Surname copy

700

Murphy
Ellis
Kilsgaard
Gieber
Selfridge

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

Mr. Herman R. Mohr, President
Park Ridge Uranium Corporation
1700 S. Washington Street
Park Ridge, Illinois

OCT 31 1955

Re: Docket No. DMEA-3964
(Uranium and Mercury)
Boulder Mercury Group
Jefferson County, Montana

Dear Mr. Mohr:

Reference is made to your application for Government aid in an exploration project on the above-named property.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

The Boulder Mercury Group has been the subject of two previous applications (DMA-1176X and DMEA-2961) for Government aid in exploration projects. In both instances, after field examinations were made, the applications were denied. The recent examination of the same property, in connection with the subject application, did not reveal any new geological information. Consequently, the probability of disclosing minable ore reserves by your proposed program is not believed to be sufficiently promising to justify Government participation. We regret to advise that, under these circumstances, your application for exploration assistance is denied.

We wish to thank you for your interest in the Defense Minerals Program and for bringing your property to our attention.

Sincerely yours,

Frank E. Johnson

Acting Administrator

FMMurphy/FEJohnson/gla
(10/24/55)
10/26/55

cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

Code 700
Mr. Murphy
DMEA Field Team, Region I, NW District (2)

R.C.H.

700

Murphy
Ellis

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

Mr. Herman R. Nohr, President
Park Ridge Uranium Corporation
1700 S. Washington Street
Park Ridge, Illinois

Re: Docket No. DMEA-3964
(Uranium and Mercury)
Boulder Mercury Group
Jefferson County, Montana

Dear Mr. Nohr:

Your application for aid in an exploration project and other information available to us in Washington concerning your above-named property.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied.

We wish to thank you for your interest in the Defense Minerals Program and for bringing your property to our attention.

Sincerely yours,

Acting Administrator

FMMurphy/gla
10-24-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700
Mr. Murphy
DMEA Field Team, Region I, Northwest District (2)

DOCKET COPY

700

Murphy
Ellis
Kilsgaard

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

October 24, 1955

Object: Denial of application for exploration aid.

Docket No.: DMEA-3964

Commodity: Uranium

Applicant: Park Ridge Uranium Corp.
1700 S. Washington Street
Park Ridge, Illinois

Property: Lease on 10 unpatented claims known as "Boulder Mercury Group," situated in secs. 19 and 20, T. 6 N., R. 4 W., Jefferson County, Montana.

Date of application: August 30, 1955

Amount of application: $36,230.00

Work Proposed: 700 feet of drifting and crosscutting.

Estimated Costs:

Labor and Supervision	$17,280.00	
Material and Supplies	3,746.00	
Equipment (rental)	3,924.00	
" (purchase)	1,420.00	
New Buildings	350.00	
Miscellaneous	5,910.00	
Contingencies	3,600.00	
Total estimated cost		$36,230.00

9130, DMR - 1176X

A previous application (Docket No. DMEA-2981) for work on the subject property was denied on May 11, 1953. However, in application DMEA-3964, the applicant stated new work had been done on the property.

A field examination was requested by Washington. Mr. Darrell M. Pinckney, USGS, examined the property on September 27, 1955. He reports that the new work done since the field examination, under the first application, consisted of only about 100 feet of crosscutting toward the vein, and that the face of the crosscut was still about 200 feet from the vein.

Mr. Pinckney recommended that since no new geolgic information had been brought to light, the present application should be denied.

Commodity Members' Comments:

U. S. Geological Survey - N. E.Nelson, October 13, 1955.

Concurs in denial, because no new geologic information has been advanced.

U. S. Bureau of Mines - J. E. Crawford, October 20, 1955.

Concurs in recommendation of denial.

Rare and Miscellaneous Metals Division - F. M. Murphy, October 24, 1955.

The work done since the original application, DMA-1176X, has not added any geologic information that would modify the previous reasons for denying aid in exploring the subject property. Therefore, this Division concurs in the Field Team's recommendation to deny this new application.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

10/27/55 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

October 24, 1955

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3964
(uranium-mercury)
Park Ridge Uranium Corporation
Boulder Mercury Group
Jefferson County, Montana

Dear Mr. Selfridge:

Enclosed are three copies of a letter from Ernest E. Thurlow, Chief, Salt Lake Exploration Branch, Atomic Energy Commission, concerning the Boulder Mercury group, Jefferson County, Montana.

Mr. Thurlow is in agreement with the Field Team's recommendations about the property.

Sincerely yours,

Verne C. Fryklund, Jr.

Verne C. Fryklund, Jr.
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW District

Enclosures

cc: USBM (2) w/incoming
Pinckney "

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
~~xxxxxxxxxxxxxxxxxx~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
OCT 27 1955

October 24, 1955

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-396A
(uranium-mercury)
Park Ridge Uranium Corporation
Boulder Mercury Group
Jefferson County, Montana

Dear Mr. Selfridge:

Enclosed are three copies of a letter from Ernest E. Thurlow, Chief, Salt Lake Exploration Branch, Atomic Energy Commission, concerning the Boulder Mercury group, Jefferson County, Montana.

Mr. Thurlow is in agreement with the Field Team's recommendations about the property.

Sincerely yours,

Verne C. Fryklund, Jr.
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW District

Enclosures:

cc: USGS (2) w/incoming
Finelmey "

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF RAW MATERIALS
Salt Lake Exploration Branch

ADDRESS REPLY TO:

U. S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah

AND REFER TO:

RECEIVED
OCT 27 1955

SLEB:EET:af

October 5, 1955

Mr. A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3964
(uranium-mercury)
Park Ridge Uranium Corp.
Boulder Mercury Group
Jefferson County, Montana

Dear Al:

I regret the delay in answering Verne Fryklund's letter of September 12 regarding the new application for assistance on the Boulder Mercury Group. No new evidence has been brought to our attention which would change the outlook for this property, and we still feel that Government exploration assistance is not warranted.

Sincerely yours,

Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
Division of Raw Materials

cc: L. D. Jarrard, AEC, Butte

RECEIVED
OCT 10 1955

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF RAW MATERIALS
Salt Lake Exploration Branch

RECEIVED
OCT 27 1955

ADDRESS REPLY TO:
U. S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah
AND REFER TO:

SLEB:EET:af

October 5, 1955

Mr. A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3964
(uranium-mercury)
Park Ridge Uranium Corp.
Boulder Mercury Group
Jefferson County, Montana

Dear Al:

I regret the delay in answering Verne Fryklund's letter of September 12 regarding the new application for assistance on the Boulder Mercury Group. No new evidence has been brought to our attention which would change the outlook for this property, and we still feel that Government exploration assistance is not warranted.

Sincerely yours,

Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
Division of Raw Materials

cc: L. D. Jarrard, AEC, Butte

RECEIVED
OCT 10 1955

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF RAW MATERIALS
Salt Lake Exploration Branch

ADDRESS REPLY TO:
U. S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah
AND REFER TO

RECEIVED
OCT 27 1955

SLEB:EET:af

October 5, 1955

Mr. A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3964
(uranium-mercury)
Park Ridge Uranium Corp.
Boulder Mercury Group
Jefferson County, Montana

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Sincerely yours,

Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
Division of Raw Materials

cc: L. D. Jarrard, AEC, Butte

RECEIVED
OCT 10 1955

10/21/55 gla

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

October 20, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket 3964, Park Ridge Uranium Corporation, Boulder Mercury Group, Jefferson County, Montana

I have reviewed the report of examination, DMEA Docket 3964, Park Ridge Uranium Corporation; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The applicant requested Government assistance to explore for uranium and mercury on 10 continuous claims located in Jefferson County, Montana, the program to consist of 700 feet of drifting at $50.00 per foot.

My September 19 memorandum to the DMEA indicated that insufficient evidence was presented by the applicant to warrant a field examination. A memorandum from the Field Team, Region I, of October 5, 1955, stated that an examination of subject property by the DMEA examiners on September 27, 1955, revealed no new geologic information was found that would warrant DMEA participation in the proposed exploration project. The Field Team recommends a denial of the request for Government assistance.

We concur with the recommendation of the Field Team that the application for DMEA aid be denied.

The report is being forwarded to the Chief, Division of Minerals, in accordance with the routing slip attached thereto.

John E Crawford
John E. Crawford

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

October 20, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket 3964, Park Ridge Uranium Corporation, Boulder Mercury Group, Jefferson County, Montana

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The applicant requested Government assistance to explore for uranium and mercury on 10 continuous claims located in Jefferson County, Montana, the program to consist of 700 feet of drifting at $50.00 per foot.

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We concur with the recommendation of the Field Team that the application for DMEA aid be denied.

The report is being forwarded to the Chief, Division of Minerals, in accordance with the routing slip attached thereto.

John E. Crawford

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

October 20, 1955

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To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

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We concur with the recommendation of the Field Team that the application for DMEA aid be denied.

The report is being forwarded to the Chief, Division of Minerals, in accordance with the routing slip attached thereto.

John E. Crawford

10/13/55 gla

IN REPLY REFER TO:

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

RECEIVED
OCT 13 1955

October 13, 1955

Re: DMEA 3964
Park Ridge Uranium Corp.
Boulder Mercury Group
Jefferson Co., Mont.
$36,250 - Uranium, Mercury

Memorandum

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

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

Subject: Review of Field Team report.

This application requested aid in doing 700 feet of drifting and crosscutting. Previous applications by the same applicant have been denied.

The status of the work under way appears to have changed but little since the denial of DMEA 2981 was made. The conclusions of the examiner and the Field Team that no new geologic information has been advanced in support of this application appear to be realistic and valid.

I concur with the Field Team recommendation that this application be denied.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
OCT 13 1955

October 13, 1955

Re: DMEA 3964
Park Ridge Uranium Corp.
Boulder Mercury Group
Jefferson Co., Mont.
$36,250 - Uranium, Mercury

Memorandum

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

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

Subject: Review of Field Team report.

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I concur with the Field Team recommendation that this application be denied.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-10/13/55

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

IN REPLY REFER TO:

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

RECEIVED
OCT 13 1955

October 13, 1955

Re: DMEA 3964
Park Ridge Uranium Corp.
Boulder Mercury Group
Jefferson Co., Mont.
$30,250 - Uranium, Mercury

Memorandum

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

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

Subject: Review of Field Team report.

This application requested aid in doing 700 feet of drifting and crosscutting. Previous applications by the same applicant have been denied.

The status of the work under way appears to have changed but little since the denial of DMEA 2981 was made. The conclusions of the examiner and the Field Team that no new geologic information has been advanced in support of this application appear to be realistic and valid.

I concur with the Field Team recommendation that this application be denied.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-10/13/55

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

IN REPLY REFER TO:

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

RECEIVED
OCT 13 1955

October 13, 1955

Re: DMEA 3964
Park Ridge Uranium Corp.
Boulder Mercury Group
Jefferson Co., Mont.
$36,250 - Uranium, Mercury

Memorandum

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

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

Subject: Review of Field Team report.

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The status of the work under way appears to have changed but little since the denial of DMEA 2981 was made. The conclusions of the examiner and the Field Team that no new geologic information has been advanced in support of this application appear to be realistic and valid.

I concur with the Field Team recommendation that this application be denied.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-10/13/55

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
OCT 10 1955

October 5, 1955

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3964 (uranium and mercury)
Park Ridge Uranium Corporation
Boulder Mercury Group
Jefferson County, Montana

Dear Mr. Selfridge:

Enclosed are the original and three copies of a short memorandum by Darrell M. Pinckney, Geologist, U. S. Geological Survey.

Work done at the property since Docket Nos. DMEA-2981 and DMA-1176X were denied consists of about 100 feet of cross-cutting toward the vein. There can, therefore, be no reason for changing our earlier recommendation for denial of the application.

By Field Team, Region I, NW District

for Verne C. Fryklund
A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Stephen A. Zoledoski
for Wing G. Agnew, Member
U. S. Bureau of Mines

Enclosures
cc: USBM (2)
USGS (SRO)
Pinckney
AEC, Salt Lake City

Reviewed by
DMEA OPERATING COMMITTEE
10-14-55
(Date)

Note: Docket No. DMEA-2981 denied by D.C. 5/11/53 and Docket No. DMA-1176X denied 6/21/51--resubmitted under Docket No. DMEA-2980 and denied 5/11/53--same property.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
OCT 10 1955

October 5, 1955

Memorandum

To: Field Team, Region I, Northwest District

From: Darrell M. Pinckney, Geologist, U. S. Geological Survey

Subject: Application examination report, Docket No. DMEA-3964 (uranium and mercury), Park Ridge Uranium Corp., Boulder Mercury group, Jefferson County, Montana

Examination of the Boulder Mercury property was made September 27, 1955. New work done since the last DMEA applications (Docket Nos. DMEA-2981 and DMA-1176X) consists of only about 100 feet of crosscutting toward the vein. The face of the crosscut is still about 200 feet from the vein.

Since no new geologic information has been brought to light, I recommend that the Government not enter into a contract at this time to explore the Boulder Mercury group of claims.

Distribution:
DMEA (Orig. & 3)
USBM (2)
USGS (SRO)
Docket
Pinckney
AEC (2)

Reviewed by
DMEA OPERATING COMMITTEE
10-14-55
(date)

10/11/55 gla

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

RECEIVED
OCT 10 1955

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Dear Mr. [illegible]:

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

A-[illegible]

[illegible]

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

[illegible]
[illegible]o. 157 Howard Street
Spokane 4, Washington

RECEIVED
OCT 10 1955

October 5, 1955

Memorandum

To: Field Team, Region I, Northwest District

From: Murrell M. Pinckney, Geologist, U. S. Geological Survey

Subject: Application examination report, Docket No. DMEA-5364 (uranium and mercury), Park Ridge Uranium Corp., Boulder Mercury group, Jefferson County, Montana

Examination of the Boulder Mercury property was made September 27, 1955. New work done since the last DMEA applications (Docket Nos. DMEA-2381 and DMEA-1176X) consists of only about 100 feet of crosscutting toward the vein. The face of the crosscut is still about 200 feet from the vein.

Since no new geologic information has been brought to light, I recommend that the Government not enter into a contract at this time to explore the Boulder Mercury group of claims.

Distribution:
DMEA (Orig. + 5)
USGS (6)
USBM (1R)
Docket
Pinckney
ARC (2)

Reviewed by
DMEA OPERATING COMMITTEE

(date)

700

Murphy
Ellis
Nelson
Gehan
Selfridge

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

SEP 22 1955

Park Ridge Uranium Corp.
1700 S. Washington Street
Park Ridge, Illinois

Re: Docket No. DMEA-3961
(Uranium and mercury)
Boulder Mercury Group
Jefferson County, Montana

Gentlemen:

The application for assistance in exploring the subject property under the captioned docket number has been reviewed by the Rare and Miscellaneous Metals Division.

The DMEA Field Team, Region I, Northwest District, Mr. A. E. Weisenborn, Executive Officer, South 157 Howard Street, Spokane 4, Washington, will schedule a field examination of your property in the near future if it has not already done so.

Any assistance you may give the members of the Field Team during the examination will be appreciated.

Sincerely yours,

Frank E. Johnson (for)

ACTING Administrator

FMMurphy/gla
9-20-55
cc to: Admr.'s Reading File
Docket
Code 700
Mr. Murphy
DMEA Field Team, Region I, Northwest District

R.C.B.

Surname copy

700

Murphy
Ellis
Nelson
Selfridge
Johnson

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

SEP 22 1955

Mr. A. E. Weissenborn
Executive Officer, Northwest District
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3964 (Uranium and mercury)
Park Ridge Uranium Corporation
Boulder Mercury Group
Jefferson County, Montana

Dear Mr. Weissenborn:

The captioned application is referred to Region I Field Team for investigation, a field examination, and recommendation. A copy of the application was forwarded to your office on September 6, 1955.

Enclosed are copies of memoranda from N. E. Nelson, dated September 12, and J. E. Crawford, dated September 19, 1955, members of the Uranium Commodity Committee.

In the event the Field Team recommends a project on the subject property, it should advise the Applicant that we will require six executed copies of the Owner's Consent to Lien signed by the Square Deal Uranium Corporation, the owner and lessor of the property.

The Applicant's estimate of drifting costs at $50 per foot appears high in relation to our usual contract costs for this type of work.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

FMMurphy/gla 9-20-55
cc to: Admr.'s Reading F.
Docket
Messrs. JECrawford, Rm.3641
THKiilsgaard, R.5224
JCHosted, Rm.3210GSA
Code 700
Mr. Murphy
Operating Committee

Enclosures

APPROVAL:

/s/ Robert W. Geehan (24B)
Member, Bureau of Mines

N. E. Nelson (24B)
Member, Geological Survey

P. S. We acknowledge receipt of your communications to the Operating Committee and Ernest E. Thurlow, AEC representative, advising a field examination is being scheduled, which were received after the above letter was prepared.

RCL

9/20/55 gla

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

RECEIVED
SEP 20 1955

September 19, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Application for assistance, DMEA Docket 3964, Park Ridge Uranium Corp., Boulder Mercury Group, Jefferson County, Montana

I have reviewed the attached application, Park Ridge Uranium Corp., DMEA Docket 3964; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The applicant has applied for DMEA aid to explore for uranium and mercury on 10 continuous unpatented claims located in Jefferson County, Montana, by 700 feet of drifting at a total estimated cost of $36,230.00, or $50.00 per foot of drift.

The application referred to two separate mining engineers' reports which were supposedly enclosed, but they did not come to my attention with this application. Assays were not given for specific locations on subject claims, and no maps were attached to show relationship of drifting to mineralization trend.

I am hesitant of recommending a field team examination on the basis of submitted information; unless the field team has information that justifies an exploration program of this nature, I do not believe an examination is warranted.

John E Crawford
John E. Crawford

Attachment

9

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
SEP 1 0 1955

September 12, 1955

Mr. George C. Selfridge, Chairman
DMEA Operating Committee
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3964 (uranium-mercury)
Park Ridge Uranium Corporation
Boulder Mercury Group
Jefferson County, Montana

Dear Mr. Selfridge:

This will acknowledge receipt of a copy of the Park Ridge Uranium Corporation application. A previous application for work at this property (Docket No. DMEA-2981, Sanford R. Davis) was denied by the Administrator's letter of May 11, 1953.

The applicant claims to be doing additional underground work so a field examination will be scheduled. This examination will be restricted to examination of new workings.

