DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

Idm-E NO. 1183

DMEA NO. 4842

Application
- [ ] Denied
- [ ] Withdrawn

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

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

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [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
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and attachments

A-1 (Previous application DMEA-4995 consolidated with DMEA-4842

Right Side

- [x] Project summary (final)
- [x] Work Comoleted 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)
- [x] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [x] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. 2 : Reports
- [ ] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

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

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

Folders No. _____ : Settlement Sheets

Folders No. _____ : Drill Logs

Folders No. _____ : Royalty material

17963

DMEA FORM 6 REFERENCE SLIP

REV. 12-56 DEFENSE MINERALS EXPLORATION ADMINISTRATION

TO:	INITIALS	DATE
1. Mr. Frank E. Johnson	FEJ	3/20
2. Mr. George C. Selfridge		
3. Mr. F. L. Knouse		
4.		
5.		
FROM: Jay L. Chambers JLC		3/19

FOR: Check items for action desired

____ Action ____ Reply for signature of _____

____ Approval ____ Investigate ____ Surname

____ Comment ____ Recommendations ____ Signature

____ Conference ____ Rewrite ____ File

____ Instructions XXX Your information

REMARKS:

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

MAR 19 1959
O.M.E.

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

San Mateo Dome Project
R. J. Lodgwar Company, Agent,
Old Colorado Building
Denver 2, Colorado.

pertaining to Exploration Project Contract No. Ida-E1183, EMBA No. 4842, including Amendment No. 1, for the months of June, 1958 to October, 1958, inclusive, covering a project for the exploration of uranium on property known as San Mateo Dome Project located in McKinley County, New Mexico.

My review included an examination of the Monthly Reports (Form MF-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, verification of work performed by reference to Field Team reports and correspondence, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the reasons given on the attachment to this report.

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

Total cost as billed by Contractor		$96,886.99
Exceptions: (Schedule attached)		
Prior to this review	$0.81	
Less: Reinstatement by review	0.00	
Herewith	0.00	0.81
Total Accepted Cost		$96,886.18

The contract calls for the following percentages of participation of exploration expenses by the United States Government:

	Accepted Costs	Percentage Participation	Amt. of Gov't. Participation
Stage I	$59,403.25	75%	$44,552.44
Stage III	37,482.93	50%	18,741.47
	$96,886.18		$63,293.91

Therefore, payment to the contractor by the Government in the amount Sixty-Three Thousand, Two Hundred Ninety-Three and 91/100ths Dollars is valid and proper, provided that the Regional Executive Officer, the Director, or other competent official has accepted or will accept the project as having otherwise met the terms of the contract.

Amount payable to Operator	$63,293.91
Amount reimbursed	62,793.91
Balance due Operator	$ 500.00

OA. @ pw. 3/25/59

Donald T. Finch

March 13, 1959

Donald T. Finch, OME Auditor

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 4 1957

DATE	INITIALS	CODE

CLYDE L. JONES DRILLING CO.

BOX 3236 — ALBUQUERQUE, N. M.

March 20, 1957

E. J. Longyear Company
Office 416
Colorado Building
Denver, Colorado

Gentlemen:

I wish to submit the following bid on Sections 32, 33 and 34, T 14 N - R 8 W:

From surface to 2000 ft.	$2.00 per ft.
Core drilling on 2000 ft. holes	$10.00 per ft.
Stand-by Time	$15.00 per hour

Drill will go on stand-by time if logging truck is not on location when hole is finished.
Contractor agrees to recondition hole one time at his expense, provided logging truck is unable to log said hole.
If further work on hole is needed, drill will go on stand-by time and circulation material will be furnished by Longyear Company.

Yours very truly,

CLYDE L. JONES DRILLING COMPANY

Clyde L. Jones

REASONS FOR REPORT OF REVIEW IN LIEU OF FINAL AUDIT

SAN MATEO DOME PROJECT

Contract Idm-E1183 Docket No. DMEA 4842

(a) The monthly reports were supported by documentary proof of that portion ($88,730.87) of the costs which covered work performed at unit rates under independent contract, and that portion ($82.13) which covered other costs for contribution by the Government on the basis of actual costs (per summary attached).

(b) The balance ($8,073.18) of the costs incurred were under contract provision for payment by the Government on the basis of fixed unit costs of work actually performed; and

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

SCHEDULE OF EXCEPTIONS

SAN MATEO DOME PROJECT

Contract Idm-E1183 Docket No. DMEA 4842

Prior Disallowance by Field Team

7 feet of logging and probing at $0.1157/foot which was in excess of actual drilling	$ 0.81

SUMMARY OF DOCUMENTED COSTS

SAN MATEO DOME PROJECT

Contract Idm-E1183

Docket No. DMEA 4842

	Stage I Gov. Part. 75%	Stage III Gov. Part. 50%	Total
Independent Contracts			
Bulldozing			
38 hours at $15.00/hr.	$ 570.00		
12 hours at $15.00/hr.		$ 180.00	$ 750.00
Non-core Drilling			
19,500 ft. at $1.50/ft.	29,250.00		
13,500 ft. at $1.50/ft.		20,250.00	49,500.00
6,170 ft. at $2.25/ft.	13,882.50		
5,090 ft.at $2.25/ft.		11,452.50	25,335.00
Core Drilling			
591 ft. at $13.00/ft.	7,683.00		7,683.00
Logging and Probing			
26,261 ft. at $0.11264/ft.	2,958.14		
18,590 ft. at $0.11002/ft.		2,045.23	5,003.37
Standby Time			
Drill Crew			
5½ hrs. at $15.00/hr.	82.50		
9 hrs. at $15.00/hr.		135.00	217.50
Logging and Probing Crew			
8.6 hrs. at $10.00/hr.	86.00		
7.4 hrs. at $10.00/hr.		74.00	160.00
Circulation Material in excess $100.00 per hole	82.00		82.00
Total Independent Contracts	$54,594.14	$34,136.73	$88,730.87
Miscellaneous			
70 Cardboard Core boxes at $1.1733/each	82.13		82.13
Total Documented Costs	$54,676.27	$34,136.73	$88,813.00
Fixed Unit Costs			
Incidental Allowance			
26,261 ft. completed drilling at $0.18/ft.	4,726.98		
18,590 ft. completed drilling at $0.18/ft.		3,346.20	8,073.18
Total Accepted Costs	$59,403.25	$37,482.93	$96,886.18

Government's copy

EXPLORATION PROJECT CONTRACT
SAN MATEO DOME PROJECT
DOCKET NO. DMEA-4842

AMENDMENT NO. 1

It is agreed this 18th day of June, 1958, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and San Mateo Dome Project, a Joint Venture, comprised of Lisbon Uranium Corporation and Mineral Projects - Venture B, Ltd., hereinafter called the "Operator," that Exploration Project Contract No. Idm-E1183, Docket No. DMEA-4842, dated April 4, 1958, hereinafter called the "Contract," is amended as follows:

1. In Article 1 of the Contract, the items Annex I(a) and map (Figure 1), attached to this amendment, are added as constituting a part of the Contract.

2. In Article 2 of the Contract, the words "and Annex I(a)" are added after the words "Annex I."

3. (a) In Article 2(b)(2) of the Contract, the Parador Mining Co., Roy B. Shaw and L. G. Shaw are added as parties having interests in the land.

(b) Consents to Lien and Subordination Agreements respecting interests in land referred to in Annex I(a) are attached to this amendment.

4. In Article 3 of the Contract, the completion date is extended from August 31, 1958, to December 31, 1958.

5. In Article 5 of the Contract, that portion preceding the colon is deleted and the following substituted:

"The estimated total allowable cost of the project set forth in Exhibit "A" is the sum of $176,770.00. The Government shall contribute 75 percent of the allowable costs under Stages I and II, and 50 percent of the allowable costs under Stages III and IV, as they are incurred, in a total sum not in excess of $114,235.00:"

6. In Exhibit "A," under Description of the Work:

(a) Under General Provisions: (1) The first sentence in the second paragraph is changed to read as follows:

"Drilling depths are estimated to average 2,030 feet in Stages I and II and 2,100 feet in Stages III and IV."

(2) The last paragraph is changed to read as follows:

"The work is divided into four stages, as hereinafter described. The Operator shall complete Stages I and III, and shall perform as much of Stages II and IV as the Government approves in writing in advance. In the event of Government approval of work under Stages II and IV, the work may be carried on concurrently with the work in the other stages."

(b) Stages III and IV are added as described hereinafter. The work in these stages is confined to the E½ section 32 T. 14 N., R. 8 W., described in Annex I(a). The general location of the work is shown on the map (Figure 1) referred to in Annex I(a).

Stage III

Prepare access roads and drill sites and drill 9 non-core holes aggregating an estimated 18,900 feet, at the locations indicated on the map (Figure 1). The holes are numbered 14 through 22 and the coordinates of each location are as follows:

Hole number	North (feet)	East (feet)
14.	314,300	561,200
15.	313,300	561,200
16.	312,300	561,200
17.	311,300	561,200
18.	312,300	562,200
19.	313,300	562,200
20.	313,300	563,200
21.	312,300	563,200
22.	311,300	563,200

Stage IV

Prepare access roads and drill sites and drill not more than 8 non-core holes aggregating not more than 16,800 feet as offsets to Stage III holes which penetrate ore grade material. Tentative locations of 8 holes are shown on the map (Figure 1) at the center of the 1,000-foot squares formed by Stage I holes. Thus, offset holes are expected to be spaced approximately 700 feet from previously drilled holes. However, a spacing of not less than 500 feet may be used when required to follow or prove a mineralized trend or when topography or other factors justify the closer offsetting.

7. In Exhibit "A," under Estimated Costs of the Project,

(a) Stages III and IV are added as follows:

Stage III

Actual Costs

Category (1) Independent Contracts

13,500 feet non-core drilling, 0-1500 foot depths, @ $1.50/ft.	$20,250.00
5,400 feet non-core drilling, 1500-2200-foot depths, @ $2.25/ft.	12,150.00
9 hours drill crew standby time @ $15/hr.	135.00
18,900 feet probing and logging @ $0.115/ft.	2,173.50
9 hours logging crew standby time @ $10/hr.	90.00
9 holes @ $40/hole for cost of circulation materials in excess of $100 per hole	360.00
12 hours bulldozing @ $15/hr.	180.00

Categories (2) through (6)

None

Category (7) Miscellaneous

15 chemical analyses @ $5/each	$75.00	$35,413.50

Fixed Unit Costs (See Annex II(d))

Incidental allowance 1/ for each foot of hole drilled, 18,900 feet @ $0.18/ft.	3,402.00
Estimated Total Cost of Stage III	$38,815.50

Stage IV

Actual Costs

Category (1) Independent Contracts

12,000 feet non-core drilling, 0-1500 foot depths, @ $1.50/ft.	$18,000.00
4,800 feet non-core drilling, 1500-2200-foot depths, @ $2.25/ft.	10,800.00
8 hours drill crew standby time @ $15/hr.	120.00
16,800 feet probing and logging @ $0.115/ft.	1,932.00
8 hours logging crew standby time @ $10/hr.	80.00
8 holes @ $40/hole for cost of circulation materials in excess of $100 per hole	320.00
12 hours bulldozing @ $15/hr.	180.00

Categories (2) through (6)

None

Category (7) Miscellaneous

20 chemical analyses @ $5/each	$100.00	$31,532.00	

Fixed Unit Costs (See Annex II(d))

Incidental allowance 1/ for each foot of hole drilled, 16,800 feet @ $0.18/ft.		3,024.00	
Estimated Total Cost of Stage IV			$34,556.00

(b) The Summary of Costs is revised to read as follows:

Summary of Costs

Estimated Total Cost of Stage I	$61,261.50		
Estimated Total Cost of Stage II	$42,142.50		
Estimated Total Cost of Stages I and II (rounded)		$103,400.00	
Government participation @ 75 percent			$77,550.00
Estimated Total Cost of Stage III	$38,815.50		
Estimated Total Cost of Stage IV	$34,556.00		
Estimated Total Cost of Stages III and IV (rounded)		$73,370.00	
Government participation @ 50 percent			$36,685.00
Estimated Total Cost of the Project		$176,770.00	
Government participation			$114,235.00

Boutin
App'd. Sol. Off.
Ching
Yusuf
Chambers

1/ Includes all allowable costs of the project under Categories (1) through (7) of Article 6(a) except as otherwise scheduled in Exhibit "A."

Executed in quintuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O Mitteudorf
Administrator, Defense Minerals
Exploration Administration

SAN MATEO DOME PROJECT

Per E. J. Longyear Company, attorney-in-fact

By D M Davidson

Title Vice President

Selfridge
Johnson

EXPLORATION PROJECT CONTRACT
SAN MATEO DOME PROJECT
DOCKET NO. DMEA-4842

ANNEX I(a)

In addition to the land described in Annex I, the land referred to in Article 2 of the Contract includes 30 whole or fractional lode mining claims situate in section 32, T. 14 N., R. 8 W., N.M.P.M.&B., McKinley County, New Mexico. The claims are shown on the map entitled "Figure 1 - Claims and Proposed Drilling on E½ Section 32, T. 14 N., R. 8 W., N.M.P.M., and Areas II and III, San Mateo Dome Project, McKinley County, New Mexico," attached hereto and made a part hereof.

The notices of location of the claims, to which reference is hereby made for a full and complete description, are recorded in the official records of McKinley County as follows:

Claims (Numbers are Inclusive)	Book	Page
Yucca 5224-5228	13MC	290-294
Yucca 5237-5246	13MC	303-312
Bulldog 1-5	7MCR	123-127
John 1-10	10MCR	173-182

The exact locations of the boundaries of the above-listed claims with respect to the boundaries of section 32 are not clearly defined. However, it is the intent of the parties to this Contract that all of the E½ Section 32 is included as land described in the Contract, notwithstanding that the recorded descriptions of the claims may not cover the entire E½ Section 32.

Yucca

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

DMEA
DEPARTMENT OF THE INTERIOR
JUN 10 1958
REGION III
DENVER, COLORADO

RECEIVED
JUN 30 1958
D.M.E.A.

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA- 4995
Contract No. Idm-E
Contract Date

CONSENT TO LIEN and SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of McKinley, State of New Mexico, described as follows: 2/

All of E ½ of Section 32, T. 14 N., R. 8 W., NMPM

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

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

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

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

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

~~None~~ Yucca Mining & Petroleum Co. Inc. knows of no liens, incumbrances or claims upon their interest and have not executed any instruments placing any liens or incumbarnces on their interest. However Yuccas interest is subject to a lease to G.R.Kennedy & Henry C. Adams.

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

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

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

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

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

Dated this 23rd day of May, 1958

Melvin E. Richards	[Seal]	YUCCA MINING & PETROLEUM CO. ICN. 1224 4th NW., Albuq., N.Mexico	[Address]
~~C. R. Kennedy~~ Melvin E. Richards	[Seal]		[Address]
~~Henry C. Adams~~	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, Elizabeth A. Hatcher certify that I am the Assistant Secretary-Treasurer (Secretary, etc.) of the corporation named herein; that Melvin E. Richards 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.

Elizabeth A. Hatcher
Ass't. Sec. Treas. [Corporate Seal]

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

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA- 4995
Contract No. Idm-E
Contract Date

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

RECEIVED JUN 20 1958 D.M.E.A.

CONSENT TO LIEN and SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of McKinley, State of New Mexico, described as follows: 2/

All of the E ½ of Section 32, T. 14 N., R. 8 W., NMPM

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

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

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

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

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

None

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

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

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

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

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

Dated this 11th day of June, 1958.

	[Seal]		[Address]
Parador Mining Co.	[Seal]	2390 Francisco St.	[Address]
Elizabeth Cedron	[Seal]	Room 201 San Francisco, California	[Address]
President	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

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

_____
[Corporate Seal]

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

DMEA
DEPARTMENT OF THE INTERIOR
JUN 10 1958
REGION III
DENVER, COLORADO

RECEIVED
JUN 30 1958
D.M.E.A.

EJL

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA- 4995
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of McKinley, State of New Mexico, described as follows: 2/

All of the E ½ of Section 32, T. 14 N., R. 8 W., NMPM

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

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

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

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

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

None

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

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

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

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

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

Dated this _____ day of _____, 195__.

_____	[Seal]	_____	[Address]
~~Mineral Projects Venture B, Ltd.~~			
_____	[Seal]	_____	[Address]
D. M. Davidson Vice President E. J. LONGYEAR COMPANY	[Seal]	76 South 8th St. Minneapolis 2, Minn.	[Address]
_____	[Seal]	_____	[Address]
_____	[Seal]	_____	[Address]
_____	[Seal]	_____	[Address]

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

_____

[Corporate Seal]

1c + A

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

DMEA
DEPARTMENT OF THE INTERIOR
JUN 10 1958
REGION III
DENVER, COLORADO

RECEIVED
JUL 30 1958
D.M.E.A.

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA- 4995
Contract No. Idm-E
Contract Date

CONSENT TO LIEN and SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of McKinley, State of New Mexico, described as follows: 2/

All of the E ½ of Section 32, T. 14 N., R. 8 N., N. M. P. 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;

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

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

None

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

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

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

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

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

Dated this _____ day of _____, 195__.

	[Seal]		[Address]
~~E. J. Longyear Co.~~ Henry C. Adams	[Seal]		[Address]
Henry C. Adams	[Seal]	506 First City Natl. Bank Bldg. Houston 2, Texas	[Address]
G. R. Kennedy	[Seal]	448 San Jacinto Bldg. Houston 2, Texas	[Address]
G. R. Kennedy	[Seal]		[Address]
	[Seal]		[Address]

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

_____

[Corporate Seal]

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

DMEA
DEPARTMENT OF THE INTERIOR
JUN 10 1958
REGION III
DENVER, COLORADO

RECEIVED
JUN 20 1958
D.M.E.A.

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA- 4995
Contract No. Idm-E
Contract Date

CONSENT TO LIEN and SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of McKinley, State of New Mexico, described as follows: 2/

All of E ½ of Section 32, T. 14 N., R. 8 W., N. M. P. 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;

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

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

None

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

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

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

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

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

Dated this _____ day of _____, 195__.

Lisbon Uranium Corp.	[Seal]		[Address]
	[Seal]		[Address]
Roy B. Shaw	[Seal]	7420 Central Ave. S. E. Albuq. New Mexico	[Address]
Belva L. Shaw	[Seal]	7420 Central Ave. S. E. Albuq. New Mexico	[Address]
L. G. Shaw	[Seal]	4112 Swiss, Dallas 4, texas	[Address]
Elizabeth Shaw	[Seal]	4112 Swiss, Dallas 4, texas	[Address]

I, Erna C. Karter certify that I am the Notary Public (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.

My Commission Expires Mar. 12, 1959

Erna C. Karter

[Corporate Seal]

Graley

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

DMEA
DEPARTMENT OF THE INTERIOR
JUN 10 1958
REGION III
DENVER, COLORADO

RECEIVED JUN 30 1958 D.M.E.A.

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA- 4995
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of McKinley, State of New Mexico, described as follows: 2/

All of the E ½ of Section 32, T. 14 N., R. 8 W., NMPM

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

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

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

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

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

None

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

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

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

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

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

Dated this _____ day of _____, 195__.

	[Seal]		[Address]
[redacted]			
Raymond E. Hartz	[Seal]		[Address]
REH Raymond E. Hartz	[Seal]	55 Green Village Road Madison, New Jersey	[Address]
Mineral Projects, Inc.			
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, Paul C. Hackett certify that I am the Asst. Secretary (Secretary, etc.) of the corporation named herein; that Raymond E. Hartz who signed this agreement was then Vice 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.

Paul C. Hackett

[Corporate Seal]

Governme[illegible]s copy

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 2 1958
DATE | INITIALS | CODE

RECEIVED
APR 8 1958
E. J. LONGYEAR CO.
DENVER, COLO.

MF-200
(Revised June 1954)

Docket No. MEA 4842

Commodity Uranium

Contract No. Idm-E 1183

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

EXPLORATION PROJECT CONTRACT[1]

Not Com

It is agreed this 4 APR 1958 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] San Mateo Dome Project, a Joint Venture, comprised of Lisbon Uranium Corporation, a Utah corporation, and Mineral Projects - Venture B, Ltd., a limited partnership, whose mailing address is E. J. Longyear Company, Agent 416 Colorado Building, Denver, Colorado, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, ~~and~~ Annex II, and map (Figure 3)

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

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

(b) The Operator represents and undertakes that:

(1) The Operator is the[4] lessee of[5] the mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of ~~a~~[6] Assignment and Lease, /recorded in Book 15, page~~s~~ 301-314 and 315-319 official records of said County; and /the assigned leases being

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: Interests of Yucca Uranium, Inc. (Yucca Mining and Petroleum Company, Inc.), G. R. Kennedy, Henry C. Adams, E. J. Longyear Company, and Mineral Projects, Inc.

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

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

of the land (lessor, seller, optionor, etc.), are attached, as follows: Consents to Lien and Subordination Agreements of the parties described in Article 2(b)(2).

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

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Uranium. The work to be performed is described in Exhibit "A." The Operator on or before July 1, 1958 shall commence the work, and on or before August 31, 1958 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall ~~xxxx~~ have completed the work ~~or shall have incurred allowable costs (see Article 6) in an amount not less than the estimated total allowable cost set forth in Exhibit "A"~~ except as otherwise provided in Exhibit "A" with respect to stages of work. See Annex II.

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

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

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

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $ 103,400.00 The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $ 77,550.00 : *Provided,* That until the Operator has rendered to the Government his final report, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last

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

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

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

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

CATEGORY (2)—PERSONAL SERVICES.

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

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

Subcategory (c)—Labor.

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

CATEGORY (4)—OPERATING EQUIPMENT.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 13. *Changes and added provisions.*—
See Annex II

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C. Mitteudorf
Administrator, Defense Minerals
Exploration Administration

App'd. Sol. Off.

Lisbon Uranium Corporation and
Mineral Projects-Venture B, Ltd.,
a joint venture, known as:

SAN MATEO DOME PROJECT
(Operator)

Per E. J. Longyear Company, attorney-in-fact
By D. M. Davidson
D. M. Davidson

Title Vice President

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

Rollin N. Dow

[CORPORATE SEAL]

Ching
Ellis
Chambers
Selfridge
Johnson

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

EXPLORATION PROJECT CONTRACT
SAN MATEO DOME PROJECT
DOCKET NO. DMEA-4842

ANNEX I

The land referred to in Article 2 of the Contract consists of 170 lode mining claims situate in sections 27, 33, and 34, T. 14 N., R. 8 W., and sections 3 and 4, T. 13 N., R. 8 W., N.M.P.M. & B., McKinley County, New Mexico. The claims are shown on the map entitled "Figure 3 - Claims and Proposed Drilling in Areas II and III, San Mateo Dome Project, McKinley County, New Mexico", attached hereto and made a part hereof.

The notices of location of the claims, to which reference is hereby made for a full and complete description, are recorded in the official records of McKinley County as follows:

Claims (Nos. are inclusive)	Book	Page
Falcon 4039-4074	14 MC	119-154
Polvadera 19-26 (ReDame 19-26)	18 MC	357-364
Falcon 4105-4131	14 MC	191-217
Tomcat 1-9	007	132-140
Falcon 4142-4177	14 MC	227-262
Wildcat, Wildcat 2-7 and 9-22	7 MC	410-433
Yucca 3-4	35	594-595
Rod 21-24 (Yucca 5-8)	39	201-204
Roberto 9-18	7 MC	183-192
Pancho 2-4, 6-8, and 10-20	7 MC	12-18 and 20-30

Excluded Land. The Wildcat claim No. 8, and those portions of the Wildcat claims Nos. 5, 6, and 7, in sec. 3, T. 13 N., R. 8 W., which are south of the south boundary of the N½ of the S½ are excluded from the land referred to in Article 2. The exclusions are shown on the attached map, Figure 3.

EXPLORATION PROJECT CONTRACT
SAN MATEO DOME PROJECT
DOCKET NO. DMEA-4842

ANNEX II

Article 13. Changes and added provisions.--

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

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

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

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

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

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

(g) In Article 8(b) the period of ten years is changed to fifteen years.

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

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D.M.E.A.

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator _____
Docket No. DMEA- _____
Contract No. Idm-E _____
Contract Date _____

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of McKinley, State of New Mexico, described as follows: 2/

Area 1 Township 14 North, Range 8 West, NMPM: Section 9, All; Section 16, All; Section 15, W½;
Area 2 Township 14 North, Range 8 West, NMPM: Section 33, All;
Township 13 North, Range 8 West, NMPM: Section 4, All, except a tract of land measuring 750 feet East and West and 400 feet North and South in the SE corner of said Section; Section 3, N½, N½S½
Area 3 Township 14 North, Range 8 West, NMPM: Section 27, All; Section 34, All;

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

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

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

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

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

NONE

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.
2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

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

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

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

Dated this 13th day of February, 1958

YUCCA MINING & PETROLEUM CO. INC.

Melvin E. Richards [Seal] 1224 4th NW., Albuq., N.M. [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, Elizabeth A. Hatcher certify that I am the Assistant Secretary Treasurer (Secretary, etc.) of the corporation named herein; that Melvin E. Richards 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.

Elizabeth A. Hatcher
Ass't. Sec. Treas. [Corporate Seal]

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

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EXPLORATION PROJECT CONTRACT
Operator _____
Docket No. DMEA- _____
Contract No. Idm-E _____
Contract Date _____

CONSENT TO LIEN and SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of McKinley, State of New Mexico, described as follows: 2/

Area 1, Township 14 North, Range 8 West, NMPM: Section 9, All; Section 16, All; Section 15, W½;
Area 2, Township 14 North, Range 8 West, NMPM: Section 33, All;
Township 13 North, Range 8 West, NMPM: Section 4, All, except a tract of land measuring 750 feet East and West and 400 feet North and South in the SE corner of said Section; Section 3, N½, N½S½, S½SW¼;

Area 3, Township 14 North, Range 8 West, NMPM: Section 27, All; Section 34, All;

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

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

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

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

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

The interest of Mineral Projects, Inc. in the land above described is as nominee for Mineral Projects - Venture B, a limited partnership, and Lisbon Uranium Corporation.

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

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

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

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

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

Dated this 15th day of March, 1948.

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

D.M. Davidson Vice President [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I Rollin N. Dow certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that D.M. Davidson who signed this agreement was then Vice 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.

Rollin N. Dow

[Corporate Seal]

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

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MAR 31 1958
D.M.E.A.

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of McKinley, State of New Mexico, described as follows: 2/

Area 1, Township 14 North, Range 8 West, NMPM: Section 9, All; Section 16, All; Section 15, W½;
Area 2, Township 14 North, Range 8 West, NMPM: Section 33, All;
Township 13 North, Range 8 West, NMPM: Section 4, All, except a tract of land measuring 750 feet East and West and 400 feet North and South in the SE corner of said Section; Section 3, N½, N½S½, S½SW¼;
Area 3, Township 14 North, Range 8 West, NMPM: Section 27, All; Section 34, All;

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

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

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

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

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

NONE

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.
2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

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

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

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

Dated this _____ day of _____, 195__.

Henry C. Adams	[Seal]	506 First City Natl. Bank Bldg. Houston 2, Texas	[Address]
G. R. Kennedy	[Seal]	448 San Jacinto Building Houston 2, Texas	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

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

_____

[Corporate Seal]

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

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D.M.E.A.

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EXPLORATION PROJECT CONTRACT
Operator _____
Docket No. DMEA- _____
Contract No. Idm-E _____
Contract Date _____

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of McKinley, State of New Mexico, described as follows: 2/

Area 1 Township 14 North, Range 8 West, NMPM: Section 9, All; Section 16, All; Section 15, W½;
Area 2 Township 14 North, Range 8 West, NMPM: Section 33, All;
Township 13 North, Range 8 West, NMPM: Section 4, All, except a tract of land measuring 750 feet East and West and 400 feet North and South in the SE corner of said Section;
Section 3, N½, N½S½
Area 3 Township 14 North, Range 8 West, NMPM: Section 27, All; Section 34, All;

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

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

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

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

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

NONE

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

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

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

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

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

Dated this 8th day of February, 1950.

E. J. Longyear Company	[Seal]	76 E. 6th St.	[Address]
J M Beaumont	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, Leslie E. Cox certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that C. M. Beaumont who signed this agreement was then Vice 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.

Lawrence N Ryan

[Corporate Seal]

EXPLORATION PROJECT CONTRACT
SAN MATEO DOME PROJECT
DOCKET NO. DMEA-4842

EXHIBIT "A"

Description of the Work

General Provisions

The work consists of exploration by core and non-core drilling to test the Westwater Canyon sandstones of the Jurassic Morrison formation for uranium.

Drilling depths are estimated to average 2030 feet. Drill holes shall not extend more than 20 feet below the contact between the Westwater Canyon and underlying Recapture members of the Morrison formation.

Non-core drilling may be either dry or wet. Dry cuttings or sludge samples shall be taken from each 10-foot interval drilled, and logged geologically. When drilling through the Westwater Canyon member or any other favorable or mineralized horizon, the samples shall be checked for radioactivity, sacked, and saved for inspection by the Government. Samples indicating significant mineralization shall be split and one portion analyzed chemically for uranium.

When core drilling, all the core shall be saved, stored in core boxes, checked for radioactivity, and logged geologically. Sections indicating significant mineralization shall be split; one-half shall be analyzed chemically for uranium and one-half preserved for inspection by the Government.

Any stored samples may be disposed of by the Operator after approval by the Government.

All holes shall be probed and gamma ray, resistivity, and self-potential logs recorded.

The record of all logging and probing, together with certified copies of all assay certificates, shall be submitted with the Operator's monthly progress reports.

No hole shall be drilled closer than 200 feet to the outer boundaries of the land described in Annex I.

The Government will not contribute to any costs of an incompleted drill hole.

Access roads and drill sites shall be prepared with an RD-6 tractor-dozer, or an equivalent unit of the same or another make.

The project shall be supervised at all times by a geologist or mining engineer, who shall devote full time to the project work.

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

The work is divided into two stages, as hereinafter described. The Operator shall complete Stage I, and shall perform as much of Stage II as the Government approves in writing in advance.

Stage I

Prepare access roads and drill sites, and drill 13 holes, aggregating an estimated 26,200 feet, at the locations indicated on the map (Figure 3) referred to in Annex I. The holes are numbered 1 through 13 and the coordinates of each location are as follows:

Hole No.	North (Ft.)	East (Ft.)
1	311,200	564,800
2	309,200	564,800
3	307,200	564,800
4	309,700	566,800
5	307,700	566,800
6	308,200	568,800
7	307,700	570,800
8	308,500	572,600
9	317,400	571,200
10	316,200	569,200
11	315,400	571,200
12	315,900	573,200
13	317,900	573,200

If, as the drilling progresses, any location is found to be unfavorable as a result of the preceding drilling, such location may be changed to a more favorable location upon approval of the Government, but a spacing of approximately 2,000 feet shall be maintained.

All the holes shall be drilled non-core throughout, except holes Nos. 1 and 9. Each of these two holes shall be drilled non-core for a distance of approximately 1,650 feet, and then cored through the bottom not more than 350 feet.

If the 13 holes require more than 25,500 feet of non-core drilling to reach the desired horizon, additional footages of non-core drilling and funds may, with the written approval of the Government, be transferred and deducted from Stage II.

Stage II

Prepare access roads and drill sites and drill (non-core) not more than 10 holes, aggregating not more than 20,500 feet of drilling as offsets to Stage I holes. Tentative locations of 10 holes are shown on the map (Figure 3). However, the offsetting may be along the north-south fences as shown, or in other directions. Offset holes are expected to be spaced approximately 1,000 feet from previously drilled holes, but a spacing of not less than 500 feet may be used when required to follow or prove a mineralized trend.

Estimated Costs of the Project

Stage I

Actual Costs

Category (1) Independent Contracts

19,500 feet non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$29,250.00
6,000 feet non-core drilling, 1,500-2,200 ft. depths, @ $2.25/ft.	13,500.00

700 feet core drilling, 1,600-2,200 ft. depths, @ $13.00/ft.	$ 9,100.00	
13 hrs. drill crew stand-by time @ $15.00/hr.	195.00	
26,200 feet probing and logging @ $0.115/ft.	3,013.00	
13 hrs. logging crew stand-by time @ $10.00/hr.	130.00	
13 holes @ $40.00/hole for cost of circulation materials in excess of $100.00 per hole	520.00	
40 hrs. bulldozing @ $15.00/hr.	600.00	
Categories (2) through (6)		
None		
Category (7) Miscellaneous		
70 cardboard core boxes @ $1.25 each	87.50	
30 chemical analyses @ $5.00 each	150.00	$56,545.50
Fixed Unit Costs (See Annex II (d))		
Incidental allowance[1] for each foot of hole drilled, 26,200 feet @ $0.18/ft.		4,716.00
Estimated total cost of Stage I		$61,261.50

Stage II

Actual Costs

Category (1) Independent Contracts

15,000 feet non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$22,500.00

5,500 feet non-core drilling, 1,500-2,200 ft. depths, @ $2.25/ft.	$12,375.00	
10 hrs. drill crew stand-by time @ $15.00/hr.	150.00	
20,500 feet probing and logging @ $0.115/ft.	2,357.50	
10 hrs. logging crew stand-by time @ $10.00/hr.	100.00	
10 holes @ $40.00/hole for cost of circulation materials in excess of $100.00/hole	400.00	
30 hrs. bulldozing @ $15.00/hr.	450.00	
Categories (2) through (6)		
None		
Category (7) Miscellaneous		
24 chemical analyses @ $5.00 each	120.00	$38,452.50
Fixed Unit Costs (See Annex II (d))		
Incidental allowance[1/] for each foot of hole drilled, 20,500 feet @ $0.18/ft.		3,690.00
Estimated total cost of Stage II		$42.142.50

Summary of Costs

Estimated Total Cost of Stage I	$61,261.50
Estimated Total Cost of Stage II	$42,142.50
Estimated Total Cost of the Project (rounded)	$103,400.00
Government participation @ 75%	$77,550.00

1/ Includes all allowable costs of the project under Categories (1) through (7) of Article 6(a), except as otherwise scheduled in Exhibit "A".

QUITCLAIM DEED

YUCCA URANIUM, INC., a New Mexico corporation for consideration paid, quitclaim to YUCCA MINING & PETROLEUM COMPANY, Inc. (formerly Northwest Mining & Petroleum Company, Inc., a Colorado corporation) the following described real estate in Valencia County, New Mexico:

Sections 2 and 11, T 12 N, R 9 W, Valencia County, New Mexico.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 19 1958

DATE	INITIALS	CODE

WITNESS our hand s and seal s this 18th day of June, 19 58

(SEAL) Melvin E. Richards (SEAL)

(SEAL) William S. Horalin (SEAL)

ACKNOWLEDGMENT
INDIVIDUAL

STATE OF NEW MEXICO,
County of Bernalillo } ss.

On this 18th day of June 19 58 before me personally appeared Melvin E. Richards William S. Horalin to me known to be the person s described in and who executed the foregoing instrument and acknowledged that they executed the same as their free act and deed.

Witness my hand and seal the day and year last above written.

My commission expires 10 April 1961 Elizabeth A. Hatcher Notary Public.

ACKNOWLEDGMENT
CORPORATION

STATE OF NEW MEXICO,
County of Bernalillo } ss.

On this 18th day of June 19 58, before me personally appeared William S. Horalin, to me personally known, who being by me duly sworn, did say that he is Sec.-Treasurer of Yucca Uranium, Inc., a corporation organized under the laws of the State of New Mexico, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation, by authority of its board of directors, and said Secretary-Treasurer acknowledged said instrument to be the free act and deed of said corporation.

Witness my hand and seal the day and year last above written.

My commission expires 10 April 1961 Elizabeth A. Hatcher Notary Public

STATE OF NEW MEXICO, County of ....., ss. I hereby certify that this instrument was filed for record on the ..... day of ....., 19....., at ..... o'clock ..... M., and duly recorded in Book ....., page ....., of the Records of Deeds of said county, on this ..... day of ....., A. D. 19.....

County Clerk.

By .....

Deputy.

Printed and For Sale by Howard N. Rose Printing, 331 Tyler Rd. NW, Albuquerque

QUITCLAIM DEED

YUCCA URANIUM, INC., a New Mexico corporation for consideration paid, quitclaim to YUCCA MINING & PETROLEUM COMPANY, Inc. (formerly Northwest Mining & Petroleum Company, Inc., a Colorado corporation) the following described real estate in San Juan County, ~~New Mexico~~ Utah

Sections 7, 8, 9, 17, 19, 20, 21, 28, T 39 S, R 17 E, San Juan County, Utah.

Sections 5, 8, 18 and 20, T 39 S, R 16 E, San Juan County, Utah.

Sections 27, 28, 33, 34, T 32S, R 10 E, San Juan County, Utah.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 19 1958

DATE	INITIAL	CODE

WITNESS our hand s and seal s this 18th day of June, 19 58.

_____ (SEAL) Melvin E. Richards (SEAL)

_____ (SEAL) William S. Horalin (SEAL)

ACKNOWLEDGMENT
INDIVIDUAL

STATE OF NEW MEXICO,
County of Bernalillo } ss.

On this 18th day of June 19 58, before me personally appeared Melvin E. Richards William S. Horalin to me known to be the person s described in and who executed the foregoing instrument and acknowledged that they executed the same as their free act and deed.

Witness my hand and seal the day and year last above written.

My commission expires 10 April 1961 Elizabeth A. Hatcher Notary Public.

ACKNOWLEDGMENT
CORPORATION

STATE OF NEW MEXICO,
County of Bernalillo } ss.

On this 18th day of June 19 58, before me personally appeared William S. Horalin, to me personally known, who being by me duly sworn, did say that he is Sec.-Treasurer of Yucca Uranium, Inc., a corporation organized under the laws of the State of New Mexico, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation, by authority of its board of directors, and said Secretary-Treasurer acknowledged said instrument to be the free act and deed of said corporation.

Witness my hand and seal the day and year last above written.

My commission expires 10 April 1961 Elizabeth A. Hatcher Notary Public

STATE OF NEW MEXICO, County of _____, ss. I hereby certify that this instrument was filed for record on the _____ day of _____, 19____, at _____ o'clock _____ M., and duly recorded in Book _____, page _____, of the Records of Deeds of said county, on this _____ day of _____, A. D. 19____.

_____ County Clerk.

By _____ Deputy.

Printed and For Sale by Howard N. Rose Printing, 331 Tyler Rd. NW, Albuquerque

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 19 1958
DATE | INITIAL | CODE

QUITCLAIM DEED

YUCCA URANIUM, INC., a New Mexico corporation for consideration paid, quitclaim to YUCCA MINING & PETROLEUM COMPANY, Inc. (formerly Northwest Mining & Petroleum Company, Inc., a Colorado corporation) the following described real estate in McKinley County, New Mexico:

WITNESS our hands and seals this 18th day of June, 19 58

(SEAL) Melvin E. Richards (SEAL)

(SEAL) William S. Horalin (SEAL)

ACKNOWLEDGMENT
INDIVIDUAL

STATE OF NEW MEXICO,
County of Bernalillo } ss.

On this 18th day of June 19 58, before me personally appeared Melvin E. Richards William S. Horalin to me known to be the persons described in and who executed the foregoing instrument and acknowledged that they executed the same as their free act and deed.

Witness my hand and seal the day and year last above written.

My commission expires 10 April 1961

Elizabeth A. Hatcher
Notary Public.

ACKNOWLEDGMENT
CORPORATION

STATE OF NEW MEXICO,
County of ~~McKinley~~ Bernalillo } ss.

On this 18th day of June 19 58, before me personally appeared William S. Horalin, to me personally known, who being by me duly sworn, did say that he is Secretary-Treasurer Yucca Uranium, Inc., a corporation organized under the laws of the State of New Mexico, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation, by authority of its board of directors, and said Secretary-Treasurer acknowledged said instrument to be the free act and deed of said corporation.

Witness my hand and seal the day and year last above written.

My commission expires 10 April 1961

Elizabeth A. Hatcher
Notary Public

STATE OF NEW MEXICO, County of ....., ss. I hereby certify that this instrument was filed for record on the ..... day of ....., 19....., at ..... o'clock ..... M., and duly recorded in Book ....., page ....., of the Records of Deeds of said county, on this ..... day of ....., A. D. 19.....

County Clerk.

By .....
Deputy.

Printed and For Sale by Howard N. Rose Printing, 331 Tyler Rd. NW, Albuquerque

Sections 6, 7 & 9, the W1/2 of 15, 16, 17, 18, 19, 20, 21, S1/2 and NW1/4 of Section 22, S1/2 of 23, 26, 27, 28, 29, 32, 33, 34, 35, T 14 N, R 8 W, McKinley County, New Mexico

Sections 2, 3, 4 & 9, T 13 N, R 8 W, McKinley County, New Mexico.

Section 20 and N1/2 of Section 30, T 15 N, R 10 W, McKinley County, New Mexico.

Sections 12, 14 and 24, T 15 N, R 11 W, McKinley County, New Mexico.

W1/2 Section 21, N1/2 of Section 28 and Section 29, T 14 N, R 11 W, McKinley County, New Mexico.

Section 20, T 16 N, R 12 W, McKinley County, New Mexico.

Sections 2, 4 and N1/2 of Section 10, T 14 N, R 13 W, McKinley County, New Mexico.

The S1/2 and NW1/4 of Section 30 and S1/2 and NW1/4 of Section 32, T 15 N, R 13 W, McKinley County, New Mexico.

Sections 16 and 36, T 15 N, R 14 W, McKinley County, New Mexico.

Section 20, T 16 N, R 14 W, McKinley County, New Mexico.

E1/2 of Section 2 and all of Sections 6 & 12, T 15 N, R 15 W, McKinley County, New Mexico.

S1/2 and NW1/4 Section 14 and S1/2 and NE1/4 Section 22, T 16 N, R 15 W, McKinley County, New Mexico.

Sections 3, 4, S1/2 and NW1/4 Section 22, N1/2 and SE1/4 Section 20, SW1/4 Section 24, NE1/4 Section 28, T 16 N, R 16 W, McKinley County, New Mexico.

March 18, 1958

ASSIGNMENT

Subject to the reservations hereinafter expressly set forth, E. J. LONGYEAR COMPANY, a Delaware corporation, with its principal office at Minneapolis, Minnesota, party of the first part, for consideration paid, hereby quitclaims and assigns to MINERAL PROJECTS INC., a Delaware corporation, with its principal office at Madison, New Jersey, and LISBON URANIUM CORPORATION, a Utah corporation, with its principal office at Salt Lake City, Utah, parties of the second part, to each an undivided one-half, the following described unpatented lode mining claims, together with all mineral rights thereon situated in McKinley County, New Mexico:

> The North 1500 feet of Section 32 in Township 14 North, Range 8 West, N.M.P.M., McKinley County, New Mexico, consisting of mining claims known as Bulldog No. 1 to Bulldog No. 9, both inclusive, obtained by filing and discovery, the location notices for which said claims were dated June 7, 1955, filed for record June 13, 1955 and recorded in Book 7, M.C.R. on pages 123, 124, 125, 126, 127, 128, 129, 130 and 131, respectively of the records of the office of the County Clerk of said county, and, for which said claims amended location notices have been filed by the locators thereof.

ALSO:

> The North 1500 feet of Section 33, Township 14 North, Range 8 West, N.M.P.M., McKinley County, New Mexico, consisting of claims known as Tomcat No. 1 to Tomcat No. 9, both inclusive, obtained by filings and discovery, the location notices for which said claims were dated June 7, 1955, filed for record June 13, 1955, and recorded in Book 7, M.C.R. on pages 132, 133, 134, 135, 136, 137, 138, 139 and 140, respectively of the records in the office of the County Clerk of said county; and for all of which said claims amended location notices have been filed, and all of which said claims have been quitclaimed and assigned, together with all discovery rights thereon to the party of the first part herein, subject to reservation to Roy B. Shaw and L. C. Shaw each, a four per cent over-riding royalty on the sale price of any and all ore that may be produced from the hereinbefore described land, said price to include discovery bonus and premiums thereon as provided in Quitclaim Deed recorded in Book 7, [illegible]65, of Quitclaim Deed Records, County Clerk, [illegible]y County, New Mexico.

ALSO:

The claims known as Pool No. 1 to Pool No. 8, both inclusive, situated in Section 29, Township 14 North, Range 8 West, N.M.P.M., obtained by filing and discovery, the location notices for which said claims were dated September 6, 1955, filed for record November 17, 1955, and recorded in Book 17, MCR. on pages 508, 509, 510, 511, 512, 513, 514 and 515, respectively, of the records in the office of the County Clerk of said County, exterior boundaries of which said eight claims are particularly described as follows:

Beginning at a point 480 feet West of the Southeast corner of said Section 29; Thence North 3000 feet; Thence West 2400 feet; Thence South 3000 feet; Thence East 2400 feet to the point of beginning.

First party reserves unto itself, from the unpatented lode mining claims and mineral rights thereon which are herein quitclaimed and assigned, a five per cent share of all cumulative net profits derived from operations by the second parties from and upon the said lode mining claims and the lands described therein, three per cent thereof to be borne by Mineral Projects Inc. and two per cent by Lisbon Uranium Corporation, which sums the said parties of the second part respectively covenant and agree shall be paid and accounted for to first party in the manner and at the times as follows:

The cumulative net profits out of which said five per cent is reserved by first party shall be determined on the same basis and in the manner as provided for computation of net profits under paragraphs 6 and 7 of that certain agreement dated April 1, 1957, entered into between first party and G. R. Kennedy and Henry C. Adams, which paragraphs are hereby referred to and made a part hereof, provided that before computing said five per cent of net profits payable to first party any sums paid to said Messrs. Kennedy and Adams as a production payment under paragraph 5 of said agreement of April 1, 1957, during any

accounting period shall be first deducted as an item of cost. At the time of each quarterly or other accounting of net profits to be made to said G. R. Kennedy and Henry C. Adams by the provisions of said paragraphs 6 and 7, first party shall be entitled to five per cent of that portion of the cumulative net profits after making the adjustment for production payment provided above which remains for allocation as net profits to second parties as assignees of first party under said agreement.

This agreement shall be binding upon the parties hereto and their respective successors, heirs and assigns, and the provisions thereof shall inure to the benefit of saidparties and their respective successors, heirs and assigns, it being understood that the said five per cent of net profits herein reserved to first party shall attach to the interests in mining claims which are the subject of this assignment.

It is the intention of the first party to quitclaim and assign to the second parties all of the foregoing mining claims, together with all minerals and mining rights thereon, and all possessory and discovery rights of first party in and to the lands and premises described above.

IN WITNESS WHEREOF, first party has caused this instrument to be executed by its duly authorized officers the day and year first above written.

E. J. LONGYEAR COMPANY (Seal)

By D. M. Davidson
Vice-President

Attest:

Rollin N. Dow
Secretary

STATE OF MINNESOTA)
)SS.
COUNTY OF HENNEPIN)

On this 18th day of March, 1958, before me, a Notary Public within and for said County, personally appeared D. M. Davidson and Rollin N. Dow, to me personally known, who, being each by me duly sworn did say that they are respectively the Vice-President and Secretary of the corporation named in the foregoing instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said D. M. Davidson and Rollin N. Dow acknowledged said instrument to be the free act and deed of said corporation.

Edmund T. Montgomery (Seal)

EDMUND T. MONTGOMERY
Notary Public, Hennepin County, Minn.
My Commission Expires June 19, 1964.

ASSIGNMENT

KNOW ALL MEN BY THESE PRESENTS, That the undersigned, E. J. LONGYEAR COMPANY, a Delaware corporation, of Minneapolis, Minnesota, for and in consideration of the sum of One Dollar ($1.00) and other good and valuable consideration, does hereby assign, transfer, set over, grant and convey to LISBON URANIUM CORPORATION, a Utah corporation, of Salt Lake City, Utah, and MINERAL PROJECTS INC., a Delaware corporation, of Madison, New Jersey, all its right, title and interest in and to the following unpatented lode mining claims located and situated on the public domain in McKinley County, New Mexico, more particularly described as follows:

> Those claims known as Rod No. 1 to 16, inclusive, Rod No. 25 to 31, inclusive, and Rod No. 36 in Section 2, Township 13 North, Range 8 West, NMPM, McKinley County, New Mexico;
>
> and those certain unpatented lode mining claims known as Rod 17, 18, 19, and 20; Rod No. 21, 22, 23, and 24, and Rod No. 32, 33, 34, and 35, located in Section 3, Township 13 North, Range 8 West, NMPM, McKinley County, New Mexico;

TO HAVE AND TO HOLD by the said LISBON URANIUM CORPORATION and MINERAL PROJECTS INC., their successors and assigns, forever.

Dated March 7th, 1958.

E. J. LONGYEAR COMPANY (Seal)

By D. M. Davidson
Its Vice-President

ATTEST:

Rollin N. Dow
Secretary

STATE OF MINNESOTA)
) SS.
COUNTY OF HENNEPIN)

On this 7th day of March, 1958, before me, a Notary Public within and for said County, personally appeared D. M. Davidson and Rollin N. Dow, to me personally known, who, being by me duly sworn did say that they are respectively the Vice-President and Secretary of the corporation named in the foregoing instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said D. M. Davidson and Rollin N. Dow acknowledged said instrument to be the free act and deed of said corporation.

Edmund T. Montgomery (Seal)

EDMUND T. MONTGOMERY
Notary Public, Hennepin County, Minn.
My Commission Expires June 19, 1964.

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POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that I Allan B. Grady, one of the duly appointed and acting representatives of Mineral Projects-Venture B, Ltd., a limited partnership, on the Owners Committee of the San Mateo Dome Project, a Joint Venture composed of Mineral Projects-Venture B, Ltd., and Lisbon Uranium Corporation, a Utah corporation, do hereby appoint E. J. Longyear Company to act as the Agent of said (Joint Venture) (Partnership) in all matters connected with an application on Form MF-103, "Application for Aid in an Exploration Project", under the United States Department of the Interior, Defense Minerals Exploration Administration Program which has been docketed DMEA No. 4842, and should the Applicant enter into a contract with the Government as a result of said application, said Agent is authorized to sign the contract, submit all necessary reports and information required, to receive, and to receipt for, any monies that are now or may hereafter become due to said (Joint Venture) (Partnership) by reason of said Docket No. DMEA 4842.

Executed this 12th day of March, 1958.

Allan B. Grady

Allan B. Grady

Witness:

Neil W. Stallion

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that I, Raymond E. Hartz, one of the duly appointed and acting representatives of Mineral Projects-Venture B, Ltd., a limited partnership, on the Owners Committee of the San Mateo Dome Project, a Joint Venture composed of Mineral Projects-Venture B, Ltd., and Lisbon Uranium Corporation, a Utah corporation, do hereby appoint E. J. Longyear Company to act as the Agent of said (Joint Venture) (Partnership) in all matters connected with an application on Form MF-103, "Application for Aid in an Exploration Project", under the United States Department of the Interior, Defense Minerals Exploration Administration Program which has been docketed DMEA No. 4842, and should the Applicant enter into a contract with the Government as a result of said application, said agent is authorized to sign the contract, submit all necessary reports and information required, to receive, and to receipt for, any monies that are now or may hereafter become due to said (joint Venture) (Partnership) by reason of said Docket No. DMEA 4842.

Executed this 14th day of March, 1958..

Raymond E. Hartz

Raymond E. Hartz

WITNESS:

Paul C. Hackler

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RECEIVED FEB 25 1958
INITIALS CODE

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS:

That LISBON URANIUM CORPORATION, a corporation, of Salt Lake City, in the County of Salt Lake, and State of Utah, has made, constituted and appointed, and by these presents does make, constitute and appoint E. J. LONGYEAR CO., a corporation, of Minneapolis, in the County of Hennepin, and State of Minnesota, its true and lawful attorney for it, and in its name, place and stead, to consent to lien of the United States of America and subordinate its interest to the United States of America in the following respects pertaining to the following described land in the County of McKinley and State of New Mexico, to-wit:

AREA I

Township 14 North, Range 8 West, NMPM

Section 9:	All
Section 16:	All
Section 15:	W-1/2

AREA II

Township 14 North, Range 8 West, NMPM

Section 33:	All

Township 13 North, Range 8 West, NMPM

Section 4:	All, except a tract of land measuring 750 feet East and West and 400 feet North and South in the SE corner of said section.
Section 3:	N-1/2, N-1/2 S-1/2

AREA III

Township 14 North, Range 8 West, NMPM

Section 27:	All
Section 34:	All

which lands are subject to a proposed exploration project contract with the United States. Said attorney being hereby empowered to undertake on behalf

of the undersigned an agreement whereby that property, in which the government may acquire an interest or equity under the contract, may be dismantled or 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. The undersigned further grants to its attorney hereby, the power to grant to the government a lien upon all of the undersigned's right, title and interest in the said 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 by the contract; said attorney having the power to subordinate the undersigned's right, title, claim or interest in or against the land and in any production therefrom to the rights of the government under the contract with respect to royalties on production and liens to secure the same; the undersigned's attorney being empowered hereby to undertake on behalf of the undersigned that there is no claim, lien or encumbrance upon the undersigned's right, title, claim or interest in or against the land; and said attorney is hereby empowered to contract and enter into whatever other agreements and execute whatever other documents are necessary to obtain a loan from the United States for exploration upon the lands.

And further, the undersigned do hereby appoint E. J. Longyear Company to act as the Agent of said (Joint Venture) (Partnership) in all matters connected with an application on Form MF-103, "Application for Aid In An Exploration Project", under the United States Department of the Interior, Defense Minerals Exploration Administration Program which has been docketed D.M.E.A. No. _____, and should the Applicant enter into a contract with the government as a result of said application, said Agent is authorized

to sign the contract, submit all necessary reports and information required, to receive, and to receipt for, any monies that are now or may hereafter become due to said (Joint Venture) (Partnership) by reason of said Docket No. D.M.E.A. _____.

GIVING AND GRANTING unto its said attorney full power and authority to do and perform all and every act and thing whatsoever requisite and necessary to be done in and about the premises as fully, to all intents and purposes, as it might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that its said attorney or its substitute shall lawfully do or cause to be done by virtue hereof.

IN WITNESS WHEREOF, it has hereunto set its hand and seal this 5th day of November, 1957.

LISBON URANIUM CORPORATION

By A. P. Kibbe
President

Signed, Sealed and
Delivered in Presence of

_____

_____

STATE OF UTAH)
) ss.
COUNTY OF SALT LAKE)

The foregoing instrument was acknowledged before me this 5th day of November, 1957, by A. P. Kibbe, President, of LISBON URANIUM CORPORATION, on behalf of said Corporation.

M. Scott Woodland
NOTARY PUBLIC
Residing at: Salt Lake City, Utah

My commission expires:
July 16, 1962

Mineral Projects

POWER OF ATTORNEY

Know All Men by These Presents, THAT Mineral Projects Inc. a corporation, of Madison, in the County of Morris and State of New Jersey has made, constituted and appointed, and by these presents does make, constitute and appoint E. J. Longyear Co., a corporation, of Minneapolis, in the County of Hennepin and State of Minnesota, its true and lawful attorney for it, and in its name, place and stead, to consent to lien of the United States of America and subordinate its interest to the United States of America in the following respects pertaining to the following described land in the County of McKinley and State of New Mexico to wit:

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AREA I.

Township 14N, Range 8W NMPM
Sections: 9 All
16 All
15 The W 1/2

AREA I I.

Township 14N, Range 8W NMPM
Section: 33 All

Township 13 N, Range 8W NMPM
Sections: 4 All except a tract of land measuring 750 feet east and west and 400 feet north and south in the SE corner of said section.
3 The N 1/2 and N1/2S1/2.

AREA III.

Township 14 N, Range 8W NMPM
Sections: 27 All
34 All

which lands are subject to a proposed exploration project contract with the United States. Said attorney being hereby impowered to undertake on behalf of the undersigned an agreement whereby that

property, in which the government may acquire an interest or equity under the contract, may be dismantled or 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. The undersigned further grants to its attorney, hereby, the power to grant to the government a lien upon all of the undersigned's right, title and interest in the said 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 by the contract; said attorney having the power to subordinate the undersigned's right, title, claim or interest in or against the land and in any production therefrom to the rights of the government under the contract with respect to royalties on production and liens to secure the same; the undersigned's attorney being impowered hereby to undertake on behalf of the undersigned that there is no claim, lien or incumberance upon the undersigned's right, title, claim or interest in or against the land; and said attorney is hereby impowered to contract and enter into whatever other agreements and execute whatever other documents are necessary to obtain a loan from the United States for exploration upon the said lands.

And Further, the undersigned does hereby appoint E. J. Longyear Company to act as the Agent of said Corporation in all matters connnected with an application on Form MF-103, "Application For Aid In An Exploration Project", under the United States Department of the Interior, Defense Minerals Exploration Administration Program which has been docketed D. M. E. A. No. 4842 , and should the

Applicant enter into a contract with the Government as a result of said application, said Agent is authorized to sign the contract, submit all necessary reports and information required, to receive, and to receipt for, any monies that are now or may hereafter become due to said Corporation by reason of said Docket No. D.M.E.A. 4842 .

GIVING AND GRANTING unto its said attorney full power and authority to do and perform all and every act and thing whatsoever requisite and necessary to be done in and about the premises as fully, to all intents and purposes, as it might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that its said attorney or its substitute shall lawfully do or cause to be done by virtue hereof.

IN WITNESS WHEREOF, it has hereunto set its hand and seal this 18th day of November, 1957.

MINERAL PROJECTS INC.

By Raymond E. Hartz REN
Vice-President

Paul C. Hackett
Ass't Secretary

Signed, Sealed and
Delivered in Presence of

Jean M. Cutter
Helen G. Wolf

STATE OF NEW JERSEY)
) ss.
COUNTY OF MORRIS)

SEAL

The foregoing instrument was acknowledged before me this 18th day of November, 1957, by RAYMOND E. HARTZ, Vice President of Mineral Projects Inc., on behalf of said Corporation.

MARY P. CAPRIO, Notary Public
My Commission Expires April 18, 1962

Mary P. Caprio
Notary Public

My commission expires _____.

Longyear

E. J. LONGYEAR COMPANY
General Offices, 76 South 8th St.
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 9-7631 • CABLE LONGCO

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DMEA
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October 3, 1957

4842

AIR MAIL

Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D.C.

Attention: Mr. C. O. Mittendorf, Administrator

Dear Mr. Mittendorf:

We are airmailing you today two packages containing the original and three copies of DMEA Application For Aid In A Uranium Exploration Project on the San Mateo Dome Properties, Grants - Mt. Taylor Mining District, McKinley County, New Mexico.

Doctor Merritt, of our company, will be in Washington Monday, October 7th, and is planning to see you Monday afternoon. He will be in touch with you by telephone for an appointment.

Yours very truly,

A. M. Nelson

A. M. Nelson
Mining Division

AMN:V
cc--Messrs. Merritt and Cox

DMEA
APPLICATION FOR AID IN A
URANIUM EXPLORATION PROJECT

on the

SAN MATEO DOME PROJECT PROPERTIES

Grants - Mt. Taylor Mining District
McKinley County, New Mexico

E. J. LONGYEAR COMPANY
August, 1957

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DATE	INITIALS	CODE

DIAMOND DRILLING
SHAFT SINKING
GEOLOGICAL AND MINING REPORTS
MANUFACTURE OF DIAMOND DRILLS AND SUPPLIES

E. J. LONGYEAR COMPANY

MINING ENGINEERS

GENERAL OFFICE
FOSHAY TOWER

MINNEAPOLIS 2, MINNESOTA

official

SPECIAL COPY
D.M.E.A.
RECEIVED 4
DATE | CODE

September 3, 1957

Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D.C.

Gentlemen:

San Mateo Dome Project, McKinley County, N.M.

Attached herewith is an application for aid in the San Mateo exploration project.

This material has had our most careful study and we feel that it is a careful representation of the money and time involved in proving up a promising uranium bearing area.

We trust that you will give this matter your prompt and careful consideration. On our part, we shall have a representative available at all times for discussion of various aspects of the proposed program.

Yours faithfully,

E. J. LONGYEAR COMPANY

D. M. Davidson

D. M. Davidson
Vice President

DMD:V

FORM 602 5M 10-56

E. J. LONGYEAR COMPANY

official
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DATE	INITIALS	CODE

DMEA
APPLICATION FOR AID IN A URANIUM EXPLORATION PROJECT

on the

SAN MATEO DOME PROJECT PROPERTIES

Grants - Mt. Taylor Mining District
McKinley County, New Mexico

Prepared for

SAN MATEO DOME PROJECT

By

E. J. LONGYEAR COMPANY
416 Colorado Building
Denver, Colorado

Form MF–103
Revised Feb. 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

APPLICATION FOR AID IN AN EXPLORATION PROJECT

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

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

SAN MATEO DOME PROJECT (of McKinley County, N.Mex.)
Addressed: OWNERS COMMITTEE
Messrs. Allan B. Grady and Raymond Hartz
c/o Mineral Projects-Venture B. Ltd.
55 Green Village Road, P.O. Box 390
Madison, New Jersey
Messrs. A. P. Kibbe and Max C. Lewis
c/o Lisbon Uranium Corporation
310 First Security Bank Building
Salt Lake City, Utah

APPLICANT NOT TO USE THIS BLOCK

Docket Number: DMEA-4842
Date Received: 10/4/57
Government Participation %:
Region: 11
Division Code: 700

BUSINESS ORGANIZATION (Check one)

- Individual
- Corporation
- Partnership
- Other (Specify)

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title
See Owners Committee (Addressed as shown above)		

State in which firm is organized: New Jersey & Utah

Mineral(s) for which you wish to explore: Uranium

Estimated Cost of Project: $ 203,232.80

LOCATION OF PROPERTY

Name	County	State
San Mateo Dome Project	McKinley	New Mexico

GENERAL INSTRUCTIONS

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

CERTIFICATION

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

E. J. LONGYEAR COMPANY

August 26, 1957
Dated

BY (*Signature*) D. M. Davidson
Vice President
Title

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

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INTRODUCTION

This report, together with Application Form MF-103 (revised Feb. 1957) is an application for a Defense Minerals Exploration Administration project contract of the unit cost type. A $203,232.80 exploration program is recommended for drilling three separate areas comprising some 255 unpatented lode mining claims. The claims are situated within favorable areas in the San Mateo Dome in the Grants-Mt. Taylor Mining District, McKinley County, New Mexico. A 3-area drilling program, to be completed by independent contractors in two stages per area, is recommended.

NAME OF APPLICANT

The name of the applicant is San Mateo Dome Project. This project is financed and controlled by LISBON URANIUM CORPORATION, a corporation organized and existing under the laws of the State of Utah, with principal offices at Salt Lake City, Utah, and MINERAL PROJECTS - VENTURE B, LTD., a limited partnership organized and existing under the laws of the State of New Jersey, with principal place of business at Madison, New Jersey.

GENERAL

This report, together with the attached completed Form MF-103, is an application for DMEA loan under a unit cost form contract and has been prepared in accordance with

DMEA Order No. 1, Amended. It is to be submitted in quadruplicate to the Executive Officer, Region IV, DMEA, New Customhouse Building, Denver 2, Colorado.

Sufficient space is not available on Application Form MF-103, therefore the necessary information is supplied in this report with reference to each case by number and letter to the item which is referred to on Form MF-103.

(1) APPLICANTS PROPERTY RIGHTS

(a) Legal Description of Property

Area I: Consists of 90 full and fractional mining claims, all contiguous, covering all of Secs. 9 and 16, and the W 1/2 of Sec. 15, in T. 14 N., R 8 W., New Mexico, Principal Meridian, McKinley County, New Mexico.

Area II: Consists of 91 full and fractional mining claims, all contiguous, covering all of Secs. 33, T. 14 N., R. 8 W., and nearly all of Secs. 3 and 4 of T. 13 N., R. 8 W., New Mexico Principal Meridian, McKinley County, New Mexico.

Area III: Consists of 74 full and fractional mining claims, all contiguous, covering all of Secs. 27 and 34, T. 14 N., R. 8 W., New Mexico Principal Meridian, McKinley County, New Mexico.

These areas lie within the Grants-Mt. Taylor Mining District being a part of 19 full and 5 partial sections of land held by lease by the San Mateo Dome Project. (see Exhibit A). The claims are unpatented mining claims of which only a portion have been surveyed under the supervision of a New Mexico Registered Engineer. The location notices, or amended notices, are posted and copies are recorded in the McKinley County Courthouse, Gallup, New Mexico. The book and page numbers of all the recordings are tabulated in the List of Properties Owned or Acquired by Yucca Uranium, Inc., and included under Appendix I. The claim outlines, with reference to the public land survey and adjacent claims,

are as shown on Exhibit B, Claim Location Map, (in three sheets).

It being specifically understood that the lands which are to be security for these loans and subject to the government's lien for royalty payments are only those lands described and designated as Areas I, II and III, on page 3 above, said designated areas to be considered in this application as security for separate applications for loans. The granting of a loan secured by any one of Areas I, II or III will not include as security for the loan the areas remaining. The amount of loan applied for to be secured by the lands and subject to the government's lien for royalty payments shown above as Area I is $68,658.37. The amount of loan applied for to be secured by the lands and subject to the government's lien for royalty payments shown above as Area II is $84,859.22. The amount of loan applied for to be secured by the lands and subject to the government's lien for royalty payments shown above as Area III is $49,715.21.

The following lands, although part of the project lands and workings of the applicant, are specifically excluded from any liens arising from loans obtained through these applications:

Township 14 North, Range 9 West, NMPM

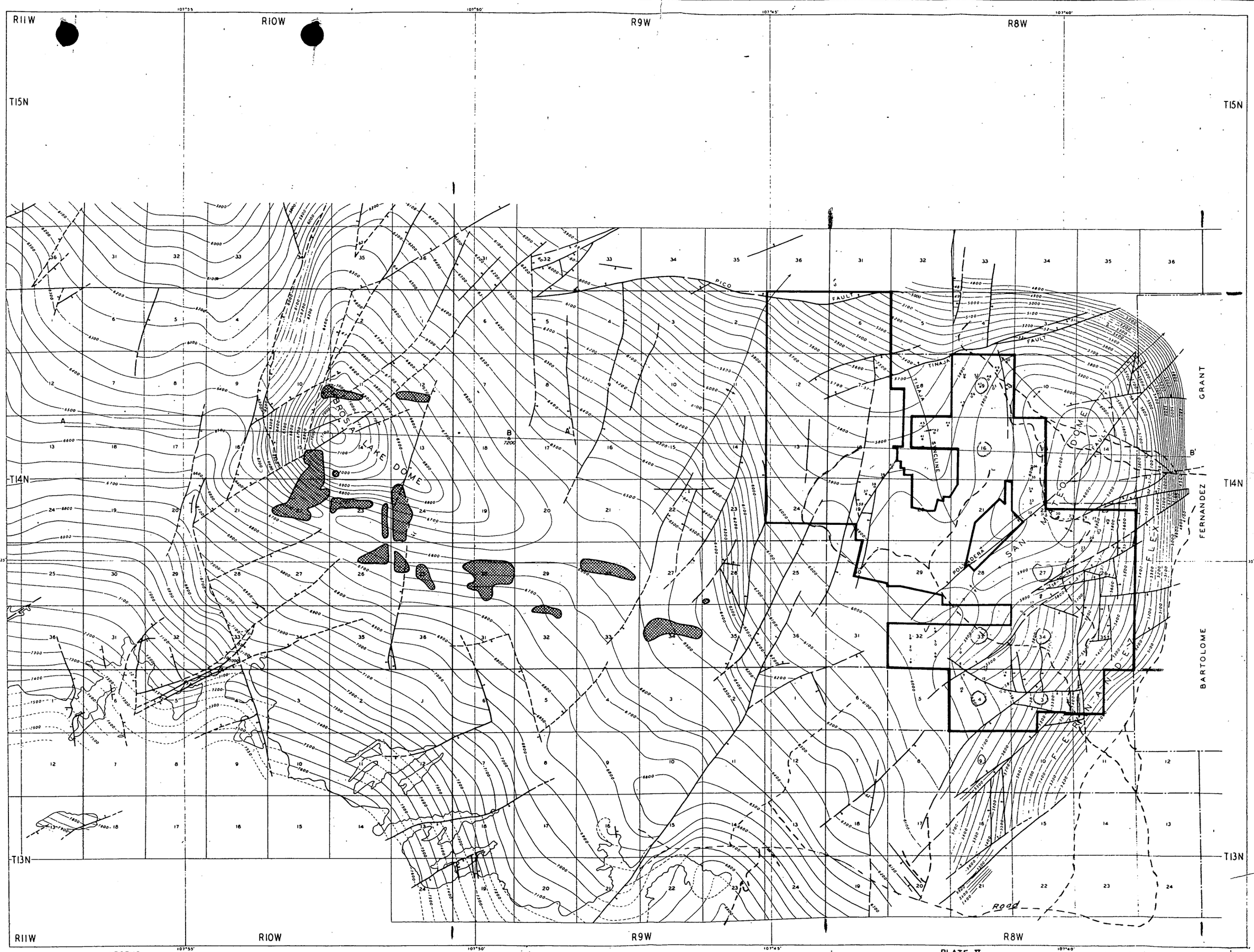
Sec. 1:	All	Sec. 13:	All
Sec. 12:	All	Sec. 24:	N 1/2, N 1/2 S 1/2

Township 14 North, Range 8 West, NMPM

Sec. 6:	All	Sec. 23:	S 1/2	Sec. 32:	All
Sec. 7:	All	Sec. 26:	All	Sec. 35:	All
Sec. 8:	All	Sec. 28:	All		
Sec. 17:	All	Sec. 29:	All		
Sec. 18:	All	Sec. 30:	That portion of the NE 1/4 as shown in Exhibit A		
Sec. 19:	N 1/2, SE 1/4				

Township 13 North, Range 8 West, NMPM

Sec. 2:	That portion in the NW 1/4 and N 1/2 SW 1/4 as shown in Exhibit A.



LEGEND

- STRUCTURE CONTOUR LINES ON TOP OF DAKOTA SANDSTONE
- OUTCROP OF BASE OF DAKOTA SANDSTONE
- FAULT WITH DOWNTHROWN SIDE
- AXIS OF ANTICLINE
- AXIS OF SYNCLINE
- KNOWN ORE BODIES
- PROPERTY OUTLINE

PROPOSED DRILL HOLES
- FIRST STAGE
- SECOND STAGE

AMBROSIA MINING DISTRICT

McKINLEY COUNTY, NEW MEXICO

1/2 0 1 MILES

PLATE V
PROXIMITY MAP
SHOWING
STRUCTURE AND ORE BODY LOCATIONS
IN THE
AMBROSIA LAKE AND SAN MATEO AREAS
To accompany E J Longyear Co report on San Mateo Prospect
March, 1957
B F Sorensen
L C Royer

Exhibit A

COMPOSITE: AEC AND V.C.KELLEY
1957
SCALE 2"= 1 MILE

(b) Name of Property

The three areas are a part of the property referred to as San Mateo Dome Project. Area I: Falcon, Yucca and Big Elk claims; Area II: Roberto, Pancho, Wildcat, and Yucca claims; and Area III; Falcon claims.

(c) Interest

The applicant's interest is as Lessee. The claims were originally staked and/or controlled by Yucca Uranium, Inc., who in October, 1956, leased the property to G. R. Kennedy and Henry C. Adams. Subsequently, Kennedy and Adams leased the property to E. J. Longyear Company who assigned it to Mineral Projects - Venture B, Ltd. and Lisbon Uranium Corporation in April, 1957. Copies of substantiating documents of ownership are included as a part of this application under the following appendices.

Appendix I - List of Properties Owned or Acquired by Yucca Uranium, Inc.

Appendix II - Mining Lease between Yucca Uranium, Inc., and G. R. Kennedy and Henry C. Adams, (October 29, 1956), and an Amendment to the Mining Lease.

Appendix III- Mining Lease between Yucca Uranium, Inc., and G. R. Kennedy and Henry C. Adams, (November 24, 1956), and an Addendum to the Mining Lease.

Appendix IV - Agreement between Kennedy, Adams and E. J. Longyear Company.

Appendix V - Assignment from Longyear to Mineral Projects - Venture B, Ltd., and Lisbon Uranium Corporation

(d) Liens, mortgages or other encumbrances on the property

A royalty of 10% of the gross value of all ores mined is payable to the lessor, Yucca Uranium Company, Inc.

On the following page is a statement from the Simms, Modrall, Seymour, Sperling & Roehl Law Firm of Albuquerque, New Mexico, concerning title to the lands contained in the San Mateo Dome Project.

LAW OFFICES OF
SIMMS, MODRALL, SEYMOUR, SPERLING & ROEHL
SIMMS BUILDING
ALBUQUERQUE, NEW MEXICO

JOHN F. SIMMS (1885-1954)
J. R. MODRALL
AUGUSTUS T. SEYMOUR
JAMES E. SPERLING
JOSEPH E. ROEHL
GEORGE T. HARRIS, JR.
DEAN P. KIMBALL
DANIEL A. SISK
WILSON P. HURLEY

TELEPHONE 3-4514
POST OFFICE BOX 466

August 27, 1957

RECEIVED
AUG 29 1957
E. J. LONGYEAR CO.
DENVER, COLO.

Gentlemen:

We have examined abstracts pertaining to title to the lands contained in the San Mateo Dome Area now being operated by E. J. Longyear Company for Lisbon Uranium Company and Mineral Projects, Inc., lessees, said abstracts certified to the 11th of December, 1956. We are further familiar with the instruments, leases and conveyances from the then owners into the lessees.

Based upon our examination of the abstracts and documents above referred to, it appears that title is in E. J. Longyear Company as lessee, subject to a 10% royalty on production from all lands previously owned by Yucca Uranium Company and 11½% royalty interest to Ed Lesh and Jack Barense insofar as the Tenaia and Polvadera Claims are concerned, which claims are leased to Lisbon Uranium Company and Mineral Projects, Inc. The above interests are, of course, subject to whatever judgments, liens and incumbrances might be shown from an abstract of the McKinley County Record from December 11, 1956 to present. To our knowledge, however, no mortgages, liens or judgments have attached with the exception of some litigation as to the title of Yucca Uranium Company, now Yucca Mining & Petroleum Co., Inc., to certain lands in Sections 2 and 3 in Township 13 North, Range 8 West, NMPM, said litigation being conducted with Reserve Minerals, Inc.

Yours very truly,

Wilson P. Hurley

Wilson P. Hurley

WPH/ke

(2) PHYSICAL DESCRIPTION

(a) Previous Exploration

The San Mateo Dome Project has leased some 700 mining claims on the San Mateo Dome, which are shown on the Claim Location Maps, Exhibit B. On April 8, 1957, a reconnaissance drilling program was initiated and 29 holes were collared as of July 15, 1957. Of the total holes drilled, one was abandoned, three contain ore-grade uranium, three are mineralized holes, two show radioactivity over twice background, 17 are barren holes, and three are not yet completed. Two of the holes containing ore-grade uranium were drilled on a closely spaced grid pattern to offset a hole on Sec. 32 known to contain ore-grade uranium. In effect then, four holes of the 23 completed reconnaissance holes proved successful in locating mineralization, and two others showed promise by the indicated presence of anomalous radioactivity. Considering that the holes were spaced over an area covering 19 full and 5 partial sections, the results are favorable, and the potential of the Project enhanced. Exhibit C described the exploration in detail.

(b) Interest in Previous Operation

All previous exploration on the property has been carried out by the applicant.

(c) Production

There has been no production from the property.

(d) Ore Reserves

A drilling program is presently being carried out in Sec. 32 in an attempt to block out ore-reserves, but to date no ore-reserve calculations have been made on the property.

(e) General Geologic Features

Reference is made to Exhibit D, herein attached, which fully describes the geologic features of the property.

(f) Favorability

Reference is made to Exhibit D, herein attached, and Exhibit E, also attached, in which favorability is discussed.

Since the preparation of these reference reports, the property was acquired and a first stage reconnaissance drilling program was completed (see Previous Exploration above).

On evaluating the results of the reconnaissance drilling, 4 areas were selected as worthy of immediate further exploration. It is not that the remainder of the property does not justify more exploration, but only that these 4 areas show prominence at this time; and based on drilling depths, accessibility, and previous drilling results, they are singled out as areas to be evaluated first by another stage of drilling.

One area, Sec. 32, contains 2 wide-spaced holes showing mineralization and 3 offset holes containing indicated

ore-grade uranium. It is thought that offset drilling to block out ore can be carried out in Sec. 32 immediately; therefore, no attempt will be made to secure DMEA assistance in that land section.

The other three locations (see Exhibit F) show promise and are considered potential ore-bearing localities; therefore, DMEA assistance is being applied for to help carry out an exploratory drilling program aimed at locating ore-grade uranium deposits.

Area I: Previously, 3 holes were drilled on the claims (see Exhibit K). They are located along the line northwest from the S 1/4 corner of Sec. 15. Spacing is approximately 4000 to 5000 feet. Average depth of the holes is 1930 feet (see Cross Sections, Exhibit G). The geophysical log of Hole SM 1-16 suggests the presence of uranium mineralization in the Westwater sandstone member of the Morrison formation. A reading (gamma ray) of 135 counts per second at 1930 feet indicates mineralization which is estimated at 0.036% U_3O_8* (see Exhibit H).

---

*Based upon relationships derived by Rio de Oro for ore in Sec. 26, T. 14 N., R. 9 W., taking 320 counts per second as the cutoff (0.10% U_3O_8).

In Hole SM 26-15 an anomalous reading was noted near the base of the Brushy Basin member of the Morrison formation. The reading is not high enough to indicate an

estimated fractional U_3O_8 percent, but it is more than twice background count and believed to be worthy of further investigation.

No anomalous radioactivity was noted in Hole SM 1-9.

A study of the sludge samples indicates the presence of bleached Westwater sand, locally coarse-grained, in substantial thicknesses; however, it is difficult to pick actual contacts between Brushy Basin, Westwater, and Recapture members, and those decided upon are based on an interpretation of the geophysical logs.

Area II: In previous drilling on Area II, five holes were completed and one abandoned at 660 feet. Anomalous radioactivity was noted in one of the holes, SM 8-33, at 1850 feet, and again at 1884 feet. Both anomalies are in the Westwater sandstone. Two other holes, SM 10-4 and SM 10B-4, are believed to have been stopped before sufficient depths were drilled. These holes are planned for deepening. Holes SM 12-4 and SM 15-3 show no above background counts.

To the south, in Sec. 9, T. 13 N., R. 8 W., Rio de Oro Uranium Mines, Inc., has drilled 5 holes, 3 of which show mineralization and one estimated to contain 9 feet of 0.44% U_3O_8. An excerpt from their June, 1957, Monthly Exploration Report is attached as Exhibit I.

Favorability, then, in Area II is based on anomalous radioactivity in one hole within the area, and ore-grade mineralization in the section directly to the south. Also,

there is ore-grade mineralization in Sec. 32, T. 14 N., R. 8 W., directly west of Sec. 8 and northwest of Sec. 4.

A study of sludge samples also indicates the presence of thick sections of locally coarse-grained, bleached Westwater sand.

Area III: No anomalous radioactivity was noted in the two holes drilled in this area, but a study of sludge samples indicates the presence of bleached, locally coarse-grained Westwater sand. As this is more than was known when exploration began on the property, it is believed that favorability has been improved. Exhibit J illustrates drilling depths together with what is known about the faulting in the area. The structure as shown is believed to enhance the potential of this area although to date nothing definite can be said about the role of faulting in terms of ore control.

In review, we can say that in the three areas favorability is based on what geologists in the District believe to be essentials, namely, bleached Westwater, the presence of coarse-grained sands within the Westwater, and thick sections of Westwater. In addition, considering results of our recent drilling on the property, we can add a fourth condition to at least two of the three areas, and that is the presence of anomalous radioactivity. Only the presence of an actual ore-hole within the area boundaries could add to what is now indicated.

(g) Supplemental Reports

1. Exhibit C - E. J. Longyear Company Report of July, 1957, on Results of Reconnaissance Drilling on the San Mateo Dome Project, Grants-Mt. Taylor Mining District, McKinley County, New Mexico.

2. Exhibit D - V. C. Kelley Report of 1956, on Geology and Uranium Possibilities of the San Mateo Dome Area, McKinley County, New Mexico.

3. Exhibit E - E. J. Longyear Company Report of March, 1957, on Recommended Exploration on the San Mateo Dome Project, McKinley County, New Mexico

(3) ACCESSIBILITY OF PROJECT

(a) Location and Accessibility

The property is located 10 miles north of the Town of San Mateo, New Mexico. A dirt access road traverses the property as shown on Exhibit A, Index Map of the District. This road joins the San Mateo road to Grants, New Mexico, which is approximately 25 miles to the south. Grants is the nearest shipping and supply point. The road from Grants to San Mateo is County maintained, and the road from San Mateo to the property is maintained by the Forest Service.

Except for short periods in the Spring, and during the summer rainy months, year-round working conditions prevail.

(b) Operating Headquarters

Manpower, materials and equipment are available in Grants, New Mexico. Office facilities are maintained at Milan, just west of the Grants city limits. All operating personnel reside in Grants.

(4) THE EXPLORATION PROJECT

(a) Proposed Work

The proposed work is to be carried out in three areas and drilling to be in two stages (see Exhibit I for area locations). Drill holes will be of a sufficient depth to penetrate the upper 20 feet of the Recapture member of the Morrison formation. The holes will be plug drilled in all cases except for one hole in each area where coring will be done through approximately the bottom 350 feet of each of the three holes. All hole locations will be surveyed and elevations run to drill sites.

It is recommended that 34 holes be drilled averaging 2018 feet each for a total of 68,600 feet. Drilling allocated to areas as follows: Area I: 12 holes (23,900 feet); Area II: 14 holes (28,600 feet); and Area III: 8 holes (16,100 feet). The locations of the holes are shown on Exhibits as follows: Area I, Exhibit K; Area II, Exhibit L; and Area III, Exhibit M.

Stage I: A total of 19 holes (38,200 feet) are proposed, averaging 2010 feet each. Drilling would be in areas as follows: Area I, 7 holes (14,000 feet); Area II, 7 holes (14,200 feet); and Area III, 5 holes (10,000 feet).

The holes are planned on a staggered grid of 2000 feet, covering areas where drilling depths average approximately 2000 feet. This stage of drilling is intended to

gain information aimed at orienting the second-stage drilling for more favorable results. Holes in Stage I that appear to be in unfavorable locations, based on results of preceding holes, should be saved and applied to more favorable locations as approved by the DMEA field team.

The holes to be drilled as follows:

1. On a 2000 foot staggered grid as shown and numbered on Exhibits K, L, and M.
2. Core through the Westwater in Hole 1, Area I; in Hole 1, Area II, and in Hole 1, Area III.
3. As drilling progresses and information accumulates, some judgment is to be used in determining the number and locations of the remaining holes.

Stage II: Drilling in Stage II would follow the pattern shown on Exhibits K, L, and M, unless the data accumulated should show that the holes might be more advantageously used on a different pattern. However, it is understood that no holes will be drilled which could be construed as "blocking" ore, and a hole spacing of greater than 200 feet will be used in offsetting ore or mineralized holes.

We recommend 30,400 feet of Stage II drilling; 9,900 feet in Area I, 14,400 feet in Area II, and 6,100 feet

in Area III; a total of 15 holes averaging 2026 feet in depth.

It is expected that one truck-mounted Failing 1500 Drill Rig will be used for the job. Sludge samples will be taken from every 10 feet of hole drilled, and logged by a geologist. Through the Westwater horizon, and through any other horizon that may be favorable or mineralized, samples of the sludge from 10 foot intervals will be sacked and saved for possible future study.

All holes will be probed, and recorded gamma ray, resistivity, and self-potential readings on geophysical strip logs will be provided.

When coring, a geologist will check the cores for radioactivity and maintain a lithologic log. Any mineralized intervals will be marked for sampling and the core split, one-half going for chemical assay and one-half preserved. All cores will be kept available for inspection by DMEA representatives in the field.

(b) Access Roads and Drill Site Preparation

All access roads exist in the various areas and it is estimated that only maintenance work will be required. An RD-6 Bulldozer provided by private contractor will be available for this work.

Each drill hole location will require bulldozer work to prepare slush pits and to level off an area for the drill rig.

(c) Time Required for Project

The work can start within 30 days and be completed within 8 months from the date of an exploration project contract. However, this estimate is contingent upon the number of drill rigs being used, the above estimate being based upon one-rig operation.

Time estimates by areas as follows:

Area I	2.5 months
Area II	3.5 months
Area III	2.0 months
Total	8.0 months

(5) EXPERIENCE

On the participants in the joint venture, San Mateo Dome Project:

Lisbon Uranium Corporation was organized in December, 1953. The Company has been engaged in the acquisition, exploration and development of mining properties (principally uranium). The Company's original acquisition was in the Big Indian Mining District, San Juan County, Utah, on which several ore bodies of major size have been established. An extensive exploratory and development program has been and is being conducted on these properties. Production is now in progress. Lisbon is also maintaining an aggressive program in the examination of uranium properties in relatively new areas of interest.

Mineral Projects - Venture B, Ltd. was organized in 1955, to undertake mineral projects, either as principal agent, partner, stockholder, syndicate member, associate, joint venturer, participant, managing agent, or in any other capacity; to invest funds in and to raise funds to be invested in mineral properties; and to organize, create, own, operate, lease, mortgage, pledge, sell, and dispose of properties and any interest therein and to do any and all things necessary or incident thereto.

During 1956, an intensive program of property search and examination was carried out in the western

United States. This program culminated in the present interest in San Mateo Dome Project.

The proposed exploration program would be managed by the E. J. Longyear Company in conjunction with other duties and responsibilities assigned to it for adjacent exploration work within the boundaries of the San Mateo Dome Project.

The E. J. Longyear Company has had over sixty years experience in the exploration and mining business and has a staff of seasoned and trained engineers. In its varied activities the E. J. Longyear Company has been closely associated with a number of successful explorations including the discovery and development of the Falconbridge nickel-copper orebody in Ontario, Canada. In recent years its contract drilling division has been engaged in extensive work in the uranium fields of Canada and the southwestern United States. Similarly, its consulting and appraisal staff has been engaged to an increasing degree in the preparation of appraisals and reports of uranium property. In one capacity or another the company's staff has had contact with most of the large uranium properties now in operation in this hemisphere.

(6) ESTIMATE OF COSTS

(a) Independent Contracts

All drilling, bulldozer work necessary in preparation of sites, roads, maintenance, etc., and probing, will be performed by independent contractors.

Drilling is to be in two stages and locations for Stage I drill-hole sites are tabulated in Schedule 1. Stage II drilling is tabulated in Schedule 2 (locations are tentative). The cost estimates of drilling, bulldozer work, and probing are summarized in Schedule 3. Contractor bids are attached as Exhibit N.

(b) Personal Services

E. J. Longyear Company will supervise this program and furnish geological and engineering services. An estimate of costs is tabulated under Schedule 4.

(c) Operating Materials and Supplies

Schedule 5 enumerates estimated costs of office supplies incidental to this project; maps and drill log reproductions; and field supplies, such as location stakes, core boxes, flagging, etc.

(d) Operating Equipment

To be furnished by independent contractors.

(e) Initial Rehabilitation and Repairs.

Not applicable.

(f) New Buildings, Fixtures, Installations

A trailer house will be provided on the property for technical personnel at rental of $50.00 per month.

(g) Miscellaneous

Schedule 6 lists estimates of cost for chemical assays, contingencies, etc.

(7) APPLICANTS SHARE OF COSTS

(a) and (b) Meeting the Costs

The San Mateo Dome Project will complete this exploration project for uranium and make such payments as will be required to allow completion and will be reimbursed by DMEA. Total cost of this project is estimated at $203,232.80 as summarized in Schedule 7, Recapitulation of Costs. Reimbursement by DMEA will be at the rate of 75% of the allowable costs as stated in DMEA Order No. 1 Amended: The San Mateo Dome Project will contribute $50,808.20, which is 25% of the cost of the project.

