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

224 New Customhouse
Denver 2, Colorado

July 16, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration, Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMA Docket 1779X, (Lead-Zinc) Burke Martin Mines, Summit County, Colorado

Enclosed are four copies of the final report on DMA-1779X.

The applicant was unable to obtain landlords subordination agreements and requested cancellation of his application.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 21 1952

W. H. King
W. H. King

Donald R. Macharen
for
A. H. Koschmann

Enclosures

SDS
7-21-52

Mining Division
Region IV

October 8, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 1779X, Burke-Martin Zinc-Lead Mines, Montezuma Mining District, Summit County, Colorado

The application of the subject docket was for an exploration loan at an estimated cost of $20,000.00. Numerous veins are known to occur on the property and the proposed initial exploration is by cutting trenches through the overburden with a bulldozer and sampling the outcrops. Additional proposed work at the project is opening caved portals of adits and rehabilitation of the adits on the Bell Trenton and Idaho claims.

The examining team recommends approval of the entire project. We suggest, however, that it be set up in phases, with the opening of caved portals and rehabilitation of the adits at an estimated cost of $9,278.00, dependent on the results of the initial trenching and sampling.

As this application falls within the prerogative of the executive officer, an exploration project contract will be executed.

Paul T. Allsman

Reviewed by
DMEA OPERATING COMMITTEE
7-25-52
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Administration
200 New Customhouse
Denver 2, Colorado

September 21, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 1779X, Burke-Martin Mines Company, Montezuma Mining District, Summit County, Colorado

Attached are 8 copies of a geologic report by Truman H. Kuhn covering the subject property. Mr. Kuhn points out that a number of lead-zinc-silver veins are known to occur on the Burke-Martin group of claims. However, overburden covers most of the surface and old prospect pits and portals to tunnels are caved, thus preventing their mapping and study and effective prospecting. Recent stripping on one claim has exposed 4 parallel veins occurring in a zone 30 feet wide. It is the intent of the applicant to uncover by stripping and trenching the veins on their property. This proposition has geologic merit, and Mr. Kuhn recommends that the loan applied for be approved.

I concur with this recommendation.

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

Attachments (8)

Mining Division
Date Rec'd.
OCT 5 1951
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Building 20
Denver Federal Center
October 5, 1951

Memorandum

To: Chief, Mining Division, Region IV

From: Chief, Colorado Branch, Mining Division

Subject: DMA 1779X, Burke-Martin Mines Company, Summit County, Colorado

Please find enclosed the original and seven copies of the "Summary, Conclusions, and Recommendations", by Harrer and Kuhn, and the equivalent copies of Harrer's revised engineering report on the subject docket.

The bulldozer estimate has not been changed and the reason is explained on page 7 of the report. The possibility of using both the TD-18 bulldozer on project A and the TD-14 on project B and operating the two concurrently is mentioned but not explained in the estimate of costs. Such procedure would effect a savings on supervision and bulldozer rental.

I am making no further comment on the project except that I am not impressed with the applicant, especially with respect to his supervisory ability. However, that is evidently not a factor in these operations.

Bulldozer exploration elsewhere has proved successful and is an economical method. I approve the recommendations of the examining team.

Martin has submitted the original copies of all of the involved lease agreements. They are apparently in order and, unless you need to examine them, they will be held in our files and returned to him if an when a contract is made, in accordance with his request.

The brochure and review are returned herewith.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-1779X, Burke-Martin Mines Company

Montezuma Mining District

Summit County, Colo.

C. M. Harrer, Mining Engineer
Bureau of Mines

T. H. Kuhn, Geologist
U. S. Geological Survey

September 12, 1951

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLO.

Summary, Conclusions, and Recommendations

By C. M. Harrer
Mining Engineer
Bureau of Mines

and

T. H. Kuhn
Geologist
U. S. Geological Survey

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLO.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By C. M. Harrer and T. H. Kuhn

The Burke-Martin Mines Company in the Montezuma Mining District, Summit County, Colo., has applied for an exploration loan of $20,000.00 to explore for lead and zinc.

Numerous, narrow and essentially parallel veins are known to exist on the northeastern slope of Glacier Mountain, and have produced at least 5,000 tons of shipping ore. Lead, zinc, and silver ore minerals are known to be present on many of the claims that are to be explored. On one claim, recent stripping has uncovered 4 parallel veins occurring in a zone 30 feet wide. In general, the ore minerals are in veins averaging approximately one foot wide and occur either as lead-silver ore, lead-silver-zinc ore, zinc ore, lead-barite ore, or lead-zinc-barite ore. From geologic evidence it is estimated that total reserves inferred from these narrow veins will be in the magnitude of thousands of tons.

The proposed stripping of outcrops and opening of old adit portals on the relatively steep slopes of Glacier Mountain is a cheap and rapid method of prospecting and exposing vein structure. This method of exploration has proven successful on this and other properties.

The narrow and discontinuous ore bodies along the veins can be mined profitably only by a system of small individual leasing and "split-check" operations. This is the present method of operations.

Milling facilities readily adaptable to treat the variety of complex ores involved are a necessity. These facilities are expected to be

furnished by the new custom mill now being built by the Glasier Mill Company on the property of Burke-Martin Mines Company.

It is recommended that this application for a loan to explore for lead and zinc (DMA Docket 1779X) be approved.

BURKE-MARTIN MINES COMPANY

MONTEZUMA MINING DISTRICT

SUMMIT COUNTY, COLORADO

DMA DOCKET 1779X

Geology

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

TABLE OF CONTENTS

	Page
INTRODUCTION	1
GENERAL GEOLOGY	2
BURKE-MARTIN GROUP	2
ORE RESERVES	3
CONCLUSIONS AND RECOMMENDATIONS	3

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLORADO

INTRODUCTION

The Burke-Martin Mines Company--Thomas E. Martin, Montezuma, Colorado, owner and lessee--has applied for a $20,000.00 loan (DMA Docket 1779X) to explore for lead and zinc on a group of 44 mining claims controlled by the company. The claims are located in the Montezuma Mining District, Summit County, Colorado, section 35, T. 5 S., R. 76 W. and section 3, T. 6 S., R. 76 W., on the northeast slope of Glacier Mountain.

The property was examined on August 14 and 15, 1951, accompanied by C. M. Harrer, engineer for the U. S. Bureau of Mines.

Geology of the general Montezuma area, including the property of the Burke-Martin Mines Company, is discussed in the following reports:

1. Patton, H. B., The Montezuma Mining District, Summit County, Colorado: Colorado Geological Survey, First Report, 1908;
2. Lovering, T. S., Geology and Ore Deposits of the Montezuma Quadrangle, Colorado: U. S. Geological Survey Professional Paper 178, 1935;
3. Lovering, T. S., Geology and Ore Deposits of the Front Range, Colorado: U. S. Geological Survey Professional Paper 223, 1950;
4. Vanderwilt, John W., Mineral Resources of Colorado: State of Colorado Mineral Resources Board, 1947.

GENERAL GEOLOGY

The general geology of the Montezuma region in the vicinity of the subject property is described on page 4 of "Geology and Ore Deposits of the Front Range, Colorado," by Lovering as follows:

> "A large stock of porphyritic quartz monzonite lies just north of the town of Montezuma and is nearly surrounded by pre-Cambrian rocks - - - . The Idaho Springs formation covers most of the eastern half of the district, and the Swandyke gneiss is prominent to the southwest and west. Dikes of porphyry are abundant in the mineral belt southeast of the stock. Mineralized fissures nearly all trend northeast, but several strong northwest faults occur in the area south of the stocks and although poorly mineralized themselves, some have localized ore in the northeasterly veins that cross them. The ore deposits are mesothermal veins containing gold, silver, galena, sphalerite, sulfarsenides, and sulfantimonides of silver and copper with some bismuth. - - - In a southeasterly branch of the mineral belt extending from Glacier Mountain to Hall Valley, barite and gray copper ore is common, and locally bismuth is found. - - - "

BURKE-MARTIN GROUP

On the Burke-Martin group of claims are a number of veins, of which the principal accessible ones are: Albany, Bell-Silver Wing, Old Timer, and St. Joseph. These known veins are related to premineral faults, vary in strike from north to N. 60 E., and generally dip to the northwest approximately 60°. On an average, the width of the veins varies

from 6 to 24 inches. On one system, the Old Timer, recent stripping has exposed four parallel veins, carrying galena, sphalerite, and ruby silver, occurring in a zone 30 feet wide. Wherever seen, the wall rock is a pre-Cambrian biotite-hornblende gneiss. The observed sulphide minerals are sphalerite, galena, with minor amounts of pyrite and some ruby silver. Oxidized lead, zinc, and iron minerals occur in minor amounts and appear to be restricted to near the surface. Quartz is the chief gangue mineral and is associated with minor barite and ankerite. The ore occurs within the vein in relatively small and discontinuous pods and masses.

Many of the veins cannot be studied; overburden covers most of the surface, and old prospect pits and portals are caved. It is the intent of Burke-Martin Mines to uncover, by stripping and trenching, the veins occurring on 13 claims. If ore is found, the company plans to lease the various claims to small groups of miners who would be better able to successfully mine the narrow veins.

ORE RESERVES

The purpose of the exploration work is to uncover veins not now exposed; thus, it is not possible to give a definite estimate of ore reserves. Judging from the accessible workings and past production, it is reasonable to expect a vein width of approximately one foot and ore, if found, will be in the magnitude of thousands of tons.

CONCLUSIONS AND RECOMMENDATIONS

Numerous, narrow, and essentially parallel veins are present on the northeastern slope of Glacier Mountain and have produced at least 5,000

tons of shipping ore. Lead, zinc, and silver ore minerals are known to occur on many of the claims that are to be explored. On one claim, recent stripping has exposed 4 parallel veins occurring in a zone 30 feet wide. In general, the ore minerals are in veins averaging approximately one foot in width and include lead-silver veins, lead-silver-zinc veins, zinc veins, lead-barite veins, and lead-zinc-barite veins. From geologic evidence it is estimated that total inferred reserves from these narrow veins will be in the magnitude of thousands of tons.

