relation to the amount of possible additional royalty which might be disclosed.

SCHEDULE I

MINING RESEARCH CORPORATION

Contract No. Idm-E520

Docket No. DMEA-2768

Schedule of Production, Sales and Royalties
Period May 14, 1953 to August 13, 1957

	COLO. PLATEAU URANIUM ORE PROJECT	LUCIUS PITKIN, INC.	MINES DEVELOPMENT, INC.	TOTAL
Gross Weight, lbs.	343,610	386,640	2,665,570	3,395,820
Dry Weight, lbs.	332,098	373,990	2,575,021	3,281,109
Dry Weight, tons	166.049	186.995	1,287.512	1,640.556
Assays (Averages)				
Uranium (U_3O_8)	.1936	.236	.1563	.169
Vanadium (V_2O_5)	.1367	.167	.1498	.150
Pounds, U_3O_8	642.79	883.96	4,025.23	5,551.98
Base Payment U_3O_8	$1,890.78	$3,093.85	$11,140.45	$16,125.08
Development Allowance	$ 321.39	$ 441.99	$ 1,940.90	$ 2,704.28
Premium				
Excess of 4 lbs. U_3O_8 per ton				
Excess lbs. U_3O_8	112.50	135.98	20.06	268.54
Payment @ 75¢ per lb.	$ 84.37	$ 101.98	$ 15.04	$ 201.39
Haulage Allowance				
Gross Weight, tons	171.82	193.32	1,332.785	1,697.925
Allowance per ton	.48	.48	.45	.456
Amount	$ 82.47	$ 92.79	$ 599.24	$ 774.50
Pounds V_2O_5	453.89	625.00	3,858.38	4,937.27
Payment for V_2O_5 @ 31¢ per lb.	$ 140.71	$ 194.15	$ 1,196.10	$ 1,530.96
Total Receiving Station Payment	$2,519.72	$3,924.76	$14,891.73	$21,336.21
A.E.C. Production Bonus	1,890.78	3,093.85	11,140.45	16,125.08
Total Value Subject to DMEA Royalty	$4,410.50	$7,018.61	$26,032.18	$37,461.29
Average Value per Dry Ton	$ 26.56	$ 37.53	$ 20.22	$ 22.83
Average DMEA Royalty Percentage	5%	5%	4.848%	4.894%
DMEA Royalties Due	$220.53	$350.93	$1,262.06	$1,833.52
DMEA Royalties Received	220.53	350.93	1,278.33	1,849.79
Balance Due (Overpayment)	$ 0.00	$ 0.00	$ 16.27	$ 16.27

Note: Above data includes Mines Development, Inc. Liquidation No. 545 dated 6/14/57 and Certificate of Deposit 57-170 dated 6/24/57.

Overpayments:

Mines Development, Inc. Liquidation No. 517 dated 6/6/57	$11.97
Mines Development, Inc. Liquidation No. 544 dated 6/14/57	4.30
Total Overpayment as above	$16.27

Check Sheet of Examining Engineer

Operator's Name Mining Research Corporation

Address 4215 Balsam Street

Wheatridge, Colorado

Exploration Contract No. Idm-E520 Docket No. DMEA-2768

		Check One Yes	Check One No
1. (a)	Does the Operator stockpile ore subject to royalty repayment?		X
(b)	If so, is segregation and identification procedure adequate?		
2. (a)	Does Operator commingle production subject to DMEA royalties with exempt production?		X
(b)	If so, do you consider the allocation of the commingled production equitable?		
3. (a)	Does the Operator stockpile mine or mill rejects (low grade ore, tailing, middlings, etc.) that may have potential value within the royalty payment period?		X
(b)	If so, are adequate records maintained on such material to protect the Government's interest?		
4.	Do you consider the assay controls in effect are adequate?	X	
5.	Do you consider that the manner of disposing of production gives the Government its fair royalty returns?	X	
6.	Do your periodic examinations of operations indicate the Operator is properly reporting his production of ores subject to DMEA royalties?	X	
7.	Does the Operator buy from or sell to other Operators?		X
8.	Comment on any item 2 (b) to 6 if answer is No.		

Date 9/10/57

E. O. Binyon
Mining Engineer

Docket copy

Flanigan
Ellis
Dwyer
Chamberlain
Lamb
Nelson
Selbridge
Johnson

CERTIFICATION BY THE UNITED STATES OF AMERICA
OF A DISCOVERY OR DEVELOPMENT UNDER
AN EXPLORATION PROJECT CONTRACT

To: Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

Pursuant to the provisions of Exploration Project Contract No. Idm-1520, dated May 14, 1953, (Docket No. DMEA-2768), hereinafter called the "contract," between the Mining Research Corporation, a Delaware corporation, and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien therefor and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made has resulted from the exploration work.

The nature of said discovery or development is described broadly or indicated as follows:

Widespread surface drilling in the McKnight, Lion, and Sheep Canyon areas described in the contract intersected uranium mineralized bodies of ore grade in sedimentary rocks of Cretaceous age.

Dated: FEB 13 1957

THE UNITED STATES OF AMERICA

By C. M. Mendenhall
Administrator, Defense Minerals
Exploration Administration

FKnouse/gla 2-5-57
cc to: Operator (original)
Robert E. Gull
Edna McKnight
Carl V. Gull
John McKnight
James McKnight
Royce A. McElhaney
Carl V. Gull as agent for
Carl V. Gull, Earl Boner & Vernon Harriett
James L. Barker
Roy Chamberlain and Gertrude Chamberlain, The Ranger Hotel, Lusk, Wyoming
Contract Adm. & Audit Division
DMEA Field Team, Region III (2)
Finance Office
Docket
Rare and Misc. Metals Division
Admr.'s Reading File
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
F. E. Johnson
Mr. Knouse

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
	Selfridge	120
6/23	[illegible]	110
	[illegible]	100
		220

JUN 24 1965

Mining Research Corporation
c/o Clinton W. Livingston
Baredynamics, Inc.
Georgetown, Colorado

Re: [illegible] (Uranium)
Mining Research Corporation
Lion Group of Claims, et al.
Fall River County, South Dakota
Contract Idm-[illegible]

Gentlemen:

By the terms of the subject Exploration Project Contract, as amended, and the certification of discovery or development dated February 13, 1957, all minerals mined or produced from May 14, 1953, to May 14, 1965, were subject to the Government's royalty as set forth in said contract.

As the period during which production was subject to royalty has now expired, the Government according to its present records 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 contract. Your attention, however, is called to the provisions of the contract which require the Operator to keep and preserve certain records for the periods indicated.

Sincerely yours,

George Fumich, Jr.

Acting Director

GCSelfridge/mm (6/23/65)
cc: Director's Reading File
Region III w/cys of 5 incoming 63's
CA&A Division
Docket
Mr. Selfridge
120M

Copies to: T. A. Boyden
Paul H. Russell
Edna McKnight
J. L. Barker
Mr. & Mrs. Roy Chamberlain
Carl V. & Robert E. Gull

23263

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

EXTRA COPY
DMEA
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DATE		CODE
4-29		800
5/1		100
5/1		110
		120
5/1		700

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

pertaining to Exploration Project Contract No. Idm-E520, Docket No. DMEA-2768, including Amendments Nos. 1 to 7, for the period June, 1953 to August, 1956, inclusive, covering a project for the exploration of Uranium on property known as Lion Group of claims, et al. located in Fall River County, South Dakota.

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, consultation with the Executive Officer, DMEA Field Team, and a determination of the reasonableness and propriety of the costs.

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

> All of the costs incurred were under a contract provision for payment by the Government on the basis of agreed estimated costs of units of work actually performed.

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

Total cost as billed by Contractor		$22,861.95
Exceptions:		
By DMEA Finance Officer	$0.00	
Herewith	0.00	0.00
Total Accepted Cost		$22,861.95

The contract, as amended, calls for a 90 percent participation in the first $11,932.20 and 75 percent participation in the balance of the exploration expenses by the United States Government. Therefore, payment to the Contractor by the Government in the amount of Eighteen thousand, nine hundred thirty-six and 31/100ths Dollars

** $18,936.31 **

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

April 26, 1957

T. H. Brading, Auditor

Docket copy

Initials 7/5/56
"Appd. Sol. Off."

EXPLORATION PROJECT CONTRACT
MINING RESEARCH CORPORATION
DOCKET NO. DMEA-2768

AMENDMENT NO. 7

It is agreed this 19th day of July, 1956, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Mining Research Corporation that Exploration Project Contract Idm-8520 (Docket No. DMEA-2768), dated May 14, 1953, as amended, is hereby further amended, effective June 1, 1956, by the following changes on page 1 of Exhibit "A," under the subheading Stage I:

1. In the fifth line: the words "a maximum of 241 wagon-mounted drill holes" are deleted, and the words "a maximum of 256 wagon-mounted drill holes" are added.

2. In the tenth line: the words "and shall be approximately 60 feet in depth" are deleted, and the words "and shall be drilled to the depth specified by the Government" are added.

3. In the sixteenth line: the words "with spacing of 30 feet between holes" are deleted, and the words "with spacing of 25 feet between holes" are added.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, or the agreed unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

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

MINING RESEARCH CORPORATION

By Clifton W. Livingston

Title President

Docket Copy

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MAY 7 - 1956

Indritz 4/4/56
Lawyer
Chief, Contract Section
J Kearns
Chambers
Selfridge
Fogerson

EXPLORATION PROJECT CONTRACT
MINING RESEARCH CORPORATION
DOCKET NO. DMRA-2768

Amendment No. 6

It is agreed this 6th day of April, 1956, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Mining Research Corporation, that Contract Idm-2520 (Docket No. DMRA-2768) dated May 14, 1953, as amended, is hereby further amended as follows:

1. The drilling areas designated in Exhibit "A" of the Contract, as amended, shall be deemed to include, with respect to all drilling performed under the Contract from May 14, 1953, to March 14, 1956, the areas within the lines marked as Boundary B on the map entitled "Figure I - Proposed Revision of Drill Areas, Mining Research Corporation, Fall River County, South Dakota," attached hereto and made a part hereof.

2. All drilling performed under the Contract, as amended, on March 14, 1956, and thereafter, shall be performed only in the areas within the lines marked as Boundary A on the map entitled "Figure II - Proposed Revision of Drill Areas, Mining Research Corporation, Fall River County, South Dakota," attached hereto and made a part hereof.

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

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 O Mittendorf
Administrator, Defense Minerals Exploration Administration

MINING RESEARCH CORPORATION

By Clifton W. Livingston

Title President

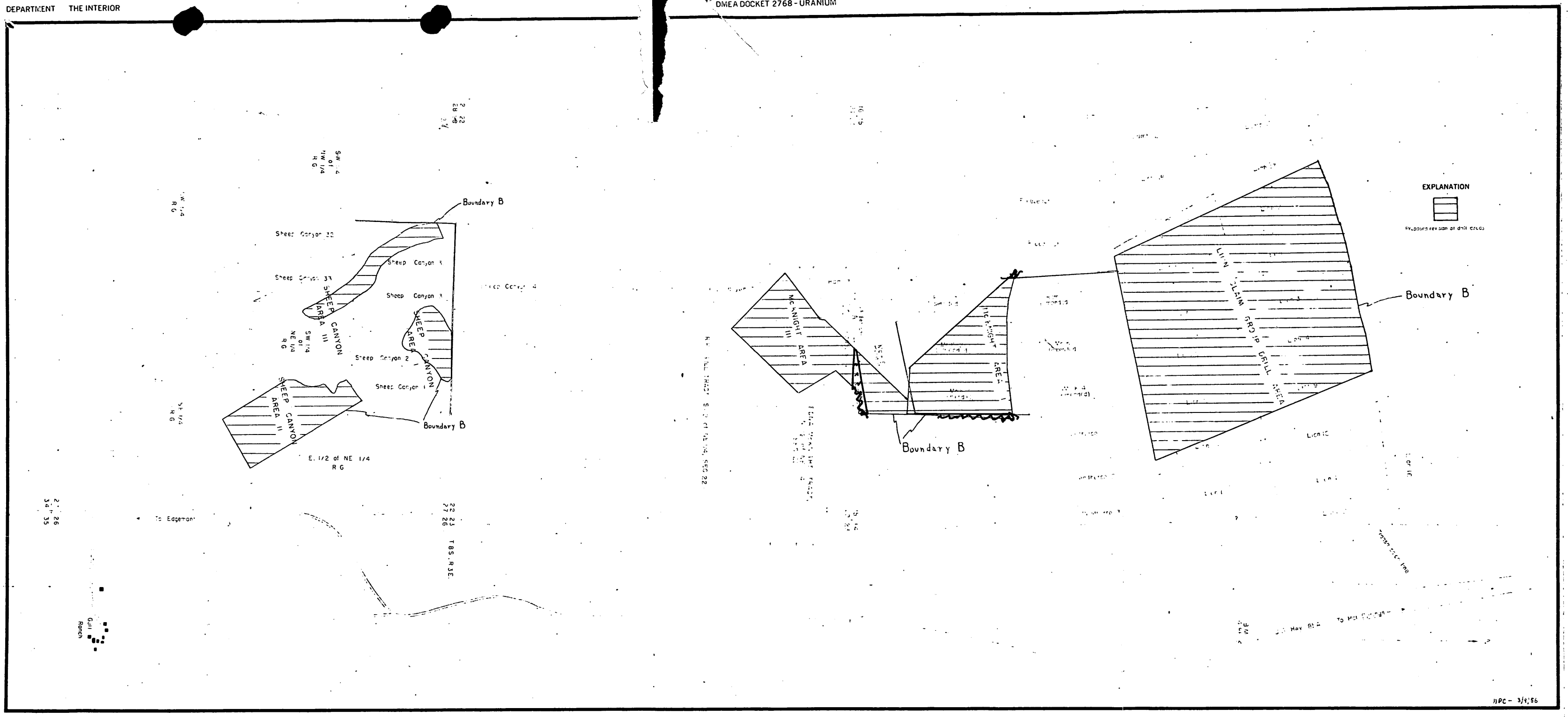

Figure I – PROPOSED REVISION OF DRILL AREAS, MINING RESEARCH CORPORATION, FALL RIVER COUNTY, SOUTH DAKOTA.

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MAY 7 - 1956

EXPLORATION PROJECT CONTRACT
MINING RESEARCH CORPORATION
DOCKET NO. DMEA-2768

Amendment No. 5

It is agreed this 27th day of February, 1956, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Mining Research Corporation, hereinafter called the "Operator," parties to that certain Exploration Project Contract Idm-E520 (Docket No. DMEA-2768), dated May 14, 1953, hereinafter called the "Contract," that the Contract, as amended, is further amended as follows:

1. (a) Work under the Contract shall be suspended during the period beginning September 1, 1955, and ending not later than June 1, 1956.

(b) The Government shall not contribute to any costs incurred by the Operator during the period of suspension or to any costs of rehabilitation or repair which in the Government's opinion would not hafe occurred had there been no suspension of work.

(c) The Operator, at its own cost and expense, without contribution by the Government, during the period of suspension shall preserve and protect the project work.

2. The time for completion of the work, extended by Amendment No. 4 of July 8, 1955, to April 14, 1956, is hereby further extended to January 1, 1957.

3. The period for royalty payments and lien to secure the payment thereof, provided in the Contract, is extended to May 14, 1965.

4. It is of the essence of this Contract that the work be resumed before the termination of the period here fixed for suspension and be completed before the termination of the period here fixed for completion of the work; and if it is not so resumed and completed in the manner required by the Contract, the following provisions shall then become effective:

(a) The Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated, as follows:

(i) Effective September 1, 1955, if the work has not been resumed on or before June 1, 1956;

Indrtg 2/16/56
Dunyon
"Appd. Sol. Off."
F L Wagner
Ellis Chamberlin
Selfridge
F L Johnson

(ii) Effective January 1, 1957, if the work is resumed on or before June 1, 1956, but is not completed on or before January 1, 1957.

(b) The Government shall contribute only to the fixed unit costs of work prior to said effective date.

(c) All rights of the Government with respect to certification of discovery or development and a percentage royalty and lien for its payment are preserved.

(d) 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.

(e) The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of the Contract, except as otherwise provided in this Amendment No. 5.

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

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C F Mitchenoy
Administrator, Defense Minerals
Exploration Administration

MINING RESEARCH CORPORATION

By Alyn W. Livingston

Title President

Docket Copy
700 Ellis

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

Memorandum

To: The Administrator

From: F. L. Knouse, Mining Engineer
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

JUSTIFICATION FOR AMENDMENT NO. 5

The Executive Officer of Region III, by memorandum of February 2, 1956, recommended a recess in the project work from September 1, 1955, until June 1, 1956, and an extension of the completion date to January 1, 1957. This amendment was requested by the Operator to provide time within which to resolve problems associated with the interpretation of the contract and locations of property boundaries and project work to be completed.

It is believed to be in the best interest of the Government to authorize the changes set forth in this amendment so that more definite property boundaries may be established and the project work completed in areas where little work has been done.

F. L. Knouse
F. L. Knouse

MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Mining Research Corporation
Docket No. DMEA- 2768
Contract No. Idm-E 520
Contract Date May 14, 1953

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described as follows:1/

Deeded land as follows:

the S 1/2 of the NE 1/4 of Section 22, and

the N 1/2 of the NW 1/4 of Section 23, T. 8 S., R. 3 E.

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;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ 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.

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

_____

_____

_____

_____

_____

_____

_____

Dated this _____ day of _____, 195__.

_____ [Seal]

Robert E. Gull

Robert E. Gull [Seal]

_____ [Seal]

I, Ruth E. Livingston certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Clifton W. Livingston who signed this agreement was then President (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.

Ruth E. Livingston

[Corporate Seal]

Docket

MF-203
Revised March 24, 1955

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For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Mining Research Corporation
Docket No. DMEA- 2768
Contract No. Idm-E 520
Contract Date May 11, 1953

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described as follows:1/

Deeded land SE ¼ of Section 22,

and

Deeded land S ½, N ½ of the NW ¼, and SW ¼ of the NE ¼ of Section 23

all in T. 8 S., R. 3 E.,

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;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ 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.

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

_____

_____

_____

_____

_____

_____

_____

Dated this _____ day of _____, 195__.

_____ [Seal]

Robert E. Gall

Robert E. Gall [Seal]

_____ [Seal]

I, Ruth E. Livingston certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Clifton G. Livingston who signed this agreement was then President (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.

Ruth E. Livingston

[Corporate Seal]

MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator [redacted]
Docket No. DMEA-2760
Contract No. Idm-E 500
Contract Date [redacted]

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of [redacted], State of [redacted], described as follows:1/

	Recorded Book	Page
[redacted]	[redacted]	[redacted]
[redacted]	31	502-510
[redacted]		

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;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

[redacted]

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ 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.

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

Dated this 19 day of July, 195_5

Carl W. Gull [Seal]
Carl W. Gull

[Seal]

Robert E. Gull [Seal]
Robert E. Gull

I, Ruth E. Livingston certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Clifton W. Livingston who signed this agreement was then President (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.

Ruth E. Livingston
[Corporate Seal]

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AUG 2 3 1955

MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Mining Research Corporation
Docket No. DMEA- 2750
Contract No. Idm-E 580
Contract Date May 24, 1955

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described as follows:1/

Mining claims Sheep Canyon No. 4 and 5, T8S., R3E.

Mining claim Sheep Canyon No. 6, in Section 22, T8S., R3E.

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;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ 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.

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

Dated this 18 day of July, 1955

Carl V. Gull [Seal]
Carl V. Gull

_____ [Seal]

Robert E. Gull [Seal]
Robert E. Gull

I, Ruth E. Livingston certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Clifton D. Livingston who signed this agreement was then President (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.

Ruth E. Livingston
[Corporate Seal]

MF-203
Revised March 24, 1955

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AUG 26 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Mining Research Corporation
Docket No. DMEA- 2768
Contract No. Idm-E 520
Contract Date May 14, 1953

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described as follows:1/

	Recorded Book	Page
Sheep Canyon No. 1, Lode Mining Claim	31	76
Sheep Canyon No. 2, Lode Mining Claim	31	77
Sheep Canyon No. 3, Lode Mining Claim	31	78

all located in T8S, R3, B.H.M.,

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;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ 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.

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

Dated this 18 day of July, 1955.

Carl V. Gull [Seal]
Carl V. Gull as agent for Carl V. Gull, Earl Boner and Vernon Harriott [Seal]

_____ [Seal]

I, Ruth E. Livingston certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Clifton D. Livingston who signed this agreement was then President (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.

Ruth E. Livingston
[Corporate Seal]

MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Kennedy Research Corporation
Docket No. DMEA-2768
Contract No. Idm-E-520
Contract Date May 11, 1953

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Bell River, State of South Dakota, described as follows:1/

Deeded land located in T3S., R3E., Section 26; the NW ¼, the N ½ of the NE ¼, the SW ¼ of the NE¼, the W ½ of the SE ¼, the N ½ of the SW¼, and the SW¼ of the SW ¼ Section 27; the E ½ of the NE¼, the SW ¼ of the NE ¼, the SE ¼, and SW¼, and the SW¼ of the NW¼, Section 34; the N ½, Section 35; the N ½ of the NW ¼, and NW ¼ of the NE¼,

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;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ 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.

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

_____

_____

_____

_____

_____

_____

_____

Dated this _____ day of _____, 195__.

_____ [Seal]

Robert E. Gill [Seal]

_____ [Seal]

I, Ruth E. Livingston certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Clifton B. Livingston who signed this agreement was then President (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.

Ruth E. Livingston

[Corporate Seal]

MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Mining Research Corporation
Docket No. DMEA- 2768
Contract No. Idm-E 520
Contract Date May 11, 1953

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described as follows:1/

		Book	Page
Mining Claim RAM No. 1 in Section 15, T6S, R3E	Amended	31 M	289
Mining claim RAM No. 2 in Section 15, T6S., R3E	Amended	31 M	289
	Amended	37 M	321
Mining claim RAM No. 3, T3S., R3E			

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;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ 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.

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

_____

_____

_____

_____

_____

_____

_____

Dated this _____ day of _____, 195__.

Royce A. McElhaney [Seal]

Royce A. McElhaney

_____ [Seal]

_____ [Seal]

I, Ruth E. Livingston certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Clifton E. Livingston who signed this agreement was then President (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.

Ruth E. Livingston

[Corporate Seal]

MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Mining Research Corporation
Docket No. DMEA-2768
Contract No. Idm-E 520
Contract Date May 11, 1953

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described as follows:1/

	Township		Book	Page		Township		Book	Page
	T8S,	R3E	3111	h12	Lion No. 9	T8S,	R3E	3111	h20
Lion No. 1					Lion No. 10	"	"	"	h21
Lion No. 2	"	"	"	h13	Lion No. 11	"	"	"	h22
Lion No. 3	"	"	"	h14	Lion No. 12	"	"	"	h23
Lion No. 4	"	"	"	h15	Lion No. 13	"	"	"	h24
Lion No. 5	"	"	"	h16	Lion No. 14	"	"	"	h25
Lion No. 6	"	"	"	h17	Lion No. 15	"	"	"	h26
Lion No. 7	"	"	"	h18	Lion No. 16	"	"	"	h27
Lion No. 8	"	"	"	h19	Lion No. 17	"	"	"	h28
					Lion No. 18	"	"	"	h29

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;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ 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.

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

_____

_____

_____

_____

_____

_____

_____

Dated this _____ day of _____, 195__.

James L. Barker [Seal]
James L. Barker

_____ [Seal]

_____ [Seal]

I, Ruth E. Livingston certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Clifton W. Livingston who signed this agreement was then President (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.

Ruth E. Livingston

[Corporate Seal]

The Ranger Hotel

Lusk, Wyoming

July 17, 1955

This is to certify that we the undersigned, Roy Chamberlain and Gertrude Chamberlain, are the sole owners ofthat certain land in the county of Fall River, State of South Dakota, described as McK. Mining Claims No. 2, 3, and 5, in Section 15, T 8 S, R 3 E.

Roy Chamberlain

Gertrude Chamberlain

Subscribed and sworn to before me a Notary Public for Niobrara County, Lusk, Wyo

Commission Expires Feb 15- 1956

MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator MINING RESEARCH CORPORATION
Docket No. DMEA- 2768
Contract No. Idm-E 520
Contract Date May 14, 1953

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described as follows:1/

		Book	Page
McK. Mining Claim No. 2,	Amended	31 M	291
	Amended	37 M	116
McK. Mining Claim No. 3	Amended	31 M	291
	Amended	37 M	117
McK. Mining Claim No 5	Amended	31 M	290
	Amended	37 M	119

[illegible] in Section 15, T8S, R3E.

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;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

NONE

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ 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.

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

Dated this 17th day of July, 1955.

Roy Chamberlain [Seal]

Gertrude Chamberlain [Seal]

_____ [Seal]

I, Ruth E. Livingston certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Clifton W. Livingston who signed this agreement was then President (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.

Ruth E. Livingston

[Corporate Seal]

Docket Copy

EXPLORATION PROJECT CONTRACT
MINING RESEARCH CORPORATION
DOCKET NO. DMEA-2768

AMENDMENT NO. 4

It is agreed this 8th day of July, 1955, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Mining Research Corporation, hereinafter called the "Operator," that Contract Idm-E520 (Docket No. DMEA-2768), dated May 14, 1953, as amended, hereinafter called the "Contract," is further amended effective August 10, 1954, as follows:

1.(a) Work under the Contract shall be suspended during the period beginning February 15, 1955, and ending not later than Aug. 1, 1955.

(b) No costs incurred by the Operator during the period of suspension shall be allowable for contribution by the Government, and the Government shall not contribute to any costs of rehabilitation or repair which, in its opinion, would not have occurred if there had been no suspension of the work.

(c) The Operator at his own cost and expense, without contribution by the Government, during the period of suspension shall preserve and protect the project work and any property in which the Government has an interest.

2. The time fixed for the completion of the work is extended to April 14, 1956.

3. The maximum period for royalty payments and lien for the payment thereof, provided for in the Contract, is increased to "eleven years."

4.(a) In Annex I attached to the Contract, describing the land originally subject to the exploration project, the following amended descriptions

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AUG 11 1955

are added:

(1) Mining claims leased from Royce A. McElhaney:

		Book	Page
R.A.M. No. 2	Amended	31 M	289
	Amended	37 M	121

(2) Mining claims leased from John McKnight and James McKnight:

McKnight No. 2	Amended	31 M	291
	Amended	37 M	116
McKnight No. 3	Amended	31 M	291
	Amended	37 M	117
McKnight No. 5	Amended	31 M	290
	Amended	37 M	119

(b) In Amendment No. 1, paragraph 1.e., the following description is added to the description of claim R.A.M. No. 1:

		Book	Page
R.A.M. No. 1	Amended	31 M	289

The amended descriptions of the claims are shown on the map entitled "Mining Research Corp. Lion and McK Areas D.M.E.A. Contract Progress," attached hereto and made a part hereof.

5. Paragraph 3 of Amendment No. 3 is deleted.

6. Work Item (5) under Stage II of Exhibit "A", Amendment No. 1, is deleted.

7. Work Item (4) under Stage II of Exhibit "A", is further revised to read as follows:

Effective February 1, 1955, no holes shall be drilled closer than 150 feet to an outer boundary of the land described in the contract.

At locations acceptable to the Government, diamond core-drill (BX or larger) and wagon-drill holes shall be drilled, spaced not closer than 25 feet apart across major stratigraphic changes or structural breaks, as follows:

(a) From any existing grid hole, not more than 4 holes may be drilled. Not more than 2 of these 4 holes shall be diamond core drill holes.

(b) In addition, a line of 4 holes spaced not closer than 100 feet from the holes described in item (2) may be drilled. Not more than 2 of these 4 holes may be diamond core drill holes.

Not more than an aggregate of 5,000 feet of wagon drilling shall be drilled under Items (3) and (4); and not more than 1,000 feet of diamond core drilling shall be drilled under Item (4).

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

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O P Mitchell
Administrator, Defense Minerals
Exploration Administration

"Appd. Sol. Off."

MINING RESEARCH CORPORATION

By Elgin W. Livingston
President.

Ching J Hoover
Selfridge
Chandler
Hyman

See JHK's memo of noted Author

OCWEA

FEB 7 1955

No. 3

AMENDMENT OF CONTRACT: No. IDM-2520

Contract Docket No. DMMA 2768, dated May 14, 1953, between the United States of America and Mining Research Corporation is hereby amended as follows:

Referring to Amendment No. 1, dated August 10, 1954, that part which substituted a revised description of the work to be performed under Stage II of Exhibit "A" attached to Exploration Project Contract form MF-200(A) (February 1952), said Amendment No. 1, caption "Stage II" is amended as follows, effective as of August 10, 1954:

1. Referring to Page 2, item (1): third line, insert the words "not less than" between the word "spaced" and the figure "50"; fifth line, insert the word "approximately" between the word "in" and the letter "a"; last sentence, delete the words "require the prior approval of" and in lieu thereof substitute the words "must be acceptable to".

2. Referring to Page 2, item (2), delete the second paragraph in its entirety and in lieu thereof substitute the following: "Not more than an aggregate of 5000 feet of drilling shall be performed under items (1) and (2)."

3. Referring to Page 3, item (3), add the following: "The drilling under the foregoing items (1), (2) and (3) may be carried on concurrently".

4. Referring to Page 3, item (4), delete the first and second paragraphs in their entirety and in lieu thereof substitute the following:

"At locations acceptable to the Government, drill not more than 25 holes, spaced not closer than 25 feet apart across the break and not closer than 300 feet along the strike of the break, to locate the position of structural breaks which are inferred to exist. Such drilling for geologic information may be performed concurrently with drilling under items (1), (2) and (3)".

"Not more than an aggregate of 5000 feet of drilling shall be performed under items (3) and (4)".

5. Referring to Page 3, item (6), first paragraph, add the following: "The offset drill holes spaced 100 feet apart may be performed concurrently with the grid drilling".

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum".

Dated FEB 8 1955

MINING RESEARCH CORPORATION

By Clifton W. Livingston
~~J. Sterling Livingston~~
~~Vice President and Treasurer~~
Clifton W. Livingston
President

UNITED STATES OF AMERICA

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

Noted - See Memo 1/24/55 HCG

[illegible] OF THE INTERIOR
[illegible]
[illegible]

[illegible] 8 1955

No. 2

AMENDMENT OF CONTRACT: No. IDM-5,20

Contract Docket No. [illegible], dated May [illegible], 1953, between the United States of America and Mining Research Corporation is hereby amended as follows, effective as of the date of the contract:

> Referring to "ARTICLE A" attached to Exploration Project Contract Form MF-200(A) (February 1952), caption "Description of the Work", the second paragraph is deleted in its entirety and in lieu thereof substitute the following:
>
> The work is divided into two stages and each stage will be performed in different areas. The work under both stages may be carried on concurrently and progressively contingent upon the specific conditions relative thereto.
>
> Referring to "Article C. Reimbursement by Operator of Exploration Project Contract Form MF-200(A) (February 1952) the matter thereunder and pertaining thereto is deleted in its entirety and in lieu thereof the provisions of ANNEX II, attached hereto and made a part hereof, are substituted.

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum".

Dated DEC 31 1954

MINING RESEARCH CORPORATION

By J. Sterling Livingston
J. Sterling Livingston,
Vice President and Treasurer

UNITED STATES OF AMERICA

By W. H. King
W. H. King, Executive Officer,
DMM Field Team, Region IV

Seal

DEPARTMENT OF THE INTERIOR
Bureau of Minerals Administration
RECEIVED
JAN - 7 1955

ANNEX II

The following provisions are in lieu of Article 6 :

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 the Operator has rendered the final report and final account, 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, for 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 raw 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 thereof 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 ($1\frac{1}{2}$) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half ($\frac{1}{2}$) 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 ($1\frac{1}{2}$) percent; on an amount of ten dollars ($10.00) per ton, three and one-half ($3\frac{1}{2}$) percent.)

f. 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.

g. 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.

h. 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 mining or production operations.

i. 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.

58694

e. The claim RAM No. 1, leased by Royce A. McElhaney to Mining Research Corporation by an instrument dated August 1, 1952. The Owner's Consent to Lien is attached.

All the above land is located in Sections 10, 15, 22, and 27, Township 8 South, Range 3 East, Black Hills Base and Meridian.

The land is shown on the map entitled "Property Map, Mining Research Corp., Docket #2768, Idm-E520," attached hereto and made a part hereof.

2. The work described under Stage II of Exhibit "A" and the agreed unit costs for said work set forth in said exhibit are deleted. The following new work and the costs thereof are set forth as Stage II:

Stage II

The areas in which the work shall be performed under this stage are shown on the map entitled "Geologic Map and Section, Mining Research Corporation, Mining Area," attached hereto and made a part hereof.

Lion Claim Group

(1) In the Lion claim area, within the area enclosed by the dashed red colored lines on the attached map, drill two lines of wagon-drill holes, with the holes spaced 50 feet apart, and with the lines being not less than 300 feet apart and being about 1,600 feet long each, in a North 55° East direction. The locations of these drill-hole lines require the prior approval of the Government.

(2) If approved in advance by the Government, a part or all of the remaining area described in item (1) shall be drilled with a wagon drill on a grid spacing of 100 feet by 300 feet.

Not more than 100 wagon-drill holes, nor more than an aggregate of 5,000 feet of hole, shall be drilled under items (1) and (2).

(3) If approved in advance by the Government, drill offset holes spaced 100 feet apart surrounding primary holes drilled under items (1) and (2), or holes subsequently drilled, which indicate mineralization or geologic favorability.

(4) If approved in advance by the Government, drill a limited number of offset holes spaced not less than 25 feet apart surrounding holes in which ore is found or between holes where a structural break is indicated.

Not more than 100 wagon-drill holes, nor more than an aggregate of 5,000 feet of hole, shall be drilled under items (3) and (4).

(5) Occasional diamond-drill holes, not less than EX size, shall be drilled for geological data as specified in advance by the Government. Not more than an aggregate of 1,000 feet of diamond-drill hole shall be drilled under this item.

Sheep Canyon Area

(6) In the Sheep Canyon area, within the Areas I and II shown on the attached work map, drill wagon-drill holes on a grid spacing of 100 by 300 feet. If approved in advance by the Government, this drilling shall be followed by drilling offset holes spaced 100 feet apart surrounding primary holes which indicate mineralization or geologic favorability. Not more than 10,000 feet of wagon drilling shall be performed under this item.

Occasional diamond-drill holes, not less than EX size, shall be drilled for geological data, as specified by the Government. Not more than 2,000 feet of diamond drilling shall be performed under this item.

(7) After the work in item (6) is completed, if approved in advance by the Government, not to exceed an aggregate of 10,000 feet of wagon-drill hole shall be drilled within Area III of the Sheep Canyon area, on the same grid spacing as set forth under item (6).

All hole locations and directions; all wagon-drill hole diameters; all hole depths; the method of recovering drill cuttings, core, and sludge; the method

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Dakota, County of Fall River, described as follows:1/

	Township		Book	Page					
Lien No. 1	T8S,	R3E	3M	412	Lien No. 9	T8S,	R3E	3M	420
Lien No. 2	"	"	"	413	Lien No. 10	"	"	"	421
Lien No. 3	"	"	"	414	Lien No. 11	"	"	"	422
Lien No. 4	"	"	"	415	Lien No. 12	"	"	"	423
Lien No. 5	"	"	"	416	Lien No. 13	"	"	"	424
Lien No. 6	"	"	"	417	Lien No. 14	"	"	"	425
Lien No. 7	"	"	"	418	Lien No. 15	"	"	"	426
Lien No. 8	"	"	"	419	Lien No. 16	"	"	"	427
					Lien No. 17	"	"	"	428
					Lien No. 18	"	"	"	429

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Mining Research Corporation

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 52,873.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this _____ day of _____, 195 ___.

James L. Barker [Seal]
James L. Barker

_____ [Seal]

_____ [Seal]

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ The maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

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

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator 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 at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

Interior--Duplicating Section, Washington, D. C.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of [illegible], County of [illegible], described as follows:1/

[illegible] 1, [illegible]	31	70
[illegible] 2, [illegible]	31	~~76~~ 77
[illegible] 3, [illegible]	31	70
[illegible] 20, 31, [illegible]		

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ [illegible]

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 40,000.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 9 day of December, 195 3.

Carl V. Gull [Seal]

[illegible] for Carl V. Gull

Earl [illegible] & Vernon Harriott [Seal]

[Seal]

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

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

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator 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 at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of SOUTH DAKOTA, County of FALL RIVER, described as follows:1/

	Recorded Book	Page
SHEEP CANYON		
LODE MINING CLAIMS, NO. 9 THROUGH 14	31	322-324
SHEEP CANYON		
LODE MINING CLAIMS, NO. 18 THROUGH 33	31	~~322-324~~ 502-510
ALL LOCATED IN T6S, R3E, B.H.M.		

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ LEGUNO RESEARCH CORPORATION

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 60,000.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 9 day of December, 195 3.

Carl V. Gull [Seal]
CARL V. GULL

[Seal]

Robert E. Gull [Seal]
ROBERT E. GULL

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

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

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator 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 at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of SOUTH DAKOTA, County of FALL RIVER, described as follows:1/

Mining Claim RAM No. 1 in Section 15, T 8 S, R 3 E

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ MINING RESEARCH CORPORATION

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ _____, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 29 day of January, 195 4.

Royce A. McElhaney [Seal]
ROYCE A McELHANEY

_____ [Seal]

_____ [Seal]

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

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

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator 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 at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of SOUTH DAKOTA, County of FALL RIVER, described as follows:1/

Deeded land located in T6S., R. 3E. Section 26; the NW ¼, the N ½ of the NE ¼ the SW ¼ of the NE¼, the W ½ of the SE ¼, the N ½ of the SW¼, and the SE¼ of the SW ¼ Section 27; the E ½ of the NE¼, the SW ¼ of the NW¼, the SE ¼, and SW¼, and the SW¼, of the NW¼. Section 34; the N ½. Section 35; the N ½ of the NW ¼, and NW ¼ of the NE¼

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ MINING RESEARCH CORPORATION

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$48,000.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 7 day of December, 195 3.

Robert E. Gull [Seal]
Robert E. Gull

[Seal]

[Seal]

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

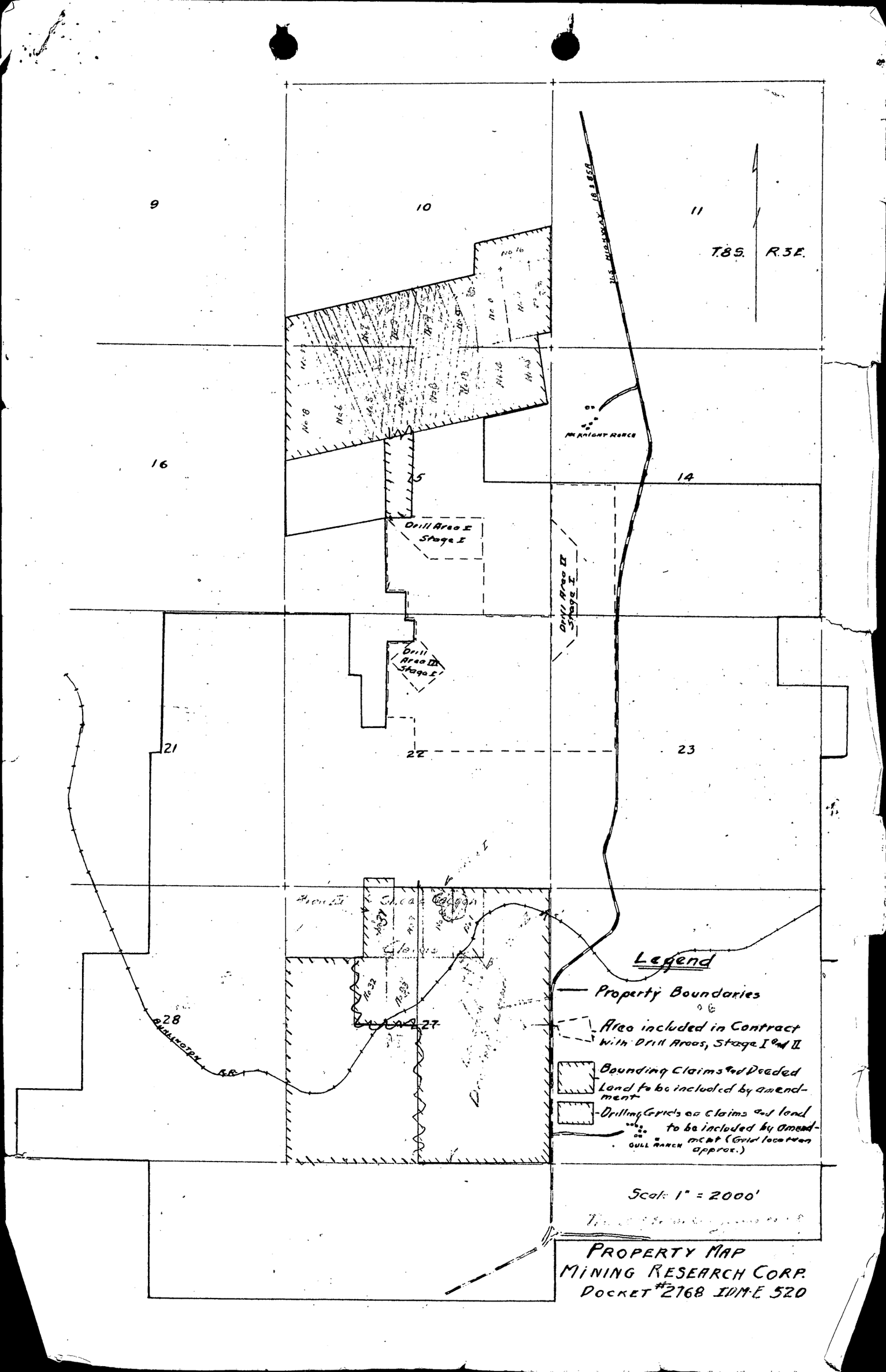
(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator 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 at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.



PROPERTY MAP
MINING RESEARCH CORP.
DOCKET #2768 IDM-E 520

ASSIGNMENT OF LEASE

KNOW ALL MEN BY THESE PRESENTS: that whereas under date of June 17, 1958, Robert E. Gull, as lessor, executed and delivered to Matthew J. Brown, as lessee, the assignor herein, a lease covering the following described real estate in Fall River County, South Dakota, namely:

Section 34: N½, Section 27: S½SW¼, E½SE¼, S½NE¼, and NE¼NE¼

Section 35: N½N½, Section 26: SW¼SW¼, N½SW¼, NW¼NW¼, S½NW¼

all in township 8 South, range 3, East B. H. M. and

The unpatented lode mining claims known and described as follows, located in the NE¼NW¼ of Section 26, township 8 south, range 3, E. H. B. M, in Fall River County, South Dakota:

Gull 1A, Gull 4A and Gull 5A

which said lease was recorded in the office of the register of deeds, Fall River County, South Dakota, on March 2. 1959, in book 44 Miscellaneous, page 32, and hereby referred to for all purposes.

NOW, THEREFORE, I, Matthew J. Brown, assignor, of Edgemont, Fall River County, South Dakota, in consideration of the sum of twenty thousand dollars ($20,000) cash to me in hand paid by the following named assignee, receipt of which is hereby acknowledged, have granted, sold, transferred, and assigned, and do hereby grant, sell, transfer and assign to Montana Chemical & Milling Corporation, assignee, of Edgemont - Fall River County, State of South Dakota, the lease above described, together with all my right, title and interest that I have in said lands by virtue of said lease and all rights, title and interests purported to be created thereby, insofar as said lease covers the lands and claims above described, subject however to the hereinafter set forth reservation and exception.

To have and to hold unto said assignee, his heirs, legal representatives successors and assigns in accordance with the terms and provisions of said lease.

It is understood and agreed by assignor and assignee, their respective assigns and successors in interest that if any DMEA loan should be adjudged due or owing on or from any of the property or claims above described, and such DMEA loan has to be repaid, in addition to the consideration set forth in the above lease to be paid the lessor above named, five per cent (5%) of the gross sales of ores, bonus, minerals or mineral substances, including uranium bearing ores and fissionable materials, produced, saved and marketed

See Region II memo to O.C. 2/19/60

TO: SOUTHERN HILLS BANK
EDGEMONT, SOUTH DAKOTA
and
U. S. ATOMIC ENERGY COMMISSION
GRAND JUNCTION, COLORADO

A S S I G N M E N T O F I N T E R E S T

KNOW ALL MEN BY THESE PRESENTS: That for and in consideration of financial assistance in the form of an operational loan from Matthew J. Brown, MONTANA CHEMICAL & MILLING CORP. of Edgemont, South Dakota, ASSIGNOR, does hereby assign unto MATTHEW J. BROWN of Edgemont, South Dakota, ASSIGNEE, all its interest as hereinafter set forth in the bonus forthcoming under Certification No. C -C-805 on the Gull Lease and on any future Certification that may apply to the Gull Lease No. 1, Fall River County, South Dakota, as follows: 85% of the total bonus receipts to be paid to Matthew J. Brown up to a maximum of $15,000.00; the other 15% to be paid to Robert E. Gull as per mineral lease covering said property.

AND the Assignor authorizes the A. E. C. to forward all bonus payments under the above certification number to the Southern Hills Bank of Edgemont, South Dakota, said bank to act as Trustee in handling said funds, and to distribute said funds when received according to schedule as above set forth.

This authorization to remain effective until the bonus is used up under said certification number and to apply against any future certification on Gull Lease No. 1 or until the maximum of $15,000.00 has been paid to the above named Assignee.

Dated at Edgemont, South Dakota, this 25th day of November, 1958.

MONTANA CHEMICAL & MILLING CORP.

By Marian G. Rolf-Secretary

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

On this the 25th day of November, 1958, before me, the undersigned Notary Public within and for said County and State, personally appeared Marian G. Rolf, Sec. and _____ who acknowledged themselves to be the Secretary and _____ respectively, of MONTANA CHEMICAL & MILLING CORP., a corporation, and that they, as such officers, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by themselves as such officers.

Paul H. Russell
Notary Public

My commission expires 1-8-61.

- C O P Y -

May 27 1957

L E A S E

PARTIES: The parties to this agreement are Robert E. Gull, hereinafter referred to as Lessor, and MONTANA CHEMICAL & MILLING CORP., hereinafter referred to as Lessee.

PURPOSE: The purpose of this covenant is to grant to the Lessee the right to mine, explore and develop the properties hereinafter described and herein leased, for minerals that may be found thereon or therein, and to set forth the rights, duties and obligations on the part of each party to this agreement; and the Lessor does hereby lease and grant to the Lessee the mining properties hereinafter described, for the purpose of exploring, developing and mining the same, for minerals that may be found thereon or therein, except gas and oil.

PROPERTY: The property herein leased is described as follows:

Sec. 22: SE¼, S½NE¼
Sec. 23: NW¼, N½SW¼ & SW¼SW¼
and
The unpatented lode mining claims in SE¼SW¼ of said Sec. 23; known and described as Gull 2A and Gull 3A,

All of the above being in Township 8 S., R. 3, East B. H. M., Fall River County, South Dakota.

WARRANTIES BY LESSOR: The Lessor warrants that he is the owner of the above described premises; that there are no other surface owners who have any right to any interest in said properties; that he has rights of way in and to the properties herein leased for all purposes connected with mining, exploration, drilling and/or development. The Lessor covenants that he is under no disability that would impair his right to execute this lease and agreement. The Lessor also warrants that there are no conflicting claims.

CONSIDERATION: The Lessee for the execution of this agreement has paid the sum of $10.00 as initial consideration, receipt of which is hereby acknowledged, and agrees to pay to the Lessor a sum of money equal to 15% (fifteen per cent) of the amounts received from the sale of ores produced from said premises, less haulage and development allowances, but including bonuses, until the bonuses are used up, at which time the percentage will revert to 10% to be paid by the Lessor on all sums received from the sale of ores from said premises, excluding haulage and development. Payment shall be made to the Lessor within ten (10) days of receipt of returns by the Lessee.

TERM: The term of this lease and agreement shall be one year from and after date, and as long thereafter as either exploration, development and/or mining are in progress thereon; and it is expressly understood and agreed by and between the parties hereto that the Lessee shall not be penalized for possible shut-downs not to exceed ninety (90) days.

SHUT-DOWNS: If shut-downs are forced upon the Lessee of more than ninety days through circumstances beyond his control, i.e., if the processing mill should be shut down, if the A. E. C. or mill is not purchasing ores, etc., the Lessee shall have the right to keep this lease in force upon payment of $.50 per acre per year as advance royalties to be applied against future mining royalties. In case no production has been accomplished before such shut-down, then the 50¢ per acre payment shall be considered as rental only, and not as advance royalty.

REPORTS: The Lessee shall furnish the Lessor with true copies of all smelter or reduction returns on any and all minerals and/or materials produced from said property at the time of payment of receipts to Lessor.

WARRANTIES BY LESSEE: The Lessee covenants that he will, immediately after the commencement of this lease, commence active exploration, development or mining upon the premises above leased; he covenants that he will save the Lessor harmless from any claims or damages arising out of his operations; the Lessee agrees that he will repair and keep in repair any and all fences that may become damaged in any way by Lessee's operations on said leased premises, and agrees to exercise all possible caution so that no livestock will be injured as a result of Lessee's mining operations on said premises, and agrees to pay Lessor any damages to livestock arising out of said operations; Lessee further agrees to sell any ore or ores under their own name; and the Lessee may terminate this lease and agreement when in their opinion it is uneconomical to proceed further with the purpose and requirements of this lease. Upon reaching such decision, the Lessee shall give written notice to the Lessor of such intention to terminate, by registered mail, shall execute, record and deliver to Lessor a release of said premises, shall pay all accrued rentals and/royalties required under this lease, and any other sums due and payable to Lessor. Lessee agrees to perform his mining operations in a good workmanlike manner to preserve said premises for future mining or use by Lessor. Lessee agrees to carry Workmen's Compe nsation insurance to protect the Lessor from any claims or damages that might arise in regard to employees of said Lessee. Locations for all roads and mining excavations shall be made by mutual consent. There shall be no work done in the fields except after crops are harvested, unless parties hereto agree mutually.

SUB-CONTRACT: The Lessee shall have the right to sub-contract mining operations under this lease. Lessee shall furnish Lessor with copies of any and all sub-contracts entered into under this lease.

BUILDINGS: The Lessor hereby grants to the Lessee the right to install, build or erect structures and facilities necessary to the successful conduct of his mining operations, and also the right to remove the same at the end of this lease.

SPRINGS: Any and all springs on the premises are to be protected, and it is understood and agreed that the 40 acre tract around the home of Robert E. Gull is not included in this lease.

VIOLATIONS: If any violation or default of the terms of this contract and agreement shall occur other than acts of God, Lessor shall give notice in writing by certified mail to the Lessee, and Lessee shall have thirty (30) days in which to correct any such default.

ASSESSMENT WORK: Lessee agrees that he will perform any and all assessment work necessary on any unpatented lode mining claims on the premises leased herein, will record affidavit or affidavits of assessment if necessary to keep the properties valid, and will give any such affidavits to the Lessor after recording.

LOW-GRADE ORES: Lessee agrees to save and stockpile any and all low-grade ores that cannot be sold by them, where the grade of ore appears to be of some future value, and at the termination of this lease and agreement, such ores shall become the sole property of the Lessor herein.

TERMINATION: Lessee shall have the right to terminate this lease and agreement as set out above.

PRODUCTION LIEN: It is understood and agreed by and between the parties hereto that the premises covered by this lease are subject to a lien on all minerals produced therefrom, in favor of the Office of Minerals Exploration, formerly Defense Minerals Exploration Administration, which lien is identified as follows: Docket No. DMEA-2768 (Uranium), Contract Idm-E520, and that the basis for computing DMEA royalty payments is as follows:

When Value Per Dry Ton Is:		Royalty Payments Are:	
$ 0.01 - $8.49		1.5%	
8.50 - 8.99		2.0	
9.00 - 9.49		2.5	of
9.50 - 9.99	Then	3.0	"Gross Proceeds"
10.00 - 10.49		3.5	
10.50 - 10.99		4.0	
11.00 - 11.49		4.5	
11.50 - and over		5.0	

and that the buyers of any ore or ores produced from said premises shall withhold the royalty payments as per schedule and remit such royalty payments directly to : Office of Minerals Exploration, 224 New Customhouse, Denver 2, Colorado.

PARTIES BOUND: This agreement shall be and is binding upon the parties hereto, their heirs, executors, administrators,

legal representatives, agents, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals this 27th day of May, 1959.

ss/ Robert E. Gull

Robert E.Gull, LESSOR

MONTANA CHEMICAL & MILLING CORP.,

By _____
LESSEE

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

On this the 27th day of May, 1959, before me, the undersigned Notary Public within and for said County and State, personally appeared Robert E. Gull, known to me to be the person whose name is subscribed to the within and foregoing instrument and acknowledged to me that he executed the same.

ss/ Paul H. Russell

Notary Public

My commission expires 1-8-61.

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

On this the 27th day of May, 1959, before me, the undersigned Notary Public within and for said County and State, personally appeared _____ who acknowledged ___self to be the _____ of MONTANA CHEMICAL & MILLING CORP., a corporation, and that __he as such officer, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by h__self as _____ _____.

In Witness Whereof, I hereunto set my hand and official seal.

_____
Notary Public

My commission expires _____.

- C O P Y -

L E A S E

PARTIES: The parties to this agreement are Robert E. Gull, hereinafter referred to as Lessor, and MONTANA CHEMICAL & MILLING CORP., hereinafter referred to as Lessee.

PURPOSE: The purpose of this covenant is to grant to the Lessee the right to mine, explore and develop the properties hereinafter described and herein leased, for minerals that may be found thereon or therein, and to set forth the rights, duties and obligatiojs on the part of each party to this agreement; and the lessor does hereby lease and grant to the Lessee the mining properties hereinafter described, for the purpose of exploring, developing and mining the same, for minerals that may be found thereon or therein, except gas and oil.

PROPERTY: The property herein leased is described as follows: Sec. 28: S ½NE¼, NE¼SE¼; Sec. 27: SW¼NW¼, N½SW¼, & W½SE¼; all in Township 8 South, Range 3 East B.H.M., in Fall River County, South Dakota.

WARRANTIES BY LESSOR: The Lessor warrants that he is the owner of the above described premises; that there are no other surface owners who have any right to any interest in said properties; that he has rights of way in and to said properties herein leased for all purposes connected with mining, exploration, drilling and/or development. The Lessor covenants that he is under no disability that would impair his right to execute this lease and agreement. The Lessor also warrants that there are no conflicting claims.

CONSIDERATION: The Lessee for the execution of this agreement has paid the sum of $10.00 as initial consideration, receipt of which is hereby acknowledged, and agrees to pay to the Lessor a sum of money equal to 15% (fifteen per cent) of the amounts received from the sale of ores produced from said premises, less haulage and development allowances, but including bonuses, until the bonuses are used up, at which time the percentage will revert to 10% to be paid by the Lessor on all sums received from the sale of ores from said premises, exclusing haulage and development. Payment shall be made to the Lessor within ten (10) days of receipt of returns by the Lessee.

TERM: The term of this lease and agreement shall be one year from and after date, and as long thereafter as either exploration, development and/or mining are in progress thereon; and it is expressly understood and agreed by and between the parties hereto that the Lessee shall not be penalized for possible shut-downs not to exceed ninety (90) days.

COPY

LEASE

PARTIES: The parties to this agreement are Robert E. Gull, hereinafter referred to as lessor, and MOUNTAIN MINERAL & MILLING CORP., hereinafter referred to as lessee.

PURPOSE: The purpose of this covenant is to grant to the lessee the right to mine, explore and develop the proposition hereinafter described and herein leased, for minerals that may be found thereon or therein, and to set forth the rights, duties and obligations on the part of each party to this agreement; and the lessor does hereby lease and grant to the lessee the mining properties hereinafter described, for the purpose of exploring, developing and mining the same, for minerals that may be found thereon or therein, except gas and oil.

PROPERTY: The property herein leased is described as follows:
Sec. 20: S SW¼, NW¼SW¼; Sec. 27: NW¼NW¼, NE¼NE¼, S NE¼; all in Township 8 South, Range 3 East B.M.M., in Tell River County, South Dakota.

WARRANTIES BY LESSOR: The lessor warrants that he is the owner of the above described premises; that there are no other surface owners who have any right to any interest in said properties; that he has rights of way in and to said properties herein leased for all purposes connected with mining, exploration, drilling and/or development. The lessor covenants that he is under no disability that would impair his right to execute this lease and agreement. The lessor also warrants that there are no conflicting claims.

CONSIDERATION: The lessee for the execution of this agreement has paid the sum of $10.00 as initial consideration, receipt of which is hereby acknowledged, and agrees to pay to the lessor a sum of money equal to 10% (fifteen per cent) of the amounts received from the sale of ores produced from said premises, less haulage and development allowances, purchasing bonuses, until the bonuses are used up, at which time the percentage will revert to 10% to be paid by the lessor on all sums received from the sale of ores from said premises, excluding haulage and development. Payment shall be made to the lessor within ten (10) days of receipt of returns by the lessee.

TERM: The term of this lease and agreement shall be one year from and after date, and as long thereafter as either exploration, development and/or mining are in progress thereon; and it is expressly understood and agreed by and between the parties hereto that the lessee shall not be required for possible shut-downs not to exceed ninety (90) days.

SHUT-DOWNS: If shut-downs are forced upon the Lessee of more than ninety days through circumstances beyong his control, i.e., if the processing mill should be shut down, if the A. E. C. or mill is not purchasing ores, etc., the Lessee shall have the right to keep this lease in force upon payment of $.50 per acre per year as advance royalties to be applied against future mining royalties. In case no production has been accomplished before such shut-down, then the 50¢ per acre payment shall be considered as rental only, and not as advance royalty.

REPORTS: The Lessee shall furnish the Lessor with true copies of all smelter or reduction returns on any and all minerals and/or materials produced from said property at the time of payment of receipts to Lessor.

WARRANTIES BY LESSEE: The Lessee covenants that he will, immediately after the commencement of this lease, commence active exploration, development or mining upon the premises above leased; he covenants that he will save the Lessor harmless from any claims or damages arising out of his operations; the Lessee agrees that he will repair and keep in repair any and all fences that may become damaged in any way by Lessee's operations on said leased premises, and agrees to exercise all possible caution so that no livestock will be injured as a result of Lessee's mining operations on said premises, and agrees to pay Lessor any damages to livestock arising out of said operations; Lessee further agrees to sell any ore or ores under their own name; and the Lessee may terminate this lease and agreement when in their opinion it is uneconomical to proceed further with the purpose and requirements of this lease. Upon reaching such decision, the Lessee shall give written notice to the Lessor of such intention to terminate, by registered mail, shall execute, record and deliver to Lessor a release of said premises, shall pay all accrued rentals and royalties required under this lease, and any other sums due and payable to Lessor. Lessee agrees to perform his mining operations in a good workmanlike manner to preserve said premises for future mining or use by Lessor. Lessee agrees to carry Workmen's Compensation insurance to protect the Lessor from any claims or damages that might arise out of or in regard to employees of said Lessee. Locations for all roads and mining excavations shall be made by mutual consent. There shall be no work done in the fields except after crops are harvested, unless parties hereto agree mutually.

SUB-CONTRACT: The Lessee shall have the right to sub-contract mining operations under this lease. Lessee shall furnish Lessor with copies of any and all sub-contracts entered into under this lease.

BUILDINGS: The Lessor hereby grants to the Lessee the right to install, build or erect structures and facilities necessary to the successful conduct of his mining operations, and also the right to remove the same at the end of this lease.

SHUT-DOWNS: If shut-downs are forced upon the lessee of more than ninety days through circumstances beyond his control, i.e., if the processing mill should be shut down, if the A. M. C. or mill in not workable ores, etc., the lessee shall have the right to keep this lease in force upon payment of $.50 per acre per year as advance royalties to be applied against future mining royalties. In case no production has been accomplished before such shut-down, then the 50¢ per acre payment shall be considered as rental only, and not as advance royalty.

INVOICES: The lessee shall furnish the lessor with true copies of all smelter or reduction returns on any and all minerals and/or materials produced from said property at the time of payment of receipts to lessor.

MAINTENANCE OF PREMISES: The lessee covenants that he will, immediately after the commencement of this lease, commence active exploration, development or mining upon the premises above leased; he covenants that he will save the lessor harmless from any claims or damages arising out of his operations; the lessee agrees that he will repair and keep in repair any and all fences that may become damaged in any way by lessee's operations on said leased premises, and agrees to exercise all possible caution so that no livestock will be injured as a result of lessee's mining operations on said premises, and agrees to pay lessor any damages to livestock arising out of said operations; lessee further agrees to sell ore or ores under their own name; and the lessee may terminate this lease and agreement when in their opinion it is uneconomical to proceed further with the purpose and requirements of this lease. Upon reaching such decision, the lessee shall give written notice to the lessor of such intention to terminate, by registered mail, shall execute, record and deliver to lessor a release of said premises, shall pay all accrued rentals and royalties required under this lease, and any sums due and payable to lessor. Lessee agrees to perform his mining operations in a good workmanlike manner to preserve said premises for future mining or use by lessor. Lessee agrees to carry Workmen's Compensation insurance to protect the lessor from any claims or damages that might arise out of or in regard to employees of said lessee. Locations for all roads and mining excavations shall be made by mutual consent. There shall be no work done in the fields except after crops are harvested, unless parties hereto agree mutually.

SUB-CONTRACT: The lessee shall have the right to sub-contract mining operations under this lease. Lessee shall furnish lessor with copies of any and all sub-contracts entered into under this lease.

BUILDINGS: The lessor hereby grants to the lessee the right to install, build or erect structures and facilities necessary to the successful conduct of his mining operations, and also the right to remove the same at the end of this lease.

SPRINGS: Any and all springs on the premises are to be protected, and it is understood and agreed that the 40 acre tract around the home of Robert E. Gull is not included in this lease.

VIOLATIONS: If any violation or default of the terms of this contract and agreement shall occur other than acts of God, Lessor shall give notice in writing by certified mail to the Lessee, and Lessee shall have thirty (30) days in which to correct any such default.

ASSESSMENT WORK: Lessee agrees that he will perform any and all assessment work necessary on any unpatented lode mining claims on the premises herein leased, will record affidavit or affidavits of assessment if necessary to keep the properties valid, and will give any such affidavits to the Lessor after recording.

LOW-GRADE ORES: Lessee agrees to save and stockpile any and all low-grade ores that cannot be sold by them, where the grade of ore appears to be of some future value, and at the termination of this lease and agreement, such ores shall become the sole property of the Lessor herein.

TERMINATION: Lessee shall have the right to terminate this lease and agreement as set out above.

PRODUCTION LIEN: It is understood and agreed by and between the parties hereto that the premises covered by this lease are subject to a lien on all minerals produced therefrom, in favor of the Office of Minerals Exploration, formerly Defense Minerals Exploration Administration, which lien is identified as follows: Docket No. DMEA-2768 (Uranium), Contract Idm-E520, and that the basis for computing DMEA royalty payments is as follows:

WHen Value Per Dry Ton Is:		Royalty Payments Are:
$ 0.01 - $8.49		1.5%
8.50 - 8.99		2.0
9.00 - 9.49		2.5 of
9.50 - 9.99	Then	3.0 "Gross Proceeds
10.00 - 10.49		3.5
10.50 - 10.99		4.00
11.00 - 11.49		4.5
11.50 - and over		5.0

and that the buyers of any ore or ores produced from said premises shall withhold the royalty payments as per schedule and remit such royalty payments directly to: Office of Minerals Exploration, 224 New Customhouse, Denver 2, Colorado.

PARTIES BOUND: This agreement shall be and is binding upon the parties hereto, their heirs, executors, administrators,

WAIVER: Any and all rights on the premises are to be protected, and it is understood and agreed that the 40 acre tract around the home of Robert E. Gull is not included in this lease.

VIOLATION: If any violation or default of the terms of this contract the agreement shall occur other than acts of God, lessee shall give notice in writing by certified mail to the lessee, and lessee shall have ninety (90) days within which to correct any such default.

MAINTENANCE WORK: Lessee agrees that he will perform any and all necessary work necessary on any unpatented lode mining claims on the premises herein leased, will record affidavit or affidavits of assessment if necessary to keep the properties valid, and will give any such affidavits to the lessor after recording.

LOW-GRADE ORE: Lessee agrees to save and stockpile any and all low-grade ores that cannot be sold by them, where the grade of ore appears to be of some future value, and at the termination of this lease and agreement, such ores shall become the sole property of the lessor herein.

TERMINATION: Lessee shall have the right to terminate this lease and agreement as set out above.

EXPLORATION LAW: It is understood and agreed by and between the parties hereto that the premises covered by this lease are subject to a lien on all minerals produced therefrom in favor of the Office of Mineral Exploration, Formerly Colorado Mineral Exploration Administration, which lien is identified as follows: Docket No. MMA-7705 (Uranium), Contract IdA-2520, and that basis for computing DMA royalty payments is as follows:

Mean Value Per Dry Ton Is:		Royalty Payment Are:
$ 0.01 - $8.49		1.5%
8.50 - 8.99		2.0
9.00 - 9.49		2.5
9.50 - 9.99	Then	3.0 of Gross Proceeds
10.00 - 10.49		3.5
10.50 - 10.99		4.00
11.00 - 11.49		4.5
11.50 - and over		5.0

and that the buyers of any ore or ores produced from said premises shall withhold the royalty payments as per schedule and remit such royalty payments directly to: Office of Mineral Exploration, 884 Sherman, Denver 2, Colorado.

BINDING EFFECT: This agreement shall be made binding upon the parties hereto, their heirs, executors, administrators,

legal representatives, agents, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals this 27th day of May, 1959.

ss/ Robert E. Gull

Robert E. Gull, LESSOR

MONTANA CHEMICAL & MILLING CORP.,

By _____

LESSEE

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

On this the 27th day of May, 1959, before me, the undersigned Notary Public within and for said County and State, personally appeared Robert E. Gull, known to me to be the person whose name is subscribed to the within and foregoing instrument and acknowledged to me that he executed the same.

ss/
Paul H. Russell
Notary Public

My commission expires 1-8-61.

STATE OF SOUTH DAKOTA)
SS. ACKNOWLEDGMENT BY CORPORATION
COUNTY OF FALL RIVER)

On this the 27th day of May, 1959, before me, the undersigned Notary Public within and for said County and State, personally appeared _____, who acknowledged ____ self to be the _____ of MONTANA CHEMICAL & MILLING CORP., a corporation, and that __ he as such officer, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by h___ self as _____.

In Witness Whereof, I hereunto set my hand and official seal.

ss/

Notary Public

My commission expires _____.

- C O P Y -

KNOW YE ALL MEN PRESENTS: That in consideration of the fact that Robert E. Gull delivers two (2) new leases to Montana Chemical & Milling Corporation, dated May 27, 1959, Montana Chemical & Milling Corporation agrees to pay a sum equivalent to the amount due to the Department of Interior of the United States Government for the D. M. E. A. loan which is represented to be $2615.32, in the following manner: by Montana Chemical & Milling Corporation paying $1000.00 and by Matthew J. Brown advancing, for the account of Montana Chemical & Milling Corporation, the balance.

Montana agrees to repay Matthew J. Brown the advance made to Gull at the rate of 20% of any ore payments, development allowance etc. received from Mines Development, Inc., from the Gull or Runge leases that may now be held or acquired in the future, until the advance is repaid.

Montana Chemical & Milling Corp.

By: J. C. Wooten, Pres.

Marian G. Rolf, Sec.

MF-206 (A)
(February 1952)

DOCKET NO. DMEA-[illegible]

COMMODITY Uranium

Docket Copy
IDM-E 520

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

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this 14th day of May, 1953 between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Mining Research Corporation, a Delaware corporation
4_15 [illegible] Street
Wheatridge, Colorado

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of South Dakota, County of Fall River, described as follows:[3] The property is located approximately [illegible] miles Northeast of Edgemont and is in Sections 14, 15, 22, and 23, Township [illegible] South, Range 3 East, B.H.B.M. The land is shown in part on the map, Exhibit "B," and is further described in Annex I, both attached to and made a part of this contract,
the Operator represents and undertakes:[4]

~~(a) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:~~

(b) That the Operator is a lessee, in possession and entitled to possession, and the Owners' Consents to Lien are ~~Owner's Consent to Lien~~ is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 15 days from the date of this contract shall commence work on a project of exploration for[5] Uranium in or upon the described land; and shall bring the project to completion within a period of [illegible] months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay [illegible] percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $47,505.70, which is [illegible] percent of $[illegible], the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or 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 ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

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

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* The repayment provisions of Article 6 shall apply also to any amounts received as bonuses, premiums, or allowances in addition to the sale price or market value of the minerals.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C. Mittendorf
Acting Administrator, Defense Minerals Exploration Administration

MINING RESEARCH CORPORATION
(Operator)

By J. Sterling Livingston
Vice President and Treasurer

I, Ruth E. Livingston, certify that I am the duly elected secretary of the corporation named as Operator herein; that J. Sterling Livingston, Vice President and Treasurer, 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.

Ruth E. Livingston [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

selected by agreement between the Operator and the Government based upon the results of the work done under Stage I and data obtained from radiometric surveys made independently by the Operator.

The work consists of drilling, from the surface, an aggregate total not to exceed 30,000 feet of wagon drill hole; and also drilling, from the surface, an aggregate total not to exceed 3,000 feet of diamond drill hole, BX size or larger. The wagon drill hole spacing shall be the same as described under Stage I, unless modified with the prior approval of the Government.

All hole locations and directions, all wagon drill hole diameters, all hole depths, the methods of recovering drill cuttings, cores, and sludge, the method of all sampling, and the method of analyzing samples are all subject to the approval of the Government.

At the request of the Government, the Operator shall furnish the Government with such samples as it specifies.

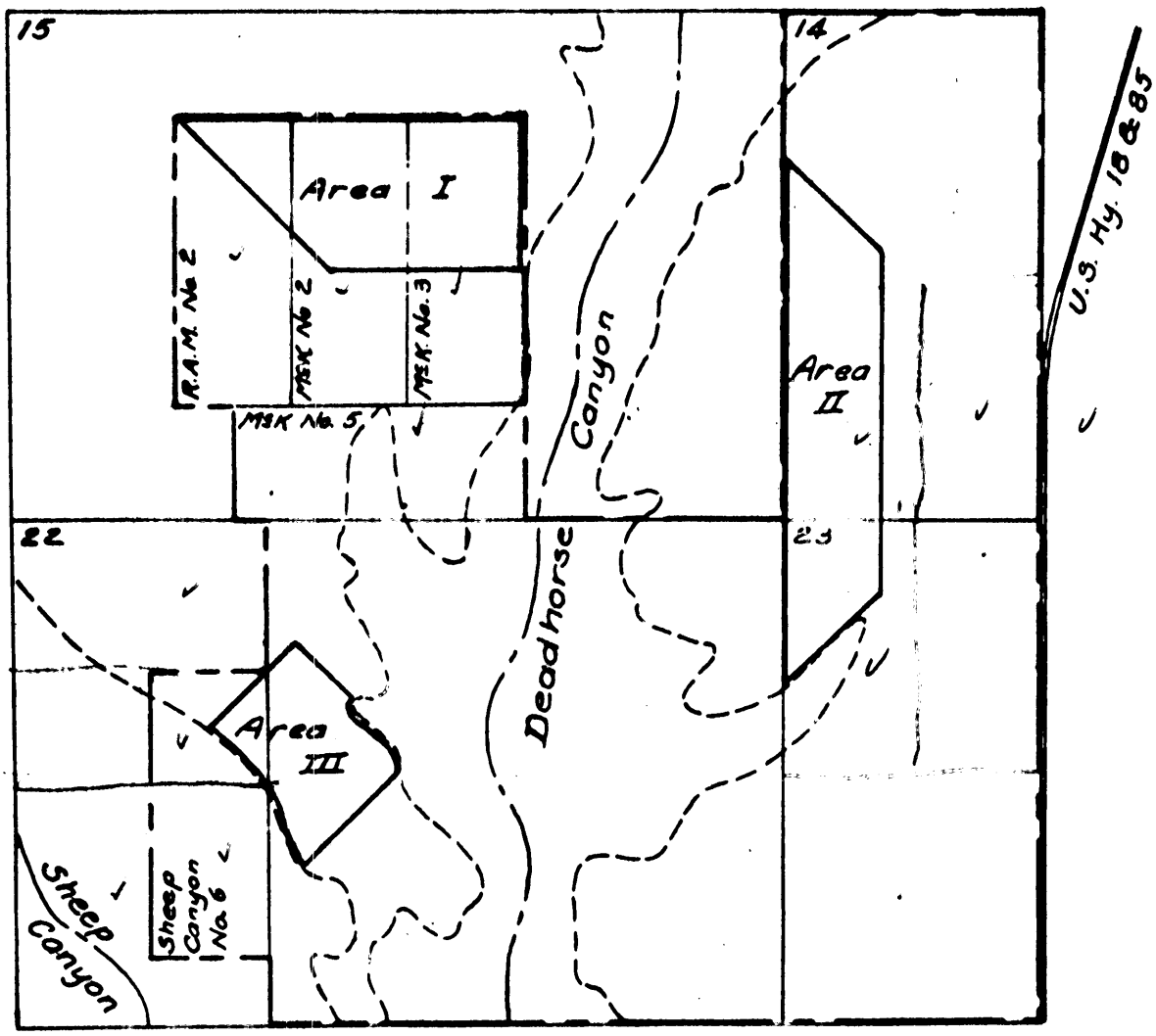
Agreed Unit Costs

STAGE I

14,770 feet of wagon drill hole @ $0.87/ft.	$12,849.90	
1,595 feet of diamond drill hole @ $3.03/ft.	4,832.85	$17,682.75

STAGE II

30,000 feet of wagon drill hole @ $0.87/ft.	$26,100.00	
3,000 feet of diamond drill hole @ $3.03 ft.	9,090.00	$35,190.00
Agreed Estimated Total Cost of Project (rounded)		$52,873.00
Government Participation @ 90%		$47,585.70



PORTION OF SECTIONS 14, 15, 22, 23,
T. 8 S., R. 3 E., FALL RIVER COUNTY, S.D.,
SHOWING DRILL AREAS

Outline of area covered by application ——— - ———

Outline of mesa rims - - - -

Outline of Stage I drill areas ———

Scale: 1" = 1000'

EXHIBIT B

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Dakota, County of Fall River, described as follows:1/

Mining claims McK. Nos. 1, 2, 3, 4, & 5, in Section 15, T. 8 S., R. 3 E.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 61,969.14, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 4 day of April, 1953.

John McKnight [Seal]
John McKnight

[Seal]

James McKnight [Seal]
James McKnight

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Dakota, County of Fall River, described as follows:1/

Deeded land E ½ of the SW ¼ and the SE ¼ of Section 14, T.8 S., R. 3 E.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 61,969.14, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 15 day of April, 195 3.

_____ [Seal]
Edna McKnight
_____ [Seal]
Edna Mc Knight [Seal]

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

Box 621
Igloo, S. Dak.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Dakota, County of Fall River, described as follows:1/

Mining Claim R. A. M. No. 3, T. 8 S., R. 3 E.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 61,969.14, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 9th day of April, 1953.

Royce A. McElhaney [Seal]
Royce A. McElhaney

[Seal]

[Seal]

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Dakota, County of Fall River, described as follows:1/

Mining claims Sheep Canyon No. 4 and 5, T. 8 S., R. 3 E.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 61,969.14, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 7th day of April, 1953.

Carl V. Gull [Seal]
Carl V. Gull

[Seal]

Robert E. Gull [Seal]
Robert E. Gull

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Dakota, County of Fall River, described as follows:1/

Deeded land SE ¼ of Section 22,

And

Deeded land S ½, E ½ of the NW ¼, and SW ¼ of the NE ¼ of Section 23

all in T. 8 S., R. 3 E.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Mining Research Corporation

4215 Balsam Street

Wheatridge, Colorado

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 61,969.14, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 7th day of April, 1953.

Robert E. Gull [Seal]

Robert E. Gull [Seal]

[Seal]

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Dakota, County of Fall River, described as follows:1/

see O.G. April 15 for other land

Deeded land as follows:

the W 1/2 of the SW 1/4 of Section 14, and

the N 1/2 of the NE 1/4 of Section 22, T. 8 S., R. 3 E.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Mining Research Corporation

4215 Balsam Street

Wheatridge, Colorado

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 61,969.14, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this _____ day of _____, 195 ___.

_____ [Seal]

Edna McKnight

_____ [Seal]

_____ [Seal]

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

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

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator 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 at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Dakota, County of Fall River, described as follows:1/

Mining claim R.A.M. No. 2, in Section 15, T. 8 S., R. 3 E.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 61,969.14, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 4th day of March, 1953.

Royce A. McElhaney [Seal]
Royce A. McElhaney

[Seal]

[Seal]

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

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

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator 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 at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Dakota, County of Fall River, described as follows:1/

Mining claim Sheep Canyon No. 6, in Section 22, T. 8 S., R. 3 E.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 61,969.14, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 13 day of March, 1953.

Carl V. Gull [Seal]
Carl V. Gull

[Seal]

Robert E. Gull [Seal]
Robert E. Gull

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

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

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator 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 at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Dakota, County of Fall River, described as follows:1/

Deeded land as follows:

the S 1/2 of the NE 1/4 of Section 22, and

the W 1/2 of the NW 1/4 of Section 23, T. 8 S., R. 3 E.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Mining Research Corporation

4215 Balsam Street

Wheatridge, Colorado

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the minerals of the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 61,969.14, or ten years have elapsed from the date of the contract. c.w.f. REG

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 12 day of March, 1953.

Robert E. Gull [Seal]
Robert E. Gull

[Seal]

[Seal]

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

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

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator 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 at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

OME
DEPARTMENT OF THE INTERIOR
APR 22 1959
REGION III
DENVER, COLORADO
APR 30 1959
O.M.E.

L E A S E

PARTIES: The parties to this agreement are Robert E. Gull, hereinafter referred to as Lessor, and MONTANA CHEMICAL & MILLING CORP., hereinafter referred to as Lessee.

PURPOSE: The purpose of this covenant is to grant to the Lessee the right to mine, explore and develop the properties hereinafter described and herein leased, for minerals that may be found thereon or therein, and to set forth the rights, duties and obligations on the part of each party to this agreement; and the Lessor does hereby lease and grant to the Lessee the mining properties hereinafter described, for the purpose of exploring, developing and mining the same, for minerals that may be found thereon or therein, except gas and oil.

PROPERTY: The property herein leased is described as follows:

Sec. 22: SE¼, S½NE¼,
Sec. 23: N½, N½SW¼ & SW¼SW¼
and
The unpatented lode mining claims in S½SW¼ of said Sec. 23, known and described as Gull 2A and Gull 3A,

All of the above being in Township 8 S., R. 3, East B.H.M., Fall River County, South Dakota.

