SEP 1 0 1954

Mr. Carl W. Heideprism
Box 146
Custer, South Dakota

Re: Docket No. DMEA-3424 - Beryl-Mica
Granite Reef Fraction
Custer County, South Dakota

Dear Mr. Heideprism:

Your application for aid for an exploration project and other reports available to us in Washington relating to the subject property have been reviewed.

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 significant reserves of beryl and mica 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,

C. O. Mittendorf

Administrator

WCAnderson:gad 9/7/54
Copy to: Admr. R. File
Docket
Field Team, Region V
Operating Committee
Mr. Dietrich, 3061
Mr. Kiilsgaard, 5227
Mr. Houk

September 3, 1954

Memorandum

To: Administrator

From: Nonmetallic Minerals Division

Subject: A denial of exploration assistance and summary report.

By: Walter C. Anderson

1. Docket No. DMEA-3424 - Beryl-Mica
   Property: Granite Reef Fraction
   Custer County, South Dakota

   Applicant: Carl W. Heideprieam
   Box 146, Custer, South Dakota

   Application: Form MF-103, date received July 26, 1954
   Work proposed: 300 feet of adit.
   Amount requested: $7,380.16
   No contract: Application denied.

2. Comments:

   Geological premise: It is a remote possibility that mineral content of pegmatite will improve sufficiently in quality and amount to warrant an economic mining operation.

   Geological Criteria:
   1. Zoned pegmatite with maximum thickness of 40 feet.
   2. Low mica and beryl content in pegmatite.
   3. Scrap grade mica.
   4. Highly altered spodumene.

   Future possibilities: According to Field Team "Exploration by any method would not result in an economic discovery".

   Recommendations: The Nonmetallic Minerals Division concurs in Field Team's recommendation to deny the application. The Geological Survey and the Bureau of Mines concur in this recommendation.

WCAnderson:gad 9/3/54
Copy to: Admr. R. File
Mr. Houk

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

September 8, 1954

Memorandum

To: Nonmetallic Minerals Division
Defense Minerals Exploration Administration

From: Donald R. Irving, Acting for Chief, Ceramic and Fertilizer Materials Branch

Subject: DMEA-3424 (mica)

Applicant: C. W. Heidepriem

Name and Location of Property: Granite Reef Pegmatite
Custer County, South Dakota

Date of Field Team Report: August 27, 1954

Date Rec'd. by Ceramic & Fertilizer Mtls. Br.: September 8, 1954

Field Team Recommendation:

1. Denial of application.

Comments:

1. Mica was found to be of scrap quality because of its small size and defects.

2. Field examiners are of the opinion that the possibility of recovery of sheet mica would be small.

3. It appears that this property would be uneconomical to operate for the production of the mica.

Recommendation:

I concur in the field team's recommendation to deny subject application on the basis that the mica is of poor quality.

Donald R. Irving

IN REPLY REFER TO:

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

September 7, 1954

Memorandum

REVIEW OF FIELD TEAM REPORT ON APPLICATION DMRA-3404 (beryl-mica)

To: L. G. Rock, Defense Minerals Exploration Administration
From: E. L. Newcomb, U. S. Geological Survey
Applicant: Carl W. Hildegrien, Box 146, Custer, South Dakota
Name of property: Granite Reef Fraction
Location of property: Sec. 31, T. 3 S., R. 5 E., Custer County, South Dakota
Date of Field Team Report: August 24, 1954
Authorship of Field Team Report: J. A. Redden, USGS, and E. G. Bingen, BMM.
Field Team's recommendation: Application should be denied.
Comments:

Amount of beryl, amblygonite, and mica is insufficient for profitable mining operation.

Evidence in present workings indicates a significant discovery of beryl, mica (sheet or scrap) and amblygonite is unlikely to be found by proposed work.

ACTION RECOMMENDED: Concurrence with Field Team recommendation that application be denied.

