IN REPLY REFER TO:

G-MD-CRM

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

July 24, 1953

Memorandum

REVIEW OF FIELD TEAM REPORT ON APPLICATION DMEA-2865 (asbestos)

To: L. G. Houk, Defense Minerals Exploration Administration
From: D. M. Larrabee, U. S. Geological Survey
Applicant: B. E. Swartout.
Name of property: Lucy and Lena Claims.
Location of property: Gila County, Arizona.
Date of field team report: April 1953.
Authorship of field team report: A. F. Shride and Lincoln A. Stewart.
Field team's recommendation: Denial.
Comments: I concur with Field Team.
ACTION SUGGESTED: Follow field team's recommendation.

D. M. Larrabee

Larrabee:jeh
G-7/24/53
cc: Director's reading 4212
Branch reading 4212
DMEA 3
Larrabee (files G-232)

DMEA 2865 Asbestos Denial

B. E. SWARTOUT, [illegible], Arizona. Lucy and Lena Claims, Gila County, Arizona.
Hold Report and Denial. The report was referred to the Committee Group.

7-24-56
[illegible]

IN REPLY REFER TO:

G-MD-CIM

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

Defense Administration
RECEIVED
JUL 24 1953

July 24, 1953

Memorandum

REVIEW OF FIELD TEAM REPORT ON APPLICATION DMEA-2865 (asbestos)

To: L. G. Houk, Defense Minerals Exploration Administration
From: D. M. Larrabee, U. S. Geological Survey
Applicant: B. F. Swartout.
Name of property: Loey and Lena Claims.
Location of property: Gila County, Arizona.
Date of field team report: April 1953.
Authorship of field team report: A. F. Shride and Lincoln A. Stewart.
Field team's recommendation: Denial.
Comments: I concur with Field Team.
ACTION SUGGESTED: Follow field team's recommendation.

D. M. Larrabee

Larrabee:jeh
G-7/24/53
cc: Director's reading 4212
Branch reading 4212
DMEA 3
Larrabee (files G-232)

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 20 1953

224 New Customhouse
Denver 2, Colorado

July 15, 1953.

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 200

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2865 (Asbestos), B. E. Swartout, Loey and Lena Claims, Gila County, Arizona.

Enclosed are four copies of the final report on the subject docket, two copies of Form 3b, and a copy of the letter of denial to the applicant.

W. H. King
W. H. King

A. N. Koschmann
A. N. Koschmann

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
7-24-53
(Date)

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

224 New Customhouse
Denver 2, Colorado

July 15, 1953.

Mr. Bruce E. Swartout
Box 204
McNary, Arizona

Re: Docket DMEA-2865

Dear Mr. Swartout:

Reference is made to your application for Government aid on the Losy and Lena claims.

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

A careful study of your property and data available to this agency reveals that the probability of disclosing mineable reserves of asbestos by your proposed exploration program is not considered sufficiently promising to justify Government participation. Under these circumstances, we regret to advise that your application for exploration aid is denied.

Very truly yours,

W. H. King
W. H. King
Field Team, Region IV

HMC:cwl

A. H. Koschmann
A. H. Koschmann
Field Team, Region IV

cc: Administrator, DMEA
WRStorms
RFRobinson
Subject
AHKoschmann (2)
Chron.

Reviewed by
DMEA OPERATING COMMITTEE
7-24-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

July 15, 1953.

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2865 (Asbestos), B. E. Swartout, Gila County, Arizona.

Enclosed are nine copies of the final engineering report on the subject docket.

The applicant requested $27,480.00 for exploration on the Loey and Lena claims.

The examiners concur that further exploration is not warranted and recommend that the application be denied.

We concur in this recommendation.

W. H. King
W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
7-24-53

MINING DIVISION
REGION IV

April 24, 1953

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Branch, Mining Div., Region IV

Subject : Final Report, Docket DMEA-2865, Losy & Lena Asbestos Prospect, Ft. Apache Indian Reservation, Gila County, Arizona.

