FILE COPY 400
SURNAME:

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

Docket No. DMEA 2058 - Tungsten August 18, 1952

Ruthledge
Mattlin

Iron and Ferro-Alloy Division, DMEA

Cancellation of application.
Docket No. DMEA 2058 - Tungsten
Morris G. Mitts
Hallie "A" Tungsten Mine
Boulder County, Colorado

The applicant requested an exploration loan of $8,000.00 for 50 feet of drifting ahead in a lower tunnel and an unspecified amount of diamond drilling, but the examining field team did not consider the applicant's program to be the most practical plan. Instead, it suggested that a shaft be sunk on the vein to a depth of 85 feet and that 100 feet of drifting be done on the vein at this level, at a total cost of $11,500.00. This plan was approved by the applicant and a contract prepared but not signed pending clarification of title.

After reviewing the subject docket, the Iron and Ferro-Alloy Division, DMEA, concurs with the examining field team that an exploration project is warranted. It also agrees that the plan outlined by the field team is a more realistic approach to the exploration of the deposit than that of the applicant.

The following data have been taken from the Monthly Reports, Mining Division, Region IV, Bureau of Mines:

May 21 to June 20, 1952 - Waiting for clarification of title.

June 21, 1952 - Waiting for clarification of title.

A Final Report on the subject docket was received August 14, 1952, in which the application was cancelled at the request of the applicant. The docket, therefore, is being removed from the active files.

FARutledge'lm
8/18/52

Signed: F. A. Rutledge

F. A. Rutledge

cc: Admn. Reading File
~~Docket~~
R. W. Geehan, USBM
D. M. Lemmon, USGS
G. C. Selfridge
F. A. Rutledge

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

224 New Customhouse
Denver 2, Colorado

December 13, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration
Attention: Code 210

From: DMA Field Team, Region IV

Subject: Final Report, DMA Docket 2058, Hallie A. Tungsten Mine, Boulder County, Colorado - Applicant, Morris G. Mitts, 2511 Court Street, Pekin, Illinois

Enclosed herewith in duplicate are Form 3b on the subject docket.

The application has been approved for an exploration loan in the amount of $11,500.

The contract is being prepared in this office and a copy of the final report will be forwarded with your copy of the contract.

J. H. East, Jr.

A. H. Koschmann

cc: WMTraver w/copy of final report
PTAllsman w/copy of final report
AHKoschmann w/copy of final report
DMA Final Report

Mining Division
Region IV

December 13, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 3[illegible], Hallie A. Tungsten Mine, Boulder County, Colorado, applicant, Morris G. Mitts, 2511 Court Street, Pekin, Illinois

Work proposals in the application of the subject docket consisted of drifting 50 feet ahead in the lower tunnel to locate the Hallie A. vein, and an unspecified amount of core drilling from the surface to explore for, or delineate ore shoots ahead of the tunnel, at an estimated cost of $6,000.

The examining team submitted an alternate proposal as being more practical, which consisted of sinking a shaft on the slope of the vein a distance of 65 feet, and drifting on the vein to the extent of 100 feet, at an estimated cost of $11,500.

The applicant and owner resides in Illinois and was not available for consultation concerning the alternate program. However, Mr. Ray Flaherty, designated on the application as manager, was consulted and he intimated that the applicant would be agreeable to the change.

We concur with the examining teams recommendation for approval of the alternate proposal in the amount of $11,500. Government participation would be 75 percent, or $[illegible].00.

Paul T. Allaman

Paul T. Allaman

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

200 New Customhouse
Denver 2, Colorado

November 27, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 2058, Hallie A. Tungsten Mine, Boulder County, Colorado, Norris G. Witts, Applicant

Attached are 8 copies of the geologic report by Ogden Tweto covering the subject docket.

The outcrop of the vein is covered by talus and the main tunnel is caved, making an effective study of this property impossible. However, from reports of operators in the district and his general knowledge of the district, Tweto concludes that the Hallie A. tungsten mine, which produced ore during World War I and in the Twenties, warrants further exploration.

The exploration program proposed by the applicant--to drill through the talus and the driving ahead of the lower tunnel--is not considered the most practical. Instead, it is suggested that a shaft be sunk on the vein to a depth of 85 feet and that 100 feet of drifting be done on the vein at this level, at a total cost of $11,500.

I concur with this recommendation.

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

Enclosures (24)
including:
Geologic Report (8)
Map of Figure 1 (8)
Map of Figure 2 (8)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
December 5, 1951

Mining Division
Data Bank

Memorandum

To: Chief, Mining Division, Region IV

From: Scott W. Hazen, Jr., for
Chief, Colorado Branch, Mining Division

Subject: DMA 2058, Hallie A Tungsten Mine, Boulder County, Colorado

Please find enclosed the original and seven copies of the "Engineering Report" by F. D. Everett on the subject docket.

Due to inaccessibility of the mine workings, field examination could not prove the existence of tungsten mineralization, but Everett concludes that there is sufficient reliable information to indicate that there is a reasonable chance of finding tungsten ore in the Hallie A mine. The owner and applicant resides in Illinois and was not available for consultation concerning the proposals. The proposal as submitted by the applicant does not appear to be completely feasible from the standpoint of developing the greatest amount of ore. Accordingly, an alternate proposal is recommended with an increase of cost from the original $8,000.00 estimated to $11,500.00. This alternate recommendation was discussed with the Boulder resident whom the applicant has designated as the manager for the mine. The applicant has indicated in his application that he is financially able and willing to participate in the program and it is assumed that the alternate method proposed will meet with his approval.

I concur in the recommendations for approval of the alternate proposal costing $11,500.00, with the Government participation of 75 percent amounting to $8,625.00.

The application, form MF-103, furnished by the Field Team, Region IV, is returned herewith.

Scott W. Hazen, Jr., for
W. M. Traver, Jr.

enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-2058, Hallie A Tungsten Mine

Boulder County, Colorado

Tungsten

O. Tweto, Geologist
U. S. Geological Survey

F. D. Everett, Mining Engineer
Bureau of Mines

December 4, 1951

HALLIN A. TUNGSTEN MINE

BOULDER COUNTY, COLORADO

HORNIS G. MITTS, APPLICANT

DMA DOCKET 2056

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Ogden Tweto, U. S. G. S.
and
F. D. Everett, U. S. B. M.

DMA DOCKET 2056
HALLIE A. TUNGSTEN MINE
BOULDER COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS
By Ogden Tweto and F. D. Everett

The Hallie A. tungsten mine comprises two short tunnels on a small ferberite vein three miles north of the main tungsten district of Boulder County, Colorado. The main tunnel is caved, and the vein above it is covered by talus. There is some doubt that a small barren vein cut in the lower tunnel is the main vein. The Hallie A. vein was stoped for a length of 100 feet in the main tunnel and up to the base of the talus. Ore is present in the floor of the tunnel according to reports. The applicant has requested an Exploration Loan of $6,000 to drive the lower tunnel 50 feet and do an unspecified amount of core drilling. The mine warrants further exploration, but the applicant's program does not seem the most efficient approach. The lower tunnel is only 30 feet below the main tunnel, and it would have to be driven 170 feet, not 50 feet, to get beneath the ore shoot. The topography and the dip of the vein are both adverse to core drilling from the surface.

The mine can best be explored at greater depth by sinking an 85-foot shaft, which allows for a 10-foot sump, and doing 100 feet of drifting. Such a shaft and drift(s) are estimated to cost $11,500.

It is recommended that an Exploration Loan of $11,500 (Government participation 75%, or $8,625) be granted to sink the 85-foot shaft and do 100 feet of drifting.

HALLIE A. TUNGSTEN MINE

BOULDER COUNTY, COLORADO

HOWARD G. HITTS, APPLICANT

DMA DOCKET 2088

Geologic Report

Ogden Tweto
U. S. Geological Survey
Denver, Colorado

HALLIE A. TUNGSTEN MINE
BOULDER COUNTY, COLORADO

INTRODUCTION

The Hallie A. tungsten mine is in a gulch west of the Nederland-Ward road about three miles north of the main tungsten district of Boulder County, Colorado. It is reached by driving northward about half a mile down the old railroad grade from the Ward road to Glacier Lake, and then turning sharply southward down the gulch to a point almost due west of Glacier Lake (Figure 1). The road distance to Nederland is about 7½ miles.

The mine comprises two short tunnels, the main one of which is caved at the portal. This tunnel is sketched roughly in Figure 2 from data supplied by Mr. Ray Flarty, lessee of the mine in 1945. The lower tunnel, about 30 feet below the main tunnel, and 50 feet to the south, is a new one only about 40 feet long.

Mr. Norris G. Mitts, 2811 Court Street, Pekin, Illinois, the owner, has made application for an Exploration Loan of $8,000 (Government participation 75%, or $6,000) to drive the lower tunnel ahead 50 feet, and to do an unspecified amount of core drilling.

GEOLOGY

The Hallie A. mine is on a small outlying ferberite vein about 8 miles north of the nearest productive tungsten mine of the Boulder district. The country rock is granite that contains fairly numerous streaks of schist and gneiss in bodies from a few inches to a hundred

feet or more wide. The vein cannot be seen anywhere except in the lower tunnel, and there is some doubt that the vein exposed there is the main vein. The vein is inaccessible in the main tunnel, and it comes to the surface at the base of a high granite cliff where it is completely covered by very coarse talus (blocks up to 10 feet across). Not even the strike of the vein is known with certainty, although the strike shown in Figure 2, based on Mr. Flarty's description, is probably correct within 5° or 10°. The dip shown (70° E.) is an approximation based on Mr. Flarty's recollection. The vein exposed at the end of the lower tunnel is in about the right position to be the Hallie A. vein, but it could be a minor vein in the footwall of the main vein. It is a small vein consisting of 3 or 4 inches of soft, gougy gneiss and ½ to 1 inch of gray horn quartz lying parallel to the structure of the enclosing gneiss.

The mine was worked during World War I and again in the twenties, but record of the production is not available. In 1944-45, Mr. Flarty produced 74 tons averaging 1.16% WO_3, or 86 units WO_3, from the edges of the old stope. According to Mr. Flarty, the ore shoot extended for 100 feet along the vein, and was stoped from the tunnel level up to the base of the coarse talus at the surface. A shallow winze was sunk in ore, and the applicant states that 2-percent ore is present in the floor of the tunnel, without stating for what width.

CONCLUSIONS

Exploration at greater depth is clearly warranted, as the ore shoot was stoped down to the tunnel level and ore is said to be present in the floor of the tunnel, but the program proposed by the applicant is not

the most efficient way to go about such exploration. Core drilling is not advisable because, as the vein dips into the hill, the holes would have to be 45° or flatter (See Section, Figure 2), and such flat holes, starting in coarse talus, would be difficult and costly, and possibly inconclusive. Driving the lower tunnel ahead beneath the main tunnel is hardly warranted because the vertical distance between the two tunnels is so small. The lower tunnel is at the level of the gulch bottom, so a tunnel at lower altitude cannot be driven.

The most economic approach is to sink a shaft on the vein. A site for the shaft at a point due east of the portal of the main tunnel (See Figure 2) could probably be cleared with a heavy bulldozer at a cost of 2 or 3 hundred dollars. A shaft 75 feet deep (plus 10 feet for a sump, or a total of 85 feet) should be adequate at this time, and 100 feet of drifting would have to be done. The direction of such drifting cannot be specified with finality until the shaft is down and the pitch of the ore shoot is determined. It is certain that a drift will have to be driven northward, but if the ore shoot is found to pitch southward, some drifting should be done in that direction also.

Costs of such a project are considered in the accompanying engineering report, where they are estimated at $11,500.