WARRANTIES BY LESSOR: The Lessor warrants that he is the owner of the above described premises; that there are no other surface owners who have any right to any interest in said properties; that he has rights of way in and to the properties herein leased for all purposes connected with mining, exploration, drilling and/or development. The Lessor covenants that he is under no disability that would impair his right to execute this lease and agreement. The Lessor also warrants that there are no conflicting claims.

CONSIDERATION: The Lessee for the execution of this agreement has paid the sum of $_____ as initial consideration, receipt of which is hereby acknowledged, and agrees to pay to the Lessor a sum of money equal to 15% (fifteen per cent) of the amounts received from the sale of ores produced from said premises, less haulage and development allowances, but including bonuses, until the bonuses are used up, at which time the percentage will revert to 10% to be paid the Lessor on all sums received from the sale of ores from said premises, excluding haulage and development. Payment shall be made to the Lessor within ten (10) days of receipt of returns by the Lessee.

TERM: The term of this lease and agreement shall be one year from and after date, and as long thereafter as exploration, development and mining are in progress thereon; and it is expressly understood and agreed by and between the parties hereto that the Lessee shall not be penalized for possible shut-downs not to exceed ninety (90) days.

SHUT-DOWNS: If shut-downs are forced upon the Lessee of more than ninety days through circumstances beyond his control,

E. N. Hartman
letter 4/27/59
to Carl H. Russell

LEASE
RECEPT E. GILL to MONTANA CHEMICAL

i.e., if the processing mill should be shut down, if the A.E.C. or mill is not purchasing ores, etc., the Lessee shall have the right to keep this lease in force upon payment of $ .50 per acre per year as advance royalties to be applied against future mining royalties. In case the production has been accomplished before such shut-down, then the 50¢ per acre payment shall be considered as rental only, and not as advance royalty.

REPORTS: The Lessee shall furnish the Lessor with true copies of all smelter or reduction returns on any and all minerals and/or materials produced from said property at the time of payment of receipts to Lessor.

WARRANTIES BY LESSEE: The Lessee covenants that he will, immediately after the commencement of this lease, commence active exploration, development or mining upon the premises above leased; he covenants that he will save the Lessor harmless from any claims or damages arising out of his operations; the Lessee agrees that he will repair and keep in repair any and all fences that may become damaged in any way by Lessee's operations on said leased premises, and agrees to exercise all possible caution so that no livestock will be injured as a result of Lessee's mining operations on said premises, and agrees to pay Lessor any damages to livestock arising out of said operations; Lessee further agrees to sell any ore or ores under their own name; and the Lessee may terminate this lease and agreement when in their opinion it is uneconomical to proceed further with the purpose and requirements of this lease. Upon reaching such decision, the Lessee shall give written notice to the Lessor of such intention to terminate, by registered mail, shall execute, record and deliver to Lessor a release of said premises, shall pay all accrued rentals and royalties required under this lease, and any [illegible] due and payable to Lessor. Lessee agrees to perform his mining operations in a good workmanlike manner to preserve said premises for future mining or use by Lessor. Lessee agrees to carry Workmen's Compensation insurance to protect the Lessor from any claims or damages that might arise in regard to employees of said Lessee. Locations for allroads and mining combinations shall be made by mutual consent. There shall be no work done in the fields except after crops are harvested, unless parties hereto agree mutually.

SUB-CONTRACT: The Lessee shall have the right to sub-contract mining operations under this lease. Lessee shall furnish Lessor with copies of any and all sub-contracts entered into under this lease.

BUILDINGS: The Lessor hereby grants to the Lessee the right to install, build or erect structures and facilities necessary to the successful conduct of his mining operations, and also the right to remove the same at the end of this lease.

SPRINGS: Any and all springs on the premises are to be protected,

LEASE
ROBERT E. GULL - MONTANA CHEMICAL

and it is understood and agreed that the 40 acre tract around the home of Robert E. Gull is not included in this lease.

VIOLATIONS: If any violation or default of the terms of this contract and agreement shall occur other than acts of God, Lessor shall give notice in writing by certified mail to the Lessee and Dakota Mines, Inc., and Lessee shall have thirty (30) days in which to correct any such default.

ASSESSMENT WORK: Lessee agrees that he will perform any and all assessment work necessary on any unpatented lode mining claims on the premises leased herein, will record affidavit or affidavits of assessment if necessary to keep the properties valid, and will give any such affidavits to the Lessor after recording.

LOW-GRADE ORES: Lessee agrees to save and stockpile any and all low-grade ores that cannot be sold by them, where the grade of ore appears to be of some future value, and at the termination of this lease and agreement, such ores shall become the sole property of the Lessor herein.

TERMINATION: Lessee shall have the right to terminate this lease and agreement as set out above.

PARTIES BOUND: This agreement shall be and is binding upon the parties hereto, their heirs, executors, administrators, legal representatives, agents, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals this 17 day of _____, 1966.

Robert E. Gull
ROBERT E. GULL - LESSOR

MONTANA CHEMICAL & MILLING CORP.

By _____
LESSEE

STATE OF SOUTH DAKOTA)
) ss. ACKNOWLEDGEMENT BY INDIVIDUAL
COUNTY OF FALL RIVER)

On this the 7 day of June, 1966, before me, the undersigned Notary Public within and for said County and State, personally appeared ROBERT E. GULL, known to me to be the person [illegible] is subscribed to the within and foregoing instrument [illegible] to me that he executed the same.

Jacob [illegible]
NOTARY PUBLIC

[illegible]

LEASE
[illegible] BY WELL - [illegible] CHEMICAL

STATE OF
COUNTY

36. ACKNOWLEDGEMENT BY CORPORATION

On this the day of , 1968, before [illegible] the undersigned officer, personally appeared [illegible] who acknowledged himself to be the of [illegible] & [illegible] Corp., and that he, as such officer, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by himself as [illegible].

In witness whereof, I hereunto set my hand [illegible] official seal.

Notary Public

My commission expires [illegible].

960 A

OME
DEPARTMENT OF THE INTERIOR
APR 22 1959
REGION III
DENVER, COLORADO

APR 30 1959
O.M.E.

PARTIES: [illegible]

PURPOSE: [illegible]

PROPERTY: [illegible]
Sec. [illegible]
Sec. [illegible]
Sec. 35: [illegible]
Sec. [illegible]: [illegible]
All in [illegible]
S. H. [illegible]
Dakota; and

The unpatented [illegible]
described as follows: [illegible]
of Sec. 26, T. [illegible] S., [illegible]
Fall River County, South Dakota:
Gull 1A, Gull 4A, and Gull A

WARRANTIES BY LESSOR: The Lessor warrants that he is the owner of the above described deeded land and mining claims; that there are no other surface owners with [illegible] right to any interest in said property; that [illegible] land [illegible] and to the properties [illegible] purposes connected with mining, development, [illegible] and/or development. The Lessor [illegible] that there is no liability that could [illegible] execute this lease and agreement. The Lessor [illegible] warrants that there are no conflicting claims.

CONSIDERATION: The Lessee for the [illegible] agreement has paid the [illegible] consideration, receipt [illegible] agrees to pay to the Lessor [illegible] 15% fifteen per cent [illegible] from the sale of ores [illegible] from [illegible] less haulage and development allowances [illegible] until the bonuses are used up, at which time the percentage will revert to 15% [illegible] on all sums received from the sale of ores from said premises, excluding haulage and development. [illegible] made to the Lessor within ten [illegible] receipt of returns by the Lessee.

SHUT-DOWNS: If shut-downs are forced upon the Lessee of more than ninety days through circumstances beyond his control, i.e., if the processing mill should be shut down, if the A. E. C. or mill is not purchasing ores, etc., the Lessee shall have the right to keep this lease in force upon payment of $6.50 per acre per year as advance royalty

to be applied against future mining royalties. In case no production has been accomplished before such shut-down, then the 50¢ per acre payment shall be considered as rental only, and not as advance royalty.

TERM: The term of this agreement shall be one (1) year and as long thereafter as either exploration, development and/or mining are in progress thereon; and it is expressly understood and agreed by and between the parties hereto that the Lessee shall not be penalized for possible shut-downs not to exceed ninety (90) days.

REPORTS: The Lessee shall furnish the Lessor with true copies of all smelter or reduction returns on any and all minerals and/or materials produced from said property at the time of payment of receipts to Lessor.

WARRANTIES BY LESSEE: The Lessee covenants that he will, immediately after the commencement of this lease, commence active exploration, development or mining upon the premises above leased; he covenants that he will save the Lessor harmless from any claims or damages arising out of his operations; the Lessee agrees that he will repair and keep in repair any and all fences that may become damaged in any way by Lessee's operations on said leased premises, and agrees to exercise all possible caution so that no livestock will be injured as a result of Lessee's mining operations on said premises, and agrees to pay Lessor any damages to livestock arising out of said operations; Lessee further agrees to sell any ore or ores under his own name; and the Lessee may terminate this lease and agreement when in his opinion it is uneconomical to proceed further with the purposes and requirements of this lease. Upon reaching such decision, the Lessee shall give written notice to the Lessor of such intention to terminate, by registered mail, shall execute, record and deliver to Lessor a release of said premises, shall pay all accrued rentals and royalties required under this lease, and any other sums due and payable to Lessor. Lessee agrees to perform his mining operations in a good workmanlike manner to preserve said premises for future mining or use by Lessor. Lessee agrees to carry Workmen's Compensation insurance to protect the Lessor from any claims or damages that might arise in regard to employees of said Lessee. Locations for all roads and mining excavations shall be made by mutual consent. There shall be no work done in the fields except after crops are harvested, unless parties hereto mutually agree.

SUB-CONTRACTS: The Lessee shall have the right to sub-contract mining operations under this lease; Lessee shall furnish Lessor with copies of any and all sub-contracts entered into under this lease.

[illegible]: The [illegible] hereby grants to the Lessee the right to

install, build or erect structures and facilities necessary to the successful conduct of his mining operations, and also the right to remove the same at the end of this lease.

SPRINGS: Any and all springs on the premises are to be protected, and it is understood and agreed that the 40 acre tract around the home of Robert E. Gull is not included in this lease.

VIOLATIONS: If any violation or default of the terms of this contract and agreement shall occur other than acts of God, Lessor shall give notice in writing by certified mail to the Lessee, and Lessee shall have thirty (30) days in which to correct any such default.

ASSESSMENT WORK: Lessee agrees that he will perform any and all assessment work necessary on any unpatented lode mining claims leased herein, will record affidavit or affidavits of assessment if necessary to keep the properties valid, and will give any such affidavits to the Lessor after recording.

LOW-GRADE ORES: Lessee agrees to save and stockpile any and all low-grade ores that cannot be sold by them, where the grade of ore appears to be of some future value, and at the termination of this lease and agreement, such ores shall become the sole property of the Lessor herein.

TERMINATION: Lessee shall have the right to terminate this lease and agreement as set out above.

PARTIES BOUND: This agreement shall be and is binding upon the parties hereto, their heirs, executors, administrators, legal representatives, agents, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals this 17th day of June, 1958.

Robert E. Gull
Robert E. Gull, Lessor

Matthew J. Brown, Lessee

STATE OF SOUTH DAKOTA)
COUNTY OF FALL RIVER)

On this the 17th day of June, 1958, before me, the undersigned Notary Public within and for said County and State, personally appeared Robert E. Gull and Matthew J. Brown, known to me to be the persons whose names are subscribed to the within and foregoing instrument and acknowledged to me that they executed the

DEPARTMENT OF THE INTERIOR
APR 22 1959
REGION III
DENVER, COLORADO
O.M.E.

L E A S E

PARTIES: The parties to this agreement are Robert E. Gull, hereinafter referred to as Lessor, and MONTANA CHEMICAL & MILLING CORP., hereinafter referred to as Lessee.

PURPOSE: The purpose of this covenant is to grant to the Lessee the right to mine, explore and develop the properties hereinafter described and herein leased, for minerals that may be found thereon or therein, and to set forth the rights, duties and obligations on the part of each party to this agreement; and the Lessor does hereby lease and grant to the Lessee the mining properties hereinafter described, for the purpose of exploring, developing and mining the same, for minerals that may be found thereon or therein, except oil and gas.

PROPERTY: The property herein leased is described as follows: Sec. 26: S½NW¼, N½SW¼; Sec. 27: SW¼NW¼, N½NW¼, & W½SW¼; all in Township 8 South, Range 3 East B.H.M., in Fall River County, South Dakota.

WARRANTIES BY LESSOR: The Lessor warrants that he is the owner of the above described premises; that there are no other surface owners who have any right to any interest in said properties; that he has rights of way in and to the properties herein leased for all purposes connected with mining, exploration, drilling and/or development. The Lessor covenants that he is under no disability that would impair his right to execute this lease and agreement. The Lessor also warrants that there are no conflicting claims.

CONSIDERATION: The Lessee for the execution of this agreement has paid the sum of $_____ as initial consideration, receipt of which is hereby acknowledged, and agrees to pay to the Lessor a sum of money equal to 15% (fifteen per cent) of the amounts received from the sale of ores produced from said premises, less haulage and development allowances, but including bonuses, until the bonuses are used up, at which time the percentage will revert to 10% to be paid the Lessor on all sums received from the sale of ores from said premises, excluding haulage and development. Payment shall be made to the Lessor within ten (10) days of receipt of returns by the Lessee.

SHUT-DOWNS: If shut-downs are forced upon the Lessee of more than ninety days through circumstances beyond his control, i.e., if the processing mill should be shut down, if the A.E.C. or mill is not purchasing ores, etc., the Lessee shall have the right to keep this lease in force upon payment of $.50 per acre per year as advance royalty to be applied against future mining royalties. In case no production has been accomplished before such shut-down, then the 50¢ per acre payment shall be considered as rental only, and not as advance royalty.

TERM: The term of this lease and agreement shall be one year from and after date, and as long thereafter as exploration, development and/or mining are in progress thereon; and it is mutually understood and agreed by and between the parties [illegible] the Lessee shall not be penalized for [illegible] to exceed ninety (90) days.

[illegible]
[illegible] 4/[illegible]/59 to
Chas. N. Russell

L E A S E
Robert E. Gull to MONTANA CHEMICAL

REPORTS: The Lessee shall furnish the Lessor with true copies of all smelter or reduction returns on any and all minerals and/or materials produced from said property at the time of payment of receipts to Lessor.

WARRANTIES BY LESSEE: The Lessee covenants that he will, immediately after the commencement of this lease, commence active exploration, development or mining upon the premises above leased; he covenants that he will save the Lessor harmless from any claims or damages arising out of his operations; the Lessee agrees that he will repair and keep in repair any and all fences that may become damaged in any way by Lessee's operations on said leased premises, and agrees to exercise all possible caution so that no livestock will be injured as a result of Lessee's mining operations on said premises, and agrees to pay Lessor any damages to livestock arising out of said operations; Lessee further agrees to sell any ore or ores under their own name; and the Lessee may terminate this lease and agreement when in their opinion it is uneconomical to proceed further with the purpose and requirements of this lease. Upon reaching such decision, the Lessee shall give written notice to the Lessor of such intention to terminate, by registered mail, shall execute, record and deliver to Lessor a release of said premises, shall pay all accrued rentals and royalties required under this lease, and any other sums due and payable to Lessor. Lessee agrees to perform his mining operations in a good workmanlike manner to preserve said premises for future mining or use by lessor. Lessee agrees to carry Workmen's Compensation insurance to protect the Lessor from any claims or damages that might arise in regard to employees of said Lessee. Locations for all roads and mining excavations shall be made by mutual consent. There shall be no work done in the fields except after crops are harvested, unless parties hereto agree mutually.

SUBCONTRACT: The Lessee shall have the right to sub-contract mining operations under this lease. Lessee shall furnish Lessor with copies of any and all sub-contracts [illegible] this lease.

BUILDINGS: The Lessor hereby grants to the Lessee the right to install, build or erect structures and facilities necessary to the successful behalf of his mining operations, and also the right to remove the same at the end of this lease.

[illegible]: Any and all [illegible] on the premises are to be protected, and it is understood and agreed that the 40 acre tract [illegible] Robert E. Gull is not included in this lease.

[illegible]: If any violation or default of the terms of this [illegible] shall occur other than acts of [illegible] is written by certified [illegible]

LEASE
Robert E. Gull to MONTANA CHEMICAL

ASSESSMENT WORK: Lessee agrees that he will perform any and all assessment work necessary on any unpatented lode mining claims on the premises leased herein, will record affidavit of affidavits of assessment if necessary to keep the properties valid, and will give any such affidavits to the Lessor after recording.

LOW-GRADE ORES: Lessee agrees to save and stockpile any and all low-grade ores that cannot be sold by them, where the grade of ore appears to be of some future value, and at the termination of this lease and agreement, such ores shall become the sole property of the Lessor herein.

TERMINATION: Lessee shall have the right to terminate this lease and agreement as set out above.

PARTIES BOUND: This agreement shall be and is binding upon the parties hereto, their heirs, executors, administrators, legal representatives, agents, successors and assigns.

IN WITNESS WHEREOF, theparties hereto have hereunto set their hands and seals this ___ day of _____, 1958.

_____
Robert E. Gull, LESSOR

MONTANA CHEMICAL & MILLING CORP.

By _____
LESSEE

STATE OF SOUTH DAKOTA)
) SS. ACKNOWLEDGEMENT BY INDIVIDUAL
COUNTY OF FALL RIVER)

On this the ___ day of _____, 1958, before me, the undersigned Notary Public within and for said County and State, personally appeared Robert E. Gull, known to me to be the person whose name is subscribed to the within and foregoing instrument and acknowledged to me that he executed the same.

_____
Notary Public

My commission expires _____.

STATE OF _____)
) SS. ACKNOWLEDGEMENT BY CORPORATION
COUNTY OF _____)

On this the ___ day of _____, 1958, before me, the undersigned officer, personally appeared _____, who acknowledged himself to be the _____ of MONTANA CHEMICAL & MILLING CORP., and that he, as such officer, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as _____.

In witness whereof, I hereunto set my hand and official seal.

My commission expires _____. _____
Notary Public

DMEA-2768

MINING LEASE

This agreement of lease, made and entered into this 19 day of March, 1953, by and between CARL V. GULL and ROBERT E. GULL, hereinafter called the lessors, and the MINING RESEARCH CORPORATION, a Delaware corporation, hereinafter called the lessee.

WITNESSETH:

1. For and in consideration of the sum of One Dollar and no/100 ($1.00) and of the covenants, agreements and payments hereinafter provided to be made and performed, lessors hereby grant, lease, let, and demise, unto lessee the following described mining claims located in Unorganized Mining District, Fall River County, South Dakota:

Sheep Canyon Nos. 9, 10, 11, 12, 13, 14, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, and 33.

Poco Pots Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18.

Perkay Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16.

Gull Nos. 1A, 2A, 3A, 4A, 5A, 7A, 8A, 9A, 10A, 11A, 12A, 7, 8, 9, 10, 13, 14, 15, 16, 17, and 18.

All located in T. 8 S., R. 3 E.

together with all the dips, spurs, rolls and angles and also all the uranium and any and all other minerals of any nature whatsoever, excluding gravel, petroleum oil and natural gas, for the purpose of investigating, exploring, drilling, and mining for, producing, saving, taking, owning, transporting, storing, handling, and treating uranium and all other minerals, whether similar or dissimilar.

2. TO HAVE AND TO HOLD the same for the purposes of exploration and mining for a primary term of five (5) lease years commencing on the date hereof.

After expiration of the primary term, lessee shall have the right to continue this lease in full force and effect on all the above described claims for as long as uranium or any other mineral shall be produced from said claims. Lessee shall also have the right to continue the term of this lease after the expiration of the primary term by expending a minimum amount of One Hundred Dollars & no/100 ($100.00) per claim per year upon the development or exploration of the above claims until such time as they are patented.

After patents are obtained on such claims as are eligible, lessee shall have the right to continue the term of this lease after the expiration of the primary term by expending a minimum amount of One Thousand Three Hundred ~~Sixteen~~ Sixty Dollars & no/100 (~~$1,316.00~~ 1,360.00) per year upon the development or exploration of the above claims.

3. At such times as any of said claims shall be eligible for patent, lessors shall, if the lessee so requests, apply for patents on all eligible claims and take all necessary steps in the procurement thereof. All expenses in procuring or attempting to procure such patents shall be advanced by lessee and any sums so advanced shall be deducted from royalties accruing to lessors hereunder.

4. Lessors hereby grant to lessee during the time of this lease, possession of such claims, the right to explore, map, mine, drill and extract ore therefrom, to dump waste materials thereon ~~and upon any adjoining areas under the control of lessors,~~ to construct ore bins and

buildings thereon, to perform any and all work connected therewith, including construction of roads, to lay pipe lines, to construct mills, power stations, power and communication lines, houses for its employees, and other structures and facilities, and further grant to lessee all road rights of way to which lessors may be entitled for egress and ingress to any and all of the demised properties.

5. Lessors hereby warrant and represent that they have prior valid and lawful right and title to such claims and hereby agree to indemnify and hold harmless lessee from any and all other persons, firms, or corporations claiming any rights thereto or any part thereof or any interest therein. If at any time title to said claims is found to be defective in any way, lessors shall return to lessee any moneys advanced to them by the said lessee.

6. Lessee agrees to comply with all provisions and requirements of federal or state laws necessary to keep the said mining claims in full force and effect, to conduct its mining operations thereon in accordance with good mining practice and in compliance with health and safety regulations, to permit lessors to inspect such premises at all reasonable times to make surveys of the same and to take samples of ore mined or in place using any access roads of lessee, and to make available to lessors survey maps, drilling logs, and other data which may be compiled pertaining to ore deposits found therein.

7. Simultaneously with the execution hereof lessee has paid to the lessors the sum of One Thousand Three Hundred ~~Sixteen~~ Sixty Dollars & no/100 (~~$1,316.00~~ 1,360.00), receipt of which is hereby acknowledged.

8. Prior to March 31, 1958, lessee shall pay lessors twelve and

one half percent ($12\frac{1}{2}\%$) of the Atomic Energy Commission bonus for initial production of uranium ores from eligible new domestic mines. Said payment shall be made as soon as practicable after receipt of said bonus from the Atomic Energy Commission and shall be subject to provisions of the regulations of the Atomic Energy Commission regarding payments of bonuses. Lessee shall comply with all regulations of the Atomic Energy Commission for certification of the property as mining property eligible for bonus payments. For purposes of computing the amount of royalty payments to be made under this section, a record shall be kept by lessee of the ore mined on each property or group of properties regarded by the Atomic Energy Commission as a single eligible unit for purposes of bonus payments.

9. In addition to the bonus payments in Section 8 and prior to March 31, 1958, lessee shall pay lessors, as royalty for ore mined or leached on this property, twelve and one half percent ($12\frac{1}{2}\%$) of the price established by the Atomic Energy Commission for ore of like grade delivered to a mill or purchasing depot on ores assaying ten one-hundredths percent (0.10%) U_3O_8 or over. For ores leached which assay less than ten one-hundredths percent (0.10%) U_3O_8, lessee shall pay to lessors as royalty twelve and one half percent ($12\frac{1}{2}\%$) of the minimum price established by the Atomic Energy Commission for acceptable ore delivered to a mill or purchasing depot. Royalty payments for each month shall be made on or before the fifteenth (15th) day of the following month and for ore delivered to the Atomic Energy Commission's purchasing depot, settlement assays and settlement weights as determined by the Atomic Energy Commission shall be used as a basis for computing royalty payments; and for ore

processed by lessee settlement shall be based upon assays and samples taken from the ore and upon weights of U_3O_8 extracted and delivered to the Atomic Energy Commission.

10. No royalty payments shall be made to lessors by lessee on any development allowances received by lessee from the Atomic Energy Commission.

11. After March 31, 1958, lessee shall pay to lessors, as royalty for uranium ore mined or leached on this property twelve and one half percent (12½%) of the price paid for ore of like grade delivered to a mill or purchasing depot, exclusive of transportation charges. Royalty payments for each month shall be made on or before the fifteenth (15th) day of the following month.

12. In addition to the above royalty payments, lessee agrees to pay lessors, as royalty for marketable ores, other than uranium ore, mined on this property, twelve and one half percent (12½%) of the price paid for similar ores of like grade.

13. Lessee hereby agrees to plug securely all drill holes, except where specified otherwise by the lessors, left by, or not necessary to, the mining operations, and furthermore, inasmuch as is practicable, grade to slopes excavations left by conventional mining operations. Lessee further agrees to replace or repair all structures and facilities of the lessors damaged, destroyed, or removed during mining operations. Lessee agrees not to commence operations in cultivated fields having a growing crop without the written consent of the lessors or their duly authorized agent.

14. Lessee at its expense will insure each and every workman

employed in its operations as provided in all applicable statutes with respect to workmen's compensation and/or employer's liability; and lessee will procure and maintain at its expense public liability insurance in a reputable and financially responsible company properly safeguarding against liability for injury to persons, including injuries resulting in death, and loss or damage to property arising out of lessee's operations hereunder. Lessee further agrees to furnish upon request satisfactory proof of such compensation, public liability and property damage insurance.

15. Lessors hereby agree to cooperate with lessee in the securing of loans from the Federal Government which may be deemed advisable by lessee for the exploration, development and mining of ore from the claims leased hereunder whether such loans may be made available under the terms of the Defense Minerals Act as now in effect or hereafter amended or any other Federal law, rule or regulation now in effect or hereafter promulgated. Lessors further agree to sign any documents necessary for the procurement of any such loans; provided, however, that lessors shall not be required to sign any instruments or enter into any agreements which will subject them to any personal liability.

16. In the event of any breach or default by lessee, the lessors may give written notice by registered mail thereof to lessee. Upon receipt of such notice lessee shall have ninety (90) days to cure such breach or default and maintain the lease in effect. If lessee shall not have cured or taken diligent steps to cure any such breach or omission within said ninety (90) day period, lessors may terminate this lease. Failure to enforce such forfeiture shall not constitute a waiver by lessors of their rights in the event of a future breach of such term or

provision or the breach of any other term or provision hereof.

Neither party shall be deemed in default hereunder where its act or omission shall be occasioned by strikes, riots, flood, fire, storm, acts of God, war, Federal, State or local laws or regulations, or other causes not within its or their control.

17. Lessee shall have the right for a period of six (6) months after the date of termination of this lease for any reason whatsoever to remove as lessee's own property, buildings, and all improvements, bins, machinery, equipment and other personal property excepting only ties and timbering which may have been placed on the premises by it.

18. Lessee understands that the land covered by this lease is used for stock-growing and is the source of practically all income from said land. Lessee agrees to conduct its operations in such a manner as to interfere in the least possible way with any livestock operations unless royalties are substantial enough to permit discontinuance of livestock operations.

19. This lease and all its terms, conditions, and stipulations shall extend to and be binding upon all successors of said lessors or lessee. Lessors hereby agree not to transfer or grant in the form of a sub-lease this lease nor any interest of the lessee therein or thereunder during the term thereof without the consent in writing of the lessors or their duly authorized agent first thereto had and obtained.

IN WITNESS WHEREOF lessors have hereunto set their hands and seals and lessee has caused this document to be executed by its officers duly authorized thereunto as of the day and year first above written.

(Signed) Carl V. Gull (L.S.)
Carl V. Gull

(Signed) Robert E. Gull (L.S.)
Robert E. Gull

Lessors

MINING RESEARCH CORPORATION
(Signed)
By: Clifton W. Livingston (L.S.)

Lessee

ATTESTED:

(Signed) Ruth E. Livingston
Secretary

STATE OF: South Dakota)
) ss
COUNTY OF: Fall River)

On this the 19 day of March, 1953, before me, Paul H. Russell, the undersigned officer, personally appeared Carl V. Gull & Robert E. Gull, known to me or satisfactorily proven to be the persons whose names are subscribed to the within instrument and acknowledged that they executed the same for the purpose therein contained.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

(Signed) Paul H. Russell
Notary Public

My Commission Expires: 1/8/57

--oooOoo---

STATE OF: South Dakota)
) ss
COUNTY OF: Fall River)

On this the 19 day of March, 1953, before me, Paul H. Russell, the undersigned officer, personally appeared Clifton W. Livingston, who acknowledged himself to be the President, of Mining Research Corporation, a corporation, and that he, as such President, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as President.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

(Signed) Paul H. Russell
Notary Public

My Commission Expires: 1/8/57

OMER-276 8 REVISED
3/10/53 glo

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 4 1953

March 2, 1953

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, Field Team, Region V

Subject: Application of Mining Research Corp. Property, Fall River County, S. Dak.

Here are the original and two copies of a revised application by the subject company, together with the original and three copies of the Field Team's Report recommending a contract for exploration.

Owner's Consent to Lien forms are not included; however, the Field Team informs me that J. S. Livingston of the Mining Research Corp. advised them that he was sending them as soon as he could get the forms executed.

The Field Team has reminded him that they will be necessary as soon as possible. You will note that the application, herein enclosed, is a revised one to conform with the discussions with the Field Team and differs from the original application which you have in your files. This office has retained the copy of the revised application.

A. B. Needham
Executive Officer, Field Team
Region V

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 4 1953

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. DMEA 2768-REVISED
Metal or Mineral
Date Received 3-4-53
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: Mining Research Corporation, 4215 Balsam Street, Wheatridge, Colorado. (Answers to all questions are given on the attached pages.)

(*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

(*b*) State any mine name by which the property is known.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise

(*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.

(*e*) If you own the land, describe any liens or encumbrances on it

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

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.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*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*) [illegible]e the mineral or minerals for which you wi[illegible] explore .....

(*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 ..... days and be completed within ..... 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)?

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

[X] Money [X] 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 January 12, 1953

MINING RESEARCH CORPORATION
(Applicant)

By J. Sterling Livingston

J. Sterling Livingston

Vice President and Treasurer.

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

DMA Application
Mining Research Corp.
4215 Balsam Street
Wheatridge, Colorado

1. Name of applicant.

(a) Mining Research Corporation, 4215 Balsam Street, Wheatridge, Colorado.

(b) Incorporated in the state of Delaware.

(c) Clifton W. Livingston, president, 4215 Balsam Street, Wheatridge, Colorado; J. Sterling Livingston, vice president and treasurer, 600 Ninth Avenue, Boulder, Colorado; and Ruth E. Livingston, secretary, 600 Ninth Avenue, Boulder, Colorado.

3. Applicant's property rights.

(a) Applicant holds under lease some 3,200 acres of mineral property in T 8 S., R 3 E., Fall River County, South Dakota.

The following land is included in the application:

Have owners Consent to Lease

(1) Mining claim leased from Royce A. McElhaney, R.A.M. No. 2, in Section 15.

(2) Mining claims leased from John McKnight, McK. Nos. 2, 3, and 5, in Section 15.

(3) Deeded land leased from Edna McKnight, the W 1/2 of the SW 1/4 of Section 14, and the N 1/2 of the NE 1/4 of Section 22. S 1/2 of Section 14

(4) Deeded land leased from Robert E. Gull, the S 1/2 of the NE 1/4 of Section 22, and the W 1/2 of the NW 1/4 of Section 23. S-1/2 SE 1/4 of Sec 22 S 1/2 of NE 1/4 Sec 22

(5) Mining claim leased from Carl V. Gull and Robert E. Gull, Sheep Canyon No. 6, in Section 22.

The following land comprises the remainder of land held under lease by applicant. This land would be benefited only indirectly by exploration conducted under this application through the development of geologic information. Descriptions of this land follows:

(1) Mining claims leased from Royce A. McElhaney, R.A.M. Nos. 1 and 3, in Section 15.

(2) Mining claims leased from John McKnight, McK. Nos. 1 and 4, in Section 15.

(3) Deeded land leased from Edna McKnight, the E 1/2 of the SW 1/4 and the SE 1/4, in Section 14.

(4) Mining claims leased from Carl V. Gull and Robert E. Gull, Sheep Canyon Nos. 4 and 5, in Section 22.

3. Applicant's property rights.(cont.)

(5) Mining claims leased from Carl V. Gull, Earl Boner, and Vernon Harriet, Sheep Canyon Nos. 1, 2, and 3, in Section 27.

(6) Deeded land leased from Robert E. Gull as follows:

Section 22 - the SE 1/4.
Section 23 - the E 1/2 of the NW 1/4, the SW 1/4 of the NE 1/4, and the S 1/2.
Section 26 - the N 1/2 of the NE 1/4, the SW 1/4 of the NE 1/4, the NW 1/4, the W 1/2 of the SE 1/4, the N 1/2 of the SW 1/4, and the SW 1/4 of the SW 1/4.
Section 27 - the NE 1/4 of the NE 1/4, the S 1/2 of the NE 1/4, the S 1/2, and the SW 1/4 of the NW 1/4.
Section 28 - the SE 1/4 of the NE 1/4, the NE 1/4 of the SE 1/4, the S 1/2 of the SE 1/4, and the S 1/2 of the SW 1/4.
Section 33 - the NE 1/4.
Section 34 - the N 1/2.
Section 35 - the N 1/2 of the NW 1/4, and the NW 1/4 of the NE 1/4.

(b) The property is not known by any mine name.

(c) Applicant's interest in the property is that of a lessee-operator.

(d) Copies of the leases covering the property included in this application were furnished previously. (Docket No. DMEA - 2768).

(e) Not applicable.

(f) Unpatented mining claims are recorded in the Court House of Fall River County at Hot Springs, South Dakota as follows:

Claim	Book	Page
R.A.M. no. 2	31M	289
Mc K. No. 2	31M	291
Mc K. No. 3	31M	291
Mc K. No. 5	31M	292
Sheep Caynon No.6	31M	98

3. Applicant's property rights. (Con't.)

(f) Unpatented mining claims not included in this application are recorded in the Court House of Fall River County at Hot Springs, South Dakota as follows:

Claim

R.A.M. No.1
R.A.M. No.3
Mc K. No. 1
Mc K. No. 4
Sheep Canyon No. 1
Sheep Canyon No. 2
Sheep Canyon No. 3
Sheep Canyon No. 4
Sheep Canyon No. 5

4. Physical description.

(a) There have been no mining operations or exploration on this property prior to current work by the applicant. Current work by the applicant consists of exploration drilling from the surface on mining claims McK. Nos. 1 and 4 in Section 15. There are no mine workings at present. Drill holes are open for radiometric logging, and logs and sample records are available for inspection.

The interest of the applicant in all work is that of lessee-operator.

(b) There has been no production to date from any of the property under lease by the applicant. Exploration drilling has not reached a point where quantity and grade of ore reserves can be stated.

(c) Uranium mineralization of the district is found in slightly tilted sandstones of the Dakota and Lakota formations on the southwest flank of the Black Hills uplift. The deposits consist of irregular lenses of ore in sandstones. The deposits are flat-lying and conform generally to the dip of the host formations. The principal ore mineral is carnotite.

Drilling done by the applicant has shown the existence of ore in a horizon 20 to 30 feet in thickness immediately above the top of Fuson shale. Two of the areas (1 and 2) selected for drilling under this application have been selected to prove up extensions of the ore horizon found by current drilling. Area 3 has been selected to check a scintillometer anomaly which is comparable in intensity to the anomaly in the current drilling areas.

The existence of outcrops of ore, the fact that ore has been found in drilling, and the existence of radiometric anomalies in the area, and the distribution of these features around the property, lead to the conclusion that exploration of the area is desirable and should lead to the finding of ore.

(d) The property is easily accessible from Edgemont and Hot Springs over U.S.Highway 18-85, an oiled highway which passes directly through the property and is fully maintained at all times. All parts of the leased area except canyon bottoms are easily accessible by pickup truck. The areas proposed for drilling under this application are located on the mesas, and are completely accessible by truck.

4. Physical description. (d)(con't.)

Shipping point is Edgemont, on the Chicago, Burlington, and Quincy R.R.

Supply and residence points are Edgemont and Hot Springs.

(e) Applicant has at present personnel needed to develop and supervise the exploration project and to form the nucleus of the crew for exploration drilling. Such additional labor as is necessary can be secured locally.

Common items of equipment and supplies may be secured in Edgemont or Hot Springs. Specialized materials, equipment, and supplies would be secured from Denver, Colorado. Since rail, truck, and air service from Denver is regularly scheduled, large stocks would not have to be maintained on the property.

Water is available either at wells or springs on the property or by haulage from the Edgemont city water supply at a cost of $0.10 per load.

Although an electric power line passes just north of the property, it is planned to use internal combustion engines for power due to the need for mobility of equipment. Both gasoline and butane are available from bulk distributors in Edgemont and Hot Springs.

5. The exploration project.

(a) Exploration is to be for uranium in the form of carnotite.

(b) The applicant proposes to explore the property by wagon drilling and diamond core drilling. General considerations affecting the choice of method of exploration are as follows:

(1) The ore horizon to be explored for lies at generally shallow depths in the area selected. Maximum hole depth expected is not over 80 feet, and would explore the Dakota sandstone down to the Fuson shale.

(2) The ore occurs normally as irregular lenses, which require close spacing of holes to properly explore the ground.

(3) Since the applicant has found ore by drilling in the area immediately north of the area covered by this application, it is considered that an extension of exploration along the lines indicated by current drilling is logical.

(4) Current drilling has indicated a general northwest-southeast trend of ore occurrences.

(5) Although ore horizons are known to exist in the Dakota sandstone below the Fuson shale, exploration for such ore horizons would require drilling to depths of some 300 feet. This is not considered practical at the present time.

(6) Although wagon drilling is much less costly than diamond core drilling, a certain amount of core drilling is desirable to secure information regarding physical characteristics and structure of the ore bodies which cannot be secured by wagon drilling alone.

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5. The exploration project (Con't.)

In accordance with the foregoing considerations, the applicant proposes the following program:

1. An initial stage of exploratory drilling comprising 14,770 feet of wagon drilling and 1,595 feet of diamond core drilling to explore extensions of ore horizons found by current drilling and an area where a scintillometer anomaly has been found. These areas are shown on Exhibit B and are described as follows:

   Area I - The immediate southeast extension of ore horizons found in current drilling.

   Area II - The southeast extension of the area found by current drilling, projected across Deadhorse Canyon.

   Area III - An area where a specific scintillometer anomaly has been found.

2. A second stage of exploratory drilling comprising 30,000 feet of wagon drilling, and 3,000 feet of diamond core drilling. This would be designed to explore the remaining area included in this application but not covered by the initial stage of drilling, and would be guided by information developed in the initial stage.

3. All drilling would be done on a 100 foot square grid pattern oriented northwest and southeast to conform to observed trends of ore occurrences.

4. All drilling would be done to bottom holes at the top of the Mancos shale in order to prospect ore horizons in the Dakota sandstone. A generalized geologic column is shown in Exhibit C. On the basis of geologic columns taken in Deadhorse Canyon, it is expected that average drilling depth will be 55 feet in areas I and III, and 70 feet in Area II.

5. The following tabulation summarizes drilling by areas, type, and amount.

Stage	Area	Wagon drill		Diamond drill		Total drilling	
		Holes	Footage	Holes	Footage	Holes	Footage
I	I	92	5,060	10	550	102	5,610
	II	101	7,070	11	770	112	7,840
	III	48	2,640	5	275	53	2,915
	Total Stage I	241	14,770	26	1,595	267	16,365
II	Total Stage II	c.500	30,000	c.50	3,000	c.550	33,000
I & II	Total Stage I & II	c.741	44,770	c.76	4,595	c.807	49,365

Since location of drill holes in Stage II would depend on results of Stage I, the footage of drill holes only has been definitely expressed, and the number of drill holes estimated. All diamond core drilling would be BQ or larger sizes.

6. In addition to the field work of drilling and securing samples, applicant proposes to perform the following work:

a. All topographic and geologic surveys necessary for a complete study of the area.

b. Radiometric surveys on the surface to correlate surface anomalies with drilling results.

c. Radiometric analysis of all samples and chemical analysis of samples shown to be ore bearing by radiometric analysis.

d. Compilation of all results into a complete report.

(c) The work will start within 15 days from the date of an exploration project contract. Stage I would be completed within 4 months, and Stage II would be completed within 12 months from the date of an exploration project contract.

5. The exploration project. (Con't.)

(d) The applicant is qualified in all respects to carry out the exploration project described in this application. Applicant now possesses substantially all equipment required, adequate working capital, and thoroughly experienced and capable engineering and supervisory personnel. The project will be carried out under the direction of Clifton N. Livingston, president of the Mining Research Corporation, who has had over 20 years' experience in the mining industry, much of it in uranium geology and mining. After serving an apprenticeship of 2½ years as a miner, mucker, mine surveyor, and draftsman, Mr. Livingston has held the following engineering, geological, supervisory, and teaching positions:

1933 - 1935 Design Engineer, Alaska Juneau Gold Mining Company, Juneau, Alaska. Designed and supervised installation of approximately one-half million dollars' worth of shaft plant equipment (shaft capacity 6,000 tons per day). Also designed pivoted truss stacker for loading waste disposal barges, power plant, flume, and miscellaneous mill and surface plant modifications.

1935 - 1936 Mine Superintendent, Arizona Comstock Corporation, Virginia City, Nevada. The company's operations consisted of open pit mining with power shovels, mining 600 tons of ore daily, stripping 1,200 tons waste daily.

1936 - 1939 Chief Engineer and Geologist, Baguio Gold Mining Company, Baguio, P.I. Directed exploration program which resulted in doubling mill capacity and increasing ore reserve four-fold.

1939 - 1940 Assistant General Superintendent, Baguio Gold Mining Company, in charge of production. Mill capacity: 500 tons daily.

1940 - 1942 Instructor in Mining, Michigan College of Mining and Technology (while working for advanced degree). Taught the following courses: Principles of Mining, Mine Plant, Mine Development, Mine Surveying, Mining Methods, Hydraulics, Office Engineering, Topographic Mapping.

Summer, 1941 Associate Geologist, Geological Survey of Newfoundland. Party Chief in charge of mapping and directing exploration of Rambler Gold District, Baie Verte, Newfoundland.

5. The exploration project. (d) (Con't.)

1942 - 1945 Mine Superintendent, Calumet and Hecla Consolidated Copper Company. Dewatered, reopened and placed Central Mine in production. Developed and brought Iroquois Mine into initial stages of production. Worked out details of mechanization and mining method for large-scale production. Established Michigan drifting record.

1943 - 1945 Field Geologist, Union Mines Development Corporation. Party Chief in regional geologic mapping, sampling, ore estimation and reports.

1945 - 1947 Associate Professor of Mining, Colorado School of Mines. Taught the following subjects: Principles of Mining, Mine Development, Mining Methods, Mining Economics, Mine Valuation, Mine Design, Drilling and Blasting.

1947 - 1951 Professor and Head, Department of Mining, Colorado School of Mines. Was in charge of the metal mining and coal mining options including both undergraduate and graduate curricula. Work included administration, teaching, graduate research, industrial research, and planning.

In addition to Mr. Livingston's duties as head of the Department of Mining at the Colorado School of Mines, he served as a consultant to private concerns and to the U. S. Army, as well as Project Manager for the Colorado School of Mines Research Foundation. As Project Manager, he was in charge of the work of from 28 to 35 engineers and technicians over a period of two years. Mr. Livingston holds the following degrees: E. M., Colorado School of Mines, 1933; D. S., Geol. Eng., Michigan College of Mining and Technology, 1942.

Mr. George W. Heim, who has had over 20 years' experience in mining and engineering, will serve as the field superintendent and will be in direct charge of the exploration work. Mr. Heim has had 10 years' field experience in the western United States and South America, which includes underground work as a miner and a mining engineer, field exploration work on hardrock properties, placer exploration work, and placer operations.

5. The exploration project. (d) (Con't.)

His employers during this period include the South American Gold and Platinum Company; Robert McCart, Jr., Consulting Mining Engineer; The Canyon Corporation; John W. Vanderwilt, Consulting Geologist; and the U. S. Bureau of Mines.

After spending four years in Army Ordnance and Engineers during World War II, Mr. Heim became, first, an assistant and, subsequently an associate professor in the Department of Mining, Colorado School of Mines. In addition to his teaching duties, Mr. Heim worked for the Colorado School of Mines Research Foundation and for various individuals and concerns as a consultant. Mr. Heim, who joined the staff of the Mining Research Corporation in 1952, holds the Master's degree in Mining Engineering from the Colorado School of Mines, as well as the E. M. degree.

Mr. Harold Davidson, who also has had over 30 years' experience in the mining industry, is employed by the Mining Research Corporation as a mining engineer. Mr. Davidson was an engineer for the Oliver Iron Mining Company for 18 years and during 10 of these years was in charge first of shaft sinking and later in charge of the company's entire timber and mineral lands. In addition to a number of other mining engineering positions, Mr. Davidson worked for the Michigan Tax Commission as an engineer in the Commission's mine appraisal work. From 1946 to 1949, Mr. Davidson was an assistant professor at the Colorado School of Mines. He holds the C. E. degree from the University of Michigan and the E. M. degree from the University of Wisconsin.

Mr. Robert Ward, who holds the degree of Geol. Eng. from the Colorado School of Mines, will serve as junior geologist on the exploration project, under Mr. Livingston's direction. Mr. Ward has had approximately two years' experience as a geologist in the Colorado Plateau area. Before joining the staff of the Mining Research Corporation, Mr. Ward was employed by the Delaney Mining Company.

In addition to the individuals named above who will be assigned to the exploration project described in this application, the applicant also is able to draw on the services of the following engineers now in its employ:

1. Allen E. Gray. B. S., Pennsylvania State College; M. S., Colorado School of Mines. Since 1948, Mr. Gray has held the following positions: Industrial Engineer, Island Creek Coal Company, 1948; Mining Engineer, R and P Coal Company, 1949-1950; Engineer and Senior Engineer, Colorado School of Mines Research Foundation, 1950-1951; Instructor in Mining, Colorado School of Mines, 1951-1952. Since June, 1952, Mr. Gray has been employed by the applicant as a mining engineer.

5. The exploration project. (d) (Con't.)

2. Russell L. Wood, E. M., Colorado School of Mines. Since 1949, Mr. Wood has held the following positions: Mining Engineer, Grosvenor Talc Company, 1949-1950; Mining Engineer, Colorado School of Mines Research Foundation, 1950-1951. Since the summer of 1951, Mr. Wood has been employed by the applicant as a mining engineer.

3. Karl Lambertson. E. M., Colorado School of Mines. From 1949 to June, 1952, Mr. Lambertson was employed by the Star Mining Company as a mining engineer. The Mining Research Corporation has employed him as a mining engineer since June, 1952.

6. Estimate of costs.

The total estimated cost of the project is $68,854.60. Estimated cost per foot for wagon drilling is $1.15, and for diamond core drilling is $3.75. The following tabulation shows costs by stage and type of drilling.

Stage	Wagon Drilling		Diamond Drilling		Total Drilling	
	Feet	Cost	Feet 45 deep	Cost	Feet	Cost
I	14,770	$16,985.50	1,595	$ 6,029.10	16,365	$23,014.60
II	30,000	34,500.00	3,000	11,340.00	33,000	45,840.00
Total I & II	44,770	$51,485.50	4,595	$17,369.10	49,365	$68,854.60

Detailed cost estimates follow.

(a) Independent contracts.
None.

(b) Labor, supervision, consultants.

(1) Applying to overall project.

Classification	One Month	12 Months.
Field supervisor (1/2)	$300.00	$ 3,600.00
Engineer (1/2)	250.00	3,000.00
Geologist	450.00	5,400.00
Sampler	300.00	3,600.00
Analyst	350.00	4,200.00
Truck driver	300.00	3,600.00
	$1,950.00	$23,400.00

It is estimated that the field supervisor and engineer would be utilized only half time on the project. Accordingly, only one half of their salaries is included in the foregoing estimate.

(2) Applying to wagon drilling only.

Classification	One Month	12 months.
Wagon drill operator	$400.00	$ 7,200.00
Wagon drill helper	300.00	5,400.00
	$700.00	$12,600.00

6. Estimate of costs. (b) (Con't)

(3) Applying to diamond drill only.

Classification	One Month	4 Months.
Diamond drill operator	$ 450.00	$1,800.00
Diamond drill helper	350.00	1,400.00
Water truck driver	300.00	1,200.00
	$1,100.00	$4,400.00

(c) Operating materials and supplies.

(1) Applying to overall project.

Item	One Month	12 Months.
Truck gasoline (200 gal/mo @ $0.26)	$ 52.00	$ 624.00
Servicing and repairs to truck	10.00	120.00
Analytical supplies	10.00	120.00
Office supplies, engineering	20.00	240.00
Office supplies, secretarial	10.00	120.00
Secretarial service, part time	100.00	1,200.00
Miscellaneous tools and supplies	15.00	180.00
	$217.00	$2,604.00

(2) Applying to wagon drilling only.

Item	One Month	18 Months.
Fuel (gasoline) (1000 gal/mo @ $0.20)	$200.00	$3,600.00
Drill rods, bits, hoses, and fixtures	200.00	3,600.00
Oils, greases	15.00	270.00
Tools and miscellaneous supplies	15.00	270.00
Sampling supplies	20.00	360.00
	$450.00	$8,100.00

(3) Applying to diamond drill only.

Item	One Month	4 Months.
Fuel (gasoline) (600 gal/mo. @ $0.20)	$ 120.00	$480.00
Oils and greases	20.00	80.00

6. Estimate of costs (3) (Con't.)

Item (con't.)	One Month	4 Months.
Drill rods, bits, hoses, fittings	$500.00	$2,000.00
Core boxes and sampling supplies	75.00	300.00
Tools and miscellaneous supplies	25.00	100.00
Drill water	20.00	80.00
	$620.00	$3,040.00

(d) Operating equipment.

(1) Applying to overall project.	One Month	12 Months.
Pickup truck, Ford F-2, 1952 model, 3/4 ton, initial cost $1,938.00, use allowance $33.00	$ 33.00	$ 396.00
Radiometric equipment (one Halross Model 939 scintillometer, one Min. Eng. #82700 Geiger Counter and Probe, one Lucky Strike Model 106 Geiger Counter) Cost $1,523.28, use allowance $15.00	15.00	180.00
Surveying equipment (transit, plane table, alidade, tapes, etc.) Cost $1,600.00, use allowance $20.00	20.00	240.00
Sampling and analytical equipment (complete equipment for handling, preparation, and fluorimetric analysis of samples). Cost $3,000.00, use allowance $30.00	30.00	360.00
Shop and shop equipment, initial cost in excess of $3,000.00, use allowance $50.00	50.00	600.00
	$142.00	$1,776.00

(2) Applying to wagon drill only.	One month	18 Months.
Wagon drill mounted on half-track. Gardner-Denver 210 c/m compressor driven by Buda gas engine, Gardner-Denver L73 drill mounted on slide for 18' steel changes, total cost $10,180.10, use allowance $170.00	$170.00	$3,060.00
	$170.00	$3,060.00

6. Estimate of costs. (Con't.)

(d) Applying to diamond drill only.

	One Month	4 Months.
Joy Model 7 diamond core drill with F-2 screwfeed, mounted on 1½ ton truck, total cost $5,811.41, use allowance $100.00	$ 100.00	$ 400.00
Accessory water tanks and pumps for use with diamond drill, 4 steel tanks and 2 portable pumps, use allowance $20.00	20.00	80.00
Water haulage truck, Ford Model F-6, 1951, dump body, cost $3,599.75, use allowance $60.00	60.00	240.00
	$180.00	$720.00

(e) Rehabilitation and repairs.

None

(f) New buildings, improvements, installations.

	One month	12 months.
One half of office rental on office currently rented in Edgemont, all office and analytical work to be done in this office.	$50.00	$600.00
	50.00	$600.00

(g) Miscellaneous.

	12 Months.
Repairs to operating equipment Est. at $200.00/month.	$2,400.00
Payroll taxes, est. at 8% of total payroll. ?	3,232.00
Equipment insurance, est. at 1%/year	270.00
	$5,902.00

(h) Contingencies.

Est. at $2,500.00	$2,500.00

6. Estimate of costs. (Con't.)

Summary of costs.

Notes:

(1) Wagon drilling has been estimated at an average rate of 100 feet per day. Costs have been shown to apply for 18 months. To complete the work within 18 months, applicant would secure by purchase or rental the use of another wagon drill for 6 months.

(2) Overall project costs have been considered as accruing to types of drilling on a 25% - 75% basis, 25% to diamond drilling, and 75% to wagon drilling.

Item	Overall costs	Wagon drilling	Diamond drilling
(a)	---	---	---
(b)	$23,400.00	$12,600.00	$4,400.00
(c)	2,604.00	8,100.00	3,040.00
(d)	1,776.00	3,060.00	720.00
(e)	---	---	---
(f)	600.00	---	---
(g)	5,902.00	---	---
(h)	2,500.00	---	---
Totals	$36,782.00 $0.719	$23,760.00 $0.53	$8,160.00 $1.775/ft

6. Estimate of costs. (Con't.)

Allotting overall cost on the foregoing 25% - 75% basis, costs for drilling are as follows:

	Wagon drilling	Diamond drilling
Direct	$23,760.00	$ 8,160.00
% of overall	27,586.50	9,195.50
Total	$51,346.50	$17,355.50

This reduces to cost per foot as follows:

Wagon drilling-

$$\frac{\$51,346.50}{44,770} = \$1.\underline{147} \text{ / foot} = \$1.\underline{15}$$

Diamond drilling (BX or larger)-

$$\frac{\$17,355.50}{4,595} = \$3.\underline{777} \text{ / foot} = \$3.\underline{78}$$

Breakdown of costs per foot of drill hole is shown in the following table.

Item	Wagon drilling Amount	Wagon drilling Cost/foot	Diamond drilling Amount	Diamond drilling Cost/foot
(a)	---	---	---	---
(b)	$30,150.00	$ 0.673	$10,250.00	$2.240
(c)	10,053.00	0.224	3,691.00	0.792
(d)	4,392.00	0.098	1,164.00	0.254
(e)	---	---	---	---
(f)	450.00	0.010	150.00	0.033
(g)	4,426.50	0.099	1,475.50	0.322
(h)	1,875.00	0.043	625.00	0.136
Total	$51,346.50	$ 1.147	$17,355.50	$3.777

Costs on footage basis may then be tabulated as follows:

	Wagon drilling Feet	Wagon drilling Cost	Diamond drilling Feet	Diamond drilling Cost
Stage I	14,770	$16,985.50	1,595	$ 6,029.10
Stage II	30,000	34,500.00	3,000	11,340.00
Total	44,770	$51,485.50	4,595	$17,369.10

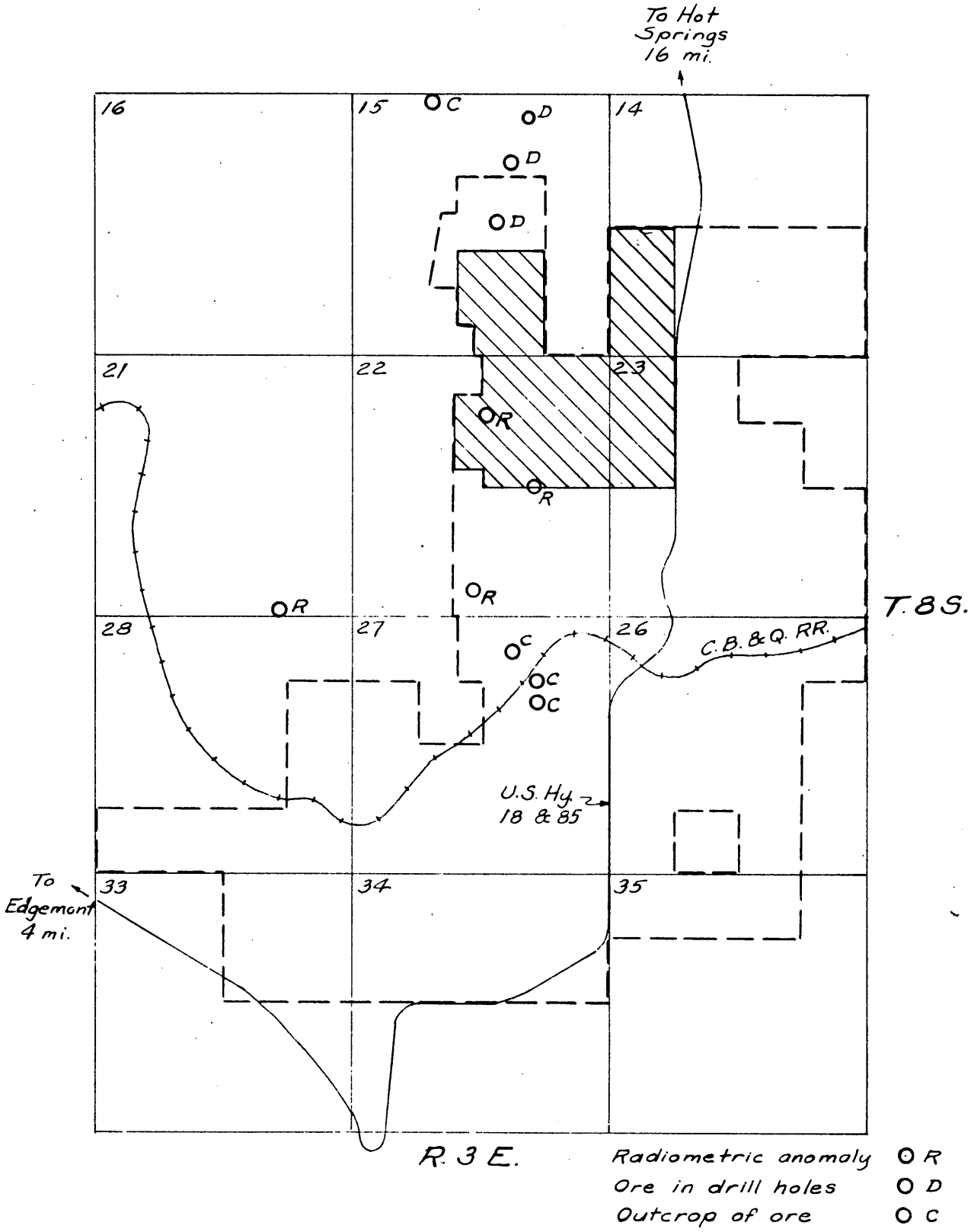
Total project cost = $68,854.60

DMEA Application

Mining Research Corp.
4215 Balsam Street
Wheatridge, Colorado

7. (a) The applicant is prepared to furnish its share of the cost of the proposed project in accordance with DMEA regulations.

(b) The applicant proposes to furnish its share of the costs in part by the use of equipment owned, as listed in Section 6 (d) of the application, and in part by supplying operating funds. The applicant is prepared to deposit funds representing its share of the costs not covered by the use of equipment, in a depository designated by the Defense Minerals Exploration Administration.



PORTION OF EDGEMONT URANIUM AREA

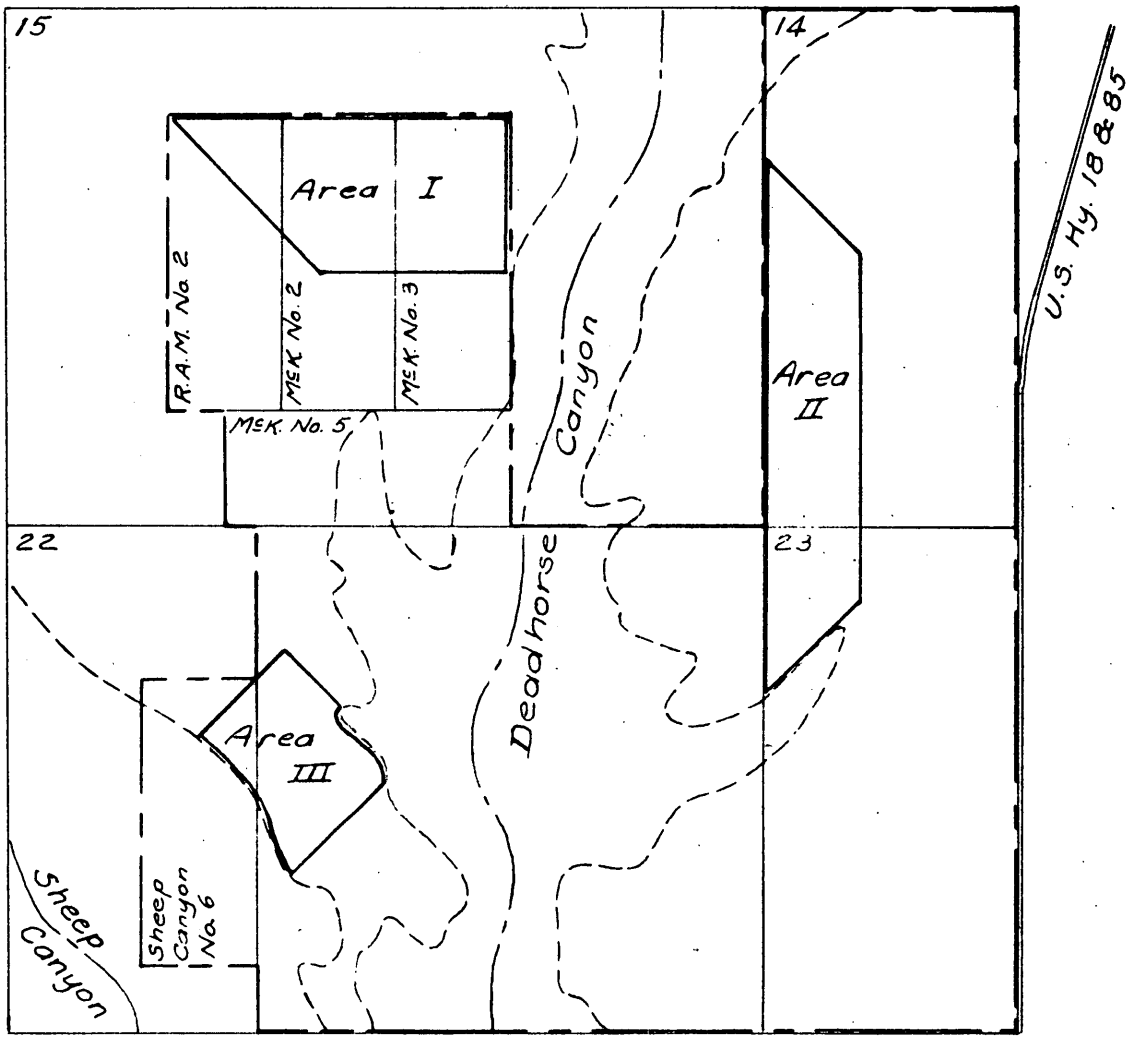
FALL RIVER COUNTY, SOUTH DAKOTA

Area under lease by applicant

Area covered by this application

Scale: 1" = 3000'

EXHIBIT A



PORTION OF SECTIONS 14, 15, 22, 23,
T. 8 S., R. 3 E., FALL RIVER COUNTY, S.D.,
SHOWING DRILL AREAS

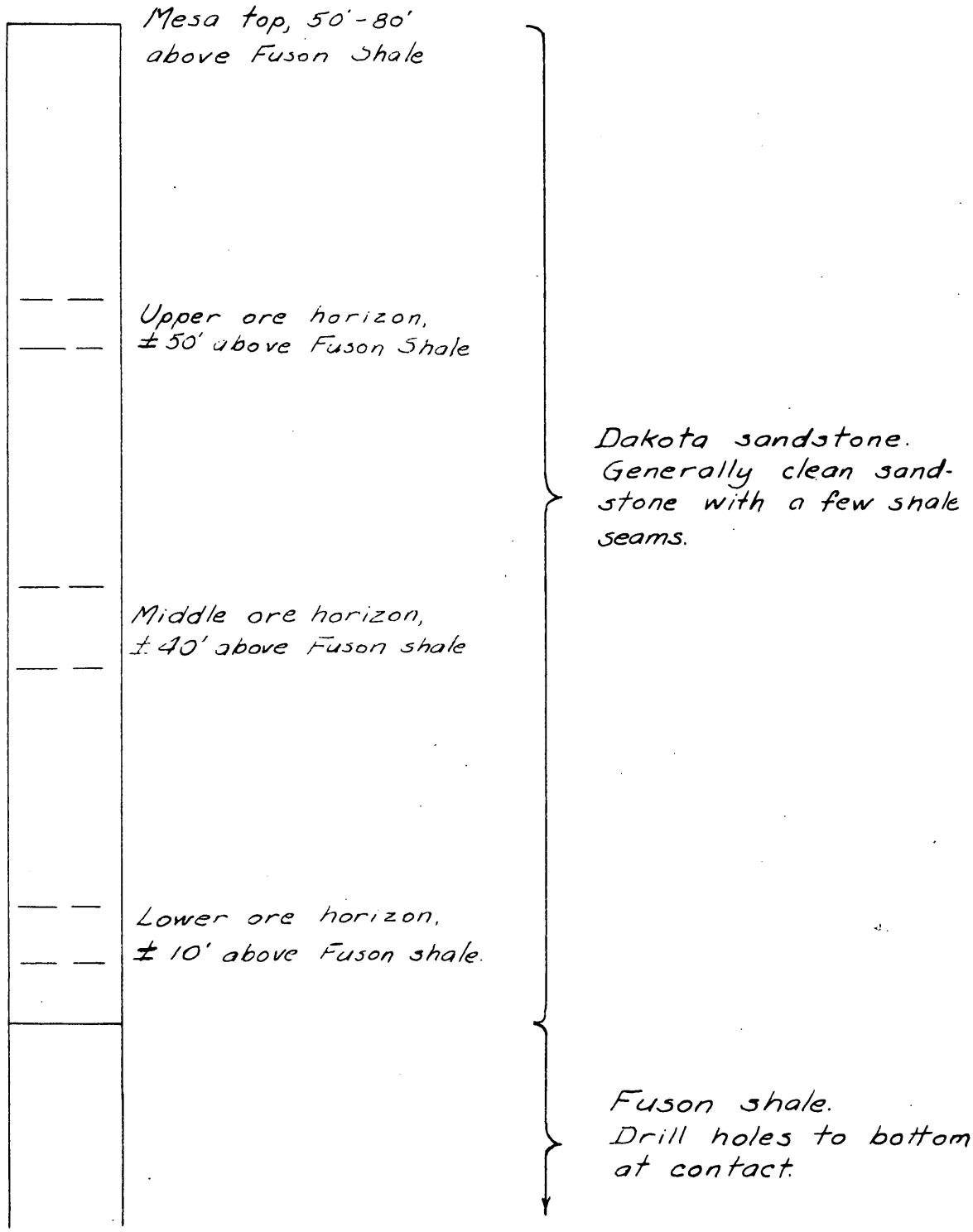
Outline of area covered by application ——— - ———

Outline of mesa rims - - - -

Outline of Stage I drill areas ———

Scale: 1" = 1000'

EXHIBIT B



GENERALIZED GEOLOGIC SECTION IN AREAS TO BE DRILLED

Not to scale.

EXHIBIT C

Dmea - 2768

MINING RESEARCH CORPORATION

INCORPORATED

4215 Balsam Street
Wheatridge, Colorado

October 30, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DENVER
NOV 6 1952

Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

Gentlemen:

Attached is a DMEA loan application submitted in quadruplicate by the Mining Research Corporation. This application covers a project, the estimated cost of which is $78,034.28. The land covered by the exploration project is near Edgemont in the Fall River County of South Dakota, where we propose to explore for uranium in the form of carnotite.

Although we believe the application is complete in all respects, if you would like to have any additional information, we shall be happy to furnish it to you.

Sincerely,

J. Sterling Livingston

J. Sterling Livingston
Vice President and Treasurer

JSL:bll
Enclosure

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 6 1952

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. Dmea-2768
Metal or Mineral
Date Received 11-6-52
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: Mining Research Corporation, 4215 Balsam Street, Wheatridge, Colorado.
(Answers to all questions are given on the attached pages.)

(*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

(*b*) State any mine name by which the property is known.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise

(*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.

(*e*) If you own the land, describe any liens or encumbrances on it

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

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.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*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 will to explore .....

.....

(*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 contact veins, ore-bearing beds, etc.

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

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

[X] Money [X] 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 October 30, 1952

MINING RESEARCH CORPORATION
(Applicant)

By J. Sterling Livingston

J. Sterling Livingston

Vice President and Treasurer

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

DMEA Application
Mining Research Corp.
4215 Balsam Street
Wheatridge, Colorado

1. Name of applicant.

(a) Mining Research Corporation, 4215 Balsam Street, Wheatridge, Colorado.

(b) Incorporated in the state of Delaware.

(c) Clifton W. Livingston, president, 4215 Balsam Street, Wheatridge, Colorado; J. Sterling Livingston, vice president and treasurer, 600 Ninth Avenue, Boulder, Colorado; and Ruth E. Livingston, secretary, 600 Ninth Avenue, Boulder, Colorado.

3. Applicant's property rights.

(a) The land covered by this application is in the Edgemont uranium area, Fall River County, South Dakota, and is located in Township 8 South, Range 3 East (T. 8 S., R. 3 E.). The land to be explored, as well as other land under the applicant's control that may be benefited by the exploration, is described in Exhibit A.

The land included in this application is deeded land located in T. 8 S., R. 3 E., as follows:

Section 14 - The S 1/2.
Section 22 - The E 1/2 less a strip on the W side of the E 1/2 1,020 feet wide by 5,280 feet long which comprises the mesa between Sheep Canyon and Deadhorse Canyon.
Section 23 - The NW 1/4, the SW 1/4 of the NE 1/4, and the S 1/2 except the SE 1/4 of the SW 1/4.
Section 26 - The NW 1/4, except the NE 1/4 of the NW 1/4, the N 1/2 of the NE 1/4, the SW 1/4 of the NE 1/4, the W 1/2 of the SE 1/4, the N 1/2 of the SW 1/4, and the SW 1/4 of the SW 1/4.
Section 35 - The N 1/2 of the NW 1/4, and the NW 1/4 of the NE 1/4.

As indicated on Exhibit A, the applicant also holds leases on the following land, which is excluded from this application but which may be benefited indirectly by the exploration:

Section 15 - Mining claims R.A.M. #1, R.A.M. #2, and R.A.M. #3, leased from Royce A. McElhaney; mining claims M.K. #1, M.K. #2, M.K. #3, M.K. #4, M.K. #5, leased from John McKnight.
Section 22 - A strip on the W side of the E 1/2 of the section, 1,020 feet wide by 5,280 feet long, which comprises the mesa between Sheep Canyon and Deadhorse Canyon; mining claims Sheep Canyon #4, Sheep Canyon #5, and Sheep Canyon #6, leased from Robert E. Gull and Carl V. Gull.
Section 27 - Mining claims Sheep Canyon #1, Sheep Canyon #2, and Sheep Canyon #3, leased from Carl V. Gull, Earl Boner, and Vernon Harriett; deeded land leased from Robert E. Gull as follows: the E 1/2 of the NE 1/4, the SW 1/4 of the NE 1/4, the SE 1/4, the SW 1/4, and the SW 1/4 of the NW 1/4.
Section 28 - Deeded land leased from Robert E. Gull as follows: The SE 1/4 of the NE 1/4, the NE 1/4 of the SE 1/4, the S 1/2 of the SE 1/4, and the S 1/2 of the SW 1/4.
Section 33 - Deeded land leased from Robert E. Gull as follows: the NE 1/4.
Section 34 - Deeded land leased from Robert E. Gull as follows: the N 1/2.

3. Applicant's property rights. (Cont.)

(b) The property covered by this application has not previously been worked in any way and has no mine name.

(c) The applicant is lessee of the property.

(d) Copies of the leases covering the property included in this application are attached.

(e) Not applicable.

(f) Not applicable because land covered by this application is all deeded land.

4. Physical description.

(a) No exploration or mining operations have been conducted on the land included in this application. The applicant is now drilling on claims it has leased in Section 15 near the NW boundary of the property described in this application. On the land adjacent to the N boundary of the property on which the applicant is drilling, the U. S. Vanadium Corporation is conducting a drilling program. Uranium is being mined both NE and SE of the land which the applicant proposes to explore.

The applicant's drilling in Section 15 is being conducted in areas where ore is known to exist and is designed to block out ore in preparation for production. There are at the present time no openings or production facilities other than drill holes, which are open for radiometric logging. The assays and records of results of the applicant's drilling operations are available. Applicant's interest in this work is that of a lessee-operator.

(b) There has been no past production, and the work to date is not sufficient to determine reserves.

(c) Uranium mineralization of the district is found in slightly tilted sandstones of the Dakota and Lakota formations on the southwest flank of the Black Hills. Mineralization is found at several horizons in the Dakota and Lakota sandstones as indicated on the accompanying section marked "Exhibit B." The deposits consist of irregular lenses in the sandstones and are flat-lying, conforming generally to the dip of the host formation. Mineralization is similar to that of the Colorado Plateau uranium area. The principal uranium mineral is carnotite. Exhibit A accompanying this application shows locations where ore is exposed in outcrops, where ore has been found by drilling, and where radiometric anomalies indicate potential ore bodies.

The existence of visible outcrops, the fact that commercial grade ore has been found in drill holes, the existence of radiometric anomalies, and the distribution of locations of these features around the property involved, lead to the conclusion that a program for complete exploration of the area is desirable, and that it should lead to the discovery of commercial ore bodies.

(d) The property is easily accessible from either Edgemont or Hot Springs over U. S. Highway 85A, an oiled highway which passes directly through the property and is fully maintained at all times. With the exception of rougher parts of the canyon bottoms, all parts of the area can be reached by pickup trucks. A small amount of road work with a bulldozer would give access to those portions of the canyon bottoms not already accessible.

Shipping point is Edgemont, on the Chicago, Burlington, and Quincy Railroad.

[illegible] on
[illegible] dump.
[illegible]
[illegible]

4. Physical conditions.

(a) The exploration on Alaskan operations have been conducted on the land included in the application. The applicants do not anticipate or claim to have access to property by reason of ownership of the property described in said application. It is the land adjacent to the U.S. [illegible] of the property on which are placions in [illegible], the U.S. Land Office [illegible] is conducting a drilling program. Persons in making minor [illegible] Mt and all of the land which the applicant's propose to conform.

The applicants drilling in section 13 is being conducted in areas where care is taken to avoid and is drilled on block out are in preparation for production. There are no big streams, lake or [illegible] or production facilities other than drill holes, which are open for [illegible] inspection. The assays and analysis of samples of the [illegible] drilling operations are available. Applicants [illegible] in [illegible] the land of a lessee-operator.

(b) There has been no pack production, and no work is [illegible] applicants to determine reserves.

(c) Alaskan climatic conditions of the Yukon are [illegible] [illegible] science of the Yukon and Canada for [illegible] [illegible] [illegible]

4. Physical description. (d) (Cont.)

Supply and residence points are Edgemont and Hot Springs. From the center of the property it is eight miles to Edgemont and twenty miles to Hot Springs over Highway 85A.

(e) Applicant has at present personnel needed to develop and supervise the exploration project and to form the nucleus of the crew for exploration. Such additional labor as is necessary can be secured from the surrounding area.

Common items of material and supplies may be secured in Edgemont or Hot Springs. Specialized materials, equipment, and supplies would, in many cases, have to be secured from Denver, Colorado. Since rail, bus, truck, and air service between Denver and Edgemont and Hot Springs is regularly scheduled, this would not require maintenance of large stocks on the property.

Water is available either at springs and wells on the property or by haulage from the Edgemont city water supply at a cost of $0.10 per load, regardless of amount.

Power is available from a transmission line which passes within 1,000 feet of the north edge of the property. Due to need for mobile equipment, however, it is planned to use gasoline as a source of power. This is available from bulk distributors in Edgemont and Hot Springs.

5. The exploration project.

(a) Exploration will be for uranium in the form of carnotite.

(b) The applicant proposes to explore the property by two stages of drilling. In Stage I, the area covered by this application will be drilled on a hole spacing of 600 feet, center to center. In Stage II, each drill hole which shows ore will be surrounded by drill holes on a spacing of 100 feet, center to center. Thus, in Stage II, each mineralized hole of Stage I will become the center of a 200-foot square embracing 8 additional holes. Due to the fact that the normal ore occurrences consist of irregular lenses of ore, it is considered that the second stage of drilling is necessary to determine whether initial showings represent actual ore bodies or merely small pockets of ore without commercial significance.

The topography and dip of the sediments combine to make it necessary to drill to varying depths. Depths of holes should vary between 50 feet and 150 feet, with 100 feet as average depth. Holes drilled on the mesas are intended to prospect those ore horizons lying in the Dakota sandstone above the Fuson Shale (see Exhibit B). Drill holes in the canyon area are intended to prospect the ore horizons lying in the Lakota sandstone below the Fuson Shale and above the Morrison formation.

In accordance with the foregoing considerations, the proposed exploration program is designed to be completed within one year with the use of one diamond drill and one wagon drill. In Stage I, the diamond drill holes are spaced at the corners and at the center of 3,000-foot squares in such a manner that a regular system of geologic cross sections can be constructed utilizing either the results of diamond drilling alone or the results of both wagon and diamond drilling. As is shown on Exhibit A, 36 diamond drill holes and 167 wagon drill holes, or a total of 203 holes, are proposed for Stage I.

The applicant estimates that, allowing for normal operating difficulties, it will be possible to drill 47 diamond drill holes 100 feet deep and 340 wagon drill holes 100 feet deep. Accordingly, 11 diamond drill holes (47 - 36 = 11) and 173 wagon drill holes (340 - 167 = 173), or a total of 184 holes, can be drilled in Stage II. Thus, it will be possible in Stage II to drill a series of 8 holes around 23 mineralized holes discovered in Stage I (8 x 23 = 184). The proposed program assumes that 11.3% of the 203 holes drilled in Stage I will be mineralized (11.3% x 203 = 23). If the percentage of mineralized holes proves to be lower than estimated and fewer than 23 clusters of Stage II holes are required, the applicant proposes to use the excess holes for drilling at 300-foot intervals within that portion of the land included in this application which geologic work indicates to be most favorable.

DMA Application
Mining Research Corp.
1215 Belle Avenue
Wheatridge, Colorado

5. The exploration project.

(a) Exploration will be for manganese in the form of carbonate.

(b) The applicant proposes to explore the property by two stages of drilling. In Stage I, the area covered by this application will be drilled on a hole spacing of 600 feet, center to center. In Stage II, each drill hole which shows ore will be surrounded by drill holes on a spacing of 100 feet, center to center. Thus, in Stage II, each mineralized hole of Stage I will become the center of a 200-foot square surrounding 8 additional holes. Due to the fact that the normal ore occurrences consist of irregular lenses of ore, it is conceivable that the second stage of drilling is necessary to determine whether individual occurrences represent small ore bodies or merely small pockets of ore without commercial significance.

The topography and dip of the earth strata combine to make it necessary to drill to varying depths. Depths of holes should vary between 50 feet and 150 feet, with 100 feet as average depth. Holes drilled on the areas are intended to prospect those ore horizons lying in the Dakota formations above the Benson Shale (see Exhibit 1). Drill holes in the canyon area are intended to prospect the ore horizons lying in the Dakota formations below the Benson Shale and above the Morrison formation.

In accordance with the foregoing considerations, the proposed exploration program is designed to be completed within one year with the use of one diamond drill and one wagon drill. In Stage I, the diamond drill holes are located at the corners and at the center of 2,000-foot squares in such a manner that a regular pattern of geologic cross sections can be constructed utilizing either the results of diamond drilling alone or the results of both wagon and diamond drilling. In its entirety, the diamond drill holes and 167 wagon drill holes, or a total of 203 holes, are proposed for Stage I.