Sincerely yours,

Verne C. Fryklund Jr.

Verne C. Fryklund, Jr.
for: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.

cc: USBM (2)
Pinckney

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
SEP 13 1955

September 12, 1955

Mr. George C. Selfridge, Chairman
DMEA Operating Committee
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3964 (uranium-mercury)
Park Ridge Uranium Corporation
Boulder Mercury Group
Jefferson County, Montana

Dear Mr. Selfridge:

This will acknowledge receipt of a copy of the Park Ridge Uranium Corporation application. A previous application for work at this property (Docket No. DMEA-2981, Sanford B. Davis) was denied by the Administrator's letter of May 11, 1953.

The applicant claims to be doing additional underground work so a field examination will be scheduled. This examination will be restricted to examination of new workings.

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Pinckney

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
SEP 1 1 1955

September 12, 1955

Mr. Ernest E. Thurlow, Chief
Salt Lake Exploration Branch
U. S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah

Re: Docket No. DMEA-3964 (uranium-mercury)
Park Ridge Uranium Corporation
Boulder Mercury Group
Jefferson County, Montana

Dear Ernie:

Enclosed is a copy of an application by the Park Ridge Uranium Corporation. The copy we received came from Washington, and the engineers' reports mentioned in the application were missing.

A previous DMEA application for work at the property (Docket No. DMEA-2981) was denied on May 11, 1953, but according to the present applicant new work has been done at the property. We would appreciate your comments about the property.

Sincerely yours,

Verne C. Fryklund, Jr.
for: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.

Enclosure

cc: DMEA (2)
USBM (2)
Pinckney

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
SEP 17 1955

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Salt Lake Exploration Branch
U. S. Atomic Energy Commission
P. O. Box 2196
Salt Lake City, Utah

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Park Ridge Uranium Corporation
Boulder Mercury Group
Jefferson County, Montana

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Sincerely yours,

Verne C. Fryklund, Jr.
for: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.

Enclosure

cc: DMEA (2)
USBM (2)
Pinckney

9/13/55 glc

IN REPLY REFER TO:

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

RECEIVED
SEP 13 1955

September 12, 1955

Re: DMEA 3964
Park Ridge Uranium Corp.
Boulder Mercury Group
Jefferson Co., Montana
$36,250 - Uranium and Mercury

Memorandum

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

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

Subject: Review of application.

The applicant asks for assistance in driving 700 feet of drifts and crosscuts to explore uranium- and mercury-bearing veins. The 700 feet of work is not segregated.

Probably the Field Team has definite information on these prospects. If not an examination and a report are probably warranted.

I recommend referral to the Field Team.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
SEP 13 1955

September 12, 1955

Re: DMEA 3964
Park Ridge Uranium Corp.
Boulder Mercury Group
Jefferson Co., Montana
$35,250 - Uranium and Mercury

Memorandum

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

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

Subject: Review of application.

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Probably the Field Team has definite information on these prospects. If not an examination and a report are probably warranted.

I recommend referral to the Field Team.

N. E. Nelson

N. E. Nelson

NENelson:iml
~~xxxxxx~~
G-9/12/55

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

Subject: Exploration
Re: Boulder Mercury Group

Park Ridge Uranium Corp.
1700 S. Washington, St.,
Park Ridge, Illinois

September 6, 1955

Gentlemen:

The receipt of your application dated August 30, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3964 and referred to the Rare & 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

60932

PARK RIDGE URANIUM CORP.

1700 South Washington Street » Park Ridge, Illinois » Phone TAlcott 3-8369

MINING » DRILLING » AERIAL AND GROUND SURVEYS

PARK RIDGE URANIUM CORP.
BOX 424
BOULDER, MONTANA

30 August 1955

RECEIVED
SEP - 2 1955

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

Gentlemen:

Enclosed please find the following:

Application for DMEA contract (4 copies)
Lease governing our property (one copy)
U.S. Government Geological Report 988-G (one copy)
Engineering Report M.R.Cooper (one copy)
Engineering Report Wade Lewis (one copy)

We would appreciate your careful consideration of this application, as we have found this area to be highly radioactive, with mineralization similar to Marysvalle, Utah, and with good ore showings on the surface. As of this writing we have expended a little more than $20,000 on equipment and personnel in order to expedite any aid that you may be able to give us. The drifting is now in operation, with capable personnel that can handle practically any mining problem that may arise.

I personally will be on the Boulder-Mercury property for the next four weeks, as will Mr. C.W. Timmerman, and we both welcome the opportunity of your representative visiting the property for inspection.

Thank you, in advance, for your kind consideration.

Sincerely,

PARK RIDGE URANIUM CORP.

Harvey Rohr

President

HRNOHR/vn

Encl: Application
Lease
Gov't Bull
Eng Rept
Eng Rept

Crawford

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
SEP - 2 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. 3964
Metal or Mineral Uranium
Date Received 9-2-55
Estimated Cost 36230.00
Participation (Government %) 75

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: Park Ridge Uranium Corp.
1700 S. Washington Street
Park Ridge, Illinois

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

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

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

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 page one attached)

(*b*) State any mine name by which the property is known. (see page one attached)

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

(*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. Submitted herewith

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

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

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

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

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

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

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

16—66551-1

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

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

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

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

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: (page four)

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

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

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

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

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

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

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

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

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

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

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

[XX] Money [XX] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated August 30, 1955, 195...

PAM RIDGE OIL MINE CORP
(Applicant)

By Herman R. Rose, President

Hugh L. Conner, Vice-Pres

David H. Spiller, Sec-Treas

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

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DATE, Aug 30, 1955

1. NAME OF APPLICANT.

RECEIVED
SEP - 1955

(a) PARK RIDGE URANIUM CORPORATION
1700 S. Washington Street
Park Ridge, Illinois

(b) A Corporation existing under the laws of the State of Illinois, and authorized to conduct business in Montana.

(c) HERMAN H. HOHN, 1700 S. Washington Street, Park Ridge, Ill PRESIDENT
HUGH L. CORNER, 668 Linden Ave, Elmhurst, Ill VICE PRESIDENT
DAVID H. SPILLER, 1704 S. Washington Street, PK Ridge, SECRETARY-TREAS.

(d) not applicable

2. APPLICANTS PROPERTY RIGHTS

(a) The legal description of land upon which we wish to explore is:

10 contiguous unpatented claims of 240 acres, more or less, in Sections 19 and 20 of Township 6 North, Range 4 West, MPM, Jefferson County, Montana.

(b) The mine name by which the property is known is:

"BOULDER MERCURY GROUP"

(c) Our interest in this land is:

Lessee, with option to purchase, under contract entered into on May 25, 1955.

(d) A copy of the contract is submitted herewith.

(e) not applicable

(f) The following claims, which comprise the BOULDER MERCURY GROUP are recorded in the record office of Jefferson County, Montana, (Town of Boulder, Mont) as follows:

Name of Claim	Book	Page	Instrument No.
(1) CAROLYN	45	480	80034
(2) CAROLYN ATHER	45	105	70589
(3) BOULDER MERCURY	45	555	55067
(4) BOULDER MERCURY #2	45	591	56266
(5) BOULDER MERCURY #3	45	592	56267
(6) BOULDER MERCURY #4	45	595	80034
(7) EAST MERCURY #1	46	549	65919
(8) EAST MERCURY #2	46	550	65920
(9) MERCURY CONNECTION	46	552	65922
(10) BOULDER MERCURY #5	46	551	65921

4. PHYSICAL DESCRIPTION.

(a) At the time we closed the contract for this property there was a drift which had been drifted by the previous lessee (who is now deceased) to a length of 295 feet, designed to cross cut the main vein on the property at a depth of 200ft. At present we are continuing this drift, and from the latest progress report it is now approx 380 feet long. This is hard rock mining with little or no timbering necessary. The mine workings are accessable at any time, the road runs right up to the mine portal.

4. Continued

(b) There has been no ore production. Surface channel samples of Bulldozer cuts and prospect pits show .11% U_3O_8.

(c) Your attention is called to two separate mining engineers' reports enclosed herewith. Your attention is also called to U.S. Geological Survey Bulletin #988-G "Geology of the Area Adjacent to the Free Enterprise Mine" Jefferson County Montana. The Government Bulletin states

QUOTE: "The Free Enterprise mine and the area mapped around the mine are entirely within the Boulder batholith, a large intrusive body composed chiefly of quartz monzonite. The quartz monzonite is cut by plugs and dikes of alaskite and dacite (?). Many of the alaskite dikes are gently dipping, irregular shaped, lens-like bodies that crop out over areas that are relatively large compared with the thickness of the bodies involved." etc.

On page 102 of Bulletin #988-G under mineralogy.

QUOTE: "Scattered crystals of pyrite are found in most of the silica veins at the surface. At the Free Enterprise mine small amounts of pyrite, galena, ruby silver, argentite, native silver, molybdenite, chalcopyrite, arsenopyrite, and barite have been found in the vein. The uranium minerals present are uraninite, gummite-type hydrous oxides, autunite, metatorbernite, and some zeunerite and uranophane. Autunite and metatorbenite occur both along fractures in and adjacent to the vein and disseminated in the wall rock as much as two feet from the vein. A dark brown primary uranium mineral resembling samarskite, but as yet unidentified, was found at the southeast end of the drift on the 60 foot level.

Wade V. Lewis (oral communication) reported that cinnabar was collected from a prospect pit on a crytocrystalline silica vein about 1500 feet north of the Free Enterprise shaft. Although a search was made no cinnabar was found by the writers. Cinnabar is also reported by Larsen (1917) to occur in crypto crystalline silica vein about half a mile North of the Boulder, Mont. Station and about 100 yds west of the railroad tracks. This locality is 1,500 to 2,000 feet east of the mapped area."

The cinnabar ore reported here has been uncovered in several prospect pits on our property (Boulder Mercury) and is available for inspection. Channel assays on the cinnabar ore run .4% to 1% mercury.

We are herewith enclosing the following for your inspection. Please remember when reading these reports that they are dated from 1949 to 1952.

GEOLOGICAL REPORT BY WADE LEWIS
GEOLOGICAL REPORT BY M.R. COOPER Butte Mont.

GEOLOGICAL SURVEY BULLETIN #988-G U.S. Government.

(d) Access to property. Road to mine portal. Road to cinnabar deposit. Within 1 mile of Boulder RR Station and within 1½ miles of Boulder residential section. Uranium ore at present must be shipped to Salt Lake City, but understand possibility of east Helena accepting uranium in near future.

(PARK RIDGE URANIUM CORP 1700 S. Washington Street Park Ridge, Ill)

4. Continued

(c) Manpower has been imported by PARK RIDGE URANIUM CORP. although local manpower is very easily obtained. Materials and Supplies are readily obtained from Helena or Butte. We have our own equipment. Water is obtainable in Boulder, and there is also a spring on the property which can be tapped. At present we are using gasoline power, but electrical power lines are within 1500 feet of mine portal.

5. THE EXPLORATION PROJECT

(a) The minerals for which we wish to explore are. Primary & secondary Uranium deposits and Cinnabar (mercury).

(b) Our plans continue the drifting to the main vein which is 15ft wide and can be traced 1000 ft on the surface. This vein is very radioactive, and meta-torbernite and autunite can be traced in this vein by lamping with ultra violet light at night. Channel samples in several prospect holes and bulldozer cuts show .11% Uranium Oxide.

We plan to drift into the Cinnabar ore for a distance of 200 feet to determine the extent of the deposit. We have already started the site for this new drift.

Estimated amount of future drifting on both projects 700 ft.
(SEE ENGINEERS REPORTS)

(c) The work is at present in progress.

(d) OPERATING EXPERIENCES.

KENNETH S. DUNN.	Business Administration	10 years
	Amateur Geologist	5 years
	Air Force Veteran Photographer and Finance	30 months.
ROGER COTTRELL.	Business and Personnel	20 years
	Finance and Payroll	10 years
	Has had supervisory capacity job for the past 12 years.	
DAVID H. SPILLER	Attorney (member of Illinois Bar) General Accounting and Tax experience 8 years	
WILLARD R. BARR	MINING SUPERVISOR, in charge of Drifting Operations. 1948 to 1953.	
	NEW OHIO COAL MINE, Paris Ark. Drill Opr. Blacksmith	
	DIXON COPPER PROJECT, " " " " "	
	YATES SHAFT & PILLAR MINE, Briggs Ark. Driller	
	DEAL COPPER MINE, Briggs Ark. Driller, Blaster.	
	GREY EMPLOYED AS CONTRACT DRILLER AND BLASTER.	
	Last two years in Uranium Mining. Last year with Park Ridge Uranium Corp. as employee, not under contract work.	
O.W. Zimmerman.	Field Representative. Public Relations work. Procurement. Naval Reserve Officer. Pilot.	

(PARK RIDGE URANIUM CORP. 1700 S. Washington St. Park Ridge, Ill)

6. ESTIMATE OF COSTS. Figured on 56 week contract

(a) No independent contracts.

(b) Labor, supervision, consultants.

	WEEKLY	56 WEEKS
Five laborers	$300.00	$16,800.00
One Supervisor	110.00	6,160.00
Consultants	30.00	720.00
(c) Gas & Oil	30.00	1,680.00
Explosives & Caps	40.00	1,440.00
Detonator Wire	-----	20.00
(d) Equipment owned on use-all basis.		
One 100 Compressor	50.00	1,800.00
One Drift Jack & Leg	15.00	540.00
Steels & Tungsten Bits	5.00	180.00
Two Mining Cars	5.00	180.00
One Chevrolet Dump	10.00	360.00
500' Double Mine Hoist	5.00	180.00
Explosive Detonator	2.00	72.00
One Blower Exhaust System	5.00	180.00
One Job Scintillator	5.00	180.00
Miscellaneous tools (shovels Helmets etc)	2.00	72.00
One 1950 Jeep Transportation	5.00	180.00
Equipment to be purchased		
One Drift Jack & Leg	---	645.00
500' Double Hoist	---	600.00
100 yds canvas for blower	---	95.00
Miscellaneous (Spikes, Batteries etc)		100.00
(e) Rehabilitation & Repairs		
New rails for GT-25 Terstrac Bulldozer		436.00
(f) New Buildings		
Compressor House		350.00
(g) Miscellaneous		
Maintenance of Equip.	10.00	560.00
Assays		100.00
Accounting & Clerical	125.00	4500.00
Foreman's Comp	15.00	540.00
Payroll taxes	10.00	560.00
(h) Additional Labor	100.00	3600.00
Contingencies.		$50,000.00

According to this schedule the average drifting expense would be 50 dollars per foot.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
SEP - 2 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. 3964
Metal or Mineral Uranium & Vanadium
Date Received 9-2-55
Estimated Cost 36,230.00
Participation (Government %) 75

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: PARK RIDGE URANIUM CORP
1700 S. Washington Street
Park Ridge, Illinois

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

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

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

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 page one attached)

(*b*) State any mine name by which the property is known. (see page one attached)

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

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

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

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

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

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

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

16—66551-1

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

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

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

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

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: (Page four)

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

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

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

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

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

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

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

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

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

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

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

[XX] Money [XX] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated August 30, 1955, 195...

PARK RIDGE URANIUM CORP
(Applicant)

By Kenneth Roth President

Hugh L. Conner Vice-Pres

David H. Gillen Sec-Treas

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

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DATE, Aug 30, 1955

1. NAME OF APPLICANT.

(a) PARK RIDGE URANIUM CORPORATION
1700 S. Washington Street
Park Ridge, Illinois

(b) A Corporation existing under the laws of the State of Illinois, and authorized to conduct business in Montana.

(c) HERMAN R. NOHR, 1700 S. Washington Street, Park Ridge, Ill PRESIDENT
HUGH L. CONNER, 848 Linden Ave, Elmhurst, Ill VICE PRESIDENT
DAVID H. SPILLER, 1704 S. Washington Street, Pk Ridge, SECRETARY-TREAS.

(d) not applicable

3. APPLICANTS PROPERTY RIGHTS

RECEIVED
SEP - 6 1955

(a) The legal description of land upon which we wish to explore is:

10 contiguous unpatented claims of 240 Acres, more or less, in Sections 19 and 20 of Township 6 North, Range 4 West, MPM, Jefferson County, Montana.

(b) The mine name by which the property is known is:

"BOULDER MERCURY GROUP"

(c) Our interest in this land is:

Lessee, with option to purchase, under contract entered into on May 25, 1955.

(d) A copy of the contract is submitted herewith.

(e) not applicable

(f) The following claims, which comprise the BOULDER MERCURY GROUP are recorded in the record office of Jefferson County, Montana, (Town of Boulder, Mont) as follows:

Name of Claim	Book	Page	Instrument No.
(1) CAROLYN	45	430	58034
(2) CAROLYN ANNEX	48	183	70569
(3) BOULDER MERCURY	45	353	55067
(4) BOULDER MERCURY #2	45	391	56286
(5) BOULDER MERCURY #3	45	392	56287
(6) BOULDER MERCURY #4	45	393	58034
(7) EAST MERCURY #1	46	549	65919
(8) EAST MERCURY #2	46	550	65920
(9) MERCURY CONNECTION	46	552	65922
(10) BOULDER MERCURY #5	46	551	65921

4. PHYSICAL DESCRIPTION.

(a) At the time we closed the contract for this property there was a drift which had been drifted by the previous lessee (who is now deceased) to a length of 295 feet, designed to cross cut the main vein on the property at a depth of 200ft. At present we are continueing this drift, and from the latest progress report it is now approx 380 feet long. This is hard rock mining with little or no timbering necessary. The mine workings are accessable at any time, the road runs right up to the mine portal.

4. Continued

(b) There has been no ore production. Surface channel samples of Bulldozer cuts and prospect pits show .11% U_3O_8.

(c) Your attention is called to two separate mining engineers' reports enclosed herewith. Your attention is also called to U.S. Geological Survey Bulletin #988-G "Geology of the Area Adjacent to the Free Enterprise Mine" Jefferson County Montana. The Government Bulleting States

QUOTE: "The Free Enterprise mine and the area mapped around the mine are entirely within the Boulder batholith, a large intrusive body composed chiefly of quartz monzonite. The quartz monzonite is cut by plugs and dikes of alaskite and dacite (?). Many of the alaskite dikes are gently dipping, irregular shaped, lens-like bodies that crop out over areas that are relatively large compared with the thickness of the bodies involved." etc.

On page 152 of Bulletin #988-G under mineralogy.

