600

AUG 10 1955

The Ferris Company
1119 E. Ash Street
Mason, Michigan

Re: Docket No. DMA-3716 - Asbestos,
Talc and Vermiculite
The Ferris Company
Rosebud, Tammy, Johnny, and
Baby Jan Groups of Claims
Carbon County, Montana

Gentlemen:

Your application for aid in an exploration project for asbestos (chrysotile), talc, and vermiculite together with other information available to us in Washington relating to the above-named property has been reviewed.

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

Careful study of all our information, although noting asbestos mineral and minor amounts of talc of non-strategic grade on your property, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied without prejudice to your property. If future work at your property reveals evidence (asbestos or talc of strategic grade) which would materially alter this opinion, be assured we will be pleased to consider a new application.

Vermiculite, which you also mentioned in your application, is not eligible for exploration assistance by the Government.

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

Sincerely yours,

E. O. Mittander

Administrator

JHopkins:gad 8/3/55
Rewritten 8/5/55
Copy to: Admr. R. File
Docket
Operating Committee
Mr. Kiilsgaard, 5222
Mr. Kennedy, 3524
Mr. Houk
Mr. Hopkins
Field Team, Region I

August 3, 1955

Memorandum

To: Administrator

From: Nonmetallic Minerals Division

Subject: A denial of exploration assistance and summary report

By: James Hopkins

1. Docket No. DMEA-3716 - Asbestos, Talc and Vermiculite
Property: (Consisting of four groups of four claims each); Rosebud, Tommy, Johnny, and Baby Jan in approximately the S.W.¼ of T.6 S., R.18 E., M.P.B. & M. Carbon County, Montana

Applicant: The Ferris Company
1119 E. Ash Street
Mason, Michigan

Application: MF-103, dated March 5, 1955.

Work proposed:	
2,500 ft. Diamond Drilling @ $3.00	$7,500.00
Bulldozing & Surface Excavating	34,716.90
New Buildings	2,000.00
	$44,216.90

No contract: Application denied.

2. Comments:

The asbestos deposit is in the Precambrian rocks of the Beartooth Mountains. The fiber occurs in ultrabasic rock inclusions in an intrusive quartz monzonite.

The ultrabasic rock was altered, in part, to serpentine before intrusion of the monzonite. Close to the quartz monzonite the serpentine has been altered to a rock which may be classified as a soapstone.

Possibly five bodies of serpentine have been exposed by bulldozing on the property. Only one body of soapstone-serpentine rock - 350' long by 140' wide - contains appreciable asbestos fiber.

The exposed zones carrying asbestos fiber are estimated to average about 25 percent cross-fiber; some slip fiber is present.

A rough estimate of the amount of asbestos-bearing rock shows about 5,000 tons of indicated ore and about 8,000 tons of geologically inferred ore that will average about 25 percent fiber.

The 25 percent fiber is estimated to be made up of:

1% over 3/4 inch
4% 3/8" to 3/4"
10% 1/8" to #/8"
10% less than 1/8"
Magnetic iron is 0.9%; total iron is 1.52%.

In spite of the fair grade of fiber, the total possible amount is believed much too little to justify the cost of building a mill and of road improvement.

Copies of a letter from G.S.A. Consultant for Asbestos, Mr. Jesse M. Weaver, stating that a sample showed the asbestos was not stockpile grade is attached herewith.

Mr. Weaver states that the fiber is definitely "harsh" but quite strong. He also emphasizes the fact that it is therefore unsuitable for the National Stockpile. However, he states, "that with a little change from the harsh side to the soft side it could easily become a textile fiber."

Samples of fiber submitted by the applicant were taken in bulldozer trenches and were undoubtedly truly representative of the entire deposit. It is not believed that the "harshness" shown in the tests made by Mr. Weaver could in any manner be attributed to any weathering action.

These trenches were available to examination by the field team. In their report there is no evidence offered that would substantiate the belief that the fiber could be expected to change from a "harsh" to a "soft" type in depth.

I am of the opinion that an exploration project based on the hopes that a soft fiber suitable for the National Stockpile will be encountered in depth is not justified, and would certainly be very unsound practice.

The Nonmetallic Minerals Division concurs in the recommendation of the Field Team that the application be denied without prejudice. The Commodity Divisions of the Bureau of Mines and Geological Survey also concur.

James Hopkins
Nonmetallic Minerals Division

JHopkins:gad 8/3/55
Copy to: Admr. R. File
Mr. Houk
Mr. Hopkins

The mineral talc noted by the field examiners occurring as an alteration product of the serpentine cannot be classified as block-steatite in grade.

The applicant also requested exploration assistance for vermiculite. This mineral, however, is not eligible for Government aid.

IN REPLY REFER TO:

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

RECEIVED
AUG 1 1955

July 29, 1955

Re: DMEA 3716
The Farris Co.
Rosebud Group
Carbon Co., Mont.
$44,216.90 - Asbestos

Memorandum

To: L. G. Houk, Defense Minerals Exploration Administration

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

Subject: Review of Comment on quality of asbestos fiber.

In the opinion of Mr. Weaver, the fiber submitted is not of textile grade, but "with a little change to the soft side it could easily become textile fiber." The change presumably might come with greater depth.

In the circumstances the applicant should demonstrate the suitability of the surface and near surface material or obtain samples which because of greater depth show the change Mr. Weaver considers possible.