RECOMMENDATIONS

It is recommended that an Exploration Loan of $11,500 (Government participation 75%, or $8,625) be granted to sink an 85-foot shaft on the Hallie A. vein and do 100 feet of drifting, as illustrated in Figure 2.

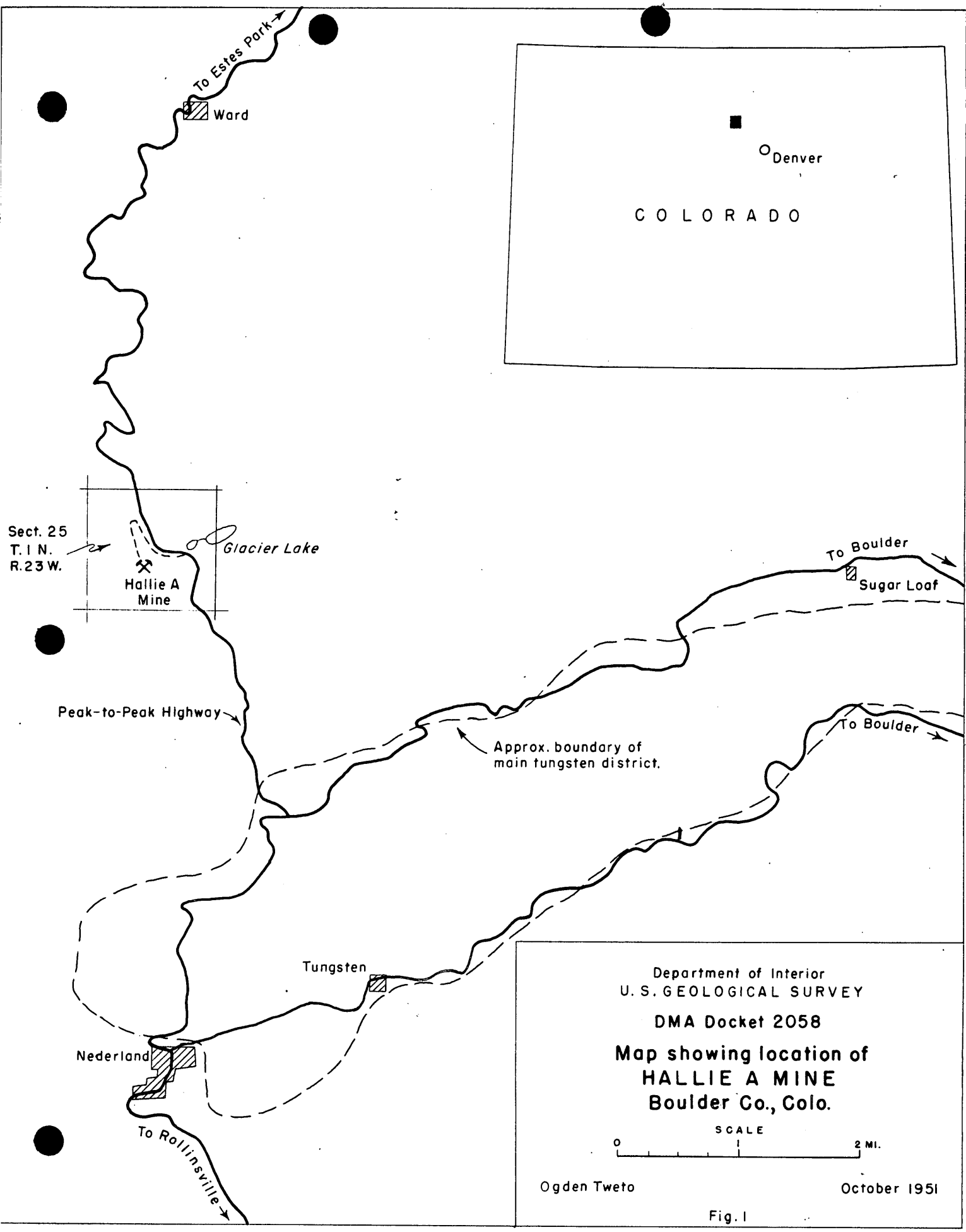
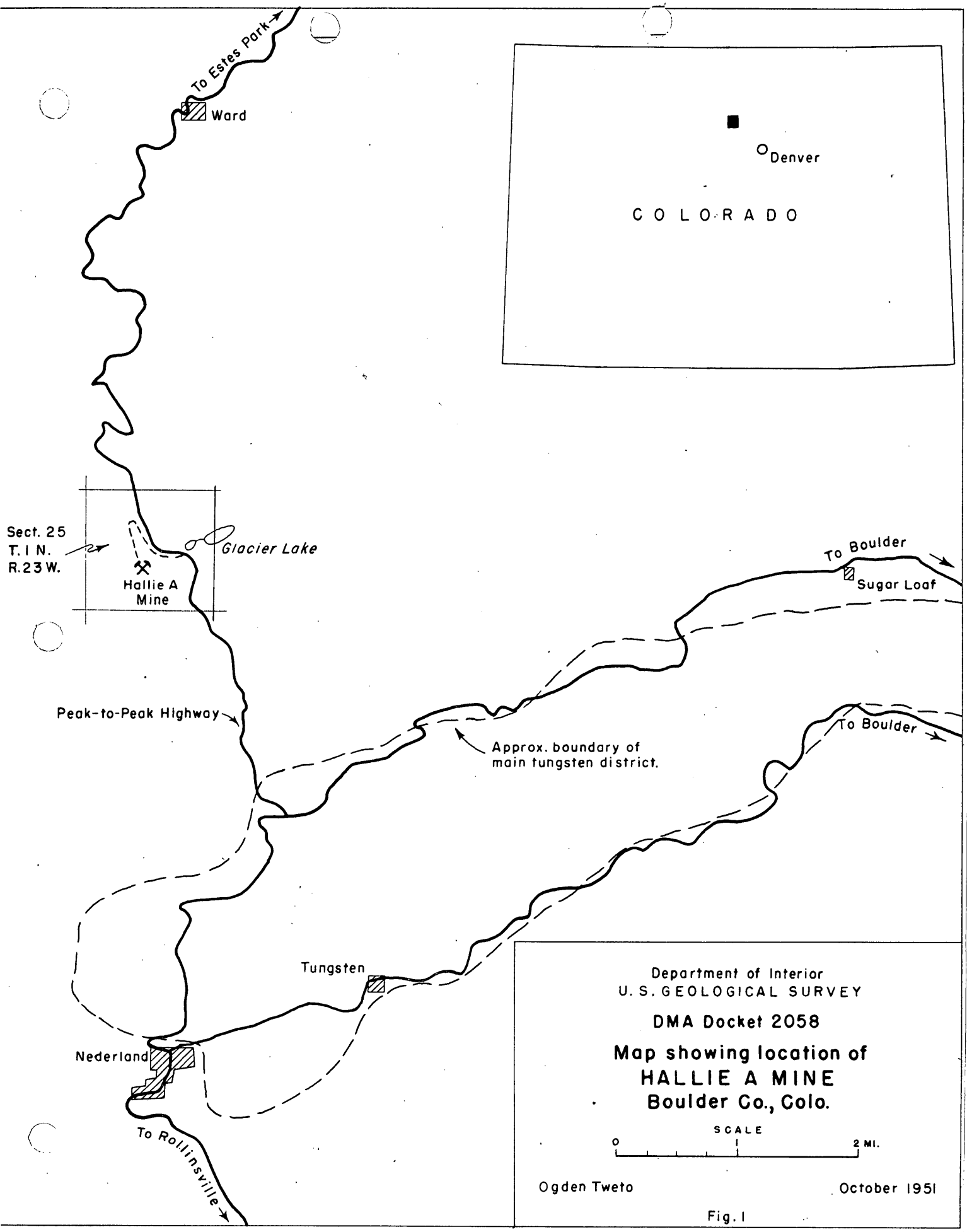

To Estes Park
Ward
Denver
COLORADO
Sect. 25
T. 1 N.
R. 23 W.
Glacier Lake
Hallie A
Mine
To Boulder
Sugar Loaf
Peak-to-Peak Highway
Approx. boundary of
main tungsten district.
To Boulder
Tungsten
Nederland
To Rollinsville
Department of Interior
U. S. GEOLOGICAL SURVEY
DMA Docket 2058
Map showing location of
HALLIE A MINE
Boulder Co., Colo.
SCALE
0
1
2 MI.
Ogden Tweto
October 1951

Fig. 1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SCALE
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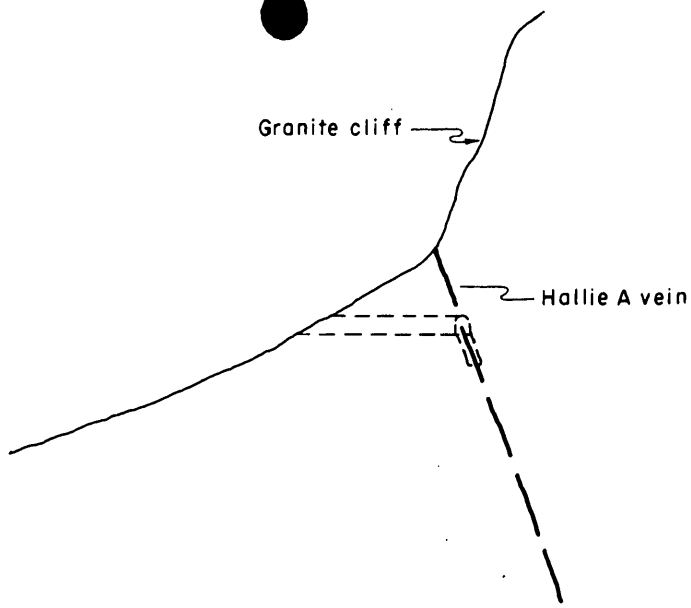
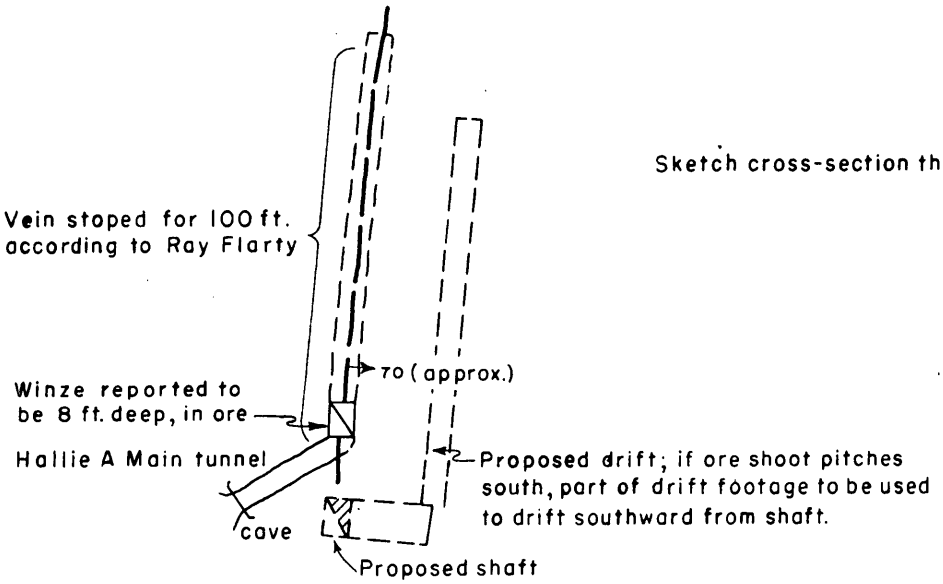
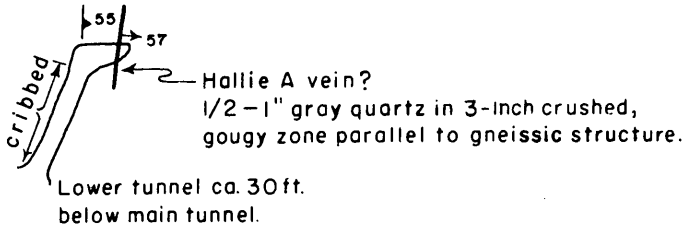
Ogden Tweto
October 1951

Fig. 1



Sketch cross-section through winze





Caved workings reconstructed
from data supplied by Ray Flarty,
lessee in 1945.