QUOTE: "Scattered crystals of pyrite are found in most of the silica veins at the surface. At the Free Enterprise mine small amounts of pyrite, galena, ruby silver, argentite, native silver, molybdentite, chalcopyrite, arsenopyrite, and barite have been found in the vein. The uranium minerals present are uraninite, gummite-type hydrous oxides, autunite, metatorbernite, and some zeunerite and uranophane. Autunite and metatorbenite occur both along fractures in and adjacent to the vein and disseminated in the wall rock as much as two feet from the vein. A dark brown primary uranium mineral resembling samarskite, but as yet unidentified, was found at the southeast end of the drift on the 80 foot level.

Wade V. Lewis (oral communication) reported that cinnabar was collected from a prospect pit on a crytocrystalline silica vein about 1500 feet north of the Free Enterprise shaft. Although a search was made no cinnabar was found by the writers. Cinnabar is also reported by Larsen (1917) to occur in crypto crystalline silica vein about half a mile North of the Boulder, Mont. Station and about 100 yds west of the railroad tracks. This locality is 1,500 to 2,000 feet east of the mapped area."

The cinnabar ore reported here has been uncovered in several prospect pits on our property (Boulder Mercury) and is available for inspection. Channel assays on the Cinnabar ore run .4% to 1% mercury.

We are herewith enclosing the following for your inspection. Please remember when reading these reports that they are dated from 1949 to 1952.

GEOLOGICAL REPORT BY WADE LEWIS
GEOLOGICAL REPORT BY M.R. COOPER? Butte Mont.
GEOLOGICAL SURVEY BULLETIN #988-G U.S. Government.

(d) Access to property. Road to mine portal. Road to Cinnabar deposit. within 1 mile of Boulder RR Station and within 1½ miles of Boulder residential section. Uranium ore at present must be shipped to Salt Lake City, but understand possibility of east Helena accepting uranium in near future.

(PARK RIDGE URANIUM CORP 1700 s. Washington Street Park Ridge, Ill)

4. Continued

(e) Manpower has been imported by PARK RIDGE URANIUM CORP. although local manpower is very easily obtained. Mterials and Supplies are readily obtained from Helena or Butte. We have our own equipment. Water is obtainable in Boulder, and there is also a spring on the property which can be tapped. At present we are using gasolene power, but electrical power lines are within 1500 feet of mine portal.

5. THE EXPLORATION PROJECT

(a) The minerals for which we wish to explore are. Primary & secondary Uranium deposits and Cinnabar (mercury).

(b) Our plans continue the drifting to the main vein which is 135 wide and can be traced 1600 ft on the surface. This vein is very radioactive, and meta-torbernite and autunite can be traced in this vein by lamping with ultra violet light at night. Channel samples in several prospect holes and bulldozer cuts show .11% Uranium Oxide.

We plan to drift into the Cinnabar ore for a disctance of 200 feet to determine the extent of the deposit. We have already started the site for this new drift.

Estimated amount of future drifting on both projects 700 ft. (SEE ENGINEERS REPORTS)

(c) The work is at present in progress.

(d) OPERATING EXPERIENCE.

HERMAN R. NOHR.	Business Administration	10 years
	Amatuer Geologist	3 years
	Air Force Veteran Photographer and Finance	38 months.
HUGH CONNER.	Business and Personnel	20 years
	Finance and Payroll	10 years
	Has had supervisory capacity job for the past 12 years.	
DAVID H. SPILLER	Attorney (member of Illinois Bar) General Accounting and Tax experience 8 years	
WILLARD R. WADE	MINING SUPERVISOR, in charge of Drifting Operations. 1945 to 1955. NEW UNIO COAL MINE, Paris Ark. Drill Opr. Blackmth DIXON COPPER PROJECT, " " " " " YATES STUMP & PILLAR MINE, Driggs Ark. Driller DEAL COPPER MINE, Driggs Ark. Driller, Blaster. SEEF EMPLOYED AS CONTRACT DRILLER AND BLASTER. Last two years in Uranium Mining. Last year with Park Ridge Uranium Corp. as employee, not under contract work.	
C.W. Timmerman.	Field Representative. Public Relations work. Procurement. Naval Reserve Officer. Pilot.	

(PARK RIDGE URANIUM CORP, 1700 S. Washington St. Park Ridge, Ill)

6. ESTIMATE OF COSTS. Figured on 36 week contract

(a) No independent contracts.

(b) labor, supervision, consultants.

	WEEKLY	36 WEEKS
Five laborers	$350.00	$12,600.00
One Supervisor	110.00	3,960.00
Consultants	20.00	720.00
(c) Gas & Oil	50.00	1,800.00
Explosives & Caps	40.00	1,440.00
Detonator Wire	-----	20.00
(d) Equipment owned on use-all basis.		
One 160 Compressor	50.00	1,800.00
One Drift Jack & Leg	15.00	540.00
Steels & Tungsten Bits	5.00	180.00
Two Mining Cars	5.00	180.00
One Chevrolet Dump	10.00	360.00
360' Double Mine Rail	5.00	180.00
Explosive Detonator	2.00	72.00
One Blower Exhaust System	5.00	180.00
One Jeb Scintillator	5.00	180.00
Miscellaneous tools (shovels Helmets etc)	2.00	72.00
One 1950 Jeep Transportation	5.00	180.00
		924
Equipment to be Purchased		
One Drift Jack & Leg	---	645.00
500' Double Rail	---	600.00
100 yds canvas for blower	---	75.00
Micellaneous (Spikes, Batteries etc)		100.00
(e) Rehabilitation & Repairs		
New rails for GT-25 Teratrac Bulldozer		486.00
(f) New Buildings		
Compressor house		350.00
(g) Miscellaneous		
Maintanance of Equip.	10.00	360.00
Assays		150.00
Accounting & Clerical	125.00	4500.00
Workmen's Comp	15.00	540.00
Payroll taxes	10.00	360.00
(h) Additional Labor	100.00	3600.00
Contingencies.		$36,230.00

According to this schedule the average drifting expense would be 50 dollars per foot.

PARK RIDGE URANIUM CORPORATION, 1700 S. Washington Street, Park Ridge, Ill.

PARK RIDGE URANIUM CORP.
BOX 424
BOULDER, MONTANA

MINING LEASE AND OPTION

THIS AGREEMENT, made and entered into this 25 day of May, 1955 (which date is referred to herein as "the date of this lease," being the date when this lease was delivered by the Lessor to Lessee and when the term of this lease begins) by and between,

SQUARE DEAL URANIUM CORPORATION, a corporation organized and existing under the laws of the State of Montana, with corporate offices at Boulder, Jefferson County, Montana,

PARTY OF THE FIRST PART, hereinafter called the L E S S O R

and

PARK RIDGE URANIUM CORPORATION, a corporation organized and existing under the laws of the State of Illinois, with corporate offices at Park Ridge, Illinois, county of Cook or any of its organized or unorganized subsidiaries,

PARTY OF THE SECOND PART, hereinafter called the L E S S E E,

RECEIVED
SEP - 1955

WITNESSETH:

ARTICLE I. Description of the Property.

That the Lessor, being the owner of all the property hereinafter described, for and in consideration of the sum of ONE DOLLAR ($1.00) to them in hand paid by the Lessee, the receipt of which is hereby acknowledged and for and in consideration of the royalties hereinafter contained and by the Lessee to be kept and performed, DO HEREBY LET AND DEMISE AND GIVE AND GRANT unto the said Lessee, its successors and assigns all of the following described unpatented quartz lode mining claims, lying and being in the Boulder Mining district (unorganized) in the County of Jefferson, State of Montana to-wit:

	Name	Book	Page	Instrument No/
(a)	Carolyn	45	430	58034
(b)	Carolyn Annex	48	183	70569
(c)	Boulder Mercury	45	362	55067
(d)	Boulder Mercury #2	45	391	56286
(e)	Boulder Mercury #3	45	392	56287
(f)	Boulder Mercury #4	45	393	58034
(g)	East Mercury #1	46	549	65919
(h)	East Mercury #2	46	550	65920
(i)	Mercury Connection	46	552	65922
(j)	Boulder Mercury #5	46	551	65921

The above mentioned group of claims hereinafter called the Boulder Mercury Group, all being one continguous group of adjoining quartz lode mining claims and situated in Sections 19 and 20 of Township 6

North, Range 4 West, M.P.M., Jefferson County, Montana.

ARTICLE 2. Terms of Lease

TO HAVE AND TO HOLD all of said property unto the said Lessee, its successors and assigns for the full term of thirty (30) years from the date hereof first above written, expiring at noon on the 25 day of May, 1985, unless sooner forfeited or determined through the violation of any of the covenants herein contained and against the Lessee reserved, or unless sooner cancelled, terminated or surrendered.

ARTICLE 3/ Ownership and Right to Lease

The Lessor hereby covenant that they are the true and lawful owner of all of the said leased property however described or referred to, and that the leased property and the whole thereof is free and clear from any and all encumberances, liens and debts whatsoever, and that the Lessor has good and absolute right to lease and dispose of said property, and all thereof in the manner and form as herein set forth, exception and reference being made to whatever interest the U.S. Government may claim in such unpatented mining claims, and in addition such interests as may exist upon lands covered by United States patents only, with mineral rights reserved for location under the U.S. Mining Laws/

ARTICLE 4. Possession and control of Property.

The Lessee shall have and it is hereby given and granted the right to enter into and take over immediately the sole and exclusive possession and control of said property and the whole and every part thereof, and during the term of this lease and option, to remain in the sole and exclusive possession and control thereof, and to investigate, measure, sample, examine, test, develop, work, mine, operate, manage and control the same and the water and water rights appurtenant thereto, and to mine, extract and remove from said property the ores and minerals therein and appurtenant and belonging thereto, and to treat, mill, ship, sell or otherwise dispose of the same and receive the full proceeds therefrom, subject to the royalties hereinafter reserved.

ARTICLE 5. Entry, Manner of Work and Conformity.

In consideration of such lease, the Lessee covenants and agrees to enter upon and take possession of all said leased property on or before June 10, 1955, and to cause all work, development and mining to be done in a carefull and minerlike manner, and to conform in all respects to and with the mining laws and regulations of the State of Montana/

ARTICLE 6. Work Requirements

Lessee agrees to work said leased property as aforesaid and to expend thereon the amount equal to a minemum of two men working a minemum of forty hours per week for a period of 44 (fonty-four) weeks in each twelve month period during the term of this lease, and within each lease year/

ARTICLE 7. Royalties

Royaltiee on all ores or concentrates milled or shipped and sold directly to a smelter or ore buyer, or buying agent, shall be an amount equal to Twelve and one-half Per Cent (12 1/2%) of the net smelter or other treatment plant returns. "Net Returns" shall be all sums paid to the Lessee for the values of the ores, or products thereof, by a smelter, licensed buying agent, or government agency, after deducting all charges for truck and railroad transportation, smelter charges, reduction charges, milling charges, and all charges for control and umpire assaying, on the Boulder Mercury Group.

ARTICLE 8. Division and Remittance of Royalties

The royalty payments to be made by the Lessee under the terms of this agreement shall be payable by the remitting smelter or other agency to UNION BANK & TRUST Co of HELENA Montana, and by said bank distributed as the interest of the respective owners, provided however that said royalties shall be remitted monthly and for each and every calendar month on or before the 25th day of the succeeding calendar month.

ARTICLE 9. Protection from Liens and Damages.

The Lessee shall keep said property and the whole and every part thereof free and clear of liens for labor done or performed upon said property or materials furnished to it, on or for said property

or for the development or operation thereof under this lease and while the same is in force and effect, and will save and keep harmless the Lessor from all costs, loss or damage which may arrise by reason of injury to any persons, livestock or other property as the result of any work or operations of the Lessee or its possession and occupancy of the property/

ARTICLE 10. Notice of Non-Liability

Lessee agrees to post or cause to be posted in three (3) of the most public places upon the said leased property a notice to the effect that the said property is being worked and operated by Park Ridge Uranium Corp, a corporation, it successors or assigns, under an agreement of lease with the Owner and that the Lessee is in actual control and management of the said operations, and that neither the Lessor nor their said property shall be in any way liable for labor, supplies, or any other debts contracted by the Lessee, its officers or agents or its successors and assigns, in connection with said operations/.

ARTICLE 11/ Inspection by Lessor or Representative of Lessor.

Lessee agrees to allow said Lessor, or any of them, and their duly authorized agents and representatives, at their own cost, expense, and their own risk, to enter upon the said leased property or any party thereof, at any and all reasonable times for the purpose of examining the condition of same, and to sample and assay the ore mill heads, tails, and concentrates; and the Lessor shall have the right to keep one or more representative at all times upon said property, but always at the sole cost, risk and expense of said Lessor/

ARTICLE 12. Payment of Taxes, Respective Liability of Lessor & Lessee/

Lessor shall pay when due and before delinquent, all taxes upon all the real property and upon the improvements owned by Lessor upon all the real property, during the full term of this lease, and Lessor shall pay all taxes of whatever nature or description on their receipt of royalties, and Lessee shall not be in any respect liable for taxes on any royalties paid to Lessor.

The Lessee shall pay when due and before delinquent, all taxes upon any and all personal property, machinery and equipment placed

upon said property by the Lessee during the term of this lease. The Lessee shall also pay all sales taxes, net proceeds, occupation, output, severance or production taxes, and license taxes of every kind, character and description levied upon or measured by ores or minerals extracted by Lessee from said premises during the term of this lease, andall taxes levied against the Lessee as an employer of labor, all such taxes to be promptly paid when due and before delinquent. Each, the Lessor and the Lessee, upon the payment of taxes, shall furnish promptly the other with satisfactory evidence of such payment.

ARTICLE 13. WORKMEN'S COMPENSATION ACT

The Lessee shall carry at all times during the term of this lease effective coverage for all its operations and all employees in said operations under this lease, under one of the authorized plans of the Workmen's Compensation Act of Montana, and such liability and other insurance required by the laws and mining regulations of the State of Montana.

ARTICLE 14. Books of Account.

The Lessee shall keep accurate and informative books of account relating to the milling, sale and disposal of ores, minerals, concentrates or other products from said property, and the marketed metal content of the same, which books of account shall be open to inspection by the Lessor or their duly authorized agent at all reasonable times.

ARTICLE 15. Lessee's Equipment to Remain Personal Property Removable by Lessee: Exception as to Timbering.

It is mutually understood and specifically agreed by and between Lessor and Lessee that any and all machinery, equipment, implements, devices, rails, pipes, pip ing and tools of whatever nature that have been or may hereafter be placed in and upon said leased property, or any part thereof for any purpose by the Lessee, or the successors and assigns of the Lessee, shall be and remain the property of the Lessee and shall not, however affixed to the land or improvements, become part of the realty or real estate, or a fixture or fixtures, and that all thereof shall be personal property, removable by Lessee, and may

be removed from the realty by Lessee or its successors or assigns at any time prior to the expiration of the termination of this lease or at any time within six (6) months after either of such events (see Article 20); PROVIDED HOWEVER, that all timbering in place in any shafts, drifts, tunnels, or other underground workings shall remain in and upon the premises and become a part thereof, and Lessee shall not remove any of said timbering.

ARTICLE 16. Forfeiture Clause.

The failure of the Lessee to make or cause to be made any payment herein provided for, or to keep or perform any agreement on its part to be kept and performed according to the terms and provisions hereof shall, at the election of the Lessor, work a forfeiture hereof, and any and all moneys which shall have been paid by Lessee to the Lessor as royalties, or otherwise, shall be deemed forfeited to the Lessor: PROVIDED HOWEVER, that in the event of a default on the part of the Lessee, and the election of the Lessor, as aforesaid, shall give to the Lessee a written notice of their intention to declare a forefeiture of this lease and to terminate the same on account of said default, specifying the particular default or defaults relied upon by them, and the Lessee shall have thirty (30) days after the receipt of such written notice from the Lessor in which to make good such default or defaults in which event there shall be no forfeiture therefor. A waiver by the Lessor of a particular breach of any covenant or agreement shall not be deemed or held to be a waiver of, or affect any other breach or impair their rights resulting therefrom.

ARTICLE 17. Unavoidable Delays.

If the Lessee shall be delayed at any time in keeping or performing any agreement on its part to be kept or performed according to the terms and provisions hereof, by any act or neglect of the Lessor, or by strikes or lockouts either in the mine or reduction works, fire, unusual delay in transportation, orders of the government, or any duly constituted instrumentality thereof, unavoidable casualties, or any causes beyond the control of the Lessees, such delay shall not be deemed

a breach of this lease or a default on the part of the Lessee constituting a cause for forfeiture of this lease and option, and during any time said lessee is so delayed, it shall be excused from the performance of the work requirements specified in Article 6 hereof until the cause of delay is removed.

ARTICLE 18. CANCELLATION BY LESSEE

A. Notice.

The lessee expressly reserves the right to cancel, terminate and surrender this lease and to relinquish and surrender said property to the Lessors at any time during the term hereof by giving the Lessors written notice of its intention to do so thirty (30) days prior to the termination date.

B. Written Relinquishment.

On or before the termination date specified in the notice of intention to cancel, the Lessee shall deliver to the Lessor a written relinquishment of this lease.

C. Release for Record.

Upon termination of this lease by expiration of its thirty (30) year term, or termination prior thereto without liability on the part of the Lessor or Lessee, Lessee will make, execute and acknowledge a good and sufficient release of this lease for recording in the office of the County Clerk of Jefferson, Montana.

ARTICLE 19. Surrender of Property.

In the event of a valid forfeiture, surrender or other termination of this lease, the Lessee will surrender peaceable possession of said property and the whole and every part thereof to the Lessor, and the Lessor may take immediate possession thereof.

ARTICLE 20. Removal of Machinery and Equipment, etc by Lessee.

The Lessee shall have, and it is hereby given and granted six (6) months after a valid forfeiture, surrender or other termination of this lease to remove from said property, all warehouse stocks, merchandise, materials, tools, hoists, compressors, engines, motors, pumps, transformers, electrical accessories, metal or wooden tanks, pipes and connections, mine cars and any and all other machinery, equipment, implements, devices and tools, railways and rails erected or placed in or upon said property by it, together with all ore broken in the stopies or workings, except mine timbers in place and permanent dwellings or structures for housing personnel or machinery, and which dwellings or structures are

permanently affixed to the realty.

