Surname copy

Murphy 700

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

San Rafael Mining Company
c/o Atlantic Investment Company
620 North Tejon Street
Colorado Springs, Colorado

NOV 29 1955

Re: Docket No. DMEA-3761 (Uranium)
Thunderbird, et al., claims
Emery County, Utah

Gentlemen:

Reference is made to our letter dated October 28, 1955, in which we stated that the subject docket would be considered closed unless certain information required to process the captioned application had reached this office on or before November 28. No answer to our letter having been received, we therefore inform you that the subject docket is considered closed effective as of that date.

This is without prejudice to the merits of your proposed project. We regret the necessity of this action and express appreciation for your interest in the exploration program during the period your application has been under consideration.

Sincerely yours,

C. O. Mi[illegible]

Administrator

FMMurphy/gla
11-28-55
cc to: Admr.'s Reading File
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700)
Mr. Murphy)
DMEA Field Team, Region III (2)

Surname copy

Murphy
Ellis
RJ Johnson

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

OCT 28 1955

San Rafael Mining Company
c/o Atlantic Investment Company
600 North Tejon Street
Colorado Springs, Colorado

Re: Docket No. DMEA-3761 (Uranium)
Thunderbird, et al., claims
Emery County, Utah

Gentlemen:

Reference is made to a letter, dated July 29, 1955, by James C. Wiebelhaus of the law firm of Lewis, Cole and Wiebelhaus, which was response to our previous communications relating to your above-docketed application. Mr. Wiebelhaus stated that a portion of the information which we require to process this application had been assembled, and it was hoped that the balance could be obtained at an early date. Our response of August 5 advised you that we would keep the docket open a reasonable period of time to permit you to submit the information requested. Furthermore, we requested that you keep us advised in regard to the progress being made in this connection.

Inasmuch as we have received no reply, we assume that you no longer desire to proceed with the application. We wish to cooperate with you in the matter of allowing ample time, but if the needed data has not been received within thirty days from the date of this letter, we will then consider the docket closed.

Sincerely yours,

Ernest Wm. Kilby, Chief
Rare and Miscellaneous
Metals Division

FMMurphy/gla
10-27-55
cc to: Admr.'s Reading File
Docket
Messrs. JECrawford, Rm. 3641
TWKillingsward, Rm. 5224
JHSerted, Rm. 3210, GSA
Code 700
Mr. Murphy
DMEA Field Team, Region III (2)

R.C.S.

Surname Copy

Murphy
Ellis
Matheuson

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

AUG - 5 1955

San Rafael Mining Company
c/o Atlantis Investment Company
620 North Tejon Street
Colorado Springs, Colorado

Re: Docket No. DMEA-3761 (Uranium)
Thunderbird, et al., claims
Emery County, Utah

Gentlemen:

This is to acknowledge your letter, dated July 29, in response to ours of July 25, 1955.

We note that you have accumulated part of the additional information requested in our letter of April 13, and hope to obtain the rest at an early date.

We prefer not to hold an application in abeyance indefinitely. However, we shall comply with your request to keep the subject docket open for a reasonable period of time in order that you may submit the information requested.

Will you kindly keep us informed in regard to your progress in assembling this data.

Sincerely yours,

SIGNED

Ernest W. Ellis, Chief
Rare and Miscellaneous
Metals Division

FMMurphy:ai
8/4/55
cc to: Admr. Reading File
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5222
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Murphy
DMEA Field Team, Region III (2)

R.C.G.

f-3.v.v-
Pm.

LOVE, COLE AND WIEBOLDT
ATTORNEYS AT LAW
MINING EXCHANGE BUILDING
COLORADO SPRINGS, COLORADO

JOHN A. LOVE
PHILIP G. COLE
JAMES C. WIEBOLDT

July 29, 1955

RECEIVED
AUG - 3 1955

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

Attention: Mr. Ernest Wm. Ellis
Rare and Miscellaneous
Metal Division

Re: Docket No. DMEA-3761 (Uranium)
Thunderbird, et al. claims
Emery County, Utah

Dear Sir:

Regarding the above application, I am replying to your letters of April 13, June 15, and July 25 in behalf of the applicant, Atlantis Investment Company, 620 North Tejon Street, Colorado Springs, Colorado. Please note the change of address of the applicant which formerly was Mining Exchange Building, Colorado Springs.

I am sorry we have failed to acknowledge the letters earlier. We have, at this writing, gathered together a portion of the additional information which you requested, and I am hopeful that the balance will be forthcoming at an early date at which time we will forward all the additional information on to your office. It is very probable that we will not be able to accomplish this within the thirty-day period from July 25 which you mentioned in your most recent letter.

I will appreciate it if you find it possible to consider this matter pending even if we experience further delays. Be assured that the company is most interested in pursuing this application.

Very truly yours,

LOVE, COLE AND WIEBOLDT

JCW:ar

By James C. Wieboldt

700

Surname Murphy
Ellis
Mattendorf

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

JUL 25 1955

San Rafael Mining Company
c/o Atlantic Investment Company
Mining Exchange Building
Colorado Springs, Colorado

Address
620 North Tejon Street

Re: Docket No. DMEA-3761 (Uranium)
Thunderbird, et al., claims
Emery County, Utah

Gentlemen:

Your attention is directed to our letter dated April 13, 1955, requesting information required to process your above-docketed application, and our further letter of June 15.

Inasmuch as we have received no reply, we assume that you no longer desire to proceed with the application. We wish to cooperate with you in the matter of allowing ample time, but if the needed data has not been received within 30 days from the date of this letter, we will then consider the docket closed.

Sincerely yours,

SIGNED

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

FMMurphy:am
7-22-55
cc to: Admr. Reading File
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Killsgaard, Rm. 5222
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Murphy
DMEA Region III(2)

700

Surname copy

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

San Rafael Mining Company
c/o Atlantis Investment Company
Mining Exchange Building
Colorado Springs, Colorado

JUN 15 1955

Re: Docket No. DMEA-3761 (Uranium)
Thunderbird, et al., claims
Emery County, Utah

Gentlemen:

Reference is made to our letter, dated April 13, 1955, relating to the captioned docket.

Action on your application is pending receipt of the information requested in the above-mentioned letter. If you are no longer interested in the processing of this application, please advise us.

Sincerely yours,

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

FMMurphy/gla
6-14-55
cc to: Admr.'s Reading File
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Murphy
DMEA Field Team, Region III (2)

Surname copy

Wingley
Elly
Johnson

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

JUN 1 - 1955

Mr. Clyde H. Long
P. O. Box 1791
Colorado Springs, Colorado

Re: Docket No. DMEA-3761 (Uranium)
San Rafael Mining Company
Thunderbird, et al., claims
Emery County, Utah

Dear Mr. Long:

This is to acknowledge your notarized letter, dated June 13, 1955, in which you requested a photostatic or a witnessed copy of the partnership contract submitted with the above-docketed application.

The only legal instrument, other than copies of a lease, in the subject docket is a "Rider" signed by the partners comprising the San Rafael Mining Company. The original and a copy of this instrument were submitted. Therefore, we are returning the signed copy. I trust this is the document you are interested in.

For your information, this Agency, in a letter to the Company, dated April 13, requested additional geologic and other data with regard to the captioned application. To date we have not received an answer to this letter.

Sincerely yours,

C. D. Mittendorf (fw)

Administrator

Enclosure

FMMurphy/gla
6-14-55
cc to: Admr.'s Reading File
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Murphy
DMEA Field Team, Region III (2)

cse

No copy of any partnership agreement in Ivchet.

Correspondent names agents only on application. Did they get it?

Ellis

Does he mean a copy of the application? If so - do we have spare? - Big job to photostat? - 6 partners in this deal - they should have retained copies. Suggestions.

P. O. Box 1791
Colorado Springs, Colorado
June 10th, 1955

Personal Attention of:

RECEIVED
JUN 13 1955

Mr. C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration
Interior Building
Washington, 25, D. C.

Re: DMEA Loan Application Doc. #3761

Dear Sir:

This is a somewhat unusual request, so I am directing it to you personally.

I desire a photostatic copy or a witnessed copy of the partnership contract which I entered into and signed and which was submitted as a part of our DMEA loan application Doc. #3761.

I talked my problem over with Mr. R. D. Berkenkotter of your branch office in Denver, Colorado and he suggested I write you personally.

It probably seems strange that I do not have a signed copy of this contract myself, however, enough copies were not made to start with and I have been put off from week to week to week in being given one. Ordinarily I would not think too much of this; but recently the same problem has arisen with another very rich uranium property in which I am in partnership with the same men.

To explain my position further, I am the airborne and ground prospector for the partnership. I have done more than ninty percent of all the work, including claim staking and development. I made up our DMEA loan application almost entirely. This application contains the results of my prospecting work on the claims the loan covers. My views on them coincide with that of several uranium geologists and mining engineers. In other words I am no amateur and I'm the company in so far as the actual field work is concerned and my partners are the financiers.

The reason I have really become concerned as to this aforementioned contract is that this other uranium property near Hite, Utah (not involved in the loan application) in almost the same partnership setup has become intangled not only with two other companies; but two of my partners are attempting to cut me out of the deal entirely. Especially since some drilling has proven it to be possibly a multi-million dollar uranium ore bed. And since it looks as if we have almost a clear title, as already one of the opposing companies has thoroughly investigated and admitted our clear title. Altho I have been unable to obtain a written contract on this group of claims right along, as the partners constantly want to put it off. My partnership position is very firm because I am the finder, claim staker, and the only one in the company who has done any work on them. For that matter the only one in the company who has even set foot on them and they are located in my name.....However, the fact remains, and I can easily prove it, that two of the partners have tried and are still quietly trying to cut my percentage in this rich ore find down to nothing. Frankly, I'm going to fight them right down the line and win.

Perhaps you can now see why I would like a photostatic copy of the partnership contract on the claims mentioned in our DMEA loan application. These claims have an excellant chance of developing into a rich mine in my opinion and I have spent several months on the ground studying them.

However, instead of waiting until they are developed into a mine, I'd like to pin my interest in them down so I can stop worrying about them.

I am not attempting to stir up any trouble concerning the loan application and I would certainly like to see it approved. As the majority of my partners are a good bunch of guys; but I would like to see things kept on a much more business like basis.

Should you desire further identification other than my notorized signature which you can compare with my signature on the partnership contract, I'd be glad to furnish it.

If you can help me with my contract copy problem, I will surely appreciate it. Thanking you, I remain,

very truly yours,

Clyde H. Long

Clyde H. Long

RECEIVED
JUN 13 1955

Subscribed and sworn to before me, this 11th day of June A.D. 1955

My Commission Expires Oct. 16, 1957

Frank Collen
Notary Public

4/19/55 gla

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

April 18, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 3761, San Rafael Mining Company,
Reds Canyon area, Emery County, Utah

I have reviewed the attached application of the San Rafael Mining Company, DMEA Docket 3761, and have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We suggest that the application be referred to the Field Team for examination and report, and that the Field Team be requested to discuss the application with Ernest Gordon, Atomic Energy Commission, Grand Junction, Colorado.

John E. Crawford
John E. Crawford

Attachment

Copy to: Division of Minerals
Branch of Rare & Precious Metals
J. O. Hosted (2)
J. E. Crawford (2)

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

April 18, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 3761, San Rafael Mining Company,
Reds Canyon area, Emery County, Utah

I have reviewed the attached application of the San Rafael Mining Company, DMEA Docket 3761, and have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We suggest that the application be referred to the Field Team for examination and report, and that the Field Team be requested to discuss the application with Ernest Gordon, Atomic Energy Commission, Grand Junction, Colorado.

John E. Crawford

Attachment

Copy to: Division of Minerals
Branch of Rare & Precious Metals
J. O. Hosted (2)
J. E. Crawford (2)

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

April 18, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 3761, San Rafael Mining Company,
Reds Canyon area, Emery County, Utah

I have reviewed the attached application of the San Rafael Mining Company, DMEA Docket 3761, and have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We suggest that the application be referred to the Field Team for examination and report, and that the Field Team be requested to discuss the application with Ernest Gordon, Atomic Energy Commission, Grand Junction, Colorado.

John E. Crawford

Attachment

Copy to: Division of Minerals
Branch of Rare & Precious Metals
J. O. Hosted (2)
J. E. Crawford (2)

Have U.S.B.M. Rec. Field Referral 4/18
U.S.G.S, dated 4/15 [illegible] 5/0?

Hold till applic answers our letter, dated April 13, then refer to field.

4/19/55 glm

IN REPLY REFER TO:

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
APR 19 1955

April 15, 1955

Re: DMEA-3761
San Rafael Mining Co.
(Gray Fox Claims)
Emery County, Utah
$16,948.14 - Uranium

Memorandum

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

From: E. L. Newcomb, U. S. Geological Survey

Subject: Review of application

The applicant has requested assistance to explore 11 claims in Section 19, T. 23 S., R. 10 E., for possible uranium deposits near the base of the Shinarump formation.

The proposed exploration would consist of 500 feet of drifting, 2,000 feet of rim stripping, and 30 to 160 wagon drill holes to an average depth of 200 feet.

Although high grade assays are mentioned by the operator, the locations and widths are not given. There is not a complete map attached to the application.

Both the Survey and the A.E.C. have been working in the San Rafael Swell area. The results of their work is not available to us, but could be obtained from their Grand Junction offices.

I do not believe a field referral is justified on the basis of the present application material. A request should be made for a geologic map, sections, radiometric survey map, location of samples, assay certificates, and location of holes and/or results from holes on or near the applicant's claims.

E. L. Newcomb

E. L. Newcomb

IN REPLY REFER TO:

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 19 1955

April 15, 1955

Re: DMEA-3761
San Rafael Mining Co.
(Gray Fox Claims)
Emery County, Utah
$16,948.14 - Uranium

Memorandum

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

From: E. L. Newcomb, U. S. Geological Survey

Subject: Review of application

The applicant has requested assistance to explore 11 claims in Section 19, T. 23 S., R. 10 E., for possible uranium deposits near the base of the Shinarump formation.

