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

224 New Customhouse
Denver 2, Colorado

November 18, 1952

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2700, (Lead-Zinc) A. R. Rhine, General Teller Lode, Summit County, Colorado

Enclosed are four copies of the final report on DMEA-2700, two copies of Form 3b and a copy of the letter of denial to the applicant.

W. H. King
W. H. King

for Ogden Tweto
A. H. Koschmann

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 24 1952

Form 3b retained in Docket & Control - 11-24-52 - B.D.

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

224 New Customhouse
Denver 2, Colorado

November 18, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 24 1952

Mr. A. R. Rhine
2550 Yarrow St.
Denver, Colorado

Re: DMEA Docket 2700

Dear Mr. Rhine:

Reference is made to your application for Government aid in exploration work on the General Teller Lode.

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

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

Very truly yours,

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

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

HMC:oc
cc: Administrator (DMEA)
WMTraver
Subject
Chron.
AHKoschmann (2)

Reviewed by
DMEA OPERATING COMMITTEE
11-28-52
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

November 18, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2700, (Lead-Zinc) A. R. Rhine, General Teller Lode, Summit County, Colorado

Enclosed are eight copies of the engineering report on DMEA-2700 by C. M. Harrer.

The applicant requested $47,100 to crosscut 1500 feet to the Wild Irishman and General Teller veins approximately 1000 feet below their lowest workings.

The examining engineer concludes this proposed work has little possibility of success in view of the small irregular ore shoots mined near surface.

The field examiners recommend denial and we concur in that recommendation.

W. H. King
W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Bureau of Mines
NOV 18 1952

Reviewed by
DMEA OPERATING COMMITTEE
11-28-52
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
November 14, 1952

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: DMEA 2700 (Lead), A. R. Rhine (General Teller lode), Summit County, Colorado

Please find enclosed the original and eight copies of the "Summary, Conclusions, and Recommendations" by E. N. Harshman and C. M. Harrer, and of Harrer's "Engineering Report" on the above docket.

Harrer concludes that the exploration at depths of 900 to 1,100 feet below the lowest workings on the Wild Irishman and General Teller veins as proposed by the applicant has little possibility of success in view of the small, irregular ore shoots exposed in near-surface mine workings. Also, the applicant fails to show in his loan request whether he has right of way for the proposed tunnel extension. He recommends denial of the application.

I concur with his conclusions and recommendation.

The brochure furnished by the Region IV Field Team is also enclosed.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

WMT/cb

cc 8
DMEA 2700
DMEA Chron.

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

200 New Customhouse
Denver 2, Colorado

October 23, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2700, General Teller Lode, Summit County, Colorado.

Attached are 8 copies of the geologic report by E. N. Harshman covering DMEA Docket 2700, General Teller Lode, Summit County, Colorado.

The applicant proposes to explore the General Teller and Wild Irishman veins by tunnelling at a depth of 1000 to 1200 feet below their outcrops, at an estimated cost of $47,100.

The Wild Irishman vein follows a fault in pre-Cambrian gneiss. It has been prospected by shallow pits and adits, the latter now caved. It consists chiefly of manganosiderite carrying some galena; locally the vein comprises quartz and barite. Galena is the principal ore mineral, and with rare pyrite and sphalerite, is disseminated through the quartz or in thin veinlets.

The General Teller vein, 3 to 4 feet wide, has been developed by a number of test pits and by a recently completed 100-foot shaft and 60-foot crosscut. Argentiferous galena is the principal ore mineral; locally sphalerite and pyrite occur, all associated with barite and quartz. Profitable mining would depend on the silver content of the ore.

The probability of finding significant quantities of lead ore in either the Wild Irishman or General Teller veins appears remote and Harshman, therefore, recommends that the exploration loan be denied.

I concur in this recommendation.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 2700, A. R. Rhine

General Teller Lode

Summit County, Colorado

Lead

E. N. Harshman, Geologist
U. S. Geological Survey

C. M. Harrer, Mining Engineer
Bureau of Mines

November 7, 1952

DMEA 2700

A. R. RHINE
GENERAL TELLER LODE
SUMMIT COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By E. N. Harshman
Geologist
U. S. Geological Survey

and

C. M. Harrer
Mining Engineer
Bureau of Mines

DMEA 2700

A. R. RHINE
GENERAL TELLER LODE
SUMMIT COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By E. N. Harshman and C. M. Harrer

A. R. Rhine, of 2550 Yarrow Street, Denver, Colo., has applied for a Defense Minerals Exploration Administration loan of $47,100.00 under docket 2700, to rehabilitate the old Preston tunnel and extend it about 1,500 feet to crosscut the Wild Irishman and General Teller veins approximately 900 to 1,100 feet below their lowest workings.

The property is in the rugged Snake River Mining District, Summit County, Colo., at altitudes ranging between 11,000 and 12,400 feet.

Argentiferous galena ore containing subordinate amounts of zinc and copper, with a gangue of quartz, barite and manganosiderite, is reported to occur in small, lenticular bodies separated by barren intervals along the vein on the Wild Irishman claim. Recorded production is 375 tons of closely sorted ore. All the lower mine workings are inaccessible. Assays of samples taken from the General Teller vein 35 feet and 85 feet below the outcrop were very low grade.

Both veins are mineralized fissures in Swandyke gneiss. They strike northeast, dip steeply north, and, where exposed, appear to

parallel the lineation in the gneiss. Alteration, believed to be hydrothermal, has produced clay, sericite, and iron-manganese oxides in the wall rock, particularly on the hanging wall side of the General Teller vein.

No basis exists upon which to predict ore reserves.

Crosscutting at depths of 900 to 1,100 feet below the lowest workings on the Wild Irishman and General Teller veins, as proposed by the applicant, is not sound exploration, particularly when only minor ore shoots have been exposed by near-surface exploration. It is doubtful if the respective veins could be identified at these depths and the probability of finding significant ore shoots appears remote.

The request for $47,100.00 exploration assistance is recommended for denial.

GENERAL TELLER LODE

SUMMIT COUNTY, COLORADO

DMEA DOCKET 2700

Geologic Report

By E. N. Harshman
U. S. Geological Survey

GENERAL TELLER LODE
SUMMIT COUNTY, COLORADO

INTRODUCTION

A. R. Rhine, 2550 Yarrow Street, Denver, Colorado, has applied for assistance, DMEA Docket 2700, to explore for lead ore on 3 patented and 5 unpatented claims, in part owned and in part leased by him. These claims are located in secs. 3 and 4, T. 6 S., R. 76 W., Summit County, Colorado, about 2 miles south of Montezuma, Colorado. They lie on top, and on the west slope of Glacier Mountain at altitudes of about 11,000 to 12,400 feet. Access to the property from Montezuma is by way of a 4 mile, poorly graded, dirt road which follows up St. Johns Creek for about 2 miles then up the steep western slope of Glacier Mountain. A 4 wheel drive vehicle must be used to traverse the last 2 miles of road.

The applicant proposes to explore the General Teller and Wild Irishman veins, at a depth of 1000 to 1200 feet below their outcrops, by extending the old Preston tunnel some 1500 feet to the southeast (fig. 3). The estimated cost of the project is $47,100.

A field examination was made on October 1, 1952, in company with C. M. Harrer, U. S. Bureau of Mines, and A. R. Rhine, the applicant.

It is concluded that there is little probability of making a significant discovery by the proposed exploration, and denial of the loan is recommended.

GEOLOGY

The General Teller and Wild Irishman veins occupy fault fissures in the pre-Cambrian Swandyke gneiss. Both veins can be traced along their

strike for several thousand feet, either by scattered outcrops of vein material or by shallow exploratory pits and adits, now caved.

The Wild Irishman vein strikes N. 75° E., and dips steeply to the north. According to Lovering (1935) the Wild Irishman vein near the lower adit (altitude about 11,400 feet) consists largely of manganosiderite carrying some galena. Higher on the west slope of Glacier Mountain, manganosiderite is rare and the gangue is chiefly fine-grained quartz and small amounts of coarse-grained barite. Galena is the principal ore mineral and pyrite and sphalerite are rare. Much of the galena is disseminated through the quartz in thin veinlets or as scattered individual grains. Some galena occurs in seams up to 3 inches wide.

Most of the vein material noted on the dumps is vuggy and the vein, at least in part, is apparently a mineralized fault breccia. Old stope maps indicate that ore occurred in small nearly vertical shoots, separated by long barren stretches of vein material.

The General Teller vein outcrops in the area immediately east of the crest of Glacier Mountain. It has been developed by a number of test pits, now caved, by a recently completed 100 foot shaft and 60 foot crosscut, and by a short adit and drift on the vein (fig. 2).

Argentiferous galena is the principal ore mineral, although some pyrite and sphalerite were noted in the underground workings. Manganosiderite is rare and the chief gangue minerals are barite and quartz. Near the surface some of the sulfides have been leached although galena was noted at several points along the vein outcrop.

The vein strikes N. 60°-70° E., and dips 75° N. On the surface and in the underground workings, the General Teller vein is concordant with

the lineation of the Swandyke gneiss (fig. 2). Vein widths are from 3 to 4 feet.

A crosscut from the bottom of the General Teller shaft has exposed the vein about 85 feet below its outcrop. At this point it is 36 inches wide and consists of very minor amounts of disseminated galena in a barite and quartz gangue. For a distance of at least 40 feet beyond the hanging wall of the vein, alteration is intense and much of the Swandyke gneiss is altered to a structureless clay. The entire mass is iron stained and near the vein, manganese oxides are noted. Alteration in the footwall country rock is less intense; feldspars are sericitized and iron oxides are present. This alteration is believed to be primarily hydrothermal. A sample of the vein material in the crosscut assayed less than 0.1% non-sulfide lead.

A short adit and drift, about 60 feet southeast of the shaft (fig. 2), has explored the General Teller vein some 35 feet below the outcrop. Galena, in a barite and quartz gangue, occurs in small lenses and stringers in a vuggy and open textured vein from 36 to 40 inches wide. Surface alteration is intense and iron and manganese oxides are present in the vein and in the wallrock near the vein. A sample of the vein assayed 1.65% non-sulfide lead.

GRADE OF VEIN MATERIAL AND ORE RESERVES

The General Teller vein was sampled in the 2 underground exposures as shown on fig. 2. Assays by the U. S. Bureau of Mines are as follows:

Sample No.	Width	oz. Au	% Pb	% Zn	% Pb (non-sulfide)
H 576	36"	1.2	0.4	0.15	less than 0.1
H 577	42"	2.9	2.75	0.2	1.65

Ore reserves on the General Teller and Wild Irishman veins cannot be estimated with any degree of accuracy.

CONCLUSIONS AND RECOMMENDATIONS

In the Glacier Mountain area of the Montezuma district ore occurs in small discontinuous shoots separated by long barren stretches of vein material. Ore widths are measured in inches and profitable mining, to a major degree, depends upon the silver content of the ore.

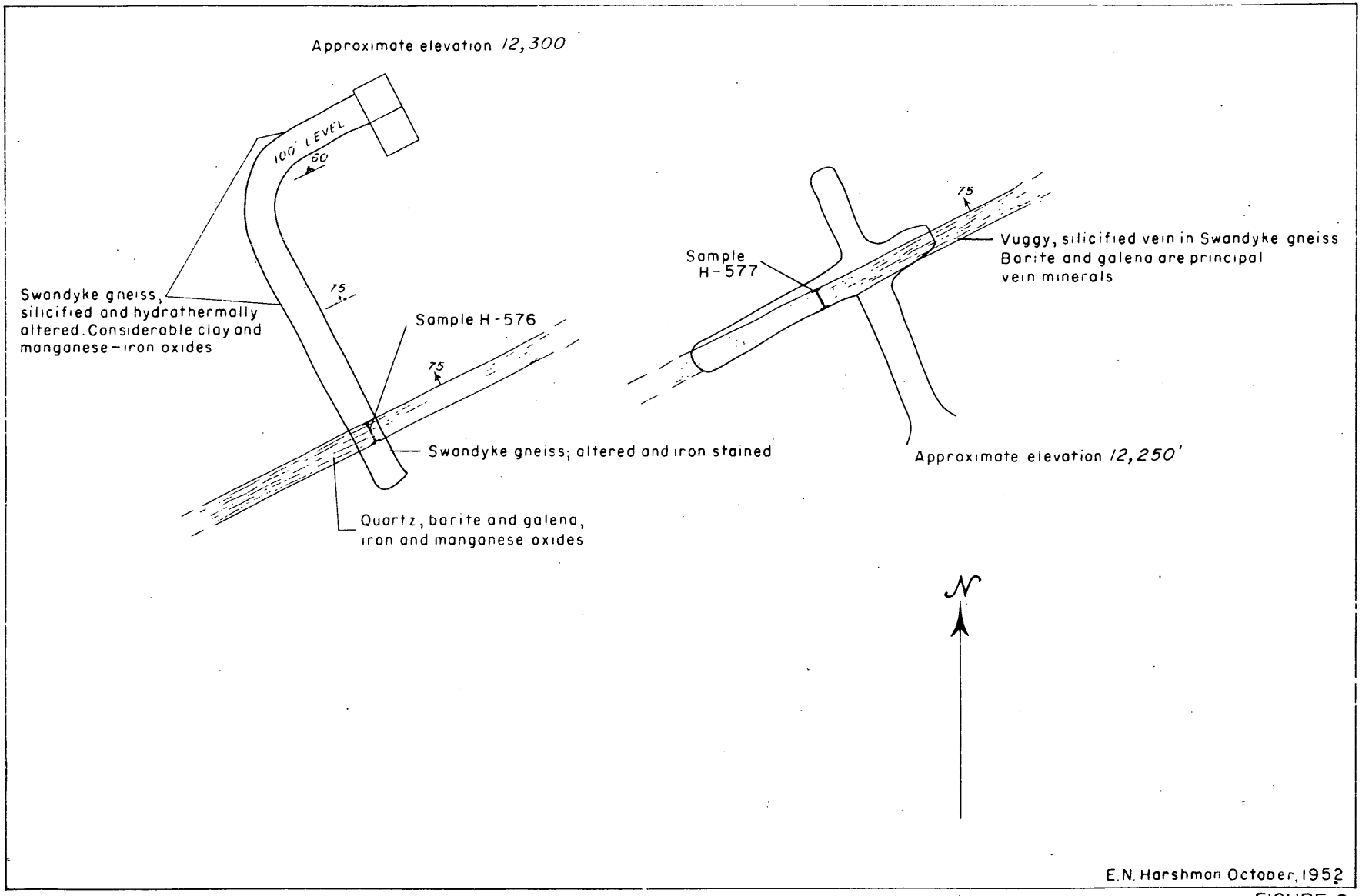
Although the workings on the Wild Irishman vein were not open, available data indicate that here the ore shoots were no exception to the general rule, for although the vein has been developed by well over 1000 feet of workings, less than 400 tons of ore have been produced. Limited exploration on the General Teller vein has exposed little or no ore and there is no reason to assume that any ore shoots that may occur in this vein will be longer, wider, or higher grade than those already mined on the Wild Irishman.