E. L. Newcomb

ELNewcomb:hlm
G-9/7/54

Copy to: Director's reading, 4212
Branch reading, 4212
DMRA (3)
Docket file
R. F. Griffith, 3641A

GMRA - 3424

Heidepriem - Tel. Call 2:30 P.M.
Sept. 10 - 1954

Called Mrs. Daley - Congressman Berry's Secy - re denial of above application. Explained to her the reasons for denial, namely mica is not of strategic quality and occurs sparingly throughout pegmatite. She thanked for our helpfulness and cooperation in keeping her informed. She said she ~~was of the opinion~~ ~~she has heard anonymously~~ that Sr. Dak. mica was not of the same good quality as North Carolina mica.

Walter C. [illegible]

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

WASHINGTON 25, D.C.
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

August 27, 1954

Memorandum

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

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA 3424, Carl W. Heidepriem, Granite Reef Fraction, South Dakota

Reference your memorandum of August 2, 1954.

Here is the original and three copies of the field team report denying the subject application.

A. B. NEEDHAM

Attachments

cc: Dutton
Redden
Binyon
Region V
files
df

ABNeedham:mg

Reviewed by
DMEA OPERATING COMMITTEE
9-3-54
(date)

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] 3121

Granite Peak Pegmatite
Custer County, South Dakota

[illegible] Bryson, Mining Engineer
U. S. Bureau of Mines

[illegible] Brown, Geologist
U. S. Geological Survey

August [illegible], 1951

Reviewed by
DMEA OPERATING COMMITTEE

9-3-54
(date)

[illegible]

by

[illegible] Minyon, Mining Engineer
U. S. Bureau of Mines

[illegible] Weden, Geologist
U. S. Geological Survey

Docket No.: 3[illegible]2
Applicant: Carl [illegible] Heidenrich, [illegible] Box 1[illegible]6 Custer, [illegible] Dak.
Commodity: [illegible]ites, beryl, columbite-tantalite, lithium minerals

[illegible]

The property is known as the Granite Reef Fraction and is in sec. 31, T. 3 [illegible], R. 5 [illegible], [illegible] [illegible], Custer County, [illegible] Dak., approximately 3 miles southeast of Custer, the county seat and nearest rail point and supply center. From Custer the road to the property, except for the last .3 mile, which is a logging road, is graveled and permits access the year around.

[illegible]

Carl [illegible] Heidenrich, the applicant, is the locator and owner of the Granite Reef Fraction claim. It is an unpatented lode mining claim held under an amended location, which is recorded in Location Book No. 19, page 273, at the Register of Deeds office in Custer.

This claim, as the name indicates, is a fraction comprising 3.[illegible] acres. (See map). The applicant states that a lease can be obtained, if necessary, on the patented ground bounding the property.

[illegible]

Approximately four hours was spent in the field team in mapping and examination of the pegmatite. Fred Heidenrich and Louis Stender were at the property for a short time during the examination.

Other than a small tool shed, there are no buildings or surface facilities on the property.

As shown on the accompanying sketch map, the mine workings consist of three open cuts and two shallow prospect pits. Present operations are confined to the largest open cut at the southeast end of the pegmatite.

The equipment at the property consists of a trailer mounted 160 c.f.m. Ghiza or Pequastic compressor driven by a 4-cylinder Hercules gas engine, a Terratrac loader with a 7- cubic foot bucket, an Ingersoll Rand, Model S-45 jackhammer, a 1939 Chevrolet pickup, and a proximately 200 feet of 1-inch and 50 feet of 2-inch pipe, with air hones and small tools.

General Geology

The pegmatite is a long narrow body having a maximum thickness of about 10 feet. (See sketch map). The average strike of the pegmatite is N. 21° E. Exposed contacts are rare and tend to be irregular, but the average dip of the main pegmatite is about 20°. In the southwest end the dip of the pegmatite flattens to the west, and in the east end of the open pit the dip is flat. Irregular veins along the contact of the pegmatite plunge nearly horizontally northeast-southwest, but it is doubted that this is a true plunge of the pegmatite.

A quartz-plagioclase-muscovite pegmatite wall zone, 1 to 3 feet thick, apparently surrounds the pegmatite. Approximately 1 percent of the zone is muscovite in 1- to 3-inch books. Small beryl crystals 1 to 3 inches in diameter are accessory in the zone.