It is recommended that this application for a loan to explore for lead and zinc (DMA Docket 1779X) be approved.

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLO.

Engineering Report

By C. M. Harrer
Mining Engineer
Bureau of Mines

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLO.

CONTENTS

Engineering Report	Page
Introduction	1
Acknowledgments	1
Location, topography, and physical features	1
History and production	2
Ownership and extent	4
Description of the deposits	4
Sampling	5
Minable ore reserves	5
Present status	5
Project proposals and costs	6
Proposed financing	10
Conclusions	11
Recommendations	12
Appendix	13

ILLUSTRATIONS

Figure	Follows Page
1. Index map, Burke-Martin Mines Company, Summit County, Colo.	1
2. Claim map, Burke-Martin Mines Company, Summit County, Colo.	16

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLO.

ENGINEERING REPORT

By

C. M. Harrer

INTRODUCTION

The Burke-Martin Mines Company, represented by T. E. Martin, of Montezuma, Colo., has applied for a $20,000.00 exploration loan under the Defense Production Act of 1950.

Field examination of the property was completed on August 15, 1951, by an engineer of the U. S. Bureau of Mines, Colorado Branch, Region IV, and a member of the U. S. Geological Survey, in the company of Mr. T. E. Martin, owner and lessee.

ACKNOWLEDGMENTS

T. E. Martin, loan applicant, spent the best part of the days August 14 and 15 in the field with the examining team and was most cooperative. Messrs. T. E. Martin, J. H. Myers, and A. B. Marlin, interested parties, later spent several hours with the examining engineer in detailing the desired exploration program and estimating costs. A. J. Martin, of the Economics Branch, U. S. Bureau of Mines, furnished available production statistics on the group of claims under consideration.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

Burke-Martin Mines Company property (fig. 1) is in sec. 35, T. 5 S., R. 76 W., and secs. 2 and 3, T. 6 S., R. 76 W., Montezuma Mining District, Summit County, Colo., on the east slope of Glacier Mountain, at altitudes ranging between 10,500 and 11,600 feet.

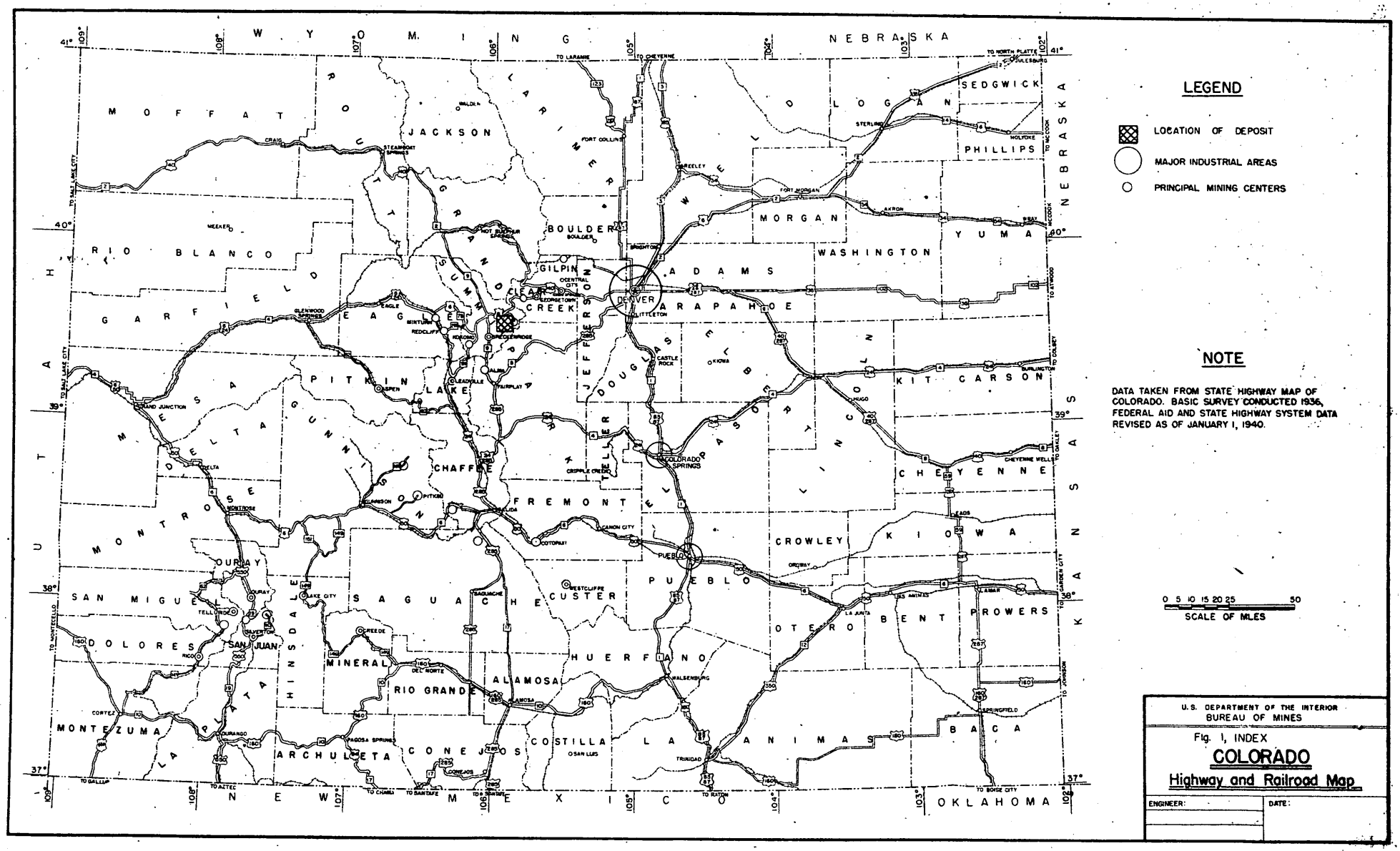

Fig. 1 - INDEX MAP, BURKE-MARTIN MINES CO. SUMMIT CO. COLORADO. DMA-1779X

This district and the nearby town of Montezuma are serviced by U. S. Highway 6 and Colorado County Highway 294. Northerly, beyond Montezuma, most mining properties are accessible over steep and rough access roads, suitable for ore hauling only.

The Snake River and Deer Creek valleys are narrowly confined between the steep and rugged slopes of Glacier and Collier Mountains, which are well forested to timberline at about 11,000 feet altitude.

Water is available from mine workings, intermittent stream drainage, and Snake River and Deer Creek in the valley floor.

Summers are short and equable; winters are cold with heavy snowfall and attendant danger from snow slides.

HISTORY AND PRODUCTION

Production and historical records for the claims under consideration are very sketchy and incomplete.

The Bell-California group of claims were located in 1866 and have an incomplete production record of 2,300 tons of galena ore assaying 20 ounces silver per ton and 39 percent lead. During 1925-26, 1,047 tons of galena-sphalerite ore were produced, averaging 15 ounces silver per ton, 39 percent lead and 30 percent zinc.

The St. Joseph claim has a 2-foot vein of sphalerite ore exposed, averaging 23 percent zinc.

The Silver Wing, which is an extension of the Bell vein, shipped 146 tons of lead-zinc ore during 1875 - 1950, assaying 0.01 ounce gold and 12 ounces silver per ton, 13 percent lead and 19 percent zinc.

Total production from the Burke group of claims, from U. S. Bureau of Mines statistics is 254 tons of zinc-lead ore, averaging 0.02 ounce

gold and 4 ounces silver per ton, 15 percent zinc, 4 percent lead and 0.06 percent copper. This is the inseparable production of a group of 22 claims which include the Trenton, Idaho, and Silver Wing.

The Mark Twain lode was discovered in 1881. Production for the years 1882-85 was 190 tons. The ore was reported as 8 inches thick, containing galena and gray copper and about 140 ounces silver per ton.

The Old Timer claim was located in 1881. The vein was reported as 6 to 10 inches thick, consisting chiefly of galena and quartz. Production total for the years 1881-83 was 20 tons, averaging 3 ounces silver per ton and 11 percent lead.

The Hancock vein was discovered in 1881 but was never mentioned as a producer. The vein has been reported as galena in a quartz gangue.

The Merrimac claim is believed to be an extension of the Tiger, which was reported as 6 feet wide with 8-inch paystreaks along the walls. In 1888, the Colorado Mining Directory reported the Tiger vein as containing galena, gray copper, and chlorides in a quartz gangue. The ore assayed 100 to 150 ounces silver per ton and 55 percent lead. Ore in the dump contains galena and sphalerite in a quartz and barite gangue, and the vein is estimated at about 9 inches thick.

The Trenton claim had a reported production of 7 tons during 1895 - 1920, which averaged 0.01 ounce gold and 42 ounces silver per ton, and 53 percent lead.

The Idaho claim produced 2 tons of lead ore during 1899, which averaged 0.01 ounce gold and 32 ounces silver per ton, and 46 percent lead.

The Echo claim produced 10 tons of ore during 1919, which averaged 0.02 ounce gold and 35 ounces silver per ton, and 10 percent lead.

The Celtic in combination with the Denver lode produced 731 tons of ore during 1923-24, which averaged 0.007 ounce gold and 8 ounces silver per ton, 5 percent lead and 3.6 percent zinc, with a minor amount of copper.

A 5-foot sample across the vein on the Illinois claim during 1950, assayed one ounce silver per ton, 2 percent lead and 10 percent zinc.

All the claims under consideration show some evidence of early day mining operations. These mine workings are now caved and more or less obliterated.

OWNERSHIP AND EXTENT

A compact group of 44 mining claims, figure 2, on the east slope of Glacier Mountain are owned or controlled by various lease and bond agreements detailed in the appended tables 1 to 6, inclusive.

Ownerships and lease agreements with the exception of that in table 5 are recorded at Breckenridge, Colo., the county seat of Summit County. The last mentioned lease was not recorded by request of the lessor. All signed leases were examined and verified.

