DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 1545 X

DO NOT DETACH THIS SLIP

Action on this document is recorded and controlled in Reports and Records Branch. Any movement of this document between divisions or offices of DMA or movement outside DMA must be reported to the Reports and Records Branch. Actions taken that affect status of the case must also be reported.

This document has been recorded as

_____

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

Routing Slip

To: 300 Date 8-8

To: Reports + Records 8-13

To: _____ Date _____

To: _____ Date _____

To: _____ Date _____

To: _____ Date _____

To: _____ Date _____

To: _____ Date _____

To: _____ Date _____

To: _____ Date _____

To: _____ Date _____

To: _____ Date _____

To: _____ Date _____

To: _____ Date _____

To: _____ Date _____

DO NOT DETACH

CONTROLLED DOCUMENT

FILE COPY
SURNAME:

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

NOV 27 1951

Mr. Joe Grover
Joe Grover Mining Company
458 Lowell Boulevard
Denver 4, Colorado

Dear Mr. Grover:

This will acknowledge your letter dated November 23, 1951, requesting the return of an engineer's report on the Joe Grover mine.

There is enclosed the report that you requested.

Sincerely yours,

Signed 11/27

Robert E. Adams, Chief
Reports and Records Unit

Enclosure

READAMS/hb

Copy to: Reports and Records
DMA File

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.

NOV 26 11 44 AM '51

Returned 11/26 by RE Adams
HB

Mr. Tom Lyon
Director
Supply Division
U.S. Department of Interior
Defense Minerals Administration
Washington 25, D. C.

11/23/51

Re:
DMA - 1545X
Mica and Beryl

Dear Mr. Lyon:

Some time ago we requested the return of the engineer's report on our property -- the Joe Grover mine in Beaver Brook, Idaho Springs Mining District.

Undoubtedly in the rush of business this request may have been overlooked.

However, because we are contemplating another private investigation by registered engineers, we would like to have the report returned to us as soon as possible.

Very truly yours

Joe Grover

Joe Grover
JOE GROVER MINING COMPANY

P.S.

Please return the report to this address:

Joe Grover
Joe Grover Mining Company
458 Lowell Boulevard
Denver 4, Colorado

If it can be returned special delivery, it will be appreciated.

J.G.

FILE COPY
SURNAME:

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

SEP 12 1951 370

Grower Mining Co.

A.E.C.

Mr. Joe Grower
Evergreen
Colorado

Re: DMA-1545X
Mica and Beryl

Dear Mr. Grower:

Replying to your letter of August 20, 1951, we would be able to reconsider subject application only in the event that new data is submitted providing a sound geologic basis to justify additional exploration of the deposit. In view of the fact that the deposit has been examined and reported on adversely not only by DMA Field Team geologist but, previously, by two engineers of the U. S. Bureau of Mines and three geologists of the U. S. Geological Survey, who visited the area during World War II, we doubt very much that this requirement can be fulfilled.

We regret that we cannot offer you more encouragement but, frankly, in view of the amount of adverse data on hand, we do not see how we could possibly recommend additional exploration or development of a property which appears to promise, at best, only a very marginal operation.

Sincerely yours,

Tom Lyon

Tom Lyon, Director
Supply Division

Jf. 9/12

RWASKEY:mp
9-7-51
cc: Field Team, Region IV (2)
DMA Docket File
Mr. Lyon
Mr. Parr

Mr. Tom Lyon
Defense Minerals Administration
U. S. Department of the Interior
Washington 25, D. C.

September 8, 1951

Re; DMA 1545X

Dear Mr. Lyon:

Some time ago I wrote you, asking for information on how to have my application for a government loan reconsidered.

I feel that in my holdings there are significant amounts of hafnium, autenite, columbium and perhaps appreciable amounts of uranium. All of these minerals have been found in small quantities in the deposits I have worked, but not in amounts to warrent extensive development.

For that reason I a federal loan would be jusitified and could be repaid quickly out of the production I feel the mine is capable of turning out.

Since I have the privilege of re-applying, I would like to know if there are any different forms, a different procedure to go through, or will my original application be given further study, with perhaps further personal investigation of my property by U. S. G. S. personnel?

I am anxious to know about this. A letter from you at an early date will be sincerely appreciated.

Very truly yours

Joe Grover

Joe Grover
Evergreen, Colorado

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D.C.
SEP 18 9 09 AM '51

300

896168

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D. C.

AUG 29 8 26 AM '51

Mr. Tom Lyon, Director
Supply Division
Defense Minerals Administration
Washington 25, D. C.

August 20, 1951

DMA 15457
mica + Beryl

Dear Mr. Lyon:

I would like to have some information.

In your letter, which turned down my application for Federal aid for an exploration project, you allowed thirty days for a resubmitting my proposal.

This I would like to do, because I feel that the larger, richer, more important strategic mineral bodies lie deeper within the deposit.

It is true that considerable development work has been done. This work, however, was primarily for the extraction of feldspar. In removing the feldspar a considerable quantity of mica (some of it strategic) and beryl were removed. These minerals, however, were by-products of the operation.

As development work progressed, it was quite evident that the larger and richer deposits of the ore lie deeper within the formation. As the feldspar operation penetrated deeper and deeper, we encountered larger, clearer sheets of mica and larger, richer crystals of beryl.

For this reason I am certain that the granting of a loan for a more thorough exploration of the area would be fully justifiable. And I feel that the granting of this loan would be a profitable venture.

This loan would be used exclusively to search deeper for the strategic minerals so urgently needed in the defense of this nation. With the showings improving as the open pit deepened, it seems that we do have a sound geologic basis for expecting to encounter significant quantities of minerals — not only beryl and mica, but such rare minerals as columbium, hafnium, autenite and commercially important quantities of uranium.

We realize that much of this work would be classed as preparation for mining. But digging a prospect hole in an unknown formation could also be classed as preparation for mining, and taking out any commercial ore out of the hole would be mining. As it looks from here, it would be difficult to carry on any type of exploration work that would not also classify as preparation for mining.

For these reasons I an writing to you to learn what has to be done in order to have my application reconsidered. Your early reply will be sincerely appreciated.

Sincerely yours
Joe Grover
Joe Grover
Evergreen, Colorado

FILE COPY
SURNAME:

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

370

Workey
Barr

AUG 14 1951

Grover Mining Co.

A. E. C.

Mr. Joe Grover
Evergreen, Colorado

Dear Mr. Grover:

Subject: DMA-1545X, Mica and Beryl

Your application for aid for an exploration project on Mica and Beryl deposits located in Clear Creek County, Colorado, and docketed as DMA-1545X, has been reviewed by this office.

Projects approved by the Defense Minerals Administration must, in its judgment, show definite promise of yielding material of acceptable grade, physical character and specifications, in quantities that will significantly improve the mineral supply position for National Defense.

Exploration projects as defined in MO-5, Regulations Governing Government Aid in Defense Exploration Projects, must be confined to work necessary to search for unknown or undeveloped sources of strategic minerals; the work must be confined to a reasonable delineation and sampling of the ore and may not include work prosecuted primarily for mining or preparation for mining.

A very careful study of your proposal, including examination by DMA Field Team, revealed the following:

1. Considerable exploration and development work has been accomplished on the deposit; need for and justification of additional exploration has not been demonstrated.

2. A sound geological basis for expecting to encounter significant quantities of strategic minerals in the deposit has not been shown.

3. Much of the proposed work project would be mining or preparation for mining and would not qualify as exploration under MO-5.

Under these circumstances, your application for exploration aid to the extent of 90% of $60,000, is denied. Should additional information become available, we would be glad to have you resubmit your proposal for consideration.

Unless we receive a request within 30 days, we will consider the case closed.

Sincerely yours,

Tom Lyon

Tom Lyon, Director
Supply Division

RWASKEY:mp 8/8/51
cc: Reports and Records
Mr. Lyon
Mr. Barr
Field Team, Region Iv (2)

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

370

August 8, 1951

Memorandum

To: Reports and Records Unit, DMA

From: Chief, Industrial Minerals Branch, DMA

Subject: DMA-1545X, Joe Grover, Evergreen, Colorado
Grover Mine, Clear Creek County, Colo.
Commodity: Mica, Beryl
Amount of Loan: $60,000

Denial recommended because data submitted by applicant and Field Team Report show:

1. Considerable work has already been accomplished on the deposit; need for and justification of additional exploration has not been demonstrated.

2. A sound geologic basis for expecting to find significant amounts of strategic mineral in the deposit has not been shown.

3. Much of the proposed work would be development and does not justify as exploration under M.O.-5.

Attached:

1. Field Report, Region IV with memo dated 8/1/51.
2. Review of application for Exploration
3. MF-100 in duplicate
4. MF-103
5. Exhibit "C" Brochure complete with data, maps, pictures, etc.

James A. Barr

James A. Barr, Sr.

Approved:

Sam Lyon

Director, Supply Division

FILE COPY
SURNAME:

Barr

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

370

August 8, 1951

Memorandum

To: Reports and Records Unit, DMA

From: Chief, Industrial Minerals Branch, DMA

Subject: DMA-1545X, Joe Grover, Evergreen, Colorado
Grover Mine, Clear Creek County, Colo.
Commodity: Mica, Beryl
Amount of Loan: $60,000

Denial recommended because data submitted by applicant and Field Team Report show:

1. Considerable work has already been accomplished on the deposit; need for and justification of additional exploration has not been demonstrated.

2. A sound geologic basis for expecting to find significant amounts of strategic mineral in the deposit has not been shown.

3. Much of the proposed work would be development and does not justify as exploration under M.O.-5.

Attached:

1. Field Report, Region IV with memo dated 8/1/51.
2. Review of Application for Exploration
3. MF-100 in duplicate
4. MF-103
5. Exhibit "C" Brochure complete with data, maps, pictures, etc.

James Barr
M. P. 8/14

James A. Barr, Sr.

MARSKEY:mp
cc: Mr. Lyon
Mr. Barr
Reports and Records
Field Team, Region IV (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OFFICE OF
REGIONAL DIRECTOR

REGION IV

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

August 1, 1951

Memorandum

To: Landon Strobel, Executive Secretary
Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: DMA Docket 1545X, Joe Grover, Grover Mine, Clear Creek County, Colorado

Enclosed herewith are original and two copies of the report as noted above.

We concur with the examining geologist and recommend that an exploration loan be denied.

The brochure is returned herewith.

Paul T. Allsman

P. T. Allsman, Alternate

A. H. Koschmann

A. H. Koschmann

Enclosure
One copy by Air Mail
Two copies by Regular Mail

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 2 1951

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OFFICE OF
REGIONAL DIRECTOR

REGION IV

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

August 1, 1951

Memorandum

To: Landon Strobel, Executive Secretary
Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: DMA Docket 1545X, Joe Grover, Grover Mine, Clear Creek County, Colorado

Enclosed herewith are original and two copies of the report as noted above.

We concur with the examining geologist and recommend that an exploration loan be denied.

The brochure is returned herewith.

P. T. Allsman, Alternate

A. H. Kaschmann

Enclosure
One copy by Air Mail
Two copies by Regular Mail

ld
cc: DMA

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

200 New Customhouse
Denver 2, Colorado

August 1, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 1545X, Joe Grover, Evergreen, Colorado

Attached are the original and 7 copies of the report, with maps, by Truman H. Kuhn, geologist, U. S. Geological Survey, covering the above docket. Because of low grade, high mining costs, and unfavorable geologic conditions to find strategic mica and beryl in commercial quantities, Mr. Kuhn concludes that the project does not merit an exploration loan.

I concur with this conclusion.

Attached also is the brochure.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Attachments (10)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 6 1951

GROVER MINE

CLEAR CREEK COUNTY, COLORADO

DMA DOCKET 1545X

Geology and Ore Reserves

By Truman H. Kuhn, Geologist
U. S. Geological Survey

TABLE OF CONTENTS

	Page
INTRODUCTION	1
GENERAL GEOLOGY	2
MICA	2
BERYL	3
COLUMBITE	4
FELDSPAR	4
MINE WORKINGS	4
PRODUCTION AND GRADE . . .	5
ORE RESERVES	6
PROPOSED WORK	6
CONCLUSIONS AND RECOMMENDATIONS . . .	6

GROVER MINE
CLEAR CREEK COUNTY, COLORADO

INTRODUCTION

The Grover mine, located on patented homestead land in section 10, T 4 S, R 72 W, 6th Principal Meridian, Clear Creek County, Colorado, is owned by Joe Grover, Evergreen, Colorado. Mr. Grover has applied for a loan of $60,000 to further explore the pegmatite body for beryl and mica.

The property was visited on July 5, 1951, and again on July 12, 1951.