Crosscutting at depths of 900 to 1100 feet below the lowest workings on the Wild Irishman and General Teller veins, as proposed by the applicant, is unsound exploration procedure, particularly when only minor ore shoots have been exposed near the surface. The probability of finding significant quantities of lead ore at depth appears remote.

It is recommended that the application for exploration assistance, DMEA Docket 2700, be denied.

REFERENCES

Lovering, T. S., Geology and ore deposits of the Montezuma quadrangle, Colorado, U. S. Geol. Survey Prof. Paper 178, 1935.



WORKINGS ON GENERAL TELLER CLAIM MONTEZUMA, SUMMIT COUNTY, COLORADO

FIGURE 2

20 0 20 30 FEET

DMEA 2700

A. R. RHINE
GENERAL TELLER LODE
SUMMIT COUNTY, COLORADO

Engineering Report

By C. M. Harrer
Mining Engineer
Bureau of Mines

DMEA 2700

A. R. RHINE
GENERAL TELLER LODE
SUMMIT COUNTY, COLORADO

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ILLUSTRATIONS

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1. Location map, General Teller lode, A. R. Rhine, applicant; Summit County, Colorado	1
2. Workings on General Teller claim, Montezuma, Summit County, Colorado	*
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*See figure following geologic report

DMEA 2700

A. R. RHINE
GENERAL TELLER LODE
SUMMIT COUNTY, COLORADO

ENGINEERING REPORT

By

C. M. Harrer

INTRODUCTION

A. R. Rhine, of 2550 Yarrow Street, Denver, Colo., has applied for a Defense Minerals Exploration Administration loan of $47,100.00 to rehabilitate the Preston tunnel for its length of about 1,200 feet and extend it southeasterly approximately 1,500 feet to intersect the Wild Irishman, General Teller, and other veins at depths of 900 to 1,100 feet below their lowest workings. A field examination of surface exposures and underground development was completed by the Defense Minerals Exploration Administration examining team on October 1, 1952.

ACKNOWLEDGMENT

A. R. Rhine, loan applicant, accompanied the examining team over the property and cooperated fully by presenting all information at his disposal.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The property owned and under lease by the applicant, A. R. Rhine, is in secs. 3 and 4, T. 6 S., R. 76 W., and overlaps into secs. 33 and 34, T. 5 S., R. 76 W., all in the Snake River Mining District, Summit County, Colo., at altitudes ranging between 11,000 and 12,400 feet (fig. 1). The group of claims on Glacier Mountain

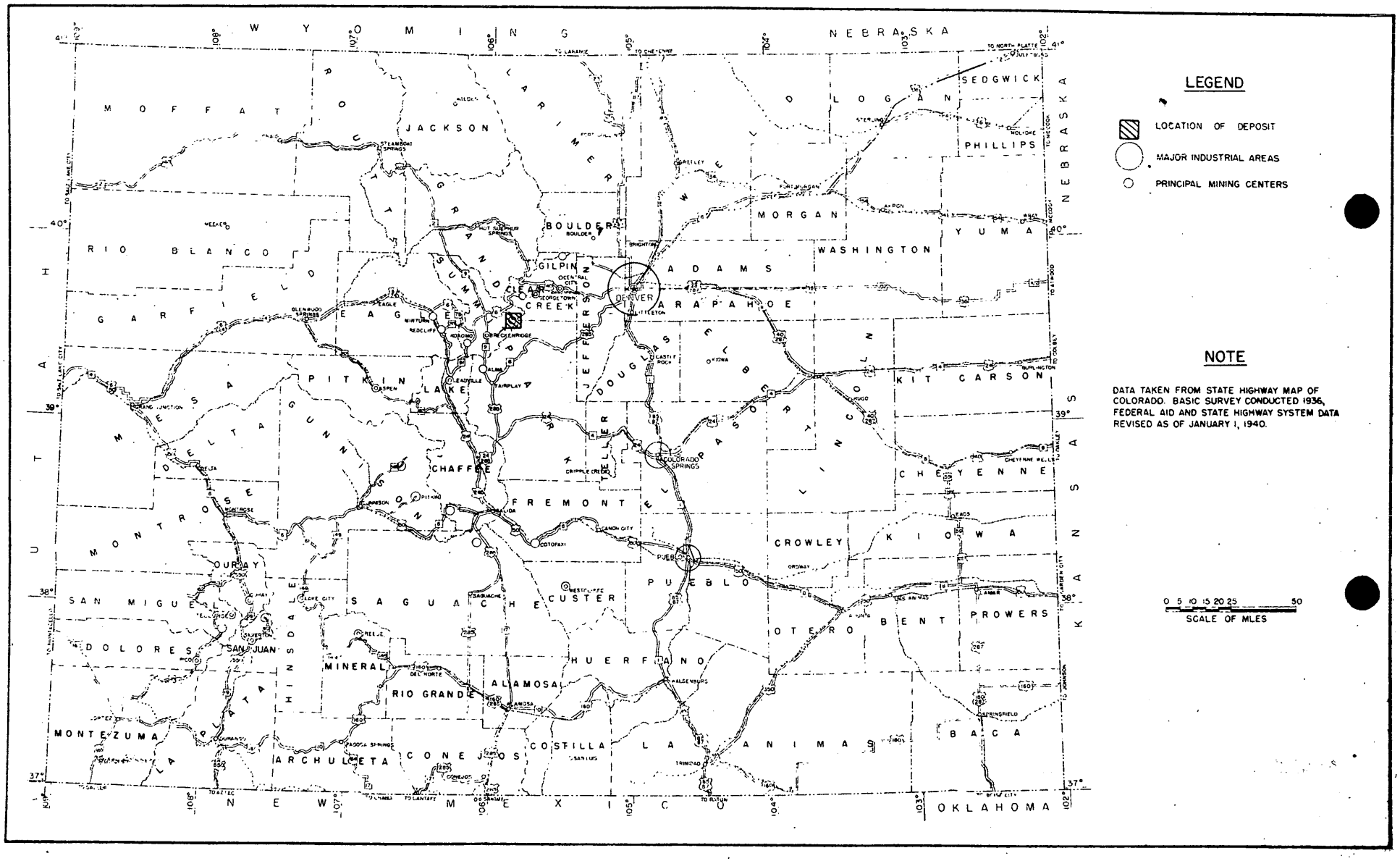


Figure 1. - Location map, General Teller lode, A. R. Rhine, applicant; Summit County, Colorado (DMEA 2700).

is accessible from Montezuma over 4.5 miles of steep and rough ore-haul roads. Ther terrain is very rugged. Winters are severe with heavy snowfall, limiting mining operations to a short season or a continual struggle against severe weather at high costs.

HISTORY AND PRODUCTION

The first activity on Glacier Mountain was in 1864 when silver was discovered. Production in this part of the district has been sporadic and consisted of small shipments of high-grade lead-silver ore.

The Wild Irishman lode, located in 1881, produced 375 tons of closely sorted lead-silver ore.

The overlapping Herman claim produced 115 tons of high-grade lead-silver ore.

The California-Bell claims, which are believed to be the extension of the Wild Irishman vein to the northeast, produced about 3,400 tons of lead-zinc-silver ore.

Extension to the west of the Wild Irishman lode, represented on the Silver Prince lode, produced about 100 tons of lead-silver ore.

The Altoona lode, which is the present terminus of the Preston tunnel, has a recorded production of 30 tons of lead-silver ore.

There has been no production from the General Teller lode.

OWNERSHIP AND EXTENT

A. R. Rhine, loan applicant, owns the following property in Summit County, Colo.:

Patented

Name	Pat. Surv. No.	Size	Location
Wild Irishman lode	2948	150 by 1,500 feet	sec. 3, T. 6 S., R. 76 W.
Millsite claim	5591-B	5 acres	sec. 4, T. 6 S., R. 76 W.; sec. 33, T. 5 S., R. 76 W.

Unpatented

General Teller tunnel site	-----	3,000 by 3,000 feet	secs. 3 and 4, T. 6 S., R. 76 W.; secs. 33 and 34, T. 5 S., R. 76 W.
Centennial lode A	-----	600 by 1,500 feet	sec. 4, T. 6 S., R. 76 W.
Centennial lode B	-----	600 by 1,500 feet	secs, 3 and 4, T. 6 S., R. 76 W.

Property controlled by the applicant through lease and bond agreement and assignment includes:

Patented

Name	Pat. Surv. No.	Size	Location
General Teller lode	131	50 by 1,602.4 feet	sec. 3, T. 6 S., R. 76 W.

Unpatented

Dick No. 1.	------	600 by 1,500 feet	secs. 3 and 4, T. 6 S., R. 76 W.
Dick No. 2.	------	600 by 1,500 feet	sec. 3, T. 6 S., R. 76 W.

The lease to the above property, with option to purchase, was activated on September 5, 1950, and is in effect to December 31, 1955.

On September 13, 1950, the lessees assigned their interests in the above lease and option to purchase to the lessors, A. R. Rhine and O. W. Stevens, providing covenants and stipulations in the original document are carried out.

Proportionate Assignments

Name	Title	Assignment-percent
A. R. Rhine	Lessor	62-1/2
O. W. Stevens	Lessor	12-1/2
V. N. Jeffrey	Lessee	8-1/3
J. N. Jeffrey	Lessee	8-1/3
J. A. Ulibarri	Lessee	8-1/3

All expenses incurred in accomplishing the terms of the contract will be the responsibility of the lessors, A. R. Rhine and O. W. Stevens.

The applicant, A. R. Rhine, does not possess right of way over the Arctic, Merrell, Altoona, and Herman claims.

Ownership and locations described above are shown on figure 3.

DESCRIPTION OF THE DEPOSITS

Argentiferous galena ore containing zinc and copper, with a gangue of quartz, barite, and iron-manganese oxides, occurs in small, lenticular bodies structurally related to changes in dip and strike. These lenses of ore and gangue are separated by barren intervals along the vein.

The discontinuous nature of ore occurrence as small lenticular shoots, a characteristic common to veins on Glacier Mountain, is illustrated by the description of the Wild Irishman vein, where ore occurred in nearly vertical shoots 40 to 100 feet long, separated by barren stretches.[1/]

Galena is sparsely present in the outcrop of the General Teller vein which can be traced for several hundred feet. Underground development and sample locations are shown on figure 2 accompanying the geologic report.

The vein as developed 35 feet below the outcrop by adit is 3.5 feet wide and parallels the schistosity of the enclosing gneiss. It is open textured and contains galena, with a gangue of quartz, barite and manganese-iron oxides. The vein assays 2.9 ounces silver per ton, 2.75 percent lead, with 1.65 percent oxide lead, and 0.2 percent zinc.

The vein is again exposed in the crosscut at the bottom of the General Teller shaft, 85 feet below the outcrop. Galena occurs in a gangue of quartz, barite, and iron-manganese oxides. The gneiss walls show severe alteration and considerable clay development. The vein, over its width of 3.0 feet, assays 1.2 ounces silver per ton, 0.4 percent lead, with less than 0.1 percent oxide lead, and 0.15 percent zinc.

1/ U. S. Geol. Survey Prof. Paper-178, Geology and Ore Deposits of the Montezuma Quadrangle: T. S. Lovering, pp. 114-115

MINEABLE ORE RESERVES

No basis exists on which to predicate an estimate of ore reserves.

SAMPLING

Two channel samples, H-577 and H-576, were taken 35 and 85 feet below the outcrop, across the full width of the General Teller vein and are shown on figure 2 accompanying the geologic report.

Assay data

Sample No.	Width feet	Oz/T Silver	Percent Lead	Percent Oxide lead	Percent Zinc	Location
H-577	3.5	2.9	2.75	1.65	0.2	General Teller vein, 35 feet below outcrop; in adit
H-576	3.0	1.2	0.4	<0.1	0.15	General Teller vein, 85 feet below outcrop; in crosscut at bottom of shaft

PRESENT STATUS

Exploration and Development

The Wild Irishman vein is traceable over the claim length by shallow workings and adits, all caved and inaccessible (fig. 3). Its continuity over the Silver Prince claim to the southwest and the California Bell group of claims to the northeast is evident in numerous shallow workings, caved and inaccessible.

The General Teller vein is traceable over most of the claim length by outcrops and shallow shafts which are caved and inaccessible.

Accessible workings (fig. 2 with the geologic report), consist of 36 feet of crosscut adit 35 feet below the outcrop, with 37 feet of drift along the vein. The General Teller shaft, 4- by 8-foot cross section and 100 feet deep, cuts the vein 85 feet below the outcrop, in a crosscut 64 feet long.

The Preston tunnel (fig. 3) is reported driven about 1,200 feet. At the time of examination the tunnel was inaccessible beyond 300 feet due to bad air. It would require rehabilitation with new track and air, water, and ventilation lines.

Mining and Milling Equipment

There are no milling facilities on the property and none are contemplated at this stage of operation.