The applicant contends that, allowing for normal operating difficulties, it will be possible to drill by diamond drill holes 100 feet deep and the wagon drill holes 100 feet deep. Accordingly, if diamond drill holes (47 - 36 = 11) and 172 wagon drill holes (140 - 167 = 27), or a total of 181 holes, can be drilled in Stage II. Thus, it will be possible in Stage II to drill a series of 8 holes around 11 mineralized holes discovered in Stage I (8 x 23 = 184). The proposed program assumes that 11.3% of the 203 holes drilled in Stage I will be mineralized (11.3% x 203 = 23). If the percentage of mineralized holes proves to be lower than anticipated and fewer than 23 clusters of Stage II holes are required, the applicant proposes to use the excess holes for drilling at 200-foot intervals within the portion of the land included in this application which geologic work indicates to be most favorable.

5. The exploration project. (b) (Cont.)

The proposed program may be summarized as follows:

	Diamond Drill Holes	Wagon Drill Holes	Total Holes
Stage I	36	167	203
Stage II	11	173	184
Total Program	47	340	387
Average Depth in ft.	100	100	
Total footage	4,700	34,000	

(c) The work will start within 15 days and be completed within 12 months from the date of an exploration project contract.

(d) The applicant is qualified in all respects to carry out the exploration project described in this application. Applicant now possesses substantially all equipment required, adequate working capital, and thoroughly experienced and capable engineering and supervisory personnel. The project will be carried out under the direction of Clifton W. Livingston, president of the Mining Research Corporation, who has had over 20 years' experience in the mining industry, much of it in uranium geology and mining. After serving an apprenticeship of 2½ years as a miner, mucker, mine surveyor, and draftsman, Mr. Livingston has held the following engineering, geological, supervisory, and teaching positions:

1933 - 1935 Design Engineer, Alaska Juneau Gold Mining Company, Juneau, Alaska. Designed and supervised installation of approximately one-half million dollars' worth of shaft plant equipment (shaft capacity 6,000 tons per day). Also designed pivoted truss stacker for loading waste disposal barges, power plant, flume, and miscellaneous mill and surface plant modifications.

1935 - 1936 Mine Superintendent, Arizona Comstock Corporation, Virginia City, Nevada. The company's operations consisted of open pit mining with power shovels, mining 600 tons of ore daily, stripping 1,200 tons waste daily.

1936 - 1939 Chief Engineer and Geologist, Baguio Gold Mining Company, Baguio, P. I. Directed exploration program which resulted in doubling mill capacity and increasing ore reserve fourfold.

1939 - 1940 Assistant General Superintendent, Baguio Gold Mining Company, in charge of production. Mill capacity: 500 tons daily.

5. The exploration project. (d) (Cont.)

1940 - 1942	Instructor in Mining, Michigan College of Mining and Technology (while working for advanced degree). Taught the following courses: Principles of Mining, Mine Plant, Mine Development, Mine Surveying, Mining Methods, Hydraulics, Office Engineering, Topographic Mapping.
Summer, 1941	Associate Geologist, Geological Survey of Newfoundland. Party Chief in charge of mapping and directing exploration of Rambler Gold District, Baie Verte, Newfoundland.
1942 - 1943	Mine Superintendent, Calumet and Hecla Consolidated Copper Company. Dewatered, reopened and placed Central Mine in production. Developed and brought Iroquois Mine into initial stages of production. Worked out details of mechanization and mining method for large-scale production. Established Michigan drifting record.
1943 - 1945	Field Geologist, Union Mines Development Corporation. Party Chief in regional geologic mapping, sampling, ore estimation and reports.
1945 - 1947	Associate Professor of Mining, Colorado School of Mines. Taught the following subjects: Principles of Mining, Mine Development, Mining Methods, Mining Economics, Mine Valuation, Mine Design, Drilling and Blasting.
1947 - 1951	Professor and Head, Department of Mining, Colorado School of Mines. Was in charge of the metal mining and coal mining options including both undergraduate and graduate curricula. Work included administration, teaching, graduate research, industrial research, and planning.

In addition to Mr. Livingston's duties as head of the Department of Mining at the Colorado School of Mines, he served as a consultant to private concerns and to the U. S. Army, as well as Project Manager for the Colorado School of Mines Research Foundation. As Project Manager, he was in charge of the work of from 28 to 35 engineers and technicians over a period of two years. Mr. Livingston holds the following degrees: E. M., Colorado School of Mines, 1933; M. S., Geol. Eng., Michigan College of Mining and Technology, 1942.

Mr. George W. Heim, who has had over 20 years' experience in mining and engineering, will serve as the field superintendent and will be in direct charge of the exploration work. Mr. Heim has had 10 years' field experience in the western United States and South America, which included underground work as a miner and a mining engineer, field exploration work on hardrock properties, placer exploration work, and placer

3. The exploration project. (c) (Cont.)

1940 - 1942 Instructor in mining, Michigan College of Mining and Technology (public working for advanced degree). Study of the following sources: Transylvania [illegible], Nine Mile, [illegible] development, Lake Superior, Mining methods, Mineral [illegible], Engineering, Geologic [illegible] Engineering.

Summer, 1942 Assistant geologist, Geological Survey of New Mexico. Survey work in charge of supervising diamond drilling exploration of Gallup District, Rio Arriba County, New Mexico.

1942 - 1944 Mine Superintendent, Kaiser and Fish Coronado Copper Company. Developed, [illegible] and placed Central Mill in production. Developed ore bodies, [illegible] Mine [illegible] initial stages of production. Worked out details of [illegible] method and mining method for large-scale production. Established Molybdenite [illegible] mined.

1944 - 1946 Fresno Reclamation, Water Conservation Corporation. Early [illegible] as regional engineer supervising [illegible], [illegible] and reports.

1946 - 1947 Associate Professor in Mining, Colorado School of Mines. Teaching the following subjects: Technique of [illegible], Mine development, Mining methods, Mining economics, Mine [illegible], Mine Geology, Training and Advanced.

1947 - 1951 Professor and head, Department of Mining, Colorado School of Mines. Was in charge of the mining and oil [illegible] engineering curriculum, including both undergraduate and graduate [illegible]. Work included curriculum [illegible], [illegible] research, industrial consult, and planning.

In addition to the investigations outlined in Part of the Department of Mining at the Colorado School of Mines, he served as a consultant on [illegible] problems for the U. S. Army, on [illegible] as a geologist [illegible] Colorado School of Mines Research Foundation. On Project [illegible], he was in charge of the [illegible] from 25 to 30 engineers and technicians over a period of two years. Mr. Pettingrew holds the following degrees: B. S., Colorado School of Mines, 1938; M. S., Univ. Ill., Mining Technology of Mining and Metallurgy, 1942.

Mr. George H. Hong who has had over 25 years' experience in mining and exploration, will serve as the Chief Mining Engineer and [illegible] in charge of the exploration work. Mr. Hong has had [illegible] years' [illegible] experience in the western United States and South America, [illegible] underground work as a miner and a mining engineer. With exploration [illegible] or mineral properties, plant [illegible] and [illegible], the [illegible]

5. The exploration project. (d) (Cont.)

operations. His employers during this period include the South American Gold and Platinum Company; Robert McCart, Jr., Consulting Mining Engineer; The Canyon Corporation; John W. Vanderwilt, Consulting Geologist; and the U. S. Bureau of Mines.

After spending four years in Army Ordnance and Engineers during World War II, Mr. Heim became, first, an assistant and, subsequently an associate professor in the Department of Mining, Colorado School of Mines. In addition to his teaching duties, Mr. Heim worked for the Colorado School of Mines Research Foundation and for various individuals and concerns as a consultant. Mr. Heim, who joined the staff of the Mining Research Corporation in 1952, holds the Master's degree in Mining Engineering from the Colorado School of Mines, as well as the E. M. degree.

Mr. Harold Davidson, who also has had over 30 years' experience in the mining industry, is employed by the Mining Research Corporation as a mining engineer. Mr. Davidson was an engineer for the Oliver Iron Mining Company for 18 years and during 10 of these years was in charge first of shaft sinking and later in charge of the company's entire timber and mineral lands. In addition to a number of other mining engineering positions, Mr. Davidson worked for the Michigan Tax Commission as an engineer in the Commission's mine appraisal work. From 1946 to 1949, Mr. Davidson was an assistant professor at the Colorado School of Mines. He holds the C. E. degree from the University of Michigan and the E. M. degree from the University of Wisconsin.

Mr. Robert Ward, who holds the degree of Geol.Eng. from the Colorado School of Mines, will serve as junior geologist on the exploration project, under Mr. Livingston's direction. Mr. Ward has had approximately two years' experience as a geologist in the Colorado Plateau area. Before joining the staff of the Mining Research Corporation, Mr. Ward was employed by the Delaney Mining Company.

In addition to the individuals named above who will be assigned to the exploration project described in this application, the applicant also is able to draw on the services of the following engineers now in its employ:

1. Allen D. Gray. B. S., Pennsylvania State College; M. S., Colorado School of Mines. Since 1948, Mr. Gray has held the following positions: Industrial Engineer, Island Creek Coal Company, 1948; Mining Engineer, R and P Coal Company, 1949-1950; Engineer and Senior Engineer, Colorado School of Mines Research Foundation, 1950-1951; Instructor in Mining, Colorado School of Mines, 1951-1952. Since June, 1952, Mr. Gray has been employed by the applicant as a mining engineer.

5. The exploration project. (d) (Cont.)

2. Russell L. Wood. E. M., Colorado School of Mines. Since 1949, Mr. Wood has held the following positions: Mining Engineer, Grosvenor Talc Company, 1949-1950; Mining Engineer, Colorado School of Mines Research Foundation, 1950-1951. Since the summer of 1951, Mr. Wood has been employed by the applicant as a mining engineer.

3. Karl Lambertson. E. M., Colorado School of Mines. From 1949 to June, 1952, Mr. Lambertson was employed by the Star Mining Company as a mining engineer. The Mining Research Corporation has employed him as a mining engineer since June, 1952.

6. Estimate of costs. The total estimated cost of this project is $78,034.28. Detailed cost estimates follow.

(a) Independent contracts. None, except contract for access roads by bulldozer estimated at 2 days per month at $10.00 per hour (2 days x 8 hours a day x $10 an hour = $160.00 per month) or a total of $1,920.00 for 12 months.

(b) Labor, supervision, consultants.

	Salaries and Wages	
	One Month	12 Months
Project Supervisor and Geologist	$ 520.83*	$ 6,250.00*
Field Superintendent (1/2 time @ $600.00/M)	300.00**	3,600.00**
Engineer (1/2 time @ $500.00/M)	250.00**	3,000.00**
Junior Geologist (1/2 time @ $450.00/M)	225.00**	2,700.00**
Wagon Drill Operator	400.00	4,800.00
Wagon Drill Helper	300.00	3,600.00
Diamond Drill Operator	400.00	4,800.00
Diamond Drill Helper	300.00	3,600.00
Truck Driver - Laborer	350.00	4,200.00
Total	$ 3,045.83	$36,650.00

*This sum is 1/4 the salary paid to C. W. Livingston by the Mining Research Corporation. Mr. Livingston will spend 1/4 of his time directing and supervising this exploration project.

**Although the exploration project will require one year to complete, it is estimated that the Field Superintendent, Engineer, and Junior Geologist will need to devote only 1/2 their time to this project. Accordingly, the above cost estimate provides for only 1/2 their salaries.

(c) Operating materials and supplies.

	One Month	12 Months
Fuel (gasoline) (1,600 gal./mo. @ $0.26)	$ 416.00	$ 4,992.00
Oil, grease, and maintenance supplies	45.00	540.00
Drill steel, rods, bits, hoses, & fixtures	600.00	7,200.00
Core boxes & sampling supplies	90.00	1,080.00
Shop & hand tools & miscellaneous supplies	140.00	1,680.00
Office & drafting supplies, postage, and secretarial service	125.00	1,500.00
Total	$ 1,416.00	$16,992.00

6. Estimate of costs. (Cont.)

(d) Operating equipment.*

	One Month	12 Months
Wagon drill mounted on half-track (WHF-2003 Port. Comp., Model WH-210-GF W/Buida Gasoline Engine; half-track remodeled to mount compressor and drill; D 73 D GD Dry Derrick Drill complete W/ 1" x 4¼" HEX CHK Blowing Cyl.; CMA Chain feed drill MTG W/side Ftgs.; Min. Eng. 18' feed; and Sample collection device; total cost, $10,180.10) Use allowance @ $169.67/M	$ 169.67	$ 2,036.04
Diamond drill mounted on truck (Joy model 7 core drill complete with E-2 screwfeed; drill base, tripod, and tool box; 1952, 1½ ton Ford truck (F-5), reinforced flat bed, 7/50-20 tires; total cost, $5,811.41) Use allowance @ $96.86/M	96.86	1,162.32
Haulage truck for water & heavy supplies (1951, F-6, Ford dump truck, and two 200-gal. water tanks; total cost, $3,599.75) Use allowance @ $60.00/M	60.00	720.00
Pick-up truck (1951, 3/4 ton Dodge truck, pick-up body; total cost, $1,748.50) Use allowance @ $29.14/M	29.14	349.68
House-trailer for living & messing quarters (1952, Litehouse Privateer; total cost, $3,055.00) Use allowance @ $50.92/M	50.92	611.04
Geiger Counters and Scintillometer (Min. Eng. #82700 Geiger Counter and Probe; Lucky Strike Model 106 Geiger Counter; and Standard Model 939 Halross Scintillometer; total cost, $1,523.28) Use allowance @ $25.39/M	25.39	304.68

*Substantially all the necessary operating equipment is now owned by the applicant. Except for the half-track, this equipment is all less than two years old.

6. Estimate of costs.

(d) Operating equipment. (Cont.)

	One Month	12 Months
Surveying equipment (Transit, plane table, explorer's alidade, survey tapes, and drafting table; total cost, $1,597.35) Use allowance @ $26.62/M	$ 26.62	$ 319.49
Sampling Equipment (Jones-Riffle splitter; McCool, 6½, 3 h.p. pulverizer; and 4/6, 3 h.p. jaw crusher; total cost, $1,130.30) Use allowance @ $18.84/M	18.84	226.08
Total	$ 477.44	$ 5,729.28

(e) Rehabilitation and repairs. None.

(f) New buildings, improvements, installations.

One sectional steel shop building, 16' x 25' 4"		
Cost of building	$ 926.00	
Erection of building	250.00	
Cost of material for benches, bins, etc.	300.00	
Installation of benches, bins, etc.	150.00	
Rental of office space at Edgemont, South Dakota 12 months @ $50.00/M	600.00	
Total		$ 2,226.00

(g) Miscellaneous.

	12 Months
Repairs to operating equipment Est. $150.00/M	$ 1,800.00
Payroll taxes, insurance, and unemployment compensation 7.994% of total payroll	2,932.00
Accounting and payroll services Est. $250.00/M	3,000.00
Analytical work (commercial) Est. 500 samples for U_3O_8 at $5.00 each	2,500.00
Equipment insurance (Rate approximately 1% per year)	285.00
Total	$10,517.00

(h) Contingencies.

Est. at approximately 5% of above total	$ 4,000.00

6. Estimate of costs. (Cont.)

Summary:

Independent contracts (Bulldozer work)	$ 1,920.00	
Labor, supervision, consultants	36,650.00	
Operating materials and supplies	16,992.00	
Operating equipment (Use allowance)	5,729.28	
New buildings, improvements, installations	2,226.00	
Miscellaneous	10,517.00	
Contingencies	4,000.00	
Total Estimated Costs		$78,034.28

7. (a) The applicant is prepared to furnish its share of the cost of the proposed project in accordance with DMEA regulations.

(b) The applicant proposes to furnish its share of the costs in part by the use of equipment owned, as listed in Section 6(d) of the application, and in part by supplying operating funds. The applicant is prepared to deposit funds representing its share of the costs not covered by the use of equipment, in a depository designated by the Defense Minerals Exploration Administration.

Dakota Sandstone Ore Horizon	Dakota Sandstone - Generally about 200' thick. Ore horizon 50' to 100' above Fuson Shale. Drill holes on upper parts of mesas designed to explore for this ore horizon.
Fuson Shale	Fuson Shale - Average 30' thick Barren.
Lakota Sandstone Ore Horizon	Lakota Sandstone. Generally about 200' thick. Ore horizon 50' to 100' above Morrison Shale. Drill holes on lower parts of mesas and in canyons designed to explore for this ore horizon.
Morrison Shale	Morrison Shale - Generally recognized as below any potential ore horizons.

GENERALIZED STRATIGRAPHIC SECTION, EDGEMONT URANIUM SECTION, SHOWING POTENTIAL ORE HORIZONS

Not to scale

EXHIBIT B

[illegible]

This [illegible], entered into as of the 31st day of July, 1958, by and between Edna McKnight, (hereinafter called the lessors), and Mining Research Corporation, (hereinafter called the lessee), [illegible]:

I. Lessors, for and in consideration of the sum of Four hundred and no/100 ($400.00) Dollars in hand paid, of the royalties herein provided, and of the agreement of lessee herein contained, hereby grant, lease, let and rent exclusively unto lessee the following described property hereinafter described, for the purpose of investigation, exploring, prospecting and mining for, producing, saving, taking, working, treating, storing, handling and transporting uranium and all other minerals, excluding petroleum oil and natural gas, whether similar or dissimilar, together with the rights and privileges and use of land necessary for lessee's operations hereunder on said land and on land in the same field, including but not limited to the following rights, to lay pipe lines, to build roads and to construct mills, power stations, power and communication lines, houses for employees, and other structures and facilities. The said land included in this lease is situated in the Unorganized Mining District, County of Hall River, State of [illegible], and is more particularly described as follows:

Deeded Land as follows:

The South ½ of Sec. 14, T. 8 S., R. 3 E.

The North ½ of the NE ¼ of Sec. 22, T. 8 S., R. 3 E.

II. Subject to the other provisions herein contained, this lease shall continue in force for a period of five (5) years from the date hereof, called the "primary term", and thereafter so long as uranium or any other mineral is produced from said land hereunder, or thereafter so long as lessee spends a minimum amount of Five hundred and no/100 ($500.00) Dollars per year upon the development of said mining property.

III. Lessee agrees to comply with all provisions and requirements of Federal or State laws necessary to keep mining claims in full force and effect.

IV. Royalty to be paid by lessee for the extraction of uranium before March 31, 1958, shall be paid lessor in two parts, as follows:

A. Lessee shall pay lessors, as royalty, ten (10%) percent of the Atomic Energy Commission bonus for initial production of uranium ores from eligible new domestic mines. Said payments shall be made as soon as practicable after receipt of said bonus from the Atomic Energy Commission, and shall be subject to provisions of the Atomic Energy Commission regarding payments of bonuses. Lessee shall comply with all provisions of the Atomic Energy Commission for certification of this property as mining property eligible for bonus payments. For purposes of computing the amount of royalty payments to be made under this section, a record shall be kept by the lessee of the ore mined on each property or group of properties regarded by the Atomic Energy Commission as a single eligible unit for purposes of bonus payments.

B. In addition to the royalty payments in Section A, lessee shall pay lessor, as royalty for ore mined on this property, fifteen (15%) percent of the Atomic Energy Commission price paid for delivery of ore of like grade to a mill or purchasing depot. Royalty payments for each month shall be made on or before the 15th day of the following month, and settlement assays and settlement weights as determined by the Atomic Energy Commission shall be used as a basis for computing grade of the ore and royalty payments.

V. After March 31, 1958, lessee shall pay to lessors, as royalty for uranium ore mined on this property, fifteen (15%) percent of the market price paid for delivery of ore of like grade to a mill or purchasing depot. Royalty payments for each month shall be made on or before the 15th day of the following month.

VI. In addition to the above royalty payments, lessee agrees to pay lessors, as royalty for marketable ores, other than uranium ores, mined on this property, ten (10%) percent of the market price paid for similar ores of like grade. However, no royalty shall be paid for vanadium ores that assay less than one (1%) percent V_2O_5 .

VII. Lessee agrees to enter upon this property within sixty (60) days from the date of this agreement and to pursue diligently an investigation to determine the possibilities of a commercial enterprise and, if such possibilities are found to be favorable, to commence the necessary steps immediately thereafter for the development of the property. If such investigation is not commenced on said land on or before sixty (60) days from the date of this agreement, this lease shall terminate as to both parties, unless the lessee shall on or before such date, pay or tender to the lessors or their successors or assigns the sum of Five Hundred and no/100 ($500.00) Dollars which shall operate as a rental and cover the privilege of deferring the commencement of operations for the investigation and development of mineral production one year from the date of said payment. In like manner and upon like payments and tenders the commencement of operations for the investigation and development of mineral production may be further deferred for like periods successively during the primary term of the lease. And it is understood and agreed that the consideration first recited herein, the down payment, covers not only the privilege granted to the date when said rental is payable as aforesaid, but also the lessee's option of extending that period aforesaid, and any and all rights aforesaid.

VIII. Lessee agrees to expend a minimum sum of Five Hundred and no/100 ($500.00) Dollars per year during the primary term of this lease upon the development and production of minerals from this property. In the event that the lessee does not expend this minimum sum during any one year period, the said lessee shall have the option to forfeit all rights to this property under the terms of this lease agreement or of paying the sum of Five Hundred and no/100 ($500.00) Dollars per year as rental for the continuation of this lease agreement. In the event that the said lessee shall elect to forfeit all rights under this agreement for failure to expend said minimum sum, both parties hereto shall be released from any further obligations or liabilities under this agreement.

IX. Lessee agrees to permit lessors or their duly authorized agent or representative at any and all times (a) to enter upon and visit all parts of said leased premises for the purpose of observing whether the terms of this agreement are being fully and faithfully complied with by the lessee, and (b) to have surveys made of the workings. Lessee agrees to facilitate in every way such inspection or surveys, and to furnish, when requested, full, true and accurate information with regard to the condition of said workings or any part thereof or the quality or the character of the minerals therein. Lessee further agrees to conduct all operations in a miner-like manner, and not to maintain or tolerate any public nuisances not necessary to the mining operations upon the property.

X. Lessor hereby agrees to securely plug all drill holes, except where specified otherwise by the lessors, left by, or not necessary to, the mining operations, and furthermore, inasmuch as is practicable, grade to slopes excavations left by conventional mining operations. Lessee further agrees to replace or replace or repair all structures and facilities of the lessors damaged, destroyed or removed during mining operations. Lessee agrees not to commence operations in cultivated fields having a growing crop without the written consent of the lessor or their duly authorized agent.

XI. Lessors hereby warrant that the properties as covered in this agreement have been properly located and are legal and valid, and that they are the only parties that hold any interest in the property. In the event that the title to said property is found to be defective in any way, the lessors shall return to the lessee any moneys advanced to them by the said lessee, and shall be liable for any damages incurred by the lessee due to such defect in the title to the mining properties.

XII. Lessee shall pay all amounts to the lessors under any part of this lease agreement to John McKnight _____, as agent for the lessors, and lessee shall in no way be held liable to the lessors or to anyone of the lessors for the payment of any amount to the aforesaid agent.

XIII. Lessors hereby agree to cooperate with lessee in the securing of any loans necessary for the exploration and development of the leased property under the provisions of the Defense Minerals Exploration Administration for government aid in defense and exploration projects and to sign any instruments necessary for the procurement of such loans; provided, however, that the lessors shall not be required to sign any instruments or enter into any agreements which will subject them to any personal liability. ~~over and above such amount as may be received by them as income from the subject property.~~

XIV. All express and implied covenants of this lease shall be subject to all federal and state laws, executive orders, rules and regulations, and this lease shall not be terminated, in whole or in part, nor lessee held liable in damage for failure to comply therewith if compliance is prevented through no fault of his own.

XV. This lease and all its terms, conditions, and stipulations shall extend to and be binding upon all successors of said lessors or lessee. Lessee hereby agrees not to transfer or grant in the form of a sub-lease this lease nor any interest of the lessors therein or thereunder during the term thereof without the consent in writing of the lessors or their duly authorized agent first thereto had and obtained.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year above written.

ATTESTED: MINING RESEARCH CORPORATION

Keith Livingston, Secretary — Clifton W. Livingston, President

Betty L. Russell — Edna McKnight

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

On this the 31st day of July, 1952, before me, Betty L. Russell, the undersigned officer, personally appeared Edna McKnight, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purposes therein contained.

IN WITNESS WHEREOF I have hereunto set my hand and official seal.

Betty L. Russell
Notary Public, South Dakota

My Commission expires: 10/23/54

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STATE OF Colorado)
:ss
COUNTY OF Delaware)

On this the 9 day of August, 1952, before me, Alice P. Barrington, the undersigned officer, personally appeared Clifton W. Barrington, who acknowledged himself to be the President of Mining Research Corporation, a corporation, and that he, as such President, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as President.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

Alice P. Barrington
Notary Public

My Commission expires: Sept. 8 1953.

7

Ezra McKnight

TO

Mining Branch Corp.

STATE OF [illegible]
COUNTY OF [illegible]

FILED FOR RECORD

23 DAY OF Aug 1952

AT 11:45 [illegible] AND RECORDED IN

BOOK 36 Misc PAGE 403-465

Wesley Bingham

RECORDER OF DEEDS

6.50

FEES $ [illegible]

When Recorded Return

TO Box 356

A G R E E M E N T

THIS AGREEMENT, entered into as of the 24th day of July, 1952, by and between Robert E. Gull, (hereinafter called the lessors), and Livingston Uranium Corporation, (hereinafter called the lessee) WITNESSETH:

I. Lessors, for and in consideration of the sum of ~~one~~ Two Hundred and ~~no/100~~ Forty ($100.00) Dollars in hand paid, of the royalties, herein provided, and of the agreement of lessee herein contained, hereby grants, demise, lease and rent exclusively unto lessee the mining property hereinafter described, for the purpose of investigation, exploring, drilling and mining for, producing, saving, taking, owning, transporting, storing, handling and treating uranium and all other minerals, excluding petroleum oil and natural gas, whether similar or dissimilar, together with the rights and privileges and easements necessary for lessee's operation hereunder on said land and on land in the same field, including but not limited to the following right, to lay pipe lines, to build roads and to construct mills, power stations, power and communication lines, houses for employees, and other structures and facilities. The said land included in this lease is situated in the Unorganized Mining District, County of Fall River, State of South Dakota, and is more particularly described as follows:

The SE ¼, Sec. 22, T. 8 S., R. 3 E.
The South ½ of the NE ¼, Sec. 22, T. 8 S., R. 3 E.

II. Subject to the other provisions herein contained, this lease shall remain in force for a period of five (5) years from the date hereof, called the "primary term", and thereafter so long as uranium or any other mineral is produced from said land hereunder, or thereafter so long as lessee spends a minimum amount of Three Hundred and no/100 ($300.00) Dollars per year upon the development of said mining property.

IIII Lessee agrees to comply with all provisions and requirements of federal or state laws necessary to keep the said mining property ~~claims~~ in full force and effect.

IV. Royalty to be paid by lessee for the extraction of uranium before March 31, 1958, shall be paid lessor in two parts, as follows:

A. Lessee shall pay lessors, as royalty, ten (10%) percent of the Atomic Energy Commission bonus for initial production of uranium ores from eligible new domestic mines. Said payments shall be made as soon as practicable after receipt of said bonus from the Atomic Energy Commission, and shall be subject to provisions of the Atomic Energy Commission regarding payments of bonuses. Lessee shall comply with all provisions of the Atomic Energy Commission for certification of this property as mining property eligible for bonus payments. For purposes of computing the amount of royalty payments to be made under this section, a record shall be kept by the lessee of the ore mined on each property or group of properties regarded by the Atomic Energy Commission as a single eligible unit for pur-

The Livingston Uranium Corporation is a subsidiary of the Mining Research Corporation, and the officers of the Livingston Uranium Corporation and the Mining Research Corporation are identical.

poses of bonus payments.

B. In addition to the royalty payments in Section A, lessee shall pay lessor, as royalty for ore mined on this property, fifteen (15%) percent of the Atomic Energy Commission price paid for delivery of ore of like grade to a mill or purchasing depot. Royalty payments for each month shall be made on or before the 15th day of the following month, and settlement assays and settlement weights as determined by the Atomic Energy Commission shall be used as a basis for computing grade of the ore and royalty payments.

V. After March 31, 1958, lessee shall pay to lessors, as royalty for uranium ore mined on this property fifteen (15%) percent of the market price paid for delivery of ore of like grade to a mill or purchasing depot.

VI. In addition to the above royalty payments, lessee agrees to pay lessors, as royalty for marketable ores, other than uranium ores, mined on this property, ten (10%) percent of the market price paid for similar ores of like grade. However, no royalty shall be paid for vanadium ores that assay less than one (1%) percent V_2O_5.

VII. Lessee agrees to enter upon this property within sixty (60) days from the date of this agreement and to pursue diligently an investigation to determine the possibilities of a commercial enterprise and, if such possibilities are found to be favorable, to commence the necessary steps immediately thereafter for the development of the property. If such investigation is not commenced on said land on or before sixty (60) days from the date of this agreement, this lease shall terminate as to both parties, unless the lessee shall on or before such date, pay or tender to the lessors or their successors or assigns the sum of Three Hundred and no/100 ($300.00) Dollars which shall operate as a rental and cover the privilege of deferring the commencement of operations for the investigation and development of mineral production one year from the date of said payment. In like manner and upon like payments and tenders the commencement of operations for the investigation and development of mineral production may be further deferred for like periods successively during the primary term of the lease. And it is understood and agreed that the consideration first recited herein, the down payment, covers not only the privilege granted to the date when said rental is payable as aforesaid, but also the lessee's option of extending that period aforesaid, and any and all rights aforesaid.

VIII. Lessee agrees to expend a minimum sum of Three Hundred and no/100 ($300.00) Dollars per year during the primary term of this lease upon the development and production of minerals from this property. In the event that the lessee does not expend this minimum sum during any one year period, the said lessee shall have the option to forfeit all rights to this property under the terms of this lease agreement or of paying the sum of Three Hundred and no/100 ($300.00) Dollars per year as rental for the continuation of this lease agreement. In the event that the said lessee shall elect to forfeit all rights under this agreement for failure to expend said minimum sum, both parties hereto shall be released from any further obligations or liabilities under this agreement.

IX. Lessee agrees to permit lessors or their duly authorized agent or representative at any and all times (a) to enter upon and visit all parts of said leased premises for the purpose of observing whether the terms of this agreement are being fully and faithfully complied with by the lessee, and (b) to have surveys made of the workings. Lessee agrees to facilitate in every way such inspection or surveys, and to furnish, when requested, full, true and accurate information with regard to the condition of said workings or any part thereof or the quality or the character of the minerals therein. Lessee further agrees to conduct all operations in a miner-like manner and not to maintain or tolerate any public nuisances not necessary to the mining operations upon the property.

X. Lessors hereby warrant thatthe properties as covered in this agreement have been properly located and are legal and valid, and that they are the only parties that hold any interest in the properties. In the event that said properties are found to be defective in any way, the lessors shall return to the lessee any moneys advanced to them by the said lessee, and shall be liable for any damages incurred by the lessee due to such defect in the title to the mining properties.

XI. Lessee shall pay all amounts to the lessors under any part of this lease agreement to _____

_____, as agent for the lessors, and lessee shall in no way be held liable to the lessors or to any one of the lessors for the payment of any amount to the aforesaid agent.

XII. Lessors hereby agree to cooperate with lessee in the securing of any loans necessary for the exploration and development of this property under the provisions of the Defense Minerals Exploration Administration for government aid indefense and exploration projects and to sign any instruments necessary for the procurement of such loans; provided, however, that the lessors shall not be required to sign any instruments or enter into any agreements which will subject them to any personal liability over and above such amount as may be received by them as income from the subject property.

XIII. All express and implied covenants of this lease shall be subject to all federal and state laws, executive orders, rules and regulations, and this lease shall not be terminated, in whole or in part, nor lessee held liable in damage for failure to comply therewith if compliance is prevented through no fault of his own.

XIV. This lease and all its terms, conditions, and stipulations shall extend to and be binding upon all successors of said lessors or lessee. Lessor hereby agrees not to transfer or grant in the form of a sub-lease this lease nor any interest of the lessee therein or thereunder during the term thereof without the consent in writing of the lessors or their duly authorized agent first thereto had and obtained.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year above written.

ATTESTED: LIVINGSTON URANIUM CORPORATION

Ruth E. Livingston Secretary — Clifton W. Livingston President.

_____ _____

_____ _____

STATE OF SOUTH DAKOTA)
SS
COUNTY OF FALL RIVER)

On this the 24th day of July, 1952, before me, Joyce Wilson, the undersigned officer, personally appeared ROBERT E. GULL, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF I have hereunto set my hand and official seal.

Notary Public, South Dakota

My Commission expires January 20, 1953

-o-o-o-o- -o-o- -o-o-o-o-

STATE OF SOUTH DAKOTA)
COUNTY OF FALL RIVER)

On this the 24th day of July, 1952, before me, Joyce Wilson, the undersigned officer, personally appeared Clifton W. Livingston, who acknowledged himself to be the President of Livingston Uranium Corporation, a corporation, and that he, as such President, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as President.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

NOTARY PUBLIC

My Commission expires January 20, 1953

32028

Robert E. Gulc

Livingston Uranium Co

STATE OF FLORIDA
COUNTY OF

F

7 of Oct 52

11:30 A.

31 Misc. 480

Mary E. Livingston

6.50

Reg

A G R E E M E N T

THIS AGREEMENT, entered into as of the [illegible] day of [illegible], 1952, by and between [illegible], (hereinafter called the lessors), and Mining Research Corporation, a Delaware Corporation, (hereinafter called the lessee), WITNESSETH:

1. Lessors, for and in consideration of the sum of [illegible] ([illegible]) Dollars to be paid as follows: [illegible] and the royalties herein provided, and of the agreement of lessee herein contained, hereby grant, demise, lease, and rent exclusively unto lessee the mining property hereinafter described, for the purpose of investigation, exploring, drilling, and mining for, producing, saving, taking, owning, transporting, storing, handling, and treating uranium and all other minerals, excluding petroleum oil, natural gas, and gravel, whether similar, or dissimilar, together with the rights and privileges and easements necessary for lessee's operation hereunder on said land and on land in the same field, including but not limited to the following right, to lay pipe lines, to build roads, and to construct mills, power stations, power and communications lines, houses for employees, and other structures and facilities. The said land included in this lease is situated [illegible] and is more patricularly described as follows:

[illegible]

All located in T. [illegible] S., R. [illegible] E.

11. Subject to the other provisions herein contained, this lease shall remain in force for a period of Five (5) Years from the date hereof, called the "primary term," and thereafter so long as uranium or any other mineral is produced from said land hereunder, or thereafter so long as lessee spends a minimum amount of [illegible] ([illegible]) Dollars per year upon the development of said mining property.

111. Lessee agrees to comply with all provisions and requirements of federal or state laws necessary to keep the said mining claims in full force and effect.

1V. Royalty to be paid by lessee for the extration of uranium before March 31, 1958, shall be paid lessor in two parts, as follows:

Lessee further agrees to conduct all operations in a miner-like manner, and not to maintain or tolerate any public nuisances not necessary to the mining operations upon the property.

X. Lessor hereby agrees to plug securely all drill holes, except where specified otherwise by the lessors, left by, or not necessary to, the mining operations, and furthermore, inasmuch as is practicable, grade to slopes excavations left by conventional mining operations. Lessee further agrees to replace or repair all structures and facilities of the lessors damaged, destroyed, or removed during mining operations. Lessee agrees not to commence operations in cultivated fields having a growing crop without the written consent of the lessors or their duly authorized agent.

Xl. Lessors hereby warrant that the properties as covered in this agreement have been properly located and are legal and valid, and that they are the only parties that hold any interest in the property. In the event that the title to said property is found to be defective in any way, the lessors shall return to the lessee any moneys advanced to them by the said lessee.

Xll. Lessee shall pay all amounts to the lessors under any part of this lease agreement to Robert E. Gull, as agent for the lessors, and lessee shall in no way be held liable to the lessors or to anyone of the lessors for the payment of any amount to the aforesaid agent.

Xlll. Lessors hereby agree to cooperate with lessee in the securing of any loans necessary for the exploration and development of the leased property under the provisions of the Defense Minerals Exploration Administration for government aid in defense and exploration projects and to sign any instruments necessary for the procurement of such loans; provided, however, that the lessors shall not be required to sign any instruments or enter into any agreements which will subject them to any personal liability.

XlV. All express and implied covenants of this lease shall be subject to all federal and state laws, executive orders, rules and regulations, and this lease shall not be terminated, in whole or in part nor lessee held liable in damage for failure to comply therewith if compliance is prevented through no fault of his own.

XV. This lease and all its terms, conditions, and stipulations shall extend to and be binding upon all successors of said lessors or lessee. Lessor hereby agrees not to transfer or grant in the form of a sub-lease this lease nor any interest of the lessees therein or thereunder during the term thereof without the consent in writing of the lessors or their duly authorized agent first thereto had and obtained.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year above written.

ATTESTED:

Secretary

MINING RESEARCH CORPORATION

J. Sterling Livingston
Vice President

Robert E. Gull

STATE OF: South Dakota)
COUNTY OF: Fall River) ss

On this the 16th day of September, 1952, before me, Paul H. Russell, the undersigned officer, personally appeared Robert E. Gull, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purpose therein contained.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

Paul H. Russell
Notary Public

My Commission Expires 1 - 8 - 53.

---ooOoo---

STATE OF: South Dakota)
COUNTY OF: Fall River) ss

On this the 16th day of September, 1952, before me, Paul H. Russell, the undersigned officer, personally appeared J. Sterling Livingston, who acknowledged himself to be the Vice-President of Uranium Research Corporation, a corporation, and that he, as such Vice-President, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as Vice-President.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

Paul H. Russell
Notary Public

My Commission Expires 1 - 8 - 53.

32^21

Robert E. Gale

TO

Mining Research Corp.

STATE OF [illegible] ss

FILED FOR RECORD

7 DAY OF [illegible] 1922

AT 11:34 O'CLOCK [illegible] M.

BOOK 31 MISC. P. 477

Mary C. Dingman

RECORDER

6.50

FEES $ [illegible]

When Recorded Return

TO

[illegible]

Docket

Project Summary Report

. Knouse Date: Sept. 12, 1957

1. Docket No. DMEA-2768 (Uranium)
Contract No.: Idm-E520

Operator - Mining Research Corporation, a Delaware corporation
4215 Balsam Street
Wheatridge, Colorado

Property: Consists of the following unpatented lode mining claims:

Ram Nos. 1, 2, and 3;
McKnight Nos. 2, 3, and 5;
Sheep Canyon Nos. 1, 2, 3, 4, 5, 6, 31, 32, and 33;
Lion Nos. 1 through 18; and deeded land as follows: sec. 22; SE$\frac{1}{4}$, S$\frac{1}{2}$ of the NE$\frac{1}{4}$; sec. 23; S$\frac{1}{2}$, E$\frac{1}{2}$ of the NW$\frac{1}{4}$, SW$\frac{1}{4}$ of the NE$\frac{1}{4}$, and the W$\frac{1}{2}$ of the NW$\frac{1}{4}$; sec. 26; the NW$\frac{1}{4}$, the N$\frac{1}{2}$ of the NE$\frac{1}{4}$, the SW$\frac{1}{4}$ of the NE$\frac{1}{4}$, the W$\frac{1}{2}$ of the SE$\frac{1}{4}$, the N$\frac{1}{2}$ of the SW$\frac{1}{4}$, and the SW$\frac{1}{4}$ of the SW$\frac{1}{4}$; sec. 27; the E$\frac{1}{2}$ of the NE$\frac{1}{4}$, the SW$\frac{1}{4}$ of the NE$\frac{1}{4}$, the SE$\frac{1}{4}$, and SW$\frac{1}{4}$, and the SW$\frac{1}{4}$ of the NW$\frac{1}{4}$.

All the above land is located in secs. 10, 14, 22, 23, and 27, T. 8 S., R. 3 E., BHM&B, Fall River County, South Dakota. Note - see map attached to summary for status of claims 2/24/60. (Murphy)

Property Rights: Recorded Owner's Consents to Lien signed by the following property owners are attached to the contract. (Amended "OCL's" were obtained to cover Annex II).

1. James L. Barker - undated
2. Carl V. Gull, Agent for Carl V. Gull, Earl Boner & Vernon Harriett - dated 12-7-53
3. Carl V. Gull & Robert E. Gull - dated 12-9-53
4. Royce A. McElhaney - dated 1-29-54
5. Robert E. Gull - dated 12-7-53
6. ~~John McKnight & James McKnight~~ - dated 4-4-53 original O.C.L. Ray Chamberlin
7. Edna McKnight - dated 3-20-53 - original O.C.L
8. Edna McKnight - dated 4-15-53 - original O.C.L

2. Contract - dated May 14, 1953

Project work was started on May 27, 1953 and was completed on August 7, 1956.

Work Authorized:

Consisted of a two stage ~~of~~ wagon and core drilling program from the surface to explore the underlying Dakota sandstone for uranium-bearing ore.

Stage I

Consisted of 241 wagon drill holes aggregating 14,770 feet and 26 core holes aggregating 1,595 feet. Each hole was required to bottom in the Fuson shale approximately 60 feet deep. Wagon drill holes were to be drilled on a rectangular pattern, spaced 100 feet apart in a NW-SE direction and 50 feet ~~upward~~ down in a NE-SW direction. Also offset drill holes may be drilled around ore holes, spaced 30 feet apart. In addition an occassional core drill hole would be drilled at locations approved by the Government for geological data.

Stage II

Consisted of 30,000 feet of wagon drilling and 3,000 feet of core drilling in other areas on the property agreed to by the Government and the Operator.

Estimated and Completed Cost of the Project Work

Work Allowed	Est. Cost	Work Completed Units	Work Completed Cost
Stage I Agreed Unit Costs			
14,770 ft. wagon drilling @ $0.87/ft.	$12,849.90	11,225	$9,765.75
1,595 ft. core drilling @ $3.03 ft.	$4,832.85	715	$2,166.45
Total Stage I	$17,682.75		$11,932.20
Stage II Agreed Unit Costs			
30,000 ft. wagon drilling @ $0.87/ft.	$26,100.00	12,044	$10,478.28
3,000 ft. core drilling @ $3.03/ft.	$9,090.00	149	$451.47
Total Stage II	$35,190.00		$10,929.75
Agreed Est. Total Project Cost (rounded)	$52,873.00		$22,861.95
Government Participation @ 90 percent	$47,585.70		$18,936.31*

* Government participation for Stage I - 90% and 75% for Stage II; see Amendment No. 1.

Amendments:

No. 1 - dated August 10, 1954 - added claims Lion Nos. 1 through 18; Sheep Canyon Nos. 1, 2, 3, 31, 32, and 33; Ram No. 1, and the following deeded land: sec. 27; the E½ of the NE¼, the SW¼ of the NE¼, the SE¼, the SW¼, and the SW¼ of the NW¼ to the contract. Also, reduced the Government's participation to 75 percent for Stage II work and limited the work as follows: Lion Claim Area: Drill two lines of wagon drill holes 1,600 feet long on a N 55° E direction. The lines to be not less than 300 feet apart with the holes spaced 50 feet apart along the lines. Also, offset holes spaced 100 feet surrounding holes that penetrated mineralization or geological favorability was permitted. In addition, an occassional core drill hole at locations approved by the Government for geological data were allowed. The drilling of this area was limited to 200 holes or 10,000 feet of wagon drilling and 1,000 feet of core drilling. Sheep Canyon Area: Within Areas I and II, wagon drill holes on a grid spacing of 100 x 300 feet followed by offset holes spaced 100 feet around primary holes that penetrated mineralization or geological favorability. Drilling was limited to not more than 10,000 feet of wagon drilling and 2,000 feet of core drilling. If approved by the Government, not more than 10,000 feet of wagon drilling would be drilled in Area III on the same grid spacing as for Areas I and II.

No. 2 - dated December 31, 1954 - added Annex II to the contract and permitted Stages I and II work to be done concurrently if approved by the Government.

No. 3 - dated February 8, 1955 - changed exact hole spacing to approximate spacing on the Lion Claim group and limited holes to 25 and hole spacing to not less than 25 feet accross structural breaks and to 300 feet along the strike to obtain geological information.

No. 4 - dated July 8, 1955 - permitted a recess in operations from February 15, 1955 to August 1, 1955, and extended the time to complete the project work until April 14, 1956: Added amended recording data for various mining claims and also added 9 amended "Consents to Lien" in support of Annex II for Amendment No. 2.

No. 5 - dated February 27, 1956 - permitted a recess of operations from September 1, 1955 to June 1, 1956 and extended the completion date of the project work until January 1, 1957 and also extended the period for royalty payments to the Government to 12 years.

Amendment No. 5 continued:

In addition if the contract work was not resumed by June 1, 1956 and completed by January 1, 1957, the contract was automatically terminated.

No. 6 - dated April 6, 1956 - showed on map (revised) ~~and~~ limited areas where drilling could be done under the contract.

No. 7 - dated July 19, 1956 - increased the number of wagon drill holes that may be drilled under Stage I from 241 to 256, deleted the approximate depth of hole (60 feet) ~~to the~~ and allowed depth approved by the Government, and reduced the spacing between holes from 30 feet to 25 feet.

Final Reports:

Operator - dated March 5, 1957, received April 22, 1957
Field Team - dated July 1957 - received in Division Sept. 9, 1957

3. Audit Report of Review - dated April 26, 1957:

Total cost as billed by Contractor		$22,861.95
Exceptions:		
By DMEA Finance Officer	$0.00	
Herewith	0.00	0.00
Total Accepted Cost		$22,861.95
Government Participation @ 90 & 75%		$18,936.31

4. Certification - dated February 13, 1957

Ore Reserves Summary

	Indicated Ore			Inferred Ore		
	Thickness (feet)	Grade U_3O_8%	Short Tons	Thickness (feet)	Grade U_3O_8%	Short Tons
Lion Claim	8.6	0.14	17,296	6.9	0.137	31,369
McKnight Area	4.2	0.126	5,791	3.95	0.119	10,803
Gull-Sheep Canyon Area II	4.25	0.201	803	4.0	0.17	2,946
Totals and Averages	5.01	0.139	23,890	4.94	0.135	45,118

Production

From the property during and subsequent to the contract production has totaled 1,640.057 tons averaging 0.17% U_3O_8 and 0.16% V_2O_5. DMEA production up to December 31, 1956 totaled 876.445 tons that averaged 0.20% U_3O_8 and 0.142% V_2O_5.

5. Comments:

The Field Team reports that the contract work was efficiently performed except for periods the project work was inactive. Also, that no unusual difficulties were encountered in the completion of the project work. The writer may add that the completion of the project work was stretched out a long time (May 27, 1953 until August 7, 1956). The Operator submitted a satisfactory final report that was not commented upon by the Field Team.

The project was established to explore the ore bearing sandstone near the base of the Fall River formation. Drilling by the Operator in the northwestern part of the property had encountered mineralized rock in 30 percent of the holes drilled. Also, drilling by the Vanadium Corporation had discovered one or two ore bodies in the same stratigraphic interval found favorable by the Operator's drilling, that strengthen the justification for the approved program.

The property is near the eastern boundary of the Edgemont uranium district which extends 25 miles around the southwestern periphery of the Black Hills uplift. Dominant topographical features of the periphery such as hogbacks, the Chilson Anticline, and the Sheep Canyon monocline, are underlain by the lower Cretaceous Inyan Kara group of sediments. The Inyan Kara group comprises the Fall River sandstone, Fuson formation, Minnewaste limestone and Lakota sandstone. Within the district, the Fall River and Lakota sandstone contribute about equally to the total uranium production.

Carnotite-type ore is in a massive fine- to medium-grained sandstone unit of the Fall River formation. The ore is 5 to 30 feet above the thick carbonaceous mudstone in which most of the holes were bottomed, averages about 5 feet thick, and is overlain by 30 to 55 feet of sandstone. Ore bodies are generally small. Although 69,000 tons of indicated and inferred ore has been discovered by this program, the ore is distributed among 14 discrete pods. In addition to the above-discovered ore bodies, there were discovered an indicated reserve of 116,620 tons of material averaging 0.03-0.099% U_3O_8 and an inferred reserve of 199,749 tons averaging 0.041% U_3O_8. Uranium trends to be concentrated as large low-grade deposits disseminated through the sandstone and as small, ore-grade deposits along northwest-trending fractures. Fractures exposed are often heavily mineralized with calcium carbonate, brown and black oxides of iron, manganese, and yellow Carnotite minerals.

A total of 449 wagon and rotary non-core holes, aggregating 23,269 feet, and 17 diamond-drill core holes aggregating 864 feet were drilled under the terms of the contract.

It is not recommended that the Government participate in further exploration of this property; however, additional exploration is warranted of the Sheep Canyon claims.

F L Knouse

F. L. Knouse, Mining Engineer
Division of Rare and
Miscellaneous Metals

th reference to attached map

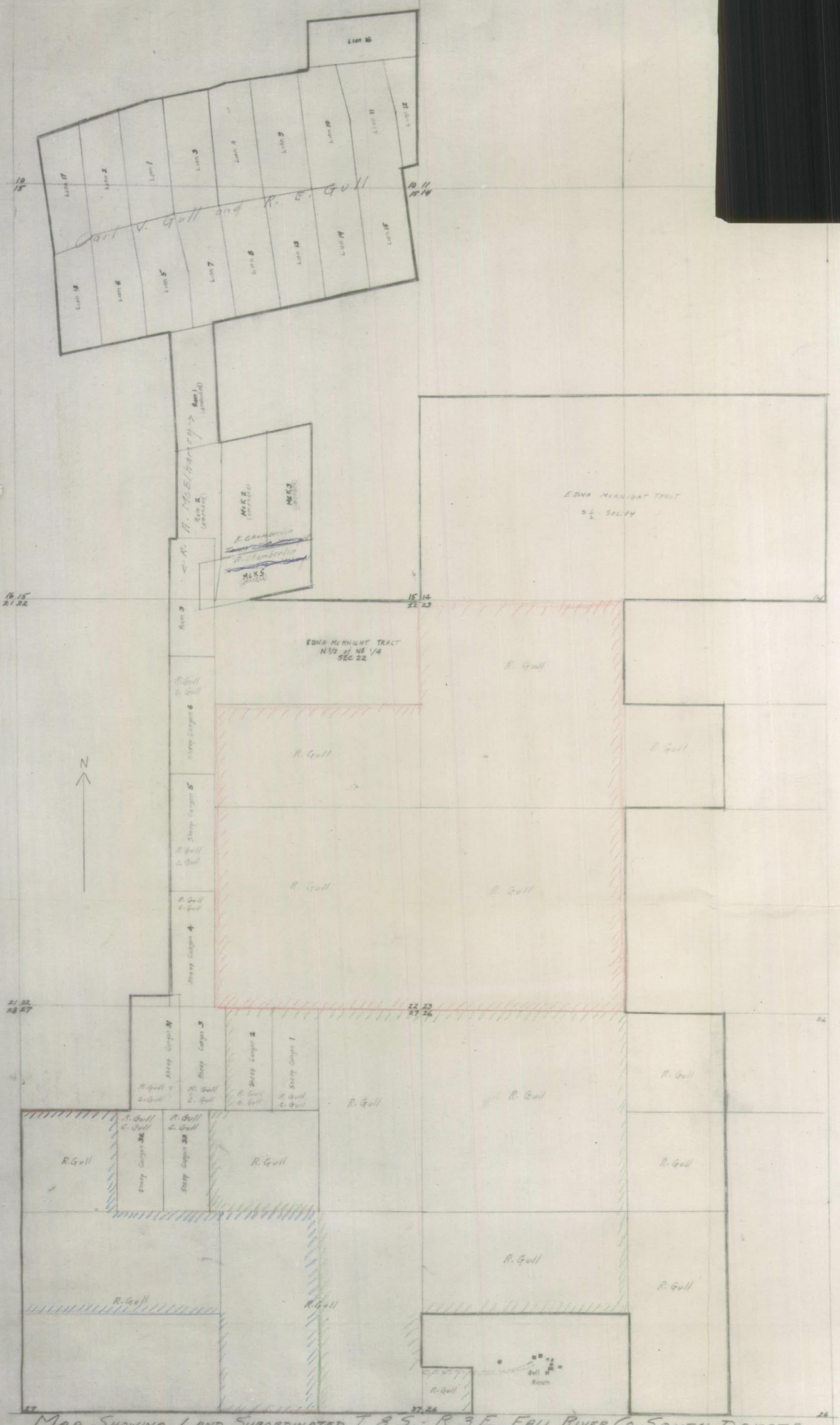
Mining Research Corporation on December 27, 1957, in Quit Claim Deeds, released all the land subordinated under the terms of the contract to the original owners.

Lease status to February 1960:

Area outlined in blue: Gull Lease No. 1 - leased by R.E. Gull on May 27, 1959 to Montana Chemical & Milling Corp.

Area outlined in red: Gull Lease No. 2 - leased by R.E. Gull on May 27 1959 to Montana Chemical & Milling Corp.

Area outlined in green: Gull Lease No. 3 leased by R.E. Gull to Matthew J. Brown, June 27, 1958: Brown on May 27, 1959 assigned this lease to Montana Chemical & Milling Corp.



MAP SHOWING LAND SUBORDINATED, T. 8 S. - R. 3 E., FALL RIVER CO., SOUTH DAKOTA,
DOCKET NO. DMEA-2768 (URANIUM), CONTRACT NO. Idm-E 520
MINING RESEARCH CORP.

SCALE
0 600 ft 1000 ft.

See letter August 28, 1959
Minphy

DOCKET

☑ Audited — WORK ANALYSIS SHEET - DMEA PROJECT — ☐ Actual Cost

☑ Certified — Analysis as of SEPT. 13, 1957 — ☑ Agreed Unit Costs

Incl. Voucher for FEB 1957

Name Mining Research Corp. — Docket No. 2768

State Fall River County, South Dakota — Commodity Uranium — Idm-E No. 520

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting					
Raising					
Shafts					
Winzes					
Drilling (Specify) CORE	4,595'	$13,922.85	864'	$2,617.92	$2,617.92
Drilling (Specify) Wagon	44,770'	38,949.90	23,269'	20,244.03	20,244.03
Surface Excavation					
Underground Excavation					
Roads and Trails					
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify)					
Rounded Totals		$52,873.00		$22,861.95	$22,861.95

Prepared by J. Monroe

71626

See Folder No. 1-A for correspondence

from January 1, 1958, to present

W

Telephone 64

LAW OFFICES OF
CHARLES R. HAYES
1-4 Syndicate Building
DEADWOOD, SOUTH DAKOTA

WILLIAM H. CARNAHAN

ORIGINAL FILE COPY
DMEA
RECEIVED DEC 23 1957

DATE	INITIALS	CODE
12/23	C	220
23	[illegible]	100
12/26	[illegible]	700

December 18, 1957

Mr. C. O. Mittendorf, Administrator
DEFENSE MINERALS EXPLORATION ADMINISTRATION
U. S. DEPARTMENT OF THE INTERIOR
Washington 25, D. C.

2768?

RE: Docket No. DMEA-2786 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al
Fall River County, South Dakota

Dear Mr. Mittendorf:

I write you at the request of Mr. Robert E. Gull of Edgemont, South Dakota. Reference is made to your letter to Mr. Clifton W. Livingston, Wheatridge, Colorado, copy of which accompanied your letter to Mr. Gull under date of February 14, 1957.

Please be advised that production from the group of mining claims referred to above has not been carried on since the 6th day of June, 1957.

Herewith find copy for Mr. W. M. Traver. — sent by mail & 7 files 12-23-57

Yours very truly,

Chas. R. Hayes

CHAS. R. HAYES

CRH:cm

Encl.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
	Long	
	Dwyer	
12/24	Krause	700
12/24	Ellis	700
"	Mittendorf	100
12/26	gb	820
		700

DEC 26 1957

Robert C. Bakewell, Jr., Esq.
Custer County Bank Building
Custer, South Dakota

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group of Claims et al.
Fall River County, South Dakota

Dear Mr. Bakewell:

Your letter of December 11, 1957, states that the Mining Research Corporation has executed in favor of Mrs. Edna McKnight a Release of its mining lease on the S½ of Section 14, and the N½NE-1/4 of Section 22, T. 8S, R. 3E, Fall River County, South Dakota, and you inquire whether or not the lien against the property can be released.

This office would appreciate an opportunity to review a copy of the Release and upon receipt of same will be glad to consider the questions raised in your letter.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

RWLong:md
12/20/57
CC: DMEA Docket
Adm. Reading file
Mr. Ellis
Field Team, Reg III (2)
Mr. Dwyer
Mr. Long
Chron. file
Pending file

8623

LAW OFFICES OF
ROBERT C. BAKEWELL, JR.
CUSTER COUNTY BANK BUILDING
CUSTER, SOUTH DAKOTA
TELEPHONE 66

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 16 1957

DATE	INITIALS	CODE
12/16	gb	220
16	[illegible]	100
11	[illegible]	700

December 11, 1957

Mr. C. O. Mittendorf
Administrator
Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al
Fall River County, South Dakota

Dear Sir:

Mr. Clifton W. Livingston, President of the Mining Research Corporation, has executed in favor of Mrs. Edna McKnight, of Edgemont, South Dakota, a Release of his mining lease previously held on the following described property, to-wit: The S½ of Section 14, the N½NE¼ of Section 22, all in Township 8 South, Range 3 East, Fall River County, South Dakota.

I do not know the status of Mr. Livingston's DMEA Loan, but I am wondering whether or not the above described property can be released from the security given for the loan, or in the event that the loan is not repaid, what the obligation of Mrs. Edna McKnight will be toward your department. Will you kindly advise me as to the status of this property at the present time, and what, if any, relief can be had to sever this property from the lien which appears to presently exist.

Very truly yours,

Robert C. Bakewell, Jr.

RCB/jo

Form 7
-56)

OFFICIAL FILE COPY

Date	Surname	Code
9/24	Fisher	800
9/26	B	220
		225

SEP 25 1957

Mr. Donald T. Finch
DMEA Auditor
224 New Customhouse Building
Denver 2, Colorado

Re: First Report of Royalty Review
Mining Research Corporation
Contract No. Idm-E520
Docket No. DMEA-2768

Dear Mr. Finch:

Receipt is acknowledged of your First Report of Royalty Review covering the above-cited project.

The report is acceptable and normal distribution is authorized.

Sincerely yours,

(Signed) E. D. Talbert

E. D. Talbert, Acting Director
Contract Administration
and Audit Division

CEFisher/wb
September 24, 1957

Copy to: Docket
Admr. Reading File
Mr. Chambers

8623

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

OFFICIAL FILE COPY
DMEA
IN REPLY REFER TO:
RECEIVED SEP 20 1957

DATE	INITIALS	CODE
9/20	B	225

Memorandum

September 19, 1957

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

From: W. P. Williams, U. S. Geological Survey

Subject: Supplement to Review of Final Field Team Report, DMEA 2768, (uranium), Contract No. Idm-E520, Mining Research Corporation, Lion claims, Fall River County, South Dakota.

In a Review of Final Field Team Report dated Sept. 12, 1957, I stated that work under the contract resulted in the discovery of 23,890 tons of indicated ore averaging 0.139 percent U_3O_8.

To make the Review more complete I wish to add that the work also resulted in the discovery of 54,118 tons of inferred ore with a grade of 0.135 percent U_3O_8.

W. P. Williams

W. P. Williams

MEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9-16	Kuerse	700
9-17	Ellis	700
"	Johnson	110
9/17	Selfridge	
9/18	C	220
		225

SEP 17 1957

Mr. Jesse C. Johnson
Director, Division of Raw Materials
Atomic Energy Commission
1717 H Street, N.W., Rm. 800
Washington 25, D. C.

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group of Claims, et al.
Fall River County, South Dakota

Dear Mr. Johnson:

I am enclosing one copy of a certification of discovery or development relating to the subject exploration contract.

The contract which was dated May 14, 1953, covered an exploration project estimated to cost $52,873.00 with Government participation at 90 percent, or $47,585.70. Subsequently, the contract was amended with Government participation in Stage I at 90 percent, and in Stage II at 75 percent; the estimated cost and Government participation being reduced to $52,873.00 and $42,307.20, respectively. Total accepted costs of the project were $22,861.95, of which the Government paid $18,936.31. Four hundred and forty nine widely spaced wagon and rotary non-core holes, aggregating 23,269 feet, and 17 diamond-drill core holes, aggregating 864 feet, were drilled.

The project work was confined to sections 10, 15, 22, and 27, T. 8 S., R. 3 E., BHM&B, Fall River County, South Dakota.

As a result of the exploration work, there were discovered the following estimated ore reserves:

ORE RESERVES

(Indicated Ore)

Thickness (Feet)	U_3O_8 Grade Percent	Short Tons
5.01	0.139	23,890

8623

(Inferred Ore)

Thickness (Feet)	U_3O_8 Grade Percent	Short Tons
4.94	0.135	45,118

Note: The ore is overlain by 30 to 55 feet of sandstone.

Sincerely yours,

?

Acting Administrator

Enclosure

FLKnouse/izm 9-16-57 (9-12-57)
cc: Mr. Knouse
Admr.'s Reading File
DMEA FT Reg. 3 (2)
E. A. Youngberg, AEC, Grand Junction, Colo.
w/cc of certification

Mr. Deering
Mr. Hennessy

Substitute something like the following to clarify paragraph 2.

The contract was dated May 14, 1953, and covered an exploration project estimated to cost $52,873.00 with Government participation at 90 percent, or $47,585.70. Subsequently, the contract was amended with Government participation in Stage I at 90 percent, and in Stage II at 75 percent; the estimated cost and Government participation being reduced to $52,873.00 and $42,307.20, respectively. Total completed costs of the project were $22,861.95, of which the Government paid $18,936.31.

EA Form 7
12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9-13	Knouse	700
9-13	———	700
		110
		220
		700

Mr. Jesse C. Johnson
Director, Division of Raw Materials
Atomic Energy Commission
1717 H Street, N.W., Rm. 800
Washington 25, D. C.

Re: Docket No. DMEA-2768 (~~Uranium~~)
Contract No. Idm-E520
Mining Research Corporation
Lion Group of Claims, et al.
Fall River County, South Dakota

Dear Mr. Johnson:

I am enclosing one copy of a certification of discovery or development relating to the subject exploration contract.

The contract was dated May 14, 1953, and covered an exploration program estimated to cost $52,873.00 with Government participation at 90 percent, or $47,585.70. Project contract work was started May 27, 1953 and was completed August 7, 1956. Four hundred and forty nine widely spaced wagon and rotary non-core holes, aggregating 23,269 feet, and 17 diamond-drill core holes, aggregating 864 feet, were drilled. The net cost of the drilling was $22,861.95 and the Government's participation was 75 and 90 percent, or $18,936.31.

The project work was confined to sections 10, 15, 22, and 27, BHM&B, Fall River County, South Dakota.

As a result of the exploration work, there were discovered the following estimated ore reserves:

Ore Reserves

(Indicated Ore)

Thickness (Feet)	U_3O_8 Grade Percent	Short Tons
5.01	0.139	23,890
(Inferred Ore)		
4.94	0.135	45,118

Note: The ore is overlain by 30 to 55 feet of sandstone.

Sincerely yours,

Enclosure

Acting Administrator

FLKnouse/izm 9-12-57
ccc Mr. Knouse
Admr.'s Reading File
DMEA FT Reg. 3(2)

8623

IN REPLY REFER TO:

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

September 12, 1957

Memorandum

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

From: W. P. Williams, U. S. Geological Survey

Subject: Review of Final Field Team Report, DMEA 2768 (uranium), Contract no. Idm-E520, Mining Research Corporation, McKnight, et al. claims, Fall River County, South Dakota.

Work completed under the contract consists of a total of 23,269 feet of wagon drilling in 449 holes and 864 feet of diamond core drilling in 17 holes. The drilling was done in five areas.

The Government participated in a total project cost of $22,861.95. The Government's share of the costs was $18,936.31. The Government's share was 90 percent in Stage I and 75 percent in Stage II.

The work resulted in the discovery of 23,890 tons of indicated ore that averages 0.139 percent U_3O_8. A Certificate of Discovery, dated February 13, 1957, was issued to the Operator. Up to December 31, 1956, the Operator had repaid from ore sales nearly 10 percent of the Government's share of the costs.

Further exploration on the property by the Government is not recommended by the examining team. I agree with the findings of the Field Team.

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W. P. Williams

W. P. Williams

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

August 28, 1957

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Memorandum

To: Chairman, Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket No. DMEA-2768 (Uranium), Contract No. Idm-E520
Mining Research Corporation (McKnight, Lion group of claims)
Fall River County, South Dakota - FINAL REPORT

FT FINAL REPORT

Enclosed are the original and two copies of a joint final engineering and geologic report dated July, 1957, by E. O. Binyon, Mining Engineer, Bureau of Mines, and N. P. Cuppels, Geologist, Geological Survey, pertaining to work completed under the subject contract.

The original and one copy of the Operator's final report were forwarded by memorandum of April 18, 1957. Final payment to the Operator was processed by this office May 3, 1957, in conformance with the Report of Review of reported project costs by the Contract Administration and Audit Division, dated April 26, 1957, which was released to this office May 2, 1957.

Accepted units of work or service completed under the contract consisted of drilling 17 diamond core drill holes, aggregating 864 feet, and the drilling of 449 wagon drill holes aggregating 23,269 feet, all at a total accepted cost of $22,861.95, which was participated in by the Government partially on a 90% and partially on a 75% basis, total Government contribution amounting to $18,936.31.

The exploration work completed resulted in a discovery or development of a significant quantity of uranium ore, on which a certification was issued February 13, 1957.

E. N. Harshman

By E. N. Harshman
Acting Executive Officer

Encls.

Reviewed by
DMEA OPERATING COMMITTEE
9-4-57
(date)

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

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

JOINT FINAL REPORT BY EXAMINING TEAM
REGION III

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DMEA 2768

CONTRACT Idm-E520

MINING RESEARCH CORPORATION

Edgemont Mining District

Fall River County, South Dakota

Uranium

Joint Final Engineering and Geologic Report

by

Reviewed by
DMEA OPERATING COMMITTEE
9-4-57
(date)

E. O. Binyon
Mining Engineer
Bureau of Mines

N. P. Cuppels
Geologist
U. S. Geological Survey

July 1957

DMEA 2768
Contract Idm-E 520

MINING RESEARCH CORPORATION
EDGEMONT MINING DISTRICT
FALL RIVER COUNTY, SOUTH DAKOTA

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DMEA 2768
Contract Idm-E 520

MINING RESEARCH CORPORATION
EDGEMONT MINING DISTRICT
FALL RIVER COUNTY, SOUTH DAKOTA

INTRODUCTION

Summary and Recommendations

The Mining Research Corporation, 4215 Balsam Street, Wheatridge, Colorado, made application for aid in an exploration project for uranium on its McKnight, Lion, and Sheep Canyon groups of claims. The applicant proposed to explore the potential ore-bearing sandstone near the base of the Rall River formation. A field examination was made on December 11, 1952 by a DMEA examining team in company with C. L. Livingston, President of Mining Research Corporation. A joint engineering and geological report recommending a drilling program was submitted by the examiners.

On May 14, 1953, a contract was signed, authorizing a two-stage program consisting of 44,770 feet of Wagon-drilling and 4,595 feet of diamond core drilling at an estimated cost of $52,873.00. Government participation at 90 percent was $47,585.70.

Exploration under the contract was started on May 27, 1953 and completed on August 7, 1956. During the active periods of the contract a total of 23,269 feet of Wagon-drilling in ~~453~~ 449 holes and 864 feet of diamond core drilling in ~~16~~ 17 holes was reported at an acceptable cost of $22,861.95

DMEA drilling resulted in the discovery of 23,890 tons of indicated ore averaging 0.139 percent U_3O_8, and a certification of discovery or development, dated February 13, 1957, was issued to the operator. The widespread low-grade mineralization which totaled 116,620 tons averaging 0.041 percent U_3O_8 is not considered to be of commercial significance at the present time. It is not recommended that the Government participate in further exploration of these claims; however, additional exploration is warranted on the Sheep Canyon claims, and should be done by the operator.

LOCATION AND ACCESSIBILITY

The uranium claims controlled by the operator are located in Secs. 10, 14, 15, 22, 23, and 27, T. 8 S., R. 3 E., B.H.B.M., Fall River County, South Dakota (fig. 1).

Altitudes in the northern part of the property range from 3,900 to 4,200 feet except in the canyons and in the Sheep Canyon area the range is 3,850 to 3,700 feet at the canyon floor. The area is in low relief with gently rolling land cut by a few shallow draws and two steep canyons. The climate is typical of the north central States, with mild summers and sub-zero temperatures for short periods during the winter, but permits practically year-around operations.

The claims are located 11 miles northeast of Edgemont, South Dakota. Access from Edgemont is via U. S. Highway 85A and Highway 18 towards Hot Springs for a distance of 10.1 miles, thence left through gate on an unimproved dirt road, west for 1/4 mile to another

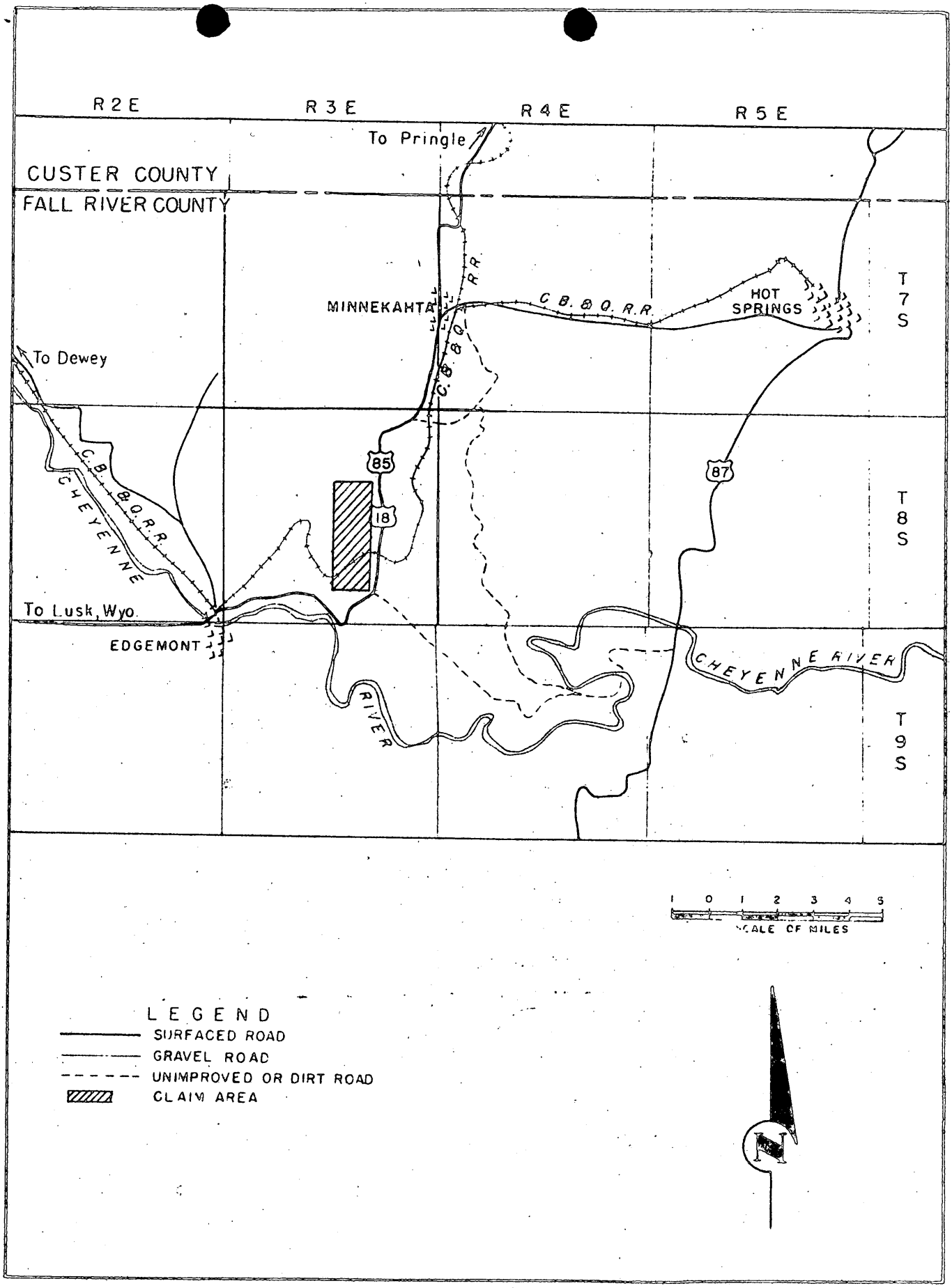


FIGURE 1 - LOCATION MAP, MINING RESEARCH CORPORATION (LION, McKNIGHT, AND SHEEP CANYON CLAIMS AND GULL DEEDED LAND), FALL RIVER COUNTY, SOUTH DAKOTA
DMEA 2768, CONTRACT Idm-R520

gate, and then 1 mile west to mine buildings at the north end of the property. Hot Springs, South Dakota, is 17.9 miles east from the turn-off on Highway 85A and 18.

Vegetation consists of grasses with a little cacti and some scrub pine along the rims and walls of the canyon. Water for domestic and small mine use must be hauled from Edgemont.

Edgemont, the nearest sizable community and former site of an A.E.C. buying station, is a railpoint on the C. B. & Q. Railroad, and a small supply center. The town is now the site of a uranium concentrating plant, and a source of labor for the mines in the district. Hot Springs, 18 miles east, is also a railpoint on the C. B. & Q. RR., and a small supply and equipment center.

Power transmission lines traverse the property; however, no electric power supply is available at present. Gasoline or diesel-driven equipment is currently being used.

PROPERTY

The property included in the original contract consists of 8 unpatented lode mining claims in Secs. 15 and 22, and 1,160 acres of deeded land in Secs. 22 and 23, T. 8 N., R. 3 E., B.H.B.M., Fall River County, South Dakota. A later amendment to the contract added the Lion claim group of 18 claims in Secs. 10 and 15, the Sheep Canyon Nos. 1, 2, 3, 31, 32, and 33 claims, and the Ram No. 1 claim to land originally subordinated. Also other deeded lands: the E1/2 of NE1/4, SW1/4 of NE1/4, SE1/4 and SW1/4, and SW1/4 of the NW1/4 were added. The amendment also

designated a drill area in the Lion claim group and areas I, II, and III located in part of the Sheep Canyon claims and partly on the Gull deeded tracts in the East 1/2 of Section 27.

The above described claims, deeds, and leases are recorded in the Registrar of Deeds' office in the Fall River County Courthouse, Hot Springs, South Dakota.

HISTORY AND PRODUCTION

Uranium as the mineral carnotite was first discovered in the Black Hills in the late summer of 1951. The properties of the Mining Research Corporation were taken under lease about one year later.

The corporation conducted radiometric surveys and did assessment work on the unpatented lode mining claims. Some drilling was done on the Lion claims by the Bureau of Mines for the A.E.C. The number of holes and footage is not known.

Production from the subordinated property during and subsequent to the life of the contract has totaled 1,640.057 tons averaging 0.17 percent U_3O_8 and 0.16 percent V_2O_5. As of June 14, 1957, some ore was produced from an incline driven on property not included under the contract. This ore was leached and a yellow cake concentrate was made. No figures on this production are available.

All production noted came from the Railroad Cut mine located on the Sheep Canyon No. 2 claim which is subordinated under DMEA Royalty. Except for a small amount on the bonus payments, royalty

has been paid on all production.

GEOLOGY

The contract area is in the northwestern part of the Flint Hill quadrangle. The geology of this quadrangle has been mapped at a scale of 1:7200 by H. Bill and E. U. Post of the U. S. Geological Survey. Much of the data pertaining to the regional geology used in this report has been obtained from preliminary geologic maps compiled by Bill and Post. The geologic map of figure 2 is taken from a preliminary geologic map compiled by Bill and Post. The geologic cross sections of figure 3 were constructed from lithologic logs furnished the Examining Team by the operator. The location of these sections are shown on the drill hole map (fig. 4).

Regional

Property subordinated under this contract is near the eastern boundary of the Edgemont uranium district which extends for 25 miles around the southwestern periphery of the Black Hills uplift. Dominant topographic features of the periphery such as hogbacks, the Chilson Anticline, and the Sheep Canyon monocline, are underlain by the lower Cretaceous Inyan Kara group of sedimentary rocks. The Inyan Kara group has been the host rock for all uranium produced in the Edgemont District. In order of increasing age, the Inyan Kara group comprises the Fall River sandstone, Fuson formation, Minnewaste limestone, and Lakota sandstone. Within the district, the Fall River and Lakota sandstones have contributed about equally to the total production of ore.

Production from the Fuson has been negligible and no ore has been mined from the Minnewaste.

The Lakota formation is composed principally of sandstone and mudstone with a minor amount of fresh water limestone. The sandstones and mudstones are interbedded, and lateral and vertical facies changes from sandstone to mudstone are abrupt and many times repeated in short distances. The formation is commonly about 400 feet thick but ranges from 310 to 485 feet in thickness. The sandstones are light shades of brown, yellow or orange. The chief constituent of the sandstones is well rounded and well sorted grains of quartz. The mudstones are rocks that have large but varied proportions of sand, silt, clay, and carbonaceous material. Kaolinite and illite are the common clay minerals although montmorillinite, chlorite, and halloyosite have been detected.

In the Edgemont district, the Minnewaste limestone is absent at most exposures of the Inyan Kara group and rarely reaches a thickness of 15 feet. Where best exposed, this unit is a light to dark gray, nearly pure limestone which grades laterally into calcareous sandstone. This unit does not outcrop in the contract area. The Fuson formation characteristically has much finer-grained sediments than either the Fall River or Lakota sandstones. In many places, it is a varicolored, sandy to silty shale with lenses of fine-grained, white sandstone. Whereas carbonaceous material can be found in most exposures of the Fall River and Lakota sandstones, it is rare or absent in the Fuson. Maximum thickness of the Fuson is about 150 feet but where it has been replaced by

Fall River channel sediments, its thickness may be reduced to 30 feet or less. As stated previously in this report, this unit is considered to be unfavorable as a possible host rock for uranium deposits.

At many places in the Edgemont district, the Fall River formation is largely thin sandstones and mudstones that are difficult to separate precisely from similar material in the Lakota formation. Although sandstone bodies in the Rall River formation are more continuous than sandstone bodies in the Lakota formation, facies changes from sandstone to interbedded sandstone and mudstone and to siltstone may be extremely abrupt. The exact nature of the change from thick-bedded sandstone to interbedded sandstone and mudstone is seldom clear and some localities suggest the truncation of beds on a large scale while other localities suggest very abrupt interfingering or gradational change. In many places the thick-bedded sandstones of the Fall River formation are darker and more orange brown in color than similar units in the Lakota formation but color is generally considered a poor criterion for distinguishing the formations. Hand specimens cannot be assigned to either formation with assurance; identification of either formation must be based largely on stratigraphic position. Exploration under the contract has been restricted to an investigation of a mineralized interval in a thick-bedded sandstone unit of this formation.