The mine is at an altitude of approximately 8,750 feet on the north side of Beaver Brook valley. It is 4.5 miles by air line southeast of Idaho Springs, and 12.5 miles by air line and 21 miles by road southwest of Golden. The property is 3.5 miles over dirt road from U. S. Highway 40 and can be reached from the highway by taking the dirt road leading westward up Beaver Brook canyon at Elmgreen Ranch.

Certain data and conclusions obtained from older reports on the Grover pegmatite have been incorporated into this report. Other reports examined include:

1. A memorandum report by Thomas C. Denton, Mining Engineer for the U. S. Bureau of Mines, dated June 22, 1942.
2. A report by W. M. Traver, Jr., Mining Engineer for the U. S. Bureau of Mines, on "Winsor Beryl Deposit, Clear Creek County, Colorado," based on an examination made January 22, 1944.
3. A report prepared for Mr. Grover by Arthur L. Crawford, Geologist and Mineral Technologist, Utah Engineering Experimental Station,

University of Utah, and Alfred M. Buranek, Geologist, Department of Publicity and Industrial Development of the State of Utah, dated January 28, 1944.

4. Hanley, John B., Heinrich, E. Wm., and Page, Lincoln R., Pegmatite Investigations in Colorado, Wyoming, and Utah, 1942-1944: U. S. Geol. Survey P. P. 227, pp. 29-30, Plates 1 and 3, 1950.

GENERAL GEOLOGY

The geology of the Grover Pegmatite is well described by John B. Hanley in U. S. Geol. Survey Prof. Paper 227, on pages 29 and 30.

The pegmatite is an elongate, tabular body approximately 760 feet long, as much as 25 feet wide, and apparently concordant to the schist and gneiss of the pre-Cambrian Idaho Springs formation. It trends east-west and probably dips from 70° S to vertical. The pegmatite is obscurely zoned, and the beryl and columbite is restricted to the intermediate zone of quartz-albite-muscovite pegmatite.

MICA

Both biotite and muscovite mica are present in the pegmatite. Muscovite, the possible commercial mica, is described by Hanley:

"Muscovite occurs in thick books as much as 6 inches in width and 10 inches in length. It is usually reeved, ruled, has "A" structure, and is very heavily black-stained. Because of these defects none of the mica found would yield mica of sheet quality, although some would yield flat pieces of acceptable size."

"Muscovite is visually estimated to make up 10 to 15 percent of the intermediate-zone pegmatite and probably would yield a good quality of scrap mica."

Both Traver and Crawford and Buranek agree that the mica is ruled and stained and that the mica produced must be marketed as scrap.

At the time of the present examination, mica made up approximately 10 to 15 percent of the pegmatite exposed in the lower or eastern workings and about 5 to 10 percent of the pegmatite exposed in the more recent workings. Of the mica examined none was of sufficient size and quality to be of strategic grade. Books up to 8 inches in width were found but because of various structural defects and staining, no pieces of slightly stained or better mica as large as one inch square were observed.

BERYL

Hanley describes the beryl as occurring:

" - - - - in light-green euhedral crystals that are as much as 8 inches in diameter and 2 feet in length. It is free of mineral impurities and probably has a high BeO content."

"Beryl is visually estimated to make up only 1 in 5000 parts of the pegmatite - - - - ."

Crawford and Buranek also describe the beryl:

"The nine tons of beryl thus far recovered came principally from a restricted horizontal zone near the east end toward the bottom of the open-cut, from a space 3 x 15 x 125 feet. The latter constituted approximately 457 tons of material, which indicates that the 'pay shoot' contained almost 2% beryl."

At the present time very little beryl can be seen in the Grover workings. Based upon the beryl remaining in the walls and upon recognisable casts of beryl crystals, the percentage of beryl taken from the lower eastern excavation is estimated to be less than one-half per cent. No beryl or casts of beryl crystals were seen in the upper western portion of the workings.

COLUMBITE

Columbite and other rare minerals were mentioned by Joe Grover as occurring in the pegmatite. These minerals have been found and identified, but they are of specimen value only and cannot be considered as being of economic importance.

FELDSPAR

Microcline feldspar of marketable quality is present in the pegmatite and in terms of tonnage is the most abundant possible commercial product. The quantity, however, is relatively small and because of the necessary selective mining and hand sorting, mining costs will be high. The value of unground feldspar at Denver would not exceed $5.00 a ton. Under present conditions, it is doubtful if the feldspar can be considered as a commercial product.

MINE WORKINGS

At the time of Hanley's examination in October 1944, the mine workings included:

" - - - - a long, narrow open-cut, a 23-foot drift from this open-cut,

and several small prospect holes, the largest of which is 18 feet long and 4 feet wide. The main open-cut is about 275 feet in length, as much as 25 feet in width and as deep as 30 feet at the west face. It is at the eastern end of the pegmatite. Parts of the main cut have been worked at two levels, - - - - ."

A third bench level was mined in 1947-48, 20 feet above the upper level mentioned by Hanley. This third level was started approximately 50 feet east of the second level face and was continued westward into unexplored pegmatite for approximately 45 feet.

PRODUCTION AND GRADE

Traver states in his 1944 U. S. Bureau of Mines report:

"No known production was credited to the property until 1937, when it was acquired by the present owner, Mr. Joe Grover, of Park City, Utah. The records show shipment in the years 1937, 1938, 1941, and 1942 totaling about 1500 tons feldspar, 70 tons scrap mica, and 7 tons beryl."

In his report Traver estimated the total rock excavated to be 3000 tons and by calculation determined the grade of the mined portion to be:

Feldspar	50.0%
Mica	2.1%
Beryl	0.2%
Waste	47.7%

Making similar calculations, Crawford and Buranek estimated the grade of the mined portion of the body to be:

Feldspar	45.52%
Mica	2.09%

Beryl	0.28%
Waste	52.11%

For their calculated grade, Crawford and Buranek reported that 9 tons of beryl had been produced from the Grover pegmatite.

ORE RESERVES

Because of incomplete data and because of the irregular character of the pegmatite, no ore reserves can be calculated.

PROPOSED WORK

Mr. Grover proposes, and in fact has started, a 95-foot, steeply inclined raise to connect the lower tunnel with the floor of the lower open-cut. He believes that ore will be encountered below the eastern trench and that the raise will serve both as a prospect raise and as an aid to mining. (See plan and cross section) As the proposed work was outlined by Mr. Grover, it is not possible to completely separate exploration from development work.

CONCLUSIONS AND RECOMMENDATIONS

Strategic mica is not present in this deposit and in considering the application for a DMA loan, beryl alone is of importance.

Assuming that a volume of pegmatitic material equal to that already mined, that is 3000 tons, could be recovered directly below the present workings, another 1500 tons of feldspar, 70 tons of scrap mica, and 7 to 9 tons of beryl might be expected. Based on an approximate value at the mine of $5.00 a ton for feldspar, $32.00 a ton for scrap mica, and

$50.00 a unit for beryl, the 3000 tons might yield $13.00 a tons, of which $10.00 would be from the possible beryl. Thus, an additional 3000 tons might yield a total value of $39,000.00. At the present market price of $28.00 a unit for beryl, the possible value would be only $8.75 a ton for all three products, or a total of $26,250.00 for 3000 tons. If Hanley's estimated 0.02 per cent (1 in 5000 parts) is correct for beryl, the value would drop to $4.00 a ton, calculating beryl at $50.00 a unit. From the above calculated gross values, underground development and mining costs must be paid, as well as trucking, and all other charges incident to mining. Mining costs would be high. Any mineable material found would be below the bottom of a narrow trench averaging 20 feet deep. To mine below the trench floor would necessitate either driving the 95-foot raise proposed by Mr. Grover and mining by underground methods, or stripping considerable waste to permit further open-cut mining.

Because of the small volume of expectable beryl, the high mining costs, and the unfavorable geologic conditions, it is recommended that the DMA application for a $60,000.00 loan to prospect for strategic mica and beryl be denied.

A smaller exploration loan is not feasible under present conditions. If, as a result of less costly prospecting methods, more beryl be indicated, either below the present eastern workings or in the western portion of the dike, extraction costs still would be extremely high and the amount of expectable beryl low. According to Hanley, the unexplored and undeveloped western portion of the pegmatite would be expected to contain even less beryl than the mined portion of the intermediate or quartz-albite-muscovite pegmatite zone.

In earlier reports both Mr. Traver of the U. S. Bureau of Mines, and Mr. Hanley of the U. S. Geological Survey advised against government participation in an exploration or development program on the Grever property.

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

200 New Customhouse
Denver 2, Colorado

August 1, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 1545X, Joe Grover, Evergreen, Colorado

Attached are the original and 7 copies of the report, with map~~s~~, by Truman H. Kuhn, geologist, U. S. Geological Survey, covering the above docket. Because of low grade, high mining costs, and unfavorable geologic conditions to find strategic mica and beryl in commercial quantities, Mr. Kuhn concludes that the project does not merit an exploration loan.

I concur with this conclusion.

Attached also is the brochure.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Attachments (10)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 2 1951

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

224 NewCustomhouse
Denver, Colorado

June 28, 1951

Memorandum

To: W. M. Traver, Jr.

(Through Chief, Mining Division)

A. H. Koschmann (with brochure)

From: DMA Field Team, Region IV

Subject: DMA Docket 1545X, Joe Grover, Evergreen, Colorado

Herewith is the exploration application and review on the above docket.

Please make the examination and report, paying particular attention to the requests contained in the review.

P. T. Allsman, Alternate

A. H. Koschmann

Attachments

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

JUN 26 1951

REGIONAL DIRECTOR'S
OFFICE
RECEIVED
JUN 28 1951
BUREAU OF MINES
DENVER, COLORADO

Mr. J. H. East, Jr.
224 New Customhouse Bldg.
Denver 2, Colorado

Dear Sir:

We attach "Review of Application for Exploration Assistance" on:

Docket No. DMA-1545X

Commodity Mica, Beryl

Applicant Joe Grover, Evergreen, Colorado

Please expedite the consideration of this application with particular reference to the points noted in the attached "Review."

Very truly yours,

Tom Lyon

Tom Lyon, Chairman
Coordinating Committee

Lowell B. Moon
For Bureau of Mines

Edwin T. McKnight
For Geological Survey

FILE COPY
SURNAME:

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

Barr
Moon
McKinzie
Rose

Docket mailed 6/26/51

June 19, 1951

Mr. Joe Grover

Evergreen, Colorado

Subject: DMA-15452
Mica, Beryl

Dear Mr. Grover:

Your application is being referred to Mr. J. H. East, Jr., 224 New Customhouse Building, Denver 2, Colorado, Executive Officer of the Field Team, Region IV, for further information.

Sincerely yours,

Tom Lyon, Director
Supply Division

RW:dak

cc: Mr. Strobel
Administrator's Reading File
Field Team
Mr. Barr
DMA Files

A.E.C.

June 19, 1951

Grover Mining Co.

Mr. Joe Grover

Evergreen, Colorado

Subject: FM-15452
Mica, Beryl

Dear Mr. Grover:

Your application is being referred to Mr. J. H. East, Jr., 224 New Customhouse Building, Denver 2, Colorado, Executive Officer of the Field Team, Region IV, for further information.

Sincerely yours,

Tom Lyon, Director
Supply Division

FWidek

cc: Mr. Strobel
Administrator's Reading File
Field Team
Mr. Barr
DMA Files

FILE COPY
SURNAME:

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

June 18, 1951

Mr. Joe Grover
Owner
Grover Mining Company
Evergreen, Colorado

Subject: DMA-1545X
Re: Exploration Loan
Grover

My dear Mr. Grover:

Receipt is acknowledged of your application and attachments of May 26, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1545X and was referred to Mr. James A. Barr, Chief, Industrial Minerals Branch on June 8, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1545X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:js
cc: Strobel-2
>Files
Barr
Lyon

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. DMA 1545X

Commodity Mica, Beryl

Total Amount $60,000 00

Govt. Participation 90%

1. Name and Address of Applicant Joe Grover, Evergreen, Colorado

2. Location of Property Sec 9-10 T4S R72W.
20 mi. west of Golden, in Clear Creek County, Colorado

3. Mineral or metal Beryl, Mica Is it listed in Section 9 of MO-5? Yes

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good Survey reports do not indicate that this is a very promising property. However, the applicant has done considerably more development work and the property should be visited again.

b) Poor

c) None

d) Don't know—needs field examination Yes - Field Check. GAK 6/14/51

e) Is there an alternative and favorable project? (If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes (question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? N. - owner

Does the lease have sufficient time to run to cover a future productive period? ——

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes

a) MF-201? Not attached.

b) MF-202 not needed

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes - for exploration only.

d) Water (question 13)* Yes

e) Power (question 13)* Yes - RFA power. Gasoline motors.