The mining plant is located on the General Teller claim in a 10- by 50-foot shaft house and a 20- by 50-foot building housing a shop, compressor, and living quarters. Equipment on the property and its revaluation by the applicant is as follows:

1	Blaisdell two-stage, 600 c.f.m., diesel-driven, 16 x 10 x 10 air compressor, serial number 1290	$ 5,000.00
1	Cummings diesel engine to drive above compressor	7,000.00
1	Hendrie and Bolthoff air-driven mine hoist, 500 feet rope capacity	1,000.00
1	RD7 caterpillar tractor and dozer	6,000.00
1	3,000-gallon fuel tank	100.00
1	air receiver	100.00
1	3-1/4-inch Sullivan automatic drifter, complete with column and hoses	500.00
1	Ingersoll-Rand jackhammer mounted on a shell, complete	250.00

Miscellaneous hand tools	$ 100.00
Miscellaneous drill steel and tinker bits	50.00
1 steel headframe	500.00
2 buildings	2,000.00
1 jeep	1,000.00
Total	$23,600.00

PROJECT PROPOSAL

A. R. Rhine proposes to rehabilitate about 1,200 feet of the existing Preston tunnel and extend it to the southeast for an additional 1,500 feet to intersect the Wild Irishman, General Teller, and other veins (fig. 3). The equipment now on the General Teller claim would be dismantled and moved to the portal of the Preston tunnel, re-installed, and housed in suitable structures as part of the project estimated to cost $47,100.00.

CONCLUSIONS

The applicant's proposal to explore the Wild Irishman and General Teller veins for commercial bodies of lead-zinc-silver ores at depths of 900 to 1,100 feet below their lowest workings by utilizing the existing Preston tunnel is not a reasonable venture based on geologic precedent.

Structural control of ore deposition, closely associated with changes in dip and strike, limits ore occurrence to lenticular bodies more or less widely spaced between barren stretches. Consequently, exploration away from their known locations is extremely uncertain.

It is doubtful if the respective veins could be identified at these crosscut depths or whether they would be ore-bearing where

intersected by the tunnel.

Ore found as a result of the proposed project would not repay the cost of the project or add materially to known reserves of strategic minerals. Assays of exposures on the General Teller vein are too low grade to be encouraging.

The applicant does not possess right of way through conflicting claims along the tunnel line.

RECOMMENDATIONS

The request by A. R. Rhine for $47,100.00 exploration assistance under the Defense Minerals Exploration Administration (DMEA 2700) is recommended for denial.

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

New Customhouse
Denver 2, Colorado

November 18, 1952

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2700, (Lead-Zinc) A. R. Rhine, General Teller Lode, Summit County, Colorado

Enclosed are four copies of the final report on DMEA-2700, two copies of Form 3b and a copy of the letter of denial to the applicant.

W. H. King
W. H. King

for A. H. Koschmann

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 24 1952

COPY

224 New Customhouse
Denver 2, Colorado

November 18, 1952

Mr. A. R. Rhine
2550 Yarrow St.
Denver, Colorado

Re: DMEA Docket 2700

Dear Mr. Rhine:

Reference is made to your application for Government aid in exploration work on the General Teller Lode.

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

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

Very truly yours,

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

/s/ Ogden Tweto for
A. H. Koschmann
Field Team, Region IV

HMC:oc
cc: Administrator (DMEA)
WMTraver
Subject
Chron.
AHKoschmann (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

November 18, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2700, (Lead-Zinc) A. R. Rhine, General Teller Lode, Summit County, Colorado

Enclosed are eight copies of the engineering report on DMEA-2700 by C. M. Beaver.

The applicant requested $47,100 to crosscut 1500 feet to the Wild Irishman and General Teller veins approximately 1000 feet below their lowest workings.

The examining engineer concludes this proposed work has little possibility of success in view of the small irregular ore shoots mined near surface.

The field examiners recommend denial and we concur in that recommendation.

W. H. King
W. H. King

Enclosures

NOV 20 1952

Reviewed by
DMEA OPERATING COMMITTEE

(date)

Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
November 14, 1952

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: DMEA 2700 (Lead), A. R. Rhine (General Teller Lode), Summit County, Colorado

Please find enclosed the original and eight copies of the "Summary, Conclusions, and Recommendations" by E. N. Harshman and C. M. Harrer, and of Harrer's "Engineering Report" on the above docket.

Harrer concludes that the exploration at depths of 900 to 1,100 feet below the lowest workings on the Wild Irishman and General Teller veins as proposed by the applicant has little possibility of success in view of the small, irregular ore shoots exposed in near-surface mine workings. Also, the applicant fails to show in his loan request whether he has right of way for the proposed tunnel extension. He recommends denial of the application.

I concur with his conclusions and recommendation.

The brochure furnished by the Region IV Field Team is also enclosed.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

WMT/eb

cc 8
DMEA 2700
DMEA Chron.

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

200 New Customhouse
Denver 2, Colorado

October 23, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2700, General Teller Lode, Summit County, Colorado.

Attached are 8 copies of the geologic report by E. N. Harshman covering DMEA Docket 2700, General Teller Lode, Summit County, Colorado.

The applicant proposes to explore the General Teller and Wild Irishman veins by tunneling at a depth of 1000 to 1200 feet below their outcrops, at an estimated cost of $47,100.

The Wild Irishman vein follows a fault in pre-Cambrian gneiss. It has been prospected by shallow pits and adits, the latter now caved. It consists chiefly of manganosiderite carrying some galena; locally the vein comprises quartz and barite. Galena is the principal ore mineral, and with rare pyrite and sphalerite, is disseminated through the quartz or in thin veinlets.

The General Teller vein, 3 to 4 feet wide, has been developed by a number of test pits and by a recently completed 100-foot shaft and 60-foot crosscut. Argentiferous galena is the principal ore mineral; locally sphalerite and pyrite occur, all associated with barite and quartz. Profitable mining would depend on the silver content of the ore.

The probability of finding significant quantities of lead ore in either the Wild Irishman or General Teller veins appears remote and Harshman, therefore, recommends that the exploration loan be denied.

I concur in this recommendation.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 2700, A. R. Ihing

General Teller Lode

Summit County, Colorado

Lead

E. N. Harshman, Geologist
U. S. Geological Survey

C. M. Harrer, Mining Engineer
Bureau of Mines

November 7, 1952

DMEA 2700

A. R. RHINE
GENERAL TELLER LODE
SUMMIT COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By E. N. Harshman
Geologist
U. S. Geological Survey

and

C. M. Harrer
Mining Engineer
Bureau of Mines

DMEA 2700

A. R. RHINE
GENERAL TELLER LODE
SUMMIT COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By E. N. Harshman and C. M. Harrer

A. R. Rhine, of 2550 Yarrow Street, Denver, Colo., has applied for a Defense Minerals Exploration Administration loan of $47,100.00 under docket 2700, to rehabilitate the old Preston tunnel and extend it about 1,500 feet to crosscut the Wild Irishman and General Teller veins approximately 900 to 1,100 feet below their lowest workings.

The property is in the rugged Snake River Mining District, Summit County, Colo., at altitudes ranging between 11,000 and 12,400 feet.

Argentiferous galena ore containing subordinate amounts of zinc and copper, with a gangue of quartz, barite and manganosiderite, is reported to occur in small, lenticular bodies separated by barren intervals along the vein on the Wild Irishman claim. Recorded production is 375 tons of closely sorted ore. All the lower mine workings are inaccessible. Assays of samples taken from the General Teller vein 35 feet and 85 feet below the outcrop were very low grade.

Both veins are mineralized fissures in Swandyke gneiss. They strike northeast, dip steeply north, and, where exposed, appear to

parallel the lineation in the gneiss. Alteration, believed to be hydrothermal, has produced clay, sericite, and iron-manganese oxides in the wall rock, particularly on the hanging wall side of the General Teller vein.

No basis exists upon which to predict ore reserves.

Crosscutting at depths of 900 to 1,100 feet below the lowest workings on the Wild Irishman and General Teller veins, as proposed by the applicant, is not sound exploration, particularly when only minor ore shoots have been exposed by near-surface exploration. It is doubtful if the respective veins could be identified at these depths and the probability of finding significant ore shoots appears remote.

The request for $47,100.00 exploration assistance is recommended for denial.

GENERAL TELLER LODE

SUMMIT COUNTY, COLORADO

DMEA DOCKET 3700

Geologic Report

By E. N. Harshman
U. S. Geological Survey

strike for several thousand feet, either by scattered outcrops of vein material or by shallow exploratory pits and adits, now caved.

The Wild Irishman vein strikes N. 75° E., and dips steeply to the north. According to Lovering (1935) the Wild Irishman vein near the lower adit (altitude about 11,400 feet) consists largely of manganosiderite carrying some galena. Higher on the west slope of Glacier Mountain, manganosiderite is rare and the gangue is chiefly fine-grained quartz and small amounts of coarse-grained barite. Galena is the principal ore mineral and pyrite and sphalerite are rare. Much of the galena is disseminated through the quartz in thin veinlets or as scattered individual grains. Some galena occurs in seams up to 3 inches wide.

Most of the vein material noted on the dumps is vuggy and the vein, at least in part, is apparently a mineralized fault breccia. Old stope caps indicate that ore occurred in small nearly vertical shoots, separated by long barren stretches of vein material.

The General Toller vein outcrops in the area immediately east of the crest of Glacier Mountain. It has been developed by a number of test pits, now caved, by a recently completed 100 foot shaft and 60 foot crosscut, and by a short adit and drift on the vein (fig. 2).

Argentiferous galena is the principal ore mineral, although some pyrite and sphalerite were noted in the underground workings. Manganosiderite is rare and the chief gangue minerals are barite and quartz. Near the surface some of the sulfides have been leached although galena was noted at several points along the vein outcrop.

The vein strikes N. 65°-70° E., and dips 75° N. On the surface and in the underground workings, the General Toller vein is concordant with

the lineation of the Swandyke gneiss (fig. 2). Vein widths are from 3 to 4 feet.

A crosscut from the bottom of the General Teller shaft has exposed the vein about 65 feet below its outcrop. At this point it is 36 inches wide and consists of very minor amounts of disseminated galena in a barite and quartz gangue. For a distance of at least 40 feet beyond the hanging wall of the vein, alteration is intense and much of the Swandyke gneiss is altered to a structureless clay. The entire mass is iron stained and near the vein, manganese oxides are noted. Alteration in the footwall country rock is less intense; feldspars are sericitized and iron oxides are present. This alteration is believed to be primarily hydrothermal. A sample of the vein material in the crosscut assayed less than 0.1% non-sulfide lead.

A short adit and drift, about 60 feet southeast of the shaft (fig. 2), has explored the General Teller vein some 35 feet below the outcrop. Galena, in a barite and quartz gangue, occurs in small lenses and stringers in a vuggy and open textured vein from 36 to 40 inches wide. Surface alteration is intense and iron and manganese oxides are present in the vein and in the wallrock near the vein. A sample of the vein assayed 1.65% non-sulfide lead.

GRADE OF VEIN MATERIAL AND ORE RESERVES

The General Teller vein was sampled in the 2 underground exposures as shown on fig. 2. Assays by the U. S. Bureau of Mines are as follows:

Sample No.	Width	oz. Au	% Pb	% Zn	% Pb (non-sulfide)
H 576	36"	1.2	0.4	0.15	less than 0.1
H 577	42"	2.9	2.73	0.2	1.65

Ore reserves on the General Teller and Wild Irishman veins cannot be estimated with any degree of accuracy.

CONCLUSIONS AND RECOMMENDATIONS

In the Glacier Mountain area of the Montezuma district ore occurs in small discontinuous shoots separated by long barren stretches of vein material. Ore widths are measured in inches and profitable mining, to a major degree, depends upon the silver content of the ore.

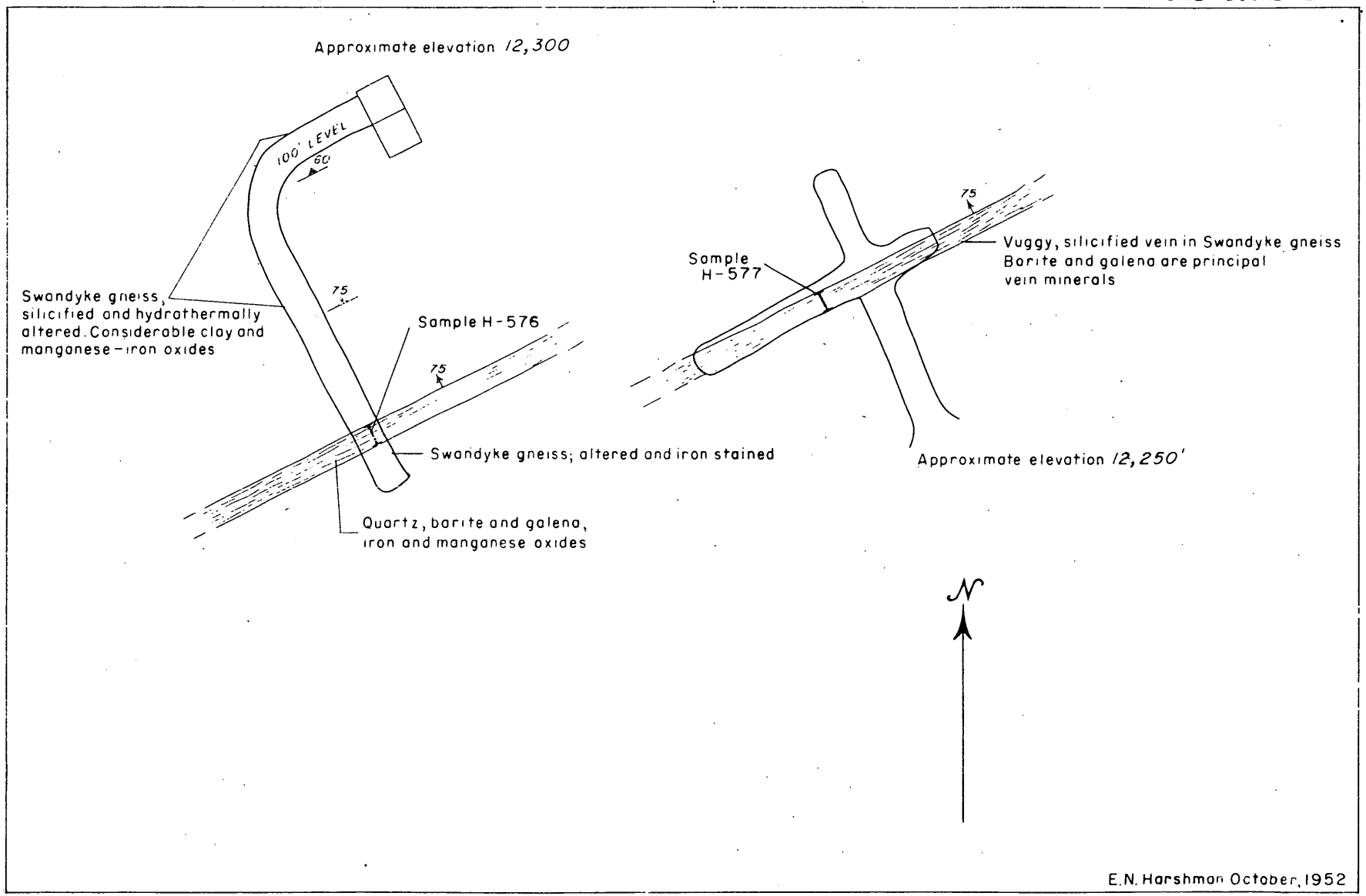
Although the workings on the Wild Irishman vein were not open, available data indicate that here the ore shoots were no exception to the general rule, for although the vein had been developed by well over 1000 feet of workings, less than 400 tons of ore have been produced. Limited exploration on the General Teller vein has exposed little or no ore and there is no reason to assume that any ore shoots that may occur in this vein will be longer, wider, or higher grade than those already mined on the Wild Irishman.