The proposed exploration would consist of 500 feet of drifting, 2,000 feet of rim stripping, and 30 to 160 wagon drill holes to an average depth of 200 feet.

Although high grade assays are mentioned by the operator, the locations and widths are not given. There is not a complete map attached to the application.

Both the Survey and the A.E.C. have been working in the San Rafael Swell area. The results of their work is not available to us, but could be obtained from their Grand Junction offices.

I do not believe a field referral is justified on the basis of the present application material. A request should be made for a geologic map, sections, radiometric survey map, location of samples, assay certificates, and location of holes and/or results from holes on or near the applicant's claims.

E. L. Newcomb

ELNewcomb:hlm
G-4/15/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641 Interior
J. O. Hosted, 3210 GSA

IN REPLY REFER TO:

Defense Minerals Administration
RECEIVED
APR 19 1955

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

April 15, 1955

Re: DMEA-3761
San Rafael Mining Co.
(Gray Fox Claims)
Emery County, Utah
$10,948.14 - Uranium

Memorandum

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

From: E. L. Newcomb, U. S. Geological Survey

Subject: Review of application

The applicant has requested assistance to explore 11 claims in Section 19, T. 23 S., R. 10 E., for possible uranium deposits near the base of the Shinarump formation.

The proposed exploration would consist of 500 feet of drifting, 2,000 feet of rim stripping, and 30 to 160 vugem drill holes to an average depth of 200 feet.

Although high grade assays are mentioned by the operator, the locations and widths are not given. There is not a complete map attached to the application.

Both the Survey and the A.E.C. have been working in the San Rafael Swell area. The results of their work is not available to us, but could be obtained from their Grand Junction offices.

I do not believe a field referral is justified on the basis of the present application material. A request should be made for a geologic map, sections, radiometric survey map, location of samples, assay certification, and location of holes and/or results from holes on or near the applicant's claims.

E. L. Newcomb

ELNewcomb:hlm
G-4/15/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641 Interior
J. O. Hosted, 3210 GSA

IN REPLY REFER TO:

Defense Minerals Exploration Adm.
RECEIVED
APR 19 1955

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

April 15, 1955

Re: DMEA-3761
San Rafael Mining Co.
(Gray Fox Claims)
Emery County, Utah
§16,948.14 - Uranium

Memorandum

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

From: E. L. Newcomb, U. S. Geological Survey

Subject: Review of application

The applicant has requested assistance to explore 11 claims in Section 19, T. 23 S., R. 10 E., for possible uranium deposits near the base of the Shinarump formation.

The proposed exploration would consist of 500 feet of drifting, 2,000 feet of rim stripping, and 30 to 160 wagon drill holes to an average depth of 200 feet.

Although high grade assays are mentioned by the operator, the locations and widths are not given. There is not a complete map attached to the application.

Both the Survey and the A.E.C. have been working in the San Rafael Swell area. The results of their work is not available to us, but could be obtained from their Grand Junction offices.

I do not believe a field referral is justified on the basis of the present application material. A request should be made for a geologic map, sections, radiometric survey map, location of samples, assay certificates, and location of holes and/or results from holes on or near the applicant's claims.

E. L. Newcomb

ELNewcomb:hlm
G-4/15/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641 Interior
J. O. Hosted, 3210 GSA

Surname 700

Murphy
Ellis
Matheuz

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

San Rafael Mining Company
c/o Atlantis Investment Company
Mining Exchange Building
Colorado Springs, Colorado

APR 13 1955

Re: Docket No. DMEA-3761 (Uranium)
Thunderbird et al., claims
Emery County, Utah

Gentlemen:

The above-docketed application for Federal assistance in an exploration project has been reviewed by this Division. However, we will require the following additional data in order to judge the merits of the requested program:

1) Maps or sketches showing:

a) Names and locations of all the claims.

b) Topographic or other data showing elevations of surface where work is proposed.

c) Contact lines of the exposed rock formations, also structural features, such as anticlines, faults, etc.

d) Indicated or inferred sedimentary and/or channel trends.

e) Locations of anomalies found by radioactivity surveys on property.

f) Tentative locations of new work, drifts, drill holes, etc.

The quadrangle map submitted with your application shows the general topography of your property, however, the scale is too small to show where your proposed work is to be done. We suggest that you make an enlarged sketch of section 19 and then indicate the above data on this larger scale sketch or map.

In the event that a contract for exploration work on the subject property appears to be warranted, we shall also require the following documents:

1) A copy of a mutual agreement between the Lessors and Lessee, Gayle Dellinger, permitting the assignment of the lease from the Lessee to your Company. (see article 11 of Gayle Dellinger's lease)

2) A signed copy or photostat of the assignment of Gayle Dellinger's lease to your Company.

3) Six executed copies of the Owner's (or Owners') Consent to Lien.

To expedite the processing of your application we are enclosing twelve (12) Owner's Consent to Lien forms for execution.

When the above data is received we shall promptly continue to process the subject application.

Sincerely yours,

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

Enclosures

FMMuphy:am
4-12-55
cc to: Admr. Reading File
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Murphy
DMEA Field Team, Region III(2)

3761.

check Travers letter re: property rights

Maps submitted

1) claim map showing
grey Fox claims #2, 3, and 4.

2) Shaking Spring Creek 2.5E quadrangle.
shows claims? but not legible
does not show work.
Should blow up Sec 20, T 23S. R 10E.
to adequate size.

show faults
location of radioactivity readings

Clarke Mountain?

Minerals

Lease Agreement
11 years
R.C. Albrechtsen
L.G. "
L.J. Curtis
Lessee:
Gayle Dettinger
Claims Gregory 2, 3, 4,
5, 6, 7, 8
Lease effectiv. month After No. 102.

San Rafael Mining Company
C/o Atlantis Investment Company
Mining Exchange Building
Colorado Springs, Colorado

April 8, 1955
Subject: DMEA 3761
Re: Exploration Assistance
Thunderbird group

Gentlemen:

The receipt of your application dated April 1, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA 3761 and referred to the Rare and Miscellaneous Metals Division.

Kindly identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

April 8, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region III.

DMEA- 3761 San Rafael Mining Company

Robert E. Adams,
Chief, Operation's Control
and Statistics Division

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

RECEIVED

224 New Customhouse
Denver 2, Colorado

April 5, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA assistance (Uranium), San Rafael Mining Co., Thunderbird Group, Temple Rock District, Emery County, Utah

Enclosed are the original and two copies of the subject application for Government assistance to explore the applicant's property for uranium at an estimated cost of $16,948.14.

According to the "Lease Agreement" to Gayle Dellinger any assignment of interests must be agreed upon by the lessee and lessors in writing. This agreement and an assignment from Gayle Dellinger to the applicant company must be obtained before a possible contract may be entered into. San Rafael Mining Company should also be requested to submit a signed copy or photostat of a signed copy of the above mentioned "Lease Agreement". The location of proposed work should also be shown on the claim map submitted. see notes in [illegible]

One copy of this application has been retained in this office.

W. M. Traver

Enclosures

W. M. Traver

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

RECEIVED
APR 7 1955

224 New Customhouse
Denver 2, Colorado

April 5, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA assistance (Uranium), San Rafael Mining Co., Thunderbird Group, Temple Rock District, Emery County, Utah

Enclosed are the original and two copies of the subject application for Government assistance to explore the applicant's property for uranium at an estimated cost of $16,948.14.

According to the "Lease Agreement" to Gayle Dellinger any assignment of interests must be agreed upon by the lessee and lessors in writing. This agreement and an assignment from Gayle Dellinger to the applicant company must be obtained before a possible contract may be entered into. San Rafael Mining Company should also be requested to submit a signed copy or photostat of a signed copy of the above mentioned "Lease Agreement". The location of proposed work should also be shown on the claim map submitted.

One copy of this application has been retained in this office.

W. M. TRAVER

Enclosures

W. M. Traver

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DMEA
Date Rec'd
Form Approved.
Budget Bureau No. 42-R1035.2.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 4 1955
BUREAU OF MINES
APR 7 1955

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

Not to be filled in by applicant

Docket No. 3761
Metal or Mineral Uranium
Date Received 4-7-55
Estimated Cost $16,948.14
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: San Rafael Mining Company (see attached rider)

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract (see attached rider)

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

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

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

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

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

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

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

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

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

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

(See attached rider)

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

.....

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☐ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

(see attached rider)

Dated ....., 195__

.....
(Applicant)

By.....

.....

.....

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

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

Department of the Interior
Defense Minerals Administration
RECEIVED

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

1. (a) (b) (c) (d)

Name of applicant: San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Bldg., Colorado Springs, Colorado, a copartnership organized under the laws of the State of Colorado consisting of the following partners:

J. Gayle Dellinger
309 South Cascade Avenue
Colorado Springs, Colorado

A. L. Trowbridge
c/o Pringle-Hurd and Co., Inc.
620 North Tejon Street
Colorado Springs, Colorado

Clyde H. Long
P. O. Box 1791
Colorado Springs, Colorado

J. M. Lane
911 North Sheridan Avenue
Colorado Springs, Colorado

Blackstone and Company, a co-partnership organized and existing under the laws of the State of Colorado, by
John A. Love
Cheyenne Mountain Boulevard
Colorado Springs, Colorado

and

James C. Wieboldt
19 Sixth Street
Colorado Springs, Colorado

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

3. (a) (b) (c) (d) (e) (f)

There are eleven mining claims contiguous and overlapping which would benefit from further exploration work. Six of these claims are known as the Gray Fox Group numbering from 1 to 6 inclusive. The Gray Fox claims were leased as of August 15, 1954, from Louis G. Albrechtsen of Castle Dale, Utah, Rufus C. Albrechtsen of Ferron, Utah, and Lyman Jack Curtis of Castle Dale, Utah. A copy of this lease is attached hereto and made a part of this application. Mining claims Gayle # 2, Thunderbird numbers 1, 2, 3 and 4, which join and overlap covering any possible land vacancies of the Gray Fox group are owned exclusively by the San Rafael Mining Company. This entire mining property is known locally as the Thunderbird group. The San Rafael Mining Company controls this entire group of claims and, other than the interest of the United States Government, being the land owner, the overriding interest of the lessors of the Gray Fox group, there are no liens or encumbrances known to be applicable to this realty.

All of these claims are located in the headwaters of Reds Canyon in the vicinity of what is locally known as Temple Rock in Section 19, Township 23, South, Range 10 East of the Salt Lake City Prime Meridian, Emery County, Utah. Included with this application is a survey map (which wasn't completed at the time because of the roughness of the terrian) of a portion of these claims. This survey will be completed in due course. Also included is one copy of a USGS Topography map showing roughly the general location of the claims and the radioactive areas.

Office of the Emery County Recorder, Castle Dale, Utah. Book and Page numbers of recorded Claims:

Gayle # 2	Book J57	Page 356	Co. owned
Thunderbird # 1	Book J59	Page 155	
Thunderbird # 2	Book J59	Page 156	
Thunderbird # 3	Book J60	Page 93	
Thunderbird # 4	Book J62	Page 44	
Gray Fox # 1	Book J35	Page 452	leased
Gray Fox # 2	Book J35	Page 453	
Gray Fox # 3	Book J35	Page 454	
Gray Fox # 4	Book J35	Page 455	
Gray Fox # 5	Book J35	Page 456	
Gray Fox # 6	Book J35	Page 457	

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

4. (a) (b) (c) (d) (e)

When we purchased the Gray Fox Claims in August, 1954, there had been no work done on them with the exception of a small amount of hand digging on radioactive places here and there. Since that time we have done considerable hand labor on the various uranium showings on the rimrock. This was done by hand rim stripping trails and a number of cuts on the productive ore horizon of that region, several cuts going back some thirty feet or more thru the Shinarump formation talus.

We built a road some three miles up the floor of Reds Canyon with a D-6 Bulldozer, the last half mile being partly shelf road-work in the steep Moenkopi formation slopes which form the lower part of the canyon walls. The first two and one half miles are in a dry wash and the work consisted merely of clearing out the larger boulders. At least one-half mile was cut into the hills to form a good working road with an easy grade for our rental air compressor and from this part of the road it is possible to run air lines to the ore horizon in the rim rock on the three most likely ore producing claims. The first part of the road was damaged by a heavy cloudburst this past fall. However, it is still readily passable even with heavy trucks.

Approximately two months were spent by two men in exploring the Canyon rims with Scintillators and Geiger counters. The San Rafael Swell's most productive uranium ore horizon of the Shinarump formation was checked very carefully on these canyon rim claims. This same horizon was checked for several miles along the headwaters of this canyon for comparative purposes. It was found that all the principal uranium showings were on our claims with only a very few weak showings in other parts of the canyon headwaters.

We have also built two well insulated houses at this mining property for personnel use. The first is a one room house of approximately 12 x 16 feet equiped with furniture and stoves. The other is a two room house of approximately 12 x 22 feet also with some furniture.

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

To date we have spent some $6,000.00 on road work, houses and exploration work on these claims.

We have looked over many other mining properties in this region for comparison. Just to the east of our claims lie three small worked out uranium mines. A fourth, somewhat to the northeast, is still operating. There are also several other operating uranium mines in the immediate area. The same general area of the San Rafael Swell includes the famous uranium mines of Vernon Pick and Temple Mountain.

We have shipped no ore to date. However, it would be possible to ship small tonnages of hand sorted uranium ore at present. Our principal aim is to explore these present uranium showings in order to find a more commercial bed of ore.

There are numerous uranium showings on the Shinarump rims on four of these claims ranging up to 1.15% chemical assay. These run mostly in pockets and seams. However, on one claim we have a number of asphalt seams which run back under the rimrock. We have made two cuts some thirty feet thru the talus and a few feet back under the rimrock. This asphalt runs approximately .24% U308 chemical assay and some seams are 6 to 8 inches thick. Some parts of these claims can be drilled to the ore horizon at a depth of approximately 200 feet. Other parts of the claims are obstructed by high Wingate Cliffs.