DESCRIPTION OF THE DEPOSITS

The bulk of metals produced has been zinc and lead with very minor amounts of copper. Sphalerite-galena-silver ores occur as lenticular and discontinuous shoots with weakly mineralized intervening areas. Veins are generally narrow with a northeasterly trend and will not support large scale mining ventures. Small scale leasing and "split-check" mining operations, however, should prove successful.

Oxidation is unimportant in the outcrop and there is little possibility of secondary enrichment in depth.

Walls of accessible stopes are generally firm and require little support, and the accepted mining method has been open stoping with occasional stull support.

Veins are generally covered with a shallow mantle of overburden.

SAMPLING

Three character samples, H-526 to H-528, inclusive, were taken across surface exposures. H-526 was taken across 2.2 feet of vein on the Silver Wing vein outcrop and assayed 1.5 ounces silver per ton, 2.3 percent lead, and 0.3 percent zinc.

Sample H-527 was taken across 3.0 feet of vein outcrop on the Illinois claim and assayed 11.3 ounces silver per ton, 6 percent lead, and 22.2 percent zinc.

Sample H-528 was taken across the largest of 4 veins exposed by a bulldozer cut on the Old Timer claim, over a vein width of 2.0 feet, and assayed 2.3 ounces silver per ton, 8.8 percent lead, and 1.3 percent zinc.

MINABLE ORE RESERVES

At present there are no minable ore reserves exposed on any claims of the group.

PRESENT STATUS

Burke-Martin Mines Company, presently control a group of 44 mining claims of which the Silver Wing, Albany, Old Timer, and St. Joseph, are now leased to small groups of miners who are preparing their surface plants and underground workings for active mining.

Early development on the remaining claims is entirely inaccessible and their only traces are the slumps over caved areas, outcrops, and old, mineralized dumps containing galena and sphalerite.

Burke-Martin Mines Company has recently entered into a verbal agreement with Paul Alishouse of Sheridan Lakes, Colo., for the use of a TD-18 International bulldozer which is being used to prospect and strip outcrops and old portals. In return, he receives one third of the net profits after mining, on all ores exposed by this stripping. Mr. Alishouse appears willing to furnish an additional bulldozer, a TD-14 International, and a 1/2-yard Quickway power shovel, as encouragement dictates.

Bulldozer stripping of outcrops and old portals on comparatively steep slopes has already proven successful on the Old Timer, Illinois No. 2, and Albany claims, where ore has been exposed and portals of old adits were uncovered.

The recently organized Glasier Mill Company, of Denver, Colo., is erecting a 100-ton, combination flotation and gravity concentration mill at the lower portal of the Silver Wing Mine to concentrate ores from the district on a custom basis, particularly those from the Burke-Martin Mines Company operations. Tungsten ore from the Breckenridge area will also be handled in a separate unit. Mill operation has been promised tentatively by September 15, 1951.

PROJECT PROPOSALS AND COSTS

Burke-Martin Mines Company propose to explore the most promising mineralized areas and outcrops on their various claims, figure 2, not presently leased, by stripping away overburden and exposing promising ore projects as project A. The portals of old adits, long caved, will also be cleared by stripping away overburden to bed rock as project B. This method of exploration and exposure for examination is expected to result in increasingly active mining by small lease and "split-check" operations.

The difficult terrain and operating conditions imposed on this project at altitudes of 11,000 to 11,600 feet above sea level make a close estimate of costs impossible. Trench locations are on very steep and difficultly accessible locations. Supplies are presently carried up on pack horses. The ground is rocky and considerable blasting, without drilling, is expected. Overburden may approach 14 feet in places and the positions of trenches may require change under adverse conditions.

Exploration intent is expected to be flexible enough to allow for field changes on the basis of increased knowledge.

Only the approximate locationsof the proposed trenches and mine portals are indicated in red on the accompanying claim map, figure 2. Lengths and widths of the proposed trenches are the exposures desired and do not include ramps or sloughs.

Time elements involved are based on the applicant's experience gained in several weeks' work under similar conditions. The applicant believes two bulldozers would be required, with the one working on pioneer service roads, project B, and the trenching.

PROJECT A: To explore the most promising mineralized areas and outcrops by stripping with a bulldozer.

Claim	Bulldozer Exposures Estimated Work	Days Required To Complete
Merrimac	2 exposures, 20 feet x 60 feet	2
Galena	1 exposure, 20 feet x 60 feet	3
Luella S.	2 exposures, 20 feet x 60 feet	6
La Salle	1 exposure, 20 feet x 60 feet	3
Northern	2 exposures, 20 feet x 60 feet	6
Pirate	1 exposure, 20 feet x 60 feet	3
Idaho	3 exposures, 20 feet x 60 feet	9
Trenton	2 exposures, 20 feet x 60 feet	6
Queen Bee	1 exposure, 20 feet x 60 feet	3
California-Bell	4 exposures, 20 feet x 40 feet	10
Illinois	1 exposure, 20 feet x 100 feet	5
Pacific	1 exposure, 20 feet x 40 feet	4
Total	21 exposures, 20 feet x 1,200 feet	60 days

It is here assumed that projects A and B will be carried on consecutively, employing only one bulldozer, and that project A can be completed within 60 days. To operate both projects simultaneously and facilitate service would require the use of an additional bulldozer. A TD-14 International bulldozer can be had on a rental basis from Paul Alishouse, of Sheridan Lakes, Colo., at the standard rental of $10.00 per hour.

Project A Costs:

Supervision (both projects A and B)

1 - superintendent, T. E. Martin, the applicant, at $450.00 per month

Total supervision per day 15.00

Equipment

1 - TD-18 International bulldozer with operator, furnished by Paul Alishouse, of Sheridan Lakes, Colo., at a rental of $12.00 per hour

Rental per 8-hour day 96.00

1 - local truck and driver will be used on an hourly rental basis of $2.50

Truck service per 8-hour day 20.00

Labor

2 - laborers will be hired at $1.50 per hour, paid overtime for work on Saturdays

Summary of Costs Project A:

Supervision, 60 days at $15.00 per day	$ 900.00
Labor (60 days at $24.00 per day	1,440.00
Labor (Overtime - 8 shifts total at $24.00 per shift	192.00
Rental TD-18, International bulldozer, 60 days at $96.00 per 8-hour day	5,760.00
Rental of service truck, 60 days at $20.00 per day	1,200.00
Total cost of trenching, Project A	$9,492.00

PROJECT B: To clear the portals of old caved adits by stripping to bedrock, with bulldozer and power shovel.

Claim	Days Required to complete
Idaho	2
Trenton	2
California-Bell, 6th level	2
Old Timer, 2nd level	2
Equipment moving time	10
Total time to complete job	18 days

Project B Costs:

Supervision (see project A) per day $15.00

Equipment

One bulldozer and a 1/2-yard Quickway power shovel will be used on a rental basis from Paul Alishouse, of Sheridan Lakes, Colo., as follows:

1 - TD-18 bulldozer, complete with operator, at $12.00 per hour
1 - 1/2-yard Quickway power shovel with operator, at $8.00 per hour

Combined rental per 8-hour day is $160.00

1 - local truck and driver will be used on a rental of $2.50 per hour.

Rental per 8-hour day will be $20.00

Labor

2 - laborers will be required for this job, at $1.50 per hour, each

Labor cost per day without overtime will be $24.00

Summary of Costs Project B:

Supervision, 18 days at $15.00 per day	$ 270.00
2 laborers - 18 days at $24.00 per day	432.00
3 Saturdays' overtime	36.00
1 - TD-18 bulldozer rental, 18 days at $96.00 per day	1,728.00
1 - Quickway power shovel rental, 18 days at $64.00 per day	1,152.00
1 - service truck and driver rental, 18 days at $20.00 per day	360.00
Total cost of opening portals, Project B	$3,978.00

Estimated
Total Cost of Proposed Exploration:

Project A	$ 9,492.00
Project B	3,978.00
100 assays for silver, lead, zinc, at $2.00 each	200.00
10 cases dynamite, at $12.50 each	125.00
Caps, fuse, etc., for both projects	50.00
1/ Underground rehabilitation	5,300.00
2/ Miscellaneous	855.00
Total cost of exploration	$20,000.00

1/ The 6th and lowest adit level of the Bell mine has a known length of 1,300 feet with the first 300 feet timbered. Lengths of adits on the Idaho and Trenton claims are unknown but assumed at 100 feet each. While most of the workings are expected to be accessible, it must be assumed that part will require rough rehabilitation for sampling and inspection.

2/ Miscellaneous includes social security, workmen's compensation insurance, small tools, timber, preparation of portals, sampling, and delays.

PROPOSED FINANCING

Burke-Martin Mines Company is already engaged in prospecting various surface exposures with the aid of a TD-18 bulldozer under a gentleman's agreement (verbal) whereby Paul Alishouse, of Sheridan Lakes, Colo., is furnishing the services of the bulldozer for 1/3 of the net profit from ores uncovered by it. This agreement will terminate when a loan is granted.

T. E. Martin, applicant, A. B. Marlin, who is related to Mr. Alishouse, and J. H. Meyers, long time local resident who is familiar with the properties and ore occurrence, are directly interested and expect to contribute their services to the project. T. E. Martin, who owns and controls the claims under consideration, has given assurances that Burke-Martin Mines Company is able to contribute on a 50 percent participation basis.

CONCLUSIONS

Numerous narrow and essentially parallel veins are known to exist on the northeastern slope of Glacier Mountain which have produced over 5,000 tons of lead-zinc ores of shipping grade.

Lead, zinc, and silver minerals are known to be present on many of the claims to be explored. Recent stripping on the Old Timer claim has exposed 4 parallel veins containing galena and sphalerite in a zone 30 feet wide.

In general, galena and sphalerite occur in veins approximately one foot wide, as lead-silver ore, lead-silver-zinc ore, zinc ore, lead-barite ore, and lead-zinc-barite ore.

Ore reserves are based on favorable geologic environment but are not sufficiently definite to form a basis for the estimation of minable reserves. The exploration program has merit.