ARTICLE 21. Notices

All notices herein provided for may be given by mail at the following addresses until otherwise changed by written request of the parties:

TO THE LESSORS:

SQUARE DEAL URANIUM MINING COMPANY, BOULDER, Montana.
& Sanford Davis

TO THE LESSEES:

PARK RIDGE URANIUM CORP. 1700 S/ Washington Street
Park Ridge, Illinois.

ARTICLE 22. Voluntary Surrender of the Lease

To the Lessee or its assignee may at any time surrender this lease upon the tenderto the Lessor of a Quit Claim or release of the above and within described property and the payment of One Dollar ($1.00) to the said Lessor, and thereafter the Lessee, its successors and assigns will be released from the performance of any further obligation under this lease thereafter accruing, but shall not be released of any existing obligations theretofore not completely performed and the Lessee shall have the right to remove its property within the terms and provisions of this lease elsewhere provided.

ARTICLE 23. Lessee first right to buy property and option.

Lessor agrees and covenants with Lessee that in the event the Lessor desires and elects to sell the leased property at any time within the thirty (30) year term of this lease, or at the expiration of the thirty (30) year term of this lease, or at the termination thereof, Lessee shall have the first right and privilege, and the continuing preferential right and privilege, over all others to purchase all of the leased property upon the same terms as my be offered by Lessors to any buyer, or upon terms not less favorable than may be offered to, or by, any buyer. The Lessor hereing agrees in consideration of the acceptance of the foregoing lease and the expenditures to be made thereunder and the well and faithful keeping of the covenants thereof, the said Lessee, its successors or assigns shall have the right to purchase within five

(5) years from the date of this lease the said demised premises by the payment of the sum of $250,000 to the Lessor, all royalties theretofore paid to any of the Lessors of these leased premises shall be deducted from such purchase price to the Lessor and such purchase price shall be payable annually in five ~~(5)~~ TWENTY (25) equal installments after allowing credit for any royalty theretofore paid. Said annual payments to be payable on the anniversary of the date of the notice to exercise said option given to the owner by the Lessee or its assigns and upon the giving of notice hat the Lessee exercise this option within thirty (30) days thereafter the Lessors will make, execute, acknowledge and deliver at their own costs and charges, good and sufficient deed or deeds of warranty as against everybody but the U.S. of America to be delivered into escrow inthe UNION ~~TRUST~~ BANK & TRUST Co of HELENA Montana, to be held until the final payment is made on the purchase price of the above described lands and premises. Such conveyance shall convey the said premises clear of encumbrances except such as might be placed thereon by the Lessee or its successors or assigns.

The forfeiture, surrender or termination of the above lease for any cause shall render this option void and the abovementioned payments may not thereafter be tendered, and the failure to make such payments shall at the option of the Lessors render said option forfeited and void.

ARTICLE 24. Litigation.

In case any litigation arises, whether actual, pending or threatened, in relation to the herein leased mining property and premises, Lessee agrees immediately after receiving notice of the same, to notify said Lessor concerning same, with view to giving all Lessors the privilege of aiding and supporting Lessee in such action, and of defending themselves and their interests against any such litigation.

ARTICLE 25. Law of Lease

All of the property which is the subject of this lease being situated and lying in Jefferson County, Montana, and this lease being delivered in the State of Montana, Lessor and Lessee agree and stipulate that this lease shall be construed under the laws of the State of Montana, and said laws are hereby designated as the laws applicable to this lease.

ARTIC

ARTICLE 26. END OF ROYALTIES

Any royalties payments payable under this lease will cease if Lessee elects to exercise its option to purchase said property and any bonus payments will likewise cease if Lessee elects to exercise its option to purchase as per Article #23 of this lease.

ARTICLE 27. Bonus or awards.

Any bonus or awards for the discovery of any ores on any of the leased property shall be equally divided between the Lessee and the Lessor at the time of receipt of such bonuses or awards and each party receiving their share of any of such bonuses or awards shall be responsible for the tax on their respective shares.

ARTICLE 28. Inurement.

The terms, provisions, covenants, and agreements herein contained shall extend to, be binding upon and inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto/

IN WITNESS WHEREOF, the Lessor has caused its corporate name to be hereunto affixed and attested by its duly authorized officer and the Lessee has caused its corporate name to be hereunto affixed and attested by its duly authorized officer and agent (executing this lease in one (1) original and three(3) duplicate copies containing ten (10) pages each not including acknowledgments, of which this is copy number 3, as of the day and date and year first above written.

LESSOR: SQUARE DEAL URANIUM MINING CO.
a corporation

by Sanford D. Vance
Its president Hereto specifically authorized and empowered

Seal

by Vivian H. Davis
Secretary

LESSEE: PARK RIDGE URANIUM CORPORATION
a corporation

by Howard L. Rohr
Its Chairman of the Board Hereto authorized and empowered

Seal

by Ned Zimmerman
Agent for Park Ridge Uranium Corp/

STATE OF MONTANA)
: ss.
County of Jefferson)

On this 25th day of May, 1955, before me personally appeared Sanford R. Davis, President of the Square Deal Uranium Corporation and Vivian M. Davis, Secretary of the Square Deal Uranium Corporation, a Montana Corporation, and Herman R. Nohr, Chariman of the Board of the Park Ridge Uranium Corporation, and Cloy W. Timmerman, Agent of the Park Ridge Uranium Corporation, an Illinois Corporation, and are known to me to be the officers of the said corporations that executed the above and foregoing instrument, and they acknowledged to me that such corporation executed the same.

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

R E Hoekker
Notary Public for the State of Mont.
Residing at Boulder, Montana
My commission expires July 22, 1956.

PARK RIDGE URANIUM CORP.

M. R. COOPER
CONSULTING GEOLOGIST
BUTTE, MONT.

RECEIVED
SEP - 2 1955

A copy of a memo report on the Boulder-Mercury group of Mining claims in Jefferson County Montana.

Location. Section 20, Township 5 N. Rge. 4 W. Montana Mer.

Group : The Boulder-Mercury Group of claims consists of the following named mining claims: Boulder Mercury, Boulder Mercury Nos. 2, 3, 4 & 5, The Mercury Connection and East Mercury Nos. 1 & 2.

Ores: Gold, silver, and primary and secondary Uranium bearing ores.

Titles : Locations are made upon the public domain: the surface of which is subject to Taylor Grazing Act. All claims were located by Sanford R. Davis of Boulder Montana. Possessory title is now in name of a corporation headed by Sanford R. Davis and as I do not have the corporate name at hand it is suffice to say that the property is owned by Mr. Davis.

Record of Recording :

Boulder Mercury:	Jan. 14, 41.	# 55067	Bk. 45	P 353
" " #2	Jan. 29, 42	#56286	Bk. 45	P 391
" " #3	Jan. 29. 42	# 56287	Bk. 45	P 392
" " #4	Jan. 29, 42	# 58034	Bk. 45	P 393
" " #5	Dec. 29 49	# 65921	Bk. 46	P 551
Boulder-Mercury Connection	Dec. 29 49	#65922	Bk. 46	P 552
East Mercury #1	Dec. 29 49	#65919	Bk. 46	P 549
" " #2	Dec. 29 49	#65920	Bk. 46	P550

Maps: Sketch map of claims not made to scale; Reference is also made to a recent US Mineral Patent Survey of adjoining "Free Enterprise" group which adjoins this group on the west. The USGS and the AEC have also made preliminary maps of the area.

Shipping Station: Shipping point is Boulder on Mt. Nor. Ry. distant about 1 mile southwesterly.

Roads: Rough country road at present from station to this group of claims; road is said to be county controlled with a partially bulldozed road leading to the tunnel. Loc. on claim #5. A good mining road can be built at very little cost as it is a bulldozer operation.

Elevation: Approximately 5200' ASL (At tunnel adit on B-M # 2 & 5

Assessment: Annual labor and assessment work has been completed to date.

Terrain: Low rolling hills: Verdure: a few scattered Pinus Limbus of no commercial value. Outcrops: Rocky reefs, surface stony and covered with sage brush and sparse range grass.

Water: None except that which may be encountered in mining operations at depth.

Power: Available from Mont. Pwr. Co. high line at about 1 mile.

M. R. COOPER
CONSULTING GEOLOGIST
BUTTE, MONT.

NATIONAL REGISTER OF SCIENTIFIC AND SPECIALIZED PERSONNEL, SUPPLY OF THE DEPARTMENT OF THE INTERIOR

APARTMENT FIRST NATIONAL BANK BUILDING TWIN FALLS

Tunnel: Present tunnel, the adit of which is on Boulder Mercury #5 and entering Boulder Mercury No. 2 very quickly is designed to crosscut the large vein on BM #2 at or about the point where an open cut made by bulldozer and which exposed a wide mineralized area.
The present tunnel is 295 feet in length measured from adit to face; is 6' X 8', no timbering necessary at present except at portal and its approaches.. The work on this was done in 1951 & 1952. and is designed to intercept the vein at depth.

Scope of Examination: Primary inspection was made in 1951 by the writer and later assisted by R.P.Jones, mining engineer and underground examination was made of this group and an adjoining group of mining claims; Lines were run on the surface for the purpose of locating corners and making primary examinations of surface outcrops; later accompanied by Mr. Lemas the outcrops, bulldozer pits on the Boulder Mercury groups were checked with a scintillometer for checking the reputed presence of Uranium in addition to the Gold, silver indications. We found that the surface readings taken on the Boulder Mercury groups were considerably stronger than those encountered in the adjoining group of claims from which shipments of ore had been made. Assays of shipments from adjoining group may be examined as they are in possion of Mr. Davis who formerly owned that group of claims. It is not necessary to quote them here.
From the inspection made of the surface outcrops and the examination of the present tunnel on the Boulder Mercury Group (on claims 2 & 5) and of the open cut at the crest of the hill; we concluded that the geology of the area as reported by Mr. Frank R. Wicks of Los Angeles was substantially correct and need not be repeated here; however, generally the area consists of a granititic block (the Boulder Batholith with some coarse granite showing; quartz monzonite intrusions, sills or flows locally called aplite all of which vary in thickness.
In checking outcrops found that they generally run easterly and westerly across the group and with special attention centered on the open cut on B-M #2 and close to 'Discovery' point This cut starting in solid granite walls shows a measured width of vein matter (135 feet) between the walls and a depth of approximately 20 feet . This open cut was very active on the scintillometer and the tunnel started near the corner of #2 (SE cor.) and on # 5 should cut the vein on #2 near the westerly end of the open bulldozer cut at a depth of approximately 200 feet when it has been driven forward straight with the adit for an additional 300 feet from the present face of the tunnel, unless of course, paying ore in encountered before intercepting this large vein exposed by the open cut.

Recommendations:
We have therefore recommended that the tunnel started on B-M #5 and now entering B-M #2 be extended for another 300 feets to a point where it will intercept the vein exposed by the open cut on the surface, at this point laterals should be run (interception of lead matter) both easterly and westerly at least 100 feet in to B-M Nos. 3 & 4. At this distance the tunnel should have ample back and the open cut indicates the probable existence of a large ore body

(Memorandum by Cooper and Jones)

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GEOLOGY

GENERAL FEATURES

The Free Enterprise mine and the area mapped around the mine (pl. 22) are entirely within the Boulder batholith, a large intrusive body composed chiefly of quartz monzonite. The quartz monzonite is cut by plugs and dikes of alaskite and dacite(?). Many of the alaskite dikes are gently dipping, irregularly shaped, lens-like bodies that crop out over areas that are relatively large compared with the thickness of the bodies involved.

Batholithic rocks have been fractured, sheared, and brecciated along narrow zones that trend about N. 60° E. and generally dip steeply to the northwest. Some of these zones were later altered and silicified and contain, in addition to the altered country rock, numerous short lentil-like veins of cryptocrystalline silica. Some zones have been recurrently silicified and brecciated. The topographic expressions of these silicified zones have been called reefs because they typically stand above the adjacent ground surface. Small, high-angle faults trending northwest offset the silicified zones as much as several hundred feet.

The only sedimentary rocks in the area mapped are Recent deposits of alluvial and colluvial material. Small terraces occur in the gullies several feet above the present bottoms. A thin veneer of slope wash and mantle blankets most of the area. The alluvial gully fills and terraces are too small to map at a scale of 1:12,000 (pl. 22).

IGNEOUS ROCKS

QUARTZ MONZONITE

The principal rock type of the Boulder batholith has been described by Knopf (1913, p. 10) and by Pardee and Schrader (1933, p. 3) as quartz monzonite. This quartz monzonite is a light-gray medium-grained equigranular rock that consists, in order of decreasing abundance, of plagioclase, quartz, orthoclase, biotite, and hornblende. Orthoclase occurs as large scattered pink phenocrysts about 1 inch long. Typically, the rock weathers into large rounded boulders and finer grained detritus that is granular and iron-stained and contains conspicuous biotite.

Wherever a silica vein cuts quartz monzonite an altered zone occurs on both sides of the vein; however, altered zones are present that are not cut by visible silica veins. The altered facies differ from the unaltered quartz monzonite in the following ways: The altered facies appear to be slightly finer grained; ferromagnesian minerals are sparser, although biotite occurs locally as scattered flakes; there

appears to be more orthoclase; and clay minerals have replaced some of the feldspars. Locally sericite occurs in the zone of alteration adjacent to silica veins, especially in the northwestern part of the area mapped, but the relative ages of the sericite and the silica are not known. Contacts between the unaltered and altered country rock are gradational through an interval ranging from 1 inch to about 1 foot. The altered facies generally weather to angular blocks instead of the rounded boulders and granular detritus formed by the weathering of the unaltered quartz monzonite.

ALASKITE

Alaskite dikes and plug-like masses cut the quartz monzonite and probably occupy tension fractures formed during the cooling of batholithic quartz monzonite. Many of these dikes are gently dipping irregular-shaped, lenticular sheet-like masses that crop out over areas as much as a quarter of a square mile. Some of the dikes have a vertical or steep dip. The alaskite commonly weathers into blocks and decomposes to a soil that is relatively free from biotite.

The alaskite is composed essentially of quartz and potash feldspar with subordinate amounts of plagioclase and rare amounts of biotite. Mineralogically, it is similar to the alaskite bodies near Clancey, Mont., but texturally the alaskites of these two areas differ significantly. In the Free Enterprise area the principal variety of alaskite has both saccharoidal and granitic textures in different grain sizes ranging from about 0.1 millimeter to 4 millimeters; however, the bulk of the rock is a medium-grained alaskitic granite with a grain size of 1 to 2 millimeters. The distinctly porphyritic facies that is common near Clancey was not seen in the Free Enterprise area, and the pegmatitic facies is rare and probably comprises less than 1 percent of all alaskite outcrops.

The contacts between the alaskite and the quartz monzonite are sharp. Although locally the grain size of the alaskite is slightly finer at the borders of a body, chilled selvages of alaskite have not been found. This suggests that the alaskite was emplaced in fractures that formed while the quartz monzonite was still cooling. The alaskite is probably derived from a quartz- and potash-rich magmatic residuum of the main batholithic mass.

A large body of relatively quartz-poor alaskite or leucogranite that apparently contains an appreciable amount of plagioclase, as well as abundant orthoclase, is exposed in a railroad cut in the southeastern part of the area mapped (pl. 22). Black tourmaline rosettes occur in the alaskite about 4 feet above the railroad bed for 20 to 30 feet along the northwestern side of the cut. For purposes of mapping, this rock type was not distinguished from the plagioclase-poor alaskite.

Cryptocrystalline silica veins and stringers cut both the alaskite and the quartz monzonite, but no zones of alteration were seen along the borders of the veins in the alaskite. Locally, however, sericite has been recognized in alaskite adjacent to silica veins.

DACITE(?)

One small aphanitic dike of dacite(?) cuts quartz monzonite at the eastern edge of the area shown in plate 23. The relative ages of the dacite(?) and the alaskite could not be determined in this area, but studies in nearby areas indicate that the dacite(?) is younger.

SILICIFICATION

Within the area mapped both the quartz monzonite and alaskite are cut by many zones composed in part of groups of stringers and veins of cryptocrystalline silica. These silica veins are each within a zone of fracturing and alteration in quartz monzonite or within a zone of fracturing without recognizable alteration in alaskite. Most silicified zones are somewhat lenticular, and generally the stringers and veins of silica within them are arranged in a subparallel to en echelon arrangement. The stringers and veins are roughly parallel to the elongation of the zones. The silicified zones, which include the silica veins and stringers, range in thickness from a few inches to several tens of feet.

Contacts of the cryptocrystalline silica veins and stringers with both the quartz monzonite and alaskite are sharp; however, disseminated cryptocrystalline silica has altered and partially replaced the wall rock of the quartz monzonite from a fraction of an inch to several feet adjacent to the veins. Locally, closely spaced iron-stained joints occur in the marginal parts of the silicified zones and in the adjacent country rock. Brecciated vein fragments cemented by silica, and fracture-fillings of brown opaline silica are common in the veins, indicating that there were at least two depositional stages of hydrothermal or primary silicification, and one stage of secondary silicification.

The silicified zones or reefs weather less rapidly than either the quartz monzonite or the alaskite and typically occur as ribs or low ridges that stand from 6 inches to 20 feet above the surrounding surface.

The quartz monzonite was the more favorable host rock for the silica and apparently was more fractured and thus more permeable than the alaskite. Silica veins that cut both quartz monzonite and alaskite are generally thicker and more continuous in the quartz monzonite. This observation also has been made in the Free Enterprise mine.[2]

[2] Thurlow, E. E., and Reyner, M. L., op. cit.

PARK RIDGE ... CORP.

ACKNOWLEDGMENTS

Valuable help and suggestions were given to the writers by M. R. Klepper of the Geological Survey. Cordial cooperation was extended by Wade V. Lewis, president of the Elkhorn Mining Co., and operator of the Free Enterprise mine.

A. F. Trites, Jr., of the Geological Survey, established triangulation stations in this area which were used as control points in mapping the areal geology, and J. W. Hosterman, of the Geological Survey, assisted in making the detailed map of the area around the mine shaft.

HISTORY

Gold, silver, and base metals were discovered in the Boulder district before 1870 and have been mined intermittently from different deposits since that time. Pardee and Schrader (1933, p. 286) do not separate completely the Boulder and the Basin mining districts but list the value of minerals produced from the Boulder district from 1904 to 1928 as $325,000. The minerals mined during this period presumably contained lead, zinc, gold, silver, and copper. Although the exact records are not available, the value of metal production from 1928 to 1936 was probably very small. The value of gold, silver, lead, copper, and zinc produced from 1937 to 1948 was about $56,000.