The claims have been inspected by a mining engineer of the Mining and Development Company of Salt Lake City and by several local experienced uranium miners. Geological information and mining suggestions in this application are a combination of information from these men and from personal experience in uranium exploration of Mr. Long, one of the partners of the applicant as noted above.

Our mining camp site is on the floor of the canyon at an elevation of about 6,000 feet. The country in general is semi-desert with practically no grass but with scattered cedar and pinon pine trees and some sage brush.

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

The geology of all of the uranium mines in this part of the Swell is the same, most of the mines being in sandstone lenses or channels at the very bottom of the Shinarump formation. However, there are some mines in the area wherein good commercial ore has been found in sandstone, conglomerate and mudstone layers. The ore bodies lie in a generally horizontal position and vary in size from six inches thickness to twenty feet or more and may vary in tonnage from a few tons to several hundred thousand tons. Uranium mining in the San Rafael Swell is still very new, most of the mines being only a year or two old. New access roads to remote areas of the Swell are constantly being opened up.

The radioactive showings on our claims are all in the bottom of the Shinarump formation which lies some one hundred feet or more above the valley floor. The canyon floor is entirely within the Moenkopi formation with no showing of the overlying Cutler formation. The thickness of the Shinarump formation varies from fifty to possibly two hundred feet in this area, with the Chinle formation showing above it. Most of the canyon rims are capped with the Wingate formation. The San Rafael Knob which is nearby is capped with the Entrada formation which lies above the Wingate in this area.

There are many out of the ordinary showings located in the head of Reds Canyon where these claims are located and in the mesa adjoining. These showings take a number of different forms. These seams and pockets may be identified by the presence of a number of different elements which are known to precipitate uranium from uranium bearing ground waters. Examples of these elements are calcium in the form of arsenic, gypsum, lime and other alkalies, also hydrogen sulfide from asphalt and dead oil, chalcocite copper, iron pyrites, limonite, hematite and carbonaceous wood.

Since uranium in secondary forms is very soluble in water, surface uranium ore will leach away very rapidly with the surface

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

drainage. Therefore, the surface showings on these claims are considered to be the result of the leaching off of a concentration of uranium ore in the vicinity. Further evidence of the reasonable presence of a uranium ore bed would seem to arise from relatively recent geologic theory which holds that the leaching process may be identified with a bleaching of the surrounding sandstone. The exploratory work on these claims has revealed a definite presence of such material. More weight is added to the leaching hypothesis when, as to these claims, it is noted that the ore bearing formation tilts downward away from the rim. These claims are considered to be situate in the midst of several geologic stream channels. In particular, it is felt that the working so far on the Gray Fox Claims Numbers 3 and 5 are approaching deeper portions of the stream in that locale or a bend in the stream where the uranium producing ore may most likely be considered to concentrate.

There is a major fault (6 feet) showing on Gray Fox Claim No. 3. This fault may be the controling factor since a number of ore beds are in the vicinity of fault zones. Since there are so many rim showings of uranium concentrated in this general area we consider that there is an excellent possibility of there being a body of ore of major importance in an area of approximately 1,200 x 3,000 feet. In addition, there is a possibility of several minor commercial beds of uranium on these same claims.

Reds Canyon has a number of uranium mines on the rims in the direction of the Muddy River. However, the upper part of the canyon for a distance of some four miles has very few showings except for the headwaters of the canyon where our claims are located. There are, on these claims, as the accompanying map will show, a large number of radioactive showings. Most of these seem to be in a copper bearing seam just under a conglomerate layer which lies on top of the Moenkopi formation. The very top of the Moenkopi formation in this area is metamorphosized by chemical water action thereby forming a hard Pinto colored layer varying from a thickness of five feet at the head of the canyon on Gray Fox Claim No. 3 to only a few inches some 1,500 feet down the canyon. This

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

Pinto layer seems to be associated with the formation of uranium deposits in some manner yet to be proven by geologists. Since the uranium deposits lie directly above this formation it would seem that the Pinto layer acts as a hard floor against which the ore collects. This Pinto layer is missing in most of the Swell area, but is conspicuously present at many of the uranium mines including Temple Mountain.

The following paragraph describes the principal uranium occurrences on these claims in numerical order. Note, however, that Gray Fox Claim No. 5 has by far the best surface showings.

On Gray Fox Claim No. 1there is a carbonized log lying parallel with the surface. This is highly radioactive in one section which yields a radiometric assay of 1% or better. This short section lies in conjunction with a crack extending back into the sandstone some distance and runs parallel to the other breaks in the general formation, all running in a Northeasterly direction. The rest of the log is barren and lies at the top of the conglomerate layer and at the bottom of the Shinarump. At the bottom of this conglomerate layer nearby there is a thin streak of copper oxide which is radioactive. There is no other radioactive material very close by on the surface; however, there is considerable talus coverage at this point. This particular area could well bear considerably more exploratory work.

Gray Fox Claim No. 2 shows no exceptional radioactivity. Again, however, the lower layer of the Shinarump is heavily covered with talus.

On Gray Fox Claim No. 3, uranium shows in a percentage up to 1.15% in small pockets and seams in the conglomerate layer just on top of the Pinto Moenkopi. There is a thin copper layer continuous for approximately 250 feet just below the conglomerate layer. This copper layer shows principally on the Shinarump point jutting out towards the valley. On this point we have excavated a trail some two feet wide and at the extreme end of the point we have dug back into the rock about six feet and have taken out perhaps two tons of uranium ore. This ore would average low grade as a whole, but in small pockets and seams would assay up to possibly

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

1%. The ore seems to be definitely associated with asphalt, copper and iron oxides. The ore is disseminated Pitchblende. The Geiger counter assay (radiometric) appears to be much lower than the chemical assay. This would seem to indicate that much of the radium content has gone. However, this does not affect the uranium ore value.

Near the center of Gray Fox Claim No. 3 outcrop there is a major fault passing thru an overhang in the Shinarump formation with a drop in the conglomerate layer of this formation of approximately six feet on the east side of the fault. This fault extends thru the Moenkopi, Shinarump, Chinle and Wingate formations.

There is another cross fault on Gray Fox Claim No. 3 which runs into the major fault at approximately fifty feet back from the rim. The fault shows considerable limonite at the outcrop which is radioactive. One geologist suggested that where these two faults meet there may be a more consistant ore bed.

The conglomerate, sandstone and clay layers near the major fault all read warm on a #111 Scintillator, particularly where iron oxides have collected. The lower layer of sandstone also shows indications of dead oil. There are also a number of iron pyrite balls of crystals to be found in the conglomerate. These balls also contain silicon, arsenic, calcium, aluminum, barium, copper and traces of titanium. The general opinion of geologists of the AEC is that the faults are possibly the controlling factor in the collection of uranium in the rock of this area.

On the north edge of Gray Fox Claim No. 3 there is a sandstone lens just on top of the Moenkopi Pinto which measures some two feet thick at the outcrop. It is thought that this is an indication of a stream channel. There are thin layers of carbonaceous material which carry a high radioactive count. We have done considerable hand work in this area and have also driven back thru the talus near the fault approximately twenty feet with a gradual improvement of the uranium showings with depth.

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

On Gray Fox Claim No. 4 there is the end of a carbonized log about 12" x 6" which is highly radioactive. It is in the sandstone lens approximately 3 feet thick lying on top of the Moenkopi with a thick mudstone layer on top of the sandstone. This was found to be still radioactive in the same amount after excavating back approximately 6 feet. There is considerable talus at this point.

About one hundred feet to the east, still on Gray Fox Claim No. 4 rim rock, there is a thicker sandstone lens at the same level which shows thin highly radioactive carbon streaks. These remain the same after blasting back approximately four feet. The sandstone lens at this point is thick and solid.

On Gray Fox Claim No. 5 in a sandstone lens lying on top of the Pinto Moenkopi there are a number of thin radioactive carbon streaks. Digging into these streaks it was found they widened out almost immediately and became much richer in radioactivity. The two such streaks showing on the surface multiplied into a number of streaks. Several of these are as much as six inches thick at a distance back of approximately four feet and distributed in the layer over a vertical distance of two feet. Three feet back under the rimrock (or approximately 30 feet from the point of beginning) the streaks consolidate into one heavy black streak of asphalt. This streak varies from 3 to 6 inches in thickness and lies horizontally. At the point where this asphalt enters the rimrock, samples were taken of the matter. In addition, a channel sample one foot long over the black vein and the adjoining sandstone was taken. This last sample showed radioactivity on the Geiger counter and had asphalt specks throughout. The asphalt at this point assayed 0.24% uranium and the channel sample assayed 0.05%.

Since there was considerable loose rock above this showing, the exploratory work was moved south about forty feet where the rock was more stable. At this new cut there were a number of radioactive streaks and by the time the cut was back under the rimrock, low grade uranium was definitely mixed thru about one foot of the sandstone directly above the Moenkopi. This radioactive layer

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

was made up of a bleached soft sandstone with asphalt specks throughout and it powdered very easily when dynamited.

The sandstone lens in which these radioactive layers are found vary between two to three feet in thickness with a layer of mudstone approximately four to six feet in thickness on top. Thin radioactive carbon streaks can be traced with a scintillator approximately two hundred feet horizontally along the face of this sandstone lens which outcrops on Gray Fox Claim No. 5. Towards the south end of the lens the mudstone layer above almost disappears.

In a sandstone layer approximately thirty feet above the base of the Shinarump formation in this area there are a number of petrified logs which register faint radioactivity on the sintillator.

As noted above, the general theory of these bottom sandstone lenses is that they were old stream channels which gradually filled with sand. They could have been channels cut along a shallow lake or inland sea shoreline. This area of the Colorado Plateau extending from Arizona to Salt Lake City has been the scene of a number of extremely large but very shallow lakes or inland seas in past ages.

To the east of thissandstone lens on Gray Fox Claim No. 5 at a distance of approximately 3,000 feet there have been a number of Core drill holes that explore the same Shinarump layer. There was a small uranium mine approximately 600 feet farther east, which produced a small tonnage of uranium ore from the Shinarump conglomerate layer. Eight Hundred feet farther east by northeast there are two more small uranium adits. Some 1,000 feet farther on the same Mesa at the same level, is the Green Vein uranium mine which still is a good uranium producer. The AEC drillings explored the area in the immediate vicinity of these diggings. Since the terrain in the area of these mines consists of a flat mesa with the diggings on the east rim, road building was a simple matter. The hole depth varies from 150 feet to 200 feet.

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

Judging from these old diggings (two years old) and drill holes there are possibly one or more old stream channels running in a generally north-east, southwest direction across this mesa, one of them coming out of the rimrock on Gray Fox Claim No. 5.

There is now considerable evidence put forward by the American Association of Petroleum Geologists that shows there is some partnership between some uranium deposits (particularly Shinarump deposits) and existing oil deposits and/or oil deposits that have seeped away due to faulting. Uranium seems to collect in sedimentary formations in a similar manner to oil.

The following is a condensation from the October, 1954, Bulletin of American Association of Petroleum Geologists:

> "The consistent presence of uranium and certain other metals, including arsenic, cobalt, chromium, copper, manganese, molybdenum, nickel, lead, vanadium, and zinc, has been established and in some places these metals are found in exceptionally high concentration in the ash of the analyzed asphalt and oil from petroliferous rock. Some of these metals probably occur as metallo-organic compounds, and all are concentrated in the heavy asphaltic portion of petroleum.
>
> "The high concentration of exceptional elements in the ash of the analyzed samples suggests that these elements were concentrated by some agency connected with the actual formation of oil and therefore have a genetic relationship to the oil. The data also suggests that uraniferous asphaltite deposits may be formed through volatilization, oxidation, and polymerization of a petroleum whose ash was enriched in uranium, vanadium, copper, arsenic, molybdenum, nickel and other metals.
>
> "The uraniferous asphaltite from the San Rafael Swell, Utah, is characterized by high uranium, arsenic, copper, and molybdenum and relatively low vanadium.

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

> "The concentration uranium, vanadium, copper, and arsenic in the ash of oil extracted from petroliferous beds in the moenkopi, shinarump, and wingate formations in the San Ragael Swell district, Emery County, Utah, is similar to the concentration of these metals in the uraniferous asphaltite deposits around the flanks of this structure.
>
> "It is interesting to note that many uranium deposits, such as those in the San Rafael Swell, Emery County; Circle Cliffs, Garfield County; and Capital Reef, Wayne County; all in Utah, occur on the flanks of breached anticlinal structures that have served as traps for the accumulation of petroleum during geologic time."

All of these quoted factors seem to fall right in line with all the uranium showings on the Canyon Claims. The opinions of the geologists who have had a look at the claims seem extremely favorable to the possibility of a major ore body being in this area.

The distance from these claims to Green River, Utah, is 60 miles. Green River is a rail shipping point for uranium ore. Thompsons, Utah, just to the east of Green River, is a uranium ore buying station, as is also Grand Junction, Colorado.

The last 56 miles from Green River to these claims is a dirt road, while the rest into Green River, Thompsons, and Grand Junction is concrete. Thompsons is 85 miles distant and Grand Junction 163 miles.

Water and food supplies have been obtained from Green River, Utah. Mining supplies have come from Grand Junction. Dynamite, caps, etc. have been obtained from Temple Mountain Consolidated Uranium Corporation which is only 15 miles from the mining property. There has been some publicity recently that in the near future it may be expected that reduction mills will be installed at either or both Green River and on the Muddy River.

Residence facilities for an exploration crew would be at the site

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company; Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

of these claims. As noted above, several well constructed buildings are already on location.

The applicant company already has several experienced miners in mind for possible contract mining work. The company has been in contact with the Mining Development Corporation, Ltd., of Salt Lake City, Utah, and, in particular, Mr. Otto Halland, a mining engineer with that firm. In any event, it is contemplated that the company will obtain expert engineering advice in its future exploratory and mining operations.

The company has also consulted with Mr. David I. Gardner, a registered engineer of long experience, for civil engineering work.