The proposed stripping of outcrops and the opening of old adit portals on the relatively steep slopes of Glacier Mountain is a cheap and rapid method of prospecting and exposing vein structure. This method of exploration has proven successful on this and other properties.

The narrow and discontinuous ore bodies along the veins can be mined profitably by a system of small individual leasing and "split-check" operations, already instituted on a small scale.

Milling facilities sufficiently flexible and adaptable to treat the variety of complex ores involved are a necessity. These facilities are expected to be furnished by the new custom mill now being constructed by the Glasier Mill Company on the property of Burke-Martin Mines Company.

RECOMMENDATIONS

It is recommended that this application for a lead-zinc exploration loan of $20,000.00 under the Defense Production Act of 1950, DMA docket 1779X, on a 50 percent participation basis be approved.

APPENDIX

TABLE 1. - Mining claims held by Mr. and Mrs. T. E. Martin, of Montezuma, Colo., located in the Montezuma Mining District, Summit County, Colo.

Name	Patent Number	Description
Silver Wing	141	patented
Albany	6429	patented
Gold Drill	6429	unpatented
Pacific	6429	unpatented
California Extension	6429	unpatented
Illinois No. 2	6429	unpatented
Burke Tunnel Site	6429	unpatented
Burke Tunnel A	6429	unpatented
Burke Tunnel 3	6429	unpatented
Burke Tunnel 4	6429	unpatented
Protector	6429	unpatented

The above claims are free of outstanding indebtedness and all taxes are paid up, except those current.

TABLE 2. - Mining claims owned jointly by Mr. and Mrs. T. E. Martin, of Montezuma, Colo., and R. B. Strassberger, of Paris, France, located in the Montezuma Mining District, Summit County, Colo.

Name	Patent Number	Part owned by T. E. Martin	Part owned by R. B. Strassberger
Galena	16211-A	1/2	1/2
Luella S.	16211-A	1/2	1/2
La Salle	16211-A	1/2	1/2
Northern	16211-A	1/2	1/2
Pirate	16211-A	1/2	1/2
Idaho	16211-A	1/2	1/2
Trenton	16211-A	1/2	1/2
Pirate Mill Site	16211-B	1/2	1/2
Illinois	17642	1/2	1/2
Meteor	19490	2/3	1/3
Northern No. 2	19491	1/2	1/2
Idaho No. 2	19491	1/2	1/2
Nicholas	19492	1/2	1/2
Copeland	19492	1/2	1/2
Tangle	19492	1/2	1/2
Garrett	19492	1/2	1/2

That part of the foregoing patented mining claims owned by R. B. Strassberger is leased to T. E. Martin for a period of 5 years, commencing July 15, 1949, with an additional 5-year renewal clause. Mr. Martin has full power to assign or sub-lease any part.

Option-to-purchase for $25,000.00 is granted during the term of the lease, and all royalty payments will apply towards the purchase price.

A royalty of 5 percent computed on net smelter returns is stipulated for all ores assaying up to $50.00 per ton.

A royalty of 7 1/2 percent of net smelter returns is stipulated for all ores assaying $50.00 per ton and over. Net smelter returns are based on the gross value after deducting transportation, milling and smelter charges.

Smelter or ore buyer shall compute and pay said royalty direct to the lessor or his agent, or deposit same in a bank designated by him.

TABLE 3. - Mining claims controlled by T. E. Martin, of Montezuma, Colo., under a lease and bond agreement from the Bell Mining Company, of Salt Lake City, Utah, and located in the Montezuma Mining District, Summit County, Colo.

Name	Patent Number	
Eureka	3484	
St. Joseph	6737	
El Montana	6802	
Sunburst	12244	
California	12244)	Overlapping
Bell West	982A)	

The above mining claims are held under a lease, with option-to-purchase for $105,000.00, agreement for a period of 3 years, dated December 1, 1950. Royalties will credit towards the purchase price.

Lessee will pay all taxes.

Lessee may sub-lease all or part of the above property, providing he notifies lessor thereof.

A royalty of 15 percent of the net smelter returns on the first carload shipped or equivalent tonnage is stipulated, and 20 percent on all subsequent shipments. Royalties are calculated on net mint, mill or smelter returns after deductions for transportation and treatment charges.

TABLE 4. - Mining claims controlled by T. E. Martin, of Montezuma, Colo., under a lease and bond agreement from Doris I. Sweeney, of Sherwood, Oregon, and located in the Montezuma Mining District, Summit County, Colo.

Name	Patent Number
Old Timer	1465
Echo	19540
Merrimac	19540
Queen	19540

The above patented mining claims are held under a lease, with option-to-purchase for $10,000.00, agreement for 5 years, dated November 1, 1950. The lease is renewable for an additional 5-year period, providing $2,500.00 has been paid in royalties. Royalties shall apply towards the purchase price. A royalty of 12 1/2 percent of the net smelter returns on all ores is stipulated.

TABLE 5. - Mining claims controlled by T. E. Martin, of Montezuma, Colo., under a lease and bond agreement from Elizabeth F. Deatherage, of Golden, Colo., dated July 14, 1951, and located in the Montezuma Mining District, Summit County, Colo.

Name	Patent Number
Mark Twain Extension	1788
Celtic	1823
Evening Star	1878
Morning Star	1928
Hancock	2011
Queen Bee	unpatented

The above mining claims can be purchased for $3,000.00 with the following stipulations, during the term of the lease:

(1) One thousand dollars is payable within 60 days from the date of the contract.

(2) Two thousand dollars is payable 12 months from the date of the first payment.

(3) A 10 percent royalty on the net mill and smelter returns on all ores shipped shall be paid to Elizabeth F. Deatherage as long as she lives. Thereafter, 10 percent royalty on the net mill and smelter returns on all ores shipped shall be paid to G. E. Hopkins, Burt Deatherage, and Lena Schmidt as long as they live.

All taxes shall be paid by the lessee.

TABLE 6. - Mining claims held by Mr. and Mrs. T. E. Martin, of Montezuma, Colo., and Paul Sweet, of Denver, Colo., in partnership, and located in the Montezuma Mining District, Summit County, Colo.

Name	Description
Sweetheart	unpatented location

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

224 New Customhouse
Denver 2, Colorado

July 16, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration, Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMA Docket 1779X, (Lead-Zinc) Burke Martin Mines, Summit County, Colorado

Enclosed are four copies of the final report on DMA-1779X.

The applicant was unable to obtain landlords subordination agreements and requested cancellation of his application.

W. H. King
W. H. King

Donald R. Machson
for
A. H. Koschmann

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
Denver
JUL 21 1952

Mining Division
Region IV

October 8, 1952

Memorandum

To: DMEA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 1779E, Burke-Martin Zinc-Lead Mines, Montezuma Mining District, Summit County, Colorado

The application of the subject docket was for an exploration loan at an estimated cost of $20,000.00. Numerous veins are known to occur on the property and the proposed initial exploration is by cutting trenches through the overburden with a bulldozer and sampling the outcrops. Additional proposed work at the project is opening caved portals of adits and rehabilitation of the adits on the Bell Trenton and Idaho claims.

The examining team recommends approval of the entire project. We suggest, however, that it be set up in phases, with the opening of caved portals and rehabilitation of the adits at an estimated cost of $7,[illegible].00, dependent on the results of the initial trenching and sampling.

As this application falls within the prerogative of the executive officer, an exploration project contract will be executed.

Paul T. Allaman

Reviewed by
DMEA OPERATING COMMITTEE

7-25-52
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Administration
200 New Customhouse
Denver 2, Colorado

September 21, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 1779X, Burke-Martin Mines Company, Montezuma Mining District, Summit County, Colorado

Attached are 8 copies of a geologic report by Truman H. Kuhn covering the subject property. Mr. Kuhn points out that a number of lead-zinc-silver veins are known to occur on the Burke-Martin group of claims. However, overburden covers most of the surface and old prospect pits and portals to tunnels are caved, thus preventing their mapping and study and effective prospecting. Recent stripping on one claim has exposed 4 parallel veins occurring in a zone 30 feet wide. It is the intent of the applicant to uncover by stripping and trenching the veins on their property. This proposition has geologic merit, and Mr. Kuhn recommends that the loan applied for be approved.

I concur with this recommendation.

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

Attachments (8)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JUL 21 1952

Mining Division
Date Rec'd.
OCT 5 1951
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Building 20
Denver Federal Center
October 5, 1951

Memorandum

To: Chief, Mining Division, Region IV

From: Chief, Colorado Branch, Mining Division

Subject: DMA 1779X, Burke-Martin Mines Company, Summit County, Colorado

Please find enclosed the original and seven copies of the "Summary, Conclusions, and Recommendations", by Harrer and Bahm, and the equivalent copies of Harrer's revised engineering report on the subject docket.

The bulldozer estimate has not been changed and the reason is explained on page 7 of the report. The possibility of using both the TD-18 bulldozer on project A and the TD-14 on project B and operating the two concurrently is mentioned but not explained in the estimate of costs. Such procedure would effect a savings on supervision and bulldozer rental.

I am making no further comment on the project except that I am not impressed with the applicant, especially with respect to his supervisory ability. However, that is evidently not a factor in these operations.

Bulldozer exploration elsewhere has proved successful and is an economical method. I approve the recommendations of the examining team.

Martin has submitted the original copies of all of the involved lease agreements. They are apparently in order and, unless you need to examine them, they will be held in our files and returned to him if or when a contract is made, in accordance with his request.

The brochure and review are returned herewith.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-1779X, Burke-Martin Mines Company

Montezuma Mining District

Summit County, Colo.

C. M. Harrer, Mining Engineer
Bureau of Mines

T. H. Kuhn, Geologist
U. S. Geological Survey

September 12, 1951

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLO.

Summary, Conclusions, and Recommendations

By C. M. Harrer
Mining Engineer
Bureau of Mines

and

T. H. Kuhn
Geologist
U. S. Geological Survey

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLO.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By C. M. Harrer and T. H. Kuhn

The Burke-Martin Mines Company in the Montezuma Mining District, Summit County, Colo., has applied for an exploration loan of $20,000.00 to explore for lead and zinc.