About April 1949 Sanford Davis of Boulder recognized uranium minerals on the dump of the old Silver Bell prospect. Mr. Davis, Edward C. Miles of Helena, and Wade V. Lewis of Boulder visited the property later with a Geiger counter and detected radioactivity at the dump.

Messrs. Davis, Miles, and Lewis now own the 29 unpatented claims of the Free Enterprise-Boulder Mercury group and have renamed the Silver Bell prospect the Free Enterprise mine. The property was leased to the Elkhorn Mining Co. of Boulder, Mont. This company in turn negotiated an operating agreement with the Sunshine Mining Co. of Coeur d'Alene, Idaho, who restored and extended the old workings in late 1949 and early 1950. When the Sunshine Mining Co. withdrew, the Elkhorn Mining Co. began mining on the 80-foot level and has since shipped a few tons of relatively high grade uranium-silver ore and three carloads of low-grade uranium ore to the Vitro Chemical Co. in Salt Lake City, Utah. The production to January 25, 1952, is shown in the following tabulation:

Dry pounds	*Dry tons*	U_3O_8 *(percent)*	*Ag (oz/ton)*
2245	--------	1.34	68.25
2617	--------	1.61	133.5
3788	--------	.60	5.55
----------	43.145	.16	----------
----------	49.885	.15	----------
----------	55.872	.14	----------

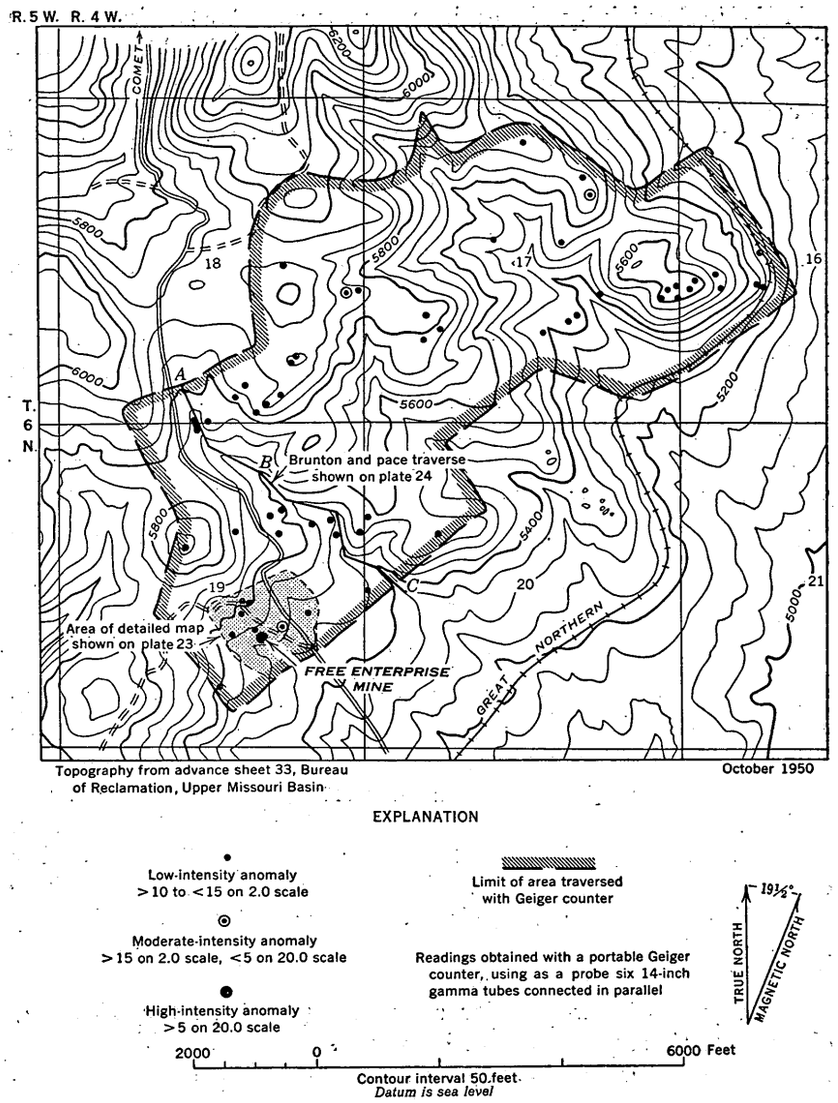

FIGURE 38.—Map showing radioactivity anomalies of the Free Enterprise mine and vicinity.

mapped at a scale of 1:12,000 (pl. 22). The geology of the area around the mine shaft was mapped in detail by plane-table methods (pl. 23), and a Brunton and pace traverse was made of the first gully north of the mine shaft (pl. 24). The geology of the underground workings at the mine had been mapped previously by geologists of the U. S. Atomic Energy Commission and was not remapped by the writers.

STRUCTURE

The many steeply-dipping silicified zones have a general trend of about N. 60° E. and dip northwestward. They are the most striking structural features in the Free Enterprise area. Many of these silicified veins are brecciated, and gouge or microbreccia is found at the margins or within some of them.

The veins are offset as much as several hundred feet (pl. 22) by high-angle northwest-trending cross faults. These are probably normal faults along which, in most cases, the northeastern blocks moved down. Faults in the batholithic rocks are difficult to detect—the lack of key units for correlation obscures all but the most obvious ones.

The principal gullies and intervening ridges are transverse to the veins and are roughly parallel to the northwest-trending normal faults.

MINERAL DEPOSITS

GENERAL GEOLOGIC FEATURES

The only known occurrence of uranium minerals in this area is at the Free Enterprise mine. Although no uranium minerals were seen in surface outcrops, low-intensity radioactivity anomalies on veins in the area suggest that uranium may occur beneath the surface in many of them.

Uranium occurs as a primary constituent of a silicified vein on the 80-foot level of the Free Enterprise mine. Most of the primary uranium minerals on the 80-foot level have been weathered to secondary gummite-type uranium minerals. Metatorbernite and autunite occur disseminated in the wall rock adjacent to the vein at the 80-foot level.

A series of 12 or more nearly parallel silicified zones, one of which includes the Free Enterprise vein, crop out in the area mapped (pl. 23). They have an average strike of about N. 60° E. and a dip of 85° NW. These zones cut the quartz monzonite and both the vertical and the gently dipping alaskite dikes. Several gently dipping alaskite sheet-like masses crop out near the mine shaft, and at least two of these have been exposed by the underground workings.[3] The steeply dipping alaskite dike that crops out about 100 feet west of the shaft is offset slightly by the Free Enterprise vein indicating that some movement has occurred along this vein. Underground studies by Thurlow and Reyner [4] indicate that this dike may be connected with the alaskite body that crops out about 130 feet east of the shaft by a gently dipping alaskite mass exposed in the mine workings (pl. 23, section BB′). A dacite(?) dike 25 feet thick shown in the southeastern part of the detailed map strikes roughly parallel to the silicified zones.

[3] Thurlow, E. E., and Reyner, M. L., op. cit.
[4] Thurlow, E. E., and Reyner, M. L., op. cit.

Intense weathering has left only short discontinuous outcrops of the silicified zones, commonly less than 10 feet long, in the vicinity of the Free Enterprise shaft. In mapping, these zones were carefully projected (pl. 23); however, only exploration such as bulldozing, drilling, or driving of underground workings can determine their extent and continuity.

MINERALOGY

Scattered crystals of pyrite are found in most of the silica veins at the surface. At the Free Enterprise mine small amounts of pyrite, galena, ruby silver, argentite, native silver, molybdenite, chalcopyrite, arsenopyrite, and barite have been found in the vein.[5] The uranium minerals present are uraninite, gummite-type hydrous oxides, autunite, metatorbernite, and some zeunerite and uranophane.[6] Autunite and metatorbernite occur both along fractures in and adjacent to the vein and disseminated in the wall rock as much as 2 feet from the vein. A dark-brown primary uranium mineral resembling samarskite, but as yet unidentified, was found at the southeast end of the drift on the 80-foot level.

Wade V. Lewis (oral communication) reported that cinnabar was collected from a prospect pit on a cryptocrystalline silica vein about 1,500 feet north of the Free Enterprise shaft. Although a search was made, no cinnabar was found by the writers. Cinnabar is also reported by Larsen (1917) to occur in a cryptocrystalline silica vein about half a mile north of Boulder station and about 100 yards west of the railroad tracks. This locality is 1,500 to 2,000 feet east of the mapped area (pl. 22).

GENERAL CHARACTER AND CLASSIFICATION

Uranium minerals occur at the Free Enterprise mine in and adjacent to a vein-type deposit of cryptocrystalline silica in fractures in the batholithic rock. The primary minerals occur as pods in the vein, and the secondary minerals occur as fracture linings and as scattered crystals in and adjacent to the vein. The Free Enterprise vein is one of many silicified and altered zones that occur in this area (pl. 22), but it is the only one in which uranium minerals have been found, although a number of others show weak to moderate radioactivity anomalies.

Although the zones of alteration and probably the fractures in which the silica veins have been deposited are traceable for hundreds to thousands of feet, the actual veins and stringers of cryptocrystalline silica characteristically swell and pinch out over distances of several

[5] Thurlow, E. E., and Reyner, M. L., op. cit.
[6] Thurlow, E. E., and Reyner, M. L., op. cit.

Relief in the vicinity of the mine ranges from 100 to 300 feet between the ridges and intervening gully bottoms. The Boulder River, a tributary of the Jefferson River, is the nearest perennial stream and is about 2 miles south of the Free Enterprise mine. Although the winter climate is severe, the mine is favorably located and should be able to operate throughout the year.

PREVIOUS WORK

Previous reconnaissance geologic work in the Boulder batholith and the Boulder mining district was done by Knopf (1913), Pardee and Schrader (1933), and Billingsley (1916, 1918). In 1950 Thurlow and Reyner made a detailed study of the uranium deposit in the Free Enterprise mine for the Atomic Energy Commission. Their findings are described in two unpublished reports.[1] Uranium-bearing deposits, similar to those of the Free Enterprise vein, occur near Clancey, 15 miles north of Boulder; these deposits were studied by the writers during 1950 and have been described in a previous report (Roberts and Gude, 1953).

FIELD WORK

RADIOMETRIC SURVEY

A radiometric survey of the Free Enterprise mine and vicinity (fig. 38) was made with a portable Geiger counter using six 14-inch gamma tubes connected in parallel as a probe. All major outcrops and most of the intervening mantle were traversed and measured with the counter. The lowest meter reading observed was 6.5 on the 2.0 scale and is designated as background for this area. The only high-intensity radioactivity detected was at the mine, where mineralized rock from the underground workings was on the dump and in ore piles. No anomalies were detected at exposures of the Free Enterprise vein at the surface.

There were 54 low-intensity anomalies (10–15 on the 2.0 scale) observed in this area. In addition to these, three anomalies between 15.0 on the 2.0 scale and 5.0 on the 20.0 scale were detected (fig. 38).

GEOLOGIC STUDIES

Geologic field work was begun September 26, 1950, and was completed October 17, 1950. The geology of an area about 2 square miles extending northeast from the Free Enterprise mine was

[1] Thurlow, E. E., and Reyner, M. L., Free Enterprise uranium prospect, Jefferson County, Mont.: Atomic Energy Commission RMO 678, 1950; Reyner, M. L., Reconnaissance of Basin-Boulder-Clancey area, Jefferson County, Mont.: Atomic Energy Commission, RMO 674, 1950. [Manuscript reports in files of Atomic Energy Commission.]

being done by the U. S. Geological Survey on behalf of the Division of Raw Materials of the U. S. Atomic Energy Commission.

The Free Enterprise mine is in sec. 19, T. 6 N., R. 4 W., about 2 miles west of Boulder, Jefferson County, Mont. (fig. 37) and 400 feet south of the graded road between Boulder and Comet. Boulder railroad station, on a branch of the Great Northern Railroad, is on the road to Comet about halfway between the town of Boulder and the Free Enterprise mine.

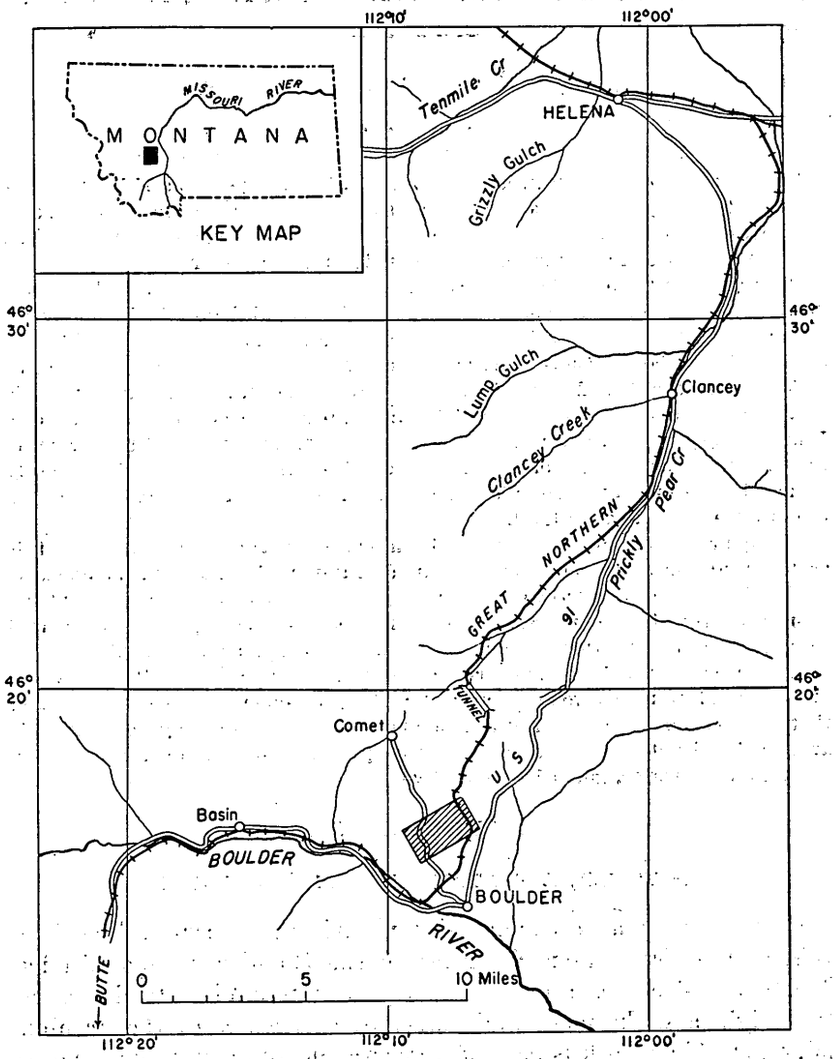

FIGURE 37.—Index map of Free Enterprise mine and vicinity, Jefferson County, Mont.

feet to several hundred feet. Altered zones border the silica veins in the quartz monzonite country rock and may extend beyond the visible silica stringers and veins. Disseminated cryptocrystalline silica probably has impregnated most of the rock in the altered zones but is most noticable adjacent to the silica veins.

Thurlow and Reyner[7] have classified the vein as a mesothermal fissure filling on the basis of the mineralogic assemblage. The writers feel, however, that the mass of brecciated cryptocrystalline silica, the reported occurrence of cinnabar at two localities, one about 1,500 feet north and the other about half a mile east of the Free Enterprise shaft in veins similar to the Free Enterprise vein, and the occurrence of argentite and primary ruby silver indicate that this deposit and all other cryptocrystalline silica veins in the area are probably epithermal. This deposit probably is genetically related to the batholithic mass.

ALTERATION BY METEORIC SOLUTIONS

By the process of weathering, the primary minerals in the Free Enterprise vein have been converted to hydrous oxides, silicates, and uranyl phosphates. The phosphates, autunite and metatorbernite, are the most widespread of the secondary uranium minerals. They occur as fracture- and cavity-fillings in the wall rock. This indicates some depletion of parts of the primary uranium deposit. The gummite-type secondary uranium minerals are typical within or very near the vein; most of them apparently were formed in place.

Thurlow and Reyner[7] state "Extensive near-surface leaching coupled with selective precipitation along favorable zones within and adjacent to the vein have combined to form enriched pockets of secondary uranium minerals These zones may be related to the former water level * * *" They report that below the water level on the 140-foot level the radioactivity is slight and that only minor amounts of secondary uranium minerals are found in vugs and on fracture surfaces.

SUGGESTIONS FOR PROSPECTING

The present study has revealed several guides that may be useful to the prospector. Radioactivity, which may indicate the presence of uranium, is associated principally with silica veins that crop out as reefs, most of which stand 6 inches to 20 feet above the surrounding surface. Studies at the Free Enterprise mine show that leaching by downward percolating water has removed most of the uranium from the near-surface silicified zones; accordingly, a radiation detector must be used in this area for efficient prospecting, but this may fail to

[7] Thurlow, E. E., and Reyner, M. L., op. cit.

give reliable results if thorough leaching of uranium has extended downward a foot or more. Quartz monzonite country rock appears to have been a more favorable host rock than alaskite for the silicified zones and associated uranium minerals. No abnormal radioactivity has been detected in any of the dacite(?) dikes tested in either the Boulder area or in the Clancey area to the north.

Suggestions for prospecting in the Clancey area probably are useful to the prospector not only near Boulder and Clancey but in the Boulder batholith as a whole (Roberts and Gude, 1953, pp. 84–85). Intersections of small spurlike reefs with the larger reefs appeared to be favorable at Clancey. At many places in the Clancey and Free Enterprise areas gray cryptocrystalline silica is indicative of radioactivity.

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A CONTRIBUTION TO THE GEOLOGY OF URANIUM

GEOLOGY OF THE AREA ADJACENT TO THE FREE ENTERPRISE MINE, JEFFERSON COUNTY, MONTANA

By W. A. Roberts and A. J. Gude 3d

ABSTRACT

Uranium minerals occur in a silver-bearing, cryptocrystalline silica vein deposit that cuts quartz monzonite and alaskite at the Free Enterprise mine, 2 miles west of Boulder, Mont. The Free Enterprise vein is one of many silicified reeflike structures in this area, most of which trend about N. 60° E.