Is a field check needed on any of these points?

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

Is a field check needed on this point? Yes - if field team in district

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? No - see draft.

If not, are there sufficient data given so that you can describe the project? No If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? No

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? No

If not, what part of it is? The raising from the tunnel to the open cut would test for the downward extension of the ore body. The area, to be opened by extending the open cut could probably be explored by surface work done in the immediate vicinity of it.

Is this part a worthwhile exploration project? Probably Yes

d) Are the cost estimates detailed? No

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? No If so, attach a draft.

e) Are the cost estimates reasonable? None given

f) Should more information be requested from applicant? Yes. by field team

g) Is a field examination necessary to complete Exhibit A? Yes

11. Exhibit B (question 23-d)*

a) Is it applicable? No - state no new facilities needed

b) If so, are sufficient data furnished? — If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Yes

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? Applicants rental appears high. —

d) Is a field check needed? Yes

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? No see draft.

b) Is the schedule adequate for the work proposed? Yes

c) Is the schedule excessive for the work proposed? No

d) Are the proposed wages and salaries reasonable? Yes

e) Is a field check needed? Yes

14. Exhibit E (question 23-c)*

a) Is it applicable? Yes

b) Sufficient data? No

c) Reasonable? Yes

d) Field check needed? Yes

15. In your judgment, can the proposed work be done in the proposed time? Exploration work - yes

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? See what exploration is advisable + suggest that applicant revise his exploration application + apply for a loan for production preparation

Cannot sampling of now opened exposures provide sufficient data to evaluate deposit? Looks like a good sampling job ought to either kill the project or justify a loan for operation - why more Exploration?

Reviewed by [signature]

BLM

G. A. Redden 6/4/51, USGS

Date 6/14/51

Page 4 of 4 pages RPW - 6/16/51

97692

6/14/51 Docket No - DMA 1554 X

Section 10 Exhibit "A"

This project appears to be primarily for preparation for increased production although the raise from the tunnel would test for the downward extension of the ore body now opened in the open cut. The driving of the open cut to open an exploited mica deposit is essentially for production - this mica could probably be explored by trenching or sinking in its immediate area.

The field team should discuss this with the applicant & suggest that he apply for a development or production loan. He should be informed that the present application is not applicable for exploration assistance, it might be modified to cover certain parts of it.

Section 11 Exhibit B.-

Applicant states that no new structures or facilities are needed at present. About 3 miles of road will probably have to be improved for production but should be usable for exploration work.

~~Section 12. Exhibit D.~~

~~The labor force listed should be sufficient for the program outlined but would need~~

Section 12. Exhibit C.

The loader or mucker is not needed for the exploration program & is listed to improve the production operations. Whether the new pipe will be needed can be determined by the field team as well as inspecting the applicants equipment & agreeing on proper rental terms - the figures quoted appear high.

6/14/51 D.A. 1554 X

Section 12 Exhibit "C" (cont.)

Section 13 Exhibit "D"

The labor listed appears sufficient for the program submitted although it might be reduced in the exploration work. The wages are reasonable

Section 14 Exhibit "E"

The condition of the existing facilities is not stated but the amount quoted should be sufficient to place everything in proper condition. The rehabilitation for an exploration program should be specified + the work done not extended to cover production items.

Section 16 - Recommendations

The field team should inspect the area + ascertain what exploration work will be needed with particular attention to the elimination of production preparation. The question of the submission of an application for a loan to cover the preparation for production should be discussed with the applicant.

As at present outlined the application should be denied.

June 16, 1951

Mr. Joe Grover
Owner
Grover Mining Company
Evergreen, Colorado

Subject: DMA-1545X
Re: Exploration Loan
Grover

My dear Mr. Grover:

Receipt is acknowledged of your application and attachments of May 26, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1545X and was referred to Mr. James A. Barr, Chief, Industrial Minerals Branch on June 6, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1545X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:js
cc: Strobel-2
Files
>Barr
Lyon

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 15455X

Date received 6-4-51

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 4 - 1951
LANDON F. STROBEL
Executive Secretary

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application May 26, 1951 Estimated cost $60,000.00

Mineral or metal Strategic Mica, Beryl, others listed Percentage of Government participation 90%

Location of mine Clear Creek County, Colo.

Date of filing MF-100 Herewith DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. $10,000.00 mortgage
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. No statement. Mine not operating
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? In the form of equipment, applicant has about $10,000.00.

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Grover Mining Company
(Name of company)

By Joe Grover
(Signature of authorized official)

May 26, 1951
(Date)

owner
(Title)

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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Amd 15458

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

1. (a) Major minerals are: Beryllium
Strategic Mica

(b) Byproducts are: Columbium
Tantalum
Hafnium
Zirconium
Uranium
Cryolite
Autenite
Bertrandite

2. GROVER MINE Beryl - Muscovite - Feldspar deposit

This mine has not been known by any other man. It was developed from the beginning by Joe Grover.

(a) No shafts on property.
(b) No drifts or crosscuts, other than:
(c) 400 feet of tunnel have been driven toward the main deposit of Beryl, Mica, Feldspar and the rare minerals. This tunnel was driven to facilitate the development of the mineral deposits thru the economical caving method.
(d) There is an extensive open cut, driven approximately 420 feet along the vein. This cut ranges from 5 to 25 feet and is from 10 to 30 feet deep. The rare minerals, listed above, were all discovered at various points in this open cut.

Because of the nature of the mine, it is not flooded. There are a series of veins on the property, all of which can be worked from the tunnel, as well as by open cut methods. Surface indications reveal that the surface has been barely scratched on this property. The open cut could be driven three to four times its present 420 foot length and still be in profitable formations. There are indications that muscovite in sizeable sheets will be found as the tunnel is extended into the deposit. In the vicinity of this mine (the Ajax property, to the north) considerable sheet and punch and block mica has been produced. The Ajax was originally developed as a source of mica for stoves, lamps, etc. Sheet mica has been found in the Grover Mine, but was sold along with scrap mica because the value of the product was not known at the time.

Seven tons of excellent quality beryl have been produced during the time that the mine has been operatre for its feldspar, which is also of an exceptional quality. The mine definitely has a long and profitable potential, when past production records are compared with the visible indications of the extent of the deposits.

3. (a) Golden, Colorado, is the nearest shipping point, located 20 miles east of the Grover Mine. The highway leading to Golden, except for three and a half miles from the mine, is paved, well-maintained and a transcontinental highway for the greater part of the distance. The road is also all down hill, which means something in transportation costs.

(b) The Grover Mine is in the Idaho Springs Mining District.

(c) Township 4 S; Section 9-10; Range 72 W.

(d) Clear Creek County, Colorado.

4. (a) This property is not in operation at the present time, but is in excellent condition. Machinery and equipment has been well maintained. Tunnel and cut are in excellent condition and ready to begin operations at once.

(b) When in operation, it is operated by Joe Grover, applicant, as the owner.

5. Between 1937 and the present time the mine has been in production 7 years. Production can begin at once.

6. Joe Grover, owner and applicant, has had 22 years of mining and mine operating experience. He has had not only actual experience in the actual work in the mines themselves, in all phases of mine work, but has also had supervisory experience. Added to this, he has employed chemists an metallurgists, with whom he has worked closely in the tasks of refining and concentrating the minerals he has produced from his mines. Besides his mining experience, the owner has had considerable experience in the management of real estate.

7. (a) A complete report, covering the history of the Grover Mine is submitted herewith. This report, by Arthur L. Crawford and Alfred M. Buranek, was completed in the early 1940's. Since then the mine, both tunnel and open cut, has been developed more extensively. Additional outcroppings have been uncovered and the extent of the vein being worked has been found to be far greater than was supposed at the time the report was written.

Operations on the Grover Mine were discontinued because of a lack of finances. Driving the tunnel under the open cut for a more intensive and more economical means of developing the deposits consumed more of the owners finances than it was at first thought necessary. Haulage expenses, due to having to hire trucks and drivers, also proved too high for profitable operation of the mine at the time, when feldspar prices were down and the mine was worked for this alone. The setting up of a laboratory to explore the means for reduction and extraction of the ores further depleted the owner's finances. All development work was financed practically in its entirety by the owner.

(b) To the north of the Grover Mine lies the Ajax Mine which has been worked intermittently since the 1890's. It was developed as a source of sheet mica at the outset. At the time, mica was in demand for use in stoves, etc. Early production records are not available, if they were ever kept. During World War II the mine was worked quite intensively for mica, punch and block as well as for some sheet mica.

7. (b) (cont.) R. D. Naslund, owner of the mine, told the writer that a considerable amount of sheet mica was produced. Two separate shipments of about a ton apiece brought returns of more than $2,000.00 per ton. In the Geological Survey Professional Paper 227, it is reported that the size pattern is about 90% 1" x 1" and 1¼" x 1¼" and the rest 1½" x 2" and larger. Production of other mineral is not reported from this mine.

To the west of the Grover Mine is the Santa Fe Mountain Beryl Prospect, also reported in Professional Paper 227. In two months in 1943 this deposit is reported to have produced 928 pounds of beryl. J. B. Hanley, who examined the deposit June 3, 1944, said that the prospect contains a high percentage of beryl, running 1.5 percent of the rock mined.

Another mine in the vicinity is the Brandt Beryl-Topaz Prospect. As in the other deposits, beryl crystals as large as 6 inches in diameter have been reported. In the Grover Mine, crystals of that size have been found with pleasing frequency and some have been found that measured as much as 12 and 15 inches in diameter. This mine is located not far to the east of the Grover Mine.

Other mines and prospects are located in the general area, but are much smaller than the Grover Mine.

(c) Development work on the Grover Mine property consists of an open cut 420 feet long and up to 25 and 30 feet wide at the widest and up to 30 and more feet deep.

Production from this mine includes 1,520 tons of feldspar, 7 tons of beryllium ore, 68 tons of mica. In making this development possible, 2½ miles of roads were built. These roads, together with the favorable location of the property, make the Grover Mine the most readily accessable of the mines and prospects in the district.

A complete report on the mine, covering the development of the mine up to 1944 is enclosed. It must be remembered that a great deal of additional development work was done after that report was written. In fact, the mine was quite intensively developed after that date. A laboratory was set up to conduct research in the refinement of some of the ores.

8. Joe Grover, Evergreen, Colorado (post office address), is the sole owner. The mine is neither a partnership nor a corporation.

9. Answered in No. 8.

10. Total tonnage produced and sold to date:

	1937	1938	1939	1940	1941	1942	1948	1949
Feldspar...	100-	900	idle	work-	400	8	80	40
Mica.....	0	23	"	ed,no	20	25	0	0
Beryl.....	0	0	"	ship-	0	6	1	0
				ments				

Total production to 1949..... 1,603 tons

11. Yes, if a loan can be approved, we can raise our average production considerably. A total of 400 to 500 tons can be produced per month. This would be total production, including Feldspar. In producing

11. (cont.)

producing the beryl and mica, a great quantity of feldspar will have to be moved and cobbed from the more desirable metals. This feldspar can, no doubt, be sold to grinders in Denver and the proceeds used to repay the loan. This, incidentally, will be done if the buyers will also take the expense and responsibility of hauling it to their plants. In this way the greater part of the workers' efforts can be devoted to the extraction of the more important minerals, but, at the same time a source of revenue for the repayment of the loan can be fully exploited.

12. This question is covered in the report submitted with this application. However, it must be remembered that this report was made previous to the time when the greater extent of the deposit had been uncovered. Reserves amount to twice the amount reported by the engineers; or perhaps even more than twice as much.

13. As previously noted, the Grover Pegmatite is but 3½ miles by present roads from a paved transcontinental highway and only 26 miles via this highway (U. S. 40) from Denver. The homestead highway leaves U. S. 40 near Bench Mark 7547 at the old Elmgreen Ranch. The road to the mine follows the well graded and graveled homestead highway for about 500 feet. It then takes off to the west and follows Beaver Brook Canyon, where it is a secondary dirt road. Clear Creek County has promised to improve this road if the Grover Mine is put on a substantial production basis. As mentioned before, the Grover Mine is more readily accessable than any of the mines in this district. An ordinary passenger car can easily be driven to the workings.

In the canyon itself there are residences, mostly inhabited only during the summer, but some of them are lived in the year 'round. Resident points near the mine itself consist of a three-room cabin for the owner and another one-room cabin. Excellent building sites abound in the area.

