MME Form 9
Rev. Nov. 65

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey

OFFICIAL DOCKET FILE

Contract No. _____ Docket No. 6878

Application
- [ ] Denied
- [x] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [ ] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [ ] Closing Letter
- [ ] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [ ] Contract Amendments
- [ ] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and Attachments

Right Side

- [ ] Project Summary (final)
- [ ] Work Completed Analysis (final)
- All other material filed in chronological order including the following reports if checked:
- [ ] Field Team Semiannual Report for Certified Project
- [ ] Final Field Team Report (Tab)
- [ ] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [ ] On-site Exam. Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. _____: Reports
- [ ] Analysis of Semiannual Inspection Reports
- [ ] Project Summary (Interim) by MME Engineers

Right Side

- [ ] Field Team Semiannual Report for Certified Project
- [ ] Field Team Interim Reports
- [ ] Operator's Monthly Reports with Transmittal, Narrative and Maps

Folders No. _____: Maps (Use pocket folder or envelope)

Folders No. _____: Settlement Sheets

Folders No. _____: Drill Logs

Folders No. _____: Royalty Material

72195-65

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
FEDERAL CENTER, DENVER, COLORADO 80225

Office of Minerals Exploration
Building 53 Room 28

OFFICIAL COPY
O. M. E.
RECEIVED
JUL 24 1972
INITIALS/CODE
RAW

July 19, 1972

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III

Subject: Application for financial assistance from the Echo Valley Mining Company, Denver, Colorado.

Enclosed is a copy of an application for financial assistance in minerals exploration from the Echo Valley Mining Company, 628 Patterson Building, Denver, Colorado 80202.

The applicant proposes to explore a number of veins and vein intersections in the Doctor Mine, and vicinity, in the Jones Pass area, Atlantic Mining district, Clear Creek County, Colorado, at an estimated total cost of $304,295.00.

A review of the application shows that the vein in the Doctor mine has an average width of 1.4 feet that when sampled the assays averaged as follows:).03 oz. Au, 2.40 oz. Ag, 4.70% Pb and 5.0% Zn. The gross value of the ore at current prices ($35.00/oz. Au, $1.56/oz. Ag, 15.50¢ lb. Pb, 18.00¢ lb. Zn) totals $37.36 per ton. The minerals eligible for government participation, gold and silver, totals only $4.79 per ton out of $37.36, which is less than 13 percent of the total value. With an average vein width of 1.4 feet a 5' x 7' drift will dilute the value of the ore considerably, perhaps by at least two-thirds, which would mean that the value of the ore would range from perhaps $12.00 - $15.00 per ton. This cannot be considered ore grade material as $20.00 ore is hardly minable even when reserves are large. If there were a chance for large reserves of silver and gold then perhaps the property would qualify, for assistance. The sample map included in the application shows that the vein has been sampled for a strike length of more than 900 feet. This is a considerable length of exposure, and strongly indicates that the possibilities of a vein becoming consistently wider than shown is not likely. Nowhere along the mapped drifts are there any stopes shown, consequently the Doctor vein produced very little actually; and those values were mostly in lead and zinc.

The veins can easily be explored with shafts ranging in depth from 50 - 80 feet, rather than by long drifts and crosscuts. Target area proposal Nos. 3, 4, 5 and 6 can be reached less expensively as suggested.

3. The intersection of vein A with veins B and C may be more easily reached by sinking two short exploratory shafts of approximately 40 and 80 feet each.

4. A 50-foot shaft at the intersection of veins B and E, plus some 600 feet of drifting along each vein would adequately explore this area, especially where proposed drift would only be 40 feet below the Doctor mine.

5. This proposal would gain more by drifting along vein E to vein C from the proposed shaft at the intersection of vein B & E. This drift would only require some 600 feet to test vein B and its intersection with E.

6. This proposal would be essentially a development raise and possibly could not be considered as exploration work.

Sincerely yours,

J. William Hasler

J. William Hasler,
Field Officer, Region III
Office of Minerals Exploration

Enclosure

MME Form 40
(Revised Nov. 71)

Form approved
Budget Bureau No. 42-R1368

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR FINANCIAL ASSISTANCE IN MINERALS EXPLORATION

Pursuant to Public Law 85—701 (72 Stat. 700; 30 U.S.C. 641)

NAME OF APPLICANT *(Full legal name and mailing address as they should appear on contract if one is executed.)*

Echo Valley Mining Company

628 Patterson Building

Denver, Colorado 80202

APPLICANT DO NOT USE THIS BLOCK

DOCKET NUMBER: 6878

DATE RECEIVED: 7-24-72

REGION: III

DIVISION CODE:

BUSINESS ORGANIZATION *(Check one)*

- INDIVIDUAL [ ]
- CORPORATION [XX]
- PARTNERSHIP [ ]
- OTHER *(Specify)* [ ]

STATE IN WHICH FIRM IS ORGANIZED: Colorado

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

NAME	ADDRESS	TITLE
Charles L. Cherry	6566 S. Elizabeth Way Littleton, Colo. 80121 (Phone 798-4273)	President
William A. Gillespie	256 Hemlock Broomfield, Colo. 80020 (Phone 466-5335)	Vice-President
Paul W. Fairchild	5743 Shasta Circle Littleton, Colo. 80123 (Phone 798-8886)	Secretary

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE: Silver, gold

ESTIMATED COST OF PROJECT: $304,295.00

PROPERTY NAME	LOCATION COUNTY	STATE
Doctor Mine Claims, Jones Pass Area,	Clear Creek,	Colo.

GENERAL INSTRUCTIONS

Before filling out this application, please read the *OME Regulations for Obtaining Federal Assistance in Financing Explorations for Mineral Reserves* (30 CFR Chap. II). To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit two copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 2, existing mine workings and geology in item 3, and the proposed exploration work in item 5. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 3(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals*, of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Department of the Interior, U.S. Geological Survey, Office of Minerals Exploration, Washington, D. C., 20242, or with the nearest OME Field Office.*

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, and that he would not ordinarily undertake the proposed exploration under current conditions and circumstances at his sole expense.

June 26, 1972
DATED

Charles L. Cherry
BY *(Signature)*

President, Echo Valley Mining Company
TITLE

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense.
U. S. Code, Title 18, Sec. 1001.

INFORMATION REQUIRED WITH THIS APPLICATION

(submit on accompanying pages)

1. Financial Eligibility:

(a) Submit evidence of efforts made within 90 days preceding the filing of this application to obtain credit from your bank of account and at least one other banking institution or other private source of credit. Such evidence shall include (1) *true copies of your letters to credit sources* which show date of loan request, amount and terms requested, and proposed use of loan funds and (2) *true copies of replies from credit sources.* If the loan was offered under terms which you consider unreasonable, state why you consider them so.

(b) List names and addresses of affiliated, parent, or controlling companies or organizations and state extent and nature of their interest.

(c) State how you propose to furnish your share of the cost of the exploration work.

2. Applicant's Rights in Land:

(a) State your interest in the land and mineral rights, whether owner, lessee, purchaser under contract, or other. If you are not the owner, submit one true copy of the lease, contract, or other document (with address of owner) under which you control the property. Describe all liens, mortgages, or other encumbrances on the land and state book and page number and official place where recorded.

(b) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all adjacent land which you own or control. Describe any part of the land or workings which should not be subject to Government royalty and liens. If the land consists of unpatented claims, state book and page number for each recorded location notice, including amended locations, and official place where recorded. State all the names by which you know the property.

(c) For all land or mineral rights encumbered or not owned, submit five copies of Lien and Subordination Agreements signed by owner on MME Form 52. If the agreements cannot be obtained, state reasons and whether you can furnish a performance bond.

3. Physical Description:

(a) Describe in detail and illustrate with maps or sketches all mining or exploration operations which you know have been or are being conducted upon the land. Include existing mine workings and all production facilities.

(b) State your interest, if any, in operations described in (a)

(c) State, if you know, the past and current production, supporting your statement with copies of settlement sheets, mine records, or published data if available.

(d) Describe known ore reserves, giving quantities and grades.

(e) Describe by narrative and maps or sketches the geologic features of the property, including ore minerals, geologic formations if known, and type of deposit (vein, bedded, etc.).

(f) If you have sampled the area you propose to explore, show where the samples were taken, describe sampling methods used, and provide copies of assay certificates. State your reasons for expecting to find ore.

(g) Send with your application at least *two* copies of all geologic or engineering reports, assay maps, or technologic information which you have, indicating whether you require their return.

4. Accessibility of Property:

(a) To aid the OME representative who may examine the property state name, address, and telephone number of person who will meet him; give directions for reaching the property; and describe accessibility of property and of any mine workings.

(b) Name the shipping and supply points and state the distances to the property.

5. Exploration Work:

(a) Describe fully the proposed exploration work giving individual footages and sizes of openings *for each item of work.* Use narrative, maps, plans, and sections as necessary. Show location of the proposed work as related to geologic features such as veins, ore-bearing beds, contacts of rock formations, etc. Show on maps also the relation of the proposed work to any existing mine workings and to *claim boundaries* or to the closest identifiable corner.

(b) If an access road must be built, show the proposed location on the property map and state the length, type and construction methods proposed.

(c) If an OME contract is executed, state how soon thereafter work would be started and finished. State your anticipated average daily or monthly rate of progress for each type of work.

6. Experience:

State your operating experience and background to conduct this exploration work and also that of the person who will supervise the work.

7. Estimate of Costs:

Furnish detailed estimates of the necessary costs for time and materials *for each item of the work proposed in 5(a)* under the headings listed below with a total for each heading and the estimated total cost of the work. Costs for any work to be performed by an independent contractor should be listed separately under category (a) below. Costs for any work that is not to be performed by an independent contractor should be listed under categories (b) through (g).

(a) Independent contracts. State the total cost of any proposed independent contract for all or any part of the work, and the number of units and the unit cost for each type of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, or per cubic yard of material moved. Cost estimates should be supported by bids from three contractors if possible. (*Note*—If none of the work is to be contracted, write "none" after this item.)

(b) Personal services. The cost of supervision, engineering and geological services, outside consultants, and labor should be itemized by numbers and classes of employees; rates of wages, salaries or fees; and periods of employment. State whether these services are available.

(c) Operating materials and supplies. List items of material and supplies giving quantity and price of each. Include under this heading power, water, and fuel, and units of equipment and tools costing less than $50 each.

(d) Operating equipment. List items of equipment and tools costing $50 or more per unit. Give specifications and indicate how each item is to be acquired—i. e., rented, purchased or provided by the applicant. If rented or purchased, state the estimated rental or purchase price and mobilization charge. If furnished by the applicant, state condition and present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant which will be used in the exploration work.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration work, stating specifications and cost including labor, and materials.

(g) Miscellaneous. Describe the type and estimate the cost of repairs and maintenance of the operating equipment listed in 7(d). Do not repeat initial repairs listed in 7(e). Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories. [*Note*—The Government will not contribute to costs incurred before the date of the contract, or to costs of or incident to: (1) acquiring, using, or possessing land and any existing improvements, facilities, buildings, installations, and appurtenances, or the depreciation and depletion thereof; (2) general overhead, corporate management, interest and taxes (other than payroll and sales taxes); (3) insurance (other than employees' liability insurance); and (4) damages to persons or property (other than authorized repair to or replacement of equipment or other property used in the work).]

E C H O V A L L E Y M I N I N G C O M P A N Y

P R O P O S A L

UNDERGROUND MINERAL EXPLORATION PROGRAM

JONES PASS AREA, COLORADO

(To accompany Application for Financial Assistance in Minerals Exploration dated June 26, 1972)

TABLE OF CONTENTS

SECTION		
I	EXHIBIT A	Project Outline and Cost Estimates
II	EXHIBIT B	Geologic Report
III	EXHIBIT C	Statements of Eligibility and Ownership
IV	APPENDIX A	Bids Covering the Projects
V	APPENDIX B	Geologic Reports from Outside Sources
VI	APPENDIX C	Excerpt from U.S.G.S. Professional Paper No. 223
VII	APPENDIX D	Assay Reports
VIII	APPENDIX E	Echo Valley Mining Company Organization

EXHIBIT A

EXHIBIT A
UNDERGROUND MINERAL EXPLORATION PROJECT
ECHO VALLEY MINING COMPANY

GENERAL PROVISIONS

The purpose of this project is to conduct exploration by drifting along various mineralized veins containing silver, gold, lead, zinc, and traces of molybdenum and copper that are exposed in pre-Cambrian rocks on the surface in the Doctor Mine area, east of Jones Pass in Clear Creek County, Colorado. Some of these mineralized veins have previously been explored at a shallower depth with apparently marginal success; however, the presence of "high grade" shoots exposed in the previous workings indicate that further exploration is warranted. Due to the heavy ground conditions, bad timbers and water flow in the old existing workings, it appears advisable to start a new drifting at a lower elevation.

DESCRIPTION OF WORK

Echo Valley Mining Company shall commence as soon as funds are available, an underground mineral exploration program consisting of driving about 4,000 feet of 7' X 8' drifts to examine at least four mineralized veins. This work shall be programmed so that two six foot rounds can be completed each day. Working a 5 day week and driving about 200 feet per month, the project should be completed in approximately 20 months.

The proposed work and its relationship to geologic features

existing workings and surveyed land boundaries are described in Exhibit B, "Geologic Report and Proposal for Underground Mineral Exploration Program, Jones Pass Area".

EQUIPMENT

The equipment to be used is as follows:

1. Transport: Rock removal to be accomplished using 60 cu. ft. rocker-dump cars and 30# track.

2. Ventilation: The ventilation system shall consist of 18" flexible ducting with air circulated by an 18" electric fan.

3. Timbering: 8" x 8" square sets placed on 7' 6" centers, using 3" back lagging and 2" side lagging.

4. Water and air lines: Water lines will be 1 inch in diameter and air lines 2 inches in diameter.

5. Mucking: Eimco 12B Mucker or its equivalent.

6. Compressed air and power: Two 600 C.F.M. compressors for air and a 10 K.V.A. generator for power.

All equipment, labor and general supervision is to be supplied by a general contractor.

ESTIMATED COSTS OF THE PROJECT

1. Fixed Unit Costs

Category (a) - Independent Contracts *

Cutting and leveling dump, grading work area. 40 hrs @ $18.00/hr.	$ 720.00
Constructing 12' x 30' shop and warehouse, Light construction	2,100.00
Installing track and collars	2,375.00
Drive 4,000' of 7' x 8' Tunnel. All inclusive contract based on normal ground - $65.00/foot.	260,000.00
Additional expenses due to anticipated heavy ground and control of probable water flows, estimated 1,000 feet @ $20.00/foot	20,000.00
Assaying - estimated 800 samples, gold & silver @ $3.50/sample, Lead zinc, copper @ $2.50/sample	4,800.00
Office expenses - 20 months @ $75.00/Mo.	1,500.00

Category (b) - Personal Services

Subcategory (a) - Supervision and technical Services:

Geological and Engineering Consultants, 80 days @ $100.00/day.	8,000.00

Category (g) - Miscellaneous

Consultants' travel expenses,		
8,000 miles @ $ .15/mi	$	1,200.00
Road maintenance and snow removal		
200 hours @ $18.00/hr.		3,600.00
Total Fixed Unit Costs:	$	304,295.00
Loan requirements @ 75%:	$	228,221.25

* Attachments 1 through 3 show cost estimates made by independent contractors.