Department of Interior
U.S. GEOLOGICAL SURVEY

DMA Docket 2058

Sketch Map of
HALLIE A MINE
Boulder Co., Colo.

SCALE
0 50 100 FT.

Ogden Tweto October 1951

Fig. 2

HALLIE A TUNGSTEN MINE
BOULDER COUNTY, COLORADO

Engineering Report

By F. D. Everett
Mining Engineer
Bureau of Mines

HALLIE A TUNGSTEN MINE
BOULDER COUNTY, COLORADO

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HALLIE A TUNGSTEN MINE
BOULDER COUNTY, COLORADO

ENGINEERING REPORT

By

F. D. Everett

INTRODUCTION

Norris G. Mitts, 2511 Court Street, Pekin, Ill., has applied for an exploration loan for a project at the Hallie A tungsten mine, 7 1/2 miles north of Nederland, Colo., costing $8,000.00 (Government participation 75 percent, or $6,000.00) to drive 50 feet of tunnel and to do core drilling.

The project is based on a report that 2 percent tungsten occurred in a drift, now inaccessible, and that the mine produced during and after World War I and again during World War II.

The applicant intends to hire Ray Flarty, of Nederland, a former lessee, to manage the project.

ACKNOWLEDGMENTS

Ray Flarty gave freely of information on the property, although he is not presently associated with the owner.

A 1941 strategic minerals report by James E. Bell, mining engineer, Bureau of Mines, proved very helpful.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Hallie A mine is 7 1/2 miles north of Nederland, Boulder County, Colo., in sec. 25, T. 1 N., R. 73 W., 6th P. M. (fig. 1). The property is reached by branching to the west from State Highway 160 between Nederland and Ward just north of the road to Glacier Lake and traveling

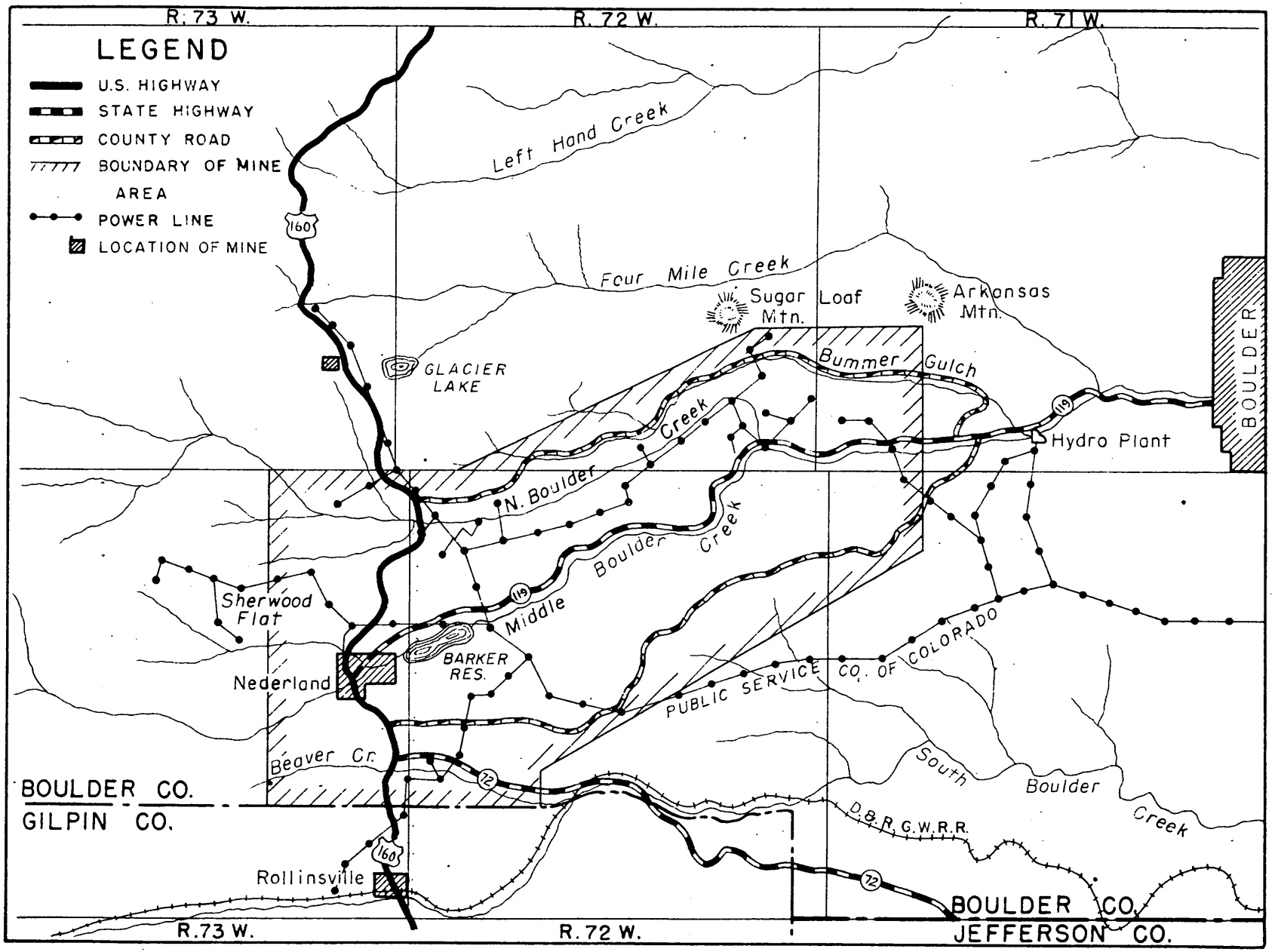


FIG. 1-LOCATION MAP, HALLIE A MINE, BOULDER COUNTY, COLORADO, D.M.A.-2058

an old railroad right of way for about one-half mile, turning sharply to the left, and continuing for about one-half mile to the mine.

The altitude at the mine is about 9,000 feet. The road between Rockerland and Ward was not open for travel during the winter 1950-51.

The topography in the general area consists of rounded mountain summits sloping into narrow valleys. The Hallie mine is in a gradually sloping creek gully having 10-to 40-foot granite cliffs with coarse talus piles on the east side. A small stream flows in the gully.

HISTORY AND PRODUCTION

The ground was first filed upon during World War I; it was worked for tungsten to a small extent during the war and then abandoned.

In 1936 the property was relocated by W. M. Crane, with N. G. Mitts acquiring an interest a short time later. During 1939 and the early part of 1940, the main drift was extended from 30 feet to 90 feet. About 45 tons of ore were shipped which are reported to have averaged 1.75 percent WO_3. In 1944-45 Ray Flarty leased the property and shipped 74 tons averaging 1.16 percent WO_3 from the edges of the old stope. The drift was extended to about 200 feet. In 1945 the lower tunnel was started 70 feet south and 30 feet vertically lower than the main workings. This tunnel is 40 feet long; the last 8 feet were driven to the vein during July 1951.

OWNERSHIP AND EXTENT

The property comprises one patented claim and three located claims owned by Norris G. Mitts, 2511 Court Street, Pekin, Ill.

The claims are: Hallie A, Hallie A No. 1, Hallie A No. 2, and June Rose (Patent Survey No. 18921).

Mitts indicated in the application that he is the owner. Ray Flarty, former lessee of the property, believes that a Mrs. W. H. Crane also owns an interest. Her address is unknown.

DESCRIPTION OF THE DEPOSITS

A strong vein in granite country rock contains quartz, crushed gneiss, and soft gouge. The only place the vein is exposed is in the lower tunnel.

A report by James E. Ball in 1941 1/ describes the vein in the main tunnel as follows:

> "One vein is known on the property. It is a true fissure vein with strong walls showing fault striations and slickensides; the vein-filling is composed of some quartz, along with gouge and crushed rock. The strike is almost N.-S. and the dip is 85° E.; the vein width varies from 1 1/2 feet to 4 feet with an average of about 2 1/2 feet. The chief tungsten mineral present is ferberite, which occurs disseminated through the vein-matter, and as a coating on the larger fragments.
>
> "Development consists of a short cross-cut tunnel and about 90 feet of drift. The vein is stoped up some 20 feet over a horizontal distance of 25 feet.
>
> "Three samples were taken in the drift, the locations of which are shown on the sketch map. Details regarding them are as follows:
>
> "No. 124. Width 4 feet; gouge and crushed vein-matter with little quartz.
> Assay: WO_3 - 0.27 percent.
>
> "No. 123. Width 1 1/2 feet; gouge and crushed vein-matter.
> Assay: WO_3 - 0.81 percent.
>
> "No. 124-A. Width 2 feet; gouge and crushed vein-matter with a little quartz.
> Assay: WO_3 - 2.82 percent."

1/ Ball, James E., W. G. Mitts Tungsten Prospect No. 2, near Nederland, Colo.: U. S. Bureau of Mines, unpublished, Strategic Mineral Examination Report 7031, January 15, 1941.

ORE RESERVES

The Bell report of 1941 states:

> "With the present exposures, a length of ore shoot of 150 feet seems fairly well assured. Taking the average width as 2 1/2 feet, this would amount to some 3,000 tons per 100 feet of depth. From the data given by the samples and ore shipments, the material might average 1.00 percent WO_3."

According to Ray Flarty, the ore shoot was mined for 100 feet of length which would infer about 2,000 tons of ore per 100 feet of depth.

PRESENT STATUS

Exploration and Development

The workings at the Hallie A mine consist of a main tunnel, caved at the portal, extending along the vein for about 100 feet. A winze 8 feet deep was sunk on the vein as shown on figure 2. The winze, reportedly, has good ore in the bottom.

A tunnel was driven to the vein 70 feet south of the main tunnel and 30 feet vertically lower. The vein showed no tungsten ore in this tunnel.