The cryptocrystalline silica veins commonly occur in groups having a lenticular pattern. Where quartz monzonite is the wall rock, they are bordered by an altered zone, but no alteration was noticed where alaskite is adjacent to the silica veins. These groups of silica veins and the enclosing altered country rock are called silicified zones in this report. No uranium minerals were observed at the surface, but radioactivity anomalies were noted at 57 outcrops. Leaching by downward percolating waters has removed most of the uranium from the near-surface part of the Free Enterprise vein and probably has slightly enriched parts of it and the adjacent wall rock from the bottom of the leached zone to the ground-water level.

The quartz monzonite appears to be a more favorable host rock for this cryptocrystalline silica veins and associated uranium minerals than the alaskite.

Alaskite occurs as vertical dikes and plug-like masses and as irregularly shaped, gently dipping masses. The smaller bodies probably were introduced into open fractures formed during the cooling of the quartz monzonite.

The nature of the Free Enterprise deposit, the abundance of silicified veins, and the weak to moderate surficial radioactivity of some of these veins suggest that many small deposits of uranium and silver minerals may occur in this area in significant concentrations at relatively shallow depth. Cost of exploring and mining, however, might be prohibitive.

INTRODUCTION

PURPOSE, LOCATION, AND ACCESSIBILITY

Uranium minerals occur in a silver-bearing cryptocrystalline silica vein at the Free Enterprise mine in the Boulder mining district, Montana. The area around this deposit was studied to determine the origin and the mode and extent of occurrence of the uranium minerals. This work is part of a general study of uranium deposits

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247753—53

UNITED STATES DEPARTMENT OF THE INTERIOR

Douglas McKay, *Secretary*

GEOLOGICAL SURVEY

W. E. Wrather, *Director*

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C.

Geology of the Area Adjacent to the Free Enterprise Mine Jefferson County Montana

By W. A. ROBERTS *and* A. J. GUDE 3d

A CONTRIBUTION TO THE GEOLOGY OF URANIUM

GEOLOGICAL SURVEY BULLETIN 988-G

This report concerns work done on behalf of the U. S. Atomic Energy Commission and is published with the permission of the Commission

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1953

COPY

RECEIVED
SEP - 8 1955

REPORT ON THE

BOULDER MERCURY MINING CLAIM GROUP INCLUDING

THE CAROLYN AND CAROLYN ANNEX

Situated next to the FREE ENTERPRISE MINE in
BOULDER, JEFFERSON COUNTY, STATE OF MONTANA

COPY

PROPERTY OF -
PARK RIDGE URANIUM CORP.
BOX 424
BOULDER, MONTANA

HOME OFFICE
1700 S. WASHINGTON
PARK RIDGE, ILL

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Report by Wade V. Lewis, Geologist
Boulder Bank Building
Boulder, Montana

Scintillometer surveys by W. V. Lewis and J. T. Lewis
December 1950 and January 1951.

REPORT ON THE BOULDER MERCURY GROUP OF LODE MINING CLAIMS IN JEFFERSON COUNTY, BOULDER, MONTANA

A. Summary

The Boulder Mercury Group of Lode Mining Claims is contained in a Montana area recently discovered to contain commercial Uranium Ores, both secondary and primary in occurrance and representing the first known occurrence of pitchblende and uraninite to be found in fissure typed veins within the monzonite of the Boulder Batholith. It immediately adjoins the Free Enterprise Uranium Group being operated by the Elkhorn Mining Company and included ground favorable for Uranium Ore exploration.*

B. Location

The Boulder Mercury Mining Claim group consists of eight** unpatented claims situated in Township 6 North, Range 4 West of the Montana Principle Meridian, in Jefferson County, near Boulder, Montana, a county seat. It represents one contigueus claim group as depicted on map, Exhibit 1, herewith attached, and lies within one mile in a westerly direction from the Great Northern Railway depot and ore loading ramps at Boulder. It is situated in a recognized productive mining area midway between Butte and Helena, Mont. and borders U. S. Highway No. 91.

*See Government Bulletin No. 988-G regarding beginning productivity of the Free Enterprise Group.

**The group now consists of ten claims the Carolyn and Carolyn Annex being added and the whole group is now (1955) under lease with option to the Park Ridge Uranium Corp, 1700 S. Washington Street, Park Ridge Illinois.

PARK RIDGE URANIUM CORP.
BOX 424
BOULDER, MONTANA

C. PROPERTY

The Boulder Mercury Group consists of the following named Claims:

BOULDER MERCURY
MERCURY CONNECTION
BOULDER MERCURY #2
BOULDER MERCURY #3
BOULDER MERCURY #4
BOULDER MERCURY #5
EAST MERCURY #1
EAST MERCURY #2
(CAROLYN*)
(CAROLYN ANNEX*)

All contained within T 6 N, R 4 W, MPM, Jefferson County, Montana.

D. STATUS

All claims contained in the Boulder Mercury Group were acquired by location through Sanford R. Davis, et al, of Boulder, Montana, were included under lease and option to the Elkhorn Mining Company, a Montana Corporation, with offices at Boulder Bank Building, Boulder Montana, on the 23rd day of November, 1949, such group having been transferred under an "Assignment by Lessee and Optionee for Described Property" on the 5th day of December, 1950 to J. I. Listle of Los Angeles, California. Lands covered by these claims represented originally stock raising lands with mineral rights therein subject to location under the mining laws of the United States. Records show there have been no transfers by deed or other conveyance of nay titles from Sanford R. Davis, et al, to any other principals. Exhibit No. 1 further shows proximity of the property to the Great Northern Railway right-of-way, which crosses the claim groupp Attention is invited to apparantconflict between the Boulder Mercury #4 claim and the New Era and Free Enterprise No. 6 claims of the adjoining group. The Boulder Mercury No. 4 is the senior

claim as to date of location so that the area shown as covered by the three locations is validly contained within the Boulder Mercury No. 4 only. As regarding a small unimportant segment covered by the Mercury Connection, Aspen, and Free Enterprise No 6 claims, such segment is valid as to the two latter named claims.*

HISTORY OF URANIUM MINING IN MONTANA

As discovery of uranium in Montana is of recent occurrence some background history of radioactivity in Montana may be mentioned.

Radioactivity in Montana has been known since the turn of the century, first occurences having been noted in pegmatite dikes, of which there are estimated several hundreds in western Montana. A part of these show radioactivity due to include fergusonite, euxenite, or other uranium-bearing minerals, these ordinarily not present in commercial quantities.

Much of the first plannned prospecting for commercial uranium in Montana has been carried on through the Elkhorn Mining Co, of Boulder, Montana, which company began its prospecting in 1948. First investigation included checking with a Geiger Counter thousands of assay pulps found in smelter and assay offices, these pulps representing material mined from many counties in Montana. Hundreds of museum and private mineral cabinet specimen were likewise checked during this preliminary investigation period.

Radioactivity found at these sources yielded a definite pattern for search, limiting areas for first examination. Many silver-lead ores shipped to the smelters over a period of years showed radioactivity, not necessarily indicating commercial uranium values, but indicating possibilities of finding uranium ores in or near certain silver-leqd districts. Incidentally, Elkhorn Mining Company has been able to trace masked silver-lead ore bodies on the surface due to contained radioactivity, likewise, to indicate the positions of such orebodies in underground workings. Initial work was performed with an El-Tronics Geiger Counter, more accurate and detailed work now being performed by the company with the latest Canadian Halross Scintillometer, this instrument being one hundred times more sensitive and effective than the ordinary Geiger Counter.

The first uranium discovery by Elkhorn Mining Company was made in gold placer sands in its Silver Bow County operations. Radioactivity was due to the presence of euxenite, monazite and other minerals, those resistant to weathering processes and contained in black sand comentrates.

Over a period of several months, investigations for radioactivity were conducted in Jefferson, Silver Bow, Beaverhead, and Lewis & Clark counties in Montana, extending north from Boulder to Helena, and south to the Montana-Idaho Line. Radioactivity was found in pegmatites, sedimentary and metamorphic rock masses, rare earth deposits in grano-aplitic phases of the Boulder granite batholith.

After searching over one hundred fifty miles of territory in several counties, one of the most promising uranium prospects was found near the office of Elkhorn Mining Company, specifically thirty-six hundred feet west of the Great Northern Depot at Boulder, Montana. This find is now included in the property known as the Free Enterprise group, developed to date by a 150 foot shaft with about 300 feet of auxiliary work, including crosscuts, drifts, and raises. For the amount of work performed to date, ore production has been very satisfactory, low-grade uranium ores being stockpiled and high-grade ores being sacked. Very satisfactory cooperation through the United States Atomic Energy Commission is providing for acceptance of these ores through the Commission or agent buyers appointed by the Commission. Government ore buying and stockpiling of Montana uranium ores, as in other areas, is a normal step preceding an ultimate uranium reduction plant for Montana.

It should be noted that in recent months much detailed geological field work has been performed through the United States Geological Survey and U.S. Bureau of Mines, working in conjunction with objectives of the U. S. Atomic Energy Commission. Results of this work can not be quoted at this time but mapping of the Boulder locality through these agencies of the government will be available to mine operators interested.

GEOLOGY

The uranium-bearing vein currently under development at the Free Enterprise property is part of a lode system as yet unexplored and lying within the Boulder Batholith. It is one of eight or ten ver-

tical fissure veins striking northeast-southwest, all nearly parallel. Nearly all the uranium ore found in the quartz monzonite appears to be associated with intrusive aplitic sills or dikes. Evidende indicates that uranium mineralization may be derived from the original aplitic segregation or the differentiated product formed when the granite magma cooled. The Free Enterprise vein system obviously is later than the aplite, the latter apparently being a favorable host rock controlling ore deposition, serving also from a confining, impervious structural standpoint, trapping original mineral solutions and acting as a barrier for the retention of secondary minerals. In passing through the aplite, the veins narrow while the ore shoots widen where monzonite is encountered. Paradoxically the first problem during early development at the Free Enterprise was finding quartz-monzonite, or granite of the Boulder batholith during development work by drifting from the main shaft, which by coincidence, extended into recurrent flat dipping aplitic dikes within the granite, the gradation of one rock into the other often being of a hybrid character commonly called grano-aplite.

The Boulder Mercury group is likewise contained within the Boulder Granite batholith and is traversed by a vein system similar to that found at the adjoining Free Enterprise group, in fact some of the veins of the Mercury group represent extensions or part of the lode system to be found on the Free Enterprise group. All of the rocks found within the Boulder Mercury group and its immediate vicinity are of igneous character, consisting mainly of monzonite in which is found geologic conditions similar to those at the Free Enterprise, together with attending sills or dikes of aplite, a later segregation

differentiated from the granite magma. Discussion of the two mining claim groups above named is necessary to show inter-relationship from a structural standpoint.

MINERALIZATION

Uranium minerals in the Jefferson County district and particularly in the Free Enterprise ore have been indentified as autunite, zeunerite, the meta-torbernites, more recently phosphuranylite, a hydrated uranyl phosphate, pitchblende and uraninite. Other associated ore minerals are argentite, pyrargyrite and native silver, besides sparse occurrences of pyrite and galena. A recent assay yielded 17.1% U_3O_8 and 1,760 ounces of silver per ton. Hand specimens exceed 20% U_3O_8. Average values or ore mined is, of course, less. Metallurgical work performed to date indicates no difficult problems. In day to day mining operations the characteristic brilliant emerald-green color of autunite, as discbsed by the ultraviolet ray lamp, is used as a guide underground as to the presence and distribution of uranium ores. Auxiliary instruments used daily are the El-Tronics Geiger Counter with portable amplifier and the Halross Scintillometer. An alpha-ray counter is likewise employed occasionally in checking certain types of ores.

MARKET

Two sources are available for marketing Montana uranium ores. Recent agreement through the U.S. Atomic Energy Commission has provided for acceptance of Boulder uranium-silver ores, the American Smelting and Refining Company smelter at East Helena, Montana, 35 miles distant, being agent buyer for the AEC. Payment is to be made for uranium as to current government scheduled, with all bonuses.

The standard haulage allowance of 6¢ per ton per mile up to 100 miles also is paid.

Silver is paid for at the market price. This item is important as silver values often run high together with uranium values in the Boulder area.

A second market for uranium silver ores isprovided by the Vitro-Chemical Co. of Pittsburgh, Pennsylvania, who maintain a plant in Salt Lake City, Utah.

Ore acceptance in either instance calls for payment for ores assaying as little as 0.2%.

SCINTILLOMETER SURVEY

In connection with examination and report on the Boulder Mercury group, Scintillometer surveys were made as shown on exhibits attached, In principle the Scintillometer intercepts gamma rays impinging on a dense crystal, causing electrical disturbances in the crystal structure. The crystal scintillations are detected and amplified by a photo-electric tube which feeds corresponding electrical pulses to an electronic measuring circuit. Although the crystal is sensitive to cosmic radiation, it offers a much larger increase in ratioof gamma rays to cosmic rays than is found in the ordinary Geiger Counter, so that cosmic radiation becomes a negligible factor.

Initial scintillometer survey was started on the Boulder Mercury No. 3 claim at a point "A" from which the southwest corner of this claim bears South 29 degrees East 294 feet. Readings in counts per second were made at three foot intervals on lines directed due north and south in crossing vein well exposed on this portion of the claim. With a background count of readings as low as 38 counts per second, anomalies as high as 70,100,175,225,260, and 525 were recorded at points encountered in crossing the vein, here designated as a ledge for reason that the vein at many points jutted above the ordinary ground surface, due to differential erosion processes, the silicified

vein gangue being more resistant to erosion than the surrounding monzonite.

EAST of the area shown on Exhibit #2 scintillometer readings were taken on north-south, east west lines along the same vein. Lode lone readings here again show a definite increase from readings taken at north-south 25 foot intervals from vein and at 15 foot intervals along lines taken parallel to the vein and directed due east-west. Low background count is 28, with vein reading anomolies up to 92 counts per second, Interpretation of these readings will be hereinafter discussed. This grid survey is depicted on chart, Exhibit 3.

Third Scintillometer survey results are shown on chart attached, exhibit number 4. This survey extended from the east portion of the Boulder Mercury No 3 claim into the west portion of the Boulder Mercury #1 claim. Interval readings for the most part were taken every 50 feet along lode line over a total distance of 2,200 feet, and at 25 foot intervals north-south, on either side of the vein. A consistant increased count from 75 to over 100 was obtained whereever vein was encountered. It should here be noted that the count increases were consistant, in this instance, rather than high, also that at one point on the East Mercury #1 when highest anomoly 180 was encountered in this survey, that this point represented the only point where the surface had been disturbed by an open cut dug years ago during early prospecting days. Any excavation here in a radioactive area or upon a radioactive outcrop often shows increased count. Field investigations over several Montana regions have shown radioactivity to be due to many causes: uranium, thorium, low grade rock masses such as aplite, even granite, radon gas emanations etc etc.

Field work has shown that Geiger counter or scintillometer grid survey readings showing increased anomalies are important, but that the interpretations of such readings are ofmuch greater importance.

In the Boulder, Montana locality it has been found that even a small increased count in crossing a vein structure is of considerable importance. To illustrate this point reference is made to an attached exhibit 5, showing scintillometer survey made a short distance from the Free Enterprise shaft, sit of commercial uranium production from a group of claims adjoining the Boulder Mercury group. Initial northwest-southeast line was run from compressor house to shaft collar and accross ore dump. A maximum reading of 820 counts per sec. was secured on medium grade commercial uranium ores. Further readings on northwest-southeast lines were taken at 5 foot intervals in an area approcimately 150 feet northeast of the shaft location These readings crossed the lode line of the Free Enterprise vein, known to contain uranium. The vein at the site of these readings is masked by some overburden, eroded vein material can account for irregularity in readings, but known mineralization is contained along the vein. The general loke line strike shows some increase in counts per second as compared to more distant points, but the highest reading, even in close proximity to known high grade uranium ore shoots, is only 60 compared to a low of 39.

In view of the foregoing, two points are important in giving consideration to scintillometer grid surveys in the Free Enterprise-Boulder Mercury area. First, the fact that radioactivity in the area is due to uranium only, rather than thorium, or other causes. Second, that even a few counts per second increase in crossing a vein structure is significant. THIS CANNOT BE SAID OF ALL OTHER MONTANA LOCALITIES HERETOFORE EXAMINED.

The latter may be best illustrated by reference to a surface cut located South 57 degrees west, 125 feet from the Free Enterprise shaft collar. This cut, about 8 feet deep shows the Free Enterprise vein with a count of 120 counts per second, no uranium content visible or determinable by commercial assay methods. However, in the development of the FreeeEnterprise vein, shaft was run at the 85 foot level to a point directly beneath the cut metioned, where high grade uranium ore, containing pitchblende, uraninite, and accompanying secondary uranium minerals, were found. In other words, mild radioactivity at the surface, recognized in relation to geologic structure, resulted in high grade uranium ore less than 100 feet below the surface on the same vein.

Conclusion

1. The Boulder Mercury mining claim group is included in an area producing the first high grade commercial uranium ores found in Montana and the Pacific Northwest, and immediately adjoins the main district producer.

2. It is contained in the Boulder granite Batholith, is traversed by fissure vein ore structures, together with attending aplitic dikes and sills, as yet unexplored but very favorable for uranium occurences in commercial quantity.

3. The vein system contained within the Boulder Mercury group shows definite higher radio activity than the Free Enterprise and increased count through Scintillometer grid surveys of vein structures. Anomolies at a great many points appear quite significant.

RECOMMENDATIONS

In view of the foregoing, the following recommendations are submitted with reference to the Boulder Mercury Group.

1. That further geologic examination be conducted for structural detail.

2. That Scintillometer surveys be extended to other veins contained within the Boulder Mercury Group.

3. That a program of diamond drilling be entertained, with initial holes located at points showing most favorable structures, combined with increased count as shown by Scintillometer grid surveys over radioactive areas.

4. That the vein system exposed on the Boulder Mercury 1 and Boulder Mercury 3 claims be penetrated by an adit to obtain a depth of 100 to 200 feet below the surface. Deeper mining to be planned upon these results.

5. The Boulder uranium area is developing very favorably for the amount of district development work performed to date. It is contained in one of the best mineralized mining regions of the United States, is in a deep seated ore district, at a point approximately 8 miles southwest of the Elkhorn district where mining has been extended to the 2300 foot level, measured on slope of ore body.

   The Boulder area in which the Boulder Mercury group is contained is only beginning exploration but merits development with view to finding deep seated commercial uranium and uranium-silver ore deposits.