EXHIBIT B

EXHIBIT B

GEOLOGIC REPORT AND
PROPOSAL FOR UNDERGROUND MINERAL EXPLORATION PROGRAM
JONES PASS AREA, CLEAR CREEK COUNTY, COLORADO

INTRODUCTION

Echo Valley Mining Company, a Colorado Corporation, is owner of record of 88 unpatented lode, placer and mill site claims that are located in the Atlantic and Dailey Mining Districts, Clear Creek County, Colorado. The claims are situated approximately 3 miles west of Berthoud Falls, Colorado in the area of the headwaters of the West Fork of Clear Creek. All of these claims were initially located in the early 1900's and have been maintained on an active status to the present time. The indicated ore deposits contain mainly silver-bearing galena, gold and sphalerite, with lesser amounts of molybdenite and chalcopyrite.

Exploratory mining operations have been conducted periodically ever since the claims were located. Six portals were opened on the claims and considerable underground exploration was accomplished in three mines. The Grand Clear Creek (Scott) Tunnel reportedly has 3300 feet of driftings, however, little is known about it. The Doctor Tunnel reportedly has 2800 feet of drifting and apparently produced some ore. Nothing specific is known about the other mines and portals present on the claims.

The Company's claims in Jones Pass Area lie high on the eastern slope of the Rocky Mountain Front Range at elevations ranging between 10,600 and 12,000 feet. The annual snowfall in the area averages 321 inches, Roads are maintained during the entire year to within 0.74 mile of the Doctor Mine portal because of operations at the nearby Henderson Molybdenum Mine. A county road passes through the property and continues on west across Jones Pass into the

drainage area of the Williams River.

PROPOSED MINERAL EXPLORATION PROGRAM

It is the intent of Echo Valley Mining Company to conduct an underground mineral exploration program in an attempt to locate ore of commercial grade on a group of claims in the eastern part of Jones Pass Area, centering around the Doctor Mine. The proposed program, for which cost estimates are given in Appendix A, is as follows:

1. Build approximately 200 feet of access road from the existing county road to the proposed mine portal. (See Plate I., Photogeologic Reconnaissance and Claim Map). An access permit already has been requested from the Forest Service.

2. Construct a portal for the underground exploratory mining operation in the timbered area shown on the enclosed U.S.G.S. Topographic Map of the area and the Photogeologic Reconnaissance and Claim Map (Plate I).

3. Cut a drift along Vein A eastward approximately 300' to explore the intersections of Vein A with Veins B and C. (See Figure I,Cross-section I).

4. Drift northward along Vein B approximately 1200 feet. This vein is the highly mineralized N-S vein encountered in the Doctor Mine and the proposed drift should be at least 40 feet below the Doctor Mine. (See Figure II, Cross-section II Elevation of proposed portal is estimated).

5. Drift northeast along Vein C approximately 1200 feet to the intersection with Vein F. (See Cross-section III, Figure III).

6. Run an inclined shaft westward to the surface along Vein E from its intersection with Vein B to explore the mineralized porphyry dike and associated veins of Mr. Harold J. Cook (See Appendix B) and to facilitate the use of a pre-existing mill site if commercial grade ore is encountered. This will require approximately 300' of incline. The exact angle will be determined after surveying the proposed portal.

7. Drift east 1000' along Vein E from its intersection with the drift along Vein C, or any other attractive mineralized vein encountered in the previously completed drifting.

8. If necessary, open the Doctor Mine to the north-

south cross-cut to facilitate water drainage estimated at 50 sec. feet during peak flow.

The above outlined exploratory program should enable Echo Valley Mining Company to properly evaluate that portion of the Doctor group of claims which is the most readily accessible, with the objective of establishing potential production or justifying additional exploration.

GEOLOGICAL DISCUSSION

The enclosed Photogeologic Reconnaissance and Claim Map (Plate I) was compiled by Company geologists from stereo-pairs of colored aerial photographs using ground controls established by a professional mineral surveyor. Veins, fracture systems and faults were plotted on the aerial photographs during reconnaissance of the surface and then transferred directly to the map.

The surface of the Jones Pass Area is quite rugged on its steeper slope, with many bare cliffs having Silver Plume Granite and other associated igneous rocks exposed on them. The more gentle slopes and the broad valley of the West Fork of Clear Creek are generally covered by glacial debris. Much of the area is intensely faulted, resulting in some rather extensive zones of shattered and/or cataclasized rock.

Pre-Cambrian Silver Plume Granite is the main rock facies in the Jones Pass Area. Scattered remnants of the older Pre-Cambrian

Idaho Springs biotite schist also are present. The Silver Plume Granite has been intruded with many dikes of seriate porphyritic biotite-muscovite quartz monzonite and biotite-muscovite quartz monzonite. No attempt has been made by Echo Valley Mining Company personnel to map these rock facies to date. A copy of the U.S.G.S. Map I-443, Preliminary Geologic Map of the Berthoud Pass Quadrangle, Clear Creek and Grand Counties, Colorado has been included with this report to assist in an understanding of the facies relationships in the area.

Geological personnel of the Echo Valley Mining Company mapped the area on the colored aerial photographs, in an attempt to locate mineralized veins and dikes. Because of the cover of glacial debris, it is not possible to evaluate most of the linear features seen either on the photos or on the ground without either stripping the cover from these features or exploring them underground. The photogeologic and surface examinations did disclose, however, that the area east of the West Fork of Clear Creek in the vicinity of the Doctor Mine is intensely shattered by a series of east-west faults and is highly altered. This shattered zone appears to be bounded on the south by Vein A and on the north by Vein F (See Plate I). This shattered zone is also cut by a roughly north-south trending vein (Vein D) and a northeast-southwest trending vein (Vein C). A north-south trending porphyry dike has been reported in the underground workings immediately west of Vein B.

A brief report on the Doctor Mine written in 1936 by Mr.

Harold J. Cook, Consulting Geologist, and a review of this report in 1955 by J. R. Wemlinger, Mining Engineer, are included as Appendix B. A map of the mine showing locations and analyses of samples taken during mining is included as Plate II. Also, an excerpt from U.S.G.S. Professional Paper 223 (Geology and Ore Deposits of The Front Range, Colorado) is included as Appendix C, which gives a discussion of the various mines in the area.

An attempt was made by Company personnel in July, 1971 to re-enter the Doctor Mine but the timbering is very rotten and the ground very heavy and wet. This operation was stopped when a bad cave-in was encountered approximately 90 feet in from the portal.

SURFACE MINERAL OCCURRENCES

Most of the veins encountered on the east side of the West Fork of Clear Creek contain much secondary quartz and pyrite with some dark unidentified minerals. The only vein that was sampled during the recent investigations was Vein B. This vein was mined for about 60 feet in the Doctor Mine and reportedly contains some high grade ore (See Appendix B). The vein was trenched on the surface and samples were taken and assayed at the points shown on the Reconnaissance Map. These assay reports are included in Appendix D. Also appended are assay reports of samples taken by Mr. Cook of a vein just west of and adjacent to the porphyry dike he mentions in his report and of samples by Austin Milling Corp. of unknown origin. Three assay reports of dump ore trucked

by the Phillips Brothers in 1948 are also included in Appendix D. A brief description of Echo Valley Mining Company and its principal personnel is included as Appendix E.

CONCLUSION

The Doctor Mine has been worked intermittently since the early 1900's. Sufficient ore was apparently produced at one time to warrant the installation of a small stamp mill. The assays shown on the mine map (Plate II) are generally marginal; however, the presence of a 4-foot high grade vein mentioned by Cook that was not mined, high grade ore shoots along Vein B underground, and the good showing on the surface at Vein B all indicate that this area definitely warrants further exploration.

Because of its unsafe condition, it is not considered economically feasible to re-open the existing Doctor Mine workings to explore for commercial ore bodies. Therefore, a new mine tunnel is proposed at a more appropriate site. A preferable location for the new portal would be in the timber about 200 feet off of the county road along Vein A, with tunneling to proceed according to the above outlined plan. It may also be advisable for the Doctor Mine to be partially opened to allow drainage of the water migrating through the shattered zone that exists in the area.

EXHIBIT C

EXHIBIT C
UNDERGROUND MINERAL EXPLORATION PROJECT
ECHO VALLEY MINING COMPANY

FINANCIAL ELIGIBILITY

Attachment 1 consists of copies of letters and replies from two banking institutions in Denver, Colorado, which are submitted as evidence of the inability of Echo Valley Mining Company to obtain the necessary credit to conduct a proposed mineral exploration program.

APPLICANT'S RIGHTS IN LAND

Attachment 2 contains a listing of the 88 unpatented claims, with their original recorded book and page numbers from the records of the County Clerk, Clear Creek County, Colorado, plus a copy of their assignment to Echo Valley Mining Company.

PHYSICAL DESCRIPTION, ACCESSIBILITY, ETC.

Exhibit B, "Geologic Report and Proposal for Underground Mineral Exploration Program, Jones Pass Area" gives a physical description of the area, describes the geological features, summarizes known previous mining operations, shows maps, assays and related reports, and outlines the proposed exploration work.

The area is readily accessible , being located along a county road about 50 miles west of Denver. The Henderson Molybdenum Mine is situated approximately one mile to the southeast along this road, and the junction of the county road with U.S. Highway 40 is about 4 miles east.

The President of Echo Valley Mining Company or any of its other officers whose names, addresses and telephone numbers are listed on the Application for Financial Assistance may be contacted in regard to examination of the property.

EXPERIENCE

Five of the seven presently active stockholders in Echo Valley Mining Company are practicing professional geologists located in Denver, Colorado (See Exhibit C, Appendix I). It is contemplated that the President with the assistance of the other four geologists will supervise most of the work, utilizing other geological and engineering consultants as needed.

Attachment 1

ECHO VALLEY MINING COMPANY
628 PATTERSON BUILDING
DENVER, COLORADO 80202

June 21, 1972

United Bank of Denver
United Bank Center
1740 Broadway
Denver, Colorado 80202

Attn: William Stolz, Vice President Commercial Loans

Gentlemen:

Enclosed is a copy of "Geologic Report and Proposal for Underground Mineral Exploration Program, Jones Pass Area" prepared by Echo Valley Mining Company geological personnel, describing the mining potential which is indicated in the vicinity of the Doctor Mine claim group in Jones Pass Area, Clear Creek County, Colorado, and proposing an underground mineral exploration program for which the estimated costs are in the order of $305,000 over a period of approximately 20 months.

We respectfully request that you examine this report and favorably consider granting to Echo Valley Mining Company a commercial loan repayable out of production for the purpose of carrying out the recommended exploration program in the amount of approximately 75% of its estimated cost, or $225,000. Particulars regarding the Company and its officers and Principal Stockholders are described in Appendix E in the report.

We shall be pleased to furnish you other data and allow you to examine the unaudited books of our Company upon request. Its main assets presently consist of the 88 unpatented lode placer, and mill-site claims described in this report and shown on the map in Plate I.

Yours very truly,

Charles L. Cherry

Charles L. Cherry
President

Encl.

United Bank Center
1740 Broadway
Denver, Colorado 80[illegible]7
Telephone: (303) 24[illegible]811

United Bank of Denver

June 22, 1972

Mr. Charles L. Cherry
President
Echo Valley Mining Company
628 Patterson Building
Denver, Colorado 80202

Dear Mr. Cherry:

Thank you very much for your letter of June 21, 1972, requesting a loan in the amount of $225,000 for an underground mineral exploration program in the Jones Pass area.

We appreciate very much your giving us the opportunity to consider this application. We do make loans predicated on mine ore production. These loans usually are term loans based on an economic feasibility study (1) demonstrating that a fully explored deposit can be developed and placed in production; or (2) a current record of profitable mining operations. In both instances the feasibility study should be supported by details of thorough exploration showing beyond any reasonable doubt that there are blocked out reserves sufficient to amortize a production loan over its contemplated term. In addition, we require conclusive evidence of ability to market all mineral products under contracts which minimize or effectively eliminate price-fluctuation risks. We also expect any operation to be carried on by a management team which has a demonstrated history of competence in running an integrated exploration, mine development, mining, milling, transportation, and sales organization.

In instances where we provide funds for carrying on new exploratory or development work, or for expansion of plant or milling facilities, we are concerned with a going operation which has at least a year to 18 months of current operating history providing a cash flow which can be used for loan amortization. If the mine is not a going operation and exploratory funds are needed, then the program does not qualify on its own merits for commercial bank debt; instead, this type of financing requirement is better met in other ways.

From your application it appears that other methods of financing would be more appropriate. If you wish a commercial bank to provide

funds, then the basis would have to be either other sources of income and/or the offering of collateral to secure the bank. Such collateral must be securities of easily determined value and quality and should be readily marketable. This can normally be accomplished through pledging of high-quality, listed stocks and bonds (of a noncontrol person or noninvestment status), or through the guaranty of an individual or corporate entity acceptable to us. Subsequently if, in fact, your mine operation does demonstrate a profitable history, then it would be possible for us to consider the transfer of the collateral base from the security position of marketable securities or guaranty, as indicated, to a straight mine production term loan.

We would suggest that at this time you pursue either equity or subordinated debt type of financing, or perhaps contact one of several Federal Government agencies which provide semi-risk type financing; such as, the Office of Minerals Exploration, Geological Survey, Department of the Interior. Also, I am enclosing a copy of our brochure, "Energy and Natural Resources Financing," which may be of interest to you.

We trust these suggestions will be of some help to you, and we look forward to following your activities and the progress of your mining program with much interest.

Very truly yours,

William H. Stolz
Commercial Banking Officer

WHS/mlj

Enclosure

ECHO VALLEY MINING COMPANY
628 PATTERSON BUILDING
DENVER, COLORADO 80202

June 22, 1972

Central Bank and Trust Company
15th & Arapahoe Streets
Denver, Colorado

Attn: Marvin F. Owens, Vice President

Gentlemen:

Enclosed is a copy of "Geologic Report and Proposal for Underground Mineral Exploration Program, Jones Pass Area" prepared by Echo Valley Mining Company geological personnel, describing the mining potential which is indicated in the vicinity of the Doctor Mine claim group in Jones Pass Area, Clear Creek County, Colorado, and proposing an underground mineral exploration program for which the estimated costs are in the order of $305,000 over a period of approximately 20 months.

We respectfully request that you examine this report and favorably consider granting to Echo Valley Mining Company a commercial loan repayable out of production, for the purpose of carrying out the recommended exploration program in the amount of approximately 75% of its estimated cost, or $225,000. Particulars regarding the Company and its officers and Principal Stockholders are described in Appendix E in the report.

We shall be pleased to furnish you other data and allow you to examine the unaudited books of our Company upon request. Its main assets presently consist of the 88 unpatented lode, placer, and mill-site claims described in this report and shown on the map in Plate I.

Yours very truly,

Charles L. Cherry

Charles L. Cherry
President

Encl.

THE CENTRAL BANK AND TRUST CO.

ESTABLISHED 1892 Central Park DENVER • PHONE 893-3456

June 27, 1972

Mr. Charles L. Cherry
President
Echo Valley Mining Company
628 Patterson Building
Denver, Colorado 80202

Dear Mr. Cherry:

This will acknowledge receipt of your letter of June 22, 1972, and the Echo Valley Mining Company proposal for underground exploration of its mining properties in the Jones Pass area of Colorado.

We have given careful consideration to your request for a loan of $225,000 to support a $305,000 projected exploration program. Our financing in extractive industries is pretty well limited to loans against ore shipments already made or reserves committed under firm purchase contracts. We cannot consider the financing of an exploration program.