Local

Structure

The contract area is near the western edge of a southward plunging structural terrace which is bounded on the east by the Chilson anticline and on the west by the Sheep Canyon monocline. The terrace

is a little more than a mile wide near the property but narrows to several hundred feet near the Cheyenne River three miles south of the property. Regional dips of 3 to 4 degrees on the terrace steepen to 10 to 12 degrees on the Sheep Canyon monocline whose axis is several hundred feet west of, and parallel with, the western boundary of the contract area. Relation of known ore deposits to geologic structures such as the Sheep Canyon monocline is not clear. Although many government and private geologists with experience in the Edgemont district consider relatively flat-lying beds, up-dip near the monoclinal axis to be favorable ground, the validity of this guide has not been established. Whereas mineralized ground has been found up-dip and near monoclinal axis at several places (including this property), the two largest deposits in the district do not fit this pattern. The Holdup 15 mine, 2 miles north of this property, lies on the monocline where the beds are dipping 14 degrees west and the Gould mine is in relatively flat-lying beds, 5000 feet east of the monoclinal axis.

Stratigraphy

Exploration for uranium in the contract area has been restricted to a thick-bedded sandstone unit of the Fall River formation. The lithologic units of the formation are well exposed in Sheep Canyon near the intersection of this canyon with Deadhorse Canyon in sections 22 and 27 of T. 8 S., R. 3 E. (see fig. 2). At this exposure, the lithologic units are as follows:

Lithology	Thickness (ft)
Mudstone, dark gray, sandy, gradational with overlying Skull Creek Shale	2

(cont.)	Lithology	Thickness (ft)
Sandstone,	light brown, fine- to medium-grained, micaceous	10
Siltstone,	gray, contains some thin-bedded sandstone	10
Sandstone,	pale light-brown, medium- to coarse-grained, cross-stratified, composed of numerous lenses separated by mudstone; beds of interfingering red mudstone in upper half; contains uranium deposits	60 to 100
Mudstone,	gray, laminated, silty, abundant carbonaceous material, augen-like structures, anomalously radioactive locally	50

The thin units of siltstone, sandstone, and mudstone overlying the thick, uranium-bearing sandstone have been removed by erosion from much of the contract area. The thick, cliff-forming sandstone unit is a composite of several discrete bodies of sandstone that overlap and truncate adjoining bodies of sandstone. The truncations are commonly marked by thin beds of mudstone that is usually less than a foot thick. When correlating lithologic units between drill holes, these sedimentary structures could easily be interpreted as displacement along structural breaks. At some places, displacement may have occurred as shown on the geologic sections of figure 3. At most exposures, the unit is a fine- to medium-grained, poorly cemented sandstone. Locally, however, silica cement has transformed the unit to a quartzite which breaks with a conchoidal fracture through the sand grains. Calcareous cement is associated with the silica cement and the two types may be genetically related, and in part controlled by joints. At an exposure on the Lion No. 1 claim, calcium carbonate occurs as a joint filling and is obviously older than the silica. At this exposure, the calcareous cement also occurs as banded concretionary masses.

There is a relatively abrupt facies change in the thick, uranium-bearing sandstone unit east of the junction between Deadhorse Canyon and Sheep Canyon. Three thousand feet east of the junction the Fall River formation consists of 30 feet of siltstone, 50 to 100 feet of mudstone, and 30 feet of sandstone with the mudstone correlating roughly with the uranium-bearing sandstone. The nature of the change from sandstone to mudstone is not clear but the mudstone is believed to interfinger with the sandstone.

MINERAL DEPOSITS

Carnotite-type ore in the contract area is in a massive fine- to medium-grained sandstone unit of the Fall River formation which has a regional dip of about 4 degrees southwest. The ore is 5 to 30 feet above the thick carbonaceous mudstone in which most of the holes have bottomed. The ore interval has an average thickness of about 5 feet and is overlain by 30 to 55 feet of sandstone in which mudstone splits are important locally. Ore bodies are generally small; for example, 6 of the holes that penetrated ore in the Lion-McKnight area are surrounded by barren holes. Although 69,000 tons of indicated and inferred ore have been discovered by this exploration program, the ore is distributed among 14 discrete pods of ore. Uranium tends to be concentrated as large, low-grade deposits disseminated through the sandstone and as small, ore-grade deposits along northwest-trending fractures.

Evidence for strong joint control in localizing the uranium can be seen in the shape of the ore bodies as shown in figure 4, in

open cuts on the Lion Nos. 1 and 2 claims, and in the underground workings on the McKnight No. 1 claim. This evidence is corroborated by the results of close-spaced drilling by the operator under the contract.

The best exposure of mineralized rocks is in an open cut on the Lion No. 1 claim. Fractures exposed in this cut are heavily mineralized with calcium carbonate, brown and black oxides of iron, manganese, and yellow carnotite minerals. At some places, the carnotite forms a thin coating on the darker-colored material which probably consists of oxides of iron and manganese. Calcium carbonate occurs as a cementing material in zones parallel with the fractures and as pods in the sandstone between the fractures. In a detailed study of these pods, R. S. Jones of the Geochemistry and Petrology Branch of the U. S. Geological Survey discovered a concretionary type zoning of the pods. According to Jones, uranium, vanadium, and strontium increase in amount from the host sandstone through a halo zone to the core of the pod. The core is enriched in Al, Ca, and Cr, while the halo is enriched in Ba, Y, Fe, Co, and Ni. Jones also investigated the distribution of trace elements at and near the contact between the sandstone unit and the thin-bedded mudstones within the sandstone unit. Results of this investigation indicate that physical and chemical changes occur at these contacts which impede the movement of ions and result in their precipitation and fixation near the contact. Concentrations of U, Ca, V, Mn, Fe, Co, Ni, Cu, Zn, and As were found near the contact and Be, Na, Mg, Sc, Ti, Cr, Ga, Al, B, K, Mo, and La are more abundant in the mudstone than in the sandstone. This distribution of the trace

elements suggest that the mudstone may have been the source for the uranium.

THE PROJECT

Geologic Justification

On December 11, 1952, this property was investigated by a DMEA examining team in connection with a request made by the operator for a DMEA loan. The examiner's approval of the request was based on the results of a drilling program performed by the operator in the northwestern part of the property, nearby exploration by the U. S. Vanadium Corp., and uranium deposits exposed on the Lion Claims and in Sheep Canyon near the mouth of the Deadhorse Canyon. The Vanadium Corporation drilling had discovered one or two ore bodies at the same stratigraphic interval that had proven favorable as a result of the operator's drilling in the contract area. Mineralized rocks had been found in 30 percent of the holes drilled by the operator prior to the examining team's visit. Most of the mineralized rocks appeared to be near the middle of a thick sandstone unit of the Fall River formation which is underlain by a carbonaceous siltstone that can be correlated throughout the contract area. Results of Stage I drilling and areal mapping by the U. S. Geological Survey indicated that mineralized rocks extended beyond the original drilling area enclosed by the McKnight claims. Zones of mineralized rocks were detected trending N. 30 to 35 degrees W., and extending to the northern boundary of the Lion claims. In addition to these results of Stage I drilling, mineralized rocks had

been discovered in the Gull-Sheep Canyon area, consequently, the examining team recommended that the contract area be enlarged to include the favorable ground north and south of the original drilling area. This recommendation was approved and incorporated in the contract as Amendment No. 1 which described the program of exploration to be followed in Stage II.

ORE RESERVES

Drilling done under contract resulted in the discovery of ore reserves in three of the five drill areas. These three widely separated areas are: the Lion claim area, Area I on the McKnight group, and Area II on deeded land adjoining the Sheep Canyon claims of the Gull-Sheep Canyon group (figs. 4 and 5).

Total ore reserves discovered in the Lion claim group area, the McKnight Area I, and the Gull-Sheep Canyon Area III as calculated are 23,890 short tons of indicated ore averaging 0.139 percent U_3O_8 and with an average thickness of about 5 feet (5.01'). Inferred ore in the three areas is calculated to be 54,118 short tons with a grade of 0.135 percent U_3O_8 and thickness of 4.94 feet. In making the estimate, the AEC method was followed as closely as possible, however, owing to the irregular spacing of the holes some minor variations in the method were necessary. A tonnage factor of 14 cu. ft. per ton was used for the estimate. Figures 6, 7, and 8 show the reserves in each area and also lists the holes, the thicknesses and grade with tonnages of indicated and inferred ore.

In March 1955 an estimate of the reserves on the Lion claim

group and Area I of the McKnight group was made as a part of an interim report. This estimate has been changed in both areas, the Lion reserves have been increased and in the McKnight Area I the tonnage has been decreased by approximately 3,500 tons because some of the ore holes that were used in the March estimate were drilled outside drill areas and have been deleted. Drilling in the Gull-Sheep Canyon area was done after the March estimate and the reserves discovered in this area are added to the new estimate.

In addition to the reserves of ore grade (0.10 percent U_3O_8) approximately 116,620 tons of material containing 0.04 percent U_3O_8 were indicated by the drilling and an inferred tonnage of 199,749 tons is also estimated. Since this estimate was available from the March report, it is given here.

A summary of the ore reserves is given in the following table.

	Indicated Ore			Inferred Ore		
Area	Thickness (feet)	Grade U_3O_8 (Percent)	Short Tons	Thickness (feet)	Grade U_3O_8 (Percent)	Short Tons
Lion Claims	8.60	0.140	17,296	6.90	0.137	31,369
McKnight Area I	4.20	0.126	5,791	3.95	0.119	10,803
Gull-Sheep Canyon Area II	2.25	0.201	803	4.00	0.170	2,946
Totals and Averages	5.01	0.139	23,890	4.94	0.135	45,118

The tonnages above are the calculated tonnages as shown on

figures 6, 7, and 8. These tonnages, however, may be reduced by as much as 20 percent in an actual mining operation owing to the character of occurrence, ie., along vertical fractures, and the grade may be reduced somewhat by dilution while mining these relatively small deposits.

Original Program and Modifications

The contract specified a two-stage drilling project providing for wagon-drilling 241 holes totaling 14,770 feet and core drilling 26 holes totaling 1,595 feet. This proposed drilling was to be in Areas I and III on the McKnight claim group on a rectangular pattern of 100-foot spacing NW-SE and 50 foot spacing NE-SW direction. Offset holes were to be drilled at a spacing of 30 feet around mineralized or ore holes. Drilling of occasional core drill holes for geologic purposes was permitted only as specified in advance by the Government.

Under Stage II 30,000 feet of wagon drilling and 3,000 feet of core drilling was designated for drilling areas other than those designated in Stage I. These areas were to be selected by agreement between the Government and the operator, and to be based on results of Stage I drilling.

The total cost of Stage I and II, was $52,873.00 with the Government's share at 90 percent as $47,585.00

Seven amendments to the contract were granted while the project was in operation. Under Amendment 1 the Lion group of 18 unpatented lode claims, Sheep Canyon Nos. 1, 2, 3, 31, 32, and 33 and the

Ram 1 claim were included in land already subordinated under the contract. Other deeded lands, the E1/2 of NE1/4, SW1/4 of NE1/4, SE1/4 and SW1/4, and SW1/4 of NW1/4, all in Sec. 27 were added. The amendment also designated a drill area on the Lion claim group and Areas I, II, and III located in part on the Sheep Canyon claims and partly on the Gull deeded tracts in the East 1/2 of Section 27. Other provisions of the amendment pertained to grid spacing, number of drill holes and footages, and the total cost of drilling. The Government's participation was reduced to 75 percent for drilling costs under Stage II of the amended contract.

Amendments 2, 3, 4, 5, 6, and 7 involved details of hole spacing of offset holes, extension of the completion date, number of holes or drill footage, and a change in the outline of drill areas. The time during which royalty payments are to be made was extended to May 14, 1965. None of the amendments changed either the unit cost or the total expenditures in the original contract.

Description of Work Completed

The completed project consisted mainly of Wagon-drilling with a minor amount of diamond-core and non-core rotary drilling being done where necessary. Drilling was confined to 5 of the 6 drill areas designated by the contract. These drill areas which are shown in figures 4 and 5 are the Lion claim group area; Areas I and III on the McKnight claim group, and Areas I and II on the Sheep Canyon claims and the Gull deeded tract in Section 27. No drilling was done in Area III which is on the Sheep Canyon 31 and 33 claims and deeded land. Area II of the McKnight group was not included in the original or

amended contract.

A total of 488 Wagon and non-core rotary drill holes with a total aggregate footage of approximately 25,258 feet were drilled on the property subordinated by the contract. However, 39 of the holes totaling 1,989 feet in depth were disallowed or not claimed and the total number of holes and footage drilled for which payment was made amounted to 449 and 23,269 feet respectively. Of the total, 14 holes were non--core rotary drill holes. In addition, 17 diamond-drill core holes with an aggregate total depth of 864 feet were drilled under the contract. The operator also drilled an unknown number of holes at Company expense on the McKnight (Mck) 1 and 4 and Ram 1 claims. The McKnight 1 and 4 claims were not included in the land under the contract and the Ram No. 1 was added by Amendment No. 1.

A distribution of the holes and footage as to drill areas is as follows:

		Wagon and Rotary Drill		Diamond Core Drill	
Stage	Drill Area	No.of Holes	Drilling Footage	No.of Holes	Drilling Footage
II	Lion Claim Group	191	9646	1	99
	McKnight				
I	Area I	196	9187	15	715
I	Area III	37	2038	--	--
	Gull Sheep Canyon				
II	Area I	10	804	--	--
II	Area II	15	1594	1	50
	Totals	449	23,269	17	864

A rectangular grid pattern with the long direction at N 35° W and the short direction N 55° E was to be used in all drill areas. The spacing of the holes, however, was different in each area. In the McKnight

Areas I and III, the holes were to be spaced 100 feet in a N 35° W direction, and 50 feet in N 55° E direction. Offset holes around mineralized holes were to be drilled at a 30 foot spacing. This was later changed to 25 feet by amendment.

In the Lion and Gull-Sheep Canyon drill areas, the spacing was enlarged to 300 by 100 foot spacing in the N 35° W direction and N 55° E direction respectively. Two lines of holes were to be drilled 300 feet apart in a N 35° W direction with the hole spacing, in the N 55°E direction, of 50 feet. Offset holes were to be spaced at 100 feet in both the Lion and Gull-Sheep Canyon Areas, except for a limited number which could be spaced at 25 feet around ore holes or where structural breaks were indicated. Occasional diamond drill holes were to be drilled at any location for geologic data or specified in advance by the Government.

Wagon drilling was done with a Gardner-Denver D-73 drill with an 18-foot feed and driven by a 210 cfm Gardner-Denver compressor, both drill and compressor mounted on a 1 1/2 ton Chevrolet truck. On the same truck a Joy Model 7 Core drill with a screw feed was mounted on the opposite end from the wagon drill. Core drilling was done with this rig. A Failing 1500 rotary drill driven by a Joy 315 cfm Compressor mounted on a separate 1 1/2 ton truck was used to drill the few rotary non-core holes put down in the Gull-Sheep Canyon Areas.

Samples of the Wagon and rotary drill holes were taken at 2-foot intervals. The samples were split and one half was left for the Government. The core from the core-drill holes was boxed and was made available to the Government.

Total expenditures for the work completed under the contract with amendments amounted to $22,861.95. A breakdown of the costs for each stage with the Wagon and core drilling footages and unit costs is as follows:

Wagon Drilling	Footage	Cost per Foot	Total Cost
Stage I	11,225	$0.87	$ 9,765.75
Stage II	12,044	0.87	10,478.28
Totals	23,269	$0.87	$20,244.03
Diamond Core Drilling			
Stage I	715	$3.03	$ 2,166.45
Stage II	149	3.03	451.47
Totals	864	$3.03	$ 2,617.92
Totals (cost of Wagon Drilling and Diamond Core Drilling combined)			
Stage I			$11,932.20
Stage II			10,929.75
Total			$22,861.95

Government participation in Stage I was 90 percent but was reduced by amendment to 75 percent for the work done under Stage II. The Government's share of the total cost of $22,861.95 amounted to $18,936.31. The total expenditures and Government's share are verified by a Report of Review dated April 26, 1957 and made by the Audit Division.

Summary of Factual Data

Date work of the project started: June 1953

Date work of the project completed: August 1956

Drilling completed was as follows:

	Wagon Drilling		Core Drilling	
Stage I	Holes	Footage	Holes	Footage
McKnight Area I	196	9,187	~~17~~ 15	715
McKnight Area II	37	2,038	--	--
Total Stage I	233	11,225	~~17~~ 15	715
Stage II				
Lion Claim Group Area	191	9,646	1	99
Gull-Sheep Canyon				
Area I	10	804	--	--
Area II	15	1,594	1	50
Totals Stage II	216	12,044	2	149

Costs were as follows:

23,269 feet of Wagon drilling at $0.87 per ft.--------$20,244.03

864 feet of diamond core drilling at $3.03 per ft.----- 2,617.92

Total accepted program costs---------$22,861.95 1/

The total exploration accomplished under the program consisted of ~~468~~ 466 completed and approved drill holes totaling 24,133 feet of acceptable drilling. The total cost of drilling was $22,861.95. The Government's share of the cost was 90 percent of Stage I and 75 percent of Stage II for a total amount of $18,936.31.

DMEA production from the property, covered by the contract up to December 31, 1956, was 876.445 tons of ore averaging 0.200 percent U_3O_8 and 0.142 percent V_2O_5. The amount repaid by the operator is $1,849.79 or 9.77 percent of the total due on the contract. Exploration drilling was on a fixed unit cost basis, thereby leaving no salvage nor disposal problems.

1/ Unit cost includes assays and incidental expense.

A Certificate of Discovery was issued on February 13, 1957 and sent to the operator, Mining Research Corporation.

CONCLUSIONS

The contract work was efficiently performed except for periods during which the project was inactive. No unusual difficulties were encountered in the completion of the approved work. Some disallowances were made on items of work as unauthorized holes and hole locations. Thirty-nine holes totaling 1,989 feet were either disallowed or not claimed by the operator. The operator also drilled an unknown number of holes at company expense on the McKnight 1 and 4 claims and Ram 1 claims, not included in the land subordinated under the original contract; however, Ram 1 was added by Amendment No 1.

The drilling completed under the program indicates the presence of 23,890 tons of indicated ore averaging 0.139 percent U_3O_8, and 45, 118 tons of inferred ore averaging 0.135 percent U_3O_8. The low-grade indicated reserves, 0.03-0.099 percent U_3O_8, are estimated to be 116,620 tons averaging 0.041 percent U_3O_8 and inferred low-grade at 199,749 tons averaging 0.041 percent U_3O_8.

The above tonnage estimates might be reduced by as much as 20 percent in actual mining operations owing to the character of occurence, ie., along vertical fractures, and the grade might be reduced somewhat by dilution occuring in mining these relatively small deposits.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8-1	Kuppa	200
8-1	Ellis	200
8/2	Martin	130
"	Johnson	110
"	Cleveland	100
8/2	C	220
		225
		200

AUG - 2 1957

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

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-3520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. King:

Please advice when we may expect to receive the final Field Team report for the subject project.

Sincerely yours,

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

APPROVED:

P. F. Yopes (JHB)
Member, Bureau of Mines

Thor H. Kiilsgaard (JHB)
Member, Geological Survey

FLKnouse/izm 8-1-57
cc to: Mr. Knouse
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

MINING RESEARCH CORPORATION
INCORPORATED
5810 W. 38th Avenue Denver 14, Colo.

DMEA
DEPARTMENT OF THE INTERIOR
JUN 12 1957
REGION III
DENVER, COLORADO

June 11, 1957

6/17	C	220
6/18		800
		225

Executive Officer, DMEA Field Team
Region III
Defense Minerals Exploration Adm.
224 New Customhouse
Denver 2, Colorado

Re: Docket DMEA Idm-[520
Mining Research Corp.
Edgemont Uranium Area
Fall River County, S. D.

Gentlemen:

Enclosed find check No. 1634 in amount of $22.47 for royalty payment on Lot S-978, Liq. 517.

Copies of settlement sheets attached to check.

In reply to your letter of May 15, 1957 we have made application to AEC for Bonus payment on the six shipments you have listed in your letter. Upon receipt of Bonus check the amount of $187.42 will be made immediately to DMEA for royalty bonus due.

Yours very truly,

Helen J. Livingston

Helen J. Livingston, Sec.

PROTOCOLTO:
DMLA/DFC. 2
WO 2

ORIGINAL FILE COPY
DMEA
RECEIVED MAY 20 1957

DATE		CODE
5/20	2W2	320
5/21		220
		225

224 New Customhouse
Denver 2, Colorado

May 15, 1957

Mrs. Helen J. Livingston, Secretary
Mining Research Corporation
5810 W. 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium), Contract No. Idm-E520, Mining Research Corporation (Lion Group Claims, et al), Fall River County, South Dakota

Dear Mrs. Livingston:

Our records indicate that the royalties due on the bonus payments for production covered by the listed Liquidation Numbers are as follows:

Liq. No.	Date	Roy. Bonus Due	Roy. Bonus Pd.
326	2/15/57	$44.42	-- --
341	2/28/57	22.56	-- --
350	2/28/57	21.56	-- --
379	3/21/57	47.44	-- --
383	3/21/57	27.63	-- --
498	5/10/57	23.81	-- --
	Total	$187.42	

This letter is a request that the indicated royalties be submitted for those bonus payments received to date. When submitting royalties on bonus payments, please indicate the Liquidation Numbers covered.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

MHM/vj
cc: Royalty File E520
Corres. File E520
Sec. Opr. Comm. (2)
Konselman (2)
Marshall
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4/29	Talbert	800
4/30	C	220
		225

APR 29 1957

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

Re: Report of Review
Mining Research Corporation
DMEA-2768, Idm-E520

Dear Mr. Brading:

Reference is made to your Report of Review, in lieu of a final audit, covering the referenced project.

The regional copies of the report probably have been distributed in accordance with authority delegated to you; however, it is requested that you arrange to correct the reference to amendments to read "including Amendments Nos. 1 to 7" on all copies. This change has been made in the Washington copies.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

EDTalbertw/b
April 29, 1957

Copy to: Docket
Admr. Reading File
Mr. Chambers

8623

OFFICIAL FILE COPY
DMEA
RECEIVED APR 22 1957

DATE		CODE
4/22	C	220
		800
		225

224 New Customhouse
Denver 2, Colorado

April 18, 1957

Memorandum

To: T. H. Brading

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

Subject: Docket No. DMEA 2768 (Uranium), Contract No. Idm-E520, Mining Research Corporation (Lion Group of claims et al.), Fall River County, South Dakota

The subject Contract was terminated under the provisions of Amendment No. 5, item 4(a)(ii).

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

Acceptable units of work or service completed on a "Fixed Unit Cost" basis are as follows:

Diamond core drilling, 10 holes, aggregating 864 feet;

Wagon and rotary drilling, 393 holes, aggregating 23,269 feet.

The sum of $163.39 was withheld from reimbursement to the Operator in processing his final accounting report, which was for the month of August, 1956.

Original signed by
E. N. HARSHMAN

E. N. Harshman

JWT:prl

cc: Chairman, Op. Comm. (2)
Harshman
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 APR 22 1957

DATE	INITIALS	CODE
4/22	C	220
		800
		225

April 18, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 2768 (Uranium), Contract No. Idm-E520, Mining Research Corporation (Lion Group of claims et al.), Fall River County, South Dakota

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

E. N. Harshman

E. N. Harshman

Enclosures

MINING RESEARCH CORPORATION
INCORPORATED
5810 W. 38th Ave. Denver 14, Colo.

DMEA
DEPARTMENT OF THE INTERIOR
APR 18 1957
REGION III
DENVER, COLORADO

April 16, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED APR 22 1957

DATE	INITIALS	CODE

J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team Region III
U. S. Dept. of the Interior
224 New Customhouse
Denver 2, Colorado

Dear Mr. Townsend:

Reference is made to your letter of April 10, 1957.

In order to close the account Docket DMEA 2768 - Idm E-520, we shall accept the figures presented in Mr. Harshman's letter of March 8, 1957.

Accordingly we have revised pages 1 and 2 and Form MF 104A of our final report and enclose the revised pages herewith.

Yours very truly,

Clifton W. Livingston

Clifton W. Livingston, Pres.
Mining Research Corporation

CWL:hjl

MINING RESEARCH CORPORATION
INCORPORATED
5810 W. 38th Ave. Denver 14, Colo.

DMEA
DEPARTMENT OF THE INTERIOR
APR 18 1957
REGION III
DENVER, COLORADO

April 16, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED APR 22 1957

DATE	INITIALS	CODE

J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team Region III
U. S. Dept. of the Interior
224 New Customhouse
Denver 2, Colorado

Dear Mr. Townsend:

Reference is made to your letter of April 10, 1957.

In order to close the account Docket DMEA 2768 - Idm E-520, we shall accept the figures presented in Mr. Harshman's letter of March 8, 1957.

Accordingly we have revised pages 1 and 2 and Form MF 104A of our final report and enclose the revised pages herewith.

Yours very truly,

Clifton W. Livingston

Clifton W. Livingston, Pres.
Mining Research Corporation

CWL:hjl

OP's. FINAL
REPORT

MINING RESEARCH CORPORATION
INCORPORATED
5810 W. 38th Ave. Denver 14, Colo.

DMEA
DEPARTMENT OF THE INTERIOR
MAR 4 1957
REGION III
DENVER, COLORADO

March 5, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED APR 22 1957

DATE	INITIALS	CODE

W. M. Traver, Executive Officer
D. M. E. A. Field Team, Region III
224 New Customs House Bldg.
Denver 2, Colorado

Dear Mr. Traver:

In accordance with the provisions of Contract Idm-E-520, Docket D. M. E. A. - 2768, we herewith submit our final report.

Yours very truly,

Clifton W. Livingston

Clifton W. Livingston, Pres.
MINING RESEARCH CORPORATION

CWL:hjl

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.2

DMEA

DEPARTMENT OF THE INTERIOR

APR 18 1957

REGION III
DENVER, COLORADO

RECEIVED
APR 22 1957
D.M.E.A.

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

Month of Final 1957 Docket No. DMEA 2768 Contract No. Idm E-520
Operator's Name MINING RESEARCH CORP Minerals
Address 4215 Balsam St. Wheatridge, Colo Uranium

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core Stage 1	ft			2166.45	715	3.03	1595	3.03
Churn Stage 2	ft			461.47	149	3.03	3000	3.03
Auger								
Stripping Wagon Drill								
Trenching Stage 1	ft			9765.75	11,225	.87	14,770	0.87
Test Pits Stage 2	ft			10478.28	12,044	.87	30,000	0.87
Roads and Trails								
TOTAL DISTRIBUTED COSTS				$22,861.95				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								

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

Date Feb. 28, 1957 Operator Mining Research Corp

Per Clifton W. Livingston Title President

Clifton W. Livingston

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

REMARKS:

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

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

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

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

GPO 872894

DMEA
DEPARTMENT OF THE INTERIOR
APR 18 1957
REGION III
DENVER, COLORADO

FINAL REPORT
CONTRACT Idm-E-520
MINING RESEARCH CORP.

Footage and Cost Summary

Contract Idm-E-520 provided for 4595 feet of diamond drilling and 34,770 feet of wagon drilling in two stages. The total footages drilled under the contract amounted to 864 feet of diamond drilling and 23,269 feet of wagon drilling. A summary of the footages drilled under the various items of the contract is presented in Table I, and in the accompanying final report on form MF-104A.

Stage I included 715 feet of core drilling and 11,225 feet of wagon drilling which at 90 percent participation represents a loan to the operators in amount of 10,735.98.

Stage II included 149 feet of core drilling and 12,044 feet of wagon drilling which at 75 percent participation represents a loan to the operators in amount of $8,197.31.

The total amount of the government loan to the operators on both stages is $18,936.29.

Repamyments under the provision of the contract began with the first shipment of ore in September, 1955. The amount of these payments to date (Feb. 25, 1957) is $1,053.49 leaving an outstanding balance of $17,882.80.

Geology

The objective of all drilling under the contract was to reach a known ore horizon near the base of the Fall River Sandstone. The depth of drilling ranged from 18 feet to 145 feet depending upon the topography and the dip of the beds. In most instances as drilling approached the base of the bed it was found that the moisture content of the sandstone was sufficiently high as to interfere with return of the drilling cuttings. However, in most instances it was found that the mineralization was above the moist sandstone. In every instance the miner-

Table I

Drill Summary

Stage I

90 Percent Participation--McKnight Area

Item	Total to Date Feet	Unit Cost	Total $	90 Pct.
Core Drilling	715	3.03	2,166.45	1,949.80
Wagon Drilling	11,225	.87	9,765.75	8,789.18
			11,932.20	10,738.98

Stage II

75 Percent Participation--Lion and Sheep Canyon Area

				75 Pct.
Core Drilling Lion-Iten 4	99	3.03	299.97	224.98
Sheep Canyon Item 6	50	3.03	151.50	113.62
	149		451.47	338.60
Wagon Drilling Lion Area Items 1 & 2	4458	.87	3,878.46	2,908.85
Lion Area Items 3 & 4	4999	.87	4,349.13	3,261.85
Sheep Canyon Item 6 & 7	2587	.87	2,250.69	1,688.02
	12,044		10,478.28	7,858.71
Total Stage II			10,929.75	8,197.31
Total Cpmtract			22,861.95	18,936.29

alization occurred in the same sandstone member.

The sandstone member that contains the mineralization is from 30 to 40 feet thick. Mineralization is spotty and eratic. The better grade mineralization lies along the joint planes and in vertical fractures. The mineralization is principally carnotite. Occassional specks of uraninite have been identified, but these are rare.

The porous and permeable nature of the sandstone has resulted in the mineralization being widely diffused, but seldom of commercial grade. In most instances holes of commercial grade ore are surrounded either by barren sandstone or low grade mineralization. For all practical purposes it must be assumed that only one body of commercial grade ore was discovered by the drilling and that the wide spread low grade mineralization is no commercial significance.

Drill Pattern

The accompanying maps show the location of the holes drilled and the limits of the DMEA areas. Figure I is a 200 scale map that shows the position of holes drilled in the Lion-McKnight Areas. Figure 2 is a 200 scale map that shows the position of holes drilled in the Sheep Canyon area. The dashed lines of Figure I outlines the limits of low grade mineralization as interpreted from the drill results. Three separate pods of submarginal mineralization were found on Lion 8, McKnight 3, and McKnight 2 Claims as shown in the figure.

Ore Reserves

In estimating ore reserves, a cut-off grade of 0.10 percent U_3O_8 was used. All results are based upon radiometric assays obtained using scalar readings from samples prepared by standard methods from drill cuttings at 2 ft. intervals. The radiometric assays are based upon standard samples assayed chemically. Radiometric assays when compared with chemical assays from the pulps on ore shipments from the Lion Claim prior to DMEA drilling show reasonable agreement. Samples were chosen for scalar radiometric assays after gamma-ray logging of the drill hole.

Figure 3 is a 40 scale plan map of drill holes on ore-shoots of the McKnight 3 and McKnight 2 claims. The dashed lines are the outline of Low-grade mineralization. Following is a list of commercial grade holes together with the depth, thickness, assay, and ft. percent product. The holes are arranged in groups thought to represent individual pods of commercial grade ore within the low grade zone.

Group	Hole No.	Depth Ft.	Thickness Ft.	Assay Pct U_3O_8	Product Ft. x Pct.
	457	18-22	4	.14	.56
	446	30-34	4	.10	.40
I	DD10	42-46	4	.18	.72
	670	30-36	6	.13	.78
	405	30-32	2	.10	.20
	DD22	32-34	2	.12	.24
		Total & Avg.	22	.13	2.90
	494	34-38	4	.19	.76
II	1711	32-36	4	.10	.40
	490	26-28	2	.11	.22
			10	.14	1.38
	466	30-32	2	.14	.28
	450	40-46	2	.10	.20
III	465	34-38	4	.13	.52
	488	20-22	2	.16	.32
	509	28-30	2	.16	.32
	510	32-34	2	.20	.40

Reserves of commercial grade ore on McKnight 3 claims are based upon holes of Group I above. Reserves of commercial grade ore on Mc Knight 2 are based upon Group II above. Because of the erratic distribution of the mineralized holes of Group III, the cost of mining would be excessive, and hence these holes are ignored in estimating reserves of commercial grade ore.

Figure 4 is a 40 scale map that shows the limits of low-grade mineralization on Lion 8 claim in dashed lines, and the limits of commercial grade ore in solid lines. It may be observed that the low-grade ore forms a halo around the commercial grade ore. The limits are based upon additional drilling beyond that done under contract Idm-E-520. Low grade mineralization occurs both above and below the commercial grade ore. The shape of the oreshoot resembles that of a mushroom. The commercial ore occupies the stem. There is no evidence to suggest the mineralization passes downward through the Fuson shale, but the deposit may be described

as vein-like.

Drill holes shown in Figure 4 that contain commercial grade ore are tabulated on the following page. The ore reserves of the Lion 8, McKnight 3 and McKnight 2 claims are tabulated below.

Area	Tons	Pct. U_3O_8	Product
Lion 8	25,300	.17	4,301
McKnight 2	1,375	.14	192
McKnight 3	3,300	.13	429
Total & Avg.	29,975	.16	4,922

Because of the small amount of drilling in the Sheep Canyon area, and the eratic distribution of mineralization it is impossible to estimate ore reserves in the Sheep Canyon area. Commercial grade mineralization was encountered in holes 50A and 504. The ore horizon is from 102 to 110 feet below the surface. It is necessary to drill through 50 to 60 feet of caving ground, before reaching the ore horizon. The mineralization is spotty and erratic. Whether caving has resulted in dilution is uncertain, but the grade of ore mined from the surface outcrop is considerably better than the drilling indicates. The difference may be due to the widely spaced drill pattern. It is perhaps a paradox that all DMEA repayments to date have been made from an area within which it is impossible to estimate ore reserves. To date 1058 tons have been produced at an average grade of 0.19 percent U_3O_8.

Respectfully submitted,

Clifton W. Livingston

Clifton W. Livingston, Pres.
Mining Research Corporation

March 5, 1957

COMMERCIAL GRADE

DMEA Drill Holes--Lion 8 Claim

Hole No.	Drill Ft.	Thickness Ft.	Assay Pct. U_3O_8	Product Ft.x Pct.
1226	34-36	2	.16	.32
1405	36-40	4	.14	.56
1404	36-40	4	.10	.40
1403	34-44	10	.24	2.40
1551	38-46	8	.17	1.36
1552	34-40	6	.12	.72
1189	40-42	2	.11	.22
1418	34-36	2	.10	.20
1417	36-40	4	.24	.96
1416	40-42	2	.31	.62
1401	36-38	2	.26	.52
1421	30-34	4	.12	.48
1420	34-40	6	.12	.72
1419	36-38	2	.21	.42
1423	28-36	8	.21	1.68
1400	30-31	1	.10	.10
251	30-34	4	.10	.40
1269	30-36	6	.17	1.02
I4	28-40	12	.15	1.80
1118	38-40	2	.25	.50
1261	30-32	1	.10	.10
1254	32-44	12	.18	2.16
	Total & Average	104	.17	17.66
	Average	4.73 ft.		

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4-12	Knouse	700
4-12	Ellis	700
	Lefay	140
	Sawyer	~~840~~
4/16	Johnson	110
	Mittendorf	100
4/11	C	220

225

APR 17 1957

Mr. Paul H. Russell
Attorney at Law
Edgemont, South Dakota

INTERIOR DEPT.

APR 15 1957

SOLICITOR

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-B520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. Russell:

Your letter of April 3, 1957, inquired what amount of the total payment used to explore the subject property was employed on the property of Mr. Robert E. Gull.

We regret that we are unable to furnish such a breakdown. However, it is suggested that the subject Operator may be able to furnish the amount expended.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FLKnouse/dlm 4-12-57
cc to : Mr. Knouse
Admr's Reading File
DMEA Field Team, Region III (2)

RECEIVED

APR 15 1957

ASSOC. SOLICITOR
MINERAL RESOURCES

8623

PAUL H. RUSSELL
ATTORNEY AT LAW
EDGEMONT, SOUTH DAKOTA

TELEPHONE MO - 2-7751

OFFICIAL FILE COPY
DMEA
RECEIVED APR 8 1957

DATE	INITIALS	CODE
4-9	C	220
"	~~[illegible]~~	710
		225

Apr. 3, 1957

Mr. C. O. Mittendorf, Administrator
United States Department of Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-2768
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall RiveerCounty, South Dakota

Dear Sir:

Thank you for your letter of March 26 regarding the DMEA payments made on the above mentioned claims.

We are wondering now whether or not you can let us know just what portion of the payments were loaned or used on Mr. Robert E. Gull's property, We appreciate your assistance in this matter.

Yours very truly,

Paul H. Russell

Paul H. Russell

PHR:b

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/25	Kuppen	700
"	Eller	700
3-26	Chamber	800
5/26	Jensen	110
"	Mittendorf	100
3/26	C	220
		225

MAR 26 1957

Mr. Paul H. Russell
Attorney at Law
Edgemont, South Dakota

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. Russell:

$18,936.31

In response to your letter of March 18, 1957, our records show that the Government contributed $18,772.92 for the exploration of the subject property, and has received $1,491.08 as royalties on production, leaving an unpaid balance of $17,281.84. The final audit of the project expenditures has not been made; therefore, the above figures are subject to audit.

We have not had a contract with the Livingston Uranium Corporation.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FLKnouse/gla
3-25-57
cc to: Admr.'s Reading File
Code 700
Mr. Knouse
DMEA Field Team, Region III (2) w/2cc incoming letter

8623

PAUL H. RUSSELL
ATTORNEY AT LAW
EDGEMONT, SOUTH DAKOTA

TELEPHONE MO - 2-7751

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 21 1957

DATE	INITIALS	CODE
3/23	C	220
3/25	Knowm	700
		225

March 18, 1957

Mr. C. O. Mittendorf
Administrator
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-2768 (Uranium)
Contract No. IDM-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, S. Dak.

Dear Mr. Mittendorf:

I am writing on behalf of Mr. Robert E. Gull of Fall River County, South Dakota, and I wish to refer to your letter to Mr. Gull dated February 14, 1957, in which you set out owner's consents of lien as given by Mr. Robert E. Gull, some as an individual and some with Carl V. Gull, all dated in 1953, also two signed in January, 1955. Mr. Gull has recently given Mining Research Corporation and Livingston Uranium Corporation notice that he is cancelling several of their leases with him because of failure to comply with the terms of the leases.

Will you please advise just how much money was loaned to Mining Research Corporation and Livingston Uranium Corporation for exploratory work on Mr. Gull's properties, so that he will know exactly how much the line is against any future production on these properties? Than k you.

Yours very truly,

Paul H. Russell

Paul H. Russell

PHR:b

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/25	Knouse	700
"	Ellis	700
3-26	Chambers	800
"	Johnson	110
"	Mittendorf	100
3/26	C	220
		225

MAR 26 1957

Mr. J. L. Barker
Box 417
Edgemont, South Dakota

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. Baker:

In response to your letter of March 7, 1957, our records show that the Government has contributed $18,772.92 for the exploration of the subject property and has received $1,491.08 as royalties on production, leaving an unpaid balance of $17,281.84. The final audit of the project expenditures has not been made; therefore, the above figures are subject to audit. Royalty percentages are variable. They range from 1½ percent to 5 percent of net proceeds from the sale of the ore, depending on the grade thereof.

Since our letter to you of February 14, 1957, we have not received an application for additional exploration of the subject property.

Sincerely yours,

C. O. Mittendorf

Administrator

FLKnouse/gla
3-25-57
cc to: Admr.'s Reading File
Code 700
Mr. Knouse
DMEA Field Team, Region III (2)

8623

Edgemont, S. Dak.
7-Mar.-57

U. S. Dept. of Interior
D. M. E. A.
224 New Custom House
Denver 2, Colo.

Mr. C. O. Mittendorf
Administrator

R. E: Docket # DMEA-2768 (Uranium)
Contract # Idm-E520
Mining Research Corp.
Lion Group Claims
Fall River County - S. Dak.

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 21 1957

DATE	INITIALS	CODE
3-25	Kuacer	700
		225

Dear Mr. Mittendorf

Am in receipt of your letter of 14 Feb-57 calling my attention to the Government lien on the Lion Claims, as contracted by Mining Research Corp., with my Consent.

Please advise as to the amount of lien to date, the royality percentage due on any production, and if any future D. M. E. A. loan has been applied for.

Yours Very Truly
J. L. Barker
Box 417
Edgemont, S. Dak.

DMEA
DEPARTMENT OF THE INTERIOR
MAR 19 1957
REGION III
DENVER, COLORADO

Eng. [illegible] contract [illegible]

Copy with: 18772.92
Regulation: 1491.08
Doc: 17281.84

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

March 19, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 21 1957

DATE	INITIALS	CODE
3/21	C	220
		225

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation (Deadhorse Canyon, Edgemont Uranium Area), Fall River County, South Dakota

Enclosed, for reply by your office, is a letter dated March 7, 1957, directed to Mr. C. O. Mittendorf, Administrator, DMEA, from J. L. Barker, Box 417, Edgemont, South Dakota, relating to a request for information on the subject contract.

E. N. Harshman

E. N. Harshman

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
224 New Customhouse
Denver 2, Colorado

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

February 20, 1957

Mr. Clifton W. Livingston, President
Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

Re: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation (Lion Group Claims, et al), Fall River County, South Dakota

Dear Mr. Livingston:

We are holding correspondence to the below listed owners of the captioned property who signed Owners' Consent of Lien, because of incomplete addresses:

NOTE

Robert E. Gull	Edgemont, So. Dak.
Edna McKnight	Edgemont, So. Dak.
Carl V. Gull	Edgemont, So. Dak.
John McKnight	Edgemont, So. Dak.
James McKnight	Edgemont, So. Dak.
Royce A. McElhaney	Box 621, Igloo, So. Dak.
James L. Barker	Edgemont, So. Dak.

Kindly provide this office with the most recent addresses you have for the above listed persons.

Very truly yours,

W. M. Traver

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

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 28 1957

DATE	INITIALS	CODE
3/1	C	220
4/1		800
		225

PROSPECTOR:
CHAIRMAN (2)
COMP

PROPERTY 6.5.7 C

Certification letters

D STATES
OF THE INTERIOR
LORATION ADMINISTRATION
TON 25, D. C.

(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
2/5/57	[illegible]	700
2-7	Ellis	700
2-7	Andritz	140
2-8	[illegible]	890
2/13	Selfridge	1301
	Lamb	USBM
2/13	Johnson	110
	Rittenhouse	100
	Nelson	220

FEB 14 1957

Mr. Clifton W. Livingston, President
Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. Livingston:

Enclosed is a "Certification by the United States of America of a Discovery or Development Under an Exploration Project Contract." This certification covers all the land described in Article 2 of the subject contract.

By the terms of the Exploration Project Contract, as amended, and of the certification, all minerals mined or produced from May 14, 1953, to May 14, 1965, are subject to the Government's percentage royalty as set forth in the contract until the amount contributed by the Government is repaid.

Payments should continue to be made to Mr. W. M. Traver, Executive Officer, DMEA Field Team, Region III, 224 New Customhouse Building, Denver 2, Colorado. Checks should be payable to the Defense Minerals Exploration Administration. The purchaser should be advised to deduct the royalties from the amount due on each shipment and forward the check directly to the Executive Officer. Any bonus payments or allowances received by you from the sale of ore are considered to be a part of the purchase price to which the Government's royalty applies. Royalty payments to the Government should be accompanied by suitable evidence, such as copies of settlement sheets, showing quantity and grade of the products sold, the name of the purchaser, and the price and charges, certified to be correct by the purchaser.

You are requested to notify Mr. Traver of any changes in ownership or production rights that might have any effect on the Government's right to its percentage royalty. Also, if production ceases at any time for an extended period, please notify Mr. Traver at six-month intervals that no production has been made, when that is the case.

Sincerely yours,

C. O. Mitteneder

Administrator

FIKnouse/gla 2-5-57
cc to: Admr.'s Reading File
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
Field Team, Region III (2)
Rare & Misc.Metals Division
Contract Adm. & Audit Division
F. E. Johnson
Mr. Knouse

Copies to:
Robert E. Gull
Edna McKnight
Carl V. Gull
John McKnight
James McKnight
Royce A. McElhaney
Carl W. Gull, as agent for Carl V. Gull, Earl Boner & Vernon Harriett
James L. Barker
Roy Chamberlain and Gertrude Chamberlain, The Ranger Hotel, Lusk, Wyoming

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
2/5	Kuguc	700
2-7	Ellis	700
2/7	Sydrick	140
	[illegible]	800
2-8	[illegible]	800
2/11	Selfridge	130
	Lamb	USBM
2/13	Johnson	110
	Stratton	100
		220
	Nelson	

FEB 14 1957

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

Re: Docket No. DMEA-2768 (Uranium)
Contract No. [illegible]-8520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. Traver:

Enclosed for your files are two copies each of a certification of discovery or development issued on the subject property and the covering letter to the Operator. Also enclosed are two copies of a letter to Roy Chamberlain and Gertrude Chamberlain, The Ranger Hotel, Luck, Wyoming.

Except for the Chamberlains, we find that the addresses of the other owners have not been supplied this office. We are, therefore, attaching seven date-stamped original letters, with distribution copies, to the following:

Robert E. Gull
Edna McKnight
Carl V. Gull (* one letter)
John McKnight
James McKnight
Royce A. McElhaney
* Carl V. Gull, as agent for
Carl V. Gull, Earl Boner and
Vernon Harriett
James E. Parker

You are requested to insert the correct address in the original and all copies of each letter, forward the original to the owner, and return all copies, except those indicated for the Field Team, to this office for distribution.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures
APPROVED:

Frank D. Lamb
Member, Bureau of Mines

N. E. Nelson
Member, Geological Survey

FIKnouse/gla 2-5-57
cc to: Admr.'s Reading File
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
Rare & Misc. Metals Division
Contract Adm. & Audit Division
F. E. Johnson
Mr. Knouse

8623

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
2/5	Knouse	700
2-7	Ellis	700
2/7/57	Sydnitz	140
2-8	Chamberlain	800
2/13	Selfridge	130
	Lamb	USBM
2/13	Johnson	110
"	Kittleson	100
	Nelson	220

FEB 14 1957

Roy Chamberlain and Gertrude Chamberlain
The Ranger Hotel
Luck, Wyoming

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Sir and Madam:

Enclosed is a copy of a certification of discovery or development, with copy of covering letter of even date to the Operator, which has been issued pursuant to the terms of the above-cited contract.

This correspondence relates to the Consent to Lien signed by you on July 17, 1955. The Government's prior lien on the land and upon any production therefrom will continue in existence for the length of time mentioned in the enclosed copy of the letter to the Operator. You are obligated during that period to commit no act and to assert no claim in conflict with the Government's rights under the agreement signed by you, and to give advance notice of the Government's rights to any transferee or lessee of any part of your interest in the land or the production therefrom.

Sincerely yours,

E. D. Mitchell

Administrator

Enclosures

FLKnouse/gla 2-5-57
cc to: Admr.'s Reading File
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
Rare & Misc. Metals Division
Contract Adm. & Audit Division
F. E. Johnson
Mr. Knouse

DMEA Field Team, Region III (2)

8623

DMEA Form 7
(12-56)

700

DMEA
DEPARTMENT OF THE INTERIOR
FEB 18 1957
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY

Date	Surname	Code
2/5	Knouse	700
2-7	Ellis	700
2/7	Hubritz	140
2-8	[illegible]	800
2/11	Selfridge	130
	Lamb	USBM
2/13	Johnson	110
	[illegible]	100
		220
3/	Nelson	425

FEB 14 1957

Mr. Robert E. Gull
Edgemont, South Dakota

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. Gull:

Enclosed is a copy of a certification of discovery or development, with copy of covering letter of even date to the Operator, which has been issued pursuant to the terms of the above-cited contract.

This correspondence relates to the six Owner's Consents to Lien signed by you on the following dates:

March 12, 1953
March 13, 1953 (with Carl V. Gull)
April 7, 1953
April 7, 1953 (with Carl V. Gull)
December 7, 1953 (with Carl V. Gull)
December 9, 1953 (with Carl V. Gull)

and five Consents to Lien, two of which were signed with Carl V. Gull on January 18 and 19, 1955, and three undated ones.

The Government's prior lien on the land and upon any production therefrom will continue in existence for the length of time mentioned in the enclosed copy of the letter to the Operator. You are obligated during that period to commit no act and to assert no claim in conflict with the Government's rights under the agreement signed by you, and to give advance notice of the Government's rights to any transferee or lessee of any part of your interest in the land or the production therefrom.

Sincerely yours,

C. O. Mitterpart

Administrator

Enclosures

FLKnouse/gla 2-5-57
cc to: Admr.'s Reading File
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
Rare & Misc. Metals Division
Contract Adm. & Audit Division
F. E. Johnson
Mr. Knouse
DMEA Field Team, Region III (2)

mailed in field.

8623

DMEA Form 7
(12-56)

700

DMEA
DEPARTMENT OF THE INTERIOR

FEB 18 1957
REGION III
DENVER, COLORADO

FEB 14 1957

OFFICIAL FILE COPY

Date	Surname	Code
2/5	Knouse	700
2-7	Ellis	700
2/7	[illegible]	140
2-8	[illegible]	800
2/11	Selfridge	130
	Lamb	USBM
2/13	Johnson	110
	[illegible]	100
2-1	C	220
		225

Mrs. Edna McKnight
Edgemont, South Dakota

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mrs. McKnight:

Enclosed is a copy of a certification of discovery or development, with copy of covering letter of even date to the Operator, which has been issued pursuant to the terms of the above-cited contract.

This correspondence relates to the Owner's Consents to Lien signed by you on March 20, 1953, and April 15, 1953. The Government's prior lien on the land and upon any production therefrom will continue in existence for the length of time mentioned in the enclosed copy of the letter to the Operator. You are obligated during that period to commit no act and to assert no claim in conflict with the Government's rights under the agreement signed by you, and to give advance notice of the Government's rights to any transferee or lessee of any part of your interest in the land or the production therefrom.

Sincerely yours,

E. O. Mittendorf

Administrator

Enclosures

FIKnouse/gla 2-5-57
cc to: Admr.'s Reading File
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
Rare & Misc. Metals Division
Contract Adm. & Audit Division
F. E. Johnson
Mr. Knouse
DMEA Field Team, Region III (2)

Mailed in Field -

8623

DMEA Form 7
(12-56)

700

DMEA
DEPARTMENT OF THE INTERIOR

FEB 18 1957
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY

Date	Surname	Code
2/5	Kugusk	700
2-7	Ellis	700
2/7	Sydnor	110
2-8	Chapman	800
2/11	Selfridge	130
/	Lamb	USM
2/13	Gram	110
	COM	100
2/1	C	250
		225

FEB 14 1957

Mr. Carl V. Gull
Edgemont, South Dakota

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. Gull:

Enclosed is a copy of a certification of discovery or development, with copy of covering letter of even date to the Operator, which has been issued pursuant to the terms of the above-cited contract.

This correspondence relates to the three Owner's Consents to Lien and two Consents to Lien signed by you and Mr. Robert E. Gull on the following dates:

Owner's Consents to Lien
March 13, 1953
April 7, 1953
December 9, 1953

Consents to Lien
July 18, 1955
July 19, 1955

and to the Owner's Consent to Lien and Consent to Lien, dated December 9, 1953, and July 18, 1955, respectively, which you signed as agent for Carl V. Gull, Earl Boner, and Vernon Harriett.

The Government's prior lien on the land and upon any production therefrom will continue in existence for the length of time mentioned in the enclosed copy of the letter to the Operator. You are obligated during that period to commit no act and to assert no claim in conflict with the Government's rights under the agreement signed by you, and to give advance notice of the Government's rights to any transferee or lessee of any part of your interest in the land or the production therefrom.

Sincerely yours,

C. O. Hitenhorst

Administrator

Mailed in Field.

Enclosures

FKnouse/gla 2-5-57
cc to: Admr.'s Reading File
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
Rare & Misc. Metals Division
Contract Adm.& Audit Division
F. E. Johnson
Mr. Knouse
DMEA Field Team, Region III (2)

8623

DMEA Form 7
(12-56)

700

DMEA
DEPARTMENT OF THE INTERIOR

FEB 18 1957
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY

Date	Surname	Code
2/5	Knouse	700
2-7	Ellis	700
2/7	Sydnitz	140
2-8	[illegible]	800
2/11	Selfridge	130
	Lamb	USBM
2/13	Johnson	110
	[illegible]	100
3/1	C	220
		225

FEB 14 1957

Mr. John McKnight
Edgemont, South Dakota

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. McKnight:

Enclosed is a copy of a certification of discovery or development, with copy of covering letter of even date to the Operator, which has been issued pursuant to the terms of the above-cited contract.

This correspondence relates to the Owner's Consent to Lien signed by you and Mr. James McKnight on April 4, 1953. The Government's prior lien on the land and upon any production therefrom will continue in existence for the length of time mentioned in the enclosed copy of the letter to the Operator. You are obligated during that period to commit no act and to assert no claim in conflict with the Government's rights under the agreement signed by you, and to give advance notice of the Government's rights to any transferee or lessee of any part of your interest in the land or the production therefrom.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosures
FIKnouse/gla 2-5-57
cc to: Admr.'s Reading File
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
Rare & Misc. Metals Division
Contract Adm. & Audit Division
F. E. Johnson
Mr. Knouse
DMEA Field Team, Region III (2)

Mailed in Field.

8623

DMEA Form 7
(12-56)

700

DMEA
DEPARTMENT OF THE INTERIOR

FEB 18 1957
REGION III
DENVER, COLORADO

FEB 14 1957

OFFICIAL FILE COPY

Date	Surname	Code
2/5	Knouse	700
2-7	Ellis	700
2/7	Sydnor	110
	Appr. Sol. Off.	800
2-8	Chaub	130
	Lamb	USBM
2/13	James	110
	Cohn	100
3-1	C	220
	Selfridge	225

Mr. James McKnight
Edgemont, South Dakota

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. McKnight:

Enclosed is a copy of a certification of discovery or development, with copy of covering letter of even date to the Operator, which has been issued pursuant to the terms of the above-cited contract.

This correspondence relates to the Owner's Consent to Lien signed by you and Mr. John McKnight on April 4, 1953. The Government's prior lien on the land and upon any production therefrom will continue in existence for the length of time mentioned in the enclosed copy of the letter to the Operator. You are obligated during that period to commit no act and to assert no claim in conflict with the Government's rights under the agreement signed by you, and to give advance notice of the Government's rights to any transferee or lessee of any part of your interest in the land or the production therefrom.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosures

FLKnouse/gla 2-5-57
cc to: Admr.'s Reading File
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
Rare & Misc. Metals Division
Contract Adm. & Audit Division
F. E. Johnson
Mr. Knouse
DMEA Field Team, Region III (2)

Mailed in Field

8623

DMEA Form 7
(12-56)

700

DMEA
DEPARTMENT OF THE INTERIOR

FEB 18 1957
REGION III
DENVER, COLORADO

FEB 14 1957

OFFICIAL FILE COPY

Date	Surname	Code
2/5	Knouse	700
2-7	Ellis	700
2/7	Sydnitz	110
2-8	[illegible]	800
2/11	Selfridge	130
	Lamb	[illegible]
2/13	Johnson	110
	CDM	100
3-1	C	200
		225

Mr. James L. Barker
Edgemont, South Dakota

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. Barker:

Enclosed is a copy of a certification of discovery or development, with copy of covering letter of even date to the Operator, which has been issued pursuant to the terms of the above-cited contract.

This correspondence relates to an undated Owner's Consent to Lien and an undated Consent to Lien signed by you. The Government's prior lien on the land and upon any production therefrom will continue in existence for the length of time mentioned in the enclosed copy of letter to the Operator. You are obligated during that period to commit no act and to assert no claim in conflict with the Government's rights under the agreement signed by you, and to give advance notice of the Government's rights to any transferee or lessee of any part of your interest in the land or the production therefrom.

Sincerely yours,

G. O. Mittendorf

Administrator

Enclosures

FIKnouse/gla 2-5-57
cc to: Admr.'s Reading File
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
Rare & Misc. Metals Division
Contract Adm. & Audit Division
F. E. Johnson
Mr. Knouse
DMEA Field Team, Region III (2)

Mailed in Field

8623

DMEA Form 7
(12-56)

DMEA
DEPARTMENT OF THE INTERIOR

700

FEB 18 1957
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY

Date	Surname	Code
2/5	Knouse	700
2-7	Ellis	700
2/7	Andrews	110
2-8	[illegible]	800
2/11	Selfridge	130
	Lamb	USBM
2/13	Johnson	110
	Com	100
3/1	C	220
		225

FEB 14 1957

Mr. Royce A. McElhaney
Box 621
Igloo, South Dakota

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. McElhaney:

Enclosed is a copy of a certification of discovery or development, with copy of covering letter of even date to the Operator, which has been issued pursuant to the terms of the above-cited contract.

This correspondence relates to the Owner's Consents to Lien signed by you on March 4, April 9, 1953, and January 29, 1954, and an undated Consent to Lien. The Government's prior lien on the land and upon any production therefrom will continue in existence for the length of time mentioned in the enclosed copy of letter to the Operator. You are obligated during that period to commit no act and to assert no claim in conflict with the Government's rights under the agreement signed by you, and to give advance notice of the Government's rights to any transferee or lessee of any part of your interest in the land or the production therefrom.

Sincerely yours,

C. O. Hittendorf (for)

Administrator

Enclosures

FIKnouse/gla 2-5-57
cc to: Admr.'s Reading File
Operating Committee
Frank D. Lamb, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
Rare & Misc. Metals Division
Contract Adm. & Audit Division
F. E. Johnson
Mr. Knouse
DMEA Field Team, Region III (2)

Mailed in Field

8623

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

224 New Customhouse
Denver 2, Colorado

February 11, 1957

Mr. Clifton W. Livingston, President
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation (McKnight, Lion and Gull-sheep Canyon claims), Fall River County, South Dakota

Dear Mr. Livingston:

From copies of settlement sheets and royalties received at this office, additional royalties are due the Government as follows:

Liq. No.	Royalty Due	Royalty Paid	Bonus Roy. Due	Bonus Roy. Paid
182	$73.23	$73.23	$56.78	-- --
215	63.25	44.27	45.77	-- --
223	92.46	92.46	73.72	-- --
237	82.35	82.35	66.12	-- --
268	66.60	66.60	52.35	-- --
296	64.17	64.17	51.56	-- --
	$442.06	$423.08	$346.30	-- --

Total Royalties Due $788.36
Total Royalties Paid 423.08
Balance Royalties Due $365.28

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 13 1957

DATE	INITIALS	CODE
2/13	C	220
2/18	CEF	800
		225

You will note that we include royalties due on Liq. No. 215 in the above listing, as our letter of January 9, 1957 discussing this shipment has met with no response from you. Accordingly, we request that a check for $365.28 made payable to the Defense Minerals Exploration Administration be mailed to the Executive Officer, DMEA Field Team, Region III, 224 New Customhouse, Denver 2, Colorado.

Very truly yours,

Original signed by
W. M. TRAVER

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

MHM/vj

cc: Royalty File E520
Corres. File E520
Sec. Opr. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

ACTION ON INTERIM
OR FINAL FIELD TEAM REPORT
Date 1-28

Referred to:

1. ~~Mr. Mittendorf~~
2. ~~Mr. Johnson~~
3. ~~Mr. Chambers~~
4. ~~Docket Control Mails and Files~~
5. ~~Road & Street Const. Division~~
6. Docket Control Mails and Files

Note comments in report regarding:

1. Certification Rec

2.

3.

4.

and take appropriate action.

- - - - - - - - - -

Action taken by Division: 2/4/57

Certification being prepared.

FIK/gla

Robert E. Adams

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

224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 28 1957

DATE	INITIALS	CODE
1/28	[illegible]	100
1-29	[illegible]	700

January 25, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 2768 (Uranium), Contract No. Idm-E520, Mining Research Corporation (McKinght, Lion, and Gullsheep Canyon claims), Fall River County, South Dakota

Enclosed are the original and three copies of a joint memorandum, dated January 24, 1957, from Norman P. Cuppels, Geologist, Geological Survey, and E. O. Binyon, Mining Engineer, Bureau of Mines.

The field examiners recommend that the subject project be certified as a discovery or development resulting from the DMEA exploration work performed, in which this office concurs.

W. M. Traver

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
DMEA
DEPARTMENT OF THE INTERIOR

JAN 25 1957
REGION III
DENVER, COLORADO

Building 20
Denver Federal Center
Denver 2, Colorado

REGION III

January 24, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: John F. Shaw, Superintendent

From: Norman P. Cuppels and E. O. Binyon

Subject: Docket DMEA 2768 (Uranium) Contract Idm-E520, Mining Research Corporation, (McKnight, Lion and Gull-sheep Canyon claims) Fall River County, South Dakota. Certification of Discovery or Development.

In a memorandum dated March 30, 1955, an estimate of ore reserves discovered on the property as a result of DMEA exploratory work up to and including March 30, was submitted. This estimate amounted to 27,590 short tons of indicated and inferred ore of an average grade of 0.115 percent U_3O_8 and also included 203,400 tons of low-grade material averaging about .04 percent U_3O_8.

DMEA drilling done after March 30 added little or no tonnage to the reserves as, for the most part, the results were negative. Those holes that encountered ore or mineralization were drilled for geologic data and were mainly in ore bodies included in the reserves above.

The I and M Mining Company (Issac and Martin) are, at present, mining ore from deposits in the Gull-sheep Canyon part of the property. No estimate of the reserves on the Gull-sheep Canyon claims has been made.

In view of the results of DMEA drilling on the subject property, it is recommended that a Certification of Discovery or Development be issued for the subject property.

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 28 1957

DATE	INITIALS	CODE

N. P. Cuppels
N. P. Cuppels
U. S. Geologic Survey

E. O. Binyon
E. O. Binyon
U. S. Bureau of Mines

EOB:jg
cc: 9
Idm-E520
Chron.

OFFICIAL FILE COPY DMEA RECEIVED JAN 14 1957		
DATE	INITIALS	CODE
1-14	C	220
1/15	[illegible]	800
		225
January 10, 1957		

224 New Customhouse
Denver 2, Colorado

Mr. Clifton W. Livingston, President
Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

Re: Docket No. DMEA 2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
(Edgemont Uranium Area)
Fall River County, South Dakota

Dear Mr. Livingston:

In accordance with the provisions of Amendment No. 5 to Contract No. Idm-E520, effective January 1, 1957, the Contract and all obligations of the parties thereunder are terminated, except as otherwise provided in the Contract as amended.

In connection with the above, you are requested to promptly submit to this office the original and four copies of a final report and final account, as required under Article 5, paragraphs (b) and (d), of the contract form.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

JDC:prl

cc: Chairman, Op. Comm. (2)
Harshman
Shaw (2)
Townsend
Corres. file
Chron.

JAN 14 1957

DATE	INITIALS	CODE
1/14	C	220
1/17	EEG	800
	G.	225

224 New Customhouse
Denver 2, Colorado

January 9, 1957

Mr. Clifton W. Livingston, President
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation (Edgemont Uranium Area), Fall River County, South Dakota

Dear Mr. Livingston:

DMEA Order 1 Amended, Sec. 10(e), stipulates that the peretntage of the Government's royalty shall be based on the "gross proceeds". The identical stipulation is made in Article 6(b) of Contract Idm-E520; and Annex II, c, of Amendment 2 to the Contract. This term "gross proceeds" necessarily includes the entire dollar return from a sale. Incidently, this base is used in computing royalty due the Government on sales of all minerals.

Accordingly, royalty is based and computed on the value per ton of production reported by Liq. No. 215 as follows:

Base Price U_3O_8	$915.43
Base Price V_2O_5	105.95
Development Allowance	183.09
Haulage Allowance	60.42
Bonus Production Payment	915.43
"Gross Proceeds"	$2,180.32
Dry Tons	122.058
Value/ton	$17.86
Royalty Rate	5%
Royalty Due	$109.02
Royalty Paid	44.27
Balance Royalty Due	$64.75

We trust this explains the basis for which we requested additional royalty of $64.75 on Liq. No. 215 in our letter of January 4 to you.

Had your property not been certified by the AEC as eligible for bonus payments on initial production, then the basis of computation would be at a rate of 3-1/2 percent.

Yours very truly,

Original signed by
E. N. HARSHMAN

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

MHM/vj

cc: Royalty File E520
Corres. File E520
Sec. Opr. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 14 1957

DATE	INITIALS	CODE
1-14	C	220
1/15	[illegible]	800
	[illegible]	225

224 New Customhouse
Denver 2, Colorado

January 9, 1957

Memorandum

To: E. N. Harshman (2)
John F. Shaw (2)

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

Subject: Docket No. DMEA 2768 (Uranium), Contract No. Idm-E520, Mining Research Corporation (Edgemont Uranium area), Fall River County, South Dakota

In accordance with the provisions of Amendment No. 5, Contract No. Idm-E520 is terminated effective January 1, 1957.

Please submit a joint memorandum containing your recommendations relative to the issuing of a Certification of Discovery or Development as the result of DMEA exploration work.

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

JDC:prl

cc: Chairman, Op. Comm. (2)
Townsend
Corres. E520
Chron.

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

224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY DMEA RECEIVED JAN 7 1957		
DATE	INITIALS	CODE
January 4, 1957		
1/8/57	EW	800
		225

Mr. C. W. Livingston, President
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium) Contract Idm-E520
Mining Research Corp. (Edgemont Uranium Area)
Fall River County, South Dakota

Dear Mr. Livingston:

On the basis of settlement sheets and royalty submitted, additional royalties due on production covered by the listed liquidation numbers are as follows:

Liq. No.	Bonus Royalty
182	$ 56.78
215	64.75
223	73.72
237	66.12
Total Bonus Royalty Due	$261.37

You will note the bonus royalty for Liquidation No. 215 includes additional royalty due as a result of an increase in the original royalty rate assigned to this production.

Accordingly, you are requested to make your check for $261.37 payable to the Defense Minerals Exploration Administration. Checks are to be sent to the Executive Officer, DMEA Field Team, Region III, 224 New Customhouse, Denver 2, Colorado.

Very truly yours,

Original signed by
W. M. TRAVER

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

MHM:bh
cc-Royalty File E-520
Corres. File E-520
Sec. Op. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

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

RECEIVED NOV 26 1956 D.M.E.A.

224 New Customhouse
Denver 2, Colorado

November 21, 1956

Mr. C. W. Livingston, President
Mining Research Corporation, Inc.
5810 W. 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation (Edgemont Uranium Area), Fall River County, South Dakota

Dear Mr. Livingston:

This office is in receipt of your corporation's check No. 1520 for $277.10 sent as per our letter of November 1, 1956.

Acceptance of this check as payment of bonus royalty due on shipments covered by Liquidation Nos. 8599, 8978, 9116, 9809, 125, 322, 727 and 884 is subject to final approval by future DMEA royalty audit.

Yours very truly,

Original signed by
W. M. TRAVER

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

MHM/vj

cc: Royalty File E520
Corres. File E520
Sec. Opr. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

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

224 New Customhouse
Denver 2, Colorado

November 1, 1956

Mr. C. W. Livingston, President
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium), Contract Idm-E52
Mining Research Corp. (Edgemont Uranium Area)
Fall River County, South Dakota

Dear Mr. Livingston:

In reply to your letter of October 29, 1956, we wish to advise you, on the basis of production records received by this office to date, royalties on A.E.C. production bonus payments which you will receive, are as follows:

Liquidation No.	Bonus Royalty
8599	$30.55
8978	31.39
9116	26.56
9809	33.91
125	51.26
322	40.37
727	32.76
884	30.30
Total Bonus Royalty Due -	$277.10

You will note the bonus royalty for Liquidation Nos. 8978 and 9116 includes the additional royalty due as the result of an increase in the original royalty rates assigned to this production.

Accordingly, you are requested to make your check for $277.10 payable to the Defense Minerals Exploration Administration. Checks are to be sent to the Executive Officer, DMEA Field Team, Region III, 224 New Customhouse, Denver 2, Colorado.

Very truly yours,

Original signed by
W. M. TRAVER

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

MHM:bh
cc-Royalty File E-52
Corres. File E-52
Sec. Op. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

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

RECEIVED
OCT 30 1956

224 New Customhouse
Denver 2, Colorado

October 25, 1956

Mr. C. W. Livingston, President
Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

Re: Docket DMEA 2768 (Uranium)
Contract Idm-E520
Mining Research Corporation
Dead Horse Canyon
Fall River County, South Dakota

Dear Mr. Livingston:

Receipt is acknowledged of your letter dated October 22, 1956 wherein you advised of current negotiations between Mining Research Corporation and another corporation which may affect DMEA Contract Idm-E520.

Relative to the above negotiations, your attention is directed to Article 7 of the contract form concerning assignment, transfer or loss of Operator's interest. Your negotiations must include adequate provisions for protection of the Government's rights under the contract.

Every effort should be made to complete the currently approved work as outlined in work approvals dated May 21, 1956 and July 19, 1956, after which, if the results of your negotiations are such that you do not wish to pursue the work further, you should immediately request termination of the contract without the completion of additional work.

Very truly yours,

Original signed by
W. M. TRAVER

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

JDC:jy
cc: Corresp. E520)
Chm. Op. Comm. (2))
Shaw (2))
Harshman)w/copy Oper's.
Townsend)letter of 10-22-56
Chron.

MINING RESEARCH CORPORATION
INCORPORATED
5810 W. 38th Ave. Denver 14, Colo.

DMEA
MENT OF THE INTERIOR
OCT 23 1956
REGION III
DENVER, COLORADO

October 22, 1956

RECEIVED
OCT 29 1956

J. W. Townsend
Acting Executive Officer, DMEA
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Dear Mr. Townsend:

In reply to your letter of Oct 18, 1956 we wish to inform you that negotiations are in progress wherein our future operations at Edgemont will be conducted jointly by Mining Reasearch Corporation and another corporation. If this negotiation is successful it is our intention to cancel our present D. M. E. A. contract and to proceed without government assistance. We are uncertain at present as to whether the negotiation will or will not be successful. We expect to have a decision at almost any hour. Until that decision is reached we are expending our efforts in road building. The terms of our agreement are such that future efforts will be directed towards the devoloped area rather than towards additional exploration. However, if the negotiations fail we will be in the same position as we are today.

Yours very truly,

Clifton W. Livingston

Clifton W. Livingston, Pres.
Mining Research Corporation

CWL:hjl

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

RECEIVED
OCT 22 1956

224 New Customhouse
Denver 2, Colorado

October 18, 1956

Mr. Clifton W. Livingston, President
Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

Re: Docket DMEA 2768 (Uranium)
Contract Idm-E520
Mining Research Corporation
McKnight and Lion claim groups
Fall River County, South Dakota

Dear Mr. Livingston:

Form MF-104, Operator's Monthly Report and Voucher for August, 1956, has been received in this office.

We have been advised that work under the contract has been suspended. Therefore, payment on the August voucher is withheld pending additional contract work.

Please advise this office of your plans relative to completion of the approved drilling which remains to be performed under the contract.

Very truly yours,

J. W. Townsend

J. W. Townsend
Acting Executive Officer, DMEA
Field Team, Region III

JDC:jy
cc: Corresp. E520
Sec. Op. Comm. (2)
Shaw (2)
Harshman
Townsend
Chron.

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

RECEIVED
JUL 30 1956

224 New Customhouse
Denver 2, Colorado

July 27, 1956

Mr. Clifton W. Livingston, President
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium)
Contract Idm-E520
Mining Research Corporation
Fall River County, South Dakota

Dear Mr. Livingston:

Reference is made to the project work approval by the DMEA Field Team, Region III, dated July 19, 1956.

Please correct an error in the last line in the next to the last paragraph as follows:

Change the figure "3400" to read "750."

Very truly yours,

W. M. Traver

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

JWT:prl

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

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

RECEIVED
JUL 25 1956

July 24, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 2768 (Uranium) Contract Idm-E520, Mining Research Corporation, Fall River County, South Dakota

I have reviewed the DMEA Docket 2768, Contract Idm-E520, Mining Research Corporation, Fall River County, South Dakota, dated June 4 and received in this office June 15, 1956. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The applicant has requested an amendment to the contract to permit closer spaced drilling.

Inasmuch as maps indicating the proposed work were being forwarded to this office for review, action was deferred pending the arrival of the two maps.

The proposed amendment to the contract was discussed on July 23 with George C. Selfridge, who advised that a satisfactory agreement between DMEA and the applicant had been reached and that drilling on 25 to 30 foot centers for the balance of the contract appeared to be a satisfactory solution to the existing problems.

We concur in the actions taken by Mr. Selfridge to solve the problem of closer spaced drilling.

John E Crawford
John E. Crawford

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

RECEIVED
JUL 23 1956

224 New Customhouse
Denver 2, Colorado

July 19, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Fall River County, South Dakota

Enclosed are the Government's, Division, and Docket copies of Amendment No. 7 to Contract Idm-E520, which were forwarded by your letter of July 12, 1956, for execution by the Operator and this office.

Also enclosed are four copies of project work approval, issued by the DMEA Field Team, Region III, consistent with the provisions of the Contract as amended by Amendment No. 7.

Copies of Amendment No. 7 and the work approval have been distributed to the Operator, the Finance Office, Region III, and to other offices concerned.

W. M. Traver

W. M. Traver

Enclosures

#7

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

JUL 2 2 1956

[illegible] New Customhouse
Denver 2, Colorado

July 19, 1956

Mr. Clifton W. Livingston, President
Mining Research Corporation
[illegible] West [illegible]th Avenue
Denver 10, Colorado

Re: Contract [illegible] (Uranium)
Contract [illegible]
Mining Research Corporation
Fall River County, South Dakota

Dear Mr. Livingston:

In reference to your request of May 29, 1956, and consistent with provisions in the Contract as amended by Amendment No. 7, you are authorized to drill the following Stage I offset holes in drill area I:

[illegible] "Block C"

Reference line "4 S"

1 - hole 25 feet south of Hole No. [illegible]

Reference line "5 S"

1 - hole 25 feet north of Hole No. [illegible]
1 - hole 25 feet south of Hole No. [illegible]

Reference line "7 S"

1 - hole 25 feet North of Hole No. [illegible]
1 - hole 25 feet South of Hole No. [illegible]

Reference line "8 S"

1 - hole 25 feet south of Hole No. [illegible]
1 - hole 25 feet north of Hole No. [illegible]
1 - hole 25 feet south of Hole No. [illegible]
1 - hole 25 feet north of Hole No. [illegible]
1 - hole 25 feet north of Hole No. [illegible]
1 - hole 25 feet south of Hole No. [illegible]
1 - hole 25 feet north of Hole No. [illegible]
1 - hole 25 feet north of Hole No. [illegible].

Reference line "9 S"

1 - hole 25 feet north of Hole No. 436
1 - hole 25 feet south of Hole No. 436

Reference line "11 S"

1 - hole 25 feet north of Hole No. 310
1 - hole 25 feet south of Hole No. 310.

It is estimated that the above listed seventeen (17) wagon drill holes will average about 30 feet each in depth, or aggregate approximately 500 feet of drilling.

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

Very truly yours,

ERRA Field Team, Region III

W. H. Turner

E. H. Burkhart

JHF:prl

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

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

RECEIVED
JUL 1 6 1956

224 New Customhouse
Denver 2, Colorado

July 16, 1956

Mr. Clifton W. Livingston, President
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium)
Contract Idm-2520
Mining Research Corporation
Fall River County, S. Dak.

Dear Mr. Livingston:

Enclosed are the Government's, Division, Docket, Finance Office, Field Team, and Operator's copies of proposed Amendment No. 7 to Contract Idm-2520, which has been prepared to provide for 25-foot spacing of offset holes as requested in your letter of May 29, 1956.

If the Amendment is satisfactory to you, all copies of the Amendment are to be signed by an official of Mining Research Corporation authorized to do so, the signer's title inserted, the corporate seal affixed, and all copies of the Amendment returned to this office.

Upon return of all copies of the Amendment properly executed, the Amendment will be dated and signed by the Executive Officer, DMEA Field Team, for the Government; after which the Operator's copy will be returned to you.

After the Amendment has been executed, this office will issue the Government's approval for a limited amount of offset drilling to be performed in Drill Area I under Stage I of the Contract.

Very truly yours,

W. M. TRAVER

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

JWT:prl
cc: Chairman, Oper. Comm. (2)
Harshman
Shaw
Townsend
Corres. file
Chron.

Enclosures

cw

Surnam copy

700

I know this Champion Selfridge Thomson Mittendorf

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

JUL 1 2 1956

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

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. Traver:

As agreed in the telephone conversation on July 2, 1956, between you, Mr. Harahman, and members of this office, there are enclosed for execution the original and five copies of Amendment No. 7 to the subject contract.

If the terms and conditions of the proposed amendment meet with your approval and the Operator's, the amendment should be properly dated, signed by you and the Operator, and the copies distributed in the usual manner.

In the event that any part of the proposed amendment does not meet with your approval or the Operator's and cannot be amended within your delegated authority, the original and all copies are to be returned with the proposed changes for consideration.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JG)

Enclosures

FLKnouse/gla
7- 9-56

APPROVAL:

/s/ Robert W. Geehan (JG)
Member, Bureau of Mines

Thor H. Kiilsgaard (JG)
Member, Geological Survey

cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700
Mr. Knouse

P.S. Two extra copies of the amendment are enclosed for the use of the Field Team.

R.S.H.

Surname copy
FLKnouse 700
Ellis

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

July 3, 1956

Memorandum

To: Associate Solicitor,
Division of Mineral Resources

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-8520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota
Amendment No. 7

Please draft Amendment No. 7 to the subject contract for the signature of the Executive Officer, Region III, which has an effective date of June 1, 1956, and modified drilling under Stage I in drilling areas I and III as follows:

1. On page 1 of Exhibit "1," under Stage I, fifth line,
   (a) delete "a maximum of 241 wagon-mounted drill holes," and add, "a maximum of 256 wagon-mounted drill holes."

   Tenth line:
   (b) delete "and shall be approximately 60 feet in depth," and add, "and shall be drilled to the depth specified by the Government."

   Sixteenth line:
   (c) delete "with spacing of 30 feet between holes," and add, "with spacing of 25 feet between holes."

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

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

FLKnouse/gla
7-3-56
cc to: ~~Admin. Reading File~~
Docket
Code 700
Mr. Knouse

700

F L Knouse

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

DOCKET COPY

July 3, 1956

Memorandum

To: The File

From: F. L. Knouse, Rare & Miscellaneous Metals Division

Subject: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota
Justification for Amendment No. 7

Reference is made to Region III memorandum, dated June 4, 1956, also to a telephone call from Messrs. W. M. Traver and E. N. Harshman to Messrs. Selfridge and Knouse, July 2, 1956.