Enclosed are original and 8 copies of the above report by L. A. Stewart of the Bureau of Mines. The Geological Survey participated in this examination and will submit a report on the geology, but as there seems to be a good possibility that the USGS report will not be submitted for sometime, we are sending you our report. I believe the geologist concurs with Stewart's recommendation.

As the deposit seems to be very local in extent and there appears to be no possibility of structural changes that would produce additional deposits in the area, the examiner recommends that an exploration loan be denied. I concur with this recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC: W. H. King (8)
R. F. Robinson
DMEA-2865
DF

WRStorms:als

Reviewed by
DMEA OPERATING COMMITTEE

7-24-53
(date)

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

200 New Customhouse
Denver 2, Colorado

June 29, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2865, Looy and Lena Claims (Asbestos), B. E. Swartout, Gila County, Arizona

Enclosed are the original and 8 copies of the geologic report by A. F. Shride of the U. S. Geological Survey covering the above docket.

It has been recommended that the loan be denied.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

Reviewed by
DMEA OPERATING COMMITTEE
7-24-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P.O. Box 4126, University Station
Tucson 5, Arizona

June 26, 1953

Memorandum

To: A. H. Koschmann, Denver, Colorado

From: R. F. Robinson, Tucson, Arizona

Subject: Geologic report, DMEA 2855, Loey and Lena Claims (Asbestos), B. E. Swartout, Gila County, Arizona

Enclosed are the original and 8 copies of the above report by A. F. Shride of the Geological Survey.

This report recommends that an exploration loan be denied because there is little geologic probability of finding a significant extension of the deposit. The report and recommendation have my approval.

Raymond F. Robinson

Raymond F. Robinson
Acting District Supervisor
Arizona - New Mexico

Enclosures 9

Reviewed by
DMEA OPERATING COMMITTEE
7-24-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA-2865, Loey and Lena Asbestos Prospect

Fort Apache Indian Reservation, Gila County, Arizona

Lincoln A. Stewart, Mining Engineer
U. S. Bureau of Mines

April 1953

Reviewed by
DMEA OPERATING COMMITTEE
7-24-53
(date)

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By Lincoln A. Stewart[1]

An application from Bruce E. Swartout of McNary, Ariz. for a $27,480 exploration loan on his Loey and Lena asbestos lease was received January 26, 1952 by the Tucson office of the Defense Minerals Exploration Administration. The application was docketed as DMEA-2865. The purpose of the loan was to construct an access road to the property, bulldoze the outcrop, and explore the deposit by 400 feet of drifting at 4 unspecified places.

The Loey and Lena property of 350 acres is held under a 10-year lease from the Fort Apache Indian Reservation. It is about 50 road miles north of Globe, Ariz. The property consists of 2 tracts, separated by Cibecue Creek Canyon. The 62-acre tract west of the creek contains the old Loey and Lena mine workings; this is the area for which exploration was proposed. An examination was made by the writer and Robert W. Ageton[1] on March 18 and 27, 1953, accompanied by A. F. Shride[2] and R. F. Robinson[2] on the latter date.

This deposit was worked in 1928-29 and again in 1935-40. The production was small; royalties were paid to the Indian Service for 8 tons of fiber, all grades.

The mineralization is contained in the pre-Cambrian Mescal limestone in bedding planes immediately under the massive algal member. The intrusion of the underlying diabase sill did not distort

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1/ Mining Engineer, U. S. Bureau of Mines
2/ Geologist, U. S. Geological Survey

the horizontal bedding of the formation. The old mine workings have thoroughly explored the deposit to the minable limits. The fiber content of the outcrop pinches out on either side of the workings. To the eastward, the diabase sill has cut out the favorable beds.

It is concluded that the deposit was very local in extent and there appears to be no possibility of structural changes that would produce additional deposits in the area examined. Therefore, it is recommended that the application of Bruce E. Swartout for exploration of his Loey and Lena property be denied.