In the light of the opinion, I concur with the recommendation of the Field Team.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-7/29/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
Oliver Bowles, 3516

IN REPLY REFER TO:

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

RECEIVED

July 15, 1955 JUL 18 1955

Re: DMEA 3716
The Ferris Co.
Rosebud Group
Carbon Co., Mont.
$44,216.90 - Asbestos

Memorandum

To: L. G. Kank, Defense Minerals Exploration Administration

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

Subject: Review of Field Team report

This asbestos showing, considering the length of time it has been known, the work done upon it and the amount and high grade of the material uncovered, is entitled to more work. Apparently, as indicated by the map, a large area of unknown depth is potential ground. Probably the applicant can and will continue the work. However with the exposures already made, further work could be considered exploration and a contract would not be out of order.

The zone could no doubt be outlined with a magnetometer and a few drill holes would point up the over-all potentialities at less cost than the work proposed under 6-D of the application.

Consideration of such a program, if agreed to by the applicant, should be accorded this application.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-7/15/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket
O. Bowles, 3516

GENERAL SERVICES ADMINISTRATION

Emergency Procurement Service
Washington 25, D. C.

Defense Minerals Administration
U. S. Department of Interior
Washington 25, D. C.

Attention: Mr. Lawrence G. Houk
Chief, Nonmetallic Minerals Division

Dear Mr. Houk:

Re: DMEA - 2716 Asbestos

Reference is made to your letter of March 28, 1955 and sample of asbestos for evaluation as to acceptability for the Stockpile. Report on this sample has been delayed because of Mr. Weaver's trip to Venezuela.

A copy of his report dated April 14, 1955 is enclosed. It appears that the material in the form in which it was submitted for examination would not be acceptable for the Stockpile but he has suggested possibilities for its use in industry.

Very truly yours,

/s/ H. C. Maull, Jr.

H. C. Maull, Jr.
Director, Purchase Division

Enclosure

GENERAL SERVICES ADMINISTRATION

Emergency Procurement Service
~~Washington 25, D.C.~~
4411 North 18th street
Phoenix, Arizona

April 14, 1955

Emergency Procurement Service,
7th & D Streets S.W.
Washington, D.C.

Capt. H. C. Maull, jr.,
Director, Purchase Division

Dear Capt. Maull:

Asbestos
DMEA - 3716
EPS No. 1104.

A closer examination of the sample than it was possible to make in Washington has improved my opinion of it. Althoughtit is a harsh asbestos it is a strong fiber, a characteristic not usually found in the harsh type. It may well be that the character of the deposit would improve with development to learn what can be found at greater depth.

The fiberized material is very short--too much hammer milling. If fiberized to a considerably coarser stage, thereby preserving length of fiber, it is very probable that the material would be suitable for the asbestos-cement branch of the asbestos industry. With a little change to the soft side it could easily become a textile fiber.

Yours very truly,

/s/ Jesse M. Weaver

Jesse M. Weaver,
Consultant.

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

RECEIVED
JUL 25 1955

July 22, 1955

Memorandum

To: Lawrence G. Houk, Chief, Non-Metallic Minerals Division, Defense Minerals Exploration Administration

From: Commodity Specialist, Branch of Construction and Chemical Materials

Subject: Docket No. DMEA 3716 (asbestos) - The Ferris Company, Rosebud, et. al. claims, Carbon County, Montana

The report on the Ferris Company asbestos claims indicates that there is little hope of developing a deposit large enough for sustained production. The exposed segments of serpentine containing asbestos are small and such drilling as has been done shows a limited depth for the asbestos bearing rock.

We therefore concur with the recommendation that the application be denied without prejudice.

D. O. Kennedy

Copy to: Files
Div. of Minerals
Br. of Const. & Chem. Mats.
Mr. Kennedy
Thor H. Kiilsgaard, Room 5222, Geological Survey

Mr. [illegible]
Bureau of Mines
Room No 3570
Interior Bldg

GENERAL SERVICES ADMINISTRATION

Emergency Procurement Service
Washington 25, D. C.

Defense Minerals Administration
U. S. Department of Interior
Washington 25, D. C.

Attention: Mr. Lawrence G. Houk
Chief, Nonmetallic Minerals Division

Dear Mr. Houk:

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A copy of his report dated April 14, 1955 is enclosed. It appears that the material in the form in which it was submitted for examination would not be acceptable for the Stockpile but he has suggested possibilities for its use in industry.

Very truly yours,

/s/ H. C. Maull, Jr.

H. C. Maull, Jr.
Director, Purchase Division

Enclosure

GENERAL SERVICES ADMINISTRATION

Emergency Procurement Service
~~Washington 25, D.C.~~
4411 North 18th street
Phoenix, Arizona

April 14, 1955

Emergency Procurement Service,
7th & D Streets S.W.
Washington, D.C.

Capt. H. C. Maull, jr.,
Director, Purchase Division

Dear Capt. Maull:

Asbestos
DMEA - 2716
EPS No. 1104.

A closer examination of the sample than it was possible to make in Washington has improved my opinion of it. Although it is a harsh asbestos it is a strong fiber, a characteristic not usually found in the harsh type. It may well be that the character of the deposit would improve with development to learn what can be found at greater depth.

The fiberized material is very short---too much hammer milling. If fiberized to a considerably coarser stage, thereby preserving length of fiber, it is very probable that the material would be suitable for the asbestos-cement branch of the asbestos industry. With a little change to the soft side it could easily become a textile fiber.

Yours very truly,

/s/ Jesse M. Weaver

Jesse M. Weaver,
Consultant.

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

RECEIVED
JUL 11 1955

July 7, 1955

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

Re: Docket No. DMEA 3726 (asbestos)
The Ferrie Company
Rosebud, et al claims
Carbon County, Montana

Dear Mr. Selfridge:

Enclosed are four copies of a geologic appraisal of the cited application by J. S. Vhay and D. F. Kellum, geologists, U. S. Geological Survey.