Golden, the nearest shipping point, is only 20 miles away, down grade all the way. Here, too, is a supply point for lumber, tools, blasting supplies, etc. Denver, of course, would be the logical supply point with its well stocked mining supply houses.

Evergreen and Bergen Park, both supplied with stores, would be the closest points for personal needs, and for living quarters for the workers. They are relatively close to the mine.

14. Several springs, supplying a good, year-round flow of water are on the property. They keep a well-sized stream flowing throughout the year. The water supply is sufficient for mine use as well as for domestic purposes.

15. Electric power is available only for heating and lighting purposes and for small motors at present. This is supplies by the Intermountain Rural Electric Association. Power for mining purposes is supplied by gasoline motors.

16. The number of men carried on the last payroll were five. One miner, two muckers and two outside maintenance men.

Grover [illegible]e
Clear Creek County, Colorado

17. Present equipment in serviceable condition and available for immediate operation consists of two air compressors, one stationary and one portable. One liner machine, four jackhammers, drilling steel for all drilling work. One blacksmith shop, complete. All necessary mining equipment and implements, such as picks, shovels, bars, sledges, axes, ore cars, tracks, etc. The buildings consist of a three-room ranch home and a one-room cabin and tool sheds, all in good condition. The entire property is in excellent condition for immediate operation.

18. Answered quite fully in other questions and authoritatively answered in the accompanying report.

19. No reply.

20. The mine will be developed primarily for:

BERYLLIUM
STRATEGIC MICA

Other ores that will be produced as by-products include:

Columbium
Tantalum
Hafnium
Zirconium
Uranium
Autenite
Bertrandite
Fluorite
Cryolite (?) See Bureau of Mines letter 4/20/51 enclosed with report.

21. Two separate but closely integrated operations are contemplated. The first is to continue driving the open cut toward the deposit of mica lying approximately 300 feet from the face of the cut. The second development would be to drive an upraise from the tunnel into the feldspar, beryl and mica deposit, which is estimated to lie from 25 to 35 feet above the top of the tunnel. This raise would be extended through the deposit to the floor of the open cut and would then proceed to deepen the cut in the direction of the mica deposit. In this way two caving operations would be in operation. Ore would be removed through the tunnel. The esitmated time for completing the open cut to the mica deposit would be about 30 weeks for the approximately 300 feet; the cut being about 30 feet deep and deepening as the work progresses. However, the mine would be producing beryl, the other ores mentioned, as well as an appreciable amount of mica from the outset. Production of the needed ores can begin at once.

Time for completing the tunnel project would depend on how long it will take to raise to the present ore level and pierce it. The distance between the top of the tunnel (its roof) and the floor of the open cut is about 100 feet. It may be that the present ore body lies as much as 45 feet above the tunnel. When the body of ore has been reached and completely pierced, the mining will proceed as an open cut.

This method will increase the daily tonnage to the point where a most impressive amount of ore will be produced. This, too, we feel, will

Grover Mine
Clear Creek County, Colorado

21. (cont.)
Within a month or less this raise could be driven to the present ore body and would be producing ore within six weeks or less.

22. (a) 2 miners..... $12.50 per day, at present wage levels.

2 muckers..... $12.00 per day, at present wage levels.

1 outside man, all around maintenance and general work..... $11.50 per day.

(b) 1 supervisor..... $300.00 per month.

(c) Approximately $500.00 would cover the cost of repairing existing tool sheds, compressor houses, ore cars now on the property and reconditioning motors, etc.

(d) No additional structures needed.

(e)

New stoper.....	$350.00 to $400.00
400 feet 2" pipe.....	.65 per foot
200 feet 1" pipe.....	.25 per foot
2 ore cars (used).....	50.00 each, approx.
Loader or mucker.....	4500.00 approx.

(f) Operator has equipment, such as compressors, hammers, etc. Not necessary to rent any equipment.

(g) The approximate rental value of the equipment now on the property would amount to between 600 and 1,000 dollars per month.

(h)

Powder.....	$12.00 per case.....	1 case per day
Fuse.....	1½¢ per foot.....	150 ft per day
Caps.....	$2.50 per 100.....	100 per week, approx.
Gasoline.....	.25.9 per gal., less state tax (25-20 gals per shift)	
2 dozen spades...	3.49 each.	
2 dozen picks....	3.50 each	
Steel and bits...	1296.00 per year	

(i) $10.00 per month for electric power.

We estimate that the project can be completed within one year with a total expenditure of $50,000.00 or less.

Total wages to be paid.....	$25,053.60
Total expenditure, all facilities.....	20,888.00
For unforseeable emergencies.....	4,058.40
	$50,000.00

Certification: The undersigned company and official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Grover Mining Company
(name of company)

By [signature]
(signature of authorized official)

May 26, 1951
(date)

Owner
(title)

LF-100

dmm 15455

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

1. (a) Major minerals are Berryllium
Strategic Mica

(b) Byproducts are Columbium
Tantalum
Hafnium
Zirconium
Uranium
Cryolite
Autenite
Bertrandite

2. GROVER MINE Beryl-Muscovite-Feldspar deposit
This mine has not been known by any other name. It was developed from the beginning by Joe Grover.

(a) No shafts on property.
(b) No drifts or crosscuts, other than:
(c) 400 feet of tunnel have been driven toward the main deposit of Beryl, Mica, Feldspar and the rare minerals. This tunnel was driven to facilitate the development of the mineral deposits thru the economical caving method.
(d) There is an extensive open cut, driven approximately 420 feet along the vein. This cut ranges from 5 to 25 feet and is from 10 to 30 feet deep. The rare minerals, listed above, were all discovered at various points in this open cut.

Because of the nature of the mine, it is not flooded. There are a series of veins on the property, all of which can be worked from the tunnel, as well as by open cut methods. Surface indications reveal that the surface has been barely scratched on this property. The open cut could be driven three to four times its present 420 foot length and still be in profitable formations. There are indications that muscovite in sizeable sheets will be found as the tunnel is extended into the deposit. In the vicinity of this mine (the Ajax property, to the northwest) considerable sheet and punch and block mica has been produced. The Ajax was originally developed as a source of mica for stoves, lamps, etc. Sheet mica has been found in the Grover Mine, but was sold along with scrap mica because the value of the product was not known at the time.

Seven tons of excellent quality beryl have been produced during the time that the mine has been operated for its feldspar, which is also of an exceptional quality. The mine definitely has a long and profitable potential, when past production records are compared with visible indications of the extent of the deposits.

3. (a) Golden, Colorado, is the nearest shipping point, located 20 miles east of the Grover Mine. The highway leading to Golden, except for three and a half miles from the mine, is paved, well-maintained, and a transcontinental highway for the greater part of the distance. The road is also all down hill, which means something in transportation costs.

(b) The Grover Mine is in the Idaho Springs Mining District

(c) Township 4 S; Section 9-10; Range 72 W.

(d) Clear Creek County, Colorado

4. (a) This property is not in operation at the present time, but is in excellent condition. Machinery and equipment has been well maintained. Tunnel and cut are in excellent condition and ready to begin operations at once.

(b) When in operation it is operated by Joe Grover, applicant, as owner.

5. Between 1937 and the present time the mine has been in production 7 years. Production can begin at once.

6. Joe Grover, owner and applicant, has had 22 years of mining and mine operating experience. He has had not only actual experience in the actual work in the mines themselves, in all phases of mine work, but has also had supervisory experience. Added to this, he has employed chemists and metallurgists, with whom he has worked closely in the tasks of refining and concentrating the minerals he has produced from his mines. Besides his mining experience, the owner has had considerable experience in the management of real estate.

7. (a) A complete report, covering the history of the Grover Mine is submitted herewith. This report, by Arthur L. Crawford and Alfred M. Duranek, was completed in the early 1940's. Since then the mine, both tunnel and open cut, has been developed more extensively. Additional outcroppings have been uncovered and the extent of the vein being worked has been found to be far greater than was supposed at the time the report was written.

Operations on the Grover Mine were discontinued because of a lack of finances. Driving the tunnel under the open cut for a more intensive and more economical means of developing the deposits consumed more of the owner's finances than it was at first thought necessary. Haulage expenses, due to having to hire trucks and drivers also proved too high for profitable operation of the mine at the time, when feldspar prices were down and the mine was worked for this alone. The setting up of a laboratory to explore the means for reduction and extraction of some of the ores further depleted the owner's finances. All development work was financed practically in its entirety by the owner.

(b) To the north of the Grover Mine lies the Ajax Mine which has been worked intermittently since the 1890's. It was developed as a source of sheet mica at the outset. At the time, mica was in demand for use in stoves, etc. Early production records are not available, if they were ever kept. During World War II the ine was worked quite intensively for mica, punch and block as well as for some sheet mica.

Grover Mine
Clear Creek County, Colorado

7. (b) (cont.) R. D. Haslund, owner of the mine, told the writer that a considerable amount of sheet mica was produced. Two separate shipments of about a ton apiece brought returns of more than $2,000.00 per ton. In the Geological Survey Professional Paper 227, it is reported that the size pattern is about 90% 1" x 1" and 1½" x 1½" and the rest 1½" x 2" and larger. Production of other mineral is not reported from this mine.

To the west of the Grover Mine is the Santa Fe Mountain Beryl Prospect, also reported in Professional Paper 227. In two months in 1943 this deposit is reported to have produced 928 pounds of beryl. J. B. Hanley, who examined the deposit June 3, 1944, said that the prospect contains a high percentage of beryl, running 1.5 percent of the rock mined.

Another mine in the vicinity is the Brandt Beryl-Topaz Prospect. As in the other deposits, beryl crystals as large as 4 inches in diameter have been reported. In the Grover Mine, crystals of that size have been found with pleasing frequency and some have been found that measured as much as 12 and 15 inches in diameter. This mine is located not far to the east of the Grover Mine.

Other mines and prospects are located in the general area, but are much smaller than the Grover Mine.

(c) Development work on the Grover Mine property consists of an open cut 420 feet long and up to 25 and 30 feet wide at the widest and up to 30 and more feet deep.

Production from this mine includes 1,520 tons of feldspar, 7 tons of beryllium ore, 68 tons of mica. In making this development possible, 2½ miles of roads were built. These roads, together with the favorable location of the property, make the Grover Mine the most readily accessable of the mines and prospects in the district.

A complete report on the mine, covering the development of the mine up to 1944 is enclosed. It must be remembered that a great deal of additional development work was done after that report was written. In fact, the mine was quite intensively developed after that date. A laboratory was set up to conduct research in the refinement of some of the ores.

8. Joe Grover, Evergreen, Colorado (post office address), is the sole owner. The mine is neither a partnership nor a corporation.

9. Answered in No. 8.

10. Total tonnage produced and sold to date:

	1937	1938	1939	1940	1941	1942	1948	1949
Feldspar...	100	900	idle	work-	400	8	80	40
Mica.....	0	23	"	ed, no	20	25	0	0
Beryl.....	0	0	"	ship-	0	6	1	0
				ments				

Total production to 1949..... 1,603 tons

11. Yes, if a loan can be approved, we can raise our average production considerably. A total of 400 to 500 tons can be produced per month. This would be total production, including Feldspar. In producing

11. (cont.)

the beryl and mica, a great quantity of feldspar will have to be moved and cobbed from the more desirable metals. This feldspar can, no doubt, be sold to grinders in Denver and the proceeds used to repay the loan. This, incidentally, will be done if the buyers will also take the expense and responsibility of hauling it to their plants. In this way the greater part of the workers' efforts can be devoted to the extraction of the more important minerals, but at the same time a source of revenue for the repayment of the loan can be more fully exploited.

12. This question is covered in the report submitted with this application. However, it must be remembered that this report was made previous to the time when the greater extent of the deposit had been uncovered. Reserves amount to twice the amount reported by the engineers; or perhaps even more than twice as much.

13. As previously noted, the Grover Pegmatite is but 3½ miles by present roads from a paved transcontinental highway and only 26 miles via this highway (U. S. 40) from Denver. The homestead highway leaves U. S. 40 near Bench Mark 7547 at the old Elngreen Ranch. The road to the mine follows a well graded and graveled homestead highway for about 500 feet. It then takes off to the west and follows Beaver Brook Canyon, where it is a secondary dirt road. Clear Creek county has promised to improve this road if the Grover Mine is put on a substantial production basis. As mentioned before, the Grover Mine is more readily accessable than any of the mines in this district. An ordinary passenger car can easily be driven to the workings.

In the canyon itself there are residences, mostly inhabited only during the summer, but some of them are lived in the year around. Resident points near the mine itself consist of a three-room cabin for the owner and another one-room cabin. Excellent building sites abound in the area.