Respectfully submitted,

E. J. LONGYEAR COMPANY

D. M. Davidson
Vice President

August 26, 1957

SCHEDULES

1 through 7

SCHEDULE 1

STAGE I - DRILL HOLE LOCATIONS

Hole No.	Collar Elevation (Est.)	Non-core (Feet) (Est.)	Core (Feet) (Est.)	Total Depth (Feet Est.)	Coordinates (1) (Feet) North	East
Area I						
DM1 - 1	7500	7500	350	2100	331,800	567,600
DM1 - 2	7550	2100		2100	330,700	568,500
DM1 - 3	7600	2000		2000	330,300	570,200
DM1 - 4	7600	2000		2000	328,300	570,200
DM1 - 5	7400	1900		1900	333,800	567,600
DM1 - 6	7300	1800		1800	335,800	567,600
DM1- 7	7400	2100		2100	333,300	565,600
Area II						
DM2 - 1	7500	1650	350	2000	311,200	564,800
DM2 - 2	7600	2000		2000	309,200	564,800
DM2 - 3	7600	2100		2100	307,200	564,800
DM2 - 4	7500	2000		2000	309,700	566,806
DM2 - 5	7600	2100		2100	307,700	566,800
DM2 - 6	7500	2000		2000	308,200	568,800
DM2 - 7	7500	2000		2000	307,700	570,800
Area III						
DM3 - 1	7350	1650	350	2000	317,400	571,200
DM3 - 2	7450	2000		2000	316,200	569,200
DM3 - 3	7400	2000		2000	315,400	571,200
DM3 - 4	7300	2000		2000	315,900	573,200
DM3 - 5	7350	2000		2000	317,900	573,200

(1) A.E.C.Net

SCHEDULE 2

STAGE II - DRILL HOLE LOCATIONS (Tentative)

Hole No.	Collar Elevation (Est.)	Non-core (Feet) (Est.)	Total Depth (Feet Est.)	Coordinates (1) (Feet) North	East
Area I					
DM1 - 8	7600	2000	2000	329,300	570,200
CM1 - 9	7450	2000	2000	332,800	567,600
DM1 - 10	7350	1800	1800	334,800	567,600
DM1 - 11	7350	2000	2000	334,300	565,600
DM1 - 12	7500	2100	2100	332,300	565,600
Area II					
DM2 - 8		2000	2000	312,200	564,800
DM2 - 9	7600	2000	2000	310,200	564,800
DM2 - 10	7400	2100	2100	308,200	564,800
DM2 - 11	7500	2000	2000	308,700	566,800
DM2 - 12	7500	2100	2100	306,700	566,800
DM2 - 13	7500	2100	2100	309,200	568,800
DM2 - 14	7500	2100	2100	307,200	568,800
Area III					
DM3 - 6	7500	2000	2000	317,200	569,200
DM3 - 7	7400	2100	2100	314,900	574,200
DM3 - 8	7300	2000	2000	316,900	574,200

(1) A.E.C.Net

SCHEDULE 3

INDEPENDANT CONTRACTS

ESTIMATED COSTS

Drilling (Stage I and Stage II) $130,511.50

Stage I

Area I

13,650 feet rotary non-core drilling @ $1.73* per foot . . $23,614.50

350 feet core drilling @ $13.00 per foot 4,550.00

Area II

13,850 feet rotary non-core drilling @ $1.73 per foot . . 23,960.50

350 feet core drilling @ $13.00 per foot 4,550.00

Area III

9,650 feet rotary non-core drilling @ $1.73 per foot . . 16,694.50

350 feet core drilling @ $13.00 per foot 4,550.00

Total Stage I. $77,919.50

Stage II

Area I

9,900 feet rotary non-core drilling @ $1.73 per foot . . $17,127.00

* Includes the cost of lost circulation materials used in excess of $100.00 per hole (Based on previous drilling in the area).

SCHEDULE 3 (continued)

Area II

14,400 feet rotary non-core

drilling @ $1.73 per foot .v. .$24,912.00

Area III

6,100 feet rotary non-core

drilling @ $1.73 per foot . . . 10,553.00

Total Stage II 52,592.00

Total Drilling Stage I & II. . . $130,511.50

Access Road Maintenance and Drill Site Preparation $6,800.00

RD.6 Bulldozer and operator

@ $15.00 per hour, furnished

by driller.

Stage I

Area I	7 holes @ $200 per hole* . .	1,400
Area II	7 holes @ $200 per hole. . .	1,400
Area III	5 holes @ $200 per hole. . .	1,000
Total Stage I		$3,800

* Based on costs of previous work on the San Mateo Dome

SCHEDULE 3 (continued)

Stage II

Area I	5 holes @ $200 per hole.	$1,000
Area II	7 holes @ $200 per hole.	1,400
Area III	3 holes @ $200 per hole	600
	Total Stage II. . .	3,000
	Total for Stage I and Stage II. . . .	$6,800

Electric Hole Logging . . . . . $ 8,569.00

Century Geophysical Company, @ 11½¢ per foot for strip logs of gamma ray, self-potential, and resistivity readings, plus standby time @ $10 per hour.

Stage I

Area I	14,000 feet at 11½ cents per foot plus 14 hours standby time @ $10.00 per hour	1,750.00
Area II	14,200 feet at 11½ cents per foot plus 14 hours standby time @ $10.00 per hour	1,773.00

SCHEDULE 3 (continued)

Stage I (continued)

Area III 10,000 feet at 11½ cents per foot plus 10 hours standby time @ $10.00 per hour	1,250.00
Total Stage I	$4,773.00

Stage II

Area I 9,900 feet @ 11½ cents per foot plus 10 hours standby time @ $10.00 per hour	1,238.50
Area II 14,400 feet @ 11½ cents per foot plus 14 hours standby time @ $10.00 per hour	1,796.00
Area III 6,100 feet at 11½ cents per foot plus 6 hours standby time at $10.00 per hour	761.50
Total Stage II	$3,796.00
Total Stage I plus Stage II.	8,569.00

ESTIMATED TOTAL FOR INDEPENDENT CONTRACTS $145,880.50

SCHEDULE 4(1)

TECHNICAL AND RELATED SERVICES COSTS - ESTIMATED (MAX.)

Service	Cost/hour	Cost/month	Cost/project (8 months)
Project Engineer		$600.00	$4,800.00
Subsistance Allowance		300.00	2,400.00
Geologist		500.00	4,000.00
Subsistance Allowance		210.00	1,680.00
Surveyor(2)		450.00	3,600.00
Subsistance Allowance		210.00	1,680.00
Laborers(2)		450.00	3,600.00
E. J. Longyear Company Retainer Fee		1,250.00	10,000.00
Drafting (50 hours/month)		150.00	1,200.00
Stenographer (?)		250.00	2,000.00
Office Rental		200.00	1,600.00
Transportation, (rental for 2 units)		600.00	4,800.00
Transportation, (operating costs for 2 units)		150.00	1,200.00
TOTAL			$42,560.00

(1) To indicate charges to be prorated directly; only, however, as the indicated services and related costs and expenditures are required and drawn upon by the drilling program herein applied for under DMEA assistance.

(2) Position established, but not yet filled.

SCHEDULE 5

OPERATING MATERIALS AND SUPPLIES

ESTIMATED COSTS

	Cost/month	Cost/project
Office supplies, map, and log reproduction	$100.00	$ 800.00
Field Supplies (core boxes, stakes, flagging, sample sacks, etc.). .		1,000.00
TOTAL		$1,800.00

SCHEDULE 6

MISCELLANEOUS COSTS AND CONTINGENCIES

ESTIMATED

	Cost/month	Cost/project
Payroll charges (on 3 employees)	$144.35	$1,154.80
Accounting and office costs	100.00	800.00
Assays (chemical) 75 assays @ $8.50 each		637.50
		2,592.30
Contingencies		10,000.00
TOTAL		$12,592.30

SCHEDULE 7

RECAPITULATION OF ESTIMATED COSTS

MF-103 Headings		Cost/project
6a	Independent contractors (Sch. 3)	$145,880.50
6b	Personal Services (Sch. 4)	42,560.00
6c	Operating Materials and Supplies (Sch. 5)	1,800.00
6d	Operating Equipment	- - -
6e	Initial Rehabilitations and Repairs	- - -
6f	New Buildings, Installations (Trailer rental on property)	400.00
6g	Miscellaneous Costs	2,592.30
	Contingencies	10,000.00
	TOTAL COST OF PROJECT	$203,232.80

BREAKDOWN OF TOTAL COSTS TO AREAS

	DMEA Participation	San Mateo Dome Project	Total
Area I	51,493.78	17,164.59	68,658.37
Area II	63,644.41	21,214.81	84,859.22
Area III	37,286.41	12,428.80	49,715.21
TOTALS	$152,424.60	$50,808.20	$203,232.80

DMEA Participation	152,424.60
San Mateo Dome Project	50,808.20
TOTAL	$203,232.80

APPENDICIES

1 through V

OFFICIAL FILE COPY
D M E A
RECEIVED OCT 4 1957

DATE	INITIALS	CODE

APPENDIX I

LIST OF PROPERTIES OWNED OR ACQUIRED

by

YUCCA URANIUM, INC.

OFFICIAL FILE COPY
DMEA
OCT 4 1951
CODE

APPENDIX II

Lithologic Logs

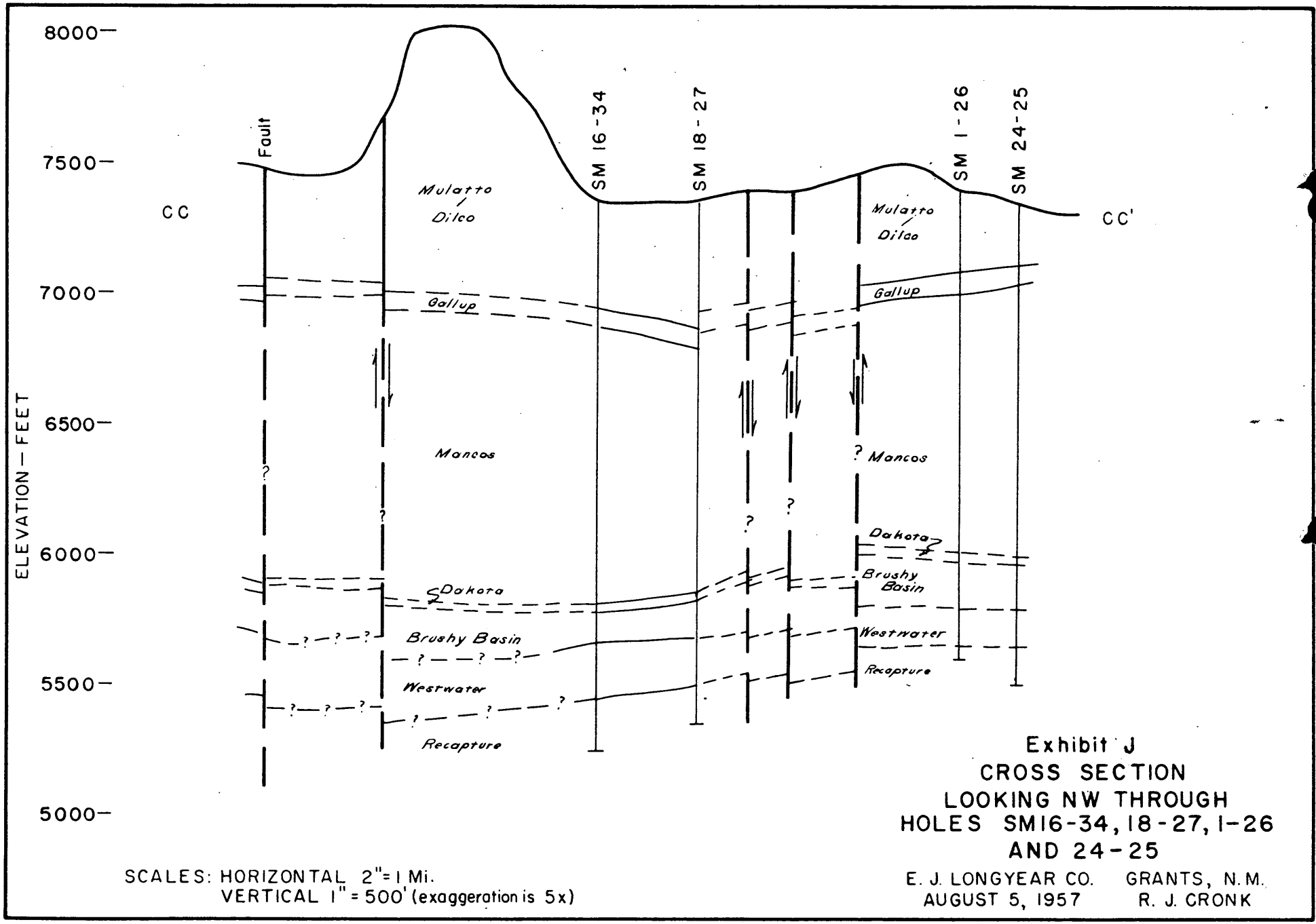


Exhibit J
CROSS SECTION
LOOKING NW THROUGH
HOLES SM16-34, 18-27, 1-26
AND 24-25

E. J. LONGYEAR CO. GRANTS, N.M.
AUGUST 5, 1957 R. J. CRONK

SCALES: HORIZONTAL 2" = 1 Mi.
VERTICAL 1" = 500' (exaggeration is 5x)

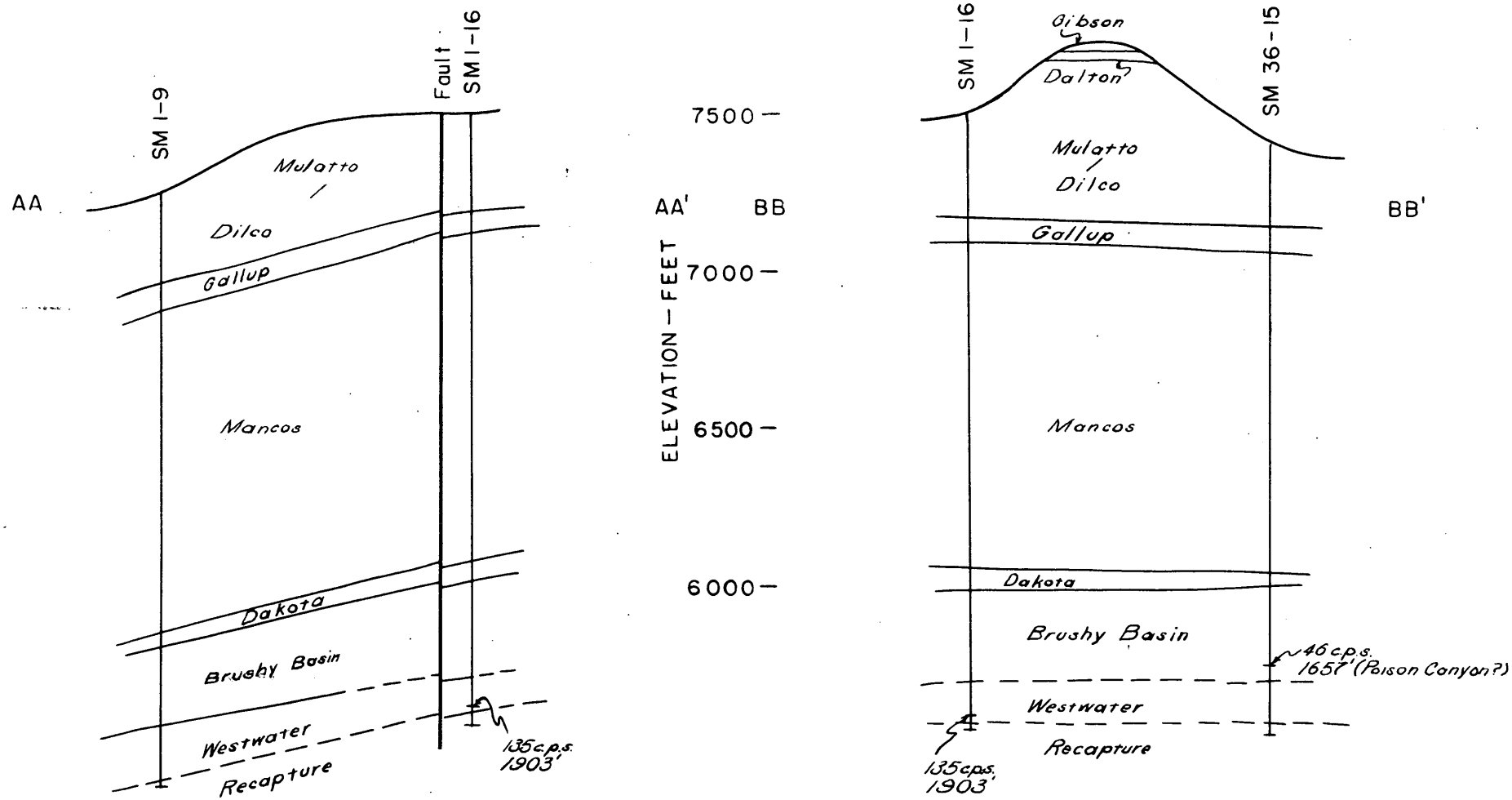


Exhibit G
CROSS SECTIONS
LOOKING NE THROUGH
HOLES SM 1-9 TO 1-16 & 1-16 TO 36-15

E. J. LONGYEAR CO. GRANTS, N.M.
AUGUST 5, 1957 B.F. SORENSEN

SCALES: HORIZONTAL 2" = 1 Mi.
VERT. 1" = 500' (exaggeration is 5 x)

E. J. LONGYEAR COMPANY
Mining Engineers

Mine:

Drill Hole No.:

Section: Township: Range:

Date Started:

N. E.: Bearing: Inclination:

Date Completed:

Depth:

Logged by:

Page 1 of _____

Level Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
From Feet	To Feet	Length Feet	Feet	% of Total		
					[illegible]	[illegible]
					[illegible]	[illegible]
					Dk gy carbonaceous sh.	Many [illegible]
					[illegible] med. and, con fine top of Kd.	
					Brown sh, with Westwater [illegible] and makes it impossible [illegible] determine bottom	Crushed [illegible]
					Westwater [illegible] med., pk feldspar grains. Too thick [illegible] probably belongs to [illegible]	Westwater
					Bl. Br. Sh.	Morrison

E. J. LONGYEAR COMPANY
Mining Engineers

Company: [illegible] Mine: Drill Hole No.: [illegible]

Location: Section: [illegible] Township: [illegible] Range: [illegible] Date Started: [illegible]

Coordinates: N. E.: Bearing: Inclination: Date Completed: [illegible]

Collar Elevation: Depth: Logged by: [illegible]

Drilled by: Page 1 of ____

Hole Size	Interval Drilled From Feet	Interval Drilled To Feet	Interval Drilled Length Feet	Core Recovered Feet	Core Recovered % of Total	Description of Core and/or Sludge	Remarks
	[illegible]	[illegible]	[illegible]			Overburden [illegible]	[illegible]
	[illegible]	[illegible]	[illegible]			lt. gy. sts, w/ [illegible]	[illegible]
	[illegible]	[illegible]	[illegible]			lt. gy. fn, gr, beach sand,	Gallup [illegible]
	[illegible]	[illegible]	[illegible]			dk. gy. carbonaceous sh.	Mancos
	[illegible]	[illegible]	[illegible]			fn-crs. lt. gy. sand	Dakota
	[illegible]	[illegible]	110			bl. gn. sh.	Brushy Basin
	[illegible]	[illegible]	[illegible]			lt. gy. fn-med., also pk. feldspar grains, rd chert grains	Westwater
	[illegible]	[illegible] T.D.	100			rd. br. sh.	Recapture

[illegible] PHYSICAL PICKS ON BACK

E. J. LONGYEAR COMPANY
Mining Engineers

Mine:

Township: Range:

Bearing: Inclination:

Depth:

Drill Hole No.: SM 1-9

Date Started: [illegible]/28/57

Date Completed: 5/31/57

Logged by: RJC

Page 1 of 1

[illegible]	[illegible]	[illegible]	Description of Core and/or Sludge	Remarks
				[illegible]
				[illegible]
				Gallup
				Kaycox
				[illegible]
				[illegible]
				[illegible]
				[illegible]

Company:

Location: Section

Formation: Date

Collar Elevation: Depth

Drilled by:

Size

E. J. LONGYEAR COMPANY
Mining Engineers

Company: [illegible] Mine: Drill Hole No.:

Location: [illegible] Section: [illegible] Township: [illegible] Range: [illegible] Date Started: [illegible]

Coordinates: N. E.: Bearing: Inclination: Date Completed: [illegible]

Collar Elevation: Depth: Logged by:

Drilled by [illegible] Page 1 of _____

Hole Size	Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Total		
	[illegible]	[illegible]	11.9	9.7	82%	[illegible] changed to a bleached lite gray then to a lite gray green at bottom [illegible] to fined grained lite grey [illegible]	
	[illegible]	1562.7	18	14	82%	[illegible]	
	[illegible]	[illegible]	16.8	14	83%	[illegible]	

[illegible]

[illegible] Township Range

[illegible] Township Section

[illegible]

[illegible]

Core Size	Interval Drilled			Core Recovered		Description of Core and/or Sludge
	From Feet	To Feet	Length Feet	Feet	% of Total	

E. J. LONGYEAR COMPANY
Mining Engineers

Company: San Mateo Dome Project **Claim:** **Mine:** Bulldog #5 **Drill Hole No.:** SM 3A-32

Location: McKinley County, N.M. **Section:** 32 **Township:** 14 N **Range:** 8 W **Date Started:** April 18

Coordinates: **N.** **E.:** **Bearing:** **Inclination:** vert. **Date Completed:** April

Collar Elevation: **Depth:** 2010' **Logged by:** LCR

Drilled by: Scott Brothers Drilling Company **Page 1 of** 1

Hole Size	Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Total		
	0	10	10			overburden - blown sand	
	10	55	45			f.g. - m.g. light tan sandstone	Dalton
	55	600	545			gray carbonaceous shale - minor sandy beds - minor coal near base - impossible to separate Mulatto and Dilco	Mulatto and Dilco (
	600	700	100			f.g.-m.g. gray sandstone	Gallup (100')
	700	1710	1010			gray carbonaceous shale with minor sandstone members	Mancos (1010')
	1710	1760	50			m.g. tan sandstone samples mostly Mancos	Dakota (50')
	1760	2010	250			samples extremely poor- Recapture -in pit when rods were pulled	Brushy Basin); (250' Westwater Canyon)

E. J. LONGYEAR COMPANY
Mining Engineers

Company: San Mateo Dome Project Claim: G Roberto #8 75' from east endline Drill Hole No.: SM [illegible]

Location: McKinley County, N.M. Section: 33 Township: 14 N Range: 8 W Date Started: April [illegible]

Coordinates: N. E.: Bearing: Inclination: Vert. Date Completed: April 28

Collar Elevation: Depth: 2020' Logged by:

Drilled by: Scott Brothers Drilling Company Page 1 of 1

Hole Size	Interval Drilled From Feet	Interval Drilled To Feet	Interval Drilled Length Feet	Core Recovered Feet	Core Recovered % of Total	Description of Core and/or Sludge	Remarks
	0	30	30			overburden - blown sand	
	30	45	15			light tan to gray f.g. sandstone probably basal Dalton	Dalton
	45	290	245			light gray carbonaceous shale some silty members	Mulatto (245') (drilled on air to 290')
	290	405	115			light gray carbonaceous shale with minor coal beds	Dilco (115')
	405	480	75			light gray f.g.-m.g. sandstone	Gallup (75')
	480	1620	1140			light gray carbonaceous shale	Mancos (1140')
	1620	1670	50			sandy section-exact contacts uncertain	Dakota (50')
	1670	1820	150			gray-green and red mudstones-samples all sandy-contacts uncertain	Brushy Basin [illegible]
	1820	2020	200			very confusing-mostly [illegible]	

[illegible]

[illegible]					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] COMPANY
[illegible]

Mine: Drill Core No.:

Section: Township: Range: Date Started:

[illegible] Bearing: Inclination: Date Completed:

[illegible] Type: Report Type:

[illegible] Logged by:

[illegible]	[illegible]	Core Recovered		Description of Core and/or Image	Remarks
[illegible]	[illegible]	[illegible]	[illegible]		

E. J. LONGYEAR COMPANY
Mining Engineers

Company: Mine: Drill Hole No.: 32

Location: Section: Township: Range: Date Started: April 1, 19
" " coring 7

Coordinates: N. E.: Bearing: Inclination: Date Completed: May 13, 1
" " coring 7/13/57

Elevation: Depth: Logged by:

Drilled by: Page 1 of 3

Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
From Feet	To Feet	Length Feet	Feet	% of Total		
					[illegible]	[illegible]
					[illegible]	[illegible]
					[illegible]	value drops off slightly with greener portions of core.
					[illegible]	[illegible]
					[illegible]	[illegible]

Hole Size	Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Total		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1970	[illegible]	16.5	[illegible]	76%	1966-1970 Ss greenish gy. med to crs, arkosic, much of core is crumbled in core box	0.035
1970	1990	20	[illegible]	[illegible]	[illegible]	[illegible] becomes coarser towards base, arkosic, qtz grains rounded, frosted, poor sorting, silty	0.035
1990	2010	20	13.5	67%		1990-2010 Ss. lt gy to gy f-crs, arkosic silty, poor sorting, section has fine material from approx 1994-1996. Coarse above and becomes coarser and grayer towards bottom of run.	0.03
[illegible]	[illegible]	20	[illegible]	[illegible]	[illegible]	[illegible] arkosic [illegible] white biotite	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] to med, crs at top becoming med grained at bottom, arkosic [illegible]	[illegible]

Hole Size	Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Total		
						are etched not fresh looking reworked (?) on siltstone calls 1892.5-1894 Sts on with some white mottling 1894-1898½ Sts, rd with gn mottling becoming gy in last foot of interval 1898½ to 1910.5 Ss rd-bn dk with gn mottling and bands, fn grains color becomes more grayish tan towards bottom of interval 1910.5-1912.5 Ss lt gray med to crs, ark-oxic, white clay (?) flowers	0.035 0.035 0.035 0.035
	1912	1915	3	2.7	90%=	1912-1915 Ss lt gray, med to crs, arkosic, loose and broken in core box	0.035
		1922	7	7	100%	1915-1920.5 Ss, lt gy to med silty, some pk feldspar grains	0.035
		1922		continued		1920-1922 Ss, lt gy crs-conglomeratic arkosic with white clay blotches	0.035
	[illegible]	[illegible]	20	19.7	98=	1922-1941½ Ss gy to dk-gy crs arkosic, grains are etched, not fresh looking 1922-1940.5 Ss greenish gy fn-med, grained arkosic, grains are etched 1940.5-[illegible] Ss greenish gy med, [illegible] grains are etched	0.035 0.03[illegible]

[illegible] GEOLOGICAL SURVEY
[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] LONGYEAR COMPANY
Mining Engineers

Company: [illegible] Mines [illegible] Drill Hole No.: [illegible]

Location: Section [illegible] Township: [illegible] Range: [illegible] Date Started: [illegible]

Coordinates: N.: E.: Bearing: Inclination: Date Completed: [illegible]

Collar Elevation: Depth: [illegible] Logged by: [illegible]

Drilled by: [illegible] Page [illegible]

Interval Drilled				Core Recovered		Description of Core and/or Sludge	Remarks
Hole No.	From Feet	To Feet	Length Feet	Feet	% of Total		
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]

E. J. LONGYEAR COMPANY
Mining Engineers

Company: Mine: Drill Hole No.:

Location: Section: Township: Range: Date Started:

Coordinates: N. E.: Bearing: Inclination: Date Completed:

Collar Elevation: Depth: Logged by:

Drilled by: Page 1 of

Hole Size	Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Total		

[illegible]

[illegible] Claims [illegible] Hole No.:

[illegible] Section Township Range Date Started:

[illegible] No. [illegible] Bearing [illegible] Date Completed:

Collar Elevation Depth Logged by:

[illegible] Page 1 of ____

Interval Drilled				Core Recovered		Description of Core and/or Sludge	Remarks
Date	From Feet	To Feet	Length Feet	Feet	% of Total		

[illegible]
[illegible]

[illegible] River

Township: Section: Township: Range:

Coordinates: N: E: Bearing: Inclination:

Surface Elevation: Depth:

Drilled by:

Earth Hole No.:

Date Started:

Date Completed:

Logged by:

Page 1 of [illegible]

Hole Size	Interval Drilled: From Feet	To Feet	Length Cored	Core Recovered: Feet	% of Total	Description of Core and/or Stages	Remarks

E. J. LONGYEAR COMPANY
Mining Engineers

Company: Mine: Drill Hole No.:

Location: Section: Township: Range: Date Started:

Coordinates: N. E.: Bearing: Inclination: Date Completed:

Collar Elevation: Depth: Logged by:

Drilled by: Page 1 of ____

Depth Drilled				Core Recovered		Description of core and/or change	Remarks
From	Feet	To	Feet	Feet	%		

Hole Size	Casing Used			Core Recovered		Description of Core and/or Sludge	Remarks
	Size	From Feet	To Feet	Feet	% of Total		

Core Hole	Interval Drilled			Core Recovered		Description of Core and/or Strata	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Length		

Hole Size	Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Total		
						2118-2120 Ss grayish tan, massive, med-crs 2120-2123, Ss, grayish tan, thin bed & x-bedded, bv silty, med to crs 2123-2131 Ss, grayish tan, med to crs, silty, occassional siltstone pebble or gall, pinkish rd-whitish pk in color massive	0.01 0.01 0.01
[illegible]	2151	20 2	19	95%		2131-2135 Ss, grayish tan med to crs, silty, occassional Sts pebble or gall continuation Ss in interval 2123-2131.	
	Jmww/Jmrc contact about 2135						
						2135-2139, Sts, rd-br with green mottelling. Ss, fn grained 2139-2145 grayish green minor rd mottelling. 2139-2145 grayish green minor re mottelling. 2145-2146 Ss fn grained dk-rd bn 2146-2149 Ss fn-med, lt greenish gy-gy gy-gn siltstone pebbles (?) or galls 2149-2151 Ss fn-med, lt gy, few pk chert & feldspar grains gy-gn Sts galls, minor Sts break 2150.9-2151	0.01 0.01 0.01 0.01 0.01 0.01
[illegible]	2174	23	19	83%		2151-2154 Ss vy fn grained [illegible] gray, pk feldspar & [illegible] (rev few) 2154-2174 Ss fn, grained lt gr-gy [illegible] chert and	

[illegible]

[illegible]

Position		Remarks	Range	
No.	No.	Remarks	Inclination	
[illegible]	Degrees			
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Hole Size	Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Total		

[illegible] LORETTA COMPANY
Mining Engineers

Company: Mine: Drill Hole No.:

Location: Section: Township: Range: Date Started:

Coordinates: N: E: Bearing: Inclination: Date Completed:

Collar Elevations: Depth: Logged by:

Drilled by: Page 1 of

Relatively Difficult				Core Recovered		Description of Core and/or Steps	Remarks
Hole Depth	From Feet	To Feet	Length Feet	Feet	% of Total		

E. J. LONGYEAR COMPANY
Mining Engineers

Company: Mine: Drill Hole No.:

Location: Section: Township: Range: Date Started:

Coordinates: N. E.: Bearing: Inclination: Date Completed:

Collar Elevation: Depth: Logged by:

Drilled by: Page 1 of

Hole Size	Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Total		
	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
	[illegible]	[illegible]	80			[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]

Core No.	Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Total		

[illegible]
[illegible] Engineers

Company: [illegible] Office: [illegible] Job No.: [illegible]

Location: Section [illegible] Terminals [illegible] Date started: [illegible]

Specifications: No. [illegible] Date [illegible] Reference: [illegible] Date finished: [illegible]

Hollow Stem Auger: [illegible] Drilling [illegible] Page [illegible]

Drilled by: [illegible] [illegible] [illegible]

[illegible]

E. J. LONGYEAR COMPANY
Mining Engineers

Company: SAN MATEO DOME PROJECT Mine: Drill Hole No.: SM 4-32

Location: McKinley County, N.M. Section: 32 Township: 14 Range: 8 W Date Started: July 11, 1957

Coordinates: N. E.: Bearing: Inclination: Date Completed: July 15, 1957

Collar Elevation: Depth: 2150 Probe Depth: 2131 Logged by: RJC

Drilled by: Scott Brothers Drilling Company Page 1 of 2

Hole Size	Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Total		
	0	30	30			Unconsolidated, Lt. Br sand, fn	Blow Sand
	30	540	510			30-230 Sandy Sh, lt gy fn sand carbonaceous shale splits 230-270 Ss, gy, fn, with vy thin lilt splits 270-540 sandy shale, sand, fn, gy, Sh is dk-gy carbonaceous	Mulatto-Dilco (undif)
	540	620	80			Ss, gy, fn, (Beach type snd)	Gallup
	620	1660	1040			Sh, dk-gy, carbonaceous, with some Ss, beds	Mancos
	1660	1710	50			Ss, fn-med, gy, rounded	Dakota
	1710	1870	160			1710-1750: Sh, Bl-gn & rd br 1750-1770: Ss, gy, coarse arkosic 1770-1790: Ss, gy, fn-med arkosic	Brushy Basin

Hole Size	Interval Drilled			Core Recovered		Description of Core and/or Sludge	Remarks
	From Feet	To Feet	Length Feet	Feet	% of Total		
	[illegible]					1790-1830: Sh, bl-gn Ss, fn-med, gy, arkosic 1830-1870: Ss, med-crs, gy arkosic	Brushy Basin
	1870	2110	240			1870-1950: Ss, gy, med-crs arkosic, rounded 1950-1970: Ss, pk-gy, crs, ardosic 1970-1990: Ss, gy, med-crs arkosic 1990-2020: Ss, orangy cast to some of the qtz grains, rest are gy med-crs, ardosic 2020-2110 Ss, gy, crs ardosic	Westwater
	2110	2150 T.D.	40			2110-2140: Ss, rd br, vy fn grained	Recapture

EXHIBIT C

REPORT

on

RESULTS OF RECONNAISSANCE DRILLING

on

THE SAN MATEO DOME PROJECT

Grants-Mt. Taylor Mining District
McKinley County, New Mexico

By B. F. Sorensen
(Prepared at Grants, New Mexico)
July 15, 1957

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REPORT
on
RESULTS OF RECONNAISSANCE DRILLING
on
THE SAN MATEO DOME PROJECT
Grants - Mt. Taylor Mining District
McKinley County, New Mexico

By B. F. Sorenson
(Prepared at Grants, New Mexico)
July 15, 1957

CONCLUSIONS

Reconnaissance drilling has shown the presence of uranium mineralization within the property boundary.

Chemical assays of split-core samples from one hole has proven the mineralization to be ore-grade, locally.

Geophysical drill hole logs indicate the mineralization may be continuous over a large area.

Drill-hole information shows the mineralization to be in a tongue of the Westwater within the Brushy Basin and also in the main body of the Westwater. Depths to mineralization are approximately 1900 - 2000 feet.

Bleached Westwater sand of substantial thickness is known to underlie a large portion of the property.

Drilling costs average less than $2.00 per foot for plug drilling.

More drilling is needed in Sec. 32 to determine the extent of the known mineralization in that area.

Offset drilling is needed in Sec. 16.

Areas known as shallow drilling areas (to 2000 feet) should be drilled on a less widely spaced pattern.

Local areas can be termed most favorable but no one area within the property boundary can be classed as unfavorable on results of the Stage A drilling.

Assessment work needs have been more than covered by the expenditure of over $90,000.00 by July 1, 1957.

RECOMMENDATIONS

It is recommended that offset plug drilling and some core drilling be carried out in Sec. 32 on a staggered grid pattern of 150-200 foot centers, until possibilities of locating more ore have been completely exhausted or until it is deemed unprofitable to continue blocking-out operations because of the limiting factors imposed on ore lying 2000 feet beneath the earth's surface.

It is further recommended that additional drilling be done in shallow drilling areas (to 2000 feet) as outlined in Phase 1 of E. J. Longyear Company Report of March 15, 1957, on Recommended Exploration Drilling on the San Mateo Prospect, and that offset holes be drilled near Holes SM 1-16, 36-15, 8-33, and around all subsequent holes where the geophysical log shows anomalous radioactivity in the Westwater sand.

Surveying in areas where offset drilling is carried out is also recommended.

EXPLORATION

All exploration on the San Mateo Dome Project has been in the form of drilling supplemented by geophysical

logs of the drill holes. In areas where warranted, a limited number of chemical assays were run on samples taken from drill core. Sludge samples were taken throughout the drilling for geological study but none were deemed worthy of chemical assay because of dilution.

The drilling program set up as Stage 1 in E. J. Longyear Company report of March 15, 1956, on Recommended Exploration on the San Mateo Prospect, and later termed Stage A of Phase 1 drilling in E. J. Longyear Revised Budget Estimate of March 29, was started on April 8, 1957, with one Failing 1500 Drill Rig operating. As allowed for in the original program, considerable discretion was to be used on locations of the drill holes (in view of data obtained from preceding holes) and consequently our first phase of drilling deviated somewhat from the original plan.

We planned 50,000 feet (27 holes) of plug drilling and 1000 feet of core drilling, hole locations to be on 2000 foot centers along fence lines covering most of the shallow drilling areas (to 2000 feet). An attempt was made to follow this plan during April, and on April, 12 a second Failing 1500 Drill Rig was employed, but it soon became evident that assessment work needs could only be fulfilled by a high-speed revised program. The new program was outlined in the Second Revised Budget Estimate of May 11, 1957, and called for 62,210 feet of drilling (28 holes) on a

completely new plan of locations, these locations being based on assessment work needs combined with favorable geological settings.

Following this outline a third rig (Failing 2500) was employed on June 7, and the combined efforts of the three rigs resulted in 29 holes being drilled for a total of 57,457 feet (see Table 1). In the final stages of the program it was decided that several holes could either be dropped or their proposed locations changed. The latter plan was chosen and offset holes were drilled in Sec. 32. Fig. 1 shows the number and location of the holes as completed by July 15, 1957. One hole was abandoned at 660 feet because of lost water circulation problems and three other holes were not completed at this writing.

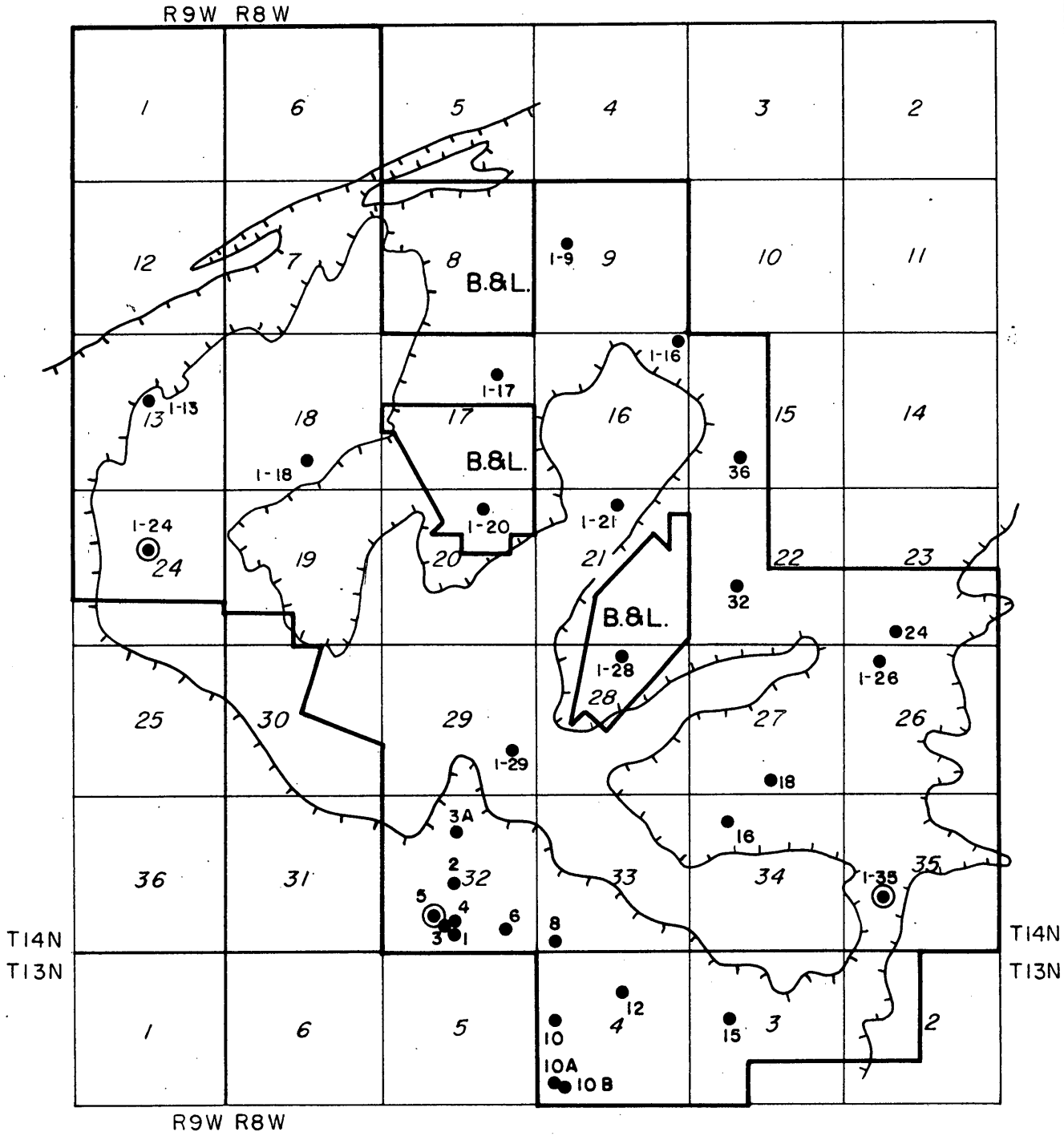
Plug Drilling - All holes except parts of Holes Sm 1-32, 2-32, and 1-17 were plug drilled. Of the 57,457 total feet drilled, only 661 feet were not plug drilled. Average advance per rig per calendar day was 288 feet.

Core Drilling- Parts of the Brushy Basin, Westwater, and Recapture members of the Morrison formation were cored in Holes SM 1-32, 2-32, and 1-17. In Hole 1-32 coring was from 1872 feet to 2043 feet in Westwater. Core recovery was 130 feet or 76%. In Hole 2-32 coring was from 1731 feet to 2174 feet. Core recovery was 78%. The section cored covered part of the Bushy Basin, all of the Westwater,

TABLE I - Showing Holes Drilled on the San Mateo Dome Project

Hole No.	Section Location	Drilled Depth (Feet)	Date of Completion
SM 10A-4	4 - SW¼	660	Apr. 10, 1957*
SM 10B-4	4 - SW¼	1955	17,
SM 6-32	32 - SE¼	1920	17,
SM 3A-32	32-cen, N½	1993	25,
SM 8-33	33- SW¼	2030	28,
SM 10-4	4 - NW¼	1970	29,
SM 12-4	4 - NW¼	1940	May 3, 1957
SM 15-3	3 - NW¼	2102	8,
SM 16-34	34- NW¼	2100	13,
SM 1-32	32- SW¼	2150	14,
SM 24-23	23- SW¼	1850	17,
SM 18-27	27- SE¼	2000	19,
SM 32-22	22- SW¼	1840	23,
SM 36-15	15- SW¼	1900	26,
SM 1-26	26- NW¼	1900	27,
SM 1-16	16- NE¼	2000	31,
SM 1-9	9 - NW¼	1900	31,
SM 1-17	17- NE¼	1960	June 17, 1957
SM 1-35	35- SW¼	2050	not completed
SM 2-32	32- SW¼	2174	19,
SM 1-13	13- cen.	2608	28,
SM 3-32	32- SW¼	2165	28,
SM 1-18	18- SW¼	2720	July 3, 1957
SM 1-28	28- NW¼	2025	4,
SM 1-20	20- NE¼	1970	10,
SM 1-29	29-SE¼	2650	10,
SM 4-32	32- SW¼	2150	14,
SM 1-21	21- NW¼	1405	not completed
SM 1-24	24- SW¼	1370	not completed
Total 29		57,457 feet	

* Abandoned



EXPLANATION

Mesa top outline

Prospect boundary

B.&L. Barense & Lesh acquisition

Holes completed — July 15, 1957

Holes drilling — July 15, 1957

Fig. 1

SKETCH MAP OF

SAN MATEO PROSPECT

SHOWING

COMPLETED DRILL HOLES

SCALE: 1" = 1 MILE

E. J. LONGYEAR CO. GRANTS, N.M.
JULY 15, 1957 B.F. SORENSEN

and part of the Recapture. In Hole 1-17 coring started at 1633 feet but had to be stopped at 1680 feet because of an obstruction in the hole. Coring was in the Westwater. Recovery was 82%.

Total footage cored was 661 feet. Average advance per rig per calendar day was 31 feet. Over-all core recovery was 77%. All coring was done with truck-mounted Failing 1500 Drill Rigs.

Probing - The holes were probed by Century Geophysical Corporation of Tulsa, Oklahoma. Equipment used was a truck-mounted Logging Control Unit Model 2201. In each hole three logs were recorded, gamma-ray, resistivity, and self-potential.

A total of 53,765 feet of hole were probed in 26 drill holes (see Table II). Gamma-ray logs indicate radioactivity above normal background count in 8 holes. Five of the holes are located in Sec. 32, the other holes being located in Sec. 16, Sec. 15 and Sec. 33.

Counts per second in Hole 1-32 (see Appendix I, Fig. 2) indicate a 6-foot interval (1876-1882) which averages 725 counts per second. It is estimated that this interval would have an average grade of 0.28% U_3O_8* (see Sampling).

---

*Based upon the relationship derived by Rio de Oro for ore in Sec. 26, T. 14 N., R. 9 W. - taking 320 counts per second as the cutoff (0.10% U_3O_8).

TABLE II - Showing Gamma-ray Probing Results

Hole No.	Probed Depth	Highest Count In C.P.S.	Depth of Count	Estimated % U_3O_8
SM 10A-4	none	Hole abandoned	--	--
SM 10B-4	1955	24	1018-1020	--
SM 6-32	1932	15	1856-1857	--
SM 3A-32	1992	150*	1913-1914	0.04
SM 8-33	2020	44*	1848-1849	--
SM 10-4	1965	27	1799-1803	--
SM 12-4	1939	18	1846-1848	--
SM 15-3	2076	21	1966-1968	--
SM 16-34	2108	24	1615-1617	--
SM 1-32	2137	1500*	1880.5-1881.5	0.67
SM 24-23	1850	nil	--	--
SM 18-27	1988	37	497-499	--
SM 32-22	1845	18	1623-1625	--
SM 36-15	1881	46*	1656-1657	--
SM 1-26	1870	22	1432-1434	--
SM 1-16	1940	135*	1903-1904	0.036
SM 1-9	1900	17	1603-1604	--
SM 1-17	1894	13	1436-1437	--
SM 1-35	2050	Hole not completed	--	--
SM 2-32	2174	180*	1926-1927	0.05
SM 1-13	2609	18	2410-2411	--
SM 3-32	2167	975*	1867.5-1868.5	0.39
SM 1-18	2715	15	2218-2220	--
SM 1-28	2005	30	1614-1615	--
SM 1-20	1972	nil	--	--
SM 1-29	2650	nil	--	--
SM 4-32	2131	900*	1869-1870	0.36

NOTE: Background averages 5-10 counts per second in all holes

*Holes considered to contain anomalous radioactivity.

Radioactivity in Hole 2-32 (see Appendix I Fig. 3) shows the presence of mineralization estimated at 0.05% U_3O_8* which indicates a possible existence of near-by ore-grade mineralization.

Above normal counts per second in Hole 3-32 (see Appendix I, Fig. 4) indicates a 7-foot interval (1863-1870) which averages 574 counts per second. It is estimated that this interval would have an average grade of 0.21% U_3O_8*.

The probing log of Hole 3A-32 indicates the presence of mineralization (see Appendix I Fig. 5) estimated at 0.04% U_3O_8*. Here again the mineralization is below ore grade but the possibility of near-by ore-grade material existing is indicated.

Hole 1-16 on the NE corner of the property also showed an indication of mineralization. Radioactivity of 135 counts per second was recorded (see Appendix I Fig. 6) casting a favorable light on that area.

In Hole 36-15, and 8-33 radioactivity over twice background is indicated. These values are not high enough to indicate an estimated U_3O_8 per cent on the correlation curve we use, but it is believed that the readings are anomalous and warrant some further explanation.

Hole 4-32 contains estimated ore-grade mineralization but the interval is thin. A 4-foot interval is indicated at 1868-1872 feet which averages 556 counts per second. It is estimated that this interval would have an average grade of 0.20% U_3O_8* (see Appendix I Fig. 7).

The resistivity and self-potential logs indicate that the mineralization recorded on the gamma-ray log is located in the Westwater sandstone or in what appears to be a tongue of Westwater sand which has invaded the Brushy Basin at its base.

In Sec. 32 the mineralization is in the Westwater sand tongue at the base of the Brushy Basin. In Sec. 16 the slight mineralization noted is in the Westwater sand near its contact with the Recapture.

Sampling - During all drilling operations sludge samples have been collected from every 10 feet of hole drilled. The samples were laid out on the ground near each drill hole and logged by a geologist (see Appendix II). After the samples were logged, contacts picked, and the hole bottom determined, representative samples were taken and stored for future study. Only one or two samples were taken for storage from each formation above the Brushy Basin. Through most of the Brushy Basin and Westwater, samples were collected at 20-foot intervals and stored. Where mineralization was indicated on geophysical logs, samples were saved from every 10-foot interval through the mineralized zone. Because of dilution none of the sludge samples were deemed worthy of chemical assay.

In holes where cores were taken and geophysical logs indicated mineralization, the core covering that area

was split and one-half saved and the other one-half assayed chemically. A total of 24 samples were assayed chemically, 20 from Hole 1-32 and 4 from Hole 2-32 (see Appendix III). In Hole 1-32 chemical assays showed the existence of 8.4 feet of 0.238% U_3O_8 at 1877.6 to 1886 feet. This proved the indication of ore recorded on the geophysical log of Hole 1-32. The assay from Hole 2-32 showed the presence of uranium mineralization and, although below ore-grade, it did prove the presence of mineralization as indicated on the geophysical log of the hole.

SURVEYING

Surveying operations carried out on the Project resulted in the claims within Secs. 32, 33, 34, 35, T. 14 N., R 8 W., and Secs. 2, 3 and 4, T. 13 N., R. 8 W. being completely surveyed.

ASSESSMENT WORK

As stated under Exploration, assessment work needs were responsible for our speed-up in drilling plans and the resulting wide spaced hole locations as shown on Fig. 1. An attempt was made to drill a hole in each section where assessment work was believed needed. Our drilling program was not completed by the end of June but all except two holes had been started and over $90,000.00 had been spent on drilling alone. It is believed that this

figure will more than cover the assessment needs. In those sections where a hole was not drilled road building and improvement costs can be applied if need be; however, it is understood that money spent and applied against assessment work need have no respect whatsoever for section lines if the claims are contiguous and under one ownership.

LOOKING AHEAD

By way of review we can say that 29 holes were collared during the 97 calendar days that have elapsed since the Project was initiated. Of the total, one was abandoned, three are ore holes, three are mineralized holes, two show radioactivity more than twice background, 17 are barren holes, and three are not yet completed. Two of the ore holes were drilled on a closely spaced grid pattern to offset the known ore hole in Sec. 32. In effect then, four holes of the 23 completed reconnaissance holes proved successful in locating mineralization, and two others showed promise. Considering that the holes were spaced over an area covering 19 full and 5 partial sections, the writer considers the results successful and the potential of the Project enhanced.

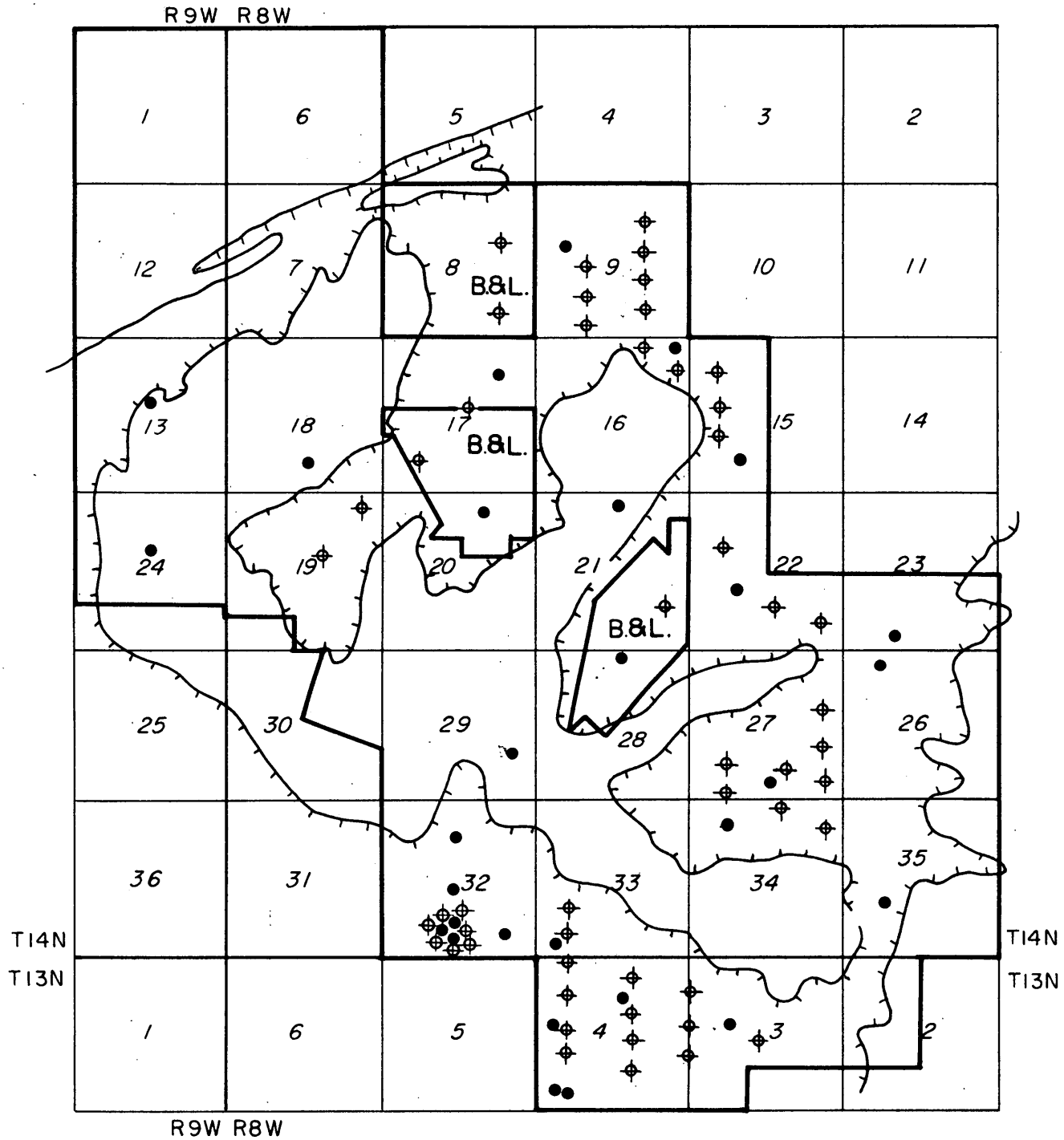
It is generally accepted in the District that favorable areas of exploration are those where the Westwater is bleached, the Westwater contains coarse-grained sands (indicating channeling), and the Westwater is thick. The existence of these conditions alone is said to be worthy of offset holes. On the San Mateo Dome Project bleaching is indicated in all holes drilled to date, the Westwater is present in considerable thickness, and although sludge samples are poor indicators, because of contamination, it is believed that a number of the holes contain coarse-grained sands.

In view of these conditions being present, offsetting is suggested; however, the spacing between drill holes is now so great that it is believed, before any offsetting is done on this basis, it would be well to first cut down the spacing between holes by carrying out Stage B of Phase 1 drilling as recommended in E. J. Longyear Revised Budget Estimate of March 29, 1957.

In Sec. 32, the favorable conditions mentioned above were found in Holes 1-32 and 2-32 and uranium was proven to exist in those holes. In Hole 1-32 the mineralization is ore-grade and subsequent offset Holes 3-32 and 4-32 also indicate the presence of ore-grade U_3O_8. In this section the situation is different in that the presence of ore-grade uranium has been proven and the course to follow now is to determine its extent by a continued offset drilling program.

Mineralization noted in Holes 2-32 and 3A-32 indicate an extension of the mineralized zone over the entire area between Holes 1-32 and 3A-32, but from results obtained in Holes 3-32 and 4-32 the ore-grade portion of the zone appears to be west of these holes; therefore, offsetting is suggested to the NW along a line connecting Holes 1-32 and 3-32, but with holes also extending easterly and westerly to pick up definite extensions in those directions (see Fig. 10).

In Sec. 16 mineralization is indicated and offsetting recommended. However, definite limits are set direction-wise because of the property boundary on the east and offsetting is recommended in a northwest and southerly direction only (see Fig. 1A).



EXPLANATION

Mesa top

Prospect boundary

B.&L. Barense & Lesh acquisition

Holes completed - July 15, 1957

Holes proposed

Fig. 1A

SKETCH MAP OF

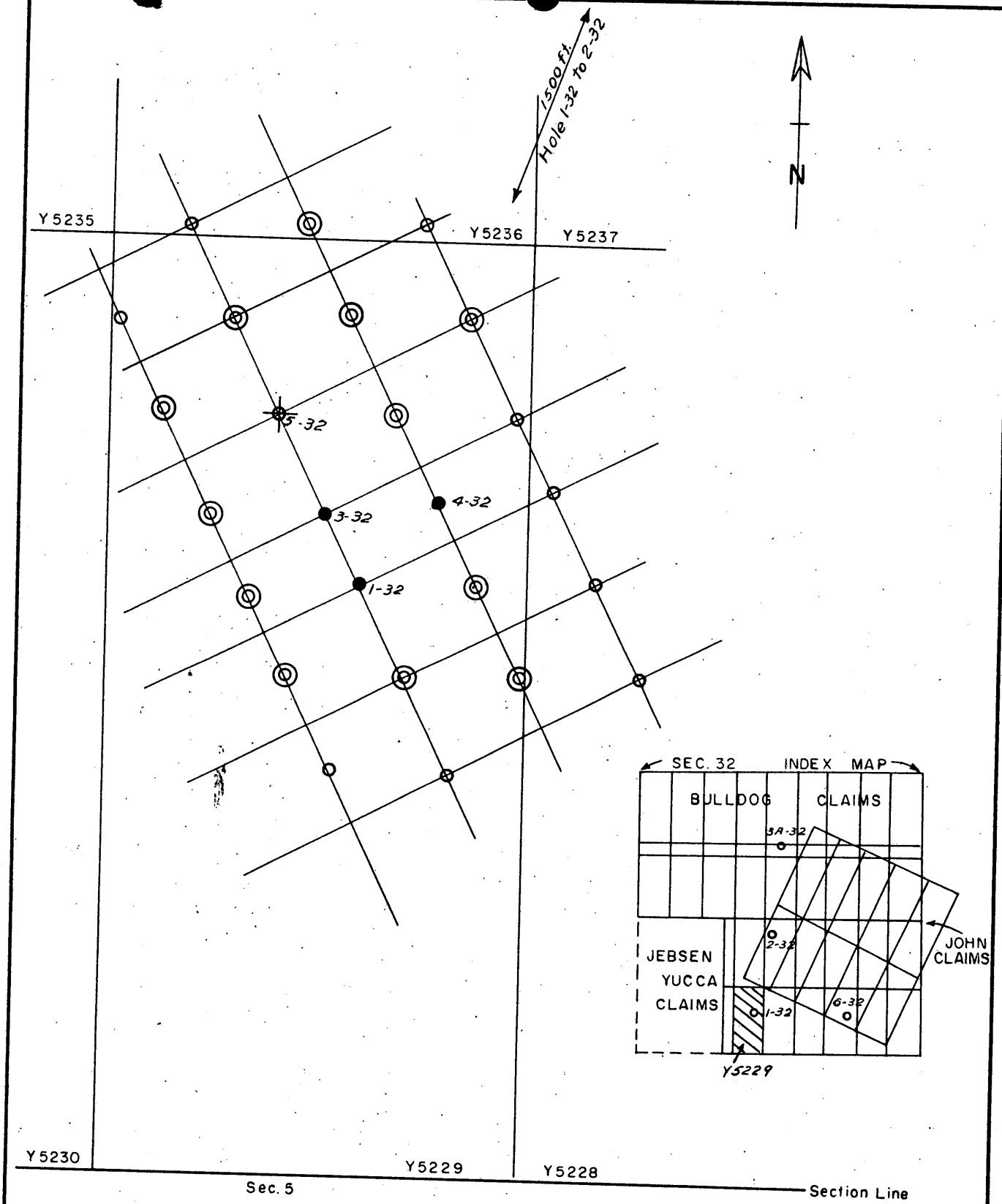
SAN MATEO PROSPECT

SHOWING

PROPOSED DRILL HOLES

SCALE: 1" = 1 MILE

E. J. LONGYEAR CO. GRANTS, N.M.
JULY 15, 1957 B. F. SORENSEN



EXPLANATION

- ● Holes drilled (ore grade)
- ◎ Holes proposed (next 3 months)
- ⊕ Holes drilling
- ○ Holes for future consideration

Fig. 10
SKETCH MAP
SHOWING
PROPOSED DRILL HOLES
ON
SECTION 32

APPROXIMATE SCALE: 1" = 200'
E. J. LONGYEAR CO. GRANTS, N. M.
JULY 15, 1957 B.F. SORENSEN

DRILLING AND RELATED COSTS (Not Including Engineering Services, Property Acquisition, Legal Costs)

Drilling:

		Costs	
April footage	10,528	$18,135.49	
May footage	21,682	38,822.72	
June footage	13,617	30,363.94	
July footage (1-15)	11,690	22,093.84	(est.)
	57,457	109,415.99	

Average cost per foot: $1.90 (includes ½ lost circulation costs)

Average cost per foot: $1.73 (includes ½ lost circulation costs) (plug drilling only)

Road Building:

		Cost
April		$ 554.63
May		810.48
June		3,177.73
July		--
	Total	4,542.84

Surveying:

		Cost
May		3,006.80
June		5,800.80
July		3,274.71
	Total	12,082.31

Sampling:

		Cost
June		85.83
July		110.16
	Total	195.99

Probing:

		Cost	
April		1,275.40	
May		2,774.31	
June		1,765.47	(estimated)
July		756.63	(estimated)
	Total	6,571.81	

Total Costs Applicable to Assessment Work:*

Drilling		109,415.99
Road Building		4,542.84
Surveying		12,082.31
Probing		6,571.81
Sampling		195.99
	Total	$132,808.94

RECOMMENDED DRILLING AND ESTIMATED COSTS (July 15 - Oct. 15 Period)
(Using 2 Failing 1500 Rigs)

Stage B Reconnaissance Drilling

Plug drilling 13 holes located as follows:

Location	Holes	Estimated Footage	Estimated Cost	
Section 34	1	1,900		
27	2	4,000		
22	3	5,900		
21	1	2,000		
19	2	4,100		
17	2	4,900		
8	2	3,500		
			$43,769.00	
				$43,769.00

Sec. 16 - Offset Holes

Plug drill 3 holes on 200 foot spacing.

Estimated Footage	Estimated Cost	
6,000	10,380.00	
		10,380.00

Sec. 32 - Offset Holes

Plug drilling and some coring on a 150 foot staggered grid. (see Fig. 10).

Holes	Estimated Footage	Estimated Cost	
7 to 12 (first 3 months)	14,700 - 25,200	43,596.00	
			43,596.00
		DRILLING TOTAL	$97,745.00

Access road building and drill site preparation 5,600.00
RD6 Caterpiller and operator @ $12.50 per hour, furnished by driller.

Sampling (Allowance for) 1,000.00
Allowing for 125 samples @ $8.00 per sample.

Electric Logging. 7,000.00
@ 11½ cents per foot + $10.00 per hour standby time.

Balance forward		$111,345
Engineering Services (Use 4 month Period)		30,200
Project Engineer and 2 assistants	$10,200	
Chief Engineer (periodic visits)	1,000	
Overhead Expenses (125% of salaries)	14,000	
Transportation Operating 3 vehicles	800	
Transportation Vehicles Purchased	3,000	
Office Rental	600	
Communication	600	
	30,200	
Total		$141,545
10% Allowance for Contingencies		14,500

Including, but not limited to:

- Engineering supplies
- Drafting
- Map reproduction
- Core boxes
- Sample rocks
- Office equipment rental
- Other incidentals

Total		$156,045
	Say	$156,000

APPENDIX III

Assay Results

(Figs. 8 and 9)

[illegible] ON ASSAYS

E. J. Longyear Company

[illegible]T: SAN MATEO DOME

[illegible]OLE NO. SM 1-32*

[illegible]ON: Sec. 32 T. 14 R. 8

[illegible]TY: McKinley

[illegible]: New Mexico

[illegible]: This is Revised Report No. 1
[illegible] is based on additional sampling
[illegible]ssay data. In process now is
[illegible]tional sampling for assay between
[illegible] and 1877.6'. Revised Report #2
[illegible] be released to cover the results.

TYPE OF SAMPLE: Split Core 1/2

CORE RUN: From 1872 To 1892

CORE RECOVERED: Ft. 15

% RECOVERY: 75

HOLE INTERVAL SAMPLED: Ft. 10.3

(From 1877.6 To 1887.9)

WEIGHTED AVERAGE % U_3O_8: 0.238

Ft. 8.4 (From 1877.6 To 1886.0)

[illegible]LE	HOLE INTERVAL REPRESENTED From	To	Interval	CORE RECOVERED & SAMPLED (Ft.)	ASSAY CHEMICAL % U_3O_8	ASSAY RADIOMETRIC % eU_3O_8	ASSAY [illegible] (Line)
	1877.6	1878.3	0.7	0.5	0.109	0.090	
	1878.3	1879.0	0.7	0.5	0.095	0.073	
	1879.0	1879.7	0.7	0.5	0.127	0.182	
	1879.7	1880.5	0.8	0.6	0.099	0.099	
	1880.5	1881.4	0.9	0.7	0.110	0.106	
	1881.4	1882.2	0.8	0.6	0.089	0.100	
	1882.2	1883.0	0.8	0.7	0.113	0.121	
	1883.0	1883.6	0.6	0.5	0.363	0.272	[illegible]
	1883.6	1884.0	0.4	0.35	0.258	0.222	[illegible]
	1884.0	1884.7	0.7	0.5	0.406	0.347	[illegible]

[illegible]tinued)

[illegible]ASED FROM: Longyear Grants Office

BY: R. F. Sorensen

DATE: June 7, 1957

[illegible] TO:
[illegible] Grady, Madison, N. J.
[illegible] Kibbe, Salt Lake City
[illegible] Montgomery, Mpls.
[illegible] Nelson, Mpls.
[illegible] Merritt, N.Y.C.

SAMPLER: R. J. Crook

Date: May 15, 1957 (#1-9)
May 28, 1957 (#10-16)

ASSAYER: Chapman Wood & Griswold

Certificate: No. 2960, May 20, 1957
No. 3011, June 4, 1957

Fig. 8

(continued on Page 2)

[illegible] ANALYSIS

E. J. Longyear Company

PROJECT: SAN MATEO DOME

HOLE NO. SM 1-32 (continued)

LOCATION: Sec. 32 T. 14 R. 8

COUNTY: McKinley

STATE: New Mexico

TYPE OF SAMPLE: Split Core 1/2

CORE RUN: From 1872 To 1892

CORE RECOVERED: Ft. 15

% RECOVERY: 75

HOLE INTERVAL SAMPLED: Ft. 10.3

(From 1877.6 To 1887.9)

WEIGHTED AVERAGE % U_3O_8: 0.238

Ft. 8.4 (From 1877.6 To 1886.0)

SAMPLE NO.	HOLE INTERVAL REPRESENTED From	To	Interval	CORE RECOVERED & SAMPLED (Ft.)	ASSAY CHEMICAL % U_3O_8	ASSAY RADIOMETRIC % eU_3O_8	ASSAY % $CaCO_3$ (Lime)
4	1884.7	1885.2	0.5	0.4	0.629	0.521	Trace
5	1885.2	1885.6	0.4	0.35	0.636	0.615	Trace
6	1885.6	1886.0	0.4	0.35	0.584	0.454	Trace
7	1886.0	1886.8	0.8	0.6	0.006	0.009	Trace
8	1886.8	1887.3	0.5	0.4	0.004	0.006	Trace
9	1887.3	1887.9	0.6	0.5	0.004	0.004	Trace

RELEASED FROM: Longyear Grants Office

BY: B. F. Sorensen

DATE: June 7, 1957

SAMPLER: R. J. Crenk

Date: May 15, 1957 (#1 - 9)
May 28, 1957 (#10 - 16)

ASSAYER: Chapman Wood & Griswold

Certificate: No. 2960, May 20, 1957
No. 3011, June 4, 1957

REPORT ON ASSAY RESULTS

E. J. Longyear Company

PROJECT: San Mateo Dome

DRILL HOLE NO.: SM [illegible]-32

LOCATION: Sec. 3[illegible] T. 14N R. 8W

COUNTY: McKinley

STATE: New Mexico

TYPE OF SAMPLE: Split core

CORE RUN: From 1921.4 To 1931

CORE RECOVERED: Ft. [illegible]

% RECOVERY: 35

HOLE INTERVAL SAMPLED: Ft. [illegible]

(From 1921.4 To 1931)

WEIGHTED AVERAGE U_3O_8: [illegible]

Ft. _____ (From _____ To _____)

SAMPLE NO.	HOLE INTERVAL REPRESENTED From	To	Interval	CORE RECOVERED & SAMPLED (Ft.)	ASSAY CHEMICAL % U_3O_8	[illegible] eq.	[illegible]
21	1921.4	1924	2.6	1	0.013	[illegible]	
22	1924	1925.4	1.4	2.5	[illegible].007	[illegible]	
23	1925.4	1928.2	2.8	1	0.003	[illegible].01	
24	1928.2	1931	2.8	1	0.003	[illegible]	

RELEASED FROM: Longyear Grants Office

BY: R. F. Sorensen

DATE: 7/8/57

COPIES TO:

SAMPLER: Sorensen Clonk

Date: June 3, [illegible]

ASSAYER: Chapman Wood

Certificate Date: No. 3099 7/5/57

Fig. 9

EXHIBIT D

GEOLOGY AND URANIUM POSSIBILITIES

of the

SAN MATEO DOME AREA
McKinley County, New Mexico

by

VINCENT C. KELLEY

1956

GEOLOGY AND URANIUM POSSIBILITIES

OF THE

SAN MATEO DOME AREA

McKINLEY COUNTY, NEW MEXICO

BY

VINCENT C. KELLEY

1956

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Gallup sandstone	9
Crevasse Canyon formation	10
Dilco coal member	10
Mulatto shale member	10
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GEOLOGY AND URANIUM POSSIBILITIES

OF THE

SAN MATEO DOME AREA

McKINLEY COUNTY, NEW MEXICO

INTRODUCTION

Geography

The area of this report lies about 25 miles northeast of Grants and embraces all of T. 14 N., R. 8 W. and adjoining parts of T. 13 N., R. 8 W., T. 13 N., R. 9 W., T. 14 N., R. 9 W., and T. 15 N., R. 8 and 9 W. — in all an area of about 115 square miles. Accessibility to much of the area is handicapped by steep terrain, poor roads, and fences. The principal access dirt roads are shown on the accompanying maps.

The San Mateo dome area immediately adjoins the Ambrosia Lake area on the northeast and both of the accompanying maps overlap the recent U. S. Atomic Energy Commission maps of the Ambrosia Lake area (Young, 1956a, b).

Relief in the San Mateo dome area ranges from a maximum of nearly 8200 feet on the prominent mesas to a minimum of about 6900 feet in the valley of San Mateo Creek along the southern edge of the area. The landscape of the area is dominated by a high irregular mesa which trends northwesterly across the southern end of the dome. On the north the mesa is quite irregular owing to two large mesa fingers which extend toward the crest of the dome. The southern side of the mesa is remarkably straight and forms a prominent escarpment along the full length of the wide Ambrosia Lake valley to the south.

An irregular divide follows the tops of the high mesas and separates the drainage to the south into San Mateo Creek from that to the north into San Miguel, Hosta,

geologic points were surveyed, were controlled by a vertical-angle net and the altitudes of these stations are thought to be in error by not more than 10 feet. Most of the surveyed geological points are on the top of the Dalton sandstone which crops out widely around the lower slopes of the mesas and along the hogbacks of the northwestern flanks of the dome. Along the southwestern side of the map numerous elevations were "shot" on the base of the main Gallup sandstone. Elsewhere numerous scattered elevations were made at the top of the Hosta sandstone. In the northern part of the area this horizon is also the base of the Satan shale. In the southern part of the area where the Satan shale has pinched out the Hosta points were located at a notch on the cliff or a "break" in the total Point Lookout - Hosta sandstone interval. Undoubtedly the Hosta points are not as consistently located stratigraphically as those of the Dalton and Gallup. In reducing the surface elevations of the Dalton and Gallup points to the top of the Dakota sandstone thickness intervals of 1690 and 900 feet respectively were substracted. In reducing the Hosta points to the Dakota a thickness of 2030 feet was subtracted in the southern part of the area, but along the northern part this interval was reduced by as much as 65 feet. Where dips were 10 degrees or more these intervals were increased by dividing by the cosine of the dip.

In the northwestern part of the area, down dip from the Dalton outcrops, structure contouring was projected entirely on the basis of dip. Along the western and southwestern sides of the dome where the dips are low and no points of control could be obtained on the Dalton, a mirror stereoscope was used to determine some strike lines, and this same method was used in projecting the trend and width of the gentle anticline shown on the accompanying map west of Mulato Canyon.

Nearly all the faults were mapped on the basis of rather obvious stratigraphic offsets and their dips were only rarely or locally observed. Although most of them

Mulatto and Pico Creeks. The mesas in the central part of the area are [illegible] flat-topped and rise rather abruptly about 300-900 feet above the immediately adjacent areas. In the northwestern part of the area, northwest of Mulatto Canyon, the mesa segments slope gently north-northeasterly. The northeastern margin of the area is marked by a series of low curved hogbacks that have been eroded from the steep flank of San Marcos dome. The mesas as well as the principal hogbacks are held up by the resistant sandstone beds of the Point Loma formation. The central part of San Marcos dome is a broad valley eroded in the soft rocks of the Mutano and Diablo members.

All the drainage in the area is intermittent and the small springs that may flow from the northern flanks of the mesas for short periods following favorable weather conditions are totally unreliable as sources of water. On the dome water is pumped from an old Midwest well for stock purposes from a level of about 565 feet (elevation of about [illegible] feet). Inasmuch as this level is in the Mutano shale it appears that the water [illegible] that of a piezometric rise from some deeper level such as the Point Loma sandstone. Water for drilling in the area may be purchased in San Marcos.

Nature of the Work

The principal mapping, which is [illegible] of this report, was done [illegible] aerial photographs. Most of the observations were made from [illegible] 1954 [illegible] 7 miles west of San Marcos [illegible] the area. The old index of the points were [illegible] vertical angle [illegible] measurements obtained from the base map. The base map was provided by the U. S. Soil Conservation Service [illegible] West Sonoma [illegible] plane table points along with the geologic data were transferred to the base map [illegible] a Sokkia [illegible] protractor. The [illegible] principal [illegible] from [illegible]

[illegible] dip of less than 70 degrees [illegible] dip of less than 60 degrees [illegible] all the faults that do dip would have positions at the Dakota horizon different from their surface positions. However, in the absence of information as to the [illegible] direction of dip it is not possible to adjust these changed positions on the structure-contour map. Therefore, the positions of the faults on the structure-contour map are surface positions and are not true except where the faults are nearly vertical. A fault at the Dalton outcrop with a dip of 80 degrees would be shifted about 500 feet at the Dakota horizon, but one of 60-degree dip would be shifted nearly 1000 feet. Obviously the fault positions on the Dakota map could only be plotted correctly if the dips were known at all points and if the dip could be assumed to be constant in depth.

The degree of reliability of the structure contours is dependent upon the accuracy of the surface elevation survey, the dips, and the chosen stratigraphic reduction intervals. The surface altitudes are reliable to less than one-half the contour interval. In the critical areas the dips were measured with great care and it does not appear that any greater errors have accrued to the map from inaccurate dip measurements than from inaccurate altitude determinations. The greatest error undoubtedly arises out of the reduction intervals that have been used. These intervals were obtained from a combination of altitude controls and dip projections, from the logs of the Superior well on the San Mateo dome, and from published estimates in the surrounding areas. Even so, owing to unpredictable changes in the subsurface of the thicknesses of the Mancos, Gallup, Dilco, and Mulatto formations there are bound to be errors in the structure contours arising out of the vagaries of the stratigraphy that are greater than any other errors. In the final analysis the best that can be hoped for the structure-contour map is a close approximation to the form and a vertical

error in the principal part of the map of not much more than one contour interval.

STRATIGRAPHY

General

Sedimentary rocks along the south side of the San Juan Basin range in age from Pennsylvanian to late Cretaceous. Within the confines of the geologic map of the San Mateo dome area the overlapping sedimentary rocks are all Cretaceous in age and range from the Dakota sandstone up to the Menefee formation of the Mesaverde group - a thickness of about 2100 feet. The principal uranium bearing objectives in the area are within the subjacent Morrison formation. The accompanying table shows the principal stratigraphic subdivisions and nomenclature currently in use in the area.

Rock Units	Thickness (feet)
Mesaverde group (late Cretaceous)	
Cliff House formation	
Menefee formation	500 +
Point Lookout formation	200-250
Point Lookout sandstone member	75-100
Satan shale member	0-75
Hosta sandstone member	75-150
Crevasse Canyon formation	600 ±
Gibson coal member	250-350
Dalton sandstone member	60-100

Mancos shale (Late Cretaceous)	[illegible]
Dilco coal member	[illegible]
Gallup sandstone	[illegible]
Mancos formation (Late Cretaceous)	[illegible]
Dakota formation (early Cretaceous)	[illegible]
Morrison formation (Late Jurassic)	[illegible]
Brushy Basin member	[illegible]
Westwater Canyon (Paria) member	[illegible]
Recapture (Cleveland) member	[illegible]
Slim sandstone (Late Jurassic)	[illegible]
Summerville formation (Late Jurassic)	[illegible]
Todilto formation (Late Jurassic)	[illegible]

Structural contours:

Top Point Lookout to top Dalton	400-600
Top Point Lookout to top Gallup	800-900
Top Point Lookout to top Dakota	2000-2200
Top Dalton to top Gallup	400-500
Top Dalton to top Dakota	1600-1800
Middle Mancos to base Westwater	1600-1700

Morrison formation

Recapture Member

The Recapture member of the Morrison formation consists dominantly of grayish green mudstone and claystone with thin beds of sandstone. The sandstone beds

[illegible] by the Westwater Canyon member [illegible].

Westwater Canyon member

The Westwater member is dominantly medium to coarse grained [illegible] lenses and accumulations of reddish brown and pebble mudstone. The sandstone is commonly friable and variably cemented and conglomeratic. It is mainly quartz white, white to clayey cement and [illegible]. Some colored quartz and [illegible] debris is present. The sandstone may be light gray to white, yellowish brown, white, buff, or tan. The quartz [illegible] are irregular and irregularly [illegible] the specific bluish bed's pyrite is disseminated in tiny grains. In some [illegible] of Halfway Canyon and Anderson Lake hydrothermal residues fill the voids of the [illegible] stone.

In the Midwest well on Star Mesa (here the top of the Westwater was not encountered at about 1500 feet. In the Sego Ice well the top was penetrated at [illegible] 1473 feet and the top of the Bluff at 1750 feet. It is difficult to choose the Brushy Basin-Westwater boundary on other than lithologic log or the chemical logs. The lithologic logs briefly describe the Westwater sand as white, greenish, or yellow.

In general the Westwater Canyon may differ grade or intertongue into the underlying or overlying units.

Brushy Basin Member

The Brushy Basin member is dominantly soft variegated mudstone and clays [illegible]. Gray and green predominate, but locally reddish brown layers or small [illegible]

[illegible] shale, and conglomerate [illegible] unit contains less sandstone than the [illegible] than the Westwater.

Along the outcrops to the south [illegible] sandstone [illegible] the Poison Canyon, near the base of the Brushy Basin [illegible] ium ore. Similar sandstone beds may occur at almost any level in the [illegible] At some places the sandstone and conglomerate beds are [illegible] Dakota and these beds are apt to be of local extent. Such occurrences encountered in drilling are apt to be included in the Dakota, resulting in [illegible] reported thickness of the Brushy Basin member.

Dakota Formation

This persistent formation is generally 75 feet thick in the Ambrosia Lake area. It consists of two distinct members, a lower one 20-30 feet thick of gray-to-black, silty carbonaceous shale with a few thin intercalated sandstone beds and an upper member consisting of variably cross-bedded, medium- to fine-grained, quartzose sandstones. The slightly disconformable upper surface of the Dakota is readily recognized in drilling.

Mancos Shale

The Mancos consists dominantly of dark gray to black carbonaceous shale with some thin interbeds of siltstone, sandstone, and limestone. It crops out along the southwestern side of the mapped area [illegible] the main Gallup sandstone [illegible]

[illegible] identified three rather persistent ... sandstone intervals in the lower 260 feet of the Mancos which he designated in ascending order as the first, second, and third Mancos sandstones. The second interval is characterized by numerous fossils at the base, among which the oyster shell, *Exogyra columbella*, predominates. A zone of oysters, *Gryphaea newberryi* forms an additional good stratigraphic marker 30-40 feet above the third sandstone interval. A fourth sandstone interval has been mapped locally by Young at about 825 feet stratigraphically above the base of the Mancos. A fourth sandstone 910 feet above the base of the Mancos is referred to by Young as the base or first sandstone of the Gallup on the basis of the fact that it merges many miles to the west with the main Gallup sandstone above. In the San Mateo map the top of the Mancos was drawn at the boundary with the main Gallup sandstone because the so-called first Gallup sandstone in this area is not everywhere well exposed.

In the Superior well the Mancos appears to be 886 feet thick. Along the southern side of the San Mateo dome area a thickness of 940 feet was calculated for the Mancos. Young (1956b) gives a thickness of about 1115 feet.

Gallup Sandstone

The Gallup sandstone as mapped in the San Mateo dome area is a prominent thick-bedded sandstone interval that forms a series of prominent points along the northern side of Ambrosia Lake valley. It is a white to light gray, medium-to coarse-grained sandstone that commonly weathers to a distinctive yellowish brown or slightly orange-brown color. Many of the layers are cross-bedded. In most of the outcrops along the southwestern part of the mapped area the massive sandstone

interval is more than [illegible] feet [illegible] the Superior [illegible] the base at about 180 feet.

Crevasse Canyon Formation

The term, Crevasse Canyon, has been recently extended to the Southern side of the San Juan basin by Beaumont, Dane, and Sears (1956, p. 2137). It includes the interval between the Gallup and Hosta sandstones and is especially useful west of Gallup where the members are not as distinctive as in the Mount Taylor region.

Dilco Coal Member

The Dilco member consists of silt, thin-bedded shale, siltstone, and sandstone with local thin beds of coal or coaly shale. The sandstone and siltstone beds weather in chips and small fragments and in general the yellowish-brown, weathered outcrops are easily distinguished from those of the overlying Mancos shale. The Dilco exposures are very poor and extend fairly across a wide bench on the Gallup sandstone. Most of the upper one-half of the Dilco is exposed around the edge of the San Mateo dome.

Mulatto Shale Member

The Mulatto is dominantly a [illegible] with small amounts of fine-grained siltstone and sandstone. A fine-grained, [illegible], [illegible] interval, several feet of [illegible] thick, forms small bluffs in many places near the middle of the member.

Locally along the southern side of the [illegible] the interval is developed into thick sandstone beds that somewhat resemble the Dilco sandstone. The Mulatto shale expands northeastward and becomes a part of the Mancos shale which it resembles closely.

Cliffs Member of Menefee

The Cliffs sandstone is a white massive sandstone which forms conspicuous cliffs interrupting the general slopes formed above and below by the soft Gibson and Mulatto beds. It is generally a medium-grained sandstone with but few shale breaks. It is cross-bedded but not as much as the Hosta sandstone. The base is sharp and generally even. The upper part is of variable resistance and where fine may be considerably covered by debris weathered from the overlying Gibson.

Gibson Coal Member

The Gibson consists principally of gray shale, dark carbonaceous shale, and thin sandstone beds. Discontinuous coal beds and coaly shale, mostly not more than 2-3 feet thick, are distributed widely, especially in the middle part of the section. The formation is soft-weathering and forms slopes that are dark reddish to purplish brown. The carbonaceous shales near the base of the overlying Hosta contain uranium mineralization locally in the range of 0.02-0.002 per cent U_3O_8.

The Gibson coal member of this report is equivalent to the "Lower part of the Gibson coal member" of Hunt (1936, p. 48).

Point Lookout Formation

The Point Lookout of this report is essentially equivalent to the Hosta sandstone of Hunt (1936, pl. 18). Hunt believes that the upper part of the Hosta sandstone was continuous with the Point Lookout of Mesa Verde Park and recently the U. S. Geological Survey (Beaumont, Dane, and Sears, 1956, p. 2153-2156) has proposed the adoption of the term Point Lookout for the lower and upper Hosta sandstone units along the southern side of the San Juan basin.

[illegible]

[illegible] The [illegible]

[illegible]

[illegible]

[illegible]

[illegible] Satan tongue member [illegible] sandstone, and Point Lookout [illegible] the Mancos and Menefee shale [illegible] The Point Lookout sandstone along the eastern side of the dome is [illegible] and the upper beds are very [illegible].

Menefee Formation

The Menefee formation as here used is the same as the upper [illegible] of Hunt (1936, p. 49). It crops out poorly around the northern and eastern sides of the dome where the dips flatten abruptly [illegible] of the Point Lookout in the hogback. Lithologically it is very similar to the [illegible] described above.

Basalt Flow

In the adjoining Mount Taylor region extensive sheets of basalt [illegible] flat slope northwestward toward the San Mateo dome [illegible] mesas and small outliers of the basalt [illegible] These all are east of the valley [illegible] San Mateo [illegible]

[illegible] flows, in the folding and [illegible]

Nevertheless, owing to the fact that [illegible]

[illegible] was considered reasonable for [illegible]

The apex of the San Mateo [illegible]

[illegible]

[illegible] Mulatto Canyon with the north-northeasterly regional dip into the San Juan Basin

In a sense the San Mateo dome [illegible] to the top of the Furnace flex in about the northern one-[illegible] of its area. It may be noted from the [illegible] in the main part of the dome the [illegible] trends northwesterly and southeasterly. The interpretation of the area as derived by structure contouring shows a lot of [illegible] random zone which appears to result in part from the displacement on the Furnace fault. If only that part of the [illegible] is considered which lies in a general way within the closing contour, it may be observed that the northern part of the fold plunges northwesterly toward the [illegible]. When only the upper closed part of the fold is considered the axial plane is [illegible] convex toward the east, extending from northern [illegible] through the open to southern [illegible] to [illegible]. From this point of view the San Mateo dome is more sharply curved than Antelope dome. The dips on the western side of San Mateo dome are low and range from about 1 to 3 degrees.

Tinajas syncline is a minor structural feature which appears to have no local economic [illegible] as a by-product of the dome of San Mateo dome. [illegible] the dome but for [illegible] syncline would have been recognizable.

The long narrow zone in the western part of the [illegible] area, T. [illegible] N., R. [illegible] W., is [illegible] with difficulty on the ground. [illegible] consequence of the general deformation. [illegible] other minor folds of lesser magnitude are present such as the small [illegible] in the southwestern part of T. [illegible] N., R. [illegible] and the small [illegible] fold along the [illegible] section 33 south of Bureau Creek.

Faults

Faults are numerous in the San Mateo dome area and are dominantly of northwesterly trend. [illegible] faults of northwesterly and northeasterly trend.