Selfridge: We have been looking over the two maps submitted by the Operator, and judging from the drilling done to date the Operator may have some small disconnected ore bodies in the area concerned.

Traver: Yes, that is our interpretation of his findings.

Selfridge: What do you think of the Operator's proposal?

Traver: The Operator wants to drill lines of holes 100 feet apart with holes spaced along the lines on 25-foot center, and I don't see the justification for this amount of drilling.

Knouse: The contract provides for drilling holes in drilling areas I and III on northeast lines 100 feet apart at holes spaced 50 feet apart; also, with your approval, holes may be drilled spaced 30 feet apart around holes in which ore is found.

Harshman: From what we know of the mineralization in this area, any additional drilling would be blocking out the ore for the Operator, and such spacing as is allowed in the contract should be ample for exploration purposes.

Selfridge: The Operator pointed out in our meeting that the 30-foot spacing, if drilled between the 50-foot spaced holes, two holes would be 20 feet apart, and he wanted to split the interval which would make the holes 25 feet apart.

Traver: I would go along with changing the 30-foot spacing to 25 feet around ore holes. This would mean drilling around ore holes in three or four known areas.

Selfridge & Knouse: We see no objections to that modification.

Traver & Harshman: Then you should prepare an amendment to change the hole spacing and allow the drilling of 256 wagon-drill holes in drilling areas I and III instead of the maximum of 241 holes now provided for in the contract.

Knouse: We will proceed to prepare such an amendment.

F. L. Knouse

F. L. Knouse

Surname copy

DEPARTMENT OF THE INTERIOR

DMEA

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

14X1401(01) Revolving Fund, Defense Production Act, Interior (Allocated working Fund to the Office of the Secy.)

T E L E T Y P E

JUN 29 1956

W. M. TRAVER, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURMEMO JUNE 4, DMEA-2768 MINING RESEARCH CORPORATION,

IN DUAL CONNECTION WITH HARSHMAN, PLEASE TELEPHONE ME ON

JULY 2 AT 9:30 A.M. YOUR TIME TO DISCUSS OPERATOR'S PROPOSAL.

George C. Selfridge

GEORGE C. SELFRIDGE,
CHAIRMAN, OPERATING COMMITTEE

FLKnouse/gla
6-29-56
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700
Mr. Knouse
Confirmation to Region III

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

RECEIVED
JUN 27 1956

224 New Customhouse
Denver 2, Colorado

June 25, 1956

Mrs. Helen J. Livingston, Secretary
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Royalty payments, Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation (Ridgemont Uranium Area), Fall River County, South Dakota

Dear Mrs. Livingston:

You indicated in your letter of January 17, 1956 that application had been made to the Atomic Energy Commission to receive bonus payments on initial production. We note royalty subsequent to January 17, 1956 is being computed and paid exclusive of AEC production bonus.

Please inform this office of the status of your corporation's eligibility for bonus and whether or not you are receiving payments.

Yours very truly,

W. M. TRAVER

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

MHM/vj

cc: Royalty File E520
Sec. Opr. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

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

RECEIVED
JUN - 1956

224 New Customhouse
Denver 2, Colorado

June 4, 1956

Memorandum

To: Acting Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Fall River County, South Dakota

Enclosed are the original and three copies of the Operator's letter of May 29, 1956, which constitutes his request for an amendment to the contract to permit drilling in Area I at a grid spacing of 25 feet by 100 feet instead of a grid spacing of 100 feet by 300 feet as stipulated in the contract. Two copies each of the two maps, Block A and Block G, referred to in the Operator's letter are being forwarded under separate cover.

The contract provides for the drilling of a maximum of 241 wagon drill holes aggregating not to exceed 14,770 feet of drilling in Areas I and III. To date 209 holes have been drilled aggregating 10,095 feet of drilling, and by letter of May 21, 1956 thirty (30) additional holes were approved and the footage involved is estimated to be about 1800 feet.

If the recently approved drilling is completed, there will remain a balance of two holes and about 2,875 feet to be drilled in Areas I and III under the provisions of Stage I of the contract.

The entire matter was discussed by the Operator at a meeting in this office May 21, 1956 in the presence of George C. Selfridge, Chairman, Operating Committee. The Operator was advised to submit his request for the amendment in writing, on receipt of which Mr. Selfridge advised us to forward the matter to you for review by the Commodity Group to determine whether or not the closer spaced drilling is deemed to fall within the provisions of the DMEA program.

If favorable consideration is given the Operator's request for the closer spaced drilling, it will also involve an amendment to the contract to increase the maximum number of holes permitted under Stage I from 241 to about 256 to enable expending the total footage presently provided in the contract.

see map in packet

The matter is forwarded without specific recommendations from this office and it is suggested that it be held in deferment until the return of Mr. Selfridge, as he has much firsthand information from the Operator that is not contained in the Operator's letter.

W. M. Traver

W. M. Traver

Enclosures

MINING RESEARCH CORPORATION
INCORPORATED
5810 W. 38th Ave. Denver 14, Colo.

DMEA
Date Rec'd.
JUN 1 1956
BUREAU OF MINES
Denver, Colorado

May 29, 1956

RECEIVED
JUN - 3 1956

Mr. W. M. Traver
Executive Officer
Field Team Region III
New Customs House Bldg
Denver, Colorado

Dear Mr. Traver:

Under separate cover I am sending three copies each of two maps. These maps are designated Block A and Block G. Both are drawn to the scale of 1" = 40 feet.

I described the situation to yourself, Mr. Townsend, Mr. Harshman, and Mr. Selfridge at your office last week that causes, in my opinion, the grid system advocated by D.M.E. A. to be ineffective in the search for ore in the Edgemont District and described how this system should be modified in areas where subsurface information indicated structural control.

Block A shows how D. M. E. A.'s 100' x 300' grid system failed to disclose a substantial body of commercial grade ore and how the structure was picked up first by a line of holes 25 feet apart at intervals of 100 feet and later followed by development drilling on a hexagonal pattern. The color system indicates the grade of ore discovered.

Block G indicates a potential area on McKnight No. 2 amended and McKnight No. 3 amended where subsurface conditions are thought favorable to this approach. We have no proof that the drilling will prove to be as effective as in Block A and are not certain that the structures either have the attitude or position shown on the plan view. All we know is that a similar situation in Block A properly drilled disclosed a substantial body of commercial grade ore.

We request that permission be granted under our D.M.E.A. contract to drill holes at the positions shown on Block G. These holes are at a spacing of 25 feet on grid lines 100 feet apart stridwise along the trend of the structures.

The information contained herein is considered to be company confidential. Unauthorized disclosure of this information is forbidden. In event that the request for permission to drill at the positions indicated is denied we request that the enclosed maps be returned promptly.

Yours very truly,

Clifton W. Livingston

Clifton W. Livingston, Pres.

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

RECEIVED
MAY 24 1956

224 New Customhouse
Denver 2, Colorado

May 22, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Fall River County, South Dakota

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

Also enclosed are four copies of the Operator's letter requesting approval of the drill holes.

J. W. Townsend

J. W. Townsend

Enclosures

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

RECEIVED
JUN 4 1956

[illegible] New Customhouse
Denver 2, Colorado

May 21, 1956

Mr. Clifton W. Livingston, President
Mining Research Corporation
5820 West 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium)
Contract DMe-2920
Mining Research Corporation
Fall River Co., S. Dak.

Dear Mr. Livingston:

Consistent with the provisions of the contract, and in reference to your letter of May 17, 1956, this constitutes the Government's approval for you to perform the following work under the provisions of Contract DMe-2920, as amended:

1. The following numbered Stage I wagon drill holes may be drilled in the Midnight Drill Areas I and III, at a minimum spacing of 100 feet between holes in a NW-SE direction and a minimum spacing of 50 feet between holes in a NE-SW direction:

Midnight Areas I and III

Hole No.	Hole No.	Hole No.	Hole No.
1600	1608	1616	1624
1601	1609	1617	1625
1602	1610	1618	1626
1603	1611	1619	1627
1604	1612	1620	1628
1605	1613	1621	1629.
1606	1614	1622	
1607	1615	1623	

2. The following numbered Stage II wagon drill holes may be drilled in the Lion Area under the provisions of item "(2)" of Amendment No. 1 as amended by Amendment No. 3. The thirty-seven (37) holes listed shall not

exceed an aggregate total footage of 1,881 feet. If insufficient footage remains to complete any of the thirty-seven (37) holes to their objectives, the holes will not be started:

Lion Area

Hole No.	Hole No.	Hole No.	Hole No.
1630	1640	1650	1660
1631	1641	1651	1661
1632	1642	1652	1662
1633	1643	1653	1663
1634	1644	1654	1664
1635	1645	1655	1665
1636	1646	1656	1666.
1637	1647	1657	
1638	1648	1658	
1639	1649	1659	

The approximate locations of the foregoing listed holes are shown on the map entitled, "Sketch Showing Position of Holes Approved under DMEA Contract Modification 5 and 6, May 14, 1956. - Mining Research Corporation, Lion & McK. Areas DMEA Contract Progress," which is attached hereto and made a part of this work approval. The exact locations of holes are contingent on field conditions as to terrain and accessibility of the drill sites.

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

Very truly yours,

DMEA Field Team, Region III

W. M. Traver

W. M. Traver

E. N. Harshman

E. N. Harshman

JWT:prl

cc: Chairman, Oper. Comm. (4)
Finance Office, Region III
Amendment File
Harshman
Runke
Townsend
Corres. File
Chron.

MINING RESEARCH CORPORATION
INCORPORATED
5810 W. 38th Ave. Denver 14, Colo.

DMEA
Date Rec'd
MAY 21 1956
BUREAU OF MINES
Denver, Colorado

May 17, 1956

Mr. W. M. Traver
Executive Officer, DMEA
Field Team, Region III
New Customs House Bldg.,
Denver, Colorado

Dear Mr. Traver:

Under separate cover I am sending a 200 scale map showing the location of wagon drill holes to be drilled under amendments 5 and 6, Docket DMEA 2768, Contract Idm E-520.

The map shows the approximate position of drill holes. Some adjustment will be necessary in the field depending upon the rim topography and upon accessibility. The map also shows your estimate as of May 1 of the footage of holes remaining under the contract.

It will be appreciated if you will return at your earliest convenience one photostat copy of the map together with your written authorization that holes drilled as indicated will be accepted by the government.

Yours very truly,
Clifton W. Livingston
Clifton W. Livingston, Pres.
Mining Research, Corporation

cc:Mr. Townsend

CWL:hjl

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

RECEIVED
MAY 23 1956

224 New Customhouse
Denver 2, Colorado

May 21, 1956

Mr. Clifton W. Livingston, President
Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

Re: Docket DMEA-2768 (Uranium)
Contract Idm-K520
Edgemont Uranium Area
Fall River County, South Dakota

Dear Mr. Livingston:

We are processing your Monthly Progress Report and Voucher for the period July-August, 1955. The project drilling has been reviewed from the beginning of the project to the present time. Several wagon drill holes were determined to be not in conformance with the terms of the contract and have, therefore, been disallowed, as follows.

Stage I, Wagon Drilling

Hole No.	Area	Month Reported	Reason for disallowance	Footage
427	I	June, 1954	Outside approved drilling area	58
655	I	Nov. 1954	Outside approved drilling area	58
419	III	June, 1953	Outside approved drilling area	60
420	III	June, 1953	Outside approved drilling area	60

Total Stage I wagon drill footage disallowed this report 236

Stage II, Wagon Drilling

Hole No.	Area	Item Under Am. No. 1*	Month Reported	Reason for disallowance	Footage
1093	Lion	(1) & (2)	Oct. 1954	Outside approved drilling area	52

Stage II, Wagon Drilling Continued

Hole No.	Area	Item Under Am. No. 1*	Month Reported	Reason for disallowance	Footage
1095	Lion	(1) & (2)	Oct. 1954	Outside approved drilling area	60
1097	Lion	(1) & (2)	Oct. 1954	Outside approved drilling area	30
1099	Lion	(1) & (2)	Oct. 1954	Outside approved drilling area	56
1100	Lion	(1) & (2)	Oct. 1954	Outside approved drilling area	10
——	Lion	(3) & (4)		Authorized footage exceeded by 39 feet	39
84	Sheep Canyon	(6)	Oct. 1954	Outside approved drilling area	190
				Total Stage II wagon drill footage disallowed this report	437

* As further amended by Amendments 3, 4 and 6

In addition to the footage disallowed, the amount of $300.00 has been withheld pending resumption of drilling under the contract.

Reconciliation With the Amount Reported on Form MF-104 for July-August, 1955

Amount reported on Form MF-104

Stage I, 106 feet wagon drilling
at $0.87 per foot----------$92.22
Government participation at 90 percent-------$83.00
Stage II, 1363 feet of wagon drilling
at $0.87 per foot----------1,185.81
Government participation at 75 percent-------889.36

Total Government participation prior to disallowances--$972.36

Amount to be disallowed

Stage I, 236 feet of wagon drilling
at $0.87 per foot----------$205.32
Government participation at 90 percent------$184.79
Stage II, 437 feet of wagon drilling
at $0.87 per foot---------- 380.19
Government participation at 75 percent------ 285.14

Government participation disallowed---------- 469.93

Recommended Government participation contingent on verification of arithmetical accuracy by the Finance Office, and subsequent review of contract expenditures by the Contract Administration and Audit Division, DMEA----------$502.43
Amount withheld pending resumption of work--------- 300.00

Recommended payment to Operator----------$202.43

Our records indicate that the approved footage and costs to date are as follows

Item	Footage	Cost
Stage I, Wagon Drilling	10095	$8,782.65
Stage I, Diamond Drilling	715	2,166.45
Stage II, Wagon Drilling	10517	9,149.79
Stage II, Diamond Drilling	149	451.47

Please check these figures and make the necessary adjustments on the Forms MF-104 and MF-104A which accompany your next Monthly Progress Report.

Yours very truly,

J. W. Townsend

J. W. Townsend
Acting Executive Officer,
DMEA Field Team, Region III

JDC:jy
cc: Corresp. E520
Sec. Op. Comm. (2)
Runke
Townsend
Cooper
Chron.

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

RECEIVED
MAY 7 - 1956

224 New Customhouse
Denver 2, Colorado

May 3, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520
Mining Research Corporation (Lion Group Claims, et al.)
Fall River County, South Dakota

Enclosed are the Government's, Division and Docket copies of Amendments Nos. 5 and 6 to Contract Idm-E520, which were forwarded by your letters of February 27, 1956 and April 9, 1956, for signature by the Operator.

Copies of the amendments have been distributed to the Operator, Finance Office, Region III, and other offices concerned.

W. M. Traver

Encls.

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

RECEIVED
APR 1 0 1956

224 New Customhouse
Denver 2, Colorado

CERTIFIED MAIL

April 13, 1956

Mr. Clifton W. Livingston, President
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium),
Contract Idm-E520
Mining Research Corporation
Fall River County, S. Dak.

Dear Mr. Livingston:

Enclosed are the Government's, Division, Docket, Finance Office, and Field Team copies of proposed Amendment No. 6 to Contract Idm-E520, which has been prepared to clarify the areas within which past drilling was to be performed and establish boundaries of the areas within which future drilling is to be performed.

If the Amendment is satisfactory to you, all copies are to be signed by an official of the corporation authorized to do so, the title of the signer inserted, the corporate seal affixed, and all copies promptly returned to this office.

Upon receipt of the properly executed copies of the Amendment, the "Operator's Copy" will be forwarded to you.

Very truly yours,

W. M. TRAVER

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

Enclosures

JWT:prl
cc: Chairman, Oper. Comm. (2)
Harshman
Runke
Townsend
Corres. file
Chron.

Surname copy

F. L. Knouse 700

Chambers
Selfridge
FE Johnson

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

APR 9 1956

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

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-8520
Mining Research Corporation
Lion Group claims, et al.
Fall River County, South Dakota

Dear Mr. Traver:

There are enclosed for execution, as requested in your memorandum of March 14, 1956, the original and five copies, with two extra copies, of Amendment No. 6 to the subject contract, signed by the Administrator. This amendment consists of one page with two attached maps, Figures 1 and 2.

After this amendment has been signed by the Operator, please make the usual distribution of the document.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

/s/ Robert W. Geehan (RWG)
Member, Bureau of Mines

N. E. Nelson (NEN)
Member, Geological Survey

FLKnouse/gla
4-5-56
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
Code 700
Mr. Knouse
JOHosted, Rm. 3210, GSA

R.C.S.

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

March 26, 1956

Memorandum

To: Associate Solicitor, Division of Mineral Resources

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota
Amendment No. 6

Please draft Amendment No. 6 to the subject contract in which drilling from the date of the contract (May 14, 1953) to March 14, 1956 shall be within areas shown as "Boundary B" on the attached map entitled "Figure I - Proposed Revision of Drilling Areas, Mining Research Corporation, Fall River County, South Dakota," and subsequent drilling shall be within areas shown as "Boundary B" on the attached map entitled "Figure II - Proposed Revision of Drill Areas, Mining Research Corporation, Fall River County, South Dakota."

The drilling areas referred to above as areas "Boundary B" have been more accurately determined as the drilling areas shown on the map attached to Amendment No. 1. Also, since Amendment No. 1 accepted the amended locations of the claims referred to therein, the wedge shaped area of land (which is not covered by the contract and shown covered by Deadhorse 4 claim) between Mck. 5 and the Edna McKnight tract in sec. 22 is taken out of the drilling areas "Boundary A" and "Boundary B" shown on the above maps.

Ernest Wm. Ellis

Ernest Wm. Ellis

FLKnouse/izm 3-26-56

Copy to: Docket
Code 700
Mr. Knouse

Mr. George Selfridge

RECEIVED

MAR 22 1956

BUR MINES DN 235 3-22-56 10-43 AM

CHAIRMAN, OPERATING COMMITTEE, DMEA

REURTT MARCH 22,1956, DOCKET DMEA 2768, MINING RESEARCH CORPORATION, CONTRACT IDM-E520. OPERATOR IN CANDA, WILL NOT RETURN UNTIL LAST OF APRIL, THEREFORE CANNOT BE CONTACTED. HAVE VERIFIED THROUGH HIS OFFICE THAT DEAD HORSE 4 CLAIM WAS ABANDONED IN FAVOR OF MCKNIGHT NO.5 AMENDED. WE RECOMMEND THAT THE SMALL TRIANGLE OF GROUND BETWEEN THE MCKNIGHT NO.5 CLAIM AND THE EDNA MCKNIGHT TRACT IN SECTION 22 BE DELETED FROM THE PROPOSED MCKNIGHT DRILLING AREA WHICH EMBRANCES THE XXXX EMBRACES THE PRIOR DRILLING AREAS 1 AND 3.

W M TRAVER, EXECUTIVE OFFICER

Denver, Colo.

MAR 22 12 53 PM '56

BUREAU OF MINES
MAIL ROOM
WASHINGTON D.C.

COPY

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

FLKnouse
Ellis
Williams
Gerhan
Selfridge
Fehrenbach
700
Nuttendorf

MAR 22 1956

DEPARTMENT OF THE INTERIOR

DMEA
14X4401(01) Revolving Fund,
Defense Production Act,
Interior (Allocated Working Fund to the
Office of the Secy.)

T E L E T Y P E

W. M. TRAVER
EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
7th MEN CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REFERENCE MARCH 14 DMEA-2748 MINING RESEARCH CORP. BOUNDARIES MCKNIGHT AREA III PROPOSED DRILLING AREA INCLUDES LAND BETWEEN MCK 5 AMENDED AND NE¼ SEC. 22, SHOWN AS PART OF DEADHORSE 4 CLAIM, NOT INCLUDED IN CONTRACT. OPERATORS LETTER JUNE 9, 1955, STATES DEADHORSE CANYON 4 WAS STAKED BY C. W. LIVINGSTON AND ABANDONED FAVOR MCKNIGHT 5 AMENDED. IF DEADHORSE 4 CLAIM IS OWNED BY OPERATOR AND TO BE INCLUDED IN CONTRACT FURNISH RECORDING DATA, OTHERWISE ADVISE.

George C. Selfridge (GCS)
GEORGE C. SELFRIDGE
CHAIRMAN, OPERATING COMMITTEE

FLKnouse/izm 3-21-56
cc to: Confirmation Region III
Docket
Code 700
Mr. Knouse
Admr.'s Reading File
Operating Committee
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

R.C.S.

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

RECEIVED
MAR 16 1956

224 New Customhouse
Denver 2, Colorado

March 14, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Fall River County, South Dakota

Enclosed are the original and three copies of a memorandum report, dated March 9, 1956, from N. P. Cuppels, Geologist, U. S. Geological Survey, relative to the boundaries of areas within which drilling is to be performed under Contract Idm-E520.

Considerable uncertainty exists as to the boundaries of the areas within which drilling is to be performed. The map, Exhibit "B", attached to the Contract, shows drill areas I and III to be of one size and shape, whereas the "Geologic Map and Sections" attached to Amendment No. 1 shows the areas to be of a different shape and size. Although Amendment No. 1 does not specifically refer to Stage I drilling or drill areas I and III, both the Operator and the DMEA examiners have considered that the areas as shown on the latter map indicate the correct boundaries of the areas within which Stage I drilling was to be performed. On that basis, geologic and engineering approval was given for drilling which falls outside the boundaries of the areas as shown on the map attached to the Contract.

The manner in which this Contract is prepared, with drilling to be performed within irregular small parcels of land lying within the land described under Article 2 of the Contract makes that part of the Contract very confusing and difficult to administer. The irregular boundaries of the drilling areas involved with both Stages I and II drilling are not described by metes and bounds or do not conform to topographic controls; consequently they cannot be recognized on the ground when holes are laid out to follow the trends of mineralization or favorable geologic conditions. Therefore, it appears that the small

see 2 maps
packet file

specific areas should only indicate the general area within which drilling was to be performed and not be considered as a hard and fast boundary of the area within which drilling is to be confined.

One specific example of the difficulties encountered in conforming to the stipulated boundaries of the drill areas is in the Lion Area. Amendment No. 1 and the "Geologic Map and Section" referred to therein indicate that drilling is to be confined within the area between the dashed red colored line. In the Southeast portion of the area, the dashed red line ties into and is replaced for a distance by a dashed black line on the map, which we assume indicates an escarpment or rim. Later maps of a larger scale showing the location of the drill holes indicate that the rim occupies an entirely different position on the ground in relation to the claim lines, and several holes approved for drilling by the field examiners fall outside or to the East of the boundary line indicated on the map attached to Amendment No. 1. We are attaching a sketch of a part of the Lion Area to depict the condition described.

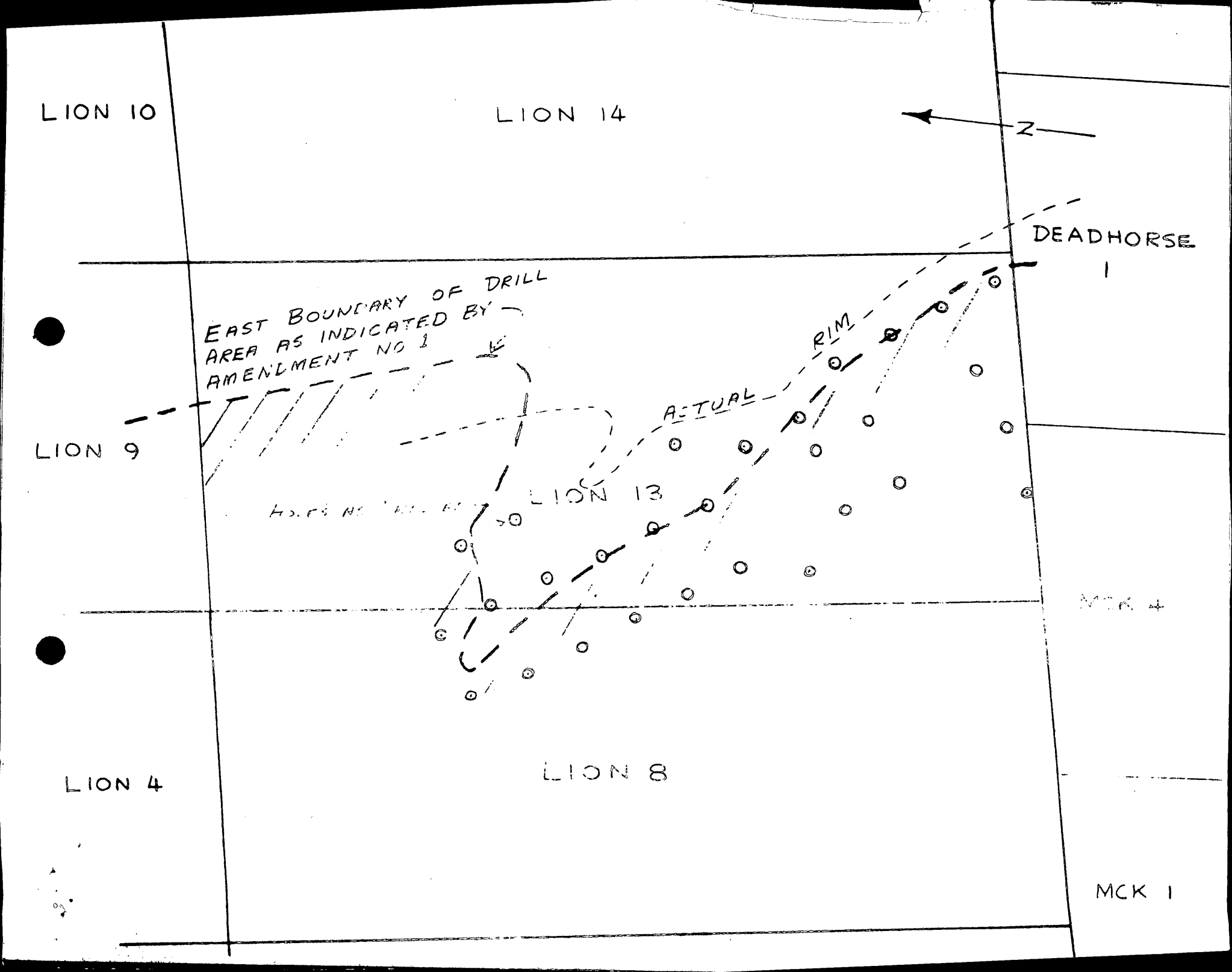
Under the circumstances, we strongly recommend that an amendment be promptly prepared, effective as of the current date, establishing the boundaries of the drill areas as shown by Boundary "B" on the map attached to Cuppels's report for all drilling up to the current date of the amendment and that subsequent drilling be confined within the areas shown as Boundary "A" on the other map attached to Cuppels's report.

Early correspondence indicates that the specific drill areas were established on the insistence of someone in the Washington Office. Therefore, if you concur in our recommendations, it will be appreciated if the amendment be prepared in your office.

W. M. Traver

W. M. Traver

Enclosures


LION 10
LION 14
2
DEADHORSE
1
EAST BOUNDARY OF DRILL
AREA AS INDICATED BY
AMENDMENT NO 1
ACTUAL
RIM
LION 9
LION 13
MCK 4
LION 4
LION 8
MCK 1

RECEIVED
MAR 1 6 1956

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

MAR 13 1956
BUREAU OF MINES
Denver, Colorado

March 9, 1956

RECEIVED
MAR 16 1956
EWH

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: N. P. Cuppels

Subject: DMEA Docket 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Fall River County, South Dakota

Confusion relative to the boundaries of drill areas described in the operator's letter to the Executive Officer dated January 18, 1956, is a result of the failure by the operator to distinguish between "drill area" and "contract area." On several previous occasions holes drilled by the operator outside of drill areas have been disallowed. In this instance, the operator assumed that the expansion of the "contract area" accomplished by Amendment No. 4 also expanded "drill area" No. 1 of Stage I. Although the operator's purpose in requesting an expansion of the contract area was to permit an enlargement of the drilling area, the "drill area" was not specifically enlarged by this amendment.

There has been considerable misunderstanding concerning boundaries of drill areas under this contract. The boundaries as originally established by the contract and by Amendment No. 1 were drawn to conform with the topography (as well as the most favorable ground)

of the area and were designed to set up approximate limits for drilling within the contract area. In the process of re-drafting these irregularly-shaped boundaries from a scale of 1" = 1,000' (contract) and 600' = 1" (Amendment No. 1) to a scale of 200' = 1" (memorandum reports), location of the boundaries has been altered which has led to conflicting interpretations of the boundaries by the operator and by the Examining Team. The confusion was compounded further by the following developments: the geologist for the Examining Team has been replaced twice; claim boundaries have been revised by the operator; and regional headquarters for this contract were transferred from Minneapolis to Denver. The situation was aggravated by the large number of holes (more than 350) and the tendency of the operator to overlook terms of the contract while exploring trends. Drilling under DMEA has been supplemented by extensive independent drilling by the operator. The operator has acted in good faith throughout this program, and any departures from the terms of the contract are believed to be honest misinterpretations. The chief areas of controversy are located between McKnight drill areas I and III and near the eastern boundary of the Lion claim group drill area.

Both groups of holes can be justified geologically and both are within areas subordinated by the contract. Controversial holes in the Lion area were allegedly drilled under Item 1, Amendment No. 1 of the contract and were designed to intercept suspected northwest-trending ore bodies. Controversial holes in the McKnight area are an extension

of the grid authorized under Stage I of the contract and were located to pick up trends of mineralization discovered under previous Stage I drilling.

In view of the circumstances described above, and in order to clarify the present status of drilling performed prior to the date of this report, it is recommended that the boundaries of the drill areas be considered as conforming to those shown as boundary B on the claim map accompanying this report. If this boundary is acceptable to all parties concerned, six holes (1091, 1093, 1095, 1097, 1099, and 1100) in the Lion area should be disallowed while the six controversial holes (660, 660B, 661, 662, 668, and 669) between drill areas I and III of the McKnight area should be allowed. It is further recommended that future drilling be performed within areas encompassed by boundary A as shown on the enclosed map. This revision of the boundaries is designed to facilitate administration of the contract and in no way alters the status of the property subordinated under the contract nor does it increase the cost of the contract to the Government.

N. P. Cuppels

N. P. Cuppels
Geologist

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

RECEIVED
MAR 12 1956

224 New Customhouse
Denver 2, Colorado

March 7, 1956

Mrs. Helen J. Livingston, Secretary
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Royalty payments, DMEA Docket 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Edgemont Uranium Area, Fall River County, South Dakota

Dear Mrs. Livingston:

We acknowledge receipt of settlement sheet for Liquidation No. 9809 (Lot No. 2410) for ore shipped from the subject property. Duplicate copies have been made for our files and your copy is returned herewith.

Royalty due the Government for this shipment is 5.0 percent of the gross payment ($869.53) which equals $43.48. Additional royalty will be due on this and on previous shipments whenever your corporation receives its A.E.C. Production Bonus payments.

Please send your check for $43.48 to the Executive Officer, DMEA Region III, Room 224 New Customhouse, Denver 2, Colorado. Government royalty payment checks are to be made payable to the Defense Minerals Exploration Administration.

Yours very truly,

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

Enclosure

RDB/vj

cc: Royalty File E520
Sec. Opr. Comm. (2)
E. O. Binyon
Berkenkotter
Chron.

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

RECEIVED
MAR - 5 1956

224 New Customhouse
Denver 2, Colorado

March 2, 1956

Mr. Clifton W. Livingston, President
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium)
Contract Idm-R520
Mining Research Corporation
Fall River County, S. Dak.

Dear Mr. Livingston:

Enclosed are the Government's, Division, Docket, Finance Office, and Field Team copies of Amendment No. 5 to Contract Idm-R520, which has been prepared pursuant to your letters of January 18 and January 30, 1956, to authorize a recess of operations from September 1, 1955, to not later than June 1, 1956, and extend the period for completion of the project work from April 14, 1956, to January 1, 1957.

If the Amendment is satisfactory to you, all copies are to be signed by an official authorized to do so, the title inserted, the corporate seal affixed, and all copies returned to this office. Upon receipt of the properly executed copies of the Amendment, the Operator's Copy will be forwarded to you.

Very truly yours,

W. M. TRAVER

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

Enclosures

JWT:prl
cc: Chairman, Oper. Comm. (2)
Harshman
Binyon
Cuppels
Townsend
Corres. file
Chron.

700

FILE COPY
Surname:
F.L. Knouse
Chairman
Selfridge
JE Jackson

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

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

FEB 27 1956

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. Traver:

There are enclosed for execution an original and five copies of Amendment No. 5 (with two extra copies) to the subject contract, signed by the Administrator.

As recommended in your memorandum of February 2, 1956, this Amendment authorizes a recess of operations from September 1, 1955, until June 1, 1956, and extends the date to complete the work to January 1, 1957. Please note that under the terms of this Amendment if the work is not started by June 1, 1956, and/or completed January 1, 1957, the contract is automatically terminated.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

/s/ Robert W. Geehan (GCS)
Member, Bureau of Mines

or H. Kiilsgaard (GCS)
Member, Geological Survey

FLKnouse/izm 2-20-56
cc to: Docket
Code 700
Mr. Knouse
Operating Committee
Admr.'s Reading File
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

R.C.L.

Surname copy

F L Knouse 700

Ellis

UNITED STATES

DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

WASHINGTON 25, D. C.

February 10, 1956

Memorandum

To: Associate Solicitor, Division of Mineral Resources

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group Claims, et al.
Fall River County, South Dakota
Amendment No. 5

Please prepare Amendment No. 5 to the subject contract which provides for the following changes in the contract:

1. Authorizes a recession in the operations from September 1, 1955, until June 1, 1956, with an automatic contract termination provision provided the work is not resumed by June 1, 1956, and completed by January 1, 1957.

2. Extends the period within which to complete the work until January 1, 1957.

3. Extends the repayment provision on royalties from production from 11 years to 12 years.

This amendment shall not be construed to increase the estimated cost of the project, the amount of the Government's contribution, nor any item of allowable cost which is expressly designated as "Agreed Unit Costs."

Ernest Wm. Ellis

Ernest Wm. Ellis

FLKnouse/gla
cc to: Docket
Code 700
Mr. Knouse

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

224 New Customhouse
Denver 2, Colorado

February 2, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium) Contract Idm-E520
Mining Research Corporation, Inc.
Fall River County, South Dakota

Enclosed are four sets of data consisting of the Operator's letters of January 18 and January 30, 1956, wherein he requests an amendment to Contract Idm-E520 to authorize a recess of operations from September 1, 1955 until June 1, 1956, and an extension of the period for completion of the project work to January 1, 1957.

Preparation of an amendment of the nature requested is not within the authority delegated to this office; therefore, the matter is forwarded for your consideration and appropriate action, with the recommendation that an amendment be prepared as requested.

The Operator's letter of December 30, 1955, to which he refers, was not received in this office.

In the last paragraph of the Operator's letter of January 18, 1956, it is requested that the Government provide an official map indicating the proper limits of the areas in which the project drilling is to be performed. The matter is under consideration at this time by this office; however, it may be a few weeks before the matter is resolved because considerable confusion does exist as to the correct boundaries of the areas in which drilling is to be performed. From a preliminary review it appears that a decision in the matter will involve the possible disallowance of a considerable amount of drilling.

W. M. Traver

W. M. Traver

Enc.

MINING RESEARCH CORPORATION
INCORPORATED
5810 W. 38th Ave Denver 14, Colo.

DMEA
Date Rec'd.
FEB 2 1956
BUREAU OF MINES
Denver, Colorado

January 30, 1956

RECEIVED
FEB - 6 1956

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

Re: Docket DMEA 2768
Contract Idm-E520
Your letter Jan. 19

Dear Mr. Traver:

In reference to our letter of December 30, 1955 requesting a recess of operations, till June 1, 1956. This letter was sent along with our "Narrative Report-July-Aug 1955" (Revised), Attn: E. O. Binyon.

The last work performed under this contract was August 30, 1955.

Yours very truly,
By Helen J. Livingston, Sec.
Clifton W. Livingston, Pres.

CWL:hjl

MINING RESEARCH CORPORATION
INCORPORATED
5810 W. 38 Ave Denver 14, Colo.

DMEA
Date Rec'd.
JAN 19 1956
BUREAU OF MINES
Denver, Colorado

January 18, 1956

RECEIVED
FEB - 3 1956

Mr. W. M. Traver
Executive Officer, D.M.E.A.
Field Team, Region III
224 New Customs House Bldg
Denver, Colorado

Gentlemen:

Problems associated with interpretation of our contract Idm-E520 were discussed in your office last week by Townsend, Traver, and Livingston. The situation has become so confused that it is now desireable for your field team to approve holes in writing before they are drilled. This confusion causes great delay and much unnecessary work and is responsible for our letter of Dec. 30, 1955, Attn. E.O. Binyon requesting a contract recess until June 1, 1956. Since May 1, 1955 we have drilled 35 holes, aggregating in excess of 1900 feet of drilling which has been disallowed because of confusion in interpreting the contract.

I repeat my request of Dec. 30, 1955 for a contract recess until June 1, 1956. I wish also to request an extension of the contract until Jan 1, 1957. Although we are proceeding with our drilling at Edgemont we have switched to development drilling. We cannot resume drilling under the contract until the confusion that now exists has been eliminated.

It would help greatly if your office, or the Rapid City field office would send us an official map giving us the proper limits of the areas we are supposed to be drilling in, including amendment No. 4.

Yours very truly,

Clifton W. Livingston

Clifton W. Livingston, Pres.
Mining Research Corporation

CWL:hjl

CC: E. O. Binyon

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

RECEIVED
JAN 30 1956

224 New Customhouse
Denver 2, Colorado

January 26, 1956

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty Payment - DMEA Docket 2768 (Uranium), Contract Idm-E520, Mining Research Corporation - S. Dakota

Enclosed is Mining Research Corporation check No. 1412 in the amount of $54.64 in payment of royalty due on Lots No. 8509, 8978 and 9116.

Settlement sheets for the above shipments of ore were transmitted to your office January 13, 1956.

Payment for A.E.C. Production Bonus has not been received.

W. M. TRAVER

W. M. Traver

Enclosure

vj

cc: Royalty File E520
Sec. Opr. Comm. (2)
E. O. Binyon
Royalty Report File
Chron.

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

224 New Customhouse
Denver 2, Colorado

January 19, 1956

Memorandum

To: E. O. Binyon

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Lion Group of Claims et al., Fall River County, South Dakota

Enclosed is a copy of the Operator's letter of January 18, 1956, and a copy of our reply of January 19.

On a recent visit to this office by Mr. Livingston, the problems involved with the subject contract were discussed; among which was the matter of the confusion that exists relative to the boundaries of drill areas 1 and 3.

The map attached to your memorandum of October 18, 1955, and the boundaries you sketched on the Operator's map which he had with him on the visit to this office are considerably different than the boundaries of the areas as depicted on the area maps attached to the contract.

Please review the matter as to the boundaries of drill areas 1 and 3 and clarify it for us by submitting a map of larger scale than the map originally included with the contract, which will show drill area boundaries in relation to the mining claims.

One particular instance of the discrepancy as to the boundary of drill area 1: The original map indicates that the South boundary line of the drill area is located approximately midway of the claims MCK 3 and 2, then runs diagonal to the Northwest corner of the Ram No. 2 claim. The original map shows drill area 3 as being almost square in outline. However, the map attached to your memorandum of October 18, 1955, showed an elongated neck of the area extending to the Northeast of the main area and joining drill area 1.

When you resubmit the map, please eliminate claim boundary lines that do not now apply to the claims, as the double boundary lines as shown on your map attached to your memorandum of October 18 add to the confusion of the actual claim boundaries.

If you have knowledge as to the last day work was actually performed under the contract, please advise us by return mail.

W. M. Traver

Enclosure

JWT:prl
cc: Chairman, Oper. Comm. (2)
Harshman
Townsend
Corres. file
Chron.

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

224 New Customhouse
Denver 2, Colorado

January 19, 1956

Mr. Clifton W. Livingston, President
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium),
Contract Idm-E520,
Fall River County, S. Dak.

Dear Mr. Livingston:

Reference is made to your letter of January 18, 1956, wherein you repeat your request of December 30, 1955, for a recess of operations to June 1, 1956, and extension of the period for completion of the project work until January 1, 1957.

We have searched the records in this office and are unable to locate your letter of December 30, 1955, to which you refer.

Before we can consider your request for a recess of operations, it is necessary that you advise us the date the last work was performed under the contract. This information was requested from you verbally on your recent visit to this office.

Very truly yours,

W. M. TRAVER

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

JWT:prl
cc: Chairman, Oper. Comm. (2)
Harshman
Binyon
Townsend
Corres. file
Chron.

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

RECEIVED
JAN 19 1956

224 New Customhouse
Denver 2, Colorado

January 18, 1956

Mr. Clifton W. Livingston, President
Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

Re: Royalty Payments, DMEA Docket 2768 (Uranium)
Contract Idm-E520, Mining Research Corporation
Edgemont Uranium Area, Fall River County, S.D.

Dear Mr. Livingston:

Royalty due the Government for the first five ore shipments from the subject property has been computed as per your request, with no consideration being given at this time to possible Atomic Energy Commission bonus payments. Total royalty amounts to $54.64, determined as follows:

LOT NO.	GROSS VALUE	VALUE PER TON	ROYALTY RATE	ROYALTY DUE
2206	No Pay - Below acceptable grade			
2173	No Pay - Below acceptable grade			
8509	$796.63	$33.77	5.0%	$39.83
8978	452.52	7.94	1.5%	6.79
9116	401.04	8.89	2.0%	8.02

Please send your check for $54.64 to the Executive Officer, DMEA, Region III, Room 224 New Customhouse, Denver 2, Colorado. Government royalty checks are to be made payable to the Defense Minerals Exploration Administration.

When A.E.C. bonus payments are received on these shipments, advise us and we will recompute the additional royalty due.

Very truly yours,

W. M. TRAVER,

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

RDB:bh
cc-Royalty File E-520
Sec. Op. Comm. (2)
E. O. Binyon
Berkenkotter
Chron.

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

January 10, 1956

224 New Customhouse
Denver 2, Colorado

Mr. Clifton W. Livingston
President, Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

RECEIVED
JAN 18 1956

Re: Docket DMEA 2768 (Uranium), Contract Idm-E520, Lion Group Claims, et al., Fall River County, South Dakota

Dear Mr. Livingston:

Records in this office indicate that the last MF-104 and 104A Progress Report submitted by you was for the period of July and August, 1955. Our records further indicate that the report was returned to you for various corrections by letter, dated October 18, 1955 from E. O. Binyon, Inspecting Engineer.

The report has not been returned to date and as we are in doubt as to the status of operations under the contract, we will appreciate advice from you at an early date as to your plans for continuing operations.

If for some justifiable reason you are unable to continue operations for a period of time, you should request the Government's approval of a suspension of operations for such time as you deem necessary.

Very truly yours,

W. M. TRAVER,

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

JWT:ab
cc: Chair. Op. Comm. (2)
Harshman
Binyon
Townsend
Corresp. E520
Chron.

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

RECEIVED
DEC 12 1955

224 New Customhouse
Denver 2, Colorado

December 7, 1955

Mr. Clifton W. Livingston, President
Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

Re: Royalty payments, DMEA Docket 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Edgemont Uranium Area, Fall River County, North Dakota

Dear Mr. Livingston:

It has been brought to our attention that your corporation has shipped ore from the land subordinated to the Government under DMEA Contract Idm-E520. We call your attention to the provisions of Amendment No. 2 to the subject contract which requires a royalty payment on all shipments made from the property from the date of the contact, May 14, 1953.

Please furnish four copies of each settlement sheet and applicable royalty payment to the Executive Officer, DMEA Region III, Room 224 New Customhouse, Denver 2, Colorado. All Government royalty checks are to be made payable to the Defense Minerals Exploration Administration.

We request that you instruct the mills and buying stations to whom you make shipments to withhold the Government royalty due and to send payment and four copies of all future settlement sheets directly to this office.

We enclose three copies of DMEA Order 1, Amended, Section 10 of which explains the method to be used to comute DMEA royalties.

Yours very tuly,

E. N. Harshman

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

Enclosure

RDB/vj
cc: Royalty File E520
Sec. Opr. Comm. (2)
E. O. Binyon
Berkenkotter
Chron.

Surname Copy

700

F L Knouse
Ellis
Nelson
Sleeper
Selfridge

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

Mr. Clifton W. Livingston
President, Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket No. DMEA-2798 (Uranium)
Contract No. Idm-8520
Lion Group Claims, et al.
Fall River County, South Dakota

Dear Mr. Livingston:

This is with reference to your letters of September 9 and October 4, 1955, addressed to Mr. W. M. Traver, Executive Officer, DMEA, Denver, Colorado, requesting additional aid for the exploration of your property by more drilling of the Lion-McKnight area and transferring drilling from one part of the project to another.

We have carefully reviewed the information which you have submitted with your letters, the results of the exploration on your property to date, and other information pertinent to your project. In this connection I wish to point out that work prosecuted primarily for development or blocking out of ore is not eligible for Government assistance under DMEA regulations. It appears that a considerable amount of your proposed program is work of this nature. We also feel that the drilling program as presently set up under the contract will adequately explore your property and that under Amendment No. 4, any desirable readjustment of the remaining drilling may be accomplished. Under the circumstances, therefore, I regret to advise that your request for additional exploration assistance or modification of the present program is denied.

Sincerely yours,

Frank E. Johnson

Acting Administrator

FLKnouse/FEJohnson/izm
11-22-55

cc to: Admr.'s Reading File
Operating Committee
Docket
Code 700
Mr. Knouse
DMEA Field Team, Region III (2)

Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

Surname copy 700

F L Knouse
Ellis
Nelson
Gehon
Selfridge

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

Mr. Clifton W. Livingston
President, Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-5520
Lion Group claims, et al.
Fall River County, South Dakota

Dear Mr. Livingston:

Your application, dated September 9, for additional aid, and request of October 4, 1955, to transfer drilling from other areas in the contract, to further explore the Lion-McKnight area of the subject property, and other data available to us concerning the proposed change in the work, have been reviewed.

Your attention is called to the fact that work to be prosecuted for development or blocking out of ore is not eligible for Government assistance under the DMEA regulations. It is our opinion that your proposed program includes some work of that nature.

With regard to your proposal to extend the exploration program beyond that described in the contract, a careful study of all our information indicates to us that the probability of disclosing additional minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you that, under these circumstances, your application for exploration assistance to extend or modify the existing program is denied.

Sincerely yours,

Administrator

FLKnouse/gla
11-17-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700 Mr. Knouse
DMEA Field Team, Region III (2)

Docket copy

I Kuyper
Ellis
Nelson

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

November 17, 1955

Memorandum

To: The Administrator

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Proposed Amendment No. 5
Contract No. Idm-E520
Docket No. DMEA-2768 (Uranium)
Mining Research Corporation
Lion Group claims, et al.
Fall River County, South Dakota

DENIAL JUSTIFICATION

Applicant's Proposal:

September 9, 1955:

"(1) Provide for an additional 5000 feet of wagon drilling at intervals not closer than 25 feet on grid lines not less than 100 feet apart, to explore for stratigraphic or structural breaks on any of the following claims: Lion Claims 1, 3, 4, 9, 7, 8, 13, Deadhorse No. 1, McKnight 2 amended, 3 amended and 5 amended.

"(a) Further amend item 2 Amendment No. 1 Stage II to provide for grid drilling at 100 foot by 100 foot intervals rather than 100 foot by 300 foot intervals on the following claims: Lion Claims 14, 15, Deadhorse No. 1, 2."

October 4, 1955:

Requests to transfer 5000 feet of drilling from other items of the contract to provide for the drilling requested above (September 9, 1955).

Field Team's Recommendations - October 27, 1955:

"Because of the comparatively low grade of mineralization encountered to date, and because the additional drilling proposed by the Operator appears to be more in the nature of prospecting, both of which involve DMEA policy, we are forwarding the matter for your consideration and appropriate action.

"The examining team recommends that the Operator's request be denied, in which this office concurs."

Examining Team Report - October 18, 1955

"Although drilling of offset holes on 25-foot centers, as authorized under Amendment No. 4, has increased definition of the ore body in Zone E, this ore body was discovered while drilling on a pattern established before Amendment No. 4 was incorporated into the contract. . . . . Any further concentration of drilling in this area would produce results similar to those described above, e.g., an increased definition of known ore bodies with an attendant increase in reserves. We believe that this phase of the work belongs more properly in a development program which should, and probably will, be carried out by the Operator.

"Although the Lion-McKnight area will be adequately explored upon completion of the drilling program as presently set up, some intra-areal readjustment in the assignment of the remaining drilling may be advisable in order to consolidate results of the exploration."

Commodity Members' Recommendations

USGS and USBM, dated November 10, 1955, by Messrs. N. E. Nelson and John E. Crawford, concur in the denial.

Rare and Miscellaneous Metals Division - F. L. Knouse, November 17, 1955.

24,770 feet of wagon drilling and 2,595 feet of core drilling are provided in the contract to explore the Lion-McKnight area. Some of the contract drilling in this area has not been completed. A discovery of marginal ore has been made as a result of this exploration program. The Operator's proposal is designed to develop known ore bodies and to prospect for other ore bodies along the sides and general trend of this mineralized fracture zone.

Since the Operator's proposed program is more in the nature of development and prospecting and also since DMEA has already contributed substantially to the exploration of the area concerned, no additional assistance, beyond that already approved, is justified. Therefore, a letter has been written to the Operator advising him of the decision.

FLKnouse/gla
cc to: Docket
Operating Committee
Code 700
Mr. Knouse

/s/ Ernest Wm. Ellis

Ernest Wm. Ellis

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

RECEIVED
NOV 17 1955

224 New Customhouse
Denver 2, Colorado

November 14, 1955

Mr. Clifton W. Livingston, President
Mining Research Corporation
5810 West 38th Avenue
Denver 14, Colorado

Re: Docket DMEA 2768 (Uranium),
Contract 14m-E520,
Mining Research Corporation,
Fall River County, South Dakota

Dear Mr. Livingston:

In the second paragraph of your letter of September 9, 1955, you state in part, "(including McKnight 4, McKnight 1 and RAM 1 claims which are excluded from D.M.E.A.)"

Regarding the exclusion of the RAM 1 claim from the DMEA Contract as you state, your attention is directed to the provisions of both Amendments No. 1 and No. 4 wherein the RAM 1 claim is added to the ground described under Article 2 of the Contract.

Very truly yours,

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

By J. W. Townsend
J. W. Townsend

JWT:prl
cc: Chairman, Oper. Comm. (2)

IN REPLY REFER TO:

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

November 10, 1955
Re: DMEA 2768 Idm-E-520
Mining Research Corp.
Lion, Dead Horse, and
McKnight claims
Fall River County, S.Dak.
- Uranium

Memorandum:

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

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

Subject: Review of memorandum report re. amendment to contract.

In a letter dated September 9 (Livingston-Traver) the operator requests 5,000 feet of additional wagon drilling, and in a letter dated October 4 he asks for a transfer of 5,000 feet. Probably transfer is meant in both cases and as a similar request was made and denied early in 1955, the field examiners recommended denial of the current request. The examiners do recommend that the drilling pattern of 1,375 feet of drilling in the Lion area be changed. Permission to make the change is granted in Amendment 4.

McKnight 1 and 4 claims were not included in the original contract area. Structure patterns are now better defined and the claims probably have benefited from the D.M.E.A. drilling on adjoining claims, but as was to be expected, the operator still objects to the inclusion of the claims in the contract area. Contrary to the statement of the operator (Livingston-Traver, September 9) Ram 1 claim was not excluded from the contract area.

In summary, I concur with these recommendations of the examiners:

(a) That no footage be transferred (or added).
(b) That the drilling pattern for 1,375 feet or the remainder of the approved footage of the Lion area, be adapted to the changed conditions as deemed advisable by the Government, and as is permitted by the contract amended.

(c) That no change be made in the established drilling pattern in the McKnight area.

I recommend that no changes be made in the boundaries of the contract area.

N. E. Nelson

N. E. Nelson

RECEIVED
NOV 14 1955

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

November 10, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 2768, Mining Research Corporation, Fall River County, South Dakota

I have reviewed the attached request for additional drilling made by the Mining Research Corporation, DMEA Docket 2768, and I have reviewed the attached Field Team report, both received in this office November 3, 1955. I have also discussed them with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The operator has requested that 5,000 feet of drilling be transferred from other items of the contract to the Lion-McKnight area. This request is a repetition of a request made by the operator to DMEA dated February 15, 1955, which the examining team recommended denial of on March 30, 1955. Results of subsequent drilling on the property by the applicant have not altered the basis for denial used by the Examining Team.

The Field Team concludes in its memorandum of October 27 to DMEA that the request is for additional drilling and appears to be prospecting rather than exploration. The Field Team recommends denial.

Mr. Hosted believes that additional drilling to test known northwest trending fracture zones is desirable. However, I concur in the recommendation of the Field Team that the request be denied.

John E. Crawford

John E. Crawford

Attachments

Docket surname copy 700

FLKnouse
Ellis
Selfridge
FJohnson

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

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
22h New Customhouse Building
Denver 2, Colorado

NOV - 7 1955

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-2520
Mining Research Corporation
Lion Group claims, et al.
Fall River County, South Dakota

Dear Mr. Traver:

This is with reference to the statement in the second paragraph of Mr. Clifton W. Livingston's letter to you of September 9, 1955, which states as follows: "The evidence suggests that the known low grade ore shoots on Mining Research Corporation property (including McKnight 4, McKnight 1 and RAM 1 claims which are excluded from D.M.E.A.) and which contain in excess of 150,000 tons at a grade slightly in excess of .05 U_3O_8, are halos derived from commercial grade ore bodies which are veinlike in their occurrence."

Your attention is directed to Amendment No. 1, paragraph "e." (page 2) in which it states: "The claim RAM No. 1, leased by Royce A. McElhaney to Mining Research Corporation by an instrument dated August 1, 1952. The Owner's Consent to Lien is attached." This claim is added to the land referred to in Article 2 of the contract. This excluded claim is also included in Amendment No. 4. Therefore, the Operator should be advised that said claim is included in the contract.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

FLKnouse/gla
11/3/55

APPROVED:

/s/ Robert W. Geehan (GCS)
Member, Bureau of Mines

Arthur M. Kiilsgaard (GCS)
Member, Geological Survey

cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700
Mr. Knouse

R.C.B.

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

RECEIVED
OCT 31 1955

224 New Customhouse
Denver 2, Colorado

October 27, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Fall River County, South Dakota

Enclosed is the following material relative to additional work to be performed under the contract:

1. Original and three copies of the Operator's letter of September 9, 1955.

2. Original and three copies of Operator's letter of October 4, 1955.

3. Original and three copies of a joint memorandum report, dated October 18, 1955, from E. O. Binyon, U. S. Bureau of Mines, and N. P. Cuppels, U. S. Geological Survey.

The Operator requests a modification of the contract to authorize 5,000 feet additional wagon drilling on the Lion, Dead Horse, and McKnight claims. He also requests an amendment to the contract to permit 100' x 100' interval grid drilling rather than 100' x 300' intervals as presently authorized.

In conjunction with Amendment No. 4, the Operator protested the inclusion of the Dead Horse claims under Article 2 of the Contract. However, he now proposes to perform work on those claims under the contract.

Because of the comparatively low grade of mineralization encountered to date, and because the additional drilling proposed by the Operator appears to be more in the nature of prospecting, both of which involve DMEA policy, we are forwarding the matter for your consideration and appropriate action.

The examining team recommends that the Operator's request be denied, in which this office concurs.

Enclosures

for W. M. Traver

MINING RESEARCH CORPORATION
INCORPORATED

5810 W. 38th Ave. Denver 14, Colo.

DMEA
Date Rec'd.
SEP 12 1955
BUREAU OF MINES
Denver, Colorado

Sept. 9, 1955

OFFICIAL USE ONLY RECEIVED
OCT 3 1 1955

Mr. W. M. Traver
Exec. Officer, D.M.E.A.
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Dear Mr. Traver:

In our Jan-Feb, 1955 report we disclosed the fact that encouraging drill results had been achieved by drilling to pin point the exact position of stratigraphic or structural breaks as provided for in amendment No 3.

Additional information relating to the significance of these "stratigraphic or structural breaks" is presented in our July-Aug 1955 report. The evidence suggests that the known low grade ore ~~schools~~ sheets on Mining Research Corporation property (including McKnight 4, McKnight 1 and RAM 1 claims which are excluded from D.M.E.A.) and which contain in excess of 750,000 tons at a grade slightly in excess of .05 U_3O_8, are halos derived from commercial grade ore bodies which are veinlike in their occurrence.

The evidence suggests that the breaks we have been exploring are structural rather than stratigraphic. The structure is not a simple fracture but consists of a series of fractures arranged en-echelon. Commercial grade ore is present in close proximity to the fractures but the walls are assay walls not ore-waste contacts. In addition to change in U_3O_8 grade laterally, the grade changes vertically also. The vertical change is a permeability control related to stratigraphy.

Because of both lateral and vertical diffusion of the ore solutions from the fracture zone it is difficult to assign exact boundaries to the deposit in making ore reserve calculations. A further complication results from the fact that the fracture zone extends into McKnight 4 claim.

Not subordinated under the contract

OFFICIAL USE ONLY

Present indications are that the average grade of commercial ore taken over a 5-1/2 ft vertical thickness is 0.17: taken over an 8 ft vertical thickness the grade is 0.14. If the assays are averaged over a 19 ft vertical thickness the average grade is reduced to 0.08. These averages are based upon the orebody in its entirety, not only the portion drilled under D.M.E.A. The averages reflect results to August 25 and are based upon over 300 assays taken from 34 drill holes, drilled to block out the orebody with development drilling following closely behind t the structure drilling provided for in amendment No. 3. Assaying of over 250 additional samples from the ore zone is currently in progress. How results will affect the above averages currently is a matter of conjecture.

In order to follow up on the possibility that other fracture zones known to exist within the D.M. E. A. area contain commercial grade ore and to continue our attempts to determine the total length of the fracture zone described in this report, I request the following further modifications in our contract Idm E-520, docket 2768

1) Provide for an additional 5000 feet of wagon drilling at intervals not closer than 25 feet on grid lines not less than 100 feet apart, to explore for stratigraphic or structural breaks on any of the following claims:
Lion Claims 1, 3, 4, 9, 7, 8, 13,

Deadhorse No. 1

McKnight 2 amended, 3 amended, and 5 amended.

2) Further amend item 2 Amendment No 1 Stage II to provide for grid drilling at 100 foot by 100 foot intervals rather than 100 foot by 300 foot intervals on the following claims:
Lion Claims 14, 15

Deadhorse No. 1, 2

I hereby certify that a discovery has been made as a result of drilling under D.M.E.A. contract Idm-E520, docket 2768 and request that your engineers undertake the necessary steps for certification so as to permit repayment of the loan at such time as production begins.

All Mining Research Corporation maps, assays, and records are available for your inspection at my consulting offices 5810 W. 38th Avenue, Denver 14, Colorado.

This information is considered to be company confidential and must not be released without written approval.

Yours very truly,

Clifton W. Livingston

Clifton W. Livingston, Pres.
MINING RESEARCH CORPORATION

CWL:hl

cc: E.O.Binyon
Norman Cupples
J.S.Livingston

MINING RESEARCH CORPORATION
INCORPORATED

DMEA
Date Rec'd.
OCT 7 1955
BUREAU OF MINES
Denver, Colorado

5810 W. 38th Avenue
Denver 14, Colorado
October 4, 1955

RECEIVED
OCT 31 1955

Mr. W. M. Traver
Executive Officer, D.M.E.A.
Field Team, Region III
224 New Customs House Bldg
Denver, Colorado

Dear Mr. Traver:

On Saturday morning October 1, 1955 I met with Mr. N. Cuppels and Mr. E. Binyon who are the field representatives under our contract Idm E 520 docket 2768. The purpose of this meeting was to permit me to present maps, cross-sections, geological data and ore reserve data to the field team.

After observing the above information Mr. Cuppels requested that maps be presented describing the drill results and repeating my request set forth in a letter addressed to you on September 9.

May I repeat the request to transfer 5000 feet of drilling from other items of the contract, to permit me to drill holes on lines not closer than 100 feet apart with the holes in each line not closer than 25 feet apart in the same manner as resulted in the discovery of commercial grade ore as described in my monthly reports and my letter to you dated September 9.

On the map I have shown the position of the fracture system which was discovered as a result of recent drilling. On August 25 I estimated the ore reserves immediately adjacent to the fracture as follows:

19,200 tons at 0.14 Percent U_3O_8, avg thickness 8.06 ft.

if the low grade ore of the same holes are included the reserves are:

45,000 tons at 0.08 percent U_3O_8, avg thickness 18.7 ft.

Since August 25 development drilling has extended the orebody from a length of 600 feet to a length of 1300 feet. Sampling and assaying is now in process to determine the present ore reserves.

Other structural conditions similar to the one described above have been inferred from the geological sections and are shown in dashed lines on the accompanying map. These inferred structures may or may not exist. The 5000 feet I requested to be transferred will be used to find out. If the structures are mineralized Mining Research Corporation would follow up with development drilling to block out the ore.

Yours very truly,

Clifton W. Livingston

Clifton W. Livingston, Pres.
Mining Research Corporation

CWL:hjl
cc: Cuppels
Binyon

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Rapid City Experiment Station
School of Mines Campus
Rapid City, South Dakota

DMEA
Date Rec'd.
OCT 24 1955
BUREAU OF MINES
Denver, Colorado

October 18, 1955

RECEIVED
OCT 31 1955

Memorandum

To: W. M. Traver, Executive Officer, DMEA Field Team, Reg. III

Through: E. N. Harshman, U. S. Geological Survey Member

From: E. O. Binyon and N. P. Cuppels, Examining Team

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corp., (Lion Group claims et al), Fall River County, S. Dak.

In compliance with your memorandum dated September 15, 1955, the Examining Team has investigated the feasibility of the operator's request for a transfer of 5,000 feet of drilling from other items of the contract to the Lion-McKnight area. This request is a repetition of a request made by the operator in a letter to the Executive Officer dated February 15, 1955. In a memorandum report submitted on March 30, 1955, the Examining Team recommended that the request be denied. Results of subsequent drilling on the property have not materially altered the basis for denial used by the Examining Team.

The operator believes that ore is associated with a set of northwest trending fractures, particularly fractures within zones of low-grade mineralization. A map showing the location of these zones is included with this report. In a letter to the Executive Officer dated October 4, 1955, the operator states that offset drilling authorized by Amendment No. 4 has located an ore body of 19,200 tons with a grade of 0.14 percent U_3O_8. This ore body is associated with a fracture system in Zone E and its length has been extended from 600 to 1300 feet by development drilling subsequent to August 25. The 5,000 feet of drilling requested by the operator would be used to search for structural breaks in the other zones of low-grade mineralization and to investigate in greater detail breaks that have been discovered by previous drilling.

The program of exploration under Stage II of this contract was based on a belief that the northwest trending fracture system was an important control in localizing the ore. Subsequent exploratory drilling in the area under the DMEA has substantiated this belief although the size of the ore bodies are smaller than anticipated and appear to be restricted to a narrow zone along the fractures with limited

lateral dissemination in the sandstone. Although drilling of offset holes on 25-foot centers, as authorized under Amendment No. 4, has increased definition of the ore body in Zone E, this ore body was discovered while drilling on a pattern established before Amendment No. 4 was incorporated into the contract. This ore body was included in the ore reserves reported by the Examining Team on March 30, 1955 and was estimated at that time to have 11,440 tons with a grade of 0.12 percent uranium. Any further concentration of drilling in this area would produce results similar to those described above, e.g., an increased definition of known ore bodies with an attendant increase in reserves. We believe that this phase of the work belongs more properly in a development program which should, and probably will, be carried out by the operator.

Although the Lion-McKnight area will be adequately explored upon completion of the drilling program as presently set up, some intra-areal readjustment in the assignment of the remaining drilling may be advisable in order to consolidate results of the exploration. It is recommended, therefore, that the operator be permitted to use remaining footage allocated for grid drilling in the Lion area (1375 feet) for offset drilling on 25-foot centers at 100-foot intervals along known or suspected structural breaks in that area. In order to further exploit results of previous drilling, we also recommend that drill areas I and III in the McKnight area be expanded to include the following claims: McKnight claims 1 through 5 and RAM claims 1 and 2. All of these claims are within the contract area. No change in the drilling pattern in this area as established by Exhibit "A" of the contract is recommended.

In a discussion with the operator on October 1, 1955, the Examining Team repeated a request made by Cuppels in a letter to the operator dated September 26, 1955 for copies of assay results of samples taken under this contract. The operator was reluctant to submit five copies of the assays, but agreed to submit one copy. Although we realize that the operator is obligated to submit five copies of these data, we hesitated to insist on five copies until we determined whether the assays could be duplicated with government facilities. The assays are compiled in ink and pencil on sheets of loose-leaf notebook paper. They could not be duplicated with an ozalid machine, but perhaps duplicates could be made on a copyflex machine, which we understand is available in the postoffice at the Federal Center. These assays are essential for the final report and for certification of ore discovery.

E. O. Binyon and N. P. Cuppels
Examining Team

By: E. O. Binyon

cc: Traver (8)
Cuppels
files

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

RECEIVED
OCT 17 1955

October 13, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: E. O. Binyon

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Deadhorse Canyon Area, Full River County, South Dakota - Progress Report for July and August, 1955

We are returning all copies of the subject report to your office since it is virtually impossible to process for payment in its present form.

We suggest that you return the report to the Operator along with your suggestions regarding corrections and clarification of the doubtful items. It is not within the jurisdiction of this office to transfer items on the Form MF-104 from one category to another.

In reference to the maps which accompany the report, please request of the Operator that the drill hole locations, including all drilling done on company account, be brought up to date.

You might mention to the Operator the mix-up concerning payment for hole 637 or 670. If the Operator does not have a valid claim for the disputed footage, we can make a disallowance of the proper amount.

W. M. Traver

By J. W. Townsend

Enclosures

JC:ab
cc: Sec. Op. Comm. (2)
Corresp. E520
Chron.

[illegible] New Customhouse
Denver 2, Colorado

September 15, 1955

Memorandum

To: R. O. Bingen
Herman Coggles

RECEIVED
SEP 1 [illegible]

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract I[illegible]-[illegible],
Mining Research Corporation (Lion Group claims et al.),
Fall River County, South Dakota

A letter dated September 9, 1955, from C. W. Livingston, President of the corporation operating the subject contract, indicates that a copy of his letter was sent to each of you. By copies of this memorandum, we are transmitting to the Chairman of the Operating Committee, DMEA, Washington, D. C., copies of Mr. Livingston's letter also.

Livingston has apparently turned up some new information as a result of drilling performed on company account and requests further amendment of the contract. You are requested to make a field examination and submit a joint memorandum report with your recommendations to this office at an early date in order that it can be referred to the Chairman for consideration. Action on amendments involving additional funds are not within the authority delegated to the Region III Field Team.

If you find you are in need of the maps, assays, or other records mentioned in Livingston's letter, request should be made direct to him that he make them available to you. Also, if your investigation indicates that subordination of additional land will be required, please cover that situation in your memorandum.

W. M. TRAVER

W. M. Traver

WMT:prl
cc: Chairman, Operating Committee (2)
Harshman
Corres. file
Townsend
Chron

MINING RESEARCH CORPORATION
INCORPORATED

5810 W. 38th Ave. Denver 14, Colo.

Sept. 9, 1955

RECEIVED
SEP 10 1955
OFFICIAL USE ONLY

Mr. W. M. Traver
Exec. Officer, D.M.E.A.
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Dear Mr. Traver:

In our Jan-Feb, 1955 report we disclosed the fact that encouraging drill results had been achieved by drilling to pin point the exact position of stratigraphic or structural breaks as provided for in amendment No 3.

Additional information relating to the significance of these "stratigraphic or structural breaks" is presented in our July-Aug 1955 report. The evidence suggests that the known low grade ore ~~bodies~~ sheets on Mining Research Corporation property (including McKnight 4, McKnight 1 and RAM 1 claims which are excluded from D.M.E.A.) and which contain in excess of 750,000 tons at a grade slightly in excess of .05 U_3O_8, are halos derived from commercial grade ore bodies which are veinlike in their occurrence.

The evidence suggests that the breaks we have been exploring are structural rather than stratigraphic. The structure is not a simple fracture but consists of a series of fractures arranged en-echelon. Commercial grade ore is present in close proximity to the fractures but the walls are assay walls not ore-waste contacts. In addition to change in U_3O_8 grade laterally, the grade changes vertically also. The vertical change is a permeability control related to stratigraphy.

Because of both lateral and vertical diffusion of the ore solutions from the fracture zone it is difficult to assign exact boundaries to the deposit in making ore reserve calculations. A further complication results from the fact that the fracture zone extends into McKnight 4 claim.

OFFICIAL USE ONLY

Present indications are that the average grade of commercial ore taken over a 5-1/2 ft vertical thickness is 0.17: taken over an 8 ft vertical thickness the grade is 0.14. If the assays are averaged over a 19 ft vertical thickness the average grade is reduced to 0.08. These averages are based upon the orebody in its entirety, not only the portion drilled under D.M.E.A. The averages reflect results to August 25 and are based upon over 300 assays taken from 34 drill holes, drilled to block out the orebody with development drilling following closely behind t the structure drilling provided for in amendment No. 3. Assaying of over 250 additional samples from the ore zone is currently in progress. How results will affect the above averages currently is a matter of conjecture.

In order to follow up on the possibility that other fracture zones known to exist within the D.M. E. A. area contain commercial grade ore and to continue our attempts to determine the total length of the fracture zone described in this report, I request the following further modifications in our contract Idm E-520, docket 2768

1) Provide for an additional 5000 feet of wagon drilling at intervals not closer than 25 feet on grid lines not less than 100 feet apart, to explore for stratigraphic or structural breaks on any of the following claims:
Lion Claims 1, 3, 4, 9, 7, 8, 13,

Deadhorse No. 1

McKnight 2 amended, 3 amended, and 5 amended.

2) Further amend item 2 Amendment No 1 Stage II to provide for grid drilling at 100 foot by 100 foot intervals rather than 100 foot by 300 foot intervals on the following claims:
Lion Claims 14, 15

Deadhorse No. 1, 2

I hereby certify that a discovery has been made as a result of drilling under D.M.E.A. contract Idm-E520, docket 2768 and request that your engineers undertake the necessary steps for certification so as to permit repayment of the loan at such time as production begins.

All Mining Research Corporation maps, assays, and records are available for your inspection at my consulting offices 5810 W. 38th Avenue, Denver 14, Colorado.

This information is considered to be company confidential and must not be released without written approval.

Yours very truly,

Clifton W. Livingston

Clifton W. Livingston, Pres.
MINING RESEARCH CORPORATION

CWL:hl

cc: E.O.Binyon
Norman Cupples
J.S.Livingston

Surname

Ellis
Butin
Hoffland

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

AUG 31 1955

DEPARTMENT OF THE INTERIOR

DMEA

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

T E L E T Y P E

W. M. HAVER
EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURMEMO AUGUST 24 MINING RESEARCH CORPORATION DOCKET DMEA-2768 CONTRACT IDM-E520. IN ACCORDANCE WITH YOUR RECOMMENDATION, I ADMINISTRATIVELY WAIVE THE NEW FORM OWNER'S CONSENTS TO LIEN ON THE TWO EDNA McKNIGHT LAND PARCELS DESCRIBED IN YOUR MEMORANDUM.

C. O. Mittendorf

C. O. Mittendorf, Administrator

EWEllis:am
8-29-55
cc to: Admr. Reading File
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm.5222
J. O. Hosted,Rm.3210,GSA
Code 700
Confirmation DMEA Field Team, Reg. III(1)

R.C.S.

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

August 29, 1955

Memorandum

To: The Administrator

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Amendment No. 4 dated July 8, 1955
Mining Research Corporation
Lion Group claims, et al.
Fall River County, South Dakota
Waiver of Edna McKnight's Consent to Lien, new forms.

In a memorandum dated August 9, 1955, from W. M. Traver, Executive Officer, Region III, it was stated that Operator was having difficulty in obtaining the signature on two of the new Owner's Consent to Lien forms. He stated that the Amendment No. 4 had been executed and the Operator given his copy. Mr. Traver stated that he had given the Operator an extension of time in which to obtain the two sets of Consents to Lien.

Since there were nine sets of Consents to Lien completed the Operating Committee requested the Washington copies of these sets be forwarded and suggested that payment of funds due the Operator be withheld until the other two sets of the Consents to Lien (Edna McKnight's) were obtained.

By memorandum dated August 24, 1955, Mr. Traver advised that Edna McKnight now refuses to sign subject documents. The ground in question is described as follows:

1. Deeded land E $\frac{1}{2}$ of the SW $\frac{1}{4}$ and the SE $\frac{1}{4}$ of Section 14, T8S., R3E.

2. Deeded land as follows:
   the W $\frac{1}{2}$ of the SW $\frac{1}{4}$ of Section 14, and
   the N $\frac{1}{2}$ of the NE $\frac{1}{4}$ of Section 22, T8S., R3E.

   Both are in Fall River County, South Dakota.

The Executive Officer of Region III says that Clifton W. Livingston, the Operator's representative states the work permitted under Amendment No. 4 will be completed by September 15, "and there is no possibility with the amount of drilling to be done that any of it will be on the property in question."

Edna McKnight however, did sign the old form Owner's Consents to Lien and the copies are attached to the original contract.

The Field Team recommends that the Administrator waive the two Consents to Lien or advise the amount of bond required to cover. Since the land in question apparently has little value in so far as the contract is concerned, and furthermore, since it would be inappropriate to require the Operator to put up a bond, it is recommended that said documents be waived.

Ernest Wm. Ellis

Ernest Wm. Ellis

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

224 New Customhouse
Denver, Colorado

August 24, 1955

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, (Lion Group Claims, et al), Fall River County, South Dakota

Enclosed in accordance with the instructions in your memorandum of August 15, 1955 are the nine properly executed Owner's Consent to Lien forms for attachment to the Government, Division and Docket copies of Amendment No. 4 to the subject contract which was transmitted to you by memorandum of August 9, 1955.

Also enclosed are two sets of Consents to Lien (seven copies) identically as received from you. These, both from the same owner, Edna McKnight, are unsigned and cover land described as follows:

1. Deeded land E $\frac{1}{2}$ of the SW $\frac{1}{4}$ and the SE $\frac{1}{4}$ of Section 14, T8S., R3E.

2. Deeded land as follows:
   the W $\frac{1}{2}$ of the SW $\frac{1}{4}$ of Section 14, and
   the N $\frac{1}{2}$ of the NE $\frac{1}{4}$ of Section 22, T8S., R3E.

Both are in Fall River County, South Dakota.

Mrs. McKnight on the advice of her attorney refuses to sign because of the statement in the forms under Item 2 "Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon ...." This is a customary complaint against the forms and one that you are no doubt familiar with. A statement to the effect that the documents are not ordinarily recorded does not generally, or in this case, satisfy the signee.

It is our understanding that the Administrator has the authority to waive the Consents to Lien and, in this instance, we recommend that he do so or advise the amount of bond required to cover. We have the McKnight signature on the old MF-203 forms attached to the original contract.

Justification for allowing this Operator more time to obtain signature on the forms was a precedent established in the case of DMEA 3159 (Tungsten), Contract Idm-E718, Spider Uranium Mining Company, Inc., (Trout Creek Mine), Juab County, Utah, Amendment No. 2. In that case in your transmittal letter of June 23, 1955 you authorized distribution of the amendment without the Owner's Consent to Lien with instructions to procure them at a later date. Incidentally, we have not received them as of this date although we are holding the Operator's copy of the amendment pending their return.

There appears to be no object in withholding payment of funds due Mining Research Corporation on future claims as admittedly there is slight possibility of his obtaining the signatures at any time. Mr. Livingston also states that because all the property owners reside in a small community and are well acquainted they have, subsequent to Mrs. McKnight's refusal to sign the forms, discussed the matter among themselves and he doubts very much if in another case any of them will sign.

If it is Administratively determined that the signed forms are definitely required, Mr. Livingston states that he may be able to prevail on Mrs. McKnight to sign. He further states that he will complete the work allowed under Amendment No. 4 by September 15, and there is no possibility with the amount of drilling to be done that any of it will be on the property in question.

Your early decision and instructions in the matter will be appreciated.

Your attention is directed to the Consent to Lien forms covering the McKnight Claims Nos. 2, 3 and 5 in Section 15 T3S., R3E, Fall River County, South Dakota. This property has changed ownership and the forms are signed by the present owners, Ray and Gertrude Chamberlain. There is attached to each signed form a certified affidavit of ownership.

Very truly yours,

W. M. Traver

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

Enclosures

MF-203
Revised March 24, 1955

RECEIVED
AUG 26 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Mining Research Corporation
Docket No. DMEA-2768
Contract No. Idm-E 520
Contract Date May 14, 1953

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described as follows:1/

Deeded land E ½ of the SW ¼ and the SE ¼ of Section 14, T8S., R3E.

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;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ 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.

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

_____

_____

_____

_____

_____

_____

_____

Dated this _____ day of _____, 195__.

_____ [Seal]

Edna McKnight

_____ [Seal]

_____ [Seal]

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]

(2)

MF-203
Revised March 24, 1955

RECEIVED
AUG 1 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Mining Research Corporation
Docket No. DMEA- 2768
Contract No. Idm-E 520
Contract Date May 14, 1953

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Fall River, State of South Dakota, described as follows:1/

Deeded land as follows:

the W 1/2 of the SW 1/4 of Section 14, and

the N 1/2 of the NE 1/4 of Section 22, T8S., R3E.

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;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ 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.

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

_____

_____

_____

_____

_____

_____

_____

Dated this _____ day of _____, 195__.

_____ [Seal]
Edna McKnight

_____ [Seal]

_____ [Seal]

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]

Surname copy

Ellis
Taffaut
Selfridge
McBeudorf

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

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

AUG 1955

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group claims, et al.
Fall River County, South Dakota

Dear Mr. Traver:

This refers to your memorandum of August 9, 1955, pertaining to the captioned project.

It is noted you state that the Operator is having some difficulty in obtaining the signatures on two of the new Consent to Lien forms. Presumably nine of the forms are properly signed. This is an unusual case. As you know, all contracts, or amendments to contracts, that are signed by the Administrator and forwarded to the Field Team for the Operator's signature, subject to certain attachments, are not to be distributed until said documents are actually made a part of the contract.

It is suggested, in this case, that you forward the nine sets of completed Consents to Lien and that you withhold payment of any funds due the Operator until the other two sets are properly signed and received.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

APPROVED:

/s/ Robert W. Geehan
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

EWEllis/gla
8-12-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JCHosted, Rm. 3210, GSA
Code 700
Mr. Knouse

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

224 New Customhouse
Denver, Colorado

August 9, 1955

RECEIVED
AUG 11 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA, Region III

Subject: DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Fall River County, South Dakota

Enclosed are the properly executed Government, Division and Docket copies of Amendment No. 4 to the subject contract, prepared in the Washington office and transmitted by your letter of July 8, 1955 for approval and signature by the applicant.