LOEY AND LENA CLAIMS
BRUCE E. SWARTOUT
GILA COUNTY, ARIZONA
ASBESTOS

DMEA 2865

Geology

By
A. F. Shride
Geologist, U. S. Geological Survey

LOEY AND LENA CLAIMS
BRUCE E. SWARTOUT
GILA COUNTY, ARIZONA
DMEA 2865

ASBESTOS

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Description of Deposit	1
Conclusions	2

ILLUSTRATIONS

Figure 3 Loey and Lena mine workings — See engineering report

DESCRIPTION OF DEPOSIT

The Loey and Lena asbestos prospect, approximately 1 mile north of the junction of Cibicue Creek and the Salt River on the Fort Apache Indian Reservation, is typical of minor occurrences of chrysotile in the Arizona asbestos district. The asbestos-bearing serpentine zones parallel the bedding of the flat-lying pre-Cambrian Mescal limestone which is the host for the asbestos veins. The serpentine zones are exposed by 4 short adits from which stoping, totaling approximately 2500 square feet in area, has been done (see Figure 3 of engineering report), and are well exposed along approximately 400 feet of cliff outcrop.

The principal asbestos-serpentine zone is in the top one foot of the lower member of the Mescal limestone; a discontinuous zone, two feet lower, exists in a few places. A thick concordant diabase intruded the Mescal horizon 25 feet below the top of the lower member. Approximately 50 feet southeast of the southeastern end of the deposit the underlying sill may cut up discordantly to approximately the top of the member; talus covers the diabase-limestone contact so that exact relations cannot be seen.

Asbestos exists for an outcrop distance of 200 feet. The upper (principal) zone is 8 to 10 inches thick and contains traces of asbestos to veins totaling $1\frac{1}{2}$ inch in width. In a few places the zone is barren of asbestos. The upper zone in most places is incompletely serpentinized. The lower zone, which

contains asbestos only in a few places, includes asbestos veins totaling as much as $\frac{1}{2}$ inch. Except for approximately 50 feet of the southeastern part of the asbestos outcrop, where the asbestos is harsh, all asbestos exposed is soft and of good tensile strength. Asbestos crops out for a distance of 50 feet northwest of the stoped area. Although serpentine is common at the favorable horizon north and west of this point, only traces of asbestos were observed.

Apparently there was little preparation of the limestones for mineralization by pre-mineral faulting. Post-mineral bedding-plane faulting is apparent in the area. The host limestone beds are horizontal. There are no folds in the limestone. Folds if existent would probably be favorable loci for concentrations of asbestos.

CONCLUSIONS

The stratigraphic units in which asbestos is found at the Loey and Lena claims are favorable units for the localization of asbestos; the diabase is in favorable close proximity to these units. Nevertheless, there is very little asbestos except where pre-mineral bedding-plane faulting is most apparent. This faulting, which is essential to localization of significant amounts of asbestos, was not widespread. No folds favorable to concentrations of ore exist. The exposures are probably typical of the mineralized area, and greater amounts of asbestos are not likely to be penetrated

by the proposed exploration. Therefore it is recommended that the application for an exploration loan be denied.

DMEA-2865, LOEY AND LENA ASBESTOS PROSPECT
FORT APACHE INDIAN RESERVATION, GILA COUNTY, ARIZONA

Engineering Report

By Lincoln A. Stewart
Mining Engineer
U. S. Bureau of Mines

April 1953

DMEA-2865, LOEY AND LENA ASBESTOS PROSPECT
FORT APACHE INDIAN RESERVATION, GILA COUNTY, ARIZONA

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Engineering report	Page
Introduction	1
Location and accessibility	1
Ownership and extent	2
History and production	2
Description of the deposit	3
Proposed exploration and cost	5
Conclusions	5
Recommendations	6

ILLUSTRATIONS

Figure		Following page
1	Location map	1
2	Property map	2
3	Map of Loey and Lena mine workings	4

INTRODUCTION

An application was submitted to the Defense Minerals Exploration Administration for a $27,480 exploration loan by Bruce E. Swartout for the Loey and Lena asbestos prospect. This application, docketed as DMEA-2865, was received by the Tucson office of the Defense Minerals Exploration Administration on January 26, 1953. The work was to consist of dozing an access road to the property and stripping the outcrop for an estimated cost of $15,000; and 400 feet of exploratory drifting at $10,000. The drifting was to be in 4 unspecified locations.