Golden, the nearest shipping point, is only 20 miles away, down grade all the way. Here, too, is a supply point for lumber, tools, blasting supplies, etc. Denver, of course, would be the logical supply point, with its well stocked mining supply houses.

Evergreen and Bergen Park, both supplied with stores, would be the closest points for personal needs, and for living quarters for the workers. They are relatively close to the mine.

14. Several springs, supplying a good, year-round flow of water are on the property. They keep a well-sized stream flowing throughout the year. The water supply is sufficient for mine use as well as for domestic purposes.

15. Electric power is available only for heating and lighting purposes and for small motors at present. This is supplied by the Intermountain Rural Electric Association. Power for mining purposes is supplied by gasoline motors.

16. The number of men carried on the last payroll were five. One miner, two muckers and two outside men, for maintenance.

17. Present equipment in serviceable condition and available for immediate operation consists of two air compressors, one stationary and one portable. One liner machine, four jackhammers, drilling steel for all drilling work. One blacksmith shop, complete. All necessary mining equipment and implements, such as picks, shovels, bars, sledges, axes, ore cars, tracks, etc. Buildings consist of a three-room ranch home and a one-room cabin and tool sheds, all in good condition. The entire property is in excellent condition for immediate operation.

18. Answered quite fully in other questions and authoratively answered in the accompanying report.

19. No reply.

20. The mine will be developed primarily for:

BERYLLIUM
STRATEGIC MICA

Other ores that will be produced as by-products include:

COLUMBIUM
TANTALUM
HAFNIUM
ZIRCONIUM
URANIUM
AUTUNITE
BERTRANDITE
FLUORITE
[illegible]NOLITE (?) See Bureau of Mines letter 4/20/51 enclosed with report.

21. Two separate but closely integrated operations are contemplated. The first is to continue driving the open cut toward the deposit of mica lying approximately 300 feet from the face of the cut. The second development would be to drive an upraise from the tunnel into the feldspar, beryl and mica deposit, which is estimated to liefrom 25 to 35 feet above the top of the tunnel. This raise would be extended through the deposit to the floor of the open cut and then would proceed to deepen the cut in the direction of the mica deposit. In this way two caving operations would be in operation. Ore would be removed through the tunnel. The estimated time for completing the open cut to the mica deposit would be about 30 weeks for the approximately 300 feet, the cut being about 30 feet deep and deepening as the work progresses. However, the mine would be producing beryl, the other ores mentioned, as well as an appreciable amount of mica from the outset. Production of the needed ores can begin at once.

Time for completing the tunnel project would depend on how long it will take to raise to the present ore level and piercing it. The distance between the top of the tunnel (its roof) and the floor of the open cut is about 100 feet. It may be that the present ore body lies as much as 45 feet above the tunnel. When the body of ore has been reached and completely pierced, the mining will proceed as an open cut working.

This method will increase the daily tonnage to the point where a most impressive amount of ore will be produced. This, too, we feel, will develop the deposit more effectively and more cheaply.

Grover Mine
Clear Creek County, Colorado

21. (cont.)
Within a month or less this raise could be driven to the present ore body and would be producing ore within six weeks or less.

22. (a) 2 miners..... $12.50 per day, at present wage levels.

2 muckers..... $12.00 per day, at present wage levels.

1 outside man, all around maintenance and general work..... $11.50 per day.

(b) 1 supervisor..... $300.00 per month.

(c) Approximately $500.00 would cover the cost of repairing existing tool sheds, compressor houses, ore cars now on the property and reconditioning motors, etc.

(d) No additional structures needed.

(e) New stoper..... $350.00 to 400.00
400 feet 2" pipe..... .65 per foot
200 feet 1" pipe..... .25 per foot
2 ore cars (used)..... 50.00 each, approx.
Loader or mucker..... 4500.00 approx.

(f) Operator has equipment, such as compressors, hammers, etc. Not necessary to rent any equipment.

(g) The approximate rental value of the equipment now on the property would amount to between 600 and 1,000 dollars per month.

(h) Powder..... $12.00 per case..... 1 case per day
Fuse..... 1½¢ per foot..... 150 ft per day
Caps..... $2.50 per 100..... 100 per week, approx.
Gasoline..... .25.9 per gal., less state tax (25-20 gals per shift)
2 dozen spades.... 3.49 each.
2 dozen picks.... 3.50 each
Steel and bits...1296.00 per year

(i) $10.00 per month for electric power.

We estimate that the project can be completed within one year with a total expenditure of $50,000.00 or less.

Total wages to be paid.....	$25,053.60
Total expenditure, all facilities.....	20,888.00
For unforseeable emergencies.....	4,058.40
	$50,000.00

Certification: The undersigned company and official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Grover Mining Company
(name of company)

By [signature]
(signature of authorized official)

May 26, 1951
(date)

Owner
(title)

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. DMA 1545X

Commodity Mica, Beryl

Total Amount $60,000.00

Govt. Participation 90%

1. Name and Address of Applicant Joe Grover, Evergreen, Colorado

2. Location of Property Sec 9-10 T.4S, R.72W.
20 mi. west of Golden, in Clear Creek County, Colorado

3. Mineral or metal Beryl, Mica Is it listed in Section 9 of MO-5? Yes

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good [illegible]

b) Poor [illegible] property. However, the applicant has done considerably more development work and the property should be visited again.

c) None

d) Don't know—needs field examination Yes - Field Check. JAK 6/14/51

e) Is there an alternative and favorable project? [illegible]
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? No - owner

Does the lease have sufficient time to run to cover a future

productive period? ——

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes

a) MF-201? Not attached.

b) MF-202 not needed

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes - for exploration only.

d) Water (question 13)* Yes

e) Power (question 13)* Yes - REA power. Gasoline motors.

Is a field check needed on any of these points? No

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

Is a field check needed on this point? Yes - if field team in district.

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? No - see draft

If not, are there sufficient data given so that you can describe the project? No If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? No

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? No

If not, what part of it is? The raising from the tunnel to the open cut would test for the downward extension of the ore body. The mica, to be opened by extending the open cut could probably be explored by surface work done in the immediate vicinity of it.

Is this part a worthwhile exploration project? Probably Yes

d) Are the cost estimates detailed? No

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? No If so, attach a draft.

e) Are the cost estimates reasonable? None given

f) Should more information be requested from applicant? Yes. by field team

g) Is a field examination necessary to complete Exhibit A? Yes

11. Exhibit B (question 23-d)*

a) Is it applicable? No - state no new facilities needed

b) If so, are sufficient data furnished? — If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Yes

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? Applicants rental appears high.

d) Is a field check needed? Yes

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? No see draft

b) Is the schedule adequate for the work proposed? Yes

c) Is the schedule excessive for the work proposed? No

d) Are the proposed wages and salaries reasonable? Yes

e) Is a field check needed? Yes

14. Exhibit E (question 23-c)*

a) Is it applicable? Yes

b) Sufficient data? No

c) Reasonable? Yes

d) Field check needed? Yes

15. In your judgment, can the proposed work be done in the proposed time? Exploration work - yes

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? See what exploration is advisable + suggest that applicant revise his exploration application + apply for a loan for production preparation.

Should send the attached rept by Crawford + Burnett to the field team for evaluation.

Cannot sampling of now opened exposures provide sufficient data to evaluate deposit? Looks like a good sampling job ought to either end the project or justify a loan for operation - why more exploration?

Reviewed by: [illegible]

B.A.M.

G. A. Rehn 6/14/51, USGS

Date 6/14/51

 RPM - 6/18/51

97692

6/14/51 Docket 60 - DMA 1554 X

Section 10 Exhibit "A"

This project appears to be primarily for preparation for increased production although the raise from the tunnel would test for the downward extension of the ore body now opened in the open cut. The driving of the open cut to open an exposed mica deposit is essentially for production - this mica could probably be explored by trenching or sinking in its immediate area.

The field team should discuss this with the applicant & suggest that he apply for a development or production loan. He should be informed that the present application is not applicable for exploration assistance, it might be modified to cover certain parts of it.

Section 11 Exhibit B.-

Applicant states that no new structures or facilities are needed at present. About 3 miles of road will probably have to be improved for production but should be usable for exploration work.

~~Section 12 Exhibit D.~~

~~The labor force listed should be sufficient for the program as outlined but would need~~

Section 12. Exhibit C.

The loader or trucker is not needed for the exploration program & is listed to improve the production operations. Whether the new pipe will be needed can be determined by the field team as well as inspecting the applicants equipment & agreeing on proper rental terms - the figures quoted appear high.

6/14/51

D. [illegible]. 1554 X

Section 12 Exhibit "C" (cont.)

Section 13 Exhibit "D"

The labor listed appears sufficient for the program submitted although it might be reduced in the exploration work. The wages are reasonable

Section 14 Exhibit "E"

The condition of the existing facilities is not stated but the amount quoted should be sufficient to place everything in proper condition. The rehabilitation for an exploration program should be specified + the work done not extended to cover production items.

Section 16 - Recommendations

The field team should inspect the area + ascertain what exploration work will be needed with particular attention to the elimination of production preparation. The question of the submission of an application for a loan to cover the preparation for production should be discussed with the applicant.

As at present outlined the application should be denied.

DMA 1545 X.
6/14/51

No data sheet for ME.103 is enclosed but a rather complete one headed "General Technical Data for Use Under the Defense Production Act of 1950" is attached from which the information used was obtained

The road work needed to permit efficient haulage is said to be promised by Clear Creek County. It is not included in the estimated expenditures of the application.

OMG

Form MF-103
(April 1951)

U. DEPARTMENT OF THE INTER R
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. Dma 1545X

Date received 6-4-51

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 4 - 1951
LANDON F. STROBEL
Executive Secretary

Date

Name and address of applicant

FILL IN THIS BLOCK

Date of application May 26, 1951

Estimated cost $60,000.00

Mineral or metal Beryl, Mica-strategic

Percentage of Government participation 90%

Location of mine Clear Creek County, Colorado

Date of filing MF-100 Herewith

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. $10,000.00 mortgage
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. No statement. Mine not in operation.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? In the form of equipment, applicant has about $10,000.00

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Grover Mining Company
(Name of company)

By Joe Grover
(Signature of authorized official)

May 26, 1951
(Date)

Owner
(Title)

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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Amer 1045 X

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

1. (a) Major minerals are Berryllium
Strategic Mica

(b) Byproducts are Columbium
Tantalum
Hafnium
Zirconium
Uranium
Cryolite
Autenite
Bertrandite

2. GROVER MINE Beryl-Muscovite-Feldspar deposit
This mine has not been known by any other name. It was developed from the beginning by Joe Grover.

(a) No shafts on property.
(b) No drifts or crosscuts, other than:
(c) 400 feet of tunnel have been driven toward the main deposit of Beryl, Mica, Feldspar and the rare minerals. This tunnel was driven to facilitate the development of the mineral deposits thru the economical caving method.
(d) There is an extensive open cut, driven approximately 420 feet along the vein. This cut ranges from 5 to 25 feet and is from 10 to 30 feet deep. The rare minerals, listed above, were all discovered at various points in this open cut.

Because of the nature of the mine, it is not flooded. There are a series of veins on the property, all of which can be worked from the tunnel, as well as by open cut methods. Surface indications reveal that the surface has been barely scratched on this property. The open cut could be driven three to four times its present 420 foot length and still be in profitable formations. There are indications that muscovite in sizeable sheets will be found as the tunnel is extended into the deposit. In the vicinity of this mine (the Ajax property, to the northwest) considerable sheet and punch and block mica has been produced. The Ajax was originally developed as a source of mica for stoves, lamps, etc. Sheet mica has been found in the Grover Mine, but was sold along with scrap mica because the value of the product was not known at the time.

Seven tons of excellent quality beryl have been produced during the time that the mine has been operated for its feldspar, which is also of an exceptionional quality. The mine definitely has a long and profitable potential, when past production records are compared with visible indications of the extent of the deposits.

3. (a) Golden, Colorado, is the nearest shipping point, located 20 miles east of the Grover Mine. The highway leading to Golden, except for three and a half miles from the mine, is paved, well-maintained, and a transcontinental highway for the greater part of the distance. The road is also all down hill, which means something in transportation costs.

(b) The Grover Mine is in the Idaho Springs Mining District

(c) Township 4 S; Section 9-10; Range 72 W.

(d) Clear Creek County, Colorado

4. (a) This property is not in operation at the present time, but is in excellent condition. Machinery and equipment has been well maintained. Tunnel and cut are in excellent condition and ready to begin operations at once.

(b) When in operation it is operated by Joe Grover, applicant, as owner.