It is pointed out in the memorandum that although the deposit contains asbestos fiber having good chemical and physical properties, there is much too little possible tonnage in the known serpentine bodies for a profitable operation.

The Field Team therefore concurs with the recommendation of the examiners that the application be denied without prejudice. The Field Team believes, however, that the applicant should be encouraged to prospect for similar and larger asbestos-bearing serpentine bodies, which, if found, might justify granting a contract on a new application.

By Field Team, Reg. I, NW District

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: USBM (2)
USGS (SRC)
Vhay
Kellum

Reviewed by
DMEA USE ONLY (REVIEWER)

(Over)

D. H. A.

SPECIAL

No.

CALVIN PIERSON

COLLEGE PARK

FOR YOUR INFORMATION AND REPORT

Dmea

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
JUL 11 1955

June 9, 1955

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: J. S. Vhay and Donald Kellum, Geologists, U. S. Geological Survey

Subject: Docket No. DMEA-3716 (asbestos), Application examination of the Rosebud, Tommy, Johnny, and Baby Jan Groups of Claims, Carbon County, Montana, The Ferris Company, 1119 E. Ash Street, Mason, Michigan.

Introduction

An application, Docket No. DMEA-3716 (asbestos), was received at the Spokane office on March 14, 1955, from The Ferris Company, through the Washington office, together with supporting evidence that indicated that the asbestos fiber was of acceptable quality. The property, and vicinity, was examined by J. S. Vhay assisted by Donald Kellum on May 1 to 4, 1955. E. E. Ferris, president of The Ferris Company, and Louis Psenda, discoverer of the deposit, accompanied the examiners.

Recommendations

As the possible amount of asbestos in the known serpentine bodies is too small to justify road improvements and the building of a mill, it is recommended that the present application be denied without prejudice, unless the DMEA is willing to assist in a straight prospecting program aimed at finding more and larger asbestos-bearing serpentine bodies in the general vicinity.

Reviewed by
DMEA OPERATING COMMITTEE
(date)

Location and Accessibility of Property

The property is approximately in the SW¼ of T. 6 S., R. 18 E., Carbon County, Montana. It is on the east side of the East Rosebud River at the top of the main canyon where the river leaves the Beartooth Mountains, about 1,300 feet above the bottom of the canyon, at an assumed altitude of 6,500 feet.

The deposit is 4 miles by a rough wagon road from a point on a county road about 28 miles northwest of Red Lodge, Montana; the road from Red Lodge is "blacktopped" for about 14 miles, and either gravel or dirt the rest of the way.

The property consists of four groups of four claims each, which, according to the application, are recorded on pages 254 to 268 and 280 to 294, Book No. 7, in the record book of Carbon County, Montana. The area around the original discovery of asbestos has been considerably trenched by bulldozer, and the applicant had an oil-well driller put down some shallow holes (maximum depth 70 feet) with a rotary drill. The drill holes are located, some only approximately, on plate 1.

Geology

The deposit is in the Precambrian rocks of the Beartooth Mountains, a short distance south of where the Precambrian rocks are thrust over Paleozoic limestones; on the west side of the East Rosebud River the Paleozoic rocks are believed to be entirely covered by the older rocks, and the younger (Mesozoic) rocks are covered almost completely by large lateral moraines.

The asbestos occurs in ultrabasic rock inclusions in an intrusive quartz monzonite, which is present under large areas in the Beartooth Mountains. Near the contacts with the ultrabasic rock the quartz monzonite has apparently taken up, by reaction, some of the magnesium in the older rock, inasmuch as it shows rosettes of talc or tremolite which have replaced some of the minerals of the quartz monzonite. Numerous narrow dikes of diabase cut the quartz monzonite throughout the property; the mistaken identification of the diabase float material as serpentine gave the applicant the impression that there was much more serpentine on the property than is actually the case.

The ultrabasic inclusions in the quartz monzonite (see plate 1) consisted originally of olivene and some pyroxene (probably the orthorhombic variety). The ultrabasic rock may have been similar to that found in the Stillwater Complex, but more likely was similar and related to that found west of Red Lodge. It is believed that the ultrabasic was altered, in part, to serpentine before intrusion of the quartz monzonite. The serpentine rock shows various colors, from a light-yellowish green through green to extremely dark green, approaching black. In places, it is massive, elsewhere it is streaky in appearance because of layers of magnetite. In thin section it is seen to consist principally of antigorite; another chlorite mineral, more yellowish brown in color is present and may be a replacement of the original pyroxene in the rock.

Closer to the quartz monzonite, the serpentine has been altered by the later intrusive to a rock which, in general, may be classified as a soapstone. It consists principally of talc, replacing an amphibole (tremolite?) some of which remains in the rock, plus chlorite, magnetite, and, in places, a biotite which might be classified as vermiculite. In places, the rock nearer the quartz monzonite consists almost entirely of chlorite, or chlorite (after amphibole) with seams of talc.

At a few places the soapstone or the serpentine contains, mostly on joints, a bright red hematite which has been mistaken for cinnabar. Elsewhere, near the contact, the white quartz veins appear to have been squeezed into sheared serpentine (now talc) mechanically.