The property is held under a 10-year lease from the Fort Apache Indian Reservation. The mine previously had been visited by the writer in 1942 and again in 1943. The current examination was made by the writer and Robert W. Ageton[1/] on March 18 and 27, 1953. The latter visit was made in company with A. F. Shride and Ray F. Robinson, geologists of the Geological Survey, and the applicant.

LOCATION AND ACCESSIBILITY

The Loey and Lena property is located near the southern boundary of the Fort Apache Indian Reservation. It is in 2 tracts situated along the cliffs on each side of Cibecue Creek about 1 mile north of the Salt River (figure 1). The application states that it lies in approximate secs. 4, 5, 8, 9 and 16, T. 5 N., R. 17 E., unsurveyed.

1/ Mining Engineer, U. S. Bureau of Mines

It is reached from Globe by traveling 43 miles north on paved U. S. Highway 60, turning left a hundred yards beyond the Salt River bridge and following a fair dirt road down the north side of Salt River to Salt River Draw, a distance of 6.2 miles. Turn right up this stream for 1.2 miles to the end of the road. From there a 1½-mile trail leads over the ridge to the Loey and Lena prospect. These mine workings are in the base of a towering cliff face at an altitude of about 4,000 feet.

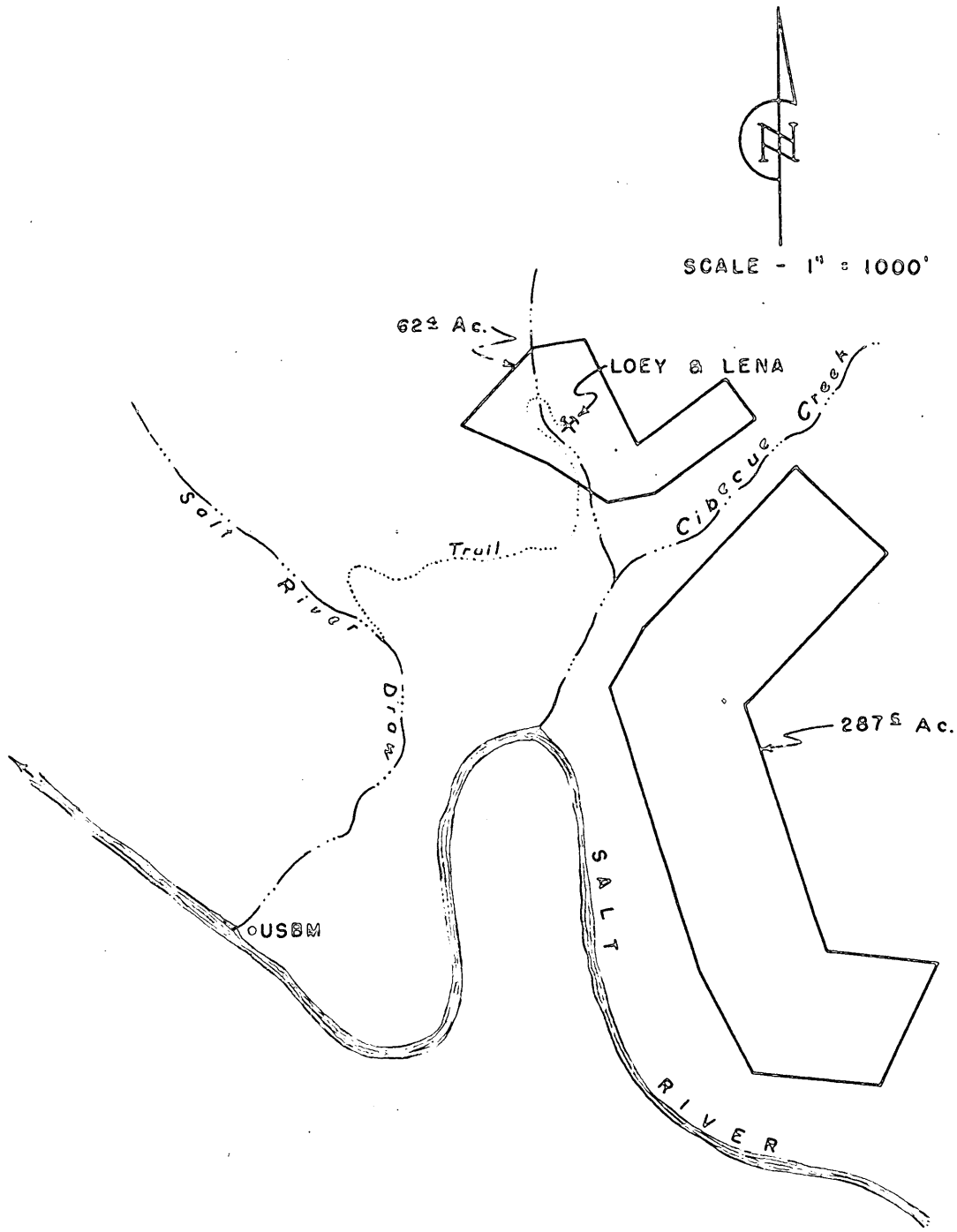
OWNERSHIP AND EXTENT