However, most of northwesterly [illegible] of [illegible] faults are probably steep [illegible] between [illegible] 100 feet. On a few, such as [illegible]

In the vicinity of the dome the faults appear [illegible] part of the [illegible] of the [illegible] of the dome. [illegible] oblique, and longitudinal with respect to [illegible] [illegible]

[illegible]

areas of the east Mulatto and Dilco lake. At the northern end in backlands of the Fernandez flex the throw is as much as 320 feet. In the southern part the throw is about 100 feet. Near the apex of the dome the projected contouring yields possible throws of about 150 feet.

To the west of San Mateo dome, mostly in R. 9 W., there are a number of faults of northerly and northeasterly trend. These faults, which are about midway between the Anticline and San Mateo domes, are mostly small with throws of less than 100 feet. They are alternately downthrown to the east and west forming a group of small horsts and grabens. The northernmost of these small faults bounds the small graben in sections 29 and 23. The dropping of this graben was accompanied with the east side being lowered more than the west. The northwesterly fault which bounds the graben dips 8-10 degrees whereas the fault outside the graben dip generally only 2-3 degrees.

The largest faults in the area are the Pico and Wagon in the southeastern part of the area. Both of these generally northwesterly trending faults are normal and downthrown to the east in the general direction of the dip into the San Joaquin basin. The maximum throw near the middle part of each fault is 300-400 feet. The long gentle nose which crosses the Pico fault in section 1 does not appear to be affected by the fault. Along the Wagon fault, on the other hand, it may be noted that the fault apparently works it to level out at the fault in section 3 may be attributed to a certain amount of compensation structural uplift in section 3. Thus, the Wagon fault may be a pre-folding fault.

In summary, it may be pointed out that the faulting in the San Mateo dome has played a significant role in the differentiation. To a certain the extent the faulting may be a part of the folding process, but the frequency and nature of the faulting may

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] due owing to the fact that [illegible] to hydrocarbon [illegible] [illegible] the [illegible]. In the final analysis, however, the [illegible] of the area [illegible] [illegible] the other [illegible] [illegible] at least of the low ground in the [illegible] dome.

Drilling depths through the Wolfcamp Canyon unconformity in the Sue Stone dome average from about 1810-2210 feet. It is of note that the base of the Wolfcamp Canyon formation is about 300-400 feet [illegible] the [illegible] on which the structure certainly [illegible] the [illegible] [illegible] Mexico. In the following table [illegible] drilling depths to the base of the Wolfcamp Canyon [illegible] [illegible].

TABLE [illegible]

Well Number	Depth Base Wolfcamp	[illegible]	[illegible]
2	2060 - 2420	[illegible]	[illegible]
3	1700 - 2000	[illegible]	[illegible]
4	2100 - 2300	[illegible]	[illegible]
5	2000 - 2200	[illegible]	[illegible]
6	2000 - 2200	[illegible]	[illegible]
7	2000 - 2200	[illegible]	[illegible]
8	1700 - 2000	[illegible]	[illegible]
9	1400 - 1600	[illegible]	[illegible]

Section	Drift Depths Base Westwater	Surface Rocks and Forms	
1	2300 – 2500	Kgl to Kp	Sloping mesas and canyons
2	2000 – 2400	Kgl to Kp	Sloping mesas and open valley
3	2100 – 2500	Kgl to Kph	Sloping mesas and canyons
4	1600 – 2500	Kdl to Kph	High mesa and steep slopes
5	1200 – 1800	Km to Kms	Low benches and valleys
6	1100 – 1500	Km to Kd	Open valleys and low benches
8	1100 – 1400	Km to Kd	Open valleys and low benches
9	1200 – 1900	Km to Kdu	Open valleys, benches, steep slopes
10	1300 – 2500	Kd to Kph	Benches, steep slopes, and mesas
11	2200 – 2500	Kgl to Kph	High mesa
12	2100 – 2500	Kgl to Kph	Mesas, benches, and valleys
13	1900 – 2500	Km to Kph	Valleys, steep slopes, and mesas
14	1600 – 2500	Kd to Kph	Canyons, steep slopes, and mesas
15	1200 – 2100	Km to Kdu	Benches, slopes, and valleys
16	1000 – 1300	Km to Kd	Open valleys and low benches
22	1100 – 1600	Km to Kd	Open valleys, canyons, and benches
23	1100 – 2100	Km to Kph	Canyons, benches, and mesas
24	1900 – 2500	Dev to Kph	Open valleys and steep slopes
25	1800 – 2100	Km to Kph	Benches, and valleys, steep slopes
26	1100 – 2000	Km to Kms	Open valleys and low benches
33	1300 – 1900	Km to Kd	Open valleys and low benches
35	1100 – 1400	Km to Kms	Low benches, and valleys

[illegible]	[illegible]	[illegible]	[illegible]
2	2400 – 2600	[illegible]	[illegible]
3	1950 – 2400	[illegible]	[illegible]
4	1800 – 2200	[illegible]	[illegible]
5	1600 – 1800	[illegible]	[illegible]
6	1200 – 1700	[illegible]	[illegible]
7	1100 – 1600	[illegible]	[illegible]
8	1400 – 1600	[illegible]	[illegible]
9	1600 – 2300	[illegible]	[illegible]
10	2200 – 2700	[illegible]	[illegible]
11	1600 – 1300	[illegible]	[illegible]
12	1400 – 1700	[illegible]	[illegible]
13	900 – 1400	[illegible]	[illegible]

* Map symbols used to indicate range of [illegible]

[illegible] The most favorable [illegible] drilling. These are the outcrops of [illegible] [illegible] 2700 [illegible] 14, 21, 22, 23, 25, 27, 29, [illegible] Mineral and Difficult [illegible] [illegible] 15, 26 [illegible] [illegible]

[illegible] destination of this stage of exploration [illegible] depth.

It is difficult to make significant [illegible] cut dependable relationships between structure and ore distribution are not established. The high flank of the dome on the basis of some occurrences at Ambrosia Lake should be considered early in exploration planning, and this would point especially to sections 9, 15, 22, 23, and 27 in T. 14 N., R. 8 W. On the other hand, it [illegible] to keep exploration near to known mineralization, and in view of the [illegible] in section 26, T. 14 N., R. 9 W., drilling in the low-ground corners of section 15 T. 14 N., R. 9 W. and section 30, T. 14 N., R. 8 W. is worthy of consideration.

[illegible] Stone, [illegible]

reede group in San Juan basin, [illegible]

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FORM 602 5M 10-56

E. J. LONGYEAR COMPANY

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EXHIBIT E

RECOMMENDED EXPLORATION

on the

SAN MATEO PROSPECT
McKinley County, New Mexico

A Report To

MINERAL PROJECTS-VENTURE B, LTD.

E. J. LONGYEAR COMPANY
By B. F. Sorensen
and L. C. Rove
MARCH 15, 1957

FOREWORD

HIGHLIGHTS OF SAN MATEO

The center of the San Mateo Prospect (in McKinley County, New Mexico, 50 air miles west of Albuquerque) lies 10 miles directly east of the Ambrosia Lake Dome and is adjacent to its easternmost known extremities of mineralization. This mineralized area, stretching eight miles west to east is authoritatively estimated to contain uranium ore reserves of 47,000,000 tons---over 50% of the total U. S. reserves. One section (640 acres) alone, of this area, is said to contain reserves worth on the order of $200,000,000.

In area the San Mateo Prospect covers about 21 sections. All of the features (structural and sedimentary) which are believed to have controlled the deposition of ore in the Ambrosia Lake area are known or believed (with good reason) to continue into the Prospect area. The reported discovery of ore in at least three sections bordering the Prospect area is perhaps the best indication of the high favorability of at least part of the Prospect.

We recommend a reconnaissance drilling program consisting of 54 drill holes estimated to cost about $300,000. This program is designed to prove (or disprove) the existence of the controlling factors in the Prospect and to test the favorability of the host rock, the Westwater

Canyon sandstone, which is currently thought to lie at depths of 1700-2600 feet below the surface. But, naturally ore found at any time would be a happy event.

The titles to the lode claims covering the Prospect are held by several parties but are concentrated in the hands of Yucca Mining and Petroleum, Inc. (Yucca Uranium, Inc.). Agreements have been reached with most of the other claim-holders and suits have been filed to quiet title on all of the Prospect area.

The area has been leased to Messrs. Kennedy and Adams, with a 10% override to Yucca and partners, who are willing to sub-lease, requiring only fair and modest work requirements which will eventually earn a 75% working interest for the sub-lessees.

The geology is favorable and chances of finding large multimillion-ton reserves of uranium ore are excellent.

Prompt action, in the form of exploratory drilling, is needed to protect land titles from claim jumpers (not uncommon in the area). Prompt action is needed to protect our position with the lessees. Prompt action is needed to complete the necessary assessment work by July 1st, the great bulk of which could well be satisfied by the drilling recommended.

RESUME

Assignment

To investigate and report on the merits of the San Mateo Prospect area of McKinley County, New Mexico, as a uranium exploration target. This work was done by Bryan F. Sorensen and Louis C. Rove, geologists, between February 11 and March 15, 1957.

Conclusions

The San Mateo Prospect is on a structure suitable for the trapping of hydrocarbons. The Westwater sandstone member of the Morrison formation, which is the potential ore horizon, is known to underlie the area.

The trend of the known orebodies in the Ambrosia Lake area projects eastward and this projection crosses the southern portion of the Prospect.

Drilling depths to the Westwater sandstone are in the vicinity of 2,000 feet. The structures and environmental conditions responsible for the localizing of uranium deposits in the Ambrosia Lake area are believed to exist on the San Mateo Prospect and justify spending several hundred thousand dollars to explore the area by reconnaissance drilling.

Recommendations

Predicated on favorable terms and title status, it is recommended that approximately $300,000 be spent on a reconnaissance drilling program to explore the San Mateo Prospect

It is also recommended that all matters relating to titles and leases be examined by competent legal authorities to determine if any serious legal problems exist.

FORM 602 5M 10-56

E. J. LONGYEAR COMPANY

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INTRODUCTION

Location and Accessibility (See Figure 1)

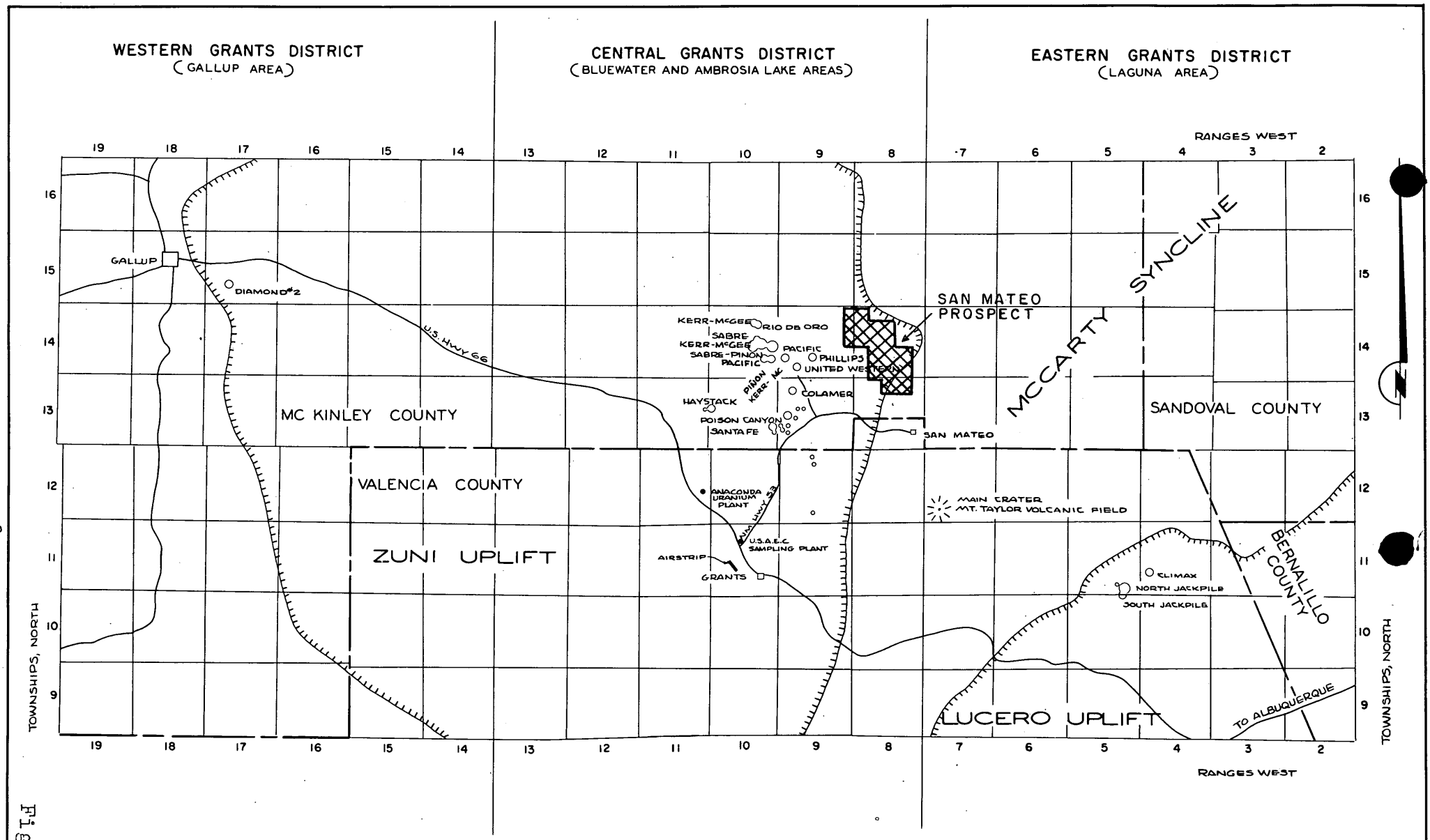
The San Mateo Prospect area lies in Townships 13, 14, and 15 North, Ranges 7, 8, and 9 West, McKinley County, New Mexico. The center of the Prospect area lies about ten miles east of the Ambrosia Lake Dome. (See Figure 2.)

The area may be reached from U. S. Highway 66 north from Grants, New Mexico, about 25 miles.

Topography

The San Mateo Prospect area is a region of cliffs and mesas with relief of about 500 feet. Elevations range from 7,200 feet to 8,200 feet above sea level. (See Plate I.)

There are several broad valleys in the area but these are "hemmed in" by high cliffs or steep hogbacks.



MAJOR URANIUM OREBODIES

- OVER 10,000 TONS
- OVER 100,000 TONS
- OVER 1,000,000 TONS

ONLY OREBODIES EXCEEDING 100,000 TONS IN SIZE ARE NAMED.
TONNAGE ESTIMATES ARE NOT FROM OFFICIAL SOURCES AND MAY BE IN ERROR

INFORMATION AND DESIGN: THOMAS W. MITCHAM, mining geologist
DRAFTING: B.M. MILLER
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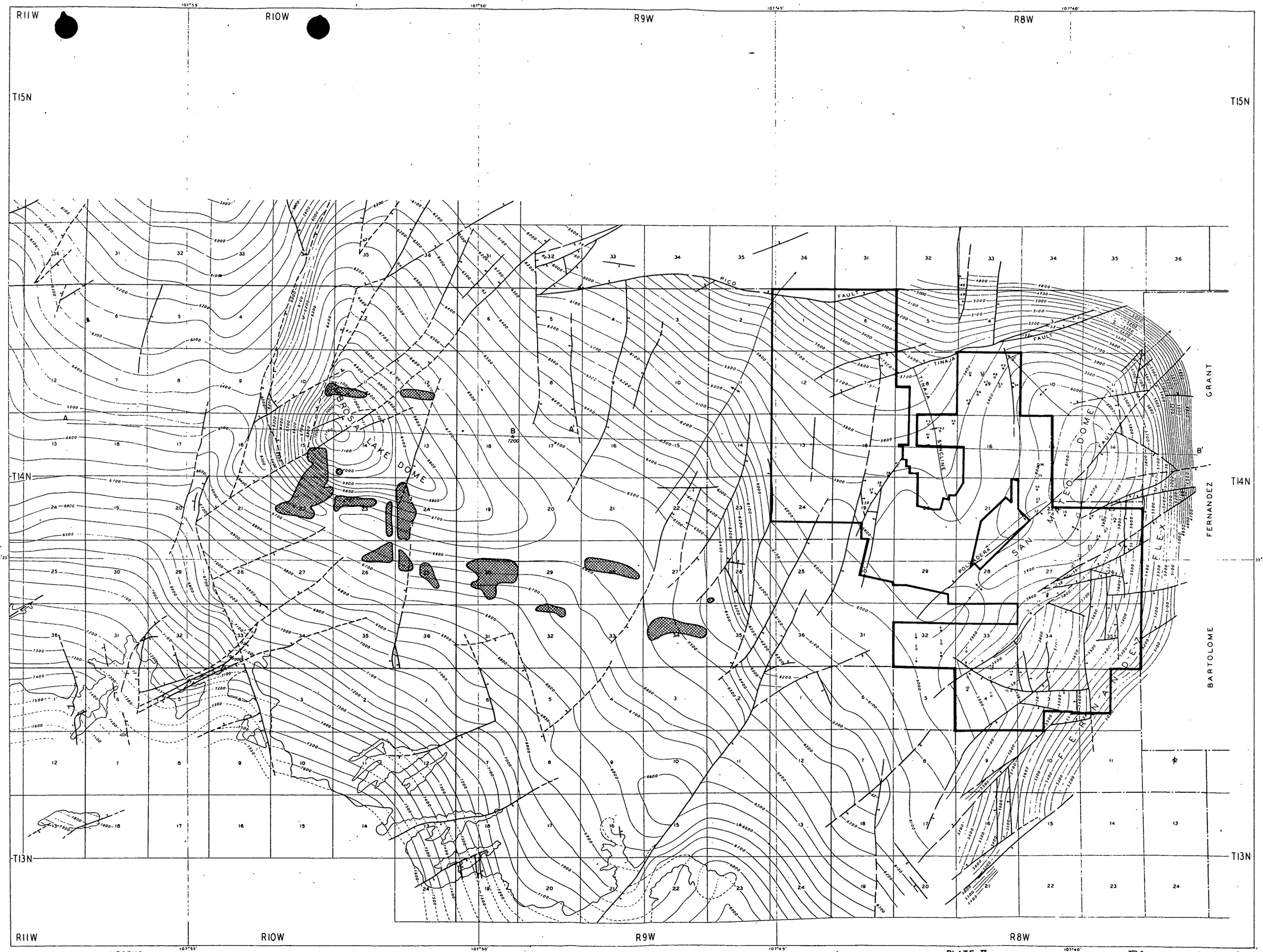
FLAGSTAFF, ARIZONA

MAP NO. 1

INDEX MAP
GRANTS DISTRICT
NEW MEXICO

0 10
MILES

Figure 1



LEGEND

- 6500 STRUCTURE CONTOUR LINES ON TOP OF DAKOTA SANDSTONE
- OUTCROP OF BASE OF DAKOTA SANDSTONE
- FAULT WITH DOWNTHROWN SIDE
- AXIS OF ANTICLINE
- AXIS OF SYNCLINE
- KNOWN ORE BODIES
- PROPERTY OUTLINE

PROPOSED DRILL HOLES
- • FIRST STAGE
- ○ SECOND STAGE

AMBROSIA MINING DISTRICT

McKINLEY COUNTY, NEW MEXICO

1/2 0 1 MILES

PLATE V
PROXIMITY MAP
SHOWING
STRUCTURE AND ORE BODY LOCATIONS
IN THE
AMBROSIA LAKE AND SAN MATEO AREAS
To accompany E. J. Longyear Co report on San Mateo Prospect

March, 1957
B. F. Sorensen
L. C. Rove

-4-

Figure 2
COMPOSITE: AEC AND V.C. KELLEY
1957
SCALE 2" = 1 MILE

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GENERAL GEOLOGY

The geology of the area of which the San Mateo Prospect is a part has been treated rather completely by Vincent Kelley* (see Appendix 1) and reference should be

*Kelley, Vincent - Geology and Uranium Possibilities of the San Mateo Dome Area, McKinley County, New Mexico

made to that report for details of stratigraphy and structure (see Geologic map, Plate II).

Stratigraphy.---The rocks exposed in the San Mateo Dome area are the Mancos and Mesaverde formations of Upper Cretaceous age. Unexposed, but lying below the Mancos, are (in descending order) the Dakota formation (Upper Cretaceous), Brushy Basin member of the Morrison formation (Jurassic), Westwater Canyon member of the Morrison, and Recapture Creek member of the Morrison.

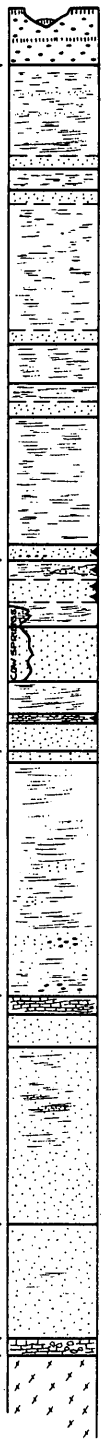
The uranium ore deposits of the Ambrosia Lake area occur in the Westwater Canyon member of the Morrison formation and it is presumed that, if present, they will have a similar occurrence in the San Mateo Dome area. Figure 3 is a stratigraphic column of the rocks in the Ambrosia Lake area by Mitchum. This column also holds for the San Mateo area with but slight changes in formation thicknesses.

STRATIGRAPHIC COLUMN

Precambrian to Tertiary
generalized composite

GRANTS DISTRICT, NEW MEXICO

a compilation by Thomas W. Mitcham, mining geologist



SYSTEM	FORMATION				
QUATERNARY & TERTIARY	Volcanic rocks and gravels including remnants of the Tertiary Santa Fe formation.				
CRETACEOUS	Mesaverde formation	Upper Gibson coal member and other shales and sandstones		500'	Shale, carbonaceous shale, sandstone, thin coal beds.
		Hosta sandstone member		100'	Sandstone, buff.
	Mancos shale	Satan tongue		200'	Shale, light tan, sandy, and dark gray.
		Hosta sandstone member		100'	Sandstone, buff.
	Mesaverde formation	Lower Gibson coal member		700'	Shale, gray, carbonaceous; sandstone; coal beds.
		Dalton sandstone member		100'	Sandstone, massive, buff, X-bedded.
	Mancos shale	Mulatto tongue		300'	Shale, light tan, sandy, and dark gray; both marine.
	Mesaverde formation	Dilco coal member		100'	Shale, thin sandstone, coal beds.
		Gallup sandstone member		65'	Sandstone, massive, light gray.
	Mancos shale	Main Body		900'	Shale, dark gray, marine, thin-bedded; a few sandstone beds, e. g. the Tres Hermanos sand beds near base.
	Dakota formation		80'		Sandstone, fine to coarse, buff, few shale partings.
JURASSIC	Morrison formation	Brushy Basin member		100'	Claystone, siltstone, green, l. gray.
		Westwater member		160'	Sandstone, orange-red, fine-coarse.
		Recapture member		140'	Claystone, siltstone, pink and white.
	Bluff sandstone		300'		Sandstone, eolian, orange-red.
	Summerville formation		150'		Siltstone, claystone, thin-, even-bedded, red, white.
	Todilto limestone		16'		Limestone, platy, gray, fine; also gypsum to East.
	Entrada sandstone		190'		Sandstone, massive, orange-red X-bedded, coarse; mottled red and white, fine at base.
	Wingate sandstone		40'		Sandstone, orange, coarse, massive, X-bedded, eolian.
TRIASSIC	Chinle formation		1600'	(1000')	Upper: siltstone, red, brown, purple; alternating with mudstone, red-brown lenses of sandstone.
				(200')	Middle: sandstone, hard, thick-bedded, yellow to gray; conglomerate X-bedded with purple siltstone.
				(400')	Lower: sandstone, silty, thin-bedded, purple to white; siltstone, mudstone, brown to purple; conglomerates, sandstone coarse, lenses.
	San Andres formation		110'		Limestone(lower); sandstone, white to buff(middle); limestone, fossiliferous(upper).
	Glorieta formation		200'		Sandstone, pure, white to buff.
PERMIAN	Yeso formation		1000'		Upper: sandstone; siltstone, pink, variegated, X-bedded; limestone, thin-bedded, slabby, blue-gray. Lower: sandstone, massive, X-bedded, quartzose.
PERMIAN(?)	Abo formation		700'		Sandstone, siltstone, brown, arkosic or quartzose, irregular bedding.
PENNSYLVANIAN	Madera limestone(?)		thin remnants		Limestone, impure; coarse clastics.
PRECAMBRIAN					Granitic and metamorphic rocks.

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Figure 3

Structure (See Plate III)

It is presently accepted that the San Mateo area is dominated structurally by a doubly plunging northeast-trending dome. The existence of the dome is based only on the information from two drill holes near the center of the dome, not more than 1,000 feet apart, and a 2,000-foot depth projection of the surface geology. The dome is asymmetrical, with the north and east flanks dipping 12° to 23° and the west and south flanks 2° to 5°. The present indicated closure is small---about 150 feet---however, this closure may have been greater at some time in the geologic past. (See Ore Possibilities below.)

The dome is broken by a number of northeast-trending faults. The throw on these faults is generally rather small. (See Plate IV.)

Ore Possibilities

According to Kelley, the major attraction of the San Mateo Dome area as a location for uranium deposits lies in its proximity to the Ambrosia Lake area (see Plate V), the presence of the Westwater sandstone member of the Morrison formation and its structure allowing the accumulation of asphaltic material in the Westwater sandstone. This is based upon exploration in the Ambrosia Lake area.

Young and Ealy,* writing about the Ambrosia Lake

*Young and Ealy - RME-86, Uranium Occurrences in the Ambrosia Lake Area, McKinley County, New Mexico

area say: "All known deposits occur in structures suitable for the trapping of hydrocarbons." At San Mateo the fact that two major oil companies have tested the structure for oil and gas seems to be substantial proof of the existence of the structure.

While the closure on the San Mateo dome is rather small now, it is possible that the closure was somewhat greater during the period of possible oil accumulation and uranium mineralization. Young and Ealy state that following accumulation of hydrocarbons in the Ambrosia Lake Dome, the region was tilted down to the northeast. This tilting would have the effect of reducing the closure on the San Mateo Dome.

Again Young and Ealy state that: "All known uranium deposits in the Ambrosia Lake area occur in bleached zones of the Westwater Canyon sandstone, and in the vicinity of major faults." According to G. R. Kennedy, who stated that he had examined the cuttings, the hole drilled by the Superior Oil Company on the San Mateo Dome cut bleached Westwater Canyon sandstone. Therefore we have not only Westwater Canyon sandstone (the presumed host) but bleached Westwater Canyon sandstone. Also present are the faults

(both major and minor) which they considered to be localizing factors for the Ambrosia Lake orebodies.

Generally the favorability as presented by Kelley appears in itself to afford exploration on the Dome. However, there are other factors that lend support to the picture and may in the future become more important as a guide to ore deposits. This is in reference to paleo-drainage patterns as discussed under General District Observations. The central area of the paleo-drainage belt, as it is thought to exist, and the trend of the known deposits in the Ambrosia Lake area project across the southern one-third of the San Mateo Dome as shown on Plate V. This adds to the attractiveness of the southern end of the San Mateo Prospect and the fact that the northern limit of the belt has not been defined, adds to the favorability of the northern part of the Prospect.

In summary we can say that all the necessary structures and environmental conditions needed to localize uranium deposits of the magnitude of those of the Ambrosia Lake area appear to exist in the San Mateo area, and that in the event that the paleo-drainage pattern passes across the Prospect, as it appears to do, the chances of a uranium deposit existing on the Prospect are very good. Knowing the risk involved and the favorability of the area we can then say that this area is a "good wild cat." This, in itself, may already be an understatement; because since our

studies have begun, late in January, newly discovered ore-bodies are coming closer and closer from the west. The latest report (3-11-57) indicates a new one virtually within rifle shot of the land boundaries on the southwestern quadrant of the holdings herein considered.

GENERAL DISTRICT OBSERVATIONS

Approximately 5-10 miles directly west of the San Mateo area is the Ambrosia Lake area where, to date, up to 41,000,000 tons of uranium ore (AEC estimates) have been blocked out by drilling. (See Plate V.)

Some general observations accumulated from published articles and personal communications with men working in the area are as follows:

1. All known ore occurs in bleached areas of the Westwater member of the Morrison formation where asphaltic material is present.
2. Structural traps suitable for the trapping of hydrocarbons play an important part in the localizing of ore deposits.
3. Faults are important but not essential.
4. Unbleached areas within the Westwater are not productive but these areas can be within close proximity to a bleached area that contains ore.
5. The orebodies located to date are much longer than they are wide, with the long direction generally east-west.
6. The several different orebodies occur in a most impressive ore trend which has been extended a distance of approximately eight

miles from Section 15, T 14 N, R 10 W, southwest to Section 35, T 14 N, R 9 W. (Zitting)*

*Geology of the Ambrosia Lake Area Uranium Deposits. McKinley County, New Mexico

7. It is thought by some that the orebodies are in an old paleo-drainage belt of Westwater age that to date has only been outlined along its southern edge. The width or northern extension of the belt is still undetermined.

8. The southern edge of this paleo-drainage belt passes just to the south of the San Mateo Dome and the trend of the known orebodies passes through the southern part of the San Mateo Prospect.

9. Some control of the orebodies is exerted by litholody of the sediments within the belt of paleo-drainage. Areas of poorly-sorted, porous, coarse arkosic sands within the Westwater member of the Morrison formation are favorable for ore deposition. Lithology can be a guide to ore. The direction of Westwater sedimentation is generally eastward and the direction of greatest permeability is assumed to parallel this trend. This feature has

affected the distribution of deposits in that the asphalt tended to string out in a rather narrow band to the east in the direction of highest permeability, rather than spreading in all directions and forming a uniform deposit around the dome.

10. A consideration of the vertical distribution of uranium deposits in the stratigraphic section supports the theory that the uranium has been derived from the connate waters of the formations. (Zitting, op. cit.)

11. It is not always easy to locate the Westwater-Recapture contact.

12. The different members of the Morrison formation will thicken and thin at the expense of each other; that is, the Westwater may invade or intertongue the Brushy Basin, giving a thick section of Westwater at the expense of the Brushy Basin. This results in conflicting thicknesses and positions for the different Morrison members in adjacent drill holes but is no cause for alarm.

13. Logging drill holes for three things is important---gamma ray logging for radioactivity; resistivity logging for lithology; and self-potential logging to determine porosity. This

gives a permanent record that does not involve hand examination of all drill cuttings.

14. Preliminary drilling on 2,000-foot centers has proven successful in locating the evidence and clues that lead to ore deposits.

15. If oriented intelligently, (and with some luck), fence lines drilled on 1,000-foot staggered centers should locate ore if it is present.

16. In ore, some offset holes need to be cored through the Westwater for orientation purposes, but most of the holes can be plug-drilled after coring has supplied sufficient information to plot relationships between chemical assays and radioactivity.

17. Equilibrium is good below 0.40% U_3O_8; however, above 0.40% U_3O_8 the ore is slightly out of equilibrium and is in favor of the chemical assay.

18. The thicknesses of the various formations should fall in the following range (given in ascending order):

    (1) Westwater and Brushy Basin - 350'

    (2) Dakota sandstone - 6-100'

    (3) Mancos shale - 1000-1020'

    (4) Mesaverde group:

Gallup sand - 100' (some channeling)

Dilco coal member - 150' (may have a stray sand at top - 50-100')

(5) Hosta sand - 100'

In summary, we can say that in the Ambrosia Lake area the chances of locating a uranium ore deposit are good where the Westwater member of the Morrison formation is in the vicinity of both a structural trap and a belt of paleo-drainage.

EXPLORATION

Recommended Reconnaissance Drilling

As previously mentioned under Ore Possibilities, the San Mateo Prospect is a favorable area for uranium exploration. With this thought in mind it is recommended that the area be explored by carrying out the following drilling program (see Plate VI).

As shown, all drilling is in areas where the depths through the Westwater are presumed to be less than 2,200 feet and where 34 of the 54 proposed holes are less than 2,000 feet deep. The drilling should be in two stages, the first stage intended to quickly drill over a large area to gain information aimed at orienting the second-stage drilling for more favorable results. This would be accomplished as follows:

Stage I (See Plate VI, holes shown with solid circles)

Start the project with one rig drilling on the south end of the Prospect with the intent of putting another rig to work in the north when conditions justify.

The holes to be drilled as follows:

1. On 2,000-foot centers along fence lines as shown.
2. Core every fifth hole through the Westwater or otherwise as justified.

3. All other holes to be plug-drilled to the base of the Westwater.

4. All holes logged by gamma ray, self-potential, and resistivity methods.

As drilling progresses and information accumulates, some discretion is to be used in determining the number and location of the remainder of the holes and subsequent coring.

Stage II (See Plate VI, holes shown with open circles)

The drilling in Stage II would follow the pattern shown on Plate VI (open circles) unless some ore is located or certain of the data accumulated would show that the holes might be more advantageous on a different pattern. This pattern and the coring to be done will be determined by the geologist in charge.

If Stage II drilling follows the pattern shown on Plate VI, approximately one out of five holes should be cored through the Westwater sandstone. All other holes will be plug drilled. The holes to be cored will be chosen so as to give an even coverage considering the coring done in Stage I.

Date of Estimate: March 13, 1957

Cost Estimate - San Mateo Prospect - Reconnaissance Drilling
(Estimated for 54 holes to be completed within six months, using one drill rig)

	(Estimate to nearest $1000)
Drilling	$167,000
101,000 feet rotary non-core drilling, @ $1.50 per foot.(1)	
2,000 feet of core drilling @ approximately $7.50 per foot.(1)	
Access road building; drill site preparation. .	30,000
RD6 Caterpillar and operator @ $12.50 per hour, furnished by driller, Some drilling and blasting required	
Sampling (allowance for)	3,000
Allowing for 750 samples @ $4 per sample.	
Engineering Services	20,000

Personnel

1 Project Engineer (salary, maintenance and related costs)	$9,000
1 Assistant	3,000
1 Stenographer	1,500
Office Quarters	600
Transportation (2 vehicles rented)	4,500
Communications	900

Electric hole logging.	$16,000
Century Geophysical Company, $3,300 per month. Services to consist of one logging truck allocated full time to job, and to provide strip logs of gamma ray, self-potential, and resistivity readings.	
TOTAL	$236,000
20% Allowance for contingencies	$47,000(2)

Including, but not limited to:

Overrun on circulation costs for drilling,
Engineering supplies and equipment,
Denver office and Senior counsel,
Drafting,
Map reproduction,
Core boxes,
Geochemical samples,
Sample sacks,
Office equipment rental and supplies,
and other incidentals.

TOTAL ESTIMATE	$283,000
	(Say - $300,000)

(1) See following page for notes on drilling cost figures and services, presented by Mr. J. K. Scott of Scott Brothers Drilling Company, Grants, New Mexico, at a meeting in the Longyear-Denver office on March 12, 1957.

(2) Admittedly a high figure, but believed justified in this case in view of what may be presently considered as a considerable number of unknowables for the beginning of a venture of this type.

Notes on Drilling Costs and Services Presented Orally by
J. R. Scott, of Scott Brothers Drilling Company, March 12, 1957

(1) Rotary non-core drilling:

$1.25 per foot, to 1500 feet.

$1.60 per foot, to 2000 feet.

$2.50 per foot, to 2600 feet.

Plus one-half the cost of lost circulation material (i.e. bran, cottonseed hulls, mud, etc.)

(2) Core drilling:

$7.50 per foot through the ore horizons in the vicinity of 1800 feet depths.

(3) Standby time:

$12.50 per hour - washing hole for probing, restore circulation, and other lost time incidentals.

(4) Water costs:

No charge - furnished by driller.

(5) Bit costs:

No charge - furnished by driller; (Diamond bit and reaming shell included).

(6) Extra Services:

No charge - airplane service to deliver parts for breakdowns, and two-way radio service for communications in the field.

(7) Sampling:

No charge - will provide dust and/or sludge samples of every 10 feet drilled. Will place core in trough, wash it off, and have ready for geologist's work and transfer to core boxes.

(8) Road building and drill site preparation:

After holes have been staked and identified for sequence in drilling, driller will build all required roads to site and prepare site, at $12.50 per hour for use of his "cat" equipment and operator.

(9) All of Scott's drillers are under $10,000 bond, each. He has 48 employees in residence at Grants, New Mexico. And, in 1956, Scott drilled in excess of one million feet of holes in this general area. Clients are: Phillips Petroleum, El Paso Natural Gas, Kerr McGee, AEC, Dunn Brothers, Pacific Uranium.

General Statement

It must be remembered that the foregoing drilling program can only be considered as reconnaissance drilling and that only the most shallow areas will be tested. This amounts to approximately one-third of the whole being tested and then only on a widely spaced reconnaissance basis. To thoroughly test the area will undoubtedly cost millions and our present aim is merely to extract the most information we can, as economically and quickly as we can, to better evaluate the deeper drilling area. In doing this we hope to locate ore in several of the holes but do not feel that the absence of ore in all of the holes will render the prospect unfavorable. It might be well to mention here that some of the better areas in the Ambrosia Lake area were explored at the rate of approximately $100,000 per claim. Also, that exploration by Rio de Oro on Section 26, T 14 N, R 9 W, as shown on Plate VI has outlined an orebody on one claim where 25 drill holes were put down in an area only the size of the space between any two of our contemplated drill holes. From this it can be seen that we are contemplating only an extremely modest approach for the San Mateo Prospect, but we must be continually aware of the potential problems and mounting exploration costs ahead. These problems should be recognized, treated, and recommendations made in a report following the two stages of drilling now proposed.

Respectfully submitted,

(Signed)
Bryan F. Sorensen

(Signed)
Louis C. Rove

(Signed)
R. C. Gebhardt

March 15, 1957
Denver, Colorado
416 Colorado Building

Report Distribution: (Copies)

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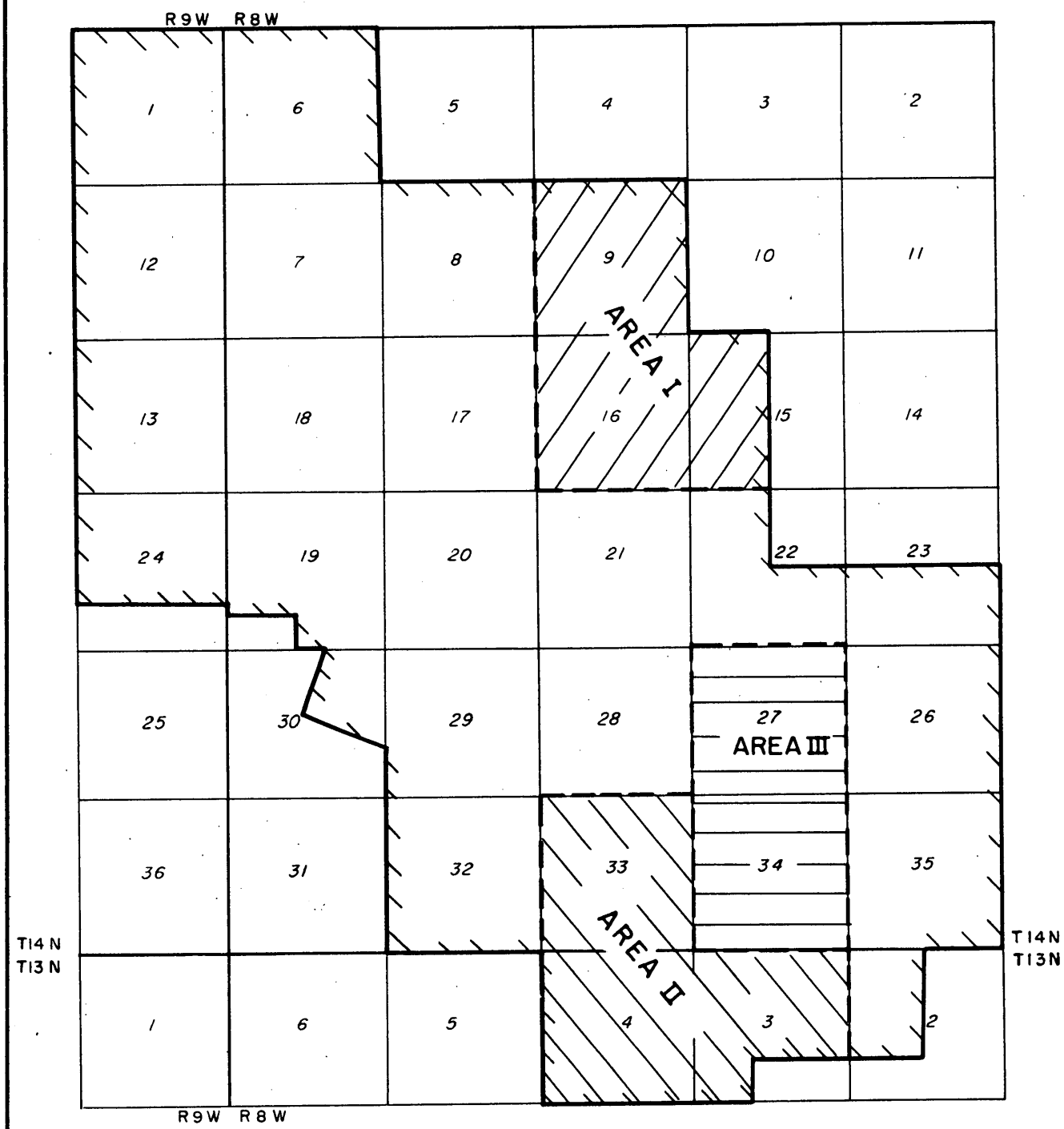
Longyear-Mpls.	4
Longyear-N.Y.C.	2
Longyear-Denver	2



Property Boundary

Areas where DMEA assistance would apply

Exhibit F
SKETCH MAP
SHOWING
THE SAN MATEO DOME PROJECT
PROPERTY AND AREAS
CONSIDERED FOR FURTHER EXPLORATION
MC KINLEY COUNTY, NEW MEXICO
E. J. LONGYEAR CO. GRANTS, N. M.
AUGUST 5, 1957 B. F. SORENSEN

LIST OF PROPERTIES OWNED OR ACQUIRED BY VIRGO [illegible]

Township 1[illegible] North, Range 6 West

Name of Claim	Filing Date	Recorded [illegible]
SECTION 6		
Falcon #609 - 644	8-22-55	[illegible]
Yucca #609 - 644	8-31-55	[illegible]
Luck # 1 - 36 (re-stake)	12-10-56	[illegible]
SECTION 7		
Falcon #3181 - 3216	10-12-55	[illegible]
Yucca #3185 - 3194	8-31-55	[illegible]
Yucca #3199 - 3216	8-31-55	[illegible]
Luck # 73 - 100 (re-stake)	12-10-56	[illegible]
SECTION 8		
Falcon #645 - 662	7-12-55	[illegible]
SECTION 9		
Falcon #3037 - 3072	8-25-55	11 MC 436-457
SECTION 15 (W½)		
*Big Elk #86 (No indication of	1-10-55	18 MS 414
*Big Elk #88 Yucca acquisition)	1-10-55	18 MS 416
Yucca 5401 - 5420	9-6-55	11 MC 361-380
Yucca 5406 - 5420 (Amended)	12-10-56	31 MC 460-474
SECTION 16		
*Big Elk #75 (No indication of	1-10-55	18 MS 403
Big Elk 77-88 Yucca acquisition)	1-10-55	18 MS 405-416
Yucca 5001 - 5036	9-6-55	11 MC 67-102
SECTION 17		
Falcon #3073 - 3108	8-25-55	11 MC 470-505
Yucca #3173 - 3190	5-8-56	24 MC 408-425

Area I

*Indicates claim boundaries extending into other sections and or multiple listed.

Name of Claim		Filing Date	Book and Page
SECTION 18			
Falcon #3109 - 3115		8-25-55	11 MC 506-512
Falcon #3109 - 3144	(Part of these must be re-files)	10-12-55	16 MC 324-359
Luck # 101 - 110		12-10-56	33 MC 623-632
SECTION 19			
*Big Elk #46 - 50	(No indica-	9-16-54	4 MC 589-591
Big Elk #55 - 62	tion of Yucca acquisition)	9-16-54	4 MC 593-597
Falcon #3145		8-25-55	11 MC 540
Falcon #3146 - 3180		8-25-55	12 MC 1 - 35
Yucca #3145 - 3146		5-8-56	24 MC 404-405
Yucca #3161 - 3162		5-8-56	24 MC 406-407
Yucca #3145 - 3148		8-31-56	32 MC 158-161
Yucca #3154 - 3180		8-31-56	32 MC 162-188
R. T. # 1 - 22	(re-stake)	12-10-56	33 MC 475-496
SECTION 20			
*Big Elk #18-20	(No indication	9-16-54	4 MC 575
Big Elk 27 - 30	of Yucca acquisition)		
Big Elk 37 - 40	"	9-16-54	4 MC 584-586
Big Elk 46 - 50	"	9-16-54	4 MC 589-591
*Big Elk #62	"	9-16-54	4 MC 597
*Big Elk #64	"	1-10-55	18 MS 393
Big Elk #63-64	"	1-10-55	18 MS 391-392
*Big Elk #65	"	1-10-55	18 MS 393
*Big Elk #67	"	1-10-55	18 MS 395
*Big Elk #69	"	1-10-55	18 MS 397
Big Elk #89	"	1-10-55	18 MS 417
Yucca #5119-5151	(Part is a re-	9-6-55	13 MC 185-217
Yucca #5148-5150	stake but the	8-31-56	32 MC 227-229
Yucca #5137-5141	descriptions	8-31-56	32 MC 230-234
Yucca #5153	are messed up)	8-31-56	32 MC 235
SECTION 21			
*Big Elk #8-9	(No indication	9-16-54	4 MC 570-570
*Big Elk #10	of Yucca	9-16-54	4 MC 571
Big Elk #64-76	acquisition)	1-10-56	18 MS 393-405
*Big Elk #78	"	1-10-55	18 MS 406

Name of Claim	Filing Date	Book and Page
SECTION 21 (continued)		
Big Elk #90 (No indication of	1-10-55	18 MS 418
*Big Elk #18 Yucca acquisition)	9-16-54	4 MC 575
Big Elk #19-20 "	9-16-54	4 MC 575-576
Yucca #5037-5072 "	9-6-55	13 MC 103-1[illegible]
Polvadera #1 - 6 (Acq.by Q.C.D.)	3-14-56	22 MC 80-8[illegible]
Polvadera #8 "	3-14-56	22 MC 87
Polvadera #7 "	3-14-56	22 MC 86
Polvadera #9 - 13 "	3-14-56	22 MC 88-9[illegible]
Ramon #5037 - 5072 (re-stake)	8-31-56	32 MC 335-370
SECTION 22 NE¼ and S½		
Yucca #5091 - 5118	9-6-55	13 MC 157-18[illegible]
*Polvadera #2 (Acq.by Q.C.D.)	3-14-56	22 MC 81
SECTION 23		
Polvadera #27A-28A(Acq.by Q.C.D.)	12-10-55	18 MC 340-341
Polvadera #29A-32A "	12-20-55	19 MC 82-85
Polvadera #18A-23A "	12-10-55	18 MC 331-336
Yucca #5073-5090	9-6-55	13 MC 139-156
Yucca #5073-5076 (This is pro-	8-31-56	32 MC 327-330
Yucca #5087-5090 bably a re- file)	8-31-56	32 MC 331-334
Falcon 5077-5081	5-8-56	24 MC 372-376
A. J. Claims #1-8 (re-stake)	12-10-56	33 MC 515-522
SECTION 26		
Falcon #4075-4110	9-6-55	14 MC 155-190
Polvadera 1A-12A(Acq.by Q.C.D.)	12-10-55	18 MC 313-325
Polvadero 17A "	12-10-56	18 MC 330
*Polvadera 18A-23A "	12-10-55	18 MC 331-336
Polvadera #24A-26A "	12-10-55	18 MC 337-339
*Polvadera 27A "	12-10-55	18 MC 340
Yucca #4075-4110	5-8-56	24 MC 42[illegible]-461
R. T. #23-40 (re-stake)	12-10-56	33 MC 497-514
*Polvadera #29A (Acq.by Q.C.D.)	12-20-55	19 MC 82
*Polvadera #31A-32A "	12-20-55	19 MC 84-85
SECTION 27		
✓ Falcon #4039-4074	9-6-55	14 MC 119-1[illegible]
*Polvadera #3 (Acq.by Q.C.D.)	3-14-56	22 MC 82

[illegible]

Name of Model	Model No.	Cost
Cordless:		
Panasonic Max Lumiere [illegible]	[illegible]	[illegible]
Panasonic [illegible]	[illegible]	[illegible]
Panasonic [illegible]	[illegible]	[illegible]
Panasonic [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
Corded:		
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[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Township 13 North, Range 8 West

Name of Claim		Filing Date	Book and Page
SECTION 2			
Coolent #1-2	(Acq. by O.C.D.)	6-22-55	7 MC 190
Mogabock #1-2	"	6-22-55	7 MC 192
Hanson #1-2	"	6-22-55	7 MC 194-[illegible]
Mae #1-2	"	6-22-55	7 MC 196-[illegible]
Bobcat #1-8	"	6-22-55	7 MC 200-205
Bobcat #9-10	"	6-22-55	7 MC 206-207
SECTION 3			
Hanson #1-2	(Acq. by O.C.D.)	6-22-55	7 MC 394-395
Mint #10-11	(No indication of Yucca acquisition)	8-16-56	30 MC 566-567
Wildcat #1-22	(Acq. by O.C.D.)	6-22-55	7 MC 410-417
SECTION 4			
Mint #10-11	(No indication of Yucca acquisition)	8-16-56	30 MC 566-567
Wildcat #1	(Acq. by O.C.D.)	6-22-55	7 MC 410
Wildcat #2	"	6-22-55	7 MC 412
Wildcat #3	"	6-22-55	7 MC 414
Wildcat #4	"	6-22-55	7 MC 416
Wildcat #5	"	6-22-55	7 MC 418
Roberto #9-17	"	6-15-55	7 MC 183-191
Rancho #2-8	"	6-3-55	7 MC 12-18
Rancho #10-11	"	6-3-55	7 MC 20-21
Rancho #24	"	6-3-55	7 MC 30
Rancho #21-23	"	6-3-55	7 MC 31-33

APPENDIX II

MINING LEASE

between

YUCCA URANIUM, INC.

and

G. R. KENNEDY AND HENRY C. ADAMS

(OCTOBER 29, 1956)

and an

AMENDMENT TO THE MINING LEASE

[illegible]

[illegible]

[illegible]

[illegible]

[illegible], exploration, drilling, mining and [illegible] and the sole and only right [illegible] use of any land [illegible] thereafter,

NOW, THEREFORE, in consideration of [illegible] Ten Dollars ($10.00) in hand paid by Lessee to Lessor, receipt whereof is hereby acknowledged by Lessor, and in consideration of the payments to be made as hereinafter provided, and the covenants and agreements hereinafter contained, to be kept and performed by all of the parties hereto, the said Lessor hereby demises, leases and lets, and by these presents does demise, lease and let unto Lessees, in the proportions of an undivided One-half (1/2) interest to C. C. Kennedy and an Undivided One-half (1/2) interest to Henry C. Adams, all of that certain land, mining claims, mineral and mineral rights situated in the following townships and ranges in McKinley County, New Mexico, as follows, to-wit:

> 2480 Acres of land located in Sections [illegible], 15, 17, 18, [illegible], 20, 21, 22, 27, 28, 29 and 35, Township [illegible] North, Range [illegible] West, N.M.P.M., and
>
> Section [illegible], Township [illegible] North, Range 9 West, N.M.P.M., and
>
> Sections 2, [illegible], Township 13 North, Range 9 West, N.M.P.M., also including [illegible] and all

right, title and interest of said Lessor in and to [illegible]

[illegible]

hereafter created, thereby it may be relieved from performing annual assessment work, if the same shall be necessary or desirable.

4. Lessee shall and hereby agree to indemnify, protect and save harmless said Lessor from and against the following specific claims, demands and damages, and none other, arising out of Lessee's negligence or actionable faults in connection with Lessee's work and operations hereunder, to-wit:

(a) For damage to property of and injury or death to third persons;

(b) Injury to or destruction of livestock and damage to permanent buildings and structures of Lessor situated on the demised property, but to no other property or property interests of Lessor whatsoever, and;

(c) Liens or lien claims on account of labor performed upon or materials furnished to the demised property at instance of Lessee.

Lessee agrees to carry such insurance covering all persons working in or on said demised property for Lessee as will fully comply with the provisions of the statutes of the State of New Mexico covering workmen's compensation and occupational disease, as are now in force or as they may hereafter be changed or amended.

[illegible] to make an prior conveyance of [illegible] or [illegible].

5. Lessee, [illegible] certificate [illegible] shall have, hereby agrees to pay to Lessors the [illegible] Fifteen Thousand Dollars ($15,000.00) payable [illegible] day [illegible], 19[illegible].

(c) Five Thousand Dollars ($5,000.00) [illegible] drilling and completion of well, performed by the [illegible] hereof.

(d) Ten Thousand Dollars ($10,000.00) [illegible] placed in escrow in THE NATIONAL BANK OF ALBUQUERQUE, Albuquerque, New Mexico, and to be delivered to Lessors [illegible] upon or prior to the [illegible] day of the above mentioned [illegible] on January 2, 19[illegible], whichever event occurs [illegible].

6. Lessee also agrees to pay Lessors [illegible] per acre ($20) of all [illegible] produced, saved and [illegible] sold therefrom, said payment to be made on or before the [illegible] day of the month succeeding the month of [illegible] and receipt of [illegible]. [illegible] or more persons [illegible] entitled to royalty hereunder, Lessee may withhold payment thereof until such [illegible] with a [illegible] instrument executed by all such persons designating [illegible] to receive payment therefor. In the event of [illegible] failure of title, it is agreed that if Lessee shall [illegible]

[illegible] to [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible]

[illegible]. Any [illegible] [illegible] [illegible]

the [illegible] of this [illegible], [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

However, lessee [illegible] [illegible] [illegible] [illegible] [illegible]

from the production of any [illegible] [illegible] [illegible] [illegible]

[illegible] of $[illegible] per acre, lessee will pay to lessor, or

to lessee's credit as provided for above, a sum of money

which when added to lessor's royalty revenue will equal

$[illegible] per [illegible] for each [illegible] of [illegible] [illegible] [illegible]

[illegible] date lease as of July 1st of the [illegible] [illegible]

[illegible]. Lessee also agrees to do all necessary

assessment work prior to April 1, 1987, and hereby specifically agree to notify lessor by registered mail, [illegible]

[illegible] on which assessment work has been done by April 1,

1987. However, on or before May 1, 1987, by registered

letter, lessee agrees to notify lessor of the [illegible]

[illegible] in the possession of the assessment work [illegible]

[illegible] work [illegible] to be [illegible], or to advise if

they are able or unable to complete [illegible] [illegible] [illegible]

If lessee are unable to complete said assessment work,

lessee agree that the lease shall have the [illegible]

[illegible]

Standard Form 63
Jan. 1952

U. S. GOVERNMENT

MEMORANDUM OF CALL

Date	Time
1/27	3:05

TO— Mr. Rubin

☑ YOU WERE CALLED BY— ☐ YOU WERE VISITED BY—

Mr. Rourke

Telephone:	Number or code	Extension
		5295

☐ PLEASE CALL
☐ WILL CALL AGAIN
☐ RETURNING YOUR CALL
☐ WAITING TO SEE YOU
☐ WISHES AN APPOINTMENT

Left This Message:

Received by— Edna

☆ U. S. GOVERNMENT PRINTING O[illegible]95 16—65931-1

[illegible]

[illegible] to the sale Terry Thomas [illegible] to the [illegible] work under the year 1960 and 1961, [illegible] Terry Thomas [illegible] work to be done by Lessee under the terms of this lease.

10. The parties hereto agree that [illegible] when possible, will be done so in the name of the [illegible].

11. The parties also agree hereto that [illegible] that the parties hereto agree [illegible] for the processing of ore owned by the parties hereto [illegible] may also ore owned by others, this lease reserves the right to participate to sale [illegible] to the extent of [illegible] than twenty-five Percent (25%) of Lessee's [illegible] Lessor reserves the right to [illegible] for [illegible] other property other than that leased herein [illegible] longer to Lessor.

12. Lessor to pay per cent also [illegible] the owner of other lands [illegible] acres [illegible] in Terry County, New Mexico, to-wit:

Sections 7, 8, 9 and the South Half of Section 18, the South [illegible] Section [illegible] of [illegible] 26, [illegible] Township [illegible] South, Range [illegible] East, [illegible]

Tract [illegible] Acres of Section [illegible], Section [illegible], [illegible] Township [illegible] South, Range [illegible] East, [illegible]

[illegible]

[illegible]

[illegible]

to any reason arising out of any term, covenant or condition herein, excepting only the following obligations to which the express provisions hereof have been deemed to be made and unconditional for the following terms:

(a) Lessee's obligation to pay corporation royalty on ores mined and sold.

(b) Lessee's obligation to keep the premises necessary free from liens or encumbrances occasioned by the act or default of Lessee.

(c) Lessee's obligation to pay taxes due by them in the execution of these leases.

(d) Lessee's option to do all discovery work and development work except as provided in Paragraph 22 herein.

Said termination by Lessee may be effected by written notice mailed to Lessor at 1413 16th Street, N. W., Albuquerque, New Mexico, stating such intention.

22. Notwithstanding the other provisions of this of the other covenants herein, Lessee will not be in default of their obligations to do annual assessment work if written notice of intention so to do is mailed on or before the first day of April of the year in which the assessment work is to be done.

23. The rights of either party hereunder may be waived in whole or in part, and the obligations herein shall extend to their heirs, successors and assigns or change or alter the terms of the lease in any respect, hereby permitted, shall inure to

[illegible]

STATE OF NEW MEXICO:

COUNTY OF BERNALILLO:

On this 29th day of October, 1956, before me personally appeared MELVIN E. RICHARDS, to me personally known who being by me duly sworn, did say that he is the President of VINCA MINING, INC. and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said MELVIN E. RICHARDS acknowledged said instrument to be the free act and deed of said corporation.

In witness whereof, I have hereunto set my hand and affixed my official seal on this, the day and year in this certificate above written.

Evelyn Terrell
Notary Public

My Commission Expires Nov. 5, 1958

STATE OF NEW MEXICO:
COUNTY OF BERNALILLO:

On this 29th day of October, 1956, before me personally appeared MELVIN E. RICHARDS, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in the certificate above written.

Evelyn Terrell
Notary Public

My Commission Expires Nov. 5, 1958

STATE OF NEW MEXICO:

COUNTY OF BERNALILLO:

On this 29th day of October, 1996, before me personally appeared LINDSEY J. GRAY, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Evelyn Harris
Notary Public

Post Office

My Commission Expires Nov. 5, 1998

STATE OF NEW MEXICO:

COUNTY OF BERNALILLO:

On this 29th day of October, 1996, before me personally appeared FRANZ FARAH, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Evelyn Harris
Notary Public

Post Office

My Commission Expires Nov. 5, 1998

THE STATE OF TEXAS:
COUNTY OF HARRIS:

Before me, the undersigned authority, on this day personally appeared [illegible], known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed, and in the capacity therein stated.

Given under my hand and seal of office, this the [illegible] day of October, A. D. 19[illegible].

[illegible]
Notary Public in and for
Harris County, Texas

STATE OF NEW MEXICO)

COUNTY OF [illegible])

On this 28th day of October, 19[illegible], before me personally appeared [illegible], to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

[illegible]
Notary Public

[illegible]

My Commission Expires [illegible]

THE STATE OF TEXAS)
COUNTY OF HARRIS)

Before me, the undersigned authority, on this day personally appeared G. [illegible], known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed, and in the capacity therein stated.

Given under my hand and seal of office, this the 29th day of October, A. D. [illegible].

[illegible]
Notary Public in and for
Harris County, Texas

[illegible]

[illegible]

[illegible]

[illegible]

Sections [illegible], 22, 27, 28, [illegible], Township [illegible] North, Range [illegible] West, N.M.P.M.;

Section [illegible], Township [illegible] North, Range [illegible] West, N.M.P.M.;

Section 2, [illegible] Township [illegible] North, Range [illegible] West, N.M.P.M.;

Sections [illegible] and the South half of Section 22, [illegible] and all of Sections [illegible], 26, [illegible], Township [illegible] North, Range [illegible] West, N.M.P.M.

North half [illegible] of Section 21, Sections 12, 13, Township [illegible] North, Range 9 West, N.M.P.M.

and

[illegible] Indian [illegible] Mexico,

NOW, THEREFORE, in consideration of [illegible] for Dollars ($50.00) in hand paid by Lessee to Lessor receipt whereof is hereby acknowledged by Lessor, [illegible] agree as follows:

1. Pursuant to the Mineral Lease of [illegible] 20, 1956 [illegible] as follows:

"1. Lessee does hereby [illegible] royalty, for [illegible] of the [illegible] per day for [illegible] said royalty which is paid on or before [illegible] 15th day of the next succeeding calendar [illegible] following the sale of the ore or [illegible] by the Lessee. Time is the essence [illegible] said hereto. Upon the dollar value [illegible] of such ore [illegible] the [illegible] application to the usable metal content of such ore of the price schedule for such [illegible] established and currently in effect by the Atomic Energy Commission or other [illegible] authorized agency before allowance for [illegible] concentration and development and [illegible] expense. Moreover, if at any time hereafter [illegible] conversion agency shall have in effect [illegible]

[illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

[illegible]

[illegible]

STATE OF NEW MEXICO:

COUNTY OF BERNALILLO:

On this 12th day of December, 1956, before me personally appeared MELVIN E. RICHARDS, to me personally known who being by me duly sworn, did say that he is the President of YUCCA URANIUM, INC. and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said MELVIN E. RICHARDS acknowledged said instrument to be the free act and deed of said corporation.

In witness whereof, I have hereunto set my hand and affixed my official seal on this, the day and year in this certificate above written.

Frederic George Campbell /s/
Notary Public

My Commission Expires:
September 30, 1959

STATE OF NEW MEXICO:

COUNTY OF BERNALILLO:

On this 12th day of December, 1956, before me personally appeared WILLIAM MOYNER, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

In witness thereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Frederic George Campbell /s/
Notary Public

My Commission Expires:
September 30, 1959

STATE OF NEW MEXICO:

COUNTY OF BERNALILLO:

On this 12th day of December, 1956, before me personally appeared LINDSEY J. GREEN, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Frederic George Comstock /s/
Notary Public

My Commission Expires:
September 30, 1959

STATE OF NEW MEXICO:

COUNTY OF BERNALILLO:

On this 12th day of December, 1956, before me personally appeared FRANK FARIAS, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Frederic George Comstock /s/
Notary Public

My Commission expires:
September 30, 1959

STATE OF NEW MEXICO

COUNTY OF BERNALILLO

Before me, the undersigned authority, on this day personally appeared [illegible] to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed, and in the capacity therein stated.

Given under my hand and seal of office, this the 11th day of December, A. D. 1950.

[illegible]
Notary Public

My Commission Expires
May 28, 1952
[illegible]

[illegible]

APPENDIX III

MINING LEASE

between

YUCCA URANIUM, INC.

and

G. R. KENNEDY AND HENRY C. ADAMS

(NOVEMBER 24, 1956)

and an

ADDENDUM TO THE MINING LEASE

[illegible]

[illegible]

[illegible]

consideration, by virtue of [illegible] the [illegible], [illegible] leases have been cancelled and are no longer in force and effect, and

WHEREAS, paragraph twenty (20) of the mining lease dated October [illegible], 1956, between [illegible], and C. R. [illegible] and [illegible] C. [illegible] provides for the same that upon [illegible] of the leased premises the above described [illegible] lands shall be included in the [illegible] of the land covered by the [illegible] mining lease dated October [illegible], 1956, between lessor [illegible] and lessee herein, subject to the payment of [illegible] consideration as set out in said paragraph twenty (20).

NOW, THEREFORE, LESSOR, in consideration of [illegible] Dollars ($[illegible].00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, does hereby demise, lease and let unto LESSEE, in the proportion of an undivided one-half (1/2) to C. R. [illegible] and an undivided one-half (1/2) to [illegible] C. [illegible], all of the above-mentioned lands, mining claims, minerals and mineral rights situated in the following section in McKinley County, New Mexico, to-wit:

> Section [illegible], [illegible] of Section [illegible], [illegible], Township [illegible] North, Range [illegible] West, N.M.P.M.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] It has [illegible] to be the [illegible] [illegible] [illegible] [illegible] Corporation, and that is the judgment of the [illegible] attorneys said leases are now [illegible], terminated, and cancellation that is the [illegible] Corporation should hold a [illegible] view, that is to say, contend that the leases are in full force and effect, that lessor and lessees should, by joint and cooperative [illegible] [illegible] efforts to have a determination [illegible] as to the validity of said leases at the earliest practicable date in a court of the federal [illegible] jurisdiction of the [illegible]. It is further understood that should [illegible] [illegible] to enter in its [illegible] that said Hornsby leases are no longer binding, then in such event lessee will not be entitled to claim or hold lessor for damages by reason [illegible] [illegible] or by reason of [illegible] of the filing leases dated [illegible] 19[illegible]. Lessor, upon the [illegible] of the [illegible], does [illegible] that it will [illegible] [illegible] to lessor a [illegible] and [illegible] option to a lease [illegible], in consideration [illegible] the [illegible] filing leases, in the [illegible] that lessor can [illegible] to lessee a valid [illegible] lease covering said [illegible]

[illegible]

[illegible] above written.

[illegible]

My Commission Expires [illegible]

STATE OF [illegible])
) SS
COUNTY OF [illegible])

On this [illegible] day of [illegible], 19[illegible], before me [illegible] appeared [illegible], to me known to be the person [illegible] who executed the foregoing instrument, and [illegible] that he executed the same [illegible] free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year [illegible] above written.

Notary Public

My Commission Expires [illegible]

STATE OF [illegible])
) SS
COUNTY OF DELAWARE)

On this [illegible] day of [illegible], 1956, before me [illegible] appeared A. [illegible], to me known to be the person [illegible] who executed the foregoing instrument, and [illegible] that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this [illegible] above written.

Notary Public

APPENDIX IV

AGREEMENT BETWEEN KENNEDY-ADAMS

and

E. J. LONGYEAR COMPANY

IV. Kennedy-Adams/Longyear Agreement

AGREEMENT

THIS AGREEMENT, made and entered into as of the 1st day of April, 1957, by and between G. R. KENNEDY and HENRY C. ADAMS, Parties of the First Part (hereinafter called "Kennedy and Adams"), of Houston, Texas, and E. J. LONGYEAR COMPANY, a corporation organized under the laws of the State of Delaware, with its principal office at 1700 Foshay Tower, Minneapolis, Minnesota, Party of the Second Part (hereinafter called "Longyear"),

WITNESSETH:

WHEREAS, Kennedy and Adams represent that under date of October 29, 1956, a Mining Lease was entered into between Yucca Uranium, Inc., as Lessor, and Kennedy and Adams, as Lessees, wherein the said Lessor demised, leased and let to Kennedy and Adams, in the proportions of an undivided one-half interest to each, all of that certain land, mining claims, minerals and mineral rights situated in the following sections, townships and ranges in McKinley County, New Mexico, as follows, to wit:

> 8620 acres of land located in Sections 6, 18, 17, 16, 15, 19, 20, 21, 22, 27, 28, 30 and 32, Township 14 North, Range 8 West, N.M.P.M. and
>
> Section 1, Township 14 North, Range 9 West, N.M.P.M., and
>
> Sections 2, 3, and 4, Township 13 North Range 8 West, N.M.P.M.,

said Lease having been recorded in Book 15, Pages 301-311, Lease Records of McKinley County, State of New Mexico, and a copy of said Lease as so recorded is herein referred to and made a part of this Agreement as Exhibit "A" hereto; and

WHEREAS, Kennedy and Adams represent that under date of November 24, 1956, a Mining Lease was entered into between Yucca Uranium, Inc. as Lessor, and Kennedy and Adams, as Lessees, wherein the said Lessor did demise, lease and let unto said Lessees, in the proportions of an undivided one-half interest to each, all of that certain land, mining claims, mineral claims, minerals and mineral rights situated in the following described sections in McKinley County, New Mexico, to-wit:

> Sections 7, 8 and 9, and the South Half of Section 23, the South 480 acres of Section 33 and all of Sections 35, 26, 34, Township 14 North, Range 8 West, N. M. P. M.
>
> Also, the North 480 acres of Section 24, Sections 12 and 13, Township 14 North, Range 9 West, N. M. P. M.

which Lease is recorded in Book 15, Pages 315, 319, Lease Records of McKinley County, New Mexico, and a copy of said Lease as so recorded is hereby referred to and made a part hereof, together with a copy of an addendum to said Lease executed by Lessor and Lessees dated November 24, 1956 as Exhibits "B-1" and "B-2", respectively; and

WHEREAS, an amendment dated December 10, 1956, to said Leases has been executed by the parties thereto, which has been recorded in Book

[illegible]

[illegible] copy of said amendment, [illegible] Plan, as [illegible] part hereof as Exhibit "C" [illegible]

WHEREAS, Kennedy and Adams further [illegible] that on [illegible] March 12, 1957, a Mining Lease was entered into between [illegible] as Lessor, and Kennedy and Adams, as Lessees, wherein [illegible] delivered, lease and let unto Kennedy and Adams [illegible] mining claims located in Sections 17, [illegible] Township [illegible] North, Range [illegible] West, N.M.P.M., and Sections [illegible] Township [illegible] North, Range [illegible] West, N.M.P.M., and in McKinley County, New Mexico, [illegible] been recorded in Book 17, Pages 491-[illegible] of the records of McKinley County, State of New Mexico, and a copy of said lease as so recorded is referred to and made a part of this Agreement as Exhibit "D" hereto; and

WHEREAS, Kennedy and Adams represent and confirm that the names of the mining claims covered by said Leases, and the recording data pertaining thereto are as shown on the "Schedule of Mining Claims" which is referred to in this Agreement and attached hereto as Exhibit "E"; and

WHEREAS, there is attached to this Agreement and made a part hereof by reference as Exhibit "F" hereto, a Map prepared by Longyear and dated March 15, 1957, showing, among other things, the following:

(a) The areas of land covered by and included under the above described leases and amendments thereto, copies of which are hereunto annexed as Exhibits "A", "B-1", "B-2", "C", and "D";

Received by— Edna

16—65931-1

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(b) A so-called "Area of Interest" which is a term to be used in this Agreement to describe the area of lands, and the mineral rights and mining claims therein, as shown on the Map which is attached hereto as Exhibit "F"; when used herein the term "Area of Interest" shall mean that area designated as such on Exhibit "F"; and

WHEREAS, Kennedy and Adams do hereby represent and warrant, as an inducement to have Longyear execute this Agreement, that the said Leases, as amended, Exhibits "A", "B-1", "B-2", "C" and "D", and the underlying and base Leases thereto, are all valid and subsisting and in full force and effect, and all cash payments and other duties of performance by Lessees thereunder, to and including the date of this Agreement, have been made and performed in full; and

WHEREAS, it is the desire of the parties that Kennedy and Adams shall assign to Longyear all of their right, title and interest in and to said Leases, as amended, Exhibits "A", "B-1", "B-2", "C" and "D" hereto and convey to Longyear all of Kennedy's and Adams' right, title and interest in, to and under the mining claims to which said Leases [illegible] to vest the full ownership of said Leases and rights of Lessees [illegible] in Longyear, subject only to the reservations [illegible] in favor of Kennedy and Adams.

NOW, THEREFORE, it is agreed by and between [illegible] in consideration of the mutual covenants hereinafter [illegible]

1. Assignment and Conveyance to Longyear. Subject to the reservations hereinafter expressly set forth in this Agreement, Kennedy and

Adams hereby bargain, sell, assign, transfer, convey and deliver to Longyear:

(a) All of Kennedy's and Adams" right, title and interest of every type and description in, to and under said Leases, copies of said Leases and amendments thereto being attached as Exhibits "A", "B-1", "B-2", "C" and "D" to this Agreement, plus any and all right, title and interest now or hereafter acquired by Kennedy and Adams in, to or under said Leases, amendments, and all of the same, and any existing or new Leases or agreements which Kennedy and Adams, or either of them, may acquire affecting the lands covered by Exhibits "A", "B-1", "B-2", "C" and "D";

(b) All of Kennedy's and Adams' right, title and interest in, to and under the mining claims listed in Exhibit "E", plus any and all right, title and interest which Kennedy and Adams may acquire in the future concerning said mining claims listed in Exhibit "E"; Kennedy and Adams warrant and represent to Longyear that the said Leases, as amended, Exhibits "A", "B-1, "B-2", "C" and "D", and the underlying or base Leases thereto, are valid, subsisting, in good standing and in full force and effect, and that all payments, work and duties required to be made or performed thereunder by the Lessees of said Leases have been paid and performed in full to the date of this Agreement; and

[illegible] including but not [illegible] [illegible] [illegible] rights which Kennedy and Adams may now have or [illegible] acquire pertaining to any of the lands shown as the "Leased Premises" on Exhibit "E" hereto. The lands, claims and mineral rights [illegible] said Leases and herein assigned shall herein sometimes be [illegible] as the "Leased Premises".

2. Provision for Recordable Assignment. Contemporaneously with execution of this Agreement, Kennedy and Adams will execute and deliver to Longyear a short form of assignment of their right, title and [illegible] as Lessees, in said Leases, in accordance with foregoing paragraph. This provision shall not be construed as affecting the rights of Longyear to record this Agreement should it see fit to do so.

3. Examination and Clearing of Titles. Kennedy and Adams will furnish all documents and abstracts in their possession and previous legal opinions to facilitate such examination of titles of the Leased Premises as Longyear may from time to time deem necessary. It is understood that approximately ten per cent (10%) to twenty-five per cent (25%) of the mining claims located upon the Leased Premises are subject to adverse claims and that Kennedy and Adams in cooperation with the Lessors, have been endeavoring to clear title to said claims. Kennedy and Adams will cooperate with Longyear and lend their best efforts toward removal of said adverse claims by negotiation or legal action as may appear advisable to Longyear.

[illegible] date of the [illegible] and [illegible]

Atlantic and the Lessor, by Longyear [illegible] Provided, [illegible] Longyear [illegible]

[illegible] to compensate Kennedy [illegible] of [illegible]

[illegible] of the condition of performance by the [illegible]

[illegible] compensation provided in the [illegible]

I. Covenants by Longyear. Longyear [illegible]

Kennedy and Lessor that it will [illegible]

(a) Employ or perform such work and labor [illegible]

[illegible] The [illegible] Premises [illegible] necessary [illegible]

[illegible] expenditures for statutory assessment work and [illegible]

[illegible] by the Lessor [illegible]

(b) Drill, or cause to be drilled, the [illegible]

[illegible] the [illegible]

[illegible] depicted on the [illegible]

[illegible] and [illegible]

[illegible] to be said Leases [illegible] and effect.

(c) Enter upon said Premises [illegible] after [illegible]

date of this Agreement and drill [illegible] to be [illegible]

[illegible] thousand (100,000) [illegible] of [illegible]

lands described in said Leases, before [illegible]

the said requirement of one hundred thousand (100,000) [illegible]

not in addition to, but will include or be included in the drilling requirement

[illegible] paragraph [illegible] shall [illegible]

[illegible] and use [illegible] efforts to [illegible] the lessors in the leases hereinabove [illegible].

(c) Provided, however, that [illegible] understood and agreed that [illegible] shall be subject to any liability, damages, [illegible] tion, or legal proceedings of any kind or nature of Kennedy and Adams, lessors or any others, for a failure to perform any of the [illegible] performance described in subparagraphs (a) to (b), inclusive, [illegible] or any other promises or obligations under the [illegible] of the said Leases; provided that this subparagraph [illegible] not relieve Longyear from the obligations contained in paragraphs [illegible] 8 and [illegible] of this Agreement; and, further, a default by Longyear [illegible] subparagraphs (b) to (d) of this paragraph 4 shall be grounds for [illegible] of this Agreement, subject to the provisions of paragraph [illegible] of the [illegible] of Kennedy and Adams, and if, at the time of such termination, no ore has been produced from the Leased Premises or any [illegible] property or interests under paragraphs 10 or 11 of this Agreement, the termination shall be considered an abandonment of the Leased Premises for the purposes of paragraph 8 of this Agreement; provided further, that should Longyear release at one time or from time to time, or abandon any portion of the Leased Premises, less than the whole thereof, or should

[illegible] shall into the ore body or [illegible] relating to [illegible] [illegible] the ore bearing horizon.

(b) The expression "pre-production expenditures" [illegible] mean all costs and expenses incurred by Longyear after the date of this Agreement and before production is begun, in connection with and in preparation for quieting and perfecting title (not deductible under sub paragraph C, above) investigation, development and exploration as authorized by said Leases and this Agreement, including but not restricted to the costs of machinery, equipment and supplies, but without allowance for depletion or interest paid on funds obtained to finance pre-production expenditures. Without limiting the generality of the foregoing pre-production expenditures shall include home office overhead expenses and supervisory salaries which are directly or indirectly related to operations, including allocation in accordance with the usual and commonly accepted principles of Western Mine Accounting, or insurance, rent, clerical salaries, telephone, telegraph and legal services, the acquisition cost of items used in connection with any of such operations of Longyear, reasonable rental charges for equipment owned and used by Longyear in connection with such operations, reasonable transportation expenses of employees, professional staff, materials and quipment to the site of the work and for the return of the equipment and such employees and staff

there be a title failure as to any portion of the Leased Premises, the obligations of Longyear to accomplish assessment work under subparagraph (a) and to pay rentals under subparagraph (b), shall be proportionately reduced in the same ratio as the acreage lost by title failures bears to the total acreage of the Leased Premises (in the case of title failure) or the total acreage retained bears to the total acreage of the Leased Premises (in the case of a release or abandonment of acreage). Should it be necessary to fix a date to apply the formulae in the preceding sentence, the date shall be as of June 1, in the case of subparagraph (a) and a date fifteen (15) days before rentals would otherwise be due in the case of subparagraph (c), applying to rental payments.

5. Reservation of Production Payment. Kennedy and Adams do hereby reserve to themselves and Longyear agrees to pay to Kennedy and Adams (one-half to each of them) a production payment, as hereinafter described and limited, relating to ores produced, mined and sold from the Leased Premises, determined, calculated and to be paid as hereinafter specified:

(a) The production payment reserved to and in favor of Kennedy and Adams shall amount to 37.5% of the gross receipts derived and received by Longyear from ores produced and sold from the Leased Premises, after payment of all royalties, commencing with the first of such ores produced and sold and continuing until the aggregate sum of Two Hundred and Fifty Thousand Dollars ($250,000.00) shall have been paid to Kennedy and Adams

(one-half) or One Hundred Twenty-Five Thousand Dollars ($125,000.00) to each of them), when the sum of Two Hundred Fifty Thousand Dollars ($250,000.00) has been paid to Kennedy and Adams (one-half, or One Hundred Twenty-Five Thousand Dollars ($125,000.00) to each of them) this production payment shall completely cease and terminate.

(b) The production payment shall be computed on the basis of the price at which ores are actually sold at the mouth of the mine or the value thereof at such point if thereafter milled or processed before sale, without deduction of the cost of mining and delivery to the mouth of the mine;

(c) There shall not be included in gross receipts for purposes determining the amount of the production payment, any bonus, development, incentive payment, or transportation allowance granted or given by any governmental instrumentality, or others;

(d) On any area of the Leased Premises from which ores are removed and where Kennedy and Adams do not have, or it is later determined that Kennedy and Adams, or their predecessors in interest, did not have one hundred per cent (100%) ownership of the minerals and mineral rights, after payment of ten per cent (10%) royalty to the Lessors, then the rate to be applied in the computation of the production payment arising from the sale of ores from the affected area shall be reduced to the proportion thereof which the ownership by Kennedy and Adams or their

predecessors in interest, bears to the entire mineral interest in said area. There shall not be included in gross receipts for purposes of calculating the production payment, the sales price or receipts from the sale of ores unless Longyear is the owner of such ores sold and is legally entitled to the sales price thereof, by virtue of the Leases being assigned hereunder. In other words, should there be a failure of title as to any portion of the Leased Premises, gross receipts from the sale of ores from the affected area shall not be considered gross receipts in determining the production payment. Longyear or its assigns, shall have the further right, in its sole discretion, if it acts in good faith, and if a genuine dispute as to title is imminent or exists, to escrow with any bank the amounts which Kennedy and Adams would otherwise have been entitled to receive, as payment on their production payment, so as to await the outcome of such dispute prior to the payment of the escrowed funds to Kennedy and Adams.

(e) Should a genuine title dispute occur as to any portion of the Leased Premises, Longyear, or its assigns, acting in good faith, shall have the right, in its sole discretion, to resolve and settle such title dispute by paying a monetary sum or other consideration to the other disputant; in such event, Longyear shall not be required to pay any production payment to Kennedy and Adams for ores sold from the area affected by the dispute, until Longyear, or its assigns, shall have recovered in full from ore sales from the affected area, all of its costs of settlement.

6. Reservation of Net Profits Interest. Kennedy and Adams hereby reserve to themselves, and Longyear agrees to pay to Kennedy and Adams (one-half to each of them) a net profits interest as to ores produced and marketed from the Leased Premises, and any newly acquired property within the Area of Interest, determined and calculated in the manner hereinafter specified:

(a) A sum equal to twenty-five per cent (25%) of the cumulative net profits actually realized by Longyear from ores produced, saved and sold from the Leased Premises and any newly acquired property within the Area of Interest, if the same is acquired by Longyear or its assigns;

(b) Longyear shall not be required to make any payment of net profits to Kennedy and Adams arising from the sale of ores from the Leased Premises, or otherwise, unless and until Longyear shall have been paid and reimbursed in full, out of net profits, for its entire cost in acquiring new interests or properties within the Area of Interest. Longyear's cost in acquiring such new interests or properties shall be its actual cost, if paid in money, or, the fair market value of stock or any other assets used for such acquisition. Should Longyear agree to pay royalties, ore payments, or other similar payments in connection with the acquisition of new interests or properties, any such amounts shall not be considered as sums received by Longyear in determining gross receipt or net profits for purposes of calculating the payment to be made to Kennedy and Adams;

(c) In determining the cumulative net profits for purposes of paragraph 6 of this Agreement, the following definitions shall be applicable and controlling:

(1) "Net Profits" shall mean the balance remaining after deducting from the gross receipts derived by Longyear from the sale of any ores produced, saved and sold, the following expenditures paid or incurred by Longyear with respect thereto:

A. All "Operating Costs" as hereinafter defined.

B. All royalties, ore payments or other similar payments payable to the respective Lessors under the Leases herein assigned, or others, exclusive, however, of the production payment to Kennedy and Adams.

C. All payments made and expenses incurred by Longyear, in good faith, to settle or resolve any title dispute, or to purchase or acquire title to any property, mining or mineral interest within the Area of Interest. Provided, that if Longyear receives reimbursement for such payments under subparagraph (b) of this paragraph 6, the amount of such reimbursement shall not be duplicated by treating the same as an item of deduction under this subparagraph to determine net profits.

D. All amounts retained by or reimbursed to Longyear as pre-production expenditures under paragraph 6 (c) (4) of this Agreement.

E. Any and all gross receipts, severance, gross production, production, mining taxes or any other taxes of any type, except individual or corporate income taxes or corporate franchise taxes.

(2) "Operating Costs" shall [illegible] (not deductible under subparagraph C, above) [illegible] the "production is begun" in connection with quieting or perfecting titles, and any and all investigations, exploration, development, mining, extraction, beneficiation, milling, processing, removal or transportation to market of sale, and sale of ores, metals, minerals and other materials (except taxes on net income), home office overhead expenses and supervisory salaries directly or indirectly related to operations, including but not restricted to the costs of machinery, equipment and supplies, but without allowance for depletion. Without limiting the generality of the foregoing, operating costs shall include the expenses and costs of items acquired and used for operations, overhead expenses and supervisory salaries which are directly related to operations, including allocation in accordance with usual and commonly accepted principles of Western Mine Accounting, of insurance, rent, clerical salaries, supplies, telephone, telegraph and legal services, reasonable rental charges for equipment owned and used for long-year in connection with operations, reasonable transportation expenses of employees, professional staff, materials and equipment to the site of the work and the return of employees, staff and equipment on completion of their work, and statutory assessment work performed to comply with the provisions of the Leases.

(3) The expression "production is begun" shall [illegible]

[illegible] a particular [illegible] is [illegible]

ted a shaft into the ore body or a shaft relating to such ore body, to the depth of the ore bearing horizon

(4) The expression "pre-production expenditures" shall mean all costs and expenses incurred by Longyear after the date of this Agreement and before production is begun, in connection with and in preparation for quieting and perfecting title (not deductible under sub-paragraph C, above) investigation, development and exploration as authorized by said Leases and this Agreement, including but not restricted to the costs of machinery, equipment and supplies, but without allowance for depletion or interest paid on funds obtained to finance pre-production expenditures. Without limiting the generality of the foregoing, pre-production expenditures shall include home office overhead expenses and supervisory salaries which are directly or indirectly related to operations, including allocation in accordance with the usual and commonly accepted principles of Western Mine Accounting, or insurance, rent, clerical salaries, telephone, telegraph and legal services, the acquisition cost of items used in connection with any of such operations of Longyear, reasonable rental charges for equipment owned and used by Longyear in connection with such operations, reasonable transportation expenses of employees, professional staff, materials and quipment to the site of the work and for the return of the equipment and such employees and staff

on completion of their work, and statutory assessment work performed to comply with the provisions of the Leases.

(d) Notwithstanding anything in this Agreement to the contrary (particularly paragraph 6 (a) hereof), Longyear shall be entitled to receive and retain to itself, fifty per cent (50%) of the net profits realized from ores produced, saved and sold until Longyear has received in full the total amount of all pre-production expenditures paid or incurred by it; the remaining fifty per cent (50%) of net profits shall be apportioned, divided and paid seventy-five per cent (75%) to Longyear and twenty-five per cent (25%) to Kennedy and Adams. When Longyear has been completely repaid its pre-production expenditures out of the first fifty per cent (50%) of net profits, the net profits shall thereafter be divided as set forth in paragraph 6 (a) until and only until Longyear incurs additional pre-production expenditures, at which time Longyear shall again and successively be entitled to the first fifty per cent (50%) of net profits until it has received full reimbursement for pre-production expenditures. As an example, assuming that at the end of a quarterly period net profits amount to Three Hundred Thousand Dollars ($300,000.00) (without having deducted pre-production expenditures) and by such time Longyear has incurred pre-production expenditures of One Hundred Fifty Thousand Dollars ($150,000.00), Longyear would be entitled to One Hundred Fifty Thousand Dollars ($150,000.00) as reimbursement of its pre-production

expenditures; the remaining One Hundred Fifty Thousand Dollars ($150,000.00) would be divided as follows: One Hundred Twelve Thousand Five Hundred Dollars ($112,500.00), seventy-five per cent (75%) to Longyear, and Thirty Seven Thousand Five Hundred Dollars ($37,500.00) twenty-five per cent (25%) to Kennedy and Adams. If, during the ensuing quarter, additional pre-production expenditures were incurred, Longyear would be entitled to reimbursement for the same in similar manner out of the first fifty per cent (50%) of net profits thereafter realized. For purposes of this subparagraph (d) net profits shall be used in the computations without having first deducted therefrom the amounts provided hereunder for recovery by Longyear of pre-production expenditures.

7. Accounting Periods. Accounting for the payment of the production payment, as described in paragraph 5, and the net profits interests as described in paragraph 6, shall be based upon a twelve month fiscal period to be determined by Longyear.

Tentative accountings shall be had for each three month period of such fiscal year selected by Longyear. Tentative payments of the production payment and net profits interest shall be made to Kennedy and Adams within thirty (30) days after the close of each such three month period. At its option, Longyear may retain and hold forty per cent (40%) of the amount otherwise payable to Kennedy and Adams following the end

[illegible]

[illegible]

At the end of each twelve month accounting period [illegible] at the option of Longyear, [illegible] final accounting. [illegible] of net profits shall be cumulative from accounting period [illegible] period and any net loss resulting from excess of operating costs [illegible] gross receipts during one accounting period shall be carried forward and taken into account in succeeding accounting periods.