Crosscutting at depths of 900 to 1100 feet below the lowest workings on the Wild Irishman and General Teller veins, as proposed by the applicant, is unsound exploration procedure, particularly when only minor ore shoots have been exposed near the surface. The probability of finding significant quantities of lead ore at depth appears remote.

It is recommended that the application for exploration assistance, OMEA Docket 2700, be denied.

REFERENCES

Lovering, T. S., Geology and ore deposits of the Montezuma quadrangle, Colorado, U. S. Geol. Survey Prof. Paper 178, 1935.



WORKINGS ON GENERAL TELLER CLAIM MONTEZUMA, SUMMIT COUNTY, COLORADO

FIGURE 2

20 0 20 30 FEET

DMA 2700

A. R. RHIME
GENERAL TELLER LODE
SUMMIT COUNTY, COLORADO

Engineering Report

By C. M. Harrer
Mining Engineer
Bureau of Mines

DMEA 2700

A. R. RHINE
GENERAL TELLER LODE
SUMMIT COUNTY, COLORADO

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ILLUSTRATIONS

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*See figure following geologic report

DMEA 2700

A. R. RHINE
GENERAL TELLER LODE
SUMMIT COUNTY, COLORADO

ENGINEERING REPORT

By

G. M. Harrer

INTRODUCTION

A. R. Rhine, of 2550 Yarrow Street, Denver, Colo., has applied for a Defense Minerals Exploration Administration loan of $47,100.00 to rehabilitate the Preston tunnel for its length of about 1,200 feet and extend it southeasterly approximately 1,500 feet to intersect the Wild Irishman, General Teller, and other veins at depths of 900 to 1,100 feet below their lowest workings. A field examination of surface exposures and underground development was completed by the Defense Minerals Exploration Administration examining team on October 1, 1952.

ACKNOWLEDGMENT

A. R. Rhine, loan applicant, accompanied the examining team over the property and cooperated fully by presenting all information at his disposal.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The property owned and under lease by the applicant, A. R. Rhine, is in secs. 3 and 4, T. 6 S., R. 76 W., and overlaps into secs. 33 and 34, T. 5 S., R. 76 W., all in the Snake River Mining District, Summit County, Colo., at altitudes ranging between 11,000 and 12,400 feet (fig. 1). The group of claims on Glacier Mountain

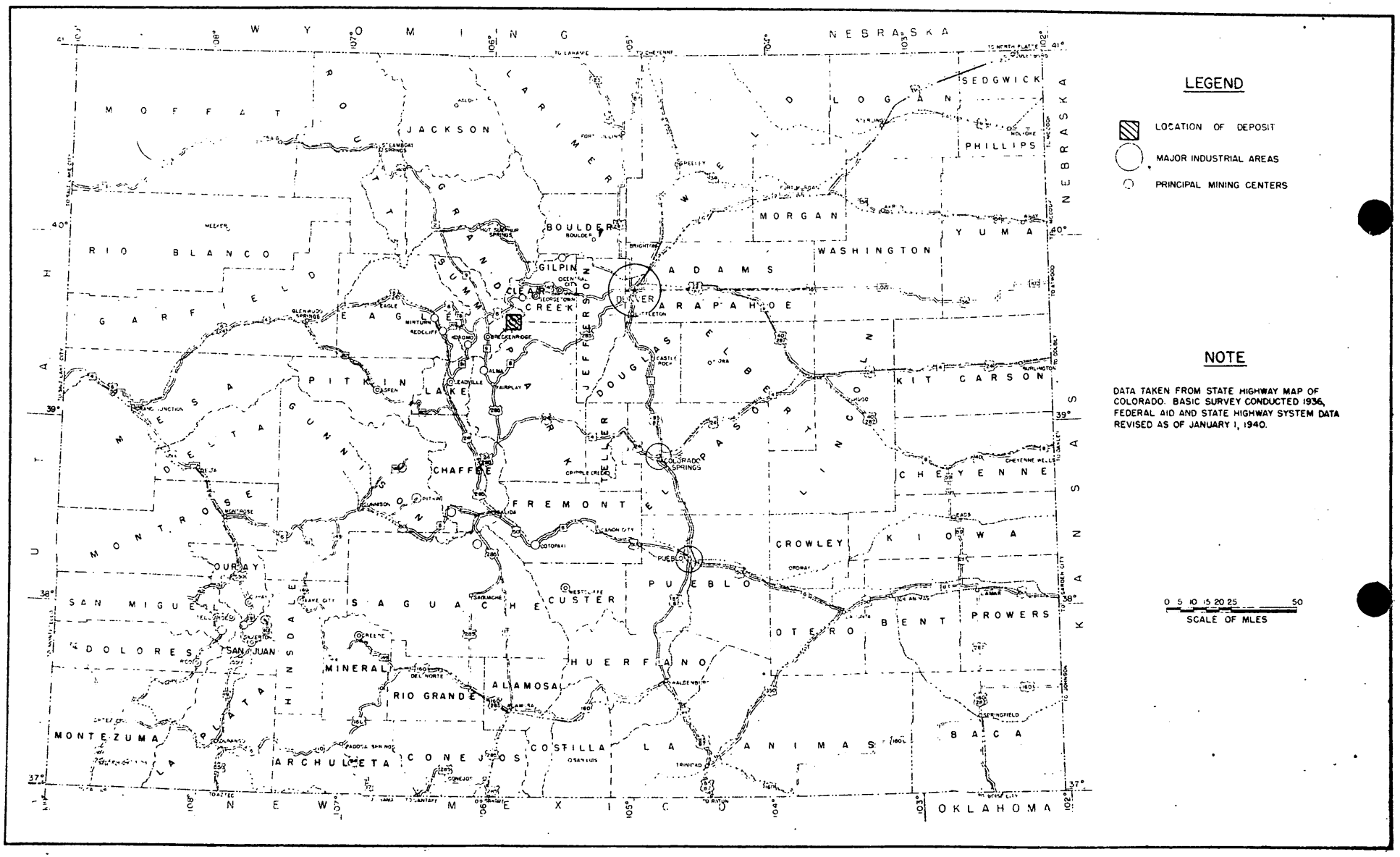


Figure 1. - Location map, General Teller lode, A. R. Rhine, applicant; Summit County, Colorado (DMEA 2700).

is accessible from Montezuma over 4.5 miles of steep and rough ore-haul roads. Ther terrain is very rugged. Winters are severe with heavy snowfall, limiting mining operations to a short season or a continual struggle against severe weather at high costs.

HISTORY AND PRODUCTION

The first activity on Glacier Mountain was in 1864 when silver was discovered. Production in this part of the district has been sporadic and consisted of small shipments of high-grade lead-silver ore.

The Wild Irishman lode, located in 1881, produced 375 tons of closely sorted lead-silver ore.

The overlapping Herman claim produced 115 tons of high-grade lead-silver ore.

The California-Bell claims, which are believed to be the extension of the Wild Irishman vein to the northeast, produced about 3,400 tons of lead-zinc-silver ore.

Extension to the west of the Wild Irishman lode, represented on the Silver Prince lode, produced about 100 tons of lead-silver ore.

The Altoona lode, which is the present terminus of the Preston tunnel, has a recorded production of 30 tons of lead-silver ore.

There has been no production from the General Teller lode.

OWNERSHIP AND EXTENT

A. R. Rhine, loan applicant, owns the following property in Summit County, Colo.:

Patented

Name	Pat. Surv. No.	Size	Location
Wild Irishman lode	2948	150 by 1,500 feet	sec. 3, T. 6 S., R. 76 W.
Millsite claim	5591-B	5 acres	sec. 4, T. 6 S., R. 76 W.; sec. 33, T. 5 S., R. 76 W.

Unpatented

General Teller tunnel site	———	3,000 by 3,000 feet	secs. 3 and 4, T. 6 S., R. 76 W.; secs. 33 and 34, T. 5 S., R. 76 W.
Centennial lode A	———	600 by 1,500 feet	sec. 4, T. 6 S., R. 76 W.
Centennial lode B	———	600 by 1,500 feet	secs. 3 and 4, T. 6 S., R. 76 W.

Property controlled by the applicant through lease and bond agreement and assignment includes:

Patented

Name	Pat. Surv. No.	Size	Location
General Teller lode	131	50 by 1,602.4 feet	sec. 3, T. 6 S., R. 76 W.

Unpatented

Dick No. 1.	———	600 by 1,500 feet	secs. 3 and 4, T. 6 S., R. 76 W.
Dick No. 2.	———	600 by 1,500 feet	sec. 3, T. 6 S., R. 76 W.

The lease to the above property, with option to purchase, was activated on September 5, 1950, and is in effect to December 31, 1955.

On September 13, 1950, the lessees assigned their interests in the above lease and option to purchase to the lessors, A. R. Rhine and O. W. Stevens, providing covenants and stipulations in the original document are carried out.

Proportionate Assignments

Name	Title	Assignment-percent
A. R. Rhine	Lessor	62-1/2
O. W. Stevens	Lessor	12-1/2
V. N. Jeffrey	Lessee	8-1/3
J. N. Jeffrey	Lessee	8-1/3
J. A. Uliberri	Lessee	8-1/3

All expenses incurred in accomplishing the terms of the contract will be the responsibility of the lessors, A. R. Rhine and O. W. Stevens.

The applicant, A. R. Rhine, does not possess right of way over the Arctic, Merrell, Altoona, and Herman claims.

Ownership and locations described above are shown on figure 3.

DESCRIPTION OF THE DEPOSITS

Argentiferous galena ore containing zinc and copper, with a gangue of quartz, barite, and iron-manganese oxides, occurs in small, lenticular bodies structurally related to changes in dip and strike. These lenses of ore and gangue are separated by barren intervals along the vein.

The discontinuous nature of ore occurrence as small lenticular shoots, a characteristic common to veins on Glacier Mountain, is illustrated by the description of the Wild Irishman vein, where ore occurred in nearly vertical shoots 40 to 100 feet long, separated by barren stretches.[1]

Galena is sparsely present in the outcrop of the General Teller vein which can be traced for several hundred feet. Underground development and sample locations are shown on figure 2 accompanying the geologic report.

The vein as developed 35 feet below the outcrop by adit is 3.5 feet wide and parallels the schistosity of the enclosing gneiss. It is open textured and contains galena, with a gangue of quartz, barite and manganese-iron oxides. The vein assays 2.9 ounces silver per ton, 2.75 percent lead, with 1.65 percent oxide lead, and 0.2 percent zinc.

The vein is again exposed in the crosscut at the bottom of the General Teller shaft, 85 feet below the outcrop. Galena occurs in a gangue of quartz, barite, and iron-manganese oxides. The gneiss walls show severe alteration and considerable clay development. The vein, over its width of 3.0 feet, assays 1.2 ounces silver per ton, 0.4 percent lead, with less than 0.1 percent oxide lead, and 0.15 percent zinc.

1/ U. S. Geo. Survey Prof. Paper-178, Geology and Ore Deposits of the Montezuma Quadrangle: T. S. Lovering, pp. 114-115

MINEABLE ORE RESERVES

No basis exists on which to predicate an estimate of ore reserves.

SAMPLING

Two channel samples, H-577 and H-576, were taken 35 and 85 feet below the outcrop, across the full width of the General Teller vein and are shown on figure 2 accompanying the geologic report.

Assay data

Sample No.	Width feet	Oz/T Silver	Percent Lead	Percent Oxide lead	Percent Zinc	Location
H-577	3.5	2.9	2.75	1.65	0.2	General Teller vein, 35 feet below outcrop; in adit
H-576	3.0	1.2	0.4	<0.1	0.15	General Teller vein, 85 feet below outcrop; in crosscut at bottom of shaft

PRESENT STATUS

Exploration and Development

The Wild Irishman vein is traceable over the claim length by shallow workings and adits, all caved and inaccessible (fig. 3). Its continuity over the Silver Prince claim to the southwest and the California Bell group of claims to the northeast is evident in numerous shallow workings, caved and inaccessible.