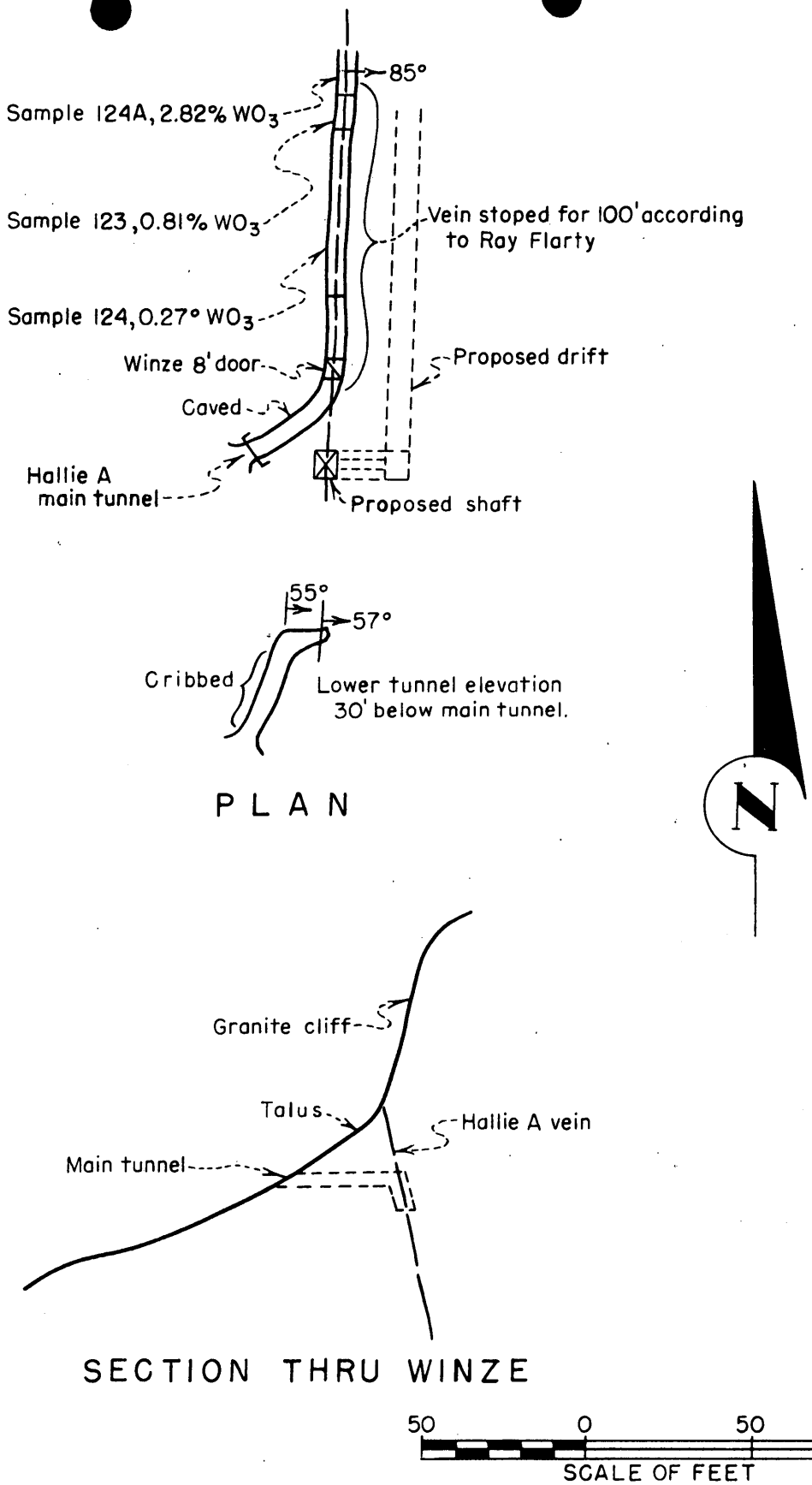
Mining and Milling Equipment

The applicant has no mining or milling equipment. Milling facilities exist in Nederland or Sugar Loaf, a few miles away.

PROJECT PROPOSALS, WITH COSTS

Exploration and Development

The applicant proposed driving the lower tunnel 50 feet on the vein to the projected ore shoot and doing an unspecified amount of diamond drilling. The cost of the program was estimated at $8,000.00.



NOTE: Constructed from data on sketch maps by Ogden Tweto, Oct. 1951 and James Bell Jan. 1941. Samples taken by Bell.

COLORADO BRANCH-MINING DIVISION-REGION IV

BUREAU OF MINES

FIG. 2- PRESENT & PROPOSED WORKINGS OF HALLIE A MINE, BOULDER CO., COLO., D.M.A.-2058

The drifting portion of this program is feasible, but it appears more advisable to sink a shaft 85 feet and drift 100 feet on the vein to obtain greater stoping depth. Diamond drilling is not advisable.

The cost of sinking an 85-foot shaft, which allows sump room of 10 feet, would be about $70.00 a foot, or $5,950.00. Drifting costs are estimated at $32.00 a foot, or $3,200.00 for 100 feet. The cost of preparing the site for starting the shaft, based on the use of the largest bulldozer available (a Caterpillar D-8 or equivalent) for at least four days at $15.00 per hour, is about $500.00. Labor, drilling, and blasting costs are estimated at $500.00, or a total of $1,000.00 for clearing the shaft site.

The sinking and drifting costs per foot are estimated as follows:

(1) 85 feet of shaft sinking, 1 1/4 feet of advance per day, 68 days for completion.

(a) Labor

Hoistman, $13.20 per day	$ 897.60	
overtime	72.60	
2 - miners, $26.40 per day	1,795.20	
overtime	145.20	
Leadman, $16.00 per day	1,088.00	
overtime	88.00	
Compensation	118.00	$4,204.60

(b)	Timber, 17 sets at $20.00, and skidway	500.00
(c)	Explosives, electric caps	250.00
(d)	Gasoline for compressor	360.00
(e)	Steel and bits	200.00
(f)	Miscellaneous tools and supplies	435.40
	Total	$5,950.00
	Cost per foot is estimated at	$70.00

(2) 100 feet of drifting, 3 feet of advance per shift, 34 days for completion.

(a) Labor

Heistman, $13.20 per day	$448.80	
overtime	39.60	
2 - miners, $26.40 per day	897.60	
overtime	79.20	
Leadman, $16.00 per day	544.00	
overtime	48.00	
Compensation	61.95	$2,119.15
(b) Timber		100.00
(c) Explosive		418.00
(d) Gasoline for compressor		200.00
(e) Steel and bits		150.00
(f) Miscellaneous tools and supplies		171.40
Total		$3,158.55

Cost per foot is estimated at $32.00

New Equipment and Facilities

The applicant proposed using used equipment but he is not in Colorado and can not be questioned about specific items. Mr. Flarty, of Nederland, who was given in the application as the proposed manager, knows nothing of the applicant's plans but he is the custodian of mining equipment that is available to the applicant at a cost of $600.00. This used equipment consists of the following:

(1) Compressor, made over model A motor, delivering 125 cubic feet of air per minute, powered by Buick motor.
(2) Jackhammer, Chicago Pneumatic type, 55 pounds
(3) Air hose and oiler
(4) Water hose
(5) 50-feet of 1-inch pipe line
(6) 1200-pound mine car
(7) 100 feet of 12-pound mine rail
(8) Air receiver
(9) Complete set of drill steel

This equipment, for the type of proposed work, is well worth $600.00. Flarty assured the engineer that the equipment is in usable condition.

A hoist, 2 shaft buckets, hoist sheave wheel, and bucket dolly would have to be rented or purchased. If water is encountered, a bailer will have to be obtained. If available, these items would rent for about $125.00 a month.

New air and water hose, steel, and some track will have to be obtained. These items are to be classified as supplies and are included in the footage estimates.

A small headframe and hoist building will have to be constructed. Material from an old and partly-demolished building at the property might be used in constructing the hoist house. The headframe material and erection cost are estimated at $200.00. A 14- by 20-foot rough building estimated at $2.00 a square foot would cost $500.00.

Transportation

The road to the property is adequate for the exploration work. State Highway 160 between Nederland and Ward is a good dirt road but the snow is not removed in the winter months.

The applicant did not request any funds for transportation of men or supplies.

Ore will be transported in small lots to either Nederland or Sugar Leaf at a cost of about $1.50 a ton.

Manpower

Flarty will probably supervise the project for $2.00 per hour, or $16.00 a day. Working labor, although scarce, can probably be obtained for $1.65 per hour. Three or four men will be needed per shift under the classification of hoistman, miner, and foreman.

Power

Electric power is not available. Gasoline must be transported for use in the compressor and hoist motors.

Water

Water flows in a stream within 150 feet of the proposed shaft.

Time Schedule for Completion

The project should be conducted in the late spring or summer months, after access can be gained to the property.

The time schedule is estimated as follows:

	Days
Assembling equipment	6
Bulldozing shaft site and drilling and blasting boulders	5
Constructing headframe and building	10
Shaft sinking - 1 1/4 feet a day	68
Drifting - 2 1/2 feet a day	34
Total days	123

About six months would be required working on a five-day-a-week, one-shift-a-day basis; or five months at six days a week.

Mining and Milling Methods

An open stope method of mining utilizing stull supports is probably the most applicable. Mining costs will be high—about $18.00 to $20.00 a ton.

Ore will be sold to either the Teal mill, at Sugar Leaf, or the Vanadium Corporation of America mill, at Nederland. Both mills utilize flotation methods. The ore purchase schedule at the former Wolf Tongue mill, which was leased to the Vanadium Corporation of America late in October 1951, started payments at $26.00 a unit for 1 percent WO_3 and $30.00 a unit for 2 percent WO_3 (schedule effective between July and November, 1951).

SUMMARY: COST OF PROJECT

The cost of a modified project at the Hallie A mine is summarized as follows:

Bulldozing and preparing shaft site	$1,000.00
Construction of building and headframe	700.00
Purchase of equipment	600.00
Shaft sinking - 85 feet at $70.00 a foot	5,950.00
Drifting - 100 feet at $30.00 a foot	3,200.00
Miscellaneous	50.00
Total	$11,500.00

This project possibly can yield 1,562 tons of 1 percent WO_3, which, at $26.00 a unit, would net $40,612.00.

The project proposed by the applicant, comprising the driving of the lower tunnel through the ore shoot (150 feet instead of the proposed 50 feet) would cost $5,100.00 and would possibly yield 625 tons of 1 percent WO_3, which, at $26.00 a unit, would net $16,250.00.

The modified project is preferred.

PROPOSED FINANCING

The applicant indicated in the application that he could finance his portion of the project.

CONCLUSIONS

The Hallie A tungsten mine is on a strong vein that reportedly contains tungsten.

A Bureau of Mines report by James E. Bell, dated January 15, 1941, states that an ore shoot extends for 100 feet with an average width of 2 1/2 feet and is estimated to assay at least 1 percent WO_3.

The vein is in granite about four miles north of the main tungsten district.

Climate and road conditions will probably not allow winter work.

A project comprising 85 feet of shaft sinking and 100 feet of drifting is estimated to cost $11,500.00.

RECOMMENDATIONS

A tungsten project at the Hallie A mine, estimated to cost $11,500.00, is recommended for approval. The Government's share will be 75 percent of the cost of the project, or $8,625.00, and the applicant's share will be 25 percent, or $2,875.00.

STANDARD FORM NO. 64

SD

400

Office Memorandum • UNITED STATES GOVERNMENT

TO : Docket No. DMEA 2058 - Tungsten

DATE: August 18, 1952

FROM : Iron and Ferro-Alloy Division, DMEA

SUBJECT: Cancellation of application.
Docket No. DMEA 2058 - Tungsten
Norris G. Mitts
Hallie "A" Tungsten Mine
Boulder County, Colorado

The applicant requested an exploration loan of $8,000.00 for 50 feet of drifting ahead in a lower tunnel and an unspecified amount of diamond drilling, but the examining field team did not consider the applicant's program to be the most practical plan. Instead, it suggested that a shaft be sunk on the vein to a depth of 85 feet and that 100 feet of drifting be done on the vein at this level, at a total cost of $11,500.00. This plan was approved by the applicant and a contract prepared but not signed pending clarification of title.

After reviewing the subject docket, the Iron and Ferro-Alloy Division, DMEA, concurs with the examining field team that an exploration project is warranted. It also agrees that the plan outlined by the field team is a more realistic approach to the exploration of the deposit than that of the applicant.

The following data have been taken from the Monthly Reports, Mining Division, Region IV, Bureau of Mines:

May 21 to June 20, 1952 - Waiting for clarification of title.

June 21, 1952 - Waiting for clarification of title.

A Final Report on the subject docket was received August 14, 1952, in which the application was cancelled at the request of the applicant. The docket, therefore, is being removed from the active files.

F. A. Rutledge

F. A. Rutledge

COPY

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

224 New Customhouse
Denver 2, Colorado

August 7, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
AUG 18 1952

Mr. Norris G. Mitts
2511 Court Street
Pekin, Illinois

Re: DMEA Docket 2058

Dear Mr. Mitts:

We have cancelled your application for exploration assistance under Docket No. DMEA-2058 as requested in your letter of August 6, 1952.