It has been anticipated that the company would furnish all mining equipment and supplies and that the same would be trucked in from Green River and Grand Junction. Water will continue to be trucked in from Hanksville approximately 35 miles distant, or, from Green River. There is some water in small ponds in the canyon. However, this water would be useful only for emergencies. It has been thought that the company would contract out the uranium labor of mining to experienced persons.

5. (a) (b) (c) (d)

Three methods for further exploration work of these claims have been under consideration. These methods are: drifting, rim stripping by bulldozer, and drilling. For the reasons indicated below, the company feels that emphasis at this time should be placed upon drifting.

As to the principal ore layer in Gray Fox Claim No. 5 and the area of the major fault on Gray Fox Claim No. 3 (as well as the other ore leads), the drifting method seems to be indicated. These two points seem to offer the best possibility of opening up into good commercial ore beds. Drifting would seem to offer little difficulty in that the sandstone is reasonably solid and safe to work in. The only hardship being that the productive

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

horizon is some 150 feet above the road on the rimrock. However, several wide shelves have been cut in the talus at both points thereby rendering the drifting operation easier with the exception of moving the equipment into position. This, however, can be accomplished with a truck operated winch. These locations offer a considerable advantage in that the waste material may be disposed of with a minimum of difficulty. Drifting seems to offer the best possibilities in that every foot of advance could be checked very carefully. In addition, the sides of the drift may be explored to a depth of approximately ten feet by drilling with an air leg.

Rim stripping by bulldozer, i. e., cutting a shelf road into the productive rim approximately twenty feet thru the talus along the rimrock of all the claims, may very possibly show up other ore bed leads. In fact, a number of mines in the Colorado Plateau region were discovered by this method. However, on these particular claims, this method would be relatively expensive, owing to the roughness of the cliffs.

It is felt that drilling would be impracticable on most of these claims because of the high vertical cliffs of the Wingate formation which overlies most of the area. However, some portions of these claims could be drilled. Road building costs rule out the practicability of drilling on the major fault on Gray Fox Claim No. 3. The same would be true of the Gray Fox Claim No. 5 ore bed. Any such drilling, however, would be blind. On the other hand, drifting on the actual ore leads in the favorable formation structures would seem to be more productive of information.

The following are estimates of the comparative costs on these three methods:

1. Drifting on the two ore leads:

Total cost of equipment and supplies	$7,500.00

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

Labor cost of 250 foot drift on Gray Fox Claim No. 5	$1,750.00
Labor cost for 250 foot drift on Gray Fox Claim No. 3	1,750.00
For any unexpected contingencies	1,000.00
	$12,000.00

2. Rim Stripping by Bulldozer:

$300.00 per hundred feet of rim at $12.50 per hour D-6 Dozer.
2,000 feet of rim with good possibilities
Total cost of $6,000.00

3. Drilling:

Drilling costs are governed to some extent by the need to truck water long distances for the operation.

$1.00 per foot for wagon drilling
$1.75 per foot for rotary drilling
$3.00 per foot for rotary core drilling

To explore the accessible parts of Gray Fox Claims No. 5 and No. 6, and Thunderbird No. 1, it would be necessary to drill some 160 holes to an average depth of 200 feet on one hundred foot grids. By using wagon drilling this cost would run $32,000.00 and road building costs would be approximately $6,000.00. Of course, rotary and core drilling costs would run much higher.

To partially explore these same claims by two lines of drill holes at one hundred foot intervals, one parallel to the rim and the other line running east and west. At an average depth of 200 feet by wagon drilling the cost would be some $6,000.00 for thirty holes with approximately $1,200 for road building.

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

To explore the possible ore channel on Gray Fox Claim No. 5 with a 200 foot average depth holes on a grid pattern of fifty foot intervals covering an area of 200 feet by 500 feet the cost by wagon drilling would be $12,000.00 plus $3,000.00 for road building.

400 ft. proposed

Under the aid program of the Defense Minerals Exploration Administration, the company proposes to make two drifts 200 feet long, one on the Gray Fox Claim No. 5 and the other on the Gray Fox Claim No. 3. The geology of both of these sites is presented in paragraph 4 above. A map of the proposed work is annexed to this application.

It is proposed that the work will be conducted under the operational supervision of Mr. Long, one of the partners of the company, who will be guided by competent engineering advice on a consulting basis. Mr. Long has been engaged in uranium exploration activities exclusively for more than a year. This activity has been in both ground and air exploration, mostly in the Colorado Plateau region. In addition, he has thoroughly familiarized himself with the geology of the region and with uranium exploration and production as the same is conducted in the region. Lastly, Mr. Long, by virtue of having spent over four months on the site, is thoroughly acquainted with the claims.

?

6. (a) (b) (c) (d) (e) (f) (g) (h)

Independent contracts:

We propose to contract the actual labor of mining to experienced miners at not more than $7.00 per running foot for a four by six foot drift. This makes a total cost of 500 feet of drifting at ..... $ 3,500.00

Labor, Supervision, geological and engineering consultants: 1,500.00

Operating materials and supplies:

50 cases of dynamite @ $11.00 per case	550.00
750 electric blasting caps @ an average price of $26.00 per 100	195.00
Electrical blasting connecting wire # 18 1,500 feet @ $.60 per 100	9.00
Balance Forward	$ 5,754.00

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

Balance Brought Forward	$ 5,754.00
Electrical leading wire #14 2,000 feet	11.00
Drilling machine oil, 35 gallons	56.00
Gasoline for air compressor and electrical power plant 75 gals. per week $22.50 2 gals oil pr. wk 3.20 $25.70 per week 102.80 per month, 4 months operation	411.20

Operating equipment:

Blasting machine (30 hole)	46.00
Blasting line galvanometer	22.25
Jaeger 125 cfm air compressor on wheels	3,365.00
Thor 38 Model Sinker Drill (7/8" x 4 1/4" shank)	380.00
Fairbanks Morse Typhoon pump and gas engine 8-16 GPM 123 #1 sq. inch pressure ..... (to be used to pump drilling water up the cliff)	367.00
1 Gardner - Denver Slusher Model HEE	1,080.00
1 Vulcan 26" Scraper	295.00
1 Keeney block (sheave) size 6" x 1 1/2" ball bearing	39.00
1 Breast pin (for sheave)	6.15
200 feet 3/8 x 3 x 19 cable @ .093/feet	18.60
Hose mender	5.95
1" air hose w/couplings 50' long	39.50
1/2" water hose w/couplings 50' long	25.00
30 gallon water tank with fittings (pressure)	69.50
450 feet of black 1" pipe for air @ 17½¢ per foot	78.75
Balance Forward	$ 12,069.90

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

Balance Brought Forward	.....	$ 12,069.90
200 feet of black 3/4" pipe for water 12¼¢ per foot	.....	24.50
Steel (drill) 7/8" x 4¼" shank -alloy		
2 - 4 foot steels 7.31 ea.	.....	14.62
2 - 6 foot steels 9.06 ea.	.....	18.12
100 Bits - liddicoat 1-d for 7/8" steels (knockoff type) 22½¢ ea.	.....	22.50
Knockoff block	.....	8.50
300 gallon water tank with two baffles for transportation of water to mine	.....	85.00
Trailer for water tank	.....	95.00
Mine timber for drift entrances 8 x 8" for posts & beams 2 x 12" for sheeting 2,000 board feet	.....	160.00
Listed slusher will be used up to 100 or 150 feet depending on its efficiency. Then slusher will be moved back to the mine face and used for the rest of the drift. Using track and mine car to run the muck out the front of the drift. Allowance for used mining car, track and installation	.....	750.00
Jeep Truck, wince and cable to be furnished by the San Rafael Mining Company	.....	1,150.00
Electrical plant, 1000 watt, A. C. for mine and residence lighting, plus wiring to be furnished by San Rafael Mining Company	.....	300.00
Truck mileage for transport of equipment and supplies 2,000 miles 1st month 1,000 miles next three months @ $.06 per mile	.....	300.00
Balance Forward		$ 14,998.14

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form MF-103)

7. (a) (b)

The company is prepared to furnish its share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1).

We propose to furnish our share of the cost in both money and equipment. The equipment we propose to furnish is: Jeep Truck, wince and cable; Electrical Plant and wiring; Hand Tools

CERTIFICATION

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

Dated April 1, 1955.

J. M. Lane
Partner

SAN RAFAEL MINING COMPANY

By J. Gayle Dellinger
J. Gayle Dellinger,
Partner

Blackstone and Company

By John A. Love
John A. Love

A. L. Trowbridge
A. L. Trowbridge,
Partner

James C. Wieboldt
Partner

Clyde H. Long
Clyde H. Long
Partner

AGREEMENT

For and in consideration of the sum of One Thousand Five Hundred and No/100dths ($1,500.00) Dollars and other good, valuable and adequate consideration, receipt of which is hereby acknowledged, the undersigned,

RUFUS C. ALBRECHTSEN, LOUIS C. ALBRECHTSEN and LYMAN JACK CURTIS, hereinafter called Lessors, and each of them hereby covenant, agree and lease unto,

GAYLE DELLINGER, hereinafter termed Lessee, as follows:

1. That the said Gayle Dellinger shall furnish the materials, provide the labor, equipment and man hours necessary to properly explore, develop, work and mine the said mining claims of the said Lessors as hereinafter more particularly described.

2. That the said Gayle Dellinger shall receive eighty-five (85%) per cent of the gross income from all ores extracted, removed and sold, and One Hundred (100%) per cent of all other compensations whatsoever from said hereinafter described mining claims and the said Rufus C. Albrechtsen, Louis C. Albrechtsen and Lyman Jack Curtis shall receive fifteen (15%) per cent of the gross income from all ores extracted, removed and sold. Said ores so extracted and removed shall be sold at a mill or ore-buying station, at the option of the lessee. The shipments shall be made in the name of Gayle Dellinger and the division of the settlement for said ore shall be made as soon as reasonably practical after received.

3. The said Gayle Dellinger shall be bound to expend a minimum of Five Thousand and No/100dths ($5,000.00) Dollars per annum beginning August 24, 1954, in materials, equipment and labor on the said mining claims hereinafter described. Provided that if the said Gayle Dellinger fails to so expend a minimum of Five Thousand and No/100dths ($5,000.00) Dollars per annum as set out in this paragraph, this Lease Agreement shall be subject to cancellation within 30 days after the end of the year wherein the default occurred, and provided a written notice of cancellation is sent by the Lessors to the said Gayle Dellinger either by personal delivery thereof or by registered mail return receipt.

4. That the said Gayle Dellinger shall from August 24, 1954 protect the rights of the said Lessors herein to the hereinafter described mining claims as long as the said Gayle Dellinger

is in possession thereof as herein provided from all claims of third parties whatsoever. And that the said Lessors shall protect said Gayle Dellinger and save him harmless from all claims of third parties prior to the date of the agreement of August 24, 1954.

5. The said Gayle Dellinger shall provide workman's compensation and any and all other insurance as required by law on all employees working on said hereinafter described mining claims.

6. That the said Gayle Dellinger shall be and he is hereby empowered to work said mining claims hereinafter described, to the end that they may be properly developed for the production of ore and to mine and remove therefrom the maximum amount of ore consistent with good mining practice and the greatest gross income from production; it being further provided, however, that upon written notification given by the said Gayle Dellinger, Lessee, to the said Rufus C. Albrechtsen, Louis O. Albrechtson and Lyman Jack Curtis, Lessors herein, said written notification to be in writing and upon 30 days notice either by personal service thereof or by registered mail return receipt, the said Gayle Dellinger may release all ownership rights and claim to said mining claims, this Lease Agreement to thereby be cancelled and all interest in said mining claims on the part of said Gayle Dellinger, Lessee, shall cease, and said mining claims shall revert back to the said Rufus C. Albrechtsen, Louis O. Albrechtsen and Lyman Jack Curtis, Lessors herein, in full settlement and release of any and all rights, claims or demands which the said Lessors may have by reason of this lease, the possession of said mining claims and the operation thereof, against said Lessee.

7. It is further agreed by the parties hereto that this Lease shall continue as long as the said Lessee Gayle Dellinger complies with the terms thereof.

8. That the said Gayle Dellinger, Lessee, hereby agrees to survey and determine the boundaries of said hereinafter described mining claims and have said work certified by registered land surveyor or engineer for the agreed price of Seventy Five and No/100dths ($75.00) Dollars, said amount to be paid by said Lessors.

9. That this agreement shall bind the undersigned Lessors and Lessee, their heirs, executors, administrators, successors and assigns, and the undersigned lessors agree to make no other

contract, option, agreement or encumbrance which might in any way conflict with the terms hereof unless mutually agreed upon in writing by lessors and lessee on and after August 24, 1954.

10. That the undersigned Lessee further agrees to perform the requisite assessment work on each of the claims set forth hereinafter, and file with the County Clerk of Emery County, State of Utah, on or before July 1, 1955, the appropriate assessment affidavits on the said claims and each of them;

11. It is further understood and agreed that any and all rights acquired hereunder may be assigned at the discretion of the said lessee and lessors by mutual agreement in writing at any time after execution date hereof;

12. It is further understood and agreed that the undersigned lessors and each of them will execute any further document necessary to effect the provisions of the foregoing.

13. This agreement is in ammendment of and supplementary to the agreement of the same parties signed August 24, 1954 and pertaining to the same mining claims and in accordance with provisions made in that agreement.

14. The property covered by this agreement and the name of claimant or claimants and claims thereof are as follows:

GRAY FOX CLAIM NO. 1 - Situated about one mile south east of the San Rafael Knob in the first canyon, in Section 19, Township 23 S. R. 10 East, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet west of this location (discovery) Monument, at the west end center monument, and running thence south 300 feet to southwest corner monument No. 1; thence east 1,500 feet to southeast corner monument No. 2; thence north 300 feet to east end center monument; thence north 300 feet to northeast corner monument No. 3; thence west 1,500 feet to northwest corner monument No. 4; thence south 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations; Claim No. 1 overlapping Claim No. 2. Louis G. Albrechteen and Rufus C. Albrechteen.