Possibly five bodies of serpentine have been exposed by bulldozing on the property (see plate 1). Of the two bodies to the northwest, the smaller one to the south appears to consist principally of soapstone. Only three small "tails" from this one, consisting of talc and vermiculite, are exposed in the trench; part of it is exposed in an outcrop above the trench, and the rest of it is covered by soil and moraine. The larger body consists mostly of soapstone in the trench; a little serpentine is exposed downhill to the northwest for about 100 feet. Above the trench some soapstone and serpentine can be found up until it is covered by morainal material. A little cross fiber asbestos (some of it up to 1.5 inches in length) is exposed in the bottom of the trench and some slip fiber is present in the wall of the trench.

The soapstone-serpentine body shown in the southwest part of the map (plate 1) is the only one which contains appreciable asbestos fiber. Where it is exposed in the lower trench, a strong shear zone striking N. 15° W. and dipping 35° NE. is overlain by about 4 feet of serpentine containing considerable asbestos fiber between one-eighth and half an inch long; 2 feet more of the serpentine contains rare veinlets of cross fiber and apparently some slip fiber. On the south side of this serpentine body a zone containing abundant asbestos strikes about N. 80° E. and dips 70° N.; it is separated from the quartz monzonite by about 2 feet of amphibole-talc rock. On the northeast side of this body, exposed in a trench about 30 feet north-northwest of Drill Hole No. 1, is a shear zone striking N. 5° E., dipping 80° E., east of which is about 8 feet of serpentine containing both cross and slip fiber. The largest area containing asbestos is approximately where these two zones intersect, around Drill Holes No. 1 and 2. The east end of this area of fiber is not exposed, but farther east a strip about 25 feet wide and 70 feet long consists of soapstone (talc, chlorite, and a little relic amphibole), which represents the east end of the inclusion.

Two more inclusions lie farther east. Parts of them are exposed in bulldozer trenches; float indicates further extensions of them, and some of the contacts were indicated by a Fischer M-Scope, which gives a decided change of reaction when it is carried across a contact. No asbestos was found in either of these inclusions, which consist, in part, of partially serpentinized ultrabasic rock, in part of straight serpentine, and which have narrow bands of soapstone along their contacts with the quartz monzonite.

Estimated Grade and Reserves

The exposed zones carrying asbestos fiber are estimated to average about 25 percent cross fiber; some slip fiber is present, but probably not enough to change the estimated grade appreciably. The 25 percent fiber is estimated to be made up of 1 percent over three-fourths inch in length, 4 percent three-eights to three-fourths inch, 10 percent one-eighth to three-eighths inch, and 10 percent less than one-eighth inch. According to a letter from George C. Selfridge to A. E. Weissenborn (3/24/55), "* * * the test of sample submitted by the applicant shows * * * The magnetic iron [to be] 0.9% and the total iron 1.52%. A preliminary examination of the fiber strength indicates it is acceptable."

A rough estimate of the amount of asbestos-bearing rock in the southwest inclusion (too little asbestos was seen in the northwest inclusion to justify any estimate) shows about 5,000 tons of indicated ore and about 8,000 tons of geologically inferred ore.

In spite of the good grade of fiber and the amount present in the asbestos-bearing rock, the total possible amount is believed much too little to justify the cost of building a mill and of road improvement. Unless much more asbestos-bearing serpentine can be found in this area, it is believed that the deposit cannot be mined at a profit.

Summary

The Ferris asbestos deposit occurs in a serpentine inclusion about 350 feet long and 140 feet wide in quartz monzonite. Of three other serpentine inclusions of about the same size and one much smaller one, only one shows a little asbestos fiber. The asbestos-bearing rock carries considerable fiber averaging about one-quarter inch long, of good grade chemically and physically; however, it is recommended that the application be denied without prejudice until much more asbestos-bearing serpentine is discovered.

Enclosure
Distribution:
DMEA(4)
USBM(2)
USGS(SRO)
Docket
Kellum
Vhay

Mr. A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
South 137 Howard Street
Spokane 4, Washington

Subject: Docket No. DMEA-3716 - Asbestos, et al.
The Farris Company
Rosebud, Tommy, Johnny, and
Baby Jan Groups of Claims
Carbon County, Montana

Dear Mr. Weissenborn:

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

Sincerely yours,

Chairman, Operating Committee

Approved:

Member, Bureau of Mines

Member, Geological Survey

LGHouk:gad 3/11/55
Copy to: Admr. R. File
Docket
Operating Committee
Mr. Kiilsgaard, 5222
Dr. Bowles, 3516
Mr. Houk

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

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Dr. Bowles, 3516
Mr. Houk

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

Subject: Docket No. DMEA-3716 - Asbestos, et al.
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Rosebud, Tommy, Johnny, and
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Chairman, Operating Committee

Approved:

Member, Bureau of Mines

Member, Geological Survey

LGHouk:gad 3/11/55
Copy to: Admr. R. File
Docket
Operating Committee
Mr. Killsgaard, 5222
Dr. Bowles, 3516
Mr. Houk

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION 600
WASHINGTON 25, D. C.

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

Subject: Docket No. DMEA-3716 - Asbestos, et al.
The Ferris Company
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Carbon County, Montana

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Chairman, Operating Committee

Approved:

Member, Bureau of Mines

Member, Geological Survey

LGHouk:gad 3/11/55
Copy to: Admr. R. File
Docket
Operating Committee
Mr. Kiilsgaard, 5222
Dr. Bowles, 3516
Mr. Houk

Docket Copy
Surname:
Houk

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION 600
WASHINGTON 25, D. C.