The General Teller vein is traceable over most of the claim length by outcrops and shallow shafts which are caved and inaccessible.

Accessible workings (fig. 2 with the geologic report), consist of 36 feet of crosscut adit 35 feet below the outcrop, with 37 feet of drift along the vein. The General Teller shaft, 4- by 8-foot cross section and 100 feet deep, cuts the vein 85 feet below the outcrop, in a crosscut 64 feet long.

The Preston tunnel (fig. 3) is reported driven about 1,200 feet. At the time of examination the tunnel was inaccessible beyond 300 feet due to bad air. It would require rehabilitation with new track and air, water, and ventilation lines.

Mining and Milling Equipment

There are no milling facilities on the property and none are contemplated at this stage of operation.

The mining plant is located on the General Teller claim in a 10- by 50-foot shaft house and a 20- by 50-foot building housing a shop, compressor, and living quarters. Equipment on the property and its revaluation by the applicant is as follows:

1	Ellaisdell two-stage, 600 c.f.m., diesel-driven, 16 x 10 x 10 air compressor, serial number 1290	$ 5,000.00
1	Cummings diesel engine to drive above compressor	7,000.00
1	Hendrie and Bolthoff air-driven mine hoist, 500 feet rope capacity	1,000.00
1	RD7 caterpillar tractor and dozer	6,000.00
1	3,000-gallon fuel tank	100.00
1	air receiver	100.00
1	3-1/4-inch Sullivan automatic drifter, complete with column and hoses	500.00
1	Ingersoll-Rand jackhammer mounted on a shell, complete	250.00

Miscellaneous hand tools	$ 100.00
Miscellaneous drill steel and tinker bits	50.00
1 steel headframe	500.00
2 buildings	2,000.00
1 jeep	1,000.00
Total	$23,600.00

PROJECT PROPOSAL

A. R. Rhine proposes to rehabilitate about 1,200 feet of the existing Preston tunnel and extend it to the southeast for an additional 1,500 feet to intersect the Wild Irishman, General Teller, and other veins (fig. 3). The equipment now on the General Teller claim would be dismantled and moved to the portal of the Preston tunnel, re-installed, and housed in suitable structures as part of the project estimated to cost $47,100.00.

CONCLUSIONS

The applicant's proposal to explore the Wild Irishman and General Teller veins for commercial bodies of lead-zinc-silver ores at depths of 900 to 1,100 feet below their lowest workings by utilizing the existing Preston tunnel is not a reasonable venture based on geologic precedent.

Structural control of ore deposition, closely associated with changes in dip and strike, limits ore occurrence to lenticular bodies more or less widely spaced between barren stretches. Consequently, exploration away from their known locations is extremely uncertain.

It is doubtful if the respective veins could be identified at these crosscut depths or whether they would be ore-bearing where

intersected by the tunnel.

Ore found as a result of the proposed project would not repay the cost of the project or add materially to known reserves of strategic minerals. Assays of exposures on the General Teller vein are too low grade to be encouraging.

The applicant does not possess right of way through conflicting claims along the tunnel line.

RECOMMENDATIONS

The request by A. R. Rhine for $47,100.00 exploration assistance under the Defense Minerals Exploration Administration (DMEA 2700), is recommended for denial.

MF6103
(Revised April 1952)

Defense Minerals Exploration Administration
RECEIVED
SEP 17 1952

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. Dmea - 2700
Metal or Mineral
Date Received 9-17-52
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: A. R. Rhine, 2550 Yarrow Street, Denver, Colorado

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract General Teller Lode, General Teller Tunnel Site, Wild Irishman Lode, Mill Site No. 5991B, Centennial A and B, Dick No. 1 and 2; all in Snake River Mining District, Summit County, Colorado.

(*b*) State any mine name by which the property is known. General Teller & Wild Irishman

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise See Supplement attached

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. See Mining Lease and Option Following the Supplement

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. See Supplement

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. See Supplement

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. See Supplement

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. See Supplement

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. See Supplement

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power. See Supplement

16—66551-1

A. R. Rhine

5. *The exploration project.*—(*a*) [redacted]te the mineral or minerals for which you wi[redacted] explore Lead and zinc

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. See Supplement

(*c*) The work will start within 60 days and be completed within 6 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See Supplement

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project: See Supplement

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.). None

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants. See Supplement

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. See Supplement answer to estimate of costs.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be. See Supplement answer to estimate of costs.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project. See Supplement answer to estimate of costs.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project. See Supplement answer to estimate of costs.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes. See Supplement answer to estimate of costs.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs. $2,900

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? Yes

(*b*) How do you propose to furnish your share of the costs?

[x] Money [x] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated August, 1952

(Applicant)

By

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.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

SUPPLEMENT

3 (e) Interest in Land: The General Teller Tunnel Site and the Wild Irishman Lode Claims, and Mill Site No. 5591B, and Locations Centennial A and Centennial B are owned by A. R. Rhine. A. R. Rhine holds a lease to General Teller Lode and to Locations Dick #1 and Dick #2. Copies of the documents relative to the leasehold interest are attached hereto.

3 (f) Unpatented Claims:

Name of Claim	Book	Page
Dick No. 1	29	14
Dick No. 2	29	13
Centennial A	29	20
Centennial B	29	21
General Teller Tunnel Site	30	14

4. Physical description:

(a) A shaft has been sunk 100 feet down at the top of Glacier Mountain and a drift therefrom has intersected the General Teller lode. This is equipped with hoist and buildings to house the same and to serve as a bunk house. The vein is clearly marked, but runs more to oxides and is faulted, as could be expected close to the surface. It indicates the probability of good values at depth. My interest is as owner, except as set forth in the lease described herein. Until November 1st, these workings are accessible by rough road for examination. At any time thereafter snow is likely to close the road.

Mining operations have previously been conducted in the Preston Tunnel on the General Teller Tunnel Site and on the Wild Irishman. These workings are reached by road readily accessible for examination.

In the summer and fall of 1951 and 1952, $40,000 was expended for machinery, equipment and supplies, together with labor and development work. These expenditures are as follows:

Equipment, consisting of Compressor, Diesel Motor Hoist, Steel Gallows Frame, Jeep, Truck, a large RD 7 Caterpillar and Dozer, Drilling Equipment, consisting of stopers, drifters and various small pieces of equipment. This equipment is in good shape	20,000
Buildings - now housing the equipment	2,000
Building a mountain road and maintaining the same during the snow periods	7,000
Sinking a 2 compartment shaft 100 feet covering labor, power, supplies - including a substantial amount of timbering, etc.	11,000
	$40,000

A. R. Rhine

The shaft is a first class workmanship job. In due time we may want to sink farther on the shaft, believing we will contact good sulphide ores at the 200 foot level, which calls for another 100 fee of sinking.

This particular operation is on top of Glacier Mountain, at an altitude of 12,600 feet, making it a seasonable operation.

The Tunnel operation which we propose to develop at this time is approximately 1,500 feet lower in altitude and so situated that it is a practical operation the year around and will intersect General Teller vein and the Wild Irishman vein, all of which is described elsewhere herein.

(b) and (c) See answer to 5 (b).

(d) Access roads are from Montezuma in Summit County, Colorado, located about 30 miles from Leadville and about 70 miles from Denver on good highways.

(e) All of these are readily available.

5 (b) General Data and Description of Work: Maps accompany this application. The present tunnel on the General Teller Tunnel Site, known as the Preston Tunnel, is shown upon the map, the breast of the tunnel being approximately 1,200 feet from the portal at a point on the Altoona claim. It is proposed to drive the tunnel in the general direction shown by the red line from that point so as to intersect veins apexing on the Wild Irishman, Dick #1, General Teller and Dick #2. A map of the present workings upon the upper level of the Wild Irishman also accompanies this application.

The dip of all of the veins being towards the northwest, it is estimated that the Wild Irishman vein will be intersected at the tunnel level within a comparatively short distance and that the General Teller vein would be intersected at a distance of approximately 1,500 feet, the tunnel level being approximately 1,000 feet below the present surface workings on the General Teller vein.

This tunnel was not completed by the previous owners, because operations were underfinanced and inexperienced. The neighboring property, known as the St. Johns, has been profitably operated continuously for 70 years. It is about one-half mile distant and its present operator is F. R. Wolfle, of Denver, who has operated it for the last 23 years.

Assays are attached hereto of samples from General Teller lode which is sought to be intersected by proposed tunnel at approximately 1,500 feet lower depth. Outcrops indicate ore deposit six to ten feet wide exposed 3,000 to 3,500 feet on surface of General Teller Lode No. 131, and Centennial A and B, with estimated 500,000 tons above tunnel level. For protection of apex, Dick No. 1 and Dick No. 2 have been located. Plat is attached hereto showing group of claims.

A. R. Rhine

On basis of above indications, computation was based on one cubic yard of ore weighing one ton; 3,000 feet length times 1,500 feet depth times 3 feet width, divided by 27, makes 500,000 tons, valued conservatively at $80 per ton, makes a total value of $40,000,000.

5 (d) Applicant has had 20 years experience in mining and will supervise the work himself. He furnishes as references: American Smelting and RefiningCo., United States Mining, Smelting and Refining Company, and Golden Cycle Corporation.

6. <u>Estimate of costs</u>:

Machinery for power plant	20,000
Housing for same	1,500
Rails & ties for 1,000 ft. } Ore cars 4 } 8" air pipe 2,000 ft. }	2,000
Jack hammers, drifters & misc. tools	1,000
Road	1,000
Timber for tunnel	1,000
Labor & supplies @ standard estimate of $20 per foot, including power, utilities and water	20,000
Engineering and accounting	600
	47,100

6 (b) Four miners and muckers under supervision of mine foreman. The miners and muckers to draw current scale as of time of employment, which maximum scale is now about $2 per hour, with basis of forty hour week with overtime provisions as required by law. Mine foreman would draw $2.10 per hour on same basis.

7 (b) <u>Furnishing costs</u>: I will put up my own money and will furnish equipment as indicated in 6 above.

A. R. Rhine

MINING LEASE AND OPTION

THIS AGREEMENT, made and entered into as of this fifth day of September, 1950, by and between LEWIS A. DIRK of the City and County of Denver, State of Colorado, hereinafter referred to as Lessor, party of the first part, and JOHN ULIBARRI, VERA M. JEFFREY, AND JOHN M. JEFFREY of the County of Summit, State of Colorado, hereinafter referred to as Lessees, parties of the second part; WITNESSETH: That,

FOR AND IN CONSIDERATION of the covenants and agreements hereinafter set forth to be kept and performed by the Lessees and the royalties to be paid by the Lessees, as hereinafter reserved, the Lessor has hereby leased, let, and demised to Lessees for mining purposes and all purposes incident thereto the following mining property and premises situate in the Snake River Mining District, County of Summit and State of Colorado, to wit:

THE GENERAL TELLER LODE MINING CLAIM, U. S. SURVEY NO. 131

Term

TO HAVE AND TO HOLD the above-mentioned premises and appurtenances unto the lessees for a term commencing on the fifth day of September, 1950, and expiring on the thirty-first day of December, 1955, unless sooner forfeited or terminated as hereinafter provided.

IN CONSIDERATION OF THE PREMISES, the Lessees hereby covenant and agree with the Lessor, as follows:

Possession

First: To enter upon said premises on or before the tenth day of September, 1950, and to work and maintain said premises in the manner required by good mining practice for the operation and preservation of said premises for mining purposes during and throughout the term and existence of this lease.

Construction of Road

Second: To commence forthwith, at the sole expense of Lessees the construction of a suitable road to the leased premises, and to continue diligently said work until the road is completed.

R. R. Shane

eliminary evelopment ork

Third: To do and perform or cause to be done and performed development work upon said leased premises during the period from September 5, 1950, up to and including December 31, 1950, consisting of diamond drilling and sinking of a shaft or shafts at a cost of not less than Fifteen Thousand Dollars ($15,000).

Work Requirements

Fourth: To do and perform or cause to be done and performed, in mining operations and development of said premises, at least one thousand eight hundred (1,800) shifts per annum, commencing with the year 1951 and continued during the remainder of the term of this lease.

Size of Shafts

Fifth: To make all working shafts at least four (4) feet by eight (8) feet in the clear; all drifts and tunnels at least three and one-half (3 1/2) by six and one-half (6 1/2) feet in the clear; and to keep all shafts, tunnels, and other workings thoroughly drained and clear of loose rock and rubbish; provided, however, that the Lessees may fill all "pulled stopes" or abandoned drifts with waste material, in good a minerlike manner.

Timbering of Drifts, etc.

Sixth: To timber all drifts, raises, shafts, or other workings, where necessary, and to replace all old timbers, where needed, in all shafts, tunnels, and other workings of said property, except in "pulled Stopes," abandoned drifts, or workings not used by the lessees.

Inspection of premises

Seventh: To allow the Lessor or his agents to enter upon and into all parts of said premises from time to time, and at all reasonable times and hours, for the purpose of inspecting or surveying the same, or taking samples of ore therefrom; and to render to the Lessor all proper assistance in connection therewith.

A. R. Kline

Furnish Information to Lessor

Eighth: To furnish the lessor with full, true and accurate information in response to any reasonable request in regard to the condition of underground workings of said premises, or any part thereof, or as to the general quality of ore exposed therein.

Ninth: To occupy and hold as the property of the Lessor, all cross and parallel lodes disclosed and discovered within said premis

Taxes

Tenth: Lessees agree to pay the general taxes assessed for the year 1950 and due and payable in the year 1951. The Lessees also agree to pay all taxes assessed and accruing on the said premises during the term of this lease before the same become delinquent, beginning with the general taxes assessed for the year 1950 and due and payable in the year 1951, whether such taxes are assessed against the said premises on an acreage basis or on the basis of production of the properties; provided, however, that nothing herein shall be construed to obligate the Lessees to pay any state or federal income taxes of the Lessor.