GRAY FOX CLAIM NO. 2 - Situated about 1½ mile southeast of the San Rafael Knob in the first canyon, in Section 19, Township 23 S. R. 10 East, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet west of this location (discovery) Monument, at the West end center monument, and running thence south 300 feet to southwest corner Monument No. 1; thence east 1,500 feet to southeast corner monument No. 2; thence north 300 feet to east end center monument; thence north 300 feet to northeast corner monument No. 3; thence west 1,500 feet to northwest corner monument No. 4; thence south 300 feet to place of beginning; including all Dips, Spurs, Angles, and Variations. Claim No. 2 overlapping Claim No. 3. Louis G. Albrechteen and Rufus C. Albrechteen.

GRAY FOX CLAIM NO. 3 - Situated about 1½ miles southeast of [illegible] in the first canyon, in Section 1[illegible], Township [illegible] 10 East, in Emery County, State of Utah, the location

being described and marked on the ground as follows, to-wit: Beginning 50 feet south of this location (Discovery) Monument, at the south end center monument, and running thence east 300 feet to southeast corner monument No. 1; thence north 1,500 feet to northeast corner monument No. 2; thence west 300 feet to north end center monument; thence west 300 feet to northwest corner monument No. 3; thence south 1,500 feet to southwest corner monument No. 4; thence east 300 feet to place of beginning; including all Dips, Spurs, & Angles, and Variations. Claim No. 3 overlapping Claim No. 4. Louis C. Albrechtsen and Rufus C. Albrechtsen.

GRAY FOX CLAIM NO. 4 - Situated about 1½ miles southeast of the San Rafael Knob in the first canyon, in or near Section 19, Township 23 S., R. 10 East, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet south of this location (Discovery) Monument, at the north end center monument, and running thence east 300 feet to southeast corner monument No. 1; thence north 1,500 feet to northeast corner monument No. 2; thence west 300 feet to north end center monument; thence west 300 feet to northwest corner monument No. 3; thence south 1,500 feet to southwest corner monument No. 4; thence east 300 feet to place of beginning, including all Dips, Spurs, Angles and Variations. Claim No. 4 overlapping Claim No. 5, Louis C. Albrechtsen, Rufus C. Albrechtsen and Lyman Jack Curtis.

GRAY FOX CLAIM NO. 5 - Situated about 1½ miles southeast of the San Rafael Knob in the first canyon, in or near Section 19, Township 23 S., R. 10 East, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet west of this location (Discovery) Monument, at the west end center monument, and running thence north 300 feet to northwest corner monument No. 1; thence east 1,500 feet to northeast corner monument No. 2; thence south 300 feet to east end center monument; thence south 300 feet to southeast corner monument No. 3; thence west 1,500 feet to southwest corner monument No. 4; thence north 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations. Claim overlapping. 5 Over 6. Louis C. Albrechtsen, Rufus C. Albrechtsen and Lyman Jack Curtis.

GRAY FOX CLAIM NO. 6 - Situated about 1½ miles southeast of the San Rafael Knob, in or near Section 19, Township 23 S., R. 10 east, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet east of this location (Discovery) Monument, at the west end center monument, and running thence south 300 feet to southeast corner monument No. 1; thence west 1,500 feet to southwest corner monument No. 2; thence north 300 feet to west end center monument; thence north 300 feet to northwest corner monument No. 3; thence east 1,500 feet to northeast corner monument No. 4; thence south 300 feet to place of beginning; including all Dips,, Spurs, Angles and Variations. Claim overlapping. Louis C. Albrechtsen and Rufus C. Albrechtsen.

GRAY FOX CLAIM NO. 7 - Situated about 1 mile southeast of the San Rafael Knob in the east fork of the first canyon, in or near Section 19, in Township 23 S., R. 10 east, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50feet north of this location (Discovery) Monument, at the north end center monument, and running thence east 300 feet to northeast corner monument No. 1; thence south 1,500 feet to southeast corner monument No. 2; thence west 300 feet to south end center monument; thence west 300 feet to southwest corner monument No. 3; thence north 1,500 feet to northwest corner monument No. 4; thence east 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations; Claim overlapping. Louis C. Albrechtsen, Rufus C. Albrechtsen and Lyman Jack Curtis.

GRAY FOX CLAIM NO. 8 - Situated about 3/4 a mile southeast of the San Rafael Knob, in the first canyon, in or near Section 19 in Township 23 S., R. 10 east, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet west of this location (Discovery) Monument at the west end center monument, and running thence north 300 feet to northwest corner monument No. 1; thence east 1,500 feet to north-

east corner monument No. 2; thence south 300 feet to east end center monument; thence south 300 feet to southeast corner monument No. 3; thence west 1,500 feet to southwest corner monument No. 4; thence north 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations. Claim No. 8 overlapping No. 1. Louis G. Albrechtsen and Rufus C. Albrechtsen.

MERLE ALICE CLAIM NO. 1 - Situated about 1 mile southeast of the San Rafael Knob in the first canyon, in or near Section 19, Township 23 S., R. 10 East, in Emery County, State of Utah, beginning 50 feet east of this location (Discovery) monument, at the west end center monument, and running thence south 300 feet to southeast corner monument No. 1; thence west 1,500 feet to southwest corner monument No. 2; thence north 300 feet to west end center monument; thence north 300 feet to northwest corner monument No. 3; thence east 1,500 feet to northeast corner monument No. 4; thence south 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations. Louis G. Albrechtsen and Rufus C. Albrechtsen.

MERLE ALICE CLAIM NO. 2 - Situated about 3/4 of a mile southeast of the San Rafael Knob in the first canyon, in or near Section 19, Township 23 S., R. 10 East, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet east of this location (Discovery) Monument, at the east end center monument, and running thence south 300 feet to southeast corner monument No. 1; thence west 1,500 feet to southwest corner monument No. 2; thence north 300 feet to west end center monument; thence north 300 feet to northwest corner monument No. 3; thence east 1,500 feet to northeast corner monument No. 4; thence south 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations. Claim No. 2 overlapping Claim No. 1. Louis G. Albrechtsenn and Rufus C. Albrechtsen.

Witnesses:

_____

_____

_____ Rufus C. Albrechtsen

_____ Louis G. Albrechtson

_____ Lyman Jack Curtis
LESSORS

_____ Gayle Dellinger
LESSEE

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

On the ____ day of _____, 1954, personally appeared before me, Rufus C. Albrechtsen, Louis G. Albrechtson, Lyman Jack Curtis, Lessors, and Gayle Dellinger, Lessee, the signers of the above instrument who duly acknowledged to me that they executed the same.

My commission expires:

_____

_____
NOTARY PUBLIC
Residing at Salt Lake City, Utah

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 7 1955

AGREEMENT

For and in consideration of the sum of One Thousand Five Hundred and No/100dths ($1,500.00) Dollars and other good, valuable and adequate consideration, receipt of which is hereby acknowledged, the undersigned,

RUFUS C. ALBRECHTSEN, LOUIS C. ALBRECHTSEN and LYMAN JACK CURTIS, hereinafter called Lessors, and each of them hereby covenant, agree and lease unto,

GAYLE DELLINGER, hereinafter termed Lessee, as follows:

1. That the said Gayle Dellinger shall furnish the materials, provide the labor, equipment and man hours necessary to properly explore, develop, work and mine the said mining claims of the said Lessors as hereinafter more particularly described.

2. That the said Gayle Dellinger shall receive eighty-five (85%) per cent of the gross income from all ores extracted, removed and sold, and One Hundred (100%) per cent of all other compensations whatsoever from said hereinafter described mining claims and the said Rufus C. Albrechtsen, Louis C. Albrechtsen and Lyman Jack Curtis shall receive fifteen (15%) per cent of the gross income from all ores extracted, removed and sold. Said ores so extracted and removed shall be sold at a mill or ore-buying station, at the option of the lessee. The shipments shall be made in the name of Gayle Dellinger and the division of the settlement for said ore shall be made as soon as reasonably practical after received.

3. The said Gayle Dellinger shall be bound to expend a minimum of Five Thousand and No/100dths ($5,000.00) Dollars per annum beginning August 24, 1954, in materials, equipment and labor on the said mining claims hereinafter described. Provided that if the said Gayle Dellinger fails to so expend a minimum of Five Thousand and No/100dths ($5,000.00) Dollars per annum as set out in this paragraph, this Lease Agreement shall be subject to cancellation within 30 days after the end of the year wherein the default occurred, and provided a written notice of cancellation is sent by the Lessors to the said Gayle Dellinger either by personal delivery thereof or by registered mail return receipt.

4. That the said Gayle Dellinger shall from August 24, 1954 protect the rights of the said Lessors herein to the hereinafter described mining claims as long as the said Gayle Dellinger

is in possession thereof as herein provided from all claims of third parties whatsoever. And that the said Lessors shall protect said Gayle Dellinger and save him harmless from all claims of third parties prior to the date of the agreement of August 24, 1954.

5. The said Gayle Dellinger shall provide workman's compensation and any and all other insurance as required by law on all employees working on said hereinafter described mining claims.

6. That the said Gayle Dellinger shall be and he is hereby empowered to work said mining claims hereinafter described, to the end that they may be properly developed for the production of ore and to mine and remove therefrom the maximum amount of ore consistent with good mining practice and the greatest gross income from production; it being further provided, however, that upon written notification given by the said Gayle Dellinger, Lessee, to the said Rufus C. Albrechtsen, Louis G. Albrechtson and Lyman Jack Curtis, Lessors herein, said written notification to be in writing and upon 30 days notice either by personal service thereof or by registered mail return receipt, the said Gayle Dellinger may release all ownership rights and claim to said mining claims, this Lease Agreement to thereby be cancelled and all interest in said mining claims on the part of said Gayle Dellinger, Lessee, shall cease, and said mining claims shall revert back to the said Rufus C. Albrechtsen, Louis G. Albrechtson and Lyman Jack Curtis, Lessors herein, in full settlement and release of any and all rights, claims or demands which the said Lessors may have by reason of this lease, the possession of said mining claims and the operation thereof, against said Lessee.

7. It is further agreed by the parties hereto that this Lease shall continue as long as the said Lessee Gayle Dellinger complies with the terms thereof.

8. That the said Gayle Dellinger, Lessee, hereby agrees to survey and determine the boundaries of said hereinafter described mining claims and have said work certified by registered land surveyor or engineer for the agreed price of Seventy Five and No/100dths ($75.00) Dollars, said amount to be paid by said Lessors.

9. That this agreement shall bind the undersigned Lessors and Lessee, their heirs, executors, administrators, successors and assigns, and the undersigned lessors agree to make no other

contract, option, agreement or encumbrance which might in any way conflict with the terms hereof unless mutually agreed upon in writing by lessors and lessee on and after August 24, 1954.

10. That the undersigned Lessee further agrees to perform the requisite assessment work on each of the claims set forth hereinafter, and file with the County Clerk of Emery County, State of Utah, on or before July 1, 1955, the appropriate assessment affidavits on the said claims and each of them;

11. It is further understood and agreed that any and all rights acquired hereunder may be assigned at the discretion of the said lessee and lessors by mutual agreement in writing at any time after execution date hereof;

12. It is further understood and agreed that the undersigned lessors and each of them will execute any further document necessary to effect the provisions of the foregoing.

13. This agreement is in ammendment of and supplementary to the agreement of the same parties signed August 24, 1954 and pertaining to the same mining claims and in accordance with provisions made in that agreement.

14. The property covered by this agreement and the name of claimant or claimants and claims thereof are as follows:

GRAY FOX CLAIM NO. 1 - Situated about one mile south east of the San Rafael Knob in the first canyon, in Section 19, Township 23 S. R. 10 East, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet west of this location (discovery) Monument, at the west end center monument, and running thence south 300 feet to southwest corner monument No. 1; thence east 1,500 feet to southeast corner monument No. 2; thence north 300 feet to east end center monument; thence north 300 feet to northeast corner monument No. 3; thence west 1,500 feet to northwest corner monument No. 4; thence south 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations; Claim No. 1 overlapping Claim No. 2. Louis G. Albrechteen and Rufus C. Albrechteen.

GRAY FOX CLAIM NO. 2 - Situated about 1½ mile southeast of the San Rafael Knob in the first canyon, in Section 19, Township 23 S. R. 10 East, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet west of this location (discovery) Monument, at the West end center monument, and running thence south 300 feet to southwest corner Monument No. 1; thence east 1,500 feet to southeast corner monument No. 2; thence north 300 feet to east end center monument; thence north 300 feet to northeast corner monument No. 3; thence west 1,500 feet to northwest corner monument No. 4; thence south 300 feet to place of beginning; including all Dips, Spurs, Angles, and Variations. Claim No. 2 overlapping Claim No. 3. Louis G. Albrechteen and Rufus C. Albrechteen.

GRAY FOX CLAIM NO. 3 - Situated about 1½ miles southeast of San Rafael Knob in the first canyon, in Section 1[illegible], Township 1[illegible] East, in Emery County, State of Utah, the location

being described and marked on the ground as follows, to-wit: Beginning 50 feet south of this location (Discovery) Monument, at the south end center monument, and running thence east 300 feet to southeast corner monument No. 1; thence north 1,500 feet to northeast corner monument No. 2; thence west 300 feet to north end center monument; thence west 300 feet to northwest corner monument No. 3; thence south 1,500 feet to southwest corner monument No. 4; thence east 300 feet to place of beginning; including all Dips, Spurs, & Angles, and Variations. Claim No. 3 overlapping Claim No. 4. Louis G. Albrechtsen and Rufus C. Albrechtsen.

GRAY FOX CLAIM NO. 4 - Situated about 1½ miles southeast of the San Rafael Knob in the first canyon, in or near Section 19, Township 23 S., R. 10 East, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet south of this location (Discovery) Monument, at the north end center monument, and running thence east 300 feet to southeast corner monument No. 1; thence north 1,500 feet to northeast corner monument No. 2; thence west 300 feet to north end center monument; thence west 300 feet to northwest corner monument No. 3; thence south 1,500 feet to southwest corner monument No. 4; thence east 300 feet to place of beginning, including all Dips, Spurs, Angles and Variations. Claim No. 4 overlapping Claim No. 5, Louis G. Albrechtsen, Rufus C. Albrechtsen and Lyman Jack Curtis.