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

Subject: Docket No. DMEA-3716 - Asbestos, et al.
The Ferris Company
Rosebud, Tommy, Johnny, and
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Chairman, Operating Committee

Approved:

Member, Bureau of Mines

Member, Geological Survey

LGHouk:gad 3/11/55
Copy to: Admr. R. File
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Mr. Kiilsgaard, 5222
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Mr. A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Subject: Docket No. DMEA-3716 - Asbestos, et al.
The Ferris Company
Rosebud, Tommy, Johnny, and
Baby Jan Groups of Claims
Carbon County, Montana

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Sincerely yours,

Chairman, Operating Committee

Approved:

Member, Bureau of Mines

Member, Geological Survey

LGHouk:gad 3/11/55
Copy to: Admr. R. File
Docket
Operating Committee
Mr. Kiilsgaard, 5222
Dr. Bowles, 3516
Mr. Houk

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

600

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

Subject: Docket No. DMEA-3716 - Asbestos, et al.
The Ferris Company
Rosebud, Tommy, Johnny, and
Baby Jan Groups of Claims
Carbon County, Montana

Dear Mr. Weissenborn:

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

Sincerely yours,

[illegible] Secretary.

Chairman, Operating Committee

Approved:

Please make a rough estimate based upon microscopic fibers in the face of the distribution of the plus 3/8" rubber and the minus 3/8" fibers.

Member, Bureau of Mines

Member, Geological Survey

[illegible]

[illegible] magnetite iron. [illegible] shows the iron content to be [illegible] magnetite iron.

38.3%
asbestos

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION 600
WASHINGTON 25, D. C.

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

Subject: Docket No. DMEA-3716 - Asbestos, et al.
The Ferris Company
Rosebud, Tommy, Johnny, and
Baby Jan Groups of Claims
Carbon County, Montana

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Sincerely yours,

Chairman, Operating Committee

Approved:

Member, Bureau of Mines

Member, Geological Survey

Jr. [illegible] Samples # 1 & 4 & 3 & 9 + 8

Ferris Co

Sample #		Size	Fiber strength	Fiber content %	Fiber length
1 - separated fiber		Gross - Semi harsh		= 100%	.6 some partings
2	1 pieces semi weathered			50%	.1-.5 partings ± .3
3	1 pieces weathered	3 × 1 × 1		60%	.1 MAX
4	2 pieces semi weathered	2 × 3 × 1	harsh	50%	1/4 - 3/8
		3 × 1 × 1.	semi	40%	1/8 - 1/2 some partings
5 -	1/2 durbar 1/2 Sagafine	4 × 2 × 2	harsh	20%	.1 - .4 partings
Rock fresh 6 - nkd. Slip fiber	3 pieces -	1 × 1 × 1/2 2 × 3/4 × 3/4 2 × 3 × 1		- 1%	Slip ?
Rock fresh 7		4" × 3" × 1/2"		- 1%	- 1/8"
8	5 pieces fresh	4 × 3 × 4		+ 10%	.1 - .2 - partings
		2 1/2 × 3 × 2		± 40%	.1 - .4 "
		6 × 5 × 2		± 10%	.1 - .2 "
		5 × 4 × 4		40%	.1 - .3
Sample 9	3 pieces				

Chemical tests will be run this week 3-14-55 per College Park.

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

RECEIVED
JUL 11 1955

July 7, 1955

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

Re: Docket No. DMEA 3716 (asbestos)
The Ferris Company
Rosebud, et al claims
Carbon County, Montana

Dear Mr. Selfridge:

Enclosed are four copies of a geologic appraisal of the cited application by J. E. Vhay and D. F. Kellum, geologists, U. S. Geological Survey.

It is pointed out in the memorandum that although the deposit contains asbestos fiber having good chemical and physical properties, there is much too little possible tonnage in the known serpentine bodies for a profitable operation.

The Field Team therefore concurs with the recommendation of the examiners that the application be denied without prejudice. The Field Team believes, however, that the applicant should be encouraged to prospect for similar and larger asbestos-bearing serpentine bodies, which, if found, might justify granting a contract on a new application.

By Field Team, Reg. I, NW District

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

King G. Agnew, Member
U. S. Bureau of Mines

cc: USBM (2)
USGS (SRO)
Vhay
Kellum

Dmea

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
JUL 11 1955

June 9, 1955

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: J. S. Vhay and Donald Kellum, Geologists, U. S. Geological Survey

Subject: Docket No. DMEA-3716 (asbestos), Application examination of the Rosebud, Tommy, Johnny, and Baby Jan Groups of Claims, Carbon County, Montana, The Ferris Company, 1119 E. Ash Street, Mason, Michigan.

Introduction

An application, Docket No. DMEA-3716 (asbestos), was received at the Spokane office on March 14, 1955, from The Ferris Company, through the Washington office, together with supporting evidence that indicated that the asbestos fiber was of acceptable quality. The property, and vicinity, was examined by J. S. Vhay assisted by Donald Kellum on May 1 to 4, 1955. E. E. Ferris, president of The Ferris Company, and Louis Psenda, discoverer of the deposit, accompanied the examiners.

Recommendations

As the possible amount of asbestos in the known serpentine bodies is too small to justify road improvements and the building of a mill, it is recommended that the present application be denied without prejudice, unless the DMEA is willing to assist in a straight prospecting program aimed at finding more and larger asbestos-bearing serpentine bodies in the general vicinity.

Location and Accessibility of Property

The property is approximately in the SW¼ of T. 6 S., R. 18 E., Carbon County, Montana. It is on the east side of the East Rosebud River at the top of the main canyon where the river leaves the Beartooth Mountains, about 1,300 feet above the bottom of the canyon, at an assumed altitude of 6,500 feet.