Numerous, narrow and essentially parallel veins are known to exist on the northeastern slope of Glacier Mountain, and have produced at least 5,000 tons of shipping ore. Lead, zinc, and silver ore minerals are known to be present on many of the claims that are to be explored. On one claim, recent stripping has uncovered 4 parallel veins occurring in a zone 30 feet wide. In general, the ore minerals are in veins averaging approximately one foot wide and occur either as lead-silver ore, lead-silver-zinc ore, zinc ore, lead-barite ore, or lead-zinc-barite ore. From geologic evidence it is estimated that total reserves inferred from these narrow veins will be in the magnitude of thousands of tons.

The proposed stripping of outcrops and opening of old adit portals on the relatively steep slopes of Glacier Mountain is a cheap and rapid method of prospecting and exposing vein structure. This method of exploration has proven successful on this and other properties.

The narrow and discontinuous ore bodies along the veins can be mined profitably only by a system of small individual leasing and "split-check" operations. This is the present method of operations.

Milling facilities readily adaptable to treat the variety of complex ores involved are a necessity. These facilities are expected to be

furnished by the new custom mill now being built by the Glacier Mill Company on the property of Burke-Martin Mines Company.

It is recommended that this application for a lease to explore for lead and zinc (DMA Docket 1779X) be approved.

BURKE-MARTIN MINES COMPANY

MONTEZUMA MINING DISTRICT

SUMMIT COUNTY, COLORADO

DMA DOCKET 1779X

Geology

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

TABLE OF CONTENTS

	Page
INTRODUCTION	1
GENERAL GEOLOGY	2
BURKE-MARTIN GROUP	2
ORE RESERVES	3
CONCLUSIONS AND RECOMMENDATIONS	3

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLORADO

INTRODUCTION

The Burke-Martin Mines Company--Thomas F. Martin, Montezuma, Colorado, owner and lessee--has applied for a $20,000.00 loan (DMA Docket 1779X) to explore for lead and zinc on a group of 44 mining claims controlled by the company. The claims are located in the Montezuma Mining District, Summit County, Colorado, section 35, T. 5 S., R. 76 W. and section 3, T. 6 S., R. 76 W., on the northeast slope of Glacier Mountain.

The property was examined on August 14 and 15, 1951, accompanied by C. M. Harrer, engineer for the U. S. Bureau of Mines.

Geology of the general Montezuma area, including the property of the Burke-Martin Mines Company, is discussed in the following reports:

1. Patton, H. B., The Montezuma Mining District, Summit County, Colorado: Colorado Geological Survey, First Report, 1908;
2. Lovering, T. S., Geology and Ore Deposits of the Montezuma Quadrangle, Colorado: U. S. Geological Survey Professional Paper 178, 1935;
3. Lovering, T. S., Geology and Ore Deposits of the Front Range, Colorado: U. S. Geological Survey Professional Paper 223, 1950;
4. Vanderwilt, John W., Mineral Resources of Colorado: State of Colorado Mineral Resources Board, 1947.

GENERAL GEOLOGY

The general geology of the Montezuma region in the vicinity of the subject property is described on page 4 of "Geology and Ore Deposits of the Front Range, Colorado," by Lovering as follows:

"A large stock of porphyritic quartz monzonite lies just north of the town of Montezuma and is nearly surrounded by pre-Cambrian rocks - - - . The Idaho Springs formation covers most of the eastern half of the district, and the Swandyke gneiss is prominent to the southwest and west. Dikes of porphyry are abundant in the mineral belt southeast of the stock. Mineralized fissures nearly all trend northeast, but several strong northwest faults occur in the area south of the stocks and although poorly mineralized themselves, some have localized ore in the northeasterly veins that cross them. The ore deposits are mesothermal veins containing gold, silver, galena, sphalerite, sulfarsenides, and sulfantimonides of silver and copper with some bismuth. - - - In a southeasterly branch of the mineral belt extending from Glacier Mountain to Hall Valley, barite and gray copper ore is common, and locally bismuth is found. - - - "

BURKE-MARTIN GROUP

On the Burke-Martin group of claims are a number of veins, of which the principal accessible ones are: Albany, Bell-Silver Wing, Old Timer, and St. Joseph. These known veins are related to premineral faults, vary in strike from north to N. 60 E., and generally dip to the northwest approximately 60°. On an average, the width of the veins varies

from 6 to 24 inches. On one system, the Old Timer, recent stripping has exposed four parallel veins, carrying galena, sphalerite, and ruby silver, occurring in a zone 30 feet wide. Wherever seen, the wall rock is a pre-Cambrian biotite-hornblende gneiss. The observed sulphide minerals are sphalerite, galena, with minor amounts of pyrite and some ruby silver. Oxidized lead, zinc, and iron minerals occur in minor amounts and appear to be restricted to near the surface. Quartz is the chief gangue mineral and is associated with minor barite and ankerite. The ore occurs within the vein in relatively small and discontinuous pods and masses.

Many of the veins cannot be studied; overburden covers most of the surface, and old prospect pits and portals are caved. It is the intent of Burke-Martin Mines to uncover, by stripping and trenching, the veins occurring on 13 claims. If ore is found, the company plans to lease the various claims to small groups of miners who would be better able to successfully mine the narrow veins.

ORE RESERVES

The purpose of the exploration work is to uncover veins not now exposed; thus, it is not possible to give a definite estimate of ore reserves. Judging from the accessible workings and past production, it is reasonable to expect a vein width of approximately one foot and ore, if found, will be in the magnitude of thousands of tons.

CONCLUSIONS AND RECOMMENDATIONS

Numerous, narrow, and essentially parallel veins are present on the northeastern slope of Glacier Mountain and have produced at least 5,000

tons of shipping ore. Lead, zinc, and silver ore minerals are known to occur on many of the claims that are to be explored. On one claim, recent stripping has exposed 4 parallel veins occurring in a zone 30 feet wide. In general, the ore minerals are in veins averaging approximately one foot in width and include lead-silver veins, lead-silver-zinc veins, zinc veins, lead-barite veins, and lead-zinc-barite veins. From geologic evidence it is estimated that total inferred reserves from these narrow veins will be in the magnitude of thousands of tons.

It is recommended that this application for a loan to explore for lead and zinc (D'A Docket 1779X) be approved.

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLO.

Engineering Report

By C. M. Harrar
Mining Engineer
Bureau of Mines

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLO.

CONTENTS

Engineering Report	Page
Introduction	1
Acknowledgments	1
Location, topography, and physical features	1
History and production	2
Ownership and extent	4
Description of the deposits	4
Sampling	5
Minable ore reserves	5
Present status	5
Project proposals and costs	6
Proposed financing	10
Conclusions	11
Recommendations	12
Appendix	13

ILLUSTRATIONS

Figure	Follows Page
1. Index map, Burke-Martin Mines Company, Summit County, Colo.	1
2. Claim map, Burke-Martin Mines Company, Summit County, Colo.	16

BURKE-MARTIN MINES COMPANY
MONTEZUMA MINING DISTRICT
SUMMIT COUNTY, COLO.

ENGINEERING REPORT

By

G. M. Herrer

INTRODUCTION

The Burke-Martin Mines Company, represented by T. E. Martin, of Montezuma, Colo., has applied for a $20,000.00 exploration loan under the Defense Production Act of 1950.

Field examination of the property was completed on August 15, 1951, by an engineer of the U. S. Bureau of Mines, Colorado Branch, Region IV, and a member of the U. S. Geological Survey, in the company of Mr. T. E. Martin, owner and lessee.

ACKNOWLEDGMENTS

T. E. Martin, loan applicant, spent the best part of the days August 14 and 15 in the field with the examining team and was most cooperative. Messrs. T. E. Martin, J. N. Myers, and A. B. Merkin, interested parties, later spent several hours with the examining engineer in detailing the desired exploration program and estimating costs. A. J. Martin, of the Economics Branch, U. S. Bureau of Mines, furnished available production statistics on the group of claims under consideration.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

Burke-Martin Mines Company property (fig. 1) is in sec. 35, T. 5 S., R. 76 W., and secs. 2 and 3, T. 6 S., R. 76 W., Montezuma Mining District, Summit County, Colo., on the east slope of Glacier Mountain, at altitudes ranging between 10,500 and 11,600 feet.