We wish to thank you for the opportunity of considering your proposal and hope that you may find the necessary capital required.

Yours very truly,

THE CENTRAL BANK AND TRUST COMPANY

Marvin F. Owens

Marvin F. Owens
Senior Vice President

MFO:dh

Attachment 2

Recorded FEB 16 1972 at 1:15 o'clock P.M.
Reception No. [illegible] Margaret V. Chiles, Recorder.

DEED

GUNDA C. SWARENS, whose address is 3611 Ames, Denver, Colorado 80212, County of Denver, State of Colorado, for the consideration of Ten Dollars ($10.00), and other good and valuable consideration in hand paid, hereby sells and conveys to ECHO VALLEY MINING COMPANY, a Colorado corporation, whose address is 628 Patterson Building, Denver, Colorado 80202, the mining claims, mill sites and tunnel sites described on Exhibit "A" hereto with all appurtenances thereto and all improvements thereon.

This Deed shall convey all interest of the Grantor including the interests acquired from M. F. Cottrell and Mrs. M. F. Cottrell (Melia K. Cottrell) under Quitclaim Deed dated June 4, 1971.

By acceptance hereof, Echo Valley Mining Company agrees that if at any time it elects to relinquish or abandon its interest in the property hereby conveyed, it will so notify Grantor herein and if she so desires, it will reconvey the property to the Grantor, without warranty of any kind.

SIGNED this 16th day of February, 1972.

Gunda C. Swarens
GUNDA C. SWARENS

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

Subscribed and sworn to before me this 16th day of February, 1972, by Gunda C. Swarens.

Sue Jaquet
Notary Public

SUE JAQUET NOTARY PUBLIC STATE OF COLORADO

My Commission expires:
My Commission Expires Jan. 25, 1975

State Documentary Fee
Date FEB 16 1972
$ 1.00

EXHIBIT "A"

Mining Claims located in the Daley and Atlantic Mining Districts, Clear Creek County, State of Colorado

DALEY MINING DISTRICT

Big Bill	Lode	Mining	Claim	Recorded	in Book	163	Page	114
Patton	"	"	"	"	"	163	"	114
Chatfield	"	"	"	"	"	163	"	115
Callahan	"	"	"	"	"	163	"	115
Early Bird	"	"	"	"	"	163	"	116
Ella	"	"	"	"	"	163	"	116
Fair View	"	"	"	"	"	163	"	117
Forrester	"	"	"	"	"	163	"	117
Governor Buchtel	"	"	"	"	"	163	"	118
Homer	"	"	"	"	"	163	"	118
Jameson	"	"	"	"	"	163	"	119
May	"	"	"	"	"	163	"	119
McMillian	"	"	"	"	"	163	"	120
New Hope	"	"	"	"	"	163	"	120
Old Man	"	"	"	"	"	163	"	121
Prunty	"	"	"	"	"	163	"	121
Prize	"	"	"	"	"	163	"	122
Red Seal	"	"	"	"	"	163	"	122
Square Deal	"	"	"	"	"	163	"	123
Sunflower	"	"	"	"	"	163	"	123
Scoty	"	"	"	"	"	163	"	124
Tom Thum	"	"	"	"	"	163	"	124
Wild Rose	"	"	"	"	"	163	"	125
Wamego	"	"	"	"	"	163	"	125
Cross Cut	"	"	"	"	"	163	"	140
First Chance	"	"	"	"	"	163	"	140
Last Chance	"	"	"	"	"	163	"	141
Wintergreen	"	"	"	"	"	163	"	141
White Bear	"	"	"	"	"	163	"	142
King Solomon	"	"	"	"	"	163	"	330
Big Chief	"	"	"	"	"	163	"	331
Prize	"	"	"	"	"	163	"	331
Silver Pick	"	"	"	"	"	163	"	332
Old Man	"	"	"	"	"	169	"	415
Snow Storm	"	"	"	"	"	177	"	298
Square Deal No. 1	"	"	"	"	"	177	"	298
Fossil	"	"	"	"	"	171	"	356
Mascot	"	"	"	"	"	171	"	356
Molly B	"	"	"	"	"	171	"	357
Silver State	"	"	"	"	"	171	"	357
Square Deal Extension	"	"	"	"	"	171	"	358
Tom Boy	"	"	"	"	"	171	"	358
Kings Chest	"	"	"	"	"	164	"	121
Queen	"	"	"	"	"	164	"	123
Thorp	"	"	"	"	"	164	"	122
Blue Bell	"	"	"	"	"	131	"	519
Blue Bell No. 2	"	"	"	"	"	131	"	520
Frederick	"	"	"	"	"	131	"	521

Grand Clear Creek Tunnel Co. Tunnel Site
" " " " " Mill Site
" " " " " May Mill Site
" " " " " Big Bill Mill Site

EXHIBIT "A" (continued)

ATLANTIC MINING DISTRICT

Doctor North & South	Lode	Mining	Claim	Recorded	in Book	163	Page	394
South Doctor	"	"	"	"	"	163	"	400
South Doctor No. 1	"	"	"	"	"	163	"	400
North Doctor	"	"	"	"	"	163	"	401
North Doctor No. 1	"	"	"	"	"	163	"	401
North Doctor No. 2	"	"	"	"	"	163	"	402
North Doctor No. 3	"	"	"	"	"	163	"	402
North Doctor No. 4	"	"	"	"	"	163	"	403
South Doctor No. 5	"	"	"	"	"	163	"	403
South Doctor No. 4	"	"	"	"	"	163	"	404
Doctor No. 2 Parallel	"	"	"	"	"	163	"	404
Gray Owl	"	"	"	"	"	177	"	341
Doctor No. 3 Parallel	"	"	"	"	"	171	"	300
Doctor No. 4 Parallel	"	"	"	"	"	171	"	300
Doctor	"	"	"	"	"	164	"	93
Doctor No. 2	"	"	"	"	"	164	"	94
Doctor No. 3	"	"	"	"	"	164	"	94
Doctor No. 4	"	"	"	"	"	164	"	95
Doctor No. 5	"	"	"	"	"	163	"	349
Doctor No. 6	"	"	"	"	"	163	"	349
Doctor Tunnel and Tunnel Site				"	"	155	"	150
Doctor Mill Site				"	"	97	"	406
Doctor Placer Site				"	"	131	"	479
Doctor Town Pipe and Water Right				"	"	Map Dr 6 - J-P		

ATLANTIC AND DALEY MINING DISTRICTS

Blizzard	Lode	Mining	Claim	Recorded	in Book	164	Page	121
W. O.	"	"	"	"	"	164	Page	123

ATLANTIC MINING DISTRICT

Ester Jane	Lode	Mining	Claim	Recorded	in Book	171	Page	359
Penfield	"	"	"	"	"	171	"	359
Henderson	"	"	"	"	"	171	"	360
McDaniels	"	"	"	"	"	171	"	360

DALEY MINING DISTRICT

Quarts	Lode	Mining	Claim	Recorded	in Book	163	Page	299

ATLANTIC MINING DISTRICT

Doctor	Lode	Mining	Claim	Recorded	in Book	177	Page	441
Eureka	"	"	"	"	"	177	"	269

55483

Recorder's Office
STATE OF COLORADO }
Clear Creek County }

I hereby certify that the within instrument was recorded on the ..... day of FEB 16 1972 at 1:15 o'clock P. M. and Recorded in Book No. ..... at Page .....

Margaret V. Atlas
Recorder

4.50 + 7.00 fd.

Echo Valley Mining Co.
628 Patterson Bldg.,
Denver, Colo. 80202
c/o C. L. Chery

EXHIBIT C APPENDIX I
ECHO VALLEY MINING COMPANY
DIRECTORS AND EXECUTIVE OFFICERS

CHARLES L. CHERRY, is Chairman of the Board of Directors and President of the company. Mr. Cherry is President of Jones Pass Venture and is a Consulting Petroleum Geologist. He is a member of the American Association of Petroleum Geologists and the Rocky Mountain Association of Geologists. Mr. Cherry has been a practicing Geologist for nearly 22 yearsof which 14 months was in the mining industry. He acquired a Bachelor of Science Degree in Geology from the University of Wyoming in August, 1950.

CHESTER A. JONES, Vice President, is Area Administrator, Labor Management Services Administration for the U.S. Dept. of Labor. Mr. Jones has a Master of Commercial Science degree from Columbus University in Washington D.C. From 1940 to 1960 he was a Special Agent for the F.B.I. specializing in accounting and fraud investigations. He has been in the Department of Labor since 1960.

WILLIAM A. GILLESPIE, Vice President - Exploration, received his academic training from Michigan State University and University of Michigan. Received A.B. Degree in Geography in 1947, B.S. and M.S. in Geology in 1948 & 1949 from University of Michigan. Professional experience includes eight years as geologist with Gulf Oil Corporation principally in Wyoming

and Utah with responsibility for exploration for oil and gas throughout the Rocky Mountains; fifteen years with Mid-west Oil Corporation as geologist responsible for exploration activities throughout the Rocky Mountains for oil and gas and various mining interests in the Rocky Mountains and western Canada. Presently engaged as an independent geological consultant. Professional affiliations include Rocky Mountain Association of Geologists, American Association of Petroleum Geologists, American Institute of Professional Geologists, Certified Professional Geologist Registration No. 1477. Other affiliations include Rocky Mountain Land Service, Inc., President.

PAUL W. FAIRCHILD, Secretary-Treasurer - Presently Vice-President-Exploration, Natural Resources Corporation, Denver. B.S. and M.S. Degrees in Geology, University of Kansas; Instructor in Mineralogy; thesis, "Geology and Petrography of Blue Rapids, Kansas, Gypsum Deposits" with financial support for field work and mine mapping from Kansas Geological Survey. Spent 21 years in employ of Shell Oil Company in Appalachians, Mid-West and Rocky Mountains, including 6 months overseas assignment with Royal Dutch Shell in the Hague; as Division Exploration Manager for 12 years he supervised, planned and coordinated major oil and gas exploration programs and studies resulting in new field discoveries. Section head of Physical Geology Research studies for 3 years at Exploration and Production Research Laboratory, Shell Development Company, Houston.

ROBERT E. GROSS, Stockholder, graduated from State University of Iowa in 1949 with B.A. & M.S. degrees in Geology. Mr. Gross is trained in hardrock geology including Igneous Petrology and Economic Geology. He worked for Texaco, Inc. as a Petroleum Geologist from 1949 to 1962 in West Texas Division in various capacities including 3 years as Div. Exploration Geologist. He joined DEPCO, INC. in 1962 and has worked in nearly all areas of the Rocky Mountains plus West Texas. Mr. Gross is a member of the A.A.P.G. and R.M.A.G.

JAMES W. MALLIN, Stockholder, graduated from University of Cincinnati with a B.S. in Geology in 1950 and a M.S. in Geology in 1951. He has academic training in Mineralogy, Crystalography, Sedimentary and Igenous Petrography and Econoomic Geology. Mr. Mallin's geological experience includes 1950-1969 with Shell Oil Co. as Stratigrapher, Geologist, District Geologist, Senior Geologist in Oklahoma, South Dakota, Montana and Colorado. From 1969 to present he has been with DEPCO, INC. as Geologist and District Geologist handling the Williston Basin and Montana. Mr. Mallin is a member of the A.A.P.G. and R.M.A.G.

WAYNE A. VEENEMAN, Stockholder, has a B.S. degree from University of Montana 1961. Mr. Veeneman was employed by Professional Petroleum Exploration as Vice President, Drilling Operations and Leasing Activities from 1967 - 1971. Since 1971 he has been a self employed building contractor in Dillon, Colo.

APPENDIX A

A. & G. Construction Co.
2601 Barnhart St.
Thornton, Colo. 80229

April 18, 1972

Jones Pass Venture
Att. Chuck Cherry
628 Patterson Bldg.
Denver, Colo.

Gentlemen:

At your proposed tunnel site, located at Jones Pass, Colo. We propose to prepare the dump and working area, build a shop and warehouse building, and drive new 7' by 8' tunnel for the following prices:

1. Cutting and leveling dump and working area to proper elevation. Estimate 40 bulldozer hrs. at $18 per hr. $720.00

2. Build 12' by 30' shop and warehouse (light construction) $2,100

3. Furnish and install track from face of new tunnel to dump and shop area with 2 switches and necessary track at $7.50 per ft.

4. Drive 4,000 ft. of 7' by 8' tunnel at $65.00 per ft. $260,000

These prices are based on excavation in normal ground. In the event water flows in excess of 200 gpm, or heavy ground requiring special methods of handling (such as spiling), are encountered the driving will be at the following rate:

1. Direct labor and supervision payroll cost plus 25%.

2. Rental of contractor's equipment at rates indicated in the latest edition of "Contractor's Equipment Owenership Expense" pamplet published by the Associated General Contractors of America, Inc.

3. Operating supplies will be furnished by contractor at cost plus 5%.

We have the necessary skilled and experienced personel to do this work for you in an efficient and workman like manner.

Very Truly Yours,

A. & G. Construction Co.
George Moyes
George Moyes

DONALD M. MANN
MINERALS GEOLOGIST
SUITE 626, PATTERSON BLDG.
555 17TH STREET
DENVER, COLORADO 80202
303-893-8692

March 28, 1972

Mr. Charles L. Cherry
Petroleum Geologist
628 Patterson Bldg.
Denver, Colorado 80202

Dear Chuck:

Re: Jones Pass Adit

Attached is a second cost estimate on your Jones Pass adit from Bacon & Crowhurst Ltd., Vancouver, B. C.

Crowhurst gives three all inclusive prices for a 7' x 5' adit:

	$80/ft	$100/ft	$150/ft
Total for 5,000 foot adit	$400,000	$500,000	$750,000

Crowhurst recommends enlarging the cross section to 6' x 7' or 7' x 8' to facilitate the use of modern equipment. A copy of his letter is attached.

Chris Mathews, Littleton, estimates the total cost for a used and new 100 T. P. D. Pb - Zn - Ag concentrator as $300,000 - $400,000 respectively.

Costs for the adit and concentrator are thus:

	$80/ft	$100/ft	$150/ft
5,000 foot adit	$400,000	$500,000	$750,000
Used conc.	$300,000	$300,000	$300,000
	$700,000	$800,000	$1,050,000
New conc.	$400,000	$400,000	$400,000
	$800,000	$900,000	$1,150,000

The range of costs is $700,000 - $1,150,000, depending on ground conditions and equipment used.

If you have any questions, please contact me.

Yours truly,

Donald M. Mann

DMM/kg

one 688-5485

1720-1055 West Hastings Street
Vancouver 1, B.C.

BACON & CROWHURST LTD.

CONSULTING ENGINEERS

MAR 20 1972

D. M. M

March 13th, 1972.

Donald M. Mann,
Ste. 626, Patterson Bldg.,
555 - 17th St.,
Denver, Colorado, 80202.

Dear Don:

Please accept my sincere apologies for not replying to your request concerning tunnel estimates before this time.

Without looking at the job, it is almost impossible to come up with a fairly close figure. As a guideline, however, I might say that we have submitted firm bids for an adit of this description on the basis of $80/ft., all inclusive cost. We have, however, also worked on other adits where the cost could be as high as $150/ft. I would say that for estimating purposes $100/ft. might be used as a "shot gun" figure.

I would strongly recommend that you use a cross-section of at least 6' wide by 7' high or perhaps even 7' x 8', because it is virtually impossible to put modern equipment in anything smaller and attain a reasonable daily footage advance.