An intermediate zone consists of quartz-plagioclase-altered spodumene pegmatite. The zone contains 10 to 15 percent altered spodumene. The altered spodumene now consists of a fibrous, white, micaceous mineral which forms poorly developed pseudomorphs after spodumene. The fibers are oriented approximately perpendicular to the surface of the pseudomorphs. Coarser-grained muscovite averaging 0.5 inches in diameter commonly forms radial aggregates around the needle-like sites. Amblygonite also occurs as an accessory mineral in the outer portion of the zone. The amblygonite occurs as rounded aggregates 2 to 10 inches in diameter. The aggregates are commonly altered to a green phosphate (?) mineral in their outer part, but are fresh in the interior. The amblygonite content of the zone probably does not exceed 3 percent.

A massive quartz core forms the innermost unit of the pegmatite. The quartz core crops out prominently above the surrounding zones.

Mineral Deposits

The beryl content of the wall zone is low and probably does not exceed 0.5 percent. Coarser-grained beryl probably exists in the intermediate zone, but none was observed and an estimate of the beryl content would be only a guess.

All of the mica is of scrap quality because of small size, staining, and certain mechanical defects. Scrap mica could be mined from the wall zone and from the radial aggregates around the altered spodumene in the intermediate zone. The possibilities for recovery of sheet mica are very bad.

Additional [illegible] mica is a [illegible]. The altered spodumene, however, contains a [illegible] alteration which suggests that it was altered [illegible] in the crystallization of the pegmatite. It differs from the common clay alteration of spodumene which often exists in the outer parts of spodumene pegmatites. It is doubtful (but not to be excluded) that fresh spodumene exists in the interior of the pegmatite.

[illegible]

The only record of production available is that supplied by the applicant, and according to the statement in the application, (1) [illegible] pounds of beryl, 3 [illegible] of mica (scrap grade), and (2) [illegible] of amblygonite were produced from the open cuts and [illegible] shown on the map.

[illegible]