5. Between 1937 and the present time the mine has been in production 7 years. Production can begin at once.

6. Joe Grover, owner and applicant, has had 22 years of mining and mine operating experience. He has had not only actual experience in the actual work in the mines themselves, in all phases of mine work, but has also had supervisory experience. Added to this, he has employed chemists and metallurgists, with whom he has worked closely in the tasks of refining and concentrating the minerals he has produced from his mines. Besides his mining experience, the owner has had considerable experience in the management of real estate.

7. (a) A complete report, covering the history of the Grover Mine is submitted herewith. This report, by Arthur L. Crawford and Alfred M. Buranek, was completed in the early 1940's. Since then the mine, both tunnel and open cut, has been developed more extensively. Additional outcroppings have been uncovered and the extent of the vein being worked has been found to be far greater than was supposed at the time the report was written.

Operations on the Grover Mine were discontinued because of a lack of finances. Driving the tunnel under the open cut for a more intensive and more economical means of developing the deposits consumed more of the owner's finances than it was at first thought necessary. Haulage expenses, due to having to hire trucks and drivers also proved too high for profitable operation of the mine at the time, when feldspar prices were down and the mine was worked for this alone. The setting up of a laboratory to explore the means for reduction and extraction of some of the ores further depleted the owner's finances. All development work was financed practically in its entirety by the owner.

(b) To the north of the Grover Mine lies the Ajax Mine which has been worked intermittently since the 1890's. It was developed as a source of sheet mica at the outset. At the time, mica was in demand for use in stoves, etc. Early production records are not available, if they were ever kept. During World War II the mine was worked quite intensively for mica, punch and block as well as for some sheet mica.

7. (b) (cont.) R. D. Naslund, owner of the mine, told the writer that a considerable amount of sheet mica was produced. Two separate shipments of about a ton apiece brought returns of more than $2,000.00 per ton. In the Geological Survey Professional Paper 227, it is reported that the size pattern is about 90% 1" x 1" and $1\frac{1}{4}$" x $1\frac{1}{4}$" and the rest $1\frac{1}{2}$" x 2" and larger. Production of other mineral is not reported from this mine.

To the west of the Grover Mine is the Santa Fe Mountain Beryl Prospect, also reported in Professional Paper 227. In two months in 1943 this deposit is reported to have produced 928 pounds of beryl. J. B. Hanley, who examined the deposit June 3, 1944, said that the prospect contains a high percentage of beryl, running 1.5 percent of the rock mined.

Another mine in the vicinity is the Brandt Beryl-Topaz Prospect. As in the other deposits, beryl crystals as large as 6 inches in diameter have been reported. In the Grover Mine crystals of that size have been found with pleasing frequency and some have been found that measured as much as 12 and 15 inches in diameter. This mine is located not far to the east of the Grover Mine.

Other mines and prospects are located in the general area but are much smaller than the Grover Mine.

(c) Development work on the Grover Mine property consists of an open cut 420 feet long and up to 25 to 30 feet wide at the widest and up to 30 and more feet deep.

Production from this mine includes 1,520 tons of feldspar, 7 tons of beryllium ore, 68 tons of mica. In making this development possible, $2\frac{1}{2}$ miles of roads were built. These roads, together with the favorable location of the property, make the Grover Mine the most readily accessable of the mines and prospects in the district.

A complete report on the mine, covering the development of the mine up to 1944 is enclosed. It must be remembered that a great deal of additional development work was done after that report was written. In fact, the mine was quite intensively developed after that date. A laboratory was set up to conduct research in the refinement of some of the ores.

8. Joe Grover, Evergreen, Colorado (post office address), is the sole owner. The mine is neither a partnership nor a corporation.

9. Answered in No. 8.

10. Total tonnage produced and sold to date:

	1937	1938	1939	1940	1941	1942	1948	1949
Feldspar.....	100	900	idle	work-	400	8	80	40
Mica.....	0	23	idle	ed,no	20	25	0	0
Beryl.....	0	0	idle	ship-	0	6	1	0
				ments				

Total production to 1949.....1,603 tons

11. Yes, if a loan can be approved, we can raise our average production considerably. A total of 400 to 500 tons can be produced per month. This would be total production, including feldspar. In

11. (cont.)

the beryl and mica, a great quantity of feldspar will have to be moved and cobbed from the more desirable metals. This feldspar can, no doubt, be sold to grinders in Denver and the proceeds used to repay the loan. This, incidentally, will be done if the buyers will also take the expense and responsibility of hauling it to their plants. In this way the greater part of the workers' efforts can be devoted to the extraction of the more important minerals, but at the same time a source of revenue for the repayment of the loan can be more fully exploited.

12. This question is covered in the report submitted with this application. However, it must be remembered that this report was made previous to the time when the greater extent of the deposit had been uncovered. Reserves amount to twice the amount reported by the engineers; or perhaps even more than twice as much.

13. As previously noted, the Grover Pegmatite is but 3½ miles by present roads from a paved transcontinental highway and only 26 miles via this highway (U. S. 40) from Denver. The homestead highway leaves U. S. 40 near Bench Mark 7547 at the old Elmgreen Ranch. The road to the mine follows a well graded and graveled homestead highway for about 500 feet. It then takes off to the west and follows Beaver Brook Canyon, where it is a secondary dirt road. Clear Creek county has promised to improve this road if the Grover Mine is put on a substantial production basis. As mentioned before, the Grover Mine is more readily accessable than any of the mines in this district. An ordinary passenger car can easily be driven to the workings.

In the canyon itself there are residences, mostly inhabited only during the summer, but some of them are lived in the year around. Resident points near the mine itself consist of a three-room cabin for the owner and another one-room cabin. Excellent building sites abound in the area.

Golden, the nearest shipping point, is only 20 miles away, down grade all the way. Here, too, is a supply point for lumber, tools, blasting supplies, etc. Denver, of course, would be the logical supply point, with its well stocked mining supply houses.

Evergreen and Bergen Park, both supplied with stores, would be the closest points for personal needs, and for living quarters for the workers. They are relatively close to the mine.

14. Several springs, supplying a good, year-round flow of water are on the property. They keep a well-sized stream flowing throughout the year. The water supply is sufficient for mine use as well as for domestic purposes.

15. Electric power is available only for heating and lighting purposes and for small motors at present. This is supplied by the Intermountain Rural Electric Association. Power for mining purposes is supplied by gasoline motors.

16. The number of men carried on the last payroll were five. One miner, two muckers and two outside men, for maintenance.

17. Present equipment in serviceable condition and available for immediate operation consists of two air compressors, one stationary and one portable. One liner machine, four jackhammers, drilling steel for all drilling work. One blacksmith shop, complete. All necessary mining equipment and implements, such as picks, shovels, bars, sledges, axes, ore cars, tracks, etc. Buildings consist of a three-room ranch home and a one-room cabin and tool sheds, all in good condition. The entire property is in excellent condition for immediate operation.

18. Answered quite fully in other questions and authoratively answered in the accompanying report.

19. No reply.

20. The mine will be developed primarily for:

BERYLLIUM
STRATEGIC MICA

Other ores that will be produced as by-products include:

COLUMBIUM
TANTALUM
HAFNIUM
ZIRCONIUM
URANIUM
AUTENITE
BERTRANDITE
FLUORITE
CRYOLITE (?) See Bureau of Mines letter 4/20/51 enclosed with report.

21. Two separate but closely integrated operations are contemplated. The first is to continue driving the open cut toward the deposit of mica lying approximately 300 feet from the face of the cut. The second development would be to drive an upraise from the tunnel into the feldspar, beryl and mica deposit, which is estimated to liefrom 25 to 35 feet above the top of the tunnel. This raise would be extended through the deposit to the floor of the open cut and then would proceed to deepen the cut in the direction of the mica deposit. In this way two caving operations would be in operation. Ore would be removed through the tunnel. The estimated time for completing the open cut to the mica deposit would be about 30 weeks for the approximately 300 feet, the cut being about 30 feet deep and deepening as the work progresses. However, the mine would be producing beryl, the other ores mentioned, as well as an appreciable amount of mica from the outset. Production of the needed ores can begin at once.

Time for completing the tunnel project would depend on how long it will take to raise to the present ore level and piercing it. The distance between the top of the tunnel (its roof) and the floor of the open cut is about 100 feet. It may be that the present ore body lies as much as 45 feet above the tunnel. When the body of ore has been reached and completely pierced, the mining will proceed as an open cut working.

This method will increase the daily tonnage to the point where a most impressive amount of ore will be produced. This, too, we feel, will develop the deposit more effectively and more cheaply.

Grover Min
Clear Creek County, Colorado

21. (Cont.)

develop the deposit more effectively and more cheaply. Within a month or less this raise could be driven to the present ore body and would be producing ore within six weeks or less.

22. (a) 2 miners..... $12.50 per day, at present wage levels.
2 muckers..... 12.00 per day, at present wage levels.
1 outside man, all around maintenance, general work.... $11.50 per day.

(b) 1 supervisor..... $300.00 per month.

(c) Approximately $500.00 would cover the cost of repairing existing tool sheds, compressor houses, ore cars now on the property and recondition motors, etc.

(d) No additional structures needed.

(e) New stoper..... $350.00 to $400.00
400 feet 2" pipe..... .65 per foot
200 feet 1" pipe..... .25 per foot
2 ore cars (used)..... 50.00 each, approx.
Loader or mucker..... 4500.00 approx.

(f) Operator has equipment, such as compressors, hammers, etc. Not necessary to rent any equipment.

(g) The approximate rental value of the equipment now on the property would amount to between 600 and 1,000 dollars per month.

(h) Powder..... $12.00 per case..... 1 case per day
Fuse..... 1½¢ per foot..... 150 ft per day
Caps..... $2.50 per 100..... 100 per week, approx.
Gasoline..... 25.9 per gal., less state tax (25-30 gals per shift)
2 dozen spades.... $3.49 each
2 dozen picks..... $3.50 each
Steel and bits.... $1,296.00 per year

(i) $10.00 per month for electric power.

We estimate that the project can be completed within one year with a total expenditure of $50,000.00 or less.

Total wages to be paid.....	$25,035.60
Total expenditures, all facilities....	20,888.00
For unforseeable emergencies.....	4,058.40
	$50,000.00

Certification: The undersigned company and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Grover Mining Company
(name of company)

By [signature]
(signature of authorized official)

May 26, 1951
(date)

Owner
(title)

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 1545X

Date received 6-4-51

Participation

REGIONAL DIRECTOR'S OFFICE
REGION IV
MAY 31 1951
BUREAU OF MINES
DENVER, COLORADO

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 4 - 1951
LANDON F. STROBEL
Executive Secretary

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application May 26, 1951

Estimated cost $60,000.00

Mineral or metal Strategic Mica, Beryl, others

Percentage of Government participation 90%

Location of mine Clear Creek County, Colorado

Date of filing MF-100 Herewith

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. $10,000.00 mortgage
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. No statement. Mine not operating.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? In the form of equipment, applicant has about $10,000.00.

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Grover Mining Company
(Name of company)

By Joe Grover
(Signature of authorized official)

May 26, 1951
(Date)

Owner
(Title)

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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dmal 1545 X

Date received 6-4-51

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 4 - 1951
LANDON F. STROBEL
Executive Secretary

Name and address of applicant

FILL IN THIS BLOCK

Date of application May 2, 1951 Estimated cost $60,000.00

Mineral or metal Beryllium, Strategic Mica, others Percentage of Government participation 90%

Location of mine Clear Creek Co., Colorado

Date of filing MF-100 Herewith DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. $10,000.00
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

Mine not operating

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. no statement
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

In form of equipment, applicant has about $10,000.00

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Grover Mining Company
(Name of company)

By Joel Grover
(Signature of authorized official)

May 26, 1951
(Date)

Owner
(Title)

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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

MF-100

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

1. (a) Major minerals are: Beryllium
Strategic Mica

(b) Byproducts are: Columbium
Tantalum
Hafnium
Zirconium
Uranium
Cryolite
Autunite
Bertrandite

2. GROVER MINE Beryl - Muscovite - Feldspar deposit

This mine has not been known by any other man. It was developed from the beginning by Joe Grover.

(a) No shafts on property.
(b) No drifts or crosscuts, other than:
(c) 400 feet of tunnel have been driven toward the main deposit of Beryl, Mica, Feldspar and the rare minerals. This tunnel was driven to facilitate the development of the mineral deposits thru the economical caving method.
(d) There is an extensive open cut, driven approximately 420 feet along the vein. This cut ranges from 5 to 25 feet and is from 10 to 30 feet deep. The rare minerals, listed above, were all discovered at various points in this open cut.