The chief difference in cost is related to the amount of ground support necessary such as timber, or shotcrete, or rock bolts and wire mesh, etc. I am also assuming that all the equipment will be rented and that the buildings will be of a trailer type construction.

I don't imagine that this is of much use to you but without a fair amount of work, it is pretty hard to submit a proper estimate.

Yours truly,

BACON & CROWHURST LTD.

Jack Crowhurst

J.J. Crowhurst

JJC/ic

DONALD M. MANN
MINERALS GEOLOGIST
SUITE 626, PATTERSON BLDG.
555 17TH STREET
DENVER, COLORADO 80202
303-893-8692

October 20, 1971

Mr. Charles L. Cherry
Petroleum Geologist
628 Patterson Building
Denver, Colorado 80202

Dear Chuck:

Re: Jones Pass Adit

I have received one estimate on your Jones Pass Adit from Versatile Tunnel Contractors, Kamloops, B. C. The estimate was made on the following assumptions:

a. The drift size has been increased from 7'x5' to 7'x7½' because Tom Waterland thinks it would be inefficient to drive a 7'x5' opening for 5,000 feet. See the sketch attached to his letter.

b. The rate of advance is 20 feet per day.

c. It will take 14 days to set up the camp and surface plant. The drive will take 250 days - 264 days total. Starting date will be June 1; the drive should be completed the following February.

d. This work is set up as a camp job. If camp is not set up, the union may require payment of $10-$12 a day per man living allowance.

e. Separate figures are given for timbered and untimbered drift, giving cost limits depending on the nature of the ground.

f. Collar preparation and dump set up are estimated at $5,000.

g. Pricing is based primarily on B. C. labor and material. Some downward adjustments for U. S. prices may be possible.

	Untimbered Drift Used Concentrator	Timbered Drift New Concentrator
Mobilization-set up camp	5,000	5,000
Install collar-dump set up	5,000	5,000
Snow removal D-8, $40/hr $7,200/month Oct. through Feb.	36,000	36,000
Camp operating cost 13 men, $18.50/man day 264 days	63,492	63,492
Drift, untimbered 7'x7½' $93.60/ft	468,000	
Drift, timbered 7'x7½' inside timber $129.50/ft		647,500
	$577,492	$756,992
New Concentrator 100 T. P. D.		400,000
Used Concentrator 100 T. P. D.	200,000	
	$777,492	$1,156,992

I have attached a copy of my request, and a copy of Versatile Tunnel Contractors' reply. I expect a second estimate soon. When you get to the bid stage, I suggest you include Stateside companies like Boyles Brothers and Centennial Development. I did not contact these concerns for estimates because I have not done business with them lately.

If you have any questions, please contact me.

Yours truly,

Donald M. Mann

Donald M. Mann

DMM/ma

October 1, 1971

Mr. Ed R. Becker, President
Versatile Mining Services Ltd.
P. O. Box 609
Kamloops, B . C.
Canada

Dear Ed:

[redacted]

I would like a general idea of what it would cost to drive a 5000 foot adit in the vicinity of Berthoud Pass, Colorado (see map). The rock is Precambrian granite. The adit will be 7 X 5 feet. It will be driven on structures which will be wet and gougy. Timber will have to be purchased locally. The work will be contracted on a two shift basis. It will be necessary to keep 1.7 miles of road open from October to May. Snowfall is heavy. The portal will be at about 11,000 feet. There is no equipment or buildings on the property.

Please give separate figures for the surface plant and the adit drive. I would also like a figure for the cost and installation of a 100 TPD Pb-Zn-Ag mill at the portal.

[redacted]

Yours truly,

Donald M. Mann

cc:file

VERSATILE TUNNEL CONTRACTORS
P.O. BOX 605, KAMLOOPS, B.C.

TELEPHONE 374-6263
TELEX 048-8191

October 6th., 1971

Mr. Donald M. Mann,
Minerals Geologist,
Suite #626, Patterson Bldg.,
555 - 17th. Street,
DENVER, Colorado 80202

Dear Sir:

Your letter of October 1st. to Ed Becker has been passed to me for answering.

I have made an estimation of the cost of driving a 5000' adit in the mountainous country near Berthoud, Colorado. It has been many years since I was in that part of Colorado; however, I remember it as extremely precipitous terrain with very high snowfalls during the winter months.

My pricing of the tunnel is based primarily on labour and material costs in B. C. There may be some downward adjustments for U. S. prices. I have also taken the liberty of increasing the drift size to a minimum 7' x 7½' cross section. I feel that a drive for a distance of 5000' would be extremely inefficient if it were driven as small as 5' x 7'. Muck handling and the provision of ventilation air would be quite difficult for the 5' x 7' size.

I have estimated the drifting cost for a fully timbered drift and for an untimbered drift. The timbered drift assumes8" x 8" timber on 7' - 6" centres with 3" back lagging and 2" side lagging. This heavy timber may or may not be required.

Equipment used for the drive would be briefly as follows: Mucking would be with an Eimco 12B Mucker into 60 cu. ft. rocker dump cars. Drilling would be with air leg drills and blasting, because of wet conditions, would be with high explosives rather than by AN/FO blasting agents. Ventilation would be provided by one or more 24" electric fans blowing air through 24" flexible ducting. Compressed air would be supplied by two 600 C.F.M. compressors and power for fans and charger would be provided by a 10 K.V.A. diesel electric plant. No allowance has been made for initial collar preparation and dump set up as the conditions are unknown to me.

The drifting cost includes a contractor profit and overhead mark up. Camp costs would be high for the small 13 man work force and these costs are based on setting up a trailer camp consisting of 2 - 8 man bunk trailers, 1 kitchen diner and one wash car.

The cost of maintaining a road during winter months is also difficult to estimate. I have allowed six hours per day for a D - 8 cat at a rate of $40.00 per ~~day~~ hour

The cost of the treatment plant has assumed all new equipment and buildings. This cost could be reduced by as much as 50% if good used equipment and buildings can be obtained.

With the above points in mind, the following costs should be fairly realistic.

Drifting untimbered 7' x 7½'	93.60	per foot
Drifting timbered 7' x 7½' inside timber. .	129.50	per foot
Camp operating cost	18.50	per man day
Camp mobilization - set up and development plant set up - allow	5,000.00	
Snow removal and road maintenance - Variable - - up to	7,200.00	per month
Treatment plant cost complete for new mill up to	400,000.00	

I trust that these are the figures you require at this time.

As you are aware, our company has had considerable experience in working in mountainous snow country and we would be pleased to contract any development work you may anticipate. Should you wish us to provide you with firm contract prices, please call at any time.

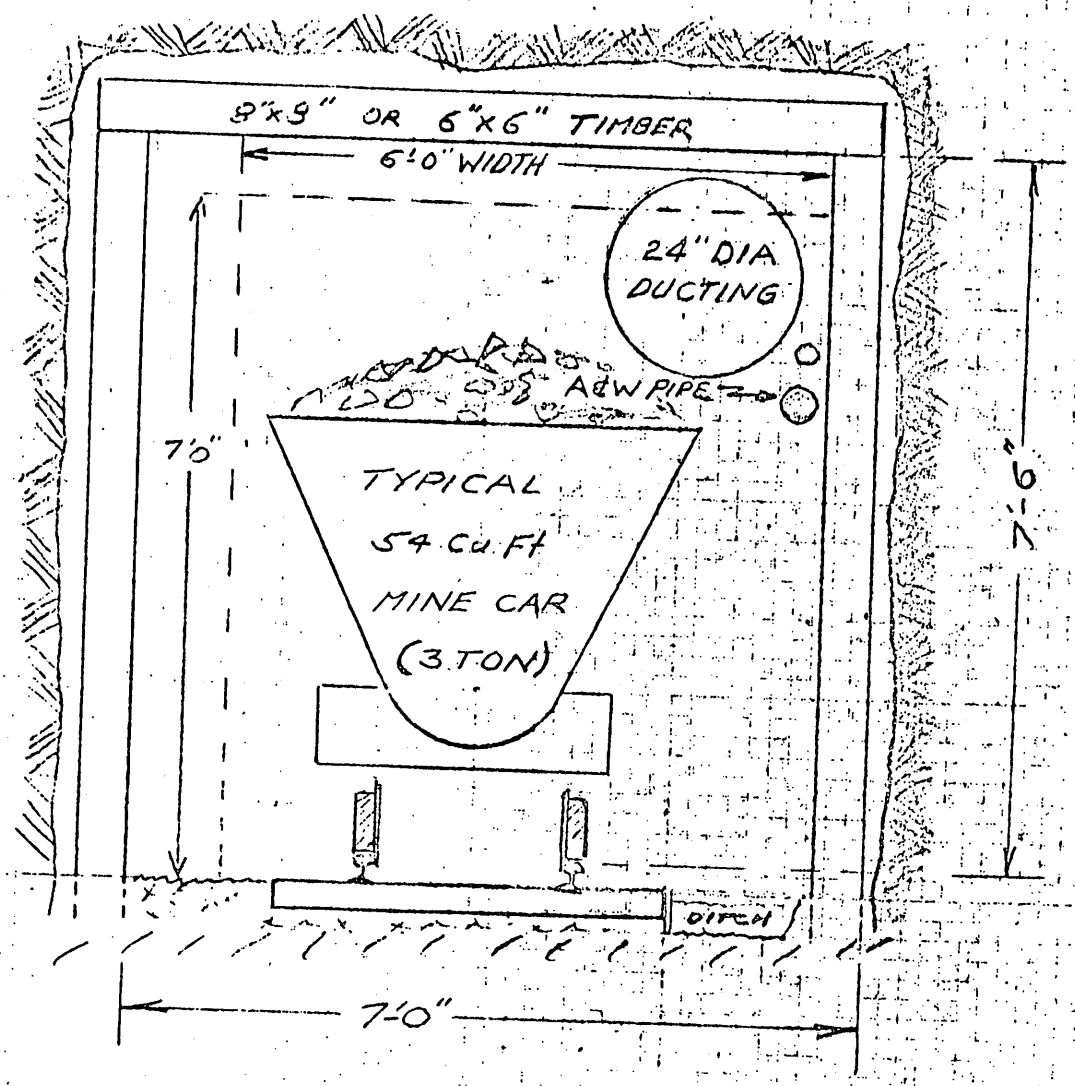
Very truly yours,

VERSATILE TUNNEL CONTRACTORS LTD.,

Tom Waterland

T. M. Waterland, P. Eng.,
PRESIDENT

TMW:rd



7'x7'-6" DRIFT
(ROCK SECTION - 9'x9')

APPENDIX B

A brief report on the "Doctor Mine", Colorado.

by

Harold J. Cook

5 (a)

INTRODUCTION.

This brief report is based upon a series of examinations made by the writer during July and August 1936, in the mine and about the surface exposures and workings in the vicinity of this mine, both alone and in company with others. Owing to the lack of time and due to the conditions in the part of the old workings of the mine where gas was encountered preventing further progress and inspection till this can be cleared, this report does not cover all the features and possiblilities of this mining property; but conditions and conclusions are warranted by the opinion of the writer as sufficient from the facts found, as hereinafter stated.

LOCATION

The Doctor Mine, refered to in this report, is located on one of the headwater drainage branches of Clear Clrre, just below timberline, directly on the new road now being constructed up the eastern slope of the continental divide, a short distance below the Jones Pass, at the point where the new road leaves the valley bottom and starts its last long climb around the south side of the mountain spur, to the crest of the pass. The mine and mill face this road on the east at this bed of the road, and the mining claims on which the working and mill are located, extend to the eastward across the mountain rising at this point.

A stream large enough to furnish water for the mill at this time, with the large fall available near at hand, runs ~~xxxxxxxx~~ directly in front of and below the mine portal and mill. When this power is utilized, costs of operation should be greatly out and more economical operation on mine and mill made possible.

Above the mine and mill abundant standing timber is available for timbering and building purposes, easlily and economically secured on this property.

GEOLOGY

The general rocks which compose the backbone of the Rockiesat this point are granites, cut through this area by veins and dikes. These run along two trends, principally, one set roughly east-west; the other set roughly north-south, and with some of various angles between, the relations of which the writer has not had time to study and work out except in a few spots. However, mineralization differs in the various sets of veins and dikes inspected by the writer in this locality, show mineralization, or there is reason to expect greater mineralization with depth from the surface exposures.

This mineralization appears to be both primary and secondary in character in part speaking generally, and the erosion and redeposition of primary ore deposits undoubtedly accounts for much of the secondary mineralization in and along veins and dikes, that has occured. For instance, some of the porphry dikes appear to contain primary mineralization, while on one or both sides of them, in contact with the "country rock" are contact or vein deposits of more or less rich secondary mineralization, that in places may impregnate either the county rock, or original dike materials, wherever conditions made this possible.

OCCURANCE OF ORES

Gold, silver, copper, lead and zinc, or various combinations of these are commonly found in these vein and contact deposits. Gold appears to occur quite generally in small amounts in practically all of the mineralized deposits tested here, in most, if not all of the mineralized deposits tested here, covering all types. Some of these deposits contain commercial quantities of gold, if operating costs are held down to a low point, but silver appears to be more abundant and valuable as a metal present here in the seposits sampled and assayed. As the two are generally found together in these ores, their value jointly receives most consideration commercially.

From evidence seen, and the statements of men familiar with the mine when being worked, good ores containing lead, silver, zinc in connection with iron sulphide also carrying some gold, occur in a large vein in this mine which the writer was unable to sample because of the gas refered to previously, though ore of this character was noted in the stope ore-chute and elsewhere. However as the writer was unable to get to this deposit in place, while I have no reasonable doubt it is here, and in important quantities, I have not seen it in place, so cannot make a more definite statement about it. An examination of the dump shows a large quantity of important ore, much of which may be milled to a profit with proper methods, and which undoubtedly came from the workings of this mine, and give a good

5B

idea of ores from the vein followed in early development work by the previous owners of mine.

The most important bodies of ore sampled in place by the writer in this mine, occur relatively near the entrance to the mine, and are cut by the main tunnel. These deposits apparently were passed up by the early operators, probably not assayed or recognized for as valuable as they are shown to be for assays made for us.

The first important ore body, stands practically vertically as a vein or dike and is about four feed wide. Samples taken across this deposit, EXCLUSIVE of a narrow rich vein in the center, averaged above twenty-two ounces of silver, and gave a net gold-silver value of over seventeen dollars to the ton. The narrow richer vein refered to averaging between one and two inches wide, showed an assay of .06 ounces of gold, and 48.40 oz. of silver to the ton, or a net value of $99.36 to the ton. As this deposit and the richer mid-vein appear quite constant and uniform as far as exposed, this means a net average value of around twenty-dollars to the ton for the deposit accross a width of four feet. As the deposit is of a character indicating great uniformity, where cut by the tunnel, a great quantity of this ore should be readily available, and should be mined very economically, giving a wide margin of profit, and in my opinion is the most important ore deposit to be worked at once when work is started of those now known in this mine.

Adjoining this however, between about 115 to 200 ft in from the mine portal and almost in contact, are massive porphry dikes, which assays show to contain average gold values of from $2.36 to $9.15 per ton, across a total measured width of over seventy ft, with some intervening country rock.

If it is found practical to mine, smelt ores from this low value here, a tremendous volume seems to be certainly available and at shallow depts under conditions which make very economical mining and handling possible, as open cut methods may employed according to the conditions this ore body sets, standing almost vertically.