Royalties

Eleventh: To pay to the Lessor upon all ore mined, shipped, or sold from the leased premises in any manner during the term and existence of this lease, the following royalty:

Ten percent (10%) of the net smelter returns on all concentrates;
Ten percent (10%) of the net smelter returns on all shipping ore.

"Net smelter returns" shall be construed to mean the gross amount received from ores, concentrates, or bullion, after deducting sampling, smelting, and transportation charges from mine or mill to smelter.

Method of Shipment

All shipments of ore or concentrates shall be made in the joint names of Lewis A. Dick, as Lessor, whose address is 520

A. R. Rhine

Equitable Building, Denver 2, Colorado, and John Ulibarri, Vera M. Jeffrey, and John M. Jeffrey, as Lessees, whose address is Montezuma, Colorado, with instructions to the smelter to divide the net smelter returns in the proportions herein stated and to make payments accordingly. Settlements for royalties due on all ores mined and sold and comentrates shipped shall be made as such ores or concentrates are sold.

Workmen's Compensation Law, etc.

Twelfth: To assume, and Lessees do hereby assume, all responsibility in case of accident to any and all persons employed on the leased premises; to comply with all provisions of the Workmen's Compensation Law of Colorado, as now existing or as hereinafter amended; and to indemnify and hold the Lessor harmless from the payment of any and all damages, costs, and expenses arising out of any accident which may occur by reason of the Lessees' operations of said premises during and throughout the termsand existence of this lease.

Hold Lessor Harmless

Thirteenth: To indemnify and hold the Lessor harmless from any and all costs, liability, or damage whatsoever on account of materials furnished or labor performed upon said premises at the Lessees' instance and request; and to post and maintain at conspicuous places upon the premises, notices to the effect that said premises are being mined under lease by the Lessees; to assume and be responsible for all bills contracted; and to keep said premises free and clear of all liens and encumbrances of every kind except such as may result from the acts of others than the Lessees or their agents. Neither the Lessor nor his successors in interest shall be liable in any manner for the payment of labor performed or materials furnished to the Lessees, or for any obligation incurred by them.

A. R. Kline

Permanent Improvements

Fourteenth: All permanent improvements, such as buildings and mine track, installed by Lessees at any time during the life of this lease, shall, upon termination of this lease, become the property of the Lessor; but the Lessees, at any time during the life of this lease and for a period of sixty (60) days after the expiration hereof, shall have the right to remove all moveable machinery and other personal property placed upon the leased premises by them during the life of this lease.

Forfeiture

Fifteenth: Any failure upon the part of the Lessees to perform each and every, or any, or all, of the covenants and conditions of this lease incumbent upon them to be performed, and any failure to pay the royalties herein reserved promptly as the same shall become due, shall work a forfeiture of any and all rights of the Lessees hereunder and entitle the Lessor, without notice, to reenter and retake possession of the premises and property hereby leased as in his first and former estate.

It is agreed, that before any forfeiture of this Mining Lease and Option becomes effective, Lessor shall notify Lessees by registered mail addressed to Montezuma, Colorado, setting out any noncompliance with the terms of said agreement; and if within thirty (30) days after receipt of said notice by Lessees such noncompliance is not rectified, then the forfeiture shall become absolute and any and all moneys paid shall be retained by Lessor as liquidated damages.

Surrender of Premises

Sixteenth: Lessees agree to deliver and surrender said premises, together with buildings and improvements thereon, but exclusive of any and all machinery and equipment placed thereon by Lessees, to Lessor in such good condition as above stated upon the

A. R. Rhine

expiration of this lease by lapse of time, without demand or notice, and to deliver and surrender the same to the first party upon any termination of said lease or option as herein provided.

Seventeenth: This lease shall inure to the benefit of and be binding upon the heirs, executors, administrators, successors, and assigns of the parties hereto; provided, however, that Lessees may not assign this lease without the written consent of the Lessor first had and obtained.

Extension of Term

Eighteenth: Lessees, provided they are not in default under this lease on its expiration date, to wit, December 31, 1955, shall be entitled to an extension of the term of said lease for a further period of five (5) years on the same terms and conditions set forth in this lease.

OPTION

AND IN CONSIDERATION OF THE PREMISES AND THE COVENANTS AND CONDITIONS herein set forth to be kept and performed by the Lessees, the Lessor gives and grants to the Lessees, during the life of this lease and so long as they are in no manner in default thereunder, the exclusive right and option to purchase the property and premises described in this lease for the sum of Twenty-five Thousand Dollars ($25,000), upon the following terms and conditions, to wit:

Option Price

1. Said option price shall be payable as follows:

   Two Thousand Dollars ($2,000) on or before September 5, 1952;

   Two Thousand Dollars ($2,000) on or before September 5, 1953;

   Two Thousand Dollars ($2,000) on or before September 5, 1954;

   Nineteen Thousand Dollars ($19,000) on or before September 5, 1955.

A. A. Rhine

It is understood and agreed that all royalties paid under this lease shall be applied against the option price, but any such royalties shall be applied against the last payment herein provided for.

Abstract of Title

2. Upon request of the Lessees, and after the sum of Four Thousand Dollars ($4,000) has been paid on account of the option price, Lessor will furnish and deliver to Lessees for examination proper abstract of title to the leased premises, showing a good mining title vested in Lessor.

3. This option and lease which precedes it form a part of one and the same instrument, and the cancellation of said lease by virtue of default shall also cancel the option. On the other hand, however, failure of Lessees to exercise the option shall not cancel said lease.

4. This option shall inure to the benefit of and be binding upon the heirs, executors, administrators, successors, and assigns of the parties hereto; provided, however, that the Lessees may not assign this option without the written consent of the Lessor first had and obtained.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals all as of the day and year first above written.

Lewis A. Dick
Lessor

John Ulibarri

Vera M. Jeffrey

John M. Jeffrey

Lessees

STATE OF COLORADO
City and County of Denver } SS.

The foregoing instrument was acknowledged before me this ____ day of September, 1950, by LEWIS A. DICK.

My commission expires _____.

WITNESS my hand and official seal.

(Seal) _____
Notary Public

STATE OF COLORADO
County of _____ } SS.

The foregoing instrument was acknowledged before me this ____ day of September, 1950, by JOHN ULIMAKKI, VERA M. JEFFREY, and JOHN M. JEFFREY.

My commission expires _____.

WITNESS my hand and official seal.

(Seal) _____
Notary Public

ASSIGNMENT OF LEASE

VERA N. JEFFREY, JOHN M. JEFFREY and JOHN A. ULIBARRI hereby assign the following proportions of their right, title and interest in Mining Lease and Option, dated as of September 5, 1950, from LEWIS A. DIRK to them covering General Teller Lode Mining Claim, U. S. Survey No. 131, and adjacent locations made or to be made, all in Snake River Mining District in Summit County, Colorado:

The proportions thereof assigned are as follows:

To A. R. Rhine, his heirs and assigns	62 1/2%
To O. M. Stevens, his heirs and assigns	12 1/2%
To Vera N. Jeffrey, her heirs and assigns	8 1/3%
To John M. Jeffrey, his heirs and assigns	8 1/3%
To John A. Ulibarri, his heirs and assigns	8 1/3%

The consideration for this assignment is as follows:

1. The assignees agree to perform all of the covenants and agreements to be performed by the lessees therein as the same now exist, or as they may hereafter be modified.

2. The assignees agree that any and all equipment purchased by them for installation upon the premises and which, by reason of the modification of the lease, may be considered as part of the realty, shall become a part of the premises.

In the event that the assignees shall fail to perform any of the covenants and agreements to be by them performed, their rights hereunder shall be forfeited without notice and the assignor may, without notice, re-enter and take possession of the premises and property leased as in their first and former estate, provided, however, that before any forfeiture becomes effective the lessor under the above Mining Lease and Option shall notify the assignees by mail, addressed to A. R. Rhine at 2550 Yarrow Street, Denver 15, Colorado, setting out any non-compliance with the terms and if, within thirty (30) days after receipt of said notice by lessees

A. R. Rhine

such compliance is not rectified, then the forfeiture shall be complete and all money paid and all equipment installed as aforesaid shall be retained by assignors as liquidated damages.

If the option in the above described Mining Lease and Option shall be exercised, the proportionate interest of the parties in the property purchased shall be the same as the proportionate interests hereinabove described.

After the road shall have been completed as provided by Paragraph Second of the Mining Lease and Option, and after the development work shall have been completed as provided by Paragraph Third of the Mining Lease and Option, as modified, the proportionate interests in all amounts derived shall be computed on the net amounts received, after deducting royalty, taxes, insurance and other payments and expenses of operation.

The sole and entire expense incurred in performing Paragraphs Second and Third of the said Mining Lease and Option shall be borne by A. R. Rhine and O. W. Stevens.

None of the assignees will be paid any salary for services rendered, except by mutual agreement. A. R. Rhine shall be the business manager so long as he shall not be in default hereunder, and John A. Uliberri shall work under him as manager of operations so long as his services shall be satisfactory to A. R. Rhine.

DATED September 13, 1950.

(Signed) A. R. Rhine
(Signed) O. W. Stevens
(Signed) Vera N. Jeffrey
(Signed) John N. Jeffrey
(Signed) John Uliberri

CONSENT TO ASSIGNMENT

In consideration of the agreements to be performed by the assignees and upon the express conditions that the assignors

A. R. Rhine

shall remain liable for the performance of the covenants and agreements to be by the lessees performed, the undersigned consents to the above assignment of the above-described proportionate interests in Mining Lease and Option dated as of September 5, 1950.

DATED September 14, 1950.

(Signed) Lewis A. Dick

MODIFICATION OF LEASE

The parties to Mining Lease and Option, dated as of September 5, 1950, agree that the said Mining Lease and Option shall be modified as follows:

1. Paragraph Third shall be modified so that, as modified, the same shall read as follows:

THIRD: To do and perform and to cause to be done and performed development work upon said leased premises during the period ending on December 31, 1950, consisting of building a road and bridges as required by Paragraph Second hereof, diamond drilling and sinking a shaft or shafts, driving a tunnel or tunnels, open pit operations, and purchase of equipment for cash to be installed on the premises or any one or more of the above at a combined total cost of not less than Fifteen Thousand Dollars ($15,000), and the equipment so installed shall remain and become a part of the premises to the extent necessary to make the total improvements amount to at least said sum of Fifteen Thousand Dollars ($15,000).

2. In Paragraph Fifteenth the words and figures "thirty (30)" shall be changed to "sixty (60)."

DATED September 13, 1950.

(Signed) Lewis A. Dick
Lessor

(Signed) John Ulibarri
(Signed) John M. Jeffrey
(Signed) Vera M. Jeffrey
Lessees

NOW, THEREFORE, in consideration of the premises and of the mutual covenants and agreements herein contained, in order to comply with the terms of the aforesaid assignment of lease and option between the parties hereto, the parties hereto agree as follows:

1. Dick No. 1 and Dick No. 2 unpatented lode mining claims shall be covered and included under the terms of said assignment of lease executed by and between the parties hereto with the same effect as if said claims had been originally included therein, and the respective interests of the respective parties therein and thereto shall be the same as their respective interests in and to the property originally covered by said assignment of lease and the respective rights and obligations of the parties with respect to Dick No. 1 and Dick No. 2 unpatented lode mining claims shall be the same as the respective rights and obligations with respect to the property originally included therein.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands this ___ day of September, 1951.

(Signed) C. K. Stevens
(Signed) John Ulibarri
(Signed) A. R. Rhine

STATE OF COLORADO)
) S.
COUNTY OF SUMMIT)

The foregoing instrument was acknowledged before me this ___ day of September, 1951, by _____.

My commission expires _____

_____
Notary Public

STATE OF COLORADO)
) SS.
CITY AND COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this ___ day of September, 1951, by _____.

My commission expires _____

_____
Notary Public

A. R. Rhine

AMENDMENT TO AGREEMENT

THIS AGREEMENT made as of the 15th day of September, 1951, by and between O. W. STEVENS, VERA M. JEFFREY, JOHN M. JEFFREY, JOHN A. GLIBARRI, and A. R. RHINE, WITNESSETH, that:

WHEREAS, Vera M. Jeffrey, John M. Jeffrey and John A. Glibarri are lessees under a mining lease and option executed by Lewis A. Dick covering General Teller Lode Mining Claim, U. S. Survey 131, in Snake River Mining District in Summit County, Colorado; and

WHEREAS, since the date of the execution of said lease and option, the lessor therein has located and claimed Dick No. 1 and Dick No. 2 Lode Mining Claims, and location certificates so stating and claiming were filed and recorded in the office of the Clerk and Recorder of Summit County on November 21, 1950, and have been recorded in Book 29 at Pages 14 and 13 thereof; and

WHEREAS, at the time of the execution of said lease and option, the parties thereto agreed that if and when said locations were made such lodes would be covered by the original lease; and

WHEREAS, on September ____, 1950, the parties hereto entered into an assignment of lease agreement whereby the parties hereto agreed that the interests in the property covered by said lease and option, and all amounts realized from the development and operation thereof, should be divided in certain proportions as therein expressed; and

WHEREAS, the parties to said lease and option have agreed that the said unpatented lode mining claims, Dick No. 1 and Dick No. 2, shall be covered and included under the terms and provisions of the original mining lease and option, by and between the lessor and lessees in said lease dated September 5, 1950, to the same effect and as if said claims had been originally included therein.

ESTABLISHED 1878

GAYLE F. FARNHAM

Certificate of Assay

THE HENRY E. WOOD ASSAYING COMPANY

TELEPHONE KEYSTONE 4816

DENVER 2, COLORADO

2042 BROADWAY

Sept. 1, 1952

We hereby certify that the samples assayed for A.R. Rhine gave the following results per ton of 2000 lbs.

MARKED	GOLD OZS.	SILVER OZS.	WET LEAD PER CENT	COPPER PER CENT	ZINC PER CENT	IRON PER CENT	INSOL. PER CENT	SULPHUR PER CENT	PER CENT	VALUE
General Teller Mine		7.20	47.27						$	167.27

Gold at $_____ per ounce
Silver at _____ per ounce
Lead at _____ per 100 lbs.
Copper at _____ per 100 lbs.
Zinc at _____ per 100 lbs.