With respect to each separate ore body exploited, the pre-production expenditures shall be ascertained and shall in the aggregate cover all costs and expenses incurred by Longyear except the costs and expenses incurred after the first production shaft has been completed into such ore body or to the depth of the pertinent ore body. All other costs or expenses with respect to each such ore body shall be treated hereunder as operating costs. A separate account shall be kept covering the pre-production expenditures and operating costs allocated to each such ore body, but reimbursement for pre-production expenditures under paragraph 6 (d) shall be based on gross receipts from all exploited ore bodies; it is not intended that pre-production expenditures allocated to a specific ore body shall be reimbursed only to the extent that net profits therefrom are sufficient for that purpose.

The accounting method to be utilized for all purposes of this

Agreement shall be the cash receipts and disbursements method of accounting, subject to the right of Longyear to use the accrual method and accrue all disbursements and expenditures, and commitments therefor, even though not yet paid in cash.

8. Abandonment Payment. In the event that Longyear, or its assigns, shall abandon all of the Leased Premises or all operations thereon before any ore shall be produced and sold from the Leased Premises, or newly acquired property or interests, or when production is begun, then, and in that event, but only in that event, Longyear will pay to Kennedy and Adams at the time of such abandonment the sum of Eighty Thousand Dollars ($80,000.00) (payable one-half to each of them) Until production is begun, it shall be conclusively presumed that operations have been abandoned for purposes of this paragraph, if Longyear shall expend less than One Hundred Thousand Dollars ($100,000.00) for assessment work, rentals, exploration or development of the Leased Premises in the annual period commencing April 1, 1957 and ending March 31, 1958, and during each annual period thereafter [illegible] year release and reassign to Kennedy and Adams any acreage of the Leased Premises, Longyear's obligations to expend One Hundred Thousand Dollars ($100,000.00) per year on assessment work, rentals, exploration or development, shall be reduced to the point where Longyear shall be required to expend annually only Six Dollars and Fifty Cents

($6.50) per acre for the acreage retained by Longyear, of which One Dollar and Fifty Cents ($1.50) per acre shall be rentals; but as in the case of said One Hundred Thousand Dollars ($100,000.00) per year expenditure, said obligation shall completely terminate if, as and when ore shall be produced and sold from the Leased Premises or newly acquired properties or interests or when production is begun Provided, however, that it is understood and agreed that if Longyear performs the annual assessment work and pays yearly rentals an expenditure in any year by Longyear in an amount exceeding One Hundred Thousand Dollars ($100,000.00) shall give rise to a carry forward and there shall be no presumption of abandonment nor automatic abandonment if there is a sufficient credit balance in such carry forward to cover a succeeding year or years; for example, if, in a particular year, Longyear should expend Three Hundred Thousand Dollars ($300,000.00) on assessment work, rentals, exploration or development, there could be no abandonment under this clause during the one (1) year when such amounts were spent and for the two (2) succeeding years, as the carry forward of Two Hundred Thousand Dollars ($200,000.00) would cover the annual minimum requirement of One Hundred Thousand Dollars ($100,000.00), for the second and third years. If Longyear abandons the Leased Premises because of a court determination that it may not remain in possession of at least thirty-seven and one-half per cent (37-1/2%) thereof, Longyear shall not be required to make said abandonment payment to Kennedy and Adams

9 Interest in Milling Company. Longyear [illegible] shall acquire an ownership interest in and for a [illegible] uranium [illegible] and operated to mill and process ores from the Leased Premises [illegible] newly acquired property or interests within the area of [illegible] give and grant to Kennedy and Adams (one-half to each of them) [illegible] right and option to purchase or acquire at Longyear's [illegible] ownership interest, twenty-five per cent (25%) of the total ownership interest acquired by Longyear in said uranium mill, provided, however, [illegible] such option, Kennedy and Adams shall be responsible for [illegible] per cent (25%) of any financial or other obligations assumed [illegible] in acquiring the interest in said uranium mill.

As concerns the rights granted herein to Kennedy and Adams, Longyear shall, upon obtaining the right to acquire an ownership [illegible] a uranium mill, notify Kennedy and Adams in writing of [illegible] the terms and conditions thereof. Kennedy and Adams shall [illegible] have the right within a period of sixty (60) days following such [illegible] tion, to notify Longyear in writing of their exercise of [illegible] rights and acceptance of the terms and conditions required by this paragraph. [illegible] Kennedy's and Adams' rights under this paragraph 9 shall [illegible] and expire in the event of a failure by them to give timely [illegible] cise of their option rights hereunder and acceptance of the terms and conditions herein stipulated, or should they at any time [illegible]

ments of transfer of said mining claims and mineral rights as shall be

[illegible] and, thereafter, the claims and rights so transferred shall be treated between the parties hereto as if [illegible] included within the Leased Premises, subject to the terms and conditions of this Agreement; provided, however, that no such [illegible] claims or mineral rights so acquired shall be taken into account in determining the production payment to be paid to Kennedy and Adams under paragraph 5, nor any royalty payment to the Lessors in the Leases hereinassigned.

[illegible] Additional Claims and Rights Acquired by Longyear. If at any time prior to April [illegible], 1982, Longyear shall acquire [illegible] claims or mineral rights in the area described [illegible] shall be considered as a part of the Leased Premises and [illegible] subject to the terms and conditions of this Agreement [illegible] production from such mining claims or mineral rights shall not be taken into account in determining the royalty payment [illegible] and adams pursuant to paragraph 5. Provided, however, this [illegible] shall not apply to any of the following properties or interests acquired by Longyear or its assigns:

(a) Properties or interests which may be [illegible] assigns or any of their corporate affiliates, or

(b) Properties or interests [illegible] tions, merger or corporate reorganizations.

12. Assignment. The rights of either party hereunder [illegible] all leasehold rights, may be assigned in whole or in part [illegible] consent of the other party, and upon assignment all provisions hereof shall extend to and inure to the benefit of their heirs, successors and assigns;

upon any assignment hereof, all obligations of the assignor under this Agreement, except the obligations under paragraphs 1, 10 and 11, shall terminate as of the date of assignment, and each and every assignee of any interest herein shall be deemed to accept, undertake and assume the covenants and obligations of Longyear under this Agreement in proportion to the share assigned, during any period of ownership of the Leases herein assigned. All discretions, elections and other rights of every type or description herein given or granted to Longyear shall inure to the benefit of, be exercisable by and succeed to Longyear's assigns and their assigns.

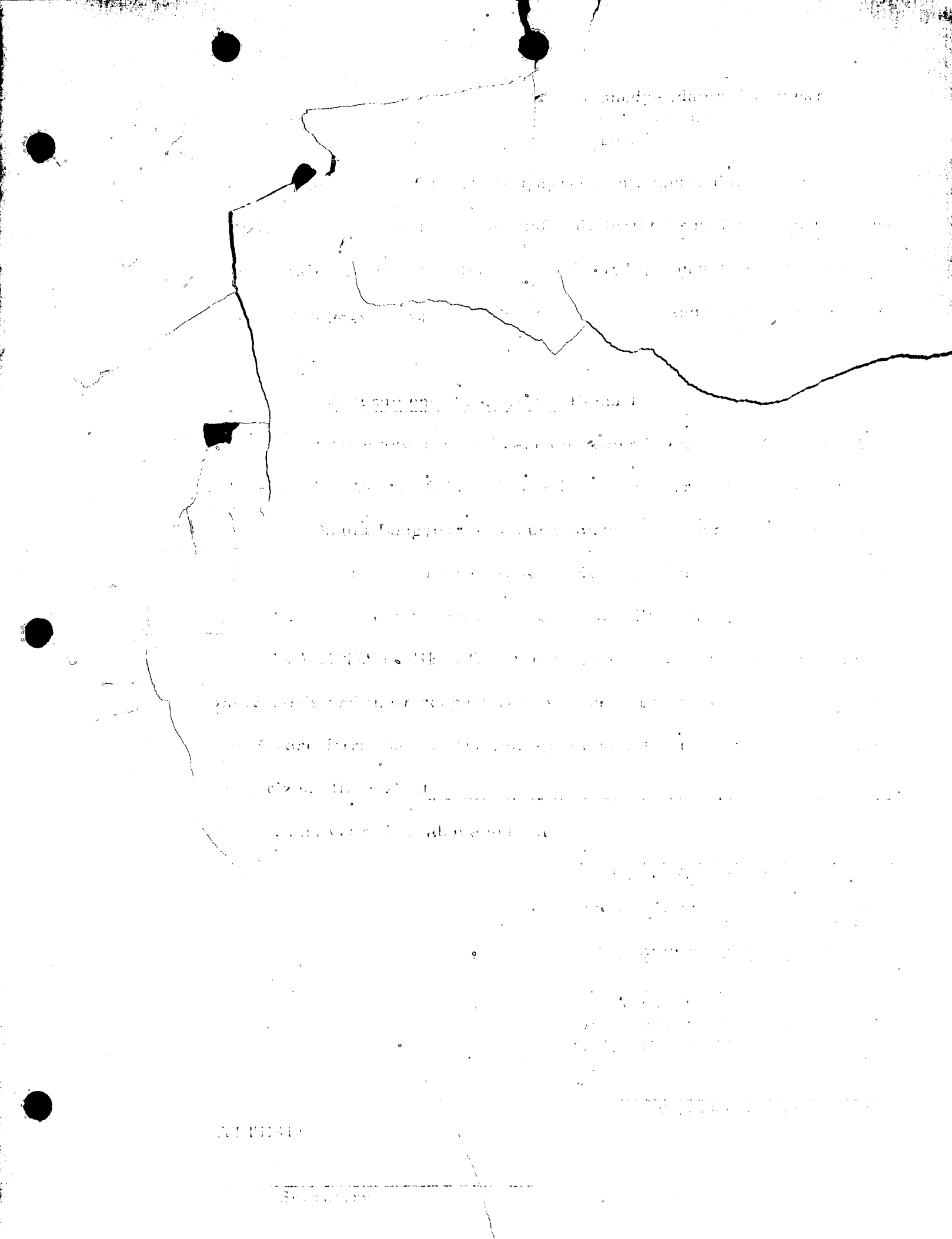
13. Termination.

(a) Longyear shall be entitled to terminate this Agreement at any time by thirty (30) days' notice in writing to Kennedy and Adams. In the event of any such termination by Longyear, Longyear shall reassign to Kennedy and Adams all its right, title and interest in and to the Leases herein assigned by an appropriate recordable instrument in writing which shall be forthwith delivered to either Kennedy or Adams, and upon tender of such assignment all obligations, duties, and liabilities of Longyear hereunder shall terminate, provided that such termination shall not effect the obligation to pay to Kennedy and Adams the sum of Eighty Thousand Dollars ($80,000.00) if the same is required pursuant to paragraph 8 of this Agreement.

IV. Kennedy [illegible]

(a) Kennedy and [illegible] terminate the [illegible] any time in the event Longyear shall [illegible] the Leased [illegible] shall breach or default any covenant or provision [illegible] concerns any asserted default under the [illegible] of this Agreement. Kennedy and Adams shall give notice [illegible] breach or default claimed as the basis of the termination [illegible] shall be delivered to Longyear [illegible] registered [illegible] office in Minneapolis, Minnesota, and [illegible] thirty (30) [illegible] shall proceed thereafter with reasonable diligence [illegible] default, [illegible] having breached this Agreement [illegible] [illegible] shall be [illegible] dismissed [illegible] transportation [illegible] or other results [illegible] which operations of the mine [illegible] shall not be taken into account [illegible] this Agreement.

(c) Longyear may terminate this Agreement at any time



APPENDIX V

ASSIGNMENT FROM E. J. LONGYEAR

to

MINERAL PROJECTS VENTURE B., LTD.

and

LISBON URANIUM CORPORATION

WHEREAS, Ventura Bay desires that Longwell [illegible]

Ratifies said agreement and the oil, gas and mineral claims therein described, therefore

IN CONSIDERATION of the assignments and mutual promises, covenants and agreements herein contained, the parties hereto agree as follows:

1. Subject to the reservations hereinafter expressly set forth, Longyear hereby bargains, sells, assigns, transfers and conveys unto Second Parties, an undivided one-half to each, all the right, title and interest of Longyear in and to the following described mineral leases and all its right, title and interest in and to the real estate and mineral rights therein described, and the mining claims located on said real estate:

A. Mining Lease recorded in Book 15, pp. 301-314, Lease Records of McKinley County, New Mexico, dated October 29, 1956, entered into between Yucca Uranium, Inc., as lessor and G. E. Kennedy and Henry C. Adams, as Lessees, wherein the said lessor demised, leased and let to said lessees all of the certain and [illegible] of the minerals and mineral rights situated in the following sections, townships and ranges in McKinley County, New Mexico, as follows, to wit:

> 5020 acres of land located in Sections 9, 18, 17, 16, 15, 19, 20, 21, 22, 27, 28, 29 and 32, Township 14 North, Range 8 West, N. M. P. M. and
>
> Section 1, Township 14 North, Range 9 West, N. M. P. M. and Sections 2, 3 and 4, Township 13 North, Range 8 West, N. M. P. M.

[illegible]

[illegible]

amount would be deducted from $5,[illegible] leaving $2,[illegible] as [illegible] net profits attributable to second [illegible] for the purpose [illegible] agreement and which shall be subject to the 5% [illegible] to Longyear [illegible] and Longyear shall, therefore, be entitled to distribution [illegible] amount so distributed shall be charged [illegible] payable [illegible] in the property and [illegible] thereof [illegible] Mineral [illegible] thereof by [illegible] Uranium Corporation.

[illegible] and parties agree that any [illegible] acquired by them subsequent to [illegible] 1957 and which [illegible] the area of interest as described and set forth in said agreement of [illegible], 1957

shall be [illegible] from and after [illegible] the [illegible] cumulative net profits for the [illegible] at said [illegible] payable to Longyear, provided this paragraph will not apply [illegible] properties which are, (a) already owned by affiliates of other parties, or (b) acquired through merger, consolidation, or corporate reorganization, or (c) not in said area of interest.

8. The second parties and third party, respectively, agree to save harmless and indemnify Longyear from and against any liability or obligation to G. R. Kennedy, Henry C. Adams, and their heirs and assigns, which may be imposed upon Longyear on account of, or may result from, its execution of said agreement dated April 1, 1957 with said Kennedy and Adams and which is herein assigned to second parties.

9. This agreement and assignment shall be binding upon the parties hereto and their respective successors, heirs and assigns, and the provisions thereof shall inure to the benefit of said parties and their respective successors, heirs and assigns, it being understood that the said 5% of net profits herein reserved to Longyear shall attach to the interests in lands and mining claims which are the subject of this assignment, provided, however, that if the second parties shall surrender or abandon any or all of said lands or mining claims to the lessor under the provisions of any lease herein assigned without any reservation or agreement for royalties, profits or other right to second parties, the 5% interest

of Longyear in profits thereafter derived from operation on said lands or mining claims so abandoned and surrendered shall terminate with respect to the lessor and all persons other than second parties succeeding to lessor's title. Longyear will, upon request, execute and deliver an appropriate release to that effect in favor of the lessor or for his or its assigns.

10. Venture B hereby requests the assignment herein made to Mineral Projects, Inc. and consents thereto and agrees with Longyear and Lisbon Uranium Corporation that said Mineral Projects, Inc. shall hold the titles, rights and interests herein assigned and acquired by virtue hereof as nominee for Venture B; all covenants and obligations of Mineral Projects, Inc. under this Assignment and Agreement are hereby assumed and guaranteed by Venture B, and all moneys and property paid over or delivered to Mineral Projects, Inc. pursuant to this assignment and agreement shall be deemed paid for the account of Venture B, and Venture B shall account to the other parties hereto for any portion thereof due any such other party.

11. Contemporaneously herewith, Longyear will execute and deliver to Mineral Projects, Inc. and Lisbon Uranium Corporation a recordable assignment embodying paragraphs 1, 2, 3, 5, 6 and 9 hereof.

12. Longyear shall have the right to examine and copy all books and records at reasonable times kept by Second Parties and Third

Party relating to the receipts and disbursements which are the basis of computation of net profits under Paragraph 6 hereof.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their respective duly authorized representatives as of the day and year first above written.

E. J. LONGYEAR COMPANY

by R. D. Longyear /s/

ATTEST:

Rollin N. Dow /s/
Secretary

MINERAL PROJECTS-VENTURE B
Per Mineral Projects, Inc.

By Raymond E. Hartz /s/
Vice-President

Paul C. Hackett /s/
Ass't Secretary
General Partner

ATTEST:

Paul C. Hackett /s/
Ass't Secretary

MINERAL PROJECTS, INC.

By Raymond E. Hartz /s/
Vice-President

ATTEST:

Paul C. Hackett /s/
Ass't Secretary

LISBON URANIUM CORPORATION

By _____

ATTEST:

_____
Secretary

STATE OF MINNESOTA

COUNTY OF HENNEPIN

On this 7th day [illegible] before me a Notary [illegible]

personally appeared [illegible] and [illegible]

[illegible] said [illegible]

[illegible] E. L. Long [illegible] and [illegible]

[illegible] instrument [illegible] said [illegible]

[illegible] instrument was [illegible]

[illegible] of the Board [illegible]

[illegible] acknowledged [illegible]

[illegible] corporation [illegible]

[illegible] witness hereof [illegible] hundred [illegible]

[illegible] on this day [illegible] Certificate above [illegible]

/S/ Edmund T. Montgomery

EDMUND T. MONTGOMERY
Notary Public, Hennepin County, Minn.
My Commission Expires
June 7, 1985

OFFICIAL FILE COPY
D M E A
RECEIVED OCT 4 1957

DATE	INITIALS	CODE

EXHIBITS

B Through N

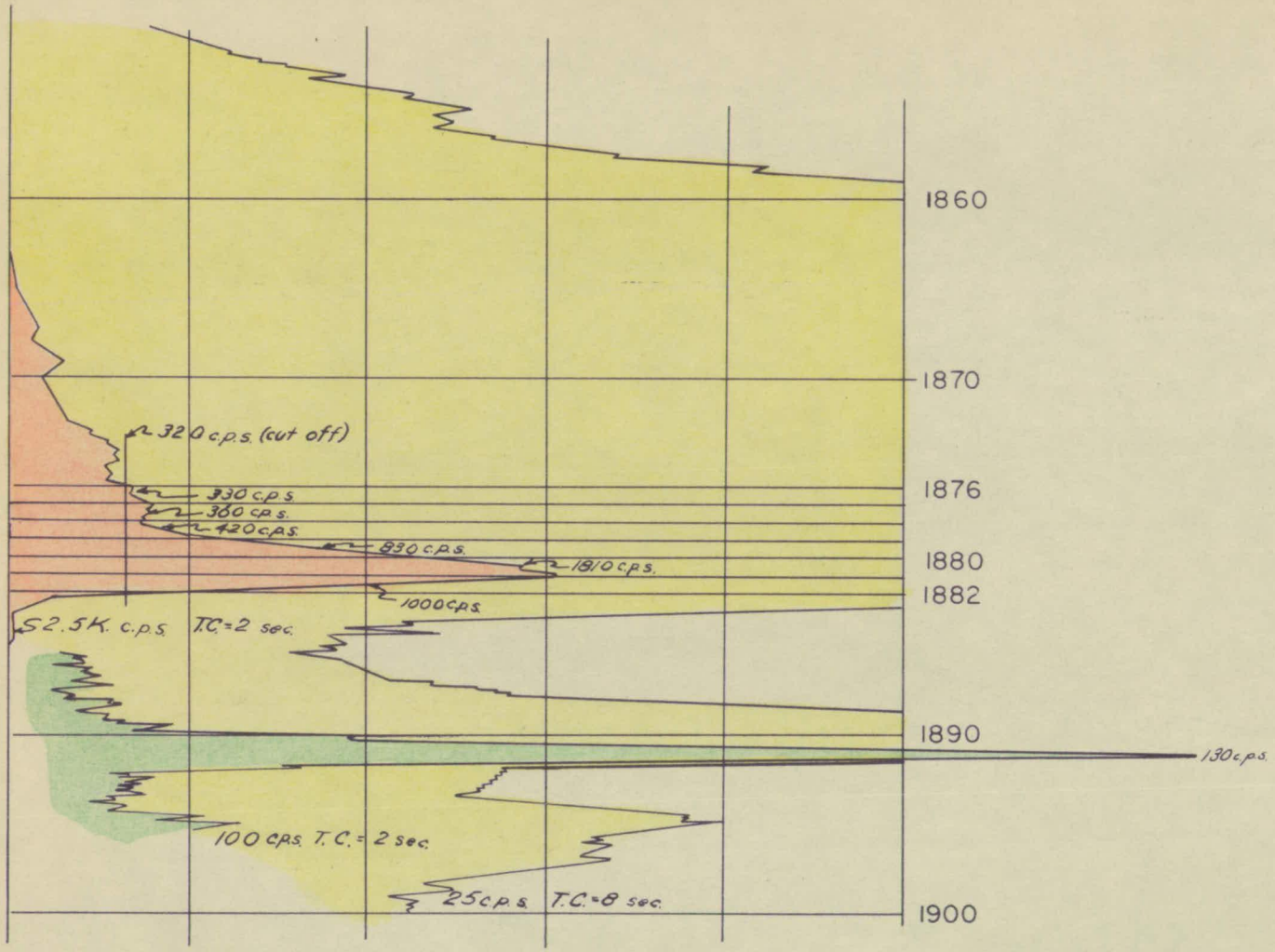
APPENDIX I

Copies of Portions of

Electric Logs

from Drill Holes

(Figs. 2 through 7)



FEET	c.p.s.
1	330
1	360
1	420
1	830
1	1410
1	1000
6	4350

6' at 725 c.p.s.

ESTIMATED FEET	ESTIMATED % U_3O_8
6 (1876 – 1882)	0.28

25 c.p.s.

100 c.p.s.

2500 c.p.s.

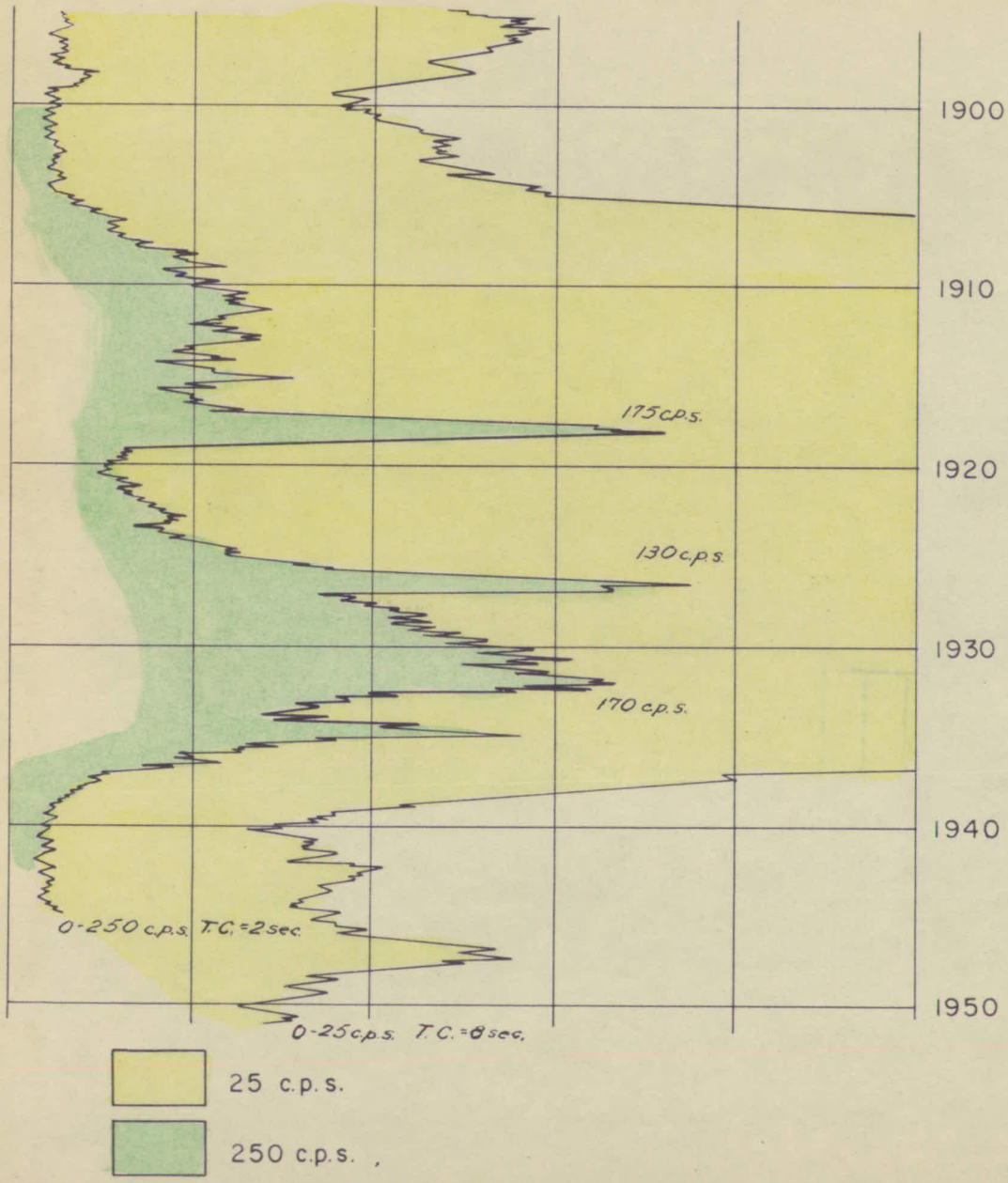
Fig. 2
COPY OF PROBING RESULTS
(GAMMA RAY)
HOLE SM 1-32
BETWEEN 1260 AND 1900 FEET

E. J. LONGYEAR CO.
JULY 15, 1957

GRANTS, N.M.
B. F. SORENSEN

OFFICIAL FILE COPY
D M E A
RECEIVED OCT 4 1957

DATE	INITIALS	CODE



ESTIMATED FEET	c.p.s.	ESTIMATED $\%U_3O_8$
1	175	0.0495
1	180	0.005
1	170	0.049

Fig. 3
COPY OF PROBING RESULTS
(GAMMA RAY)
HOLE SM 2-32
BETWEEN 1900 AND 1950 FEET

E. J. LONGYEAR CO.
JULY 15, 1957

GRANTS, N.M.
B. F. SORENSEN

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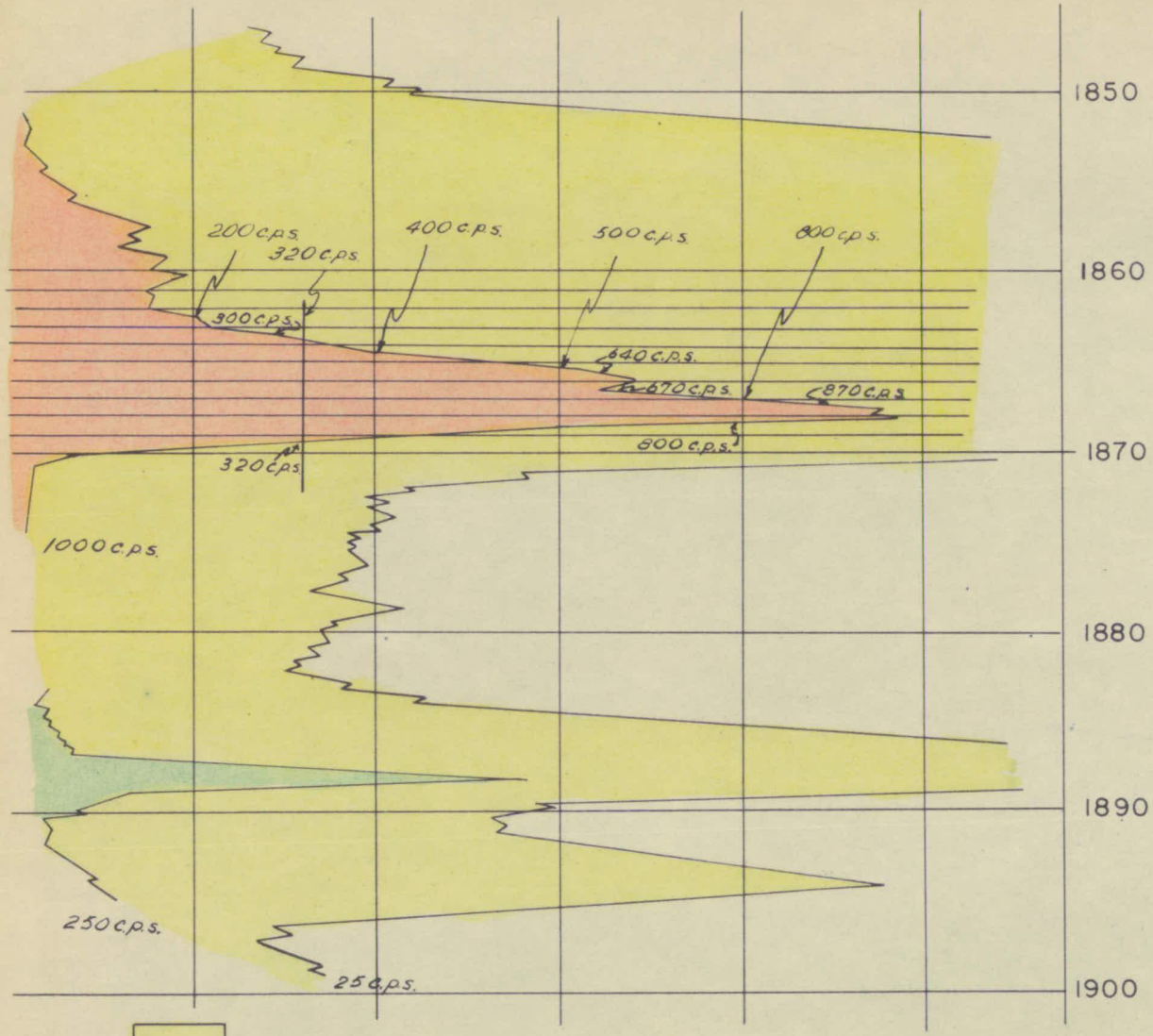
D M E A
RECEIVED OCT 4 1957

DATE	INITIALS	CODE



FEET	c.p.s.
1	300
1	400
1	640
1	670
1	890
1	800
1	320
7	4020

7' at 574 c.p.s.

ESTIMATED FEET	ESTIMATED $\%U_3O_8$
7 (1863 - 1870)	0.21

25 cps.

250 cps.

1000 c.p.s.

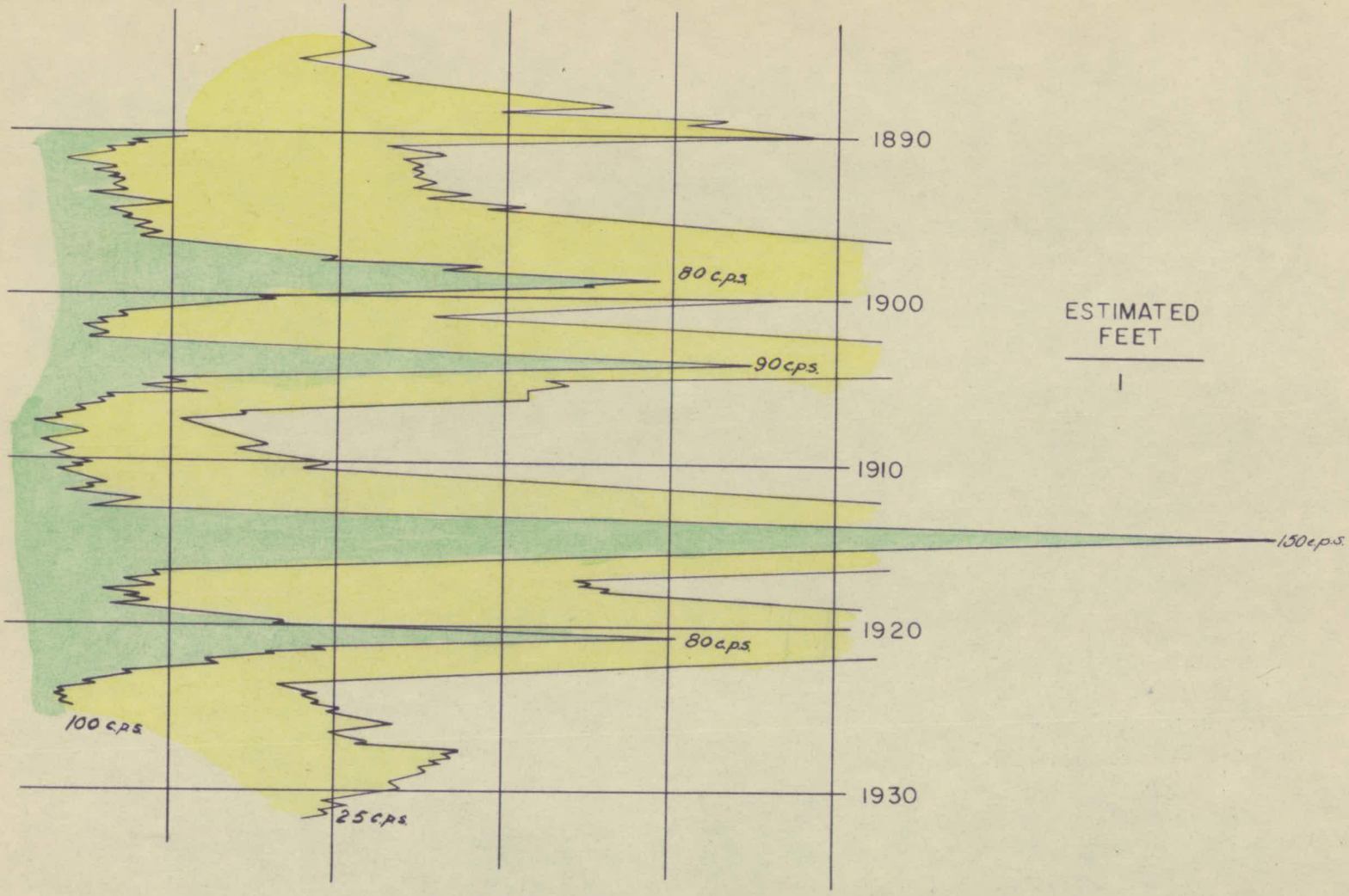
Fig. 4
COPY OF PROBING RESULTS
(GAMMA RAY)
HOLE SM 3-32
BETWEEN 1850 AND 1900 FEET

E. J. LONGYEAR CO.
JULY 15, 1957

GRANTS, N. M.
B. F. SORENSEN

OFFICIAL FILE COPY
D M E A
RECEIVED OCT 4 1957

DATE	INITIALS	CODE



ESTIMATED FEET	ESTIMATED $\%U_3O_8$
1	0.04

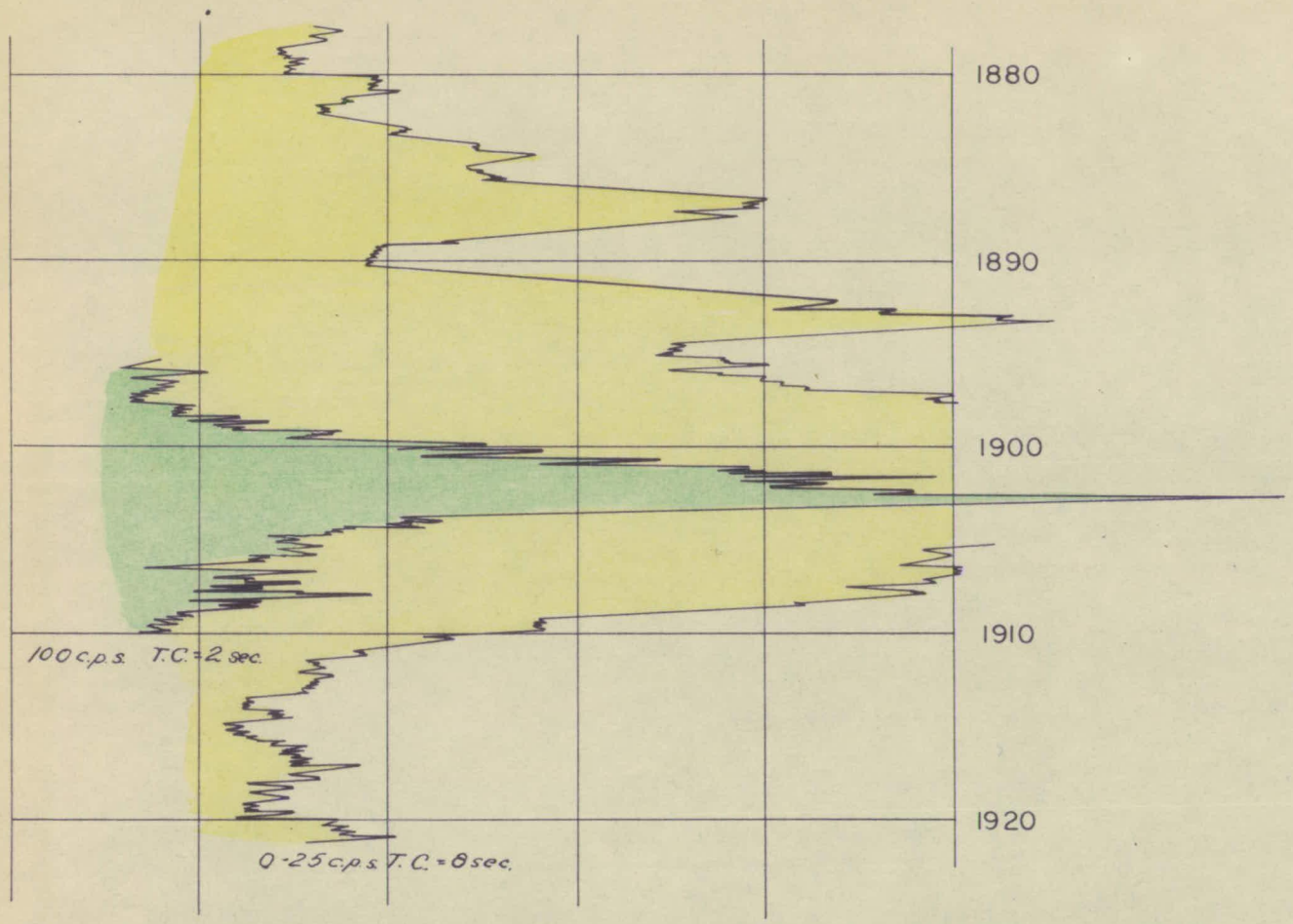
25 c.p.s.

100 c.p.s.

Fig. 5
COPY OF PROBING RESULTS
(GAMMA RAY)
HOLE SM 3A-32
BETWEEN 1890 AND 1930 FEET

E. J. LONGYEAR CO.
JULY 15, 1957

GRANTS, N.M.
B. F. SORENSEN



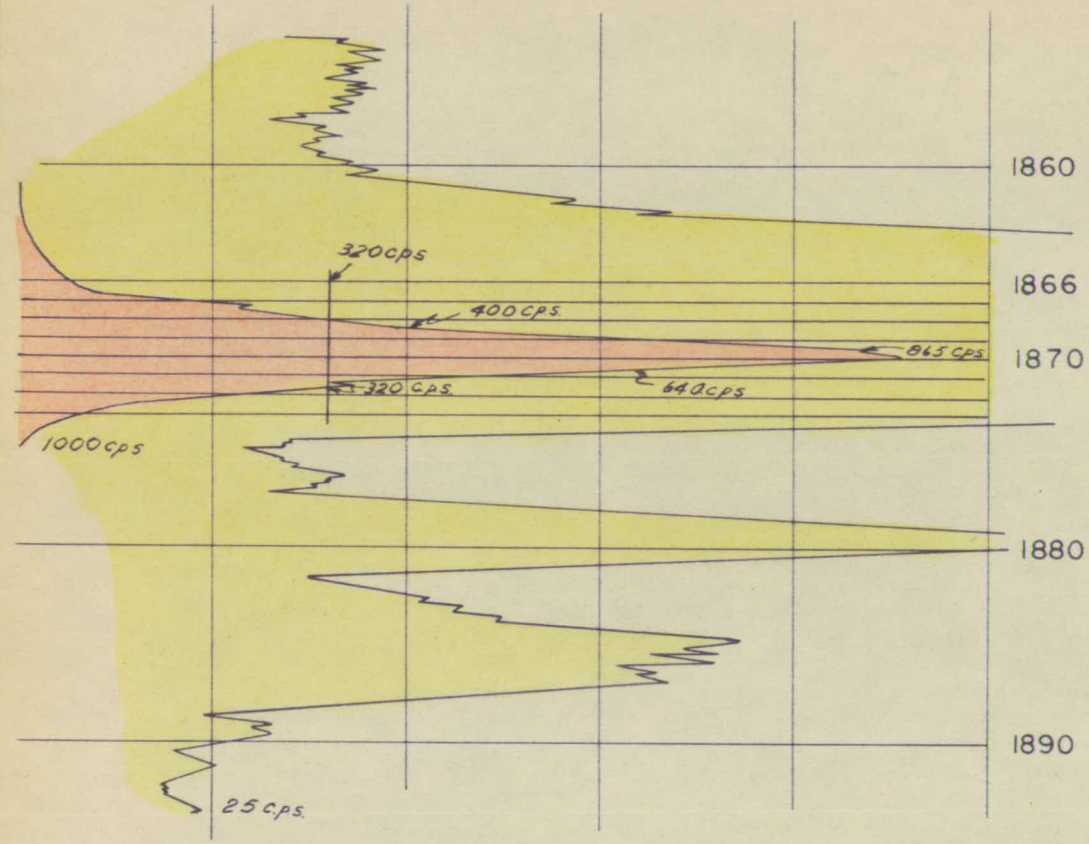
25 c.p.s.

100 c.p.s.

Fig. 6
COPY OF PROBING RESULTS
(GAMMA RAY)
HOLE SM 1 - 16
BETWEEN 1880 AND 1920 FEET

E. J. LONGYEAR CO.
JULY 15, 1957

GRANTS, N. M.
B. F. SORENSEN



FEET	c.p.s.
1	400
1	865
1	640
1	320
4	2225

4' at 556 c.p.s.

ESTIMATED FEET	ESTIMATED $\%U_3O_8$
4	0.20

25 c.p.s.

1000 c.p.s.

Fig. 7
COPY OF PROBING RESULTS
(GAMMA RAY)
HOLE SM 4-32
BETWEEN 1860 AND 1890 FEET

E. J. LONGYEAR CO. GRANTS, N. M.
JULY 15, 1957 B. F. SORENSEN

OFFICIAL FILE COPY
D M E A
RECEIVED OCT 4 1957

DATE	INITIALS	CODE

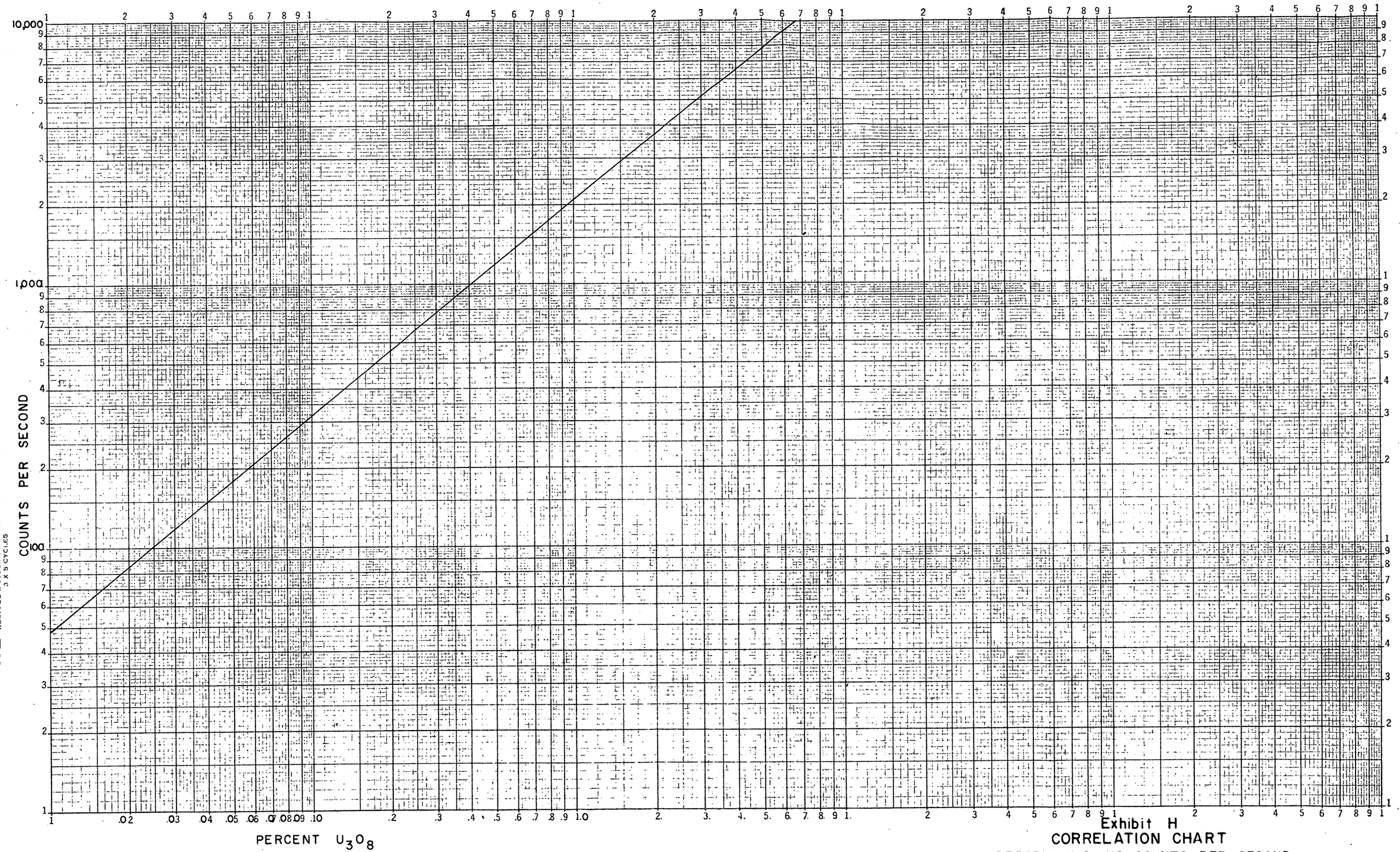


Exhibit H
CORRELATION CHART
PERCENT U_3O_8 US COUNTS PER SECOND
(GAMMA RAY)
FROM ORIGINAL BY RIO DE ORO URANIUM MINES

OFFICE FILE COPY
DMEA
RECEIVED OCT 4 1957
DATE | INITIALS | GRADE

EXHIBIT I

Monthly Report Excerpt

(From Rio de Oro Uranium Mines, Inc.)

RIO DE ORO URANIUM MINES, INC.

Albuquerque, New Mexico

Excerpt from Monthly Drilling & Exploration Report from Harold A. Powers - Dated June 9, 1957

Section 9, Twp. 13N., R8W

Three holes were completed on this section this month. The area is extremely favorable since there is considerable structure; both faulting and doming being present. Shannon A. Fowler spent several days making a reconnaissance geologic survey of the section and this information has aided in planning drill holes. To date 5 holes have been completed and three have mineralization, one which is ore grade (9 Feet @ 0.44% U_3O_8e).

Considerable time has been spent in deepening the discovery pits to legal size. This work should be completed in June. It is planned to make an accurate map of this section in the near future.

Drill hole 9-3 located on Pancho No. 1 had to be abandoned due to a large piece of steel (probably an old drill bit) in the hole. However, the hole was deep enough to show some mineralization (1 Foot @ 0.04% U_3O_8e.) This mineralization is probably in the Poison Canyon sandstone tongue of the Brushy Basin Member.

Drill hole 9-4 located about 1200 feet south of 9-S contained only very slight radioactive anomalies. These anomalies are near the bottom of the Westwater Canyon sandstone.

Drill hole 9-5 located approximately 2,000 feet south and 500 feet east of 9-4 contained 9 feet of 0.44% U_3O_8e as indicated by the gamma log. This ore grade zone is near the top of the Westwater Canyon sandstone at a depth of 1602 feet. Another zone near the bottom of the Westwater Canyon (depth 1733 feet) logged 1 foot @ 0.04% U_3O_8e.

FILE COPY
DMEA
RECEIVED OCT 4 1967

EXHIBIT - K, L, and M

(in pocket)

OFFICIAL FILE COPY
D M E A
RECEIVED OCT 4 1957

DATE	INITIALS	CODE

EXHIBIT N

Drilling Contract Bids

1/31/72

Phoned Sam Adams
(801) 521 7520
Anaconda Salt Lake
contacting Kerr McGee
releasing material
to Anaconda or
authorizing release
by the Court of
the material to
Anaconda. Adams
will contact K-M.

Kirk

Docket Copy

Knowse

Project Summary Report

By Michael Ching

April 22, 1959

1. Docket No. DMEA-4842 (Uranium)
Contract No. Idm-E1183

Operator - San Mateo Dome Project, a Joint Venture, comprised of Lisbon Uranium Corporation and Mineral Projects - Venture B, Ltd.
E. J. Longyear Company, Agent
416 Colorado Building
Denver, Colorado

Property - 200 whole or fractional lode mining claims, Falcon 4039-4074 and 4105-4131, Polvadera 19-26, Tomcat 1-9, Wildcat, Wildcat 2-7 and 9-22, Yucca 3-4, 5224-5228, and 5237-5246, Rod 21-24, Roberto 9-18, Pancho 2-4, 6-8, and 10-20, Bulldog 1-5, and John 1-10, situated in Secs. 27, 32, 33, and 34, T. 14 N., R. 8 W., and Secs. 3 and 4, T. 13 N., R. 8 W., N. M. P. M. & B., McKinley County, New Mexico.

Operator's Property Rights -

Lessee. Consent to Lien and Subordination Agreements signed by Yucca Mining and Petroleum Company, Inc., G. R. Kennedy, Hency C. Adams, E. J. Longyear Company, Mineral Projects, Inc., Parador Mining Co., Roy B. Shaw, and L. G. Shaw.

2. Contract (Long Form) dated April 4, 1958

Final starting date	- July 1, 1958
Actual starting date	- May 13, 1958
Contract completion date	- Dec. 31, 1958
Actual completion date	- Oct. 24, 1958

Work Authorized (As Amended) -

Test the Westwater Canyon sandstones of the Jurassic Morrison formation for uranium in four stages as outlined hereafter. Stages I and II apply to all claims except those in Section 32. Stages III and IV apply to the claims in the E½ of Section 32.

Stage I (13 holes)

Actual Costs

19,500 feet non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$29,250.00	
6,000 feet non-core drilling, 1500-2200 ft. depths, @ $2.25/ft.	13,500.00	
700 feet core drilling, 1600-2000 ft. depths, @ $13.00/ft.	9,100.00	
13 hrs. drill crew standby time @ $15.00/hr.	195.00	
26,200 feet probing and logging @ $0.115/ft.	3,013.00	
13 hrs. logging crew standby time @ $10.00/hr.	130.00	
13 holes @ $40.00/hole for cost of circulation materials in excess of $100.00 per hole	520.00	
40 hrs. bulldozing @ $15.00/hr.	600.00	
70 cardboard core boxes @ $1.25 each	87.50	
30 chemical analyses @ $5.00 each	150.00	

Fixed Unit Costs

26,200 feet @ $0.18/ft. incidental allowance	4,716.00	$61,261.50

Stage II (Not more than 10 holes)

Actual Costs

15,000 feet non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$22,500.00	
5,500 feet non-core drilling, 1500-2200 ft. depths, @ $2.25/ft.	12,375.00	
10 hrs. drill crew standby time @ $15.00/hr.	150.00	
20,500 feet probing and logging @ $0.115/ft.	2,357.50	
10 hrs. logging crew standby time @ $10.00/hr.	100.00	
10 holes @ $40.00/hole for cost of circulation materials in excess of $100.00/hole	400.00	
30 hrs. bulldozing @ $15.00/hr.	450.00	
24 chemical analyses @ $5.00 each	120.00	

Fixed Unit Costs

20,500 feet @ $0.18/ft. incidental allowance	3,690.00	42,142.50

Stage III (9 holes)

Actual Costs

13,500 feet. non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$20,250.00	
5,400 feet non-core drilling, 1500-2200 ft. depths, @ $2.25/ft.	12,150.00	
9 hrs. drill crew standby time @ $15.00/hr.	135.00	
18,900 feet probing and logging @ $0.115/ft.	2,173.50	
9 hrs. logging crew standby time @ $10.00/hr.	90.00	
9 holes @ $40.00/hole for cost of circulation materials in excess of $100.00/hole	360.00	
12 hrs. bulldozing @ $15.00/hr.	180.00	
15 chemical analyses @ $5.00 each	75.00	

Fixed Unit Costs

18,900 feet @ $0.18/ft. incidental allowance	3,402.00	38,815.50

Stage IV (Not more than 8 holes)

Actual Costs

12,000 feet non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$18,000.00	
4,800 feet non-core drilling, 1500-2200 ft. depths, @ $2.25/ft.	10,800.00	
8 hrs. drill crew standby time @ $15.00/hr.	120.00	
16,800 feet probing and logging @ $0.115/ft.	1,932.00	
8 hrs. logging crew standby time @ $10.00/hr.	80.00	
8 holes @ $40.00/hole for cost of circulation materials in excess of $100.00/hole	320.00	
12 hrs. bulldozing @ $15.00/hr.	180.00	
20 chemical analyses @ $5.00 each	100.00	

Fixed Unit Costs

16,800 feet @ $0.18/ft. incidental allowance	3,024.00	34,556.00

Estimated total cost of the project		$176,770.00
Government participation @ 75% in Stages I and II	$77,550.00	
Government participation @ 50% in Stages III and IV	36,685.00	
Estimated total Government participation		$114,235.00

Amendments

No. 1, dated June 18, 1958. Extends completion date from Aug. 31 to Dec. 31, 1958, adds the E½ Sec. 32, T. 14 N., R. 8 W. to the land, provides for necessary additional map and consents to lien, and adds Stages III and IV to the project work, with Government participation @ 50%.

Work Completed (Work was confined to Stages I and III)

Stage I (13 holes)

19,500 feet non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$29,250.00	
6,170 feet non-core drilling, 1500-2200 ft. depths, @ $2.25/ft.	13,882.50	
591 feet core drilling @ $13.00/ft.	7,683.00	
5.5 hrs. drill crew standby time @ $15.00/hr.	82.50	
26,261 feet @ $0.11264/ft. logging and probing	2,958.14	
8.6 hrs. logging crew standby time @ $10.00/hr.	86.00	
Circulation material in excess of $100.00/hole	82.00	
38 hrs. bulldozing @ $15.00/hr.	570.00	
70 core boxes @ $1.1733 each	82.13	
26,261 feet @ $0.18/ft. incidental allowance	4,726.98	$59,403.25

Stage III (9 holes)

13,500 feet non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$20,250.00	
5,090 feet non-core drilling, 1500-2200 ft. depths, @ $2.25/ft.	11,452.50	
9 hrs. drill crew standby time @ $15.00/hr.	135.00	
18,590 feet @ $0.11002/ft. logging and probing	2,045.23	
7.4 hrs. logging crew standby time @ $10.00/hr.	74.00	
12 hrs. bulldozing @ $15.00/hr.	180.00	
18,590 feet @ $0.18/ft. incidental allowance	3,346.20	37,482.93
Total cost of the project		$96,886.18
Government participation @ 75% in Stage I	44,552.44	
Government participation @ 50% in Stage III	18,741.47	
Total Government participation		$63,293.91

Final Reports Received

Operator's - dated March 7, 1959, received March 16, 1959.

Field Team's - dated March 1959, received March 23, 1959.

3. Auditor's Report of Review, dated March 13, 1959

Total cost as billed by Operator	$96,886.99
Exceptions	0.81
Total accepted cost	$96,886.18
Government participation	$63,293.91

4. Certification of Discovery - None.

5. Results and Comments

The 13 Stage I holes, drilled in Sections 3 and 4, T. 13 N., R. 8 W., and Sections 27, 33, and 34, T. 14 N., R. 8 W., were spaced approximately 2000 feet apart. All were barren. Average thickness of the Westwater penetrated was about 132 feet.

The 9 Stage III holes, drilled in the E½ of Section 32, were spaced approximately 1000 feet apart. Seven were barren and two (G-15-32 and G-16-32) contained minor mineralization over a thickness of 1 foot at a depth of approximately 1880 feet. The mineralization is believed to be in the Poison Canyon sandstone. Average thickness of the Westwater penetrated was about 151 feet.

Drilling was done with Model 1500 Failing rotary rigs. Logging of holes was done with a truck-mounted Logging Control Unit, Model 2201. Gamma ray, resistivity and self-potential logs were recorded.

One drill rig was used between May 13 and July 1, 1958, and two rigs thereafter. Drilling was completed October 24, 1958. Average depth of the holes drilled was 2136 feet. Average advance per rig per shift was about 190 feet, including 591 feet of core drilling in two of the holes. Core recovery was about 90%.

Determination of formational contacts by examination of sludge samples was made difficult by contamination. Contacts determined from geophysical logs were considered more accurate.

No unusual delays were encountered in the drilling except the breaking of a string of drill rods which were successfully recovered. The work was efficiently done and well supervised.

Since no ore was found, a certification of discovery was not made.

Michael Ching
Michael Ching

MChing/fw
4/22/59
cc: Admr's Reading File
~~Mr. Ching~~
~~Mr. Johnson~~
Chron.

MME Form 17
Mar. 59

OFFICE OF MINERALS EXPLORATION

WORK COMPLETED ANALYSIS

___ Certified — After final audit or review report is received, prepare in duplicate. File original in official docket. Send copy to Code 210.

Operator: San Mateo Dome Project
E. J. Longyear Company, Agent

Actual Cost: X

State: New Mexico

Agreed Unit Cost:

Final Report of Audit: ___

Commodity: Uranium

Docket No.: DMEA-4842

Final Report of Review: x

Contract No.: Idm-E1183

Type of Work (Use these categories only)	Authorized by Contract and Amendments		Completed and Paid for		Net cost after sale of Gov't. Property
	Units	Cost 1/	Units	Cost 1/	
Drifting & Crosscutting					
Raising					
Shafts					
Winzes					
Drilling Rotary Non-core	81,700'	$165,521.00	44,260'	88,198.00	88,198.00
(Specify) Rotary Core	700'	9,394.00	591'	7,938.00	7,938.00
Surface Excavation					
Underground Excavation					
Roads and Trails		1,410.00		750.00	750.00
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify) Chem. Analyses		445.00		—	
Totals		$176,770.00		$96,886.00	2/ $96,886.00

1/ Round off to dollars.
2/ Net cost total must agree with final report of audit or review.

Prepared by Michael Ching Date 4-9-59

52616

ME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
		110
		220

MAR 2 1966

Mr. L. L. Werts
District Geologist
Kerr-McGee Oil Industries, Inc.
600 Coal Avenue, S.W.,
Albuquerque, New Mexico

Re: DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract Idm-E1183

Dear Mr. Werts:

This will acknowledge receipt of your letter of February 11, 1966, enclosing U. S. Postal Money Order in the amount of $30.00 for payment of the cost of duplicating and mailing available electric and lithologic logs on the subject project.

Enclosed are copies of the available electric and lithologic logs for 22 drill holes referred to in our letter of February 7, 1966.

Sincerely yours,

(Signed) FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

Enclosures

cc: Director's reading file
Division file
Economic Geology file
OME file
OME reading file

FEJohnson/bih 3/2/66

43683

KERR-McGEE OIL INDUSTRIES, INC.
KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

February 11, 1966

OFFICIAL COPY
O. N. E.
RECEIVED
FEB 14 1966
110

Please reply to
600 Coal Avenue, S.W.
Albuquerque, New Mexico

Mr. Frank E. Johnson, Chief
Office of Minerals Exploration
Department of the Interior
U. S. Geological Survey
Washington, D.C. 20240

Re: DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract Idm-E1183

Dear Mr. Johnson:

I have enclosed a Postal Money Order in the amount of $30.00 in payment for the electric and lithologic logs described in your letter of February 7, 1966.

I appreciate your very prompt response to my request for the additional data.

Sincerely yours,

L. L. Werts
District Geologist

LLW/bs
enc

Money Order for $30.00 received / gk

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
2/7	Johnson	110
		220

FEB 7 1966

Mr. L. L. Werts
District Geologist
Kerr-McGee Oil Industries, Inc.
600 Coal Avenue, S.W.
Albuquerque, New Mexico

Re: DMEA-4842 (Uranium) - 110 the file
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract Idm-E1183

Dear Mr. Werts:

We have your letter of January 31, 1966, concerning the Century Geophysical Corporation electric logs for each hole drilled under the subject contract.

We have located copies of the electrical and lithologic logs which were submitted monthly with vouchers for payment of the Government's share of the cost of the exploration work. As copies were not submitted with the Operator's Final Report, it will be necessary to make photostats of the material for you. The cost of duplication and mailing will be $30.00. Upon receipt of your check in this amount we will have the material duplicated and forwarded to you.

Sincerely yours,

(signed) FRANK E. JOHNSON

(bh)

Frank E. Johnson
Chief, Office of
Minerals Exploration

cc: Director's reading file
Division file
Economic Geology file
OME file
OME reading file
OME Region III

FEJohnson/bih 2/7/66

23263

KERR-McGEE OIL INDUSTRIES, INC.
KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

January 31, 1966

OFFICIAL COPY
O. M. E.
RECEIVED
FEB 3 1966
INITIALS | CODE
110

Please reply to
600 Coal Avenue, S.W.
Albuquerque, New Mexico

Mr. Frank E. Johnson, Chief
Office of Minerals Exploration
Department of the Interior
U. S. Geological Survey
Washington, D.C. 20240

Re: DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract Idm-E1183

Dear Mr. Johnson:

We have received the copy of the final report on the captioned project and appreciate your cooperation very much.

The lithologic data contained in the report was very helpful however the Century Geophysical Corporation electric logs which were obtained from each hole would be particularly valuable to us in our regional correlation. The logs were apparently included with the final report from Longyear but they were not included in the material furnished by your office.

I would appreciate it very much if you could furnish us with copies of the twenty-two logs provided by Longyear. We will be happy to pay any additional amount necessary for reproduction and handling.

Sincerely yours,

L. L. Werts

L. L. Werts
District Geologist

LLW/bs

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
1/21	Johnson	110
		220

JAN 21 1966

Mr. L. L. Werts
District Geologist
Kerr-McGee Oil Industries, Inc.
Kerr-McGee Building
Oklahoma City, Oklahoma 73102

Re: DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinely County, New Mexico
Contract Idm-E1183

Dear Mr. Werts:

Receipt is acknowledged of your letter of January 13, 1966, and enclosed postal money order in the amount of $5.00 to cover the cost of reproduction and mailing a copy of the final report on the subject project, submitted by E. J. Longyear Company, Agent.

The reproduced material is enclosed.

Sincerely yours,

(signed) FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

Enclosures

cc: Director's reading file
Division file
Economic Geology file
OME file
OME reading file
OME Region III

FEJohnson/bih 1/21/66

23263

KERR-McGEE OIL INDUSTRIES, INC.
KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

January 12, 1966

OFFICIAL COPY
O. M. E.
RECEIVED
JAN 14 1966

INITIALS	CODE
	110

Mr. Frank E. Johnson
Chief, Office of Minerals Exploration
Department of the Interior
U. S. Geological Survey
Washington, D.C. 20240

Re: DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract IDM-E1183

Dear Mr. Johnson:

In response to your letter of December 30, 1965, I have enclosed a release from the E. J. Longyear Company concerning work performed under the captioned contract in the Ambrosia Lake area of New Mexico.

As I explained in my letter to Mr. Hasler, we have made several attempts to locate members of the original Venture "B" group without success. Due to the negative results of our efforts we feel we will be unable to secure releases from any of the parties other than Longyear. I hope this will be sufficient for your purposes.

I have enclosed a postal money order in the amount of $5.00 to cover the cost of reproduction and mailing of the data requested earlier.

Thank you very much for your cooperation.

Sincerely yours,

L. L. Werts
District Geologist

LLW/bs
enc

U.S. Postal Money Order Received Check & Bill 1/14/65

Longyear
E. J. LONGYEAR COMPANY
General Offices, 76 South 8th St.
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 9-7631 • CABLE LONGCO

January 6, 1966

Mr. Larry Werts
District Geologist
Kerr McGee Oil Industries, Inc.
600 Coal Avenue S.W.
Albuquerque, New Mexico

Dear Mr. Werts:

Venture "B" Exploration Program
Ambrosia Lake Area, New Mexico

Your telephoned request to our Mr. Michael J. Gleason for results of the subject program has been relayed to me, together with the news that the U.S. Geological Survey, Washington, D.C. has agreed to release to you the data on this exploration lodged in its file, provided Longyear endorses such release.

Longyear is happy to authorize release of these exploration data for your use. However, inasmuch as the Venture "B" group was Longyear's client on the Ambrosia Lake Area work, we feel that you should clear your request with a principal of this group. Since the program terminated in the mid-50's, it is Longyear's understanding that the Venture "B" group dissolved. Two of the principals may still reside at their old addresses in New Jersey; they are:

Mr. Allan B. Grady
55 Green Village Road
Madison, New Jersey

Mr. Clinton Davidson
Box 35
Bernardsville, New Jersey

We suggest that you communicate with one or the other of these gentlemen to acquire their sanction for use of their exploration information.

We trust the above is useful to you and wish you success.

Sincerely yours,
CONSULTING DIVISION
E. J. Longyear Company

Lee C. Armstrong

Lee C. Armstrong
Chief Geologist & Mining Engineer

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
1/14	CAC	210

JAN 1 8 1966

Memorandum

To: Chief, Branch of Budget and Finance
U. S. Geological Survey

From: Chief, Office of Minerals Exploration

Subject: DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract Idm-E 1183

Enclosed is U. S. Postal Money Order, number 7,410,157,722, (stamp dated January 11, 1966, Albuquerque, New Mexico) in the amount of $5.00, payable to U. S. Geological Survey, from L. L. Werts, Kerr-McGee Corporation, Albuquerque, New Mexico in payment for duplication and mailing of reports and maps on the referenced project.

Enclosure

[redacted]

cc: Directors reading file
Mails and files

23263

ME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
12/30	J Thomas	110
	Bellfridge	120
		220

DEC 30 1965

Mr. L. L. Werts
Kerr-McGee Oil Industries, Inc.,
600 Coal Avenue, S. W.,
Albuquerque, New Mexico

Re: EMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract Idm-E1183

Dear Mr. Werts:

Your letter of December 10, 1965, to Mr. William Nasler, Office of Minerals Exploration, Denver, Colorado, requesting information concerning the drilling performed under the subject contract by the Longyear Company, has been referred to this office.

The final report on this project submitted by E. M. Longyear Company, Agent, contains a summary of the project, with drill hole logs, results and maps. The logs, however, are not geophysical or lithologic in detail. Ordinarily, this material is considered confidential and not made available to the public. However, if E. J. Longyear Company, Agent, will furnish us with written authorization, we shall be glad to release a copy of the final report to you. There will be a nominal charge of $5.00 to cover the cost of reproduction and mailing.

Sincerely yours,

(signed) FRANK E. JOHNSO

Frank E. Johnson
Chief, Office of
Minerals Exploration

FEJohnson/gla/bih
12/30/65
cc to: Director's reading file
Division file
Economic Geology file
OME file
OME reading file
OME Region III

23263

OFFICIAL
COPY
O. M. E.
RECEIVED
DEC 27 1965
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120
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Denver Federal Center-Bldg. 20
D2211
Denver, Colorado 80225

December 22, 1965

Mr. L. L. Werts
Kerr-McGee Oil Industries, Inc.
600 Coal Avenue, S. W.
Albuquerque, New Mexico

Dear Mr. Werts:

This letter is in reply to your request for certain information obtained on the San Mateo Dome Project DMEA-4842, Contract 1183. We have reviewed our files and can find only material which was submitted with the original application for assistance.

At the time these files were sent to the archives, much of the information obtained from the exploration program was sent to Washington as the logs and other geologic material was required to substantiate payment.

Your best possibility of obtaining this information will be to contact Mr. Frank Johnson, Chief, Office of Minerals Exploration, Room 4460, Interior Building Geological Survey, Department of the Interior, Washington, D. C. 20240.

Sincerely yours,

J. William Hasler,
Field Officer Region III
Office of Minerals Exploration

JWH/mc/12/22/65

cc: Chief OME
File
Chron

KERR-McGEE OIL INDUSTRIES, INC.
KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

December 10, 1965

Please reply to
600 Coal Avenue, S.W.
Albuquerque, New Mexico

Mr. William Hassler
Office of Mineral Exploration
Denver Federal Center
Denver, Colorado

Dear Mr. Hassler:

During the past year the Kerr-McGee Corporation located the Roca Honda group of unpatented lode mining claims 1 through 333 inclusive, covering sections 3, 4, 5, 6, 8, 9 and 10, Township 13 North, Range 8 West and the east half of section 31, sections 32, 33 and 34 of Township 14 North, Range 8 West. The claims are located as shown on the attached map and are recorded in the office of the Clerk of McKinley County, New Mexico in Book 48, pages 216 through 422 inclusive, and in Book 49, pages 1 through 126 inclusive. All of the claim location and validation requirements of the United States and the state of New Mexico have been satisfied and the Roca Honda claims are considered by legal counsel to be valid. This land was previously covered by claims located by Andre Senutovich, the Yucca Uranium Corporation, the National Growth Corporation and others whose claims have been abandoned either through filing of certificates of abandonment or by non-performance of annual assessment work during the past five years.

The Roca Honda claims were located as part of a program of reconnaissance evaluation of the subject lands for evidence of extension of ore deposits now being mined or developed by the Kerr-McGee Corporation in Townships 13 and 14 North, Range 9 West. As a result of a surface examination it was found that a reconnaissance drilling program had been performed on the subject lands by the E. J. Longyear Company acting as a consultant for Yucca Uranium, et al with funds provided wholly or in part by the Defense Minerals Exploration Administration. Insofar as can be determined the drilling was performed in 1958 and all of the information obtained by Longyear as a result of the drilling was turned over to the various partners. Following a diligent search we have been unable to locate any of the original participants, including Yucca Uranium and the National Growth Corporation.

The results of the drilling performed by the Longyear Company have been summarized in DMEA Docket #4842 and it appears that your office is the only source of this much needed information. We are

not particularly interested in any mineralization or ore discovered during the drilling program however we are vitally interested in obtaining the electric logs for purposes of regional stratigraphic evaluation, any information concerning the sedimentary characteristics of the Morrison formation, i.e. lithologic logs, and a map showing the location of the drill holes.

I realize that this docket may be difficult to trace however I will greatly appreciate any effort you could make on our behalf.

Sincerely yours,

L. L. Werts

LLW/bs

OFFICIAL FILE COPY

Date	Surname	Code
5/28	Ching	700
5/29	Kennedy	700
9/14	Talbut	800
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9-15	gad	220
		700

SEP 15 1959

(TO-261)
MAIL ROOM 1

San Mateo Dome Project, a Joint Venture
E. J. Longyear Company, Agent
416 Colorado Building
Denver, Colorado

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract No. Idm-E1183

Gentlemen:

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

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

We appreciate your interest and participation in the DMEA exploration program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George C. Selfridge

Acting Director

MChing/ama
May 20, 1959

Copy to: Docket
Dir. Reading File
CA & A Division
Mr. Ching
OME FT, Reg. III (2)
Mr. Melvin E. Richards
Mr. Henry C. Adams
Mr. G. R. Kennedy
E. J. Longyear Company
Mineral Projects, Inc.
Miss Elizabeth Adoor
Mr. Roy B. Shaw & Mrs. Belva L. Shaw
Mr. L. G. Shaw & Mrs. Elizabeth Shaw
Mr. Raymond E. Hartz

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
5/28	Ching	700
5/28	Krause	700
9/14	Talbert	800
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9-15	gad	220
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SEP 15 1959

E. J. Longyear Company
76 South 8th Street
Minneapolis 2, Minnesota

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract No. Idm-E1183

Gentlemen:

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

This correspondence relates to the Consents to Lien and Subordination Agreements, one dated February 17, 1958, and the other undated, signed by Messrs. V. N. Burnhart and D. M. Davidson, respectively, under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George C. Selfridge (for)

Acting Director

Enclosure

MChing/ama
May 25, 1959

Copy to: Docket
Director's Reading File
Mr. Ching
OME Field Team, Region III (2)

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

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SEP 15 1959

Miss Elizabeth Adoor, President
Parador Mining Co.
2390 Francisco Street, Room 201
San Francisco, California

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract No. Idm-K1183

Dear Miss Adoor:

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

This correspondence relates to the Consent to Lien and Subordination Agreement, dated June 11, 1958, signed by you under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George C. Selfridge (for)

Acting Director

Enclosure

MChing/ama
May 27, 1959

Copy to: Docket
Director's Reading File
Mr. Ching
OME Field Team, Region III (2)

43683

MME Form 7
(10-58)

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SEP 15 1959

Mr. G. R. Kennedy
448 San Jacinto Building
Houston 2, Texas

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract No. Idm-E1183

Dear Mr. Kennedy:

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

This correspondence relates to the Consents to Lien and Subordination Agreements, both undated, signed by you under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George C. Selfridge

Acting Director

Enclosure

MChing/ama
May 20, 1959

Copy to: Docket
Director's Reading File
Mr. Ching
OME Field Team, Region III (2)

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SEP 15 1959

Mr. Henry C. Adams
506 First City National Bank Bldg.
Houston 2, Texas

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract No. Idm-E1183

Dear Mr. Adams:

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

This correspondence relates to the Consents to Lien and Subordination Agreements, both undated, signed by you under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George C. Selfridge

Acting Director

Enclosure

MChing/ama
May 20, 1959

Copy to: Docket
Director's Reading File
Mr. Ching
OME Field Team, Region III (2)

43683

MME Form 7
(10-58)

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SEP 15 1959

Mr. Roy B. Shaw and
Mrs. Belva L. Shaw
7420 Central Avenue, S. E.
Albuquerque, New Mexico

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract No. Idm-E1183

Dear Mr. and Mrs. Shaw:

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

This correspondence relates to the undated Consent to Lien and Subordination Agreement signed by you under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George C. Selfridge (for)

Acting Director

Enclosure

MChing/ama
May 27, 1959

Copy to: Docket
Director's Reading File
Mr. Ching
OME Field Team, Region III (2)

43683

MME Form 7
(10-58)

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SEP 15 1959

Mr. L. G. Shaw and
Mrs. Elizabeth Shaw
4112 Swiss
Dallas 4, Texas

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract No. Idm-E1183

Dear Mr. and Mrs. Shaw:

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

This correspondence relates to the undated Consent to Lien and Subordination Agreement signed by you under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George C. Selfridge (for)

Acting Director

Enclosure

MChing/ama
May 27, 1959

Copy to: Docket
Director's Reading File
Mr. Ching
OME Field Team, Region III (2)

43683

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(10-58)

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SEP 15 1959

Mr. Raymond E. Hartz, Vice President
Mineral Projects, Inc.
55 Green Village Road
Madison, New Jersey

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract No. Idm-E1183

Dear Mr. Hartz:

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

This correspondence relates to the undated Consent to Lien and Subordination Agreement signed by you under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George C. Selfridge

Acting Director

Enclosure

MChing/ama
May 27, 1959

Copy to: Docket
Director's Reading File
Mr. Ching
OME Field Team, Region III (2)

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

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SEP 15 1959

Mr. Melvin E. Richards, President
Yucca Mining & Petroleum Co., Inc.
1224 - 4th N. W.
Albuquerque, New Mexico

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract No. Idm-E1183

Dear Mr. Richards:

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

This correspondence relates to the Consents to Lien and Subordination Agreements, dated February 13, 1958, and May 23, 1958, signed by you under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George C. Selfridge

Acting Director

Enclosure

MChing/ama
May 20, 1959

Copy to: Docket
Director's Reading File
Mr. Ching
OME Field Team, Region III (2)

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

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SEP 15 1959

Mineral Projects, Inc.
E. J. Longyear Company, Agent
416 Colorado Building
Denver, Colorado

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico
Contract No. Idm-E1183

Gentlemen:

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

This correspondence relates to the Consent to Lien and Subordination Agreement, dated March 15, 1958, signed by Mr. D. M. Davidson under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George C. Selfridge (for)

Acting Director

Enclosure

MChing/ama
May 27, 1959

Copy to: Docket
Director's Reading File
Mr. Ching
OME Field Team, Region III (2)

43683

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

RECEIVED MAR 26 1959

DATE	INITIALS	CODE
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		700

Date March 26, 1959
DMEA Docket No. 4842
DMEA Contract No. Idm-E1183
Commodity Uranium
Name of Applicant E. J. Longyear Company
Location of property McKinley County, New Mexico
Estimated cost of project $96,886.99

Memorandum

To: Frederick L. Knouse, Acting Director, OME
Rare and Misc. Minerals Division

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

Subject: Review of Final Report
(Applications, Field Team Report, etc.)

1. Date of subject document: 3/18/59. 2. Date received by reviewer: 3/25/59

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

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

5. Information available on past production: Yes ☐ No ☐

6. Other pertinent factors known to reviewer: Yes ☐ No ☐

7. Explain items marked 'yes' above:

8. Factors needing special consideration:

a. Location ☐
b. Ownership ☐
c. Evidence of mineralization ☐
d. Geology ☐
e. Proposed exploration method ☐
f. Alternate exploration method ☐
g. Costs
h. _____ ☐

9. Action advised:

a. Obtain information from applicant ☐
b. Refer to Field Team ☐
c. Denial ☐
d. Agree with Field Team ☒
e. Disagree with Field Team ☐
f. Suggest alternate plan ☐
g. Request another examination ☐
h. Approval ☐
i. Consult with Mr. _____ at _____ AEC Offices

10. Remarks: (Use back of page if necessary). Certification as discovery or development not recommended.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado
March 25, 1959

OFFICIAL FILE COPY
O. M. E.
RECEIVED MAR 30 1959
DATE 3/30 INITIALS C CODE 220 780

Memorandum

To: Chairman, Operating Committee, OME

From: OME Field Team, Region III

Subject: Docket No. DMEA 4842 (Uranium) Contract Idm-E1183, E. J. Longyear Company, Agent, (San Mateo Dome Project) McKinley County, New Mexico - FINAL SUMMARY REPORT

The original and one copy of the Operator's final report were forwarded by memorandum of March 12, 1959. The original and two copies of the Joint Final Engineering and Geologic Report, by the OME field examiners, were forwarded by memorandum of March 18, 1959.

The contract was considered completed on completion of the authorized work under primary Stages I and III, and the Operator was so notified by our letter of February 19, 1959.

Final payment of the Operator's account was processed by this office March 25, 1959, in conformance with the Report of Review of reported project costs, by the Contract Administration and Audit Division, OME, dated March 13, 1959.

Exploration completed under the contract consisted of the drilling of 22 holes. Acceptable work or service incident to the exploration consisted of the following:

Item	Acceptable Units
Non-core drilling	44,260 feet
Core drilling	591 feet
Drill crew stand-by time	14.5 hours
Logging and probing	44,851 feet
Logging crew stand-by time	16 hours
Bulldozing access roads and drill sites	50 hours
Core boxes purchased	70 boxes
Incidental Allowance	44,851 feet
Circulating materials as required	

F.T. FINAL SUMMARY

The total accepted cost of the project was $96,886.18 toward which the Government contributed the following amount:

Government participation, Stage I, 75 percent of $59,403.25	$44,552.44
Government participation, Stage III, 50 percent of $37,482.93	18,741.47
Total Government participation	$63,293.91

The above accepted units and costs are in agreement with correction contained in our transmittal memorandum of March 18, 1959, pertaining to the joint final engineering and geologic report by the OME field examiners, which differed slightly from records maintained in this office.

Exploration work completed under the contract did not result in the discovery of a significant quantity of uranium ore, therefore certification of the project as a discovery or development is not recommended.

By J. W. Townsend
J. W. Townsend

By E. N. Harshman
E. N. Harshman

DMEA FORM 6 REFERENCE SLIP

REV. 12-56 DEFENSE MINERALS EXPLORATION ADMINISTRATION

TO:	INITIALS	DATE
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3. 700		
4.		
5.		
FROM:		

FOR: Check items for action desired

____ Action ____ Reply for signature of _____

____ Approval ____ Investigate ____ Surname

____ Comment ____ Recommendations ____ Signature

____ Conference ____ Rewrite ____ File

____ Instructions ____ Your information

REMARKS:

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
Denver 2, Colorado
224 New Customhouse
March 18, 1959

OFFICIAL FILE COPY
O. M. E.
RECEIVED MAR 23 1959

DATE	MINERALS	CODE
3/23	C	220
3/27		130
3/27	C	220
		700

Memorandum

To: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4842 (Uranium) Contract Idm-E1183
E. J. Longyear Company, Agent, (San Mateo Dome Project)
McKinley County, New Mexico

Enclosed are the original and two copies of a Joint Final Engineering and Geologic Report, dated March 15, 1959, with transmittal memorandum dated March 11, 1959, by T. M. Romslo, Mining Engineer, Bureau of Mines, and W. L. Emerick, 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 March 12, 1959.

Exploration work completed under the contract did not result in the discovery of a significant quantity of uranium ore, therefore, certification of the project as a discovery or development is not recommended.

The figures on pages 22, 24 and 25 of the joint final report pertaining to work units and costs for "Probing", differ slightly with records in this office. This difference is also reflected in the total costs for Stage I, and for the project. All of the units and costs are tentative and are subject to audit or review by the Contract Administration and Audit Division, OME; however, as the records in this office are in agreement with reimbursement records maintained by the Finance Office, Region III, we believe that they are arithmetically correct, as follows:

Corrections of Units and Costs, Subject to Audit

Stage I

Probing, 26,261 feet at $0.113 per foot----------	$ 2,958.14
Total accepted cost, Stage I----------	59,403.25
Government participation at 75 percent----------	44,552.44

Reviewed by
OME OPERATING COMMITTEE
3-27-59
(date)

FINAL F.T. REPORT

Stages I and III (Total for Project)

Probing, 44,851 feet at $0.111 per foot----------	$ 5,003.37
Total accepted cost, Stages I and III----------	96,886.18
Government participation----------	63,293.91

Further information regarding the matter will be included in the Field Team's final summary report, which will be submitted upon resolution of the balance of matters which are prerequisite to closing the account.

J. W. Townsend

Enclosures

Checked 3-18-59

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

OFFICE OF MINERALS EXPLORATION
Box 4126 University Station
Tucson, Arizona

OME
DEPARTMENT OF THE INTERIOR
MAR 17 1959
REGION III
DENVER, COLORADO

MAR 16 1959

OFFICIAL FILE COPY
GEOLOGICAL SURVEY
RECEIVED MAR 23 1959

DATE		
3/27	JB	130
		220
		Elliott

March 11, 1959

MEMORANDUM

To: J. W. Townsend, Executive Officer
OME Field Team, Region III

From: T. M. Romslo
W. L. Emerick

Through: E. N. Harshman

Subject: Docket No. DMEA-4842 (Uranium)
Contract Idm-E1183, E. J. Longyear Company, Agent
(San Mateo Dome Project), McKinley County, N. Mex.
Final Joint Engineering and Geologic Report.

Enclosed are the original and 10 copies of a final joint engineering and geologic report on the above subject docket.

No significant amounts of uranium were encountered in the drilling project; therefore a Certificate of Discovery or Development is not recommended.

T M Romslo
T. M. Romslo
U. S. Bureau of Mines

W L Emerick
W. L. Emerick
U. S. Geological Survey

TMR:WLE:ms

cc: J. W. Townsend (10)
OME/Tuc. (2)

Reviewed by
OME OPERATING COMMITTEE
3-27-59
(date)

WO

OME
DEPARTMENT OF THE INTERIOR
MAR 17 1959
DENVER, COLORADO

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

OFFICE OF MINERALS EXPLORATION

FINAL JOINT ENGINEERING AND GEOLOGIC REPORT
REGION III

DMEA-4842 (Uranium) Contract Idm-E1183

E. J. Longyear Company, Agent

(San Mateo Dome Project)

McKinley County, New Mexico

Reviewed by
OME OPERATING COMMITTEE
3-27-59
(date)

W. L. Emerick, Geologist
U. S. Geological Survey

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

March 1959

DMEA-4842 (URANIUM) CONTRACT Idm-E1183
E. J. LONGYEAR COMPANY, AGENT
(SAN MATEO DOME PROJECT)
McKINLEY COUNTY, NEW MEXICO

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PROPERTY	4
History and Production	4
Ownership and Extent of Property	5
Present status	6
GEOLOGY	6
Introduction	6
Stratigraphy	7
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Ore Deposits	11
THE PROJECT	13
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Estimated Cost of Project	17
Work Performed on the Project with Costs	25
Efficiency of the Operations	27
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Summary of drill hole logs	
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Figure 1 - Location map	Following page 3
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" 3 - Structure map	Following page 7
" 4 - Geologic map	In Folder
" 5 - Section A-A'	Following page 11

INTRODUCTION

Explorations for uranium in the San Mateo dome area in McKinley County, New Mexico were carried out from May 13, 1958 to October 16, 1958, with governmental aid authorized by the Defense Production Act of 1950, as amended. The work was authorized by contract Idm-E1183, dated April 14, 1958, and was performed by the E. J. Longyear Company as agent for the San Mateo Dome Project, a joint venture comprised of Lisbon Uranium Corporation and Mineral Projects - Venture B, Ltd. It was confined to portions of secs. 27, 32, 33 and 34, T. 14 N., R. 8 W. and secs. 3 and 4, T. 13 N., R. 8 W., N.M.P.M.

The E. J. Longyear Company first requested aid in the explorations in an application that was received by the Defense Minerals Exploration Administration October 4, 1957. The application was assigned docket number DMEA-4842, reviewed by the Operating Committee and referred to the Field Team, Region III for an examination of the property. The property was examined for the Field Team by N. L. Archbold, U. S. Geological Survey, and M. H. Salsbury, U. S. Bureau of Mines, November 19, 1957. Their recommendation that explorations be confined to 2 of 3 proposed areas was approved by the Field Team and the Operating Committee. The contract was duly executed and the project work was initiated shortly thereafter. It was amended June 18, 1958, to provide for an extension of the explorations to the E 1/2 of section 32. This additional work was proposed in the Operator's

application of Docket DMEA-4995, and was approved on the basis of recommendations made by the examining team, J. William Hasler, U. S. Geological Survey, and M. H. Salsbury, U. S. Bureau of Mines.

On November 1, 1958, after completion of the approved portion of authorized work, the Operator requested that the contract again be amended to include drilling in the W 1/2 of section 32. The request was approved on the basis of recommendations made by W. L. Emerick and T. M. Romslo, of the U. S. Geological Survey and U. S. Bureau of Mines, respectively. However, the work was not made a part of the contract inasmuch as the Operator could not obtain necessary land subordination agreement and the contract was terminated December 31, 1958.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The property of the San Mateo Dome project, situated in southeastern McKinley County, New Mexico, was explored for uranium during 1958 with governmental aid authorized by the Defense Production Act of 1950, as amended.

The exploratory work was carried out by E. J. Longyear Company in accordance with the specifications of Contract No. Idm-E1183 of Docket No. DMEA-4842. It comprised the testing of the Westwater Canyon sandstone of the Morrison formation, the principal ore-bearing and presently productive bed of the area, by drilling a total of 22 holes. The total footages of approved drilling and probing were 44,851 and 44,756, respectively. Pre-audited approved cost of the project totalled $96,886.99, of which the Government's share was $63,294.50.

Twenty of the 22 holes drilled were barren and uranium mineralization in each of the other 2 holes was of insignificant extent and degree.

On the basis of the unfavorable findings, governmental aid in additional explorations of the property and Certification of Discovery on the project is not recommended.

ACKNOWLEDGMENT

Acknowledgment is hereby made to J. W. Hasler and N. L. Archbold, U. S. Geological Survey, and to M. H. Salsbury, U. S. Bureau of Mines, for geologic and engineering material, respectively, extracted from their Reports of Examination on the subject project.