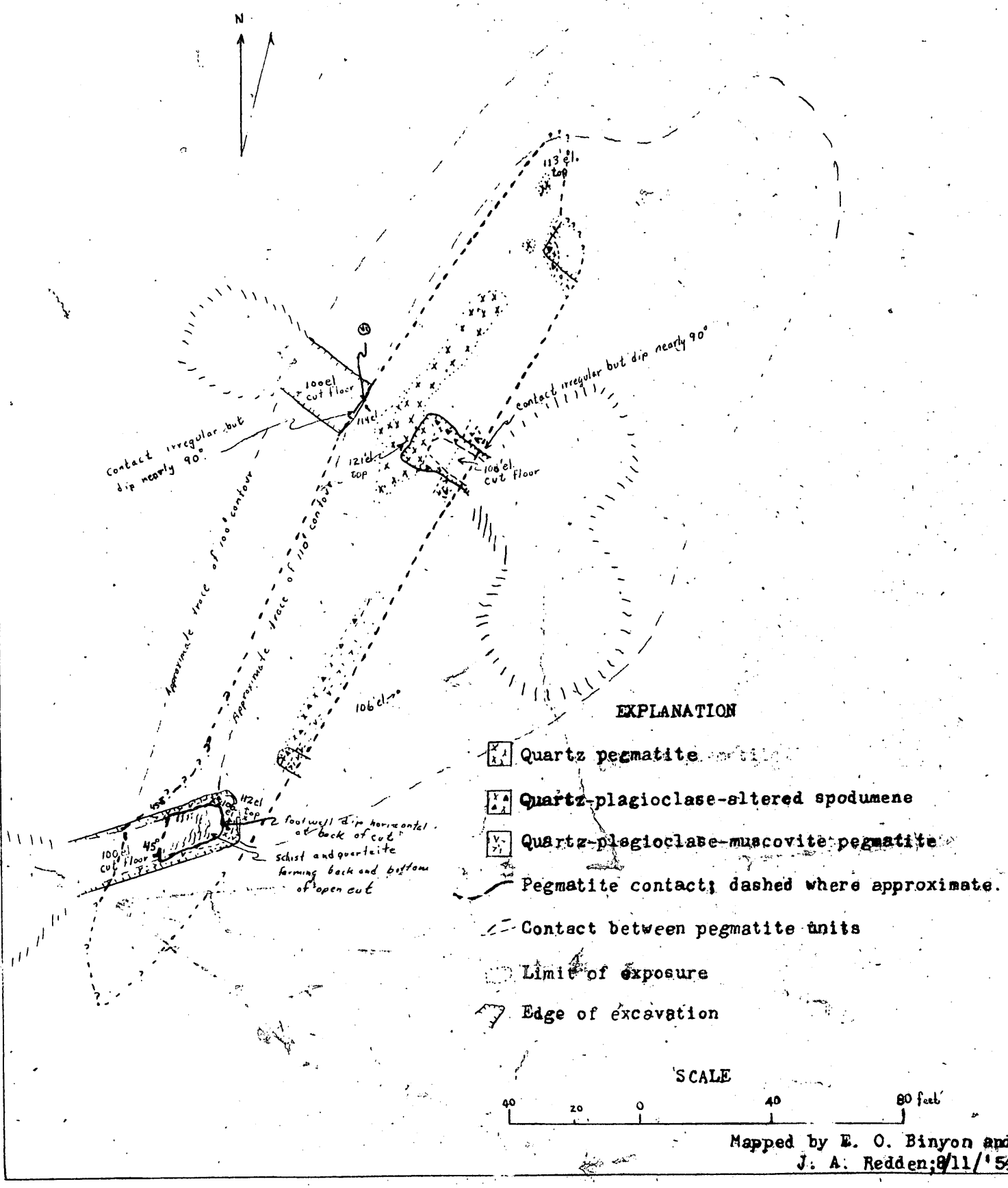
The applicant proposes to explore the deposit by adit. The adit is to be started at the north end of the pegmatite and is to be driven along the strike for a distance of 300 feet and at a depth of approximately 100 feet below the surface. The proposed work is not economically feasible and, owing to the low grade of the deposit as described under "Geology," exploration by any method would not result in an economic discovery.

[illegible]