Charges

$ 2.00

The Henry E. Wood Assaying Co.

By G.F.F.

A.R. Rhine

ESTABLISHED 1878

GAYLE F. FARNHAM

Certificate of Assay

THE HENRY E. WOOD ASSAYING COMPANY

TELEPHONE KEYSTONE 4816

DENVER 2, COLORADO

2042 BROADWAY

July 23, 1952

We hereby certify that the samples assayed for A.R. Rhine gave the following results per ton of 2000 lbs.

MARKED	GOLD OZS.	SILVER OZS.	WET LEAD PER CENT	COPPER PER CENT	ZINC PER CENT	IRON PER CENT	INSOL. PER CENT	SULPHUR PER CENT	PER CENT	VALUE
General Teller Mine		53.60	18.10							$ 109.78

Gold at $_____ per ounce
Silver at _____ per ounce
Lead at _____ per 100 lbs.
Copper at _____ per 100 lbs.
Zinc at _____ per 100 lbs.

Charges

$ 2.00

The Henry E. Wood Assaying Co.

By G. F. F.

at the southwest end of the main shoot on any of the levels, according to miners, and plate 40 corroborates this information. The occurrence of the ore close to the strong northwesterly fault shown on plate 3 is very similar to the occurrence of ore in the Leftwick and Missouri veins, a short distance south. The same northwesterly fault is associated with the localization of ore shoots in the three veins and probably traces the course of a deep-lying channel of mineralization.

Incomplete production figures for the Whale are given below.

Production of Whale mine

	Ore (short tons)	Gold (fine ounces)	Silver (fine ounces)	Lead, wet assay (pounds)	Copper, wet assay (pounds)
1877	99½		1,324	3,665	154
1878	2½		252	1,548	
1879	16		1,842	2,108	
1880	3		210	1,631	
1881	2		199	1,919	
1882	10		842	4,482	25
1883	232½		13,000	74,500	6,550
1884	61½		3,001	14,012	
1885	26		1,050	6,410	456
1887	54		3,087	22,755	500
1888	41		2,271	23,100	756
1890	15½		758	5,428	324
1900	10½		430	3,305	127
1916	28	9.09	1,040	2,988	1,021
1917	12		363	2,820	188
1922 (Whale, Lane, and Leftwick)	20	.20	666	6,024	590
1928	5	.10	234	1,184	99
Brilliant claim (upper adits on Whale vein):					
1899	83		7,318	28,463	
1900	60½		3,888	29,035	
1903	7		282	4,835	
1904	56½		2,161	25,192	

	Ore to concentrating mills (short tons)	Concentrates produced (short tons)	Gold (fine ounces)	Silver (fine ounces)	Lead, wet assay (pounds)	Copper, wet assay (pounds)
1918	910	91		4,310	47,506	1,915
1919	2,290	229	0.19	12,608	82,762	6,383
1920 (Whale, Lane and Leftwick)	800	71		4,466	48,254	1,917
1921 (Whale, Lane and Leftwick)	2,655	164		11,646	94,827	1,941

No record available for 1886, 1889, 1891-98; no production in 1901-2, 1905-15, 1923-27.

WHITE SWAN

The White Swan vein is in the valley of the Middle Fork of the Swan River about three-quarters of a mile east of Swandyke and about 5 miles south of Montezuma. The workings are at an altitude of about 11,250 feet and are at the end of a secondary road that follows the stream down to the Swan River, where it joins another wagon road that leads to Tiger. The vein strikes N. 85° E. and dips 85° N. The principal opening is an adit, which follows the vein east for a few hundred feet. As the portal is only a short distance from the stream and the adit is almost parallel to the course of the valley, depth is gained very slowly, and the breast is only a short distance below the surface. A sheeted zone about 12 inches wide contains galena, pyrite, sphalerite, and ankerite veins whose aggregate width is commonly about 4 inches. Striations on the walls of the vein dip about 10° W., and the south wall moved west. The country rock of the vein is hornblende gneiss of the Swandyke gneiss, and it strikes about N. 20° W. and dips steeply west.

No ore is known to have been shipped from the White Swan.

WILD IRISHMAN

The Wild Irishman mine is on the west slope of Glacier Mountain near the head of St. Johns Creek, about 1½ miles southwest of Montezuma. The vein was discovered about 1880 and was rapidly developed in the next few years. The mine was a steady shipper from 1883 to 1886 but has no recorded production from that year until 1901, when it shipped several carloads of ore; some ore was shipped the following year, but little has been produced since that time. A small concentrating mill was built at the mine in 1884 but was unsuccessful in separating the barite from the sulphides and was soon abandoned.

The mine was inaccessible in 1929, but the underground workings are shown in figure 30, and the vein was studied on the surface by the writer. The lower adit has an altitude of about 11,400 feet, and the ore on its dump indicates that here the vein consists largely of manganosiderite carrying moderate amounts of galena. At 350 feet above the lower adit manganosiderite is rare, and the gangue is chiefly fine-grained quartz and small amounts of coarse-grained barite. Galena is moderately abundant, and pyrite and sphalerite are rare. Much of the galena is disseminated through the quartz in scattered individual grains and in thin veinlets, but some seams occur that are as much as 3 inches wide. Most of the vein material is very vuggy and open-textured, and in places the vein is apparently a mineralized fault breccia at least 8 inches wide. The country rock of the region is hornblende gneiss of the Swandyke gneiss and strikes about N. 30° E. and dips about 75° E. The vein strikes N. 75° E. and dips steeply to the north. The early accounts of the mine in the Montezuma Mill Run, as well as the stope map shown in figure 30, indicate that the ore occurred in nearly vertical shoots or chimneys from 40 to 100 feet long separated by barren stretches along the vein. The presence of barite in the ore made it difficult to use before the days of the flotation mill but should present little difficulty to the modern ore-dressing plant.

The following are incomplete production records:

Production of Wild Irishman mine

	Ore (short tons)	Gold (fine ounces)	Silver (fine ounces)	Lead, wet assay (pounds)	Copper, wet assay (pounds)	Zinc (pounds)
1883	30					
1884	35					
1885	30					
1886	48					
1901	56	Trace	5,726			
1902	28		1,960	26,353		
1907	35		1,269	29,652		
1913	113		1,392	115,736	45	

No record available for 1887-1900; no production in 1903-6, 1908-12, 1914-28.

WINNING CARD

The Winning Card mine is on the south slope of Lenawee Mountain at an altitude of about 12,500 feet, at the head of the valley of the small stream that empties into the Snake River at U.S.L.M. Adrian. It is about 2½ miles north of Montezuma and is reached by a Forest Service trail, which passes over the crest of Lenawee Mountain a short distance west of the mine. The vein was discovered in 1882 by Isaac Filger, and in 1885 rich silver ore containing stromeyerite was found in it. As shown in the table below, several tons of high-grade ore was

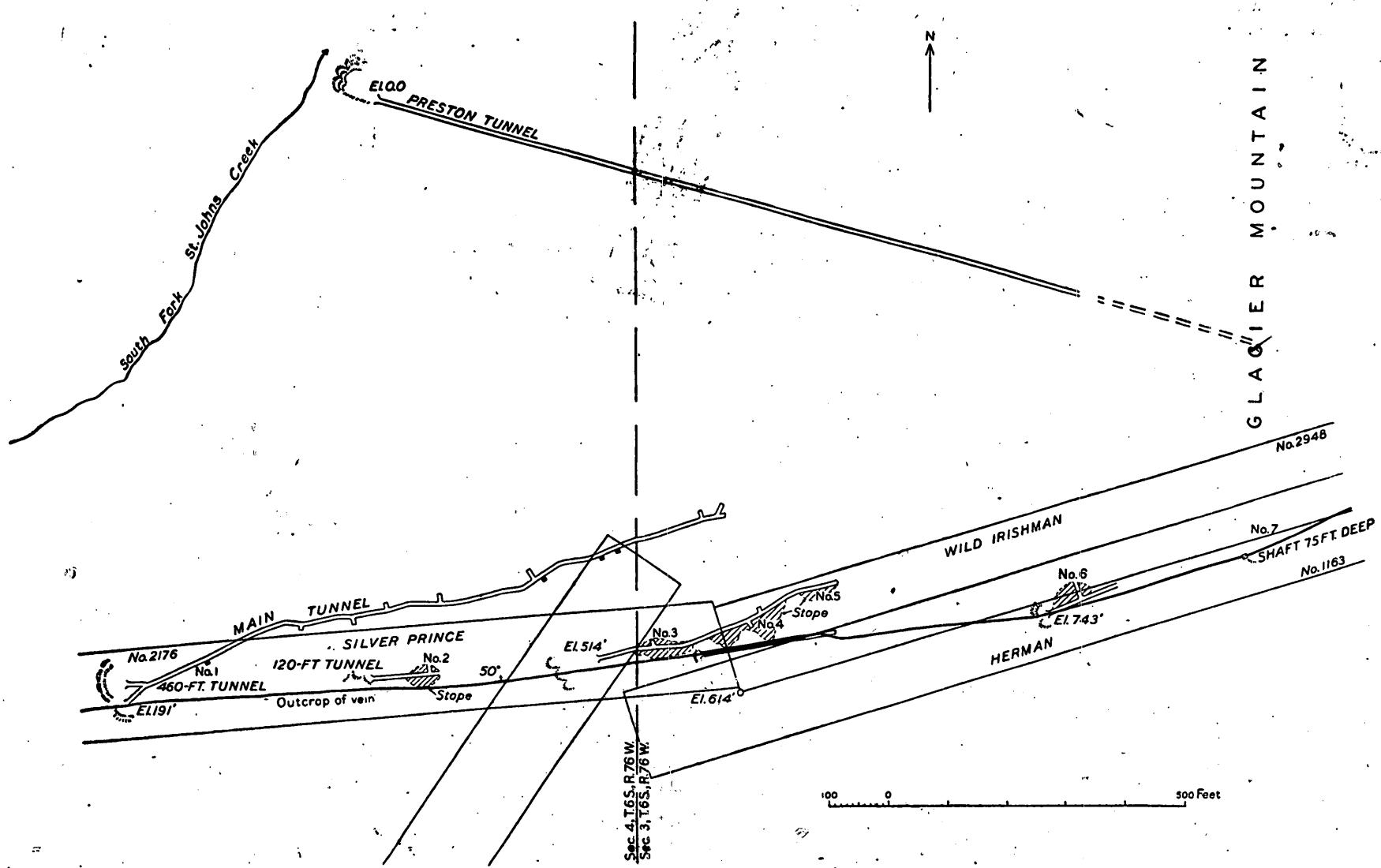


FIGURE 30.—Workings on Wild Irishman vein, Glacier Mountain.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1201 NORTH DIVISION STREET
SPOKANE 2, WASHINGTON

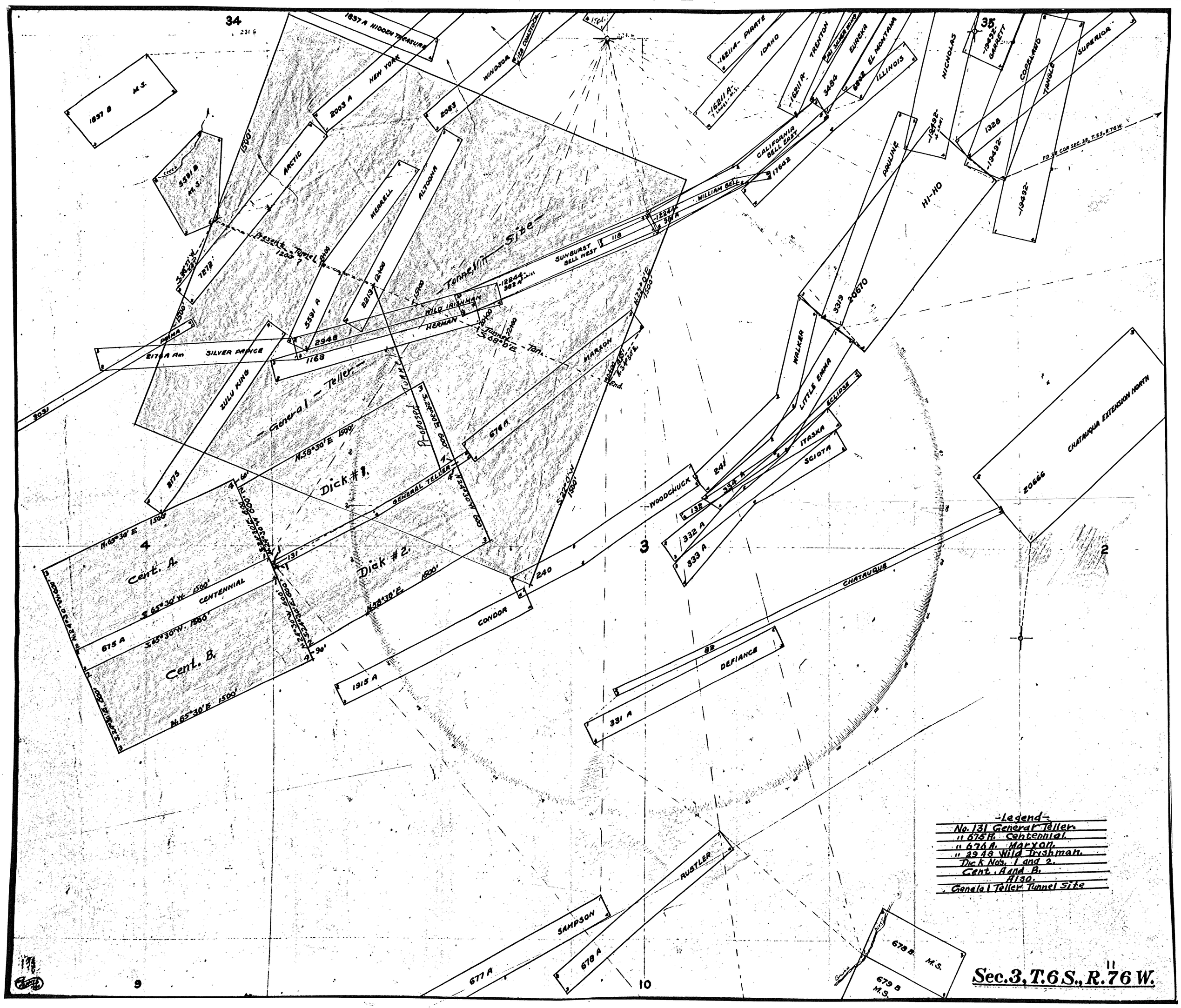
OFFICIAL BUSINESS

SPOKANE
SEP 12
17 PM
1952
WASH.