LOCATION, TOPOGRAPHY AND PHYSICAL FEATURES

The property explored by the San Mateo Dome Project is about 19 air-miles northeast of Grants, New Mexico, a town on U. S. Highway 66, and the Atchison, Topeka and Santa Fe Railroad. It is situated in secs. 27, 32, 33, and 34, T. 14 N., R. 8 W., and secs. 3 and 4, T. 13 N., R. 8 W., N.M.P.M., McKinley County, New Mexico (figs. 1 and 2).

The property may be reached from Grants by traveling about 3 miles westerly on U. S. Highway 66 to its junction with State Highway 53. Turn right onto the latter highway and proceed about 22 miles to San Mateo village. The southern boundary of the property is about 3 miles north of the village via Forest Service roads. The first 14 miles of Highway 53 is hard surfaced.

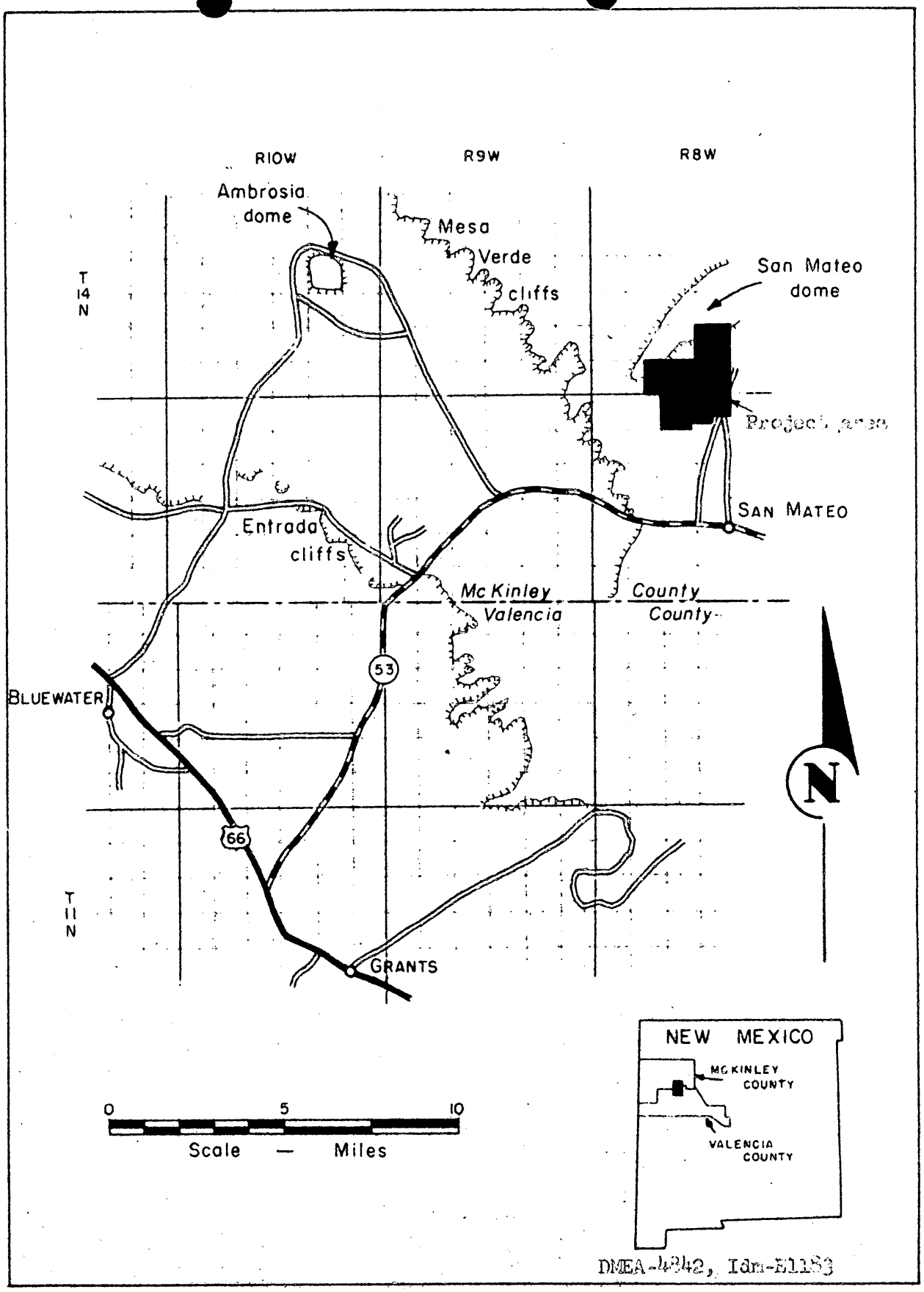


Figure 1. Location Map, F. J. Longyear Co., San Mateo Dome Project, McKinley County, New Mexico.

Altitudes in the San Mateo area range from over 8,000 feet on the mesas to about 6,900 feet on the valley floors to which the exploratory drilling was confined. The mesas are bounded by cliffs and high-angle slopes, 500 to 900 feet high.

Vegetation on the valley floors is largely confined to forage grasses and scattered light growths of scrub cedar trees. On the mesas the growth of pinon pine and scrub cedar trees is fairly dense.

Temperatures and precipitation range widely in the Grants area both winter and summer. Year-round operations are generally feasible except for periods during and following rain or snow storms when secondary roads may be impassable.

PROPERTY

History and Production

Uranium-bearing minerals were first reported in the Grants area by a party of California geologists in 1949. The first commercial deposit was discovered in the Todilto limestone by an Indian sheepherder in 1951. Extensive exploration since that date has resulted in a high rate of discovery and development of large reserves in both the Todilto limestone and the Morrison formation. Exploration has been intensive west and southwest of the San Mateo dome where drilling depths to the potential ore-bearing horizons are considerably less. There have been at least 14 DMEA projects carried on in the area 5 to 10 miles west and southwest of San Mateo dome. Six of these projects have been certified as discoveries.

Interest in the uranium possibilities of the San Mateo dome area dates from 1955 and was based on the geology of the surface and of the underground as revealed by 2 previously drilled oil exploration holes. Property in the area, most of which was open for location, was acquired by firms, one of which was Yucca Uranium, Inc. This firm acquired control of a large block of ground which was transferred by leases to Lisbon Uranium Corporation and Mineral Projects - Venture B. Ltd.

The area was probably first explored for uranium during 1956. Since then, a considerable amount of exploratory work was done and at least 2 discoveries were made. One of the discoveries was made by Rio de Oro Uranium Mines, Inc. in sec. 9, T. 13 N., R. 8 W. Reserve figures for this deposit, yet to be exploited, are not available. The other discovery was made by the Operator in section 32. Prior to the drilling described in this report, the deposit, which had been partially delineated by drill holes, contained estimated total reserves of about 300,000 tons of 0.26 percent U_3O_8 in a zone averaging about 7 feet thick. Exploitation of the deposit was not considered warranted unless the reserves could be increased to a minimum of about 1/2 million tons of similar grade.

Ownership and Extent of Property

The Operator is the lessee of all the property explored by the project and its right, title or interest is subject to the following claims, liens, or encumbrances: Interests of Yucca Uranium, Inc. (Yucca Mining and Petroleum Company, Inc.), G. R. Kennedy, Henry C. Adams,

E. J. Longyear Company, Mineral Projects, Inc., The Parador Mining Co., and a co-partnership comprising Ray B. Shaw, Belva L. Shaw, L. G. Shaw and Elizabeth Shaw.

The property involved in the DMEA exploration project comprised all or parts of secs. 3 and 4, T. 13 N., R. 8 W., secs. 27, 32, 33, and 34, T. 14 N., R. 8 W., N.M.P.M., McKinley County, New Mexico (Figs. 1 and 2).

Present status

With the exception of a temporary portable sample storage shed, there is no equipment or permanent structures present on the property.

GEOLOGY

Introduction

The San Mateo Dome Project is located in the Mt. Taylor mining district. The district lies in the folded and faulted area between the southern fringe of the San Juan basin to the north and the Zuni uplift to the south. Sedimentary formations exposed in the district consist of marine and terrestrial rocks ranging in age from Pennsylvanian to Late Cretaceous. The sediments dip gently northward into the San Juan basin. South and east of the San Mateo Dome Project the sedimentary formations are covered by a Late Tertiary sequence of acidic volcanics and basic flows. Precambrian rocks are exposed in the Zuni uplift.

The properties of the San Mateo Dome Project are centered on and around the San Mateo dome which lies about 9 miles east of the

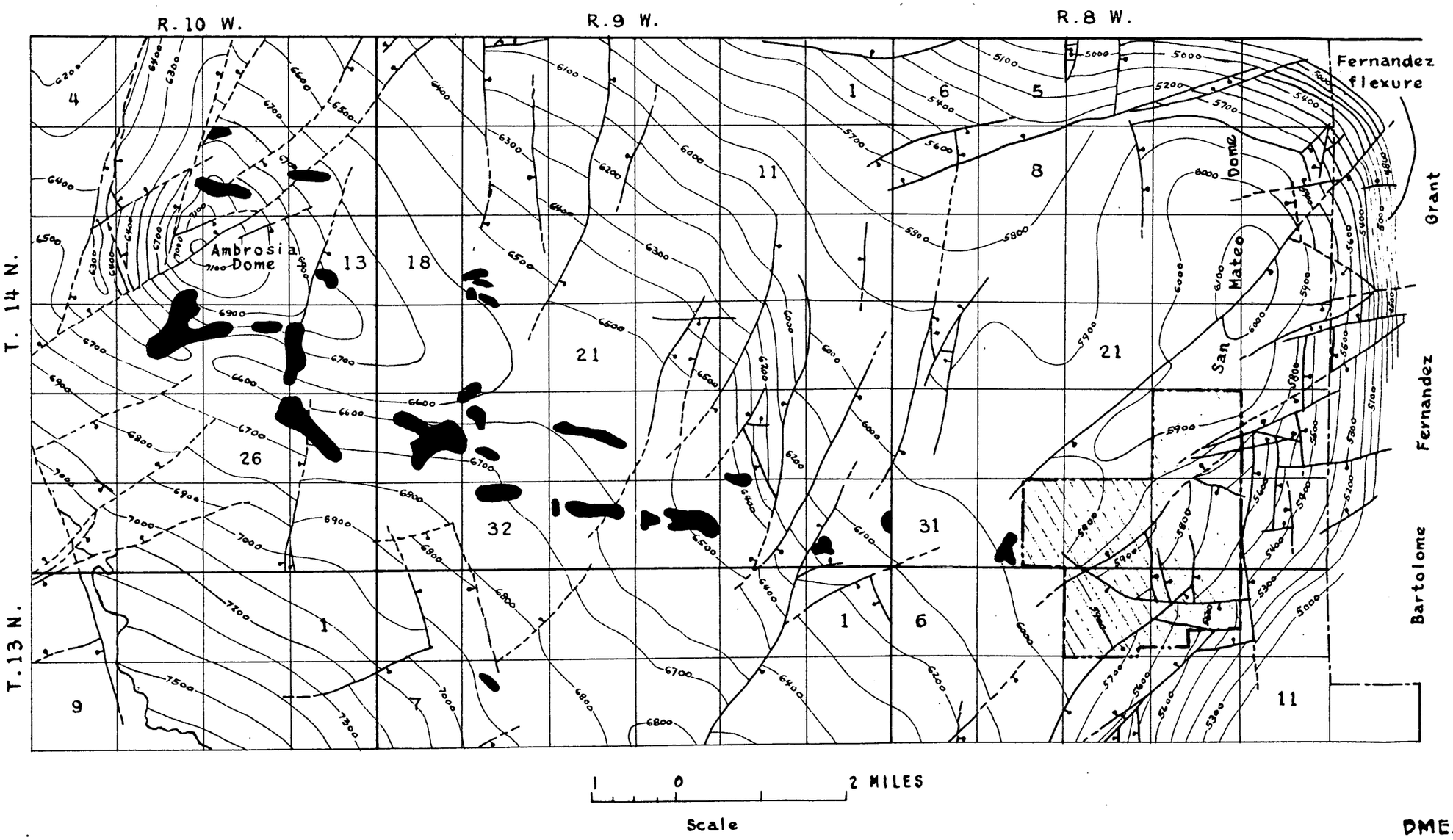
Ambrosia Lake dome. Large uranium deposits occur in a belt which extends between the southern edges of the two domes (fig. 3).

Stratigraphy

Sedimentary rocks along the south side of the San Juan basin range in age from Pennsylvanian to Late Cretaceous; however, only formations of Jurassic age or younger are presently of interest with respect to uranium deposits; a generalized description of these rocks is given in Table 1.

Exploration on the San Mateo dome would be aimed at finding uranium deposits in the Morrison formation. The Morrison formation in the area is composed of three members: from bottom to top these are, the Recapture, Westwater Canyon, and Brushy Basin members. The Recapture member consists of interbedded continental sandstone, siltstone and mudstone units. The sandstone strata are fine to medium-grained and locally contain granules and pebbles disseminated in a sand matrix or concentrated along laminations. The sandstone is generally friable and sedimentary structures are poorly displayed. The member is about 100 feet thick and contains alternate red-brown and light gray beds.

The Westwater Canyon member overlies the Recapture member and consists predominantly of medium- to coarse-grained fluvial sandstone, locally interbedded with gray, greenish gray and reddish brown



EXPLANATION

5400

STRUCTURE CONTOURS ON TOP OF DAKOTA SANDSTONE. CONTOUR INTERVAL = 100 FEET.

BASE OF DAKOTA SANDSTONE

APPROXIMATE POSITION OF KNOWN ORE BODY

FAULT
DOT ON DOWNTHROWN SIDE

AREAS INVOLVED IN DMEA CONTRACT

Note: MODIFIED FROM OPERATOR'S MAP. FAULTS ARE SHOWN AT POSITION ON SURFACE.

DMEA 4842 CONTRACT Idm-E1183.

FIGURE 3.- STRUCTURE MAP OF THE AMBROSIA MINING DISTRICT SHOWING KNOWN ORE BODIES AND RELATION TO PARTS OF THE SAN MATEO DOME PROJECT PROPERTY, McKINLEY COUNTY, NEW MEXICO.

mudstone. In places, the sandstone is friable and arkosic and ranges in color from yellowish gray to yellowish orange or brown. The thickness of the member varies from about 30 feet to as much as 200 feet. It interfingers with the overlying Brushy Basin and underlying Recapture members; consequently, the top and bottom contacts are indefinite. Large uranium deposits occur in the Westwater Canyon member.

Table 1.--Some Jurassic and Cretaceous uranium-producing formations in the vicinity of San Mateo dome.

Age	Formation	Approximate Thickness	Description
			UNCONFORMITY
Early Cretaceous	Dakota	75-160'	Cross-bedded, medium- to fine-grained quartzose sandstone in top part. Gray to black silty carbonaceous shale in lower part. Contains small uranium deposits.
			UNCONFORMITY
Late Jurassic	Morrison	100-160'	Brushy Basin member: gray, green, and reddish mudstone with minor lenses of sandstone and conglomerate; includes ore-bearing Poison Canyon sandstone unit. Interfingers with Westwater Canyon member.
		110-250'	Westwater Canyon member: medium to coarse-grained sandstone with minor intercalated mudstone layers. Locally arkosic or conglomeratic. Contains uranium deposits.
		150-175'	Recapture member: grayish green mudstone with minor lenses of sandstone. Interfingers with Westwater Canyon member.

The Brushy Basin member is composed principally of mudstone and claystone containing various amounts of siltstone and sandstone. Impure bentonitic clay forms most of the Brushy Basin while lesser amounts of medium-grained sandstones occur as lenses and range in thickness from a few feet to as much as 90 feet. Crossbedding and scour and fill features indicate a fluvial origin. Carbonaceous debris and claystone lenses and pebbles are present locally in the sandstone beds. The Brushy Basin member ranges in thickness from 125 to 175 feet. The variation in thickness is partly the result of differential erosion prior to Dakota time.

In T. 13 N., R. 9 W. and R. 10 W., a sandstone unit of the Brushy Basin member, commonly referred to as the "Poison Canyon" sandstone, contains ore deposits of commercial size and grade. This sandstone unit lies about 20 feet above the base of the Brushy Basin member and ranges from 30 to 90 feet in thickness. Drilling data in this area indicate that the so-called "Poison Canyon" sandstone is a tongue of the underlying Westwater Canyon member, and further north and northeast it pinches out. Drilling data in the project area (Fig. 2), particularly in secs. 3 and 4, T. 13 N., R. 8 W., and in secs. 27, 33 and 34, T. 14 N., R. 8 W., indicate that the presence of the sandstone unit is uncertain or missing. In the E 1/2 of sec. 32, T. 14 N., R. 8 W. the unit is believed to be represented in the upper part of the Westwater Canyon member penetrated by drill holes.

Much of the uncertainty in determining the presence of the Poison Canyon sandstone unit in drill hole sludge lay in the heavy contamination of all samples with high percentages of Mancos shale. However, owing to a pinchout, it is quite possible that the sandstone unit is not present in the area.

Structure

The San Mateo dome lies within an easterly trending belt of deformation along the southern edge of the San Juan Basin. Strata in the San Juan Basin to the north and the Zuni uplift to the southwest are relatively undeformed. To the east of the dome, strata dip rather steeply into the northerly trending Mt. Taylor (McCartys) syncline underlying the Mt. Taylor volcanics. The apex of the Ambrosia Lake dome is about 12 miles west of the San Mateo dome.

The San Mateo dome is irregularly elliptical; the axis trends northeast and is convex to the southwest. The dome is strongly asymmetrical as the west flank dips one to three degrees westward while the east flank dips 15 to 30 degrees eastward. Closure on the dome is 150 to 200 feet and involves an area of about 6 1/2 square miles. The dominant structure of the area is not the dome itself, but a sharp, northerly-trending fold, the Fernandez monoclinal flexure, along the eastern side of the dome (fig. 3). The San Mateo dome can be regarded as a minor high area atop the Fernandez flexure. The Tinaja syncline, a shallow fold plunging gently northward, forms the western edge of the San Mateo dome.

The San Mateo dome area is highly faulted (figs. 3 and 4). Two major systems of normal faults are present, a system of northerly trending faults and a system of northeasterly trending faults. Northerly trending faults are characteristically shorter and of smaller throw; individual faults are mostly less than a mile long with a throw of approximately 50 feet or less. Northeasterly trending faults are commonly several miles long and have throws ranging up to 300 feet.

The major northeasterly-trending faults, the Polvadera and the Tinaja, traverse the San Mateo dome area (fig. 4). The Polvadera fault is at least 6 miles long and trends northeasterly across the apex of the dome. The block on the southeast side of the Polvadera fault is downthrown 100 to 300 feet relative to the block on the northwest side. The Tinaja fault trends northeasterly across the northern part of the dome; it is about 4 1/2 miles long and branches into 2 parts in the eastern third. Throw on the Tinaja fault ranges up to 400 feet with the north side downthrown.

Section A-A' (Figure 5) through Holes G-3-4, G-5-4, G-6-4, SM 15-3, G-7-3 and G-8-3 indicates probable faulting between Holes G-3-4 and G-5-4 and between Holes SM-15-3 and G-7-3. The section also indicates probable thinning of the Westwater Canyon member to the east.

Ore deposits

Known uranium deposits in the Morrison formation occur in the main body of the Westwater Canyon member and in the Poison Canyon sandstone unit of the overlying Brushy Basin member. Large deposits are

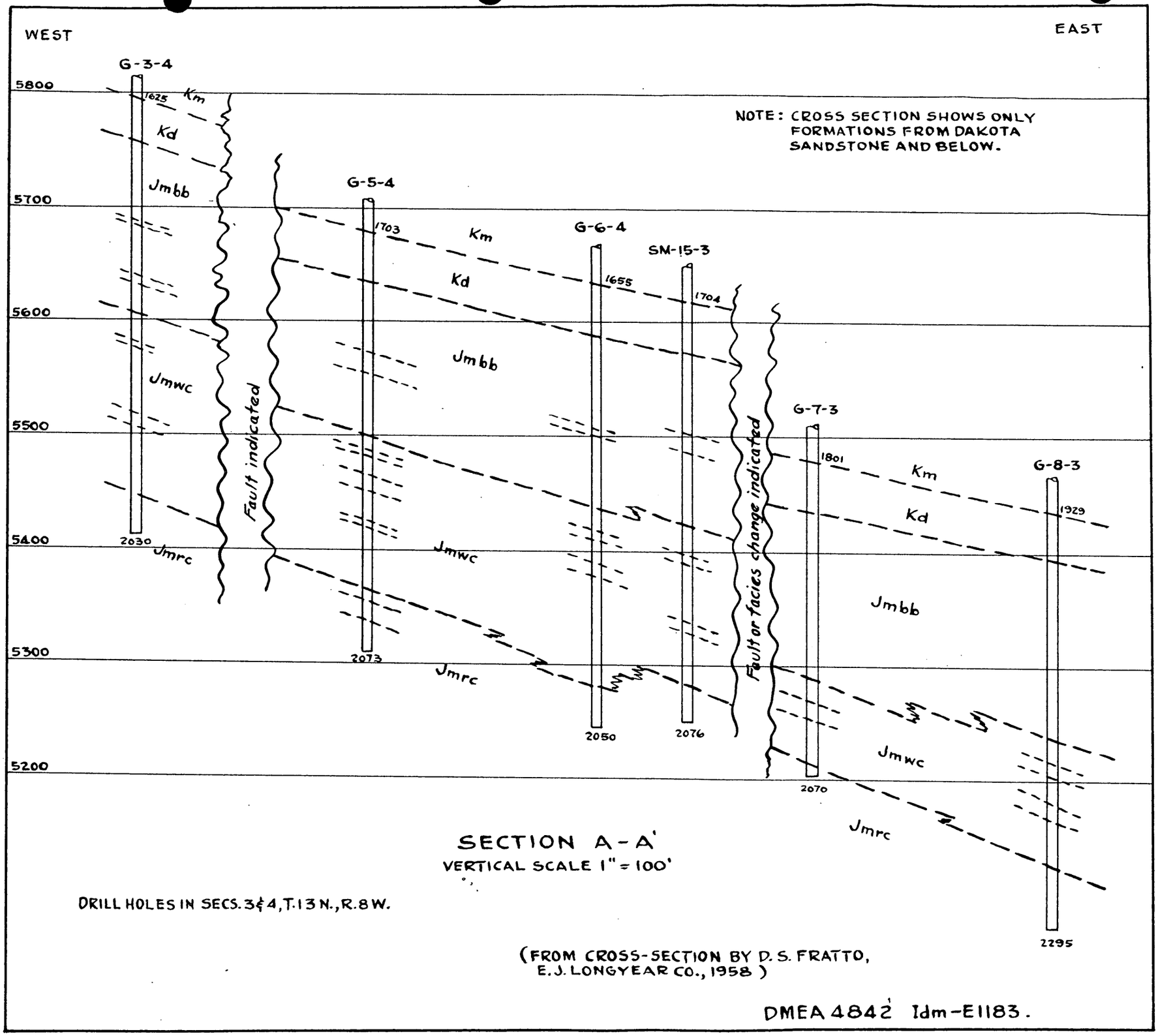


FIGURE 5 .- SECTION A-A' THROUGH DRILL HOLES G-3-4, G-5-4, G-6-4, SM15-3, G-7-3, AND G-8-3, E.J. LONGYEAR CO., SAN MATEO DOME PROJECT, McKINLEY COUNTY, NEW MEXICO.

concentrated in a belt that extends southeastward from the Ambrosia Lake dome to the southern flank of the San Mateo dome and onto the southern part of the property held by the San Mateo Dome Project (Fig. 3). This belt is about 12 miles long and 3 miles wide on the apex of the Ambrosia Lake dome. Although the southeast end is only partly explored the belt apparently narrows in that direction. Individual deposits within this belt contain from a few tons to several million tons of ore averaging 0.25 to 0.30 percent U_3O_8.

About 4 miles south of the main belt of ore deposits, there appears to be a parallel belt in which the deposits occur in the Poison Canyon sandstone. The belt of deposits in the Poison Canyon sandstone is about one mile wide and individual deposits within the belt seem to be smaller and more scattered than those in the main part of the Westwater Canyon member.

Mineralized rock in the Morrison formation consists mainly of sandstone impregnated with uranium and vanadium minerals. Individual ore bodies have an irregular, lenticular shape and are flat-lying. Ore deposits consist of a cluster of these lenticular bodies which commonly overlap and coalesce but may be separated by barren sandstone. Based on results of original drilling the deposits range in thickness from less than a foot to 80 feet or more and they occupy zones as much as 2,000 feet wide and up to 5,000 feet long. Most commonly they are elongate parallel to the main belt of deposits. Subsequent development shows in some known cases that the actual widths of the deposits are substantially narrower than drilling results indicate.

THE PROJECT

The following description of the authorized work and estimated cost of the project have been abstracted from Exhibit "A" of contract Idm-E1183.

Description of the Work

The work consists of exploration by core and non-core drilling to test the Westwater Canyon sandstone of the Jurassic Morrison formation for uranium.

Drilling depths are estimated to average 2030 feet. Drill holes shall not extend more than 20 feet below the contact between the Westwater Canyon and underlying Recapture members of the Morrison formation.

Non-core drilling may be either dry or wet. Dry cuttings or sludge samples shall be taken from each 10-foot interval drilled, and logged geologically. When drilling through the Westwater Canyon member or any other favorable or mineralized horizon, the samples shall be checked for radioactivity, sacked, and saved for inspection by the Government. Samples indicating significant mineralization shall be split and one portion analyzed chemically for uranium.

When core drilling, all the core shall be saved, stored in core boxes, checked for radioactivity, and logged geologically. Sections indicating significant mineralization shall be split; one-half shall be analyzed chemically for uranium and one-half reserved for inspection by the Government.

Any stored samples may be disposed of by the Operator after approval by the Government.

All holes shall be probed and gamma ray, resistivity, and self-potential logs recorded.

The record of all logging and probing, together with certified copies of all assay certificates, shall be submitted with the Operator's monthly progress reports.

No hole shall be drilled closer than 200 feet to the outer boundaries of the land described in Annex I.

The Government will not contribute to any costs of an incompleted drill hole.

Access roads and drill sites shall be prepared with an RD-6 tractor-dozer, or an equivalent unit of the same or another make.

The project shall be supervised at all times by a geologist or mining engineer, who shall devote full time to the project work.

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

The work is divided into two stages, as hereinafter described. The Operator shall complete Stage I, and shall perform as much of Stage II as the Government approves in writing in advance.

Stage I

Prepare access roads and drill sites, and drill 13 holes, aggregating an estimated 26,200 feet, at the locations indicated on

the attached map (Figure 2).

If, as the drilling progresses, any location is found to be unfavorable as a result of the preceding drilling, such location may be changed to a more favorable location upon approval of the Government, but a spacing of approximately 2,000 feet shall be maintained.

All the holes shall be drilled non-core throughout, except holes Nos. 1 and 9. Each of these two holes shall be drilled non-core for a distance of approximately 1,650 feet, and then cored through the bottom not more than 350 feet.

If the 13 holes require more than 25,500 feet of non-core drilling to reach the desired horizon, additional footages of non-core drilling and funds may, with the written approval of the Government, be transferred and deducted from Stage II.

Stage II

Prepare access roads and drill sites and drill (non-core) not more than 10 holes, aggregating not more than 20,500 feet of drilling as offsets to Stage I holes. The offsetting may be along the north-south fences as shown, or in other directions. Offset holes are expected to be spaced approximately 1,000 feet from previously drilled holes, but a spacing of not less than 500 feet may be used when required to follow or prove a mineralized trend.

By amendment No. 1, dated June 18, 1958, Stages III and IV were added to the contract, and the revised work descriptions contained the following:

"Drilling depths are estimated to average 2,030 feet in Stages I and II and 2,100 feet in Stages III and IV.

"The work is divided into four stages, as hereinafter described. The Operator shall complete Stages I and III, and shall perform as much of Stages II and IV as the Government approves in writing in advance. In the event of Government approval of work under Stages II and IV, the work may be carried on concurrently with the work in the other stages.

"Stages III and IV are added as described hereinafter. The work in these stages is confined to the E 1/2 section 32 T. 14 N., R. 8 W.

Stage III

"Prepare access roads and drill sites and drill 9 non-core holes aggregating an estimated 18,900 feet at the locations indicated on the attached map (Fig. 2).

Stage IV

"Prepare access roads and drill sites and drill not more than 8 non-core holes aggregating not more than 16,800 feet as offsets to Stage III holes which penetrate ore grade material. Thus, offset holes are expected to be spaced approximately 700 feet from previously drilled holes. However, a spacing of not less than 500 feet may be used when required to follow or prove a mineralized trend or when topography or other factors justify the closer offsetting."

Estimated Cost of Project

Stage I

Actual Costs

Independent Contracts

19,500 feet non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$29,250.00	
6,000 feet non-core drilling, 1,500-2,200 ft. depths, @ $2.25/ft.	13,500.00	
700 feet core drilling, 1,600-2,200 ft. depths, @ $13.00/ft.	9,100.00	
13 hrs. drill crew stand-by time @ $15.00/hr.	195.00	
26,200 feet probing and logging @ $0.115/ft.	3,013.00	
13 hrs. logging crew stand-by time @ $10.00/hr.	130.00	
13 holes @ $40.00/hole for cost of circulation materials in excess of $100.00 per hole	520.00	
40 hrs. bulldozing @ $15.00/hr.	600.00	
70 cardboard core boxes @ $1.25 ea.	87.50	
30 chemical analyses @ $5.00 ea.	150.00	$56,545.50

Fixed Unit Costs

Incidental allowances for each foot of hole drilled, 26,200 feet @ $0.18/ft.	4,716.00
Estimated Total Cost of Stage I	$61,261.50

Stage II

Actual Costs

Independent Contracts

15,000 feet non-core drilling 0-1500 ft. depths, @ $1.50/ft.	$22,500.00	
5,500 feet non-core drilling, 1,500-2,200 ft. depths, @ $2.25/ft.	12,375.00	
10 hrs. drill crew stand-by time @ $15.00/hr.	150.00	
20,500 feet probing and logging @ $0.115/ft.	2,357.50	
10 hrs. logging crew stand-by time @ $10.00/hr.	100.00	
10 holes @ $40.00/hole for cost of circulation materials in excess of $100.00/hole	400.00	
30 hrs. bulldozing @ $15.00/hr.	450.00	
24 chemical analyses @ $5.00/ea.	120.00	
		$ 38,452.50

Fixed Unit Costs

Incidental allowances for each foot of hole drilled, 20,500 feet @ $0.18/ft.	3,690.00
Estimated Total Cost - Stage II	$ 42,142.50

Estimated Total Cost of Stage I	$ 61,261.50
Estimated Total Cost of Stage II	42,142.50
Estimated Total Cost Stages I and II (rounded)	$103,400.00
Government participation @ 75%	$ 77,550.00

Stage III

Actual Costs

Independent Contracts

13,500 feet non-core drilling, 0-1,500 ft. depths, @ $1.50/ft.	$20,250.00	
5,400 feet non-core drilling, 1,500-2,200 ft. depths, @ $2.25/ft.	12,150.00	
9 hrs. drill crew stand-by time @ $15.00/hr.	135.00	
18,900 feet probing and logging @ $0.115/ft.	2,173.50	
9 hrs. logging crew stand-by time @ $10.00/hr.	90.00	
9 holes @ $40/hole for cost of circulation materials in excess of $100 per hole	360.00	
12 hrs. bulldozing @ $15/hr.	180.00	
15 chemical analyses @ $5.00/ea.	75.00	
		$35,413.50

Fixed Unit Costs

Incidental allowance for each foot of hole drilled, 18,900 feet @ $0.18/ft.	3,402.00
Estimated Total Cost of Stage III	$38,815.50

Stage IV

Actual Costs

Independent Contracts

12,000 feet non-core drilling, 0-1,500 ft. depths, @ $1.50/ft.	$18,000.00	
4,800 feet non-core drilling, 1,500-2,200 ft. depths, @ $2.25/ft.	10,800.00	
8 hrs. drill crew stand-by time @ $15.00/hr.	120.00	
16,800 feet probing and logging @ $0.115/ft.	1,932.00	
8 hrs. logging crew stand-by time @ $10.00/hr.	80.00	
8 holes @ $40/hole for cost of circulation materials in excess of $100 per hole	320.00	
12 hours bulldozing @ $15.00/hr.	180.00	
20 chemical analyses @ $5.00/ea.	100.00	
		$31,532.00

Fixed Unit Costs

Incidental allowance for each foot of hole drilled, 16,800 ft. @ $0.18/ft.	3,024.00
Estimated Total Cost Stage IV	$34,556.00

Summary of Costs

Estimated Total Cost of Stage I	$61,261.50		
Estimated Total Cost of Stage II	42,142.50		
Estimated Total Cost of Stages I and II (rounded)		$103,400.00	
Government participation @ 75%			$ 77,550.00
Estimated Total Cost of Stage III	$38,815.50		
Estimated Total Cost of Stage IV	34,556.00		
Estimated Total Cost of Stages III and IV (rounded)		$73,370.00	
Government participation @ 50%			$ 36,685.00
Estimated Total Cost of the Project		$176,770.00	
Government participation			$114,235.00

The following total costs of the project are before an audit of the project accounts by the Office of Minerals Exploration.

Stage I

Actual Costs - Independent Contracts.

Drilling:		
Non-core		
0-1500 feet, 19,500 ft. @ $1.50 per ft.	$29,250.00	
1500-2200 feet, 6,170 ft. @ $2.25 per ft.	13,882.50	
Core		
591 feet @ $13.00 per ft.	7,683.00	
		$50,815.50
Drill Crew Stand-by 5.5 hours @ $15.00 per hour		82.50
Circulation Material		82.00
Bulldozing 38 hours @ $15.00 per hour		570.00
Probing 26,166 feet @ approx. $0.113 per foot		2,958.95
Probing Crew Stand-by 8.6 hours @ $10.00 per hour		86.00
Core boxes 70 boxes @ approx. $1.17 each		82.13

Fixed Costs

Incidental allowance, 26,261 feet @ $0.18 per ft.	4,726.98
Total Cost of Stage I	$59,404.06
Government participation @ 75%	$44,553.04

Stage III

Actual Costs

Drilling:

Non-core

0-1500 feet, 13,500 ft. @ $1.50 per foot	$20,250.00	
1500-2200 feet, 5,090 ft. @ $2.25 per foot	11,452.50	
		$31,702.50
Drill Crew Stand-by 9 hours @ $15.00 per hour		135.00
Bulldozing 12 hours @ $15.00 per hour		180.00
Probing 18,590 feet @ approx. $0.11 per foot		2,045.23
Probing Crew Stand-by 7.4 hrs. @ $10.00 per hour		74.00

Fixed Costs

Incidental allowance, 18,590 feet @ $0.18 per foot	3,346.20
Total Cost of Stage III	$37,482.93
Government participation @ 50%	$18,741.46

Stages I and III

Actual Costs

Drilling:

Non-core		
0-1500 feet, 33,000 ft. @ $1.50 per ft.	$49,500.00	
1500-2200 feet, 11,260 ft. @ $2.25 per ft.	25,335.00	
Core		
591 feet @ $13.00 per foot	7,683.00	$82,518.00
Drill Crew Stand-by		
14.5 hours @ $15.00 per hour		217.50
Circulation Material		82.00
Bulldozing		
50 hours @ $15.00 per hour		750.00
Probing		
44,756 feet @ approx. $0.112 per foot		5,004.18
Probing Crew Stand-by		
16 hours @ $10.00 per hour		160.00
Core boxes		
70 boxes @ approx. $1.17 each		82.13

Fixed Costs

Incidental allowance, 44,851 ft. @ $0.18 per ft.	8,073.18
Total Cost of Project	$96,886.99
Government participation	$63,294.50

Work Performed on the Project with Costs

Mr. B. F. Sorensen, project engineer, E. J. Longyear Company, Grants, New Mexico supervised all phases of the project operations.

Drilling operations were carried out with Model 1500, Failing rotary drill rigs by Scott Brothers Drilling Company, Grants, New Mexico. The logging of holes was done by Century Geophysical Corporation, Tulsa, Oklahoma, using a truck-mounted Logging Control Unit, Model 2201. Three logs, gamma ray, resistivity, and self-potential, were recorded.

Drilling operations were started May 13, 1958. Stage I drilling with 1 rig being employed to July 1, 1958 and 2 rigs thereafter was completed September 10, 1958. It was immediately followed by Stage III drilling that was completed October 24, 1958. Each hole was electrically logged, generally not more than 1 day after being bottomed.

Stage I drilling comprised the drilling of an allowable 26,261 feet in 13 holes. Non-core, wet drilling to a diameter of 4 3/4 inches was employed except in 2 of the holes, G-1-33 and G-9-27, where a total of 591 feet of core drilling was done at intervals from 1700-2034 feet and 1650-1907 feet, respectively. Core of 2 5/16 inches in diameter was recovered, using a 4-inch bit and 15-foot barrel.

Stage III drilling comprised the wet, non-core drilling to a diameter of 4 3/4 inches of 9 holes for an allowable total of 18,590 feet.

The total allowable footage of drilling and electric logging in the 22 holes of both stages was 44,851 and 44,756, respectively.

Additional drilling and probing to depths more than 20 feet below the Westwater-Recapture contact totalled 54 feet and 177 feet, respectively, which were disallowed.

Samples collected from each 10 feet of hole drilled were logged by a geologist and those through the Westwater formation were checked for radioactivity with a Geiger counter. None of the samples checked showed radioactivity above background. Probing, however, indicated that each of 2 holes, G-15-32 and G-16-32, contained a thin zone of slightly abnormal radioactivity. Failure to note abnormal radioactivity with the Geiger counter probably can be attributed to contamination of the samples.

The estimated extent and degree of mineralization in the 2 holes is later reported under "Ore Reserves".

Contamination of the samples also made positive determinations of formational contacts difficult or impossible. Consequently, there existed some discrepancies between contacts established from a study of the sludge samples and those indicated by the geophysical logs. Although the differences are not great, contacts used as reference points are those taken from the geophysical logs because their greater accuracy has been definitely established by the findings from core drilled holes and mine workings.

Core recovery from the 257 feet of hole G-9-27 was 234 feet or 91 percent. For hole G-1-33, overall recovery from the 334 feet drilled was 297 feet or 89 percent. In the Westwater formation only,

the recovery was 95 percent. All core was checked for radioactivity and none was found worthy of chemical assay.

The monthly advance in drilling per rig shift ranged from 103 feet to 296 feet and averaged about 190 feet. The aggregate time lost in drilling probably was not abnormally great inasmuch as the interruptions were infrequent and of short duration. Principal delays were caused by loss of water circulation in a few holes and by breakage of a string of drilling rods and a few roller-cone drilling bits. Fishing operations for the rods with attached core barrel and bit and the broken bits were successful.

Efficiency of the Operations

All phases of the project were efficiently carried out under the supervision of B. F. Sorensen, project engineer, in accordance with acceptable standards.

Ore Reserves

Thirteen DMEA holes drilled under Stage I, in Secs. 3 and 4, T. 13 N., R. 8 W., and Secs. 27, 33 and 34, T. 14 N., R. 8 W., on a widely spaced pattern of approximately 2,000 feet between holes (Fig. 2), were found essentially barren of radioactivity by probing methods.

Probing results under Stage III drilling in the E 1/2 Sec. 32, T. 14 N., R. 8W. (Fig. 2), indicated 7 holes with no radioactivity above background, and 2 holes (G-15-32 and G-16-32) containing weak radioactivity. The radioactivity in Hole G-15-32 occurred between the intervals

of 1876 and 1877 feet with an estimated 0.09 percent eU_3O_8; the radioactivity in Hole G-16-32 occurred between the intervals 1884 and 1885 feet with an estimated 0.03 percent eU_3O_8. The radioactivity was thought to be in the Poison Canyon sandstone but positive identification of the unit was impossible because of heavy contamination of the sludge samples with overlying Mancos shale.

No ore reserves appear to underlie the project area, inasmuch as none of the 22 DMEA drill holes, or any of the holes drilled previously by the Operator, penetrated significant amounts of uranium mineralization.

APPENDIX

Summary Logs of DMEA-Drilled Holes
San Mateo Dome Project

Hole No.	Total Depth (Ft.)	Mineralized zone (Ft.) Interval	Thickness	Classification	%eU3O8	%U3O8	Remarks
G- 1-33	2036	-	-	Barren	-	-	Cored: 1700'-2027'
G- 2- 4	2020	-	-	"	-	-	
G- 3- 4	2030	-	-	"	-	-	
G- 4- 4	2020	-	-	"	-	-	
G- 5- 4	2060	-	-	"	-	-	
G- 6- 4	2050	-	-	"	-	-	
G- 7- 3	2070	-	-	"	-	-	
G- 8- 3	2295	-	-	"	-	-	
G- 9-27	1907	-	-	"	-	-	Cored: 1650'-1907'
G-10-27	1950	-	-	"	-	-	
G-11-34	1880	-	-	"	-	-	
G-12-27	2090	-	-	"	-	-	
G-13-27	1970	-	-	"	-	-	
G-14-32	2080	-	-	"	-	-	
G-15-32	2070	1876-1877	1.0	Minor mineralization	0.09	-	
G-16-32	2080	1884-1885	1.0	"	0.03	-	
G-17-32	2070	-	-	Barren	-	-	
G-18-32	2050	-	-	"	-	-	
G-19-32	2080	-	-	"	-	-	
G-20-32	2090	-	-	"	-	-	
G-21-32	2090	-	-	"	-	-	
G-22-32	2030	-	-	"	-	-	

OFFICIAL FILE COPY

Date	Surname	Code
3/19	G McCarthy	800
3/19	Talbot	800
3/19	C	220
		700

MAR 19 1959

Memorandum

To: Donald T. Finch, OME Auditor

From: Jay L. Chambers (Signed) J. L. Chambers
Contract Administration and Audit Division

Subject: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
Contract No. Ism-E1183

Your Report of Review on the above referenced contract is acceptable and normal distribution is authorized.

GMcCarthy/GMcC
March 19, 1959

cc: Docket
Director's Reading File
Mr. Chambers

8623

OFFICIAL FILE COPY
O. M. E.
RECEIVED MAR 16 1959
DATE | CODE
3/16 | C 220
" | 700

224 New Customhouse
Denver 2, Colorado
March 12, 1959

Memorandum

To: Donald T. Finch, GMK Auditor

From: Executive Officer, GMK Field Team, Region III

Subject: Docket No. DMRA 4542 (Uranium) Contract Iam-K1183,
E. J. Longyear Company, Agent (San Mateo Dome Project)
McKinley County, New Mexico

The subject contract was considered completed on completion of the authorized work under primary Stages I and III, and the Operator was so notified by our letter of February 19, 1959, a copy of which is enclosed for your records, together with a copy of the Operator's letter of February 17, 1959, requesting termination.

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

Work or service completed on a fixed unit cost basis consisted of Incidental Allowance for 44,851 feet of drilling.

The sum of $500.00 was withheld from reimbursement to the Operator in processing its final accounting report, which was for the month of October, 1958.

Original signed by
J. W. TOWNSEND

J. W. Townsend

Enclosure

JWT:hmh

cc: Chmn. Op. Comm. (2)
Harshman
Ramalo, GMK/Tuc.
Emerick
Corres.file, Reg. III
Cooper
Chron

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado
March 12, 1959

OFFICIAL FILE COPY
O. M. E.
RECEIVED MAR 16 1959

DATE	INITIALS	CODE
3-16	C	220
3/16		800
3/17	Ching	700

Memorandum

To: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4842 (Uranium) Contract Idm-E1183,
E. J. Longyear Company, Agent (San Mateo Dome Project)
McKinley County, New Mexico

Enclosed are the original and one copy of a Final Engineering and Geologic Report, submitted by the Operator, pertaining to work under the subject contract.

The Operator's final report appears to be complete, therefore, we recommend that it be accepted as complying with the requirements under Article 7(c) of the contract form.

J. W. Townsend

Enclosures

Longyear

E. J. LONGYEAR COMPANY
General Offices, 76 South 8th St.
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 9-7631 • CABLE LONGCO

March 7, 1959

OME
DEPARTMENT OF THE INTERIOR
MAR 11 1959
DENVER, COLORADO

United States Department of the Interior
Office of Minerals Exploration
224 New Customhouse
Denver 2, Colorado

Attention: J. W. Townsend, Executive Officer
OME Field Team, Region III

Re: Docket No. DMEA 4842 (Uranium)
Contract No. Idm-E1183
San Mateo Dome Project
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Gentlemen:

Pursuant to conditions under Article 7-c of Exploration Project Contract Idm-E1183, between the United States Government, through the Department of Interior Defense Minerals Exploration Administration, and the San Mateo Dome Project, we are submitting herewith the original and four copies of our "Final Report" on results of work performed under the Contract, together with the necessary maps, charts, logs, and other related data.

We wish to thank you for the very helpful cooperation and assistance you so graciously extended to us prior to and during the term of the Project.

Very truly yours,

E. J. LONGYEAR COMPANY

B. F. Sorensen
Project Engineer

BFS/emr

Longyear
E. J. LONGYEAR COMPANY
General Offices, 76 South 8th St.
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 9-7631 • CABLE LONGCO

March 7, 1959

United States Department of the Interior
Office of Minerals Exploration
224 New Customhouse
Denver 2, Colorado

OME
DEPARTMENT OF THE INTERIOR
MAR 11 1959
DENVER, COLORADO

Attention: J. W. Townsend, Executive Officer
OME Field Team, Region III

Final Report (March, 1959)

Re: Docket No. 4842 (Uranium)
Contract No. Idm-E1183
San Mateo Dome Project
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Gentlemen:

The following is submitted as a Final Report on results of work completed on the San Mateo Dome Project, McKinley County, New Mexico, under DMEA Contract Idm-E1183.

INTRODUCTION

An application for assistance on a drilling program was first submitted to the Defense Minerals Exploration Administration in October of 1957. The application was approved in April, 1958 and a Contract with the Government was signed allowing for some 23 holes to be drilled in two stages of drilling, Stage II (10 holes) to be drilled only if Stage I results warranted and Government approval was given in writing. Government participation was to be at 75%. The approved program covered drilling in sections 27, 33, and 34, T. 14N., R. 8W., and sections 3 and 4, T. 13 N., R. 8W., NMPM, McKinley County, New Mexico.

In April, 1958 a second DMEA application was submitted covering a drilling program in the E $\frac{1}{2}$ of section 32, T. 14 N., R. 8 W., NMPM, McKinley County, New Mexico. The drilling covered all of the area in the E $\frac{1}{2}$ of the section south of the mesa slope, on a spacing of approximately 700 feet. Government participation was to be at 50%.

On June 28, 1958, an Amendment was made to the existing Contract (Idm-E1183), providing for additional work and funds as requested in the application of April, 1958. The Government Contract, as amended, covered

drilling 40 exploratory holes at an estimated cost of $176,770.00, of which the Government would contribute up to $114,235.00. The additional work allowed drilling up to 17 holes in the E ½ of section 32 in two stages of drilling.

The overall program (40 holes) was to be carried out in four stages of drilling. Stages I and III were to be drilled first, Stages II and IV to be drilled only if results of drilling in Stages I and III warranted, and Government approval was given in writing. Drilling under the Contract commenced May 13, 1958.

GENERAL GEOLORY

For details of straigraphy and structure in the area of which the San Mateo Dome Project is a part, reference is made to V. C. Kelley's Report on Geology and Uranium Possibilities of the San Mateo Dome Area, McKinley County, New Mexico. Mr. Kelley's Report was previously submitted to DMEA as Appendices to the applications for DMEA assistance which resulted in the Contract covered by this report. A general picture of the geology follows.

Stratigraphy

The rocks exposed in the San Mateo Dome area are the Mesaverde Group of Upper Cretaceous age. The broad valleys throughout the area and the steep canyons on the west and south are in the Mulatto shale member of the Crevasse Canyon formation. Covering most of the center and the western edge of the area steep cliffs occur, composed in ascending order, of the flat-lying Dalton sandstone and Gibson coal members of the Crevasse Canyon formation, and capped by the Point Lookout sandstone. Unexposed but lying below the Mulatto shale, in descending order, are the Dilco coal members of the Crevasse Canyon formation, Gallup sandstone, Mancos shale, and Dakota sandstone (Upper Cretaceous); Brushy Basin member of the Morrison formation (Jurrasic), the Westwater Canyon member of the Morrison (an upper Westwater Canyon sandstone lens intertongues with the overlying Brushy Basin shale in parts of the area, and is locally known as the Poison Canyon sandstone); and the Recapture Creek member of the Morrison formation.

The uranium ore deposits of the Ambrosia Lake area occur in the main body of the Westwater Canyon member of the Morrison formation and also in the Poison Canyon sand-tongue. In the San Mateo Dome area mineralization has been noted only in the Poison Canyon sand-tongue.

Structure

Reconnaissance drilling on the San Mateo Dome has confirmed the existence of an assymmetrical dome of post-Cretaceous age. Offset drilling in section 32 suggests that the axis of the dome passes through the center

of that section in a northeast direction. The dome is broken by numerous northeast-trending faults. Other faults with a different trend, not apparent on the surface, are indicated by drill hole information, as is pre-Cretaceous folding in the Morrison formation.

EXPLORATION

On May 13, 1958, drilling on the San Mateo Dome Project, under DMEA Contract Idm-E1183 was initiated. Drilling was continuous through October 24, 1958, at which time Stages I and III were completed. Results of drilling in Stages I and III did not justify completing Stages II and IV; however, a request was made on November 1, 1958 for an amendment to the Contract to allow for further drilling in the W ½ of section 32 (see Fig. 1 attached). The request was for 6 holes. On December 9, 1958, tentative approval was given by the Government to drill 2 of the requested holes, with the provision to be made for additional holes should either of the first 2 penetrate ore-grade material. Because executed Consents to Lien forms covering additional ground to be subordinated under the Contract could not be obtained from all parties concerned, the request of November 1, 1958, was withdrawn on February 17, 1959.

During the term of the Contract, 45,016 feet were drilled in 22 completed holes. Total cost of the project was approximately $98,147.79, of which the Government contributed approximately $63,294.50.

Details of drilling, probing, and sampling under each Stage of the work follows.

Drilling

All holes were drilled by Scott Bros. Drilling Company of Grants, New Mexico, with a Failing truck-mounted Model 1500 drill rig and using 4 3/4 inch bits. When coring, a 4 inch bit was used to get a 2 5/16 inch core. Samples of drill cuttings indicated that all holes penetrated the Recapture member of the Morrison formation at least 20 feet.

Of the 45,016 feet drilled only 44,851 feet were submitted to the Government for reimbursement. The difference is explained by the fact that some of the holes penetrated the Recapture more than 20 feet and the Government only recognized depths up to 20 feet into the Recapture member.

Stage I - Drilling commenced May 13, 1958 and was completed September 10, 1958. A total of 26,376 feet were drilled in 13 completed holes (see Drill Hole Data Sheet attached). One hole was drilled in section 33, 5 in section 4, 2 in section 3, 4 in section 27, and 1 in section 34 (see attached Fig. 1 for hole locations).

Two holes, G-1-33 and G-9-27, were cored through the Westwater member. Total feet cored were 591; 334 feet in hole G-1-33, and 257 feet in hole G-9-27.

A total of 25,500 feet of non-core drilling and 700 feet of core drilling was allowed by the Contract. Of the 26,376 feet drilled, 26,261 feet were submitted to DMEA for reimbursement. The excess footage turned in was approved by DMEA by letter of November 10, 1958, to the San Mateo Dome Project from Mr. J. W. Townsend; the footage being covered by a transfer from that footage allowed under Stage II drilling.

Stage II - Results of Stage I drilling did not justify continuing with Stage II drilling, therefore no work was done under Stage II.

Stage III - Drilling started September 8, and was completed October 24, 1958. A total of 18,640 feet were drilled in 9 completed holes (see Drill Hole Data Sheet attached). All holes were drilled in the E ½ of section 32, spacing between holes being approximately 1000 feet north to south and 2000 feet east to west. None of the holes were cored. Of the 18,640 feet drilled, 18,590 feet were submitted to DMEA for reimbursement. The footage not submitted was deducted from the total because certain of the holes were drilled more than 20 feet into the Recapture member.

None of the holes penetrated ore-grade material.

Stage IV - Because Stage IV holes were to be drilled as offsets to Stage III holes that penetrated ore-grade material, no work was done under Stage IV.

Probing

All holes were probed by Century Geophysical Corporation of Tulsa, Oklahoma, using a truck-mounted Logging Control Unit, Model 2201. In each hole, there were recorded (when possible) three logs, gamma-ray, resistivity, and self-potential.

The geophysical logs indicated that all holes except one were drilled into the Recapture member at least 20 feet. The log on hole G-7-3 indicates that the Recapture was penetrated only 11 feet. The Drill Hole Date Sheet attached is a compilation of all data obtained from an interpretation of the gamma-ray, resistivity, and self-potential curves recorded on the geophysical logs. Because of their bulk (they are each 20 feet long) and the cost of reproduction, plus the fact that 5 copies of each log have previously been submitted, no logs will be submitted with this report. Should it be necessary that copies of the logs are needed arrangements can be made to submit them at a later date.

A total of 44,930 feet were probed in 22 completed holes. Of the total feet only 44,756 feet were submitted to DMEA for reimbursement. The difference is explained by the fact that some of the holes could not be probed to their entire depth because of caving, and by the fact that

some of the holes were drilled more than 20 feet into the Recapture but the Government only recognized depths up to 20 feet into the Recapture member.

Stage I - a total of 26,377 feet were logged in 13 completed holes. No above background radioactivity was recorded in any of the holes and all are considered barren (see Drill Hole Data Sheet attached).

The Westwater member ranges in thickness from 73 feet in hole G-7-3 to 202 feet in hole G-1-33. Average thickness is 132 feet. The Poison Canyon sand is thought to be present only in holes G-3-4 and G-4-4. In most of the other holes there exists several shale splits within what is interpreted as the Westwater and it is possible that the upper sand beds could be the Poison Canyon sand; however, this cannot be determined because of the distance between holes which makes correlation difficult, and the entire interval is called the Westwater member.

Of the total feet probed, only 26,166 feet were submitted for reimbursement.

Stage II - No holes were drilled under Stage II.

Stage III - A total of 18,653 feet were logged in 9 completed holes. No above background radioactivity was recorded in 7 of the 9 holes probed, indicating that they are barren. Two of the holes, G-15-32 and G-16-32, contained above background radioactivity and are considered mineralized. The indicated mineralization is in the Poison Canyon sand at a depth of approximately 1880 feet. Only slight mineralization, amounting to an estimated 1 - 3 feet of 0.03 -0.04% eU308 is indicated (see Drill Hole Data Sheet attached).

The Westwater member ranges in thickness from 106 feet in hole G-16-32 to 211 feet in hole G-22-32. Average thickness is 151 feet. The Poison Canyon sand unit is present in all but 3 holes. Average thickness of the Poison Canyon sand is approximately 50 feet. Thickness of the sand has no noticeable effect on the mineralization.

Of the total feet probed, only 18,590 feet were submitted to DMEA for reimbursement.

Stage IV - No holes were drilled under Stage IV.

Sampling

Dust and/or sludge samples were collected from every 10 feet of hole drilled. The samples were logged by a geologist and those through the Westwater were checked for radioactivity with a geiger counter. None

of the samples checked showed radioactivity above background. Samples through the Westwater were sacked and saved for study by the Government.

Contacts cannot be definitely determined from samples because of contamination. Therefore, there exists some discrepancies between contacts picked from a study of the sludge samples and those picked from the geophysical logs. This difference is not great; however, contacts used as reference points are taken from geophysical logs because of their greater accuracy. In all holes drilled sludge samples indicated that the Recapture member had been penetrated at least 20 feet.

When core drilling, all core was checked for radioactivity, stored in core boxes, and saved for future study. No samples were deemed worthy of chemical assay.

Stage I - Core and sludge samples from the holes indicate that bleached Westwater sand in excess of 100 foot thicknesses is present, and that coarse grained sand zones exist in the Westwater. In spite of these favorable conditions, gamma-ray logs show that all holes contain no above background radioactivity.

Stage II - No samples taken.

Stage III - As in Stage I sampling, sludge samples indicate that bleached Westwater sand in excess of 100 feet thicknesses is present, and that coarse grained sand zones exist in the Westwater. However, 7 of 9 holes are shown to be barren by the geophysical logs. In none of the holes were samples deemed worthy of chemical assay. Neither the samples from the barren holes nor the mineralized holes showed any above background radioactivity when checked with a geiger counter.

Stage IV - No samples taken.

Summary of Costs

Actual Costs (Stage I)

Category (1) Independent Contracts	Cost to SMDP	Cost submitted to DMEA
19,500 feet of non-core drilling 0-1,500 ft. depths, @ $1.50/ft.	$29,250.00	$29,250.00
6,285 ft. of non-core drilling, 1,500 -2,200 ft. depths, @ $2.25/ft.	14,141.25	13,882.50
591 feet core drilling, 1,600-2,200 ft. depths, @ $13.00/ft.	7,683.00	7,683.00

Category (1) Independent Contracts	Cost to SMDP	Cost submitted to DMEA
5.5 hours drill crew standby time @ $15.00/hr.	82.50	82.50
26,377 feet probing and logging @ $ 0.115/ft.	2,971.55	2,958.95
18.6 logging crew stand-by time @ $10.00/hr.	186.00	186.00
Cost of lost circulation material in excess of $100.00/hole (13 holes)	497.10	82.00
42 hrs. bulldozing @ $14.00/hr.	630.00	570.00
Categories (2) through (6) None		
Category (7) Miscellaneous		
70 cardboard core boxes @ $1.17 each	82.13	82.13
Chemical analyses - none taken		
Fixed Unit Costs		
Incidental allowance for each foot of hole drilled, 26,376 feet @ $0.18/ft.	4,747.68	4,726.98
TOTAL COST OF STAGE I	$60,271.21	$59,404.06

Actual Costs (Stage III)

Category (1) Independent Contracts	Cost to SMDP	Cost submitted to DMEA
13,500 feet non-core drilling 0-1,500 ft. depths @ $1.50/ft.	20,250.00	20,250.00
5,140 feet non-core drilling 1,500-2,200 ft. depths, @ $2.25/ft.	11,565.00	11,452.50
22.5 hrs. drill crew stand-by time @ $15.00/hr.	337.50	135.00
18,653 feet probing and logging @ $ 0.115/ft.	2,055.98	2,045.23
9 hrs. logging crew stand-by @ $10.00/hr. & $17.00/hr.	102.90	74.00

	Cost to SMDP	Cost submitted to DMEA
Cost for lost circulation material in excess of $100.00/hole - none		
14 hrs. bulldozing @ $15.00/hr.	210.00	180.00
Categories (2) through (6) None		
Fixed Unit Costs		
Incidental allowance for each foot of hole drilled, 18,640 ft. @ $0.18/ft.	3,355.20	3,346.20
TOTAL COST OF STAGE III	$ 37,876.58	$37,482.93
TOTAL COST STAGE I & STAGE III.....	$ 98,147.79	$96,886.99
GOVERNMENT PARTICIPATION.....		$63,294.50

SUMMARY AND CONCLUSIONS

A total of 45,016 feet were drilled in 22 completed holes, in two stages of drilling. Stage I drilling was distributed over an area covering approximately three land sections with holes being drilled in each of five different sections. An evaluation of results of Stage I drilling indicate that all of the holes are barren and that there is no justification for further drilling in that area. Stage III drilling was distributed over an area covering only ½ section. An evaluation of results show two holes to be mineralized and seven holes to be barren. The two mineralized holes are 1000 feet apart with no holes between them, and although the mineralization encountered cannot be considered ore-grade, it does indicate the presence of near by ore-grade material. However, mineralization noted in holes SM 2-32 and SM 29-32, located immediately to the west and on the northeast end of a presently known ore zone where the known ore appears to be thinning out, indicates that the mineralization noted in holes G-15-32 and G-16-32 is probably a halo around the known ore to the west rather than mineralization on the sides of an eastern extension of that ore.

Sincerely yours,

E. J. LONGYEAR COMPANY

B. F. Sorensen

B. F. Sorensen
Project Engineer

BFS/emr

E. J. LONGYEAR COMPANY, AGENT
SAN MATEO DOME PROJECT

DRILL HOLE DATA — JOB NO.

DMEA Docket No. 4842 Sections 33, 34, 27 T14N, R8W and 3, 4, T13N, R8W SECTION ___, T ___ N, R ___ W,
CONTRACT Idm-E1183 McKINLEY COUNTY,
STAGES I & III NEW MEXICO

HOLE NO	CORED (C) PLUGGED (P)	COLLAR ELEV	COORDINATES	DEPTH DRILLED	DEPTH LOGGED	DATE COMP	Kd D	Kd E	Kd T	Jmbb D	Jmbb E	Jmbb T	JmPc D	JmPc E	JmPc T	JmPc (Base) D	JmPc (Base) E	JmPc (Base) T	Jmwc D	Jmwc E	Jmwc T	Jmrc D	Jmrc E	MINERALIZATION Depth of Top-Base	Elev. of Top-Base	Thickness cps, grade product	Rock Type Bk-Sill	Depth of Top-Base	Elev of Top-Base	Thickness cps, grade product	Rock Type Bk-Sill	Depth of Top-Base	Elev of Top-Base	Thickness cps, grade product	Rock Type Bk-Sill	Depth of Top-Base	Elev of Top-Base	Thickness cps, grade product	Rock Type Bk-Sill
STAGE I																																							
Sec. 33, T14N, R8W			N / E																																				
G-1-33	P & C	7426.6	311,221 N / 564,854 E	2036	2040	6/11/58	1602	5825	45	1647	5780	150	Missing			—	—	—	1828	5599	202	2030	5397	Barren															
Section 4 T13N, R8W			N / E																																				
G-2-4	P	7383.4	304,200 N / 564,800 E	2020	2012	7/3/58	1604	5779	39	1643	5740	157	Missing			—	—	—	1800	5583	199	1999	5384	Barren															
G-3-4	P	7444.5	307,200 N / 564,800 E	2030	2027	7/17/58	1625	5820	38	1663	5782	191	1816	5629	25	1841	5604	—	1854	5591	124	1978	5467	Barren															
G-4-4	P	7353.2	309,635 N / 566,908 E	2020	2025	7/31/58	1613	5740	46	1659	5694	201	1828	5525	20	1848	5505	—	1860	5493	120	1980	5373	Barren															
G-5-4	P	7383.3	307,539 N / 566,831 E	2060	2073	7/31/58	1703	5680	47	1750	5633	135	Missing			—	—	—	1885	5498	135	2020	5363	Barren															
G-6-4	P	7289.7	308,200 N / 568,800 E	2050	2034	8/7/58	1655	5635	49	1704	5586	150	Missing			—	—	—	1854	5436	160	2014	5276	Barren															
Section 3 T13N, R8W			N / E																																				
G-7-3	P	7277.8	307,700 N / 570,800 E	2070	2081	8/13/58	1801	5477	45	1846	5432	151	Missing			—	—	—	1997	5281	73	2070	5208	Barren															
G-8-3	P	7354.7	308,500 N / 572,600 E	2295	2295	8/16/58	1929	5426	42	1971	5384	155	Missing			—	—	—	2126	5229	114	2240	5115	Barren															
Section 27 T14N, R8W			N / E																																				
G-9-27	P & C	7419?	317,400 N / 571,200 E	1907	1905	9/6/58	1506	5913	43	1549	5870	171	Missing			—	—	—	1720	5699	180	1900	5519	Barren															
G-10-27	P	7410?	316,200 N / 569,200 E	1940	1950	8/20/58	1600	5810	42	1642	5768	118	Missing			—	—	—	1760	5650	128	1888	5522	Barren															
G-12-27	P	7370?	315,900 N / 573,200 E	2090	2090	8/31/58	1707	5663	38	1745	5625	151	Missing			—	—	—	1896	5474	131	2027	5343	Barren															
G-13-27	P	7447?	317,900 N / 573,200 E	1970	1970	9/10/58	1527	5920	38	1565	5882	195	Missing			—	—	—	1760	5687	151	1911	5536	Barren															
Section 34 T14N, R8W			N / E																																				
G-11-34	P	7380?	315,400 N / 571,200 E	1880	1875	8/25/58	1509	5871	44	1553	5827	104	Missing			—	—	—	1657	5723	181	1838	5542	Barren															
STAGE III			N / E																																				
Section 32 T14N, R8W			N / E																																				
G-14-32	P	7516.0	314,302 N / 561,190 E	2080	2090	9/15/58	1690	5826	41	1731	5785	198	1863	5653	57	1920	5596	—	1929	5587	129	2058	5458	Barren															
G-15-32	P	7501.2	313,303 N / 561,188 E	2070	2070	9/15/58	1682	5819	34	1716	5785	206	1857	5644	38	1895	5606	—	1922	5579	123	2045	5456	1876 -1877	5625 -5624	1 x 300 = 300													
G-16-32	P	7485.9	312,304 N / 561,187 E	2080	2073	9/25/58	1641	5845	47	1688	5798	225	1822	5664	64	1886	5600	—	1913	5573	137	2050	5436	1884 -1885	5602 -5601	1 x 96 = 96													
G-17-32	P	7509.3	311,305 N / 561,186 E	2070	2049	9/25/58	1656	5853	44	1700	5809	235	1842	5667	73	1915	5594	—	1935	5574	106	2041	5468	Barren															
G-18-32	P	7457.6	312,303 N / 562,188 E	2050	2066	10/1/58	1632	5826	44	1676	5782	170	1784	5674	51	1835	5623	—	1846	5612	211	2057	5401	Barren															
G-19-32	P	7517.4	313,301 N / 562,189 E	2080	2090	10/1/58	1699	5818	41	1740	5777	189	1887	5630	15	1902	5615	—	1929	5588	149	2078	5439	Barren															
G-20-32	P	7496.9	313,300 N / 563,188 E	2100	2100	10/24/58	1689	5808	40	1729	5768	191	Missing			—	—	—	1920	5577	164	2084	5413	Barren															
G-21-32	P	7456.4	312,301 N / 563,187 E	2090	2080	10/12/58	1648	5808	44	1692	5764	171	Missing			—	—	—	1863	5593	178	2041	5415	Barren															
G-22-32	P	7428.1	311,303 N / 563,186 E	2030	2035	10/24/58	1620	5808	40	1660	5768	174	Missing			—	—	—	1834	5594	186	2020	5408	Barren															

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

224 New Customhouse
Denver 2, Colorado

February 24, 1959

OFFICIAL FILE COPY O. M. E. RECEIVED FEB 27 1959		
DATE	INITIALS	CODE
2-27	C	220
		700

Memorandum

To: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4842 (Uranium), Contract No. Idm-E1183, E. J. Longyear Company, Agent - (San Mateo Dome Project) McKinley County, New Mexico

Enclosed are two copies of a letter dated February 19, 1959, from the Field Team, Region III to the Operator, advising that the contract is to be considered completed before completion of the work under Stages I and III. Also enclosed are two copies of the Operator's letter of February 17, 1959 regarding the matter.

The results of the work completed are such that certification of the project will not be recommended.

J. W. Townsend

Enclosures

OFFICIAL FILE COPY
O. M. E.
RECEIVED FEB 27 1959

DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado

February 19, 1959

Mr. B. F. Sorensen
c/o E. J. Longyear Company, Agent
San Mateo Dome Project
P. O. Box 998
Grants, New Mexico

Re: Docket No. IMEA 4842 (Uranium)
Contract No. Idm-E1183
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Dear Mr. Sorensen:

Reference is made to your letter of February 17, 1959, and prior correspondence regarding including additional land under Article 2 of the referenced contract and an amendment to the contract to provide for drilling on that land in lieu of performing additional drilling as presently provided for under Stages II and IV of the contract.

Since you are unable to obtain executed subordination agreements from owners of the land in question and therefore withdraw your request for further Government aid in performing additional exploration work under the contract, and since the results of the drilling performed under Stages I and III do not warrant further drilling under Stages II and IV on land presently subordinated under the contract, therefore the contract is considered to have been completed upon completion of the work under Stages I and III, and you are hereby so advised.

Under the circumstances the provisions of Article 7 (e) of the contract become effective regarding the rendering by your company of a final geologic and engineering report pertaining to the work completed under the contract.

It is necessary that the required five copies of the final report be received in this office before other procedures relative to closing the account can be initiated. Therefore, prompt rendering of the report will be appreciated.

JWT/ff

Very truly yours,

OME Field Team, Region III
Original signed by
J. W. TOWNSEND

J. W. Townsend

Original signed by
E. N. HARSHMAN

E. N. Harshman

cc: E. J. Longyear Company
Minneapolis 2, Minn.

416 Colorado Building
Denver 2, Colorado

cc: Chmn.Op. Comm (2)
Harshman
Emerick
Romslo, OME/Tucson

cc: Cooper
Finch
Chron.
Corres. file Idm-E1183

FORM 311A 10M 3-56

Longyear

E. J. LONGYEAR COMPANY

General Offices, Foshay Tower
Minneapolis 2, Minnesota, U.S.A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
COLORADO BUILDING
DENVER 2, COLORADO
AMHERST 6-1941
MAIL ADDRESS
LONGCO DENVER

OFFICIAL FILE COPY
O. M. E.
RECEIVED FEB 27 1959

DATE	INITIALS	CODE

Grants, New Mexico
February 17, 1959

Mr. J. W. Townsend
Executive Officer
OME Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. 1842 (Uranium)
Contract No. Idm-E1183
San Mateo Dome Project
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Dear Mr. Townsend:

This is in answer to your letter of January 27, 1959, regarding the subordination of additional ground under Contract Idm-E1183.

Inasmuch as we are having difficulty obtaining executed Consents to Lien forms covering additional ground to be subordinated under the Contract, we are withdrawing our request of November 1, 1958, for additional DMRA funds.

The completion date of Contract Idm-E1183 was set for December 31, 1958, and because all work previously approved has been completed and in view of our withdrawal of our request for further assistance, we are assuming that the Contract will be considered terminated upon the submittal of a final report on completed work by the San Mateo Dome Project.

A final report is being prepared and will be submitted as soon as practicable.

Very truly yours,

E. J. LONGYEAR COMPANY

B. F. Sorensen
Project Engineer

bs:
cc: A. P. Kibbe (Lisbon Uranium Corp.)
P. C. Hackett (Venture B, Inc.)
P. L. Merritt (Longyear Co.)
R. C. Gebhardt (Longyear Co.)

OME
DEPARTMENT OF THE INTERIOR
FEB 18 1959
REGION III
DENVER, COLORADO

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22A New Customhouse
Denver 2, Colorado
January 27, 1959

Mr. B. F. Sorensen
c/o E. J. Longyear Company, Agent
San Mateo Dome Project
P. O. Box 998
Grants, New Mexico

Re: Docket No. DMEA 4842 (Uranium)
Contract No. Idm-E1183
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Dear Mr. Sorensen:

Reference is made to your letter of December 15, 1958, and prior communications regarding the subordination of additional ground under Contract Idm-E1183.

Since considerable time has elapsed and we have heard nothing further from you in the matter, we will appreciate advice by return mail as to the status of the matter of obtaining executed Consents to Lien forms covering additional ground to be subordinated under the contract.

Very truly yours,

Original signed by
J. W. TOWNSEND

J. W. Townsend
Executive Officer, OMK
Field Team, Region III

cc: E. J. Longyear Company
416 Colorado Building
Denver 2, Colorado

JWT:ltm

cc: Chmn. Op. Comm. (2) ✓
Harshman
Emerick
Romslo, OME/TUC
Corres. file
Cooper
Chron.

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

OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 22 1958

DATE	INITIALS	CODE
12/22	C	220
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December 17, 1958

Memorandum

TO: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4842 (Uranium) Contract No. Idm-E1183
San Mateo Dome Project, E. J. Longyear Company, Agent
(San Mateo Dome Project), McKinley County, New Mexico

Enclosed for your information are two copies of the Operator's letter of December 15, 1958, which is in reference to matter discussed in your teletype of December 2, 1958, and prior communications relative to an amendment to the contract to include additional ground under Article 2, and provide for drilling thereon.

When the executed Consents to Lien are received, they will be forwarded to you with recommendations regarding the proposed amendment to the contract.

J. W. Townsend

Enclosure

OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 22 1958

DATE	INITIALS	CODE

OME
DEPARTMENT OF THE INTERIOR
DEC 17 1958
REGION III
DENVER, COLORADO

Grants, New Mexico
December 15, 1958

Mr. J. W. Townsend
Executive Officer
OME Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. 4842 (Uranium)
Contract No. Idm E1183
San Mateo Dome Project
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Dear Mr. Townsend:

This will serve to confirm our telephone conversation of December 8, 1958, regarding the San Mateo Dome Project request of November 1, 1958, for an amendment to Contract No. Idm E1183.

The San Mateo Dome Project agrees to subordinate to the Government that property in the W ½ of section 32, T. 14 N., R. 8 W., NMPM, McKinley County, New Mexico, that covers the area where we have some seventeen (17) known ore holes. The area to be subordinated includes all of the SW ¼ of section 32, and the southern 1,140 feet of the S ½ NW ¼ of section 32.

It is our understanding that if this area is subordinated, approval will be given to drill two (2) holes, at locations determined by the Government, in the SW ¼ of section 32; and, that should the holes be successful in penetrating ore grade uranium mineralization, some provision will be made for additional offset drilling.

A complete list of claims to be subordinated together with Book and Page numbers of their respective recordings in the official records of McKinley County, will accompany forms MF-205 when they are executed and returned to the OME Region III Office.

Verly truly yours,

B. F. Sorensen

bs:
cc: A. P. Kibbe
P. C. Hackett
P. L. Merritt
R. C. Gebhardt

OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 11 1958

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224 New Customhouse
Denver 2, Colorado

December 8, 1958

Mr. B. F. Sorensen
San Mateo Dome Project
E. J. Longyear Company, Agent
P. O. Box 998
Grants, New Mexico

Re: Docket No. DMEA 4042 (Uranium)
Contract No. Ldm-81185
San Mateo Dome Project
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Dear Mr. Sorensen:

In compliance with your telephone request of even date, enclosed are six sets of six copies each of form NF-205, Consent To Lien and Subordination Agreement, which are to be completed and executed covering the land to be subordinated as agreed upon in the West ½ of Section 32.

The original and four copies of each set of form NF-205 are to be returned to this office after execution by the owners of the land involved.

Very truly yours,

J. W. Townsend

J. W. Townsend
Executive Officer
OME Field Team, Region III

JWT/ad
Enclosures
cc: E. J. Longyear Company
416 Colorado Building
Denver 2, Colorado
cc: Chmn. Op. Comm. (2)
Harshman
Emerick
Romslo, OME/TWC
Corres. File
Cooper
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
	Ching	700
12/2	Knowlse	700
12/2	[illegible]	120
12/2	Johnson	110
12/3	C	220
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DEC 2 1958

Department of the Interior

TELETYPE
XXXXXXXXXXXXXXXXXXXXXXXXX
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1490108, Salaries and Expenses, Office of Minerals Exploration, Interior, 1959.

J. W. TOWNSEND, EXECUTIVE OFFICER
OME FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURMEM NOVEMBER 26 SAN MATEO DOME PROJECT DOCKET 4842, PROPOSED DRILLING RECOMMENDED BY YOU SATISFACTORY PROVIDED AREA RECOMMENDED BY EXAMINERS IS SUBORDINATED AND CONSENT TO LIEN AND SUBORDINATION AGREEMENTS COVERING THE NEW AREA ARE EXECUTED.

George C. Selfridge

ACTING CHAIRMAN, OPERATING COMMITTEE (5422)

MChing/esf
12/2/58
cc to: Dir. Reading File
Operating Committee
THKiilsgaard, 5224
Mr. Ching
Contract Adm. & Audit Division
DME Field Team, Region III, confirmation

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
~~XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX~~
OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado

November 26, 1958

OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 1 1958

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12/1	C	220
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Memorandum

To: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA-4842 (Uranium), Contract No. Idm-E1183
San Mateo Dome Project, E. J. Longyear Company, Agent
McKinley County, New Mexico

Enclosed are the following pertaining to the Operator's request of November 1, 1958, for an amendment to the contract, to provide for drilling not within the intent of the contract as presently written: -

1. Original and two copies of a joint memorandum dated November 20, 1958, from T. M. Romslo, Mining Engineer, Bureau of Mines, and W. L. Emerick, Geologist, Geological Survey.

2. Original and two copies of a memorandum dated November 25, 1958, from E. N. Harshman, Member, OME Field Team, Region III, transmitting and commenting on the material under item 1, above.

3. Eight extra copies of map, Figure 2 (A), included with the joint memorandum under item 1.

Two copies of the Operator's request of November 1, 1958, were forwarded to you by copy of a memorandum dated November 13, 1958, from this office to Mr. Harshman regarding the matter.

The project cannot be certified as a result of the drilling performed to date, but possibly drilling to the west of the known low grade ore body might enable the Government to certify the project, thereby protecting its investment. Under those circumstances, I concur with Mr. Harshman's statements and recommendations regarding the additional drilling. The additional drill holes are not to be spaced closer than 400 feet from previously drilled holes, and the exact locations are to be subject to prior written approval by this office. However, the work recommended is not within the original intent of the contract; therefore, it involves an OME policy determination at the Washington level.

If favorable consideration is given the matter, the adding of land involved under Article 2 of the contract would be within the authority delegated to this office; however, it would simplify matters to have the one amendment include the additional land as well as provide for the drilling. In that respect, it would be necessary that we obtain and forward to you recording data concerning the claims to be added.

The contract completion date is presently established as December 31, 1958; therefore, if favorable consideration is given to the matter, it will be necessary to extend the completion date to provide for an additional sixty days, within which to complete the work after execution of the amendment.

If your review of the matter results in an adverse policy determination, it is then recommended that a suitable termination agreement be prepared to terminate the contract in its present status, effective October 25, 1958.

When the matter has been reviewed, we will appreciate advice by teletype as to your decision, so that the Operator can be advised accordingly.

J. W. Townsend

Encls.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Office of Minerals Exploration
Denver Federal Center
Denver, Colorado

OME
DEPARTMENT OF THE INTERIOR
NOV 26 1958
REGION III
DENVER COLORADO

W.O.

OFFICIAL FILE COPY
RECEIVED DEC 1 1958

DATE	INITIALS	CODE

November 25, 1958.

Memorandum

To: Executive Officer, OME Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 4842 (Uranium), Contract Idm-E 1183, E. J. Longyear Company, Agent, (San Mateo Dome Project) McKinley County, New Mexico

Attached are the original and seven copies of a joint memorandum by W. L. Emerick, U. S. Geological Survey, and T. M. Romslo, U. S. Bureau of Mines, in which certain exploration not covered by the subject contract is recommended.

Exploration under Stages I and III of contract Idm-E 1183 failed to discover ore-grade material or to determine prominent trends of mineralization. I concur with the conclusion that work as now provided for under Stages II and IV of the contract is not warranted.

I am not fully in accord with the exploration requested by the operator or the modification recommended by the examiners. The proposed exploration is designed to locate a westward extension of the present ore body--a body estimated to contain 330,000 tons of ore which because of its depth and low grade cannot now be profitably mined. The operator hopes that by supplementing the known ore reserves, exploitation will be possible.

Since exploration to extend the limits of the known ore body is not within the intent of the present contract the propriety of such exploration may be questioned, particularly when the ore body has been roughly delineated by barren or weakly mineralized holes on the north, east, southeast, and in part on the west. Furthermore most of the holes proposed in the attached memorandum do not conform to the provisions of Stages II and IV which state that holes should be on a 500-foot minimum spacing--a reasonable restriction when drilling to depths of 2,000 feet.

If drilling to explore for an extension of the known ore body is considered justified, I suggest that Stage IV of the contract be ammended to permit offset drilling around significantly mineralized holes at distances of not less than 400 feet. In addition I suggest that immediate approval be given for only two holes, one near hole G-27A and one northeast of hole no. G-25. Should these holes indicate an extension of the ore body to the west or south additional holes on minimum centers of 400 feet could be approved as warranted. I can see no justification for drilling hole G-24, a hole 250 and 350 feet respectively west of weakly mineralized holes 20-32 and 18-32.

I concur with the field examiners' recommendations regarding ground to be subordinated, and extension of the completion date to February 28, 1959.

E. N. Harshman

E. N. Harshman

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION
Box 4126 University Station
Tucson, Arizona

OME
DEPARTMENT OF THE INTERIOR
NOV 26 1958
REGION III
DENVER, COLORADO

MINERAL DEPOSITS
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RECEIVED
NOV 24 1958

U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO
OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 1 1958

DATE	INITIALS	CODE

November 20, 1958

Memorandum

To: J. W. Townsend, Executive Officer, OME Field Team, Region III

From: T. M. Romslo
W. L. Emerick

Through: E. N. Harshman

Subject: Docket DMEA-4842 (Uranium), Contract Ddm-E1188, San Mateo Dome Project, E. J. Longyear Company, Agent (San Mateo Dome Project), McKinley County, New Mexico

Reference is made to the Executive Officer's memorandum dated November 13, 1958, to E. N. Harshman, and to Operator's letter dated November 1, 1958, to E. N. Harshman, Acting Executive Officer, in which the Operator requests amendment to the contract by relocation of 6 proposed Stage IV holes from the E 1/2 of Sec. 32, T.14 N., R. 8 W., to the presently unsubordinated 6 Sophie claims in the SW 1/4 of the same Sec. 32.

The field operations of the project were recently terminated after the completion of all work authorized by Stages I and III of the contract.

Under Stage I, 13 holes were drilled in Secs. 3 and 4, T. 13 N., R. 8 W., and Secs. 27, 33 and 34, T. 14 N., R. 8 W. All of the holes were barren. Consequently, the Stage II drilling of offset holes in these areas is not either justified or recommended by the Operator or the writers.

Stage III work comprised the drilling of 9 holes in the E 1/2, Sec. 32, T. 14 N., R. 8 W. Of the 9 holes, 7 were barren and 2, holes G-15-32 and G-16-32, were weakly mineralized (Plate 1 of Operator's letter). Here again, the Operator and writers find that the drilling of Stage IV holes to offset the 2 weakly mineralized holes is neither justified or recommended. We do believe, however, that the mineralized zones of these holes and the holes 2-32 and 29-32 (previously drilled by the Operator) represent possible extensions of a narrow northeasterly trending zone from the known uranium deposit in the SW 1/4 of Section 32. Instead of drilling offset holes in the limited zone adjacent to the 4 drill holes, the Operator proposes 6 holes in the untested ground west of the known deposit for the purpose of picking up possible ore trends in that direction.

The field examiners believe that testing for ore trends to the west and also to the south of the deposit is justified because (1) there is a reasonably good chance that extensions of the deposit may be indicated, and, (2) if the findings are favorable and the operator continues exploration by drilling the necessary offset holes, the presently uneconomic deposit might be converted into a deposit suitable for exploitation.

The Operator proposes 6 holes (G-23 through G-28) spaced about 500 feet apart on a N-S line about 300 to 400 feet west of the known deposit. The field examiners believe that of the 6 proposed holes G-27 and G-28 should be relocated at positions G-27A and G-28A (Figure 1A) because (1) they are too close to boundaries of the property and (2) they will better serve to test for possible extensions of uranium ore trends to the south. Drilling of the holes at the indicated locations is believed to be in the realm of exploration, inasmuch as any ore encountered in these holes could not be considered as a part of the known deposit without the drilling of necessary offset holes at intervals of less than 200 feet. Practice in the field has shown that drilling on relatively close intervals is necessary before a deposit is considered blocked-out.

The field examiners recommend in the event that the proposed drilling is approved that (1) all of the area in the SW 1/4 of Sec. 32 to the east of the west side lines of the Sophie claims be subordinated, that (2) the drilling be done in accordance with existing specifications and with funds transferred from Stage IV, and (3) that the life of the contract be extended to a termination date allowing 2 months for the completion of the project.

Ten additional copies of Figure 1A are enclosed with this memorandum, for possible use in the contract.

T. M. Romslo
U. S. Bureau of Mines

W. L. Emerick
U. S. Geological Survey

TMR:WLE:ms

cc: J. W. Townsend (8)
OME/TUC (2)

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C. Z.
.../17 1958

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11/17		800
		700

OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado
November 13, 1958

Memorandum

To: E. N. Harshman

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4842 (Uranium), Contract Iam-K1183
San Mateo Dome Project, E. J. Longyear Company, Agent
(San Mateo Dome Project), McKinley County, New Mexico

Enclosed is a copy of the Operator's letter of November 1, 1958, with attached map which constitutes a request for an amendment to the contract to include additional ground under Article 2, and to change the location of six Stage IV holes so that they can be drilled in the new area.

If the Operator's request is considered favorably, it will be necessary that the Operator furnish recording data, that is, book and page numbers for the claims covering the new area involved.

The Operator's letter indicates that a copy of the request was forwarded directly to T. M. Romslo, Tucson, Arizona. Therefore, it is desired that a memorandum report containing the field examiner's recommendations will be forthcoming without further action by this office.

Original signed by
J. W. TOWNSEND

J. W. Townsend

Enclosures
TWT/f
cc: Chmn. Op. Comm. (2)
Emerick
Corres.
} w/copy of enclosures
T. M. Romslo, OME/Tucson
Cooper
Chron.

Frank Johnson thinks proposal O.K. if F.T. commends it and knows of area in also subordinate use

Longyear

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
416 COLORADO BUILDING
DENVER 2, COLORADO
AMHERST 6-1941
CABLE ADDRESS
"LONGCODENVER"

FORM 311A 10M 8-56

OFFICIAL FILE COPY
O. M. E.
RECEIVED NOV 17 1958

DATE	INITIALS	CODE

Grants, New Mexico
November 1, 1958

OME
DEPARTMENT OF THE INTERIOR
NOV 13 1958
DENVER, COLORADO

United States Dept. of the Interior
Office of Minerals Exploration
224 New Customhouse
Denver 2, Colorado

Attention: E. N. Harshman, Acting Executive Officer
OME Field Team, Region III

Proposed Amendment No. 2

RE: Docket No. DMEA 4842 (Uranium)
Contract Idm-E1183
San Mateo Dome Project
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Gentlemen:

Drilling under Stages I and III of Contract Idm-E1183 has been completed. Stage I was completed on September 10, 1958 and Stage III was completed on October 24, 1958.

An evaluation of Stage I drilling shows all holes (13) barren. Inasmuch as Stage II holes were to be drilled as offsets to favorable Stage I holes there appears to be no justification for Stage II drilling; therefore a request to continue with Stage II will not be made.

An evaluation of Stage III drilling shows 2 holes mineralized and 7 holes barren. Stage IV holes were to be drilled as offsets to Stage III holes that penetrated ore-grade material, and although mineralization encountered in the two Stage III holes cannot be considered ore-grade it does indicate the possible presence of nearby ore-grade material.

This indication together with the mineralization noted in Holes SM 2-32 and SM 29-32, located immediately to the west and on the northeast end of a presently known ore zone, further indicate a possible extension of the known ore to the east. This greatly enhances the possibilities for enlargment of the known area of ore-grade material now outlined, and because the estimated tonnage in the known ore zone does not constitute a mineable orebody, further exploration, in the form of drilling, appears justified. However,

U. S. Dept. of the Interior (OME) November 1, 1958

drill hole locations, Holes G-15-32, G-16-32, SM 2-32, and SM 29-32, limit the width of any extension of known ore to the east in that an extension, if present, would probably be found between the above mentioned holes; and although an extension is possible, future exploration would be more profitable if a similar or more definite extension of the known ore could be determined to the west. For this reason we are requesting that Contract Idm-E1183 be amended as follows:

(1) That 6 Stage IV holes be relocated and drilled in the SW¼ of section 32 as shown on attached Plate I.

The proposed amendment is estimated to cost $25,917.00 or 3/4 of that previously set up for Stage IV.

Total expenditures under Contract Idm-E1183 to date are some $97,000.00 or $80,000.00 less than that approved under the Contract.

Approval of the proposed amendment will put the total amount contributed by the Government at approximately $76,000.00 or $38,000.00 less than that initially set up for the project.