GRAY FOX CLAIM NO. 5 - Situated about 1½ miles southeast of the San Rafael Knob in the first canyon, in or near Section 19, Township 23 S., R. 10 East, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet west of this location (Discovery) Monument, at the east end center monument, and running thence north 300 feet to northwest corner monument No. 1; thence east 1,500 feet to northeast corner monument No. 2; thence south 300 feet to east end center monument; thence south 300 feet to southeast corner monument No. 3; thence west 1,500 feet to southwest corner monument No. 4; thence north 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations. Claim overlapping. 5 Over 6. Louis G. Albrechtsen, Rufus C. Albrechtsen and Lyman Jack Curtis.

GRAY FOX CLAIM NO. 6 - Situated about 1½ miles southeast of the San Rafael Knob, in or near Section 19, Township 23 S., R. 10 east, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet east of this location (Discovery) Monument, at the west end center monument, and running thence south 300 feet to southeast corner monument No. 1; thence west 1,500 feet to southwest corner monument No. 2; thence north 300 feet to west end center monument; thence north 300 feet to northwest corner monument No. 3; thence east 1,500 feet to northeast corner monument No. 4; thence south 300 feet to place of beginning; including all Dips,, Spurs, Angles and Variations. Claim overlapping. Louis G. Albrechtsen and Rufus C. Albrechtsen.

GRAY FOX CLAIM NO. 7 - Situated about 1 mile southeast of the San Rafael Knob in the east fork of the first canyon, in or near Section 19, in Township 23 S., R. 10 east, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50feet north of this location (Discovery) Monument, at the north end center monument, and running thence east 300 feet to northeast corner monument No. 1; thence south 1,500 feet to southeast corner monument No. 2; thence west 300 feet to south end center monument; thence west 300 feet to southwest corner monument No. 3; thence north 1,500 feet to northwest corner monument No. 4; thence east 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations; Claim overlapping. Louis G. Albrechtsen, Rufus C. Albrechtsen and Lyman Jack Curtis.

GRAY FOX CLAIM NO. 8 - Situated about 3/4 a mile southwest of the San Rafael Knob, in the first canyon, in or near Section 19 in Township 23 S., R. 10 east, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet west of this location (Discovery) Monument at the west end center monument, and running thence north 300 feet to northwest corner monument No. 1; thence east 1,500 feet to north-

east corner monument No. 2; thence south 300 feet to east end center monument; thence south 300 feet to southeast corner monument No. 3; thence west 1,500 feet to southwest corner monument No. 4; thence north 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations. Claim No. 8 overlapping No. 1. Louis G. Albrechtsen and Rufus C. Albrechtsen.

MERLE ALICE CLAIM NO. 1 - Situated about 1 mile southeast of the San Rafael Knob in the first canyon, in or near Section 19, Township 23 S., R. 10 East, in Emery County, State of Utah, beginning 50 feet east of this location (Discovery) monument, at the west end center monument, and running thence south 300 feet to southeast corner monument No. 1; thence west 1,500 feet to southwest corner monument No. 2; thence north 300 feet to west end center monument; thence north 300 feet to northwest corner monument No. 3; thence east 1,500 feet to northeast corner monument No. 4; thence south 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations. Louis G. Albrechtsen and Rufus C. Albrechtsen.

MERLE ALICE CLAIM NO. 2 - Situated about 3/4 of a mile southeast of the San Rafael Knob in the first canyon, in or near Section 19, Township 23 S., R. 10 East, in Emery County, State of Utah, the location being described and marked on the ground as follows, to-wit: Beginning 50 feet east of this location (Discovery) Monument, at the east end center monument, and running thence south 300 feet to southeast corner monument No. 1; thence west 1,500 feet to southwest corner monument No. 2; thence north 300 feet to west end center monument; thence north 300 feet to northwest corner monument No. 3; thence east 1,500 feet to northeast corner monument No. 4; thence south 300 feet to place of beginning; including all Dips, Spurs, Angles and Variations. Claim No. 2 overlapping Claim No. 1. Louis G. Albrechtsenn and Rufus C. Albrechtsen.

Witnesses:

_____

_____

_____ Rufus C. Albrechtsen

_____ Louis G. Albrechtson

_____ Lyman Jack Curtis
LESSORS

_____ Gayle Dellinger
LESSEE

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

On the ____ day of _____, 1954, personally appeared before me, Rufus C. Albrechtsen, Louis G. Albrechtson, Lyman Jack Curtis, Lessors, and Gayle Dellinger, Lessee, the signers of the above instrument who duly acknowledged to me that they executed the same.

My commission expires:

_____

_____ NOTARY PUBLIC
Residing at Salt Lake City, Utah

RIDER ATTACHED TO AND MADE A PART OF FORM MF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR - 7 1955

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DMEA Date Rec'd

RECEIVED APR 7 1955

BUREAU OF MINES Denver, Colorado

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

Not to be filled in by applicant

Docket No. 3761
Metal or Mineral Uranium
Date Received 4-7-55
Estimated Cost $16,948.14
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: San Rafael Mining Company (see attached rider)

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract (see attached rider)

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

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

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

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

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

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

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

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

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

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

(See attached rider)

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

.....

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☐ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

(see attached rider)

Dated ....., 195__

.....
(Applicant)

By.....

.....

.....

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

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

DEPARTMENT OF THE INTERIOR
Bureau of Mines
RECEIVED

ATTACHMENT TO AND PART HEREOF FORM P-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form P-103)

1. (a) (b) (c) (d)

Name of applicant: San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Bldg., Colorado Springs, Colorado, a copartnership organized under the laws of the State of Colorado consisting of the following partners:

J. Gayle Dellinger
309 South Cascade Avenue
Colorado Springs, Colorado

A. L. Trowbridge
c/o Pringle-Hurd and Co., Inc.
620 North Tejon Street
Colorado Springs, Colorado

Clyde H. Long
P. O. Box 1791
Colorado Springs, Colorado

J. F. Lane
911 North Sheridan Avenue
Colorado Springs, Colorado

Blackstone and Company, a co-partnership organized and existing under the laws of the State of Colorado, by
John A. Love
Cheyenne Mountain Boulevard
Colorado Springs, Colorado

and

James C. Wieboldt
19 Sixth Street
Colorado Springs, Colorado

RIDER ATTACHED TO AND MADE A PART OF FORM DMP 103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMP ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form DMP 103)

5. (a) (b) (c) (d) (e) (f)

There are eleven mining claims contiguous and overlapping which would benefit from further exploration work. Six of these claims are known as the Gray Fox Group numbering from 1 to 6 inclusive. The Gray Fox claims were leased as of August 15, 1954, from Louis G. Albrechtsen of Castle Dale, Utah, Rufus C. Albrechtsen of Ferron, Utah, and Lyman Jack Curtis of Castle Dale, Utah. A copy of this lease is attached hereto and made a part of this application. Mining claims Gayle # 2, Thunderbird numbers 1, 2, 3 and 4, which join and overlap covering any possible land vacancies of the Gray Fox group are owned exclusively by the San Rafael Mining Company. This entire mining property is known locally as the Thunderbird Group. The San Rafael Mining Company controls this entire group of claims and, other than the interest of the United States Government, being the land owner, the overriding interest of the lessors of the Gray Fox group, there are no liens or encumbrances known to be applicable to this reality.

All of these claims are located in the headwaters of Reds Canyon in the vicinity of what is locally known as Temple Rock in Section 19, Township 23, South, Range 16 East of the Salt Lake City Prime Meridian, Emery County, Utah. Included with this application is a survey map (which wasn't completed at the time because of the roughness of the terrain) of a portion of these claims. This survey will be completed in due course. Also included is one copy of a USGS Topography map showing roughly the general location of the claims and the radioactive areas.

Office of the Emery County Recorder, Castle Dale, Utah. Book and Page numbers of recorded Claims:

Gayle # 2	Book J57	Page 350
Thunderbird # 1	Book J59	Page 155
Thunderbird # 2	Book J59	Page 156
Thunderbird # 3	Book J60	Page 93
Thunderbird # 4	Book J62	Page 44
Gray Fox # 1	Book J35	Page 452
Gray Fox # 2	Book J35	Page 453
Gray Fox # 3	Book J35	Page 454
Gray Fox # 4	Book J35	Page 455
Gray Fox # 5	Book J35	Page 456
Gray Fox # 6	Book J35	Page 457

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
ade by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

4. (a) (b) (c) (d) (e)

When we purchased the Gray Fox Claims in August, 1954, there had been no work done on them with the exception of a small amount of hand digging on radioactive places here and there. Since that time we have done considerable hand labor on the various uranium showings on the rimrock. This was done by hand rim stripping trails and a number of cuts on the productive ore horizon of that region, several cuts going back some thirty feet or more thru the Shinarump formation talus.

We built a road some three miles up the floor of Reds Canyon with a D-6 Bulldozer, the last half mile being partly shelf road-work in the steep Moenkopi formation slopes which form the lower part of the canyon walls. The first two and one half miles are in a dry wash and the work consisted merely of clearing out the larger boulders. At least one-half mile was cut into the hills to form a good working road with an easy grade for our rental air compressor and from this part of the road it is possible to run air lines to the ore horizon in the rim rock on the three most likely ore producing claims. The first part of the road was damaged by a heavy cloudburst this past fall. However, it is still readily passable even with heavy trucks.

Approximately two months were spent by two men in exploring the Canyon rims with Scintillators and Geiger counters. The San Rafael Swell's most productive uranium ore horizon of the Shinarump formation was checked very carefully on these canyon rim claims. This same horizon was checked for several miles along the headwaters of this canyon for comparative purposes. It was found that all the principal uranium showings were on our claims with only a very few weak showings in other parts of the canyon headwaters.

We have also built two well insulated houses at this mining property for personnel use. The first is a one room house of approximately 12 x 16 feet equiped with furniture and stoves. The other is a two room house of approximately 12 x 22 feet also with some furniture.

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DEFN
UNDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

To date we have spent some $6,000.00 on road work, houses and exploration work on these claims.

We have looked over many other mining properties in this region for comparison. Just to the east of our claims lie three small worked out uranium mines. A fourth, somewhat to the northeast, is still operating. There are also several other operating uranium mines in the immediate area. The same general area of the San Rafael Swell includes the famous uranium mines of Vernon Pick and Temple Mountain.

We have shipped no ore to date. However, it would be possible to ship small tonnages of hand sorted uranium ore at present. Our principal aim is to explore these present uranium showings in order to find a more commercial bed of ore.

There are numerous uranium showings on the Shinarump rims on four of these claims ranging up to 1.15% chemical assay. These run mostly in pockets and seams. However, on one claim we have a number of asphalt seams which run back under the rimrock. We have made two cuts some thirty feet thru the talus and a few feet back under the rimrock. This asphalt runs approximately .24% U_3O_8 chemical assay and some seams are 6 to 8 inches thick. Some parts of these claims can be drilled to the ore horizon at a depth of approximately 200 feet. Other parts of the claims are obstructed by high Wingate Cliffs.

The claims have been inspected by a mining engineer of the Mining and Development Company of Salt Lake City and by several local experienced uranium miners. Geological information and mining suggestions in this application are a combination of information from these men and from personal experience in uranium exploration of Mr. Long, one of the partners of the applicant as noted above.

Our mining camp site is on the floor of the canyon at an elevation of about 6,000 feet. The country in general is semi-desert with practically no grass but with scattered cedar and piñon pine trees and some sage brush.

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

The geology of all of the uranium mines in this part of the Swell is the same, most of the mines being in sandstone lenses or channels at the very bottom of the Shinarump formation. However, there are some mines in the area wherein good commercial ore has been found in sandstone, conglomerate and mudstone layers. The ore bodies lie in a generally horizontal position and vary in size from six inches thickness to twenty feet or more and may vary in tonnage from a few tons to several hundred thousand tons. Uranium mining in the San Rafael Swell is still very new, most of the mines being only a year or two old. New access roads to remote areas of the Swell are constantly being opened up.

The radioactive showings on our claims are all in the bottom of the Shinarump formation which lies some one hundred feet or more above the valley floor. The canyon floor is entirely within the Moenkopi formation with no showing of the overlying Cutler formation. The thickness of the Shinarump formation varies from fifty to possibly two hundred feet in this area, with the Chinle formation showing above it. Most of the canyon rims are capped with the Wingate formation. The San Rafael Knob which is nearby is capped with the Entrada formation which lies above the Wingate in this area.

There are many out of the ordinary showings located in the head of Reds Canyon where these claims are located and in the mesa adjoining. These showings take a number of different forms. These seams and pockets may be identified by the presence of a number of different elements which are known to precipitate uranium from uranium bearing ground waters. Examples of these elements are calcium in the form of arsenic, gypsum, lime and other alkalies, also hydrogen sulfide from asphalt and dead oil, chalcocite copper, iron pyrites, limonite, hematite and carbonaceous wood.

Since uranium in secondary forms is very soluble in water, surface uranium ore will leach away very rapidly with the surface

RIDER ATTACHED TO AND MADE A PART OF FORM DF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form DF-103)

drainage. Therefore, the surface showings on these claims are considered to be the result of the leaching off of a concentration of uranium ore in the vicinity. Further evidence of the reasonable presence of a uranium ore bed would seem to arise from relatively recent geologic theory which holds that the leaching process may be identified with a bleaching of the surrounding sandstone. The exploratory work on these claims has revealed a definite presence of such material. More weight is added to the leaching hypothesis when, as to these claims, it is noted that the ore bearing formation tilts downward away from the rim. These claims are considered to be situate in the midst of several geologic stream channels. In particular, it is felt that the working so far on the Gray Fox Claims Numbers 3 and 5 are approaching deeper portions of the stream in that locale or a bend in the stream where the uranium producing ore may most likely be considered to concentrate.