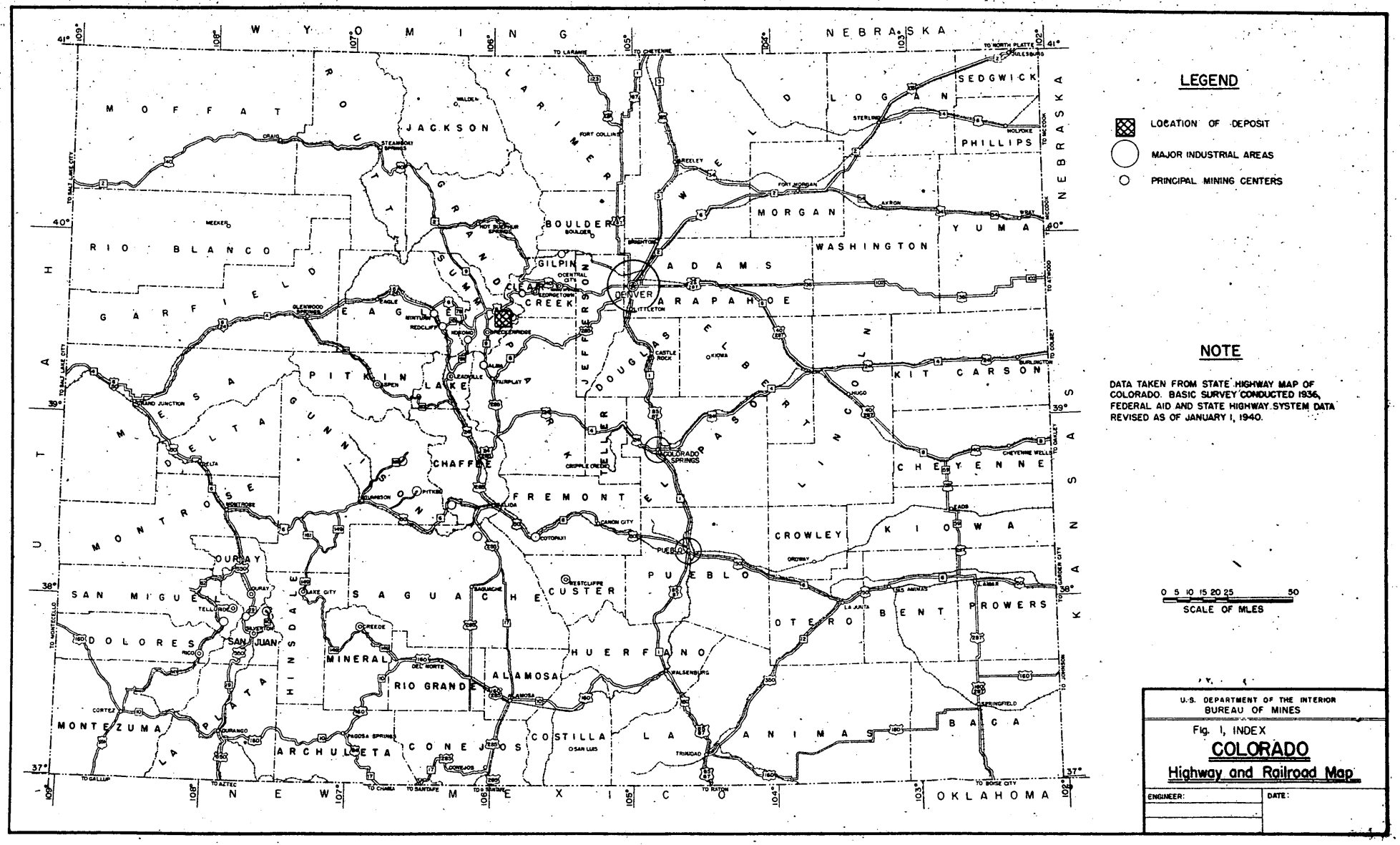

Fig. 1 - INDEX MAP, BURKE-MARTIN MINES CO. SUMMIT CO. COLORADO. DMA-1779X

This district and the nearby town of Montezuma are serviced by U. S. Highway 6 and Colorado County Highway 294. Northerly, beyond Montezuma, most mining properties are accessible over steep and rough access roads, suitable for ore hauling only.

The Snake River and Deer Creek valleys are narrowly confined between the steep and rugged slopes of Glacier and Collier Mountains, which are well forested to timberline at about 11,000 feet altitude.

Water is available from mine workings, intermittent stream drainage, and Snake River and Deer Creek in the valley floor.

Summers are short and equable; winters are cold with heavy snowfall and attendant danger from snow slides.

HISTORY AND PRODUCTION

Production and historical records for the claims under consideration are very sketchy and incomplete.

The Bell-California group of claims were located in 1866 and have an incomplete production record of 2,300 tons of galena ore assaying 20 ounces silver per ton and 39 percent lead. During 1925-26, 1,047 tons of galena-sphalerite ore were produced, averaging 15 ounces silver per ton, 39 percent lead and 30 percent zinc.

The St. Joseph claim has a 2-foot vein of sphalerite ore exposed, averaging 23 percent zinc.

The Silver Wing, which is an extension of the Bell vein, shipped 146 tons of lead-zinc ore during 1875 - 1950, assaying 0.01 ounce gold and 12 ounces silver per ton, 13 percent lead and 19 percent zinc.

Total production from the Burke group of claims from U. S. Bureau of Mines statistics is 254 tons of zinc-lead ore, averaging 0.02 ounce

gold and 4 ounces silver per ton, 15 percent zinc, 4 percent lead and 0.06 percent copper. This is the inseparable production of a group of 22 claims which include the Trenton, Idaho, and Silver Wing.

The Mark Twain lode was discovered in 1881. Production for the years 1882-85 was 190 tons. The ore was reported as 8 inches thick, containing galena and gray copper and about 140 ounces silver per ton.

The Old Timer claim was located in 1881. The vein was reported as 6 to 10 inches thick, consisting chiefly of galena and quartz. Production total for the years 1881-83 was 20 tons, averaging 3 ounces silver per ton and 11 percent lead.

The Hancock vein was discovered in 1881 but was never mentioned as a producer. The vein has been reported as galena in a quartz gangue.

The Merrimac claim is believed to be an extension of the Tiger, which was reported as 6 feet wide with 8-inch paystreaks along the walls. In 1888, the Colorado Mining Directory reported the Tiger vein as containing galena, gray copper, and chlorides in a quartz gangue. The ore assayed 100 to 150 ounces silver per ton and 55 percent lead. Ore in the dump contains galena and sphalerite in a quartz and barite gangue, and the vein is estimated at about 9 inches thick.

The Trenton claim had a reported production of 7 tons during 1895 - 1920, which averaged 0.01 ounce gold and 42 ounces silver per ton, and 53 percent lead.

The Idaho claim produced 2 tons of lead ore during 1899, which averaged 0.01 ounce gold and 32 ounces silver per ton, and 46 percent lead.

The Echo claim produced 10 tons of ore during 1919, which averaged 0.02 ounce gold and 35 ounces silver per ton, and 10 percent lead.

The Celtic in combination with the Denver lode produced 731 tons of ore during 1923-24, which averaged 0.007 ounce gold and 8 ounces silver per ton, 5 percent lead and 3.6 percent zinc, with a minor amount of copper.

A 5-foot sample across the vein on the Illinois claim during 1950, assayed one ounce silver per ton, 2 percent lead and 10 percent zinc.

All the claims under consideration show some evidence of early day mining operations. These mine workings are now caved and more or less obliterated.

OWNERSHIP AND EXTENT

A compact group of 44 mining claims, figure 2, on the east slope of Glacier Mountain are owned or controlled by various lease and bond agreements detailed in the appended tables 1 to 6, inclusive.

Ownerships and lease agreements with the exception of that in table 5 are recorded at Breckenridge, Colo., the county seat of Summit County. The last mentioned lease was not recorded by request of the lessor. All signed leases were examined and verified.

DESCRIPTION OF THE DEPOSITS

The bulk of metals produced has been zinc and lead with very minor amounts of copper. Sphalerite-galena-silver ores occur as lenticular and discontinuous shoots with weakly mineralized intervening areas. Veins are generally narrow with a northeasterly trend and will not support large scale mining ventures. Small scale leasing and "split-check" mining operations, however, should prove successful.

Oxidation is unimportant in the outcrop and there is little possibility of secondary enrichment in depth.

Walls of accessible stopes are generally firm and require little support, and the accepted mining method has been open stoping with occasional stull support.

Veins are generally covered with a shallow mantle of overburden.

SAMPLING

Three character samples, H-526 to H-528, inclusive, were taken across surface exposures. H-526 was taken across 2.2 feet of vein on the Silver Wing vein outcrop and assayed 1.5 ounces silver per ton, 2.3 percent lead, and 0.3 percent zinc.

Sample H-527 was taken across 3.0 feet of vein outcrop on the Illinois claim and assayed 11.3 ounces silver per ton, 6 percent lead, and 22.2 percent zinc.

Sample H-528 was taken across the largest of 4 veins exposed by a bulldozer cut on the Old Timer claim, over a vein width of 2.0 feet, and assayed 2.3 ounces silver per ton, 8.8 percent lead, and 1.3 percent zinc.

MINABLE ORE RESERVES

At present there are no minable ore reserves exposed on any claims of the group.

PRESENT STATUS

Burke-Martin Mines Company presently control a group of 44 mining claims of which the Silver Wing, Albany, Old Timer, and St. Joseph, are now leased to small groups of miners who are preparing their surface plants and underground workings for active mining.

Early development on the remaining claims is entirely inaccessible and their only traces are the slumps over caved areas, outcrops, and old, mineralized dumps containing galena and sphalerite.

Burke-Martin Mines Company has recently entered into a verbal agreement with Paul Alisheuse of Sheridan Lakes, Colo., for the use of a TD-18 International bulldozer which is being used to prospect and strip outcrops and old portals. In return, he receives one third of the net profits after mining on all ores exposed by this stripping. Mr. Alisheuse appears willing to furnish an additional bulldozer, a TD-14 International, and a 1/2-yard Quickway power shovel, as encouragement dictates.

Bulldozer stripping of outcrops and old portals on comparatively steep slopes has already proven successful on the Old Timer, Illinois No. 2, and Albany claims where ore has been exposed and portals of old adits were uncovered.

The recently organized Glacier Mill Company, of Denver, Colo., is erecting a 100-ton combination flotation and gravity concentration mill at the lower portal of the Silver Wing Mine to concentrate ores from the district on a custom basis, particularly those from the Burke-Martin Mines Company operations. Tungsten ore from the Breckenridge area will also be handled in a separate unit. Mill operation has been promised tentatively by September 15, 1951.

PROJECT PROPOSALS AND COSTS

Burke-Martin Mines Company propose to explore the most promising mineralized areas and outcrops on their various claims, figure 2, not presently leased, by stripping away overburden and exposing promising ore projects as project A. The portals of old adits, long caved, will also be cleared by stripping away overburden to bed rock as project B. This method of exploration and exposure for examination is expected to result in increasingly active mining by small lease and "split-check" operations.

The difficult terrain and operating conditions imposed on this project at altitudes of 11,000 to 11,600 feet above sea level make a close estimate of costs impossible. Trench locations are on very steep and difficultly accessible locations. Supplies are presently carried up on pack horses. The ground is rocky and considerable blasting, without drilling, is expected. Overburden may approach 14 feet in places and the positions of trenches may require change under adverse conditions.

Exploration intent is expected to be flexible enough to allow for field changes on the basis of increased knowledge.

Only the approximate locationsof the proposed trenches and mine portals are indicated in red on the accompanying claim map, figure 2. Lengths and widths of the proposed trenches are the exposures desired and do not include ramps or sloughs.