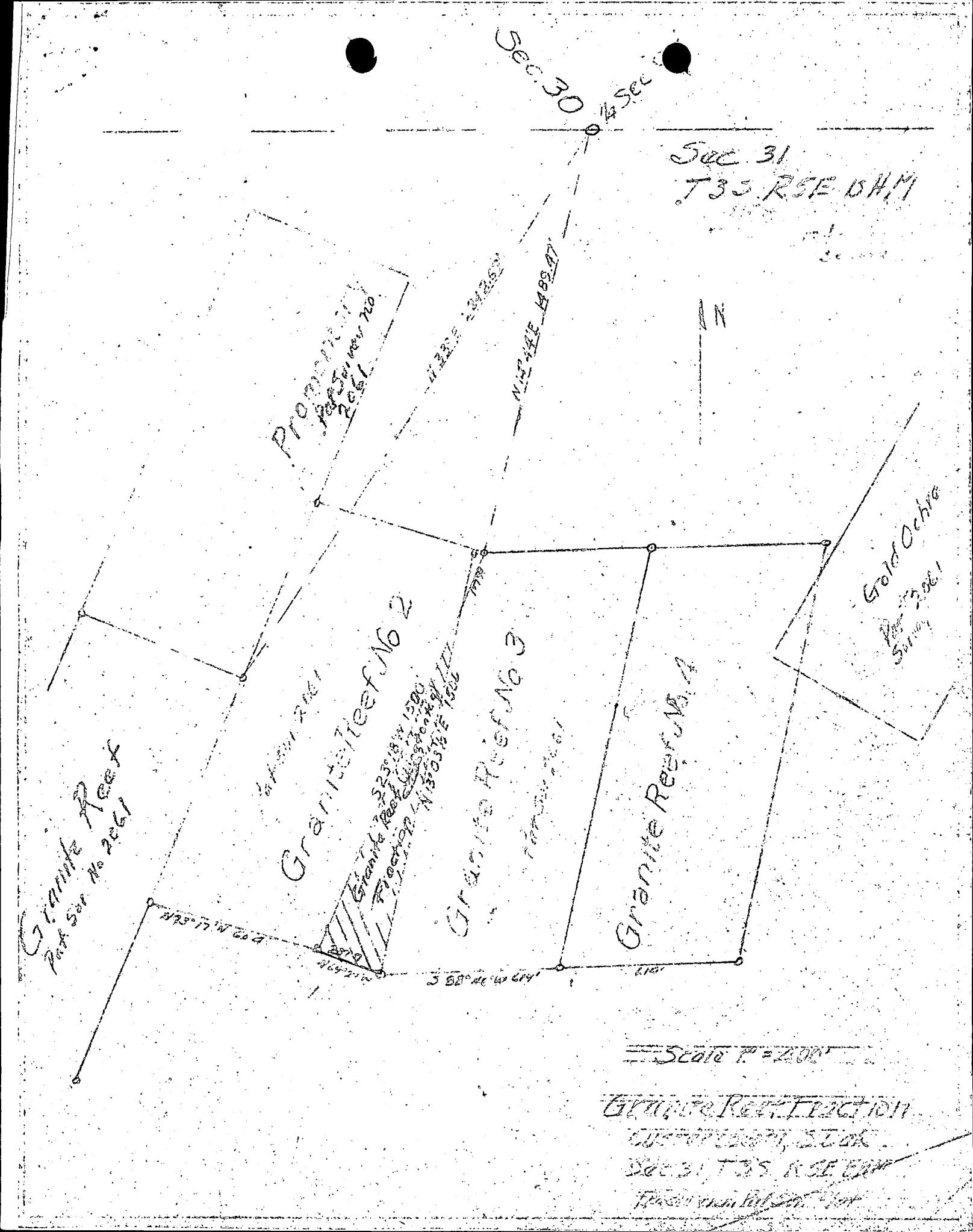
The pegmatite is well zoned and contains some beryl, mica (scrap grade), amblygonite and spodumene. However, the percentage of beryl and amblygonite is too low for profitable mining; also, there is little, if any, sheet mica and the spodumene is so highly altered as to be unusable.

As it is very unlikely that fresh or unaltered spodumene will be found in valuable quantities in the deposit at depth, and since a successful mining operation would depend on the recovery of spodumene, it is concluded that the property does not warrant exploration as proposed. Also, it is unlikely any exploration could result in a discovery of sufficient amounts of either one or all of the economic minerals--beryl, mica (sheet or scrap), and amblygonite--to permit a profitable mining operation. As stated, the spodumene noted in the workings is highly altered and has no value.

Although some beryl production could result from a mining operation, the amount would not be of economic importance and it is recommended that the application be denied.



SKETCH MAP, GRANITE REEF FRACTION PEGMATITE, CUSTER COUNTY, SOUTH DAKOTA


Sec 30
1/4 Sec
Sec 31
T35 R5E BHM
N
Proprietary Parcel No. 2661
N 33° 33' E 334.25'
N 42° 42' E 489.47'
Granite Reef No 2
Granite Reef No 3
Granite Reef No 4
Gold Ochre Parcel No 2661 Survey
Granite Reef Parcel No 2661
N 23° 17' W 20.4'
S 88° 46' W 614'
Scale 1" = 200'
Granite Reef Fraction
Sec 31 T35 R5E BHM

8/25/54

Mrs. Daly, Sec'y. Office of Cong. Berry, So. Dak. telephoned re status of application Omaha - 3424. She was told we had not yet heard from field team re examination, but would keep her informed when reports were received. If not by Sept. 1, inquiry would be made. She seemed happy for progress made.