The deposit is 4 miles by a rough wagon road from a point on a county road about 28 miles northwest of Red Lodge, Montana; the road from Red Lodge is "blacktopped" for about 14 miles, and either gravel or dirt the rest of the way.

The property consists of four groups of four claims each, which, according to the application, are recorded on pages 254 to 268 and 280 to 294, Book No. 7, in the record book of Carbon County, Montana. The area around the original discovery of asbestos has been considerably trenched by bulldozer, and the applicant had an oil-well driller put down some shallow holes (maximum depth 70 feet) with a rotary drill. The drill holes are located, some only approximately, on plate 1.

Geology

The deposit is in the Precambrian rocks of the Beartooth Mountains, a short distance south of where the Precambrian rocks are thrust over Paleozoic limestones; on the west side of the East Rosebud River the Paleozoic rocks are believed to be entirely covered by the older rocks, and the younger (Mesozoic) rocks are covered almost completely by large lateral moraines.

The asbestos occurs in ultrabasic rock inclusions in an intrusive quartz monzonite, which is present under large areas in the Beartooth Mountains. Near the contacts with the ultrabasic rock the quartz monzonite has apparently taken up, by reaction, some of the magnesium in the older rock, inasmuch as it shows rosettes of talc or tremolite which have replaced some of the minerals of the quartz monzonite. Numerous narrow dikes of diabase cut the quartz monzonite throughout the property; the mistaken identification of the diabase float material as serpentine gave the applicant the impression that there was much more serpentine on the property than is actually the case.

The ultrabasic inclusions in the quartz monzonite (see plate 1) consisted originally of olivene and some pyroxene (probably the orthorhombic variety). The ultrabasic rock may have been similar to that found in the Stillwater Complex, but more likely was similar and related to that found west of Red Lodge. It is believed that the ultrabasic was altered, in part, to serpentine before intrusion of the quartz monzonite. The serpentine rock shows various colors, from a light-yellowish green through green to extremely dark green, approaching black. In places, it is massive, elsewhere it is streaky in appearance because of layers of magnetite. In thin section it is seen to consist principally of antigorite; another chlorite mineral, more yellowish brown in color is present and may be a replacement of the original pyroxene in the rock.

Closer to the quartz monzonite, the serpentine has been altered by the later intrusive to a rock which, in general, may be classified as a soapstone. It consists principally of talc, replacing an amphibole (tremolite?) some of which remains in the rock, plus chlorite, magnetite, and, in places, a biotite which might be classified as vermiculite. In places, the rock nearer the quartz monzonite consists almost entirely of chlorite, or chlorite (after amphibole) with seams of talc.

At a few places the soapstone or the serpentine contains, mostly on joints, a bright red hematite which has been mistaken for cinnabar. Elsewhere, near the contact, the white quartz veins appear to have been squeezed into sheared serpentine (now talc) mechanically.

Possibly five bodies of serpentine have been exposed by bulldozing on the property (see plate 1). Of the two bodies to the northwest, the smaller one to the south appears to consist principally of soapstone. Only three small "tails" from this one, consisting of talc and vermiculite, are exposed in the trench; part of it is exposed in an outcrop above the trench, and the rest of it is covered by soil and moraine. The larger body consists mostly of soapstone in the trench; a little serpentine is exposed downhill to the northwest for about 100 feet. Above the trench some soapstone and serpentine can be found up until it is covered by morainal material. A little cross fiber asbestos (some of it up to 1.5 inches in length) is exposed in the bottom of the trench and some slip fiber is present in the wall of the trench.

The soapstone-serpentine body shown in the southwest part of the map (plate 1) is the only one which contains appreciable asbestos fiber. Where it is exposed in the lower trench, a strong shear zone striking N. 15° W. and dipping 35° NE. is overlain by about 4 feet of serpentine containing considerable asbestos fiber between one-eighth and half an inch long; 2 feet more of the serpentine contains rare veinlets of cross fiber and apparently some slip fiber. On the south side of this serpentine body a zone containing abundant asbestos strikes about N. 80° E. and dips 70° N.; it is separated from the quartz monzonite by about 2 feet of amphibole-talc rock. On the northeast side of this body, exposed in a trench about 30 feet north-northwest of Drill Hole No. 1, is a shear zone striking N. 5° E., dipping 80° E., east of which is about 8 feet of serpentine containing both cross and slip fiber. The largest area containing asbestos is approximately where these two zones intersect, around Drill Holes No. 1 and 2. The east end of this area of fiber is not exposed, but farther east a strip about 25 feet wide and 70 feet long consists of soapstone (talc, chlorite, and a little relic amphibole), which represents the east end of the inclusion.

Two more inclusions lie farther east. Parts of them are exposed in bulldozer trenches; float indicates further extensions of them, and some of the contacts were indicated by a Fischer M-Scope, which gives a decided change of reaction when it is carried across a contact. No asbestos was found in either of these inclusions, which consist, in part, of partially serpentinized ultrabasic rock, in part of straight serpentine, and which have narrow bands of soapstone along their contacts with the quartz monzonite.

Estimated Grade and Reserves

The exposed zones carrying asbestos fiber are estimated to average about 25 percent cross fiber; some slip fiber is present, but probably not enough to change the estimated grade appreciably. The 25 percent fiber is estimated to be made up of 1 percent over three-fourths inch in length, 4 percent three-eights to three-fourths inch, 10 percent one-eighth to three-eighths inch, and 10 percent less than one-eighth inch. According to a letter from George C. Selfridge to A. E. Weissenborn (3/24/55), "* * * the test of sample submitted by the applicant shows * * * The magnetic iron [to be] 0.9% and the total iron 1.52%. A preliminary examination of the fiber strength indicates it is acceptable."