We will expedite the processing of Mr. Mc Broom's application.

Very truly yours,

s/ W. H. King

t/ W. H. King
Executive Officer
DMEA Field Team, Region IV

JFS:fwo

cc: Traver
Subject
Koschmann (2)
Chron
Actg Admin. DMEA

PEKIN COMMUNITY HIGH SCHOOL
Business Department
PEKIN, ILLINOIS

August 4, 1952

COPY

Mr. W. H. King
Defense Minerals Adm.
224 New Customhouse
Denver 2, Colorado

Dear Mr. King:

8

I have your letter of July 29, 1952 in which you state that you are unable to transfer my application (Docket DMEA 2058) to my lessee, Mr. McBroom. I did not intend that you should, but wanted you to know that the mine was now leased and that Mr. McBroom was going to submit an application.

Please cancel my application.

I could send you a photostat of my lease with Mr. McBroom, but it would be much easier for him to bring you his copy.

I hope that Mr. Core and my attorney, Mr. Holmes will be able to furnish you with the information you need on this mine. Please do your best to expedite Mr. McBroom's application so that he get some of the development work done before bad weather.

Yours very truly,

s/ Norris G. Mitts

t/ Norris G. Mitts

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

224 New Customhouse
Denver 2, Colorado

August 7, 1952

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMA Docket 2058 (Tungsten), Hallie "A" Tungsten Mine, Boulder County, Colorado

Enclosed are four copies of the report on DMA-2058.

The application was cancelled at the request of the applicant.

W. H. King

W. H. King

A. H. Koschmann

A. H. Koschmann

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

WASHINGTON 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 18 1951

December 13, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration
Attention: Code 210

From: DMA Field Team, Region IV

Subject: Final Report, DMA Docket 2058, Hallie A. Tungsten Mine, Boulder County, Colorado - Applicant, Morris G. Mitts, 2511 Court Street, Pekin, Illinois

Enclosed herewith in duplicate are Form 3b on the subject docket.

The application has been approved for an exploration loan in the amount of $11,500.

The contract is being prepared in this office and a copy of the final report will be forwarded with your copy of the contract.

Paul T. Allsman
Paul T. Allsman, Alternate

A. H. Koschmann
A. H. Koschmann

Region IV case

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

224 New Customhouse
Denver 2, Colorado

December 13, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration
Attention: Code 210

From: DMA Field Team, Region IV

Subject: Final Report, DMA Docket 2058, Hallie A. Tungsten Mine, Boulder County, Colorado - Applicant, Morris G. Mitts, 2511 Court Street, Pekin, Illinois

Enclosed herewith in duplicate are Form 3b on the subject docket.

The application has been approved for an exploration loan in the amount of $11,500.

The contract is being prepared in this office and a copy of the final report will be forwarded with your copy of the contract.

Paul T. Allsman, Alternate

A. H. Koschmann

A. H. Koschmann

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 1 1951

Mining Division
Region IV

December 13, 1953

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 8958, Hallie A. Tungsten Mine, Boulder County, Colorado, applicant, Morris G. Mitts, 8511 Court Street, Pekin, Illinois

Work proposals in the application of the subject docket consisted of drifting 55 feet ahead in the lower tunnel to locate the Hallie A. vein, and an unspecified amount of core drilling from the surface to explore for, or delineate ore shoots ahead of the tunnel, at an estimated cost of $8,000.

The examining team submitted an alternate proposal as being more practical, which consisted of sinking a shaft on the slope of the vein a distance of 65 feet, and drifting on the vein to the extent of 100 feet, at an estimated cost of $11,500.

The applicant and owner resides in Illinois and was not available for consultation concerning the alternate program. However, Mr. Ray Flurry, designated on the application as manager, was consulted and he indicated that the applicant would be agreeable to the change.

We concur with the examining team recommendation for approval of the alternate proposal in the amount of $11,500. Government participation would be 75 percent, or $8625.00.

Paul T. Allemann

Paul T. Allemann

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

200 New Customhouse
Denver 2, Colorado

November 27, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 2058, Hallie A. Tungsten Mine, Boulder County, Colorado, Morris G. Mitts, Applicant

Attached are 8 copies of the geologic report by Ogden Tweto covering the subject docket.

The outcrop of the vein is covered by talus and the main tunnel is caved, making an effective study of this property impossible. However, from reports of operators in the district and his general knowledge of the district, Tweto concludes that the Hallie A. tungsten mine, which produced ore during World War I and in the Twenties, warrants further exploration.

The exploration program proposed by the applicant--to drill through the talus and the driving ahead of the lower tunnel--is not considered the most practical. Instead, it is suggested that a shaft be sunk on the vein to a depth of 80 feet and that 100 feet of drifting be done on the vein at this level, at a total cost of $11,500.

I concur with this recommendation.

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

Enclosures (24)
including:
Geologic Report (8)
Map of Figure 1 (8)
Map of Figure 2 (8)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
December 5, 1951

Memorandum

To: Chief, Mining Division, Region IV

From: Scott W. Hazen, Jr., for
Chief, Colorado Branch, Mining Division

Subject: DMA 2038, Hallie A Tungsten Mine, Boulder County, Colorado

Please find enclosed the original and seven copies of the "Engineering Report" by F. D. Everett on the subject docket.

Due to inaccessibility of the mine workings, field examination could not prove the existence of tungsten mineralization, but Everett concludes that there is sufficient reliable information to indicate that there is a reasonable chance of finding tungsten ore in the Hallie A mine. The owner and applicant resides in Illinois and was not available for consultation concerning the proposals. The proposal as submitted by the applicant does not appear to be completely feasible from the standpoint of developing the greatest amount of ore. Accordingly, an alternate proposal is recommended with an increase of cost from the original $6,000.00 estimated to $11,500.00. This alternate recommendation was discussed with the Boulder resident whom the applicant has designated as the manager for the mine. The applicant has indicated in his application that he is financially able and willing to participate in the program and it is assumed that the alternate method proposed will meet with his approval.

I concur in the recommendations for approval of the alternate proposal costing $11,500.00, with the Government participation of 75 percent amounting to $8,625.00.

The application, form MF-103, furnished by the Field Team, Region IV, is returned herewith.

Scott W. Hazen, Jr., for
W. M. Traver, Jr.

enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-2058, Hallie A Tungsten Mine

Boulder County, Colorado

Tungsten

O. Tweto, Geologist
U. S. Geological Survey

F. D. Everett, Mining Engineer
Bureau of Mines

December 4, 1951

MALLIE A. TUNGSTEN MINE

BOULDER COUNTY, COLORADO

MORRIS G. WITTE, APPLICANT

DMA DOCKET 2058

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Ogden Tweto, U. S. G. S.
and
F. D. Everett, U. S. B. M.

DMA DOCKET 7088
HALLIE A. TUNGSTEN MINE
BOULDER COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS
By Ogden Tweto and F. D. Wright

The Hallie A. tungsten mine comprises two short tunnels on a small ferberite vein three miles north of the main tungsten district of Boulder County, Colorado. The main tunnel is caved, and the vein above it is covered by talus. There is some doubt that a small barren vein cut in the lower tunnel is the main vein. The Hallie A. vein was stoped for a length of 100 feet in the main tunnel and up to the base of the talus. Ore is present in the floor of the tunnel according to reports. The applicant has requested an Exploration Loan of $8,500 to drive the lower tunnel 96 feet and do an unspecified amount of core drilling. The mine warrants further exploration, but the applicant's program does not seem the most efficient approach. The lower tunnel is only 30 feet below the main tunnel, and it would have to be driven 170 feet, not 30 feet, to get beneath the ore shoot. The topography and the dip of the vein are both adverse to core drilling from the surface.

The mine can best be explored at greater depth by sinking an 80-foot shaft, which allows for a 10-foot sump, and doing 100 feet of drifting. Such a shaft and drift(s) are estimated to cost $11,800.

It is recommended that an Exploration Loan of $11,800 (Government participation 75%, or $8,855) be granted to sink the 80-foot shaft and do 100 feet of drifting.

HALLIE A. TUNGSTEN MINE

BOULDER COUNTY, COLORADO

MORRIS G. MITTS, APPLICANT

DMA DOCKET 2088

Geologic Report

Ogden Tweto
U. S. Geological Survey
Denver, Colorado

HALLIE A. TUNGSTEN MINE
BOULDER COUNTY, COLORADO

INTRODUCTION

The Hallie A. tungsten mine is in a gulch west of the Nederland-Ward road about three miles north of the main tungsten district of Boulder County, Colorado. It is reached by driving northward about half a mile down the old railroad grade from the Ward road to Glacier Lake, and then turning sharply southward down the gulch to a point almost due west of Glacier Lake (Figure 1). The road distance to Nederland is about 7½ miles.

The mine comprises two short tunnels, the main one of which is caved at the portal. This tunnel is sketched roughly in Figure 2 from data supplied by Mr. Ray Flarty, lessee of the mine in 1945. The lower tunnel, about 30 feet below the main tunnel, and 50 feet to the south, is a new one only about 40 feet long.

Mr. Morris G. Mitts, 2811 Court Street, Pekin, Illinois, the owner, has made application for an Exploration Loan of $8,000 (Government participation 75%, or $6,000) to drive the lower tunnel ahead 50 feet, and to do an unspecified amount of core drilling.

GEOLOGY

The Hallie A. mine is on a small outlying ferberite vein about 3 miles north of the nearest productive tungsten mine of the Boulder district. The country rock is granite that contains fairly numerous streaks of schist and gneiss in bodies from a few inches to a hundred

feet or more wide. The vein cannot be seen anywhere except in the lower tunnel, and there is some doubt that the vein exposed there is the main vein. The vein is inaccessible in the main tunnel, and it comes to the surface at the base of a high granite cliff where it is completely covered by very coarse talus (blocks up to 10 feet across). Not even the strike of the vein is known with certainty, although the strike shown in Figure 2, based on Mr. Flarty's description, is probably correct within 5° or 10°. The dip shown (70° N.) is an approximation based on Mr. Flarty's recollection. The vein exposed at the end of the lower tunnel is in about the right position to be the Hallie A. vein, but it could be a minor vein in the footwall of the main vein. It is a small vein consisting of 3 or 4 inches of soft, gouge gneiss and ½ to 1 inch of gray horn quartz lying parallel to the structure of the enclosing gneiss.

The mine was worked during World War I and again in the twenties, but record of the production is not available. In 1944-45, Mr. Flarty produced 74 tons averaging 1.16% WO_3, or 86 units WO_3, from the edges of the old stope. According to Mr. Flarty, the ore shoot extended for 100 feet along the vein, and was stoped from the tunnel level up to the base of the coarse talus at the surface. A shallow winze was sunk in ore, and the applicant states that 2-percent ore is present in the floor of the tunnel, without stating for what width.

CONCLUSIONS

Exploration at greater depth is clearly warranted, as the ore shoot was stoped down to the tunnel level and ore is said to be present in the floor of the tunnel, but the program proposed by the applicant is not

the most efficient way to go about such exploration. Core drilling is not advisable because, as the vein dips into the hill, the holes would have to be 45° or flatter (See Section, Figure 2), and such flat holes, starting in coarse talus, would be difficult and costly, and possibly inconclusive. Driving the lower tunnel ahead beneath the main tunnel is hardly warranted because the vertical distance between the two tunnels is so small. The lower tunnel is at the level of the gulch bottom, so a tunnel at lower altitude cannot be driven.