WRA

AUG 3 - 1954

Mr. Carl A. Heideprian
Box 146
Custer, South Dakota

Re: Docket No. DMEA-3424 - Beryl-Mica
Granite Reef Fraction
Custer County, South Dakota

Dear Mr. Heideprian:

Your application for assistance in exploring the subject property has been reviewed by the Nonmetallic Minerals Division of the Defense Minerals Exploration Administration and has been referred to Mr. A. B. Needham, Executive Officer, DMEA Field Team, Region V, 2908 Colfax Avenue, South, Minneapolis 8, Minnesota, for further consideration and possibly a field examination.

Please advise this office in writing if you desire to have your application processed under the new Government participation rate which is 75 percent of the approved cost.

The Regional Office will contact you at an early date if an examination is to be made. Any assistance that you may give the members of the Field Team during the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

WCAnderson:gad 7/30/54
Copy to: Hon. E. Y. Berry
House of Representatives
Washington 25, D. C.

Admr. R. File
Docket
Operating Committee
Field Team, Region V
Mr. Dietrich, 3061
Mr. Larrabee, 5216
Mr. Houk

600

AUG 3 - 1954

Mr. A. B. Needham
Executive Officer, DMEA
Field Team, Region V
2908 Colfax Ave., South
Minneapolis 8, Minnesota

Subject: Docket No. DMEA-3424 - Beryl-Mica
Carl W. Heidepriem
Granite Reef Fraction
Custer County, South Dakota

Dear Mr. Needham:

Please review the subject application and arrange for a field examination if you deem it necessary.

On July 29, 1954, this office received a telephone call from Representative E. Y. Berry of South Dakota inquiring into the status and progress of the application.

Copies of memoranda from the Geological Survey, dated July 28, 1954, and from the Bureau of Mines, dated July 30, 1954, are enclosed for your information.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Approved:

J. H. Hedges
Member, Bureau of Mines

D. M. Larrabee
Member, Geological Survey

Enclosures 4

Copy to: Admr. R. File
Docket
Operating Committee
Mr. Dietrich, 3061
Mr. Larrabee, 5216
Mr. Houk

Cong. E. Y. Berry, S. D.
This concerns telephone this office. I turned the call over to Mr. Anderson.

Re: DMEA - 3424

gab
7-29-54

Carl Heidefriemer
Custer, S. D.
(Berry + DMEA)

751

Mrs. Daly, Secy.

If any difficulties call her, and she will check back. Informed here time required for processing application, would be not under a month. She thought that was fine. Will keep in touch.

WS
7/29/54

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

July 30, 1954

Memorandum

To: Nonmetallic Minerals Division
Defense Minerals Exploration Administration

From: Chief, Ceramic and Fertilizer Materials Branch

Subject: DMEA-3424 (mica)

Applicant: Carl W. Heidepriem

Name and Location of Property: Granite Reef Fraction
near Custer, South Dakota

Date Application Rec'd. by Ceramic & Fertilizer Mtls. Br.: 7/27/54

Comments:

No information is available on this mine.

Recommendation:

It is recommended that the field team visit this mine when in that vicinity to ascertain if an exploration project is justified. If so, the field team and applicant should agree on a definite plan of exploration on a unit-cost basis.

Signed

W. F. Dietrich

IN REPLY REFER TO:

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

July 28, 1954

Memorandum

REVIEW OF APPLICATION DMEA-3424 (mica)

To: L. G. Hook, Defense Minerals Exploration Administration
From: E. L. Newcomb, U. S. Geological Survey
Applicant's name and address: Carl Heidepriem, Box 146, Custer, South Dakota
Name of property: Granite Reef Fraction
Location of property: (Sec. 31, T. 3 S., R. 5 E.) 1.5 mi. SE of Custer
Summary of applicant's proposal: 300' adit in pegmatite dike
Total cost — $7,388.18
Sources of information on applicant's property:
U.S.G.S. Prof. Paper 247 (general geologic information)
We have no specific information on this property. However, the applicant states that U.S.G.S. personnel (L. Page and J. Redden) have visited the property.
Comments: Though the application contains insufficient information to appraise the proposed work, the property is known to be in an area containing significant mica deposits.
RECOMMENDATION: The application should be referred to the Field Team for their review and comments.

E. L. Newcomb

ELNewcomb:hlm
G-7/28/54

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
W. F. Dietrich, USBM