A rough estimate of the amount of asbestos-bearing rock in the southwest inclusion (too little asbestos was seen in the northwest inclusion to justify any estimate) shows about 5,000 tons of indicated ore and about 8,000 tons of geologically inferred ore.

In spite of the good grade of fiber and the amount present in the asbestos-bearing rock, the total possible amount is believed much too little to justify the cost of building a mill and of road improvement. Unless much more asbestos-bearing serpentine can be found in this area, it is believed that the deposit cannot be mined at a profit.

Summary

The Ferris asbestos deposit occurs in a serpentine inclusion about 350 feet long and 140 feet wide in quartz monzonite. Of three other serpentine inclusions of about the same size and one much smaller one, only one shows a little asbestos fiber. The asbestos-bearing rock carries considerable fiber averaging about one-quarter inch long, of good grade chemically and physically; however, it is recommended that the application be denied without prejudice until much more asbestos-bearing serpentine is discovered.

Enclosure
Distribution:
DMEA(4)
USBM(2)
USGS(SRO)
Docket
Kellum
Vhay

Monthly Report
Region I - Northwest District
Reporting period: Mar. 15 - Apr. 15, 1955

Montana

DMEA-3716 (asbestos) - The Ferris Company, Rosebud et al Claims
Carbon County, Montana

The application was referred to the Field Team on March 14, 1955. A field examination will be scheduled.

The Bureau of Mines has a file on this prospect. Three xenoliths of serpentine are exposed in the granite. Two of these bodies, about 50 feet in diameter, show no asbestos. The third body is about 100 feet in diameter and is traversed by a shear zone 4 feet wide. The hanging wall fractures of this zone are mineralized with chrysotile asbestos fibers over a width of 2 to 6 inches with the longest fibers 1/2 inch to 1 inch in length. The footwall of the shear is also mineralized over widths of 2 to 6 inches, but with shorter fibers. The rock in between is mostly barren.

MAR 2 4 1955

The Ferris Company
1119 E. Ash Street
Mason, Michigan

Re: Docket No. DMEA-3716 - Asbestos, et al.
The Ferris Company
Rosebud, Tessy, Johnny, and
Baby Jan Groups of Claims
Carbon County, Montana

Gentlemen:

Your application for assistance in exploring the subject property has been reviewed by the Nonmetallic Minerals Division of the Defense Minerals Exploration Administration and has been referred to Mr. A. E. Weissenburn, Executive Officer, DMEA Field Team, Region I, South 157 Howard Street, Spokane 4, Washington, for further consideration and possibly a field examination.

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

Sincerely yours,

Administrator

LGHouk:gad 3/11/55
Copy to: Admr. R. File
Docket
Operating Committee
Field Team, Region I (Northwest District)
Mr. Kiilsgaard, 5222
Dr. Bowles, 3516
Mr. Houk

MAR 2 4 1955

600

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

Subject: Docket No. DMEA-3716
Asbestos, et al.
The Ferris Company
Rosebud, Tenny, Johnny, and
Baby Jan Groups of Claims
Carbon County, Montana

Dear Mr. Weissenborn:

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

During the field investigation an estimate should be made on the average fiber length. It should be based upon measurement of the fiber in place, and separated into plus 3/4", minus 3/4", plus 3/8", and minus 3/8".

A representative sample of the asbestos fiber should be obtained at the time of the examination. This sample should be analyzed for total iron and magnetic iron. A sample should be submitted to this office for determination of the tensile strength. The results of the test of sample submitted by the applicant shows there was 28.3% asbestos fiber in the composite made of the mine samples. The magnetic iron was 0.9% and the total iron 1.52%. A preliminary examination of the fiber strength indicates it is acceptable.

We are returning the Owner's Consent to Lien forms which are to be corrected in accordance with the instructions in the Operating Committee Minutes No. 469, dated January 21, 1955. If a contract is recommended please make the corrections and have them initialed by the signers.

Copies of memoranda from the Geological Survey, dated March 15, 1955, and from the Bureau of Mines, dated March 16, 1955, are enclosed for your information.

Approved:

J. H. Hedges
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

Enclosures 2

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

LQHouk:gad 3/23/55
Copy to: Admr. R. File Docket
Operating Committee Mr. Houk
Mr. Kiilsgaard, 5222
Mr. Dietrich, 3061

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

March 16, 1955

Memorandum

To: Mr. Lawrence G. Houk, Chief, Non-Metallic Minerals Division, Defense Minerals Exploration Administration

From: Commodity Specialist, Branch of Construction and Chemical Materials

Subject: Docket No. 3716, The Ferris Co.

This application appears to be reasonable and from a visual inspection of the samples the deposit seems to be worthy of investigation. If the samples prove to be of strategic grade, I would recommend that the field team make an examination of the deposit.

Oliver Bowles

Copy to: Files
Div. of Minerals
Br. of Const. & Chem. Mats.
Dr. Bowles

IN REPLY REFER TO:

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

MAR 1 6 1955

March 15, 1955

Re: DMEA-3716
The Ferris Company
(Rosebud, Tommy,
Johnny & Baby Jan
Claim Groups)
Carbon Co., Montana
$44,216.90 - Asbestos

Memorandum

To: L. G. Houk, Defense Minerals Exploration Administration

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

Subject: Review of application

The applicant requests assistance to further explore a recently discovered asbestos occurrence which is about 28 miles from Red Lodge, Montana. The proposed work consists of bulldozing and 2500 feet of diamond drilling.