Time elements involved are based on the applicants experience gained in several weeks' work under similar conditions. The applicant believes two bulldozers would be required, with the one working on pioneer service roads, project B, and the trenching.

PROJECT A: To explore the most promising mineralized areas and outcrops by stripping with a bulldozer.

Claim	Bulldozer Exposures Estimated Work	Days Required To Complete
Merrimac	2 exposures, 20 feet x 60 feet	2
Galena	1 exposure, 20 feet x 60 feet	3
Luella S.	2 exposures, 20 feet x 60 feet	6
La Salle	1 exposure, 20 feet x 60 feet	3
Northern	2 exposures, 20 feet x 60 feet	6
Pirate	1 exposure, 20 feet x 60 feet	3
Idaho	3 exposures, 20 feet x 60 feet	9
Trenton	2 exposures, 20 feet x 60 feet	6
Queen Bee	1 exposure, 20 feet x 60 feet	3
California-Bell	4 exposures, 20 feet x 40 feet	10
Illinois	1 exposure, 20 feet x 100 feet	5
Pacific	1 exposure, 20 feet x 40 feet	4
Total	21 exposures, 20 feet x 1,200 feet	60 days

It is here assumed that projects A and B will be carried on consecutively, employing only one bulldozer, and that project A can be completed within 60 days. To operate both projects simultaneously and facilitate service would require the use of an additional bulldozer. A TD-14 International bulldozer can be had on a rental basis from Paul Alishouse, of Sheridan Lakes, Colo., at the standard rental of $10.00 per hour.

Project A Costs:

Supervision (both projects A and B)

1 - superintendent, T. E. Martin, the applicant, at $450.00 per month

Total supervision per day	15.00

Equipment

1 - TD-18 International bulldozer with operator, furnished by Paul Alishouse, of Sheridan Lakes, Colo., at a rental of $12.00 per hour

Rental per 8-hour day	96.00

1 - local truck and driver will be used on an hourly rental basis of $2.50

Truck service per 8-hour day	20.00

Labor

2 - laborers will be hired at $1.50 per hour, paid overtime for work on Saturdays

Summary of Costs Project A:

Supervision, 60 days at $15.00 per day	$ 900.00
Labor (60 days at $24.00 per day	1,440.00
Labor (Overtime - 8 shifts total at $24.00 per shift	192.00
Rental TD-18, International bulldozer, 60 days at $96.00 per 8-hour day	5,760.00
Rental of service truck, 60 days at $20.00 per day	1,200.00
Total cost of trenching, Project A	$9,492.00

PROJECT B: To clear the portals of old caved adits by stripping to bedrock, with bulldozer and power shovel.

Claim	Days Required to complete
Idaho	2
Trenton	2
California-Bell, 6th level	2
Old Timer, 2nd level	2
Equipment moving time	10
Total time to complete job	18 days

Project B Costs:

Supervision (see project A) per day $15.00

Equipment

One bulldozer and a 1/2-yard Quickway power shovel will be used on a rental basis from Paul Alishouse, of Sheridan Lakes, Colo., as follows:

1 - TD-18 bulldozer, complete with operator, at $12.00 per hour
1 - 1/2-yard Quickway power shovel with operator, at $8.00 per hour

Combined rental per 8-hour day is $160.00

1 - local truck and driver will be used on a rental of $2.50 per hour.

Rental per 8-hour day will be $20.00

Labor

2 - laborers will be required for this job, at $1.50 per hour, each

Labor cost per day without overtime will be $24.00

Summary of Costs Project B:

Supervision, 18 days at $15.00 per day	$ 270.00
2 laborers - 18 days at $24.00 per day	432.00
3 Saturdays' overtime	36.00
1 - TD-18 bulldozer rental, 18 days at $96.00 per day	1,728.00
1 - Quickway power shovel rental, 18 days at $64.00 per day	1,152.00
1 - service truck and driver rental, 18 days at $20.00 per day	360.00
Total cost of opening portals, Project B	$3,978.00

Estimated
Total Cost of Proposed Exploration:

Project A	$ 9,492.00
Project B	3,978.00
100 assays for silver, lead, zinc, at $2.00 each	200.00
10 cases dynamite, at $12.50 each	125.00
Caps, fuse, etc., for both projects	50.00
1/ Underground rehabilitation	5,300.00
2/ Miscellaneous	855.00
Total cost of exploration	$20,000.00

1/ The 6th and lowest adit level of the Bell mine has a known length of 1,300 feet with the first 300 feet timbered. Lengths of adits on the Idaho and Trenton claims are unknown but assumed at 100 feet each. While most of the workings are expected to be accessible, it must be assumed that part will require rough rehabilitation for sampling and inspection.

2/ Miscellaneous includes social security, workmen's compensation insurance, small tools, timber, preparation of portals, sampling, and delays.

PROPOSED FINANCING

Burke-Martin Mines Company is already engaged in prospecting various surface exposures with the aid of a TD-18 bulldozer under a gentleman's agreement (verbal) whereby Paul Alishouse, of Sheridan Lakes, Colo., is furnishing the services of the bulldozer for 1/3 of the net profit from ores uncovered by it. This agreement will terminate when a loan is granted.

T. E. Martin, applicant, A. B. Marlin, who is related to Mr. Alishouse, and J. H. Meyers, long time local resident who is familiar with the properties and ore occurrence, are directly interested and expect to contribute their services to the project. T. E. Martin, who owns and controls the claims under consideration, has given assurances that Burke-Martin Mines Company is able to contribute on a 50 percent participation basis.

CONCLUSIONS

Numerous narrow and essentially parallel veins are known to exist on the northeastern slope of Glacier Mountain which have produced over 5,000 tons of lead-zinc ores of shipping grade.

Lead, zinc, and silver minerals are known to be present on many of the claims to be explored. Recent stripping on the Old Timer claim has exposed 4 parallel veins containing galena and sphalerite in a zone 30 feet wide.

In general, galena and sphalerite occur in veins approximately one foot wide, as lead-silver ore, lead-silver-zinc ore, zinc ore, lead-barite ore, and lead-zinc-barite ore.

Ore reserves are based on favorable geologic environment but are not sufficiently definite to form a basis for the estimation of minable reserves. The exploration program has merit.

The proposed stripping of outcrops and the opening of old adit portals on the relatively steep slopes of Glacier Mountain is a cheap and rapid method of prospecting and exposing vein structures. This method of exploration has proven successful on this and other properties.

The narrow and discontinuous ore bodies along the veins can be mined profitably by a system of small individual leasing and "split-check" operations, already instituted on a small scale.

Milling facilities sufficiently flexible and adaptable to treat the variety of complex ores involved are a necessity. These facilities are expected to be furnished by the new custom mill now being constructed by the Glacier Mill Company on the property of Burke-Martin Mines Company.

RECOMMENDATIONS

It is recommended that this application for a lead-zinc exploration loan of $20,000.00 under the Defense Production Act of 1950, DMA docket 1779X, on a 50 percent participation basis be approved.

APPENDIX

TABLE 1. - Mining claims held by Mr. and Mrs. T. E. Martin, of Montezuma, Colo., located in the Montezuma Mining District, Summit County, Colo.

Name	Patent Number	Description
Silver Wing	141	patented
Albany	6429	patented
Gold Drill	6429	unpatented
Pacific	6429	unpatented
California Extension	6429	unpatented
Illinois No. 2	6429	unpatented
Burke Tunnel Site	6429	unpatented
Burke Tunnel 1	6429	unpatented
Burke Tunnel 3	6429	unpatented
Burke Tunnel 4	6429	unpatented
Protector	6429	unpatented

The above claims are free of outstanding indebtedness and all taxes are paid up, except those current.

TABLE 2. - Mining claims owned jointly by Mr. and Mrs. T. E. Martin, of Montezuma, Colo., and R. B. Strassberger, of Paris, France, located in the Montezuma Mining District, Summit County, Colo.

Name	Patent Number	Part owned by T. E. Martin	Part owned by R. B. Strassberger
Galena	16211-A	1/2	1/2
Luella S.	16211-A	1/2	1/2
La Salle	16211-A	1/2	1/2
Northern	16211-A	1/2	1/2
Pirate	16211-A	1/2	1/2
Idaho	16211-A	1/2	1/2
Trenton	16211-A	1/2	1/2
Pirate Mill Site	16211-B	1/2	1/2
Illinois	17642	1/2	1/2
Meteor	19490	2/3	1/3
Northern No. 2	19491	1/2	1/2
Idaho No. 2	19491	1/2	1/2
Michalas	19492	1/2	1/2
Oppeland	19492	1/2	1/2
Tangle	19492	1/2	1/2
Garrett	19492	1/2	1/2

That part of the foregoing patented mining claims owned by H. H. Strassberger is leased to T. E. Martin for a period of 5 years, commencing July 15, 1949, with an additional 5-year renewal clause. Mr. Martin has full power to assign or sub-lease any part.

Option-to-purchase for $25,000.00 is granted during the term of the lease, and all royalty payments will apply towards the purchase price.

A royalty of 5 percent computed on net smelter returns is stipulated for all ores assaying up to $50.00 per ton.

A royalty of 7 1/2 percent of net smelter returns is stipulated for all ores assaying $50.00 per ton and over. Net smelter returns are based on the gross value after deducting transportation, milling and smelter charges.

Smelter or ore buyer shall compute and pay said royalty direct to the lessor or his agent, or deposit same in a bank designated by him.

TABLE 3. - Mining claims controlled by T. E. Martin, of Montezuma, Colo., under a lease and bond agreement from the Bell Mining Company, of Salt Lake City, Utah, and located in the Montezuma Mining District, Summit County, Colo.

Name	Patent Number	
Eureka	3484	
St. Joseph	6737	
El Montana	6802	
Sunburst	12244	
California	12244)	Overlapping
Bell West	982A)	

The above mining claims are held under a lease, with option-to-purchase for $105,000.00, agreement for a period of 3 years, dated December 1, 1950. Royalties will credit towards the purchase price.

Lessee will pay all taxes.

Lessee may sub-lease all or part of the above property, providing he notifies lessor thereof.