The most economic approach is to sink a shaft on the vein. A site for the shaft at a point due east of the portal of the main tunnel (See Figure 2) could probably be cleared with a heavy bulldozer at a cost of 2 or 3 hundred dollars. A shaft 75 feet deep (plus 10 feet for a sump, or a total of 85 feet) should be adequate at this time, and 100 feet of drifting would have to be done. The direction of such drifting cannot be specified with finality until the shaft is down and the pitch of the ore shoot is determined. It is certain that a drift will have to be driven northward, but if the ore shoot is found to pitch southward, some drifting should be done in that direction also.

Costs of such a project are considered in the accompanying engineering report, where they are estimated at $11,500.

RECOMMENDATIONS

It is recommended that an Exploration Loan of $11,500 (Government participation 75%, or $8,625) be granted to sink an 85-foot shaft on the Hallie A. vein and do 100 feet of drifting, as illustrated in Figure 2.

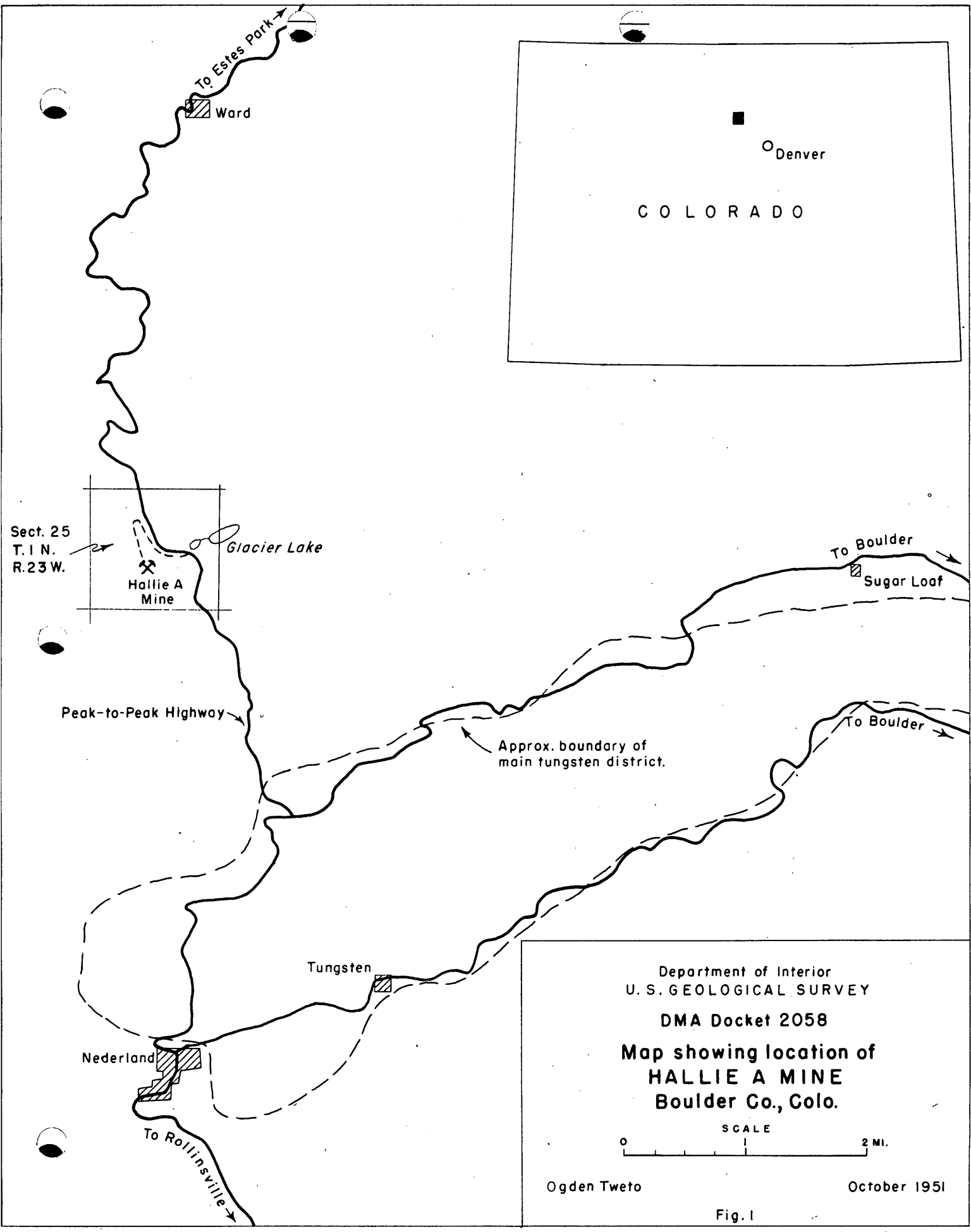
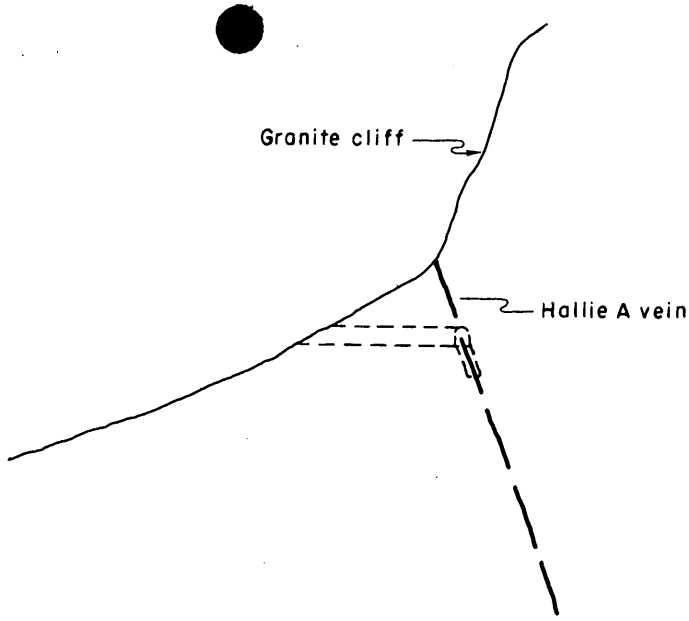
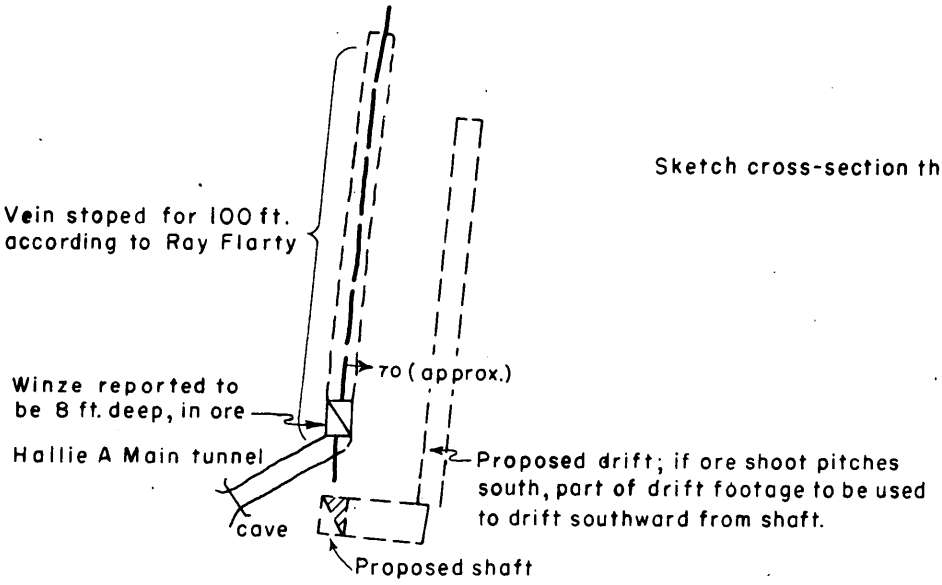
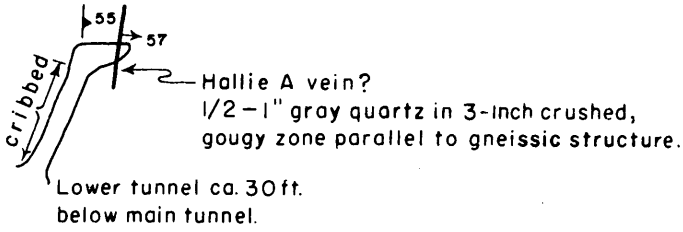

To Estes Park
Ward
Denver
COLORADO
Sect. 25
T. 1 N.
R. 23 W.
Glacier Lake
Hallie A
Mine
To Boulder
Sugar Loaf
Peak-to-Peak Highway
Approx. boundary of
main tungsten district.
To Boulder
Tungsten
Nederland
To Rollinsville
Department of Interior
U. S. GEOLOGICAL SURVEY
DMA Docket 2058
Map showing location of
HALLIE A MINE
Boulder Co., Colo.
SCALE
0
1
2 MI.
Ogden Tweto
October 1951

Fig. 1



Sketch cross-section through winze





Caved workings reconstructed
from data supplied by Ray Flarty,
lessee in 1945.

Department of Interior
U. S. GEOLOGICAL SURVEY

DMA Docket. 2058

Sketch Map of
HALLIE A MINE
Boulder Co., Colo.

SCALE
0 50 100 FT.

Ogden Tweto

October 1951

Fig. 2

HALLIE A TUNGSTEN MINE
BOULDER COUNTY, COLORADO

Engineering Report

By F. D. Everett
Mining Engineer
Bureau of Mines

HALLIE A TUNGSTEN MINE
BOULDER COUNTY, COLORADO

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ILLUSTRATIONS

Figure	Follows Page
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HALLIE A TUNGSTEN MINE
BOULDER COUNTY, COLORADO

ENGINEERING REPORT

By

F. D. Everett

INTRODUCTION

Norris G. Mitts, 2511 Court Street, Pekin, Ill., has applied for an exploration loan for a project at the Hallie A tungsten mine, 7 1/2 miles north of Nederland, Colo., costing $8,000.00 (Government participation 75 percent, or $6,000.00) to drive 50 feet of tunnel and to do core drilling.

The project is based on a report that 2 percent tungsten occurred in a drift, now inaccessible, and that the mine produced during and after World War I and again during World War II.

The applicant intends to hire Ray Flarty, of Nederland, a former lessee, to manage the project.

ACKNOWLEDGMENTS

Ray Flarty gave freely of information on the property, although he is not presently associated with the owner.