There the vein previously refered to which was worked by the previous operators, cuts the main tunnel of the mine, (drifting away to the southeast along the vein where gas was encountered) this vein has not been worked on the opposite (northern) side of the main tunnel. Samples taken here indicate this profitable development may be taken to the northward on this vein, and further exploration and examination work should be done in this direction here.

Between this veing and the mine portal is a timbered section where it was impossible to examine the deposits in place, but where the amount of water coming through the roof and white walls indicate the presence of a large vein, or shattered belt, and such zones in this area are very apt to contain mineralized deposits. Reports reaching the writer indicate that important ore deposits may be located in this section behind this timbering.

Again it is impossible to state any facts or opinion beyond those given, other than to say that this section should have enough timber removed to permit a proper examination and inspection, asit is almost certain from the water coming in here that a deposit worth examining is to be found in this section. This however, and the clearing of the section of the mine troubled with gas may be deffered until a later date when operations make this more simple here.

CONCLUSIONS.

IN THE writers opinion the four-foot silver-rich vein discovered here, alone is sufficient to warrant the opening and operation of this mine on the evidence available in the mine, and from the assays made by the Colorado Smelting and Refining Co. on samples taken by the writer. Several thousand tons of ore available for milling are not out and in the dump, permitting work to start the day the mill is ready for operation. The back workings of the mine, and additions indicated possible by an examination of the surroundings of surface exposure, indicate the possibility of much additional expansion, and if the low grade ores mentioned can be handled at a profit, almost unlimited quantities should be available and running to great depths in the deposits examined herein, and nearby, as the main dikes and fissures almost certainly out to even greater depths than mining is practical.

While deep snows may be expected at this altitude, be it remembered that other mines now operate as high or higher in Colorado successfully winter and summer. The famous Climax mine is an example, with proper methods and handling in mining and smelting, the writer sees no good reason why this property may not be made readily into an important producer on a profitable basis, with ores available for years to come on which to perate. An important factor that is fortunate at this time, is that other interests impell the authorties to build and maintain the road past the very door of this mine, which is of great importance to the economic and profitable handling of this property.

(58)

The writer has made no examination of the titles or survey of the boundry lines of the claims on this property due to lack of time, but from maps seen and checked on the grou with the owners of the property, has no reason to doubt the accuracy of the maps or statements of ownership made to the writer.

In the opinion of the writer a most important factor in the operation of properties of this character is to avoid the high and unnecessary costs involved in transporting and funning ores and concentrates through outside and distant custom mills and smelters, as these eat up a large share of the profits in higher grade of ores, and make impractical the mining of the lower grade of ores. However with the proper and economic and efficient handling, there appears to be no good reason why local milling and smelting cannot be done at or near the mine by its operators, cutting out most of the transportation, milling and smelting costs, and conserving the profits for the mine-mills owners in situations of this character, with the water power and other factos available at this time, very low costs may be practical with proper management and operation.

Harold J. Jook
Consulting Geologist

August 18, 1936

(NOTE) This property consists of approx 480 acres of land with nice timber and grazing area suitable for dude ranch, resort or ski tow & run. Another report by J. L. Livingstone (consulting engineer) there is said to be enought ore available for a 100 ton mill per day, and water power to operate at about .50 per ton. Distance from Denver about 50 miles. Ore shipments can be made over the Moffit R. R. to Salt Lake City, Utah. Considerable development has been done, $250.00 spent. Assay map of working available. 2300 ft of open tunnel.)

J. R. WEYLINGER
MINING ENGINEER
517 Empire Bldg.
Denver 2, Colo.

VI (a)

March 7, 1955

Mrs G. C. Swarens
Denver, Colorado.

Re: DOCtor mine

Dear Mrs Swarens:

Referring to a report covering the above mentioned property, by Harold J. Cook, Consulting Geologist, and data available in the State of Colorado Bulletin detailing the Mineral Resources of Colorado, I can state that in all my contacts with mining properties over the past 35 years. I have not had the opportunity to become connected with mining enterprise having all the attributes of a profitable operation to the same degree as the "DOCTOR MINES". I shall briefly mention the most im= portant practical features of it.

1. LOCATION: This mine is located in Clear Creek County, Colorado, on one of the headwater drainage branches of Clear Creek, just below timber line. The mine and a mill close thereto, face a road on the eastern sope of the Continental Divide, a short distance below Jones Pass. A stream large enough to supply water power, with the large fall available near at hand, runs directly in front and below mine protal and mill site.

Thus there is already available, the advantage of location as well as ample water, and in the operation of a concentrating mill, plenty of water is a most important factor. It means that cost of operation may be greatly cut, while also more economical operation of the mine and the mill is made possible.

2. GEOLOGY: The general rock formation is quite favorable, as it consists of granites cut through in this area, by veins and dikes east-west and north-south. Substantially, all the principal veins and dikes show mineralization at the tunnel level, and there is reason to believe and expect greater mineralization with depth.

3. ORE OCCURRENCES: Gold, silver, copper, lead and zinc are commonly found in these veins and contact deposits. While gold is generally present in commercial quantities, silver is the most abundant valuable metal present. Mining carried on years ago when this property was being mined, good ores containing not only gold and silver, carried also lead and zinc, and of great importance was the content of iron sulphide carrying gold in a large vein. That sulphide has some sizable value in that it decreases the cost of smelting the ores. There is still a big dump containing a large quantity of important ore that can be milled at a profit. The most important bodies of ore sampled by Mr Cook, occur relatively near the entrance to the mine, and are crossed by the main tunnel. Which means low cost mining. The average values obtained from these veins thus determined are better than $40.00 per ton, which would mean a wide margin of profit, and if open cut mining is resorted to, the cost of mining may be reduced to an extent that a further substantial profit could be derived as the ore bodies stand almost vertically.

IV (B)

4. CONCLUSION: Mr Cook stated that the one four foot silver-rich ore discovery near the protal, alone, is sufficient to warrant the greater opening and operation of this mine and mill, and the evidence available, prove that several thousand tons of ore are available for milling and are now in the dump, much more than enough to permit profitable work from the day the mill is ready for operation. As for the ore in the mine and workings designed to follow the veins and dikes, it can be expected that almost unlimited quantities should be available.

In my own experience, I have seldom had occassion to read a report by a competent geologist, such as Mr Cook, in which a conclusion was stated so positively. Usually, the writer thereof is more likely to dodge or to deal in generalities. Personally, I endorse Mr Cook's advise and suggestions 100%.

Sincerely

Signed; J. R. Wemlinger.

VI (c)

P.S. In accordance with your request, I submit below a synopsis of the most important connections and events in my career as related to mining and the search for new bodies of ores containing the important alloy metals:

The first and most important approach to this problem originated in 1923, when I became invited by Mr Charles M. Schwab, then President of the Bethlehem Steel Corp, resulting in the formation of the Wemlinger Inc., of which company I was President. Both Schwab and I held the same number of shares in the company until shortly before his death. The 1929 crash practically wiped out the company.

However I carried on one of the most important functions of Wemlinger Inc. that was the search for alloy metals which I had initiated. INCIdentally, I had also determined that the most promising territory was the Province of British Columbia, Canada. His development was based on a railroad to connect Vancouver and points in the United States with Fairbanks, Alaska. The project was to be carried on by the Canadian-American Railroad & Development Co. Inc., of which I was Exe. Vice- Pres. until the declaration of War 11, in 1941.

At that time I went to Washington D. C., to submit the Railroad project to the Government. After some delay, I was invited to call on Mr Federic Delano, uncle of President F. D. Roosevelt. I became his adviser until after the War Department decided in favor of a gravel road, due to scarcity of rails. It developed later that the road cost about 40 million more than the proposed railroad, and is still far from be adequate to mo e heavy freight.

In between these various engagements I took charge of the operation of a Tungsten property in Western Washington, and numerous explorations from Northern Washington to San Diego, California. Since January 1949, President of the Beryllium Mining Co., operating a mine near Gunnison, Colorado, producing some of the Rarer Metals and Minerals, such as Beryl, Columbite and Tantalite, the three of which are stockpiled by the General Services Adm. at Custer, So. Dakota, on a purchase agreement provididing for the highest payment for such ores, far in excess of the prices we received heretofore. The time at the moment, is so short that I must close although I would like to give you much more information about my former experiences.

Signed;

J. R. Wemlinger.

H. LEON BIRD

P.O. Box 663
Boulder, Colorado

June 22, 1969

Carl L. Sackett
1122 N. 15th Street,
Canon City Colorado.

Dear Major Sackett:

I am sending the following brief outline of what I have been able to accomplish concerning the Doctor mining property near Jones Pass in Clear Creek County since I first became acquainted with it last fall.

During September and October of 1968 I made several trips to the property. Initially my work was on behalf of Cardinal Mining Co. in which I am a partner and later on behalf of you and Mrs. Swarens after Cardinal Mining Co. withdrew from further exploration on the property in order to expedite negotiations with other interested parties better prepared to finance the work.

On my first visit to the property in 1968 I went over the surface of the property after which I suggested that bulldozing should be done to explore an occurence of manganiferous float. This work disclosed the southerly extension of a north-south vein on which some stoping has been done in previous mining operations. Galena and pyrite in significant amounts were found in overburden contiguous to the outcrop. Vein material from this exposure contains galena, sphalerite, pyrite and rhodochrosite in addition to minerals characteristic of strongly altered rock.

Further exploration of this occurance both on the surface and underground is justified since it is possible that more ore similar to that previously mined will be found.

In the course of my investigation of the property I was advised of an occurence of lead- silver ore discovered in the Vasquez water tunnel near the eastern border of the Doctor property. After due consideration I recommended action by your group to secure the surface ground above the location of the occurence in the tunnel. Later, after arrangements with you and Mrs Swarens were made I undertook the work of determining land ownership in the area covering the discovery in the tunnel and of staking claims for you to cover the area of interest.

In order to do this work I made several trips to Georgetown to secure data from which I prepared a map showing land ownership. From this work it became clear where location notices should be placed. After the snow was gone, a little over two weeks ago I, with the assistance of Mr. Lyle Chapman posted notice for three claims. This initial step must be followed by surveying to locate the claims correctly with respect to adjacent holdings of American Metal- Climax.

Since the consideration which you gave in return for my services to date is satisfactory there will be no further charge for the work completed. It has been a pleasure to work with you on this project and it is my hope that you will be successful in its further development.

Sincerely yours,

H. Leon Bird

H. Leon Bird, Mining Geologist

26-828-3548
Erie Colorado

Post Office Box 663
Boulder, Colorado 80302

December 8, 1971

Geological Report
Doctor Mining Property
Clear Creek County, Colorado

This report covers work done on and for the benefit of the Doctor Group of lode mining claims directly adjoining the northerly side of the Henderson property of American Metal--Climax.

The principal workings on this property are the Doctor Tunnel on the easterly side, and the Grand--Clear Creek Tunnel on the westerly side of a broad glacial valley through which flows the headwaters of the west branch of South Clear Creek. These adit tunnels are at an elevation of about 10,700 feet above sea level.

A geologic map of the Berthoud Pass Quadrangle, in which the Doctor property is located, has been prepared by Paul K. Theobald and associate geologists of the United States Geological Survey.

During October and November of 1970 I was employed by Mrs. G. C. Swarens, at that time the principal owner of the property, to continue geological investigation at the property and to locate and file new claims to cover an adjacent area believed to have good potential for the discovery of commercial lead-silver-zinc mineralization.

After examining the county records to be sure no conflicting claims had been filed, a notice was posted at the entrance to the property which stated that work was in progress on the property and declared the intention of the property owners to hold and develop it.

Geological Report (2)

Further geological reconnaisance was done in a study of conditions along the strike of a strong northerly and southerly trending vein which was discovered early in the history of the property and from which some good copper-silver-lead ore was extracted. In 1968 on my first trip to the property I observed manganiferous float on the hillside below and to the southwest of the early workings. Bulldozing was done which uncovered the outcrop. Two additional trenches along the strike of the vein and southerly from the initial trench demonstrated that the vein continues southward.

My study of the area north of the Doctor Tunnel line through which area the vein should extend along its northerly extension confirms my opinion that the vein extends northerly at least as far as a trench several hundred feet north of the tunnel line. This trenching disclosed soft, brown, decomposed altered rock material similar in every respect to such material found contiguous to the vein where explored by trenching southward from the Doctor Tunnel line. I panned several samples of this material from this northerly trench and found it to contain residual pyrite and a little residual galena.

After my study of conditions at the property I had informal discussions with geologists at the Federal Center branch of the United States Geological Survey. At that time I saw maps showing results of soil sampling in the general area which, in my opinion, should encourage further geochemical investigation of the area covered by the Doctor claims. Consideration should be given to the fact that certain portions of the property are covered by glacial debris which might make soil sampling in such areas unsatisfactory. In the area easterly from the Doctor Tunnel where my

preliminary samples were taken there is only a thin veneer of such glacial material. I took a number of soil samples for analysis. This was preliminary work and owing to the rapid onset of snow and cold conditions at that late time of year, I was unable to proceed, as I had hoped, with a careful and thoroughly systematic soil sampling program.

These preliminary samples were taken in the area under which the Doctor Tunnel passes for the first few hundred feet from its portal. The object of the sampling was twofold.

1. The samples were tested for mercury in the hope that it might prove an efficient indicator element associated with occurences of lead-silver ore.

2. Another object of the sampling was to determine whether anomalous metal concentrations could serve to define the position of the covered vein outcrop and indicate portions of the vein outcrop with the highest metal content, and, hopefully, lead to the discovery of one or more ore-shoots.

Report of Analyses

Skyline Labs - Wheatridge, Colorado

Item	Sample No.	Value in ppm Hg.	Pb.	Ag.
1.	A	.04	120	<.2
2.	B	.015	100	<.2
3.	C-1	.035	210	.6
4.	C-2	.04	175	.4
5.	C-3	.06	200	.6
6.	D	.02	215	<.2
7.	P-1-12A	.03	210	.2
8.	P-1-12B	.015	150	<.2
9.	P-1-12-C	.02	255	<.2

Geological Report (4)

Report of Analyses (Cont'd.)

The C series samples were taken in the easterly wall of an excavation at the portal of the caved Bluebell adit at depths of one, two, and four feet respectively.

Sample D was from material excavated from a badger hole a short distance southwest of the P-1-12 location.

The P-1-12 series samples were taken at depths of about 12, 18, and 36 inches at sample station 12 on a profile at right angles to the topographic contours and in the bank forming the upper side of an access road at that location.

Samples A & B were taken at the north side of the old caved pit or stope in the northerly-southerly vein outcrop area.

Analyzing the results of these few preliminary samples, I believe that, although not enough samples were taken to be conclusive, the fact that only very minor quantities of mercury were detected would tend to discourage the use of mercury as an indicator without much more investigation of its relationship to lead-silver occurrences in a more general way. The samples tested for mercury were taken below what is believed to be a strongly mineralized portion of the northerly-southerly vein. Samples C-1 to C-3 and samples P-1-12A to P-1-12C were taken to investigate the vertical distribution of metals in the soil. No regular pattern of increasing metal content with depth is shown by the results. None of these samples were taken in the A_1 and A_2 zones.

Subsequent to the mercury determinations the same pulps were tested for silver and lead. In my opinion the results of this work indicated that anomalous quantities of lead occur in the soil in this area over the Doctor Tunnel and below the outcrop of

the northerly-southerly vein and that it, along with copper and zinc, is likely to be a useful indicator element in subsequent systematic soil sampling on the property. The possibility that molybdenum might be present in soil samples and have diagnostic significance will not, I am sure, be overlooked.