There is a major fault (6 feet) showing on Gray Fox Claim No. 3. This fault may be the controlling factor since a number of ore beds are in the vicinity of fault zones. Since there are so many rim showings of uranium concentrated in this general area we consider that there is an excellent possibility of there being a body of ore of major importance in an area of approximately 1,200 x 3,000 feet. In addition, there is a possibility of several minor commercial beds of uranium on these same claims.

Reds Canyon has a number of uranium mines on the rims in the direction of the Muddy River. However, the upper part of the canyon for a distance of some four miles has very few showings except for the headwaters of the canyon where our claims are located. There are, on these claims, as the accompanying map will show, a large number of radioactive showings. Most of these seem to be in a copper bearing seam just under a conglomerate layer which lies on top of the Moenkopi formation. The very top of the Moenkopi formation in this area is metamorphosized by chemical water action thereby forming a hard Pinto colored layer varying from a thickness of five feet at the head of the canyon on Gray Fox Claim No. 3 to only a few inches some 1,500 feet down the canyon. This

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

Pinto layer seems to be associated with the formation of uranium deposits in some manner yet to be proven by geologists. Since the uranium deposits lie directly above this formation it would seem that the Pinto layer acts as a hard floor against which the ore collects. This Pinto layer is missing in most of the Swell area, but is conspicuously present at many of the uranium mines including Temple Mountain.

The following paragraph describes the principal uranium occurrences on these claims in numerical order. Note, however, that Gray Fox Claim No. 5 has by far the best surface showings.

On Gray Fox Claim No. 1 there is a carbonized log lying parallel with the surface. This is highly radioactive in one section which yields a radiometric assay of 1% or better. This short section lies in conjunction with a crack extending back into the sandstone some distance and runs parallel to the other breaks in the general formation, all running in a Northeasterly direction. The rest of the log is barren and lies at the top of the conglomerate layer and at the bottom of the Shinarump. At the bottom of this conglomerate layer nearby there is a thin streak of copper oxide which is radioactive. There is no other radioactive material very close by on the surface; however, there is considerable talus coverage at this point. This particular area could well bear considerably more exploratory work.

Gray Fox Claim No. 2 shows no exceptional radioactivity. Again, however, the lower layer of the Shinarump is heavily covered with talus.

On Gray Fox Claim No. 3, uranium shows in a percentage up to 1.15% in small pockets and seams in the conglomerate layer just on top of the Pinto Moenkopi. There is a thin copper layer continuous for approximately 250 feet just below the conglomerate layer. This copper layer shows principally on the Shinarump point jutting out towards the valley. On this point we have excavated a trail some two feet wide and at the extreme end of the point we have dug back into the rock about six feet and have taken out perhaps two tons of uranium ore. This ore would average low grade as a whole, but in small pockets and seams would assay up to possibly

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

1,2. The ore seems to be definitely associated with asphalt, copper and iron oxides. The ore is disseminated Pitchblende. The Geiger counter assay (radiometric) appears to be much lower than the chemical assay. This would seem to indicate that much of the radium content has gone. However, this does not affect the uranium ore value.

Near the center of Gray Fox Claim No. 3 outcrop there is a major fault passing thru an overhang in the Shinarump formation with a drop in the conglomerate layer of this formation of approximately six feet on the east side of the fault. This fault extends thru the Moenkopi, Shinarump, Chinle and Wingate formations.

There is another cross fault on Gray Fox Claim No. 3 which runs into the major fault at approximately fifty feet back from the rim. The fault shows considerable limonite at the outcrop which is radioactive. One geologist suggested that where these two faults meet there may be a more consistant ore bed.

The conglomerate, sandstone and clay layers near the major fault all read warm on a #111 Scintillator, particularly where iron oxides have collected. The lower layer of sandstone also shows indications of dead oil. There are also a number of iron pyrite balls of crystals to be found in the conglomerate. These balls also contain silicon, arsenic, calcium, aluminum, barium, copper and traces of titanium. The general opinion of geologists of the AEC is that the faults are possibly the controlling factor in the collection of uranium in the rock of this area.

On the north edge of Gray Fox Claim No. 3 there is a sandstone lens just on top of the Moenkopi Pinto which measures some two feet thick at the outcrop. It is thought that this is an indication of a stream channel. There are thin layers of carbonaceous material which carry a high radioactive count. We have done considerable hand work in this area and have also driven back thru the talus near the fault approximately twenty feet with a gradual improvement of the uranium showings with depth.

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

On Gray Fox Claim No. 4 there is the end of a carbonized log about 12" x 6" which is highly radioactive. It is in the sandstone lens approximately 3 feet thick lying on top of the Moenkopi with a thick mudstone layer on top of the sandstone. This was found to be still radioactive in the same amount after excavating back approximately 6 feet. There is considerable talus at this point.

About one hundred feet to the east, still on Gray Fox Claim No. 4 rim rock, there is a thicker sandstone lens at the same level which shows thin highly radioactive carbon streaks. These remain the same after blasting back approximately four feet. The sandstone lens at this point is thick and solid.

On Gray Fox Claim No. 5 in a sandstone lens lying on top of the Pinto Moenkopi there are a number of thin radioactive carbon streaks. Digging into these streaks it was found they widened out almost immediately and became much richer in radioactivity. The two such streaks showing on the surface multiplied into a number of streaks. Several of these are as much as six inches thick at a distance back of approximately four feet and distributed in the layer over a vertical distance of two feet. Three feet back under the rimrock (or approximately 30 feet from the point of beginning) the streaks consolidate into one heavy black streak of asphalt. This streak varies from 3 to 6 inches in thickness and lies horizontally. At the point where this asphalt enters the rimrock, samples were taken of the matter. In addition, a channel sample one foot long over the black vein and the adjoining sandstone was taken. This last sample showed radioactivity on the Geiger counter and had asphalt specks throughout. The asphalt at this point assayed 0.24% uranium and the channel sample assayed 0.05%.

Since there was considerable loose rock above this showing, the exploratory work was moved south about forty feet where the rock was more stable. At this new cut there were a number of radioactive streaks and by the time the cut was back under the rim rock, low grade uranium was definitely mixed thru about one foot of the sandstone directly above the Moenkopi. This radioactive layer

RIDER ATTACHED TO AND MADE A PART OF FORM DMF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form DMF-103)

was made up of a bleached soft sandstone with asphalt specks throughout and it powdered very easily when dynamited.

The sandstone lens in which these radioactive layers are found vary between two to three feet in thickness with a layer of mudstone approximately four to six feet in thickness on top. Thin radioactive carbon streaks can be traced with a scintillator approximately two hundred feet horizontally along the face of this sandstone lens which outcrops on Gray Fox Claim No. 5. Towards the south end of the lens the mudstone layer above almost disappears.

In a sandstone layer approximately thirty feet above the base of the Shinarump formation in this area there are a number of petrified logs which register faint radioactivity on the scintillator.

As noted above, the general theory of these bottom sandstone lenses is that they were old stream channels which gradually filled with sand. They could have been channels cut along a shallow lake or inland sea shoreline. This area of the Colorado Plateau extending from Arizona to Salt Lake City has been the scene of a number of extremely large but very shallow lakes or inland seas in past ages.

To the east of thissandstone lens on Gray Fox Claim No. 5 at a distance of approximately 3,000 feet there have been a number of Core drill holes that explore the same Shinarump layer. There was a small uranium mine approximately 600 feet farther east which produced a small tonnage of uranium ore from the Shinarump conglomerate layer. Eight hundred feet farther east by northeast there are two more small uranium adits. Some 1,000 feet farther on the same mesa at the same level, is the Green Vein uranium mine which still is a good uranium producer. The AEC drillings explored the area in the immediate vicinity of these diggings. Since the terrain in the area of these mines consists of a flat mesa with the diggings on the east rim, road building was a simple matter. The hole depth varies from 150 feet to 200 feet.

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

Judging from these old diggings (two years old) and drill holes there are possibly one or more old stream channels running in a generally north-east, southwest direction across this mesa, one of them coming out of the rimrock on Gray Fox Claim No. 5.

There is now considerable evidence put forward by the American Association of Petroleum Geologists that shows there is some partnership between some uranium deposits (particularly Salmarup deposits) and existing oil deposits and/or oil deposits that have seeped away due to faulting. Uranium seems to collect in sedimentary formations in a similar manner to oil.

The following is a condensation from the October, 1954, Bulletin of American Association of Petroleum Geologists:

> "The consistent presence of uranium and certain other metals, including arsenic, cobalt, chromium, copper, manganese, molybdenum, nickel, lead, vanadium, and zinc, has been established and in some places these metals are found in exceptionally high concentration in the ash of the analyzed asphalt and oil from petroliferous rock. Some of these metals probably occur as metallo organic compounds, and all are concentrated in the heavy asphaltic portion of petroleum.
>
> "The high concentration of exceptional elements in the ash of the analyzed samples suggests that these elements were concentrated by some agency connected with the actual formation of oil and therefore have a genetic relationship to the oil. The data also suggests that uraniferous asphaltite deposits may be formed through volatilization, oxidation, and polymerization of a petroleum whose ash was enriched in uranium, vanadium, copper, arsenic, molybdenum, nickel and other metals.
>
> "The uraniferous asphaltite from the San Rafael Swell, Utah, is characterized by high uranium, arsenic, copper, and molybdenum and relatively low vanadium.

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

> "The concentration uranium, vanadium, copper, and arsenic in the ash of oil extracted from petroliferous beds in the Moenkopi, Shinarump, and Wingate formations in the San Rafael Swell district, Emery County, Utah, is similar to the concentration of these metals in the uraniferous asphaltite deposits around the flanks of this structure.
>
> "It is interesting to note that many uranium deposits, such as those in the San Rafael Swell, Emery County; Circle Cliffs, Garfield County; and Capital Reef, Wayne County; all in Utah, occur on the flanks of breached anticlinal structures that have served as traps for the accumulation of petroleum during geologic time."

All of these quoted factors seem to fall right in line with all the uranium showings on the Canyon Claims. The opinions of the geologists who have had a look at the claims seem extremely favorable to the possibility of a major ore body being in this area.

The distance from these claims to Green River, Utah, is 60 miles. Green River is a rail shipping point for uranium ore. Thompsons, Utah, just to the east of Green River, is a uranium ore buying station, as is also Grand Junction, Colorado.

The last 56 miles from Green River to these claims is a dirt road, while the rest into Green River, Thompsons, and Grand Junction is concrete. Thompsons is 85 miles distant and Grand Junction 163 miles.

Water and food supplies have been obtained from Green River, Utah. Mining supplies have come from Grand Junction. Dynamite, caps, etc. have been obtained from Temple Mountain Consolidated Uranium Corporation which is only 15 miles from the mining property. There has been some publicity recently that in the near future it may be expected that reduction mills will be installed at either or both Green River and on the Muddy River.

Residence facilities for an exploration crew would be at the site

RIDER ATTACHED TO AND MADE A PART OF FOR F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

of these claims. As noted above, several well constructed buildings are already on location.

The applicant company already has several experienced miners in mind for possible contract mining work. The company has been in contact with the Mining Development Corporation, Ltd., of Salt Lake City, Utah, and, in particular, Mr. Otto Halland, a mining engineer with that firm. In any event, it is contemplated that the company will obtain expert engineering advice in its future exploratory and mining operations.

The company has also consulted with Mr. David I. Gardner, a registered engineer of long experience, for civil engineering work.

It has been anticipated that the company would furnish all mining equipment and supplies and that the same would be trucked in from Green River and Grand Junction. Water will continue to be trucked in from Hanksville approximately 35 miles distant, or, from Green River. There is some water in small ponds in the canyon. However, this water would be useful only for emergencies. It has been thought that the company would contract out the uranium labor of mining to experienced persons.

5. (a) (b) (c) (d)

Three methods for further exploration work of these claims have been under consideration. These methods are: drifting, rim stripping by bulldozer, and drilling. For the reasons indicated below, the company feels that emphasis at this time should be placed upon drifting.

As to the principal ore layer in Gray Fox Claim No. 5 and the area of the major fault on Gray Fox Claim No. 3 (as well as the other ore leads), the drifting method seems to be indicated. These two points seem to offer the best possibility of opening up into good commercial ore beds. Drifting would seem to offer little difficulty in that the sandstone is reasonably solid and safe to work in. The only hardship being that the productive

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

horizon is some 150 feet above the road on the rim rock. However, several wide shelves have been cut in the talus at both points thereby rendering the drifting operation easier with the exception of moving the equipment into position. This, however, can be accomplished with a truck operated winch. These locations offer a considerable advantage in that the waste material may be disposed of with a minimum of difficulty. Drifting seems to offer the best possibilities in that every foot of advance could be checked very carefully. In addition, the sides of the drift may be explored to a depth of approximately ten feet by drilling with an air leg.

Rim stripping by bulldozer, i. e., cutting a shelf road into the productive rim approximately twenty feet thru the talus along the rim rock of all the claims, may very possibly show up other ore bed leads. In fact, a number of mines in the Colorado Plateau region were discovered by this method. However, on these particular claims, this method would be relatively expensive, owing to the roughness of the cliffs.

It is felt that drilling would be impracticable on most of these claims because of the high vertical cliffs of the Wingate formation which overlies most of the area. However, some portions of these claims could be drilled. Road building costs rule out the practicability of drilling on the major fault on Gray Fox Claim No. 3. The same would be true of the Gray Fox Claim No. 5 ore bed. Any such drilling, however, would be blind. On the other hand, drifting on the actual ore leads in the favorable formation structures would seem to be more productive of information.

The following are estimates of the comparative costs on these three methods:

1. Drifting on the two ore leads:

Total cost of equipment and supplies $7,500.00

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

Labor cost of 250 foot drift on Gray Fox Claim No. 5	$1,750.00
Labor cost for 250 foot drift on Gray Fox Claim No. 3	1,750.00
For any unexpected contingencies	1,000.00
	$12,000.00

2. Rim Stripping by Bulldozer:

$300.00 per hundred feet of rim at $1.50 per hour D-6 Dozer.
2,000 feet of rim with good possibilities
Total cost of $6,000.00

3. Drilling:

Drilling costs are governed to some extent by the need to truck water long distances for the operation.