A 1941 strategic minerals report by James E. Bell, mining engineer, Bureau of Mines, proved very helpful.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Hallie A mine is 7 1/2 miles north of Nederland, Boulder County, Colo., in sec. 25, T. 1 N., R. 73 W., 6th P. M. (fig. 1). The property is reached by branching to the west from State Highway 160 between Nederland and Ward just north of the road to Glacier Lake and traveling

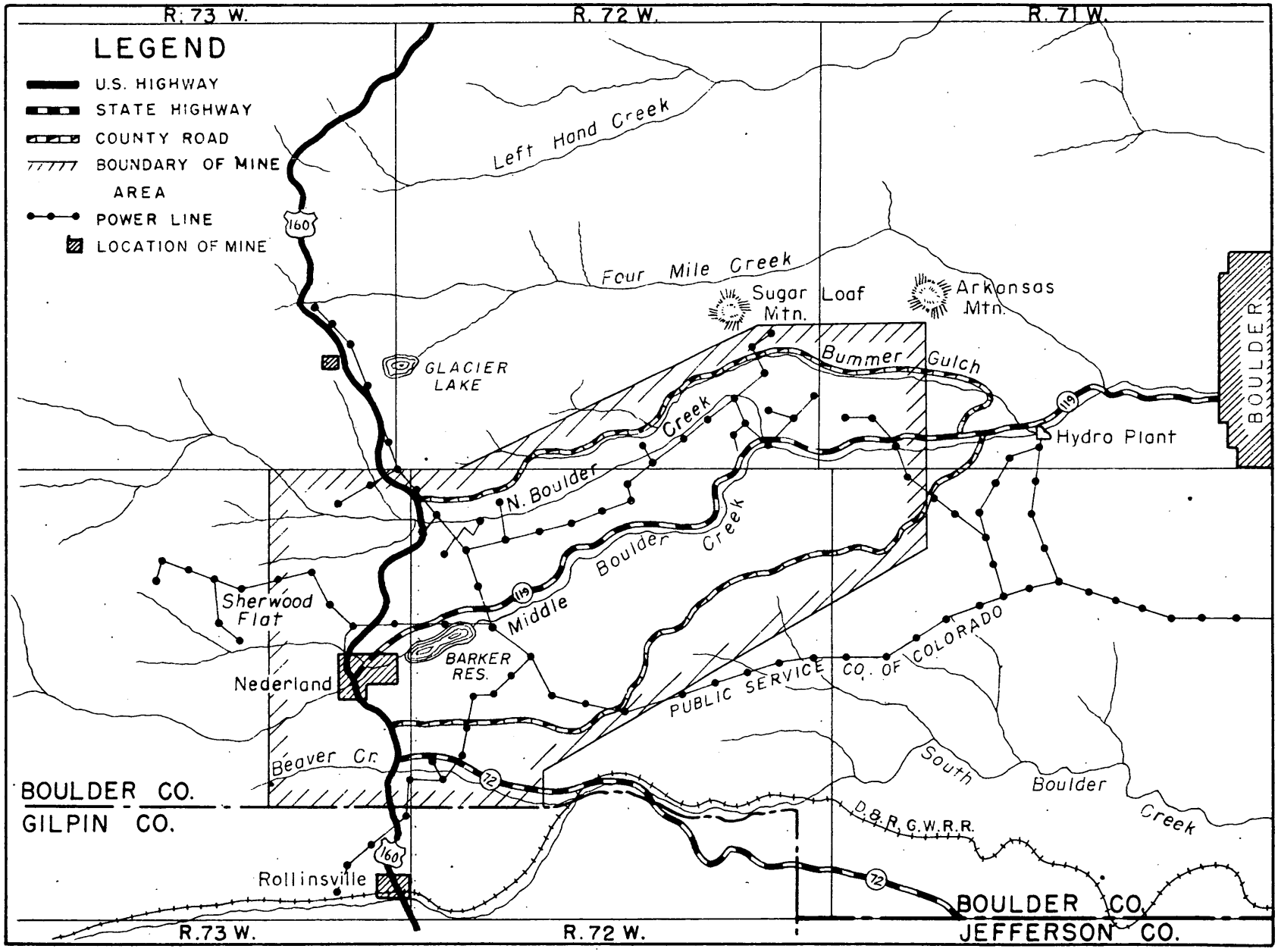

FIG. 1-LOCATION MAP, HALLIE A MINE, BOULDER COUNTY, COLORADO, D.M.A.-2058

an old railroad right of way for about one-half mile, turning sharply to the left, and continuing for about one-half mile to the mine.

The altitude at the mine is about 9,000 feet. The road between Nederland and Ward was not open for travel during the winter 1950-51.

The topography in the general area consists of rounded mountain summits sloping into narrow valleys. The Hallie mine is in a gradually sloping creek gully having 10-to 40-foot granite cliffs with coarse talus piles on the east side. A small stream flows in the gully.

HISTORY AND PRODUCTION

The ground was first filed upon during World War I; it was worked for tungsten to a small extent during the war and then abandoned.

In 1936 the property was relocated by W. H. Crane, with N. O. Mitts acquiring an interest a short time later. During 1939 and the early part of 1940, the main drift was extended from 30 feet to 90 feet. About 45 tons of ore were shipped which are reported to have averaged 1.75 percent WO_3. In 1944-45 Ray Flarty leased the property and shipped 74 tons averaging 1.16 percent WO_3 from the edges of the old stope. The drift was extended to about 200 feet. In 1945 the lower tunnel was started 70 feet south and 30 feet vertically lower than the main workings. This tunnel is 40 feet long; the last 8 feet were driven to the vein during July 1951.

OWNERSHIP AND EXTENT

The property comprises one patented claim and three located claims owned by Norris O. Mitts, 2511 Court Street, Pekin, Ill.

The claims are: Hallie A, Hallie A No. 1, Hallie A No. 2, and June Rose (Patent Survey No. 18921).

Mitts indicated in the application that he is the owner. Ray Flarty, former lessee of the property, believes that a Mrs. W. H. Crane also owns an interest. Her address is unknown.

DESCRIPTION OF THE DEPOSITS

A strong vein in granite country rock contains quartz, crushed gneiss, and soft gouge. The only place the vein is exposed is in the lower tunnel.

A report by James E. Bell in 1941 1/ describes the vein in the main tunnel as follows:

> "One vein is known on the property. It is a true fissure vein with strong walls showing fault striations and slickensides; the vein-filling is composed of some quartz, along with gouge and crushed rock. The strike is almost N.-S. and the dip is 85° E.; the vein width varies from 1 1/2 feet to 4 feet with an average of about 2 1/2 feet. The chief tungsten mineral present is ferberite, which occurs disseminated through the vein-matter, and as a coating on the larger fragments.
>
> "Development consists of a short cross-cut tunnel and about 90 feet of drift. The vein is stoped up some 20 feet over a horizontal distance of 25 feet.
>
> "Three samples were taken in the drift, the locations of which are shown on the sketch map. Details regarding them are as follows:
>
> "No. 124. Width 4 feet; gouge and crushed vein-matter with little quartz.
> Assay: WO_3 - 0.27 percent.
>
> "No. 123. Width 1 1/2 feet; gouge and crushed vein-matter.
> Assay: WO_3 - 0.81 percent.
>
> "No. 124-A. Width 2 feet; gouge and crushed vein-matter with a little quartz.
> Assay: WO_3 - 2.82 percent."

1/ Bell, James E., N. G. Mitts Tungsten Prospect No. 2, near Nederland, Colo.: U. S. Bureau of Mines, unpublished, Strategic Mineral Examination Report 7031, January 15, 1941.

ORE RESERVES

The Bull report of 1941 states:

> "With the present exposures, a length of ore shoot of 150 feet seems fairly well assured. Taking the average width as 2 1/2 feet, this would amount to some 3,000 tons per 100 feet of depth. From the data given by the samples and ore shipments, the material might average 1.00 percent WO_3."

According to Ray Flarty, the ore shoot was mined for 100 feet of length which would infer about 2,000 tons of ore per 100 feet of depth.

PRESENT STATUS

Exploration and Development

The workings at the Hallie A mine consist of a main tunnel, caved at the portal, extending along the vein for about 100 feet. A winze 8 feet deep was sunk on the vein as shown on figure 2. The winze, reportedly, has good ore in the bottom.

A tunnel was driven to the vein 70 feet south of the main tunnel and 30 feet vertically lower. The vein showed no tungsten ore in this tunnel.

Mining and Milling Equipment

The applicant has no mining or milling equipment. Milling facilities exist in Nederland or Sugar Loaf, a few miles away.

PROJECT PROPOSALS, WITH COSTS

Exploration and Development

The applicant proposed driving the lower tunnel 50 feet on the vein to the projected ore shoot and doing an unspecified amount of diamond drilling. The cost of the program was estimated at $8,000.00.

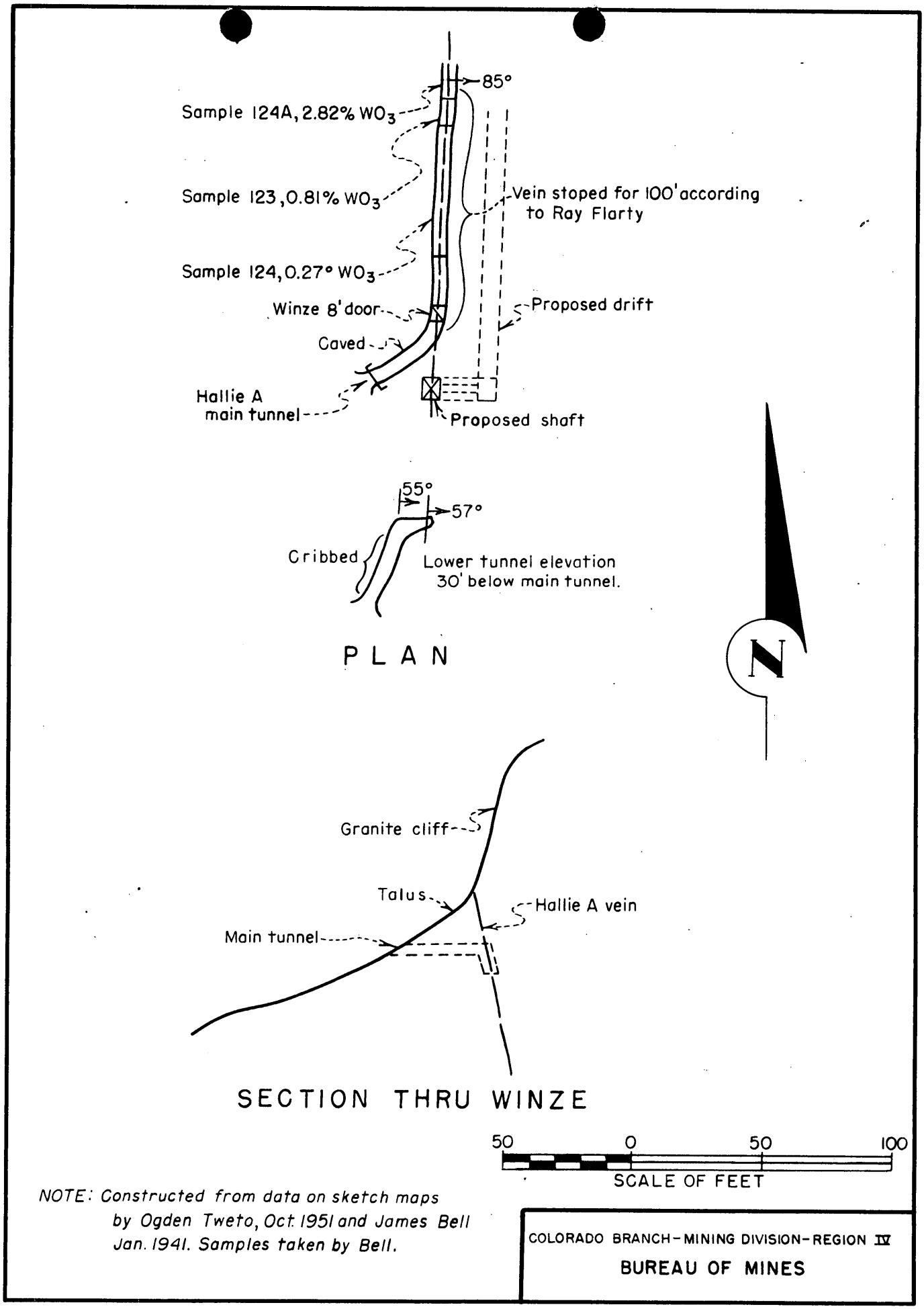

FIG. 2 - PRESENT & PROPOSED WORKINGS OF HALLIE A MINE, BOULDER CO., COLO., D.M.A.-2058

The drifting portion of this program is feasible, but it appears more advisable to sink a shaft 85 feet and drift 100 feet on the vein to obtain greater stoping depth. Diamond drilling is not advisable.