The Loey and Lena No. 2 lease, consisting of 350 acres in 2 tracts, is leased by Bruce E. Swartout and Eugene V. Ethelbah for a 10-year period from the Fort Apache Indian Reservation. The 2 tracts are separated by the deep, cliff-lined canyon of Cibecue Creek. Of interest to this application is the 62.4 acre parcel on the west side of Cibecue Creek that contains the Loey and Lena prospect (figure 2).

It is to be noted that the Fort Apache Reservation does not require mining leases to be laid out as conventional mining claims.

HISTORY AND PRODUCTION

The Loey and Lena deposit was first worked in 1928-29 and again during the period of 1935-40. All of the work was done by hand-steel methods. The former lessee, Chas. O. Reidhead, boarded up one of the stope entrances and lived in the mine during part of the 1930 depression years. During this time he mined and hand-cobbed the



SECTIONS 4, 5, 8, 9 & 16

T. 5 N. R. 17 E.

UNSURVEYED

FORT APACHE INDIAN RESERVATION

COPIED FROM DOCKET MAP

DMEA 2865

FIGURE 2. - MAP OF LOEY & LENA NO. 2 LEASE

ore to limits far below that which would normally be considered commercial. Records of the Indian Service at Whiteriver indicate that royalties had been paid on about 8 tons of fiber, all grades.

In 1943, Reidhead interested a Phoenix man in the property. A small mill was constructed at the mine in the fall of 1943, but it was never operated.

It is not known when Reidhead relinquished his lease. The present applicant secured a lease on Reidhead's claim and adjacent areas in January 1953, but has done no work on the property. The writer first visited this area in 1942 and thus knows that no work has been done in the mine since that time.