Wade V. Lewis

Wade V. Lewis

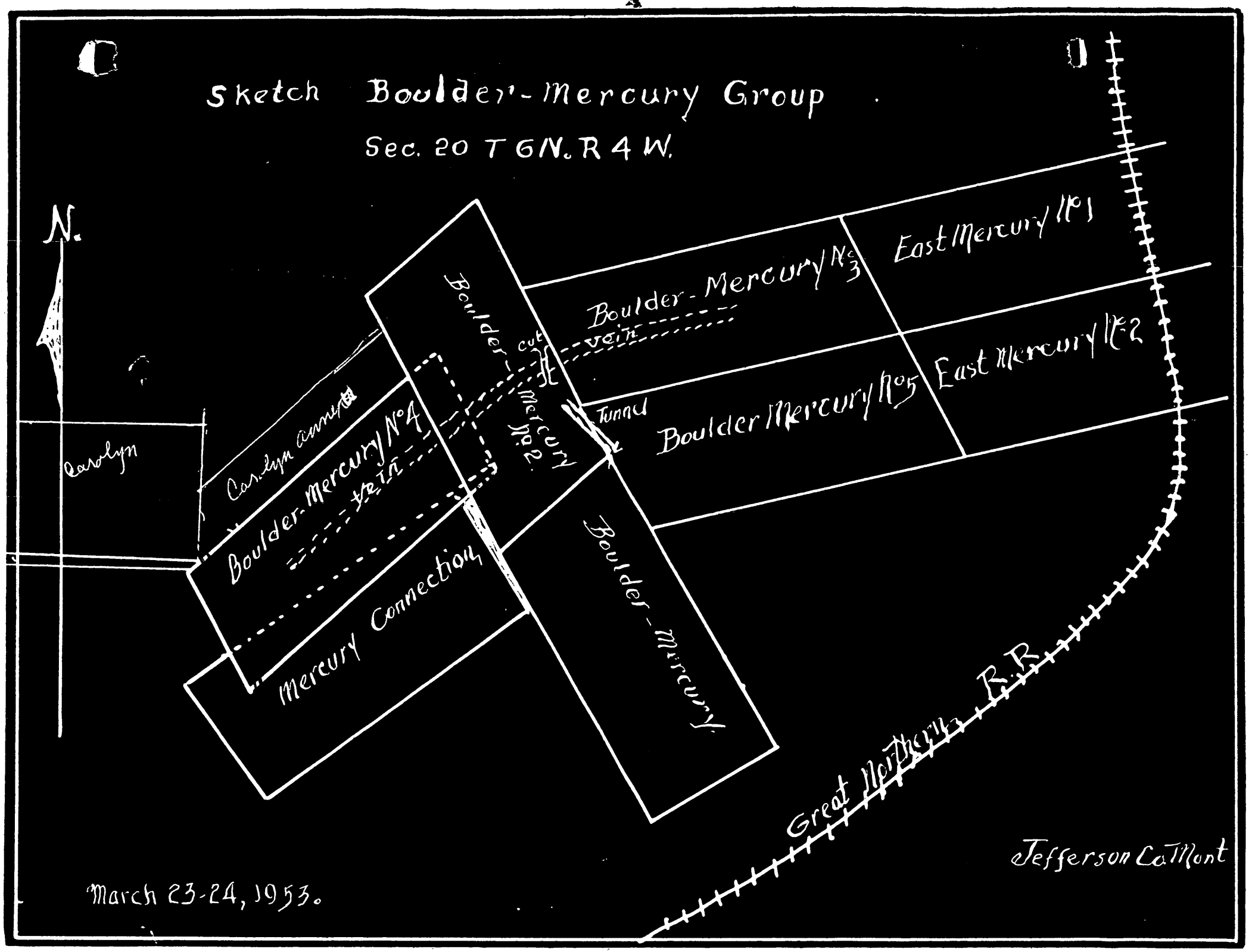
Information to date May 1955 compiled by Herman R. Nohr.

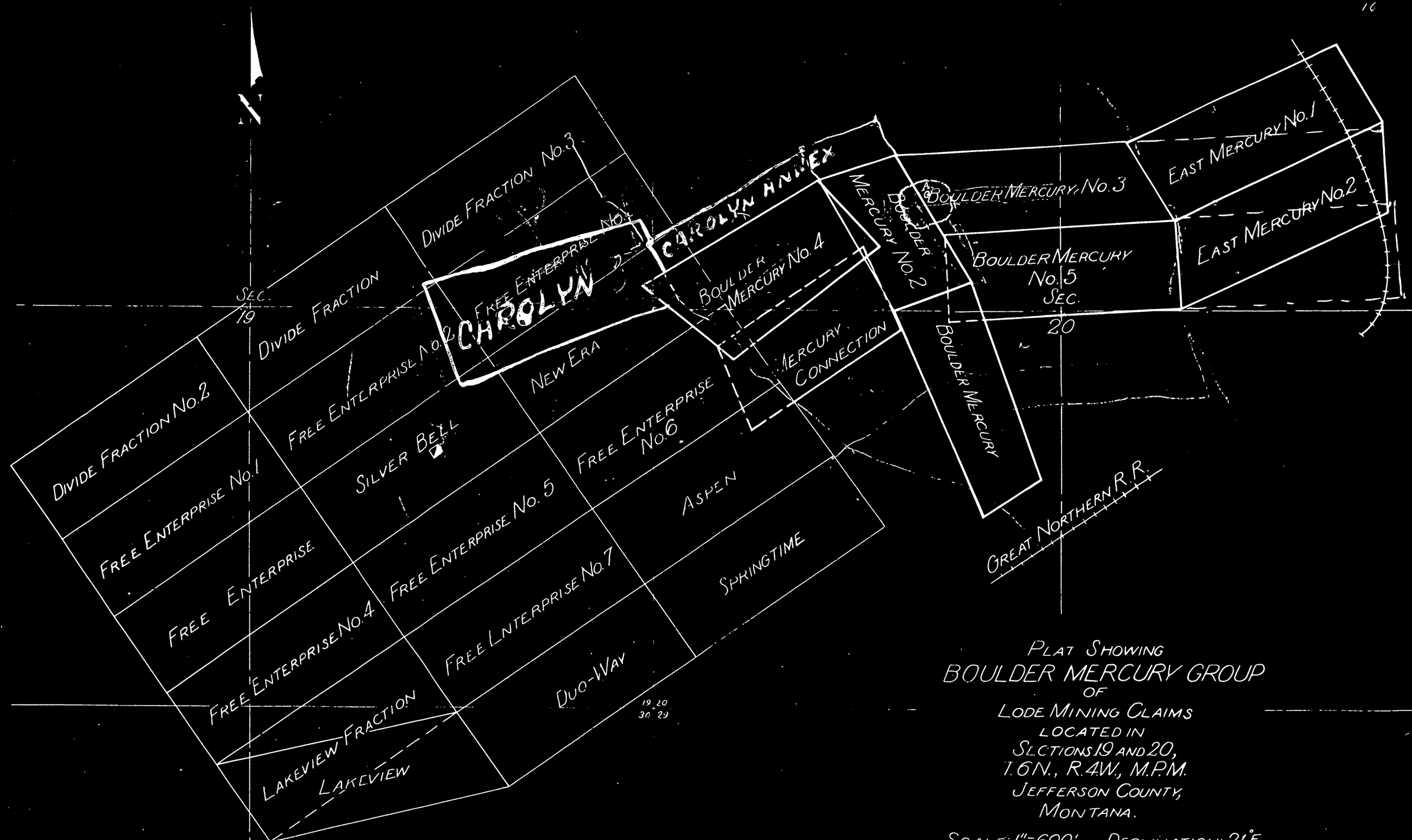
Our scintillometer survey showed essentially the same facts brought out by Mr Lewis in his report. However since Mr Lewis' report was written a great deal more exploratory work has been done. Besides about 25 deep prospect pits scattered over the claims a tunnel has been drifted to a depth of 296 feet 200 feet below the vein surface structure. Radioactivity in the tunnel is 200 counts per second compared to background of 40 counts per second. This tunnel is designed to cross cut the main vein in another 100 to 150 feet. This tunnel starts in the North west corner of Boulder Mercury # 5 and Northwest on Boulder Mercury #2.

In a prospect pit on the Mercury Connection a vein of Cinnabar has been uncovered and traced over Boulder Mercury #4 and on to the Carolyn claim. This ore assays .9 to 1% Mercury. Average value about 100 dollars per ton at current rates. This ore also shows signs of secondary uranium ore under the ultra violet light.

Park Ridge Uranium is planning open pit mining of the Cinnabar ore and further drifting in the tunnel to get at the main ore body.

Herman R. Nohr


Sketch Boulder-Mercury Group
Sec. 20 T 6N. R 4 W.
N.
Carolyn
Carolyn camp
Boulder-Mercury No 4
vein
Mercury Connection
Boulder-Mercury No 2
cut
Boulder-Mercury No 3
vein
Tunnel
Boulder Mercury No 5
Boulder-Mercury
East Mercury No 1
East Mercury No 2
Great Northern R.R.
Jefferson Co Mont
March 23-24, 1953.



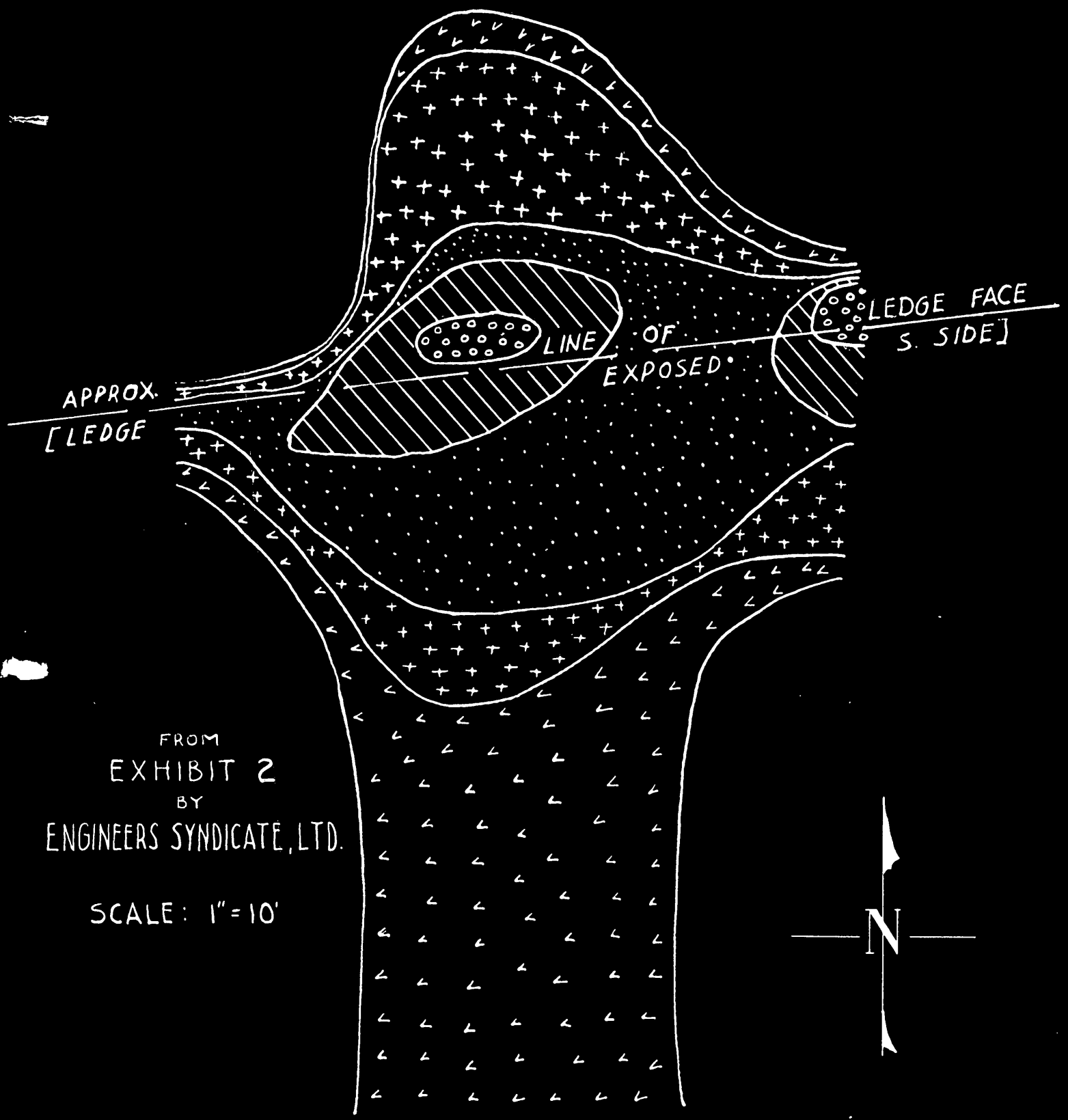
PLAT SHOWING
BOULDER MERCURY GROUP
OF
LODE MINING CLAIMS
LOCATED IN
SECTIONS 19 AND 20,
T.6N., R.4W., M.P.M.
JEFFERSON COUNTY,
MONTANA.

SCALE: 1" = 600' DECLINATION: 21° E.