We do not have any information on this prospect, but a note in our files indicates that asbestos specimens from a property near Red Lodge were brought in to the Bureau of Mines office at Spokane by an unidentified prospector in 1954. It seems possible that the specimens came from the applicant's claims.

A field examination cannot be made for some weeks because of winter conditions. In the meantime, before a field referral is made, I suggest the Field Team (Bureau and Survey) be asked for information they may have regarding the possible merit of this new prospect.

E. L. Newcomb

ELNewcomb:hlm
G-3/15/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
Oliver Bowles, 3516 Interior

March 10, 1955

Memorandum

To: Mr. Paul Ambrose, Superintendent, Eastern Experiment Station, Region V.

From: Lawrence Q. Houk, Chief, Nonmetallic Minerals Division, DMEA

Subject: Evaluation of samples of asbestos - Docket No. DMEA-3716 Asbestos, Ferris Company,(Incorporated), Carbon County, Montana.

Confirming our telephone conversation of yesterday there is attached hereto sample of asbestos rock for separation and evaluation. Please make chemical analysis of the asbestos fiber to determine the total iron and magnetic iron content. The rejects should be returned to this office. The cost of the work may be taken from regular DMEA funds, by billing code 1

LQHouk:gad 3/10/55

Copy to: Mr. H. P. Greenwald, Director, Region V, Bureau of Mines
Mr. W. T. Millar
Admr. R. File
Docket
Mr. Houk

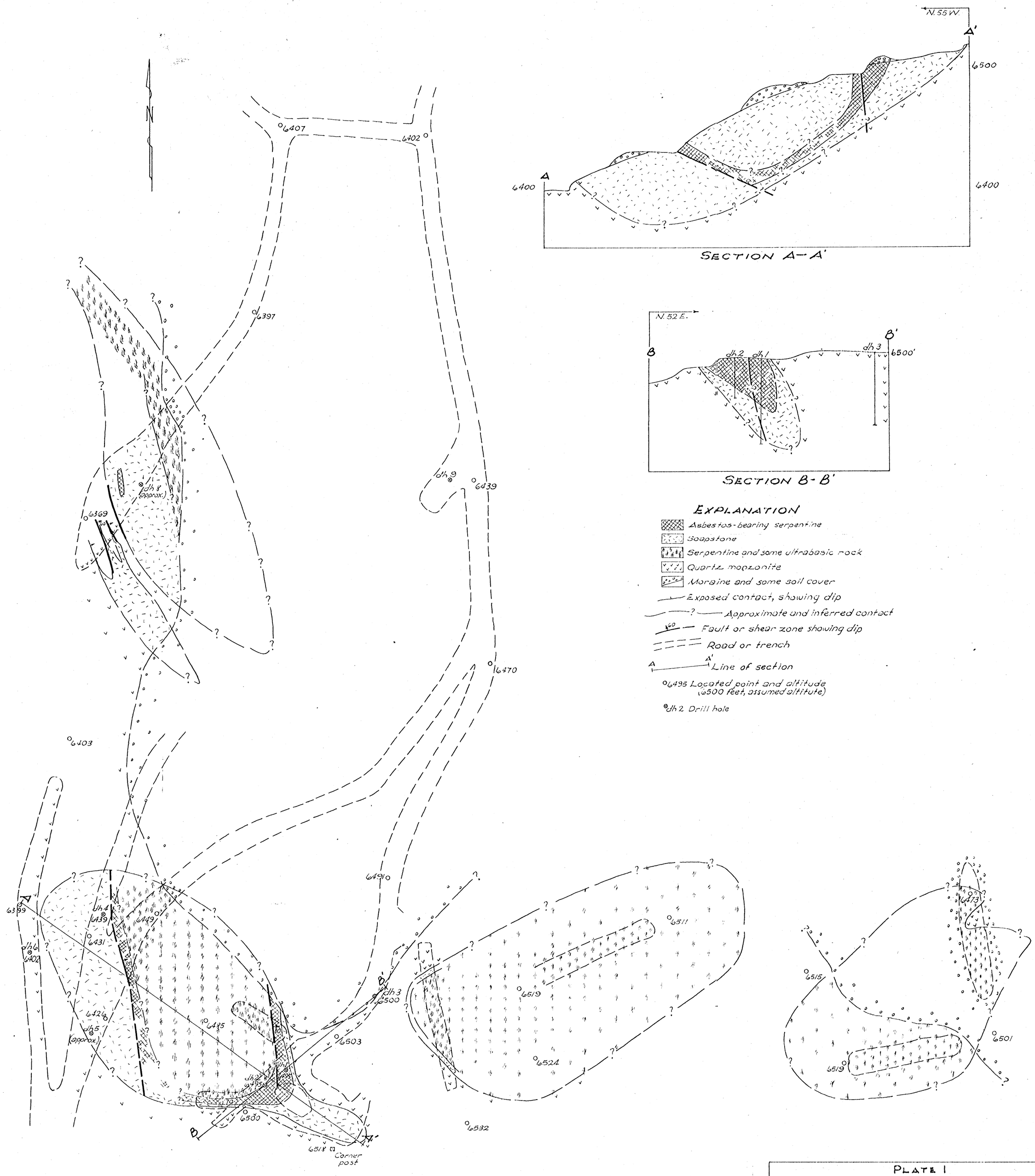

PLATE I

GEOLOGIC MAP AND CROSS SECTIONS OF
FERRIS ASBESTOS DEPOSIT
CARBON COUNTY, MONTANA

Scale: 50 0 50 100 150 Feet

Brunton and tape survey by J. S. Vhay and D. F. Kellum