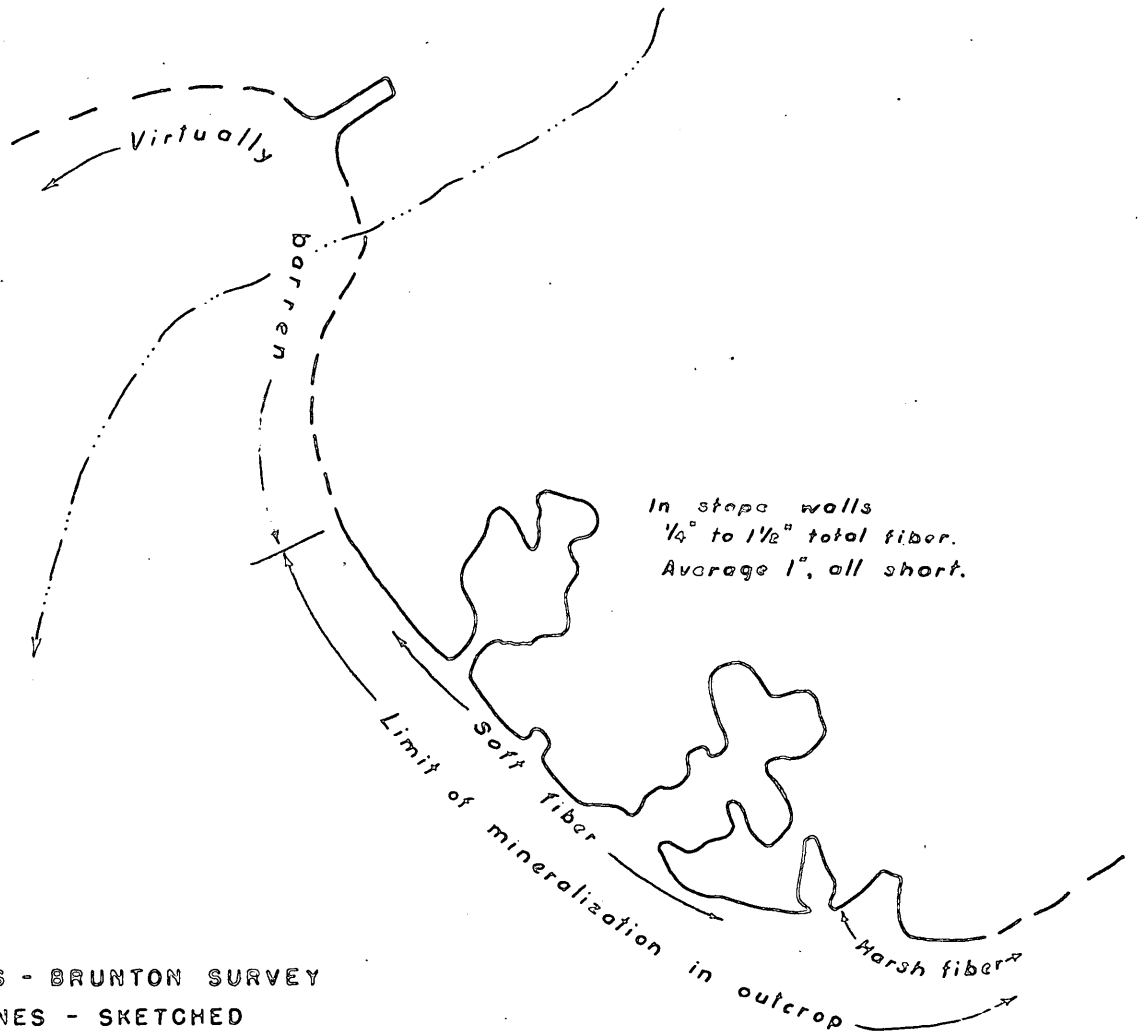
DESCRIPTION OF THE DEPOSIT

The outcrop of the Loey and Lena deposit is confined to a length of about 200 feet along the cliff face. The main asbestos-bearing serpentine zone is immediately under the base of the massive algal member of the Mescal limestone formation. Locally there is a second zone about 2 feet below the main zone. A heavy diabase sill underlies the mined area, but the contact is obscured by overburden. In the canyon about 100 feet west of the workings the top of the sill is 25 feet below the algal base. At about 100 feet east of the mined area the diabase has cut up to the base of the algal member.

The limestone formations are virtually horizontal. The only disturbance of the beds caused by the diabase intrusive appears to be a bedding plane fault about 4 to 5 feet below the ore zone.