It is not without justification that the proposed amendment is requested. During 1957 some $300,000.00 was sunk into the ground on the San Mateo Dome Project. As a result of that expenditure ore-grade material was encountered in section 32, T14N, R8W and approximately 166,000 tons of indicated ore was estimated to be present in the section. Another 161,000 tons of inferred ore was estimated, this tonnage being inferred rather than indicated because of the spacing between holes. Plate I attached shows hole locations and areas of influence in the area of ore-grade mineralization (a complete report on the drilling in section 32 was submitted with our DMEA application of April, 1958).

Because of the economics of shaft sinking and mining at 1900-foot depths, the ore-grade material now outlined does not constitute a mineable orebody. It is for this reason that relocation of Stage IV holes is requested. It is thought that the proposed drilling will yield the necessary information that will enable us to determine whether or not the possibility of ever blocking-out a mineable orebody exists. Should any of the proposed holes encounter ore-grade material a trend may be indicated that will enable us to forsee where offset drilling will eventually block-out what is thought to be sufficient tonnage to constitute a mineable deposit. The two mineralized Stage III holes together with Hole SM 2-32 and SM 29-32 indicates a possible extension of the ore zone to the east. As mentioned above any extension would probably be between Holes SM 29-32 and SM 2-32 which would necessarily limit its width; therefore, rather than request more drilling in an area where there are some limiting factors in existence, the proposed amendment shifts

COPY

U. S. Dept. of the Interior (OME) November 1, 1958

the drilling to an area where no such limits exist. As can be seen from the attached map, an area to the west of the known ore, 1,480 feet x 2,640 feet, is intended for subordination to the Government should the proposed amendment be approved. This is the preferred area of subordination; however, should the Government feel that areas that are being drilled under the same contract or an amendment of that contract, be connected or adjacent to each other there would then be no objection to subordinating the area under which the present known ore exists.

The spacing for the proposed holes is also preferred, but should the Government feel that the spacing is not in line with their requirements then, again, we have no objections to some changes; however, it is felt that inasmuch as Stage IV holes were to be offsets to Stage III holes that penetrated ore-grade material, the new locations might also be looked upon as offsets to nearest known ore holes.

Termination date for Contract Idm-E1183 is set for December 31, 1958 and should immediate consideration (if favorable) be given this request it is felt that there will be no need for an extension of that date.

Whatever consideration can be given this request will be appreciated.

Very truly yours,

E. J. LONGYEAR COMPANY

B. F. Sorensen

B. F. Sorensen

BS:br
cc: 4 enclosed
1 sent to T. M. Romslo
Bureau of Mines
Tucson, Arizona

COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
~~BUREAU OF MINERALS EXPLORATION~~
OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado
November 10, 1958

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

DATE	INITIALS	CODE
11/13	C	220
11	~~Ching~~	700

Memorandum

To: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4842 (Uranium) Contract Idm-E1183, E. J. Longyear Company, Agent, (San Mateo Dome Project) McKinley County, New Mexico

Enclosed are three copies of an approval issued by the Field Team, Region III, for transfer of non-core drilling footage and Incidental Allowance, together with Incident Costs from Stage II to Stage I, to permit completion of all Stage I holes to their objective.

Also enclosed are two copies of the Operator's request dated October 5, 1958, for the transfer. The engineer's recommendations relative to the transfer of drill footage are contained in the engineer's report which accompanied Form MF-104, Operator's Monthly Report and Voucher, for September 1958.

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

J. W. Townsend

J. W. Townsend

Enclosures

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

OFFICE OF FEDERAL EXPLORATION
[illegible] Customhouse
Denver 2, Colorado
November 10, 1958

Mr. R. J. [illegible]
E. J. Longyear Company, Agent
Box 998
Grants, New Mexico

Re: Contract No. [illegible] (Amended)
Contract [illegible]
E. J. Longyear Company, Agent
(San Mateo Mesa Project)
McKinley County, New Mexico

Dear Mr. [illegible]:

In reference to your letter of October 3, 1958, this constitutes approval by the Government to transfer the following units of work and service, together with related costs, from Stage II to Stage I, to permit completion of Stage I holes to their objectives.

Item	Units Transferred
Non-core drilling (1500'-2000' interval)	179'
Incidental allowance	61'

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

Very truly yours,

OME Field Team, Region III

By J. W. Townsend

J. W. Townsend

JWC:hmh

cc: ✓Chem. Op. Comm. (3)
Finance Office, Reg. III
Amendment file, Reg. III
Herdman
Romain, OME/Tuc.
Memorial
Corresp. file, Reg. III
Cooper
Chron

cc: Mr. R. C. Hubbardt
416 Colorado Building
Denver 2, Colorado

Longyear

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U.S.A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
416 COLORADO BUILD
DENVER 2, COLORAD
AMHERST 6-1941
CABLE ADDRESS
LONGCODENVER

OME
DEPARTMENT OF THE INTERIOR
OCT 9 - 1958
REGION III
DENVER, COLORADO

Grants, New Mexico
October 5, 1958

United States Department of the Interior
Office of Minerals Exploration
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4842 (Uranium)
Contract Idm-E1183
E. J. Longyear Company
(San Mateo ~~Dome Project~~)
McKinley County, New Mexico

Gentlemen:

Drilling under Stage I of Contract Idm-E1183 for the month of September, 1958 totaled 3,857 feet. Of the total, 600 feet was in the 1,500-2,200 foot interval. The 600 feet have been submitted for reimbursement on voucher and accounting Forms MF-104 and MF-104A for September.

Contract Idm-E1183 allows 6,000 feet of Stage I drilling in the 1,500-2,200 foot interval, but states that should more than the number of feet allowed be needed to complete the 13 Stage I holes, additional footage of non-core drilling and funds may, with the written approval of the Government, be transferred and deducted from Stage II.

Because the above mentioned 600 feet raises the total footage of Stage I, in the 1,500-2,200 foot interval, to 170 feet above that which is allowed by the Contract, it is herein requested that the additional footage and funds be transferred and deducted from Stage II.

Very truly yours,

E. J. LONGYEAR COMPANY

B. F. Sorenson
Project Engineer

Mlsbr
cc: 2-enclosed
1-cont to T. H. Pomeio
Bureau of Mines
Tucson, Arizona

UNITED STATES
DEPARTMENT OF THE INTERIOR
~~DEFENSE MINERALS EXPLORATION ADMINISTRATION~~
OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado
October 29, 1958

OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 31 1958

DATE	INITIALS	CODE
11/3	C	220
"	JG	110
11/9	[illegible]	800
"	~~[illegible]~~	~~700~~

Memorandum

To: Chairman, Operating Committee, OME

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

Subject: Docket No. DMEA 4842 (Uranium) Contract Idm-E1183,
E. J. Longyear Company, (San Mateo Dome Project)
McKinley County, New Mexico - Interim Inspection

Enclosed are the original and two copies of a memorandum report, dated October 23, 1958, from W. L. Emerick, Geologist, U. S. Geological Survey, pertaining to interim inspection of operations under the subject contract.

E. N. Harshman

E. N. Harshman

Enclosures

IN REPLY REFER TO:
MINERAL RESOURCES
O M E
RECEIVED
OCT 27 1958
GEOLOGICAL SURVEY
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
OME
DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

OCT 27 1958
REGION III
DENVER, COLORADO

OFFICE OF MINERALS EXPLORATION
Box 4126 University Station
Tucson, Arizona

W.O.

October 23, 1958

Memorandum

To: Executive Officer, OME Field Team, Region III

From: W. L. Emerick Through: E. N. Harshman

Subject: Docket No. DMEA 4842 (Uranium) Contract Idm-E1183, E. J. Longyear Company (San Mateo Dome Project), McKinley County, New Mexico - interim inspection.

An inspection of the above subject project was made on October 16, 1958 in the company of T. M. Romslo, U. S. Bureau of Mines, and B. F. Sorensen, Project Engineer. All of the 13 drill holes on Stage I (Secs. 3 and 4, T. 13 N., R. 8 W., and Secs. 27, 33, and 34, T. 14 N., R. 8W.), and 7 drill holes of Stage III in the E½ Sec. 32, T. 14 N., R. 8 W. were completed. The two remaining holes of Stage III were expected to be completed during the week of October 20-24.

Probing results on the 13 holes of Stage I indicated essentially no radioactivity above background, and all of the holes were considered barren. Sludge samples and geologic logs indicated that all of the 13 holes penetrated the Westwater Canyon member of the Morrison formation and went into the Recapture shale member.

An inspection of the sludge samples on the 7 completed holes of Stage III indicated that they had all gone into the Recapture shale member after penetrating the Westwater Canyon member. All of the sludge samples were contaminated by large proportions of the Mancos shale below that formation.

Two of the 7 completed Stage III holes (Nos. 15 and 16, Figure 1, Examination Report) showed weak mineralization in the range of 0.03 to 0.09 percent eU_3O_8. The mineralized thickness of about 1 foot in both of the two holes, lying at a depth of approximately 1880 feet, appears to be in the interval that is thought to be Poison Canyon sand. The two weakly mineralized holes lie northeast, about 1,000 feet or more, from a deposit in the W½ Sec. 32.

W L Emerick
W. L. Emerick
U. S. Geological Survey

cc: Executive Officer (9)
ENHarshman
OME/TUC
Emerick

OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 3 1958

DATE	INITIAL	CODE
10/3	C	220
10/6	EEJ	800
10/7	Ching	700

224 New Customhouse
Denver 2, Colorado
September 30,1958

Mr. R. C. Gebhardt
E. J. Longyear Company
416 Colorado Building
Denver 2, Colorado

Re: Docket No. [illegible] (Uranium)
Contract Ida-E1183
E. J. Longyear Company
(San Mateo Dome Project)
McKinley County, New Mexico

Dear Mr. Gebhardt:

Form MF-104, Operator's Monthly Report and Voucher, for August 1958, has been received in this office and is being processed for payment. The following deductions have been made:

Disallowance, Logging Crew Standby Time

The cost of 6 hours Standby time for the logging period is reported on Form MF-104; however, only two hours of Standby time was required. The reported cost for 4 hours logging crew standby time is disallowed.

Disallowance, Self Potential Probing

The cost of self potential probing was reported on Form MF-104 for 95 feet of unreported drilling. The reported cost for 95 feet of self potential probing is disallowed.

You will be further advised of the deductions by means of an Administrative Audit Difference Statement, which will be forwarded you by the Finance Office, Region III. Adjustments should be made for the disallowed units and costs on the next voucher and accounting Forms MF-104 and MF-104A submitted by you.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

JDC:hmh

cc; Chmn. Op. Comm. (2)
Harshman
Emerick
Romalo, OME/Tuc.
Cooper
Corres. file, Reg. III
Chron

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado
August 18, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 21 1958

DATE	INITIALS	CODE
8/21	H. G.	225
21	Cohn	100
"	FEG	110
8/25	EEG	800
"	Ching	700

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4842 (Uranium) Contract Idm-E1183, E. J. Longyear Company, (San Mateo Dome Project), McKinley County, Arizona - INTERIM REPORT

Enclosed are four copies of an interim geologic report dated August 12, 1958, by W. L. Emerick, Geologist, U. S. Geological Survey, and T. M. Romslo, Mining Engineer, U. S. Bureau of Mines, covering work under the subject contract through August 5, 1958.

J. W. Townsend

Enclosures

DMEA
DEPARTMENT OF THE INTERIOR

AUG 15 1958
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY
DMEA

CODE

RECEIVED
AUG 14 1958
U.S.
GEOLOGICAL SURVEY
DENVER, COLORADO

Box 4126 University Station
Tucson, Arizona

August 12, 1958

Memorandum

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

From: W. L. Emerick

Subject: Docket No. DMEA 4642 (Uranium), Contract No. Idm-31183, E. J. Longyear Company (San Mateo Dome Project), McKinley County, Arizona -- Interim Inspection.

An interim inspection of the above subject project was made on August 5, 1958 in the company of T. M. Romslo, U. S. Bureau of Mines, and B. F. Sorensen, Project Engineer. Five drill holes had been completed under Stage I of the contract and two additional holes had been started at the time of the inspection. All of the completed holes contained essentially no radioactivity above background and were considered barren.

Drill hole cuttings were inspected at the drill sites of the completed and currently drilling holes. All of the completed holes were carried through the Westwater Canyon member of the Morrison formation into the Recapture shale member. All of the sludge samples below the overlying Mancos shale were contaminated by large proportions (probably even as high as 95 percent) of the Mancos, and visual determination of contacts below the Mancos shale could not be made definitely. The contaminated condition is further confused by the fact that the Brushy Basin, Westwater Canyon and Recapture members of the Morrison formation interfinger. This operator and others have found that electrical logging methods give more accurate results in placing contacts between the formations.

Under the existing unavoidable circumstances it would be extremely difficult for the operator to definitely pick contacts during the drilling of a hole, or to definitely know when he was 20 or 30 feet into the Recapture member. The drilling is being performed diligently and efficiently, and I concur with Mr. Romslo's opinion that excess footage in the holes is unavoidable under the circumstances.

WLE:ms
cc: Acting Executive Officer (9)
Hershman
DMEA/TTC
Emerick

W. L. Emerick

224 New Customhouse
Denver 2, Colorado
July 25, 1958

Mr. B. F. Sorensen
E. J. Longyear Company
P. O. Box 998
Grants, New Mexico

Re: Docket No. DMEA 4842 (Urani
Contract No. Idm-K1183
E. J. Longyear Company
(San Mateo Dome Project)
McKinley County, New Mexico

Dear Mr. Sorensen:

Mr. T. M. Romslo, Mining Engineer, Bureau of Mines, and representative to whom field administration of Contract No. Idm-K1183 has been assigned, has brought up the question of the possibility of the work under Stages I and III being performed concurrently, and that drilling not be accomplished in consecutive order of the drill hole numbers as shown on the maps, "Figure 1" attached to Amendment No. 1 and "Figure 3" attached to the Contract.

If you will refer to item 2, on page 2, of Amendment No. 1, you will note that the Operator shall complete Stages I and III and shall perform as much of Stages II and IV as the Government approves in writing in advance, which imposes no restriction in performing the work under Stages I and III concurrently.

The reference numbers of the holes shown on Figures 1 and 3 should not be changed. However, the holes need not be drilled consecutively in the order numbered.

Very truly yours,

Original signed by
J. W. TOWNSEND

J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team, Region III

cc: Mr. R. C. Gebhardt
E. J. Longyear Company
416 Colorado Building
Denver, Colorado

JWT:prl
cc: Chmn.Op.Comm.-2) w/copy of Romslo's
Harshman) memorandum of
Emerick) July 23.
Corres. file)

Romslo
Cooper
Chron.

DMEA

DEPARTMENT OF THE INTERIOR

JUL 24 1958

REGION III

DENVER, COLORADO

July 23, 1958

Memorandum

Air Mail

To: Executive Officer, DMEA Field Team, Region III

From: T. M. Romslo, Mining Engineer, Tucson, Ariz.

Subject: Docket DMEA-4842 (Uranium) Contract Idm-E1183, E. J. Longyear, Representative, (San Mateo Dome Project) McKinley County, N. Mex.

During my recent inspection of the exploratory project of captioned contract I found that drilling was being confined to Stage 1 and that the holes were being drilled in the order as numbered in the map attached to the contract. Mr. B. F. Sorensen, the project engineer, was of the opinion that this was the required procedure. We discussed possible changes in the procedure and mutually agreed that the operations could be carried out more expeditiously if (1) the drilling of Stages I and III could be done concurrently and if (2) the order in which the holes are drilled need not be as consecutively numbered. The increased efficiency could be effected by placing additional rigs in operation and by reducing the moving time of the rigs.

I told Mr. Sorensen that the contract does not appear to prohibit the discussed procedural changes but that the official decision must come from the Field Team.

I suggest that copies of your letter to the Operator on this matter be sent to me and to Mr. B. F. Sorensen, E. J. Longyear Company, Box 998, Grants, N. Mex.

Original signed by
T. M. Romslo

T. M. Romslo

CC Executive Officer (8)
DMEA-4842
DF

TMRomslo:frj

RECEIVED JUL 16 1958		
DATE	INITIALS	CODE
7/16	C	220
7/16	[illegible]	800
7/17	[illegible]	700

224 New Customhouse
Denver 2, Colorado
July 14, 1958

Mr. R. C. Gebhardt
B. J. Longyear Company
416 Colorado Building
Denver 2, Colorado

Re: Docket No. DMEA 4[illegible] (Uranium)
Contract Idm-[illegible]183
B. J. Longyear Company
(San Mateo Mesa Project)
McKinley County, New Mexico

Dear Mr. Gebhardt:

Confirming telephone advise to your office July 9, 1958, in the future all monthly accounting reports and vouchers are to be submitted directly to the following address:

Defense Minerals Exploration Administration
P. O. Box 4097, University Station
Tucson 5, Arizona.

The U. S. Bureau of Mines and the U. S. Geological Survey maintain offices in buildings on the campus of the University of Arizona, and DMEA representatives of the two Services, who will administer the contract in the field as representatives of this office, may be contacted as follows:

T. M. Romslo, Mining Engineer, Bureau of Mines,
Engineering Building, or
Mail address: P.O. Box 4097, University Station,
Tucson 5, Arizona

W. L. Emerick, Geologist, Geological Survey,
Mining and Metallurgical Building, or
Mail address: P. O. Box 4126, University Station,
Tucson, Arizona.

JDC:hmh

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/Tucson
Emerick
Corres.file,Reg.III
Cooper
Chron

cc: N.F. Sorensen
Box 998
Grants, N. M.

Very truly yours,

Original signed by
J. W. TOWNSEND

J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team, Region III

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/30/58	Ching	700

June 30, 1958

Memorandum

To: Allen S. Dakan, Director
Division of Operations Control & Statistics

From: F. L. Knouse, Acting Director
Division of Rare & Miscellaneous Metals

Subject: Combining Dockets Nos. DMEA-4842 and 4995
Contract No. Idm-E1183
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico

Referring to my memorandum of June 16, 1958, concerning the above subject, Amendment No. 1, dated June 18, 1958, has now been executed and returned. Accordingly, Docket No. DMEA-4995 may now be consolidated with DMEA-4842 and considered withdrawn.

F. L. Knouse

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado
June 26, 1957

DMEA
RECEIVED JUN 30 1958
6/30 C 220
6/30 B 215
" Chicago 700

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4842 (Uranium), Contract No. Idm-E1183, E. J. Longyear Company, Agent (San Mateo Dome Project), McKinley County, New Mexico

Enclosed are the Government's and Audit copies of executed Amendment No. 1, which was forwarded by your letter of June 19, 1958, for signature by the Operator after attaching executed Forms MF-205, Consent to Lien and Subordination Agreements, listed under items 1, 3, 4, 6, 7, and 8 of Mr. Harshman's letter of May 14, 1958. The required executed forms have been attached to each copy of the Amendment.

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

J. W. Townsend

J. W. Townsend

Enclosures

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 26 1958
DATE
6/26 C 220
" 700

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado
June 24, 1958

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4842 (Uranium), Contract No. Idm-E1183, E. J. Longyear Company, Agent (San Mateo Dome Project), McKinley County, New Mexico

Reference is made to your teletype of 6/20/59 and prior correspondence concerning the waiving of probing requirement s for hole No. 1 (G-1-33).

We have been informed by the Operator that the driller, on his own time and at his own expense, has re-entered the hole and recovered the tools which were broken off in the hole.

The hole has been probed as required by the contract. Therefore, it will not be necessary to issue the waiver.

To complete your files, we are enclosing two copies of a joint memorandum,dated June 17, 1958, from N. L. Archbold, Geologist, Geological Survey, and H. F. Robertson, Mining Engineer, Bureau of Mines, relative to waiving the probing requirements.

J. W. Townsend

J. W. Townsend

Enclosures

IN REPLY REFER TO:

MINERAL DEPOSITS
DMEA
RECEIVED
JUN 18 1958
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

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

DMEA
DEPARTMENT OF THE INTERIOR
JUN 20 1958
REGION III
DENVER, COLORADO

June 17, 1958

Memorandum

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

Through: E. N. Harshman
J. William Hasler

Official file copy ENH

From: N. L. Archbold
H. F. Robertson

RECEIVED
CODE

Subject: Docket No. DMEA 4842 (Uranium), Contract Idm-E 1183,
E. J. Longyear Company, Agent (San Mateo Dome Project),
McKinley County, New Mexico.
Recommendations concerning Drill hole G-1-33.

In a letter dated June 11, 1958, the subject operator requested permission to consider hole G-1-33, located on the Falcon 4111 claim, as completed although the hole cannot be electrically and radiometrically probed due to twisted off drilling tools blocking the hole at a depth of 1,690 feet. Attempts to recover the tools were unsuccessful.

Contract Idm-E 1183 specifies in Exhibit "A", Description of the Work, General Provisions, paragraph 6, that "All holes shall be probed and gamma-ray, resistivity, and self-potential logs recorded."

Hole G-1-33, the first hole drilled under the subject contract, was non-core drilled to a depth of 1,700 feet, then core drilled from 1,700 feet to 2,027 feet. From 2,022 feet to 2,027 feet, the drill penetrated interbedded shale and sandstone indicating that the ore-bearing Westwater Canyon sandstone had been completely penetrated and the underlying Recapture shale had been reached. However, the operator decided to drill one more run to confirm the presence of the Recapture shale. After drilling seven feet of the run, the rods twisted off in the hole at a point 1,690 feet below the collar. According to the driller, certain operating characteristics indicated that the last seven feet penetrated consisted of mudstone. An overshot fishing tool was used in an unsuccessful attempt to recover the broken rods. Thus, due to the remaining 344 feet of rods, it is impossible to electrically and radiometrically probe the subject hole.

Hole G-1-33 was core drilled from 1,700 feet to 2,027 feet with an overall core recovery of 89 percent. Core recovery through the target horizon (the Westwater Canyon sandstone) was 95 percent. All drill cuttings and core were checked for anomalous radioactivity resulting in the hole being classified barren of uranium mineralization.

Inasmuch as very good core recovery was obtained from hole G-1-33, the examining team is of the opinion that sufficient pertinent data were obtained from the hole and recommends that the Government waive the requirement for probing this specific hole.

H. F. Robertson

H. F. Robertson,
Mining Engineer

N. L. Archbold

N. L. Archbold,
Geologist

HFR/bh

224 New Customhouse
Denver 2, Colorado
June 20, 1958

DMEA
JUN 23 1958

6/23	C	220
6/24		800
	~~Check~~	700

Mr. R. C. Gebhardt
E. J. Longyear Company
416 Colorado Building
Denver 2, Colorado

Re: Docket No. DMEA 4842 (Uranium)
Contract No. Idm-E1183
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Dear Mr. Gebhardt:

Enclosed are the Government's, Audit, Finance Office, and Field Team copies of proposed Amendment No. 1 to Contract No. Idm-E1183, which has been prepared in reference to your Application, docketed DMEA 4995, to provide additional funds and additional work under Stages III and IV, as outlined in the proposed Amendment.

If the Amendment is satisfactory, all copies are to be signed by an official of E. J. Longyear Company authorized to sign such an instrument, as Agent for the San Mateo Dome Project, the signer's title inserted, and all copies promptly returned to this office; in conjunction with which, for the Amendment to become effective it will have to be signed and the envelope returning the Amendment to this office postmarked prior to midnight June 30, 1958.

Upon return of the properly signed copies of the Amendment, the "Operator's Copy" will be forwarded to you.

Very truly yours,

Original signed by
J. W. TOWNSEND

J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team, Region III

JWT:prl
cc: Chmn. Op. Comm. (2)
Harshman
Hasler
DMEA/Gr.Jct.
DMEA/DFC
Docket 4995
Corres. E1183
Cooper
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/20/58	Ching	700
6/20	Kaunde	700
6/20	GCS	130
"	Gr	110
"	Mattendorf	100
		220
		700

JUN 20 1958

Department of the Interior

DMEA

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

T E L E T Y P E

J. W. TOWNSEND
ALTERNATE ACTING EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REOURLET MAILED JUNE 19, SAN MATEO DOME PROJECT DOCKET 4842, CONDITION NO. 2 HAS BEEN MET. CONSENT SIGNED BY YUCCA MINING AND PETROLEUM COMPANY, INC., IS ACCEPTABLE.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (GCS)

MChing/gla
6-20-58
cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
Mr. Ching
Confirmation to Region III

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/20/58	Ching	700
6/20	Ricarte	700
6/20	Tallent	800
6/20	[illegible]	130
"	Johnson	110
"	Montevideo	100
		220
		700

JUN 20 1958

Department of the Interior

DMEA

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

T E L E T Y P E

J. W. TOWNSEND
ALTERNATE ACTING EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURMEM JUNE 13 SAN MATEO DOME PROJECT DOCKET 4842, A REVIEW OF RESULTS OBTAINED ON HOLE NO. 1 SHOWS THAT PROBING WOULD ADD NOTHING TO INFORMATION ALREADY ON HAND. THEREFORE PROBING OF THIS HOLE MAY BE WAIVED ADMINISTRATIVELY AND PAYMENT MADE FOR DRILLING BUT NOT FOR PROBING.

George C. Selfridge
CHAIRMAN, OPERATING COMMITTEE (HB)

MChing/gla
6-20-58
cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
Mr. Ching
Contract Adm. & Audit Division
DMEA Field Team, Region III confirmation

8623

FORM 311A 10M 3-56

W.O.

Longyear

E. J. LONGYEAR COMPANY

General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
416 COLORADO BUILDING
DENVER 2, COLORADO
AMHERST 6-1941
CABLE ADDRESS
"LONGCODENVER"

DMEA
DEPARTMENT OF THE INTERIOR
JUN 20 1958
REGION III
DENVER, COLORADO

June 19, 1958

6/23	C	220
"	Chin	700

United States Dept. of the Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Attention: J. W. Townsend, Alternate ~~Acting~~ Executive Officer
DMEA Field Team, Region III

Re: Docket No. DMEA 4995 4847 (Uranium)
San Mateo Dome Project (E ½, S. 32, T.14 N., R.8 W.) McKinley County, New Mexico
(Further data on Yucca change of names)

Gentlemen:

As I promised to you over the telephone, this morning, there are attached hereto two copies each of Quitclaim Deeds which yesterday evening were mailed by Air Special Delivery to Mr. Michael Ching by Mr. Richards of Yucca.

We trust that these will fulfill the requirements of Mr. Ching and as soon as you know one way or the other, we would appreciate your communication by telephone because time is of the essence as we all realize.

Faithfully yours,

E. J. LONGYEAR COMPANY

R. C. Gebhardt

RCG:msb

Enclosures

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/17/58	Ching	700
6/18	Knowd	700
6-18	Chandler	800
6/18	[illegible]	130
"	Johnson	110
"	Hutchinson	100
6/19	[illegible]	220
		700

C

JUN 19 1958

Mr. J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4842 (Uranium)
Contract No. Idm-E1183
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico

Dear Mr. Townsend:

Enclosed are the original and four copies of a proposed Amendment No. 1 to the subject contract, signed by the Administrator. Also enclosed are two extra copies of the amendment for the use of the Field Team.

The amendment increases the total allowable cost of the project by $73,370.00. It must be executed, complete with all attachments, by June 30. If mailed by the Operator, the forwarding must be postmarked by midnight June 30.

The work added under the amendment resulted from an application under Docket No. DMEA-4995. Hereafter, please refer to the combined dockets as Docket No. DMEA-4842.

If you and the Operator find the proposed amendment satisfactory, it is ready for the signature of the Operator provided that the following conditions are met:

Because footages are very liberal as demonstrated by nearby drilling area more restricted. No room for changing position of holes. MC.

1. The required Consent to Lien and Subordination Agreement forms are attached. Items 2 and 5 in Mr. Harahman's letter, dated May 14, 1958, to E. J. Longyear Co. are not required. All other items listed in that letter are required and should be attached to Amendment No. 1.

2. Evidence is supplied the Government in the form of a sales agreement showing that the land and assets of Yucca Uranium, Inc., were transferred to Northwest Mining and Petroleum Company (now Yucca Mining and Petroleum Company).

8623

In connection with the foregoing condition No. 2, we will contact Mr. Gebhardt directly and advise you by teletype when the condition has been met.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (HB)

Enclosures

APPROVED:

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

Thor H. Kiilsgaard (HB)
Member, Geological Survey

MChing/gla
6-17-58

cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
Mr. Ching

Yucca Mining & Petroleum Co., Inc.

1224 FOURTH ST. NW —— ALBUQUERQUE, N.M.
PHONE 3-5417

June 18, 1958

DMEA - Department of Interior
ATTN: Mr. Michael Ching
Washington 25, D. C.

Re: E. J. Longyear Co.

Dear Sir:

Enclosed are two notarized left-hand side copies of Quit Claim Deeds as per your request, in reference to the Yucce Uranium, Inc, Yucca Mining & Petroleum Co. Inc. and E. J. Longyear Co. agreement.

The assignment of leases are included on the Quit Claim Deeds, therefore their are no separate assignments. As shown on the Quit Claim Deeds, all properties, claims and leases have been Quit Claimed to Yucca Mining & Petroleum Co. Inc. The originals of these instruments have been mailed to the respective counties for recording, copies of which will be mailed to you upon request.

Trusting the enclosed will satisfy your requirements, if further information is needed, please contact us immediately.

Very truly yours

M. E. Richards
M. E. RICHARDS
President

MER/eah
Encl.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 19 1958

DATE	INITIALS	CODE
6 19	C	220
-	Ching	700

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/17/58	Ching	700
		700
		225

June 17, 1958

Memorandum

To: The File

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

Subject: Long Distance Telephone Call to Denver, Colorado
Docket No. DMEA-4842 (Uranium)
Contract No. Idm-E1183
San Mateo Dome Project
E. J. Longyear, Agent
McKinley County, New Mexico

To justify the signing of a Consent to Lien and Subordination Agreement by Yucca Mining and Petroleum Company instead of by Yucca Uranium, Inc., the Operator submitted certain documents through the Denver DMEA office.

One key instrument, the sales agreement between Yucca Uranium, Inc. and Northwest Mining and Petroleum Company (now Yucca Mining and Petroleum Company) was missing.

Amendment No. 1 to the subject contract, increasing the total cost by $73,370.00, is ready for Operating Committee consideration. Because of the June 30 deadline, time is of the essence in placing the amendment in condition for execution.

After discussion with Mr. Selfridge, it was decided to process the amendment as quickly as possible and at the same time clarify the problem mentioned in Paragraph 1 by long distance telephone with Mr. R. C. Gebhardt of the E. J. Longyear Company in Denver. This was done, and Mr. Gebhardt promised to forward copies of the required document to the Washington Office as soon as possible.

Michael Ching
Michael Ching

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/16/58	Ching Knouse	700
		700
		130
		110
		100
		225

June 16, 1958

Memorandum

To: Allan S. Dakan, Director
Division of Operations Control & Statistics

From: F. L. Knouse, Acting Director
Division of Rare & Miscellaneous Metals

Subject: Combining Dockets Nos. DMEA-4842 and 4995
Contract No. Idm-E1183
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico

The work requested under Docket No. DMEA-4995 has been incorporated into Contract Idm-E1183 (Docket No. DMEA-4842) in the form of an amendment. After official approval of the amendment, it is requested that both dockets be combined under Docket No. DMEA-4842. Physical consolidation of the two dockets will then be made.

/s/ F. L. Knouse

F. L. Knouse

MChing/gla
6-16--58
cc to: Mr. Ching

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/16	Selfridge	120
"	Ehling	110
		100
		700

June 16, 1958

MEMORANDUM

To: Administrator, DMEA

From: George C. Selfridge, Special Assistant

Subject: Docket No. DMEA-4842 - Uranium
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico
Contract No. Idm-E1183

Mr. Townsend called the writer on June 9, 1958, to ask if the probing of Hole No. 1 under the subject contract could be waived. He explained that the hole had been cored from 1700 feet to 2027 feet with a 95% core recovery. He did not know whether the 5% core loss was distributed uniformly over the entire distance or whether it had been lost over a short distance that might represent an ore horizon.

The waiver was asked because 400 feet of rod had been lost in the hole so it couldn't be probed. As all of the core was barren, though geologically favorable, it was not thought that the expense of recovering the rods so that the hole could be probed was justified. The writer told Mr. Townsend that he would not want to commit himself one way or another as the matter would have to be discussed with the legal department. The writer suggested that all of the available information be submitted for study.

G. Selfridge

GCS/esf - 6/16/58
cc to: Docket
Admr. Read. File
Code 700
Mr. Selfridge

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

ORIGINAL FILE COPY
DMEA
RECEIVED JUN 16 1958

DATE	INITIALS	CODE
6/16	C	220
		130
		700

June 13, 1958

AIR MAIL
SPECIAL DELIVERY

Memora ndum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4842 (Uranium), Contract No. Idm-E1183, E. J. Longyear Company, Agent (San Mateo Dome Project), McKinley County, New Mexico

Enclosed are original and one copy of the Operator's letter of June 11, 1958, with attached drill hole log, which are in reference to the drilling of hole No. 1 (Company No. G-1-33) under the contract, which was discussed briefly with you by telephone June 9, 1958.

For reasons stated, the Operator requests that the provisions in the contract pertaining to the probing and submitting records thereof for the hole be waived.

A review of the drill hole log indicates geologic favorability for mineralization. However, radiometric testing of the core and cuttings indicates that the material penetrated is barren of significant uranium mineralization, as count was very little above background.

The matter has been discussed with the field examiners, and, after due consideration, they advised that under the circumstances they recommend that the probing requirement and the submitting of probe records be waived for this particular hole and that the hole be considered as a completed hole and eligible for reimbursement under the terms of the contract, in which this office concurs. It is further recommended that a suitable instrument be prepared by your office to waive the probe requirement.

When the matter has been reviewed, we will appreciate advice by teletype as to your decision.

J. W. Townsend

DMEA Longyear
DEPARTMENT OF THE INTERIOR

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
416 COLORADO BUILDING
DENVER 2, COLORADO
AMHERST 6-1941
CABLE ADDRESS
"LONGCODENVER"

JUN 12 1958
REGION III
DENVER, COLORADO

June 11, 1958

United States Dept. of the Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

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

DMEA
RECEIVED JUN 16 1958

DATE	INITIALS	CODE

Re: Docket No. DMEA 4842 (Uranium)
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico
Proposed Exploration Project
Contract No. Idm-E1183

Special Report on Hole No. G-1-33
on request for classification
as a completed hole at depth
of 2027 feet; impossible to
probe.

Gentlemen:

Conforming to your request over the phone on June 9, we submit our project engineer's special report on the subject drill hole. We believe that this will serve to give you a detailed account of its history and performance for what we consider represents a completed depth, a completed test, and complete geological data amply sufficient to classify the hole as barren.

Annexed also is the detailed geologic log of the hole.

The problem is this: We think that this hole should be considered a completed hole. The question is: Does DMEA think so?

It is our humble opinion that in view of the overwhelming and exhaustive geologic evidence (in sight) of a "dry" hole on G-1-33, any further efforts to furnish additional proof of its "dryness" would not be justified.

After you have studied these records for this hole, we shall appreciate your prompt reply on how this hole should be classed - incomplete or complete.

Yours faithfully,

E. J. LONGYEAR COMPANY

R. C. Gebhardt

RCG:msb

Longyear

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
416 COLORADO BUILDING
DENVER 2, COLORADO
AMHERST 6-1941
CABLE ADDRESS
"LONGCODENVER"

Grants, New Mexico
June 9, 1958

Mr. R. C. Gebhardt
E. J. Longyear Company
416 Colorado Bldg.
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 16 1958

DATE	INITIALS	CODE

Re: Docket No. DMEA 4842 (Uranium)
Contract Idm-E1183
San Mateo Dome Project
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Special Report on Drill Hole No. G-1-33 on our request for its classification as a completed hole for voucher presentation.

Dear Mr. Gebhardt:

As reported in our Progress Report No. 1, to DMEA, on June 5, 1958, Hole G-1-33 was started May 13 and scheduled for completion early in June. Drilling was started with one rig operating on a one shift basis of 12 hours each per calendar day. Drill crews worked a schedule of 10 straight days on and 4 days off. On May 25, the hole reached 1700 feet and coring was started.

1. On June 2, the hole depth was at 1760 feet and gave indications of some slight caving when left idle over night. As a precaution against this a 12-hour night shift was started and, since June 2, drilling has been on a 24-hour per day basis.

2. On June 8, a depth of 2027 feet was reached and the core showed that the last 5 feet of the hole were in what we believe to be the Recapture shale. It was decided that one more run would be made to confirm that the Recapture had been penetrated. On the last run, drilling was very hard and advance was slow, indicating that the Recapture shale was being drilled. After 7 feet were cored the driller reported that he thought the bit was blocked and that he was going to pull the rods from the hole. On coming out of the hole the driller found that a rod had twisted off at 1690 feet and 344 feet of rods were still on

the bottom of the hole. Fishing operations were started and the broken rods were caught with an overshot tool; however, the rods were stuck and could not be moved.

3. Although the hole was considered completed, the above mentioned circumstances which are beyond our control, have rendered the hole inaccessible for probing. For this reason we are requesting that DMEA consider this hole as completed and vouchers for reimbursement be recognized.

4. We feel that because the hole was cored and that core recovery through the target horizon was 95% (total recovery over 327 feet was 89%) a safe and sufficient amount of information has been gained from this hole to justify its classification as a barren hole. Sludge samples were also collected from every 10 feet of hole drilled and checked for radioactivity. The sludge samples are highly contaminated by the Mancos shale and considered unreliable; however, no above background radioactivity was recorded on any of the sludge or core samples. A Model 107B (A.E.C. #SGM-4913) Geiger Counter was used to test the samples.

5. Experience in this district has taught us that core recovery of 90% or more is excellent, and that a great majority of rock failing to core generally represents shale and mudstone beds. So that, when core recovery falls off it can generally be attributed to the presence of such shale and mudstone beds in the interval cored.

6. Experience has also taught us that the shale and mudstone beds do not carry appreciable amounts of mineralization. For this reason we believe that the 5% loss of core through the target horizon does not represent any loss of core of geological significance that could have been mineralized.

A geologic log of subject drill hole is attached.

Sincerely yours,

B F Sorensen

B. F. Sorensen
Project Engineer

BFS:msb

FORM A

Docket No. DMEA 4842
(Uranium)
Contract Idm-E1183
San Mateo Dome Project
E.J.Longyear Company,Agent
(San Meteo Dome Project)
McKinley County, New Mex.

E. J. LONGYEAR COMPANY

DRILL HOLE NO. G-1-33

SAN MATEO DOME PROJECT

Exploration at Sec. 33, T.14 N., R. 8 W., McKinley, New Mexico
(mine, prospect, or place) (county) (state)

For SAN MATEO DOME PROJECT
(company, group, or individual)

Date started 5/13/58 Completed _____

Driller Scott Bros.

Sampler B. F. Sorensen (Project Engineer)

Collar elevation 7425 (?)

Coordinates (or bearing and distance from a reference point) 311,200 N 564,800 E

Inclination from horizontal Vertical

Bearing _____

(Specific gravity of core from _____ft.= _____; _____ft.= _____; _____ft.= _____; _____ft.= _____.)

Interval Drilled			Core Recovery		Bit	Character of	Sample Record		
From	To	Feet	Feet	%	Size	Material and Remarks	No.	From	To
0	250	250	Sludge		4-3/4	light to dark gray		Mulatto	
						shale & silt-mudstone		shale	
250	290	40	Sludge		4-3/4	gray fine to medium			
						grained sandstone.			
				(drilled on		air to 460 feet.)			
290	520	230	Sludge		4-3/4	dark gray shale &		Dilco	
						mudstone.			
520	610	90	Sludge		"	light gray fine to		Gallup sand	
						medium grained sandstone.			
610	1580	970	Sludge		"	light to dark gray		Mancos shale	
						siltstone shale & mud-			
						stone sand beds at			
						1460 - 1480.			
1580	1640	60	Sludge		"	fine to medium grained		Dakota	(?)
						light colored sandstone.			

Telefax **WESTERN UNION** Telefax

JK DVE088 PD=DENVER COLO 16 1055AM=

MICHAEL CHANG= DEFENSE MINERALS EXPLORATION ADMIN

DEPT OF INTERIOR WASHDC=

THIS IS TO INFORM YOU THAT I HAVE JUST ADVISED PRESIDENT RICHARDS OF YUCCA MINING AND PETROLEUM COMPANY THAT HE SHOULD DIRECTLY MAIL TO YOU THE DOCUMENTS YOU HAVE REQUESTED IN RELATION TO OUR OWN MARED DOME PROJECT. HE INFORMS ME THAT THEY WILL BE FORWARD TO YOU TODAY BY SPECIAL DELIVERY AIRMAIL REGISTERED=

E J LONGYEAR CO R C GEBHARDT=

1270 (1-51)

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 18 1958

DATE	INITIALS	CODE
6/19	C	220
		700

E. J. LONGYEAR COMPANY

DRILL HOLE NO. G-1-33

SAN MATEO DOME PROJECT

Interval Drilled			Core Recovery		Bit	Character of	Sample Record		
From	To	Feet	Feet	%	Size	Material and Remarks	No.	From	To
1640	1700	60	Sludge		4-3/4	gray-green shale	Brushy Basin		
						Brushy Basin (?)	shale at 1640		
Started coring at 1700 ft. using a 15' core barrel-2 5/16" core -4" bit.									
1700	1715	15	9.1	61	4"	1700-1703.5 fine grained			
						gray-green ss. well			
						sorted non-calcareous.			
						1703.5-1707 fine to			
						medium grained gray			
						arkosic ss. Some			
						calcareous material.			
						1707-1709.1 gray-green			
						shale to mudstone.			
						Calcareous material			
						present.			
1715	1730	15	14.8	99	4"	gray-green shale with			
						interbedded mudstones.			
						Some reddish inter-			
						bedded shales.			
1730	1745	15	3	20 9	"	core dropped out of			
						the core barrel - gray			
						mudstone.			
1745	1760	15	14.3	95	"	6 ft. light gray fine			
						grained ss. 1 ft.coarse			

(continued Page 3)

E. J. LONGYEAR COMPANY

DRILL HOLE NO. G-1-33

SAN MATEO DOME PROJECT

Interval Drilled			Core Recovery		Bit	Character of	Sample Record		
From	To	Feet	Feet	%	Size	Material and Remarks	No.	From	To
						grained unsorted ss.			
						arkosic with 1/4"			
						pebbles.			
						2.3 ft. light gray			
						fine grained ss.			
						5 ft. green shale mudstone.			
1760	1775	15	14	93	4"	green shale & mudstone.			
1775	1790	15	14.7	98	"	green shale & mudstone			
Crosby Basal Zone contact El. 1805									
1790	1805	15	15.0	100	"	3' fine grained dark			
						gray greenish ss. Some			
						Carbonate zones. 11'			
						dark red shale and			
						mudstone. 1' fine			
						grained reddish-green ss.			
1805	1818	13	13	100	"	2.5' fine grained gray-			
						green to reddish arkosic			
						ss.			
1805	1818	13	13	100	"	2.5' fine grained gray-	Westwater		
						green to reddish	sand	at 1804'	
						arkosic ss.			
						1' coarse grained un-			
						sorted arkosic ss.			
						4.8' green-reddish			

(Continued on Page 4)

E. J. LONGYEAR COMPANY

DRILL HOLE NO. G-1-33

SAN MATEO DOME PROJECT

Interval Drilled			Core Recovery		Bit	Character of	Sample Record		
From	To	Feet	Feet	%	Size	Material and Remarks	No.	From	To
						fine grained ss.			
						4.7' fine to med.			
						grained dark gray			
						dirty ss.			
1818	1832	14	13.6	97	4"	3' fine grained greenish			
						ss-arkosic, 1' medium			
						to coarse grained green			
						ss, 9.6' fine grained			
						arkosic ss.			
1832	1847	15	14.3	95	"	fine grained greenish			
						arkosic ss. Some			
						medium grained zones			
						shaly zone at 1835,			
						possible fault, very			
						calcareous.			
1847	1862	15	14.9	99	"	fine grained greenish ss.			
1862	1877	15	15	100	"	6' unsorted coarse			
						grained arkosic green ss.			
						9' fine grained vari-			
						gated red, white & green			
						ss.			
1877	1892	15	10.7	71	"	fine grained greenish ss.			
1892	1907	15	13.3	89	"	fine grained greenish gray ss.			

E. J. LONGYEAR COMPANY

DRILL HOLE NO. G-1-33

SAN MATEO DOME PROJECT

Interval Drilled			Core Recovery		Bit	Character of	Sample Record		
From	To	Feet	Feet	%	Size	Material and Remarks	No.	From	To
1907	1922	15	14.5	97	4"	fine to medium grained			
						greenish gray ss. to			
						1917'			
						5' green to red very			
						fine grained shaly ss.			
1922	1937	15	14.7	98	"	fine grained varigated			
						red to gray-green ss.			
1937	1952	15	15	100	"	fine to medium grained			
						gray-green arkosic ss.			
1952	1967	15	15	100	"	fine to medium grained			
						unsorted gray-green			
						arkosic ss, some local			
						coarse grained beds.			
1967	1982	15	7.5	50	"	same as above			
1982	1997	15	15	100	"	same as above			
1997	2012	15	14.9	99	"	same as above			
2012	2027	15	13.5	90	"	same as above to 2022			
						5' interbedded ss and			
						red & green shale			
						possibly Recapture			
		Contacts picked as follows:							
				Dakota	-	1580 - 1640			

All core was checked with a Model 107B Geiger Counter - No above background radioactivity was noted.

(Continued on Page 5)

E. J. LONGYEAR COMPANY

DRILL HOLE NO. G-1-33

SAN MATEO DOME PROJECT

Interval Drilled			Core Recovery		Bit	Character of	Sample Record		
From	To	Feet	Feet	%	Size	Material and Remarks	No.	From	To
		Contacts picked as follows: (Continued)							
			Brushy Basin		-	1640 - 1804			
			Westwater		-	1804 - 2022			
			Recapture		-	2022 - 2027			
			Total footage drilled - 327 feet						
			Total core recovered - 290 feet						
			% core recovery = 89%						
			% core recovery through Westwater = 95 %						

1726
1786

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado
June 13, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 16 1958

DATE		
6/16	C	220
"		700

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4995 (Uranium) San Mateo Dome Project (E. ½, S. 32, T. 14 N., R. 8 W.) McKinley County, New Mexico

also

Docket No. DMEA 4842, Contract Idm-E1183

This replies to your teletype of June 13, 1958, on the subject dockets. Enclosed are two copies of a letter from R. C. Gebhardt dated June 12, 1958, together with two copies of Change of Name Certificates as follows:

1. Yucca Uranium, Inc., New Mexico Corporation, to Northwest Mining and Petroleum Company, a Colorado Corporation.

2. Northwest Mining and Petroleum Company, a Colorado Corporation, to Yucca Mining and Petroleum Company, Inc., a Colorado Corporation.

One copy of the above is being retained in our file.

J. W. Townsend

J. W. Townsend

6548

Longyear

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U.S.A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
416 COLORADO BUILDING
DENVER 2, COLORADO
AMHERST 6-1941
CABLE ADDRESS
"LONGCODENVER"

FORM 311A 10M 8-56

ORIGINAL FILE COPY
DMEA
RECEIVED JUN 16 1958
DATE

June 12, 1958

United States Dept. of the Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

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

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

Re: Docket No. DMEA 4995 (Uranium)
San Mateo Dome Project (E ½, S. 32, T.14 N., R.8 W.) McKinley County, New Mexico

Gentlemen:

We refer now to a letter from Mr. J. W. Townsend, dated June 10, in which he requests documents which verify the change of corporate names from Yucca Uranium, Inc. to Yucca Mining & Petroleum Co., Inc.

We believe that the two sets of attachments, plus two extra copies each, will fulfill the request.

Attachments dated June 10, received from Yucca offices in Albuquerque, submit photostat of the Certificate of Amendment to Articles of Incorporation of Northwestern Mining & Petroleum Company for the amendment thereto changing the name to Yucca Mining & Petroleum Co., Inc.

Attachment dated June 11, received from Yucca offices in Albuquerque, presents photostatic copy of the proof of dissolution of Yucca Uranium, Inc. and subsequent purchase by Northwestern Mining & Petroleum Company, Inc.

We trust that this will provide the necessary information for you, verifying the change in the chain of corporate names involved, that is, (1) Yucca Uranium, Inc. to (2) Northwestern Mining & Petroleum Company, and, finally, to (3) Yucca Mining & Petroleum Co., Inc.

Faithfully yours,

E. J. LONGYEAR COMPANY

R. C. Gebhardt

RCG:mab
Enclosures

Yucca Mining & Petroleum Co., In

1224 FOURTH ST. NW — ALBUQUERQUE, N.M.
PHONE 3-5417

June 30, 1958

E. J. Longyear Company
416 Colorado Building
Denver 2, Colorado

Attn: Mr. R. C. Gebhardt

Dear Mr. Gebhardt:

Pursuant to [illegible] with are [illegible] corporation [illegible] amendment [illegible] Oil [illegible]

If further [illegible]

CERTIFICATE OF AMENDMENT TO ARTICLES

OF INCORPORATION

OF

NORTHWESTERN MINING AND PETROLEUM COMPANY

RECEIVED JUN 13 1967
OFFICIAL
RECEIVED JUN
DATE INITIAL

HOWLAND SCHAEFER hereby certifies that he is the Vice President of Northwestern Mining and Petroleum Company; that a meeting of the stockholders of said company duly held at the offices of the company, 518 Main Street, Grand Junction, Colo. on February 5, 1967 at the hour of 10:00 o'clock A. M., duly called for such purpose, the following amendments to the Articles of Incorporation, to-wit:

ARTICLE I: The name of the company shall be:

"YUCCA MINING & PETROLEUM CO., Inc."

ARTICLE IV: "The authorized capital stock of said corporation is $12,500,000.00 divided into 50,000,000 shares of common stock of the par value of 25¢ per share and said stock shall be non-assessable."

were duly adopted and that said amendments received the affirmative vote of more than two-thirds of each class of stock entitled

Howland Schaefer

STATE OF COLORADO }
COUNTY OF M E S A } ss

The foregoing instrument was acknowledged before me this 5th day of February, A. D. 1967 by Howland Schaefer, Vice President of Northwestern Mining and Petroleum Company.

WITNESS my hand and official seal.

My commission expires August 28, 1968.

RECEIVED
JUN 12

UNITED STATES OF AMERICA,
STATE OF COLORADO) ss CERTIFICATE

I, George J. Baker, Secretary of State of the State of Colorado, do hereby certify that the annexed is a full, true, and complete copy of the original Certificate of Amendment of the Certificate of Incorporation of

NORTHWESTERN MINING AND PETROLEUM COMPANY

changing corporate name to

YUCCA MINING & PETROLEUM CO., INC.

filed in this office on the 5th day of February A.D. 1957 and admitted to record.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the Great Seal of the State of Colorado at the City of Denver, this 5th day of February A.D. 1957

GEORGE J. BAKER
Secretary of State

OFFICIAL FILE COPY
OMEA
RECEIVED JUN 16 1958

DATE	INITIALS	CODE

RECEIVED
JUN 12 1958
E. J. LONGYEAR CO.
DENVER, COLO.

UNITED STATES OF AMERICA)
) ss. CERTIFICATE
STATE OF COLORADO)

I, George J. Baker, Secretary of State of the State of Colorado, do hereby certify that the annexed is a full, true, and complete copy of the original Certificate of Incorporation of

NORTHWESTERN MINING AND PETROLEUM COMPANY

filed in this office on the 9th day of July A. D. 1956 and admitted to record.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the Great Seal of the State of Colorado, at the City of Denver, this 9th day of July A. D 1956.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 16 1958

DATE	INITIALS	CODE

GEORGE J. BAKER
Secretary of State

Deputy

Yucca Mining & Petroleum Co., Inc.

1224 FOURTH ST. NW ALBUQUERQUE, N.M.
PHONE 3-541

June 11, 1958

E. J. Longyear Company
416 Colorado Building
Denver 2, Colorado

Attn: R. C. Gebhardt

Dear Mr. Gebhardt:

Enclosed are further photostatic copies of proof of the dissolution of Yucca Uranium, Inc. and the subsequent purchase of the assets by Northwestern Mining & Petroleum Co. Inc. Sorry to have delayed your DEMA negotiations.

Very truly yours

E. A. Hatcher

eah

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 16 1958

DATE	INITIALS	CODE

AFFIDAVIT OF PUBLICATION

State of New Mexico)
County of Bernalillo) SS.

W. V. GROTTENTHALER being duly sworn declares and says that he is Publisher of EL INDEPENDIENTE & THE NEW MEXICO INDEPENDENT a newspaper published in and having a general circulation in the City of Albuquerque, County of Bernalillo and State of New Mexico and duly qualified for that purpose within the meaning of Chapter 167 of the New Mexico Session Laws of 1937; that the publication, a copy of which is hereto attached, was published in said newspaper in the regular Edition and entire issue of every number of the paper during the period and time of publication, and that the notice was published in the newspaper proper and not in a supplement.

for 4 Consecutive weeks the first publication being on the 1st

of Mar, 1957 and the subsequent publications

on Mar 8-15-22nd 1957

and that payment therefor has been (19

W V Grottenthaler

Sworn and subscribed to before me, a Notary Public

this 23rd day of Mar 1957

Notary Public

My Commission expires September 17, 1960

NOTICE OF SPECIAL STOCKHOLDERS MEETING OF YUCCA URANIUM, INC. (NSL) a New Mexico Corporation

TO STOCKHOLDERS OF YUCCA URANIUM, INC. (NSL)

Notice is hereby given to the stockholders of Yucca Uranium, Inc. (NSL), a New Mexico Corporation that the directors according to law did on the 23rd day of February, 1957, adopt a resolution to dissolve said corporation voluntarily as provided by law.

You are further notified that on the 29th day of March, 1957 a special stockholders meeting will be held at 1224 4th St., Northwest, Albuquerque, New Mexico at 10 A.M. to take action upon the resolution so adopted by the Board of Directors.

YUCCA URANIUM, INC. (NSL)
(Seal) a New Mexico Corporation
By Melvin E. Richards,
President

E. I. March 1, 8, 15, 22, 1957.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 16 1958

DATE	INITIALS	CODE

RECEIVED
JUN 12 1958
E. J. LONGYEAR CO.
DENVER, COLO.

BOARD OF DIRECTORS MEETING OF YUCCA
URANIUM, INC., (NSL) HELD FEB 12, 1957

At the Meeting of the Board of Director held after the Annual meeting of 1957 of YUCCA URANIUM, INC (NSL) the Board approved and past the following resolution:

"BE IT RESOLVED, that Melvin E. Richards, President be and is instructed and directed to execute the agreement to sell all the Assets of Yucca Uranium, Inc. (NSL), a New Mexico Corporation, to Northwest Mining and Petroleum Company, a Colorado Corporation according to the terms of the agreement attached hereto and made a part hereof. That his every act in the premises is hereby approved, subject to the approval of the sale by the Stockholders at a Special Meeting to be held on Bebruary 15, 1957 call for the purpose of submit ing same to the Stockholders for their approval or rejection as provided by Law."

William S. Hardin
Secretary

I, Secretary of Yucca Uranium, Inc., (NSL), a New Mexico corpeeation hereby certify that the above action was taked as stated above.

William S. Hardin
Secretary

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 16 1958

DATE	INITIALS	CODE

RECEIVED
JUN 12
E. J. LONGYEAR CO.
DENVER, COLO.

RESOLUTION OF BOARD OF DIRECTORS TO DISSOLVE YUCCA URANIUM INC., (NML) A NEW MEXICO CORPORATION

RESOLVED, that it shall be and is advisable and for the benefit of Yucca Uranium, Inc., that it should be dissolved.

BE IT FURTHER RESOLVED that Yucca Uranium, Inc., (NML) a New Mexico Corporation be dissolved voluntarily by the directors and stockholders as provided by law.

BE IT FURTHER RESOLVED that a notice of the adoption of this resolution be mailed to each stockholder residing in the United States, and also that a notice of the adoption of the resolution and the time and place for a meeting of the stockholders to take action upon this resolution, be mailed to each stockholder and also publish as provided by law.

BE IT FURTHER RESOLVED that the 29th day of March, 1957 be designated as the day for the stockholders meeting to take action on this resolution to be held at the office of the corporation at 1224 Fourth St. N.W., Albuquerque, New Mexico between 10 A.M. and 3 P.M. of said day, and that notice thereof be given as provided by law.

Dated this 23rd day of February, 1957.

Melvin E. Pickett, Director

Lindsay Chase, Director

William S. Hart, Director

Director

Director

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 16 1958

DATE	INITIALS	CODE

SPECIAL MEETING OF STOCKHOLDERS

YUCCA URANIUM, INC.

A special meeting of the stockholders was held on March [illegible] 1957 at 10 a.m. at the company's office at 1224 Fourth Street N.W., Albuquerque, New Mexico.

The meeting was called to order by Mr. Richards.

A resume' was given by Mr. Perry S. Kay on the sale of Yucca Uranium, Inc. assets and the fact was pointed out that the only assets now held by Yucca Uranium is the stock in Yucca Mining & Petroleum Co. Inc.

"The meeting is being held today", Mr. Kay said, "to consent to the dissolution". The dissolution resolution was read by Mr. [illegible] and a discussion followed. Stockholders present were asked to sign the consent to dissolution after the meeting.

The motion was made to the effect that "if the necessary two-thirds required were not available the meeting would be adjourned for 1 week.

The motion was seconded and passed by unanimous vote.

There being no further business at hand, the meeting was adjourned at 11:30 a.m.

Melvin E. Richards
President

William S. Hardin
Secretary-Treasurer

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 16 1958

DATE	INITIALS	[illegible]

RECEIVED JUN 12

RECEIVED JUN 13

CONSENT OF STOCKHOLDERS TO DISSOLUTION

We, the undersigned, stockholders of Yucca Uranium, Inc. (NEL), a New Mexico Corporation, hereby consent to the dissolution of Yucca Uranium, Inc., as provided by law for the voluntary dissolution of a corporation by the Directors and stockholders in the State of New Mexico and further approve the hereinafter set out resolution adopted by the Directors on February 20, 1957. We further agree that we will accept 1 share of Yucca Mining and Petroleum Company stock for each share of Yucca Uranium stock held by us. We understand that the only distribution to the stockholders will be 1 share of Yucca Mining and Petroleum Company stock for each share of Yucca Uranium, Inc. stock held by us, all other assets of Yucca Uranium having been sold to Yucca Mining and Petroleum Company.

"RESOLVED, that it shall be and is advisable and for the benefit of Yucca Uranium, Inc., that it should be dissolved.

"BE IT FURTHER RESOLVED that Yucca Uranium, Inc., (NEL), a New Mexico Corporation be dissolved voluntarily by the directors and stockholders as provided by law.

"BE IT FURTHER RESOLVED that a notice of the adoption of this resolution be mailed to each stockholder residing in the United States, and also that a notice of the adoption of the resolution and the time and place for a meeting of the stockholders to take action upon this resolution, be mailed to each stockholder and also published as provided by law.

"BE IT FURTHER RESOLVED that the 29th day of March, 1957 be designated as the day for the stockholders meeting to take action on this resolution to be held at the office of the Corporation at 1224 Fourth St., N.W., Albuquerque, New Mexico between 10 A.M. and 3 P.M. of said day, and that notice thereof be given as provided by law."

Name	Shares Held

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 16 1958

DATE	INITIALS	CODE

RECEIVED
JUN 12
E. J. LONGYEAR
DENVER, COLO.

CALL AND WAIVER OF SPECIAL BOARD OF DIRECTORS MEETING FOR VOTING ON DISSOLUTION OF YUCCA URANIUM, INC. (NSL)

We, the undersigned, being all the directors of Yucca Uranium, Inc., (NSL), a New Mexico Corporation, do hereby call a Special Board of Directors meeting for the purpose of determining if it be advisable and for the benefit of said corporation, that it be dissolved, to be held at the office of said corporation on February 23, 1957 at 10 A.M; and we hereby considered this notice of said meeting and waive any further notice to us in reference thereto and hereby consent to the holding of such meeting at such time and place.

Dated this ____ day of February, 1957.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 16 1958

DATE	INITIALS	CODE

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/13/58	Knouse	700
"	Ellis	700
"	Rubin	140
"	Hoffleneck	140
6/13	[illegible]	130
"	Johnson	110
"	[illegible]	100
6/16	C	220
		700

6/13 Lamb (130)
6/13 Tilsgaard (130)

JUN 13 1958

Department of the Interior

DMEA

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

T E L E T Y P E

J. W. TOWNSEND
ALTERNATE ACTING EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURTT JUNE 11, DMEA-4842 AND 4995, SAN MATEO DOME PROJECT, IF YOU ARE SATISFIED THAT YUCCA URANIUM, INC., HAS ACCOMPLISHED CHANGE OF NAME TO YUCCA ~~URANIUM~~ Mining & PETROLEUM COMPANY, INC., CONSENT TO LIEN AND SUBORDINATION AGREEMENT SIGNED BY ~~BOTH~~ LATTER IS ACCEPTABLE FOR LANDS LEASED BY YUCCA URANIUM, INC. COPY OF CHANGE OF NAME CERTIFICATE SHOULD ALSO BE FURNISHED WITH THE CONSENT TO LIEN AND SUBORDINATION AGREEMENT PRIOR TO EXECUTING AMENDMENT. IF ANY LAND INSTRUMENTS WERE EXECUTED IN CONNECTION WITH CHANGE OF CORPORATE NAME, WE SHOULD ALSO HAVE COPIES OF SAME.

me

Mr. Rubin
Mr. Knouse

FLKnouse/HFRubin/gla 6-13-58
cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (GCS)

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

JUN 11 1958

Memorandum

To: Administrator, DMEA
Attention: Director, Div. of Rare and Misc. Metals

From: Associate Solicitor, Division of Mineral Resources

Subject: Proposed Amendment No. 1
Docket No. DMEA-4842 (Uranium)
Contract No. Idm-E1183
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico

As requested in Mr. Ellis' memorandum of May 23, 1958, we have prepared an Amendment No. 1 to the subject Contract.

Items 2 and 5 in Mr. Harshman's memorandum dated May 14, 1958, to Longyear are not required. All other items listed in that letter are required and should be attached to the Amendment No. 1.

Robert P. Dwyer

OFFICIAL FILE COPY
DMEA

RECEIVED JUN 12 1958

DATE	INITIALS	CODE
6/12	J.J.	225
6/12	[illegible]	700
	(Chicago)	

ON 235 BUR MINES 6-11-58 10-55

AIRMAN, GPERATING COMMITTEE/// OPERATING COMMITTEE, DMEA

RE DMEA 4842, CONTRACT E1183. CONSENT TO LIEN SIGNED BY YUCCA MINING AND PETROLEUM CO., INC., ON LAND OWNED BY YUCCA URANIUM, INC., ACCORDING TO MINING LEASE DATED 10-29-56 SHOWN IN APPENDIX 11 OF APPLICATION . SIMILAR CONDITION EXISTS DMEA 4995. WILL CONSENT TO LIEN SIGNED BY YICCAXX YUCCA MINING AND PETROLEUM CO., INC., BE ACCEPTABLE WITHOUT THEIR SUBMITTING INSTRUMENTS SHOWING CLAINXX CHAIN OF TITLE OR CHANGE IN CORPORATE NAME.

J W TOWNSEND

Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado
June 6, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 9 1958

6/9 220
6/10 110
700

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4842 (Uranium) Contract Idm-E1183 San Mateo Dome Project, E. J. Longyear Company, Agent, (San Mateo Dome Project) McKinley County, New Mexico

Enclosed are two copies of a letter from the subject Operator dated June 5, 1958, concerning progress under the subject contract during the month of May, 1958. One hole was started during May, but was not completed to the contract objective; therefore, voucher and accounting Forms MF-104 and MF-104A were not submitted by the Operator.

J. W. Townsend

J. W. Townsend

Enclosures

FORM 311A 10M 8-56

Longyear

E. J. LONGYEAR COMPANY

General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
416 COLORADO BUILDING
DENVER 2, COLORADO
AMHERST 6-1941
CABLE ADDRESS
LONGODENVER

June 5, 1958

DMEA
RECEIVED JUN 9 1958

United States Dept. of the Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

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

Progress Report No. 1 - Re: Docket No. DMEA 4842 (Uranium)
Contract ~~Idm-E1183~~
San Mateo Dome Project,
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Gentlemen:

This is to report to you that our first drill hole (No. G-1-32), started May 13, under subject contract, had reached a depth of approximately 1750 feet by the end of May. Coring started at 1700 feet on May 25.

The hole is scheduled for completion in June at a depth of 2050 feet. In view of this, under subject agreement for completed holes only, we are not submitting vouchers for any work performed in May.

We understand that your field team has visited the drilling operation.

Faithfully yours,

E. J. LONGYEAR COMPANY

R. C. Gebhardt

RCG:msb

DMEA
DEPARTMENT OF THE INTERIOR
JUN 6 - 1958
REGION III
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado
June 4, 1958

DMEA
RECEIVED JUN 6 1958

6/6	C	220
"	FEJ	110
6/6	~~[illegible]~~ (Chrg)	700

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4842 (Uranium) Contract Idm-E1183, E. J. Longyear Company, Agent, (San Mateo Dome project) McKinley County, New Mexico

Enclosed are two copies of a memorandum dated June 3, 1958, from M. H. Salsbury, Mining Engineer, Bureau of Mines, concerning progress under the subject contract during May, 1958.

One drill hole was started, but was not completed to the contract objective during the period.

J. W. Townsend

J. W. Townsend

Enclosures

DMEA

RECEIVED JUN 3 1958

P. O. Box 360
Grand Junction, Colorado

June 3, 1958

Memorandum

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

From: M. H. Salsbury

Subject: Docket No. DMEA 4842 (Uranium), Contract Dm-E 1183, E. J. Longyear Company, Agent (San Mateo Dome Project), McKinley County, New Mexico.--Progress report for May 1958.

Operations under the subject project for May 1958 were inspected on May 29, 1958 by a DMEA engineer in the area on other business.

No holes had been completed on the date of inspection and the drillers, Scott Brothers Drilling Company, had recessed over the Memorial Day weekend. One hole, no. G-1-33, had been drilled to an uncompleted depth of 1,760 feet of which the last 60 feet was cored. The operator's representative, Mr. Bryan Sorenson, was out of town. No valid claim can be made as yet on results to date.

H. F. Roberton
for M. H. Salsbury,
Mining Engineer

MHS/bh

DMEA
DEPARTMENT OF THE INTERIOR
JUN 3 - 1958
REGION III
DENVER, COLORADO

May 23, 1958

Memorandum

To: Associate Solicitor, Division of Mineral Resources

From: Ernest Wm. Ellis, Director
Division of Rare and Miscellaneous Metals

Subject: Proposed Amendment No. 1
Docket No. DMEA-4842 (Uranium)
Contract No. Idm-K1183
San Mateo Dome Project
E. J. Longyear Company, Agent
McKinley County, New Mexico

Please prepare an Amendment No. 1 to the subject contract in accordance with the attached draft.

Referring to Mr. Harshman's letter of May 14, to the Operator, requesting Consent to Lien and Subordination Agreements, please advise whether or not items 2 and 5 are required.

Eight copies of a map (Figure 1) are attached for use with the amendment.

/s/ Ernest Wm. Ellis

Ernest Wm. Ellis

Attachments

MChing/izm 5-23-58
cc: Mr. Ching

FT
ing/izm
-23-58

DOCKET NO. DMEA-4842
CONTRACT NO. IDM-E1183

AMENDMENT No. 1

It is agreed this _____ day of _____, 1958, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and San Mateo Dome Project, a Joint Venture, comprised of Lisbon Uranium Corporation and Mineral Projects - Venture B, Ltd., hereinafter called the "Operator," that Exploration Project Contract No. Idm-E1183, Docket No. DMEA-4842, dated April 4, 1958, hereinafter called the "Contract," is amended as follows:

1. To the items listed in Article 1 as constituting the Contract, add the items Annex I(a) and map (Figure 1), attached hereto and made a part hereof;

2. To the parties listed in Article 2(b)(2) as having an interest in the property add the Parador Mining Co., Roy B. Shaw and L. G. Shaw;

3. The completion date shown in Article 3 is extended from August 31, 1958 to December 31, 1958;

4. In Article 5 of the Contract that portion preceding the colon is deleted and the following substituted:

The estimated total allowable cost of the project set forth in Exhibit "A" is the sum of $176,770.00. The Government shall contribute 75 percent of the allowable costs under Stages I and II, and 50 percent of the

allowable costs under Stages III and IV, as they are incurred, in a total sum not in excess of $114,235.00;

~~and~~

5. In Exhibit "A," Description of the Work

(a) Under General Provisions: (1) The first sentence in the second paragraph is changed to read as follows: Drilling depths are estimated to average 2,030 feet in Stages I and II and 2,100 feet in Stages III and IV. (2) The last paragraph is changed to read as follows: The work is divided into four stages, as hereinafter described. The Operator shall complete Stages I and III, and shall perform as much of Stages II and IV as the Government approves in writing in advance. Except for the limitations imposed by such required approval the work may be carried on concurrently in the various stages.

(b) Add Stages III and IV as described hereinafter: The work in these stages is confined to the E½ section 32, T. 14 N., R. 8 W., described in Annex I(a). The general location of the work is shown on the map (Figure 1) referred to in Annex I(a).

Stage III

Prepare access roads and drill sites and drill 9 non-core holes aggregating an estimated 18,900 feet, at the locations indicated on the map (Figure 1). The holes are numbered 14 through 22 and the coordinates of each location are as follows:

Hole No.	North (Ft.)	East (Ft.)
14	314,300	561,200
15	313,300	561,200
16	312,300	561,200
17	311,300	561,200
18	312,300	562,200
19	313,300	562,200
20	313,300	563,200
21	312,300	563,200
22	311,300	563,200

Stage IV

Prepare access roads and drill sites and drill not more than 8 non-core holes aggregating not more than 16,800 feet as offsets to Stage III holes which penetrate ore grade material. Tentative locations of 8 holes are shown on the map (Figure 1). They are at the center of the 1,000-foot squares formed by Stage I holes. Thus, offset holes are expected to be spaced approximately 700 feet from previously drilled holes; however, a spacing of not less than 500 feet may be used when required to follow or prove a mineralized trend or when topography or other factors justify the closer offsetting; and

6. In Exhibit "A," Estimated Costs of the Project

(a) Add Stages III and IV as follows:

Stage III

Actual Costs

Category (1) Independent Contracts

13,500 ft. non-core drilling,
0-1500 ft. depths, @ $1.50/ft. $20,250.00

5,400 ft. non-core drilling,
1500-2200 ft. depths, @ $2.25/
ft. 12,150.00

9 hrs. drill crew standby time @ $15.00/hr.	135.00	
18,900 ft. probing and logging @ $0.115/ft.	2,173.50	
9 hrs. logging crew standby time @ $10.00/hr.	90.00	
9 holes @ $40/hole for cost of circulation materials in excess of $100 per hole	360.00	
12 hrs. bulldozing @ $15.00/hr.	180.00	
Categories (2) through (6)		
None		
Category (7) Miscellaneous		
15 chemical analyses @ $5.00/each	75.00	$35,413.50
Fixed Unit Costs (See Annex II-d)		
Incidental allowance for each foot of hole drilled, 18,900 ft. @ $0.18/ft.[1/]		$3,402.00
Estimated Total Cost of Stage III.....		$38,815.50

Stage IV

Actual Costs

Category (1) Independent Contracts		
12,000 ft. non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$18,000.00	
4,800 ft. non-core drilling, 1500-2200 ft. depths, @ $2.25/ft.	10,800.00	
8 hrs. drill crew standby time @ $15.00/hr.	120.00	

16,800 ft. probing and logging @ $0.115/ft.	$1,932.00	
8 hrs. logging crew standby time @ $10/hr.	80.00	
8 holes @ $40/hole for cost of circulation materials in excess of $100 per hole	320.00	
12 hrs. bulldozing @ $15/hr.	180.00	
Categories (2) through (6)		
None		
Category (7) Miscellaneous		
20 chemical analyses @ $5/each	100.00	$31,532.00
Fixed Unit Costs (See Annex II-d)		
Incidental allowance for each foot of hole drilled, 16,800 ft. @ $0.18/ft.1/		$ 3,024.00
Estimated Total Cost of Stage IV.....		$34,556.00

(b) Delete the Summary of Costs and substitute the following:

Summary of Costs

Estimated Total Cost of Stage I	$61,261.50		
Estimated Total Cost of Stage II	$42,142.50		
Estimated Total Cost of Stage I & II (rounded)		$103,400.00	$77,550.00
Government Participation @ 75%			$77,550.00
Estimated Total Cost of Stage III	$38,815.50		
Estimated Total Cost of Stage IV	$34,556.00		
Estimated Total Costs of Stages III & IV (rounded)		$73,370.00	
Government Participation @ 50%			$36,685.00
Estimated Total Cost of the Project and of Government Participation		$176,770.00	$114,235.00

1/ Includes all allowable costs of the project under Categories (1) through (7) of Article 6(a) except as otherwise scheduled in Exhibit "A."

Executed in quintuplicate the day and year first above written

THE UNITED STATES OF AMERICA

By _____
Administrator, Defense Minerals Exploration Administration

ATEO DOME PROJECT
E. J. Langyear Company,
orney-in-Fact

_____

tle _____

ANNEX I(a)

In addition to the land described in Annex I, the land referred to in Article 2 of the Contract includes 30 whole or fractional lode mining claims situated in section 32, T. 14 N., R. 8 W., N.M.P.M.&B., McKinley County, New Mexico. The claims are shown on the map entitled "Figure 1 - Claims and Proposed Drilling On E½ Section 32, T. 14 N., R. 8 W., N.M.P.M., and Areas II and III, San Mateo Dome Project, McKinley County, New Mexico," attached hereto and made a part hereof.

The notices of location of the claims, to which reference is hereby made for a full and complete description, are recorded in the official records of McKinley County as follows:

Claims (Nos. are Inclusive)	Book	Page
Yucca 5224 - 5228	13MC	290 - 294
Yucca 5237 - 5246	13MC	303 - 312
Bulldog 1 - 5	7MCR	123 - 127
John 1 - 10	10MCR	173 - 182

The exact location of the boundaries of the above-listed claims with respect to the boundaries of section 32 are not clearly defined. The intent of the parties to this Contract is that the listed claims cover all of the E½ Section 32. In the event that such claims do not cover such E½ Section 32 the Operator shall include as much of the neighboring claims as is required to cover all of the E½ Section 32.

Mr. G. Selfridge

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 5 1958

DATE	INITIALS	CODE
5/5	C	220
"	Ching	700

DN 235 BUR MINES 5-2-58 12-05

CHAIRMAN OPERATING COMMITTEE, DMEA

REURTT 5-2-58 DOCKET DMEA 4842, SAN MATEO DOME PROJECT. CONTRACT HAS BEEN EXECUTED BY OPERATOR. GOVERNMENT S AND AUDIT COPIES FORWARDED TO YOU BY MEMO OF 4-29-58.

E N HARSHMAN

Denver, Colo.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado
April 29, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 2 1958

DATE	INITIALS	CODE
5/2	C	220
5/7	B	215
"	Chuy	700

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4842 (Uranium), Contract No. Idm-E1183, San Mateo Dome Project, E. J. Longyear Company, Agent, McKinley County, New Mexico

Enclosed are the Government's and Audit copies of Exploration Project Contract No. Idm-E1183, which was forwarded by your letter of April 4, 1958 for signature by the Applicant and insertion of a suitable starting date under Article 3.

Also enclosed are two copies of the Operator's letter, dated April 25, 1958, by which the executed copies of the contract were returned to us, and three copies of a letter from this office, dated April 29, 1958, whereby we forwarded the "Operator's Copy" of the contract, blank report forms, instructions relative to reporting on work performed under the contract, and outlined the procedures to be followed in communicating with this office in all matters pertaining to the contract.

The contract, dated April 4, 1958, provides for work estimated to cost $103,400.00, toward which the Government will contribute 75 percent, or not in excess of $77,550.00.

Copies of the contract have been distributed to the Finance Office and others concerned in Region III.

E. N. Harshman

E. N. Harshman

Enclosures

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 2 1958

DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado

APR 29 1958

Mr. H. C. Gebhardt
E. J. Longyear Company, Agent
San Mateo Dome Project
416 Colorado Building
Denver, Colorado

Re: Docket No. DMEA 4042 (Uranium)
Contract No. Idm-E1183
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico

Dear Mr. Gebhardt:

Enclosed is the "Operator's Copy" of Exploration Project Contract No. Idm-E1183, Docket No. DMEA 4042.

Also enclosed are six copies of Form MF-104, "Operator's Monthly Report and Voucher," and six copies of Form MF-104A, "Operator's Unit Cost and Progress Report." At the end of the first calendar month after work is commenced, and monthly thereafter, you are required to submit the original and four copies of each form to the

Defense Minerals Exploration Administration
P. O. Box 300
Grand Junction, Colorado.

The extra copy is for your records.

Forms MF-104 and MF-104A are to be combined into five sets of one of each form. Each set of the combined forms is to be accompanied by a map or sketch, showing the location and extent of work performed, and a signed narrative report which describes the work performed, conditions encountered, and results of the work. The monthly accounting report will not be processed for reimbursement unless it is accompanied by a signed narrative report and other required or pertinent data. Additional copies of Forms MF-104 and MF-104A will be forwarded to you each month on receipt of your report for the prior month.

The U. S. Geological Survey and the U. S. Bureau of Mines maintain a field office in the A.E.C. Compound at Grand Junction, Colorado. DMEA representatives of the two Services can be contacted as follows:

J. W. Hasler, Geologist, U. S. Geological Survey;
M. M. Salsbury, Mining Engineer, U. S. Bureau of Mines;

Telephone, Grand Junction, Chapel 3-2110,
Extension 272 or 282;

P. O. Box 300, Grand Junction, Colorado.

For your information, and in reply to many questions that have been asked, after Forms MF-104 and MF-104A are received, an engineer will check progress on the project and review your accounts, after which they will be forwarded to this office for administrative examination and vouchering. If the report is in order, a check will be issued by the Treasury Department for the Government's portion of the approved costs. If you have any difficulty in completing these forms and the reports, please call on either the field representatives or this office for assistance.

In the matter of your claim for reimbursement of drilling costs under the terms of the contract, reimbursement to you will be on the basis of a hole or holes completed to the objective, which has, or have been, drilled in compliance with the conditions under the "General Provisions" section of Exhibit "A" of the contract and the special conditions pertaining to the drilling under each stage. Therefore, your monthly report should include only such holes which are completed to that extent and the required records made a part of your claim for reimbursement.

The contract is prepared on form MF-200, and under its provisions and as outlined in Exhibit "A" attached to the contract, the allowable costs are a combination of "Actual Costs" and "Fixed Unit Costs", with established maximum average unit costs for the drilling and maximum unit costs which cannot be exceeded for the other items of work under Category (1). Under the provisions of Article 6 of the contract, the work outlined in Exhibit "A" under Category (1) is to be performed by an independent contractor. The actual costs of the work completed under Category (1) are to be recorded under item (1) on Form MF-104 and must be supported and documented by a signed or certified true copy of the billing from the subcontractor. The costs of sample analyses under Category (7) are to be recorded under item (7) on Form MF-104. The number of sample analyses reported must be documented by a copy of the assay return and a signed or certified true copy of the billing from the assayer. Amounts reported on the basis of the "Fixed Unit Costs" require no documentation, as they are otherwise verified. However, costs on a "Fixed Unit Cost" basis are to be recorded on Form MF-104 under item (1). The foregoing applies to both stages of work described in Exhibit "A". For further information relative to documentation of costs, please refer to instructions on the reverse side of Form MF-104. Also, please refer to instructions on the reverse side of Form MF-104A regarding preparation of that Form.

In reference to the drilling work under "Category (1)" of exhibit "A", please refer to item (f) of Annex II attached to the Contract pertaining to the average unit cost. If costs incurred any month cause the average unit cost to be in excess of the maximum allowable average unit cost, such excess costs will be suspended, subject to reinstatement at a later date within the aggregate of such suspensions, should the costs incurred any subsequent month cause the average unit cost to fall below the maximum allowable average unit cost. The foregoing applies to each seperate class of drilling under each work Stage.

In the event you desire to perform the work under Category (1) on company account instead of subcontracting it, as provided in the contract, it will be necessary that you request and obtain an appropriate amendment to the contract before reimbursement can be made to you for the Government's portion of the allowable incurred costs.

Your requests to this office for work approval, changes in the contract, or any other communication pertaining to operations under the contract, must be in writing, of which please supply the original and five copies, each copy complete with maps or other pertinent data. Each request for action by this office must pertain to one matter only. Such requests are <u>not</u> to be incorporated in your narrative report accompanying monthly progress report Forms MF-104 and MF-104A.

The locations of holes to be drilled under Stage I are indicated on the map, "Figure 3," attached to the contract. Should conditions encountered necessitate or make desirable a change in the location of any of the holes, approval of this office for the change must be obtained prior to performance of the drilling. Otherwise, the drilling may not be acceptable for reimbursement to you under the terms of the contract.

Your attention is directed to the provision that Stage II work is contingent on results obtained from Stage I, and performance of the work under Stage II is subject to the prior written approval of the Government.

When work under Stage I has been completed, or sufficiently so to permit evaluation of the results of the work, you must request approval from this office for the work you propose to perform under the next stage. Your request for the work approval must be in sextuplicate, each copy complete with a map showing the location and extent of the work completed and the location of the additional work proposed. Also, your request must include an evaluation of the work completed and include assay returns and any other pertinent data which will be of value to the Government in appraising the results of the work.

You should anticipate a suspension of operations between stages of work, to enable the Government Geologist and Engineer to evaluate the results of the work performed and make their recommendations to this office relative to the additional work you propose.

To eliminate as much delay to operations as possible, if that is of serious consideration, you should expedite forwarding of the results of the work completed and your request for the Government's approval of the additional work you propose.

No oral statement of any person shall be construed to modify or change the terms of the contract. Field representatives of the Government are not authorized to approve any changes in the work program or contract provisions. Such approval can only be given by the Washington Office, DMEA, or by the DMEA Field Team, Region III.

It is a regulation that reimbursement for the cost of work accomplished prior to the date of the contract will not be allowed. It is a requirement and imperative that you notify this office in writing the date work actually commences under the Contract.

Very truly yours,

Original signed by
E. N. HARSHMAN

Acting Executive Officer
DMEA Field Team, Region III

Enclosures

JWT:prl

cc: Chmn. Op. Comm. (3)
Finance Office, Region III
Amendment file, Region III
Harshman
Hasler
DMEA/Gr.Jct.(Salsbury)
DMEA/DFC
Corres. file
Townsend
Chron.

FORM 311A 10M 8-56

Longyear

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
416 COLORADO BUILDING
DENVER 2, COLORADO
AMHERST 6-1941
CABLE ADDRESS
"LONGCODENVER"

April 25, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 2 1958

DATE	INITIALS	CODE

United States Dept. of the Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

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

Re: Docket No. DMEA 4842 (Uranium)
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico
Proposed Exploration Project
Contract No. Idm-E1183

COPY

Gentlemen:

Pursuant to your letter of 8 April and ours of 9 April, we return herewith the four copies of subject contract with appropriate signatures affixed by Longyear and the required initials next to C.O.M. as you instructed for the first page.

In due course, we understand that we are next to expect receipt of "Operator's Copy" of the contract from you, together with report forms, instructions for reporting, and other instructions pertaining to communications with your office.

Due to several delays in the processing of the application for subject contract, first submitted some seven months ago, our own budget schedules have required revision calling for extra cash input for exploratory drilling during the delay to maintain the whole project in firm condition for subject contract's commencement of work. Therefore, in view of these circumstances this is to inform you, in response to your request, that we are setting the commencement date of subject contract for on or before July 1, 1958.

Yours faithfully,

E. J. LONGYEAR COMPANY

R. C. Gebhardt

RCG:msb

orm 7
-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/2/58	Ching	700
"	Ellis	700
5/2	G.C.S.	130
"	Johnson	110
"	Hullander	100
5/2	[illegible]	220
		700

MAY 2 1958

Department of the Interior

DMEA

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

T E L E T Y P E

E. N. HARSHMAN, ACTING EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

RE SAN MATEO DOME PROJECT DOCKET 4842 HAS CONTRACT BEEN EXECUTED BY OPERATOR? IF NOT, WHAT IS STATUS?

George C. Selfridge
CHAIRMAN, OPERATING COMMITTEE (248)

MChing/gla
5-2-58
cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
Mr. Ching
DMEA Field Team, Region III - confirmation

8623

FORM 311A 10M 8-56

DMEA
DEPARTMENT OF THE INTERIOR
APR 10 1958
REGION III
DENVER, COLORADO

Longyear

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
416 COLORADO BUILDING
DENVER 2, COLORADO
AMHERST 6-1941
CABLE ADDRESS
"LONGCODENVER"

April 9, 1958

OFFICE OF THE SUP. DMEA
RECEIVED APR 14 1958

DATE	INITIALS	CASE
4-15	C	326
"	Chiny	700

United States Dept. of the Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

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

Re: Docket No. DMEA 4602 (Uranium)
E. J. Longyear Company, Agent
(San Mateo Dome Project
McKinley County, New Mexico
Proposed Exploration Project
Contract No. Idm-E1183

Gentlemen:

This will serve to acknowledge and thank you for our receipt today of four copies of subject contract, for the finalizing signatures of E. J. Longyear Company, as agent.

We note your attention to the need for our signer's initials next to the initials C.O.M. on page 1; also the special attention directed to provisions indicated on page 2 of your letter.

The four copies of contract are being sent to our home office in Minneapolis for signatures, following which they will be returned to you from this office.

Meanwhile, the termination date, set for August 31, 1958, will be carefully considered by our principals in the light of their schedules, following which they will inform you in due course about a desired change of termination date, if necessary, and the reasons therefore.

Faithfully,

E. J. LONGYEAR COMPANY

R. C. Gebhardt

RCG:msb

224 New Customhouse
Denver 2, Colorado
April 8, 1958

RECEIVED APR 10 1958
DATE | INITIALS | CODE

Mr. R. C. Gebhardt
E. J. Longyear Company, Agent
San Mateo Dome Project
416 Colorado Building
Denver, Colorado

Re: Docket No. DMEA 4842 (Uranium)
E. J. Longyear Company, Agent
(San Mateo Dome Project)
McKinley County, New Mexico -
Proposed Exploration Project
Contract No. Idm-E1183

Dear Mr. Gebhardt:

Enclosed are the Government's, Audit, Finance Office, and Field Team copies of proposed Exploration Project Contract No. Idm-E1183, which has been prepared pursuant to your Application for Government assistance in exploration work under the Defense Minerals Exploration Administration program.

The Powers of Attorney submitted in conjunction with Docket No. DMEA 4842 authorize E. J. Longyear Company to execute the Contract with the Government. Therefore, if the Contract is satisfactory, all copies are to be signed by an official of E. J. Longyear Company authorized to sign such an instrument, the signer's title inserted, the signature attested to by the Secretary of the Company, the corporate seal affixed, and all copies promptly returned to this office.

In addition to signing the Contract, please have the signer's initials affixed on the first line of the Contract adjacent to the initials "C.O.M.", which acknowledge the date of the Contract which it was necessary to change because of an error.

In the event the Contract is not satisfactory, all copies are to be returned promptly to this office, together with your comments on or objections to the Contract.

Your attention is especially directed to three provisions in the Contract:

1. The Government will not contribute to the costs of any of the work that is provided for in the Contract which is performed prior to the date of the Contract.

2. The Contract requires completion of the exploration work by the date fixed therefor. Approval must be obtained from the Government for any suspension of work which may result in failure to complete the work by the date specified.

3. Royalty is due the Government on all production from the land described in the Contract, beginning on the date of the Contract.

If the Contract is satisfactory, and upon return of all copies properly signed, the "Operator's Copy" of the Contract will be forwarded to you, together with blank report forms and instructions relative to reporting on work performed under the Contract. Also, instructions will be given you as to the procedure to be followed in corresponding with this office in matters concerning operations under the Contract.

When the signed copies of the Contract are returned, please advise us the date on or before which work will be commenced, for our insertion in Article 3 of the Contract form.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

Enclosures

JWT:prl

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC
Hasler
Docket
Townsend
Chron.

Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4/3/58	Chiang	700
"	Ellis	700
"	Chambers	800
4/4	GCL	130
"	Johnson	110
"	Hartenbach	100
		220
		700

KB

APR 4 1958

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

Re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Harahman:

Enclosed are the original and four copies of a proposed long-form contract between the Government and San Mateo Dome Project, a Joint Venture, signed by the Administrator. The contract consists of Form MF-200, Annex I, Annex II, Exhibit "A" (5 pages), and a map (Figure 3). Also enclosed are two extra copies each of Annexes I and II, Exhibit "A" and the map (Figure 3) for the use of the Field Team.

If you and the Applicant find the proposed contract satisfactory, it is ready for the signature of the Applicant, provided that a suitable final starting date is inserted under Article 3.

The costs as recommended by the field examiners have been incorporated into the contract without significant change.

The following enclosed material helps clarify recent correspondence regarding certain claims that are to be subordinated and enables E. J. Longyear to act as Agent for the San Mateo Dome Project:

1. Two copies of a letter, dated April 1, 1958, from Richards, Janes, Montgomery and Cobb, lawyers, to Mr. Ellis.

2. Four Powers of Attorney, dated November 5 and 18, 1957, and March 12 and 14, 1958.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

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

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

MChing/gla
4-3-58
cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
Mr. Ching

Form 7
(2-56)

OFFICIAL FILE COPY

Date	Surname	Code
4/3/58	Ching	700
4/4	Ellis	700
4	Secretary	100
4/	C	220
		700

APR 4 1958

E. J. Longyear Company
416 Colorado Building
Denver 2, Colorado

Re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

Gentlemen:

In accordance with instructions attached thereto, we are returning two envelopes containing maps, labeled Exhibit B and Part of Exhibit E. By a copy of this letter we are requesting our Field Team to return similar exhibits that are in its possession.

Sincerely yours,

Ernest Wm. Ellis, Director
Division of Rare and
Miscellaneous Metals

Enclosures

MChing/gla
4-3-58
cc to: Admr.'s Reading File
THKiilsgaard, 5224
Mr. Ching
DMEA Field Team, Region III (2)

8623

RICHARDS, JANES, MONTGOMERY & COBB

LAWYERS

FRED B. SNYDER
EDWARD C. GALE
DECEASED

BERGMANN RICHARDS
FRANK A. JANES
EDMUND T. MONTGOMERY
NATHAN A. COBB
CHARLES A. BASSFORD
MELVIN D. HECKT
CRANE WINTON
GREER E. LOCKHART
ARNE L. SCHOELLER

TELEPHONE FE. 2-5303
CABLES "SNYGALE"

1430 RAND TOWER
MINNEAPOLIS 2
MINNESOTA

April 1, 1958

Mr. Ernest Wm. Ellis, Director
Division of Rare and Miscellaneous Metals
Department of the Interior
Washington 25, D. C.

Dear Mr. Ellis:

In re: Docket No.DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

I have for acknowledgment your letter of March 24, 1958, and in response thereto will give you such additional information as is available to me with respect to Yucca Claims 3 and 4 in Sections 3 and 4. I note in a letter addressed to you by Mr. Hurley, dated February 26, 1958, that these claims were located February 7, 1957, by Yucca Uranium Inc. and recorded March 7, 1957, in Book 35, pp. 594 and 595, McKinley County, N. M.

The lease given prior thereto by Yucca Uranium Inc. to G. R. Kennedy and Henry C. Adams, dated October 29, 1956, provided that the "Lessor hereby demises, leases and lets * * * unto lessees * * * all that certain land, mining claims and mineral rights situated in * * * Sections 2, 3 and 4, Township 13, Range 8, N.M.P.M., also including any and all right, title and interest of said lessor in and to any and all veins, lodes or mineral deposits contained in said property or any part thereof, and including all rights of way, easements, water or water rights, developed by either lessor or lessees, including all rights of every kind and nature which are useful, convenient and necessary for the lessees in the operation and mining of these lands contained in this lease." There was no listing of mining claims incorporated in this lease. On December 10, 1956, the parties to this lease entered into an agreement amending the lease and also amending a companion lease dated November 24, 1956, in which reference was made to an Exhibit A attached in which were to be listed the unpatented lode mining claims leased to the lessees under these leases. However, according to our information the list was not attached to the amendment agreement at the time of its execution.

Note: Mr. Rubin believes that with this explanation on record we can proceed with the processing of the contract. mcc

Under date of April 1, 1957, G. R. Kennedy and Henry C. Adams assigned to E. J. Longyear Company their lessees' interest in the said lease dated October 29, 1956. The language of assignment included "all of Kennedy's and Adams' right, title and interest of every type and description in, to and under said leases * * * plus any and all right, title and interest now or hereafter acquired by Kennedy and Adams in or under said leases. * * * any and all right, title or interest of every type or description including but not restricted to leases, mining claims, mining or mineral rights which Kennedy and Adams may now have or hereafter acquire pertaining to any lands shown on the leased premises on Exhibit F hereto."

The attached Exhibit F listed mining claims in Sections 3 and 4, Township 113, Range 8, but did not include Yucca Claims 3 and 4. The exhibit recited that the list of unpatented mining claims did not intend to exclude any claims owned by the assignors or thereafter acquired by them and that all claims within the lands described thereafter acquired by them were intended to be included in the assignment.

As I stated to you in my letter of March 19th, the interest of E. J. Longyear Company in the lease of October 29, 1956, subject to reservation of 5% in net profits, was assigned by an instrument dated April 1, 1957, to Mineral Projects Inc. and Lisbon Uranium Corporation. It is my opinion that Yucca Claims 3 and 4, in Sections 3 and 4, although located and recorded subsequent to execution of the October 29, 1956, lease, are subject to its terms and the rights of Yucca Uranium Inc. in said claims upon recording thereof became subject to the lease and passed with assignment by Kennedy and Adams to E. J. Longyear Company April 1, 1957, and by subsequent assignment by Longyear to Mineral Projects Inc. and Lisbon Uranium Corporation on the same date.

It is obvious that the October 29, 1956, lease was not drawn with the careful coverage of future claims on the same Sections as was the assignment of the lease from Kennedy and Adams to Longyear. Nevertheless the language of the original lease was very broad, describing the whole of Sections 3 and 4, and there is a legal presumption in such case that the lessor intended to lease its entire mineral interest in the premises. Greenshields v. Superior Oil Co., (S.Ct. Okla.) 233 P. (2d) 959.

I talked this morning with Dr. Philip Merritt in New York with regard to this matter and he informed me that he did not

consider Yucca Claims 3 and 4 as important claims and that if there is any question about title to these claims they could be eliminated from consideration.

I am sending a copy of this letter to Mr. R. F. Deacon Arledge at Albuquerque with a request that he forward to you any suggestions he has with respect to this matter.

Very truly yours,

EDMUND T. MONTGOMERY

ETM:eol

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4/1	Ching	700
	Montgomery	100
4/2		220
		700

APR 2 1958

Mr. R. F. Deacon Arledge
Attorney at Law
612-615 Sunshine Building
Albuquerque, New Mexico

Re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Arledge:

Thank you for your two letters of March 27, one enclosing the consent to lien forms, and one advising that you are taking over the work that Mr. Wilson Hurley was doing on the subject project.

We find the consent to lien forms in acceptable order and now require only certain information which was requested of Mr. Edmund T. Montgomery of Minneapolis.

We note with interest that you have had experience working for the Department of the Interior. We also appreciate your expression of cooperation.

Sincerely yours,

Ernest Wm. Ellis, Director
Division of Rare and
Miscellaneous Metals

Copy to:

Phillip L. Merritt
New York, New York

MChing/izm 4-1-58
cc: Mr. Ching
Admr.'s Reading File
DMEA FT Reg. III (2) w/2cc's each of incoming letters

8623

R. F. DEACON ARLEDGE
ATTORNEY AT LAW
612-615 SUNSHINE BUILDING
PHONE CH. 3-2432
ALBUQUERQUE, NEW MEXICO

DMEA
RECEIVED MAR 31 1958
DATE | INITIALS | CODE
3/31 | C | 220
" | Cherry | 700

March 27, 1958

Mr. Ernest Wm. Ellis, Director
Division of Rare and Miscellaneous Metals
Department of the Interior
Washington 25, D. C.

PERSONAL ATTENTION: Mr. Ellis

Re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Ellis:

I am writing you today on the above case. I am taking over the work that Attorney Wilson Hurley was doing for the Landowners' Committee. For your information, Wilson is leaving the practice of law and going to work for either the Sandia Corporation or the Government at Sandia Base here. He, as you know, received considerable scientific training at West Point and in the Air Force, and he has decided that he wants to return to scientific endeavor. His father, General Hurley, believes that Wilson will be happy in his new work. We were unsuccessful in persuading him to stick to the law.

I have been associated with the San Mateo Dome Project since its inception and hope that I will be able to give your department full cooperation. When I attended George Washington Law School, where I graduated in 1937, I was employed with the Department of the Interior in the Legal Section of the National Park Service. I feel at home in the Department of the Interior and trust that I will be able to give you full cooperation.

Very sincerely yours,

R. F. Deacon Arledge

RFDA:ia

R. F. DEACON ARLEDGE
ATTORNEY AT LAW
612-615 SUNSHINE BUILDING
PHONE CH. 3-2432
ALBUQUERQUE, NEW MEXICO

DMEA
RECEIVED MAR 31 1958
DATE | | CODE
3/31 | C | 220
" | ~~Chrg~~ | 700

March 27, 1958

Mr. Ernest Wm. Ellis, Director
Division of Rare and Miscellaneous Metals
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Ellis:

In connection with the above loan application, there are enclosed Consent to Lien and Subordination Agreements concerning the following three described areas:

Area 1, Township 14 North, Range 8 West, NMPM: Section 9, All; Section 16, All; Section 15, W½;

Area 2, Township 14 North, Range 8 West, NMPM: Section 33, All;
Township 13 North, Range 8 West, NMPM: Section 4, All, except a tract of land measuring 750 feet East and West and 400 feet North and South in the SE corner of said Section; Section 3, N½, N½S½, S½SW¼;

Area 3, Township 14 North, Range 8 West, NMPM: Section 27, All; Section 34, All.

The enclosures include:

a) Five executed Consents signed by Henry C. Adams and G. R. Kennedy;

b) Five executed Consents signed on behalf of Mineral Projects Inc. by appropriate officers of the E. J. Longyear Company, as attorney in in fact for Mineral Projects Inc.;

c) Five executed Consents signed by appropriate officers of E. J. Longyear Company on its behalf;

d) Five executed Consents signed by appropriate officers on behalf of Yucca Mining & Petroleum Co. Inc.

If there is anything further you need from me, as attorney for the Owners' Committee San Mateo Dome Project, please advise.

I thank you for your courtesies in this matter.

Very sincerely yours,

R. F. Deacon Arledge

RFDA:ia

encs.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/21/58	Ching	700
3/24	Ellis	700
	Matteudy	100
3/25	C	220
		700

MAR 24 1958

Mr. Edmund T. Montgomery
Richards, Janes, Montgomery & Cobb
1430 Rand Tower
Minneapolis 2, Minnesota

Re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Montgomery:

Your letter of March 19 satisfies our requirements with respect to the Tomcat claims Nos. 1 through 9.

We will accept Mr. Wilson P. Hurley's explanation of February 26, 1958, that Yucca claims 5 through 8 were filed as Rod claims 21, 22, 23, and 24.

This leaves unsatisfied the requirement described in the third paragraph of our letter of March 13 regarding Yucca claims 3 and 4. Your letter makes no mention of these claims. Mr. Hurley has advised that they were located by Yucca Uranium, Inc., on February 7, 1957. We fail to see where the mining lease, dated October 29, 1956, as amended, from Yucca Uranium, Inc., to Kennedy and Adams, has made any provisions for the transfer of these two claims, which apparently were located after the lease agreement. As you know, such lease agreement is supposed to have a Schedule A attached which contains a full listing of the claims covered by the lease. No such Schedule A has ever been furnished us, which accounts, in part, for the general confusion regarding the land involved in this project.

We again request that you furnish us with evidence as to how Yucca claims 3 and 4 were transferred from Yucca Uranium, Inc., to the San Mateo Dome Project.

Sincerely yours,

SIGNED

Ernest Wm. Ellis, Director
Division of Rare and
Miscellaneous Metals

Copy to:
Mr. Phillip L. Merritt
E. J. Longyear Company
420 Lexington Avenue
New York 17, New York

MChing/gla
3-21-58

cc to: Admr.'s Reading File
THKiilsgaard, 5224
Mr. Ching
DMEA Field Team, Region III (2)

8623

RICHARDS, JANES, MONTGOMERY & COBB

LAWYERS

FRED B. SNYDER
EDWARD C. GALE
DECEASED

BERGMANN RICHARDS
FRANK A. JANES
EDMUND T. MONTGOMERY
NATHAN A. COBB
CHARLES A. BASSFORD
MELVIN D. HECKT
CRANE WINTON
GREER E. LOCKHART
ARNE L. SCHOELLER

TELEPHONE FE. 2-5303
CABLES "SNYGALE"

1430 RAND TOWER
MINNEAPOLIS 2
MINNESOTA

March 19, 1958

Mr. Ernest Wm. Ellis, Director
Division of Rare and Miscellaneous Metals
Department of the Interior
Washington 25, D. C.

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 20 1958

DATE	INITIALS	CODE
3/20	C	220
3/21	Chiny	700

Dear Mr. Ellis:

In re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

I am pleased to acknowledge receipt of your letter of March 13. The Tomcat claims 1 through 9 were quitclaimed to E. J. Longyear Company by G. R. Kennedy and Henry C. Adams May 20, 1957, together with other claims, the assignment being recorded in Book 8 of Q.C.D. 346-348, in the office of the County Clerk of McKinley County, New Mexico. The Longyear Company has continued to hold title to these claims as nominee for Mineral Projects Inc. and Lisbon Uranium Corporation pursuant to its contract with these companies dated April 1, 1957. If for purposes of the DMEA loan it is necessary that these claims be assigned to the principals there is no reason why this should not be done and I have therefore prepared such an assignment which has been executed by E. J. Longyear Company and the original sent to Simms, Modrall, Seymour, Sperling & Roehl, at Albuquerque, for recording. I trust this will satisfy your requirement as to these claims.

You mention Yucca claims 5 through 8 in Sections 3 and 4. I find no record of assignment of these claims by that specific name to E. J. Longyear Company. The mining lease given by Yucca Uranium Inc. as lessor to G. R. Kennedy and Henry C. Adams as lessees, dated October 29, 1956, recorded in Book 15, pages 301-314, McKinley County, New Mexico, covers all mining claims, minerals and mineral rights situated in the sections, townships and ranges in McKinley County, New Mexico, described in said lease, which includes Sections 2, 3 and 4, Township 13 N, Range 8 W. By instrument of assignment dated April 1, 1957, Messrs. Kennedy and Adams assigned their interest in this lease to E. J. Longyear Company and under the same date E. J. Longyear Company assigned to Mineral Projects Inc. and Lisbon Uranium Corporation its right, title and interest in said mining lease, together with

other leases, subject to reservation of a 5% interest in net profits. I assume that copies of these documents have been furnished to you. It would be my opinion that these documents transfer any interest of Yucca Uranium Inc. in the claims in question to these two corporations which constitute the San Mateo Dome Project. If the documents dated April 1, 1957, have not been supplied to you by Mr. Hurley, I would be glad to forward to you copies upon your request.

Very truly yours,

EDMUND T. MONTGOMERY

ETM:eol

c.c.-Mr. Hurley

c.c.-Mr. Merritt

c.c.-Mr. Davidson

~~P.S. I am also enclosing Consent to Lien forms executed by E. J. Longyear Company as attorney for Mineral Projects Inc., which I trust you will find in order. E.T.M.~~

OFFICIAL FILE COPY

Date	Surname	Code
3/13/58	Ching	700
3/14	Ellis	700

March 13, 1958

Memorandum

To: The Files

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

Subject: Long Distance call to Madison, New Jersey
Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

Following long distance telephone conversation with Mr. P. C. Hackett on March 7 and with Mr. Cates on March 10, a Power of Attorney was received on March 13, signed by one of the committee men for Mineral Projects - Venture B, Ltd. No covering letter of explanation was received.

Since both Mr. Hackett and Mr. Cates were advised that the signatures of both members of the Owner's Committee were required, I telephoned Mr. Hackett after discussing the matter with Mr. Selfridge and Mr. Rubin. Mr. Hackett assured me that a second Power of Attorney signed by the second committee man was forthcoming. He explained that the two committee men were in different sections of the country and separate instruments were being executed in order to save time.

Michael Ching
Michael Ching

MChing/gla

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/13	GCS	120
"	COM	100
		225

March 13, 1958

MEMORANDUM

To: Administrator

From: George C. Selfridge, Special Assistant

Subject: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

A Mr. P. C. Hackett telephoned the writer on March 7, 1958, stating that Dr. Merritt, of the Longyear Company, had called him concerning another power of attorney. Mr. Hackett stated that we had been furnished power of attorney by Mineral Projects, Inc., and he was not quite sure just what else we wanted. He explained that Mineral Projects - Venture B, Ltd., was the limited partner and that Mineral Projects, Inc., was the general partner which acted for all concerned. The writer informed Mr. Hackett that he had not seen the telegram that had been sent but that it was his understanding that the legal department also wished a power of attorney from Mineral Projects - Venture B, Ltd., the limited partner. (?)

This was confirmed in telephone conversation between Mr. Hackett, Mr. Rubin and Mr. Ching.

As it was the lunch hour, the writer informed Mr. Hackett that either he or one of the lawyers would call him back and explain exactly what was wanted. Mr. Hackett gave his address as Madison, New Jersey, and his telephone number as Frontier 7-2800. Later in the day Messrs. Rubin and Ching discussed the matter with Mr. Hackett.

George C. Selfridge.

GCSelfridge/esf
cc to: Docket
Admr. Reading File
Mr. Selfridge

On March 10 a Mr. Cates, attorney for Longyear, called long distance from Oklahoma regarding the above-mentioned Power of Attorney. I reiterated our requirement of an instrument similar to those on hand, but from Venture B, signed by the two committee members.

M. Ching

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/12s/58	Ching	700
"	Ellis	700
13	Montgomery	200
3/13	C	220
		700

MAR 13 1958

Mr. Edmund T. Montgomery
Richards, Janes, Montgomery & Cobb
1430 Rand Tower
Minneapolis 2, Minnesota

Re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Montgomery:

Your letter of March 10 satisfies our requirements with respect to the Rod Claims Nos. 21, 22, 23, and 24, with which we are concerned. We note, however, that the Assignment, dated March 7, 1958, locates these claims in section 3, whereas Yucca claims 5 through 8, which the Rod claims are supposed to replace, are located in sections 3 and 4.

Our inquiry to the E. J. Longyear Company also refers to Yucca claims 3 and 4 in sections 3 and 4 and Tomcat claims 1 through 9 in section 33.

Mr. Hurley has advised that Yucca claims 3 and 4 were located by Yucca Uranium, Inc., on February 7, 1957. We require evidence of how these claims were transferred to Longyear and from Longyear to the San Mateo Dome Project.

We were also advised that the Tomcat claims 1 through 9 were quitclaimed by Kennedy and Adams to Longyear on May 20, 1957. We require evidence of the transfer of these claims from Longyear to the San Mateo Dome Project.

Sincerely yours,

Ernest Wm. Ellis, Director
Division of Rare and
Miscellaneous Metals

MChing/gla
3-12-58
cc to: Admr.'s Reading File
THKiilsgaard, 5224
Mr. Ching
DMEA Field Team, Region III (2)

8623

RICHARDS, JANES, MONTGOMERY & COBB

LAWYERS

FRED B. SNYDER
EDWARD C. GALE
DECEASED

BERGMANN RICHARDS
FRANK A. JANES
EDMUND T. MONTGOMERY
NATHAN A. COBB
CHARLES A. BASSFORD
MELVIN D. HECKT
CRANE WINTON
GREER E. LOCKHART
ARNE L. SCHOELLER

TELEPHONE FE. 2-5303
CABLES "SNYGALE"

1430 RAND TOWER
MINNEAPOLIS 2
MINNESOTA

March 10, 1958

DMEA
RECEIVED MAR 11 1958
DATE | | |
3/11 | C | 220
11 | Cling | 700

Dr. Ernest W. Ellis
United States Department of Interior
Minerals Exploration Administration
Washington 25, D. C.

Re: Docket DMEA-4842 (Uranium)
San Mateo Dome Project
McKinley County, New Mexico

Dear Sir:

The E. J. Longyear Company has referred to me, as attorney for the company, your inquiry with respect to mining claims assigned to E. J. Longyear Company in connection with the above project and which have not been in turn assigned to Lisbon Uranium Corporation and Mineral Projects Inc.

The only claims falling in this classification which have not been recorded that I am aware of are the Rod claims assigned by W. Rodney DeVilliers and wife to E. J. Longyear Company January 3, 1958, by agreement with Lisbon Uranium Corporation and Mineral Projects Inc. E. J. Longyear Company is holding title to these claims as nominee for the two latter corporations. An assignment to them has been executed but not recorded. A copy of this assignment is enclosed for your file. The original has been forwarded to Mr. Wilson P. Hurley at Albuquerque for recording and he will forward to you the reference to book and page in the recorder's office.

If there are any other claims of this nature that have come to your attention I would appreciate if it you would let me know so that I can give you the proper information.

Very truly yours,

EDMUND T. MONTGOMERY

ETM:EOL
enclosure

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3-7	Ching	700
3-7	Ellis	700
		~~110~~
		~~100~~
3/10	C	220
		700

MAR 7 1958

Dept. of the Interior

DMEA
14X1401(01) Revolving Fund
Defense Production Act,
Interior (Transfer to Office of
Secretary)

Mr. Wilson P. Hurley
Simms, Modrall, Seymour, Sperling & Roehl
Simms Building
Albuquerque, New Mexico

REURLET MARCH 5, SAN MATEO DOME PROJECT DOCKET 4842. PLEASE HAVE ONE SET CONSENTS TO LIEN SIGNED BY LONGYEAR BOTH FOR ITSELF AND AS AGENT FOR MINERAL PROJECTS, INC. THIS REPRESENTS AN ADDED REQUIREMENT TO OUR ORIGINAL REQUEST.

Frank E. Johnson
FRANK E. JOHNSON, ACTING ADMINISTRATOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

MChing/izm 3-7-58
cc: Mr. Ching
Admr.'s Reading File
DMEA FT Reg. 3 (2)
Confirmation Copy

8623

FILE COPY
Surname:

Rubin

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

MAR 7 1958

Memorandum

To: Administrator, DMEA
Attention: Mr. Ellis

From: Associate Solicitor, Division of Mineral Resources

Subject: DMEA-4842 (Uranium)
San Mateo Dome Project

As requested in Mr. Ellis' memorandum dated February 26, 1958, we have prepared the attached contract.

Mr. Ellis' memorandum pointed out that there are some overlapping claims, that the applicant is quieting title and settling conflicting claims where necessary, but that, in view of the well-known reputation of the applicant's agent for reliability and the Consents to Lien and Subordination Agreements that will be obtained, the Operator's interest in the land described in Annex I of the draft submitted to this office is adequate for the purposes of a contract. In addition, it should be noted that, it appears from Longyear's latest letters, as to the land, the Red claims 21-24, inclusive, the ReDame (Polvadera) claims, and the Tomcats 1-9, inclusive, were conveyed by quitclaim deed to Longyear, but it does not appear that the applicant's agreement with Longyear was amended to include these claims, which should be done. The same comment applies to some of the Wildcat claims. Consents to Lien and Subordination Agreements of Longyear should also cover these claims.

Mr. Ellis' memorandum asked whether the Powers of Attorney granted to Longyear Company, who will conduct the project as agent for the Joint Venture, are adequate. The Power of Attorney executed by Lisbon Uranium, in part, authorizes Longyear to negotiate and execute the contract, to receive and to receipt for money due from the Government, and to conduct the operations under the DMEA contract. The Power of Attorney executed by Mineral Projects, Inc., the Corporation, does not suffice to bind Mineral Projects - Venture B, Ltd., the limited partnership, as to a DMEA contract and as to the equitable interest in the land held by this partnership, and a Power should be obtained from the limited partnership. Although these Powers authorize the agent, Longyear, to receive the money due the Operator from the Government, they do not authorize payment in the name of Longyear. Therefore, payments under the contract should be made to the joint venture as it is described in the contract form and may be mailed to the agent.

HCRubin:ar
2-6-58
Copy to: Sol. Docket (2)
Mr. Ellis
R. P. Dwyer
H.C. Rubin
Chron file

It was noted in the Field Team's report that any discovery would be at depth and would be worthwhile as reserves for "future needs." Apparently, there would be no immediate mining if a worthwhile discovery were made, and we discussed with Mr. Ching the possibility of increasing the regular royalty period. Mr. Ching indicated that an increase to 15 years would be appropriate, and the d rafted contract so provides.

Consents to Lien and Subordination Agreements are required from the parties listed in 2(b)(2) of the contract.

Robert P. Dwyer

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3-6	Ching	700
3-6	Ellis	700
3/6	Johnson	110
"	Rattenberg	100
3-7		220
		700

MAR 6 1958

Dept. of the Interior

DMEA

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

MR. PHILLIP L. MERRITT,
E.J. LONGYEAR COMPANY
420 LEXINGTON AVENUE
NEW YORK 17, NEW YORK

RE SAN MATEO DOME PROJECT DOCKET 4842. REFERENCE YOUR COUNSEL'S LETTERS OF FEBRUARY 19 and 26 REGARDING VARIOUS CLAIMS QUITCLAIMED TO LONGYEAR. OUR DOCKET DOES NOT DISCLOSE THAT THESE CLAIMS WERE ASSIGNED OR LEASED BY LONGYEAR TO SAN MATEO DOME PROJECT. WE REQUIRE SUCH EVIDENCE. WE ALSO REQUIRE POWER OF ATTORNEY FROM MINERAL PROJECTS VENTURE B LTD. TO LONGYEAR AS AUTHORITY FROM THE ENTIRE LIMITED PARTNERSHIP, IN ADDITION TO POWER SUBMITTED BY MINERAL PROJECTS INC., OR LEGAL EXPLANATION WHY SUCH POWER IS NOT APPROPRIATE.

C. O. MITTENDORF (Leo)

C. O MITTENDORF, ADMINISTRATOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Ruben
MChing/izm 3-6-58
cc: Mr. Ching
Admr.'s Reading File
DMEA FT Reg. 3
THKiilsgaard, 5224
Confirmation copy

8623

LAW OFFICES OF
SIMMS, MODRALL, SEYMOUR, SPERLING & ROEHL
SIMMS BUILDING
ALBUQUERQUE, NEW MEXICO

JOHN F. SIMMS (1885-1954)
J. R. MODRALL
AUGUSTUS T. SEYMOUR
JAMES E. SPERLING
JOSEPH E. ROEHL
GEORGE T. HARRIS, JR.
DEAN P. KIMBALL
DANIEL A. SISK
WILSON P. HURLEY

TELEPHONE 3-4514
POST OFFICE BOX 466

DMEA
RECEIVED MAR 6 1958

DATE	INITIALS	CODE
3/6	C	220
3/7	Chung	700

March 5, 1958

Dr. Ernest W. Ellis
United States Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA 4842 (Uranium)
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Ellis:

In answer to your letter of February 27, 1958 and specifically paragraph 3 thereof, I perceive that you sent a copy of your letter to Mr. Phillip L. Merritt of the E. J. Longyear Company, and I trust that they are at the present time making an election between eliminating Wildcat Claim No. 8 and portions of Wildcat Claims No. 5, 6 and 7, or enlarging the description to include this area. I have, today, sent a corrected description on the Consents to Lien to Yucca and Longyear, and have taken the liberty of preparing additional Consents to Lien including in the description of Area 2 the $S\frac{1}{2}SW\frac{1}{4}$ of Section 3, which will encompass the affected claims. When I get these new Consents to Lien executed, I will forward them to you, and I presume that a decision on whether this land will be included or excluded from the loan will rest upon whether or not there will be a delay in obtaining an execution of the new Consents from Kennedy and Adams.

In answer to paragraph 1 of your letter of February 27, 1958, the chain of title of Yucca claims 5 through 8 has been submitted to you in a subsequent letter to our letter of February 19, said letter dated February 26, 1958; and, in another letter of the same date we submitted our findings in a follow-up investigation insofar as Yucca claims 3 and 4 were concerned. We presume you had not yet

received this correspondence at the time you sent your letter of February 27, 1958 to this office.

If any additional information is needed, please advise.

Yours very truly,

Wilson P. Hurley

Wilson P. Hurley

WPH:cj

cc: Mr. Phillip L. Merritt
E. J. Longyear Company
420 Lexington Avenue
New York 17, New York

Longyear

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
420 LEXINGTON AVENUE
NEW YORK 17, NEW YORK
LEXINGTON 2-2710
CABLE ADDRESS - "LONGCOYORK"

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 3 1958

DATE	INITIALS	CODE
3/3	C	220
11	Chron	700

February ~~28, 1958~~

Mr. Ernest Wm. Ellis
U. S. Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Ellis:

You will find herewith a couple of letters from Mr. Hurley to you. I hope these will clarify some of the points you have raised.

Yours very truly,

Phillip L. Merritt

Phillip L. Merritt

PLM: KA

Enclosures 2

LAW OFFICES OF
SIMMS, MODRALL, SEYMOUR, SPERLING & ROEHL
SIMMS BUILDING
ALBUQUERQUE, NEW MEXICO

JOHN F. SIMMS (1885-1954)
J. R. MODRALL
AUGUSTUS T. SEYMOUR
JAMES E. SPERLING
JOSEPH E. ROEHL
GEORGE T. HARRIS, JR.
DEAN P. KIMBALL
DANIEL A. SISK
WILSON P. HURLEY

TELEPHONE 3-4514
POST OFFICE BOX 466

February 26, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 3 1958

DATE	INITIALS	CODE

Mr. Ernest Wm. Ellis
U. S. Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Ellis:

This is a follow-up to our letter to you of this same date wherein we stated that we were unable to find the recording data on Yucca claims 3 and 4 in Sections 3 and 4, Township 13 North, Range 8 West, N.M.P.M. A subsequent check in the field followed by an investigation of the records of the County Clerk in McKinley County this afternoon disclosed that Yucca claims 3 and 4 were located by Yucca Uranium Inc. on February 7, 1957, and were recorded with the County Clerk on the 7th of March, 1957, in Book 35 at Pages 594 and 595 respectively. Because of this evidence of valid location and recording, we have not relocated as suggested in our previous letter.

I trust this fulfills your request for information in your letter of January 24th.

Yours very truly,

Wilson P. Hurley

Wilson P. Hurley

WPH:sj

LAW OFFICES OF
SIMMS, MODRALL, SEYMOUR, SPERLING & ROEHL
SIMMS BUILDING
ALBUQUERQUE, NEW MEXICO

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FILE COPY
DMEA
RECEIVED MAR 3 1958

DATE	INITIALS	CODE

February 26, 1958

Mr. Ernest Wm. Ellis
U. S. Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket ~~No. DMEA 4842 (Uranium)~~
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Ellis:

In further answer to your letter of January 24, 1958, Paragraph 1, the following is the recording data on the Tomcat claims 1 through 9, Section 33, Township 14 North, Range 8 West, NMPM:

Tomcat No. 1	Book 007	Page 132
Tomcat No. 2	Book 007	Page 133
Tomcat No. 3	Book 007	Page 134
Tomcat No. 4	Book 007	Page 135
Tomcat No. 5	Book 007	Page 136
Tomcat No. 6	Book 007	Page 137
Tomcat No. 7	Book 007	Page 138
Tomcat No. 8	Book 007	Page 139
Tomcat No. 9	Book 007	Page 140

Said claims were recorded on June 13, 1955.

You have asked for the recording data of the Yucca claims 3 through 8, in Sections 3 and 4, Township 13 North, Range 8 West, N.M.P.M. An examination of the records in the County Clerk's office, McKinley County discloses that Yucca claims 5 through 8 were filed as Rod claims 21, 22, 23 and 24. These claims were surveyed and located on our behalf by a surveyor named Gammache in July of 1957. At the same time he was surveying and locating these claims for the San Mateo group, he was working for W. Rodney DeVilliers, and through inadvertence and mistake he located these claims in the wrong name. Rod claims 21 through 24 were filed with the County Clerk, McKinley County, on July 9, 1957, and were given the following Book and Page numbers:

Rod Claim 21	Book 39	Page 201
Rod Claim 22	Book 39	Page 202
Rod Claim 23	Book 39	Page 203
Rod Claim 24	Book 39	Page 204

Thereafter on the 3rd of January, 1958, W. Rodney DeVilliers and his wife assigned these Rod claims 21 through 24 along with other property to the E. J. Longyear Company, said assignment recorded on the 24th of January, 1958, in Book 32 Miscellaneous Records, Page 543, McKinley County, New Mexico. This would satisfy your inquiries concerning what you have designated in your letter of January 24, as Yucca claims 5 through 8.

We were unable to find where Yucca claims 3 and 4 had been recorded in McKinley County. Claims 3 and 4 were located on top of pre-existing claims for the purpose of filling in gaps left in the prior locations. Thus they do not represent full claims, and the areas which they cover are completely surrounded by claims of the Dome Project. Because of this apparent failure to record the same, men have been sent to the field today to re-locate all this area, and we expect the location notices to be filed with the County Clerk tonight. Upon receiving the recording data, I will forward the same to you.

An examination of the County records yesterday and an examination of the land this morning both show that no intervening rights have occurred in the area where Yucca claims 3 and 4 were to have been located.

Upon forwarding to you the recording data on Yucca claims 3 and 4 in Sections 3 and 4, Township 13 North, Range 8 West, N.M.P.M., we believe that we will have completely fulfilled the requests for information contained in your letter of January 24th.

Yours very truly,

Wilson P. Hurley

Wilson P. Hurley

WPH:sj

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
2/26/58	Cline	700
"	Ellis	700
"	Mathenson	700
2/27		220
		700

FEB 27 1958

Simms, Modrall, Seymour, Sperling & Roehl
Simms Building
Albuquerque, New Mexico

Attention: Mr. Wilson P. Hurley

Re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

Gentlemen:

Your letter of February 19 with attached Consent to Lien and Subordination Agreement forms have been reviewed.

When you forward the recording data on the Tomcat claims 1 through 9 and Yucca claims 3 through 8, please list the succession of ownership of the Yucca claims as you did in the case of the Tomcat claims. Also, advise whether or not there are any royalty reservations against the Tomcat and Yucca claims by parties other than those that have signed Consent to Lien and Subordination Agreement forms.

We note that the description of the land in the Consent to Lien forms is inconsistent with maps supplied by E. J. Longyear Company. The description of the land in sec. 3 (N½, N½S½) does not include portions of Wildcat claims Nos. 5, 6, and 7, and all of claim No. 8. These claims, in their entirety, are shown on all available maps as a part of Area II. They are also listed in the application as property owned or acquired by Yucca Uranium, Inc. and are presumably included in the mining leases attached to the application.

For your information, it is our intention to describe the land to be subordinated under the proposed contract in terms of the mining claims involved. This description does not necessarily have to coincide with the description in the Consent to Lien forms, but the latter must be comprehensive enough to cover the former. Unless otherwise advised by you, we will eliminate Wildcat No. 8 claim and the affected portions of Wildcat Nos. 5, 6, and 7 claims to conform to your description of the land in sec. 3, and revise the maps required for the proposed contract accordingly.

8623

We are returning two of the three sets of consents for a slight correction in the third line of the land description. It should read Township 13 North instead of Town 14 North. Please have the signers initial the correction. The third set was prepared correctly.

Sincerely yours,

Ernest Wm. Ellis, Director
Division of Rare and
Miscellaneous Metals

Enclosures

cc: Mr. Phillip L. Merritt
E. J. Longyear Company
420 Lexington Avenue
New York 17, New York

MChing/gla
2-26-58
cc to: Admr.'s Reading File
THKiilsgaard, 5224
Mr. Ching
DMEA Field Team, Region III (2)

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
2/26/58	Ching	700
"	Ellis	700
		140

INTERIOR DEPT.
FEB 28 1958
SOLICITOR

February 26, 1958

Memorandum

To: Associate Solicitor,
Division of Mineral Resources

From: Ernest Wm. Ellis, Director
Division of Rare and Miscellaneous Metals

Subject: Proposed Contract
Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

Please prepare a long-form contract between the Government and the captioned Applicant in accordance with the attached draft.

Attached are eight copies of a map (Figure 3) for use with the contract. A contemplated revision is shown in pencil on the top copy.

The land, as described in Annex I, should adequately protect the Government's interests if a discovery is made. There are a number of conflicts in the form of overlapping claims. However, these conflicts are either of very minor extent or the conflicting claims are controlled by the Applicant or one of the signers of a Consent to Lien. Furthermore, the Applicant has quieted title or is in process of doing so where necessary, and has made a thorough effort to settle all conflicting claims. Applicant's agent has a well-known reputation for reliability. It is satisfied that the Applicant's interest in the land is sufficient for the purposes of an exploration project.

One set of Consent to Lien forms are attached. Two sets have been returned to Applicant for correction and will be attached to the contract later.

The recording data for Tomcat 1-9 and Yucca 3-8 claims will be forwarded by Applicant shortly. We will fill in the necessary data later if it has not been received by the time the contract is ready for typing.

Please note Power of Attorney to E. J. Longyear Company and advise if found unsatisfactory.

/s/ Ernest Wm. Ellis

Ernest Wm. Ellis

MChing/gla
cc: Mr. Ching

DRAFT
2/26/58
MChing/gla

DOCKET COPY

MF-200
(Revised June 1954)

Docket No. DMEA -4842

Commodity Uranium

Contract No. Idm-E ~~1183~~

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

EXPLORATION PROJECT CONTRACT[1]

It is agreed this 5 APR 1958 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] San Mateo Dome Project, a Joint Venture of Lisbon Uranium Corporation, a Utah corporation, and Mineral Projects - Venture B, Ltd., a limited partnership - E. J. Longyear Company, Agent, whose mailing address is 416 Colorado Building Denver, Colorado, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, ~~and~~ Annex II, and map (Figure 3)

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

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

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] Lessee of [5] the mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of ~~a~~ [6] Assigned Leases, [7] recorded in Book 15, pages 301-314 and 315-319 official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: Interests of Yucca Uranium Company, G. R. Kennedy, ~~and~~ Henry C. Adams, and E. J. Longyear Company

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

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

of the land (lessor, seller, optionor, etc.), are attached, as follows: Consent to Lien and Subordination Agreement of the foregoing parties.

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

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Uranium. The work to be performed is described in Exhibit "A." The Operator on or before ..... shall commence the work, and on or before August 31, 1958 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall either have completed the work or shall have incurred allowable costs (see Article 6) in a sum not less than the estimated total allowable cost set forth in Exhibit "A." See Article 13

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

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

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

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $ 103,400.00. The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $ 77,550.00: *Provided,* That until the Operator has rendered to the Government his final report, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last

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

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

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

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums. **See Article 13**

CATEGORY (2)—PERSONAL SERVICES.

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

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

Subcategory (c)—Labor.

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

CATEGORY (4)—OPERATING EQUIPMENT.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DRAFT
2/26/58
MChing/gla

EXPLORATION PROJECT CONTRACT
SAN MATEO DOME PROJECT, etc.

DOCKET NO. DMEA-4842

ANNEX I

The land referred to in Article 2 of the Contract consists of 170 lode mining claims situated in sections 27, 33, and 34, T. 14 N., R. 8 W., and sections 3 and 4, T. 13 N., R. 8 W., N.M.P.M. & B., McKinley County, New Mexico. The claims are shown on the map entitled "Figure 3 - Claims and Proposed Drilling in Areas II and III, San Mateo Dome Project, McKinley County, New Mexico," attached hereto and made a part hereof.

The notices of location of the claims are recorded in the official records of McKinley County as follows:

Claims (Nos. are inclusive)	Recording Date	Book	Page
Falcon 4039-4074	9-6-55	14 MC	119-154
Polvadera 19-26 (Redane 19-26)	12-10-55	18 MC	357-364
Falcon 4105-4131	9-6-55	14 MC	191-217
Tomcat 1-9	6-13-55		
Falcon 4142-4177	9-6-55	14 MC	227-262
Wildcat, Wildcat 2-7 and 9-22	6-22-55	7 MC	410-433
Yucca 3-8	7- -57		
Roberto 9-18	6-15-55	7 MC	183-192
Pancho 2-4, 6-8, and 10-20	6-3-55	7 MC	12-18 and 20-30

As shown on the map (Figure 3), those portions of Wildcat claims Nos. 5, 6, 7, and 8, in sec. 3, T. 13 N., R. 8 W., which are south of the south boundary of the N½ of the S½ are omitted from the land.

ANNEX II

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

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

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

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

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

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

DRAFT
2/26/58
MChing/gla

EXHIBIT "A"

Description of the Work

General Provisions

The work consists of exploration by core and non-core drilling to test the Westwater Canyon sandstones of the Jurassic Morrison formation for uranium

Drilling depths are estimated to average 2030 feet. Drill holes shall not extend more than 20 feet below the contact between the Westwater Canyon and underlying Recapture members of the Morrison formation.

Non-core drilling may be either dry or wet. Dry cuttings or sludge samples shall be taken from each 10-foot interval drilled, and logged geologically. When drilling through the Westwater Canyon member or any other favorable or mineralized horizon the samples shall be checked for radioactivity, sacked, and saved for inspection by the Government. Samples indicating significant mineralization shall be split and one portion analyzed chemically for uranium.

When core drilling, all the core shall be saved, stored in core boxes, checked for radioactivity, and logged geologically. Sections indicating significant mineralization shall be split; one-half shall be analyzed chemically for uranium and one-half preserved for inspection by the Government.

Any stored samples may be disposed of by the Operator upon approval by the Government.

All holes shall be probed, and gamma ray, resistivity, and self-potential logs recorded.

The record of all logging and probing, together with certified copies of all assay certificates, shall be submitted with the Operator's monthly progress reports.

No hole shall be drilled closer than 200 feet to the outer boundaries of the land described in Annex I.

The Government will not contribute to any costs of an incompleted drill hole.

Access roads and drill sites shall be prepared with an RD-6 tractor-dozer, or an equivalent unit of same or another make.

The project shall be supervised at all times by a geologist or mining engineer, who shall devote full time to the project work.

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

The work shall be divided into two stages as hereinafter described. The Operator shall complete Stage I, and shall perform as much of Stage II as the Government approves in writing in advance.

Stage I

Prepare access roads and drill sites, and drill not more than 13 holes, aggregating an estimated 26,200 feet,

All the holes shall be drilled non-core throughout except Nos. 1 and 9. Each of these two holes shall be drilled non-core for a distance of approximately 1,650 feet and cored through the bottom 350 feet, or less.

If the 13 holes require more than 26,200 feet of drilling to reach the desired horizon, the additional footage and funds required may, with the written approval of the Government, be transferred and deducted from Stage II.

Stage II

Prepare access roads and drill sites and drill not more than 10 holes, aggregating not more than 20,500 feet as offsets to Stage I holes. Tentative locations for these 10 holes are shown on the map (Figure 3). However, the offsetting may be along the north-south fences as shown, or in other directions. Offset holes are expected to be spaced approximately 1,000 feet from previously drilled holes, but a spacing of not less than 500 feet may be used when required to follow or prove a mineralized trend.

Estimated Costs of the Project

Stage I

Actual Costs

Category (1) Independent Contracts

19,500 feet non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$29,250.00	
6,000 feet non-core drilling, 1,500-2,200 ft. depths, @ $2.25/ft.	13,500.00	
700 feet core drilling, 1,600-2,200 ft. depths, @ $13.00/ft.	9,100.00	
13 hrs. drill crew stand-by time @ $15.00/hr.	195.00	
26,200 feet probing and logging @ $0.115/ft.	3,013.00	
13 hrs. logging crew stand-by time @ $10.00/hr.	130.00	
13 holes @ $40.00/hole for cost of circulation materials in excess of $100.00 per hole	520.00	
40 hrs. bulldozing @ $15.00/hr.	600.00	
Categories (2) through (6)	None	
Category (7) Miscellaneous		
70 cardboard core boxes @ $1.25 each	87.50	
30 chemical analyses @ $5.00 each	150.00	$56,545.50

Fixed Unit Costs (See Annex II-d)

Incidental allowance for each foot of hole drilled, 26,280 feet @ $0.18/ft. — $4,716.00

Estimated total cost of Stage I — $61,261.50

Stage II

Actual Costs

Category (1) **Independent Contracts**

15,000 feet non-core drilling, 0-1500 ft. depths, @ $1.50/ft.	$22,500.00	
5,500 feet non-core drilling, 1,500-2,200 ft. depths, @ $2.25/ft.	12,375.00	
10 hrs. drill crew stand-by time @ $15.00/hr.	150.00	
20,500 feet probing and logging @ $0.115/ft.	2,357.50	
10 hrs. logging crew stand-by time @ $10.00/hr.	100.00	
10 holes @ $40.00/hole for cost of circulation materials in excess of $100.00/hole	400.00	
30 hrs. bulldozing @ $15.00/hr.	450.00	
Categories (2) through (6)	None	
Category (7) **Miscellaneous**		
24 chemical analyses @ $5.00 each	120.00	$38,452.50

Fixed Unit Costs (See Annex II-d)

Incidental allowance for each foot of hole drilled, 20,500 feet @ $0.18/ft.	$ 3,690.00
Estimated total cost of Stage II	$42,142.50

Summary of Costs

Estimated total cost of Stage I	$61,261.50
" " " " Stage II	$42,142.50
" " " " the project (rounded)	$103,400.00
Government participation @ 75%	$77,550.00

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 13. *Changes and added provisions.*—

See Annex II

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By .....

.....
(Operator)

By .....

.....

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

.....

[CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—7C617-1

E. J. LONGYEAR COMPANY

DIAMOND DRILL MANUFACTURERS
CORE DRILLING CONTRACTORS
MINING ENGINEERING AND
GEOLOGICAL CONSULTANTS

GENERAL OFFICE
FOSHAY TOWER
MINNEAPOLIS 2, MINNESOTA
TELEPHONE: MAIN 2447
CABLE: LONGCO

Address Reply to
420 LEXINGTON AVENUE
NEW YORK 17, NEW YORK
LEXINGTON 2-2710
CABLE ADDRESS
"LONGCOYORK"

February 24, 1958

Mr. Ernest Wm. Ellis
U. S. Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Dear Mr. Ellis:

Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
McKinley County, New Mexico

I have a copy of a letter to you from Mr. Wilson P. Hurley of Simms, Modrall, Seymour, Sperling & Roehl with which he submitted to you certain information requested by you in your letter to me of January 24, 1958. You will find herewith two copies each of the Powers of Attorney from Lisbon Uranium Corporation and Mineral Projects, Incorporated in compliance with the request in Paragraph (1) of your letter of January 24.

When the additional information on the Tomcat claims Nos. 1 - 9, Section 33, T33N, R8W, and the Yucca claims Nos. 3 - 8, Sections 3 and 4, T13N, R8W, is obtained, Mr. Hurley will forward it directly to you.

With this information, I believe that your request of January 24 will be fulfilled.

Yours very truly,

Phillip L. Merritt

Phillip L. Merritt

PLM:KA
Enclosures 4

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LAW OFFICES OF
SIMMS, MODRALL, SEYMOUR, SPERLING & ROEHL
SIMMS BUILDING
ALBUQUERQUE, NEW MEXICO

JOHN F. SIMMS (1885-1954)
J. R. MODRALL
AUGUSTUS T. SEYMOUR
JAMES E. SPERLING
JOSEPH E. ROEHL
GEORGE T. HARRIS, JR.
DEAN P. KIMBALL
DANIEL A. SISK
WILSON P. HURLEY

TELEPHONE 3-4514
POST OFFICE BOX 466

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" | ching | 7.00

February 19, 1958

Mr. Ernest Wm. Ellis, Director
Division of Rare and
Miscellaneous Metals
United States Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Ellis:

Pursuant to your request in your letter of January 24, 1958, to Mr. Phillip L. Merritt of the E. J. Longyear Company, 420 Lexington Avenue, New York 17, New York, we are submitting the following information and documents to you.

First, in answer to Paragraph 1. of your letter of January 24, 1958, this office has submitted additional copies of these Powers of Attorney to Mr. Phillip L. Merritt who in turn will submit the same to you.

In answer to your Paragraph 2. of your letter of January 24, 1958, Consent to Lien and Subordination Agreements are submitted herewith in accordance with Sub-paragraphs (b), (c), and (d). We have not obtained Consent to Lien and Subordination Agreement from Ed Lesh and Jack Barense for Polvodera claims Nos. 19 through 26 in sections 27 and 34, T. 14 N., R. 8 W. (Also known as Redame Nos. 19-26). The explanation for this is that Polvodera is a common place name in New Mexico meaning dusty. By coincidence Ed Lesh and Jack Barense named certain of their claims lying in sections 21, 22 and 28, Township 14N., Range 8W., Polvodera, as did a group of locaters calling themselves the "Cocar" group who located the Redame and Polvodera claims in sections 27 and 34 of the same township. The Cocar claims were deeded over to Longyear Company a considerable time ago. We presume that your request for Consent from Lesh and Barense was initiated by this coincidence of names. We trust that this explanation is sufficient.

In answer to your Paragraph 3. of your letter of January 24, the Tomcat claims Nos. 1 through 9 were acquired by Kennedy and Adams in the Spring of 1957 from Fred Poole by a conveyance dated April 1, and on May 20, 1957, pursuant to the provisions of Paragraph Six of the Agreement between Kennedy and Adams and E. J. Longyear Company dated April 1, 1957, Kennedy and Adams quit claimed these and other claims to the Longyear Company. This Quit Claim is recorded

in Book 8, Page 346, County Clerk, McKinley County, New Mexico. We are, at the present time, getting the recording data for the Tomcat claims 1 through 9 in section 33, T. 33N., Range 8W. and will forward the same to you. In this connection we are also obtaining the recording data on Yucca claims 3 through 8 in sections 3 and 4, Township 13N. Range 8W.

Yours very truly,

Wilson P. Hurley

Wilson P. Hurley

WPH:sj
Encl.

c.c. Mr. Phillip L. Merritt
E. J. Longyear Company
420 Lexington Avenue
New York 17, New Y rk

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

February 11, 1958

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Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4842 (Uranium) E. J. Longyear Company, Agent, San Mateo Dome Project, McKinley County, New Mex.

This replies to your letter of February 6, 1958, regarding estimated bulldozer costs at the subject property.

This property is 25 miles north of Grants, New Mexico, on the extreme outskirts of the Ambrosia Lake area. The entire area is one of high costs, and the remoteness of the property has no doubt been considered by the contractors in the preparation of their bids.

Under these circumstances we believe that the $15.00 rate for an RD-6 tractor-dozer is justified.

W H King
W. H. King

Form 7
(2-56)

OFFICIAL FILE COPY

Date	Surname	Code
2-3	Ching	700
2-3	Kusuda	700
2/5	GCS	150
"	Johnson	110
"	Hutchedorf	100
		~~210~~
2/6	C	220
		700

FEB 6 1958

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

Re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, Agent
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. King:

We note that the examiners have recommended bulldozer work at $15.00 per hour with an RD-6 tractor-dozer.

The Caterpillar people here inform us that the RD-6 is an old 1940 model with only 44.7 drawbar horsepower. This compares with 75 horsepower for a D-6.

Please advise whether or not an adjustment should be made in the $15.00 rate.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (HB)

APPROVED:

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

N. E. Nelson (HB)
Member, Geological Survey

MChing/izm 2-3-58
cc: Mr. Ching
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

Longyear

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

ADDRESS REPLY TO
420 LEXINGTON AVENUE
NEW YORK 17, NEW YORK
LEXINGTON 2-2710
CABLE ADDRESS - "LONGCOYORK"

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DMEA
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January 28, 1958

Mr. Ernest Wm. Ellis
U. S. Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Dear Mr. Ellis:

Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
McKinley County, New Mexico

Thank you for your letter of January 24, 1958. I have forwarded a copy of the letter to our attorney, Mr. Wilson P. Hurley of Simms, Modrall, Seymour, Sperling & Roehl. Mr. Hurley has been requested to supply you with the instruments and information requested by you. He will forward the material directly to you.

Could you kindly let me know the approximate size of the program that will be approved by DMEA.

Yours very truly,

E. J. LONGYEAR COMPANY

Phillip L. Merritt

Phillip L. Merritt

PLM: KA
cc: Wilson P. Hurley
Bryan F. Sorenson
R. C. Gebhardt
D. M. Davidson

No reply necessary. Mr. Merritt, telephoned Mr. Selfridge later.
mc.

AEC Form 7
(12-56)

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Date	Surname	Code
1-24	Ching	700
1-24	Mittenthal	100
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AIR MAIL

JAN 24 1958

Mr. Phillip L. Merritt
B. J. Longyear Company
420 Lexington Avenue
New York 17, New York

Re: Docket No. [illegible]-4842 (Uranium)
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Merritt:

The processing of the subject application has reached the point where the following specific action may be taken by you in order to eliminate possible delays and facilitate action on our part:

1. As suggested to you by our Mr. Ching on October 8, 1957, a Power of Attorney is now in order from the San Mateo Dome Project (Lisbon Uranium Corporation and Mineral Projects - Venture B, Ltd.) to B. J. Longyear Company. Such instrument should empower Longyear, as agent, to sign any contract that may result from the subject application, and to do everything necessary to be done in connection with such a contract as fully and to all intents and purposes as San Mateo Dome Project could do if personally present and active. We will require two copies of this instrument;

2. Consent to Lien and Subordination Agreement forms are enclosed and should be filled out and executed by the parties listed below. The original and four copies of each instrument are required by us.

   (a) Ed Lesh and Jack Barense, in so far as Polvouera claims Nos. 19 through 26 in sections 27 and 34, T. 14 N., R. 8 W., are concerned. (Also known as Madame Nos. 19-26);

   (b) Yucca Uranium Company, in so far as sections 27, 33 and 34, T. 14 N., R. 8 W., and sections 3 and 4, T. 13 N., R. 8 W., are concerned;

   (c) G. R. Kennedy and Henry C. Adams, covering the same land as (b);

8623

(d) B. J. Longyear Company, covering the same land as (b); and

3. Tomcat claims Nos. 1 through 9 in section 33, T. 14 N., R. 8 W., are not covered by the Leases, dated October 29 and November 24, 1956. Please advise how Applicant secured control of these claims and give the recording date, book and page numbers. Similarly, Yucca claims Nos. 3 through 8 in sections 3 and 4, T. 13 N., R. 8 W., were not listed in the application and were apparently located at a later date. The recording date, book and page numbers for these claims are also required. Please submit this information as promptly as possible.

Enclosed are two copies of this letter for forwarding to the offices which are to take action on the above matters.

Sincerely yours,

Ernest Wm. Ellis, Director
Division of Rare and
Miscellaneous Metals

In triplicate

Enclosures

MChing/izm 1-24-58
cc: Mr. Ching
Admr.'s Reading File
THKiilsgaard, 5224
DMEA FT Reg. 3 (2)

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RECEIVED JAN 22 1958

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

Date January 22, 1958

DMEA Docket No. 4842
RFA Contract No.
Commodity Uranium
Name of applicant San Mateo Dome
Name of property E. J. Longyear Company
Location of property McKinley County, New Mexico
Estimated cost of project $104,228.00

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

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

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

1. Date of subject document: 1/15/58. 2. Date received by reviewer: 1/17/58

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

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

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

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

7. Explain items marked yes above:

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

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

10. Remarks: (Use back of page if necessary)

FILE COPY
DMEA
JAN 21 1958
CODE
220
700

IN REPLY REFER TO:

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

January 21, 1958
Re: DMEA 4842
E. J. Longyear Co.
San Mateo Dome Project
T 14 N, T 13 N, R 8 W, NMPM
McKinley Co., New Mexico
Appl. Est. $203,433
Rec'd Est. $103,294 Uranium

Memorandum

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

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

Subject: Review of Field Team Report

The applicant requested assistance in exploring by deep drilling (2,000 feet plus) for uranium deposits in the Westwater member of the Morrison formation. The Westwater, the host rock of most of the large uranium ore reserves in the Ambrosia Lake area, is deeply buried beneath the dome.

Random drilling by the applicant (7 holes) failed to find ore but the indications are regarded as favorable, and drilling in an adjoining section has located ore and, as reported, ore has been found in another adjoining section. As a result of the findings, to the west a favorable belt has been outlined, the easterly extension of which crosses the southerly part of the proposed project block.

The examiners and Field Team conclude the prospects are good enough to justify the recommended work. Ore, if found, may not presently be minable, but if in substantial amounts, could constitute a reserve for the future.

The proposed drilling consists of 13 Stage I and 10 Stage II holes, the total footage being:-

Stage	Non Core Ft.	Core Ft.
I	25,500	700
II	20,500	--
Total	46,000	700

I concur with the recommendations of the examiners and Field Team.

N. E. Nelson

N. E. Nelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

January 15, 1958

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JAN 17 1958

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Memorandum

To: Secretary to the Field Team, DMEA

From: DMEA Field Team, Region III

Subject: Docket No. DMEA 4842 (Uranium), San Mateo Dome Project
E. J. Longyear Company, Representative (T 14 N, R 8 W, NMPM)
McKinley County, New Mexico, Joint Engineering and Geologic Report

Enclosed are the original and two copies of a joint engineering and geologic report on the subject docket.

The Field Examiners recommend an exploration project in Areas II and III consisting of not more than 23 holes, totaling 46,700 feet of core and non-core drilling. They also recommend that the applicant's request for exploration aid in Area I be denied.

Drill holes averaging 2,030 feet in depth may involve DMEA policy. In our opinion, this is justified because the possibility of finding large deposits compensates for the great depth.

It is also recommended that Areas II and III be subordinated under one program, particularly on a long shot like this. We do not recommend limiting second stage holes to location in fences. More flexibility in administrating the contract would be obtained by stating that offset holes be not closer than 1,000 feet from Stage I holes, and may be located in fences if we so desire.

Claim conflicts and possible litigation mentioned in the report indicate that the applicant's property rights must be checked by the legal division.

Enclosed are eight copies of Figure 3 for use in the contract.

Reviewed by
DMEA OPERATING COMMITTEE
1-28-58
(date)

W. H. King
W. H. King

E. N. Harshman
E. N. Harshman

DMEA

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

JAN 14 1958
REGION III
DENVER, COLORADO

IN REPLY REFER TO:
MINERAL DEPOSITS
DMEA
RECEIVED
JAN 10 1958
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

1-20 2/3 220 228

January 9, 1958

Memorandum

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

Through: E. N. Harshman

TRANSMITTED
JAN 15 1957

From: J. William Hasler

Subject: Transmittal of report of examination by examining team of DMEA Docket No. 4842 (Uranium), San Mateo Dome Project, E. J. Longyear Co., Representative, R. 14 N., R. 8 W., NMPM, McKinley County, New Mexico.

The E. J. Longyear Company, P. O. Box 998, Grants, New Mexico, acting as agents for the "San Mateo Dome Project", a joint venture by a partnership of individuals and the Lisbon Uranium Corporation, applied for Government assistance on October 4, 1957, to explore for uranium on located claims covering a portion of the San Mateo Dome area, McKinley County, New Mexico. The application was referred to the field and an examination was made on November 19, 1957 by a DMEA examining team consisting of M. H. Salsbury, U. S. Bureau of Mines, and N. L. Archbold and J. William Hasler, U. S. Geological Survey. The examining team was accompanied by Mr. Bryan F. Sorenson, resident geologist for E. J. Longyear Company.

The property controlled by the applicant consists of over 15,000 acres in 27 sections of land covering the San Mateo Dome, an anticlinal structure located 25 miles north of Grants, New Mexico.

The rocks exposed on the property are the Mancos shale and Mesa Verde group of Cretaceous age. Below the Mancos, but unexposed, are, in descending order, the Dakota formation of Cretaceous age and the Morrison formation of Jurassic age. The potential ore-bearing formation is the Westwater Canyon member of the Morrison formation which contains the major portion of the large uranium ore reserves which have been developed in the Ambrosia Lake area, 3 to 10 miles to the west. Reconnaissance drilling on the applicant's property, followed by closer spaced drilling on sec. 32, T. 14 N., R. 8 W., has indicated that a belt of large uranium deposits extends from the Ambrosia Lake area to the property of the San Mateo Dome Project.

Reviewed by
DMEA OFFICE
1-20-58

The results of the field examination and a detailed study of the company's lithologic, gamma-ray, self-potential and resistivity logs indicates that drilling in Area I, as requested by the applicant, shows the lithology of the Westwater Canyon member to be unfavorable for the occurrence of large uranium deposits, in that the Westwater Canyon member consists largely of mudstone and siltstone rather than being predominently sandstone. Areas II and III, as submitted by the applicant, however, are underlain by more favorable Westwater Canyon sandstone and occur at the southeastern end of a belt of uranium deposits extending from the Ambrosia Lake area. In Areas II and III there is a good possibility of finding up to 1,000,000 tons of ore containing 0.25 to 0.30 percent U_3O_8, lying at a depth of about 2,000 feet. The possible size of deposits compensates for the relatively great depth of the ore-bearing Westwater Canyon sandstone.

The examining team recommends denial, without prejudice, of any DMEA assistance for exploration in Area I. In Areas II and III, an exploration program consisting of not more than 23 holes, totaling 46,700 feet of core and non-core drilling, is recommended for approval. The recommended program would cost an estimated $104,228.00, making the Government's share $78,171.00.

Specifications suggested by the applicant for taking and preserving drill cuttings as set forth under "Applicant's Proposed Exploration" would be satisfactory. Holes should be bottomed in not more than 20 feet of the Recapture member of the Morrison formation. Prior Government approval should be required for any Stage II drilling.

The Atomic Energy Commission was consulted relative to the appraisal of the area and results of studies made by the Geological Survey were also used, during the field examination and the preparation of the joint report. Reserve and production figures from Atomic Energy Commission records were also made available to the examining team.

I concur with the conclusions and recommendations of the examining team and recommend that a contract be prepared to complete the work herein outlined.

Enclosed are ten copies each of figures 1, 2, and 4, and 21 copies of figure 3 entitled "Claims and proposed drilling in areas II and III, San Mateo Dome Project, McKinley County, New Mexico," for inclusion in a possible contract, as well as the applicant's brochure.

J. William Hasler

J. William Hasler,
Geologist

Enclosures
JWH/bh

FOR UNITED STATES GOVERNMENT USE ONLY

TRANSMITTED

JAN 15 1957

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

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DMEA 4842

San Mateo Dome Project

E. J. Longyear Company, Representative

Land in T. 13 N., and T. 14 N., R. 8 W., NMPM

McKinley County, New Mexico

Uranium

Joint Engineering and Geologic Report

by

M. H. Salsbury
U. S. Bureau of Mines

N. L. Archbold
U.S. Geological Survey

January 1958

Reviewed by
DMEA OPERATING COMMITTEE
1-20-58
(date)

DMEA 4842
SAN MATEO DOME PROJECT
E. J. LONGYEAR COMPANY, REPRESENTATIVE
LAND IN T. 13 N., and T. 14 N., R. 8 W., NMPM
McKINLEY COUNTY, NEW MEXICO

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DMEA 4842
SAN MATEO DOME PROJECT
E. J. LONGYEAR COMPANY, REPRESENTATIVE
LAND IN T. 13 N., and T. 14 N., R. 8 W., NMPM
McKINLEY COUNTY, NEW MEXICO

INTRODUCTION AND SUMMARY

The E. J. Longyear Company, P. O. Box 998, Grants, New Mexico, (field office), acting as agents for the "San Mateo Dome Project," a joint venture by a partnership of individuals and the Lisbon Uranium Corporation, applied for Government assistance on October 4, 1957, to explore for uranium on located claims covering a portion of the San Mateo Dome area, McKinley County, New Mexico. Exploratory drilling on three parcels, totaling more than 7 sections of land, is proposed at an estimated cost of $203,232.30. The application was filed in time to receive 75 percent Government participation, if approved. Considering the large total area and the depth to the target, the amount of drilling proposed is moderate. Drilling depths average 2,000 feet, and deposits which could be mined profitably must necessarily be large.

A field examination was made on November 19, 1957 by a DMEA examining team consisting of M. H. Salsbury, Bureau of Mines, and N. L. Archbold, Geological Survey, accompanied by J. William Hasler, Geological Survey, and Bryan F. Sorenson, resident geologist for E. J. Longyear Company.

The property controlled by the applicant consists of over 15,000 acres in 27 sections of land covering the San Mateo Dome, an anticlinal structure located 25 miles north of Grants, New Mexico.

The rocks exposed on the property are the Mancos shale and Mesa Verde group of Cretaceous age. Below the Mancos, but unexposed, are, in descending order, the Dakota formation of Cretaceous age and the Morrison formation of Jurassic age. The potential ore bearing formation is the Westwater Canyon member of the Morrison formation which contains the major portion of the large uranium ore reserves which have been developed in the Ambrosia Lake area, 3 to 10 miles to the west. Reconnaissance drilling on the applicant's property, followed by closer spaced drilling on sec. 32, T. 14 N., R. 8 W., has indicated that a belt of large uranium deposits extends from the Ambrosia Lake area to the property of the San Mateo Dome Project. Work still in progress on section 32 proves that ore of minable grade is present in substantial tonnages.

Reconnaissance drilling to date in the three proposed DMEA project areas has consisted of 7 wide-spaced non-core holes in three of which anomalous radioactivity was noted (from twice background to 0.036 percent eU_3O_8). The applicant's discovery in sec. 32, T. 14 N., R. 8 W., and a reported discovery by Rio de Oro Uranium Mines, Inc. in sec. 9, T. 13 N., R. 8 W., adjoin the southern project area.

The examining team concludes that there is a reasonable probability of finding large tonnages of average grade ore at a depth of about 2,000 feet. Such deposits would constitute a worthwhile reserve for future needs even though they might not be presently minable because of their depth.

A two-stage drilling program covering two of the proposed project areas is recommended for approval. This program requires an estimated 46,700 feet of core and non-core drilling in a maximum of 23 holes at a cost of $103,294.00. Government participation at 75 percent would be $77,470.50.

ACKNOWLEDGMENTS

The applicant documented the DMEA application with three reports covering previous and proposed work in the San Mateo Dome area, a cost estimate with 3 drilling bids, copies of agreements pertaining to ownership of the property and a title opinion prepared by the applicant's legal consultants. Additional data on property transfers which have taken place since the DMEA application was made, were furnished the examining team verbally.

The results of studies made by the Geological Survey and the Atomic Energy Commission, and reserve and production figures from A.E.C. records were available.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The property controlled by the San Mateo Dome Project consists of located claims covering approximately 15,000 acres, in 27 sections of Forest Service land in T. 13 N. and T. 14 N., R. 8 W., NMPM (fig. 1). Approximately $7\frac{1}{4}$ sections, divided by the applicant into three project areas, but actually a northern block of $2\frac{1}{2}$ sections and a southern block of 4-3/4 sections, are involved in the DMEA application (fig. 2).

The property is 25 miles north of Grants, New Mexico, and may be reached by traveling 22 miles over New Mexico Highway 53 to San Mateo, thence 13 miles over County and Forest Service roads to the southern boundary of the property. The first 14 miles of Highway 53 is hard surfaced.

The relief in the San Mateo Dome area is severe. Altitudes range from over 8,000 feet on top of the mesas to about 6,900 feet on the valley floors. The mesas are bounded by cliffs and high-angle slopes, 500 to 900 feet high. The location and outline of the highest mesas and the irregular drainage pattern formed by the broad erosional valleys apparently do not bear any relation to the underlying dome structure.

Because of the excessive drilling depths to the potential ore-bearing Westwater member of the Morrison formation, proposed drilling sites have been limited to the valley floors where the depth to the base of the Westwater Canyon member is about 2,000 feet.

There is an extreme range of temperatures and precipitation in the Grants area both summer and winter, but year-around operations are generally feasible except for periods during and following storms when secondary roads may be impassable.

There are no problems of access, supply, power, labor, or transportation involved in the proposed DMEA project. The work would be done by contract drillers who maintain equipment and personnel in the Grants area. Current labor and housing shortages would not affect the project materially. E. J. Longyear Company has supervision of current exploration and presumably would assume responsibility for any DMEA project.

Water for drilling purposes is scarce in the immediate area and must be purchased from local ranchers and hauled 10 miles or more. For this reason, dry non-core methods of drilling are used as much as possible.

While limited tonnages of uranium ore can be marketed at the Grants buying station of the Atomic Energy Commission, milling facilities in operation and under construction are committed for treatment of ore already developed. Greater milling capacity is required if any additional large ore reserves in the Grants area are to be milled in the near future.

HISTORY, PRODUCTION, AND OWNERSHIP

Uranium-bearing minerals were first reported in the Grants area by a party of California geologists in 1949. The first commercial deposit was discovered in the Todilto limestone by an Indian sheepherder in 1951. Extensive exploration since that date has resulted in a high rate of discovery and development of large reserves in both the Todilto limestone and the Morrison formation. Exploration has been intensive west and southwest of the San Mateo Dome where drilling depths to the potential ore-bearing horizons are considerably less. There have been at least 12 DMEA projects carried on in the area 5 to 10 miles west and southwest of San Mateo Dome. Six of these projects have been certified as discoveries.

Activity in the San Mateo dome area dates from 1955 and was based on surface geology and two oil exploration drill holes. One of the firms engaged in acquiring property in the area, most of which was open to mineral location, was Yucca Uranium, Inc. This firm acquired control of a large block of ground which has come into the hands of the present applicant through transfer of leases. Very little, if any, actual exploration was done before 1956.

There has been no production from the San Mateo dome area and no definite reserves have been computed on the results of exploration to date. Development drilling in sec. 32, T. 14 N., R. 8 W., is still in an early stage and has not progressed to the point where a reliable reserve calculation is possible. Mr. Sorenson stated, however, that a tentative estimate of 100,000 tons of ore with an average grade of 0.27 percent U_3O_8 has been made. Reserve figures are not available on the Rio de Oro discovery in sec. 9, T. 13 N., R. 8 W. adjacent to our [illegible]

The property now controlled by the applicant, of which the proposed DMEA project ground is a small portion, consists of mining claims in 27 sections of land located or acquired in 1955 and 1956 by Yucca Uranium, Inc., a Colorado Corporation, 1115 4th St. N.W., Albuquerque, New Mexico. Melvin E. Richards is president of the corporation, and William Horabin, secretary-treasurer. Most of the claims are held by right of location but a number of conflicts with other locations exist. Yucca Uranium, Inc. has obtained quit-claim deeds to some of the conflicting claims, has leased others, and has filed suits to quiet title on still others.

It should be noted that, in the title opinion by Longyear's attorneys, Yucca Uranium, Inc. is referred to as "Yucca Uranium Company, now Yucca Mining and Petroleum Company".

The applicant's property rights are vested in a lease assigned to them by the E. J. Longyear Company, who had been retained to make an investigation of the Grants, New Mexico area, and to work up an exploration project if conditions were favorable. Longyear negotiated a lease with G.R. Kennedy

and Henry C. Adams of Albuquerque, New Mexico, who held two leases with supplementary agreements from Yucca Uranium, Inc., controlling approximately 15,000 acres. The first lease covered ground which Yucca was free to lease. The second lease covered 6,400 acres which had been previously leased to the Mercury Uranium and Oil Corporation. This lease had been cancelled for failure to fulfil lease requirements. Apparently at the time Yucca leased the ground to Kennedy and Adams there was a possibility that Mercury might sue over cancellation of its lease, but has not done so to date. Secs. 9, 33, and 34, T. 14 N., R. 8 W., all in the proposed DMEA project area, are covered by the cancelled Mercury lease.

Copies of leases and agreements in force were furnished with the application. They appear to be satisfactory for protection of the applicant's and the Government's rights.

The original leases from Yucca Uranium, Inc. are for a period of two years from October 29, 1956 and "continuing thereafter as long as mining or exploration operations are diligently prosecuted--etc." There are lease provisions for cash payments, rentals of $1.50 per acre, and all assessment work including a minimum of 25,000 feet of drilling annually until all necessary drilling is completed. A royalty of 10 percent on net ore returns, less any haulage and development allowances, is payable to Yucca Uranium, Inc. On certain claims in conflict with Yucca's ground, on which leases have since been obtained from the adverse claimants, the royalty rate is 11½ percent. Royalties applying on other ground which has been quitclaimed or leased to Yucca were not disclosed.

Agreements between Kennedy and Adams, and Longyear and between Longyear and the applicants continue the provisions of the original leases from Yucca, but call for additional expenditures and drilling. Kennedy and Adams' interest in the property is now a 37.5 percent interest in gross ore returns, after payment of royalties due Yucca or other parties, up to a maximum of $250,000.00 plus a percentage of net profits after the San Mateo Dome Project shall have recovered its investment. Longyear has retained a small interest in net profits.

The applicant under Docket No. DMEA 4842 is a partnership under the title "San Mateo Dome Project (of McKinley County, New Mexico)", a group of individuals operating as "Mineral Projects-Venture B Ltd.," and Lisbon Uranium Corporation.

Mineral Projects-Venture B Ltd. is represented by an "owners' committee", Allan B. Grady and Raymond Hartz, 55 Green Village Road, P. O. Box 390, Madison, New Jersey.

Lisbon Uranium Corporation, A. P. Kibbe, president, and Max B. Lewis, secretary, incorporated in the state of Utah, has offices at 310 First Security Bank Bldg., Salt Lake City, Utah. This corporation was the contractor under a recently completed DMEA contract (Docket No. DMEA 4363, contract Idm-E 1065).

The ground included in the proposed DMEA project consists of located mining claims in three project areas as defined by the applicant (figs. 2 and 3). Actually Areas II and III are contiguous. The numbered items (1) in the following claim summary are keyed to the notes which follow:

Claims	Location	Recording Data Gallup, New Mexico Date	Book	Pages
Area I - 92 claims				
Owned	T. 14 N., R. 8 W.			
Falcon nos. 3037 through 3072 (36 claims)	sec. 9	8-25-56	11MC	436-469
Yucca nos. 5401 thru 5420 (20 claims)	sec. 15	9-6-55	13MC	361-380
Yucca nos. 5406 thru 5420 (amended)		12-10-56	33MC	460-474
Yucca nos. 5001 thru 5036 (36 claims)	sec. 16	9-6-55	13MC	67-102
Conflicting claims				
(1)Big Elk nos. 75,77 thru 88	sec.15-16	1-10-55	18MS	403 & 405-416
(2)Tenaia nos. 26,27 and 28	sec. 16	Settled by agreement with owners, Jack Barense and Ed Lesh		
(3)Ange nos. 11 and 12	sec. 15	11-1-55	no assessment done, suit filed to quiet title on 2-27-57	
(4)Dusty no. 10	sec. 15	Lapsed, according to applicant.		
Area II - 91 claims	T. 14 N., R. 8 W.			
Owned				
Falcon nos. 4105 thru 4131 (27 claims)	sec. 33	9-6-55	14MC	191-217
Tomcat nos. 1 thru 9(9 claims)	sec. 33	6-13-55		
	T. 13 N., R. 8 W.			
(5)Yucca nos. 3 thru 8 (6 claims)	secs. 3-4	July 1957		
(6)Wildcat nos. 1 thru 22 (22 claims)	secs. 3-4	6-22-55	7MC	410-433
Pancho nos. 2,3,4,6,7,8, and 10 thru 20(17 claims)	sec. 4	6-3-55	7MC	12-18& 20-30

Claims	Location	Date	Book	Pages
Roberts nos. 9 thru 18 (10 claims)	sec. 4	6-15-55	7MC	183-192
Conflicting claims				
(7)Bobcat nos.1,3,5,7,9	sec. 3	6-22-55	7MC	398-406
(8)Hansum nos. 1 and 2	sec. 3	6-22-55	7MC	394,305
(9)John no. 7 and 9	sec. 33		10MC	179,181
(5)Yucca nos. 1 and 2	sec. 3	July '57		
Area III - 72 claims Owned	T. 14 N., R. 8 W.			
Falcon nos. 4039 thru 4074 (36 claims)	sec. 27	9-6-55	14MC	119-154
Falcon nos. 4142 thru 4177 (36 claims)	sec. 34	9-6-55	14MC	227-262
Conflicting claims				
(10)Yucca nos. 5268 and 5269	sec. 34	9-6-55	13MC	334-335
(11)Bobcat no. 9	sec. 34	6-22-55	7MC	406
(12)Polvadera nos. 19 thru 26	sec.27-34	12-10-55	18MC	357-364
(12)Radame nos. 19 thru 26	sec. 27-34	no data		

Many claim locations made by or for Yucca Uranium, Inc. were laid out to make claim lines coincide with section boundaries, and other claims were not full size.

The property is described in all leases and agreements by township and section. Exhibits containing claim descriptions referred to in the several lease documents apparently have never been compiled.

From the maps furnished, there does not appear to be any open ground in the proposed DMEA project area except a narrow strip approximately 80 feet wide along the northern boundary of sec. 27, T. 14 N., R. 8 W. Claims have been surveyed and presumably are accurately shown on maps. No evidence of conflicts was seen during the field examination; however, the maps and

other material submitted with the DMEA application show conflicts, most of which have been adjusted or are considered of no moment by the applicant. The following notes on the conflicting claims keyed to the preceding summary are based on information obtained from Mr. B. F. Sorenson:

(1) The Big Elk nos. 75 and 77 through 88 claims, conflicting in part with certain Yucca claims in the southern half of sec. 16, and along the west sideline of sec. 15, T. 15 N., R. 8 W., are prior claims. They are owned by the Joplin Machinery and Electric Company, Joplin, Missouri, and have been leased to Yucca Uranium, Inc. A copy of this lease was not submitted by the applicant. The lease held by the applicant includes the rights to all claims acquired in the name of Yucca Uranium, Inc. in the San Mateo Dome Project area.

(2) The Tenaia nos. 26, 27 and 28 claims form a 550-foot by 1825-foot block conflicting with Yucca no. 5008, 5009, 5010, and 5011 claims in the southeast corner of sec. 16, T. 14 N., R. 8 W. There is a sideline agreement between the owners of the Tenaia claims, Jack Barense and Ed Lesh, and Yucca Uranium Inc., establishing the boundary between conflicting claims as the west sideline of sec. 16 and 21. A copy of this agreement was not furnished.

(3) The Ange nos. 11 and 12 claims conflict in part with the Yucca nos. 5411 and 5420 claims in the northeast corner of the west ½ of sec. 15, T.14 N., R. 8 W. They were located by or for the St. Anthony Uranium Company. Notice of assessment work has never been filed on them and suit was filed by the applicant's attorneys on February 27, 1957 to quiet title. No ruling has been handed down according to Mr. Sorenson.

(4) There is a 250-foot by 350-foot overlap of the Dusty no. 11 claim on the Yucca no. 5401 claim in the southeast corner of the west half of section 15, T. 14 N., R. 8 W. Mr. Sorenson states that the Dusty no. 11 claim has lapsed.

(5) The Yucca claims nos. 1 thru 8 in secs. 3 and 4, T. 13 N., R. 8 W., were located in July 1957 to cover open ground found in the course of the applicant's surveying. Of these, Yucca nos. 1 and 2 claims proved to be in conflict with Yucca's previously located Wildcat nos. 21 and 22 claims and covered little if any open ground. In any case, the conflict is of no consequence inasmuch as all claims are controlled by the applicant. O.K.

(6) In the title opinion by Longyear's attorneys, litigation between Yucca Uranium, Inc. and Reserve Minerals Inc. over claims in secs. 2 and 3, T. 13 N., R. 8 W. is referred to. Mr. Sorenson stated that the only claims in sec. 3 involved were the Wildcat claims no. 5, 6, 7, and 8 and that the matter has been settled. He did not have the documents pertaining to the settlement, however. These were in the hands of the Owners' Committee for "Mineral Products-Venture B. Ltd." O.K.

(7) The Bobcat nos. 1, e, 5, and 7 claims conflicting with the Wildcat nos. 12, 14, 16, 18, 20 and 22 claims in a narrow overlap along the east boundary of sec. 3, T. 13 N., R. 8 W., have been quit-claimed to Yucca Uranium, Inc. by the owners. Data on this transaction were not submitted. O.K.

(8) The Hansum nos. 1 and 2 claims conflict with Wildcat no. 20 claim in a narrow overlap along the east boundary of sec. 3, T. 13 N., R. 8 W. They have been quit-claimed to Yucca Uranium, Inc. by the owners but no evidence of this was submitted. O.K.

(9) The John nos. 7 and 9 claims conflict in part with the Falcon nos. 4114, 4115, 4130 and 4131 on the east side of sec. 33, T. 14 N., R. 8 W. The two John claims are part of a larger group most of which is in sec. 32. They are owned by Parador Mining Company, Inc. and are leased to Yucca Uranium, Inc. No lease data have been submitted.

(10) Yucca nos. 5268 and 5269 claims in sec. 34, T. 14 N., R. 8 W., coincide nearly with Falcon nos. 4142 and 4159 claims. Both groups of claims are owned by Yucca Uranium, Inc., so the conflict is of no consequence. O.K.

(11) The Bobcat no. 9 claim overlaps a very small portion of the Falcon no. 4142 claim (Yucca no. 5268 claim) in the southeast corner of sec. 34, T. 14 N., R. 8 W. It has been quit-claimed to Yucca Uranium, Inc., by the owners. O.K.

(12) The Polvadera nos. 19 through 26 claims, identical locations with the Radame nos. 19 through 26 claims, conflict with portions of the Falcon nos. 4039 through 4047 claims along the south boundary of sec. 27, T. 14 N., R. 8 W., and with the Falcon nos. 4169 through 4177 along the north boundary of sec. 34, T. 14 N., R. 8 W. The Polvadera claims have been quit-claimed to Yucca Uranium, Inc., by the locators, Jack Barense and Ed Lesh. The Radame claims were the original locations made by the same men 3 months earlier. They were allowed to lapse and were relocated as the Polvadera claims. O.K.

The applicant's agent, the E. J. Longyear Company, has made an extensive investigation of property ownership. According to a title opinion by an Albuquerque firm of attorneys, Simms, Modrall, Seymour, Sperling and Roehl,

a copy of which was furnished with the application, the applicant's title is good, subject to a royalty interest held by Yucca Uranium, Inc. and royalty held by Ed Lesh and Jack Barense on the Tenaia and Polvadera claims. The royalty rate on conflicting claims leased or quit-claimed to Yucca by Joplin Machinery and Electric Company, Parador Mining Company and others, was not mentioned in the title opinion. Litigation mentioned in the title opinion is discussed in note (6) of the claim summary.

In the opinion of the DMEA examiners, the validity of the applicant's title rests chiefly in the fact that (1) the only drilling carried on to date has been done by its agent, E. J. Longyear Company, and has resulted in discoveries, and (2) that conflicting locations have been investigated thoroughly and steps taken to buy or lease them if they appear to have any validity, or to quiet title if they do not. For protection, this thoroughness has been considered essential by the applicant, and this policy would appear to be the Government's best guarantee of title.

Longyear's representative, Mr. B. F. Sorenson, stated to the examining team that all lease requirements have been fulfilled, and all parties concerned would sign subordination agreements. Presumably this includes Barense and Lesh, Parador Mining Corporation, and others who have leased or quit-claimed claims to Yucca.

The DMEA examining team is recommending exploration only in the applicant's Areas II and III. Therefore, the status of the ground in Area I is of no concern in the recommended project. Claims which should be included in the recommended project are as follows:

Sec. 27, T. 14 N., R. 8 W.

Falcon claims nos. 4039 through 4074 inclusive (36 claims)

Conflicting portions of Polvadera claims nos. 19 through 26 (8 claims)

Sec. 34, T. 14 N., R. 8 W.

Falcon claims nos. 4142 through 417~~6~~7 inclusive (36 claims) me

Conflicting portions of Polvadera claims nos. 19, 21, 23 and 25 (4 claims also listed in sec. 27) and of Bobcat no. 9 claim.

Conflicting Yucca claims nos. 5268 and 5269.

Sec. 33, T. 14 N., R. 8 W.

Falcon claims nos. 4105 through 4131 inclusive (27 claims)

Tomcat claims nos. 1 through 9 inclusive (9 claims)
(south end of Tomcat claims overlap Falcon claims nos. 4123 through 4131).

Conflicting portions of John claims nos. 7 and 9 (2 claims)

Sec. ~~34~~, 3+4 me T. 13 N., R. 8 W.

Wildcat claim and Wildcat claims nos. 2 through 22 inclusive (22 claims)

Yucca claims nos. 3 through 8 inclusive (6 claims)

Pancho claims nos. 2,3,4,6,7,8, and 10 through 20 inclusive (17 claims)

Roberto claims nos. 9 through 18 inclusive (10 claims)

Conflicting Yucca claims nos. 1 and 2 (2 claims)

Conflicting portions of Bobcat claims nos. 1,3,5,7, and 9 (5 claims)

Conflicting portions of Hansum claims nos. 1 and 2 (2 claims)

If it should be necessary to exclude from the DMEA project the following conflicting claims, the project would not be materially affected:

(1) Portions of John claims nos. 7 and 9 in sec. 33, T. 14 N., R. 8 W., a total of about 18.7 acres.

(2) Portions of Bobcat claims nos. 1,3,5,7, and 9 and Hansum nos. 1 and 2 claims in sec. 3, T. 13 N., R. 8 W.

The applicant proposed to subordinate the three drilling areas separately so that a DMEA lien and contract on any one would be independent of the others, but Mr. Sorenson stated during the field examination that it would probably be satisfactory to the applicant to subordinate as one unit all the ground to be explored, if the Government requires it.

Although Mr. Sorenson stated that all parties concerned are agreeable to subordinating the property, it is possible that difficulties may arise. It is suggested that in this event, a performance bond or third party guarantee might be the solution.

PRESENT STATUS

Exploration and Development

Exploration on the proposed DMEA project areas to date has consisted of 3 holes in Area I of which one was reported to be slightly mineralized, 5 holes in Area II of which 1 was reported to contain anomalous radioactivity at two horizons in the Westwater sandstone, and 2 were not deep enough, and 2 holes in Area III both barren. There has been additional drilling in other parts of the San Mateo Project property the results of which were available to the examining team for study. The most productive drilling to date has been exploration in sec. 32 which has resulted in discovery of substantial quantities of ore grade uranium. This work is being continued.

Mining Equipment and Other Facilities

The applicant does not have any construction or mining equipment in the Grants area. All work done has been contracted. The current operation in sec. 32 is being carried on by the Scott Brothers Drilling Company, of Lubbock, Texas, using a Failing 1500 drill rig and a Failing 2500 drill rig. This equipment has been adequate.

GEOLOGY AND ORE DEPOSITS

Introduction

The San Mateo Dome Project is located in the Mt. Taylor mining district. The district lies in the folded and faulted area between the southern fringe of the San Juan basin to the north and the Zuni uplift to the south. Sedimentary formations exposed in the district consist of marine and terrestrial rocks ranging in age from Pennsylvanian to Late Cretaceous. The sediments dip gently northward into the San Juan basin. South and east of the San Mateo Dome project the sedimentary formations are covered by a Late Tertiary sequence of acidic volcanics and basic flows. Precambrian rocks are exposed in the Zuni uplift.

The properties of the San Mateo Dome project are centered on and around the San Mateo dome which lies about 9 miles east of the Ambrosia Lake dome. Large uranium deposits occur in a belt which extends between the southern edges of the two domes (fig. 2).

Stratigraphy

Sedimentary rocks along the south side of the San Juan basin range in age from Pennsylvanian to Late Cretaceous; however, only formations of Jurassic age or younger are presently of interest with respect to uranium deposits; a generalized description of these rocks is given in table 1.

Exploration on the San Mateo Dome would be aimed at finding uranium deposits in the Morrison formation. The Morrison formation in the area is composed of three members: from bottom to top these are, the Recapture, Westwater Canyon, and Brushy Basin members. The Recapture member consists of interbedded continental sandstone, siltstone and mudstone units. The sandstone strata are fine to medium-grained and locally contain granules and pebbles disseminated in a sand matrix or concentrated along laminations. The sandstone is generally friable and sedimentary structures are poorly displayed. The member is about 100 feet thick and contains alternate red-brown and light gray beds.