$1.00 per foot for wagon drilling
$1.75 per foot for rotary drilling
$3.00 per foot for rotary core drilling

To explore the accessible parts of Gray Fox Claims No. 5 and No. 6, and Thunderbird No. 1, it would be necessary to drill some 160 holes to an average depth of 200 feet on one hundred foot grids. By using wagon drilling this cost would run $32,000.00 and road building costs would be approximately $6,000.00. Of course, rotary and core drilling costs would run much higher.

To partially explore these same claims by two lines of drill holes at one hundred foot intervals, one parallel to the rim and the other line running east and west. At an average depth of 200 feet by wagon drilling the cost would be some $6,000.00 for thirty holes with approximately $1,200 for road building.

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

To explore the possible ore channel on Gray Fox Claim No. 5 with a 200 foot average depth holes on a grid pattern of fifty foot intervals covering an area of 200 feet by 500 feet the cost by wagon drilling would be $12,000.00 plus $3,000.00 for road building.

Under the aid program of the Defense Minerals Exploration Administration, the company proposes to make two drifts 100 feet long, one on the Gray Fox Claim No. 5 and the other on the Gray Fox Claim No. 3. The geology of both of these sites is presented in paragraph 4 above. A map of the proposed work is annexed to this application.

It is proposed that the work will be conducted under the operational supervision of Mr. Long, one of the partners of the company, who will be guided by competent engineering advice on a consulting basis. Mr. Long has been engaged in uranium exploration activities exclusively for more than a year. This activity has been in both ground and air exploration, mostly in the Colorado Plateau region. In addition, he has thoroughly familiarized himself with the geology of the region and with uranium exploration and production as the same is conducted in the region. Lastly, Mr. Long, by virtue of having spent over four months on the site, is thoroughly acquainted with the claims.

6. (a) (b) (c) (d) (e) (f) (g) (h)

Independent contracts:

We propose to contract the actual labor of mining to experienced miners at not more than $7.00 per running foot for a four by six foot drift. This makes a total cost of 500 feet of drifting at ..... $ 3,500.00

Labor, supervision, geological and engineering consultants: 1,500.00

Operating materials and supplies:

50 cases of dynamite @ $11.00 per case 550.00
750 electric blasting caps @ an average price of $26.00 per 100 ..... 195.00
Electrical blasting connecting wire # 18 1,500 feet @ $.60 per 100 ..... 9.00

Balance Forward $ 5,254.00

RIDER ATTACHED TO AND MADE A PART OF FORM F-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form F-103)

Balance Brought Forward	.....	$ 5,754.00
Electrical leading wire #14 2,000 feet	.....	11.00
Drilling machine oil, 35 gallons	.....	56.00
Gasoline for air compressor and electrical power plant 75 gals. per week $22.50 2 gals oil pr. wk 3.20 25.70 per week 102.80 per month, 4 months operation	.....	411.20
Operating equipment:		
Blasting machine (30 hole)	.....	40.00
Blasting line galvanometer	.....	28.35
Jaeger 1.5 cfm air compressor on wheels	.....	3,305.00
Thor 38 model sinker drill (7/8" x 4 1/4" shank)	.....	380.00
Fairbanks Morse Typhoon pump and gas engine 8-10 HP, 1.3 #1 sq. inch pressure (to be used to pump drilling water up the cliff)	.....	307.00
1 Gardner - Denver Slusher Model HX	.....	1,000.00
1 Vulcan 16" Scraper	.....	295.00
1 Keeney block (sheave) size 6" x 1 1/2" ball bearing	.....	39.00
1 Breast pin (for sheave)	.....	6.15
200 feet 3/8 x 3 x 19 cable .093/feet	.....	18.60
Hose bender	.....	5.95
1" air hose w/couplings 50' long	.....	39.50
1/2" water hose w/couplings 50' long	.....	25.00
30 gallon water tank with fittings (pressure)	.....	69.50
450 feet of black 1" pipe for air 17¢ per foot	.....	76.75
Balance Forward		$ 1,069.90

RIDER ATTACHED TO AND MADE A PART OF FORM DF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form DF-103)

Balance Brought Forward	.....	$ 12,069.90
200 feet of black 3/4" pipe for water 12¢ per foot	.....	24.50
Steel (drill) 7/8" x 4" shank -alloy		
2 - 4 foot steels 7.31 ea.	.....	14.62
2 - 6 foot steels 9.06 ea.	.....	18.12
100 Bits - liddicoat 1-d for 7/8" steels (knockoff type) 22¢ ea.	.....	22.50
Knockoff block	.....	8.50
300 gallon water tank with two baffles for transportation of water to mine	.....	85.00
Trailer for water tank	.....	95.00
Mine timber for drift entrances 8 x 8" for posts & beams 2 x 12" for sheeting 2,000 board feet	.....	100.00
Listed slusher will be used up to 100 or 150 feet depending on its efficiency. Then slusher will be moved back to the mine face and used for the rest of the drift. Using track and mine car to run the muck out the front of the drift. Allowance for used mining car, track and installation	.....	750.00
Jeep Truck, winch and cable to be furnished by the San Rafael Mining Company	.....	1,150.00
Electrical plant, 1000 watt, A. C. for mine and residence lighting, plus wiring to be furnished by San Rafael Mining Company	.....	300.00
Truck mileage for transport of equipment and supplies 2,000 miles 1st month 1,000 miles next three months @ $.06 per mile	.....	300.00
Balance Forward		$ 14,998.14

RIDER ATTACHED TO AND MADE A PART OF FORM DF-103
(APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED)
Made by and for San Rafael Mining Company, c/o Atlantis Investment Company, Mining Exchange Building, Colorado Springs, Colorado

(Paragraph numbers below refer to and correspond with the questions as numbered on Form DF-103)

Balance Brought Forward	.....	$ 14,998.14
Hand Tools (To be furnished by San Rafael Mining Company)	.....	00.00

These prices were obtained from the Western Machinery Company of Grand Junction, The S & M Supply Company of Grand Junction, the Independent Lumber Co. and the Odds & Ends Lumber Company of Grand Junction, as well as from a number of other smaller supply houses.

These price quotations may be subject to slight changes due to market conditions or it may be possible to obtain slightly used equipment that is in good working condition for slightly lower prices.

The Air Compressor and the Slusher may be bought on a rental purchase plan for only six months use, thereby saving some $2,000.00.

Rehabilitation and repairs: None

New buildings, improvements and installations:

Estimated cost of installing drilling equipment at the two drifts	.....	300.00

Miscellaneous:

Repairs, bookkeeping, and insurance	.....	640.00
Contingencies:	.....	950.00
	TOTAL	$ 16,948.14

Rider attached to this copy removed and sent to Clyde H. Long, one of the partners.

See original application in docket.

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

OFFICIAL BUSINESS

~~U. S. GEOLOGICAL SURVEY~~
~~SOUTH 157 HOWARD ST.~~
~~SPOKANE 4, WASHINGTON~~

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, $300
(PMGC)

SPOKANE WASH
JY 23 5 PM
1954

Maps

~~Mr. George C. Selfridge, Chairman~~
~~Operating Committee~~
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

ATLANTIS INVESTMENT COMPANY

LOCATIONS

OF THE

GREY FOX GROUP

OF

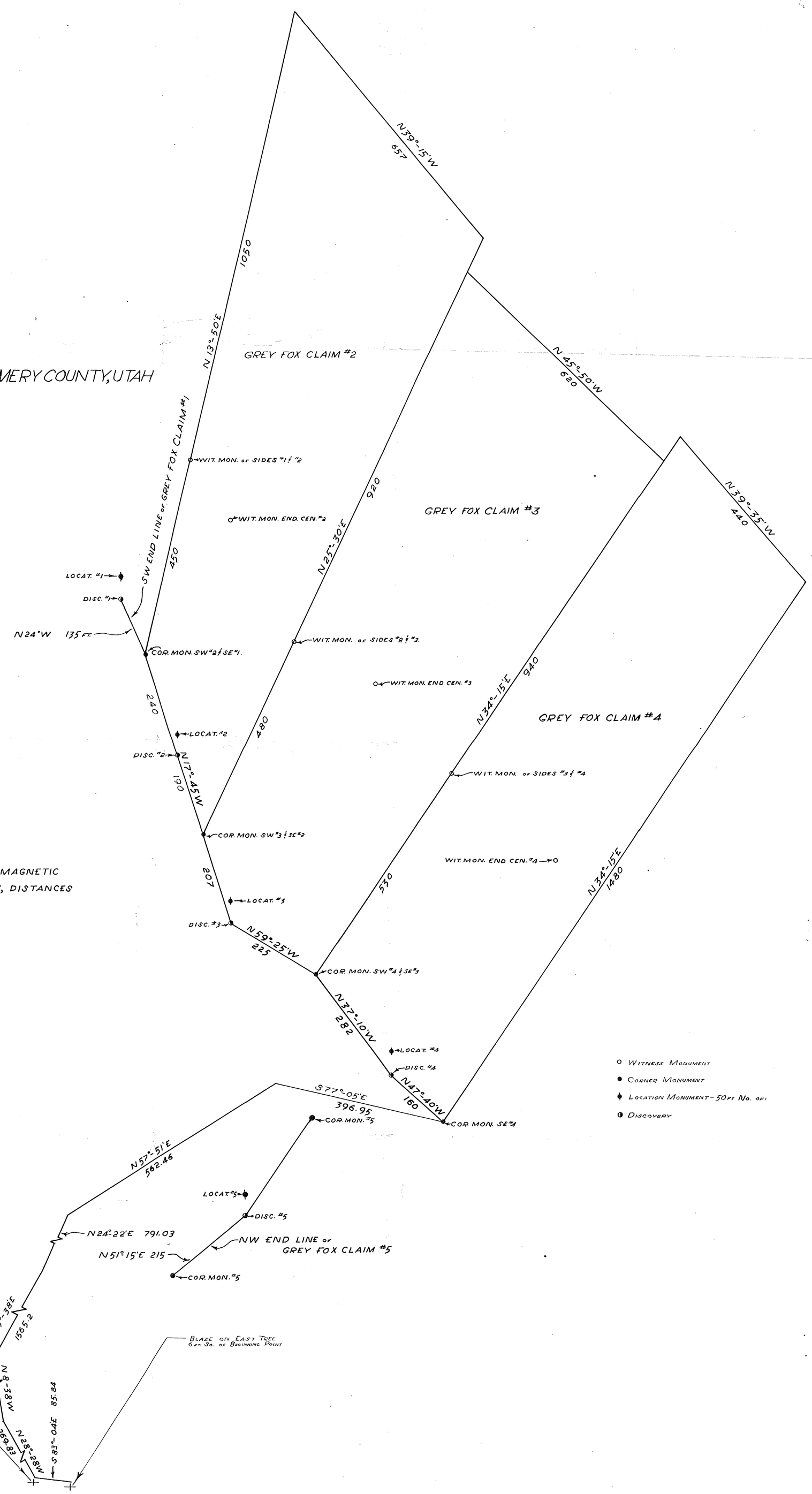
MINING CLAIMS

~NEAR TEMPLE ROCK, EMERY COUNTY, UTAH

PREPARED BY:
GARDNER ENGINEERING
MIDVALE, UTAH

SEPT 16 1954
DATE

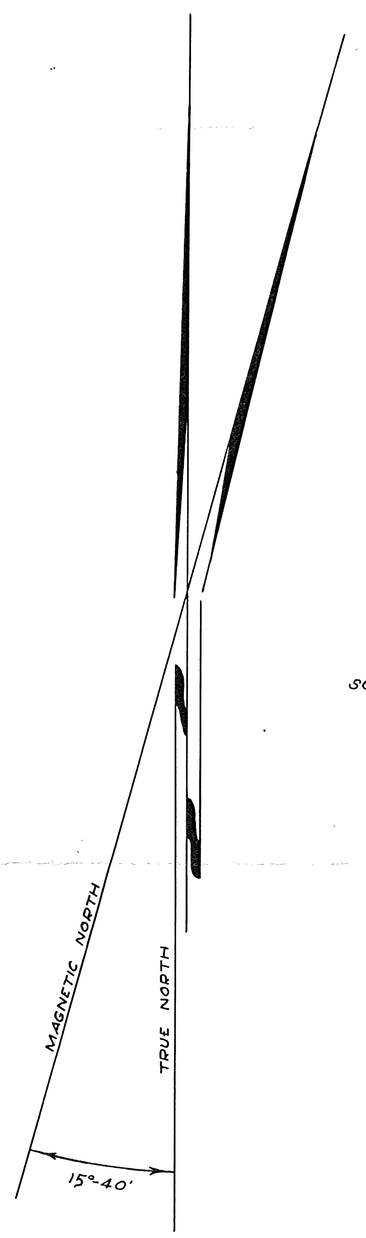
David I. Gardner
DAVID I. GARDNER
ENGINEER'S LICENSE #427



ENGINEER'S NOTE:

BEARINGS BASED ON A MAGNETIC DECLINATION OF 15°-40', DISTANCES BY STADIA.

SCALE: 1" = 100'



DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STINKING SPRING CREEK 2 SE QUADRANGLE

UTAH-EMERY CO.

Drift on Gray Fox 3
600' on Fault
to the Wingate

Drift on Gray Fox 5
to Chinle 300'
to Wingate 800'

— Radioactive

— Ore beds in this area?
3,700' x 1,200'

• Shinarump rim thin NW of Temple Rock -

Mapped by the Geological Survey 1953

Topography by multiplex methods from aerial photographs taken 1951

Data subject to minor corrections when incorporated in a standard series map

TRUE NORTH
MAGNETIC NORTH
16°

APPROXIMATE MEAN DECLINATION, 1953

SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION

Improved ——— Unimproved - - - - -

STINKING SPRING CREEK 2 SE, UTAH

N3845—W11045/7.5

Dunkin Blue Print & Supply Co.
Grand Junction, Colo.