EXHIBIT 1

RECEIVED
SEP - 9 1955

THE CAROLYN CLAIM WAS CLAIMED
PRIOR TO THE FREE ENTERPRISE #3

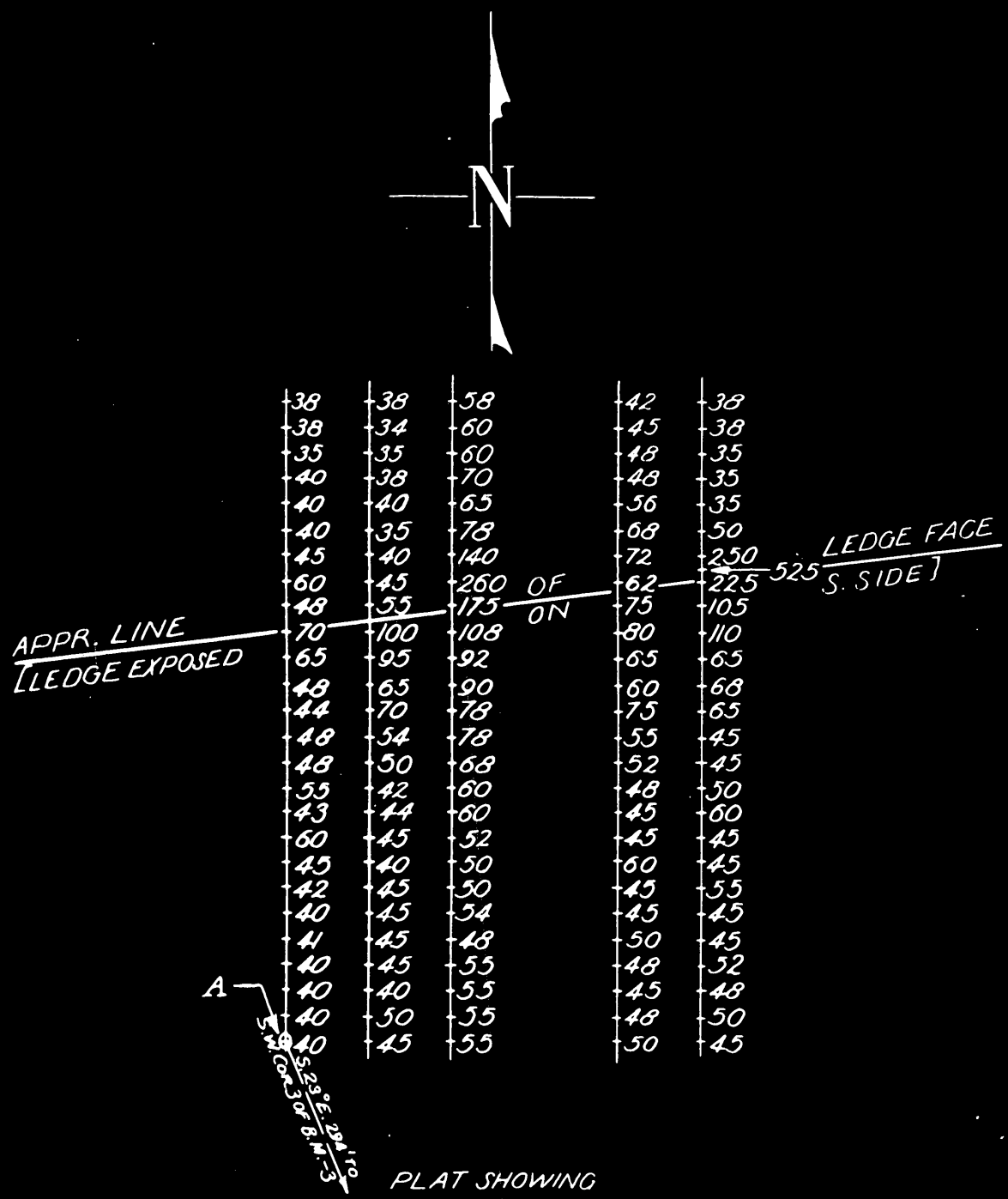


UNDER 50 | 61-70 | 91-200

50-60 | 71-90 | OVER 200

ISORAD CHART

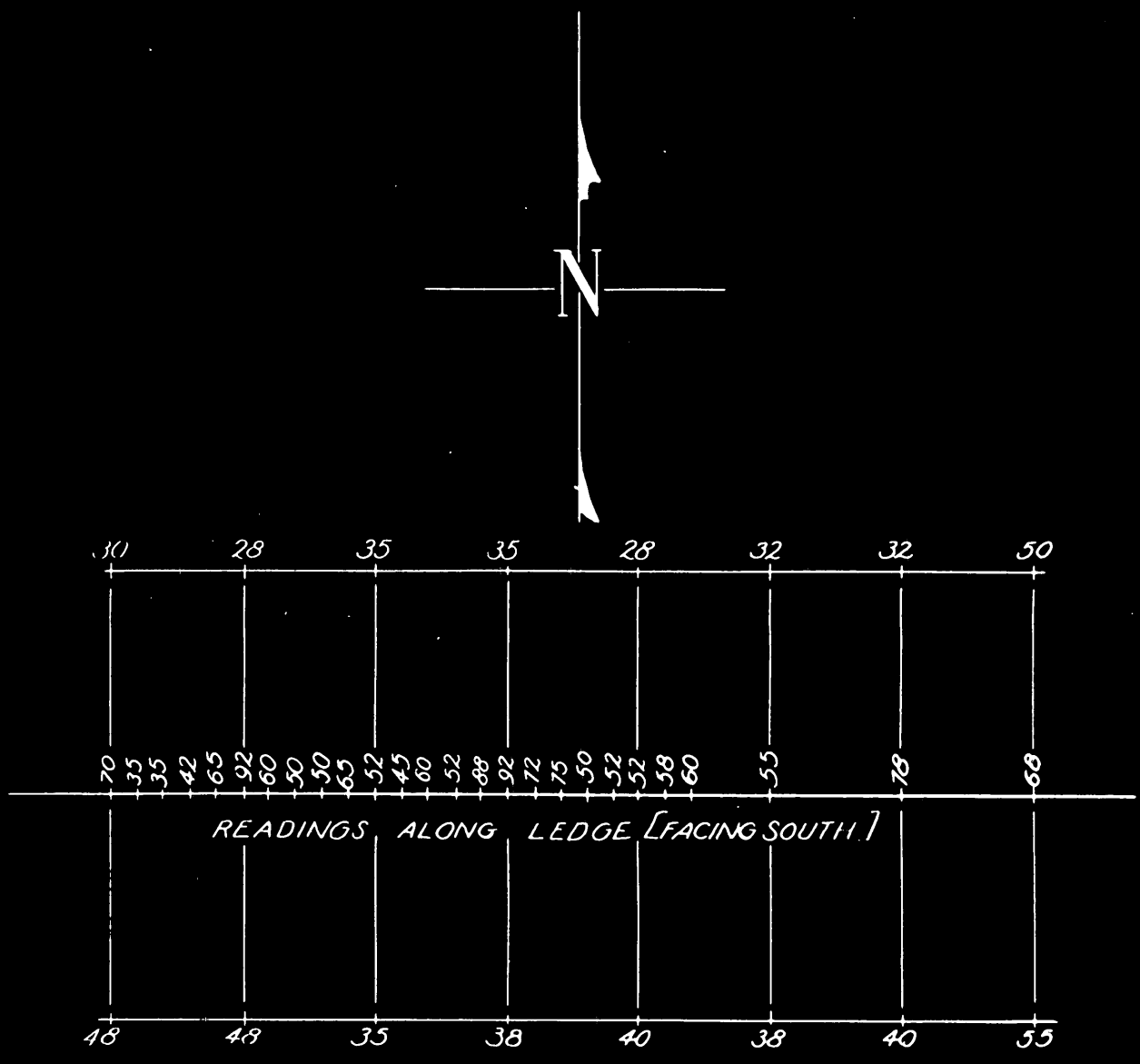
BOULDER MERCURY № 3 CLAIM



PLAT SHOWING
SCINTILLOMETER READINGS
ON
WEST PORTION OF LEDGE
ON
BOULDER MERCURY Nº3 CLAIM

READING INTERVALS:
3' N-S ——— 10' E-W
READINGS IN COUNTS/SECOND
WITH HALROSS SCINTILLOMETER.
SCALE: 1" = 20' ——— DECLINATION: 21° E.

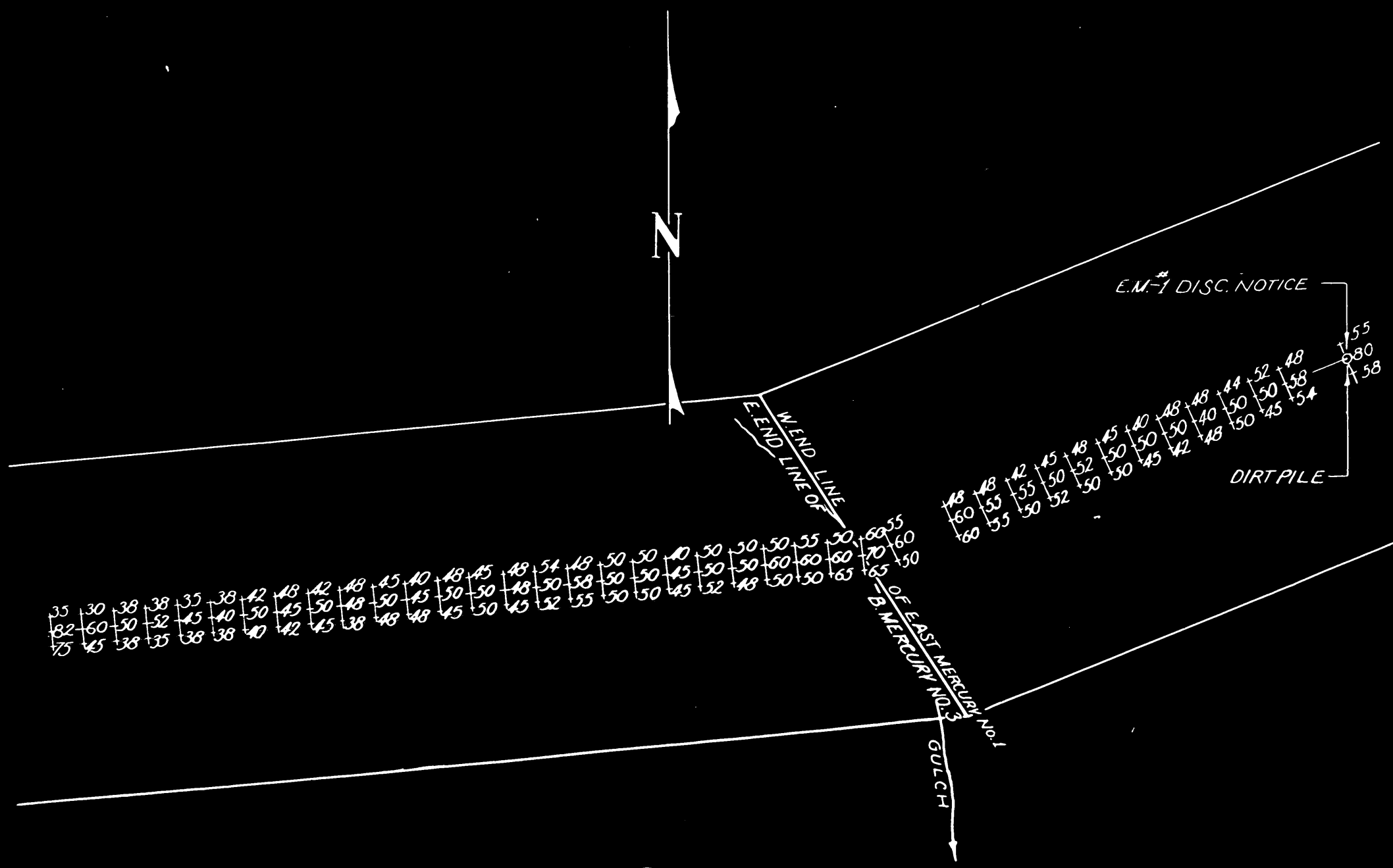
EXHIBIT 2



PLAT SHOWING
SCINTILLOMETER READINGS
ON
EAST PORTION OF LEDGE
ON
BOULDER MERCURY Nº3 CLAIM

READING INTERVALS:
3' AND 15', E-W — 25', N-S
READINGS IN COUNTS/SECOND
WITH HALROSS SCINTILLOMETER
SCALE: 1" = 20' — DECLINATION: 21° E.

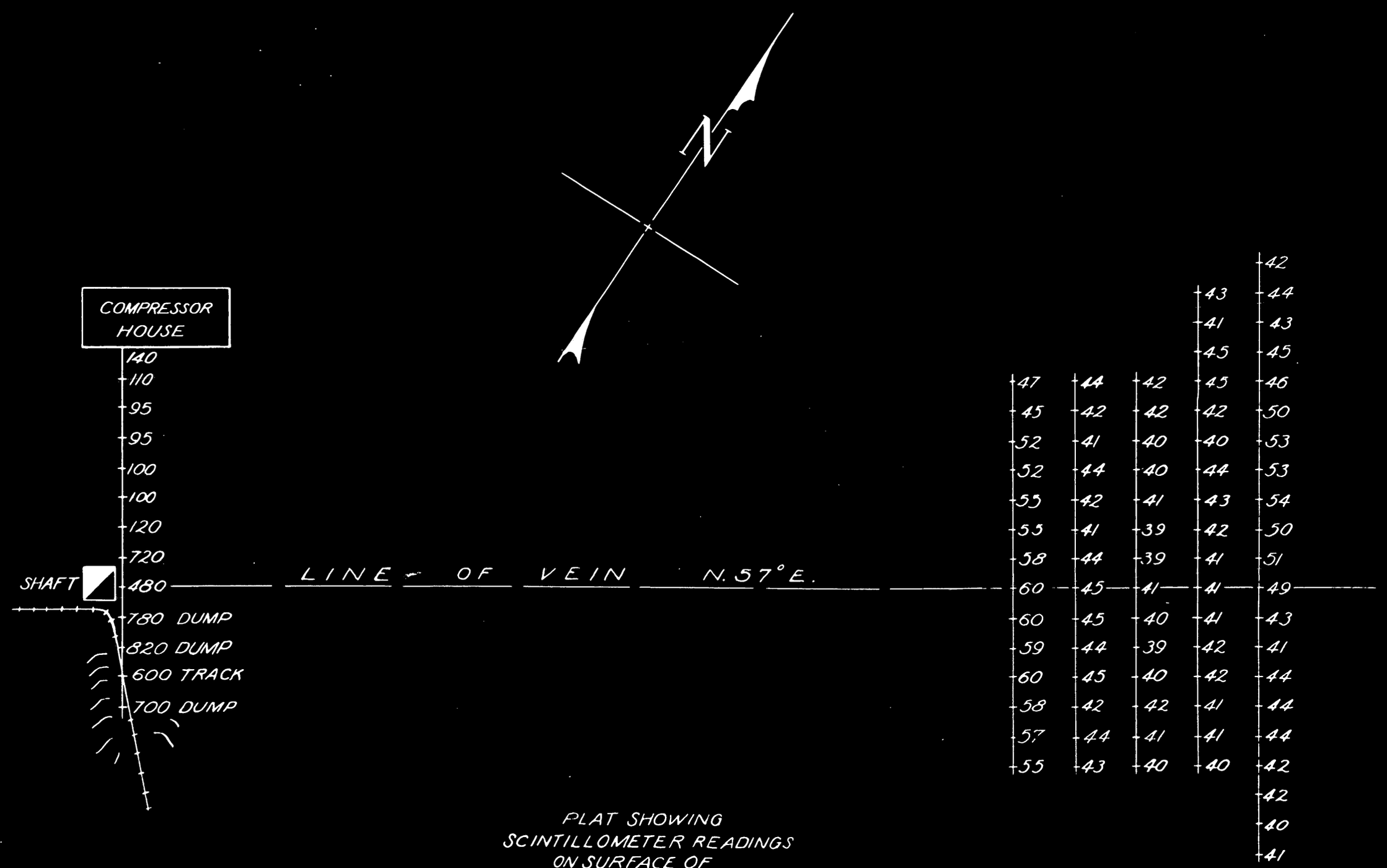
EXHIBIT 3



PLAT SHOWING
SCINTILLOMETER READINGS
ON
LODE LINES
OF
BOULDER MERCURY Nº 3
AND
EAST MERCURY Nº 1

READING INTERVALS:
25', NW-SE——50', NE-SW
READINGS IN COUNTS/SECOND
WITH HALROSS SCINTILLOMETER
SCALE: 1" = 200'————DECLINATION: 21 E.

EXHIBIT 4



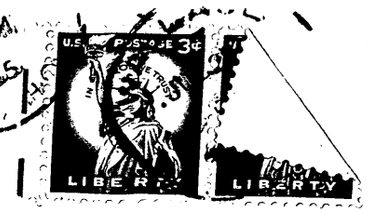
PLAT SHOWING
SCINTILLOMETER READINGS
ON SURFACE OF
FREE ENTERPRISE MINE
[SILVER BELL CLAIM]

READING INTERVALS:
5' NW-SE ——— 10' NE-SW.
READINGS IN COUNTS/SECOND
WITH HALROSS SCINTILLOMETER
SCALE: 1" = 20' ——— DECLINATION: 21° E.

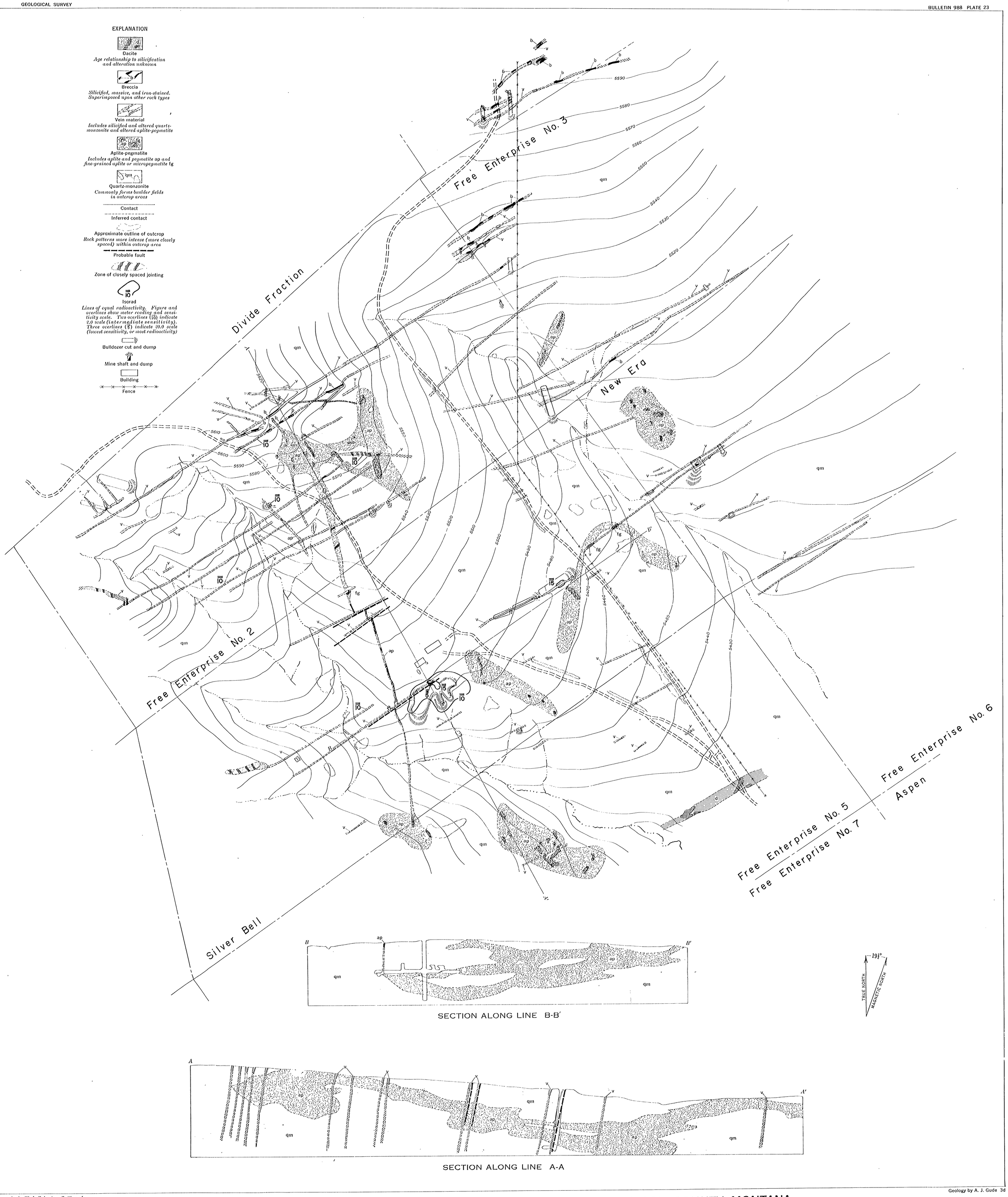
EXHIBIT 5

HECLA MINING COMPANY
WALLACE, IDAHO

WALLACE
JUL 28
6 P.M.
1955
ID.



Mr. Ernest Wm. Ellis, Chief
Rare & Miscellaneous Metals Division
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.



Topography by W. A. Roberts. Outline of underground workings taken from E. E. Thurlow and M. L. Raynor, unpublished report

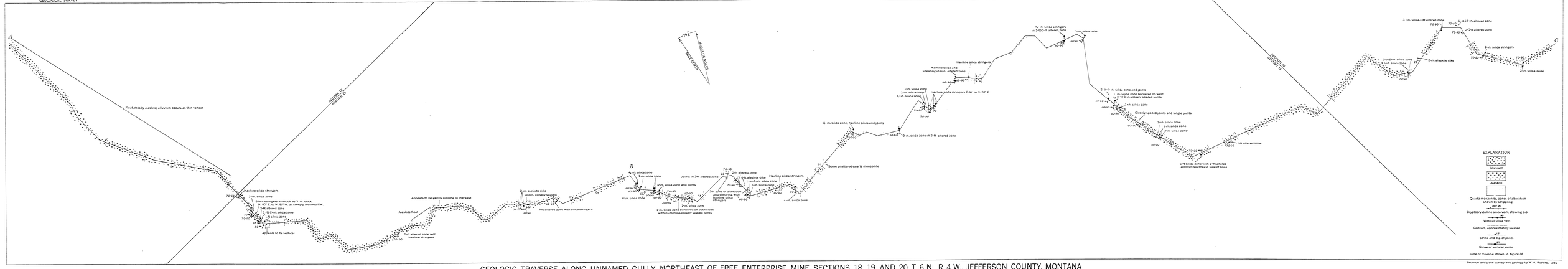
Geology by A. J. Gude 3d

DETAILED MAP OF THE FREE ENTERPRISE MINE AND VICINITY, JEFFERSON COUNTY, MONTANA

100 0 500 Feet

Contour interval 10 feet
Datum is sea level

287753 O - 53 (In pocket) No. 1



GEOLOGIC TRAVERSE ALONG UNNAMED GULLY, NORTHEAST OF FREE ENTERPRISE MINE, SECTIONS 18, 19, AND 20, T. 6 N., R. 4 W., JEFFERSON COUNTY, MONTANA

100 0 500 Feet

Brunton and pace survey and geology by W. A. Roberts, 1950

24770-D-12 (In press) No. 2