After the work at the Doctor Tunnel area I made another reconnaisance over the area above the Vasquez water tunnel and relocated the corners at the northwest end of the Waltham patented claim inoorder to be sure where to locate the new claims, namely the South Doctor No. 6, South Doctor No. 7, and South Doctor No. 8. I then prepared a preliminary map which guided me in locating the points at which to post location notices for these claims. Later, although hampered considerably by deep snow in the upper portion of the staked area I erected the claim corners. I then prepared the location certificates and the accompanying maps in lieu of discovery shafts, and recorded them well within the 90-day location period.

At the time of putting in the claim corners I noticed a soil condition of interest near the westerly side of the snowslide area which is covered, partially at least, by the South Doctor No. 6 claim and about midway along the length of that claim. I believe that the fact that the soil contains more clay than is usual in that area, could indicate argillized rock beneath the surface. Since the association of this type of material with veins is well known I would recommend the taking of a few soil samples in this vicinity to investigate this possibility.

Concerning the report of the occurrence of lead-silver-zinc ore in the Vasquez water tunnel, I have no reason to doubt the story. Other geologists in a position to know, with whom I have conversed, have confirmed the occurrence and believe that it could represent substantial mineralization.

Geological Report (6)

I have no reason to change the approximate location of this mineralization in the water tunnel as placed on the map i have previously prepared. The geologic map of the Berthoud Pass Quadrangle prepared by Mr. Theobald shows a rhyolite k dike in the area of the water tunnel a short distance north of the west fork of South Clear Creek. This can be classed as a favorable indication since there is reason to infer a genetic relationship of this rock to the younger Tertiary period of mineralization characteristic of this strongly mineralized general area.

In conclusion, I am of the opinion that the Doctor property deserves careful study. I recommend a broad program of geochemical sampling with more detailed sampling along the northerly-southerly structure and other structures known but as yet insufficiently delineated. I also recommend the opening of the Doctor Tunnel to allow investigation of the report that silver-lead mineralization was found in the northerly-southerly vein where it leaves the north side of the Doctor Tunnel.

Hoping that this report will be of service in future work at the Doctor property,

I remain,

Sincerely,

H. Leon Bird

H. Leon Bird
Mining Geologist

Dec 8, 1971

APPENDIX C

a quartz vein trending north-northwest. In the Jerry Quigley tunnel a mass of high-grade oxidized copper ore was mined, but there is little evidence of additional copper mineralization nearby. On the south slope of the ridge, on what is known as the Perry Sullivan mine, the same vein was exploited for its gold content, but little success attended the operation. Some cuprite was noted at the contact of the quartz vein with granite, and it is believed that much of the ore mined in the Quigley deposit was of this character. The vein cuts granite pegmatite and follows a fault that displaces the Fountain formation on the North Fork of Little Thompson River a few miles to the southeast (pl. 1). The mineralization is regarded as belonging to the "breccia reef" type characteristic of an early stage of the Laramide revolution.

DAILEY OR JONES PASS DISTRICT

The Dailey or Jones Pass mining district is in the southern part of the Fraser quadrangle, a few miles southwest of Berthoud Pass. It includes the headwaters of the west fork of Clear Creek on the eastern side of the Continental Divide and part of the headwaters of the Williams Fork River on the western side of the Divide. The Victory highway, U. S. No. 40, a splendid automobile road, crosses the eastern edge of the district. In 1935 a wagon road was completed which extended westward over Jones Pass, altitude 12,452 feet, to the west portal of the transmountain water diversion tunnel on Bobtail Creek; it could be traversed by automobiles with difficulty. Supplies, however, must still be carried to several of the mines by pack train. The western part of the district can also be reached by trail from Leal post office in the valley of the Williams River about 10 miles northwest of Jones Pass.

The district includes an area of about 10 square miles, and nearly all of it lies above an altitude of 10,000 feet. Dikes and a small stock of granite porphyry occur in the southeastern part of the district, on and near Red Mountain, but intrusives of the Laramide have not been observed to the west. The Urad molybdenum mine on Red Mountain has contributed most of the output of the district, which is small. The chief minerals found in the veins outside the Urad mines are sphalerite, galena, pyrite, and silver minerals. The trend of most of the veins developed is north and northeast, but cross veins striking north to northwest are common. Most of the high-grade ore shoots are lenticular or chimneylike, but shoots of low-grade pyritic quartz, which were not commercial in 1932, persist for several hundred feet along the strike in some of the veins. The shoots of high-grade ore are commonly less than a foot thick, but the low-grade pyritic ore may be 4 to 8 feet thick for some distance.

BOBTAIL MINE

The Bobtail mine, at an altitude of 10,400 feet, is on Bobtail Creek, a continuation of the Williams River, 1.3 miles southwest of Jones Pass. Several cabins in poor repair and a 10-stamp mill are on the eastern side of the stream across from the mouth of the main tunnel which was approximately 500 feet long in 1929. The Bobtail vein itself strikes from N. 80° E. to N. 60° E. and is developed through the adit. The country rock is entirely Silver Plume granite, and no porphyry formed during the Laramide revolution is known in the nearby region. The vein, which occupied a narrow sheeted zone, is nearly everywhere less than 12 inches thick and contains pockets and seams of ore 1 to 6 inches thick separated by nearly barren sheared granite. Near the mineralized parts of the vein the granite is bleached and manganese-stained. The ore is a typical complex lead-zinc ore made up chiefly of pyrite and sphalerite (blackjack) with sporadic masses of galena. The gangue is chiefly massive quartz with a little late horn quartz and some small seams of white ankerite. The longest continuous seam of ore exposed was approximately 100 feet long and 6 inches thick.

READY CASH MINE

The Ready Cash mine is on the eastern side of Bobtail Creek Valley, 0.8 mile southwest of Jones Pass, at an altitude of approximately 11,200 feet. In 1929, when visited by the writers, the mine was opened by three adits. The output of the mine is not known, but a small amount of high-grade silver ore has been shipped. The country rock is entirely Silver Plume granite, the typical "corn rock" of the Silver Plume mining district. No porphyry was observed near the mine, nor was any found in the float along the valley sides. Schist and injection gneiss of the Idaho Springs formation appear on Williams Fork about a mile west of the mine, but none was seen nearby.

Three veins have been cut by the middle adit—the Mud vein, striking from N. 20° to 30° E. and dipping steeply to the west, the Ready Cash vein, 50 feet farther east, striking N. 17° E. and dipping 71° E., and the Helping Hand vein, about 100 feet farther east, striking N. 8° E. An easterly branch of the Ready Cash vein strikes from N. 45° to 60° E. and joins the Helping Hand vein about 600 feet northeast of the cabins. A chimney of high-grade silver ore is said to have been mined out at the junction. Another ore body was found in the Ready Cash vein just north of its junction with this branch vein, but south of the junction the Ready Cash fissure is mineralized very little. The ore found in the Helping Hand vein is chiefly galena with an appreciable content of silver. The vein filling in the Ready Cash commonly consists of brecciated granite cemented

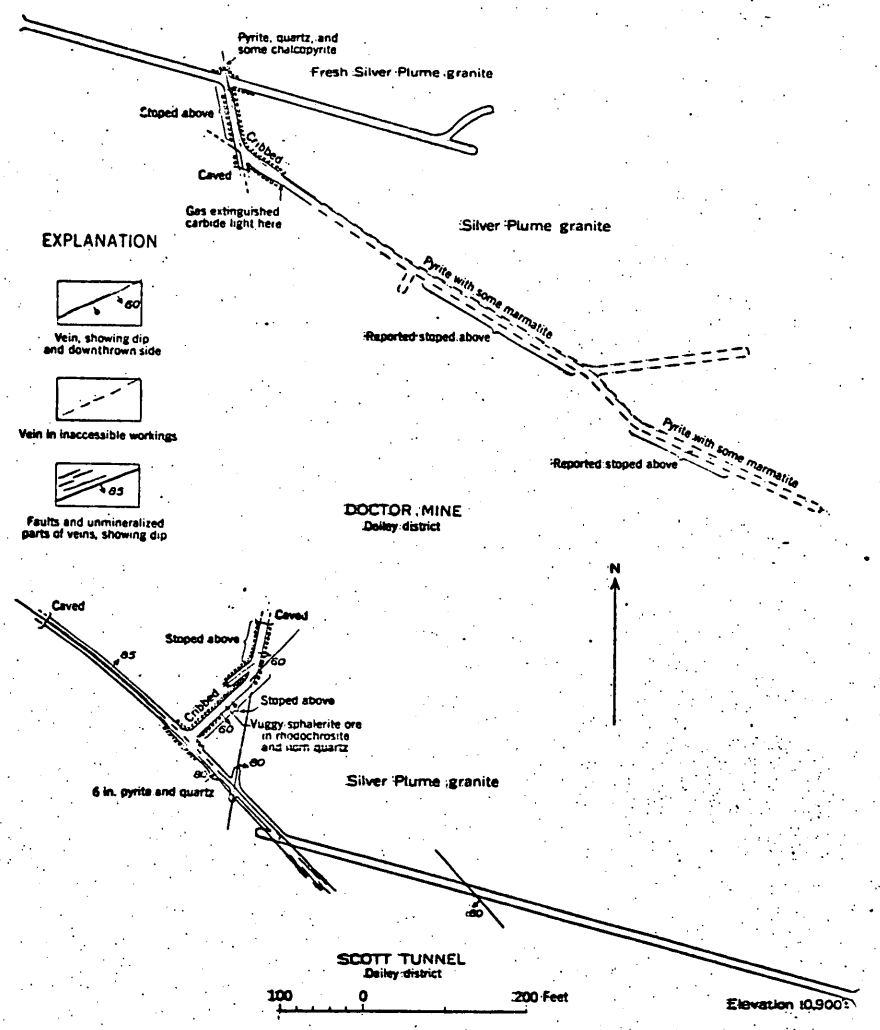


FIGURE 85.—Plan of the Doctor mine and Scott tunnel, Dailey district.

by horn quartz, with blackjack, galena, some rosin jack, gray copper, and a little ankerite. The high-grade ore assayed about 115 ounces of silver to the ton, according to A. C. Trout, the owner. The granite is strongly bleached and altered near the vein. Where seen by the writers, the ore-bearing part of the vein was approximately 6 inches wide, but according to Trout the ore shoot ranged in width from 3 to 24 inches and pitched about 45° S.

SCOTT TUNNEL

The Scott crosscut tunnel is 1.3 miles N. 80° E. of Jones Pass at an altitude of about 10,900 feet. The tunnel is more than 1,100 feet long, but in 1932, when visited by Lovering, the breast was not accessible. As shown in figure 85, the tunnel extends west-northwest into the mountain, crosscutting the Silver Plume granite which forms the country rock of the mine for a distance of 700 feet, and thence following a barren sheeted zone of northwesterly strike for 370 feet to a point where it was caved in 1932. Fifty feet beyond the point where the crosscut enters the northwesterly sheeted zone, a barren fissure striking N. 10° E. is cut. Eighty feet farther northwest a vein striking N. 45° E. has been followed northeastward to its junction with the N. 10° E. vein. At this junction the northeasterly fissure becomes barren, the vein material continuing

northward along the N. 10° E. vein. The granite is strongly altered in the area of mineralization, and the ground is very "heavy." Southwest of the intersection the northeasterly vein dips 60° SE., and the unmineralized fissure dips 80° E. North of the intersection the N. 10° E. vein dips 60° E. The vein has been stoped for an undetermined distance above the level, but the stopes were very wet and in bad condition in 1932. The vein itself could not be seen, but ore found on the dump had a width of 3 to 15 inches and was made up of nearly solid sulfides, chiefly dark sphalerite and galena with minor amounts of pyrite. The sulfides were cut by seams of quartz and rhodochrosite.

DOCTOR MINE

The Doctor mine is 1½ miles N. 75° E. of Jones Pass, at an altitude of 10,850 feet, and is entirely in Silver Plume granite. The mine is opened by two adits—a short upper tunnel and a lower tunnel, which is reported to extend east-southeast into the mountain for a distance of 1,100 feet. When examined by the writers, only a small part of the drift along the vein could be entered, as the air was so poor that a carbide lamp could not burn.

In 1932 there were several cabins about 100 yards south of the portal of the main crosscut tunnel and a small steam mill equipped with jaw crushers, ball mills, and tables.

The ore on the upper level occurs in a vein striking N. 15° E. and dipping steeply east (fig. 85). It is a lead-zinc ore containing a small amount of chalcopyrite and much pyrite. Fifty feet below, on the main adit level, the ore in this vein is extremely pyritic; very little chalcopyrite or galena was noted, but dark sphalerite in a few places made up approximately one-sixth of the ore. The vein fissure is a channel for a heavy flow of water; the wall rock on each side is much altered, and the ground is "heavy." The north-northeasterly vein intersects a west-northwesterly vein about 90 feet from the main crosscut, but because of the bad air the writers were unable to examine this vein in detail. According to Mr. E. P. Snyder, the former superintendent of the property, the northwesterly vein contained a maximum of 15 percent of zinc and 2 to 10 ounces of silver and about 0.04 ounce of gold to the ton, the highest of 100 assays showing 0.075 ounce of gold. Pyritic concentrates of this ore contained an average of about 0.2 ounce of gold to the ton, some zinc, and less than 1 percent of copper. The gangue is chiefly quartz, but some manganiferous ankerite is also present.

On the upper level the north-northeasterly vein is 3 to 4 feet thick, and some rich massive chalcopyrite ore was found north of the junction with the northwesterly vein. No ore was found to the south, however, and no ore is known on the northwesterly vein west of the junction. The flow of water at the intersection of the two veins is very strong, and the grade of ore exposed in the mine and on the dump offers little incentive to sink a shaft and pump out the water.

PUZZLER AND SCOTIA VEINS

The Puzzler vein is 3½ miles due east of Jones Pass, about half a mile northwest of the hairpin curve where U. S. Highway 40 starts its ascent from the valley of Clear Creek for Berthoud Pass. The vein is opened by a shaft, a level 200 feet long, and an adit 650 feet long, which is 70 feet below the shaft collar. The country rock in both levels is injection gneiss and Silver Plume granite; the foliation of the gneiss strikes about N. 50° W. and dips 40° NE. The vein itself strikes northeast at the shaft and dips 58° NW., but 50 feet northeast of the shaft the course of the vein changes abruptly to N. 82° E. Coincident with this change the seam of ore thickens and contains much more silver and gold than to the southwest. The vein is 2 to 3 feet thick and consists chiefly of greenish-blue quartz containing abundant disseminated pyrite and some secondary silver minerals. Native silver was observed resting on pink and brown ankerite crystals in vugs. According to E. P. Snyder, the lessee, the ore from the upper level, taken from the stope on the easterly fork, assayed 66 ounces of silver and 0.60 ounce of gold to the ton and contained no lead, zinc, or copper. Almost no sign of ore was seen along the lower adit until the change in course was reached, and even there the vein quartz was of comparatively low grade and was barren in many places. Near the breast, about 650 feet from the portal, a gougy seam between the vein and hanging wall contained visible molybdenite and was said to assay about 2 percent of MoS_2.