The cost of sinking an 85-foot shaft, which allows sump room of 10 feet, would be about $70.00 a foot, or $5,950.00. Drifting costs are estimated at $32.00 a foot, or $3,200.00 for 100 feet. The cost of preparing the site for starting the shaft, based on the use of the largest bulldozer available (a Caterpillar D-8 or equivalent) for at least four days at $15.00 per hour, is about $500.00. Labor, drilling, and blasting costs are estimated at $500.00, or a total of $1,000.00 for clearing the shaft site.

The sinking and drifting costs per foot are estimated as follows:

(1) 85 feet of shaft sinking, 1 1/4 feet of advance per day, 68 days for completion.

(a) Labor

Foreman, $11.20 per day	$ [illegible]	
overtime	[illegible]	
2 - miners, $26.40 per day	1,795.20	
overtime	115.20	
Laborer, $16.00 per day	1,088.00	
overtime	64.00	
Compensation	118.00	$4,204.60

(b)	Timber, 17 sets at $20.00, and skidway	560.00
(c)	Explosives, electric caps	250.00
(d)	Gasoline for compressor	360.00
(e)	Steel and bits	200.00
(f)	Miscellaneous tools and supplies	135.40
	Total	$5,950.00

Cost per foot is estimated at $70.00

(2) 100 feet of drifting, 3 feet of advance per shift, 34 days for completion.

(a) Labor

Foreman, $13.20 per day	$448.80	
overtime	39.60	
2 - miners, $26.40 per day	897.60	
overtime	79.20	
Laborer, $16.00 per day	544.00	
overtime	48.00	
Compensation	61.95	$2,119.15

(b)	Timber	180.00
(c)	Explosive	418.00
(d)	Gasoline for compressor	200.00
(e)	Steel and bits	150.00
(f)	Miscellaneous tools and supplies	371.40
	Total	$3,258.55

Cost per foot is estimated at $32.00

New Equipment and Facilities

The applicant proposed using used equipment but he is not in Colorado and can not be questioned about specific items. Mr. Flerty, of Nederland, who was given in the application as the proposed manager, knows nothing of the applicant's plans but he is the centerline of mining equipment that is available to the applicant at a cost of $660.00. This used equipment consists of the following:

(1) Compressor, made over model A motor, delivering 125 cubic feet of air per minute, powered by Ford motor.
(2) Rockhammer, Chicago Pneumatic type, 55 pounds
(3) Air hose and oiler
(4) Water hose
(5) 50-feet of 1-inch pipe line
(6) 1500-pound mine car
(7) 100 feet of 12-pound mine rail
(8) Air receiver
(9) Complete set of drill steel

This equipment, for the type of proposed work, is well worth $600.00. Flerty assured the engineer that the equipment is in usable condition.

A hoist, 2 short buckets, hoist sheave wheel, and bucket dolly would have to be rented or purchased. If water is encountered, a bailer will have to be obtained. If available, these items would rent for about $125.00 a month.

New air and water hose, steel, and some track will have to be obtained. These items are to be classified as supplies and are included in the footage estimates.

A small headframe and hoist building will have to be constructed. Material from an old and partly-demolished building at the property might be used in constructing the hoist house. The headframe material and erection costs estimated at $200.00. A 14- by 20-foot rough building estimated at $2.00 a square foot would cost $500.00.

Transportation

The road to the property is adequate for the exploration work. State Highway 160 between Nederland and Ward is a good dirt road but the snow is not removed in the winter months.

The applicant did not request any funds for transportation of men or supplies.

Ore will be transported in small lots to either Nederland or Sugar Loaf at a cost of about $1.50 a ton.

Manpower

Flarty will probably supervise the project for $2.00 per hour, or $16.00 a day. Working labor, although scarce, can probably be obtained for $1.65 per hour. Three or four men will be needed per shift under the classification of hoistman, miner, and foreman.

Power

Electric power is not available. Gasoline must be transported for use in the compressor and hoist motors.

Water

Water flows in a stream within 150 feet of the proposed shaft.

Time Schedule for Completion

The project should be conducted in the late spring or summer months, after access can be gained to the property.

The time schedule is estimated as follows:

	Days
Assembling equipment	6
Bulldozing shaft site and drilling and blasting boulders	5
Constructing headframe and building	10
Shaft sinking - 1 1/4 feet a day	68
Drifting - 2 1/2 feet a day	34
Total days	123

About six months would be required working on a five-day-a-week, one-shift-a-day basis; or five months at six days a week.

Mining and Milling Methods

An open stope method of mining utilizing stull supports is probably the most applicable. Mining costs will be high—about $18.00 to $20.00 a ton.

Ore will be sold to either the Teal mill, at Sugar Leaf, or the Vanadium Corporation of America mill, at Nederland. Both mills utilize flotation methods. The ore purchase schedule at the former Wolf Tongue mill, which was leased to the Vanadium Corporation of America late in October 1951, started payments at $26.00 a unit for 1 percent WO_3 and $30.00 a unit for 2 percent WO_3 (schedule effective between July and November, 1951).

SUMMARY: COST OF PROJECT

The cost of a modified project at the Hallie A mine is summarized as follows:

Bulldozing and preparing shaft site	$1,000.00
Construction of building and headframe	700.00
Purchase of equipment	600.00
Shaft sinking - 85 feet at $70.00 a foot	5,950.00
Drifting - 100 feet at $30.00 a foot	3,200.00
Miscellaneous	50.00
Total	$11,500.00

This project possibly can yield 1,562 tons of 1 percent WO_3, which, at $26.00 a unit, would net $40,612.00.

The project proposed by the applicant, comprising the driving of the lower tunnel through the ore shoot (150 feet instead of the proposed 50 feet) would cost $5,100.00 and would possibly yield 625 tons of 1 percent WO_3, which, at $26.00 a unit, would net $16,250.00.

The modified project is preferred.

PROPOSED FINANCING

The applicant indicated in the application that he could finance his portion of the project.

CONCLUSIONS

The Hallie A tungsten mine is on a strong vein that reportedly contains tungsten.

A Bureau of Mines report by James E. Bell, dated January 15, 1941, states that an ore shoot extends for 100 feet with an average width of 2 1/2 feet and is estimated to assay at least 1 percent WO_3.

The vein is in granite about four miles north of the main tungsten district.

Climate and road conditions will probably not allow winter work.

A project comprising 85 feet of shaft sinking and 100 feet of drifting is estimated to cost $11,500.00.

RECOMMENDATIONS

A tungsten project at the Hallie A mine, estimated to cost $11,500.00, is recommended for approval. The Government's share will be 75 percent of the cost of the project, or $8,625.00, and the applicant's share will be 25 percent, or $2,875.00.

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-2058

Date received 9-10-51

Participation

Mr. Norris G. Mitts (Owner)
2511 Court Street
Pekin, Illinois

Mr. Ray Flarty (Manager)
Nederland, Colorado

Name and address of applicant

Date Aug. 20, 1951

FILL IN THIS BLOCK

Date of application August 20, 1951

Estimated cost $8000.00

Mineral or metal Tungsten

Percentage of Government participation 75%

Location of mine Sugar Loaf Mining District
Nederland, Colorado

Date of filing MF-100

DMA Docket Number, if available 2058

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? individual

*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. Manager has spent his entire life in tungsten mining.

*5. Are you the owner or the lessee of the property? owner

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. none

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. Have net income of about $900 per month

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)? Yes $2000

*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. [June Rose patent # 18921 Hallie A, Hallie A # 1, Hallie A # 2--located by
(b) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted. same

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. same as above

*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. 1st mine road to left after Glacier Lake

*13. State source and quantity of water available for operations and its sufficiency at all seasons. excellent all year
State amount of power to be used, rate per hour or other cost, and source. no electric line at present

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. compressor & drill, track & mine car, ore shed

15. State in detail how the ore could be shipped and how and where milled. by truck to Nederland (Wolf-tongue) or Teal Mill at Sugarloaf

*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. 200' of tunnel-shipped during War 2
(b) State briefly the known history and production of adjoining and neighboring properties. Conger Mine down the canyon
(c) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations. was approved for diamond drilling near end of W. War 2, but never started.

*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				

Have already spent $300 in opening up tunnel. Need to drive in about 50' more to reach stoping ground. Shipments averaged 1½% when in operation during World War 2. Is a new mine still in prospect stage. Vein has never been explored. Samples on floor of old tunnel indicate an average of 2% ore.

*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.
Mine is up the canyon from famous Conger tungsten mine and shows similar ore.

THE EXPLORATION

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

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. tunneling and core drilling, taking about 1 year or less

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. We have mill sheets from shipments made in 1945 showing ore averaging 1½%. No maps have been made.

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 (1) Labor-$1.62 per hr.
(b) Supervisors, by numbers and positions, with salaries of each (1) $1.00 per hr. + 10% of shipment
(c) Cost of necessary repairs to existing facilities, structures, and buildings. $500
(d) Cost of necessary installation or construction of additional facilities, structures, and buildings. $1000
(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. Compressor, Drill, Minecar, Track, Lines, (used) $1000
(f) Cost of rental for equipment which the operator proposes to rent. none
(g) Rental value of items of equipment which the operator now owns and which will be devoted to the work. (see e)
(h) Cost of materials and supplies, including items of equipment costing less than $50 each. $600
(i) Cost of power, water, utilities, and any other items not provided for above. none

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. expect to have 50' of tunnel completed by Dec. 1, 1951--core drilling to be completed by July 1, 1952 at a total cost of $8000.

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.

(Name of company) By Jerry G. Mitts (Signature of authorized official)

Aug 20, 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.

(Spoken for but not purchased)

*Same as footnote on page 1.

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

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

Building 20, Denver Federal Center

Mining Division

TO : Chief, Mining Division, Region IV

DATE: August 27, 1951

Date Rec'd. AUG 28 1951

BUREAU OF MINES
Denver, Colorado

FROM : W. M. Traver, Jr.

SUBJECT: Loan application, Norris G. Mitts.

Please find enclosed four copies of a loan application received from Norris G. Mitts, of Pekin, Illinois, covering a tungsten property in Boulder County, Colorado. A copy of Mr. Mitts' accompanying letter is attached.

The application originated from a letter Mr. Mitts wrote S. R. Zimmerley regarding the exploration program, which Mr. Zimmerley forwarded to this office. Copies of correspondence on the subject were submitted to you July 11, 1951.

Please forward the application to Washington in the usual manner.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

C
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Y

2511 Court Street
Pekin, Illinois
August 20, 1951

Mr. W. M. Traver, Jr.
Chief, Colorado Branch, Mining Div.
Denver Federal Center
Denver 14, Colorado

Dear Mr. Traver:

Thank you for your letter of July 11 and the enclosed forms which I have now filled out and am returning to you.

Since receiving this material in Nederland this summer, I have spent $300 in getting the mine in shape for inspection and have machinery and a good manager lined up ready to go to work.

We plan to continue a new tunnel, started during World War 2 when the mine was in operation. This will give us stoping ground under proven ore for about 160'. We ran into a schist dike in the old tunnel and had the mine approved for core drilling to locate the ore body when the government stopped their drilling operations. At that time we dropped down the mountain about 40' and started a second tunnel. We had not yet reached the vein when the market dropped and all work was stopped. This new tunnel was caved in and I spent $300 during the summer getting it opened up and driven in about 8' further to reach the vein. No ore is in sight, and we plan to drive the tunnel approximately 50' further to get under the old tunnel where we know good tungsten ore is available. The old tunnel was driven in about 200'.

This is a new mine, and it needs a lot of prospecting and exploration work done on it. The ore taken out seems to warrant such expenditure.

Yours very truly,

/s/ Norris G. Mitts

Norris G. Mitts

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