The Operator is having some difficulty in obtaining signature on two of the new Owner's Consent to Lien and has been given a short extension of time for that purpose. All copies will be forwarded for attachment to your copies of the Amendment within a short time.

Copies of the Amendment have been given to the Operator, the field offices concerned, the Finance Officer, Region III and a copy is being retained in our files.

W. M. Traver

W. M. Traver

Enclosures

700

Surname

Ching J. L. Kouse
Ellis
Chandler
Selfridge
Kjorsen

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

JUL - 8 1955

Code 700
Mr. Knouse

Mr. W. H. Traver
Executive Officer
DMEA Field Team, Region III
22h New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group claims, et al.
Fall River County, South Dakota

Messrs. J.E.Crawford,Rm.3641
T.H.Kiilsgaard,Rm.5224
J.O.Hosted,Rm.3210,GSA

Dear Mr. Traver:

As recommended in the examining team memorandum of March 30, 1955, there are enclosed the original and five copies of Amendment No. 4 to the subject contract signed by the Administrator. As requested in your teletype of May 25, we have prepared the required Consents to Lien (eleven sets) which are to be executed and attached to the amendment prior to its execution.

Since the Operator objects to the inclusion of some of the claims on which he had done work prior to the subject contract that you proposed to include in the contract, said claims have not been made a part of this amendment.

Also, since Consents to Lien have not been executed on the most recent forms, in order to fully protect the Government's interest it is desirable to execute this amendment and not to terminate the contract as you suggested.

If the terms and conditions of this amendment meet with your approval and the Operator's, have the original and all copies signed by the company official authorized to sign this document and make the usual distribution thereafter.

If any part of this proposed amendment does not meet with your approval or the Operator's, and cannot be amended within your delegated authority the original and all copies are to be returned with the proposed changes for consideration.

Admr. Reading File
Operating Committee
Docket

FLKnouse:am
7-1-55
cc to:

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

R.C.S.

Enclosures

APPROVED:

/s/ Robert W. Geehan (GCS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

June 27, 1955

Memorandum

To: The Administrator, DMEA
Attention: Mr. E. W. Ellis

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-#768 (Uranium), Mining Research Corporation, Contract Idm-E520

As requested in Mr. Krouse's memorandum dated May 16, we have prepared the attached Amendment No. 4, in satisfactory legal form for execution, subject to prior acquisition of new Consents to Lien covering all the claims listed in Annex I to the Contract and all the claims listed in Amendment No. 1 to the Contract.

/s/ Henry C. Rubin
For J. L. Hofflund
Acting Assistant Solicitor
Defense Minerals

Attachments .

HCRubin/emd
Copy to: DMEA Docket
Solicitor's Docket
E. W. Ellis
J. L. Hofflund
H. C. Rubin
chron.

Surname copy

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

June 22, 1955

Memorandum

To: Acting Assistant Solicitor, DMEA

From: F. L. Knouse, Mining Engineer
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group claims, et al.
Proposed Amendment No. 4
(Supplement to memorandum dated May 16, 1955)

In addition to the information furnished in the subject memorandum, please include in the draft of Amendment No. 4 the following:

1. Under "Change the description of the work as follows:" (a) None of these holes shall be closer than 150 feet to the outer boundary of the land described in the contract.

2. Amended locations of the following claims are shown on the attached map entitled, "Mining Research Corp. Lion & MCK. Areas D.M.E.A. Contract Progress":

Recording Data

Claim	Book	Page
RAM No. 1 Amended	31M	289
RAM No. 2 "	37M	121
McKnight No. 2 Amended	37M	116
McKnight No. 3 "	37M	117
McKnight No. 4 "	37M	119

A copy of the map referred to above should be attached to the amendment.

3. Please draft a sample copy of each Consent to Lien that will be required before this amendment is executed.

/s/ F. L. Knouse

F. L. Knouse

FLKnouse/gla
cc to: Docket
Code 700
Mr. Knouse

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

RECEIVED
JUN 20 1955

224 New Customhouse
Denver 2, Colorado

June 15, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Fall River County, South Dakota

Enclosed are the original and three copies of a letter from Clifton W. Livingston, President, Mining Research Corporation, dated June 9, 1955 which is in conjunction with the matter discussed in your teletype of June 2, 1955.

Mr. Livingston objects to inclusion under Article 2 of the contract any additional claims except the Ram No. 2, McKnight No. 2, McKnight No. 3 and McKnight No. 5, all amended locations. We believe that at least the Dead Horse No. 1, No. 2 and No. 3 claims should be included under the contract, because the trend of mineralization developed on the Lion group of claims could conceivably extend onto the Dead Horse claims.

As the mineralization encountered in the drilling to date is of very low grade, we would be in agreement to terminating the contract in its present status if there are sufficient grounds to do so.

W. M. Traver

Enclosures

MINING RESEARCH CORPORATION
INCORPORATED

5810 W. 38th Street Denver 14, Colo.

DMEA
Date Rec'd
JUN 13 1955
BUREAU OF MINES
Denver, Colorado

June 9, 1955

RECEIVED
JUN 20 1955

Mr. W. M. Traver, Exec., Officer, D,EA
Field Team Region III
U. S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

Attn: Mr. Townsend

Gentlemen:

Enclosed herewith is information requested in preparing your amendment to out contract Idm-520E/

Freezeout #1	Located 4-18-53, Locators Earl Boner, Charles H. Frazer, W.W.Wing, agent (recorded Book 31M, Page 311)
Freezeout #2	Located 4-18-53, Locators as above, agent W.W. Wing, (recorded Book 31M, Page 359)
Freezeout #3	Located 4-18-53, Locators Alva Schnee, C.H.Frazer, Amos Clark, agent Chas. Frazer (recorded Book 31M, Page 359)
Deadhorse Canyon #1	Located Dec. 18, 1954
Deadhorse Canyon #2	Locator C. W. Livingston, (recorded Book 33M, page 426, 437)
Deadhorse Canyon #3	Not staked
Deadhorse Canyon #4	Staked by C.W.Livingston Dec. 18, 1954, but abandoned in favor of McKnight #5 amended.
Lamb No. 1	Located July 5, 1953 by C.W.Livingston (recorded Book 33M, Page 339)
Lamb No. 2	Located July 5, 1953 by Mr. C.W.Livingston, (recorded Book 33M, Page 339)

I believe that your request for inclusion of Freezout 1,2,3, Deadhorse 1,2,3, and Lamb 1 and 2 is improper for the following reasons:

1) We do not intend to drill on these claims under the amended contract.
2) We do not have sufficient footage under any of the items of the contract to explore structures approaching the boundaries of the above mentioned claims.
3) If you have a right to ;include Freezeout 1,2,3, Deadhorse Canyon 1,2, and Lamb 1, & 2, what is to prevent including RAM #1 amended, McKnight #1 amended, and McKnight #4 amended which we drilled extensively at out own expense before requesting

DMEA assistance to explore the extension of the known ore structures.

Accordingly we object to ;including RAM, #1 amended, McKnight #1 amended, and McKnight #4 amended because these claims cover ground that was drilled out before we requested assistance to explore the mineralized extensions. The amended locations cover substantially the same ground covered by the original locations. The object of the amended locations was to correct minor errors in claim width and claim length made by the original locators.

We are in agreement with you on the inclusion of the following claims:

Ram #2	Amended	Book 37m, page 121
McKnight #2	Amended	Book 37m, page 116
McKnight #3	Amended	Book 37m, page 117
McKnight #5	Amended	Book 37m, page 119

Yours very truly,

Clifton W. Livingston

Clifton W. Livingston, Pres.
Mining Research Corp.

CWL:hl

Surname 700

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

F.L. Knouse
Selfridge
Jessmer
Mathendorf

JUN - 2 1955

DEPARTMENT OF THE INTERIOR

DMEA

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

TELETYPE

W. M. TRAVER
EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REFERENCE MAY 25 DMEA 2768 MINING RESEARCH CORPORATION. PLEASE FURNISH RECORDING DATA, ALSO LEASES, IF NOT OWNED BY OPERATOR, COVERING CLAIMS TO BE INCLUDED IN CONTRACT.

George C. Selfridge

George C. Selfridge, Chairman
Operating Committee

FLKnouse:am
6-1-55
cc to: Admr. Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Knouse
Confirmation to Region III(1)

R.C.G.

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

224 New Customhouse
Denver 2, Colorado

May 25, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corp., Fall River County, South Dakota

In conjunction with advice in our teletype of May 25, 1955, we are enclosing six copies of a map submitted by the operator which shows amended claims in relation to other property.

To more adequately protect the Government's interest in the matter it appears that the Lamb, Freezeout, and Dead Horse claims should also be included with the ground described under Article 2 of the contract.

If further action by this office is desired please advise.

W. M. Traver

W. M. Traver

Enclosure

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE 5-26-55

REFERRED TO: INTERIOR DEPT. Actg.Asst.Sol.DMEA,Rm. 6042

2.

MAY 26 1955 RECEIVED

4.

SOLICITOR

MAY 26 1955

GENERAL COUNSEL

FOR:

..... Action	..... Recommendation
..... Approval	..... Record of .....
..... Comment	..... Referring to .....
..... Conference	..... Reply for signature of .....
..... Consideration	..... Rewriting
..... Filing	..... Signature
..... Instructions	..... Suggestions
..... Investigation	..... Your information
..... Initials	
..... Mailing	
..... Previous correspondence	

REMARKS: Attached is original of TT from Mr. Traver, dated 5/25/55 together with docket copy our TT 5/24 to him, for the file, re preparation of Amendment No. 4. Please hold until communication from FT arrives.

Check (X) before the items needing attention.

F.L.Knouse
Ernest Wm. Ellis

Initials of sender.

GPO 16—63815-1

May 31 - Retd to Division pending instructions concerning adding land - when recd. from field.

MINERALS
ADMINISTRATION
SPECIAL

Mr. George Selfridge

RECEIVED

MAY 26 1955 - 4:15 p.m.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 26 1955

GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

BUR MINES D N 235 5-25-55 1-07 PM

CHAIRMAN, OPERATING COMMITTEE, DMEA

REURTT MAY 24, DOCKET DMEA 2768, CONTRACT IDM-E520, MINING RESEARCH CORPORATION, NEW OWNER S CONSENT TO LIEN. BECAUSE OF THE NUMEROUS OWNER S CONSENTS TO LIEN INVOLVED WITH GROUND INCLUDED IN CONTRACT AND THAT ADDED BY AMENDMENT NO.1, WE SUGGEST NEW FORMS BE PREPARED BY YOUR LEGAL SECTION TO ASSURE CORRECT PREPARATION. IN CONJUNCTION THEREWITH WE ARE FORWARDING MAP WHICH INDICATES THAT ADDITIONAL GROUND SHOULD BE ADDED TO PROTECT THE GOVERNMENT S INTERESTS.

W M TRAVER

Denver, Colo.

MAY 26 7 39 AM '55
BUREAU OF NAVAL
MAIL ROOM
WASHINGTON, D.C.

Surname copy

Department of the Interior

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

DMEA
14-14-01(01) Revolving Fund, Defense Production Act, Interior
(Allocated Working Fund to the Office of the Secy.)

FLKnouse
Elv
Selfridge
KJohnson
MHendry

T E L E T Y P E MAY 24 1955

W. M. TRAVER, EXECUTIVE OFFICER
DMEA FIELD TEAM, REG OF III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURTELCO MAY 4 AND OURLET JANUARY 31 DMEA-2768

MINING RESEARCH CORPORATION CONSENT TO MENTIONED FUND FOR ALL CLAIMS LISTED IN CONTRACT INCLUDING SEVEN AMENDED CLAIMS TO BE INCLUDED AMENDMENT NO. 4 ON REVISED FORM DATED MARCH 27, 1955.

George C. Selfridge

GEORGE C. SELFRIDGE, (24B)
CHAIRMAN OPERATING COMMITTEE

FLKnouse/gla
5-24-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Knouse
Confirmation to Region III

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

May 20, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 2768, Mining Research Corp., Fall River, South Dakota

I have reviewed the attached application of the Mining Research Corp., DMEA Docket 2768, requesting an amendment of their Contract Idm-E520, and the attached comments from the Field Team. Mr. Joseph O. Hosted, Washington representative of the Atomic Energy Commission, also studied the report, and we have discussed it together.

We believe the contract amendment is justified, but suggest that the contract amendment be prepared to include the recommendations of the field examiners as described in their memorandum of March 30, 1955.

John E. Crawford

John E. Crawford

Attachment

IN REPLY REFER TO:

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

May 18, 1955

Re: DMEA-2768
Contract E520
Mining Research Corp.
Fall River Co., S. D.
Amendment, Uranium

Memorandum

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

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

Subject: Review of application for an amendment

The Field Team appears to have developed their recommendations ~~of~~ of the operator's 5 requests by a careful study of the results obtained to date. The results are considered 'not generally satisfactory', whereas the operator considers them 'very favorable'. Under such conditions questions of procedure are apt to arise. In this case, until 0.05% WO_3 material is known to be ore, the evidence as given, supports the conclusions of the Field Team.

I concur with its recommendations.

N. E. Nelson

N. E. Nelson

Surname copy

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

May 16, 1955

Memorandum

To: Acting Assistant Solicitor, DMEA

From: F. L. Knouse, Mining Engineer
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Lion Group claims, et al
Proposed Amendment No. 4

Please prepare Amendment No. 4 to the subject contract which provides for the following changes in the contract:

1. Authorizes a recess of operations from February 15 to ~~June~~ 1, 1955. May 1, 1956.

2. Extension of the completion date until April 14, 1956.

3. Extends the repayment provision on royalties from production from 10 years to 11 years.

Change the description of the work as follows:

(a) Change item 4 (Amendment No. 3) to read:

"At locations acceptable to the Government, diamond core-drill or wagon-drill holes may be drilled, spaced not closer than 25 feet apart across major stratigraphic changes or structural breaks. Not more than four of these holes shall be drilled at any one grid hole location or at any offset hole drilled provided it is spaced not less than 100 feet from a grid hole. Diamond core-drilling shall be restricted to not more than two holes at one location for a check on the lithologic interpretation of the wagon drilling."

(b) Delete authorization in Amendment No. 3, item 3, which permits offset hole drilling concurrently with primary or grid-hole drilling.

This amendment shall not be construed to increase the estimated cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated as "Agreed Unit Costs."

/s/ F. L. Knouse

F. L. Knouse

FLKnouse/gla
5-16-55
cc to: Docket
Code 700
Mr.Knouse

Mr. George Selfridge

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 16 1955

BUR MINES DN235 5-13-55 4-33 PM

CHAIRMAN, OPERATING COMMITTEE, DMEA

REFERENCE DOCKET DMEA 2768, CONTRACT IDM-E520, MINING RESEARCH CORPORATION, OUR MEMO
XXXX
WILL START OVER

REFERENCE DOCKET DMEA 2768, CONTRACT IDM-E520, MINING RESEARCH CORPORATION, OUR MEMORANDA OF FEBRUARY 8 AND MAY 4. LIVINGSTON ADVISED US TODAY THAT HE IS RETURNING TO PROJECT TO RESUME OPERATIONS. HE ALSO ADVISED THAT NO ASSIGNMENT OF THE CONTRACT WILL BE REQUESTED AS MENTIONED IN OUR MEMORANDUM OF FEBRIARY 8.

J M TRAVER

Memorandum. Gb.

MAY 16 8 35 AM '55

BUREAU OF MINES
MAIL ROOM
WASHINGTON D C

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

224 New Customhouse
Denver 2, Colorado

May 4, 1955

Memorandum

To: Chairman of the Operating Committee, DMEA Washington

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2768 (Uranium), Contract Idm-E520, Mining Research Corporation, Fall River County, South Dakota

Supplementing and in conjunction with the matter discussed in our memorandum of February 8, 1955 we are enclosing the original and three copies of the following material which is relative to an amendment to the subject contract:

1. Letter from the Operator dated February 15, 1955

2. Joint memorandum, dated March 30, 1955 from N. P. Cuppels, Geologist, U. S. Geological Survey and E. O. Binyon, Mining Engineer, U. S. Bureau of Mines

3. Letter from the Operator, dated April 29, 1955

Also enclosed are one copy each of form MF-104A, Operator's and Engineers' Reports and map submitted by the Operator pertaining to work completed during January and February, 1955, which has been deferred from processing pending resumption of work.

The Operator requests an amendment to the contract which will include the following features:

a. Authorization of suspension of operations from February 15, 1955 to on or before June 1, 1955

b. Extension of the period for completion of project work until April 14, 1956

c. Inclusion of the McKnight 1 to 5 incl., Amended Claims and RAM Nos. 1 and 2 Amended Claims under Article 2 of the contract

d. Modification of the description of the work to be performed under the contract

The examining Engineer and Geologist, in their joint memorandum under item "2", have analyzed the situation very thoroughly and this office concurs in their recommendations.

Preparation of an amendment of the nature requested is not within the authority delegated to this office, therefore the matter is forwarded for your consideration and appropriate action.

W. M. Traver

Enclosures

MINING RESEARCH CORPORATION
INCORPORATED

1320 Pearl Street
Boulder, Colorado

DMEA
Date Rec'd.
MAY 2 1955
BUREAU OF MINES
Denver, Colorado

April 29, 1955

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

Re: Docket DMEA 2768 (Uranium)
Contract Idm-E520

Dear Mr. Traver:

Your letter of April 28, 1955 concerning the completion date of our exploration project, Contract Idm-E520, has been received. We definitely plan to continue the work under the contract and, therefore, hope you will initiate action to extend the period for completion of the work for a period of one year, or until April 14, 1956.

Mr. Clifton W. Livingston, who requested a recess of the project during the period in which he planned to be out of the country, is expected to return to Edgemont within a period of two weeks. Before temporarily closing the Edgemont office, he had been able to establish more definitely the trend of mineralization in the area covered by our drilling and had encountered commercial-grade ore in most of the holes drilled during the early part of the year. I might add that several of these holes were drilled after February 3 at which time the letter you refer to was written.

I am sure that Mr. Clifton W. Livingston had overlooked the termination date of the contract in requesting the amendments set forth in his letter of February 15. Inasmuch as he considered his drilling results to be very favorable, it was his plan to continue the drilling upon his return to the country, and the amendments requested in his letter of February 15 were in line with that intention.

Work was suspended during the spring of this year not only because of Mr. Livingston's departure from the country but also because the weather during this period of the year in South Dakota usually makes operations extremely difficult. Also, our drilling experience indicated that heavier

equipment was needed to reach the ore horizon in one area covered by the contract. Arrangements have been made to secure that equipment with the thought that drilling would be resumed during the month of May.

This letter is to advise you, therefore, that we plan to resume operations on or before June 1, 1955 and urgently request that you initiate action to extend our contract until April 14, 1956.

Very truly yours,

J. Sterling Livingston

J. Sterling Livingston
Vice President and Treasurer

JSL:ar

UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF MINES
Rapid City Experiment Station
School of Mines Campus
Rapid City, South Dakota

DMEA
Data Rec'd.
1955
BUREAU OF MINES
Denver, Colorado

March 30, 1955

Memorandum

To: W. M. Traver, Executive Officer, DMEA Field Team, Reg. III

From: Examining Team, N. P. Cuppels and E. O. Binyon

Subject: Memorandum Report on Amendments, Docket DMEA 2768 (Uranium), Contract Idm E-520, Mining Research Corp., Fall River County, S. Dak.

Pursuant to your memorandum of February 23, a brief description of the work completed to date under the subject contract, and the results, are given as a background for the recommendations made in this memorandum concerning the modifications to the contract requested by the operator on February 15, 1955.

Results of the exploration program have not been generally satisfactory. To date, 13 small ore bodies with a total of 27,590 short tons and a weighted average grade of 0.115 percent U_3O_8 have been discovered by the contract drilling in the Lion and McKnight areas.

The carnotite-type ore is in a massive, fine- to medium-grained unit of the Fall River sandstone, which has a regional dip of about 4 degrees southwest in this area. The ore is 5 to 30 feet above a thick mudstone in which most of the holes have bottomed, and ranges in grade from 0.1 to 0.25 percent U_3O_8 with an average of 0.115 percent U_3O_8 for all deposits of "ore" grade (0.1 percent U_3O_8 plus) discovered thus far.

The ore horizons have an average thickness of about 4 feet and are overlain by 40 to 50 feet of massive sandstone in which mudstone splits are important locally. Individual ore bodies tend to be concentrated along northwesterly trending fractures, whereas groups of ore bodies have a northeasterly trend. Ore bodies are generally small; for example, 9 holes penetrated ore in the Lion area but the ore cannot be considered continuous between any two of these holes when using the AEC method for calculating ore reserves, the method being devised specifically for the Black Hills uranium ore deposits.

In addition to the 27,590 tons of "ore" grade material mentioned above, a total of at least 203,400 tons of low-grade material (indicated and inferred) was also discovered by the drilling under the contract in the Lion and McKnight areas. Calculation of the low-grade reserves was by the AEC method and the lower and upper cut-offs were

0.03 and 0.099 percent U_3O_8 respectively.

It may be that this low-grade material is of little or no economic importance at present; however, it is included here since it is a part of the overall results of the exploratory work, and as with the "ore" grade deposits, the occurrence, size, depth, and grade are some of the factors that are considered in making the recommendations pertaining to grid spacing and the transfer of drilling footage from the Gull-Sheep Canyon area to the Lion and McKnight areas.

Other reasons for considering the low-grade material are: 1) The operator has maintained that he has developed a leaching process which, on the basis of a large scale operation, will economically treat material with a grade of 0.05 percent U_3O_8, and possibly with no more than 0.03 percent. 2) The DMEA Operating Committee Minutes No. 353 dated April 12, 1954, state: "--- Recommendations should be based upon geologic probability of finding mineralization from which production may be reasonably expected in a national emergency, although possibly not at current prices."

We are not in a position to evaluate the process from either the technical or economic standpoint; however, it is our opinion that the "ore" deposits (0.115 percent) occurring as they do in many scattered and small units and at an average depth of about 40 feet, with some relatively hard intervening sandstone units, cannot be mined profitably at present. Also, mining of the low-grade material, regardless of the scale of operations, is not feasible under present conditions.

Expenditures and footages drilled to date under Stage I and Stage II, Amendment No. 1, with the funds and footages remaining for each of the areas, are:

STAGE I - McKnight Areas I and III (90% government participation)

	Core Drilling		Wagon Drilling		Total
	Feet	Dollars	Feet	Dollars	Dollars
Authorized by contract	1,595	4,833.00	14,770	12,850.00	17,683.00
Totals to date, Area I	715	2,166.45	8,423	7,328.01	9,494.46
" " " Area III	--	--	1,746	1,519.02	1,519.02
Totals, Areas I and III	715	2,166.45	10,169	8,847.03	11,013.48
Total Remaining	880	2,666.55	4,601	4,002.97	6,669.52

STAGE II - Lion Claim Group Area (75% government participation)

	Core Drilling		Wagon Drilling		Total
	Feet	Dollars	Feet	Dollars	Dollars
Authorized by contract	1,000	3,030.00	10,000*	8,700.00	11,730.00
Totals to date	99	299.97	6,963*	6,057.81	6,357.78
Totals Remaining	901	2,730.03	3,037*	2,642.19	5,372.22

* Grid and offset footage (grid footage remaining, 1,673; offset footage remaining, 1,364)

Gull-Sheep Canyon Area

Authorized by contract, Areas I, II and III	2,000*	6,060.00	20,000	17,400.00	23,460.00
Totals to date	50	151.50	2,588	2,251.56	2,403.06
Totals Remaining	1,950	5,908.50	17,412**	15,148.44	21,056.94

* Authorized for Areas I and II
** 7,412 feet remaining for Areas I and II; 10,000 feet remaining for Area III, dependent upon results in Areas I and II.

For past drilling, the procedure followed by the operator has been to drill on the grid until the results might be interpreted as showing some indication of a possible trend in mineralization, whereupon grid drilling was suspended while this particular trend was investigated by offset drilling.

Whether or not this was the most satisfactory method of exploring the areas was discussed several times with the operator, and he advanced the argument that there was no purpose in drilling holes--drilling out the grid simply for the sake of drilling holes. In view of the operator's experience and the fact that for exploration of new areas some concurrent drilling might be justified, and also that the contract did not specifically designate drilling out the grid, the matter was not definitely settled.

However, after spending much time and effort in a thorough study of the results, calculation of reserves etc., it is our opinion that the concurrent drilling can over-explore parts of one particular drilling area, with the result that remaining footage is inadequate for exploration of the entire area or the other areas included in the contract. For example, in the Stage I drilling, an aggregate of 14,770

feet of wagon drilling was allocated to Areas I and III. As of December 31, 1954, the operator had used 8,423 feet of the assigned footage in grid and offset drilling in Area I and only 1,746 feet in Area III. The remaining 4,601 feet are considered inadequate to explore Area III. If both areas had been drilled on a grid before any offsetting, remaining footage would have been sufficient to define the ore well enough for DMEA purposes and to verify trends of mineralization.

We are sympathetic to the operator's attitude that Area I was more favorable ground, but cannot agree that this fact warranted such a heavy assignment of the overall footage. Drilling in Area I has approached the development stage, whereas footage remaining to explore Area III can provide only the barest minimum of exploratory data.

The relatively closely-spaced drilling in Area I was permitted to establish a guide to the size of the ore bodies to be expected in the vicinity. Much of this area has been drilled on 50-foot centers (grid plus offset holes). A drill grid template with 100-foot centers was superposed on a plan view of the six ore bodies discovered in Area I to date. If the template is superposed coincident with the contract grid, the template indicates that three of the six ore bodies would have been detected by a 100-foot grid. On the other hand, when the template is superposed coincident with the offset drill holes, indications are that none of the ore bodies would have been detected. Although use of the template suggests that a drill grid with 50-foot centers would be more effective in locating ore deposits, the low grade of the deposits found cannot justify extensive drilling at 50-foot centers.

We have therefore concluded that for exploration of any new areas that may be added by amendment to the contract, the primary grid shall be no less than 100 feet by 100 feet and this grid shall be drilled out before offset drilling is started.

Based on the foregoing, our recommendations as to modifications to the contract requested by the operator are as follows:

Item 1

Operator's Request: "At locations acceptable to the Government, diamond drill holes or wagon drill holes (be) spaced not closer than 25 feet across stratigraphic or structural breaks and spaced not closer than at 100-foot intervals corresponding to established grid and offset lines."

Recommendation: This request is a modification of Item 4, Stage II of Amendment No. 1 of the contract. Reduction in the grid interval at which 25-foot offsets may be drilled is approved subject to the following provisions: 1) Not more than four 25-foot offset holes be drilled at each hole of the grid or at each 100-foot offset of the grid; 2) only major structural or stratigraphic breaks be investigated by the 25-foot offsets; 3) diamond drilling be restricted to a check on the lithologic interpretation of the wagon drilling.

Item 2

Operator's Request: "Such drilling for geologic information may be performed concurrently with drilling under Items 1, 2, 3, and 4."

Recommendation: Concurrent drilling of offset and grid holes be disapproved. Recent developments in this drilling program indicate that the practice of drilling grid and offset holes concurrently is not a satisfactory method of exploration from the DMEA point of view.

Item 3

Operator's Request: "We request that 5,000 feet of wagon drilling presently included in the contract under Item 7, page 3, Amendment No. 1 be transferred to this paragraph."

Recommendation: This item be disapproved. Drilling under Item 7, Amendment No. 1 is contingent upon the results of drilling in Areas I and II of the Gull-Sheep Canyon area. Areas I and II under this item have not been adequately explored. As of March 1, 1955, only 2,588 feet (27 holes) had been drilled, although up to 10,000 feet had been authorized. Ore grade mineralization was found in four of the holes and there is no reason, geologically, why these areas shouldn't be drilled out according to the terms of the contract. There are 3,037 feet of wagon drilling (50 holes) and 901 feet of core drilling (15 holes) remaining under Items 1 through 5 of Amendment No. 1 of the contract. This previously approved drilling is considered adequate to complete exploration of the Lion area.

Item 4

Operator's Request: "We request further that diamond drilling under the paragraph be included under Item 5, Stage II in the Lion Area and under Stage I in the McKnight Area."

Recommendation: Transfer of diamond drilling from Item 7 be disallowed for the same reason transfer of wagon drilling was disallowed.

Item 5

Operator's Request: "We request that the following claims in their entirety be included within Stage II of the contract: McKnight No. 5 Amended, McKnight No. 2 Amended, RAM No. 2 Amended and that within this area, line and grid wagon drilling under Items 1, 2, 3, 4, and 5 on a spacing not less than 50 feet by 100 feet be permitted."

Recommendation: Expanding the drilling areas under the contract without concurrent increase in the drilling footage is not considered feasible. Remaining footage is no more than adequate to explore the original drilling areas. If additional parts of these claims warrant exploration, total footage under the contract will have to be increased. The examining team is not convinced that any increase in footage allowance can be justified at this time.

However, it would not be to the disadvantage of the Government to include all of the claims which are now in part included under the contract. If the request under Item 3 to transfer footage from the Gull-Sheep Canyon areas is approved and the request under Item 5 is approved, we recommend that any drilling in the newly added areas be on a grid spacing of 100 feet by 100 feet and that this primary grid be drilled out before any offset drilling is permitted. Offset drilling shall be done only with prior approval of the examining team.

The contract expires April 14, 1955.

This is a joint report of the examining team.

N. P. Cuppels, U.S.G.S.

E. O. Binyon, U. S. B. M.

By: E O Binyon

E. O. Binyon

cc: Traver (8)
Harshman
Cuppels
files

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

224 New Customhouse
Denver 2, Colorado

February 23, 1955

Mr. Clifton W. Livingston, President
Mining Research Corporation
P. O. Box 356
Edgemont, South Dakota

Re: Docket DMEA 2768 (Uranium)
Contract Idm-E520

Dear Mr. Livingston:

Receipt is acknowledged of your letter of February 15, 1955 wherein you furnished information relative to an amended location of the McKnight and RAM claims and requested certain amendments to modify the description of work under the contract.

Modifying the description of land under Article 2 of the contract is not within the authority delegated to this office, therefore the matter must be forwarded to the Washington office, DMEA, for their consideration and appropriate action.

In conjunction therewith it will be necessary that you supply this office with nine copies of a map showing the amended locations of the claims involved. We note that you say the map showing the amended locations will be included in your forthcoming January-February report, however that is not adequate as additional copies of the map will be required as you were advised in our letter of February 8, 1955.

Regarding your request for a modification of the description of the work, the matter has been referred to our field examiners and action will be deferred pending receipt of their recommendations in the matter.

Very truly yours,

W. M. TRAVER,

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

JWT:jp
cc Subject
Chron
Harshman
Binyon
Cuppels
Chairman, Op. Comm.
Townsend

2/25/55 gla

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

224 New Customhouse
Denver 2, Colorado

February 25, 1955

Memorandum

To: E. O. Binyon
N. P. Cuppels

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract Idm-E520, Mining Research Corp., Fall River County, South Dakota

Enclosed is a copy of a letter dated February 15, 1955 from the operator wherein he requests an amendment to the subject contract to modify the description of a portion of the work.

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

Also enclosed is a copy of a letter from this office to the operator dated February 23 acknowledging his letter of February 15.

W. M. TRAVER,
W. M. Traver

Encls.

JWT:jp
cc Subject
Chron
Harshman
Chairman, Op. Comm. w/encls
Townsend

February 15, 1955

Mr. W. M. Traver
Executive Officer, D.M.E.A.
224 New Custom House
Denver 2, Colorado

Dear Mr. Traver:

In reply to your letter of February 8, 1955.

The amended locations of the claims referred to is shown on our January - February progress map. Following are book and page numbers of the amended claims.

	Book	Page
McKnight No. 1 Amended	31 M	290
McKnight No. 2 Amended	31 M	291
McKnight No. 3 Amended	31 M	291
McKnight No. 4 Amended	31 M	292
McKnight No. 5 Amended	31 M	290
RAM No. 1 Amended	31 M	289
RAM No. 2 Amended	31 M	289

As a result of drilling to pin-point stratigraphic or structural breaks under our contract IDME - 520 as described in our forthcoming January - February report results have been most encouraging. This pin-point drilling was made possible under Item 4, Amendment No. 3.

We request therefore that our contract be further modified as follows:

(1) At locations acceptable to the Government, diamond drill holes or wagon drill holes spaced not closer than 25 feet across stratigraphic or structural breaks and spaced not closer than at 100 feet intervals corresponding to established grid and offset lines. Such drilling for geologic information may be performed concurrently with drilling under Items 1, 2, 3, and 4. We request that 5000 feet of wagon drilling presently included in the contract under item 7, page 3, Amendment No. 1 be transferred to this paragraph. We request further that diamond drilling under the paragraph be included under Item 5, Stage II in the Lion Area and under Stage I in the McKnight Area.

(2) We request that the following claims in their entirety be included within Stage II of the contract:

McKnight No. 5 Amended
McKnight No. 2 Amended
RAM No. 2 Amended

and that within this area, line and grid wagon drilling under Items 1, 2, 3, 4, and 5 on a spacing not less than 50 ft. by 100 ft. be permitted.

Yours very truly,

MINING RESEARCH CORPORATION

Clifton W. Livingston

Clifton W. Livingston, Pres.

CWL:lh

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

February 14, 1955

Memorandum

To: Hazel Berry, Operating Committee

From: Grace L. Ault, Rare & Miscellaneous Metals Division

Subject: Amendment No. 3, dated February 8, 1955
Docket DMEA-2768
Contract No. Idm-E520
Mining Research Corporation (Uranium)
Fall River County, South Dakota

Mr. Knouse has reviewed and approved the above amendment, provided the Legal Division will approve it without the new Owner's Consent to Lien as stated in Mr.Hofflund's memorandum to the Administrator of January 24, 1955, a copy of which was forwarded to the Field on January 31.

Grace L. Ault

Grace L. Ault

RECEIVED
MAR 1 1956
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

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

224 New Customhouse
Denver 2, Colorado

February 8, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract IDM-E520, Mining Research Corporation, Fall River County, South Dakota

Enclosed are the original and two copies of Amendment No. 3 to Contract IDM-E520 which has been executed to modify the description of the work to be performed.

Amendment No. 3 had been prepared and sent to the operator for signature prior to receipt of your letter of January 31, 1955 regarding a new Owner's Consent to Lien which was to be included with the next amendment to the contract.

Also enclosed are four sets of data relative to the amendment. - 2 sets with docket copy

Copies of the amendment have been given to the operator, the Finance Office, Region III, and a copy has been retained for our files.

W. M. Traver

W. M. Traver

Encls.

RECEIVED
MAR 1 1955
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

Rapid City Experiment Station
School of Mines Campus
Rapid City, South Dakota

January 11, 1955

Memorandum

To: W. A. King, Executive Officer, DMA Field Team, Reno, NV

From: E. C. Minyon, Rapid City Experiment Station

Subject: Docket DMA 2768 (Uranium), Contract Icm-2520, Mining Research Corporation, Fall River County, S. Dak.

Enclosed are eight copies of a letter from the operator in which he requests six amendments to the subject contract.

The recommendations for each proposed amendment, listed below as in the letter, are as follows:

A. We recommended that the Dead Horse No. 4 claim be included in the claims and land described under Article 2 of the contract as amended by Amendment No. 1.

Previously, the fraction now included by the Dead Horse No. 4 was included, either through error or oversight, by the McKnight No. 5 claim and came under the contract. Addition of the fraction to land included in the contract by a specific location will be to the advantage of the government.

B. (1) We recommend approval of the change in wording in Item 1 of Amendment No. 1 from "with the holes spaced 50 feet apart" to "with the holes spaced at not less than 50 feet apart, as approved by the government."

Most of the holes have been drilled on 100-foot centers, with a few on the northeast end of the southernmost row being spaced on 200-foot centers. The results of the drilling thus far indicate that this spacing may be close enough, at least for the most part, to give the desired information. If so, the change in wording would be only a limit on the minimum spacing and can result in a saving in footage.

(2) We recommend that the second paragraph, Item 2, Amendment No. 1, be amended, as suggested, to read: "not more than 5,000 feet of hole shall be drilled under Items 1 and 2."

As the depth of the shale which underlies the mineralized horizons, and upon which the estimated footage was based, is more variable and shallower than expected, this will permit an increase in the number of holes and additional exploration. It is to the advantage of the operator; however, it seems that the government's interest will not be affected adversely.

C. We recommended that the contract be amended to permit drilling under Items 1, 2 and 3 of Amendment No. 1 to be carried on concurrently. The amendment apparently is of no disadvantage to the government.

D. We recommend that the wording "with the approval of the government" start the paragraph suggested by the applicant. The drilling, as outlined under this item, undoubtedly would give additional geologic data. The value of the data to the overall exploration project is difficult to determine; however, it seems that any additional data that would aid in determining either structural or lithologic controls would be of value to both the government and operator.

E. We recommend that the operator be permitted to drill both the grid and the offset holes around mineralized holes concurrently.

F. For this item we recommend that no action be taken at present. The drilling of the Sheep Canyon area has not progressed to the point where a decision can be made as to whether or not the Gull-Sheep Canyon Area III should be drilled.

A transfer of the footage for use in the Gull-Sheep Canyon Areas I and II is not recommended at this time as the footage allotted to these areas under Amendment No. 1, Item 6 seems adequate for exploration of the areas. To date insufficient drilling has been done in the areas to determine whether additional exploration is warranted.

Before a recommendation can be made for tentatively transferring the footage to the Lion Claim group, as proposed by the operator, certain conditions should be considered and clarified.

The company claims to have developed a leaching process that will operate economically for either in-place or plant treatment of material as low as .05 percent U_3O_8. The process is, of course, more or less classified information and we know nothing about it. However, it was our understanding that the A. E. C. had investigated both the technical and economic feasibility of the process. We inquired of the A. E. C. office at Hot Springs as to what they knew about the matter. They informed us that the processing division of the A. E. C. was the place to get what information would be available.

If the process is economic, then exploration for sub-marginal material (less than .10 percent) may be justified in this instance, and additional drilling with the transferred footage from Gull-Sheep Canyon Area III could be recommended. There is a qualifying condition for such a recommendation: if the geologic data and results of drilling in the Gull-Sheep Canyon Areas I and II ruled out drilling in Area III.

If the process is not economic and the objective for additional exploration in the Lion Claim Group is entirely for minable grade deposits, then we cannot recommend the transfer at this time. We are of the opinion that the Lion Claim Group will have been adequately explored with the footage allotted. Results of the drilling thus far in the Lion Claim Group indicates a relatively small tonnage of minable grade material (.10 percent plus) and a considerable tonnage of sub-marginal. An estimate would only be a guess at this time since we do not have sufficient data and, as stated, any additional drilling in the area may border on development.

E. O. Sinyon for

W. P. Curpels, U.S.G.S. Member
E. O. Sinyon, U.S.B.M. Member

cc: Reg. Office (6)
Curpels
files

Box 356
Edgemont, South Dakota

January 3, 1955

Executive Officer, Region IV
U. S. Bureau of Mines, D.M.E.A.
New Customs House Building
Denver, Colorado

VIA

Mr. E. O. Binyon
Rapid City Field Office
School of Mines Campus
Rapid City, South Dakota

Dear Sir:

We wish to make the following formal request for further amending Mining Research Corporation Contract Docket D.M.E.A. - 2768.

A. In addition to the land referred to in Article 1 of the amended contract add Item (f).

The claim Deadhorse No. 4, a fractional claim on ground originally assumed to be covered by McKnight No. 5 claim,

B. On page 2 of Amendment No. 1, we request that Item 1, Stage II be rewritten as follows:

(1) The phrase "with the holes spaced 50 feet apart" be amended to read as follows: "with the holes spaced not less than 50 feet apart."

(2) The paragraph following Item 2, we request to be amended to read as follows: "Not more than 5000 feet of holes shall be drilled under Items 1 and 2."

C. On page 3 of Amendment No. 1 following Item 3 insert the following

new paragraph.

"Drilling under Items 1, 2, and 3 above may be carried on concurrently."

D. On page 3 of Amendment No. 1, Item 4 be amended to read as follows:

"To locate the exact position of structural breaks, drill not more than 25 holes spaced not closer than 25 feet apart across the break and not closer than 300 feet apart along the strike of the break. Such drilling for geological information may be done concurrently with drilling under Items 1, 2, and 3 of Amendment No. 1.

E. We request that the following sentence be added to Item 6 (Sheep Canyon Area). "Offset drilling at 100 feet spacing surrounding mineralized holes may be done concurrently with grid drilling."

F. We request that the phrase Item 7, page 3, Amendment No. 1 "Concurrently with the work under Items 1 through 6 above, not to exceed an aggregate of 10,000 feet of wagon drill hole may be distributed as approved by the field team to drilling in the Lion Area under Items 1, 2, 3, and 4; to drilling of Areas I and II of the Sheep Canyon Area under Item 6; and, or, to drilling in Area III of the Sheep Canyon Area on the same spacing as set forth under Item 6."

Respectfully requested,

MINING RESEARCH CORPORATION

Clifton W. Livingston

Clifton W. Livingston, Pres.

CWL:lh

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

224 New Customhouse
Denver 2, Colorado

February 8, 1955

Mr. Clifton W. Livingston, President
Mining Research Corporation
P. O. Box 356
Edgemont, South Dakota

Re: Docket DMEA 2768 (Uranium)
Contract IDM-E520

Dear Mr. Livingston:

Reference is made to our letter of January 24, 1955 and the second paragraph of your letter of February 3, 1955 in reply regarding amended location recording data and a map showing the revised location of the McKnight claims 1 through 5 and RAM claims 1 and 2.

When the recorder's book and page number of the amended location becomes known to you please forward the information to this office together with a map showing the revised location of the claims.

A copy of the map will be necessary in addition to the map provided with your form MF-104 Monthly Progress Report and Voucher covering work for the month of January 1955.

Very truly yours,
W. M. TRAVER

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

JWT:jp
cc Subject
Chron
Chairman, Op. Comm.
Harshman
Binyon
Cuppels
Townsend

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

Department of the Interior
Defense Minerals Administration
RECEIVED
FEB 10 1955

224 New Customhouse
Denver 2, Colorado

February 8, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2768 (Uranium), Contract IDM-E520, Mining Research Corporation, Fall River County, South Dakota

Enclosed are the original and three copies of a letter dated February 3, 1955 from Clifton W. Livingston, President, Mining Research Corporation, by which he forwarded Amendment No. 3 to this office after signature. In addition he advises that the survey and amended locations on the McKnight and RAM claims listed have been completed but that the recording data is not yet available. He also requests a recess of operations under the contract from February 15 to March 31, 1955.

Regarding the amended location of the McKnight and RAM claims it appears that when the amended locations have been recorded that new Owner's Consent to Lien relative to those claims would be necessary.

Regarding the requested recess of operations we are uncertain as to whether or not a formal amendment to the contract authorizing the recess is necessary and, if so, the preparation of the amendment by this office would be complicated by the necessity of including new Owner's Consent to Lien as instructed in your letter of January 31, 1955.

From unsupported information in this office there is a possibility that the operator upon resuming operations will request assignment of the contract to a new operating company. If this occurs, then it would be necessary to provide new Owner's Consent to Lien at that time with the new operating company as the principal instead of Mining Research Corporation.

Due to the many separate Owner's Consent to Lien forms involved it appears that the matter should be deferred until definite information is at hand relative to future operations under the contract.

We will appreciate your advice in the matter at an early date.

W. M. Traver

W. M. Traver

Enclosures

9 wfa
FEB 7 1955

February 3, 1955

Mr. W. M. Traver
Executive Officer, D.M.E.A.
Field Team, Region III
Denver, Colorado

Dear Mr. Traver:

Enclosed are the originals and five copies of Amendment No. 3 to Contract IDM - E 520. I have signed these amendments and have affixed the corporate seal.

Surveying and amended locations are now complete on McKnight claims 1 through 5, also RAM 1, and RAM 2. The date of the amended certificates is January 28, 1955. Until the amended location notices are returned I do not know the recorder's book or page numbers. The positions of the claims as amended will be shown on our progress report for the Month of January.

I wish to request a drilling recess under our contract Idm - E 520 during the period February 15 to March 31. This recess is requested for the following reasons: (1) I plan to be in Manitoba, Canada during that period and (2) we are closing our Edgemont office during the period I am away. New offices will be opened in the Spring by Climax Molybdenum Company under the name of Livingston Metals Corp. if we are successful in obtaining the A.E.C. contract for the Edgemont Mill.

Very truly yours,

MINING RESEARCH CORPORATION

Clifton W. Livingston

Clifton W. Livingston, Pres.

CWL:lh

Enclosures

cc: E.O. Binyon

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

February 1, 1955

Memorandum

To: Miss Curtin, Statistics and Control Division

From: Hazel Berry, Operating Committee

Subject: Amendment to Contract

Attached is the following docket copy of an amendment to a contract which has been reviewed and approved by the Commodity Division, Contract Administration and Audit Division, and by the Legal Division. See Memorandum by Legal dated January 24, 1955. The official docket is also attached.

Mining Research Corporation, DMEA-2768, Amendment No. 2, Idm-E520.

Attachment 1

Surname 700

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

JAN 31 1955

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

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Idm-4520
Mining Research Corporation
Lion Group claims, et al
Fall River County
South Dakota

Dear Mr. Traver:

This refers to Amendment No. 2 to the subject contract and the attached new royalty annex, copies of which accompanied Mr. King's memorandum of January 4, 1955.

Enclosed are copies of a memorandum to the Administrator from the Acting Assistant Solicitor under date of January 24, which is self-explanatory.

You will note the memorandum states, in part, "Now that the royalty annex has been added, new Owners' Consents to Lien should be obtained, if possible, in connection with the next amendment of this contract, as the old Owners' Consents to Lien probably have been invalidated." This means that when and if a 3rd amendment is executed the new Owners' Consents to Lien should be attached.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosure

EWEllis:am
1-27-55

APPROVED:

J. H. Hedges

Member, Bureau of Mines

E. L. Newcomb

Member, Geological Survey

cc to: Admr. Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm.3641
T. H. Kiilsgaard, Rm.5224
J. O. Hosted, Rm.3219, GSA
Code 700

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

Defense Minerals Administration
RECEIVED
JAN 27 1955

224 New Customhouse
Denver 2, Colorado

January 24, 1955

Mr. Clifton W. Livingston, President
Mining Research Corporation
P. O. Box 356
Edgemont, South Dakota

Re: Docket DMEA 2768 (Uranium)
Contract Idm-E520

Dear Mr. Livingston:

Receipt is acknowledged of your letter of January 22, 1954 in reply to our letter of January 17.

We will defer action in amending the contract to include the Dead Horse No. 4 claim, inasmuch as you advise that you are in the process of amending locations of the McKnight 1 to 5 and Ram 1 and 2 claims, which under amended location would cover the ground presently covered by temporary location of the Dead Horse No. 4 claim.

When the amended locations of the claims have been completed and recorded please supply this office with recording data and a map showing the amended location of the claims.

Very truly yours,

W. M. TRAVER

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

JWT:jp
cc Subject
Chron
Harshman
Binyon
Cuppels
Chairman, Op. Comm.
Townsend

DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Denver, Colorado
JAN 27 1955

January 22, 1955

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

Dear Mr. Traver:

In reply to your letter of January 17. Dead Horse #4 claim was recorded on January 21, 1955 in the name of C. W. Livingston. Book and page numbers have not been assigned as yet. Staking of Dead Horse #4 was a temporary measure. We are now in process of amending locations for McKnight #1, McKnight #2, McKnight #3, McKnight #4, McKnight #5, RAM #1, and RAM #2. These amended locations will cover the ground temporarily held under Dead Horse #4 and I will abandon Dead Horse #4 in favor of Mc Knight #5 amended.

Yours very truly,

Clayton W. Livingston

CLAYTON W. LIVINGSTON

CWL:lh

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

Rubin

JAN 24 1955.

Memorandum

To: The Administrator, DMEA
Attention: Mr. E. W. Ellis

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-2768 (Uranium), Mining Research Corporation, Contract Idm-E520

We have reviewed Amendment No. 2 to the subject contract, executed by Mr. King, transmitted to us with a reference slip dated January 18. The amendment added a new royalty annex.

The contract is on the short form of February 1952. We noted that in connection with Amendment No. 1, which was prepared in Washington, our memorandum dated August 4, 1954, to the Administrator, stated that a new royalty annex was not added to the amendment because it would require new Owners' Consents to Lien from too many owners to replace those executed on the old form.

Now that the royalty annex has been added, new Owners' Consents to Lien should be obtained, if possible, in connection with the next amendment of this contract, as the old Owners' Consents to Lien probably have been invalidated.

J. L. Hofflund

J. L. Hofflund
Acting Assistant Solicitor
Defense Minerals

Attachment

HCRubin/emd
Copy to: DMEA Docket
Solicitor's Docket
E. W. Ellis
J. L. Hofflund
H. C. Rubin
chron.

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JAN 27 1955

COPY

224 New Customhouse
Denver 2, Colorado

January 17, 1955

Mr. Clifton W. Livingston, President
Mining Research Corporation
P. O. Box 356
Edgemont, South Dakota

Re: Docket DMEA 2768 (Uranium)
Contract Idm-E520

Dear Mr. Livingston:

Receipt is acknowledged of your letter of January 3, 1955 wherein you request an amendment to Contract Idm-E520 to modify the work description and include the Dead Horse No. 4 claim with the ground described under Article 2 of the contract.

Before an amendment can be prepared to include the Dead Horse No. 4 claim under Article 2 of the contract it will be necessary that you supply the date of location and the book, page, and where recorded. Furthermore, it will be necessary that the ownership of the claim be clarified. If the claim is located in the name of the Mining Research Corporation please so state. If the claim is located in the name of the owner of the McKnight No. 5 claim it will be necessary that Owner's Consent to Lien be provided.

Please supply the above data at your earliest convenience.

Very truly yours,

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

JWT:jp
cc Subject
Chron
Harshman
Binyon
Cuppels
Townsend
Chairman, Operating Committee

January 10, 1955

Memorandum

To: Hazel Berry, Operating Committee

From: Grace L. Ault, Rare & Misc. Metals Division

Subject: Amendment to contract

Mr. Knouse has reviewed and approved Amendment No. 2, dated December 31, 1954, to Contract Idm-E520, Docket No. DMEA-2768, Mining Research Corporation, but suggests it be referred to the Legal Division for further review.

/s/ Grace L. Ault

Grace L. Ault

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Rapid City Field Office
School of Mines Campus
Rapid City, South Dakota

DEC 27 1954
BUREAU OF MINES
Denver, Colorado

December 22, 1954

Memorandum

To: W. H. King, Executive Officer, DMEA Field Team, Region IV

From: E. O. Binyon, Rapid City Field Office

Subject: Amendment- Docket 2[illegible], Contract [illegible]-[illegible]20 (uranium)
Mining Research Corporation, Bell [illegible] County, S. Dak.

Enclosed are the original and seven copies(6 copies from the operator and 1 made here) of a letter from J. Sterling Livingston, Vice President and Treasurer of the subject corporation requesting an amendment to the subject contract to permit the work under Stage I and under Stage II-Amendment No. 1 to be performed concurrently.

As stated in the memorandum of December 16, under item 1) we recommended approval of an amendment which would permit " Stage I and Stage II drilling to be carried on concurrently".

The proposed amendment will not affect the government's interest adversely and will result in adequate exploration of the areas included under Stage I and under Stage II-Amendment No. 1 of the contract

E O Binyon
E. O. Binyon

cc: J. H. Hast
King (2)
Curpels
files

PS: The clerk is on leave, [illegible]

1320 Pearl Street
Boulder, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JAN - 7 1955

December 20, 1954

Mr. J. W. Townsend, Executive Officer
DMEA Field Team, Region IV
Bureau of Mines
224 New Custom House
Denver 2, Colorado

Via: Mr. E. O. Binyon, Rapid City Field Office

Dear Mr. Townsend:

The purpose of this letter is to request an amendment to our DMEA Contract Idn E-520, Docket 2768, to permit us to perform the work under Stage 2 (Amendment No. 1) concurrently with the performance of the work under Stage 1. In our previous request to the Defense Minerals Administration for the amendment of our DMEA contract, we requested that the remaining footage under Stage 1, as well as the footage under Stage 2, be covered by an amendment. Although our contract was amended, the amendment appears to pertain only to Stage 2 drilling.

We were of the opinion, as was Mr. Binyon, that work under the amendment could be undertaken concurrently with Stage 1 drilling. Inasmuch as this apparently is not the case, we would very much appreciate your assistance in amending our contract to permit us to proceed with Stage 1 and Stage 2 (Amendment) drilling concurrently so that we might be paid for work already performed and might continue our exploration work without delay.

The need for an additional contract amendment has been discussed with the DMEA Field Team, Region IV, in Denver. A detailed request for this additional amendment will be submitted in the near future.

Sincerely,

J. Sterling Livingston

J. Sterling Livingston
Vice President and Treasurer

JSL:ar

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JAN - 7 1955

224 New Customhouse
Denver 2, Colorado

January 4, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2768 (Uranium), Contract IDM-E520, Mining Research Corporation, Fall River County, South Dakota

Enclosed are the original and two copies of Amendment No. 2 to Contract IDM-E520 which has been executed to authorize Stage I and Stage II work to be carried on concurrently. Also, Article 6 of the contract form relative to repayment by the operator is amended by the provisions of Annex II attached to and made a part of the amendment. Also enclosed are three sets of data relevant to the amendment.

Copies of the amendment have been given to the operator, the Finance Office, Region IV, and a copy has been retained for our files.

W. H. King

W. H. King

Encls.

RECEIVED
JAN 19 1955
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

2768

Mr. Thomas H. Reading
DMA Auditor
224 New Customhouse Building
Denver 2, Colorado

Dear Mr. Reading:

Reference is made to a letter from S. D. Mittenhof to J. H. East, Jr., under date of November 23, 1954, in regard to several problems raised in Mr. East's letter of November 15, 1954. One problem was the status of audited projects among the contracts transferred from Region V to Region IV.

Contracts E58-Keenan Properties, E517-Grumpyer, Sullivan and Boyle, E520-Mining Research Corporation, are still open.

The first phases of the Keenan Properties have been finished and have been audited. If you do not have a copy of the audit you doubtless will find some in the Executive Officer's copies transferred to Mr. King. The other two projects, that is, E517 and E520 are agreed unit cost contracts and most probably can be reviewed with the information in the Finance Officer and Executive Officer's files when such contracts are finished.

Sincerely yours,

Jay L. Chambers, Chief
Contract Administration
and Audit Division

JLChambers/wb
December 3, 1954

Copy to: Docket
Admr. Reading File
Mr. Chambers

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

RECEIVED

August 30, 1954

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Washington, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA 2768, Contract Idm E-520, Mining Research Corporation

Here are the original, docket and division copies of Amendment No. 1 to the subject contract, duly executed.

The Regional Finance Office copy is being transmitted direct to them, and the Field Team copy has been retained by this office.

A. B. NEEDHAM

Attachments

Docket
Surname copy

700

F. L. Knouse
Ellis
Chamberlin
Martin
F. Johnson

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

Mr. A. . Needham
Executive Officer
DMEA Field Team, Region V
2908 Calfax Avenue, South
Minneapolis 8, Minnesota

Re: Docket No. DMEA-2778 (Uranium)
Contract No. Ion-E520
Mining Research Corporation
Fall River County, South Dakota

Dear Mr. Needham:

Enclosed, with attachments, are the original and five copies of Amendment No. 1 to the subject contract, signed by the Administrator for the Government.

If the terms and conditions of this amendment meet with your approval and the Operator's, please have the original and all copies signed by the Company official authorized to sign this document and make the usual distribution.

If any part of the proposed amendment does not have either your approval or the Operator's and cannot be amended within your delegated authority, the original and all copies of the amendment are to be returned with the proposed changes for consideration.

Sincerely yours,

W. S. Martin

ACTING Chairman, Operating Committee (WSB)

Enclosures

APPROVED:

J. H. Hedges

Member, Bureau of Mines (JHB)

Philip W. Guild

Member, Geological Survey (PWG)

FLKnouse/gla
8-6-54
cc to: Admr. Reading File
Operating Committee
Docket
Messrs. A. P. Butler, Jr., Rm. 3212, GSA
J. O. Hosted, Rm. 3210, GSA
H. D. Keiser, Rm. 3641
Code 700
F. L. Knouse

R.C.S.

DMEA
File Copy
Rubin

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

August 4, 1954

Memorandum

To: The Administrator, DMEA
Through: Mr. E. W. Ellis

From: Acting Assistant Solicitor, Defense Minerals

Subject: Mining Research Corporation, Docket No. DMEA-2768 (Uranium), Contract Idm-E520

Attached is Amendment No. 1 to the subject contract in satisfactory legal form for execution, subject to the attachment of the necessary copies of Owners' Consents to Lien. Only two of each are available in the file.

As Mr. Knouse pointed out that time is of the essence in executing the amendment and as there are so many Owners' Consents to Lien involved, we have not added the new royalty annex because, to do so, all new Owners' Consents to Lien would be required.

/S/ Henry C. Rubin
For J. L. Hofflund
Acting Assistant Solicitor
Defense Minerals

Attachments 6

HCRubin:ep

Copy to: Solicitor's Docket
DMEA Docket
Mr. Ellis (2)
Mr. Hofflund
Mr. Rubin
Chron.

Docket Copy

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

July 22, 1954

Memorandum

To: Acting Assistant Solicitor, DMEA

From: F. L. Knouse, Mining Engineer
Rare and Miscellaneous Metals Division

Subject: Amendment No. 1
Docket No. DMEA-2768 (Uranium)
Contract No. Idm-E520
Mining Research Corporation
Fall River County, South Dakota

Please draft Amendment No. 1 for the signature of the Administrator which will permit drilling as indicated below in land areas to be added to the contract in lieu of uncompleted drilling set forth in Stages I and II of the contract.

Lion Claim Group:

1. In the Lion Claim area within the area surrounded by dashed red colored lines as shown on the attached map entitled "Geological Map and Section, Mining Research Corporation Mining Area," drill two lines of wagon drill holes spaced 50 feet apart, with each line being not less than 300 feet apart and about 1600 feet long, in a North 55° East direction. The locations of these drill hole lines require the prior approval of the Government field engineers.

2. A part or all of the remaining area described in Item 1 is to be drilled with a wagon drill on a grid spacing of 100 feet by 300 feet, if approved by the Government field engineers.

3. Drill offset holes spaced 100 feet apart surrounding primary holes drilled under Items 1 and 2 or holes subsequently drilled, which indicate mineralization or geologic favorability, if approved by the Government field engineers.

4. Drill a limited number of offset holes spaced not less than 25 feet apart surrounding holes in which ore is found or between holes where a structural break is indicated, if approved by the Government field engineers.

5. Occasional diamond drill holes shall be drilled for geological data as specified in advance by the Government field engineers.

Sheep Canyon area:

6. In the Sheep Canyon area, within the Areas I and II shown on the map described in Item 1, drill wagon drill holes on a grid spacing of 100 by 300 feet. This drilling is to be followed by drilling offset holes spaced 100 feet apart surrounding holes which indicate mineralization or geologic favorability, if approved by the Government field engineers.

Occasional diamond drill holes shall be drilled for geological data, as specified by the Government.

7. In the Sheep Canyon area, within Area III, as shown on the map described in Items 1 and 6, after the work in Item 6 is completed, if approved by the Government field Engineers, drill wagon drill holes on the grid spacing described in Item 6.

Drilling Summary

Lion Claim area:

100 wagon drill holes, Items 1 and 2, 5,000 feet @ $0.87/ft. 100 wagon drill holes, Items 3 and 4, 5,000 feet @ $0.87/ft.	$8,700.00	
1,000 feet diamond drilling BX size hole, or larger, @ $3.03/ft.	3,030.00	
Total		$11,730.00

Sheep Canyon Area:

Wagon drilling, Item 6 - 10,000 feet @ $0.87/ft.	$8,700.00	
Diamond drilling, Item 6 - 2,000 feet @ $3.03/ft.	6,060.00	
Wagon drilling, Item 7, BX size hole, or larger, 10,000 feet @ $0.87/ft.	8,700.00	
Total		$23,460.00

Total estimated cost of work under Amendment No. 1	$35,190.00
Total expended to date	8,131.17
Remaining from Stage I	9,551.58
Total estimated amount of contract (rounded to)	$52,873.00

Government Participation @ 90%	$15,914.75	
Government Participation @ 75%*	26,392.50	
		$42,307.25

* This applies to drilling in the land added to the contract by this amendment.

Note: Status of work allowed in contract:

	Wagon drilling Feet	Diamond drilling Feet
Authorized footage - Stage I	14,770	1,595
Drilled to date	6,856	715
Balance Stage I	7,914	880
Authorized footage - Stage II	30,000	3,000
Total remaining footage	37,914	3,880
Allocated for this amendment	30,000	3,000
Balance drilling for areas in original contract	7,914	880

Five sets of two (2) each executed Owners' Consents to Lien are attached. We have not made additional required copies as you may determine the new form (revised July 1, 1954) will be required. In addition, we are attaching six (6) copies each of two maps entitled, "Geologic Map and Section, Mining Research Corporation Mining Area" and "Property Map Mining Research Corp. Docket #2768 IDM-E520" for attachment to the amendment. We would like to use these Owners' Consents to Lien, if possible, because of the necessity to obtain the signatures of so many parties concerned.

Also attached is a draft of Annex I covering the land to be added to the contract.

/s/ F. L. Knouse

F. L. Knouse

FLKnouse/gla
cc to: Docket
Code 700 contract file
F. L.Knouse

Exploration Project Contract
Mining Research Corporation
Docket No. DMEA-2768
Contract No. Idm-E520

ANNEX I - (Continued)

The following land located in Township 8 South, Range 3 East, Black Hills Base and Meridian, is included in the contract:

Name of claim or deeded land	Section	Recorded in Book	Page
R.A.M. 1	15		
Lion No. 1	10 & 15	31M	412
" No. 2	10 & 15	"	413
" No. 3	10 & 15	"	414
" No. 4	10 & 15	"	415
" No. 5	15	"	416
" No. 6	15	"	417
" No. 7	15	"	418
" No. 8	15	"	419
" No. 9	10 & 15	"	420
" No. 10	10	"	421
" No. 11	10	"	422
" No. 12	10	"	423
" No. 13	15	"	424
" No. 14	10	"	425
" No. 15	10 & 15	"	426
" No. 16	10	"	427
" No. 17	10 & 15	"	428
" No. 18	15	"	429

ANNEX I - (Continued)

Name of claim or deeded land	Section	Recorded in Book	Page
Sheep Canyon No. 1	27	31	78
" " No. 2	27	"	77
" " No. 3	27	"	78
" " No. 31	27 & 22	"	502-510
" " No. 32	27	"	" "
" " No. 33	27	"	" "

Section 27; the E½ of the NE¼, the SW¼ of the NE¼, the SE¼, the SW¼, and the SW¼ of the NW¼.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

Defense Minerals
JUL 13 1954

July 13, 1954

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Washington, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket 2768, Contract E-520, Mining Research Corporation

Pursuant to your telegram of June 23, 1954, we are transmitting under separate cover 6 copies each of two maps showing claims and drill areas pertinent to the above project.

On the large map, the areas bounded in blue with wide spaced hatching are those drilled under stage 1. Red-bounded areas are the claims and deeded lands to be added by amendment. Areas with narrow hatching are possible drilling areas, and the dashed red lines mark the definite boundaries of the grids as far as the Field Team knows now. They feel there has to be a certain degree of flexibility for drilling in that area.

A. B. NEEDHAM

Surname 700

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

F.L. Knouse
Hodges
Langer
Selfridge
Johnson
Hollandsworth

JUN 23 1954

T E L E T Y P E

FLKnouse

DMEA-Department of the Interior

14X4401(01) Revolving Fund,
Defense Production Act (Interior)
(Allocated Working Fund to the
Office of the Sec.)

A. S. MEADMAN, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION V
2908 COLFAX AVENUE, SOUTH
MINNEAPOLIS 8 MINNESOTA

REURTEMD JUNE 16 DMEA 2768 MINING RESEARCH CORPORATION FURNISH SIX

COPIES EACH MAPS SHOWING INITIAL DRILLING GRID RECOMMENDED BY FIELD

TEAM FOR LION CLAIM GROUP AND GULL SHEEP CANYON AREA/ALL PROPERTY
TO BE ADDED/CONTRACT/OUTLINE OF BLOCKS 1, 2 AND 3 GULL SHEEP CANYON

AREA WITH ANOMALIES AND SAMPLE DATA.

INCLUDE
TO AND

George C. Selfridge

George C. Selfridge, Chairman (GCS)
Operating Committee

FLKnouse/am
6-23-54
cc to: Admr. Reading File
Operating Committee
Docket
Messrs. A.P. Butler, Jr. Rm. 3212, GSA
J.O. Hosted, Rm. 3210, GSA
H.D. Keiser, Rm. 3641
Code 700
F.L. Knouse
Confirmation to Region V

R.G.S.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

June 16, 1954

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Washington, D. C. Attention: F. L. Knouse

From: Executive Officer, Field Team, Region V

Subject: Docket 2768, Contract Idm E-520, Mining Research Corporation, Edgemont, South Dakota

Reference is made to Mr. Knouse's telephone call June 11, 1954, concerning the request of the Mining Research Corporation under an amendment to include the Lion group and Gull's-Sheep Canyon properties in the exploration project under the subject docket. E. O. Binyon, Bureau Field Team representative, was consulted on two specific points raised by Mr. Knouse in his telephone call.

The recommendation for reduction of amount of Government participation from 90 to 75 percent originated at this office. The company is in agreement with the recommendation as outlined in the interim report - the Lion and Gull's-Sheep Canyon areas to be under the 75 percent rate, and areas I and III of the original contract to continue under the 90 percent rate. Mr. Livingston called Binyon and told him that he understood fully the participation rate and was in agreement.

The work proposed under the new amendment would explore widely separated and new areas. The Gull's-Sheep Canyon area is entirely separate and about 1-1/2 miles from area III, which was drilled in Stage I. The Lion claim area is 1/2 mile north and apparently on the same trend as disclosed by drilling under Stage I in area I. Any discoveries of either leaching grade ore (0.05% U_3O_8) or shipping would be of considerable importance and benefit to the company, as the company is now working on its leaching process and is also shipping ore from development work on other properties. In the sense that additional ore will increase the possibilities of at least partial and perhaps total repayment of the loan, the new areas are of benefit to the exploration program just completed.

In checking over our records here, we find that the following maps relative to the Gull's-Sheep Canyon properties and Lion Group were forwarded to your office with the interim report:

1. Geologic Map and Section, Mining Research Corporation, Scale, 1" = 600 feet.

2. Exhibit I - Shows location of Gull's-Sheep Canyon claims and Lion group with respect to Areas I, II, and III, which were included in the original contract. Scale, 2" = 1 mile.

3. Exhibit II - Shows area drilled. Scale, 1" = 200'.

4. Exhibit IV - Shows proposed location of holes - Lion group.

5. Exhibit V - Shows proposed location of holes - Gull's-Sheep Canyon properties.

The claims of the Lion group and Gull's-Sheep Canyon properties are located in the applicant's report as to the page number in the book of claim recordings in the Fall River County Court House.

We have not requested additional maps from the operator because we are not exactly certain of what kind of maps are needed.

Setting the drilling up on a definite grid pattern with specific boundaries has been avoided by the Field Team. The general geology indicates that the mineralizations can be followed on a broad trend. However, in localized areas on the trend, the mineralization is erratic and scattered over a fairly wide zone and may occur outside of the broad trend. The drilling program under the amendment was set up to afford flexibility, so that the more favorably localized areas could be fully explored without additional amendments. For this reason, the Field Team interim report limits the drilling only to the specific boundaries of the Lion and Gull's-Sheep Canyon claims included under the amendment application.

If your requirements are such that you must have a specific grid layout of drill-hole locations, we will immediately notify the company to furnish the maps, together with a grid system showing definite boundaries of proposed drilling.

Walter E. Lewis

WALTER E. LEWIS
Acting for A. B. Needham

June 11, 1954

TO : File - Contract

FROM : F. L. Knouse

SUBJECT: Docket No. DMEA 2768 (Uranium)
Contract No. Idm E-520
Amendment No. 1
Telephone Call to Mr. Needham, Executive Officer, Region V

Today I talked with Mr. Walter Lewis, and requested maps of the Lion Claims Area and the Sheep Canyon Area which shows the primary drill~~s~~ing as recommended in the Field Team report. These are to show section corners and property lines (mining claims or other property lines). In addition the maps should show mineral exposures and sample data of exposures as justification for the recommended work.

With the above information, furnish a list of the additional property-mining (claims and deeded land) recommended to be included in the contract which will benefit from the exploration.

Does the Operator agree to the 75 percent Government participation for drilling on land to be added to the contract?

F. L. Knouse

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis, DMEA Member, Uranium Commodity Committee

DATE: June 3, 1954

FROM : W. S. Twenhofel, USGS Acting Member, Uranium Commodity Committee

SUBJECT: Application for amendment to Contract Idm-E520, DMEA Docket 2768 (Uranium), Mining Research Corp., Wheatridge, Colorado and Edgemont, South Dakota; Fall River County, South Dakota

I have reviewed the applicant's proposal to amend the present contract (Idm-E520, DMEA Docket 2768), and an undated interim Field Team report pertaining to the applicant's proposal to amend the present contract.

The project was recessed on November 1, 1953, after the completion of a total of 146 wagon drill holes aggregating 6,856 feet and 15 core drill holes aggregating 715 feet. Still authorized under the present contract are 7,914 feet of wagon drilling and 880 feet of core drilling under Stage I, and 30,000 feet of wagon drilling and 3,000 feet of core drilling under Stage II.

The present contract authorizes the expenditure of $52,872.75 of which $8,131.17 was expended by the time the project was recessed in November, 1953. There thus remains $44,741.58 of which $9,551.58 remains for Stage I drilling and $35,190 for Stage II. Stage II of the contract was not to be implemented unless the results of Stage I were considered to be favorable by the Field Team.

The effective result of the proposed amendment is to completely cease work in the areas covered by the original contract and to use the footage and money now authorized on two entirely different areas. To all intents and purposes the amendment applied for may be considered as a request for cancellation of the existing contract and the authorization of a new contract to include two nearby but non-contiguous areas, known as the Lion Claim area and the Sheep Canyon area. The total cost of the proposed amendment, when added to that already expended under the original contract, will equal the total cost of the original contract.

Recommendation

In the interim Field Team report the proposed amendment is considered and evaluated with the recommendation that the amendment be granted subject to the specific points mentioned in the report. I concur with the Field Team report.

W. S. Twenhofel

Copies to: E. Wm. Ellis (2)

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

May 27, 1954

Mrmorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4640

From: H. D. Keiser, Bureau of Mines Member
Uranium Commodity Committee

Subject: Interim Report by Field Team, DMEA Docket No. 2768, Contract No. Idm E-520, Mining Research Corporation, Edgemont, S. Dak.

I have reviewed the subject report and discussed it with Joseph O. Hosted, representative of the Atomic Energy Commission.

I concur with the recommendations of the Field Team as presented in the subject report and, in turn, recommend that action be taken looking toward amendment of the contract in accord with the Field Team's recommendations.

H. D. Keiser

Attachment

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

May 24, 1954

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Washington, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket 2768, Contract E-520 - Mining Research Corporation, South Dakota

Reference is made to your letter of May 17, 1954, regarding the status of the subject project.

On May 11, 1954, three copies of the operator's formal application for an amendment to this contract, together with all the necessary documents, and also with the Field Team's interim report, were transmitted to your office.

A. B. Needham

A. B. NEEDHAM

700
Docket
Surname
F. L. Kneuse
Ellis
Selfridge
W. Johnson
Mathews

MAY 17 1954

Mr. A. R. Meadows
Executive Officer
DMEA Field Team, Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

Re: Docket No. DMEA-2768 (Uranium)
Contract No. Ida-4520
Minding Research Corporation
Fall River County, South Dakota

Dear Mr. Meadows

This is with reference to the status of the subject project. The most recent MF-104 received for this project is for the month of October, 1953.

Please advise if the project is completed or if the work has been suspended for the winter. If the work is completed, kindly advise when we may expect to receive the final reports of the Operator and the Field Team, and also the Field Team's recommendations concerning issuing a certificate of discovery or development. If the project is suspended, and if you approve, we suggest you prepare an amendment providing for the recess period and set forth the time within which to complete the work in accordance with Operating Committee Memorandum No. 16, dated March 9, 1953.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (JHB)

ATTACHED:

J. H. Hedges (JHB)
Member, Bureau of Mines

Philip W. Guild (JHB)
Member, Geological Survey

FLKnouse/fes 5-13-54
cc to: Admr. Reading File
Operating Comm.
Docket
Messrs. H. D. Kaiser, Rm. 3641
A. P. Butler, Jr., Rm. 3212, GSA
J. O. Hosted, Rm. 3210, GSA
F. L. Knouse
Code 700
DMEA Field Team, Region V

R.C.J.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

May 11, 1954

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Washington, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket 2768, Contract E-520, Mining Research Corporation

Here are three copies of the operator's formal application for an amendment to his subject contract, together with all of the necessary supporting papers, such as mining leases, mining agreements, owner's consent to lien and maps, also together with the Field Team's Interim Report of the project, recommending that the amendment be executed and approved.

The amendment, although it does not contemplate an increase in the funds involved, does propose exploration in other areas outside of the boundaries of the original contract and accordingly must be written by the Washington Office.

One copy of the entire amendment application and Field Team report has been retained by this office.

A. B. Needham
A. B. NEEDHAM

Attachments

INTERIM REPORT OF FIELD TEAM
Region V

E. O. Binyon, Mining Engineer
U. S. Bureau of Mines

W. A. Braddock, Geologist
U. S. Geological Survey

Docket No. 2768
Commodity: Uranium
Contract No.: Idm E-520
Applicant: Mining Research Corp.
Edgemont, S. Dak.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between May 27, 1953 when the project was started, and November 1, 1953, when the project was recessed, the operator completed a total of 146 wagon drill holes with an aggregate total footage of 6,856 feet and 15 core drill holes with a total depth of 715 feet in Areas I and III under Stage I of the contract. Of the total drilling, 117 wagon drill holes, or 5,174 feet, and 15 core drill holes totaling 715 feet were drilled in Area I; the remaining wagon drilling footage, or 1,682 feet, was drilled in Area III.

The footage for wagon and core drilling remaining under Stage I and Stage II are:

	Wagon Drilling	Core Drilling
Stage I	7,914	880
Stage II	30,000	3,000
Total	37,914	3,880

To date total expenditures amount to $8,131.17, of which the government's share at 90 percent participation is $7,318.05. Of the total amount of the contract a balance of $9,551.58 remains for Stage I drilling and $35,190, or all of the funds, for Stage II, which amounts to a total of $44,741.58 remaining under the contract. Of this the government's share is $40,267.42.

The operator has requested that the contract be amended to permit exploration of two separate properties not originally included under the contract. The properties are known as the "Lion Group" of claims and the Gull-Sheep Canyon area. A detailed description, as well as all necessary supporting documents--Owner's Consent to Lien, Leases, Agreements and Maps--have been submitted by the operator and are included with this report.

As proposed by the operator, exploration would be by wagon drilling and some core drilling and would be confined to the Lion Nos. 1, 2, 3, 4, 5, 7, 8, 13 and 17 in the Lion Group area. On the Gull-Sheep Canyon property three separate areas on the Sheep Canyon Nos. 1, 2, 3, 31 and 33 claims and Gull deeded land on the southeast side of the Sheep Canyon are to be explored. Exhibit I submitted by the operator shows the general location of the areas and Exhibits II and VI are large-scale maps showing the specific locations of proposed drilling areas of the Lion Group and the Gull-Sheep Canyon group of claims respectively.

The operator proposes to use the total footage for both wagon drilling (37,914 feet) and core drilling (3,880 feet) remaining under the contract. This footage is to be allotted as follows:

Lion Group Area

Wagon drilling 200 holes - 10,000 feet

Core drilling 20 holes - 1,000 feet

Gull-Sheep Canyon Areas

Wagon drilling 200 holes - 20,000 feet

Core drilling 20 holes - 2,000 feet

Correlation of the available geologic data resulting from the drilling under the DMEA contract, from company drilling and underground and surface

work, from core drilling by the A.E.C., and detailed geologic mapping by the Geological Survey and the company, indicates that within the areas under consideration the mineralization is found over a relatively wide area and in one or more zones which generally trend N. 30° - 35° W. and extend at least to the northern boundaries of the Lion claims. (See maps). As little or no drilling and only a relatively small amount of other exploratory work have been done in the Gull-Sheep Canyon area, there are less data available on which to base even as general an outline of favorable areas for exploration as for the Lion Group. However, from geologic study and mapping by the Geological Survey and from the shows of mineralization which are found at or near the same horizon as in the McKnight-Lion area, it is reasonable to assume that the Gull-Sheep Canyon area is also favorable for exploration.

Drill hole data from the areas drilled under the DMEA contract and by the company (see exhibits with application) indicate that there are numerous low-grade uranium deposits near the middle of a massive sandstone which is approximately 60 feet thick. The sandstone is underlain by Carbonaceous shale that has been correlated throughout the drilled area.

Correlation of the drill logs indicate that the beds in the drilled area are broken by numerous small faults with displacement as great as 10 feet. Surface mapping in the area indicates that these fractures trend N. 35° W. Uranium has been concentrated along these fractures in broad zones. One such zone extends from the McKnight No. 2 claim northwesterly to the Lion No. 1 claim. A second zone is believed to extend southwest from the Sheep Canyon occurrences.

Detailed mapping by the U. S. Geological Survey at the Lion No. 1 mine and by C. W. Livingston at the underground workings on the McKnight

No. 1 claim shows that uranium has been deposited along these fractures in concentrations as high as 1.0 percent U_3O_8, and that lower grade deposits extend laterally between the fractures.

Table 1 shows the assay data for samples from Stage I drilling. Figures 1 and 2 show the postulated distribution of ore bodies. Table 2 is a tabulation of indicated ore reserves which were calculated by the field team. In the reserve calculation each hole was assigned an average grade. The area of influence of each hole was calculated. The tonnage blocks from each ore body were separated into three grades: AA, 0.1 percent U_3O_8 or higher; BB, 0.07 percent U_3O_8 to less than 0.10 percent; CC, 0.05 percent U_3O_8 to less than 0.07 percent. Finally, the weighted grade of the entire body was determined. These estimates are based on the assumption that the majority of the ore occurs as low-grade blanket deposits between fractures. Very likely the ore adjacent to the fractures will be higher grade.

Indicated reserves of ore with the minimum cut-off of 0.05 percent U_3O_8 in the area drilled under Stage I of the contract are 32,104 tons, with a U_3O_8 content of 0.088 percent, or 57,510 pounds.

Ore reserves indicated by company drilling in the area lying between the Lion claims and the area drilled under Stage I (DMEA) are 17,200 tons with a grade of 0.05 percent U_3O_8. Also, from the initial scattered drilling on the Lion claims, estimated reserves of inferred ore containing 0.05 percent U_3O_8 are 38,250 tons. Total ore reserves, including both indicated and inferred ore, are 87,554 short tons with an average grade of 0.06 percent U_3O_8, or 113,000 pounds. An estimate of reserves on the Gull-Sheep Canyon property is not possible at this time.