About 1,000 feet east of the Puzzler shaft a strong vein known as the Scotia strikes N. 20° E. If the Puzzler maintains its easterly course the two should intersect about 1,200 feet from the shaft. So far as is known this intersection has not been sought. About 250 feet west of U. S. Highway 40 the Scotia vein is exposed in a prospect on the Jones Pass road. There it strikes N. 10° E., dips 80° E., is about 5 feet wide, and is made up chiefly of brecciated, vuggy vein quartz containing a small amount of barite, calcite, manganosiderite, galena, chalcopyrite, and pyrite. According to Snyder, it contains less than half an ounce of gold to the ton. As the vein is followed along the strike, it apparently thickens where it shifts toward the northeast but pinches where it resumes its north-south trend.

URAD MINE

The molybdenite deposit at Camp Urad,[91] on Red Mountain, about 10 miles west of Empire, was first developed and mined by the Primos Chemical Co. in 1914 and 1915. In 1917 a deep crosscut tunnel (altitude 11,150 feet) was begun, and during World War I it was completed to a position beneath the upper workings, but the quantity and grade of mineralized rock did not encourage further development. Several thousand tons of molybdenite were produced up to 1918.

In 1942, because of the war demands for molybdenum, the Molybdenum Corporation of America, under contract with the Defense Plant Corp., undertook development of the deposit by raising 1,100 feet from the lower tunnel to the lower levels of the old Urad mine (altitude 12,250 feet). This raise was completed in 1943, and a 100-ton mill was erected. The property was finally purchased by the Molybdenum Corporation of America, and production started early in 1945.

In the vicinity of the mine, Silver Plume granite and some schist have been intruded by a small stock of granite prophyry of Tertiary age. The outcrop of the porphyry near the top of Red Mountain contains considerable pyrite, which has weathered to give the rock a dark-brown to red color. The surrounding rock is highly altered near the contact and contains small amounts of pyrite.

The molybdenite, associated with quartz and pyrite, occurs chiefly in veins and seams in the highly altered rock near the contact. Small amounts of rhodochrosite, galena, sphalerite, and fluorite have been found in stringers within the mineralized ground but not in sufficient quantity to constitute a serious milling problem. In the upper workings, the veins, which were the only source of ore in the earlier operations, are as much as 3 or 4 feet wide and have a molybdenite content of about 1 percent. The veins occupy a series of curved fractures, somewhat in the form of nested inverted cones, that partly encircle the porphyry stock on the south and west sides and dip steeply toward the center. Some of them curve from a westerly to a northwesterly course and finally enter the porphyry core. In addition to the conelike fractures, there are steeper radial fractures and joints.

In places the veins and other mineralized fractures are spaced closely enough to form rather large blocks of possible low-grade ore. The future of the deposit as a substantial source of molybdenite depends on the size and grade of such blocks around the periphery or within the edges of the intrusive body. Development work in 1944 was not advanced far enough to foretell the outcome, but the mineralized ground exposed in the raise 500 to 600 feet below the old workings looked promising.

ALLENS PARK DISTRICT

Prospecting in the vicinity of Allens Park during the eighties resulted in the discovery of gold and silver ores of low grade.[92] Sporadic but unsuccessful attempts to placer the boulder gravels of North St. Vrain Creek have been made at various times since.[93] According to local information, both northwesterly and northeasterly veins are present in the district, but during a brief visit the writers were unable to find any of the northeasterly veins. As shown on plate 2, the country rock of the region is chiefly Silver Plume granite. A zone of northwestward-trending breccia reefs passes through Allens Park. It is a continuation of the Maxwell breccia reef. The reefs strike about N. 75° W. and dip about 75° S. Grooves along the sides of the silicified breccia and wall rock and the displacement of the diabase Iron dike a mile southeast of Allens Park indicate that the north wall moved downward to the west at an angle of about 45°. The hematitic silicified breccia typical of these reefs was found in a number of shafts and pits near Allens Park, and in a few places small amounts of pyrite and chalcopyrite line vugs in the reefs. Only minor amounts of gold and silver are present in the primary ore, but the value of the vein material has been increased by secondary enrichment close to the surface, where its tenor has been sufficiently high to excite the interest of prospectors from time to time. It seems unlikely, however, that commercial ore deposits will be found in the breccia reefs in this region.

A weathered shear zone striking northeast was shown the writers as an example of the northeasterly silver veins, but the only signs of mineralization seen were a few thin seams of hematite, probably related to the nearby breccia reef. The northeasterly "vein" was reported to contain 2.5 ounces of silver to the ton but no gold.

At the intersection of the Iron dike and the main breccia reef 1½ miles southeast of Allens Park, a shaft was sunk and was reported to have cut low-grade cobalt ore at a depth of 100 feet. No cobalt ore was noted on the dump, however, but the sheared diabase of the Iron dike is cut by innumerable thin seams of hematite. About 1,000 feet southeast of the old "Cobalt mine" shaft the Iron dike is cut by an andesite porphyry dike striking northeast and dipping steeply to the northwest.

LAKE ALBION DISTRICT

The Lake Albion mining district is 5 miles west-southwest of Ward and includes parts of secs. 17, 18, 19, and 20, T. 1 N., R. 73 W. The Snowy Range mine, at

[91] Worcester, P. G., Molybdenum deposits of Colorado: Colorado Geol. Survey Bull. 14, pp. 47–50, 1919. Horton, F. W., Molybdenum, its ores and their concentration: U. S. Bur. Mines Bull. 111, pp. 66–67, 1916. Vanderwilt, J. W., The occurrence and production of molybdenum: Colorado School of Mines Quart., vol. 37, no. 4, p. 34, 1942. Vanderwilt, J. W., editor, Mineral resources of Colorado: State of Colorado Min. Res. Board, pp. 225–226, 1947. Burbank, W. S., oral communication.

[92] Van Diest, P. H., Mineral resources of Boulder County: Colorado School of mines Bienn. Rept., pp. 25–31, 1886.

[93] Lee, H. A., Report of State Bureau of Mines, Colorado, 1901–2.

APPENDIX D

SKYLINE LABS, INC.
SPECIALISTS IN GEOCHEMICAL EXPLORATION
12090 WEST 50TH PLACE • WHEAT RIDGE, COLORADO 80033 • TEL.: (303) 424-7718

REPORT OF SPECTROGRAPHIC ANALYSIS

Job No. M-1249
October 23, 1971

Jones Pass Venture
628 Patterson Building
Denver, Colorado 80202

Values reported in parts per million, except where noted otherwise, to the nearest number in the series 1, 1.5, 2, 3, 5, 7 etc.

Element	Sample Numbers D-1	D-2	G-1
Fe	2%	7%	10%
Ca	.15%	.3%	.5%
Mg	.2%	.1%	.05%
Ag	<1	200	20
As	<500	<500	<500
B	10	20	20
Ba	300	200	70
Be	<2	<2	<2
Bi	<10	700	<10
Cd	<50	<50	1000
Co	<5	<5	<5
Cr	10	<10	<10
Cu	<0	100	700
Ga	30	50	20
Ge	<20	<20	<20
La	150	100	<20
Mn	500	300	2000
Mo	<2	5	3
Nb	30	30	<20
Ni	<5	<5	<5
Pb	200	>10,000	>10,000
Sb	<100	<100	<100
Sc	<10	<10	<10
Sn	<10	20	<10
Sr	50	50	<50
Ti	3000	2000	100
V	30	30	10
W	<50	<50	<50
Y	20	10	20
Zn	200	500	>10,000
Zr	200	200	<20

Charles E. Thompson
Charles E. Thompson
Chief Chemist

SKYLINE LABS, INC.
SPECIALISTS IN GEOCHEMICAL EXPLORATION
12090 WEST 50TH PLACE • WHEAT RIDGE, COLORADO 80033 • TEL.: (303) 424-7718

REPORT OF ANALYSIS

Job No. M-1249
October 23, 1971

Jones Pass Venture
628 Patterson Building
Denver, Colorado 80202

3 Rock chip samples

Item	Sample No.	Au (ppm)	Ag (ppm)
1.	D-1	<.02	<.2
2.	D-2	.08	210.
3.	G-1	.07	32.

Charles E. Thompson
Chief Chemist

SKYLINE LABS, INC.
SPECIALISTS IN GEOCHEMICAL EXPLORATION
12090 WEST 50TH PLACE, WHEAT RIDGE, COLORADO 80033 TEL.: (303) 424-7718

REPORT OF ANALYSIS

Job No. M093
November 4, 1968

Dr. M. F. Cottrell
3289 Benton Street
Denver, Colorado 80212

1 Galena and 1 Vein Sample

Sample No.	Au (ppm)	Ag (ppm)	Pb (ppm)	Zn (ppm)
#1	-	28 oz. 950.	-	-
#2	.08	2.0	3200	4500

over Dr Mines

Sample 1 from south cut on Vein B
Sample 2 from dump of Doctor Mine

Charles E. Thompson
Chief Chemist

SKYLINE LABS, INC.
SPECIALISTS IN GEOCHEMICAL EXPLORATION
12090 WEST 50TH PLACE • WHEAT RIDGE, COLORADO 80033 • TEL.: (303) 424-7718

REPORT OF ANALYSIS

Job No. M-1144
September 1, 1971

Jones Pass Venture
628 Patterson Building
Denver, Colorado 80202

3 Rock chip samples

Item	Sample No.	Pb (%)	Au oz/T	Ag oz/T
1.	Channel cut above Doc. Mine A Dark	9.25	.006	1.4
2.	Channel cut above DOc. Mine B light	.135	<.001	.03
3.	Portal above Jones Pass Road	1.85	.002	.48

Samples 1 & 2 from Vein B

Charles E. Thompson
Chief Chemist

ASSAYING
ORE TESTING
ORE SAMPLING

Colorado Smelting & Refining Co.

PLANT No. 1—1277 So. Cherokee St.
Phone SP. 1203 Denver, Colorado

PLANT No. 2—Gorham Post Office
Boulder County - Colorado

ORE MILLING
SMELTING AND REFINING
HI-GRADE ORES,
CONCENTRATES AND
PRECIPITATES

REPORT OF ASSAYS

FOR (AUSTIN MILLING CORPORATION,
(C/O H.H.AUSTIN, DENVER, COLO.

DATE MAY 5TH-1937.

DESCRIPTION OR NUMBER	GOLD OUNCES PER TON	SILVER OUNCES PER TON	LEAD PER CENT	ZINC PER CENT	COPPER PER CENT	
YOUR SAMPLE: DOCTOR NO.1 (ORE) -	0.24 oz.	10.92 oz	0.3 %	11.2 %		31.83
YOUR SAMPLE: DOCTOR NO.2 (ORE) -	0.54 oz.	36.00 oz	5 %	11.5 %	X	
YOUR SAMPLE: DOCTOR NO.3 (ORE) -	0.30 oz.	3.34 oz	0.2 %	3.1 %		27.57
~~YOUR SAMPLE: DOCTOR NO.4 (ORE)~~	~~0.06 oz.~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~		
YOUR SAMPLE: DOCTOR NO.5 (ORE) -	0.12 oz.	3.12 oz	0.25%	1.5 %		

GOLD AT $ 35.00 PER OZ.

SILVER AT $ 0.77 PER OZ.

CHARGES $ 12.50 PAID

Colorado Smelting & Refining Co.

By Theo. J. Swisher

(THEO.J.SWISHER)

9

ASSAYING
TEST SAMPLING

Colorado Smelting & Refining Co.

SOUTH DENVER STATION
1277 SO. CHEROKEE ST.
Phone SPruce 1203, Denver, Colorado

SMELTERS AND REFINERS
HI-GRADE ORES AND
CONCENTRATES

REPORT OF ASSAYS

FOR MR. HAROLD COOK,
DENVER, COLO.

DATE AUGUST 13TH-1936.

DESCRIPTION OR NUMBER	OUNCES PER TON		GOLD @ $35.00	SILVER @ 77¢	TOTAL.
	GOLD	SILVER			
YOUR SAMPLE: TIMBERLINE NO.2 ORE -	0.06 oz	0.34 oz	$ 2.10	$ 0.26	$ 2.36
YOUR SAMPLE: TIMBERLINE NO.3 ORE -	0.08 oz	0.44 oz	$ 2.80	$ 0.35	$ 3.15
YOUR SAMPLE: TIMBERLINE NO.4 ORE -	0.06 oz	48.40 oz	$ 2.10	$37.26	$39.36
YOUR SAMPLE: TIMBERLINE HEADS------	0.06 oz	0.76 oz	$ 2.10	$ 0.56	$ 2.66

CHARGES $ 6.00

PAID

Colorado Smelting & Refining Co.
BY Theo. J. Swisher
(THEO. J. SWISHER)

#3
for Mr. Martin

ASSAYING
TEST SAMPLING

Colorado Smelting & Refining Co.

SOUTH DENVER STATION
1277 SO. CHEROKEE ST.

SMELTERS AND REFINERS
HI-GRADE ORES AND
CONCENTRATES

Phone SPruce 1203 Denver, Colorado

REPORT OF ASSAYS

FOR H. H. AUSTIN,
DENVER, COLO.

DATE JULY 22nd-1936.

DESCRIPTION OR NUMBER	OUNCES PER TON		GOLD @ $35.00	SILVER @ 77¢	TOTAL
	GOLD	SILVER			
4' vein YOUR SAMPLE NO.1 (ORE)	0.02 oz	22.23 oz	$ 0.70	$17.07	$17.77
Vogl Wash Dump 2" vein	2.26	48.10	79.10	37.06	116.16

CHARGES PAID.

THANK YOU.

(7)

Colorado Smelting & Refining Co.

BY Theo. J. Smedley
(THEO. J. SMEDLEY)

FORM C-247
2M—1-84

AMERICAN SMELTING AND REFINING CO.

ARKANSAS VALLEY PLANT

LEADVILLE, COLO. Aug 7, 1948

BOUGHT OF Phillips Brothers (Doctor Lode Mining Claim) LOT NO. SMELTER 1677 MINE 1

ADDRESS (90%) (COPY) CLASS Cts. SHIPPING POINT Empire Colo.

QUOTATIONS OF 7/26-31/48 SILVER .90 LEAD 18.833 COPPER

ASSAYS	GOLD OZ. PER TON	SILVER OZ. PER TON	LEAD PER CENT	COPPER PER CENT	INSOL. PER CENT	IRON PER CENT	MANGANESE PER CENT	LIME PER CENT	ZINC PER CENT	SULPHUR PER CENT
A. S. & R. CO.	0.03	6.0	7.0						3.8	
SHIPPER	0.05	6.5	7.1						3.6	
UMPIRE										
SETTLEMENT ASSAY	0.04	6.25	7.05	0.0	5.6	36.2	0.03		3.7	44.3

CAR INITIAL	NUMBER	WEIGHT	FROZEN WT.
Trucked.		4152	

PAYMENTS PER TON			DEDUCTIONS PER TON	
GOLD 31.81825	@	1.27	BASE CHARGE	5.750
SILVER less 1 oz.	@	4.72	INSOLUBLE	
LEAD LESS 1.5 90% 3% 3886	PER UNIT	16.93	ZINC	
COPPPER, LESS @	PER UNIT		SULPHUR	2.500
GROSS VALUE OF METALS		22.92	EXCESS VALUE	
			IRON CREDIT	
			LIME CREDIT	
			LEAD CR OR DR	
LESS TOTAL DEDUCTIONS		8.25	TOTAL DEDUCTIONS	8.250

WEIGHT OF LOT 4152

WEIGHT OF SACKS

WET WEIGHT

LESS MOISTURE 5.8 %

DRY WEIGHT 3911 @ $ 14.67 PER TON $ 28.69

DATE LOT RECEIVED 7/31/48

FREIGHT ADVANCED, @

FEDERAL TRANSPORTATION TAX

MOISTURE 5.00

SAMPLING 3.00

FROZEN ORE Wilbar Smith

UMPIRE

SWITCHING & FEDERAL TRANS. TAX

HAULING & TRANSPORTATION TAX 2.37

ROYALTY 10% Gunda C Swarens

THIS LOT CONTAINS 12 OZS. OF SILVER

CORRECT WR

CHECKED JC

RATES, EXCEPT ON CONTRACTS, SUBJECT TO CHANGE WITHOUT NOTICE.