A royalty of 15 percent of the net smelter returns on the first carload shipped or equivalent tonnage is stipulated, and 20 percent on all subsequent shipments. Royalties are calculated on net mint, mill or smelter returns after deductions for transportation and treatment charges.

TABLE 4. - Mining claims controlled by T. E. Martin, of Montezuma, Colo., under a lease and bond agreement from Doris I. Sweeney, of Sherwood, Oregon, and located in the Montezuma Mining District, Summit County, Colo.

Name	Patent Number
Old Timer	1465
Echo	19540
Merrimac	19540
Queen	19540

The above patented mining claims are held under a lease, with option-to-purchase for $10,000.00, agreement for 5 years, dated November 1, 1950. The lease is renewable for an additional 5-year period, providing $2,500.00 has been paid in royalties. Royalties shall apply towards the purchase price. A royalty of 12 1/2 percent of the net smelter returns on all ores is stipulated.

TABLE 5. - Mining claims controlled by T. E. Martin, of Montezuma, Colo., under a lease and bond agreement from Elizabeth F. Deatherage, of Golden, Colo., dated July 14, 1951, and located in the Montezuma Mining District, Summit County, Colo.

Name	Patent Number
Mark Twain Extension	1788
Celtic	1823
Evening Star	1878
Morning Star	1928
Hancock	2011
Queen Bee	unpatented

The above mining claims can be purchased for $3,000.00 with the following stipulations, during the term of the lease:

(1) One thousand dollars is payable within 60 days from the date of the contract.

(2) Two thousand dollars is payable 12 months from the date of the first payment.

(3) A 10 percent royalty on the net mill and smelter returns on all ores shipped shall be paid to Elizabeth F. Deatherage as long as she lives. Thereafter, 10 percent royalty on the net mill and smelter returns on all ores shipped shall be paid to G. E. Hopkins, Burt Deatherage, and Lena Schmidt as long as they live.

All taxes shall be paid by the lessee.

TABLE 6. - Mining claims held by Mr. and Mrs. T. E. Martin, of Montezuma, Colo., and Paul Sweet, of Denver, Colo., in partnership, and located in the Montezuma Mining District, Summit County, Colo.

Name	Description
Sweetheart	unpatented location

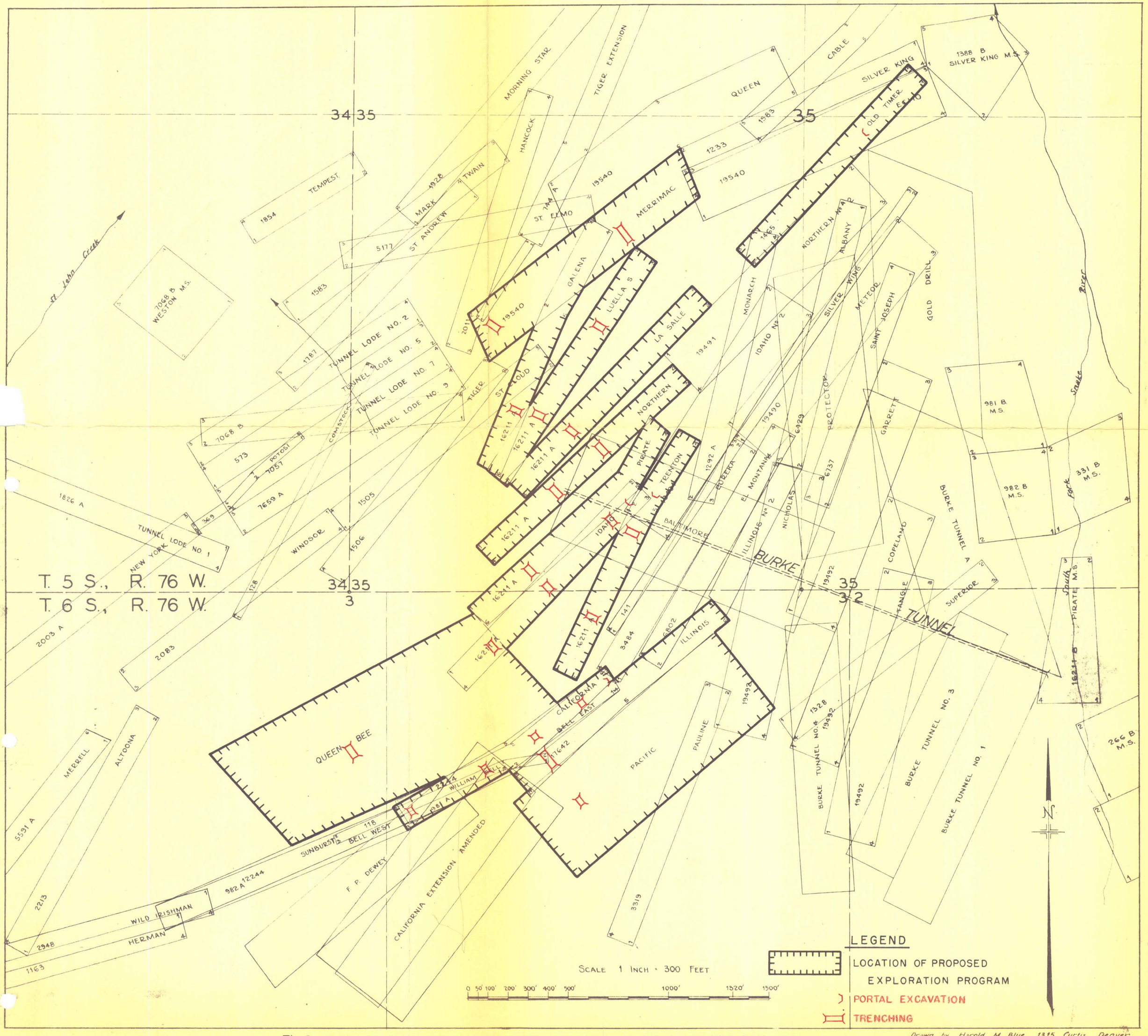

Fig. 2 - CLAIM MAP, BURKE-MARTIN MINES CO. SUMMIT CO. COLORADO. DMA-1779X

Drawn by Harold M Blue, 1315 Curtis, Denver

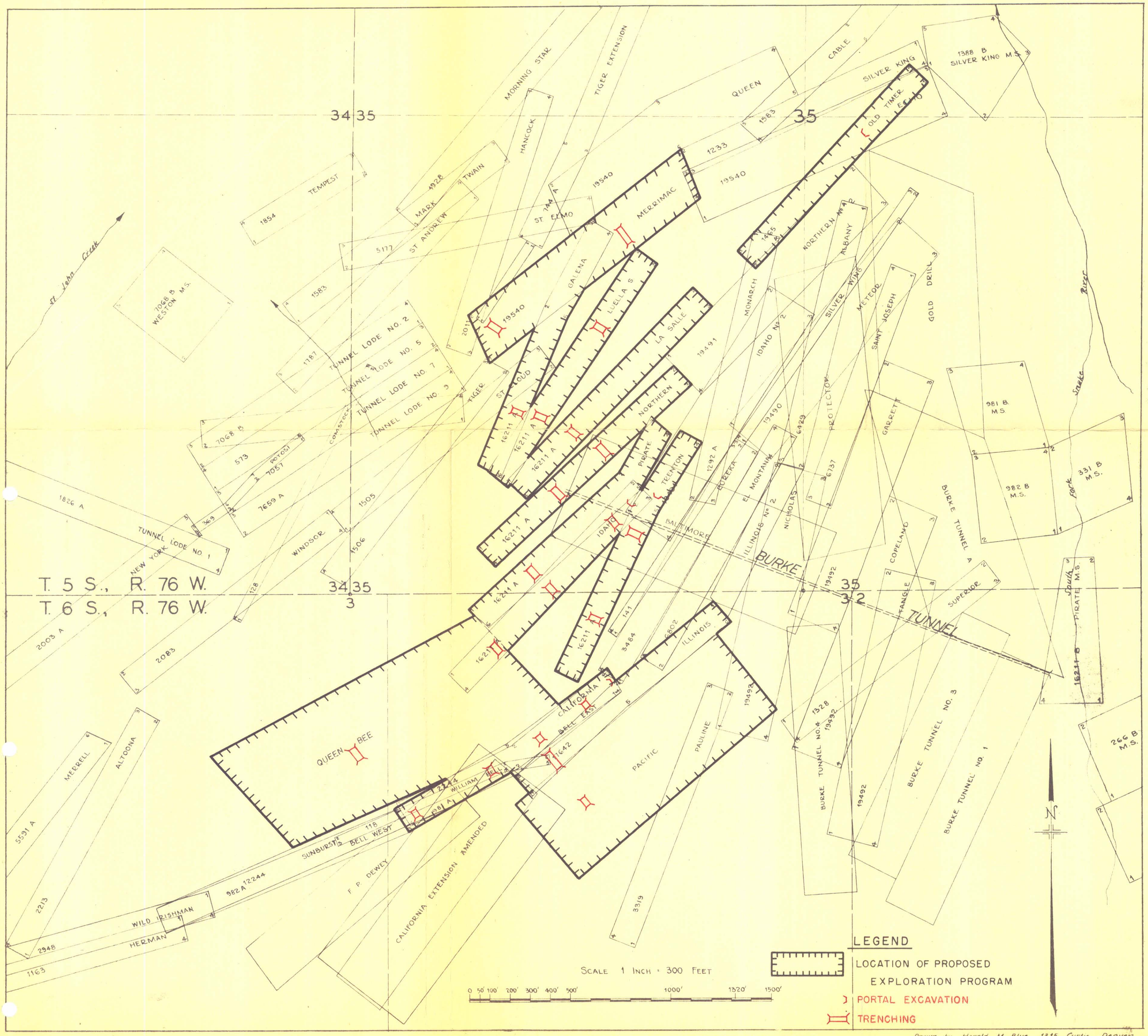

Fig. 2 - CLAIM MAP, BURKE-MARTIN MINES CO. SUMMIT CO. COLORADO. DMA-1779X

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