It is concluded that both the Lion group of claims and the Gull-Sheep Canyon properties warrant exploration. The possibilities of the discovery of ore on these properties, particularly on the Lion claims, are at least as good and perhaps slightly better than for the areas explored under Stage I of the contract.

RECOMMENDATIONS

Lion Claim Area

We recommend that the Lion claim area be included in the contract and that exploration of this area proceed as follows:

(1) Two lines of holes, each about 1,600 feet long, trending N. 55° E. and extending across the mineralized zone to be drilled at 50-foot centers. These two lines would not be closer together than 300 feet and would determine the positions of the northwest trending zones along which the underlying shale has been displaced.

(2) The remainder of the area on the Lion claims which past work, and the results of the drilling in (1) above, indicate may be favorable, will be drilled on a grid 100 by 300 feet with the close-spaced holes perpendicular to the trend of mineralization. This large spacing will satisfactorily indicate the blocks of ground which merit further attention.

(3) Those areas which 100- by 300-foot drilling indicate are favorable would be drilled at 100 by 100 feet.

(4) Since it seems very important to locate as closely as possible the small faults which have displaced the underlying shale, the operators should be allowed to drill a limited number of offset holes at 25-foot centers between holes where a structural break is indicated.

(5) Drilling will be continued in the area of the McKnight Nos. 2 and 3 claims, as previously established.

It is not feasible to strictly specify the amount of footage to be used in each phase of this program because the plan will be continuously modified as information is obtained. However, the number of holes required in the Lion claim group area for the two rows under (1) and for the initial drilling on the 300- by 100-foot grid, as outlined under (2), will number approximately 100, or about 5,000 feet of drilling. It is estimated that an equal number, or about 5,000 feet, may be required for drilling on the 100-foot spacing and for closer spaced offset drilling. The 7,914 feet remaining under Stage I is very likely considerably more than will be required for "fill-in" or closer spaced holes in Areas I and III. Also, the 1,800 feet of core drilling, or approximately 30 holes remaining under Stage I, probably will not be required to obtain geologic data in the Lion claim group area and few, if any, core drill holes will be required in Areas I and III.

Sheep Canyon Area

The mineralized area in Sheep Canyon was mapped by the U. S. Geological Survey in July 1953. In this area the lithology is approximately as follows:

Top of rim. Flat covered with terrace gravel.

FALL RIVER SANDSTONE	
Sandstone, fine grained	10 feet
Shale, maroon	10 feet
Sandstone, medium- to coarse-grained	55 feet
Sandstone, fine-grained with abundant interbedded shale	70 feet
FUSON FORMATION	
Mudstone, white yellow, maroon (Bottom of valley)	60 feet

On both sides of the canyon uranium-bearing rocks have been found. The ore-bearing zone ranges from approximately 70 feet above the Fuson to the Fall River-Fuson contact.

A water well drilled approximately 800 feet south of the area of surface mineralization penetrated radioactive rocks in the basal 50 feet of the Fall River sandstone. The top of the mineralized zone was 90 feet below the surface.

The Mining Research Corporation has requested drilling in three blocks in the Sheep Canyon area. Of these blocks the two eastern ones appear to offer the best chances of finding ore. The operators originally estimated an average hole depth of 100 feet. The result of mapping and the water well data indicate, however, that drill depths should average 150 feet and may be as great as 200 feet. The operators will obtain a rotary drill which will drill effectively to 200 feet, and will operate this rig at the same footage price that the present contract allows.

Therefore, we recommend that the Sheep Canyon area be included in the contract, and that exploration of this area proceed as follows:

STAGE 1 - Exploration of Blocks I and II

Wagon drilling	(100- by 300-foot initial grid spacing, 100 by 100 feet in mineralized ares)	10,000 feet
Diamond drilling	(to be distributed at operator's discretion)	2,000 feet

If the results of Stage I are satisfactory:

STAGE II - Exploration of Block III
(At completion of Blocks I and II)

Wagon drilling	10,000 feet

Company operations are well supervised, and from past experience, the field team is of the opinion that the drilling will be done only where warranted.

Progress of the exploration will be watched closely and the operator will be expected to make prompt summary reports and to advise of any changes that may be considered necessary to obtain desired results, thereby insuring that the exploration will follow the plan as outlined in this report.

The amendment is not to increase the total amount of the contract. However, it is recommended that the percentage of government participation be decreased to 75 percent on all wagon and core drilling in the areas on the properties, the Lion Claim Group and Gull-Sheep Canyon claims and deeded land, which, by the amendment, are included under the contract. Addition of the properties by amendment is a matter of convenience in lieu of an application which would, if approved, come under a contract with the government's share of 75 percent.

It is difficult to determine the exact footage to be drilled on either of the properties to be added to the original contract. It is suggested that on the footage reported on the Operator's Monthly Reports as drilled on the properties added by the amendment, the government's share will be calculated on the 75 percent rate, and the footage drilled in those areas included in the original contract will take the 90 percent rate for government participation.

TABLE I

DRILL SAMPLE ASSAYS, Stage 1

Note: Holes not listed are blank

Hole No.	Collar Elevation	Assay	Depth
395	4044.9	.01	22-24
		.04	26-28
		.06	32
		.02	34
		.01	36
		.02	38
397	4035.3	.02	30-32
399	4036.8	.03	24-26
403	4028.9	.02	38
		.03	40
405	4038.9	.03	28
		.05	30
		.07	32
		.04	34
		.02	42
415	4014.2	.06	28
		.03	32
		.01	34
436	4039.2	.02	30
		.03	32
		.04	34
		.05	36
		.02	38
		.01	40
		.02	42
		.05	44
		.05	46
		.03	48
		.03	50
437	4038.0	.01	26
		.03	28
		.01	30
		.02	40
		.02	42
		.02	44
		.02	46
438	4047.3	.02	22
		.03	24
		.02	30
		.04	32
		.03	34
		.02	36-38
439	4042.1	.02	28
		.03	30
		.08	32
		.02	34
		.01	36
440	4048.3	.02	22
		.05	24
		.03	26
		.03	32
		.06	34
		.05	38
		.11	40
		.04	42
441	4036.5	.07	28
		.06	32
		.03	34
		.06	36
		.01	38
442	4042.1	.06	36
		.09	38
443	4046.6	.02	40-44
444	4049.7	.03	24
		.05	26
		.02	28
445	4050.3	.01	24-28
		.08	30
		.05	32
		.02	34
446	4045.5	.05	24
		.07	26
		.04	28
		.03	30
		.10	32-34
		.06	36
		.07	38
		.10	40
		.02	40-50
451	4052.8	.03	34
		.01	36-40

Note: Holes not listed are blank

TABLE 1 (Cont.)

Hole No.	Collar Elevation	Assay	Depth
452	4055.1	.01	22-34
		.02	26-28
		.06	30-32
		.02	44-46
456	4050.8	.02	20-22
		.02	28
457	4050.6	.02	18
		.22	20
		.07	22
		.04	24
		.03	26
458	4050.2	.02	26
459	4048.8	.01	26-28
460	4047.6	.01	34
		.06	36
		.03	38
462	4032.2	.08	28
		.01	30
		.03	32
		.04	34
		.01	36-38
465	4039.3	.10	38
		.16	40
466	4041.6	.04	30
		.14	32
		.02	34-36
468	4045.3	.07	26
		.15	28
		.05	30
		.01	32
		.02	40
469	4037.2	.01	22
		.03	24
		.01	26
		.02	28
		.04	30
		.02	32
471	4034.1	.01	30
		.02	32
475	4041.4	.04	30
		.02	32
483	4056.2	.06	32
		.02	34
		.01	36
484	4057.5	.01	30-32
486	4051.1	.04	32
		.01	34
488	4051.8	.04	18
		.07	20
		.08	22
		.02	24
		.01	26
		.04	28
		.03	30
		.05	32
		.06	34
		.11	36
490	4055.8	.03	24
		.04	26
		.11	28
		.07	30
		.06	32
		.04	34
		.07	36
		.06	38
491	4059.5	.03	32
492	4061.2	.03	26
493	4059.5	.03	28
494	4056.6	.03	30
		.06	34
		.20	36
		.18	38
		.04	40
495	4053.4	.02	28-30
		.04	32
		.03	34
		.06	36
497	4048.9	.03	26
		.03	28
		.02	30
500	4027.3	.04	28
501	4028.9	.01	22
502	4030.2	.03	28
506	4023.9	.03	26-28
509	4021.7	.02	28
		.16	30
510	4020.7	.02	22
		.01	24-26
		.02	28
		.03	30
		.05	32
		.20	34
513	4029.7	.14	40
		.07	42
		.03	44
520	4026.8	.02	28-30
524	4035.4	.02	30-32
DD-10	4044.7	.18	44-46
DD-11	4034.2	.05	41
DD-13	4039.3-mineralized		32-44

TABLE II

ORE RESERVES, STAGE I DRILLING

Ore Body	Tons	Grade % U_3O_8	Total Pounds U_3O_8 AA	BB	CC
A	637	0.075		1,000	
B	3,120	0.14	8,740		
	5,328	0.073		7,780	
	4,933	0.057			5,620
Total	13,381	0.083			
C	1,046	0.056			1,170
D	527	0.14	1,480		
	2,340	0.077		3,600	
	546	0.06			660
Total	3,413	0.084			
E	243	0.05			240
F	2,746	0.082	4,500		
	2,970	0.062			3,680
Total	5,716	0.072			
G	2,612	0.132	6,900		
	1,340	0.060			1,600
H	1,173	0.130	3,050		
I	643	0.180	2,310		
J	1,900	0.136	5,170		
	32,104		27,660	16,880	12,970

Total Pounds U_3O_8 57,510

Pounds U_3O_8 to the nearest 10 pounds

MINING RESEARCH CORPORATION
INCORPORATED

See separate envelope for maps Exhibits I to VI Folder #3

Docket No. 2768
Contract IDM - E - 520
Mining Research Corporation
1320 Pearl Street
Boulder, Colorado

RECEIVED
FEB 26 1954
U. S. Dept. of Interior
Bureau of Mines
Rapid City,
South Dakota

Defense Minerals Exploration Administration
U. S. Department of Interior
Washington 25, D. C.

Attention: Mr. F. L. Knouse, Room 4640

Via: Field Team Region 5, Rapid City Field Office,
Rapid City, South Dakota

Att: Mr. E. O. Binyon and Mr. W. A. Braddock

Gentlemen:

Enclosed is a request for an amendment to our contract IDM-E-520 (Docket 2768), together with the necessary supporting documents. We are requesting this amendment to permit us to undertake exploratory drilling in certain areas not included in our present contract. Geologic information obtained from drilling, scintillometer surveys, exploratory excavations, and some mining, has led us to believe that the probability of finding workable ore bodies is greater in the areas we are now requesting be included under the contract than in the unexplored areas of our original contract. This amendment will not involve an increase in the total cost of the project.

Additional Property to be Included and Applicant's Property Rights. As is shown in Exhibit I, the areas included in the original contract were in Sections 14, 15, 22, and 23, T 8 S, R 3 E, Fall River County, South Dakota. Drilling under the contract to date has been confined to areas I and III as provided under Stage 1 of the contract.

Since the date of our original DMEA loan application, we have acquired the "Lion Group" of eighteen claims north of the area in the original contract. The boundaries of this claim group which we request be added by amendment to our present contract are shown on Exhibit I. These claims originally were staked by

Messrs. Barker and Howell but subsequently were deeded to James L. Barker, whose clear title to the claims has been verified. Four copies of the mining lease between James L. Barker and the Mining Research Corporation are attached to this request for amendment. In addition five copies of the owner's consent to lien (Form MF203) have been signed by James L. Barker and are attached to this request for amendment.

The second area which we propose to add by amendment is identified as the Gull-Sheep Canyon area, as can be seen from Exhibit I. This area is largely in Section 27 directly south of the area covered by the original contract. As will be subsequently explained in detail, the proposed additional drilling will be confined to deeded land leased from Robert E. Gull in Section 27 and to six Sheep Canyon claims, including Sheep Canyon No. 1, 2, 3, and Nos. 31, 32, 33. Inasmuch as the applicant has leased additional land adjoining the areas in which the proposed drilling will be undertaken, copies of all leases and owner's consent to lien forms covering all land that might be benefited by the proposed drilling are enclosed. Four copies of the lease agreement between Robert E. Gull and the Mining Research Corporation are enclosed covering deeded land leased in Sections 23, 26, 27, 28, 33, 34, and 35. In addition, Mr. Gull has signed an owner's consent to lien form on all land in Sections 26, 27, 34, and 35, which had been leased to the Mining Research Corporation; five copies of the owner's consent to lien form are enclosed. Sheep Canyon claims No. 1, 2, and 3 were leased by the Mining Research Corporation from Carl V. Gull, as agent for Carl V. Gull, Earl Boner, and Vernon Harriot. Four copies of this lease agreement are enclosed as well as five copies of the owner's consent to lien form covering these claims. Sheep Canyon claims No. 31, 32, and 33 were leased by the Mining Research Corporation from Robert E. Gull and Carl V. Gull. Four copies of the mining lease covering these claims as well as several additional Sheep Canyon claims which might be benefited by the drilling are enclosed. Five copies of the owner's consent to lien form signed by Carl V. Gull and Robert E. Gull covering all their Sheep Canyon claims also are enclosed. The only other property held by the applicant which might be benefited by the proposed drilling program is mining claim RAM No. 1, leased from Royce A. McElhaney. The mining lease

covering this claim, as well as RAM No. 2, was submitted with the original contract application. Enclosed, however, are five copies of the owner's consent to lien form covering RAM No. 1 and signed by Royce A. McElhaney. To the best of the applicant's knowledge, the enclosed leases and owner's consent to lien forms cover not only all the property on which the proposed drilling will be conducted, but also all property held under lease by the applicant that might benefit by the proposed drilling except land on which owner's consent to lien forms were submitted with the original contract application.

Exploration Work Completed To Date. DMEA drilling to date has been concentrated largely in Area I, but some drilling has been undertaken in Area III. A total of 6,856 feet of wagon drilling and 715 feet of core drilling has been completed to date. Exhibit II, which is a working map showing the drilling completed to date both at the applicant's expense and under contract IDM-E-520, summarizes our exploratory work to date. Area I is confined to McKnight claims No. 2, 3, and RAM No. 2; the drilling south of these claims is in Area III. As is shown by the outlines on Exhibit II, four groups of holes on McKnight Nos. 2 and 3 contain commercial grade mineralization ranging in thickness from two to six feet. In addition, six feet of ore averaging 0.08% U308 was discovered in drill hole 513 on McKnight No. 3. Since further drilling has not been undertaken near hole 513, the possibility of discovering commercial grade ore in that area has not been determined. The holes on McKnight No. 1, 4, and RAM No. 1, as shown on Exhibit II, were drilled by the Mining Research Corporation at its own expense. These holes indicate the presence on these claims of a large low-grade ore body, which is estimated to contain approximately 250,000 tons of ore that will assay approximately .08% U308. Approximately 7,000 tons of ore assaying .09% U308 have been blocked out in the leach area on McKnight No. 1. Four drill holes in this area have penetrated ore that assayed over 1% U308 and ranged in thickness from two to eight feet. The applicant's underground excavations in the leach area show that these drill holes are on or near vertical fissures which contain high-grade ore. Although the high-grade ore does not appear to extend more than a few inches from

the fissures, applicant's underground workings have not yet penetrated the high-grade ore and, therefore, the extent of the ore has not been determined. The dark holes on Exhibit II contain at least six feet of ore which assayed at least .05% U308; many of these holes contained from two to eight feet of ore which averaged .1% U308 or more. Approximately 3,000 feet northwest of the leach area on Lion Claim No. 1 a pit about one-half acre in extent has been opened and about 800 tons of ore averaging .22% U308 have been mined from this pit. The high-grade ore in the pit is localized along fissures as is the case in the leach area. The mining, drilling, and exploratory drifting work completed to date indicates that the axis of mineralization is striking about N 30° W through the area and probably is associated with a joint system which has been observed at many points. We, therefore, have developed a plan to continue our drilling in belts extending either N 30° W or S 30° E from presently known ore occurrences.

A second factor influencing our proposed drilling plan is our correlation of mineral occurrences with disturbances in the basement shale. We have found that the areas in which our drilling has penetrated ore are those areas in which the basement shale has been disturbed. Information leading to this conclusion is presented in Exhibit III, which shows sections through the drilled area. Exhibit II shows the location in the drilled area of the longitudinal section, and the cross sections shown on Exhibit III. Exhibit III shows the shale contacts, the areas of interbedded shale and sandstone, and the areas of mineralization. From the information on Exhibit III, the proposed drill holes on the Lion claims have been planned to penetrate those areas in which the basement shale is believed to have been disturbed and which experience indicates are most favorable for the discovery of mineralization. Exhibit IV, which further supports Exhibit II shows the cross-sections of the diamond drill holes drilled on the McKnight claims under our DMEA contract. Except for diamond drill hole #12, all drill holes bottom near the contact of the Fuson shale. Drill hole #12 has penetrated the Fuson shale for a considerable distance, as is shown on Exhibit IV.

<u>Drilling Program Under Proposed Amendment.</u> Approximately 37,914 feet of wagon drilling and 3,880 of diamond drilling remain to be completed under the present contract.

The manner in which the use of this footage has been authorized is summarized in the following schedule:

	Wagon Drilling (feet)	Diamond Drilling (feet)
Authorized Footage		
Stage I	14,770	1,595
Drilled to date	6,856	715
Balance Stage I	7,914	880
Stage II	30,000	3,000
Total Remaining Footage	37,914	3,880

In the program proposed under this amendment, the remaining authorized footage under the contract would be used as follows:

	Wagon Drilling (feet)	Diamond Drilling (feet)
Lion Claim Group	10,000	1,000
Gull-Sheep Canyon Area	20,000	2,000
Fill In - Areas I, II, III, Lion, and Gull Areas	7,914	880
Total	37,914	3,880

The proposed drilling on the Lion claim group would be located as follows:

	Wagon Drilling		Diamond Drilling	
	(Holes)	(Feet)	(Holes)	(Feet)
Lion No. 1 & 2 (North)	25	1,250	To be distributed as drilling progresses in order to provide the best geologic information	
Lion No. 1, 2, 3, & 17 (South)	40	2,000		
Lion No. 5, & 7	50	2,500		
Lion No. 7, 8, 13, & 4	85	4,250		
Total	200	10,000	20	1,000

The location of the proposed drilling on the Lion claim group is shown on Exhibit V. The drilling to be undertaken on Lion No. 1 & 2 (North) is shown on the lower left hand corner of Exhibit V, which is the approximate northwest boundary of the property held by the applicant. The open pit from which commercial grade ore has been mined, as previously explained, is about in the center of Lion No. 1. The proposed drilling is intended to explore the extension of the ore in the pit along the axis of the mineralization which has been striking approximately north 30 degrees west through the area. Although not shown on Exhibit V, anomalies have been found in this area on Lion No. 1.

The proposed holes on the south end of Lion No. 1, 2, 3, and 17 are intended to explore the southern extension of the ore found in the open pit. As can be seen in Exhibit V, we plan to extend the drilling from Lion No. 1 and 2 into Lion 5 and 7 to

test the northern extension of the mineralization discovered by the applicant's drilling in the area south of the Lion claims. The mineralized hole shown on Exhibit V just beyond the end of the belt of drill holes projected through Lion Nos. 5 and 7 contained approximately two feet of mineralization which assayed chemically 0.42% U308. The holes in this belt have been planned on a grid 60 feet by 104 feet to coincide with the applicant's drilling pattern in the leach area. In the initial stages of the drilling every second row will be skipped, and the remaining holes subsequently will be drilled in the areas where mineralization is discovered; thus the fifty holes planned for Lion No. 5 and 7 will tend to be concentrated where ore is found.

The two belts of holes projected from the open pit through Lion Nos. 7 and 8 and from Lion No. 4 through Lion No. 8 and 13 are intended both to explore the extension of the ore found in the open pit and to explore the extension of ore already discovered by previous drilling. As shown on Exhibit V, applicant's drilling has produced several mineralized holes near the south boundary of Lion Claims No. 8 and 13. Three of the seven mineralized holes near the south end of these claims contained from four to eight feet of ore assaying .10% U308 or better. A very large tonnage of ore assaying from .06% to .10% U308 was discovered on Lion No. 4 by drilling conducted by the U. S. Vanadium Corporation prior to its release of the Lion claim group. Although ore of that grade is not commercial, applicant expects to be able to leach ore of that grade either in place or in surface tanks. Accordingly, applicant is interested in determining whether additional tonnages of low-grade ore are available and also whether higher grade deposits can be found in the areas outlined for drilling. Drilling in these areas has been planned on 104 by 120 feet grid, except near the south end of Lion Nos. 8 and 13 where the holes are based on a 60 by 104 feet grid.

The proposed drilling in the Gull-Sheep Canyon area, as is shown on Exhibit VI, would be divided between three locations as follows:

	Wagon Drilling (Holes	(Feet)	Diamond Drilling (Holes)	(Feet)
Sheep Canyon Nos. 1, 2, & 3	35	3,500	To be distributed as drilling progresses in order to provide the best geologic information)	
Sheep Canyon Nos. 31, 3, & 33	40	4,000		
Gull deeded land (south-east side of Sheep Canyon)	125	12,500		
Total	200	20,000	20	2,000

Drilling in the Sheep Canyon area is requested because the large number of anomalies and outcrops in that area can be correlated with the joint system which is associated with mineralization throughout the property being explored. A mineralized face of from 2 to 12 feet in thickness has been exposed by a railroad cut running through the canyon near the southeast boundary of Sheep Canyon No. 1. As shown on Exhibit VI, applicant has placed a drift in the canyon rim south of Sheep Canyon No. 1. The drift is about 15 feet long and has passed through one of the fissures or faults visible on the canyon rim. Ore of commercial grade was found along the down-dip side of this fissure and in the bottom of the drift. The drift was discontinued because there was no way in which to move the ore without constructing a road into the canyon at this point. The construction of a road cannot be justified until further exploratory drilling is undertaken to determine the extent of the ore deposit.

Applicant is of the opinion that the area southeast of Sheep Canyon may contain a structural trap favorable for the accumulation of a large tonnage of uranium ore. Although the regional dip of the beds in the area is approximately south, they tend to reverse their dip approximately 2,000 feet south of Sheep Canyon. Since the strike of the fissures associated with mineralization is roughly parallel with the direction of the dip of the beds, there is a distinct possibility that uranium which has migrated down-dip along the fissures has been trapped south of the canyon.

The proposed drilling in the Gull-Sheep Canyon area, as shown on Exhibit VI, will begin along the canyon rims where anomalies and outcrops have been discovered and work back from the outcrops, except the row of 10 holes in the bottom of Sheep Canyon on claims No. 1 and 2. These ten holes are intended to explore the horizon below the Fuson shale and will be approximately 100 feet in depth. All other holes are intended to explore the Dakota sandstone down to the Fuson shale which varies in depth from 80 to 120 feet in the Sheep Canyon area. It has been estimated that the average drill hole will be 100 feet in depth. Drill holes have been spaced on a grid 100 feet by 100 feet, but every other row of holes will be skipped initially and the remaining holes will be concentrated in those areas where mineralization is discovered.

When the planned drilling is completed on the Lion claim group and the Gull-Sheep Canyon claims and deeded land, 7,914 feet of wagon drilling and 880 feet of diamond drilling will remain under the contract. Applicant requests contract authorization to use this footage, upon approval of the DMEA Field Team, either

(1) To complete the drilling in Area I between the mineralized holes and hole 513 on McKnight No. 3. (See Exhibit II), or

(2) To drill additional holes on a spacing of 50 feet by 50 feet to fill in around mineralized holes discovered in the Lion and Gull-Sheep Canyon area, or

(3) To drill Area II on a grid of 100 feet by 100 feet.

Since the wisest use of the remaining footage under the contract can best be determined after additional drilling and exploration is completed, applicant requests amendment of the present contract to permit use of this footage for one or more of the above purposes as approved by the Field Team at that stage of the drilling program.

Sincerely,

J. Sterling Livingston
Vice President and Treasurer

Enclosures

C O P Y C O P Y

MINING LEASE

This agreement of lease, made and entered into this 29th day of January, 1953, by and between JAMES L. BARKER, hereinafter called the lessor, and the MINING RESEARCH CORPORATION, a Delaware corporation, hereinafter called the lessee.

WITNESSETH:

1. For and in consideration of the sum of One Dollar & no/100 ($1.00) and of the covenants, agreements and payments hereinafter provided to be made and performed, lessor hereby grants, leases, lets, and demises, unto lessee the following described mining claims located in Unorganized Mining District, Fall River County, South Dakota, and more particularly described in townships as indicated in the following list, and recorded in the book and on the page indicated in the County Court House of Fall River County, South Dakota, at Hot Springs:

Name of Claim	Township	Book	Page
Lion No. 1	T8S, R3E	31M	412
Lion No. 2	" "	"	413
Lion No. 3	" "	"	414
Lion No. 4	" "	"	415
Lion No. 5	" "	"	416
Lion No. 6	" "	"	417
Lion No. 7	" "	"	418
Lion No. 8	" "	"	419
Lion No. 9	" "	"	420
Lion No. 10	" "	"	421
Lion No. 11	" "	"	422

C O P Y

C O P Y

Lion No. 12	T8S,	R3E	31M	423
Lion No. 13	"	"	"	424
Lion No. 14	"	"	"	425
Lion No. 15	"	"	"	426
Lion No. 16	"	"	"	427
Lion No. 17	"	"	"	428
Lion No. 18	"	"	"	429
Barker and Howell No. 1	T7S,	R2E	"	389
Barker and Howell No. 2	"	"	"	390
Barker and Howell No. 3	"	"	"	391
Barker and Howell No. 4	"	"	"	392
Barker and Howell No. 5	"	"	"	393
Barker and Howell No. 6	"	"	"	394
Barker and Howell No. 7	"	"	"	395
Barker and Howell No. 8	"	"	"	396
Barker and Howell No. 9	"	"	"	397
Barker and Howell No. 10	"	"	"	398
Barker and Howell No. 11	"	"	"	399
Barker and Howell No. 12	"	"	"	400
Barker and Howell No. 13	"	"	"	401
Barker and Howell No. 14	"	"	"	402
Barker and Howell No. 15	"	"	"	403
Barker and Howell No. 16	"	"	"	404
Barker and Howell No. 17	"	"	"	405
Barker and Howell No. 18	"	"	"	406
Barker and Howell No. 19	"	"	"	407

Barker and Howell No. 20	T7S,	R2E	31M	408
Barker and Howell No. 21	"	"	"	409
Barker and Howell No. 22	"	"	"	410
Barker and Howell No. 23	"	"	"	411

together with all the dips, spurs, rolls and angles and also all the uranium and any and all other minerals of any nature whatsoever, including but not limited to all metals, ores, ore bearing quartz, rock and earth therein for the purpose of investigating, exploring, drilling, and mining for, producing, saving, taking, owning, transporting, storing, handling, and treating uranium and all other minerals, whether similar, or dissimilar.

2. TO HAVE AND TO HOLD the same for the purposes of exploration and mining for a primary term of twenty lease years commencing on the date hereof.

After the expiration of the primary term lessee shall have the right to continue this lease in full force and effect on all the above described claims, or on such claims as have not been previously surrendered or abandoned for as long as uranium or any other mineral shall be produced from said claims. Lessee shall also have the right to continue the term of this lease after the expiration of the primary term by expending a minimum amount of One Hundred Dollars & no/100 ($100.00) per claim per year upon the development or exploration of such claims as it may wish to retain.

3. Lessor hereby grants to lessee during the time of this lease, possession of such claims, the right to explore, map, mine, drill and extract ore therefrom, to dump waste materials thereon and upon any adjoining areas under the control of lessor, to construct ore bins and buildings

thereon, to perform any and all work connected therewith, including construction of roads, to lay pipe lines, to construct mills, power stations, power and communication lines, houses for its employees and other structures and facilities, and further grants to lessee all road rights of way to which lessor may be entitled for egress and ingress to any and all of the demised properties.

4. Lessor reserves unto himself personally the right to mine uranium ores from Barker and Howell claims numbered One (1) through twenty-three (23) described above for eight (8) man-months, a "man-month" being one man-shift per day during one calendar month.

This reservation shall terminate immediately upon the completion of said eight (8) man-months or upon the expiration of eight (8) calendar months from the date hereof whichever event shall sooner occur.

Any minerals and ores or either of them mined by the lessor under the terms of this reservation are and shall be the property of the lessee. Lessee shall pay lessor for mining said minerals and ores a sum equal to the price then established by the Atomic Energy Commission purchasing depot in Edgemont, South Dakota, for ores of like grade and quality.

5. Lessor hereby warrants and represents that he has prior valid and lawful right and title to such claims and hereby agrees to indemnify and hold harmless lessee from any and all other persons, firms or corporations claiming any rights thereto or any part thereof or any interest therein. Lessor further represents and warrants that said demised premises are free and clear of any and all trust deeds, assignments, mortgages, leases, or any other encumbrances of any nature whatsoever. If at any time title to said claims is found to be defective in any way,

lessor shall return to lessee any moneys advanced to him by the said lessee.

6. Lessee agrees to comply with all provisions and requirements of federal or state laws necessary to keep the said mining claims in full force and effect, to conduct its mining operations thereon in accordance with good mining practice and in compliance with health and safety regulations, to permit lessor to inspect such premises at all reasonable times to make surveys of the same and to take samples of ore mined or in place using any access roads of lessee, and to make available to lessor survey maps, drilling logs, and other data which may be compiled pertaining to ore deposits found therein.

7. At such times as any of said claims shall be eligible for patent, lessor shall, if the lessee so requests, apply for patents on such eligible claims as may be designated by lessee and take all necessary steps in the procurement thereof. All expenses in procuring or attempting to procure such patents shall be advanced by lessee.

8. Simultaneously with the execution hereof lessee has paid to the lessor the sum of One Thousand & no/100 Dollars ($1,000.00), receipt of which is hereby acknowledged. As soon as practicable, lessor at his expense shall furnish to lessee abstract of title covering said claims certified to date. Lessee shall have a period of thirty (30) days after receipt of said abstract to examine the same and give notice of any defects in title. Failure to give such notice shall constitute approval of title. Upon receipt of notice of defects within said thirty (30) days, lessor shall immediately commence any curative or corrective work which may be required to render the title good, safe, and marketable.

9. Upon approval of title by lessee or correction of the same as above provided, lessee shall pay to the lessor the sum of Five Hundred Ninety & no/100 Dollars ($590.00) in cash.

10. Prior to March 31, 1958, lessee shall pay lessor twelve and one-half (12-1/2%) percent of the Atomic Energy Commission bonus for initial production of uranium ores from eligible new domestic mines. Said payment shall be made as soon as practicable after receipt of said bonus from the Atomic Energy Commission and shall be subject to provisions of the regulations of the Atomic Energy Commission regarding payments of bonuses. Lessee shall comply with all regulations of the Atomic Energy Commission for certification of the property as mining property eligible for bonus payments. For purposes of computing the amount of royalty payments to be made under this section, a record shall be kept by lessee of the ore mined on each property or group of properties regarded by the Atomic Energy Commission as a single eligible unit for purposes of bonus payments.

11. In addition to the bonus payments in Section 10 and prior to March 31, 1958, lessee shall pay lessor, as royalty for ore mined or leached on this property, twelve and one-half (12-1/2%) percent of the price established by the Atomic Energy Commission for ore of like grade delivered to a mill or purchasing depot on ores assaying ten one-hundredths (0.10%) percent U_3O_8 or over. For ores mined or leached assaying less than ten one-hundredths (0.10%) percent U_3O_8, lessee shall pay to lessor as royalty ten (10%) percent of the minimum price established by the Atomic Energy Commission for acceptable ore delivered to a mill or purchasing depot. Royalty payments for each month shall be made on or before the fifteenth

(15th) day of the following month and for ore delivered to the Atomic Energy Commission's purchasing depot, settlement assays and settlement weights as determined by the Atomic Energy Commission shall be used as a basis for computing royalty payments; and for ore processed by lessee settlement shall be based upon assays and samples taken from the ore and upon weights of U_3O_8 extracted and delivered to the Atomic Energy Commission.

12. No royalty payments shall be made to lessor by lessee on any development allowances received by lessee from the Atomic Energy Commission.

13. After March 31, 1958, lessee shall pay to lessor, as royalty for uranium ore mined or leached on this property ten (10%) percent of the price paid for ore of like grade delivered to a mill or purchasing depot exclusive of transportation charges. Royalty payments for each month shall be made on or before the fifteenth (15th) day of the following month.

14. In addition to the above royalty payments, lessee agrees to pay lessor, as royalty for marketable ores, other than uranium ore, mined on this property, ten (10%) percent of the price paid for similar ores of like grade.

15. Lessee agrees to enter upon this property within ninety (90) days from the date of this agreement and to pursue diligently an investigation to determine the possibilities of a commercial enterprise, and, if such possibilities are found to be favorable, to commence the necessary steps immediately thereafter for the development of the property.

16. Lessee agrees to expend a minimum sum of One Hundred & no/100 Dollars ($100.00) per claim per lease year during the primary term of this lease upon the exploration of such claims as it may retain or the development and production of mineral bearing ores therefrom. Lessee shall designate the claims it wishes to surrender from time to time, and ninety days after delivery of a proper instrument surrendering the same to lessor shall be relieved of any further responsibility or obligation with respect to such surrendered claims.

17. Lessee at its expense will insure each and every workman employed in its operations as provided in all applicable statutes with respect to workmen's compensation and/or employer's liability; and lessee will procure and maintain at its expense public liability insurance in a reputable and financially responsible company properly safeguarding against liability for injury to persons, including injuries resulting in death, and loss or damage to property arising out of lessee's operations hereunder. Lessee further agrees to furnish upon request satisfactory proof of such compensation, public liability and property damage insurance.

18. Lessor hereby agrees to cooperate with lessee in the securing of loans from the Federal Government which may be deemed advisable by lessee for the exploration, development and mining of ore from the claims leased hereunder whether such loans may be made available under the terms of the Defense Minerals Act as now in effect or hereafter amended or any other Federal law, rule or regulation now in effect or hereafter promulgated. Lessor further agrees to sign any documents necessary for the procurement of any such loans; provided, however, that lessor shall not be

required to sign any instruments or enter into any agreements which will subject him to any personal liability.

19. In the event of any breach or default by lessee, the lessor may give written notice by registered mail thereof to lessee. Upon receipt of such notice lessee shall have ninety (90) days to cure such breach or default and maintain the lease in effect. If lessee shall not have cured or taken diligent steps to cure any such breach or omission within said ninety (90) day period, lessor may terminate this lease. Failure to enforce such forfeiture shall not constitute a waiver by lessor of his rights in the event of a future breach of such term or provision or the breach of any other term or provision hereof.

Neither party shall be deemed in default hereunder where its act or omission shall be occasioned by strikes, riots, flood, fire, storm, acts of God, war, Federal State or local laws or regulations, or other causes not within his or its control.

20. Lessee shall have the right for a period of six months after the date of termination of this lease for any reason whatsoever to remove as lessee's own property buildings, and all improvements, bins, machinery, equipment and other personal property excepting only ties and timbering which may have been placed on the premises by it.

21. At any time within three years from date hereof, lessee shall have the option to purchase such claims as it may designate that are covered by this agreement for the total sum of Fifteen Thousand & no/100 Dollars ($15,000.00). To exercise this option, lessee shall give notice to lessor by registered mail. Lessor shall thereupon convey to lessee the

claims so designated, whether or not said claims have then been patented, by warranty deed.

22. This lease and all its terms, conditions and stipulations shall extend to and be binding upon the respective heirs, executors, personal representatives, assigns and successors of the parties hereto. The right to assign this lease is hereby expressly granted.

IN WITNESS WHEREOF lessor has hereunto set his hand and seal and lessee has caused this document to be executed by its officers duly authorized thereunto as of the day and year first above written.

/s/ James L. Barker (L.S.)

(L.S.)
Lessor

MINING RESEARCH CORPORATION

/s/ J. Sterling Livingston

BY: J. Sterling Livingston, (L.S.)
Vice President
Lessee

ATTESTED: SEAL

/s/ Ruth E. Livingston
Secretary

C O P Y C O P Y

STATE OF South Dakota)
) ss
COUNTY OF Fall River)

On this the 29th day of January, 1953, before me _____ the undersigned officer, personally appeared James L. Barker, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purpose therein contained.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

SEAL

/s/ Paul H. Russell
Notary Public

My Commission Expires 1-8-57

****

STATE OF South Dakota)
) ss
COUNTY OF Fall River)

On this the 29th day of January, 1953, before me _____ the undersigned officer, personally appeared J. Sterling Livingston, who acknowledged himself to be the Vice President of MINING RESEARCH CORPORATION, a corporation, and that he, as such Vice President, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as Vice President.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

SEAL

/s/ Paul H. Russell
Notary Public

My Commission Expires 1-8-57

A G R E E M E N T

THIS AGREEMENT, entered into as of the 18th day of September, 1952, by and between Robert E. Gull, (hereinafter called the lessors), and Mining Research Corporation, a Delaware Corporation, (hereinafter called the lessee), WITNESSETH:

1. Lessors, for and in consideration of the sum of One and no/100 ($1.00) Dollars ~~XXXXXXXXXX~~ receipt of which is hereby acknowledged, and other valuable considerations

and the royalties herein provided, and of the agreement of lessee herein contained, hereby grant, demise, lease, and rent exclusively unto lessee the mining property hereinafter described, for the purpose of investigation, exploring, drilling, and mining for, producing, saving, taking, owning, transporting, storing, handling, and treating uranium and all other minerals, excluding petroleum oil, natural gas, and gravel, whether similar, or dissimilar, together with the rights and privileges and easements necessary for lessee's operation hereunder on said land and on land in the same field, including but not limited to the following right, to lay pipe lines, to build roads, and to construct mills, power stations, power and communications lines, houses for employees, and other structures and facilities. The said land included in this lease is situated in the Unorganized Mining District, County of Fall River, State of South Dakota, and is more patricularly described as follows:

Deeded land as follows:
Of Section 23; the S 1/2, the NW 1/4, and the SW 1/4 of the NE 1/4.
Of Section 26; the NW 1/4, the N 1/2 of the NE 1/4, the SW 1/4 of the NE 1/4, the W 1/2 of the SE 1/4, the N 1/2 of the SW 1/4, and the SW 1/4 of the SW 1/4.
Of Section 27; the E 1/2 of the NE 1/4, the SW 1/4 of the NE 1/4, the SE 1/4, the SW 1/4, and the SW 1/4 of the NW 1/4.
Of Section 28; the SE 1/4 of the NE 1/4, the NE 1/4 of the SE 1/4, the S 1/2 of the SE 1/4, and the S 1/2 of the SW 1/4.
Of Section 33; the NE 1/4.
Of Section 34; the N 1/2.
Of Section 35; the N 1/2 of the NW 1/4, and the NW 1/4 of the NE 1/4.

All located in T. 8 S., R. 3 E.

11. Subject to the other provisions herein contained, this lease shall remain in force for a period of Five (5) Years from the date hereof, called the "primary term," and thereafter so long as uranium or any other mineral is produced from said land hereunder, or thereafter so long as lessee spends a minimum amount of Two Thousand and Three Hundred and Twenty and no/100 ($2,320.00) Dollars per year upon the development of said mining property.

111. Lessee agrees to comply with all provisions and requirements of federal or state laws necessary to keep the said mining claims in full force and effect.

1V. Royalty to be paid by lessee for the extration of uranium before March 31, 1958, shall be paid lessor in two parts, as

A. Lessee shall pay lessors, as royalty, twelve and one-half (12½) per cent of the Atomic Energy Commission bonus for initial production of uranium ores from eligible new domestic mines. Said payments shall be made as soon as practicable after receipt of said bonus from the Atomic Energy Commission, and shall be subject to provisions of the Atomic Energy Commission regarding payments of bonuses. Lessee shall comply with all provisions of the Atomic Energy Commission for certification of this property as mining property elibible for bonus payments. For purposes of computing the amount of royalty payments to be made under this section, a record shall be kept by the lessee of the ore mined on each property or group of properties regarded by the Atomic Energy Commission as a single eligible unit for purposes of bonus payments.

B. In addition to the royalty payments in Section A, lessee shall pay lessor, as royalty for ore mined on this property, twelve and one-half (12½) per cent of the Atomic Energy Commission price paid for delivery of ore of like grade to a mill or purchasing depot. But in no event shall Royalties paid for uranium extracted by the leaching process be based on a price lower than the minimum price specified for acceptable ore by the Atomic Energy Commission. Royalty payments for each month shall be made on or before the 15th day of the following month, and settlement assays and settlement weights as determined by the Atomic Energy Commission shall be used as a basis for computing grade of the ore and royalty payments.

V. After March 31, 1958, lessee shall pay to lessors, as royalty for uranium ore mined on this property, twelve and one-half (12½) per cent of the market price paid for delivery of ore of like grade to a mill or purchasing depot. Royalty payments for each month shall be made on or before the 15th day of the following month.

Vl. In addition to the above royalty payments, lessee agrees to pay lessors, as royalty for marketable ores, other than uranium ores, mined on this property, twelve and one-half (12½) per cent of the market price paid for similar ores of like grade. However, no royalty shall be paid for vanadium ores that assay less than one (1) per cent V_2O_5.

Vll. If the Mining Research Corporation or any of its affiliated companies after this date signs an agreement to lease uranium bearing lands in the unorganized mining district of Fall River County, South Dakota which provides for a higher royalty than provided in this agreement, it is understood that the royalties in this agreement will be correspondingly raised as of the date of such subsequent agreement.

Vlll. Lessee agrees to expend a minimum sum of Two Thousand and Three Hundred and Twenty and no/100 ($2,320.00) Dollars per year during the primary term of this lease upon the development and production of minerals from this property. In the event that the lessee does not expend this minimum sum during any one year period, the said lessee shall have the option to forfeit all rights to this property under the terms of this lease agreement or of paying the sum of Two Thousand and Three Hundred and Twenty and no/100 -($2,320.00) Dollars per year as rental for the continuation of this lease agreement. In the event that the said lessee shall elect to forfeit all rights under this agreement for failure to expend said minimum sum, both parties hereto shall be released from any further obligations or liabilities under this agreement.

lX. Lessee agrees to permit lessors or their duly authorized agent or representative at any and all times (a) to enter upon and visit all parts of said leased premises for the purpose of observing whether the terms of this agreement are being fully and faithfully complied with by the Lessee, and (b) to have surveys made of the workings. Lessee agrees to facilitate in every way such inspection or surveys, and to furnish, when requested, full, true, and accurate information with regard to the condition of said workings or any part thereof or the quality or the character of the minerals therein.

Lessee further agrees to conduct all operations in a miner-like manner, and not to maintain or tolerate any public nuisances not necessary to the mining operations upon the property.

X. Lessor hereby agrees to plug securely all drill holes, except where specified otherwise by the lessors, left by, or not necessary to, the mining operations, and furthermore, inasmuch as is practicable, grade to slopes excavations left by conventional mining operations. Lessee further agrees to replace or repair all structures and facilities of the lessors damaged, destroyed, or removed during mining operations. Lessee agrees not to commence operations in cultivated fields having a growing crop without the written consent of the lessors or their duly authorized agent.

Xl. Lessors hereby warrant that the properties as covered in this agreement have been properly located and are legal and valid, and that they are the only parties that hold any interest in the property. In the event that the title to said property is found to be defective in any way, the lessors shall return to the lessee any moneys advanced to them by the said lessee.

Xll. Lessee shall pay all amounts to the lessors under any part of this lease agreement to Robert E. Gull, as agent for the lessors, and lessee shall in no way be held liable to the lessors or to anyone of the lessors for the payment of any amount to the aforesaid agent.

Xlll. Lessors hereby agree to cooperate with lessee in the securing of any loans necessary for the exploration and development of the leased property under the provisions of the Defense Minerals Exploration Administration for government aid in defense and exploration projects and to sign any instruments necessary for the procurement of such loans; provided, however, that the lessors shall not be required to sign any instruments or enter into any agreements which will subject them to any personal liability.

XlV. All express and implied covenants of this lease shall be subject to all federal and state laws, executive orders, rules and regulations, and this lease shall not be terminated, in whole or in part nor lessee held liable in damage for failure to comply therewith if compliance is prevented through no fault of his own.

XV. This lease and all its terms, conditions, and stipulations shall extend to and be binding upon all successors of said lessors or lessee. Lessor hereby agrees not to transfer or grant in the form of a sub-lease this lease nor any interest of the lessees therein or thereunder during the term thereof without the consent in writing of the lessors or their duly authorized agent first thereto had and obtained.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year above written.

ATTESTED:

/s/ Ruth E. Livingston
Secretary

MINING RESEARCH CORPORATION

/s/ J. Sterling Livingston
Vice - President

/s/ Robert E. Gull

STATE OF: South Dakota)
) ss
COUNTY OF: Fall River)

On this the 18th day of September, 1952, before me, Paul H. Russell, the undersigned officer, personally appeared Robert E. Gull, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purpose therein contained.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

(SEAL) /s/ Paul H. Russell
Notary Public

My Commission Expires 1 - 8 - 53.

---ooOoo---

STATE OF: South Dakota)
) ss
COUNTY OF: Fall River)

On this the 18th day of September, 1952, before me, Paul H. Russell, the undersigned officer, personally appeared J. Sterling Livingston, who acknowledged himself to be the Vice-President of Mining Research Corporation, a corporation, and that he, as such Vice-President, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as Vice-President.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

(SEAL) /s/ Paul H. Russell
Notary Public

My Commission Expires 1 - 8 - 53.

COPY COPY

AGREEMENT

THIS AGREEMENT, entered into as of the 17th day of September, 1952, by and between Carl V. Gull, as agent for Carl V. Gull, Earl Boner, and Vernon Harriett, (hereinafter called the lessors), and Mining Research Corporation, (hereinafter called the lessee), WITNESSETH:

I. Lessors, for and in consideration of the sum of One Hundred and no/100 ($100.00) Dollars in hand paid, of the royalties herein provided, and of the agreement of lessee herein contained, hereby grant, devise, lease and rent exclusively unto lessee the mining property hereinafter described, for the purpose of investigation, exploring, drilling and mining for, producing, saving, taking, owning, transporting, storing, handling and treating uranium and all other minerals, excluding petroleum oil and natural gas, whether similar, or dissimilar, together with the rights and privileges and easements necessary for lessee's operation hereunder on said land and on land in the same field, including but not limited to the following right, to lay pipe lines, to build roads and to construct mills, power stations, power and communication lines, houses for employees, and other structures and facilities. The said land included in this lease is situated in the Unorganized Mining District, County of Fall River, State of South Dakota, and is more particularly described as follows:

Mining Claims as follows: Sheep Canyon No. 1
Sheep Canyon No. 2
Sheep Canyon No. 3

The above claims are located in the North 1/2, Sec. 27, T. 8 S., R. 3 E.

II. Subject to the other provisions herein contained, this lease shall remain in force for a period of Five (5) Years from the date hereof, called the "primary term", and thereafter so long as uranium or any other mineral is produced from said land hereunder, or thereafter so long as lessee spends a minimum amount of Three Hundred and no/100 ($300.00) Dollars per year upon the development of said mining property.

III. Lessee agrees to comply with all provisions and requirements of federal or state laws necessary to keep the said mining claims in full force and effect.

IV. Royalty to be paid by lessee for the extraction of uranium before March 31, 1958, shall be paid lessor in two parts, as follows:

A. Lessee shall pay lessors, as royalty, ten (10) percent of the Atomic Energy Commission bonus for initial production of uranium ores from eligible new domestic mines. Said payments shall be made as soon as practicable after receipt of said bonus from the Atomic Energy Commission, and shall be subject to provisions of the Atomic Energy Commission regarding payments of bonuses.

Lessee shall comply with all provisions of the Atomic Energy Commission for certification of this property as mining property eligible for bonus payments. For purposes of computing the amount of royalty payments to be made under this section, a record shall be kept by the lessee of the ore mined on each property or group of properties regarded by the Atomic Energy Commission as a single eligible unit for purposes of bonus payments.

B. In addition to the royalty payments in Section A, lessee shall pay lessor, as royalty for ore mined on this property, fifteen (15) percent of the Atomic Energy Commission price paid for delivery of ore of like grade to a mill or purchasing depot. Royalty payments for each month shall be made on or before the 15th day of the following month, and settlement assays and settlement weights as determined by the Atomic Energy Commission shall be used as a basis for computing grade of the ore and royalty payments.

V. After March 31, 1958, lessee shall pay to lessors, as royalty for uranium ore mined on this property, fifteen (15%) percent of the market price paid for delivery of ore of like grade to a mill or purchasing depot.

VI. In addition to the above royalty payments, lessee agrees to pay lessors, as royalty for marketable ores, other than uranium ores, mined on this property, ten (10%) percent of the market price paid for similar ores of like grade. However, no royalty shall be paid for vanadium ores that assay less than one (1%) percent V_2O_5.

VII. Lessee agrees to enter upon this property within sixty (60) days from the date of this agreement and to pursue diligently an investigation to determine the possibilities of a commercial enterprise and, if such possibilities are found to be favorable, to commence the necessary steps immediately thereafter for the development of the property. If such investigation is not commenced on said land on or before sixty (60) days from the date of this agreement, this lease shall terminate as to both parties, unless the lessee shall on or before such date, pay or tender to the lessors or their successors or assigns the sum of Three Hundred and no/100 ($300.00) Dollars which shall operate as a rental and cover the privilege of deferring the commencement of operations for the investigation and development of mineral production one year from the date of said payment. In like manner and upon like payments and tenders the commencement of operations for the investigation and development of mineral production may be further deferred for like periods successively during the primary term of the lease. And it is understood and agree that the consideration first recited herein, the down payment, covers not only the privilege granted to the date when said rental is payable as aforesaid, but also the lessee's option of extending that period aforesaid, and any and all rights aforesaid.

VIII. Lessee agrees to expend a minimum sum of Three Hundred and no/100 ($300.00) Dollars per year during the primary term of this lease upon the development and production of minerals from this property. In the event that the lessee does not expend this minimum sum during any one year period, the

said lessee shall have the option to forfeit all rights to this property under the terms of this lease agreement or of paying the sum of Three Hundred and no/100 ($300.00) Dollars per year as rental for the continuation of this lease agreement. In the event that the said lessee shall elect to forfeit all rights under this agreement for failure to expend said minimum sum, both parties hereto shall be released from any further obligations or liabilities under this agreement.

IX. Lessee agrees to permit lessors or their duly authorized agent or representative at any and all times (a) to enter upon and visit all parts of said leased premises for the purpose of observing whether the terms of this agreement are being fully and faithfully complied with by the lessee, and (b) to have surveys made of the workings. Lessee agrees to facilitate in every way such inspection or surveys, and to furnish, when requested, full, true and complete information with regard to the condition of said workings or any part thereof or the quality or the character of the minerals therein. Lessee further agrees to conduct all operations in a miner-like manner and not to maintain or tolerate any public nuisances not necessary to the mining operations upon the property.

X. Lessors hereby warrant that the properties as covered in this agreement have been properly located and are legal and valid, and that they are the only parties that hold any interest in the claims. In the event that the title to said claims is found to be defective in any way, the lessors shall return to the lessee any moneys advanced to them by the said lessee.

XI. Lessee shall pay all amounts to the lessors under any part of this lease agreement to Carl V. Gull, as agent for the lessors, and lessee shall in no way be held liable to the lessors or to any one of the lessors for the payment of any amount to the aforesaid agent.

XII. Lessors hereby agree to cooperate with lessee in the securing of any loans necessary for the exploration and development of this property under the provisions of the Defense Minerals Exploration Administration for government aid in defense and exploration projects and to sign any instruments necessary for the procurement of such loans; provided, however, that the lessors shall not be required to sign any instruments or enter into any agreements which will subject them to any personal liability.

XIII. All express and implied covenants of this lease shall be subject to all federal and state laws, executive orders, rules and regulations, and this lease shall not be terminated, in whole or in part, nor lessee held liable in damage for failure to comply therewith if compliance is prevented through no fault of his own.

XIV. This lease and all its terms, conditions, and stipulations shall extend to and be binding upon all successors of said lessors or lessee. Lessee hereby agrees not to transfer or grant in the form of a sub-lease this lease nor any interest of the lessee therein or thereunder during the

term thereof without the consent in writing of the lessors or their duly authorized agent first thereto had and obtained.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year above written.

MINING RESEARCH CORPORATION

ATTESTED:

/s/ J. Sterling Livingston
Vice President

/s/ Ruth E. Livingston
Secretary

//s/ Carl V. Gull (Agent)

COPY COPY

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF FALL RIVER)

On this the 17th day of September, 1952, before me, Paul H. Russell, the undersigned officer, personally appeared Carl V. Gull, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purpose therein contained.

In witness whereof I hereunto set my hand and official seal.

(SEAL) /s/ Paul H. Russell
Notary Public, South Dakota

My Commission expires 1 - 8 - 53.

---ooOoo---

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF FALL RIVER)

On this the 17th day of September, 1952, before me, Paul H. Russell, the undersigned officer, personally appeared J. Sterling Livingston, who acknowledged himself to be the Vice President of Mining Research Corporation, a corporation, and that he, as such vice president, being authorized to do so, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as vice president.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

(SEAL) /s/ Paul H. Russell
Notary Public

My Commission Expires 1 - 8 - 53.

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

DOCKET COPY

NOV 3 1953

Dr. [illegible] Washington, Vice President
[illegible] Uranium Corporation
[illegible] Street
Denver, Colorado

Re: Docket No. [illegible] (Uranium)
Contract No. [illegible]
[illegible]

Dear Dr. Washington:

Reference is made to your above-named Exploration Project Contract for uranium. You are probably aware that in some similar cases it has been found that some part or all of the land which is the subject of the exploration project contract consists of claims located on land which was subject to prior Federal oil and gas leases. The validity of such claims is doubtful, and in some cases the Atomic Energy Commission has issued a lease to the land for whatever benefit that may afford in curing the invalidity as far as uranium is concerned.

By the recent act of Congress approved August 12, 1953 (Public Law 250, 83d Cong.), mining claims located between July 31, 1939, and January 1, 1953, on United States Lands which were then subject to oil and gas leases, may be validated by the owners of such claims, if, not later than December 10, 1953, they

> ".... post on such claim in the manner required for posting notice of location of mining claims and file for record in the office where the notice or certificate of location of such claim is of record an amended notice of location of such claim, stating that such notice is filed pursuant to the provisions of this Act and for the purpose of obtaining the benefits thereof."

If any of the land which is the subject of your Exploration Project Contract includes a located claim or claims, the validity of which might be questioned on account of a previous oil and gas lease, the statute cited is called to your attention so that you may validate your rights as above indicated, if you consider this to be in your interest. This Agency deems such validation to be desirable even though the land in question may be covered by a lease from the Atomic Energy Commission.

Sincerely yours,

C. D. Mattendorf

Administrator

DMcguire/db
10-30-53
cc to: Docket File
Region V (2)
Division contract file

50811

2768

FILE COPY
SURNAME:

200

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

JUN 12 1953

Mr. W. H. King
Executive Officer
224 New Customhouse Building
Denver 2, Colorado

mining research

Dear Mr. King:

Attached herewith is one copy of contract Idm-E520. This "extra copy" is for use of your office in making a report on this project.

Sincerely yours,

C. O. Mittendorf

Administrator

6-12-53

Attachment
WMJens/meb
6-11-53
cc to: Adm.Reading File
Mails & Files Br.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

May 27, 1953

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA-2768, Contract Idm E-520, Mining Research Corp.

Here are the Government, division, and docket copies of the subject contract, duly executed.

One copy has been retained by the Operator, one by this office, and a copy has been transmitted to the Regional Finance Section.

A. B. Needham
Executive Officer, Field Team
Region V

Attachments

Case
5/29

FILE COPY
SURNAME:

Murphy
Ellis
Martin

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

MAY 1 4 1953

Mr. A. [illegible] Meadlan
Executive Officer
DMA Field Team, Region V
290 Colfax Avenue, South
Minneapolis, Minnesota

Re: Docket No. DMA-2[illegible] (Graniteville)
Mining Research Corporation
Fall River County, South Dakota

Dear Mr. Meadlan:

Enclosed are the original and five copies of the subject contract which have been signed by the Government. When the original and all copies have been signed by the operator, they are to be distributed according to the usual practice.

The original application was for a total area of [illegible],031.2[illegible]. This has been revised to [illegible]52,[illegible]73.0[illegible] upon the recommendation of the Field Team.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee

S.N.
5-14-53
(SNB)

Enclosures 5

Copies:

J. H. Hedges
Director, Bureau of Mines (SNB)

T. P. Thayer
Director, Geological Survey (SNB)

HMurphy/(HKnouse)/ecf 5/13/53

cc. to: Adm. Reading Files
Operating Committee
Docket
Messrs. HDKeiser, Room 3641
AFButler, Jr., Room 3206 GSA
Ellis
Murphy (Knouse)
DMA Field Team, Region V (2)

FILE COPY
SURNAME:

140

Rubin

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

May 8, 1953

M.S. in H.v.R.

Memorandum

To: The Administrator
Through: Mr. E. W. Ellis

From: Chief Counsel

Subject: Mining Research Corporation, Docket No. DMEA-2768 (Uranium)

There is attached in satisfactory legal form, for execution, a contract covering the above-described project, subject to the attachment to the contract prior to execution of either a claim map describing the mining claims in Items 1, 2, and 3 of Annex I, or a metes-and-bounds description of those claims. Either addition can be incorporated in the contract by reference thereto in Annex I.

J. L. Hofflund for

J. L. Hofflund
Chief Counsel

Attachments

HCRubin:ep

Copy to: Mails & Files
Mr. Hofflund
Mr. Rubin
Chron.

5/4/53 gla

MINING RESEARCH CORPORATION
INCORPORATED
4215 Balsam Street
Wheatridge, Colorado

RECEIVED
MAY 4 1953

May 1, 1953

Mr. F. L. Knouse
Room 4640
Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

Dear Mr. Knouse:

Re: Revised Application replacing
Docket No. DMEA-2768 (Uranium)
Edgemont Uranium Area
Fall River County, South Dakota

Enclosed you will find the originals and five copies of the following Owner's Consent to Lien forms:

Mining claim R.A.M. No. 3 (Royce A. McElhaney);
Mining claims McK. No. 2, 3, and 5 (John McKnight and James McKnight);
Deeded land SE 1/4 of Section 22; S 1/2, E 1/2 of the NW 1/4, and SW 1/4 of the NE 1/4 of Section 23 (Robert E. Gull);
Mining claims Sheep Canyon No. 4 and 5 (Carl V. Gull and Robert E. Gull); and
Deeded land E 1/2 of the SW 1/4 and the SE 1/4 of Section 14, (Edna McKnight).

Since I had insufficient copies of these forms signed, I have had reproductions made in order to send you the six copies requested.

I believe our application is now complete in all respects.

I expect to be in Washington during the week of May 11 to 15 and shall call at your office to learn of the status of our contract.

Sincerely,

J. Sterling Livingston

J. Sterling Livingston
Vice President and Treasurer

JSL:bll
Enclosures

4/21/53 gla

LIVINGSTON URANIUM CORPORATION

INCORPORATED

J. STERLING LIVINGSTON
Vice-President and Treasurer

4215 BALSAM STREET
WHEATRIDGE, COLORADO

April 17, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 20 1953

Mr. F. L. Knouse
Room 4640
Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

Dear Mr. Knouse:

Re: Revised Application replacing
Docket No. DMEA-2768 (Uranium)
Edgemont Uranium Area
Fall River County, South Dakota

Enclosed are the originals and one copy each of the agreements assigning the leases held by the Livingston Uranium Corporation to the Mining Research Corporation.

As you will see from an examination of the assignments and leases, the lease agreement dated July 24, 1953, between Robert E. Gull & Carl V. Gull and the Livingston Uranium Corporation covers Sheep Canyon claims No. 4, 5, and 6. This lease was recorded on the 6th day of August, 1952, in Book 31 Misc., at page 445 in the records of the county of Fall River, state of South Dakota.

The lease agreement dated July 24, 1952, between Robert E. Gull and the Livingston Uranium Corporation covers the SE 1/4 and the S 1/2 of the NE 1/4, Section 22, T. 8 S., R. 3 E. This lease was recorded on the 7th day of October, 1952, in Book 31 Misc., at page 480 in the records of the county of Fall River, state of South Dakota.

Except for the additional Owner's Consent to Lien forms, the above assignments comprise, I believe, the last of the documents needed to support our revised DMEA loan application. We have had all the new Owner's Consent to Lien forms signed except one, which I am confident will be in hand by the time our contract is ready for signature.

Sincerely,

J. Sterling Livingston

JSL:bll
Enclosures 4

Edgemont Office:
P. O. Box 356
Edgemont, South Dakota

ASSIGNMENT OF AGREEMENT

KNOW ALL MEN BY THESE PRESENTS, that for and in consideration of the sum of One Dollar and other valuable considerations, receipt and sufficiency of which is hereby acknowledged, LIVINGSTON URANIUM CORPORATION, a Delaware corporation, does hereby sell, assign and set over unto MINING RESEARCH CORPORATION, a Delaware corporation, the following described agreement and all the rights and privileges secured thereunder, to-wit:

That certain agreement dated July 24, 1952 by and between Robert E. Gull and Carl V. Gull, as lessors, and Livingston Uranium Corporation as lessee, and which was recorded on the 6th day of August, 1952 in Book 31 Miscellaneous at Page 445 in the records of the County of Fall River, State of South Dakota.

Dated this 10 day of April, 1953.

LIVINGSTON URANIUM CORPORATION

By J. Sterling Livingston

Attest:

Ruth E. Livingston
Secretary

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

On this 10 day of April, 1953, before me, _____, the undersigned officer, personally appeared J. Sterling Livingston who acknowledged himself to be the Vice-President of Livingston Uranium Corporation, and that he, as such Vice-President being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the

corporation by himself as Vice-President.

IN WITNESS WHEREOF I have hereunto set my hand and official seal.

NOTARY PUBLIC
residing at
EDGEMOMT, SOUTH DAKOTA

My commission expires: 1-8-57 1-8-57

APPROVAL OF ASSIGNMENT

KNOW ALL MEN BY THESE PRESENTS, that the undersigned, ROBERT E. GULL and CARL V. GULL, lessors in that certain agreement dated July 24, 1952 and recorded August 6, 1952, in Book 31 Miscellaneous at Page 445 in the records of Fall River County, South Dakota, wherein Livingston Uranium Corporation is the lessee, do hereby consent to and approve the assignment of said agreement by Livingston Uranium Corporation to Mining Research Corporation, and agree that the said Mining Research Corporation may succeed to all the rights and privileges granted in said agreement to the said Livingston Uranium Corporation.

Dated this 10 day of APRIL, 1953.

Robert E. Gull

Carl V. Gull

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

On this 10 day of APRIL, 1953, before me, PAUL H. RUSSELL, the undersigned officer, personally appeared Robert E. Gull, known to be or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same as his free and voluntary act and deed for the purposes therein contained.

IN WITNESS WHEREOF I have hereunto set my hand and official seal.

Paul H. Russell
NOTARY PUBLIC

residing at
EDGEMONT, SOUTH DAKOTA

My commission expires: 1-8-57 1-8-57

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

On this 10 day of APRIL, 1953, before me, PAUL H. RUSSELL, the undersigned officer, personally appeared Carl V. Gull, known to be or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same as his free and voluntary act and deed for the purposes therein contained.

IN WITNESS WHEREOF I have hereunto set my hand and official seal.

Paul H. Russell
NOTARY PUBLIC

residing at
EDGEMONT, SOUTH DAKOTA

My commission expires: 1-8-57

ASSIGNMENT OF AGREEMENT

KNOW ALL MEN BY THESE PRESENTS, that for and in consideration of the sum of One Dollar and other valuable considerations, receipt and sufficiency of which is hereby acknowledged, LIVINGSTON URANIUM CORPORATION, a Delaware corporation, does hereby sell, assign and set over unto MINING RESEARCH CORPORATION, a Delaware corporation, the following described agreement and all the rights and privileges secured thereunder, to-wit:

That certain agreement dated July 24, 1952, by and between Robert E. Gull, as lessor, and Livingston Uranium Corporation, lessee, which agreement was recorded on October 7, 1952 in Book 31 Miscellaneous at Page 480 in the records of the County of Fall River, State of South Dakota.

Dated this 10 day of APRIL, 1953.

LIVINGSTON URANIUM CORPORATION

By J. Sterling Livingston

Attest:

Ruth E. Livingston
Secretary

STATE OF South Dakota
COUNTY OF Fall River } ss.

On this 10 day of April, 1953, before me PAUL H. RUSSELL, the undersigned officer, personally appeared J. Sterling Livingston who acknowledged himself to be the Vice-President of Livingston Uranium Corporation, and that he, as such Vice-President being authorized so to do, executed the foregoing instrument for

for the purposes therein contained by signing the name of the corporation by himself as Vice-President.

IN WITNESS WHEREOF I hereby set my hand and official seal.

Paul H. Russell
NOTARY PUBLIC
residing at Edgemont
S. Dakota

My commission expires: 1-8-57

CONSENT AND APPROVAL OF ASSIGNMENT

KNOW ALL MEN BY THESE PRESENTS, that the undersigned, ROBERT E. GULL, lessor, in that certain agreement dated July 24, 1952, and recorded October 7, 1952 in Book 31 Miscellaneous at Page 480 in the county records of Fall River County, South Dakota, and wherein Livingston Uranium Corporation is the lessee, does hereby consent to and approve the assignment of said agreement by Livingston Uranium Corporation to Mining Research Corporation, and the undersigned does hereby agree that the said Mining Research Corporation may succeed to all rights and privileges granted in said agreement to the said Livingston Uranium Corporation.

Dated this 10 day of April, 1953.

Robert E. Gull
Robert E. Gull

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

On this 10 day of APRIL, 1953, before me, PAUL H. RUSSELL, the undersigned officer, personally appeared Robert E. Gull, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same as his free and voluntary act and deed for the purposes therein contained.

IN WITNESS WHEREOF I have hereunto set my hand and official seal.

Paul H. Russell
NOTARY PUBLIC
residing at
EDGEMONT, SOUTH DAKOTA

My commission expires: 1-8-57.

4/6/53 gla

MINING RESEARCH CORPORATION

INCORPORATED

4215 Balsam Street
Wheatridge, Colorado

April 1, 1953

Mr. F. L. Knouse
Room 4640
Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 3 1953

Dear Mr. Knouse:

Re: Revised Application replacing
Docket No. DMEA-2768 (Uranium)
Edgemont Uranium Area
Fall River County, South Dakota

Enclosed you will find two copies of the following lease agreements which are required to support our DMEA loan application:

(1) Agreement with Royce A. McElhaney covering R.A.M. No. 1, 2, and 3, Section 15, T 8 S, R 3 E;
(2) Agreement with John McKnight and James McKnight covering McK. No. 1, 2, 3, 4, and 5, Section 15, T 8 S, R 3 E; and
(3) Agreement with Robert E. Gull and Carl V. Gull covering Sheep Canyon No. 4, 5, and 6, Section 22, T 8 S, R 3 E.

We previously sent with our original application the following agreements:

(1) Agreement with Edna McKnight covering deeded land, the S 1/2 of Section 14 and the N 1/2 of the NE 1/4 of Section 22, T 8 S, R 3 E;
(2) Agreement with Robert E. Gull covering deeded land, the SE 1/4 of Section 22 and the S 1/2 of the NE 1/4 of Section 22, T 8 S, R 3 E; and
(3) Agreement with Robert E. Gull covering deeded land, in Sections 23, 26, 27, 28, 33, 34, and 35, T 8 S, R 3 E.

I believe, therefore, we have now sent you copies of the lease agreements covering all land included in our application.

The lease agreements with Carl V. Gull and Robert E. Gull covering Sheep Canyon claims No. 4, 5, and 6, as well as the agreement with Robert E. Gull covering the SE 1/4 and the S 1/2 of the NE 1/4 of Section 22, T 8 S, R 3 E, were with the Livingston Uranium

Corporation, a subsidiary of the Mining Research Corporation. It is my understanding that the Livingston Uranium Corporation must assign these lease agreements to the Mining Research Corporation prior to the issuance of a DMEA contract. Assignments covering both lease agreements have been executed and forwarded to the Gulls for their consent, as required by the agreements. When signed by the Gulls, these assignments will be forwarded directly to your office by our Edgemont office.

On the basis of our telephone conversation, it is my understanding that your exploration contract will place a lien on all mineral rights we hold in Sections 14, 15, 22, and 23, even though much of this land is not directly covered by our application. You have indicated, however, that we may exclude that land on which we have already drilled or otherwise blocked out ore. Accordingly, the McKnight claims, McK. No. 1 and 4, and the Royce A. McElhaney claim, R.A.M. No. 1, all in Section 15, should be excluded. These claims are not included in the area covered by our application, and we have blocked out sufficient ore on these claims to begin production. Since submitting our revised DMEA loan application, we have acquired from James L. Barker, Lion claims No. 1 to 18 inclusive and have uncovered three ore pods by the use of a bulldozer. A considerable tonnage of low-grade ore has also been blocked out by drilling on these claims. Since we are now extracting uranium from these claims which are located in Sections 14 and 15, we request that they be excluded from the area on which the government will require its lien.

In view of the fact that the government will require a lien on the minerals in a larger area than that included in our application, it will be necessary for me to have Owner's Consent to Lien forms signed to cover the additional areas which are as follows:

(1) Mining claim R.A.M. No. 3, (Royce A. McElhaney);
(2) Mining claims McK. No. 2, 3, and 5, (John McKnight and James McKnight);
(3) Deeded land SE 1/4 of Section 22, (Robert E. Gull);
(4) Mining claims Sheep Canyon No. 4 and 5, (Carl V. Gull and Robert E. Gull);
(5) Deeded land S 1/2, E 1/2 of the NW 1/4, and SW 1/4 of the NE 1/4 of Section 23, (Robert E. Gull); and
(6) Deeded land E 1/2 of the SW 1/4 and the SE 1/4 of Section 14, (Edna McKnight).

Since it will take a few days to get the additional Owner's Consent to Lien forms signed, it is my understanding that you will proceed with the contract but make its issuance conditional upon our delivery of these forms to your regional office at the time the contract is signed. I shall proceed at once to get the forms signed so that they will be ready when the contract is forwarded from your office.

I trust that the arrangements outlined in this letter will meet your requirements and will enable you to proceed with the contract.

Sincerely,

J. Sterling Livingston

J. Sterling Livingston
Vice President and Treasurer

Edgemont office:
P. O. Box 356
Edgemont, South Dakota

JSL:bll
Enclosures

A G R E E M E N T

THIS AGREEMENT, entered into as of the 1st day of August, 1952, by and between Royce A. McElhaney, thereinafter called the lessors,) and Mining Research Corporation-[redacted], (hereinafter called the lessee,

WITNESSETH:

I. Lessors, for and in consideration of the sum of One Hundred Fifty and no/100 ($150.00) Dollars in hand paid, of the royalties herein provided, and of the agreement of lessee herein contained, hereby grant, demise, lease and rent exclusively unto lessee the mining property hereinafter described, for the purpose of investigation, exploring, drilling and mining for, producing, saving, taking, owning, transporting, storing, handling and treating uranium and all other minerals, excluding petroleum oil and natural gas, whether similar or dissimilar, together with the rights and privileges and easements necessary for lessee's operation hereunder on said land and on land in the same field, including but not limited to the following right, to lay pipe lines, to build roads and to construct mills, power stations, power and communication lines, houses for employees, and other structures and facilities. The said land included in this lease is situated in the Unorganized Mining District, County of Fall River, State of South Dakota, and is more particularly described as follows:

Mining Claims: R.A.M. No. I
R.A.M. No. II
R.A.M. No. III

The above claims are all located in Sec. 15, T. 8 S., R. 3 E.

II. Subject to the other provisions herein contained, this lease shall remain in force for a period of five (5) years from the date hereof, called the "primary term", band thereafter so long as uranium or any other mineral is produced from said land hereunder, or thereafter so long as lessee spends a minimum amount of Three Hundred and no/100 ($300.00) Dollars per year upon the development of said mining property.

III. Lessee agrees to comply with all provisions and requirements of federal or state laws necessary to keep mining claims in full force and effect.

IV. Royalty to be paid by lessee for the extraction of uranium before March 31, 1958, shall be paid lessor in two parts, as follows:

A. Lessee shall pay lessors, as royalty, ten (10%) percent of the Atomic Energy Commission bonus for initial production of uranium ores from eligible new domestic mines. Said payments shall be made as soon as practicable after receipt of said bonus from the Atomic Energy Commission, and shall be subject to provisions of the Atomic Energy Commission regarding payments of bonuses. Lessee shall comply with all provisions of the Atomic Energy Commission for certification of this property as mining property eligible for bonus payments. For purposes of computing the amount of royalty

payments to be made under this section, a record shall be kept by the lessee of the ore mined on each property or group of properties regarded by the Atomic Energy Commission as a single eligible unit for purposes of bonus payments.

B. In addition to the royalty payments in Section A, lessee shall pay lessor, as royalty for ore mined on this property, fifteen (15%) percent of the Atomic Energy Commission price, paid for delivery of ore of like grade to a mill or purchasing depot. Royalty payments for each month shall be made on or before the 15th day of the following month, and settlement assays and settlement weights as determined by the Atomic Energy Commission shall be used as a basis for computing grade of the ore and royalty payments.

V. After March 31, 1958, lessee shall pay to lessors, as royalty for uranium ore mined on this property, fifteen (15%) percent of the market price paid for delivery of ore of like grade to a mill or purchasing depot. Royalty payments for each month shall be made on or before the 15th day of the following month.

VI. In addition to the above royalty payments, lessee agrees to pay lessors, as royalty for marketable ores, other than uranium ores, mined on this property, ten (10%) percent of the market price paid for similar ores of like grade. However, no royalty shall be paid for vanadium ores that assay less than one (1%) percent V_2O_5.

VII. Lessee agrees to enter upon this property within sixty (60) days from the date of this agreement and to pursue diligently an investigation to determine the possibilities of a commercial enterprise and, if such possibilities are found to be favorable, to commence the necessary steps immediately thereafter for the development of the property. If such investigation is not commenced on said land on or before sixty (60) days from the date of this agreement, this lease shall terminate as to both parties, unless the lessee shall on or before such date, pay or tender to the lessors or their successors or assigns the sum of Three Hundred and no/100 ($300.00) Dollars which shall operate as a rental and cover the privilege of deferring the commencement of operations for the investigation and development of mineral production one year from the date of said payment. In like manner and upon like payments and tenders the commencement of operations for the investigation and development of mineral production may be further deferred for like periods successively during the primary term of the lease. And it is understood and agreed that the consideration first recited herein, the down payment, covers not only the privilege granted to the date when said rental is payable as aforesaid, but also the lessee's option of extending that period aforesaid, and any and all rights aforesaid.

VIII. Lessee agrees to expend a minimum sum of Three Hundred and no/100 ($300.00) Dollars per year during the primary term of this lease upon the development and production of minerals from this property. In the event that the lessee does not expend this minimum sum during any one year period, the said lessee shall have the option to forfeit all rights to this property under the terms of this lease agreement or of paying the sum of Three Hundred and no/100 ($300.00) Dollars per year as rental for the continuation of this lease agreement. In the event that the said lessee shall elect to forfeit all rights under this agreement for failure to expend said minimum sum, both parties hereto shall be released from any further obligations or liabilities under this agreement.

IX. Lessee agrees to permit lessors or their duly authorized agent or representative at any and all times (a) to enter upon and visit all parts of said leased premises for the purpose of observing whether the terms of this agreement are being fully and faithfully complied with by the lessee, and (b) to have surveys made of the workings. Lessee agrees to facilitate in every way such inspection

or surveys, and to furnish, when requested, full, true and accurate information with regard to the condition of said workings or any part thereof or the quality or the character of the minerals therein. Lessee further agrees to conduct all operations in a miner-like manner, and not to maintain or tolerate any publid nuisances not necessary to the mining operations upon the property.

X. Lessors hereby warrant that the properties as covered in this agreement have been properly located and are legal and valid, and that they are the only parties that hold any interest in the property. In the event that the title to said property is found to be defective in any way, the lessors shall return to the lessee any moneys advanced to them by the said lessee, and shall be liable for any damages incurred by the lessee due to such defect in the title to the mining properties.

XI. Lessee shall pay all amounts to the lessors under any part of this lease agreement to Royce A. McElhaney, as agent for the lessors, and lessee shall in no way be held liable to the lessors or to any one of the lessors for the payment of any amount to the aforesaid agent.

XII. Lessors hereby agree to cooperate with lessee in the securing of any loans necessary for the exploration and development of the leased property under the provisions of the Defence Minerals Exploration Administration for government aid in defense and exploration projects and to sign any instruments necessary for the procurement of such loans; provided, however, that the lessors shall not be required to sign any instruments or enter into any agreements which will subject them to any personal liability over and above such amount as may be received by them as income from the subject property.

XIII. All express and implied covenants of this lease shall be subject to all federal and state laws, executive orders, rules and regulations, and this lease shall not be terminated, in whole or in part, nor lessee held liable in damage for failure to comply therewith if compliance is prevented through no fault of his own.

XIV. This lease and all its terms, conditions, and stipulations shall extend to and be binding upon all successors of said lessors or lessee. Lessee hereby agrees not to transfer or grant in the form of a sub-lease this lease nor any interest of the lessors therein or thereunder during the term thereof without the consent in writing of the lessors or their duly authorized agent first thereto had and obtained.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year above written.

ATTEST: MINING RESEARCH CORPORATION

Ruth E. Livingston
Secretary

Clifton U. Livingston
President.

Royce A. McElhaney

STATE OF SOUTH DAKOTA)
SS
COUNTY OF FALL RIVER)

On this the 31st day of July, 1952, before me, Betty L. Russell, the undersigned officer, personally appeared John McKnight and James McKnight, known to me or satisfactorily proven to be the persons whose names are subscribed to the within instrument and acknowledged that they executed the same for the purposes therein contained.

IN WITNESS WHEREOF I have hereunto set my hand and official seal.

Betty L. Russell
Notary Public, South Dakota

My Commission expires: 10/23/54.

-o-1-o-1-o-1-o-1-o-

STATE OF Colorado)
SS
COUNTY OF Gilpin)

On this the 4 day of August, 1952, before me, Elise P. Brewington, the undersigned officer, personally appeared Clifton W. Brewington, who acknowledged himself to be the President of Mining Research Corporation, a corporation, and that he, as such President, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as President.

IN WITNESS WHEREOF I Hereunto set my hand and official seal.

Elise P. Brewington
Notary Public

My Commission expires: [illegible].