Because of the nature of the mine, it is not flooded. There are a series of veins on the property, all of which can be worked from the tunnel, as well as by open cut methods. Surface indications reveal that the surface has been barely scratched on this property. The open cut could be driven three to four times its present 420 foot length and still be in profitable formations. There are indications that muscovite in sizeable sheets will be found as the tunnel is extended into the deposit. In the vicinity of this mine (the Ajax property, to the north) considerable sheet and punch and block mica has been produced. The Ajax was originally developed as a source of mica for stoves, lamps, etc. Sheet mica has been found in the Grover Mine, but was sold along with scrap mica because the value of the product was not known at the time.

Seven tons of excellent quality beryl have been produced during the time that the mine has been operated for its feldspar, which is also of an exceptional quality. The mine definitely has a long and profitable [illegible] pilot production record compared with the

3. (a) Golden, Colorado, is the nearest shipping point, located 30 miles east of the Grover Mine. The highway leading to Golden, except for three and a half miles from the mine, is paved, well-maintained and a transcontinental highway for the greater part of the distance. The road is also all down hill, which means something in transportation costs.

(b) The Grover Mine is in the Idaho Springs Mining District.

(c) Township 4 S; Section 9-10; Range 72 W.

(d) Clear Creek County, Colorado.

4. (a) This property is not in operation at the present time, but is in excellent condition. Machinery and equipment has been well maintained. Tunnel and cut are in excellent condition and ready to begin operations at once.

(b) When in operation, it is operated by Joe Grover, applicant, as the owner.

5. Between 1937 and the present time the mine has been in production 7 years. Production can begin at once.

6. Joe Grover, owner and applicant, has had 22 years of mining and mine operating experience. He has had not only actual experience in the actual work in the mines themselves, in all phases of mine work, but has also had supervisory experience. Added to this, he has employed chemists an metallurgists, with whom he has worked closely in the tasks of refining and concentrating the minerals he has produced from his mines. Besides his mining experience, the owner has had considerable experience in the management of real estate.

7. (a) A complete report, covering the history of the Grover Mine is submitted herewith. This report, by Arthur L. Crawford and Alfred M. Buranck, was completed in the early 1940's. Since then the mine, both tunnel and open cut, s been developed more extensively. Additional outcroppings have been uncovered and the extent of the vein being worked has been found to be far greater than was supposed at the time the report was written.

Operations on the Grover Mine were discontinued because of a lack of finances. Driving the tunnel under the open cut for a more intensive and more economical means of developing the deposits con. med more of the owners finances than it was at first thought necessary. Haulage expenses, due to having to hire trucks and drivers, also proved too igh for profitable operation of the mine at the time, when feldspar prices were down and the mine was worked for this alone. The setting up of a laboratory to explore the means for reduction and extraction of the ores further depleted the owner's finances. All development work was financed practically in its entirety by the owner.

(b) To the north of the Grover Mine lies the Ajax Mine which has been worked intermittently since the 1890's. It was developed as a source of sheet mica at the outset. At the time, mica was in demand for use in stoves, etc. Early production records are not available, if they were ever kept. During World War II the mine was worked quite intensively for mica, punch and block as well as for some sheet mica.

7. (b) (cont.) R. D. Waslund, owner of the mine, told the writer that a considerable amount of sheet mica was produced. Two separate shipments of about a ton apiece brought returns of more than $2,000.00 per ton. In the Geological Survey Professional Paper 227, it is reported that the size pattern is about 90% 1" x 1" and 1½" x 1½" and the rest 1½" x 2" and larger. Production of other mineral is not reported from this mine.

To the west of the Grover Mine is the Santa Fe Mountain Beryl Prospect, also reported in Professional Paper 227. In two months in 1943 this deposit is reported to have produced 928 pounds of beryl. J. B. Hanley, who examined the deposit June 3, 1944, said that the prospect contains a high percentage of beryl, running 1.5 percent of the rock mined.

Another mine in the vicinity is the Brandt Beryl-Topaz Prospect. As in the other deposits, beryl crystals as large as 6 inches in diameter have been reported. In the Grover Mine crystals of that size have been found with pleasing frequency and some have been found that measured as much as 12 and 15 inches in diameter. This mine is located not far to the east of the Grover Mine.

Other mines and prospects are located in the general area but are much smaller than the Grover Mine.

(c) Development work on the Grover Mine property consists of an open cut 420 feet long and up to 25 to 30 feet wide at the widest and up to 30 and more feet deep.

Production from this mine includes 1,520 tons of feldspar, 7 tons of beryllium ore, 68 tons of mica. In making this development possible, 2½ miles of roads were built. These roads, together with the favorable location of the property, make the Grover Mine the most readily accessable of the mines and prospects in the district.

A complete report on the mine, covering the development of the mine up to 1944 is enclosed. It must be remembered that a great deal of additional development work was done after that report was written. In fact, the mine was quite intensively developed after that date. A laboratory was set up to conduct research in the refinement of some of the ores.

8. Joe Grover, Evergreen, Colorado (post office address), is the sole owner. The mine is neither a partnership nor a corporation.

9. Answered in No. 8.

10. Total tonnage produced and sold to date:

	1937	1938	1939	1940	1941	1942	1948	1949
Feldspar.....	100	900	idle	worked, no shipments	400	8	80	40
Mica.....	0	23	~~idle~~		20	25	0	0
Beryl.....	0	0	idle		0	6	1	0

Total production to 1949.....1,603 tons

11. Yes, if a loan can be approved, we can raise our average production considerably. A total of 400 to 500 tons can be produced per month. This would be total production, including feldspar. In

11. (cont.)

producing the beryl and mica, a great quantity of feldspar will have to be moved and cobbed from the more desirable metals. This feldspar can, no doubt, be sold to grinders in Denver and the proceeds used to repay the loan. This, incidentally, will be done if the buyers will also take the expense and responsibility of hauling it to their plants. In this way the greater part of the workers' efforts can be devoted to the extraction of the more important minerals, but, at the same time a source of revenue for the repayment of the loan can be fully exploited.

12. This question is covered in the report submitted with this application. However, it must be remembered that this report was made previous to the time when the greater extent of the deposit had been uncovered. Reserves amount to twice the amount reported by the engineers; or perhaps even more than twice as much.

13. As previously noted, the Grover Pegmatite is but 3½ miles by present roads from a paved transcontinental highway and only 26 miles via this highway (U. S. 40) from Denver. The homestead highway leaves U. S. 40 near Bench Mark 7547 at the old Elmgreen Ranch. The road to the mine follows the well graded and graveled homestead highway for about 500 feet. It then takes off to the west and follows Beaver Brook Canyon, where it is a secondary dirt road. Clear Creek County has promised to improve this road if the Grover Mine is put on a substantial production basis. As mentioned before, the Grover Mine is more readily accessable than any of the mines in this district. An ordinary passenger car can easily be driven to the workings.

In the canyon itself there are residences, mostly inhabited only during the summer, but some of them are lived in the year 'round. Resident points near the mine itself consist of a three-room cabin for the owner and another one-room cabin. Excellent building sites abound in the area.

Golden, the nearest shipping point, is only 20 miles away, down grade all the way. Here, too, is a supply point for lumber, tools, blasting supplies, etc. Denver, of course, would be the logical supply point with its well stocked mining supply houses.

Evergreen and Bergen Park, both supplied with stores, would be the closest points for personal needs, and for living quarters for the workers. They are relatively close to the mine.

14. Several springs, supplying a good, year-round flow of water are on the property. They keep a well-sized stream flowing throughout the year. The water supply is sufficient for mine use as well as for domestic purposes.

15. Electric power is available only for heating and lighting purposes and for small motors at present. This is supplies by the Intermountain Rural Electric Association. Power for mining purposes is supplied by gasoline motors.

16. The number of men carried on the last payroll were five. One miner, two muckers and two outside maintenance men.

Grover Mine
Clear Creek County, Colorado

17. Present equipment in serviceable condition and available for immediate operation consists of two air compressors, one stationary and one portable. One liner machine, four jackhammers, drilling steel for all drilling work. One blacksmith shop, complete. All necessary mining equipment and implements, such as picks, shovels, bars, sledges, axes, ore cars, tracks, etc. The buildings consist of a three-room ranch home and a one-room cabin and tool sheds, all in good condition. The entire property is in excellent condition for immediate operation.

18. Answered quite fully in other questions and authoritatively answered in the accompanying report.

19. No reply.

20. The mine will be developed primarily for:

BERYLLIUM
STRATEGIC MICA

Other ores that will be produced as by-products include:

Columbium
Tantalum
Hafnium
Zirconium
Uranium
Autenite
Bertrandite
Fluorite
Cryolite (?) See Bureau of Mines letter 4/20/51 enclosed with report.

21. Two separate but closely integrated operations are contemplated. The first is to continue driving the open cut toward the deposit of mica lying approximately 300 feet from the face of the cut. The second development would be to drive an upraise from the tunnel into the feldspar, beryl and mica deposit, which is estimated to lie from 25 to 35 feet above the top of the tunnel. This raise would be extended through the deposit to the floor of the open cut and would then proceed to deepen the cut in the direction of the mica deposit. In this way two caving operations would be in operation. Ore would be removed through the tunnel. The estimated time for completing the open cut to the mica deposit would be about 39 weeks for the approximately 300 feet; the cut being about 30 feet deep and deepening as the work progresses. However, the mine would be producing beryl, the other ores mentioned, as well as an appreciable amount of mica from the outset. Production of the needed ores can begin at once.

Time for completing the tunnel project would depend on how long it will take to raise to the present ore level and pierce it. The distance between the top of the tunnel (its roof) and the floor of the open cut is about 100 feet. It may be that the present ore body lies as much as 45 feet above the tunnel. When the body of ore has been reached and completely pierced, the mining will proceed as an open cut.

This method will increase the daily tonnage to the point where a most impressive amount of ore will be produced. This, too, we feel, will

Grover Mine
Clear Creek County, Colorado

21. (Cont.)

develop the deposit more effectively and more cheaply. Within a month or less this raise could be driven to the present ore body and would be producing ore within six weeks or less.

22. (a) 2 miners..... $12.50 per day, at present wage levels.
2 muckers..... 12.00 per day, at present wage levels.
1 outside man, all around maintenance, general work.... $11.50 per day.

(b) 1 supervisor..... $300.00 per month.

(c) Approximately $500.00 would cover the cost of repairing existing tool sheds, compressor houses, ore cars now on the property and recondition motors, etc.

(d) No additional structures needed.

(e) New stoper..... $350.00 to $400.00
400 feet 2" pipe..... .65 per foot
200 feet 1" pipe..... .25 per foot
2 ore cars (used)..... 50.00 each, approx.
Loader or mucker..... $500.00 approx.

(f) Operator has equipment, such as compressors, hammers, etc. Not necessary to rent any equipment.

(g) The approximate rental value of the equipment now on the property would amount to between 600 and 1,000 dollars per month.

(h) Powder..... $12.00 per case..... 1 case per day
Fuse..... 1½¢ per foot..... 150 ft per day
Caps..... $2.50 per 100..... 100 per week, approx.
Gasoline..... 25.9 per gal., less state tax (25-30 gals per shift)
2 dozen spades.... $3.49 each
2 dozen picks..... $3.50 each
Steel and bits.... $1,296.00 per year

(i) $10.00 per month for electric power.

We estimate that the project can be completed within one year with a total expenditure of $50,000.00 or less.

Total wages to be paid.....	$25,035.60
Total expenditures, all facilities....	20,000.00
For unforseeable emergencies.....	4,050.40
	50,000.00

Certification: The undersigned company and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Grover Mining Company
(name of company)

By [signature]
(signature of authorized official)

May 26, 1951
(date)

Owner
(title)

GROVER MINE

CLEAR CREEK COUNTY, COLORADO

DMA DOCKET 1545X

Geology and Ore Reserves

By Truman H. Kuhn, Geologist
U. S. Geological Survey

TABLE OF CONTENTS

	Page
INTRODUCTION	1
GENERAL GEOLOGY	2
MICA	2
BERYL	3
COLUMBITE	4
FELDSPAR	4
MINE WORKINGS	4
PRODUCTION AND GRADE . . .	5
ORE RESERVES	6
PROPOSED WORK	6
CONCLUSIONS AND RECOMMENDATIONS . . .	6

GROVER MINE
CLEAR CREEK COUNTY, COLORADO

INTRODUCTION

The Grover mine, located on patented homestead land in section 10, T 4 S, R 72 W, 6th Principal Meridian, Clear Creek County, Colorado, is owned by Joe Grover, Evergreen, Colorado. Mr. Grover has applied for a loan of $60,000 to further explore the pegmatite body for beryl and mica.