The deposit consisted of 2 lenses of ore that were mined out by two 50-foot stopes averaging 20 to 25 feet wide (figure 3). Judging from the remnants of the fiber zone left in the stope walls, the asbestos produced must have been very soft and of high tensile strength. However, these lenses have been completely worked out. The fiber showing in the stope walls usually occurs in several veinlets, the wider of which contain partings that reduce the individual fiber lengths. The total or combined fiber length over the stopes varies from $\frac{1}{4}$ to $1\frac{1}{2}$ inches, averaging less than 1 inch. Except for a couple of local areas where a little No. 2 is visible, all the fiber would grade as Nos. 3 and 4. At several places in the stope faces there is virtually no fiber. A more detailed discussion of the veins will be found in the Geologic section of this report, written by the Geological Survey's geologist.

The fiber veins in the outcrop pinch out about 50 feet west of the west stope. The 20-foot drift furtherwest contains much serpentinized limestone, but no fiber. The asbestos in the easternmost opening totals about 1 inch of the harsh, spicular type, and the vein pinches out about 25 feet eastward. Further eastward the diabase sill rises to the base of the algal limestone, thus cutting out the potential ore-bearing beds. Although talus slopes obscure the contact, occasional outcropping patches of diabase indicate that the contact remains at or above the base of the algal limestone for several thousand feet northeastward.



SCALE - 1" = 50'

SOLID LINES - BRUNTON SURVEY
DASHED LINES - SKETCHED

DMEA 2867

FIGURE 3. - LOEY AND LENA MINE WORKINGS - GILA COUNTY, ARIZONA

The part of the property east of Cibecue Creek was not examined as the applicant himself had not investigated it and had no exploration plans for that side. Most of the area of this tract could be viewed from the west side of the canyon, and no prospect pits or old workings could be seen.

PROPOSED EXPLORATION AND COST

The application states "It is proposed to spend $15,000 with bulldozer equipment, compressor, etc., in building satisfactory roads to the property and in opening up the face of the veins to properly evaluate ore; $10,000 is needed to sink 400 feet of adits in four selected locations to property evaluate the fiber". A contingency factor was added to these estimated costs that made a total project cost of $27,480.

As the project is not considered justifiable, there is no point in discussing the elements on which these costs are based.

CONCLUSIONS

The proposed exploration work was limited to the immediate vicinity of the Loey and Lena prospect. This is the only known mineralized area on the applicant's property. A previous operator has mined all of the commercial fiber from the two small lenses. The underground work has demonstrated that the ore zones are pinching out laterally and at depth. The well-exposed surface outcrops indicate that the mineralization terminates within a very short distance on either side of the workings.

The underlying diabase intrusion did not disturb the horizontal bedding of the limestone. East of the mine workings, the rising diabase sill cuts out the favorable beds without distortion of the adjacent limestone. West of the workings the diabase contact is too far below the favorable beds to have caused mineralization.

The workings are on the southern point of a long ridge, consequently the level bedding visible along the northeast side of the ridge would indicate that no disturbance of the bedding would be expected within the limit of reasonable exploration into the hill.

It is concluded that the present Loey and Lena workings have exhausted the small local deposits and that no structural changes can be expected within the hill that would furnish a target for possible exploration.

RECOMMENDATIONS

On the basis of the above conclusions, there appears to be no possible justification for granting this exploratory loan. Therefore, it is recommended that the application of Bruce E. Swartout for exploration of his Loey and Lena lease be denied.

July 23, 1953

Memorandum

Docket No. DMEA-2865 - Asbestos
Bruce E. Swartout
Loey and Lena Claims
Gila County, Arizona

To: Mr. C. O. Mittendorf

From: Lawrence G. Houk

Subject: Concurrence of the denial on the subject application.

The Nonmetallic Minerals Division concurs with Region IV in the denial of this application because the deposit appears to be very local in extent, and no structural features are noted that would indicate potential deposits in the area.

LGHouk:gad 7/23/53

Copy to: Admr. R. File
Docket File
Mr. Houk