[illegible] day of _31st_

July, [illegible], by and between John McKnight and James McKnight, (hereinafter called the [illegible]), Mining Research Corporation, (hereinafter called the [illegible]), [illegible]:

I. [illegible] Two [illegible] Fifty ($250.00) [illegible]

[illegible]

Mining Claims as follows:

McK No. 1
McK No. 2
McK No. 3
McK No. 4
McK No. 5

The above claims are located in T. 8 S., R. 3 E., Sec. 15.

II. Subject to [illegible], this [illegible] in force for [illegible] of five (5) years from [illegible] minimum amount of Five Hundred and no/100 ($500.00) dollars per year [illegible] development of said mining property.

III. Lessee [illegible] to comply with [illegible] in full force and effect.

IV. Royalty to be paid by Lessee for the extraction of uranium before March 31, [illegible], shall be paid [illegible] in two parts, as follows:

[illegible] Lessee shall pay Lessors, as royalty, ten (10%) percent of the [illegible] Atomic Energy Commission [illegible] uranium [illegible] eligible [illegible] payments shall be made as soon as practicable after [illegible] bonus from the Atomic Energy Commission, [illegible] subject to provisions of the Atomic Energy [illegible] bonuses. Lessee shall comply with all provisions of the Atomic Energy [illegible] property [illegible] mining property eligible for bonus payments. [illegible] purposes of computing the amount of royalty [illegible] under this section, a record shall be kept by the Lessee of the ore mined [illegible] property [illegible] of [illegible] by the Atomic Energy Commission [illegible] eligible unit for purposes of [illegible].

IV. In addition to the royalty payments in Section III, lessee shall pay lessors, as royalty for ore mined on this property, fifteen (15%) percent of the Atomic Energy Commission price paid for delivery of ore of like grade to a mill or purchasing depot. Royalty payments for each month shall be made on or before the 15th day of the following month, and settlement assays and settlement weights as determined by the Atomic Energy Commission shall be used as a basis for computing grade of the ore and royalty payments.

V. After March 31, 1958, lessee shall pay to lessors, as royalty for uranium ore mined on this property, fifteen (15%) percent of the market price paid for delivery of ore of like grade to a mill or purchasing depot. Royalty payments for each month shall be made on or before the 15th day of the following month.

VI. In addition to the above royalty payments, lessee agrees to pay lessors, as royalty for marketable ores, other than uranium ores, mined on this property, ten (10%) percent of the market price paid for similar ores of like grade. However, no royalty shall be paid for vanadium ores that assay less than one (1%) percent V_2O_5.

VII. Lessee agrees to enter upon this property within sixty (60) days from the date of this agreement and to pursue diligently an investigation to determine the possibilities of a commercial mining venture, and, if such possibilities are found to be favorable, to commence the necessary steps immediately thereafter for the development of the property. If such investigation is not commenced on said land on or before sixty (60) days from the date of this agreement, this lease shall be terminated as to both parties, unless the lessee shall on or before such date, pay or tender to the lessors or their successors or assigns the sum of Five Hundred and no/100 ($500.00) Dollars which shall operate as a rental and cover the privilege of entering the premises for operations for the investigation and development of mineral properties one year from the date of this agreement. In like manner and upon like payments and tenders the commencement of operations for the investigation and development of mineral properties may be further deferred for like periods successively during the primary term of the lease. And it is understood and agreed that the consideration first recited herein, the down payment, covers not only the privilege granted to the lessee herein but rental is payable as aforesaid, but also the lessee's agreement of entering that said aforesaid, and any and all rights forfeited.

VIII. Lessee agrees to expend a minimum sum of Five Hundred and no/100 ($500.00) Dollars per year during the primary term of this lease upon the development and production of minerals from this property. In the event that the lessee does not expend this minimum sum within any one year period, the said lessee shall have the option to forfeit all rights to this property under the terms of this lease agreement or of paying the sum of Five Hundred and no/100 ($500.00) Dollars per year as rental for the continuation of this lease agreement. In the event that the said lessee shall elect to forfeit all rights under this agreement for failure to expend said minimum sum, both parties hereto shall be released from any further obligations or liabilities under this agreement.

IX. Lessee agrees to permit lessors or their duly authorized agent or representative at any and all times (a) to enter upon and visit all parts of said leased premises for the purpose of observing whether the terms of this agreement are being fully and faithfully complied with by the lessee, and (b) to have surveys made of the workings. Lessee agrees to facilitate in every way such inspection or surveys, and to furnish, when requested, full, true and accurate information with regard to the condition of said workings or to report the nature or the quality or the character of the minerals therein. Lessee further agrees to conduct all operations in a miner-like manner, and not to maintain or tolerate any public nuisance not necessary to the mining operations upon the property.

X. Lessee hereby agrees to severally plug all drill holes, except where specified otherwise by the lessors, left by, or not necessary to, the mining operations, and furthermore, inasmuch as is practicable, guard to slopes excavations left by conventional mining operations. Lessee further agrees to replace or replace or repair all structures and facilities of the lessors damaged, destroyed or removed during mining operations. Lessee agrees not to conduct operations in cultivated fields having a growing crop without the written consent of the lessors or their duly authorized agent.

XI. Lessors hereby warrant that the properties as covered in this agreement have been properly located and are legal and valid, and that they are the only parties that hold any interest in the property. In the event that the title to said property is found to be defective in any way, the lessors shall return to the lessee any moneys advanced to them by the said lessee, and shall be liable for any damages incurred by the lessee due to such defect in the title to the mining properties.

XII. Lessee shall pay all amounts to the lessors under any part of this lease agreement to John McKnight

_____, as agent for the lessors, and lessee shall in no way be held liable to the lessors or to anyone of the lessors for the payment of any amount to the aforesaid agent.

XIII. Lessors hereby agree to cooperate with lessee in the securing of any loans necessary for the exploration and development of the leased property under the provisions of the Defense Minerals Exploration Administration for government aid in defense and exploration projects and to sign any instruments necessary for the procurement of such loans; provided, however, that the lessors shall not be required to sign any instruments or enter into any agreements which will subject them to any personal liability. ~~over and above any amounts may be secured by them as liens on the subject property.~~

XIV. All express and implied covenants of this lease shall be subject to all federal and state laws, executive orders, rules and regulations, and this lease shall not be terminated, in whole or in part, nor lessee held liable in damage for failure to comply therewith if compliance is prevented by, or is due to no fault of his own.

XV. This lease and all its terms, conditions, and stipulations shall extend to and be binding upon the successors of said lessors or lessee. Lessee hereby agrees not to transfer or grant in the form of a sub-lease this lease or any interest of the lessors therein or the land covered by the terms thereof without the consent in writing of the lessors or their duly authorized agent first thereto had and obtained.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year above written.

ATTEST: MINING RESEARCH CORPORATION

Ruth E. Livingston — Secretary | Clifton W. Livingston — President

Betty L. Russell | John E. McKnight

James A. McKnight

STATE OF SOUTH DAKOTA)
) ss
COUNTY OF MINNEHAHA)

On this the 18th day of August, 1953, before me, R. E. McCalley, the undersigned officer, personally appeared Royce A. McElhaney, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

R. E. McCalley
Notary Public, South Dakota

My Commission Expires Aug 27, 1953.

-o-o-o-o-o-o-o-o-o-

STATE OF Delaware)
) ss
COUNTY OF Delaware)

On this the 9 day of August, 1953, before me, Alice P. Spencer, the undersigned officer, personally appeared Clifton A. Spencer, who acknowledged himself to be the President of Spencer Oil & Gas Corporation, a corporation, and that he, as such President, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as President.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Alice P. Spencer
Notary Public

My Commission Expires Sept 1953.

A G R E E M E N T

THIS AGREEMENT, entered into as of the - 24th - day of July, 1952, by and between - - - - - - - - -

Robert E. Gull and Carl V. Gull - - - - - - - - - - - - - - - - (hereinafter called the lessors), and Livingston Uranium Corporation, (hereinafter called the lessee, WITNESSETH:

I. Lessors, for and in consideration of the sum of One Hundred and no/100 ($100.00) Dollars in hand paid, of the royalties herein provided, and of the agreement of lessee herein contained, hereby grant, devise, lease and rent exclusively unto lessee the mining property hereinafter described, for the purpose of investigation, exploring, drilling and mining for, producing, saving, taking, owning, transporting, storing, handling and treating uranium and all other minerals, excluding petroleum oil and natural gas, whether similar, or dissimilar, together with the rights and privileges and easements necessary for lessee's operation hereunder on said land and on land in the same field, including but not limited to the following right, to lay pipe lines, to build roads and to construct mills, power stations, power and communication lines, houses for employees, and other structures and facilities. The said land included in this lease is situated in the Unorganized Mining District, County of Fall River, State of South Dakota, and is more particularly described as follows:

Mining Claims as follows: Sheep Canyon No. 4
Sheep Canyon No. 5
Sheep Canyon No. 6

The above three claims are located in T. 8 S., R. 3 E., Sec. 22.

II. Subject to the other provisions herein contained, this lease shall remain in force for a period of Five (5) Years from the date hereof, called the "primary term", and thereafter so long as uranium or any other mineral is produced from said land hereunder, or thereafter so long as lessee spends a minimum amount of Three Hundred and no/100 ($300.00) Dollars per year upon the development of said mining property.

III. Lessee agrees to comply with all provisions and requirements of federal or state laws necessary to keep the said mining claims in full force and effect.

IV. Royalty to be paid by lessee for the extraction of uranium before March 31, 1958, shall be paid lessor in two parts, as follows:

A. Lessee shall pay lessors, as royalty, ten (10) percent of the Atomic Energy Commission bonus for initial production of uranium ores from eligible new domestic mines. Said payments shall be made as soon as practicable after receipt of said bonus from the Atomic Energy Commission, and shall be subject to provisions of the Atomic Energy Commission regarding payments of bonuses. Lessee shall comply with all provisions of the Atomic Energy Commission for certification of this property as mining property eligible for bonus payments. For purposes of computing the amount of royalty payments to be made under this section, a record shall be kept by the lessee of the ore mined on each property or group of properties regarded by the Atomic Energy Commission as a single eligible unit for purposes of bonus payments.

B. In addition to the royalty payments in Section A, lessee shall pay lessor, as royalty for ore mined on this property, fifteen (15) percent of the Atomic Energy Commission price paid for delivery of ore of like grade to a mill or purchasing depot. Royalty payments for each month shall be made on or before the 15th day of the following month, and settlement assays and settlement weights as determined by the Atomic Energy Commission shall be used as a basis for computing grade of the ore and royalty payments.

V. After March 31, 1958, lessee shall pay to lessors, as royalty for uranium ore mined on this property, fifteen (15%) percent of the market price paid for delivery of ore of like grade to a mill or purchasing depot.

VI. In addition to the above royalty payments, lessee agrees to pay lessors, as royalty for marketable ores, other than uranium ores, mined on this property, ten (10%) percent of the market price paid for similar ores of like grade. However, no royalty shall be paid for vanadium ores that assay less than one (1%) percent V_2O_5.

VII. Lessee agrees to enter upon this property within sixty (60) days from the date of this agreement and to pursue diligently an investigation to determine the possibilities of a commercial enterprise and, if such possibilities are found to be favorable, to commence the necessary steps immediately thereafter for the development of the property. If such investigation is not commenced on said land on or before sixty (60) days from the date of this agreement, this lease shall terminate as to both parties, unless the lessee shall on or before such date, pay or tender to the lessors or their successors or assigns the sum of Three Hundred and no/100 ($300.00) Dollars which shall operate as a rental and cover the privilege of deferring the commencement of operations for the investigation and development of mineral production one year from the date of said payment. In like manner and upon like payments and tenders the commencement of operations for the investigation and development of mineral production may be further deferred for like periods successively during the primary term of the lease. And it is understood and agreed that the consideration first recited herein, the down payment, covers not only the privilege granted to the date when said rental is payable as foresaid, but also the lessee' option of extending that period aforesaid, and any and all rights aforesaid.

VIII. Lessee agrees to expend a minimum sum of Three Hundred and no/100 ($300.00) Dollars per year during the primary term of this lease upon the development and production of minerals from this property. In the event that the lessee does not expend this minimum sum during any one year period, the said lessee shall have the option to forfeit all rights to this property under the terms of this lease agreement or of paying the sum of Three Hundred and no/100 ($300.00) Dollars per year as rental for the continuation of this lease agreement. In the event that the said lessee shall elect to forfeit all rights under this agreement for failure to expend said minimum sum, both parties hereto shall be released from any further obligations or liabilities under this agreement.

IX. Lessee agrees to permit lessors or their duly authorized agent or representative at any and all times (a) to enter upon and visit all parts of said leased premises for the purpose of observing whether the terms of this agreement are being fully and faithfully complied with by the lessee, and (b) to have surveys made of the workings. Lessee agrees to facilitate in every way such inspection or surveys, and to furnish, when requested, full, true and information with regard to the condition of said workings or any part thereof or the quality or the character of the minerals therein. Lessee further agrees to conduct all operations in a miner-like manner and not to maintain or tolerate any public nuisances not necessary to the mining operations upon the property.

X. Lessors hereby warrant that the properties as covered in this agreement have been properly located and are legal and valid, and that they are the only parties that hold any interest in the claims. In the event that said claims are found to be defective in any way, the lessors shall return to the lessee any moneys advanced to them by the said lessee, and shall be liable for any damages incurred by the lessee due to such defect in the title to the properties.

XI. Lessee shall pay all amounts to the lessors under any part of this lease agreement to _____

Robert E. Hall, as agent for the lessors, and lessee shall in no way be held liable to the lessors or to any one of the lessors for the payment of any amount to the aforesaid agent.

XII. Lessors hereby agree to cooperate with lessee in the securing of any loans necessary for the exploration and development of this property under the provisions of the Defense Minerals Exploration Administration for government aid in defense and exploration projects and to sign any instruments necessary for the procurement of such loans; provided, however, that the lessors shall not be required to sign any instruments or enter into any agreements which will subject them to any personal liability over and above such amount as may be received by them as income from the subject property.

XIII. All express and implied covenants of this lease shall be subject to all federal and state laws, executive orders, rules and regulations, and this lease shall not be terminated, in whole or in part, nor lessee held liable in damage for failure to comply therewith if compliance is prevented through no fault of his own.

XIV. This lease and all its terms conditions, and stipulations shall extend to and be binding upon all successors of said lessors or lessee. Lessor hereby agrees no to transfer or grant in the form of a sub-lease this lease nor any interest of the lessee therein or thereunder during the term thereof without the consent in writing of the lessors or their duly authorized agent first thereto had and obtained.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year above written.

LIVINGSTON URANIUM CORPORATION.

ATTESTED:

Ruth E. Livingston
Secretary

Clyton W. Livingston
President

Robert E. Hall

Carl L. [illegible]

STATE OF SOUTH DAKOTA)
SS
COUNTY OF FALL RIVER)

On this the 24th day of July, 1952, before me, Joyce Wilson, the undersigned officer, personally appeared ROBERT E. GULL and CARL V. GULL,

known to me or satisfactorily proven to be the person s whose name s are subscribed to the within instrument and acknowledged that they executed the same for the purpose therein contained.

In witness whereof I hereunto set my hand and official seal.

Joyce Wilson
Notary Public, South Dakota.

My Commission Expires January 20, 1953.

-o-o-o-o-o- -o-o-o-o-o-o-

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

On this the 24th day of July, 1952, before me, Joyce Wilson, the undersigned officer, personally appeared Clifton W. Livingston, who acknowledged himself to be the President of Livingston Uranium Corporation, a corporation, and that he, as such President, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as President.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

Joyce Wilson
NOTARY PUBLIC

My commission expires January 20, 1953

MINING RESEARCH CORPORATION
INCORPORATED
4215 Balsam Street
Wheatridge, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 31 1953

March 30, 1953

Mr. F. L. Knouse
Room 4640
Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

Dear Mr. Knouse:

Re: Revised Application replacing
Docket No. DMEA-2768 (Uranium)
Edgemont Uranium Area
Fall River County, South Dakota

Enclosed you will find the five executed Owner's Consent to Lien forms required to support our DMEA loan application. As you will see, the Consent to Lien forms have been signed by Royce A. McElhaney, Edna McKnight, John McKnight, Robert E. Gull, and Carl V. Gull & Robert E. Gull.

Our delay in sending these forms to you is explained by the fact that we just received the last lien form in today's mail.

It is my understanding that our application is now complete, and you will be able to issue a contract to us in the near future. I greatly appreciate your helpfulness.

Sincerely,

J. Sterling Livingston

J. Sterling Livingston
Vice President and Treasurer

Edgemont office: P. O. Box 356
Edgemont, South Dakota

JSL:bll
Enclosures 5

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Dakota, County of Fall River, described as follows:1/

Mining claims McK. Nos. 2, 3, and 5, in Section 15, T. 8 S., R. 3 E.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 61,969.14, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 11 day of March, 1953.

John McKnight [Seal]
John McKnight

[Seal]

[Seal]

1/ 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.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

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

4/ Insert the maximum amount of the Government's contribution.

Returned

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

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

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator 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 at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 31 1953

DRAFT
3/25/53
FLKnouse/gla

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 2768

COMMODITY Uranium

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

RECEIVED
MAR 26 53
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]

(Short Form)

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] Mining Research Corporation, ~~incorporated in the State of~~ a Delaware Corp., 4215 Balsam Street, Wheatridge, Colorado

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of South Dakota, County of Fall River, described as follows: The property ~~to be explored~~ is approximately 8 miles Northeast of Edgemont and is ~~located~~ in Sections 14, 15, 22 and 23, T. 8 S., R. 3E, B.H.B.M., ~~as~~ shown on the ~~attached~~ map Exhibit "B" (and made a part of this contract) and further described on Annex I attached to the Operator represents and undertakes: ~~The mining claims are further described~~

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: _____

Owners' Consents to Lien are

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the ~~XXXXXXXXXXXXXXXX~~ attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within _____ days from the date of this contract shall commence work on a project of exploration for[5] _____

in or upon the described land; and shall bring the project to completion within a period of 23 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $47,585.70 which is 90 percent of $52,873.00 the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or 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 ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

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

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* Addition to Article 6: Repayment provision shall also apply to any bonus paid for the production of any metal or mineral.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

MINING RESEARCH CORPORATION
(Operator)

By Administrator, DMEA

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—66329-1

ROUGH DRAFT
FLKnouse
4/29/53

MINING RESEARCH CORPORATION
EXPLORATION PROJECT CONTRACT
DOCKET NO. DMEA-2768

ANNEX I

The following land located in T.8 ~~S.~~ South, R.3 E. East B.H.B.M. is included in the contract:

1) Mining claims leased from Royce A. McElhaney, R.M.A. Nos. 2 and 3, in Section 15.

2) Mining claims leased from John McKnight, McK - Nos. 2, 3 and 5, in Section 15.

3) Mining claims leased from Carl V. Gull and Robert E. Gull, Sheep Canyon Nos. 4, 5, and 6 in Section 22.

4) ~~Deeded~~ land leased from Edna McKnight, ~~W~~ S 1/2 of ~~the SW 1/4 of~~ Section 14. N 1/2 of the NE 1/4 of Section 22.

5) ~~Deeded~~ land leased from Robert E. Gull, ~~S 1/2 of the NW 1/4 of Section 23~~ E1/2 and NW 1/4 of the NE 1/4 of Section 23. ~~W 1/2 of the NW 1/4 of Section 23~~ S1/2, the NW 1/4, and the SW 1/4 of the NE 1/4 of Section 23. SE 1/4, and the S 1/2 of the NE 1/4 of Section 22.

MINING RESEARCH CORPORATION
EXPLORATION PROJECT CONTRACT
DOCKET NO. DMEA-2768

EXHIBIT "A"

Description of the Work

The purpose of the work is to explore the Dakota Sandstone down to the Fuson Shale (the local ore bearing horizon), ~~underlying the described property~~ for uranium ore. The exploration work shall be done by drilling ~~holes with a~~ wagon mounted ~~percussion~~ drill holes and also diamond ~~core~~ drill holes.

Stage II to be undertaken first. The work ~~below indicated is to~~ shall be done in two stages, Stage I. ~~If, in the opinion of the Government, the results of Stage I warrant it, and but~~ Stage II ~~is to~~ shall be undertaken. ~~only after completion of Stage I and the location and extent of the work is to be dependent upon the results of Stage I and to be undertaken only upon the expressed approval of the Government. The location and extent of the work consists of the following:~~ The Government approves it in advance.

STAGE I

The work ~~is to~~ shall be confined to Areas I, and III ~~as~~ shown on the attached map Exhibit "B" entitled "Portion of Sections 14, 15, 22, 23, T. 8 S., R. 3 E., Fall River County, S. D., showing Drill Areas". ~~This work~~ It consists of drilling from the surface a maximum of 241 wagon mounted drill holes, ~~totalling~~ not to exceed an aggregate total of 14,770 feet, ~~of wagon drill holes~~ and also 26 diamond drill holes, total~~ling~~ of 1,595 feet. ~~of diamond core drill hole of BX or larger diameter size.~~ (BX size or larger, not to exceed an aggregate) ~~All~~ Each holes ~~are to~~ shall be drilled ~~to penetrate~~ through the Dakota Sandstone ~~and in~~ down into the Fuson Shale, ~~(the local ore bearing horizon), averaging~~ and shall be approximately 60 feet in depth. The wagon drill holes ~~are to~~ shall be drilled on a rectang~~ular~~ be with a spacing of 100 feet between holes in a northwest or southeast direction and a spacing of 50 feet between holes in a northeast or southwest direction. Offset wagon drill holes (if the Government approves in advance), drilling from the surface a maximum of

may be drilled in a square, with a spacing of 30 feet between holes ~~on a 30 ft. square spacing, surrounding~~ around holes on which ore has been found. ~~if the work has the prior approval of the Government.~~ [P] Occasional diamond ~~core~~ drill holes ~~are to~~ shall be drilled for geological data as the circumstances may require ~~at locations and to depths approved~~ by the Government.

STAGE II

The work ~~is to~~ shall be performed ~~confined to other~~ in areas of the property other than those ~~included in the application which were not~~ explored under ~~by the work done in~~ Stage I. ~~that has the expressed approval of the Government.~~ The areas are to be selected by agreement between the parties and are based upon the results of ~~from data obtained from~~ the work done under ~~in~~ Stage I and data obtained from ~~additional~~ radiometric surveys made independently by the Operator. ~~in progress, which are to be done.~~ [II] The work consists of drilling from the surface an aggregate total not to exceed ~~maximum of~~ 30,000 feet of wagon drill hole drilling from the surface and an aggregate total not to exceed 3,000 feet of diamond ~~core~~ drill hole, ~~of~~ BX size or larger. ~~diameter size.~~ The wagon drill hole spacing shall ~~is to~~ be the same as ~~is~~ described under Stage I, unless modified with the prior ~~expressed~~ approval of the Government. [H] All the locations and directions of all wagon drill hole diameters, all hole depths, the methods of recovery of all drill cuttings, cores and sludge, the methods of all sampling, ~~sample~~ analyzing ~~and~~ samples, ~~to be supplied to the Government~~ are all subject to the approval of the Government. [K] At the request of the Government, the Operator shall furnish the Government with such information as to spacings

~~Estimated Costs of the Project~~ Agreed Limit Costs

Stage I

14,770 feet of wagon drill hole @ $0.87/ft.	$12,849.90	
1,595 feet of diamond ~~core~~ drill hole @ $3.03/ft	4,832.85	
~~Total Stage I~~		$17,682.75

Stage II

30,000 feet of wagon drill hole @ $0.87/ft.	$26,100.00	
3,000 feet of diamond ~~core~~ drill hole @ $3.03/ft.	9,090.00	
~~Total Stage II~~		$35,190.00

* * * * * *

Agreed Estimated cost of Project is rounded off ~~Total Stages I and II~~		$52,873.00
Government Participation @ 90%		$47,585.70

3/24/53 gla

MINING RESEARCH CORPORATION

4215 Balsam Street

Wheatridge, Colorado

March 22, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 23 1953

Mr. F. L. Knouse
Defense Minerals Exploration Administration
U. S. Department of the Interior
Room 4640
Washington 25, D. C.

Reference: DMEA 2768 Revised

Dear Mr. Knouse:

Enclosed are the DMEA Loan Application and the cost figures you lent to me. After reviewing the figures in light of my conversation with you, I have come to the conclusion that a considerable time period may be involved in the justification of higher costs than those recommended by the field team. Under the circumstances, we believe it is more important for us to receive a contract at an early date than it is to delay the contract for the purpose of justifying higher costs. If it is possible for you to allow $500 during Stage One and $1,000 during Stage Two for bulldozer work, we would appreciate it.

Although I believe the recommended cost figures are considerably lower than our experienced costs, we will keep accurate cost records during the performance of our exploration contract so that we will be able to justify higher costs in subsequent contracts, if we find this necessary.

I wish to thank you very much for your assistance.

Sincerely yours,

J. Sterling Livingston

J. Sterling Livingston

JSL:jk

Enclosures

Uranium

DMEA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region V
2900 Chicago Avenue South
Minneapolis 8, Minnesota

March 18, 1953

Memorandum

To: Regional Director, Region V, Bureau of Mines

From: Acting Chief, Mining Division, Region V

Subject: Long distance telephone calls, March 16, 1953

Mr. F. L. Knouse, Chief, Interior Building, Washington, D. C., called to this office requesting immediate information concerning the unit cost per foot of drilling in the field report submitted in the application presented by the Mining Research Corp., DMEA Docket 2768.

Mr. Livingston, engineer, Mining Research Corp., was there in Washington to discuss the contract with him. The call from Mr. Knouse necessitated a call to Mr. E. C. Binyon, Rapid City, S. Dak., field office, and a return call to Mr. Knouse.

The following calls were made:

Person called: E. C. Binyon, Mining Engineer
U. S. Bureau of Mines
Rapid City, S. Dak.
Bureau of Mines, Region V

Subject covered: That explained above.

Charge: DMEA

Person called: F. L. Knouse, Mining Engineer
Interior Building, DMEA
Washington, D. C.

Subject covered: That explained above.

Charge: To DMEA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 20 1953

Walter E. Lewis
Acting Chief, Mining Division
Region V

CC - F. L. Knouse
DMEA, Washington, D. C.

3/18/53 gla

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

March 16, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 17 1953

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4640

From: H. D. Keiser, Bureau of Mines Member
Uranium Commodity Committee

Subject: Revised application and Field Team's report, DMEA Docket No. 2768 Revised, Mining Research Corporation, 4215 Balsam Street, Wheatridge, Colorado.

I have reviewed the subject revised application and Field Team report and discussed them with Mr. Joseph O. Hosted representative of the U. S. Atomic Energy Commission.

It is recommended that the Field Team report be approved, and that a contract be executed in accord with the Field Team's recommendations.

The Field Team report has been forwarded to the Chief, Minerals Division, Bureau of Mines, in accord with the routing slip attached thereto.

H. D. Keiser

3/17/53 gla

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis, DMEA Member
Uranium Commodity Committee

DATE: March 12, 1953

FROM : Arthur P. Butler, Jr., USGS Member, Uranium Commodity Committee

SUBJECT: Field Team Report and Revised Application, DMEA Docket 2768 (Uranium), Mining Research Corp., Applicant, Wheatridge, Colo., parts of Secs. 14, 15, 22, and 23, T. 8 S., R. 8 E., Fall River County, South Dakota.

Mining Research Corp., after review of proposals with the Field Team examiners, has presented a revised proposal for wagon and core drilling to explore for uranium deposits in more restricted areas of its property as identified above than previously proposed. In the revised proposal, exploration is divided into two stages. In the first stage, 14,770 feet of wagon drilling and 1,595 feet of diamond drilling will be done in three areas, defined on the maps accompanying the application, that present information suggests are most favorable for the presence of ore. Exploration by 30,000 feet of wagon drilling and 3,000 feet of diamond drilling will be extended under Stage 2 into adjoining parts of the property, as outlined in "Exhibit A" Revised Application, by mutual agreement of the applicant and DMEA, provided results of the first stage warrant the extension.

The selection of Areas I and III, "Exhibit B", Revised Application, appears reasonable on the basis of information submitted by the applicant and the interpretation of the field team, who state "The area appears reasonably favorable for the discovery of new ore bodies and for extending the geologic information on the deposits in the area. It is believed ..... that it (exploration) should be concentrated in the most favorable areas, that is, where radiometric anomalies are present or mineralized rock crops out of a favorable horizon." (Field Team Rept., par. 5, p. 3.)

The inclusion of Area II appears to be based on the applicant's interpretation that it is "The southeast extension of the area found by current drilling, projected across Deadhorse Canyon.", a distance of about 2,500 feet from the nearest point where uranium is known, and that "Current drilling has indicated a general northwest-southeast trend of ore occurrences."

Although such a trend may exist, the Field Team report does not mention it and the applicant's data and maps do not supply the evidence for the proposed trend.

The field team has consulted with the local geologic staffs of the Geological Survey and Atomic Energy Commission and recommends approval of Government assistance for exploration in the proportionate share of a total cost of $50,945. Subject to the reservation that DMEA may wish to obtain confirmation of the basis for including Area II in Stage 1 of the exploration proposal, I concur with the Field Team's recommendation.

Arthur P. Butler, Jr

Arthur P. Butler, Jr

Copy to: E. Wm. Ellis (2)

DMEA 2768 REVISED

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS MC KAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION V

PROPERTIES OF THE MINING RESEARCH CORPORATION

Fall River County, South Dakota

E. C. Binyon, Mining Engineer
U. S. Bureau of Mines

J. A. Redden, Geologist
U. S. Geological Survey

February 26, 1953

ON-SITE EXAM. REPORT

see Needham letter 3/2/53
& revised application
left side

FIELD TEAM REPORT ON EXAMINATION
of
PROPERTIES OF THE MINING RESEARCH CORPORATION
Fall River County, S. Dak.

Docket: 2768 REVISED
Applicant: Mining Research Corp.
Commodity: Uranium

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The applicant, a corporation known as the Mining Research Corporation, incorporated under the laws of Delaware, is addressed at 4215 Balsam Street, Wheatridge, Colorado.

George W. Heim, P. O. Box 356, Edgemont, S. Dak., is field superintendent and in direct charge of the proposed exploration.

All properties, both deeded land and mining claims, included in the application are held by the applicant under lease agreements. Copies of the leases have been submitted with a previous application, Docket No. 2768.

The center of the property is approximately 8 miles northeast of Edgemont, Fall River County, S. Dak. and it is accessible the year around by way of U. S. highway 85A and a short stretch of ungraded dirt road. The present holdings are in secs. 14, 15, 22, 23, 26, 27, 28, 33, 34, and 35, T. 8 S., R. 3 E., B.H.M.M.

An examination of the property was made by the field team on December 11, 1952 in company with C. W. Livingston, President, and George W. Heim, Field Superintendent. Approximately six hours were spent on the examination and in discussing the application. Several changes in the proposed program were suggested by the field team. It was agreed that wagon and core drilling were the most feasible methods of exploration but spacing of holes of the grid patterns in the areas to be explored should be reduced. Also, the exploration would be conducted in two phases and would be confined to those areas with the most favorable anomalies or other geologic criteria. Certain details concerning the cost were also discussed. The applicants also were in agreement with the suggestion that the contract be set up on a unit cost basis, and it was proposed that a new application with the cost on a unit basis should be submitted. The revised application was submitted January 27, 1953.

At the time of the examination the applicant was wagon drilling in the NE¼ and NW¼ sec. 15, T. 8 S., R. 3 E. on a block of ground adjoining the area designated Area I on the accompanying map. Several low grade ore bodies had been disclosed by this drilling and Livingston and Heim were well pleased with the results. Maps and sections showed mineralization had been encountered in about 30 percent of the holes. The few assays available showed the average grade of the deposits or mineralized zones to be below 0.2 percent U_3O_8, or unminable by conventional methods. However, Livingston and Heim believed that the

mineralized deposits would be amenable to the leaching process they propose to use.

It was concluded that the property warranted exploration and that both wagon and core drilling should be done on the areas as shown on the map. The grid spacing in general would be 100 by 50 feet. A closer spacing with the minimum of 30 feet is to be used around holes in which mineralization is disclosed and where it is necessary to determine a possible trend. Skip drilling, or drilling of every other hole in an area, would be advisable in the initial stages, and if the results were all negative it may be possible to discontinue drilling in this particular area.

It is recommended that the application be approved for a maximum of 14,770 feet of wagon drilling and 1,595 feet of core drilling, BX size or larger, under Phase I and that the allowable cost on a unit cost basis be $0.83 per foot for wagon drilling and $3.00 per foot for core drilling. The total amount to be allowed for Phase I, wagon drilling, is, in round figures, $12,260 and for core drilling, $4,785, or a total of $17,045 for this phase of the project. If the results of Phase I warrant, then additional exploration, Phase II, would be undertaken in other areas within the present boundaries included in the application. Phase II is to be started only by mutual agreement between the applicant and field team. A maximum of 30,000 feet of wagon drill holes and 3,000 feet of core drilling is to be done under Phase II. Cost of Phase II drilling also is to be on a unit cost basis and at the same rates of $0.83 per foot for wagon drilling and $3.00 per foot for core drilling, or a maximum of $24,900 for wagon drilling and $9,000 for core drilling.

Cost of both phases of the project is not to exceed $37,160 for wagon drilling and $13,745 for core drilling, or a total of $50,945. The total cost to the government, at 90 percent participation, is $45,850.

NAME, LOCATION, AND DESCRIPTION OF THE PROPERTY

The Mining Research Corporation, 4215 Balsam Str., Wheatridge, Colo., with a field office address of P. O. Box 356, Edgemont, S. Dak., is the operating company. Mr. C. W. Livingston is President, J. S. Livingston, Vice President and Treasurer, and George W. Heim is the field superintendent.

The company holds lease agreements on approximately 3,200 acres comprised of both deeded land and unpatented mineral claims. A description of the various holdings is given in lease agreements which accompany the application, as well as in Exhibit A of the application. Owner's Consent to Lien forms are included.

As shown on the map accompanying the application, the holdings are in secs. 14, 15, 22, 23, 26, 27, 28, 33, 34, and 35, T. 8 S., R. 3 E., B.H.B.M., Fall River County, S. Dak. However, the areas to be explored, designated as Areas I, II, and III, are confined to secs. 14, 15, 22, and 23, T. 8 S., R. 3 E., and are delineated as shown.

The approximate center of the property is about 8 miles northeast of Edgemont and 16 miles southwest of Hot Springs and is accessible from both towns by way of highway U. S. 85A. Short ungraded dirt roads furnish access from the highway to various parts of the property. Except for short periods during the winter, the property is readily accessible the year around.

Present operations are confined to wagon drilling in the area adjoining and immediately north of Area I. Other than small discovery pits on the mining claims, there are no mine workings on the property.

GEOLOGY

Most of the mineralized areas and radiometric anomalies appear to be near the upper contact of the Lakota formation. In general, the horizons to be explored appear to be the same as in the area now being drilled by the company in the northwestern part of the property. This is the same horizon that was explored by the U. S. Vanadium Corp. on the Ludwig and Brockman claims and on which it is reported one or two ore bodies were discovered.

From the detailed engineering and geologic work done by the company to date, Heim and Livingston believe that the thin underlying shale may be a definite control for the ore bodies thus far discovered.

The area appears reasonably favorable for the discovery of new ore bodies and for extending the geologic information on the deposits in the area. It is believed that the first exploration should be on a somewhat more limited scale than the applicant's first application, and that it should be concentrated in the most favorable areas, that is, where radiometric anomalies are present or mineralized rock crops out of a favorable horizon.

The advisability of a relatively small scale exploration in the most favorable (at present) locations was discussed, and it was decided that on the basis of the present limited knowledge of the number of deposits and the questionability as to whether any ore bodies to be found would exceed the largest to date, (approximately 2,500 tons) it would be wise to have a more closely spaced drilling pattern over much smaller areas, as shown on the accompanying map.

Heim and Livingston were in agreement to this suggestion and decided to submit a new application roughly along these suggested changes. Certain cost details were discussed and it was pointed out that they could not charge work to the exploration that they had already done, such as the installation of their field camp.

PRODUCTION

No ore shipments have been made from the property. Operations to date include erection of a repair shop on the property, preparation of a camp site, and exploratory wagon drilling. Excellent records of the drill holes, with maps and sections of the area being drilled, have been kept and their geology and engineering work are above the average in quality in this area.

PROPERTY RIGHTS

The maps accompanying the application definitely outline the areas to be included in the exploration. In the lease agreements covering these areas, as well as the entire property, a legal description of the lands is included in each lease.

DESCRIPTION OF THE PROJECT

Following the examination, the application was discussed at some length with C. W. Livingston, President, and George W. Heim, Field Superintendent. It was decided that the exploration would be confined to the more favorable areas, that is, areas with anomalies or wherein it was likely that favorable horizons might occur.

The spacing of the grid pattern, as outlined in the original application, was considered too large and it was agreed to reduce the spacing to 100 by 50 feet for the wagon drilling and to drill occasional core drill holes in the various areas. The purpose of the core drilling is to obtain reliable geologic data that will enable a better interpretation of the wagon drilling and subsurface structure and add to the general information on possible structure control of ore deposits in the area.

As stated, the spacing of holes in the grid patterns for each area is to be 100 by 50 feet, with a minimum of a 30-foot spacing for a few holes which are necessary to determine trends around mineralized holes.

It was suggested, and the applicant was in agreement, that at the start of wagon drilling in each area a wider spacing or skip-drilling (the drilling of every other hole), could be used to the advantage of the applicant and the government. If an area was skip-drilled and none of the holes showed mineralization, it is obvious that the total number of holes in this particular area could be greatly reduced. However, in skip-drilling an area some intermediate holes would necessarily have to be drilled if even a relatively weak mineralization was disclosed.

All data obtained from Phase I is to be made available to the government.

Under Phase I an estimated total of 241 wagon drill holes averaging about 60 feet in depth and with an aggregate total of 14,770 feet will be required for exploration of Areas I, II and III (as shown on the map). Also, in these areas 26 core drill holes, BX or larger hole size, are to be drilled. The holes will average about 60 feet in depth and the aggregate total footage is 1,595 feet.

Cost of wagon drilling is estimated at $0.83 per foot, or approximately $12,260. Core drilling is estimated at $3.00 per foot, or $4,785 for the proposed 1,595 feet. A breakdown of the cost accompanies this report.

If, in the opinion of the field team, the results of Phase I drilling are sufficiently favorable, then exploration under Phase II would proceed.

Under Phase II other parts of the area included in the application but not drilled under Phase I would be explored. It is estimated that approximately 30,000 feet of wagon drilling and 3,000 feet of core drilling would be required to adequately explore these areas. Selection of areas to be explored under Phase II would be based on the data obtained from Phase I drilling and, to some extent, on other data that may be made available by additional radiometric surveys, but will not include areas other than those indicated in the application.

The unit cost of $0.83 per foot for wagon drilling and $3.00 per foot for core drilling (BX or larger hole size) as used for Phase I are to be applied to Phase II. Using these costs, the amount for wagon drilling under Phase II is $24,900 and for core drilling, $9,000.

The total cost of the project is:

Wagon drilling 44,770 feet @ $0.83 per foot	- $37,160.00
Core drilling 3,595 feet @ $3.00 per foot	- 13,785.00
	$ 50,945.00
The government's share at 90 percent is	-$ 45,850.50

It will be noted that the applicant's estimate of the unit cost is considerably higher than the unit cost submitted with this report: $1.15 as against $0.83 per foot for wagon drilling and $3.78 as against $3.00 per foot for core drilling.

The contract prices in the district are $0.75 per foot for wagon drilling and $3.40 to $3.60 per foot for core drilling. Obviously, the prices must include at least a reasonable profit to the contractor. The field team is of the opinion that the applicant has inadvertently included such items as the use of the shop and repairs to equipment on which there is a use allowance. These items should not be allowed as part of the unit cost; several other items also have either been reduced or disallowed.

In the discussion of the original application the field team tried to stress the point that items of cost should be calculated to include only the actual cost of operation and also that a review of the cost might result in a reduction in some items.

The applicant states that the work will start within 15 days after signing of the contract and that Phase I would be completed within 4 months. Phase II is expected to be completed within 18 months after the start of the project.

For the cost calculations submitted with this report, 4-3/4 months has been used as the time required for Phase I. The drilling rate for wagon drilling is estimated at 120 feet per day and for core drilling at 40 feet per day.

These drilling rates are considered conservative, especially when the equipment and the depth of holes are taken into consideration. Core drilling is to be carried on simultaneously with wagon drilling after a sufficiently large part of the first grid pattern has been wagon-drilled.

The area included in the application was discussed with Mr. Howard Stafford, Chief of the A.E.C. Raw Materials Division office in Hot Springs, and with members of the U.S.G.S. attached to that office. The consensus of opinions was that the area warranted exploration and they were in agreement with the proposed methods to be used and the suggestion that the exploration be conducted as described in this report.

PHASE I - Overall Project

	Amount Per Month	Amount Total*
6		
(a) Independent Contracts	-	-
(b) Labor, Supervision, Consultants		
Labor	-	-
Supervision and Consultants:		
Field Superintendent, ½ of salary	$ 300.00	$ 1,425.00
Engineer, ¼ of salary	125.00	593.75
Geologist	450.00	2,137.50
Analyst	350.00	1,662.50
Secretary, part time	50.00	237.50
Total	$ 1,275.00	$ 6,056.25
(c) Operating Materials and Supplies		
Gasoline, oil, & service for Ford pickup, estimated per month	60.00	285.00
Analytical supplies	10.00	47.50
Engineering supplies	5.00	23.75
Office supplies	5.00	23.75
Total	80.00	380.00
(d) Operating Equipment: Owned by Applicant		
3/4-ton pickup, present value $1,800, Use allowance @ 1/60 per mo.	30.00	142.50
Radiometric instruments:		
1 - Halross Scintillometer, Model 939)		
1 - Minerals Eng. Geiger Counter & Probe)$1,500		
1 - Lucky Strike Geiger Counter)		
Use allowance @ 1/120 per mo.	12.50	59.37
Surveying instruments:		
Transit, alidade, plane table, rods, tapes, etc., present value $1,500 Use allowance @ 1/120 per mo.	12.50	59.38
Sample preparation equipment		
Crusher, pulverizer, fluorometric analysis equipment, present value $2,400 Use allowance @ 1/120 per mo.	20.00	95.00
Total	75.00	356.25
(e) Rehabilitation and repairs	-	-
(f) New buildings, improvements and installations		
Allowance for rental of building for office, drafting, sample preparation and analytical work. Rental $100 per month, allow 25%	25.00	118.75

* For 4-3/4 months

PHASE I - Overall Project (continued)

		Amount Per Month	Amount Total*
6			
(g) Miscellaneous			
Payroll taxes, 1½% of $3,600 for field superintendent, engineer, geologist & analyst, and 1½% of $600 for secretary		$ 13.13	$ 62.37
Compensation and unemployment insurance at .3% per $100 and 3% of total		16.91	80.32
	Total	30.04	142.69
(h) Contingencies: 10% of total exclusive of items 6(b) and 6(g)	Total	18.00	85.50
	Total Overall Project	$1,503.04	$ 7,139.44

Distribution of the charges to the Overall Project are to be 75 percent to Wagon Drilling and 25 percent to Core Drilling:

Item		Total	Wagon Drilling	Core Drilling
6 (a)	Independent Contracts	--	--	--
(b)	Labor, supervision & consultants			
	Labor	--	--	--
	Supervision & consultants	$6,056.25	$4,542.19	$ 1,514.06
(c)	Operating materials and supplies	380.00	285.00	95.00
(d)	Operating equipment	356.25	267.19	89.06
(e)	Rehabilitation and repairs	--	--	--
(f)	New buildings, improvements and installations	118.75	89.06	29.69
(g)	Miscellaneous	142.69	107.02	35.67
(h)	Contingencies	85.50	64.12	21.38
	Total	$ 7,139.44	$ 5,354.58	$ 1,784.86

* For 4-3/4 months

PHASE I - Wagon Drilling
(Footage 14,770 feet; time 4-3/4 months)

		Amount Total	Amount Per Foot
6			
(a) Independent contracts		--	--
(b) Labor, supervision, consultants			
Labor:		$4,393.75	
Drill operator @ $400 per mo.	$1,900.00		
Drill helper @ $300 per mo.	1,425.00		
Sampler @ 75% of $300 per mo.	1,068.75		
Supervision and consultants			
75% of Item 6(b) Overall Project		4,542.19	
Total		8,935.94	.6050
(c) Operating materials & supplies			
Gasoline, oil, grease & service for half-track mounted compressor and wagon drill	617.50		
Bits, drill rods, couplings, hoses, etc.	522.50		
Miscellaneous supplies & tools	47.50		
Sampling supplies	47.50	1,235.00	
75% of item 6 (c) Overall Project		285.00	
Total		1,520.00	.1029
(d) Operating Equipment: wagon drill with 210 cfm. G-D compressor powered by Buda engine mounted on half-track; wagon drill G-D D-73 on slide for 18' steel change, steel, hoses, etc. Present value $9,000. Use allowance @ 1/60 per month, or $150		712.50	
75% of item 6(d) Overall Project		356.25	
Total		$ 1,068.75	.072
(e) Rehabilitation and repairs		--	--
(f) New buildings, improvements and installations - 75% of item 6(f) Overall Project		89.06	
Total		89.06	.006
(g) Miscellaneous			
Payroll taxes @ 1½%	65.91		
Compensation & Unemployment Ins.	107.97	173.88	
75% of item 6(g) Overall Project		107.02	
Total		280.90	.0190
(h) Contingencies			
10% of all charges, exclusive of item 6(b) and item 6(g)		203.66	
75% of item 6(h) Overall Project		64.13	
Total		267.79	.0180
Grand Total		$12,162.44	.823

Allow 14,770 feet @ $.83 = $12,260.00

Tractor Rental 5 days @ $100/day for Stage I .031

.854

PHASE I - Core Drilling

		Amount Total*	Amount Per Foot
6			
(a) Independent Contracts		-	-
(b) Labor, supervision & consultants			
Labor:			
Diamond drill operator @ $450 per mo.	-$675.00		
Diamond drill helper @ $350 per mo.	- 525.00		
Water truck driver @ $300 per mo.	- 450.00	$ 1,650.00	
25% of item 6(b) Overall Project		1,514.06	
Total		$ 3,164.06	$1.984
(c) Operating Material & Supplies:			
Gasoline, oil & grease for drill, truck, pumps & water truck, per mo.	- 140.00		
Bits, rods, miscellaneous fittings and tools, per mo.	- 400.00		
Core boxes, per mo.	- 75.00		
Miscellaneous, per mo.	- 10.00		
	625.00	937.50	
25% of item 6(c) Overall Project		95.00	
Total		$ 1,032.50	.647
(d) Operating Equipment (furnished by applicant)			
Joy Model 7 core drill with screw feed E-2, mounted on 1½-ton truck. Present value $5400. At 1/60 per mo.	90.00		
Water tanks, pumps, value $600. 1/60 per mo.	10.00		
Water haulage truck, 1951 Ford dump, present value $2,700. At 1/60 per mo.	45.00		
	145.00	217.50	
25% of item 6(d) Overall Project		89.06	
Total		306.56	.192
(e) Rehabilitation and repairs		--	--
(f) New buildings and improvements			
25% of item 6(f) Overall Project		29.69	
Total		29.69	.019
(g) Miscellaneous:			
Payroll taxes, 1½% of $3600 for all labor, per month	13.50		
Compensation insurance, minimum $50 for 3 mos. (Rate $3.21/$100)		50.00	
Unemployment insurance @ 3%, per mo.	7.91		
	21.41	32.11	
25% of item 6(g) Overall Project		35.67	
Total		$ 117.78	.074
(h) Contingencies:			
10% of items 6(c(, (d), (e) for core drilling		115.50	
25% of item 6(h) Overall Project		21.38	
Total		136.88	.086
Grand Total		$ 4,787.47	$ 3.002

* For 1½ months but included in the period for wagon drilling

Tractor rental 5 days @ $500

.031
3.031

PHASE I - Core Drilling

Allow 1,595 feet @ $3.00 = $ 4,785.00

RECAPITULATION

		No. of holes	Total feet	Cost per ft.	Total Cost
PHASE I					
	Wagon drilling	241	14,770	$0.83	12 849.90 ~~$12,269.00~~
	Core drilling	26	1,595	3.00	4832.85 ~~4,785.00~~
					$17,045.00
PHASE II					
	Wagon drilling	500	30,000	0.83	26 100.00 ~~24,900.00~~
	Core drilling	50	3,000	3.00	9.090.00 ~~9,000.00~~
TOTAL FOR PROJECT					
	Wagon drilling	741	44,770		38 949.90 ~~37,169.00~~
	Core drilling	76	4,595		13 922.85 ~~13,785.00~~
					52872.75 ~~$50,954.00~~
	Government participation @ 90 percent				47 585.47 ~~$45,950.50~~

THE WINTER-WEISS CO.
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Manufacturers and Distributors of TRANSPORTATION, FARM AND INDUSTRIAL EQUIPMENT

January 6, 1953

Mr. S. L. Knouse
Room 4640
Defense Minerals Exploration Administration
U. S. Department of Interior
Washington, D.C.

Dear Mr. Knouse:

At the request of Mr. Livingston of Mining Research Corporation, we are sending to you some descriptive literature on the Model 500 "Air Blast" PORTADRILL.

This machine actually consists of the standard Model 500 PORTADRILL, which is furnished as a conventional rotary mud circulating type of rig, with the mud pump removed and in its place installed a rotary type air compressor and the necessary driving mechanism.

The "Air Blast" PORTADRILL is particularly well adapted to the drilling of dry formations especially where accurate sampling is required. Drilling completely dry, the cuttings are almost instantaneously recovered through the use of a high volume of compressed air. The resulting method of drilling is very rapid and difficulties very often encountered in wet drilling are eliminated.

The "Air Blast" PORTADRILL can be converted back to a standard mud circulating rig with the minimum amount of effort.

Should you require any further information, please do not hesitate to call on us.

Yours sincerely,

THE WINTER WEISS CO.

BY: H. A. Winter, Jr.

H. A. Winter, Jr.

HAW:ds
Enc.

see literature Folder #3

1/7/53 gla

MINING RESEARCH CORPORATION
INCORPORATED
4215 Balsam Street
Wheatridge, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 6 1953

January 5, 1953

DMEA-37-B

Mr. F. L. Knouse
Room 4640
Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

Dear Mr. Knouse:

Although we are not yet certain that we are going to acquire a rotary rig, I have asked Winter-Weiss to send you the literature on this equipment. The DMEA field team visited our property in South Dakota and, as a result of their recommendations, we are preparing a new loan application which we hope to submit in the near future.

Sincerely,

J. Sterling Livingston

J. Sterling Livingston
Vice President and Treasurer

JSL:bll

FILE COPY
SURNAME:

TOO
L. L. Krouse.
Ellis
Selfridge.

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

DEC 3 1952

T. [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

George C. Selfridge
ACTING

(GHB)

S.H.
12-3-52

[illegible]/jem 12/1/52
cc to: [illegible] Leasing File
Docket
[illegible] October-1947
[illegible] October-1946
[illegible]
Gov. Com.
Field [illegible]

J. H. Hodges (GHB)
[illegible]

A. R. Kinkel, Jr. (GHB)
[illegible]

FILE COPY
SURNAME:

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

NOV 26 1952

Mr. [illegible]
[illegible] Corporation
[illegible] street
[illegible], California

Re: Docket No. [illegible] (Uranium
Government Drainage Area
Gilliam County, [illegible]

Dear Mr. [illegible]:

[illegible]

[illegible]

[illegible]
[illegible]
[illegible]
[illegible]

[illegible] opportunity to serve [illegible] project.

Sincerely yours,

C. O. Mittendorf

Administrator

Flannouse/jem
11/26/52
cc to: Adm. Reading File
Docket
Messrs. Ellis
Schmidt
Field Team, Region V (2)

FILE COPY
SURNAME:

I. Knouse

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

NOV 26 1952

Mr. [illegible] Fredhan
Executive Officer, Region V
[illegible]

Re: Docket No. [illegible]-2/58 Uranium,
Mining Corporation
Judgement Uranium Corp
Bell River County, South Dakota

Dear Mr. [illegible]:

[illegible] field examination.

Copies of memoranda from Mr. [illegible] November 18, 1952 and from Mr. [illegible] November [illegible], 1952, [illegible] report.

[illegible] recommendation [illegible] for the [illegible] report.

[illegible] work [illegible] indicated and a detailed breakdown of the cost for the work to be contracted [illegible] breakdown of the cost should be furnished. [illegible] exploration program is recommended we will require from the applicant a list of the mining claims or property [illegible] claims or property controlled by [illegible] claim or property are recorded, book number, page and entry date.

A copy of this application and related [illegible] to your office November 7, 1952 and we are enclosing [illegible] dated November 17, 1952 from the applicant.

Sincerely yours,

(signed) FRANK E. JOHNSON (GWB)

Chairman, Operating Committee

Enclosures
/s/ GWB:

J. H. Hedges (GWB)
Member, Bureau of Mines

A. R. Finkel, Jr. (GWB)
Member, Geological Survey

FEKnouse/jem 11/26/52 CCto: Adm. Reading
Docket Messrs. H.H.Reiser-1347
A.P.Butler-3206 GSA
Ellis Knouse Opr. Com. Field Team, Reg. V

11-26-52

MINING RESEARCH CORPORATION
INCORPORATED
4215 Balsam Street
Wheatridge, Colorado

November 24, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 28 1952

Mr. F. L. Knouse
Room 4640
Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

Dear Mr. Knouse:

Enclosed is a copy of a letter which I have forwarded to supplement our DMEA loan application.

I assume this information will be sufficient to enable you to send a field team to investigate our property. If you need any additional information, I would greatly appreciate your letting me know.

Sincerely,

J. Sterling Livingston

J. Sterling Livingston
Vice President and Treasurer

JSL:bll
Enclosure

11/28/52 gla

MINING RESEARCH CORPORATION
INCORPORATED
4215 Balsam Street
Wheatridge, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 28 1952

November 24, 1952

Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

Gentlemen:

Subject: DMEA-2768

The following information is being forwarded to supplement our DMEA application which has been assigned Docket No. 2768 and referred to the Rare and Miscellaneous Metals Division.

Mr. F. L. Knouse requested us to submit a geological section map of the area, but such a map is not now available. The Hot Springs Sub-Office of the A.E.C. does not now have a geological section map of the area and informed us that the only thing available is Darton's professional paper on the Black Hills, which was prepared in 1935 for the U.S.G.S. by Mr. N. H. Darton. There is also available, of course, the Geologic Survey's geologic map of South Dakota. Since we assume that the above material is already available to you, we have not included copies with our application. We are, however, now working on our own geologic section map, which we expect to have completed by the time your field team visits the property.

Mr. Knouse suggested that we report the values obtained from the chemical assays and Scintillometer work we have conducted to date. This can best be done by referring to the map identified as Exhibit A in our application. In Section 15, the two areas showing the occurrence of uranium outside our lease holdings refer to operations being conducted by U. S. Vanadium Corporation, which is now drilling on ten-foot centers. Although we do not know the grade of ore obtained, we understand that commercial grade ore has been shipped from this property.

Our own drilling activities in Section 15, as indicated by the symbol in the area outlined by red, have resulted in the discovery of mineralization in 7 of a total of 34 holes drilled. The analysis of wagon drill cuttings submitted to the Denver office of the A.E.C. indicate an average grade of 0.16% U_3O_8 on 3 ore pods which average 4 feet in thickness. Our drill holes in this area are from 40 to 60 feet deep.

We have assayed samples from the rim exposures at the end of Deadhorse Mesa. Eighty feet below the mesa, samples from a six-foot section assayed 0.07% U_3O_8. One hundred feet below the mesa, samples from a streak two feet wide assayed 0.55% U_3O_8. Directly across Sheep Canyon a railroad cut exposes mineralization 15 feet thick. A Scintillometer survey of the mineralized area resulted in readings of from 300 to 1,200 against a background count of 60. All other ore occurrences on Exhibit A refer to radiometric anomalies, except for rim exposures in Sections 25 and 36.

Since preparing our DMEA loan application, we have conducted a limited Scintillometer survey of the area covered by the application and have located a number of additional anomalous areas. The location of these areas has not been marked on Exhibit A but will be given to your field team.

If you would like to have any further information, I hope you will let me know.

Sincerely,

J. Sterling Livingston

J. Sterling Livingston
Vice President and Treasurer

JSL:bll

ARD FORM NO. 64

11/25/52 gla

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis, DMEA Member, Uranium Commodity Committee

DATE: November 18, 1952

FROM : Arthur P. Butler, Jr., USGS Member, Uranium Commodity Committee

SUBJECT: Application, DMEA Docket 2768 (Uranium), Mining Research Corp., Wheatridge, Colo., Applicant: Secs. 14, 22, 23, 26, and 35, T. 8 S., R. 3 E., Fall River Co., N. Dak.

Comment

The applicant proposes to explore comprehensively by diamond and wagon drilling an area of about two sections in Fall River Co., S. Dak., as identified in the subject above. The ground to be explored is underlain by two sandstone formations, the Lakota and Dakota of Cretaceous age that are host rocks for local concentrations of uranium in the surrounding area, and are the principal uranium ore-bearing rocks in the general region. Several occurrences of uranium are known on land adjoining that where exploration is proposed but none are reported within the area of proposed exploration. The distribution of uranium occurrences and the presence of the favorable host rock suggest that some exploration in search of ore is warranted and to obtain information on geologic favorability of the rocks that will contribute to evaluation of the region as a whole. Data available in Washington, however, are inadequate to appraise the optimum amount and intensity of exploration necessary.

It should be emphasized that the presence of uranium in the general area has been known for only a little more than a year, that relatively little exploration has been carried out, that criteria to guide exploration have not yet been established, and that any exploration at distances of more than 100 or 200 feet from known occurrences is strictly a high risk venture, the outcome of which is entirely unpredictable.

Sound geologic supervision of the exploration is clearly desirable, and it appears from the information set forth in the application that the applicant is competent to provide it.

Recommendations

It is recommended that this application be referred to the Field Team for review, field examination, if necessary, and recommendations. Members of the Field Team should consult with the staff of the Atomic Energy Commission's Hot Springs, S. Dak., Sub-office, and the local project staff of the Mineral Deposits Branch, Geological Survey to obtain the benefit of the information and suggestions that those groups may be able to furnish.

Arthur P. Butler, Jr.

Arthur P. Butler, Jr.

Copy to: E. Wm. Ellis

11/21/52 gla

MINING RESEARCH CORPORATION
INCORPORATED
4215 Balsam Street
Wheatridge, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 20 1952

November 18, 1952

Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Gentlemen:

Subject: DMEA-2768
Re: Exploration Assistance

Enclosed you will find four copies of a letter from the Hot Springs, South Dakota, office of the Atomic Energy Commission. This letter was obtained to assist the Defense Minerals Exploration Administration in its decision to send a field team to examine the property covered by our exploration application, which has been given Docket No. DMEA-2768.

Additional information as to the values already obtained from drilling and rim exposures on our property is being assembled and will be forwarded in the near future.

Sincerely,

J. Sterling Livingston

J. Sterling Livingston
Vice President and Treasurer

JSL:bll
Enclosures 4

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF RAW MATERIALS
DENVER EXPLORATION BRANCH
HOT SPRINGS SUBOFFICE

ADDRESS REPLY TO:

U. S. ATOMIC ENERGY COMMISSION
P. O. BOX 611
HOT SPRINGS, SOUTH DAKOTA

AND REFER TO

November 8, 1952

Mr. Clifton W. Livingston
4215 Balsam Street
Wheatridge, Colorado

Dear Mr. Livingston:

It has been brought to my attention that Livingston Uranium Corporation and Mining Research Corporation have submitted a joint application for a DMEA loan to conduct operations in parts of Sections 14, 22, 23, 26, and 35, T8S, R3E, Fall River County, South Dakota.

Rim exposures in this area, and near to it, have been examined by geologists from this office. The fact that mineralized outcrops occur on the north, northeast, southeast, south and west sides of your area, and that ore has been shipped from claims immediately to the north, causes us to consider the intercanyon flats to be favorable ground.

I sincerely hope that your loan application is approved, and that you will soon be operating in this district.

Very truly yours,

Howard S. Stafford

Howard S. Stafford, Chief
Hot Springs Sub-Office

HSS:dh

11/21/52 gla

MINING RESEARCH CORPORATION
INCORPORATED
4215 Balsam Street
Wheatridge, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 20 1952

November 17, 1952

Mr. F. L. Knouse
Room 4640
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Dear Mr. Knouse:

I greatly appreciated the opportunity of meeting with you to review our DMEA loan application last week. We are getting together the additional information which you indicated you needed to appraise the merits of our application. In the meantime, I am forwarding a copy of a letter obtained from the Hot Springs office of the A.E.C. Four copies of this letter have been sent to the DMEA office for inclusion with our application.

Before leaving Washington, I talked with Mr. Sheldon P. Wimpfen of the A.E.C., who indicated that the Raw Materials Division would be willing to support our application.

In the event that you conclude that the opinion expressed by the A.E.C.'s Hot Springs office is sufficient to warrant examining our property by a field team, we shall have the necessary geological information available as soon as the team is able to visit the property. In any case, I shall send the additional information to you as soon as it is assembled.

I wish to express my appreciation to you for your helpfulness in reviewing our loan application.

Sincerely,

J. Sterling Livingston

J. Sterling Livingston
Vice President and Treasurer

JSL:bll
Enclosure

11/14/52 gla

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

November 13, 1952

Memorandum

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 14 1952

To: Ernest William Ellis, DMEA Member,
Uranium Commodity Committee, Room 4640

From: H. D. Keiser, Bureau of Mines Member,
Uranium Commodity Committee

Subject: DMEA Docket No. 2768, Mining Research Corporation, 4215 Balsam Street, Wheatridge, Colorado.

I have reviewed the application included in the subject docket and discussed it with Mr. Joseph O. Hosted, representative of the U. S. Atomic Energy Commission.

It is recommended that the application be referred to the field team for investigation and report, and that the field team be requested to consult Mr. Lincoln R. Page, of the Geological Survey, at Denver, Colorado, and Mr. Howard Stafford, of the Atomic Energy Commission, at Hot Springs, South Dakota, relative to the application.

H. D. Keiser

H. D. Keiser

Attachment

November 7, 1952

Mr. J. Sterling Livingston
Mining Research Corporation
4215 Balsam Street
Wheatridge, Colorado

Subject: DMEA-2768
Re: Exploration Assistance

My dear Mr. Livingston:

The receipt of your application dated October 30, 1952 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-2768 and referred to the Rare and Miscellaneous Metals Division.

Kindly refer to DMEA-2768 in any future correspondence relating to your application.

Sincerely yours,

Robert E. Adams
Chief, Operation Control
and Statistics Division

25451

No " " " "

T. 8. S
R. 3 E

Base line
Meridian.

Note: Lease on Deeded land owned by R.E. Gull signed July 24th also includes:
Sheep Canyon Mining claim 4.
" " " " 5.
" " " " 6.

This ground previously leased

AREA I

RAM 2

MEK 2

MEK 3

MEK-5

600'

AREA II

D.L.
Edna McK
O.C.L.
Mar 20/53

O.C.L.

O.C.L.
signed
Apr 16/53

LEASE signed E. McK - July 31/52

S.C.L.

D.L.
Edna McK
Lease July 31/52
O.C.L. Mar. 20/52

AREA 3

Sheep Canyon 6

D.L.
R.E. Gull.
O.C.L. Mar 12/52

D.L.
R.E. Gull
O.C.L.
Mar. 12/52

R.E.
Apr 9/53

owners
Gas
Lease

O.C.L.
signed
Apr 16/53

Lease Gull signed
OK

OK O.C.L. signed
Apr 9/53

R.E. Gull
O.C.L. signed
Mar 9th

	Lease signer & Date of lease	Owners consent to lease Signer & Date
Mining claim RAM #2 ✓	Royce R. McElhaney - July 24/52	R.A.Mc. Mar 4/52
" " RAM #3 ✓		R A Mc Apr 1/52
" " McK #2 ✓	John McKnight / James McKnight July 31/52	John Apr 4/52 / Same James
" " " #3 ✓	"	" "
" " " #5 ✓	"	" "
" " " #4	Robt E Gull	#4 & #5 Apr 7/52
" " " #6	Carl V Gull	R.E.G. #6 Mar 13/52 / C.V.G.

Deeded Land

W ½ of SW ¼ of Sec 14	Edna McKnight	E.Mc. Mar 20/52
E ½ " " " " "	S ½ of Sec 14 July 31/52	" Apr 15/52
All SE ¼ of " "		" " " "
N ½ of NE ¼ of Sec 22		" Mar 20/52
S ½ " " " " "	R.E. Gull July 24/52	REG Mar 12/52
all SE ¼ " " "	" " " "	" Apr 7/52
W ½ of NW ¼ of Sec 23	N ¼ R.E. Gull. Sept. 18/52	" Mar 12/52
E ½ " " " " "	" " " "	" 9/30 signed Apr 9/52 Apr 15/52
SW ¼ of NE ¼ " " " ✓	" " " "	" 9/30 signed Apr 9/52 Apr 15/52
all S ½ of " " ✓	" " " "	" " 10/52

Shown in lease & owners consent to lease but excluded from this contract (Previously explored):

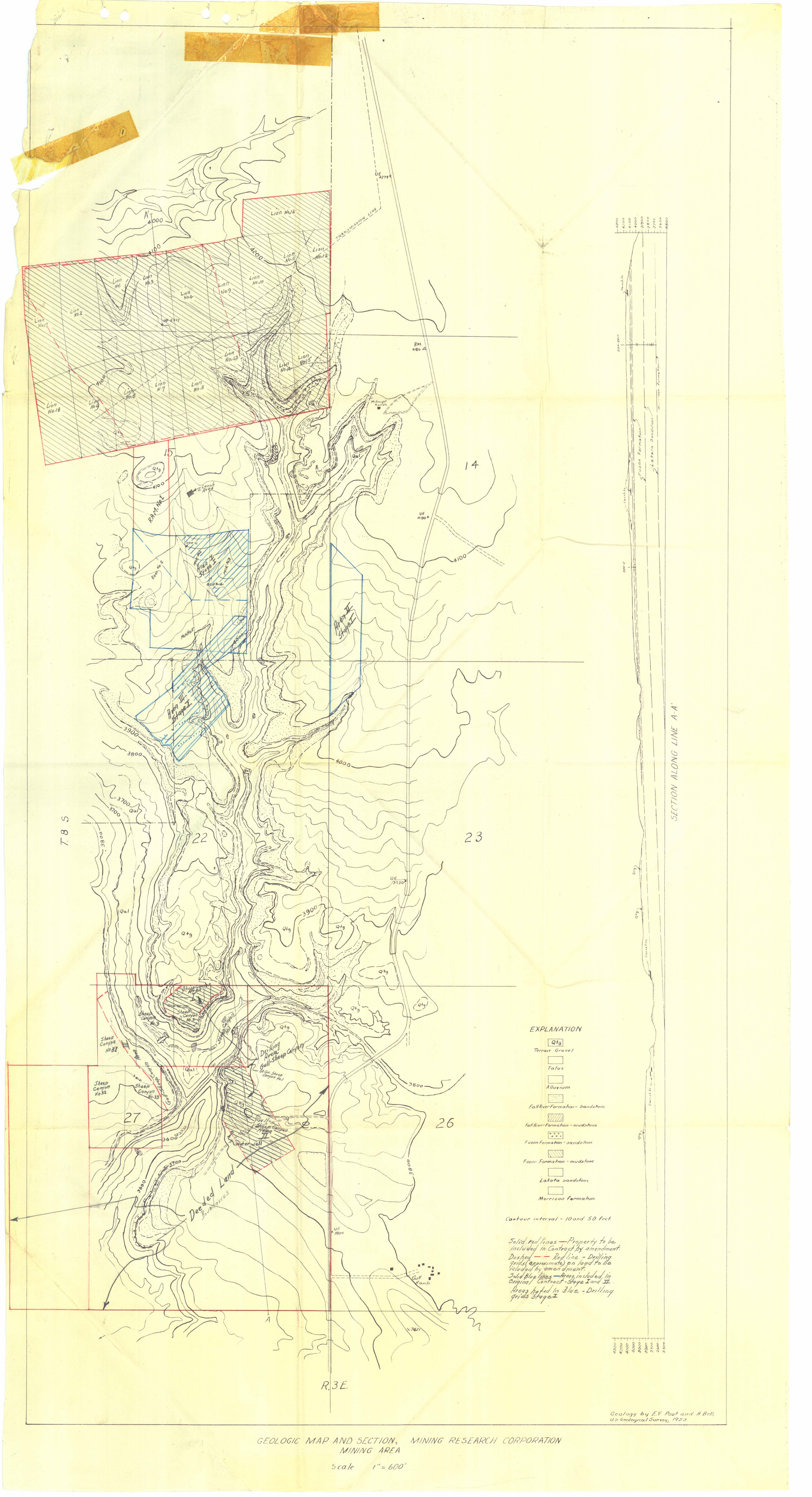
~~Sheep Canyon Mining claim #4 of [illegible]~~

~~4 " " " #5 [illegible]~~

McK. " claims #1 & #4 J & J. McKnight

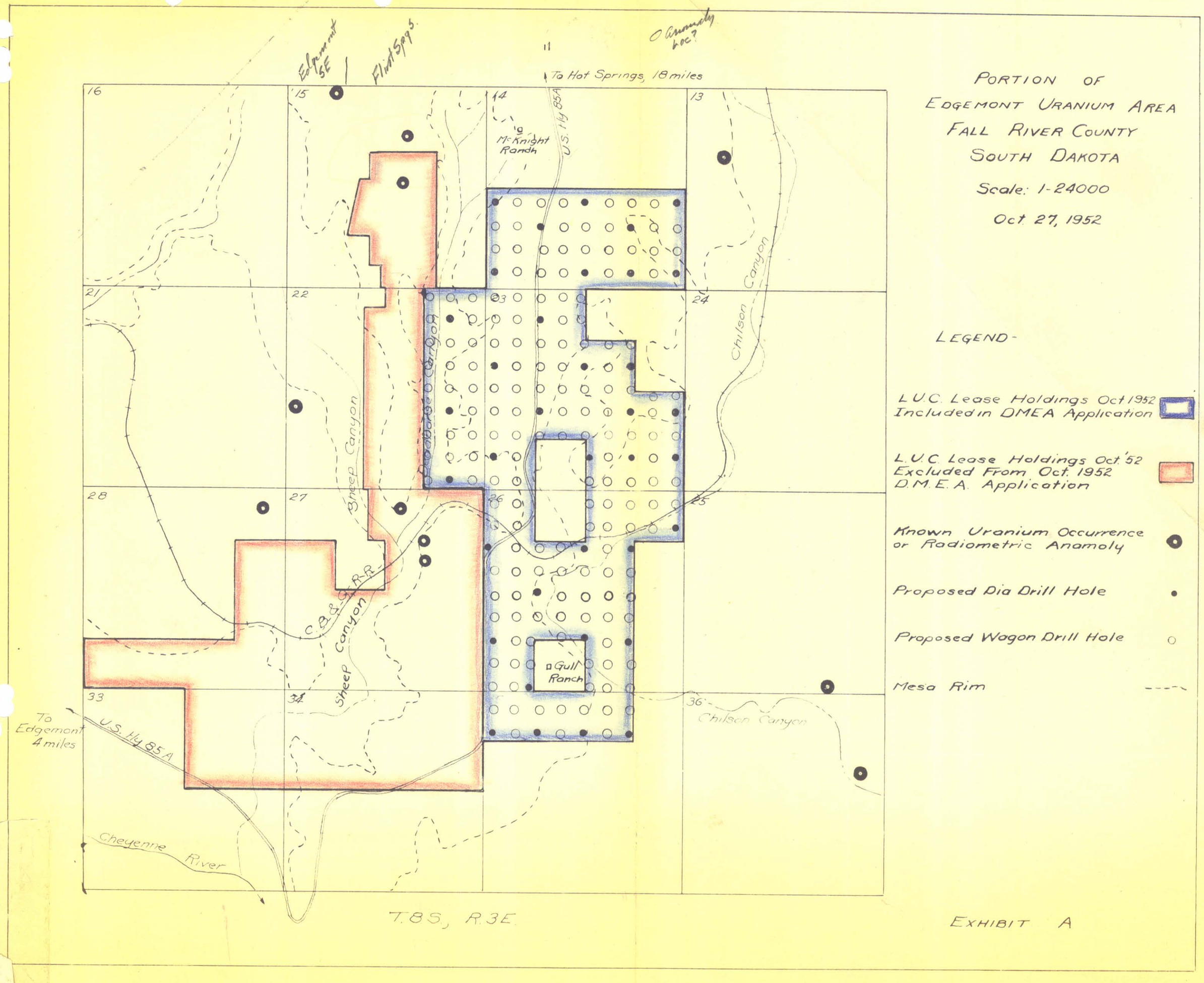
R.A.M. " " #1 ~~[illegible]~~ Royce R McElhaney

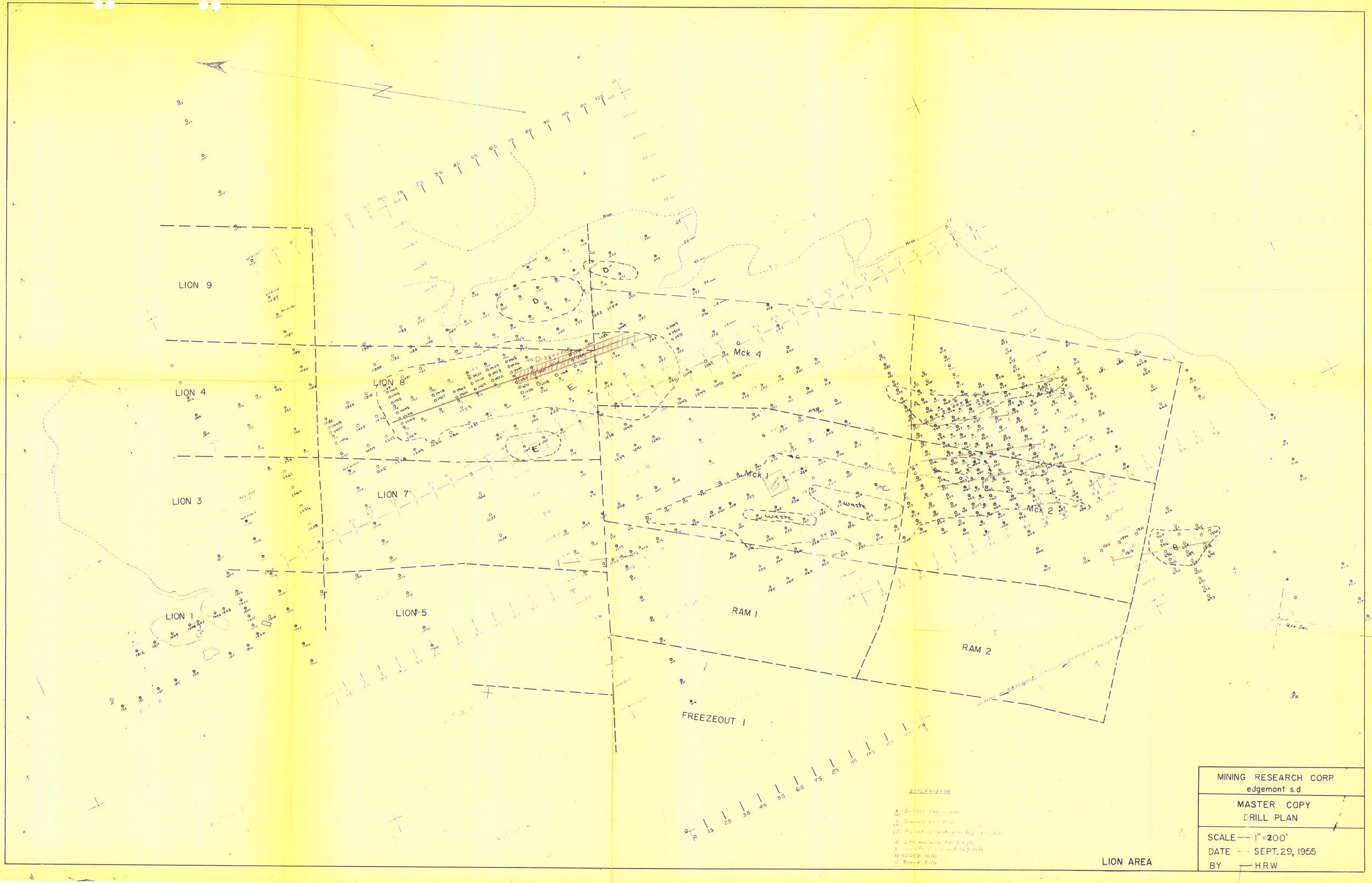
LAMB 1
LION 17
LION 2
LION 1
LION 3
LION 4
LION 9
LION 10
LION 11
LAMB 2
LION 18
LION 6
LION 5
LION 7
LION 8
LION 13
LION 14
LION 15
FREEZEOUT 2
FREEZEOUT 1
RAM 1
MCK 1
MCK 4
DEADHORSE 1
DEADHORSE 2
DEADHORSE 3
RAM 2
MCK 2
MCK 3
MCK 5
DEADHORSE 4
NOTE: SOLID LINES ARE
AMENDED CLAIM LOCATIONS
Jan. 28, 1955
o PRESENT MONTHS DRILLING
• PREVIOUS MONTHS DRILLING
G LINE & GRID
MINING RESEARCH CORP.
LION & MCK. AREAS
D.M.E.A. CONTRACT PROGRESS
SCALE — 1" = 200'
MONTH
LION & MCKNIGHT



GEOLOGIC MAP AND SECTION, MINING RESEARCH CORPORATION
MINING AREA

Scale 1" = 600'


PORTION OF
EDGEMONT URANIUM AREA
FALL RIVER COUNTY
SOUTH DAKOTA
Scale: 1-24000
Oct. 27, 1952
LEGEND-
L.U.C. Lease Holdings Oct 1952 Included in DMEA Application
L.U.C. Lease Holdings Oct '52 Excluded From Oct. 1952 D.M.E.A. Application
Known Uranium Occurrence or Radiometric Anomoly
Proposed Dia Drill Hole
Proposed Wagon Drill Hole
Mesa Rim
To Hot Springs, 18 miles
Edgemont SE
Flint Spgs.
Anomaly loc?
McKnight Ranch
U.S. Hy 85A
Chilson Canyon
Sheep Canyon
C.B.&Q. R.R.
Gull Ranch
To Edgemont 4 miles
Cheyenne River
16
15
14
13
21
22
23
24
28
27
26
25
33
34
36
T.8S., R.3E.
EXHIBIT A


LION 9
LION 4
LION 8
LION 3
LION 7
LION 1
LION 5
RAM 1
RAM 2
FREEZEOUT 1
Mck 1
Mck 2
Mck 3
Mck 4
waste
waste
Disappeared
MINING RESEARCH CORP.
edgemont s.d.
MASTER COPY
DRILL PLAN
SCALE — 1" = 200'
DATE — SEPT. 29, 1955
BY — H.R.W.
LION AREA