PAYMENT OF POSTAGE, $300
(PMGC)

2

Chairman, Operating Committee
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

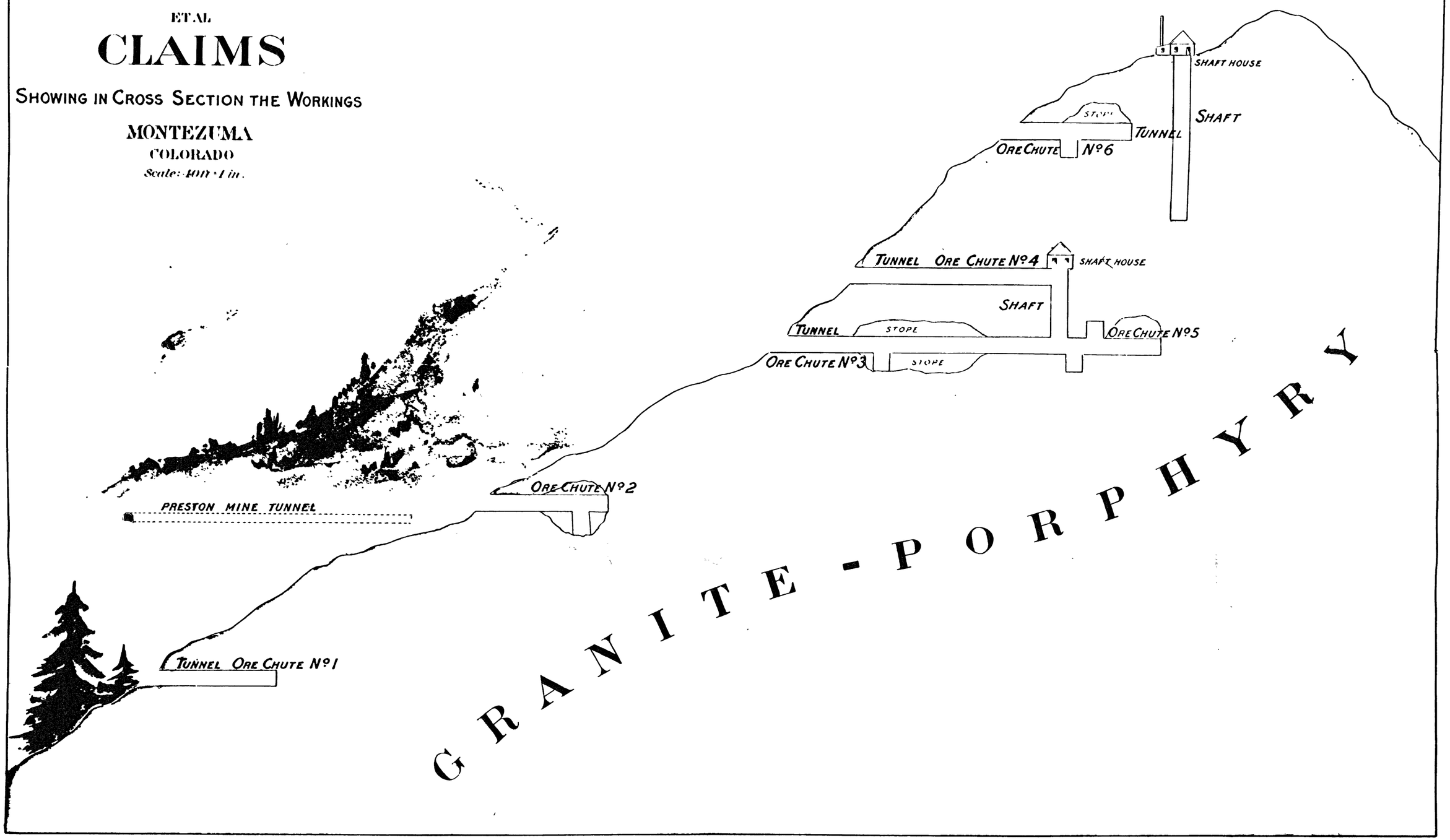


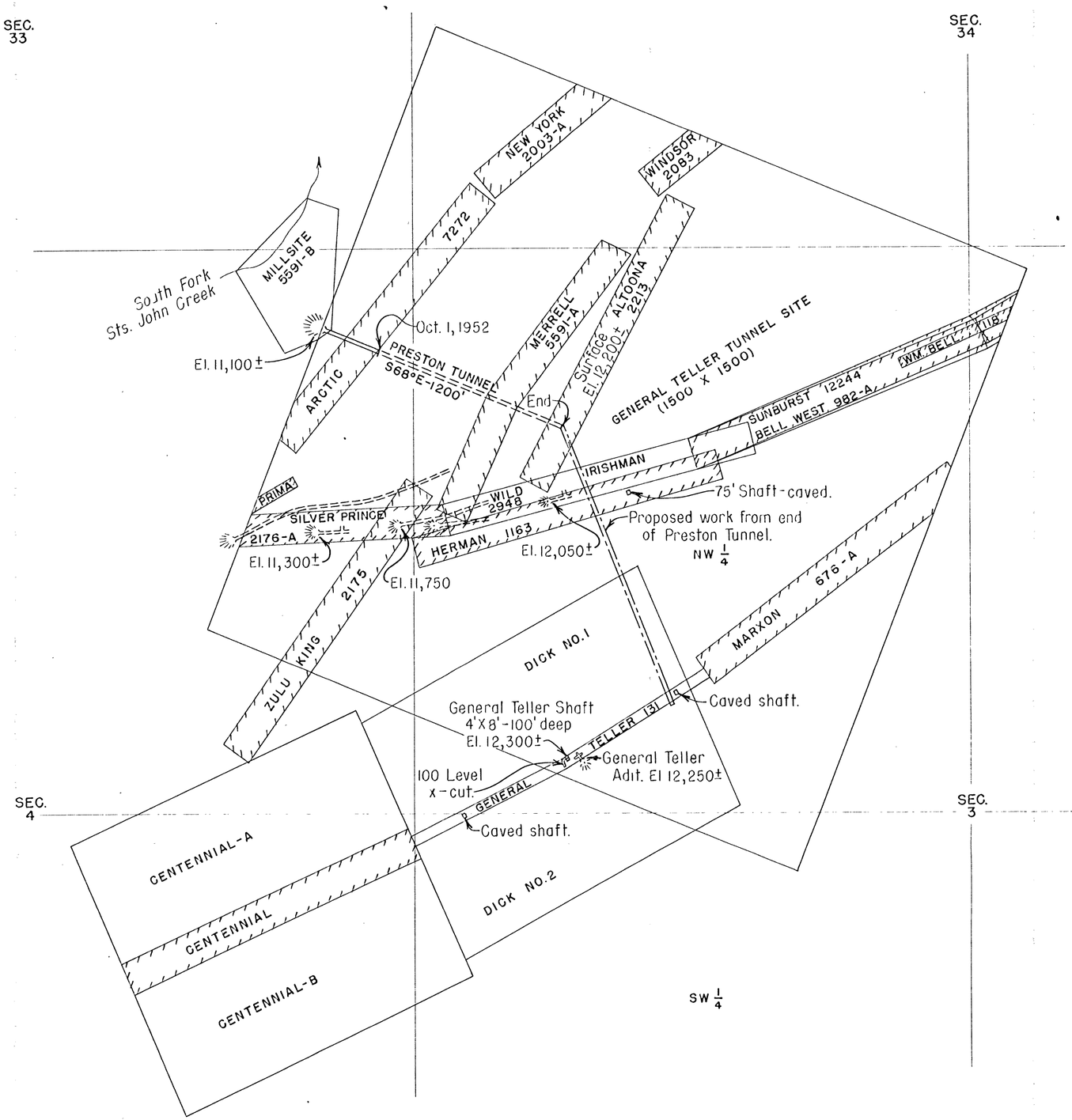
-Legend-
No. 131 General Teller.
" 675 A. Centennial.
" 676 A. Marxon.
" 2948 Wild Irishman.
Dick Nos. 1 and 2.
Cent. A and B.
Also.
General Teller Tunnel Site

MAP
OF THE
WILD IRISHMAN
ET AL
CLAIMS

SHOWING IN CROSS SECTION THE WORKINGS

MONTEZUMA
COLORADO
Scale: 40 ft = 1 in.





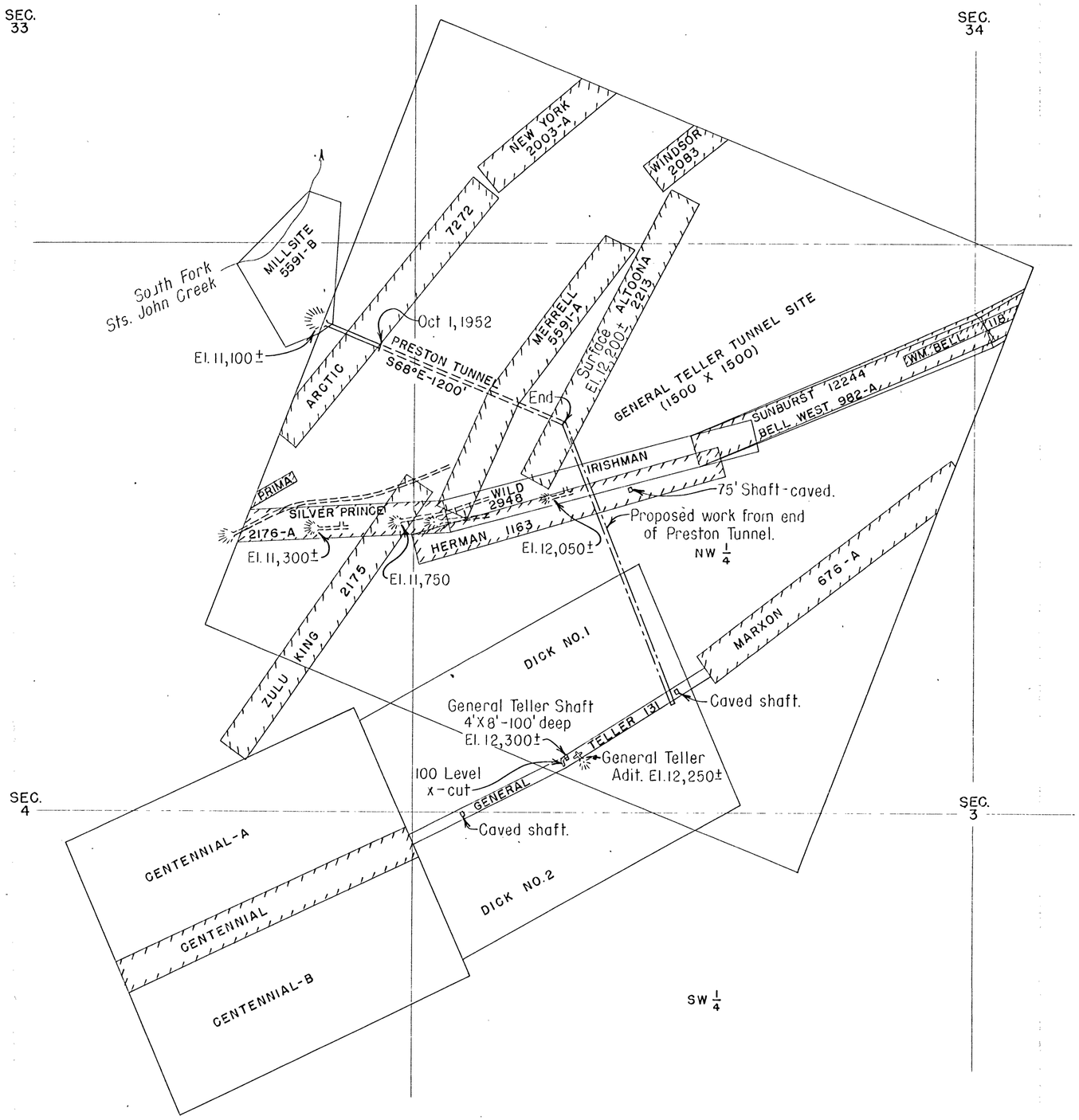
LEGEND

- A.R Rhine property, Sections 3 and 4, T. 6S, R. 76W and Sections 33 and 34, T. 5S., R. 76W.
- Property not controlled by A.R. Rhine.
- Preston tunnel accessible Oct. 1, 1952.
- Proposed extension of Preston tunnel.
- Old workings, caved or inaccessible Oct. 1, 1952.

0 200 400 1200

SCALE IN FEET

FIGURE 3 - GENERAL TELLER CLAIM AND PROJECT MAP, SUMMIT COUNTY, COLO. DMEA 2700



LEGEND

- A.R Rhine property, Sections 3 and 4, T. 6S, R. 76W and Sections 33 and 34, T. 5S., R. 76W.
- Property not controlled by A.R Rhine.
- Preston tunnel accessible Oct. 1, 1952.
- Proposed extension of Preston tunnel.
- Old workings, caved or inaccessible Oct. 1, 1952.

0 200 400 1200

SCALE IN FEET

FIGURE 3 - GENERAL TELLER CLAIM AND PROJECT MAP, SUMMIT COUNTY, COLO. DMEA 2700