The property was visited on July 5, 1951, and again on July 12, 1951.

The mine is at an altitude of approximately 8,750 feet on the north side of Beaver Brook valley. It is 4.5 miles by air line southeast of Idaho Springs, and 12.5 miles by air line and 21 miles by road southwest of Golden. The property is 3.5 miles over dirt road from U. S. Highway 40 and can be reached from the highway by taking the dirt road leading westward up Beaver Brook canyon at Elmgreen Ranch.

Certain data and conclusions obtained from older reports on the Grover pegmatite have been incorporated into this report. Other reports examined include:

1. A memorandum report by Thomas C. Denton, Mining Engineer for the U. S. Bureau of Mines, dated June 22, 1942.
2. A report by W. M. Traver, Jr., Mining Engineer for the U. S. Bureau of Mines, on "Winsor Beryl Deposit, Clear Creek County, Colorado," based on an examination made January 22, 1944.
3. A report prepared for Mr. Grover by Arthur L. Crawford, Geologist and Mineral Technologist, Utah Engineering Experimental Station,

University of Utah, and Alfred M. Buranek, Geologist, Department of Publicity and Industrial Development of the State of Utah, dated January 28, 1944.

4. Hanley, John B., Heinrich, E. Wm., and Page, Lincoln R., Pegmatite Investigations in Colorado, Wyoming, and Utah, 1942-1944: U. S. Geol. Survey P. P. 227, pp. 29-30, Plates 1 and 3, 1950.

GENERAL GEOLOGY

The geology of the Grover Pegmatite is well described by John B. Hanley in U. S. Geol. Survey Prof. Paper 227, on pages 29 and 30.

The pegmatite is an elongate, tabular body approximately 760 feet long, as much as 25 feet wide, and apparently concordant to the schist and gneiss of the pre-Cambrian Idaho Springs formation. It trends east-west and probably dips from 70° S to vertical. The pegmatite is obscurely zoned, and the beryl and columbite is restricted to the intermediate zone of quartz-albite-muscovite pegmatite.

MICA

Both biotite and muscovite mica are present in the pegmatite. Muscovite, the possible commercial mica, is described by Hanley:

"Muscovite occurs in thick books as much as 6 inches in width and 10 inches in length. It is usually reeved, ruled, has "A" structure, and is very heavily black-stained. Because of these defects none of the mica found would yield mica of sheet quality, although some would yield flat pieces of acceptable size."

"Muscovite is visually estimated to make up 10 to 15 percent of the intermediate-zone pegmatite and probably would yield a good quality of scrap mica."

Both Traver and Crawford and Buranek agree that the mica is ruled and stained and that the mica produced must be marketed as scrap.

At the time of the present examination, mica made up approximately 10 to 15 percent of the pegmatite exposed in the lower or eastern workings and about 5 to 10 percent of the pegmatite exposed in the more recent workings. Of the mica examined none was of sufficient size and quality to be of strategic grade. Books up to 8 inches in width were found but because of various structural defects and staining, no pieces of slightly stained or better mica as large as one inch square were observed.

BERYL

Hanley describes the beryl as occurring:

" - - - - in light-green euhedral crystals that are as much as 8 inches in diameter and 2 feet in length. It is free of mineral impurities and probably has a high BeO content."

"Beryl is visually estimated to make up only 1 in 5000 parts of the pegmatite - - - - ."

Crawford and Buranek also describe the beryl:

"The nine tons of beryl thus far recovered came principally from a restricted horizontal zone near the east end toward the bottom of the open-cut, from a space 3 x 15 x 125 feet. The latter constituted approximately 457 tons of material, which indicates that the 'pay shoot' contained almost 2% beryl."

At the present time very little beryl can be seen in the Grover workings. Based upon the beryl remaining in the walls and upon recognizable casts of beryl crystals, the percentage of beryl taken from the lower eastern excavation is estimated to be less than one-half per cent. No beryl or casts of beryl crystals were seen in the upper western portion of the workings.

COLUMBITE

Columbite and other rare minerals were mentioned by Joe Grover as occurring in the pegmatite. These minerals have been found and identified, but they are of specimen value only and cannot be considered as being of economic importance.

FELDSPAR

Microcline feldspar of marketable quality is present in the pegmatite and in terms of tonnage is the most abundant possible commercial product. The quantity, however, is relatively small and because of the necessary selective mining and hand sorting, mining costs will be high. The value of unground feldspar at Denver would not exceed $5.00 a ton. Under present conditions, it is doubtful if the feldspar can be considered as a commercial product.

MINE WORKINGS

At the time of Hanley's examination in October 1944, the mine workings included:

" - - - - a long, narrow open-cut, a 23-foot drift from this open-cut,

and several small prospect holes, the largest of which is 18 feet long and 4 feet wide. The main open-cut is about 275 feet in length, as much as 23 feet in width and as deep as 30 feet at the west face. It is at the eastern end of the pegmatite. Parts of the main cut have been worked at two levels, - - - - ."

A third bench level was mined in 1947-48, 20 feet above the upper level mentioned by Hanley. This third level was started approximately 50 feet east of the second level face and was continued westward into unexplored pegmatite for approximately 45 feet.

PRODUCTION AND GRADE

Traver states in his 1944 U. S. Bureau of Mines report:

"No known production was credited to the property until 1937, when it was acquired by the present owner, Mr. Joe Grover, of Park City, Utah. The records show shipment in the years 1937, 1938, 1941, and 1942 totaling about 1500 tons feldspar, 70 tons scrap mica, and 7 tons beryl."

In his report Traver estimated the total rock excavated to be 3000 tons and by calculation determined the grade of the mined portion to be:

Feldspar	50.0%
Mica	2.1%
Beryl	0.2%
Waste	47.7%

Making similar calculations, Crawford and Buranek estimated the grade of the mined portion of the body to be:

Feldspar	45.52%
Mica	2.09%

Beryl	0.28%
Waste	52.11%

For their calculated grade, Crawford and Buranek reported that 9 tons of beryl had been produced from the Grover pegmatite.

ORE RESERVES

Because of incomplete data and because of the irregular character of the pegmatite, no ore reserves can be calculated.

PROPOSED WORK

Mr. Grover proposes, and in fact has started, a 95-foot, steeply inclined raise to connect the lower tunnel with the floor of the lower open-cut. He believes that ore will be encountered below the eastern trench and that the raise will serve both as a prospect raise and as an aid to mining. (See plan and cross section) As the proposed work was outlined by Mr. Grover, it is not possible to completely separate exploration from development work.

CONCLUSIONS AND RECOMMENDATIONS

Strategic mica is not present in this deposit and in considering the application for a DMA loan, beryl alone is of importance.

Assuming that a volume of pegmatitic material equal to that already mined, that is 3000 tons, could be recovered directly below the present workings, another 1500 tons of feldspar, 70 tons of scrap mica, and 7 to 9 tons of beryl might be expected. Based on an approximate value at the mine of $5.00 a ton for feldspar, $32.00 a ton for scrap mica, and

$50.00 a unit for beryl, the 3000 tons might yield $13.00 a tons, of which $10.00 would be from the possible beryl. Thus, an additional 3000 tons might yield a total value of $39,000.00. At the present market price of $28.00 a unit for beryl, the possible value would be only $8.75 a ton for all three products, or a total of $26,250.00 for 3000 tons. If Hanley's estimated 0.02 per cent (1 in 5000 parts) is correct for beryl, the value would drop to $4.00 a ton, calculating beryl at $50.00 a unit. From the above calculated gross values, underground development and mining costs must be paid, as well as trucking, and all other charges incident to mining. Mining costs would be high. Any mineable material found would be below the bottom of a narrow trench averaging 20 feet deep. To mine below the trench floor would necessitate either driving the 95-foot raise proposed by Mr. Grover and mining by underground methods, or stripping considerable waste to permit further open-cut mining.

Because of the small volume of expectable beryl, the high mining costs, and the unfavorable geologic conditions, it is recommended that the DMA application for a $60,000.00 loan to prospect for strategic mica and beryl be denied.

A smaller exploration loan is not feasible under present conditions. If, as a result of less costly prospecting methods, more beryl be indicated, either below the present eastern workings or in the western portion of the dike, extraction costs still would be extremely high and the amount of expectable beryl low. According to Hanley, the unexplored and undeveloped western portion of the pegmatite would be expected to contain even less beryl than the mined portion of the intermediate or quartz-albite-muscovite pegmatite zone.

In earlier reports both Mr. Traver of the U. S. Bureau of Mines, and Mr. Hanley of the U. S. Geological Survey advised against government participation in an exploration or development program on the Grover property.

GROVER MINE

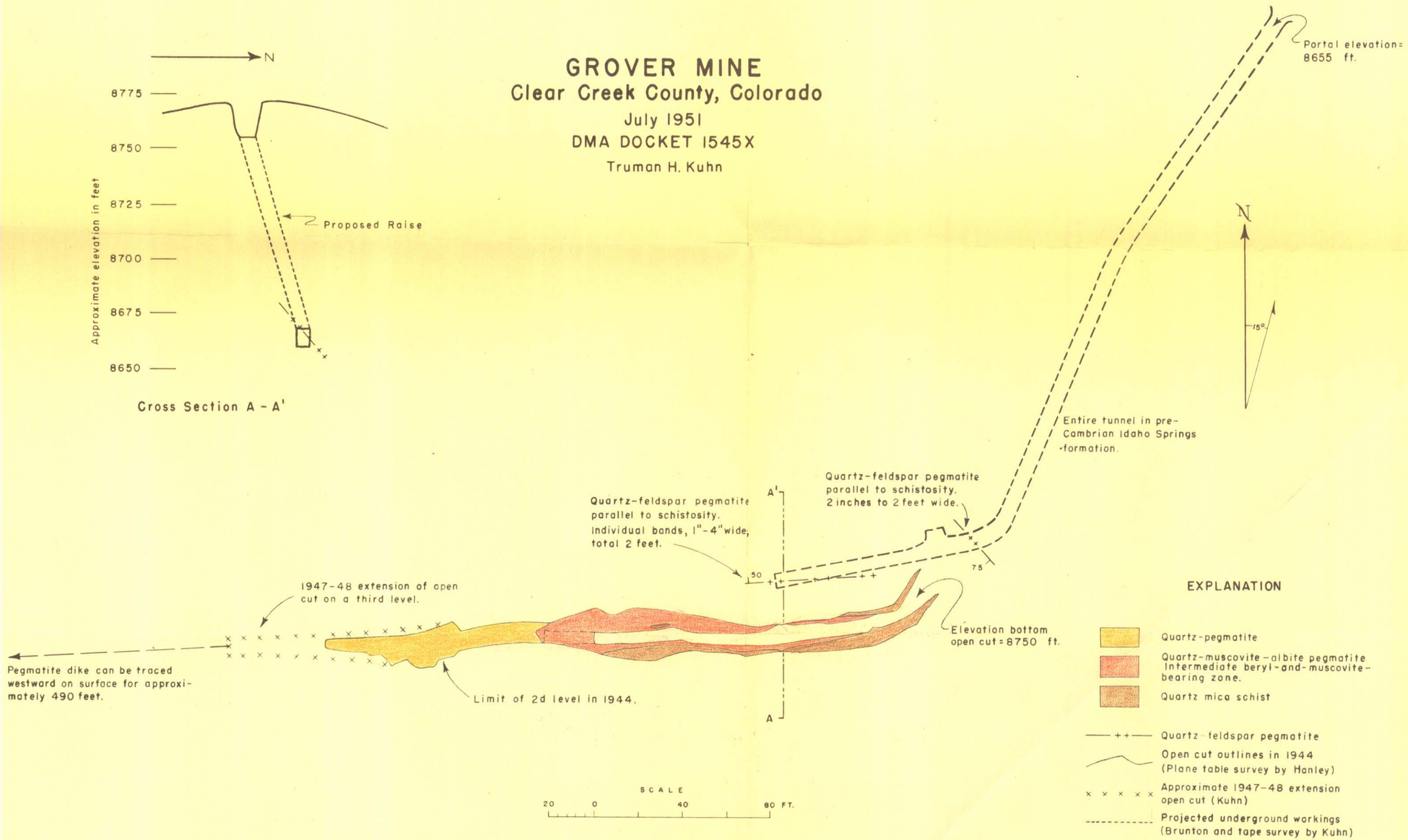
Clear Creek County, Colorado

July 1951

DMA DOCKET 1545X

Truman H. Kuhn

Cross Section A - A'



(1944 open cut outlines and geology of open cut from John B. Hanley, U. S. Geological Survey, Professional Paper 227, Plate 3, 1950)