The Westwater Canyon member overlies the Recapture member and consists predominantly of medium- to coarse-grained fluvial sandstone, locally interbedded with gray, greenish gray and reddish brown mudstone. In places, the sandstone is friable and arkosic and ranges in color from yellowish gray to yellowish orange or brown. The thickness of the member varies from about 30 feet to as much as 200 feet. It interfingers with the overlying Brushy Basin and underlying Recapture members, consequently, the top and bottom contacts are indefinite. Large uranium deposits occur in the Westwater Canyon member.

Table 1.--Jurassic and Cretaceous formations in the vicinity of San Mateo dome. 1/

Age		Formation	Approximate Thickness	Description
		Menefee	500+ feet	Gray and dark gray carbonaceous shale with thin sandstone and coal beds.
Late Cretaceous	Mesa Verde group	Point Lookout	75-100'	Point Lookout sandstone member: Medium- to coarse-grained, thick-bedded, light-colored sandstone.
			0-75'	Satan shale member: gray marine shale. Absent in southern part of the area where the Point Lookout formation is not divided into members.
			75-150'	Hosta sandstone member: medium grained, cross-bedded, light-colored sandstone.
		Crevasse Canyon	250-350'	Gibson coal member: gray to black carbonaceous shale with thin sandstone beds. Thin, discontinuous coal beds in the middle part of the member.
			60-100'	Dalton sandstone member: white, massive, medium-grained sandstone, moderately cross-bedded.
			250-300'	Mulatto shale member: gray, marine shale with thin interbedded sandstone layers.

Mesa Verde group

1/ adapted from report by V. C. Kelley, 1956.

Table 1. (con't.)

Age		Formation	Approximate Thickness	Description
Late Cretaceous	Mesa Verde group	Crevasse Canyon	140-180'	Dilco coal member: thin-bedded shale, siltstone, and sandstone with local thin beds of coal and carbonaceous shale.
			65-150'	Gallup sandstone member: thick-bedded white to light gray, medium- to coarse-grained sandstone. Many cross-bedded layers.
		Mancos	885-1000'	Dark gray to black marine shale with thin, persistent sandstone layers. Local thin beds of siltstone and limestone. Fossiliferous.
		UNCONFORMITY		
Early Cretaceous		Dakota	75-160'	Cross-bedded, medium- to fine-grained quartzose sandstone in top part. Gray to black silty carbonaceous shale in lower part.
		UNCONFORMITY		
Late Jurassic		Morrison	100-160'	Brushy Basin member: gray, green, and reddish mudstone with minor lenses of sandstone and conglomerate. Interfingers with Westwater Canyon member.
			110-250'	Westwater Canyon member: medium to coarse-grained sandstone with minor intercalated mudstone layers. Locally arkosic or conglomeratic.

Table 1. (con't.)

Age	Formation	Approximate Thickness	Description
		150-175'	Recapture member: grayish green mudstone with minor lenses of sandstone. Interfingers with Westwater Canyon member.
	Bluff	200'	Massive, light-colored cross-bedded sandstone.
	Summerville	100'	Reddish brown, thinly-bedded siltstone.
	Todilto	20-50'	Dense, dark gray limestone. Thinly bedded, massive, or recrystallized.
	Entrada	?	Massive, light reddish brown, quartzose sandstone.

The Brushy Basin member is composed principally of mudstone and claystone containing various amounts of siltstone and sandstone. Impure bentonitic clay forms most of the Brushy Basin while lesser amounts of medium-grained sandstones occur as lenses and range in thickness from a few feet to as much as 90 feet. Crossbedding and scour and fill features indicate a fluvial origin. Carbonaceous debris and claystone lenses and pebbles are present locally in the sandstone beds. The Brushy Basin member ranges in thickness from 125 to 175 feet. The variation in thickness is partly the result of differential erosion prior to Dakota time.

In T. 13 N., R. 9 E., and R. 10 E., a sandstone unit of the Brushy Basin, commonly referred to as the "Poison Canyon" sandstone, contains ore deposits of commercial size and grade. This sandstone unit lies about 20 feet above the base of the Brushy Basin member and ranges from 30 to 90 feet in thickness. Drilling data indicate that the so-called "Poison Canyon" sandstone is a tongue of the underlying Westwater Canyon member and further north and northeast, it pinches out.

Structure

The San Mateo dome lies within an easterly trending belt of deformation along the southern edge of the San Juan Basin. Strata in the San Juan Basin to the north and the Zuni uplift to the southwest are relatively undeformed. To the east of the dome, strata dip rather steeply into the northerly trending Mt. Taylor (McCartys) syncline underlying the Mt. Taylor volcanics. The apex of the Ambrosia Lake dome is about 12 miles west of

the San Mateo dome.

The San Mateo dome is irregularly elliptical; the axis trends northeast and is convex to the southwest. The dome is strongly asymmetrical as the west flank dips one to three degrees westward while the east flank dips 15 to 30 degrees eastward. Closure on the dome is 150 to 200 feet and involves an area of about $6\frac{1}{2}$ square miles. The dominant structure of the area is not the dome itself, but a sharp, northerly-trending fold, the Fernandez monoclinal flexure, along the eastern side of the dome (fig. 2). The San Mateo dome can be regarded as a minor high area atop the Fernandez flexure. The Tinaja syncline, a shallow fold plunging gently northward, forms the western edge of the San Mateo dome.

The San Mateo dome area is highly faulted (figs. 2 and 4). Two major systems of normal faults are present, a system of northerly trending faults and a system of northeasterly trending faults. Northerly trending faults are characteristically shorter and of smaller throw; individual faults are mostly less than a mile long with a throw of approximately 50 feet or less. Northeasterly trending faults are commonly several miles long and have throws ranging up to 300 feet.

Two major northeasterly-trending faults, the Polvadera and the Tinaja, traverse the San Mateo dome area (fig. 4). The Polvadera fault is at least 6 miles long and trends northeasterly across the apex of the dome. The block on the southeast side of the Polvadera fault is downthrown 100 to 300 feet relative to the block on the northwest side. The Tinaja fault trends northeasterly across the northern part of the dome; it

is about $4\frac{1}{2}$ miles long and branches into 2 parts in the eastern third. Throw on the Tinaja fault ranges up to 400 feet with the north side downthrown.

Ore Deposits

Uranium deposits are known to occur in several formations in the district; production is from mines in the Dakota, Todilto and Morrison formations. The small scattered deposits in the Dakota formation are essentially insignificant and do not merit large-scale exploration programs.

Known ore deposits in the Todilto limestone contain up to 50,000 tons of ore averaging 0.35 percent U_3O_8. Mineralized rock consists of blebs and crystals of uranium minerals disseminated in the limestone and along joint surfaces and bedding planes. Common oxidized minerals are tuyamunite and carnotite, however less oxidized minerals are also present. In the vicinity of the ore deposits, the limestone appears to be more crystalline than away from the ore deposits, disseminated iron oxides seem to form small haloes around some ore bodies. Most commonly Todilto ore deposits occur as narrow, sinuous masses along the axial portions of minor folds that have a predominent northerly trend although locally the trend may be easterly. Ore bodies in the trend are often connected by a zone of slight alteration in the limestone. These altered zones do not materially increase the width of the drilling target but are of some help in following mineralized trends. No reliable set of guides

to the Todilto deposits are known. This lack of suitable guides to ore and the long sinuous nature of the deposits make it necessary to explore the Todilto by drilling relatively close-spaced holes on fence lines essentially normal to the long actual trend of inferred ore bodies. Considering the size, shape, and spatial distribution of these deposits, exploratory drilling is not economically feasible where the Todilto limestone is relatively deep. On the property of the San Mateo Dome Project, the Todilto probably lies at depths of 2,500 feet or more; a depth considered highly excessive.

Known uranium deposits in the Morrison formation occur in the main body of the Westwater Canyon member (Poison Canyon sandstone) which extends into the overlying Brushy Basin member. Large deposits are concentrated in a belt that extends southeastward from the Ambrosia Lake dome to the southern flank of the San Mateo dome and onto the southern part of the property held by the San Mateo Dome Project. This belt is at least 12 miles long; it is about 3 miles wide on the apex of the Ambrosia Lake dome and apparently narrows to the southeast; though the southeast end is only partly explored. Individual deposits within this belt contain from a few tons to several million tons of ore averaging 0.25 to 0.30 percent U_3O_8.

About 4 miles south of the main belt of ore deposits, there appears to be a parallel belt in which the deposits occur in a lense of Westwater Canyon sandstone which extends into the overlying Brushy Basin member. Locally this sandstone is called the Poison Canyon sandstone. The belt

of deposits in the Poison Canyon sandstone is about one mile wide; individual deposits within the belt seem to be smaller and more scattered than those in the main part of the Westwater Canyon member.

Mineralized rock in the Morrison formation consists mainly of sandstone impregnated with uranium and vanadium minerals. Individual ore bodies have an irregular, lenticular shape and are flat-lying. Ore deposits consist of a cluster of these lenticular bodies which commonly overlap and coalesce but may be separated by barren sandstone. Deposits range in thickness from less than a foot to 80 feet or more; they are as much as 2,000 feet wide and up to 5,000 feet long. Most commonly they are elongate parallel to the main belt of deposits. Because of their broad extent, deposits in the Westwater Canyon member make very good drilling targets.

Origin of the ore is not understood; no relationship between structure and ore deposits has been established, but the deposits seem related to certain sedimentary features in the host sandstone. The following features and habits are useful as exploration guides for ore deposits in the Westwater Canyon member in the Ambrosia Lake-San Mateo dome area: (1) deposits seem to favor the thicker parts of the Westwater Canyon where there are few mudstone layers, (2) in the vicinity of ore deposits the host sandstone is light-gray to yellowish gray rather than yellowish orange or reddish brown, (3) mudstone, associated with the host sandstone, is greenish to gray rather than reddish brown in the vicinity of ore deposits, (4) ore deposits occur in sandstone containing abundant carbonaceous material, asphaltite, and limonite or pyrite.

APPLICANT'S PROPOSED EXPLORATION

The applicant has proposed a two stage drilling program in three areas designated Areas I, II and III (fig. 2). Drill holes would be of sufficient depth to penetrate the upper 20 feet of the Recapture member of the Morrison formation. All drilling would be done by non-core methods except for the bottom 350 feet of three holes, the first one drilled in each area. All drill sites would be surveyed and collar elevations determined. A total of 34 holes with an estimated average depth of 2,018 feet is proposed for an estimated total of 68,600 feet of combined core and non-core drilling, distributed as follows:

Area I consists of 90 full and fractional mining claims, all contiguous, all in section 9 and 16, and the west half of sec. 15, T. 14 N., R. 8 W., NMPM, McKinley County, New Mexico. A total of 7 Stage I and 5 Stage II holes amounting to 23,900 feet is proposed for total drilling in Area I.

Area II consists of 91 full and fractional mining claims, all contiguous covering all of section 33, T. 14 N., R. 8 W., and nearly all of sections 3 and 4, T. 13 N., R. 8 W., NMPM, McKinley County, New Mexico. A total of 8 Stage I and 7 Stage II holes amounting to 28,600 feet is designated in Area II.

Area III consists of 74 full and fractional mining claims, all contiguous, covering all of sections 27 and 34, T. 14 N., R. 8 W., NMPM, McKinley County, New Mexico. A total of 5 Stage I holes and 3 Stage II holes amounting to 16,100 feet would be drilled in Area III.

The applicant uses a figure of 34 holes for the three areas but there are 35 holes shown on the 3 drilling maps submitted.

In Stage I the holes are planned on a staggered grid of 2,000 feet, covering areas where drilling depths average approximately 2,000 feet. A total of 20 holes is required as shown on the drill maps submitted. This stage of drilling is intended to gain information as to the favorability of the ground proposed. Holes in Stage I that appear to be in unfavorable locations, based on the results of preceding holes, would be saved and applied to more favorable locations as approved by the DMEA field team. Holes would be staggered as follows: (1) a 2,000-foot staggered grid as shown in figure 2, (2) to core through the Westwater in hole 1, area I, hole 1, area II, and hole 1, area III, (3) as drilling progresses and information is accumulated, some judgment would be exercised in determining the numbers and locations of the remaining holes. This decision would be made by the examining field team in conjunction with the applicant.

Stage II: drilling in Stage II is proposed to follow the pattern shown on figure 4, unless the data accumlated should show that the holes might be more advantageously used in a different pattern. However, it is understood that no holes would be drilled which would be construed as "blocking" ore, and a hole spacing greater than 200 feet would be used in offsetting ore or mineralized holes. A total of 15 holes is proposed.

Sludge samples would be taken from every ten feet of hole drilled and logged by a geologist through the Westwater horizon and other horizons that may be favorably mineralized. Samples of the sludge made at 10-foot intervals would be sacked and saved for possible future study. All holes would be probed and recorded. Gamma-ray, resistivity, and self-potential readings on geophysical strip logs would be provided. When coring, the geologist would check the cores for radioactivity and maintain a lithologic log as well. Any mineralized intervals would be marked for sampling and the core split, one half to be sent for a chemical assay and the other half would be reserved for Government use. All cores would be kept available for DMEA representatives in the field.

Examining Team Review of Applicant's Drilling Results

Area I

A detailed examination was made of the applicant's gamma-ray, resistivity and self-potential logs in comparison with the lithologic logs accompanying the applicant's proposal.

The majority of the lithologic logs do not compare very closely with the gamma-ray, resistivity and self-potential logs, especially in the most northerly area, area I. It is extremely difficult to obtain accurate and completely reliable information with rotary, non-core drilling methods from depths as great as 2,000 feet. The lithologic logs show comparatively definite Westwater Canyon sandstone between certain intervals; e.g., drill hole SM1-16, in which the electric logging equipment shows the same area to be largely mudstone and siltstone with only occasional beds of relatively

pure sandstone, rather than typical Westwater sandstone as shown by the lithologic log. Review of the electrical logs shows that area I contains much more silty and shaly material than is considered favorable for the occurrence of uranium deposits, if uranium favors a more pure, coarser-grained, thick sandstone, as is the case with the larger uranium deposits of the Grants area. Drill holes SM36-15, SM1-16, and SM1-9 all contain greater amounts of siltstone and mudstone throughout the Westwater Canyon interval than is considered favorable for occurrence of large uranium deposits. According to the electric logs, the mineralization in hole SM1-16 reported by the applicant as being in the Westwater appears to occur near the base or even in the underlying Recapture shale member of the Morrison formation.

It may be concluded that Area I is therefore essentially unfavorable and that the chances of finding ore bodies of significant size and grade are not good. Denial of exploration in Area I without prejudice is recommended.

Areas II and III

Exploration in Area II, the most southerly portion of the proposed areas included in the applicant's request, was only moderately successful. Two of the five holes drilled are believed to have stopped short of their goal, namely, complete penetration of the Westwater Canyon sandstone member of the Morrison formation. The applicant states that he intends to reopen the holes and deepen them.

Diamond drill hole SM8-33 showed anomalous radioactivity between 1,850 and 1,884 feet, but the lithologic logs indicate some faulting in

the area and the anomaly may not be in the Westwater sandstone. Two other holes, SM12-4 and SM15-3 did not show any radioactivity, but both the lithologic and electric logs show favorable thicknesses (175 feet--100 feet) of bleached Westwater sandstone, as do the holes in sec. 32, T. 14 N., R 8 W., where ore has been discovered.

The majority of the ore bodies in the Westwater Canyon sandstone member discovered in the Ambrosia Lake area have a very strong trend (fig. 2), S. 68° E. across sections 23, 24, and 25, T. 14 N., R. 10 W., NMPM, into sections 30, 29 and the northern part of section 32, T. 14 N., R. 9 W., NMPM. The trend of the ore bodies then swings more easterly, about S. 85° E. across sections 33, 34, 35, and the southern portion of section 36, T. 14 N., R. 9 W., NMPM.

Exploratory drilling in section 32, T. 14 N., R. 8 W., penetrated an ore body (fig. 2), that may well be a continuation of the trend of large Westwater sandstone ore bodies, and the proposed drilling in sections 27, 34, and 33, T. 14 N., R. 8 W., and in sections 3 and 4, T. 13 N., R. 8 W., should test for new ore bodies in a possible extension of the presently established trend.

It is concluded that the possibilities of finding ore deposits in Areas II and III of the applicant's proposal are very good, even though drilling will be deep, and it is therefore recommended that the exploration drilling as proposed by the applicant in these two areas be completed as outlined in the following section.

RECOMMENDED EXPLORATION

This revised program is essentially the one proposed by the applicant for Areas II and III. For purposes of administration these can be treated as one project area.

Stage I consists of 13 holes averaging 2,015 feet in depth in five north-south fences 2,000 feet apart with holes in each fence on approximately 2,000-foot centers on a staggered pattern (fig. 4, and table 2). Estimated requirement for non-core drilling is 25,500 feet and for core drilling in hole nos. DM1 and DM2, 700 feet.

Stage II consists of 10 holes averaging 2,050 feet deep at intermediate locations in the same fences as Stage I on approximately 1,000-foot centers, or equidistant between Stage I holes (fig. 4, table 2). The estimated requirement for Stage II is 20,500 feet of non-core drilling. Provision should be made in the contract for transfer of Stage II footage to Stage I in case this becomes necessary for completion of Stage I. The estimated drilling requirements are based on figures supplied by the applicant and shown in table 2. A map supplied by the applicant, Plate VI, gave drilling depths compiled by the applicant.

The use of a logging service to supply strip logs of gamma-ray, self-potential, and resistivity readings on all holes as proposed by the applicant is recommended. The information obtained is considered to be essential in identifying formations penetrated and placing contacts. The charge for logging the three items, 11.5 cents per foot, is reported by Mr. Sorenson to be only 1.5 cents per foot higher than for gamma-ray log alone.

Table 2.--Depth and location of recommended drill holes

Hole no. (DM prefix omitted)	Color elev. est. feet	Estimated Depth non-core feet	core feet	total feet	Coordinates on A.E.C. grid North ft.	East ft.
Stage I						
1	7,500	1,650	350	2,000	311,200	564,800
2	7,600	2,000		2,000	309,200	564,800
3	7,600	2,100		2,100	307,200	564,800
4	7,500	2,000		2,000	309,700	566,800
5	7,600	2,100		2,100	307,700	566,800
6	7,500	2,000		2,000	308,200	568,800
7	7,500	2,000		2,000	307,700	570,800
8	7,500	2,000		2,000	308,500	572,600
9	7,350	1,650	350	2,000	317,400	571,200
10	7,450	2,000		2,000	316,200	569,200
11	7,400	2,000		2,000	315,400	571,200
12	7,300	2,000		2,000	315,900	573,200
13	7,350	2,000		2,000	317,900	573,200
Total Stage I	13 holes	25,500	700	26,200		
Stage II						
14	7,600	2,000		2,000	312,200	564,800
15	7,400	2,000		2,000	310,200	564,800
16	7,500	2,100		2,100	308,200	564,800
17	7,500	2,000		2,000	308,700	566,800
18	7,500	2,100		2,100	306,700	566,800
19	7,500	2,100		2,100	309,200	568,800
20	7,500	2,100		2,100	307,200	568,800
21	7,500	2,000		2,000	317,200	569,200
22	7,400	2,100		2,100	314,900	574,200
23	7,300	2,000		2,000	316,900	574,200
Total Stage II	10 holes	20,500		20,500		
Project totals	23 holes	46,000	700	46,700		

Mr. Sorenson also says that enough work has now been done in the Grants area to permit accurate correlation of electrical logs and drill cores, and logging now gives worthwhile results.

The applicant's cost estimate is reasonable insofar as actual drilling items and supplementary services are concerned but the cost of chemical analyses and of supervision and consulting services to be furnished by the E. J. Longyear Company are excessive. The following cost estimate is therefore based on employment of a full time supervisor-geologist, and a surveyor and assistant part time.

Three bids were submitted of which 2 give unit prices for all items. The bid by Stewart Brothers and Parker Drilling Company quotes core drilling prices on an hourly basis and is not suitable. Following is a summary of the 2 other bids.

Bidder	PLUG DRILLING per foot Range feet 0-1500	feet 1500-2000	feet 2000-2200	CORE drilling per ft. 1600-2000	Estimated Cost of 2000-ft. hole non-core
Scott Brothers Drilling Co. 1/	$1.50	$2.25	$2.25	$13.00	$3375.00
Clyde L. Jones Drilling Co.	2.00	2.00		10.00	4000.00

1/ Standby time $15.00 per hour

Tractor-dozer (RD6) $15.00 per hour

Moving time in excess of 8 hours $15.00 per hour

Cost of lost circulation materials in excess of $100.00/hole to be charged.

Because of the small amount of coring specified, the bid by Scott Brothers Drilling Company gives the lowest cost per foot. Longyear reports that in drilling done to date the cost of materials to restore lost circulation above the $100.00 per hole furnished by the drilling contractor has averaged $.04 per foot drilled. No quotation was made in any bid received for core drilling at a depth of more than 2,000 feet. The price for core drilling in the range 1,600-2,000 feet is therefore used although some holes may bottom below 2,000 feet.

The following cost estimate is based on employment of two rigs 1 shift per day, or the equivalent, with the average drilling rate estimated at 275 feet per shift per rig. On this basis the total time required for the project is estimated at 4 months including preliminary work and evaluation between stages.

Cost Estimate

(1) Independent contracts

Bulldozing		
RD6 tractor-dozer or equivalent		
69 hours at $15.00/hr.		$ 1,035.00
Drilling		
non-core 0-1500 ft. range		
34,500 ft. at $1.50/ft.	$51,750.00	
1500-2200 foot range		
11,500 ft. at $2.25/ft.	25,875.00	
Core-1600-2000 ft. range		
700 ft. at $13.00/ft.	9,100.00	
Total 46,700 feet drilling		86,725.00
Logging		
Gamma-ray, self-potential and resistivity logs, recorded 46,700 ft. at $0.11½ per ft.		5,370.50

Standby time 1 hour per hole-23 hours at $15.00/hr.	$ 345.00	
Logging unit 1 hour per hole-23 hours at $10.00/hole	230.00	
Total independent contracts		$93,705.50

(2) Labor, Supervision and Technical Services

Labor -- none		
Supervision, 1 full time geologist-engineer, 4 months at $750/mo.	3,000.00	
Technical services-1 surveyor, part time, 1 mo. at $500/mo.	500.00	
1 surveyor's helper, part time, 1 mo. at $350/mo.	350.00	
Geologic consultant, part time, 1 week per month at $1,250/mo. 4 weeks	1,250.00	
Total supervision and technical services		$ 5,100.00

(3) Operating Materials and Supplies

70 core boxes for 700 ft. of core at $1.25 each	87.50	
Materials for recovering lost circulation estimated at $40/hole	920.00	
Survey, drafting and office supplies, 4 months at $25.00/mo.	100.00	
Gasoline and repairs for 2 jeeps or pickups for field use-4 mo. at $50/mo each 1 jeep or pickup for field	400.00	
Total operating supplies		$ 1,507.50

(4) Operating Equipment

Rental-trailer for field, 4 mos. at $50/mo.	200.00	
Depreciation-2 jeeps or pickups valued at $2,500 each, depreciated on 60 month basis 4 months at $41.67/ month each	333.36	
Total operating equipment		$ 533.36

(7) Miscellaneous

Accounting, 4 months at $50/mo.	$200.00	
Sampling and analyses, maximum of 50 samples analyzed chemically for U_3O_8 at $3.50 each	175.00	
Compensation ins. and payroll taxes at 7 percent of $5,100.00	357.00	
New Mexico school tax, 2 percent of $93,705.50	1,874.11	
Total miscellaneous		$ 2,606.11
Total for Project		$103,452.47

Summary of Costs

Item	Sub-total	Total
(1) Independent contracts		$93,705.50
(2) Labor, supervision and technical services	$5,100.00	5,100.00
(3) Operating materials and supplies		
Core boxes		87.50
Material for recovering lost circulation		920.00
Other	500.00	500.00
(4) Operating equipment	533.36	533.36
(7) Miscellaneous		
Sampling and analyses		175.00
Other	2,431.11	2,431.11
Total		$103,452.47
Sub-total (items (2) (3) (4) (7) less core boxes, materials for recovering lost circulation and chemical analyses)	$8,564.47	
Calculated overall cost of drilling	$\frac{\$103,452.47}{46,700 \text{ ft.}}$ -	$2.22 per foot
Calculated cost of items which go to make up "incidental allowance"	$\frac{\$8,564.47}{46,700 \text{ ft.}}$	$0.18 per foot

Summary of Costs Suggested for Contract Use

Stage I - 13 holes

Actual Cost Items

Independent contracts		
39 hours RD-6 tractor-dozer or equivalent at $15.00/hr.	$ 585.00	
19,500 feet non-core drilling, 0-1500 ft. range, at $1.50/ft.	29,250.00	
6,000 feet non-core drilling, 1500-2200 ft. range, at $2.25/ft.	13,500.00	
700 feet core drilling, 1600-2000 ft. range, at $13.00/ft.	9,100.00	
Standby time for drill rig-13 hours at $15.00/hour	195.00	
26,200 feet gamma-ray, self-potential and resistivity logging at $0.11½/ft.	3,013.00	
Standby time for logging rig-13 hours at $10.00/hr.	130.00	
Materials for recovering lost circulation estimated at $40.00 per hole, market price but not to exceed	520.00	
Total actual cost items, Stage I		$56,293.00

Fixed Cost Items

70 core boxes at $1.25 each	87.50	
30 chemical analyses for U_3O_8 at $3.50 each	105.00	
Incidental allowance for 26,200 feet of drilling at $0.18/ft.	4,716.00	
Total fixed cost items, Stage I		$ 4,908.50
Total Stage I		61,201.50

Stage II -- 10 holes

Actual Cost Items

Independent contracts		
30 hours RD-6 tractor-dozer or equivalent at $15.00/hr.	$ 450.00	

15,000 ft. non-core drilling, 0-1500 ft. range at $1.50/ft.	$22,500.00	
5,500 ft. non-core drilling, 1500-2200 ft. range at $2.25/ft.	12,375.00	
Standby time for drill rig-10 hours at $15.00/hr.	150.00	
20,500 ft. gamma-ray, self-potential and resistivity logging at $0.11½/ft.	2,357.50	
Standby time for logging rig at $10/hr.	100.00	
Materials for recovering lost circulation estimated at $40.00 per hole, market price but not to exceed	400.00	
Total actual cost items, Stage II		$38,332.50
Fixed Cost Items		
20 chemical analyses for U_3O_8 at $3.50 each	70.00	
Incidental allowance for 20,500 feet of drilling at $0.18/ft.	3,690.00	
Total fixed cost items, Stage II		3,760.00
Total Stage II		42,092.50
Total for Project		$103,294.00
Government participation at 75 percent		$ 77,470.50

CONCLUSIONS AND RECOMMENDATIONS

The examining team concludes that exploratory drilling in Area I has shown the lithology of the Westwater Canyon member to be unfavorable for the occurrence of large uranium deposits. Areas II and III however, are underlain by favorable Westwater Canyon sandstone and occur at the southeastern end of a belt of large uranium deposits. In Areas II and III there is a good possibility of finding up to 1,000,000 tons of ore containing 0.25 to 0.30 percent U_3O_8, lying at a depth of about 2,000 feet. The

possible size of deposits compensates for the relatively great depth of the ore-bearing Westwater Canyon sandstone.

The examining team recommends denial, without prejudice, of any DMEA assistance for exploration in Area I. In Areas II and III, an exploration program consisting of not more than 23 holes, totaling 46,700 feet of core and non-core drilling, is recommended for approval. The recommended program would cost an estimated $103,294.00, making the Government's share $77,470.50.

Specifications suggested by the applicant for taking and preserving drill cuttings as set forth under "Applicant's Proposed Exploration" would be satisfactory. Holes should be bottomed in not more than 20 feet of the Recapture member of the Morrison formation.

Prior Government approval should be required for any Stage II drilling.

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JANUARY 1958
DOCKET 4842

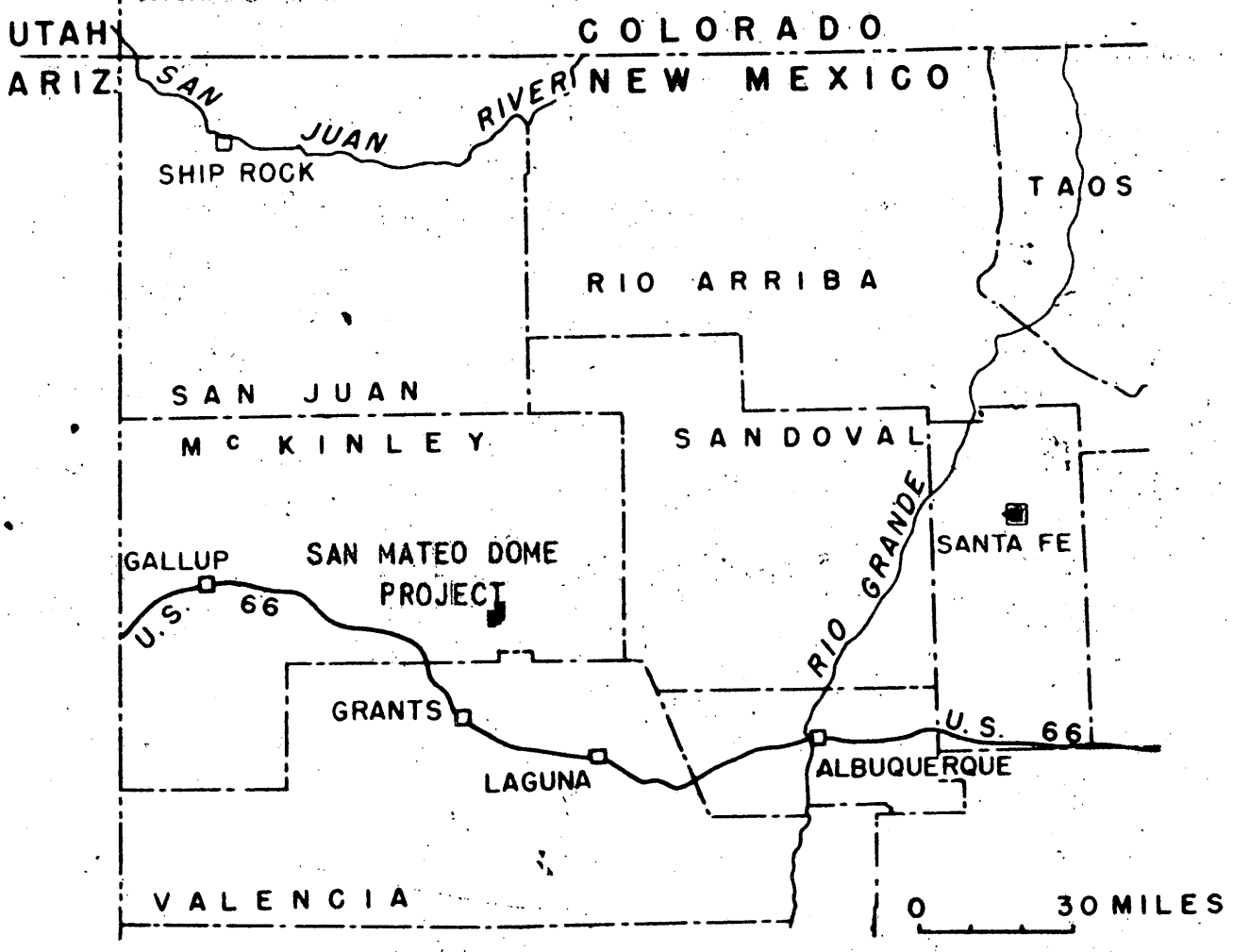


FIGURE 1.--LOCATION OF SAN MATEO DOME PROJECT, McKINLEY COUNTY, NEW MEXICO.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JANUARY 1958
DOCKET 4842

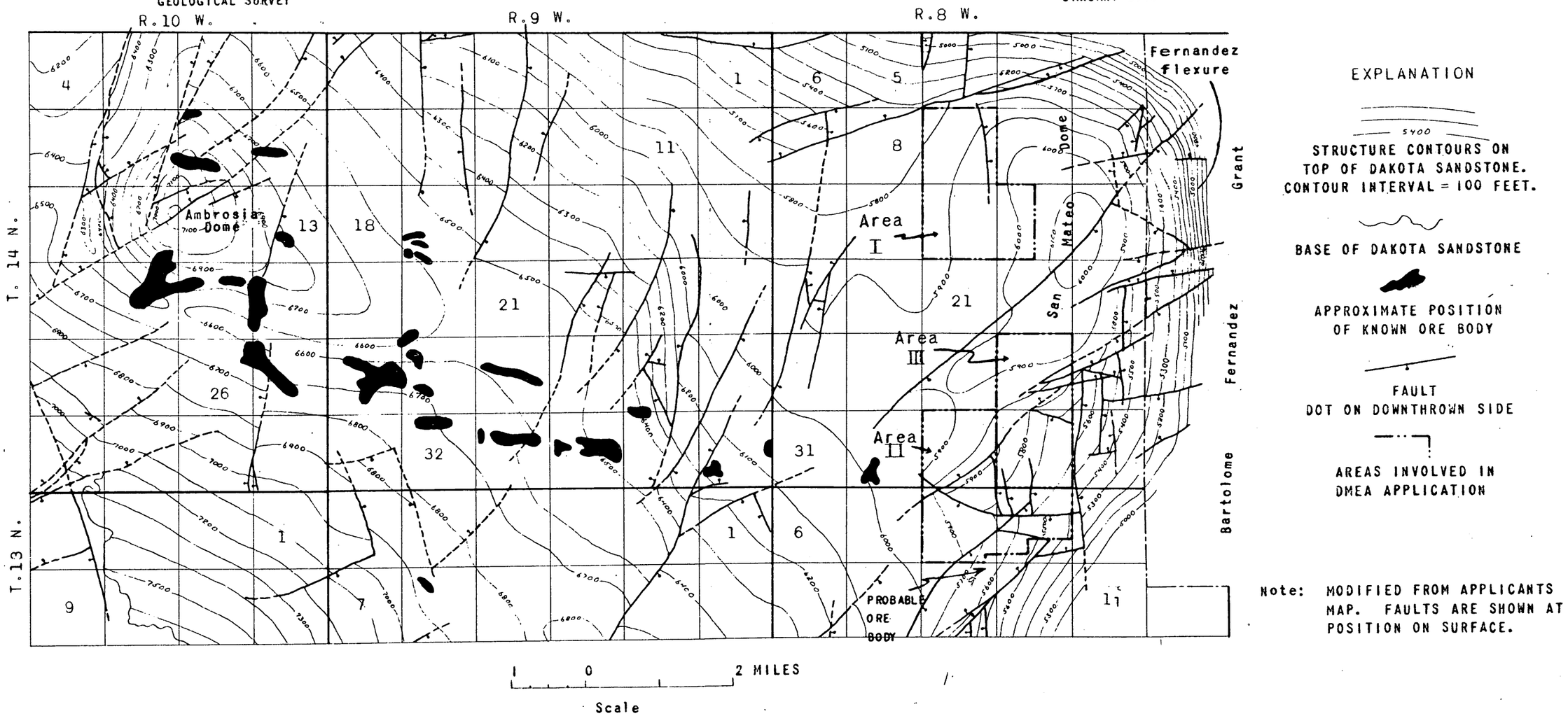


FIGURE 2.--STRUCTURE MAP OF THE AMBROSIA MINING DISTRICT SHOWING KNOWN ORE BODIES AND RELATION TO PARTS OF THE SAN MATEO DOME PROJECT PROPERTY, McKINLEY COUNTY, NEW MEXICO.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
10/30	Ching	700
"	[illegible]	700
11/1	[illegible]	130
"	[illegible]	110
		~~100~~
11/4	[illegible]	220
		700

NOV 1 1957

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

Re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Harshman:

Enclosed are two copies of a letter, dated October 28, 1957, to the Administrator, which explains the inconsistency pointed out in Item 4 of our letter to you of October 14. Our Legal Division is of the opinion that this explanation is sufficient for our purposes.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (SLB)

Enclosures

MChing/gla
10-30-57
cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
Mr. Ching

APPROVED:

P. F. Yopes (SLB)
Member, Bureau of Mines

Thor H. Kiilsgaard (SLB)
Member, Geological Survey

8623

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 30 1957

DATE	INITIALS	CODE
10/30	C	220
/11	Ching	700

LAW OFFICES
McAFEE, TAFT & CATES
FIRST NATIONAL BUILDING
OKLAHOMA CITY 2, OKLAHOMA

KENNETH E. McAFEE
RICHARD G. TAFT
OLIVER W. CATES

CASSIDY WRIGHT

October 28, 1957

Mr. C. O. Mittendorf, Administrator
United States Department of the Interior
Defense Materials Exploration
Administration
Washington, D. C.

Re: Docket No. DMEA--4842 (Uranium)
San Mateo Dome Project
McKinley County, New Mexico

Dear Sir:

Our client, Mineral Projects - Venture B, Ltd. has requested us to write you concerning the reason why its interest in the captioned mineral project was taken in the name of Mineral Projects, Inc. Mineral Projects - Venture B, Ltd. is a limited partnership formed under the Uniform Limited Partnership Act which has been adopted, with only minor modifications, by many of the states. Its sole general partner is Mineral Projects, Inc., a Delaware corporation.

As in many other ways, the laws of the various states differ considerably as to whether or not and in what manner a partnership can take and hold title to real property or interests therein. For instance, until recently, in Oklahoma a partnership would have to hold title to real property as "John Doe and Richard Roe D/B/A Doe-Roe Mineral Company". In the case of Mineral Projects - Venture B, Ltd. with more than 30 partners, this obviously would be highly impractical.

Because of such variations in local laws of real property, it was felt that the best procedure for handling the record

See our letter of Oct. 4 to Harchanan. This relates to and explains Item 4. Mr. Ruhen says this explanation is sufficient for our purposes.

Mr. Ching

title to properties acquired by the partnership would be to take the record title in the name of the corporate general partner. Beneficial or equitable title would always be in the partnership, of course; this the corporation would be obliged to acknowledge, and it could always be proved by showing the source of funds for acquisition and exploration of the property. The corporation would be qualified to do business in the particular state or states involved and the limited partnership also qualified by appropriate filings to protect its status as a limited partnership. Both the domestication of Mineral Projects, Inc. and the qualification of Mineral Projects - Venture B, Ltd. as a limited partnership have been accomplished in New Mexico.

Should you desire further information or have any further questions, we shall be happy for you to so advise us.

Yours very truly,

McAFEE, TAFT & CATES

Oliver W. Cates

Oliver W. Cates

OWC/bn

		CODE
11/12	C	220
"	Ching (absent)	700

224 New Customhouse
Denver 2, Colorado

November 7, 1957

Memorandum

To: J. W. Hasler, DMEA/DFC } W/enclosures
" "

From: DMEA Field Team, Region III

Subject: Docket No. DMEA-4842 (Uranium) San Mateo Dome Project (San Mateo Dome Project Properties) Mt. Taylor Mining District, McKinley County, New Mexico

Enclosed is a copy of a letter from the Chairman of the Operating Committee dated November 1, 1957. Also attached is a copy of a letter from the law firm of McAfee, Taft & Cates which explains the inconsistency pointed out in Item 4 of the Chairman's letter forwarded to you with our letter of October 17, 1957.

Will you please attach this correspondence to the copy of the application you now hold.

E. N. Harshman

E. N. Harshman
Acting Executive Officer

Enclosures

EMC:eh

cc: Sec. Op. Comm. (2)
Harshman W/enclosures
Docket
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 21 1957

DATE	INITIALS	CODE
10/21	JB	220
11	[illegible]	700

224 New Customhouse
Denver 2, Colorado

October 17, 1957

Memorandum

To: J. W. Hasler

From: DMEA Field Team, Region III

Subject: Docket DMEA 4842 (Uranium) San Mateo Dome Project (San Mateo Dome Project Properties) Mt. Taylor Mining District, McKinley County, New Mexico

Enclosed is the following material relating to the subject docket:

1. Copy of application for Government assistance in exploration work under the DMEA program.
2. Memorandum of Review by James Paone, USBM, dated October 7, 1957.
3. Memorandum of Review by W. P. Williams, USGS, dated October 8, 1957.
4. Letter of transmittal of the foregoing to this office, dated October 14, 1957, from the Chairman, Operating Committee, DMEA.
5. Routing Control Sheet.

A field examination of the property and a joint report of findings and recommendations pertaining to the Applicant's work proposal are requested.

Your specific attention is directed to the comments in the material under items 2, 3, and 4 in the matter.

The matter of the Power of Attorney mentioned under item 1 of the Chairman's letter will be handled by this office after resolution of certain matters involved.

Please contact this office at least a week in advance of scheduling the examination of the property so that an engineer can be assigned to collaborate with you in the examination.

If contact with the Applicant becomes necessary Mr. R. C. Gebhardt, E. J. Longyear Company, 416 Colorado Building, Denver, Colorado, has requested that contact be made with him. When an examination has been scheduled Mr. Gebhardt requests that he be advised three or four days in advance of the scheduled date so that we can alert Applicant's representatives on the property to assure that someone will be present at the time of the examination.

E. N. Harshman

E. N. Harshman
Acting Executive Officer

Enclosures

JWT:eh

cc: Ch. Op. Comm. (2)
DMEA/DFC) W/cy of enclosures, items 1-5 inclusive
Harshman) " " " " 2,3 & 4
Docket
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
10/11	Ching	700
10/11	[illegible]	700
10/11	Williams	130
10/11	Selfridge	130
"	Johnson	100
"	Mittendorf	100
10/14	C	200
		700
10/11	[illegible]	130

Mr. D. M. Davidson, Vice President
E. J. Longyear Company
416 Colorado Building
Denver, Colorado

OCT 14 1957

Re: Docket No. DMEA-4842 (Uranium)
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Davidson:

The application for assistance in exploring your property, under the captioned docket number, has been reviewed by the Division of Rare and Miscellaneous Metals of the Defense Minerals Exploration Administration. It has been referred to:

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

In the event a project is approved for the subject property, it will be necessary for you to furnish the required Consent to Lien and Subordination Agreement forms properly signed and dated, and the addresses of the interested parties shown. An early submission of these forms may save time.

The Regional Office will contact you in regard to your project if additional information is required.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

cc: E. J. Longyear Company, Minneapolis 2, Minnesota
Lisbon Uranium Corporation
Mineral Projects-Venture B. Ltd.
Admr.'s Reading File
DMEA Field Team, Reg. 3 (2)
Mr. Ching

MChing/izm 10-11-57

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
10/10	Ching	700
10/11	[illegible]	700
10/11	[illegible]	136
"	[illegible]	110
"	[illegible]	100
		220
		700
10/11	[illegible]	130

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

OCT 14 1957

Re: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company, agent
San Mateo Dome Project
McKinley County, New Mexico

Dear Mr. Harshman:

The subject application is being referred to you for investigation, a field examination if warranted, and recommendations.

Enclosed for your information are memoranda, dated October 7 and 8, 1957, by James Paone, USBM, and W. P. Williams, USGS, respectively, relating to the application. Also enclosed are two copies of the application for the use of the Field Team.

A representative of the Applicant, Phillip L. Merritt, called at the Washington Office on October 8, and was advised concerning the following points:

1. Since the project is to be carried out by the E. J. Longyear Company, that company should secure a comprehensive Power of Attorney to enable it to act as the Applicant and prospective Operator under the subject docket;

2. The Government does not favor separation of the three areas involved into three separate liens, with the lien on each area covering a specified amount for royalty purposes. (See page 4 of the application). We believe that all three areas may be covered by a single project and a single lien;

3. All owners and holders of liens and claims against the property should be prepared to execute Consent to Lien and Subordination Agreement forms; and

8623

4. There is an apparent inconsistency in the fact that the Assignment, dated April 1, 1957 (Appendix V), was from E. J. Longyear to Lisbon Uranium Corporation and Mineral Projects, Inc., whereas the Joint Venture for which Longyear is acting consists of Lisbon Uranium Corporation and Mineral Projects - Venture B, Ltd.

Mr. Merritt was not advised concerning another point which may possibly be clarified by the field examiners. The Applicant describes the three areas, I, II and III, as consisting of 90, 91, and 74 full and fractional claims, respectively, but does not list the claims. We are unable to reconcile these numbers with the claims shown in Exhibits K, L, and M, with the exception of Exhibit L.

You will note that some of the estimated costs are relatively high, particularly those for personal services. Since these costs are based upon a one-rig operation requiring 8 months, a substantial reduction would be possible through the use of several rigs. Electric logging services contemplated include self-potential and resistivity readings. The extent *which costs are increased on account of these readings and the value of such readings, as related to the exploration work, should be investigated.

Sincerely yours,

*to

George C. Selfridge

Chairman, Operating Committee (HB)

Enclosures

APPROVED:

P. F. Yopes (HB)

Member, Bureau of Mines

W. P. Williams (HB)

Member, Geological Survey

MChing/izm 10-10-57

cc: Mr. Ching
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

DMEA Form 7
(12-

OFFICIAL FILE COPY

Date	Surname	Code
10/11	Selfridge	120
		110
		100
		225

October 11, 1957

MEMORANDUM

To: Administrator

From: George C. Selfridge, Special Assistant

Subject: Docket No. DMEA-4842 (Uranium)
E. J. Longyear Company
San Mateo Dome Project
McKinley County, New Mexico

Dr. P. L. Merritt telephoned October 9, 1957, and asked the writer to inform Mr. Ching that the Longyear Company would sign any exploration contract, and that he had asked the officials of Venture B, Ltd., to write to Mr. Ching explaining the company's status. After discussing the matter with Mr. Ching the writer is not too sure that Dr. Merritt actually understood what was involved.

GCS/esf - 10/11/57
cc to: Admr. R. File
Mr. Selfridge

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

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 8 1957

DATE	INITIALS	CODE
10/8	B	220
"	[illegible]	700

October 8, 1957

Memorandum

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

From: W. P. Williams, U. S. Geological Survey

Subject: Review of application, DMEA 4842, San Mateo Dome Project, c/o Lisbon Uranium Corporation, Grants - Mt. Taylor mining district, McKinley County, New Mexico (uranium)

In a voluminous, but apparently complete, application the applicant proposes to explore for new uranium ore deposits. The property involved is a large tract of 255 unpatented mining claims. The claims are located to the east of the known producing areas of the Grants district.

The drilling the applicant proposes to do would be deep - at least 2,000 feet. Drilling to such depths would be costly, and the applicant estimates the cost of his proposed project at $203,233. Some of the applicant's estimated cost items appear to be excessive.

The applicant states he has collared 29 holes on the property. Of those holes, three were ore-bearing, three were mineralized, two gave a twice-background count, 17 were barren, three have not been completed, and one was abandoned. No ore has been mined from the property.

There may be an element of DMEA policy involved here - that being whether DMEA should participate in such deep drilling at this time. In any event I recommend that the application be referred to the Field Team for their appraisal of the favorability of the ground and the size and grade of ore bodies that might be expected.

If a contract is executed perhaps one contract, or at most two, could cover the lands involved.

W. P. Williams

W. P. Williams

OFFICIAL FILE COPY DMEA RECEIVED OCT 8 1957		
DATE	INITIALS	CODE
10/8	B	220
"	Chung	700

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

Date October 7, 1957

DMEA Docket No. 4842
DMEA Contract No.
Commodity Uranium
Name of applicant San Mateo Dome Project Properties
Name of property
Location of property McKinley County, N. Mex.
Estimated cost of project $203,232.80

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

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

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

1. Date of subject document: 10/4/57. 2. Date received by reviewer: 10/7/57

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

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

5. Information available on past production: Yes ☐ No ☐

6. Other pertinent factors known to reviewer: Yes ☐ No ☐

7. Explain items marked yes above:

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

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

10. Remarks: (Use back of page if necessary)

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

October 4, 1957

Messrs. A. P. Kibbe and Max C. Lewis
c/o Lisbon Uranium Corporation
310 First Security Bank Building
Salt Lake City, Utah

Subject: DMEA-4842

Gentlemen:

Your application for exploration assistance, dated August 26, 1957 submitted to our office at Washington, D. C. has been assigned Docket Number DMEA-4842 and referred to the Rare and Miscellaneous Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to:

Region III
E. J. Longyear Company

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

October 4, 1957

Messrs. Allan J. Grady and Raymond Hartz
c/o Mineral Projects-Venture B. Limited
55 Green Village Road, P. O. Box 390
Madison, New Jersey

Gentlemen:

Subject: DMEA-4842

Your application for exploration assistance, dated August 26, 1957 submitted to our office at Washington, D. C. has been assigned Docket Number DMEA-4842 and referred to the Rare and Miscellaneous Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to:

Region III
E. J. Longyear Company

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JANUARY 1958
DOCKET 4842

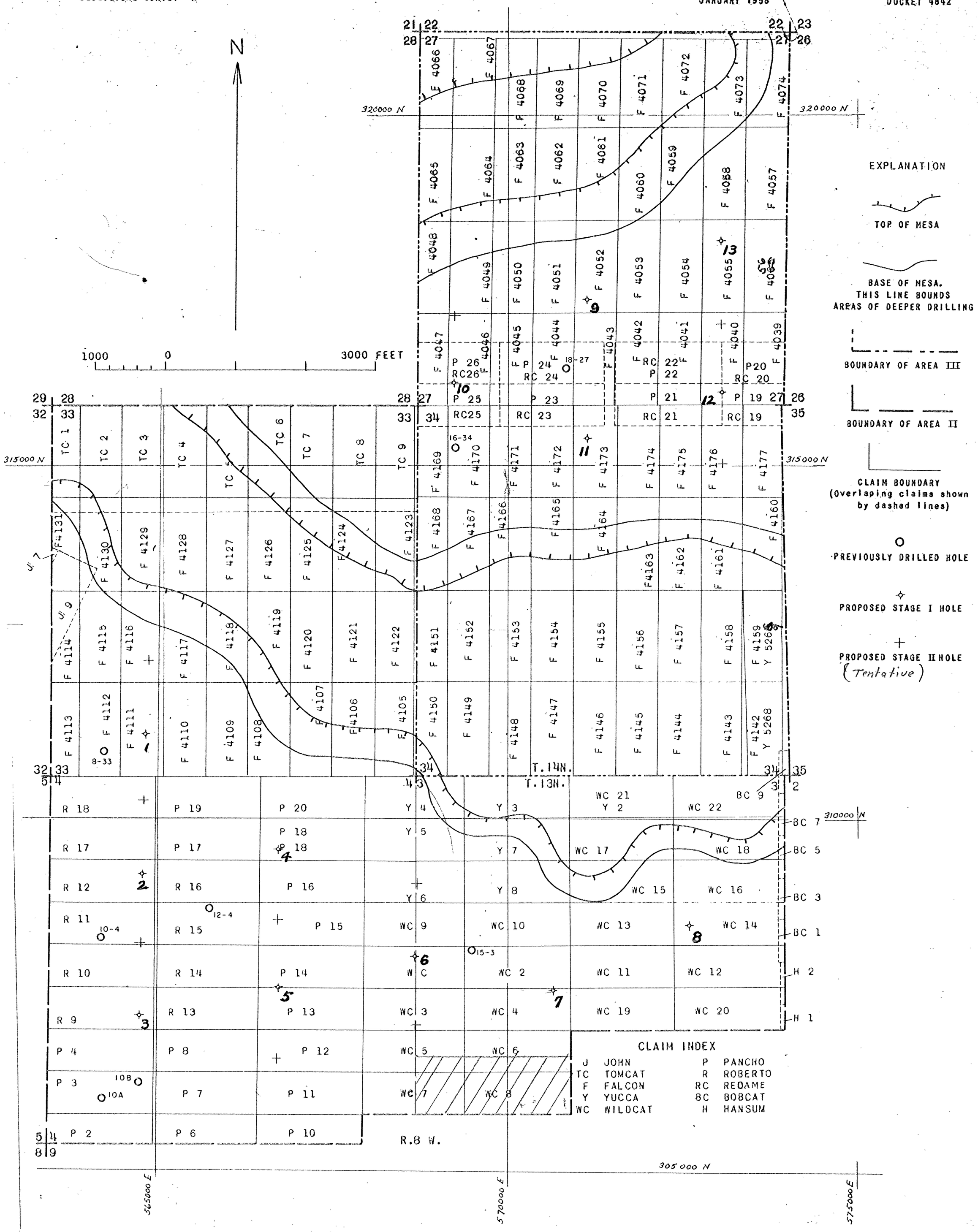
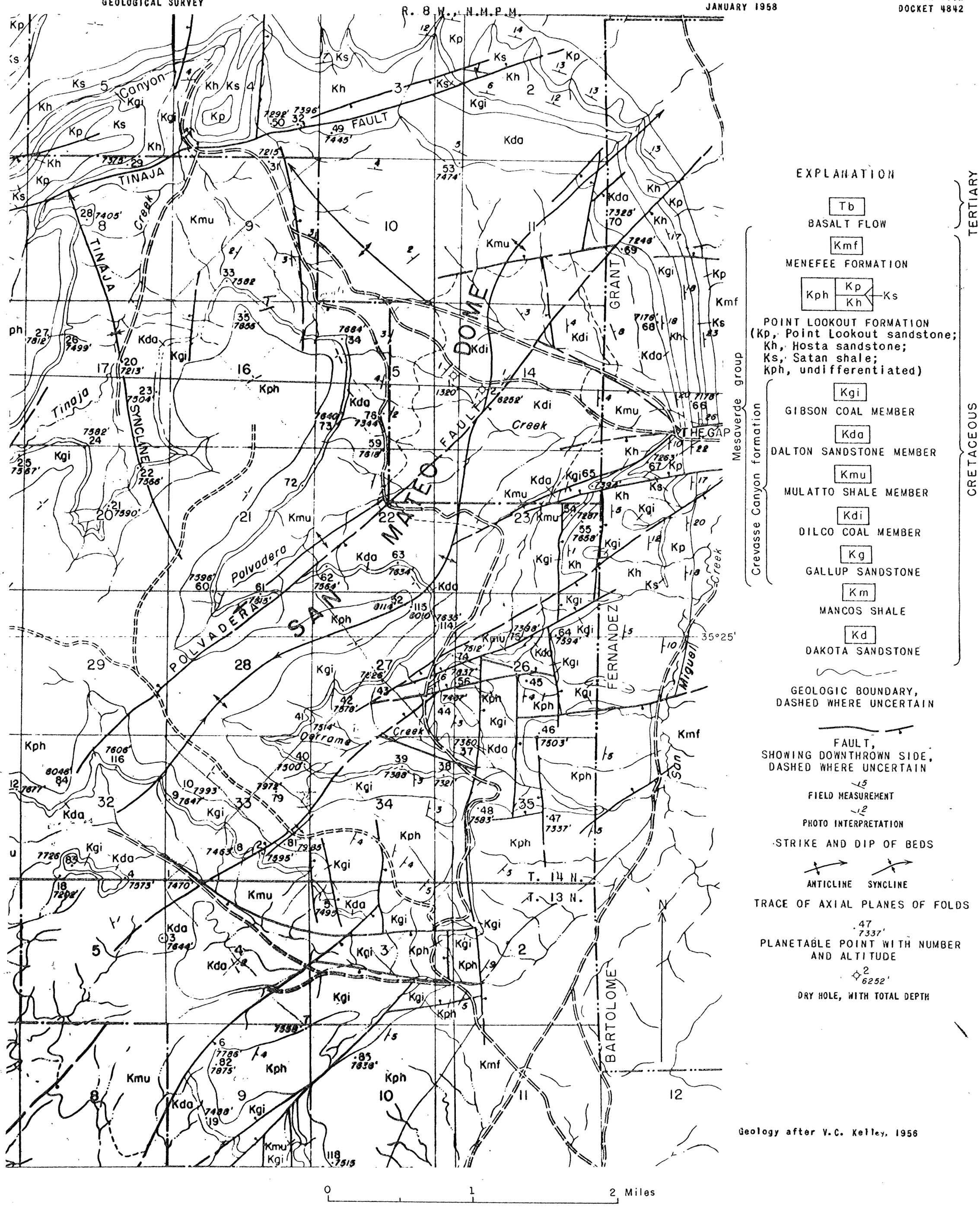


FIGURE 3.--CLAIMS AND PROPOSED DRILLING IN AREAS II AND III, SAN MATEO DOME PROJECT, McKINLEY COUNTY, NEW MEXICO.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JANUARY 1958
DOCKET 4842



Geology after V.C. Kelley, 1956

Figure 4.--GEOLOGIC MAP OF PART OF THE SAN MATEO DOME AREA, McKINLEY COUNTY, NEW MEXICO.

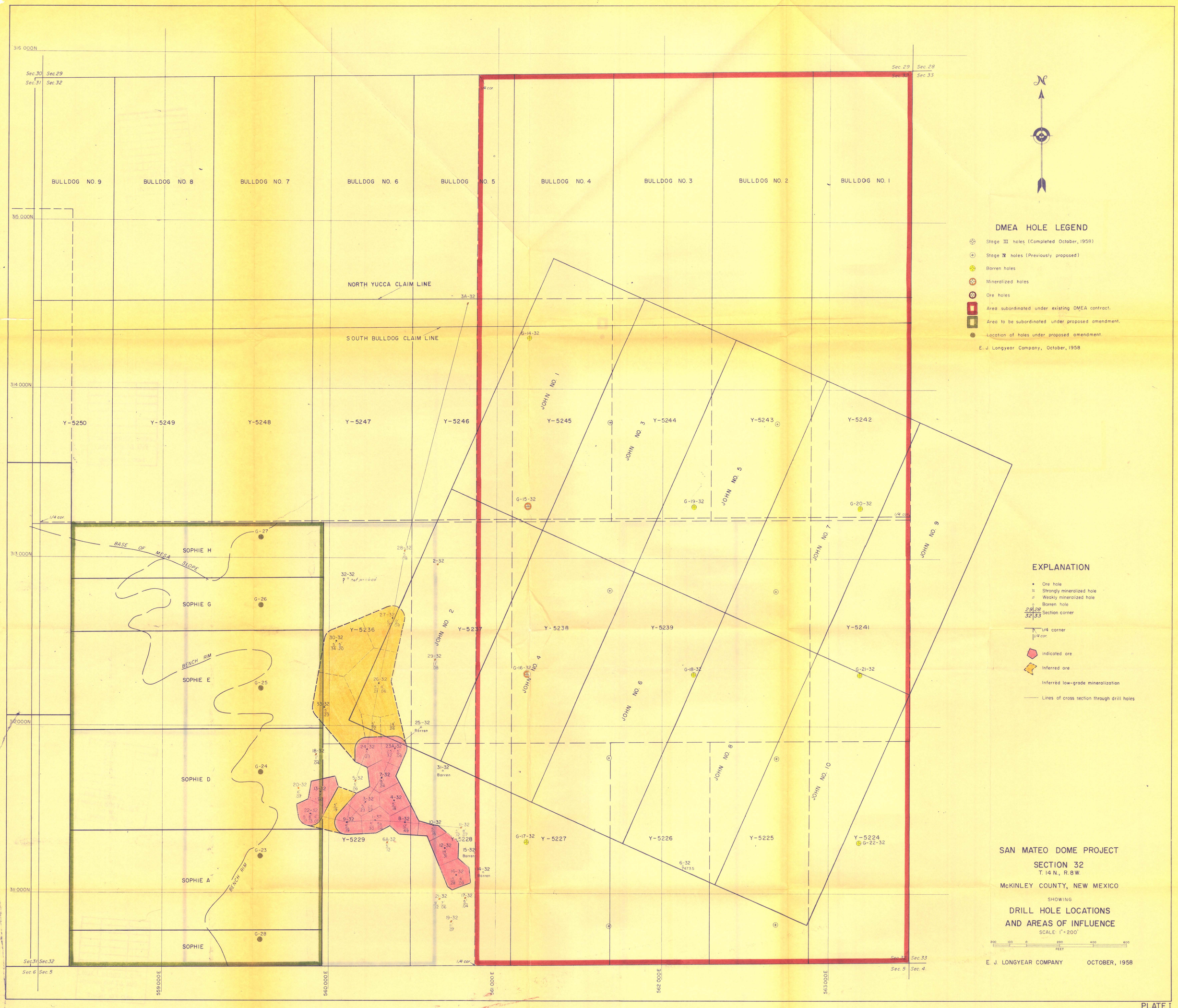

316 000N
315 000N
314 000N
313 000N
312 000N
311 000N
559 000E
560 000E
561 000E
562 000E
563 000E
Sec.30 Sec.29
Sec.31 Sec.32
Sec.29 Sec.28
Sec.32 Sec.33
Sec.31 Sec.32
Sec.6 Sec.5
Sec.5 Sec.4
1/4 cor.
BULLDOG NO. 9
BULLDOG NO. 8
BULLDOG NO. 7
BULLDOG NO. 6
BULLDOG NO. 5
BULLDOG NO. 4
BULLDOG NO. 3
BULLDOG NO. 2
BULLDOG NO. 1
NORTH YUCCA CLAIM LINE
SOUTH BULLDOG CLAIM LINE
Y-5250
Y-5249
Y-5248
Y-5247
Y-5246
Y-5245
Y-5244
Y-5243
Y-5242
JOHN NO. 1
JOHN NO. 2
JOHN NO. 3
JOHN NO. 4
JOHN NO. 5
JOHN NO. 6
JOHN NO. 7
JOHN NO. 8
JOHN NO. 9
JOHN NO. 10
BASE OF MESA SLOPE
BENCH RIM
SOPHIE H
SOPHIE G
SOPHIE E
SOPHIE D
SOPHIE A
SOPHIE
Y-5236
Y-5237
Y-5238
Y-5239
Y-5241
Y-5229
Y-5228
Y-5227
Y-5226
Y-5225
Y-5224
G-27
G-26
G-25
G-24
G-23
G-28
G-14-32
G-15-32
G-16-32
G-17-32
G-18-32
G-19-32
G-20-32
G-21-32
G-22-32
3A-32
32-32
? not probed
25-32
Barren
31-32
Barren
15-32
Barren
14-32
Barren
6-32
74735
DMEA HOLE LEGEND
Stage III holes (Completed October, 1958)
Stage IV holes (Previously proposed)
Barren holes
Mineralized holes
Ore holes
Area subordinated under existing DMEA contract.
Area to be subordinated under proposed amendment.
Location of holes under proposed amendment.
E. J. Longyear Company, October, 1958
EXPLANATION
Ore hole
Strongly mineralized hole
Weakly mineralized hole
Barren hole
29 28 / 32 33 Section corner
1/4 corner
Indicated ore
Inferred ore
Inferred low-grade mineralization
Lines of cross section through drill holes
SAN MATEO DOME PROJECT
SECTION 32
T. 14 N., R. 8 W.
McKINLEY COUNTY, NEW MEXICO
SHOWING
DRILL HOLE LOCATIONS
AND AREAS OF INFLUENCE
SCALE: 1" = 200'
200 100 0 200 400 600
FEET
E. J. LONGYEAR COMPANY
OCTOBER, 1958

PLATE I

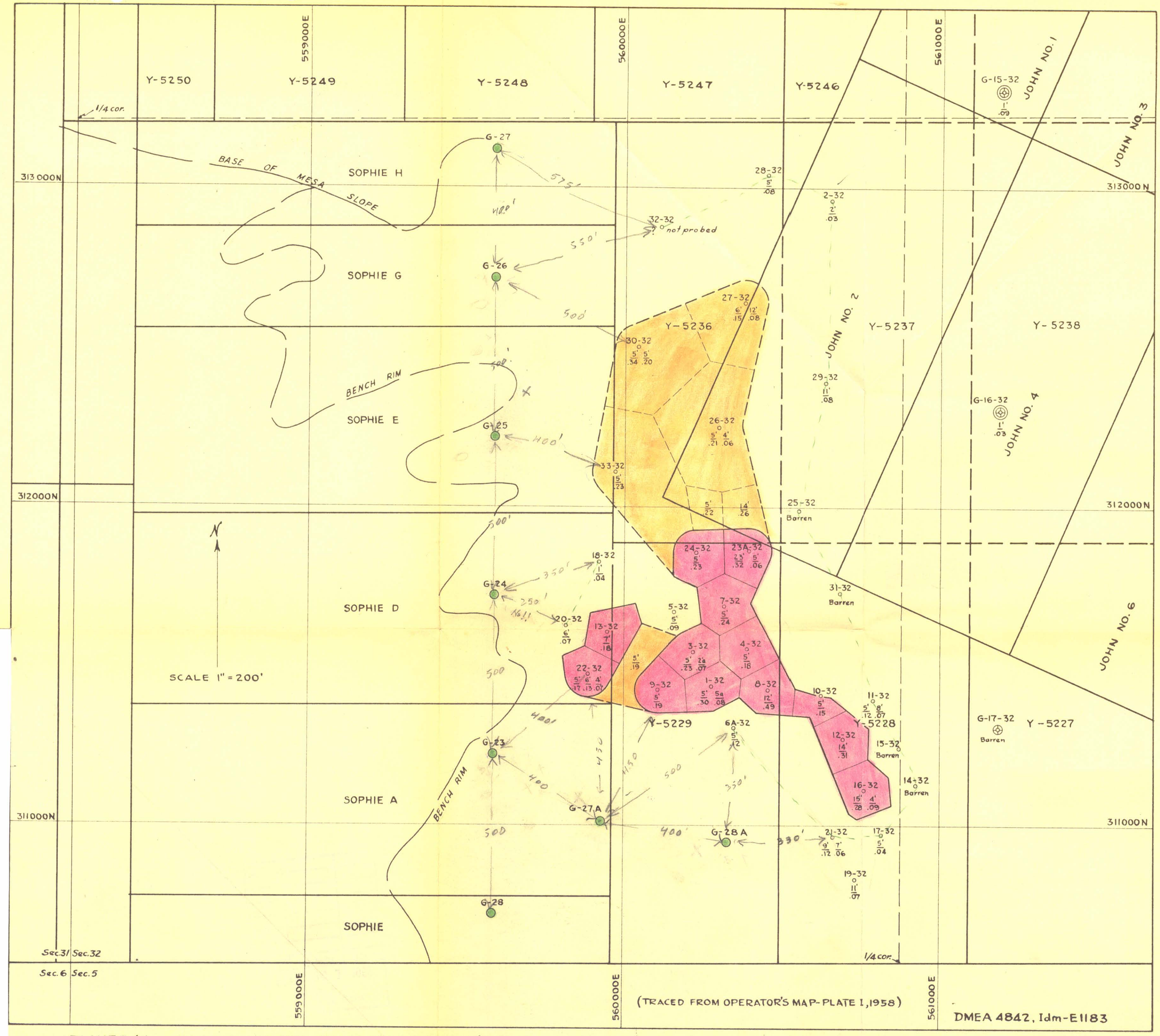
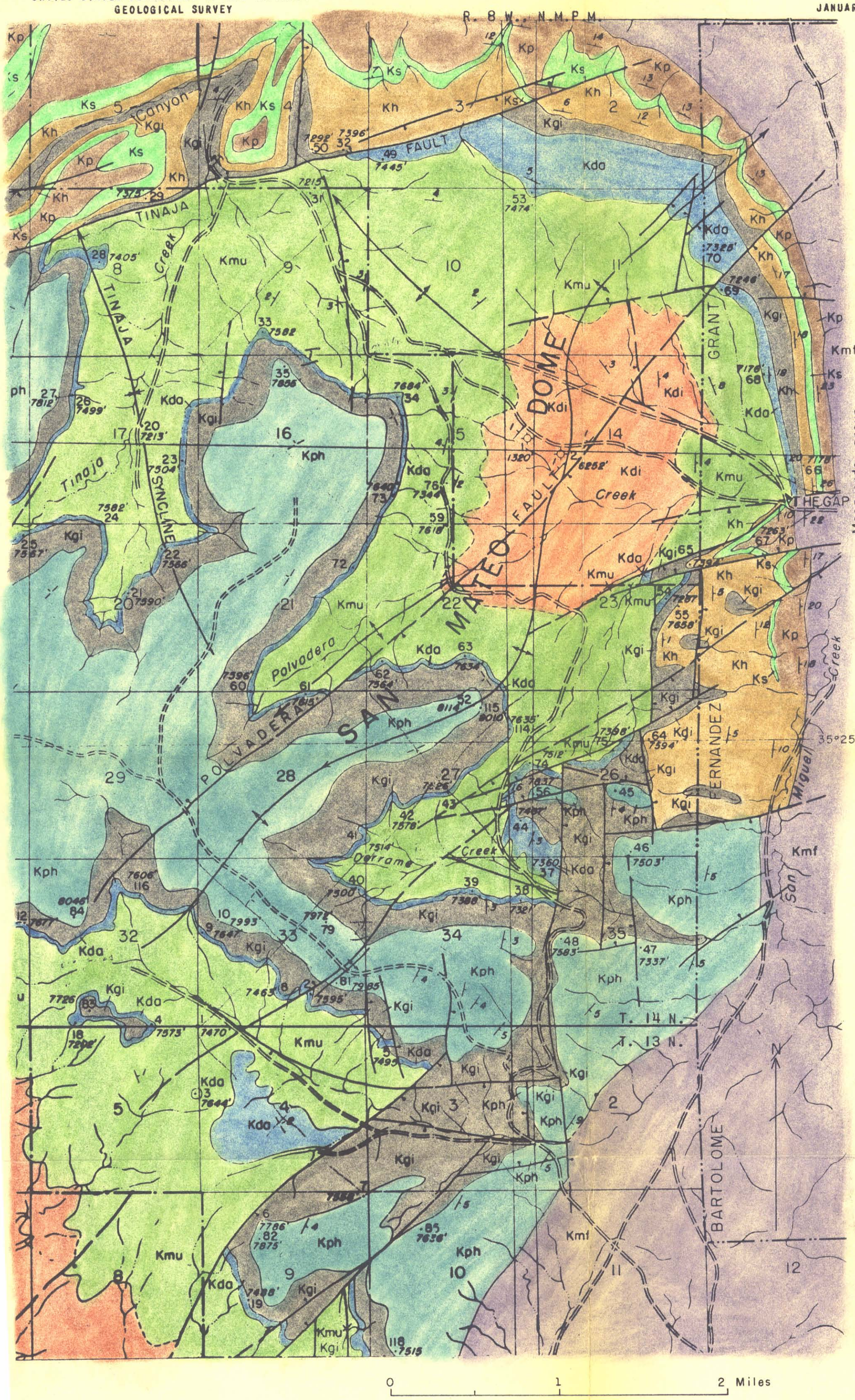


FIGURE 1A. - CLAIMS AND PROPOSED DRILLING, SW ¼ SECTION 32, T. 14 N., R. 8 W., E. J. LONGYEAR CO., SAN MATEO DOME PROJECT, McKINLEY COUNTY, NEW MEXICO.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JANUARY 1958
DOCKET 4842



EXPLANATION

TERTIARY

Tb
BASALT FLOW

CRETACEOUS

Kmf
MENEFEE FORMATION

Mesaverde group

Kph | Kp / Kh ← Ks
POINT LOOKOUT FORMATION
(Kp, Point Lookout sandstone;
Kh, Hosta sandstone;
Ks, Satan shale;
Kph, undifferentiated)

Crevasse Canyon formation

Kgi
GIBSON COAL MEMBER

Kda
DALTON SANDSTONE MEMBER

Kmu
MULATTO SHALE MEMBER

Kdi
DILCO COAL MEMBER

Kg
GALLUP SANDSTONE

Km
MANCOS SHALE

Kd
DAKOTA SANDSTONE

GEOLOGIC BOUNDARY,
DASHED WHERE UNCERTAIN

FAULT,
SHOWING DOWNTHROWN SIDE,
DASHED WHERE UNCERTAIN

5
FIELD MEASUREMENT

12
PHOTO INTERPRETATION

STRIKE AND DIP OF BEDS

ANTICLINE SYNCLINE

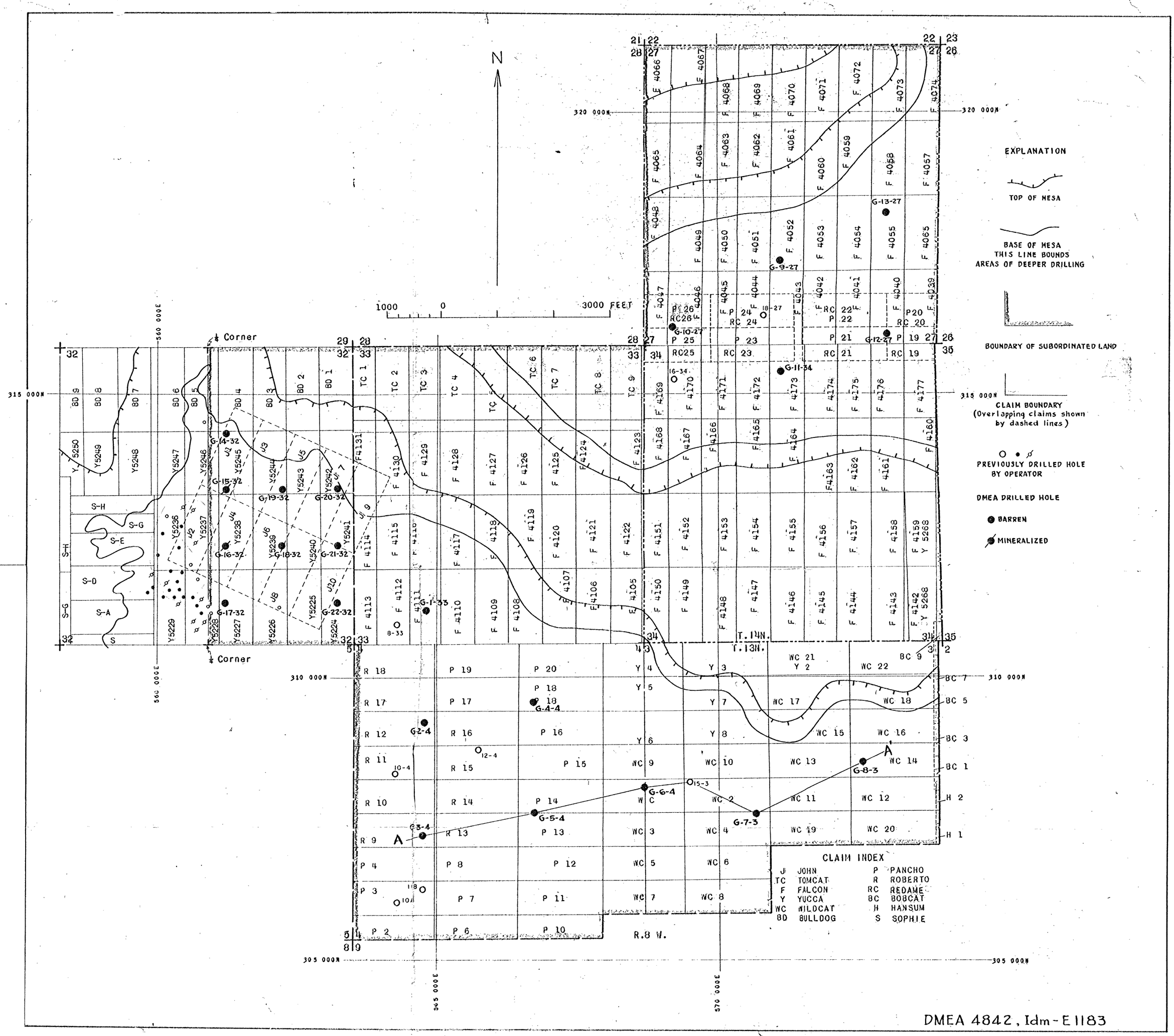
TRACE OF AXIAL PLANES OF FOLDS

.47
7337'
PLANETABLE POINT WITH NUMBER
AND ALTITUDE

2
6252'
DRY HOLE, WITH TOTAL DEPTH

Geology after V.C. Kelley, 1956

Figure 4.--GEOLOGIC MAP OF PART OF THE SAN MATEO DOME AREA, McKINLEY COUNTY, NEW MEXICO.



DMEA 4842, Idm-E1183

FIGURE 2.—CLAIMS, LOCATION OF PREVIOUSLY DRILLED HOLES, AND LOCATION OF DMEA DRILLED HOLES, E. J. LONGYEAR CO., SAN MATEO DOME PROJECT, McKINLEY COUNTY, NEW MEXICO.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
MAY 1958
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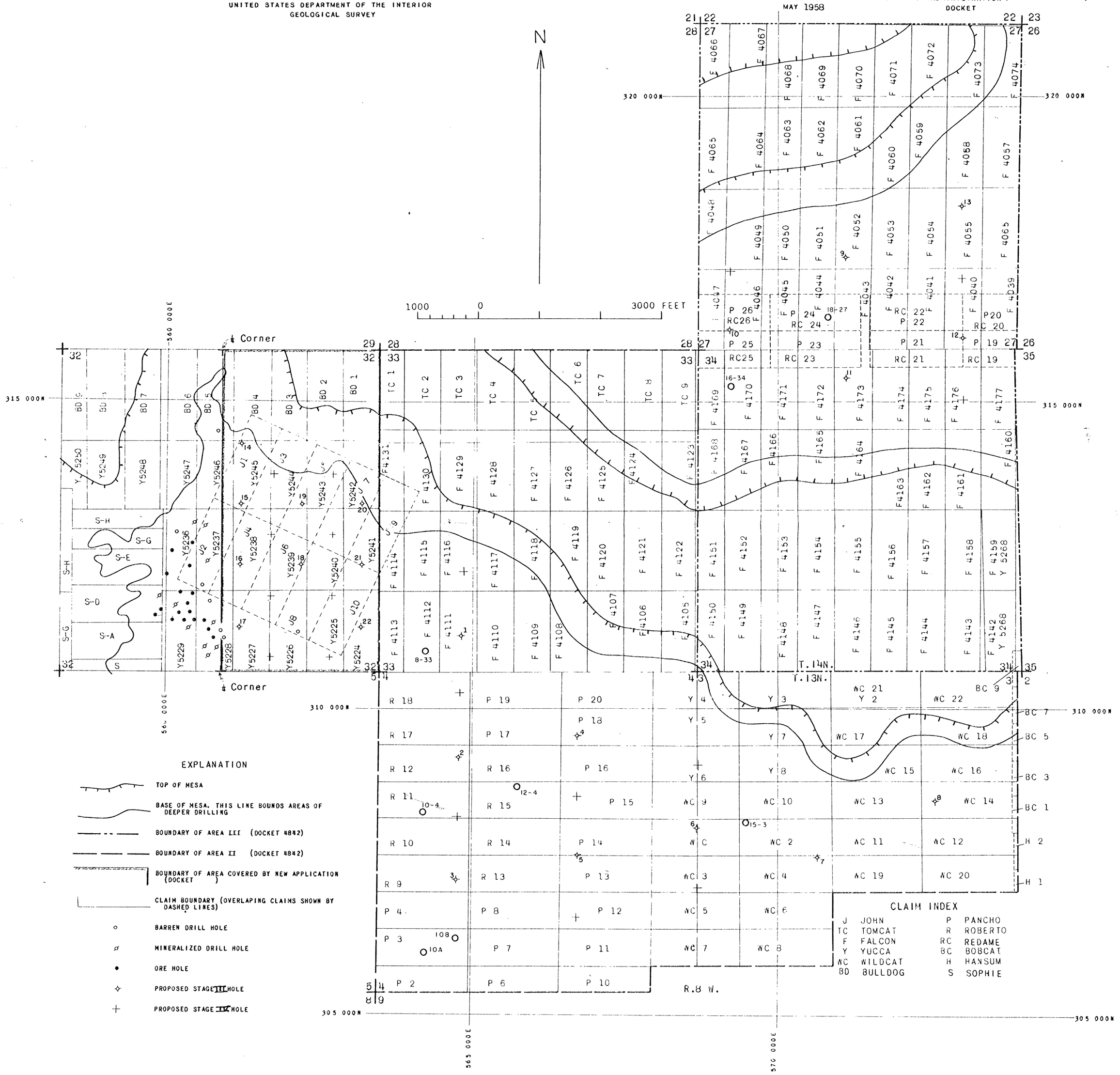

FIGURE 1.--CLAIMS AND PROPOSED DRILLING ON E½ SECTION 32, T.14 N., R.8 W., N.M.P.M., AND AREAS II AND III, SAN MATEO DOME PROJECT, McKINLEY COUNTY, NEW MEXICO.

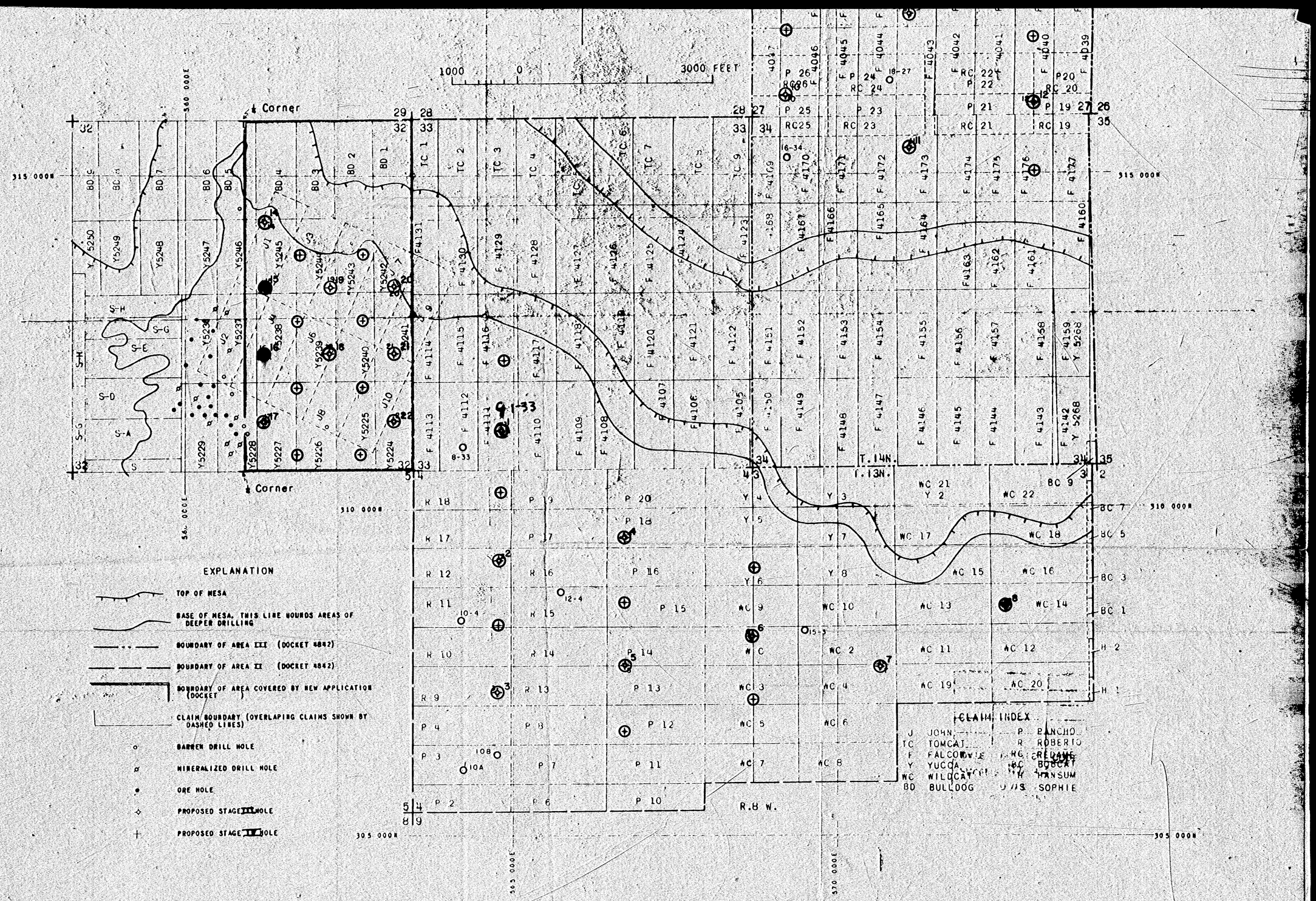

FIGURE 1.--CLAIMS AND PROPOSED DRILLING ON E½ SECTION 32, T.14 N., R.8 W., N.M.P.M., AND AREAS II AND III, SAN MATEO DOME PROJECT, MCKINLEY COUNTY, NEW MEXICO.

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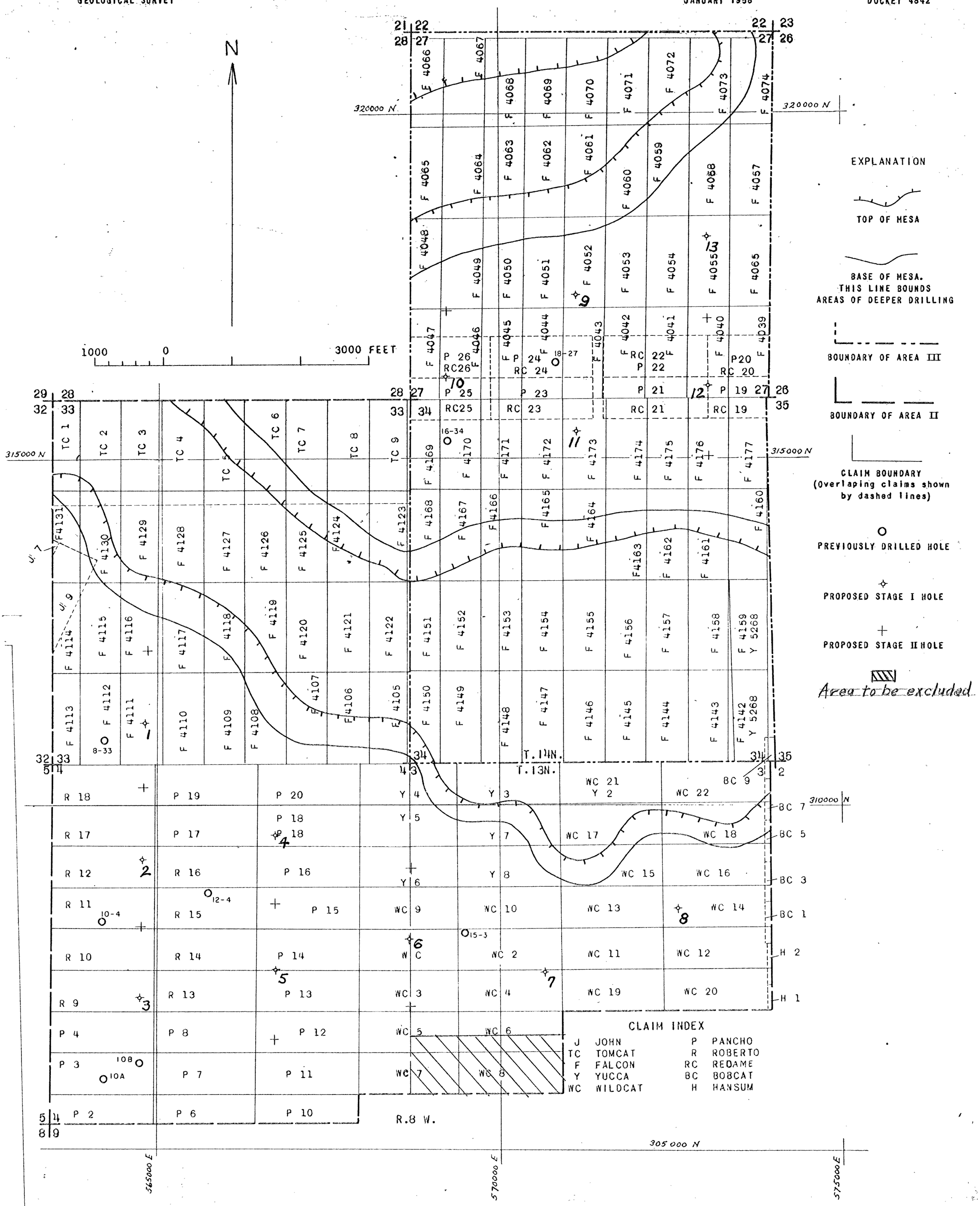

FIGURE 3.--CLAIMS AND PROPOSED DRILLING IN AREAS II AND III, SAN MATEO DOME PROJECT, McKINLEY COUNTY, NEW MEXICO.