NET PROCEEDS $ 18.32

FORM C-247
2M—1-54

AMERICAN SMELTING AND REFINING CO.

ARKANSAS VALLEY PLANT

LEADVILLE, COLO. Aug 7,1948

BOUGHT OF Phillips Brothers (Doctor Lode Mining Claim)

LOT NO. { SMELTER 1678 / MINE 2

ADDRESS (900) (COPY) CLASS Crude SHIPPING POINT Empire, Colo.

QUOTATIONS OF 7/26-31/48 SILVER .90 LEAD 18.833 COPPER

ASSAYS	GOLD OZ. PER TON	SILVER OZ. PER TON	LEAD PER CENT	COPPER PER CENT	INSOL. PER CENT	IRON PER CENT	MANGANESE PER CENT	LIME PER CENT	ZINC PER CENT	SULPHUR PER CENT
A. S.& R. CO.	0.12	13.0	3.6						5.6	
SHIPPER	0.14	13.3	3.7						4.5	
UMPIRE										
SETTLEMENT ASSAY	0.13	13.15	3.65	0.0	44.0	21.0		0.04	5.05	19.8

CAR INITIAL	NUMBER	WEIGHT	FROZEN WT.
Trucked.		1158	

PAYMENTS PER TON			DEDUCTIONS PER TON	
GOLD 31.81825	@	4.14	BASE CHARGE	5.750
SILVER Lessloz.	@	10.93	INSOLUBLE	2.500
LEAD, LESS 1.5 90% 3@3886	PER UNIT	6.56	ZINC	
COPPPER, LESS @	PER UNIT		SULPHUR	2.500
GROSS VALUE OF METALS		21.63	EXCESS VALUE	
			IRON CREDIT	
			LIME CREDIT	
			LEAD CR OR DR	
LESS TOTAL DEDUCTIONS		10.75	TOTAL DEDUCTIONS	10.750

WEIGHT OF LOT 1158

WEIGHT OF SACKS

WET WEIGHT

LESS MOISTURE 1.0 %

DRY WEIGHT 1146 @ $ 10.88 PER TON $ 6.23

DATE LOT RECEIVED 7/31/48

FREIGHT ADVANCED, @

FEDERAL TRANSPORTATION TAX

MOISTURE

SAMPLING 10.00

FROZEN ORE Wilbar Smith 3.00

UMPIRE

SWITCHING & FEDERAL TRANS. TAX

HAULING & TRANSPORTATION TAX

ROYALTY

THIS LOT CONTAINS 8 OZS. OF SILVER

CORRECT WR

CHECKED JC

RATES, EXCEPT ON CONTRACTS, SUBJECT TO CHANGE WITHOUT NOTICE.

NET PROCEEDS $ 6.77 (RED)

FORM C-247
2M—1-54

AMERICAN SMELTING AND REFINING CO.

ARKANSAS VALLEY PLANT

LEADVILLE, COLO. August 19, 1948

LOT NO. SMELTER 1764 MINE 3

BOUGHT OF Phillips Brothers (Doctor Lode Mining Claim)

SHIPPING POINT Empire Colo.

ADDRESS (COPY)

CLASS Cts

QUOTATIONS OF 8/9-14/48 SILVER .90 LEAD 19.50 COPPER 23.075

ASSAYS	GOLD OZ. PER TON	SILVER OZ. PER TON	LEAD PER CENT	COPPER PER CENT	SOL. PER CENT	IRON PER CENT	MANGANESE PER CENT	LIME PER CENT	ZINC PER CENT	SULPHUR PER CENT
A. S.& R. CO.	0.04	5.7	6.9	0.2					3.7	
SHIPPER	0.07	5.9	7.3	0.4					3.8	
UMPIRE										
SETTLEMENT ASSAY	0.055	5.8	7.1	0.3	6.4	35.8		0.02	3.75	42.3

CAR INITIAL	NUMBER	WEIGHT	FROZEN WT.
Trucked.		6872	

PAYMENTS PER TON			DEDUCTIONS PER TON	
GOLD	$1.81925 @	1.75	BASE CHARGE	8.000
SILVER	Less 1.0 @	4.32	INSOLUBLE	
LEAD, LESS 5 90%	@ .522 PER UNIT	17.75	ZINC	
COPPPER, LESS	1.0 @ PER UNIT		SULPHUR	2.500
GROSS VALUE OF METALS		23.82	EXCESS VALUE	
			IRON CREDIT	1.470
			LIME CREDIT	
			LEAD CR OR DR	1.290
LESS TOTAL DEDUCTIONS		10.32	TOTAL DEDUCTIONS	10.320
	@	$ 13.50	PER TON $	42.67

WEIGHT OF LOT 6872

WEIGHT OF SACKS

WET WEIGHT

LESS MOISTURE 8.0 %

DRY WEIGHT 6322

DATE LOT RECEIVED 8/10/54

FREIGHT ADVANCED, @	
FEDERAL TRANSPORTATION TAX	
MOISTURE	5.00
SAMPLING	3.00
FROZEN ORE Wilbar Smith	
UMPIRE	
SWITCHING & FEDERAL TRANS. TAX	
HAULING & TRANSPORTATION TAX	3.77
ROYALTY 10% Gunda C Swarens	

THIS LOT CONTAINS 18 OZS. OF SILVER

CORRECT WR

CHECKED JC

NET PROCEEDS $30.90

PRICES, EXCEPT ON CONTRACTS, SUBJECT TO CHANGE WITHOUT NOTICE.

APPENDIX E

APPENDIX E
SUMMARY OF ECHO VALLEY MINING COMPANY AND ITS PRINCIPAL STOCKHOLDERS

Echo Valley Mining Company, a Colorado Corporation, was organized and incorporated February 3, 1972. Seven of the eight principal stockholders are the seven participants in Jones Pass Venture, formed in May 1971, for the purpose of investigating and acquiring possession, if warranted, of the mining claims which subsequently became the property of Echo Valley Mining Company.

The authorized stock of the Company is presently 50,000 shares, no par value, of which 36,360 shares have been issued in equal amounts to each of the seven participants and also to an eighth party from whom the claims were initially optioned by Jones Pass Venture. Unaudited records of Jones Pass Venture show that capital contributions and services rendered by the participants, on a cash value basis, totalled $33,960.05 at the time Echo Valley Mining Company was organized and the mining properties acquired and assigned thereto. The Company's only major assets at this time are the various mining claims shown on Plate I, for which this application is beingmade.

The office of the Company is located at 628 Patterson Building, Denver, Colorado 80202, and the Company retains as its legal Counsel, Mr. Joseph O. Young, Attorney, Colorado State Bank Building, Denver, Colorado 80202. There are no regular paid employees, and all the Officers and Principal Stockholders have

full-time occupations that do not relate to the Company's activities.

The Officers and Principal Stockholders are as follows:

Charles L. Cherry, President

Chester A. Jones, Vice President

William A. Gillespie, Vice President-Exploration

Paul W. Fairchild, Secretary-Treasurer

James W. Mallin, Stockholder

Robert E. Gross, Stockholder

Wayne A. Veeneman, Stockholder

* Gunda C. Swarens (Mrs.), Stockholder

* Not a participant in Jones Pass Venture

WEST - EAST SECTION

ECHO VALLEY MINING COMPANY TUNNEL

Projection Along Vein 'A'

Scale 1" = 100'

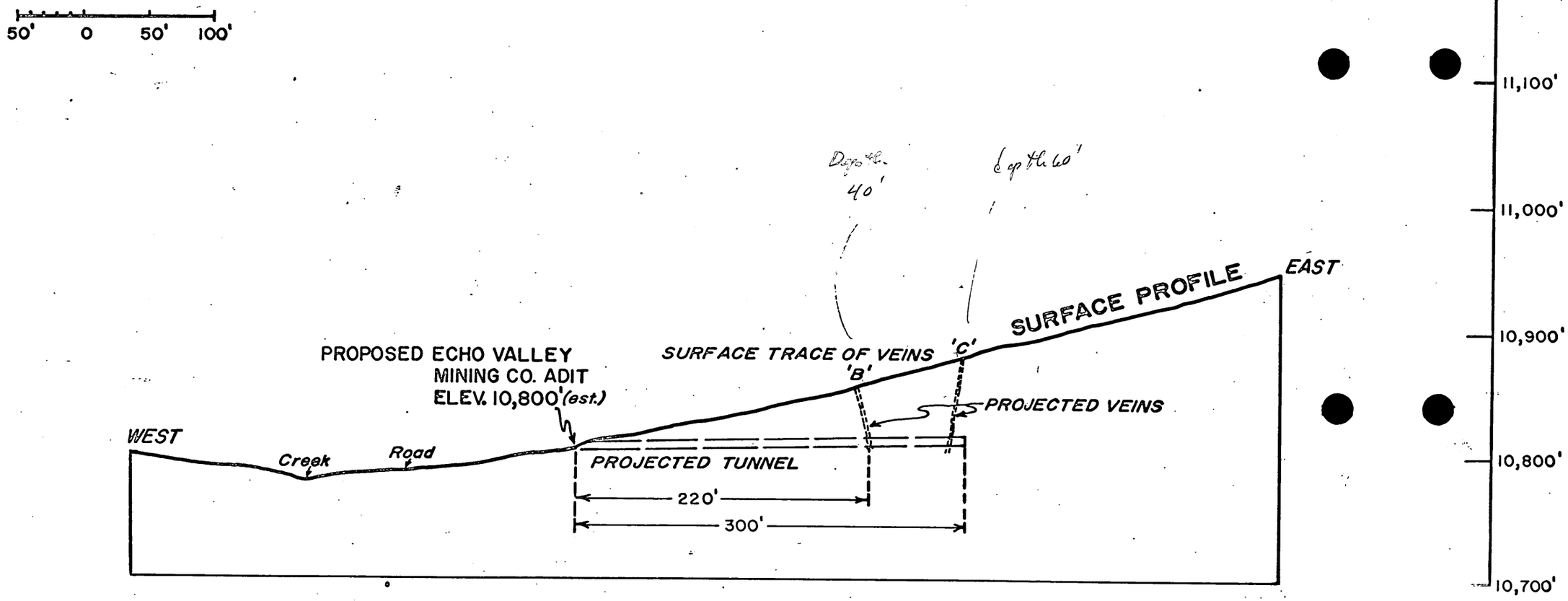


FIGURE I

NORTHEAST - SOUTHWEST SECTION

ECHO VALLEY MINING COMPANY TUNNEL

Projection Along Vein 'C'

Scale 1" = 100'

50' 0 50' 100'

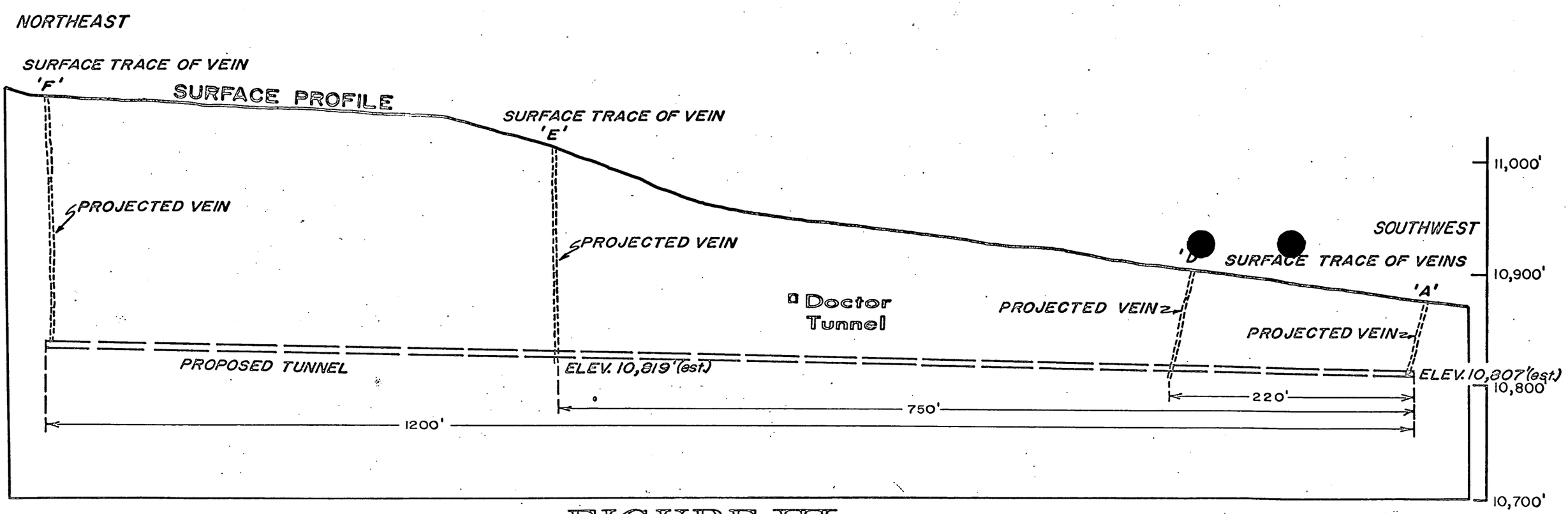


FIGURE III

NORTH - SOUTH SECTION

ECHO VALLEY MINING COMPANY TUNNEL

Projection Along Vein 'B'

Scale

50' 0 50' 100'

depth: 50'

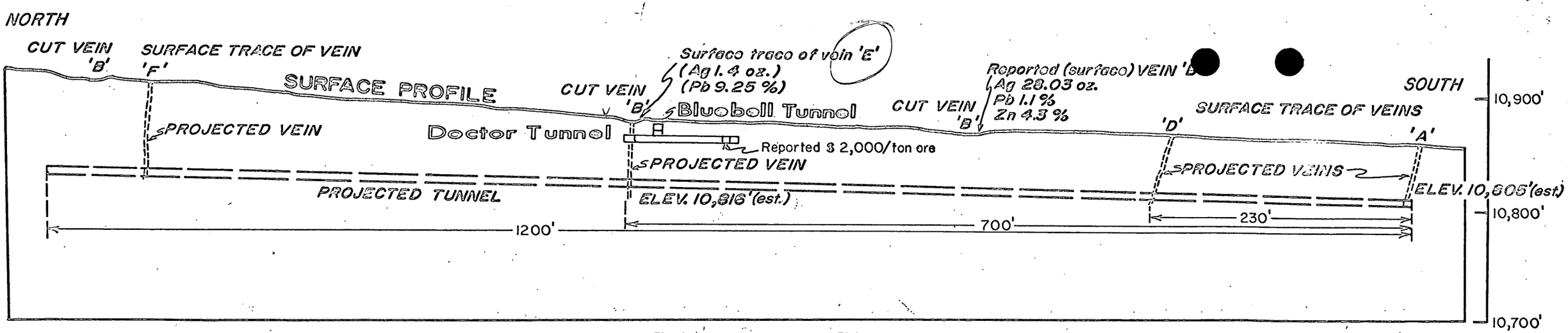
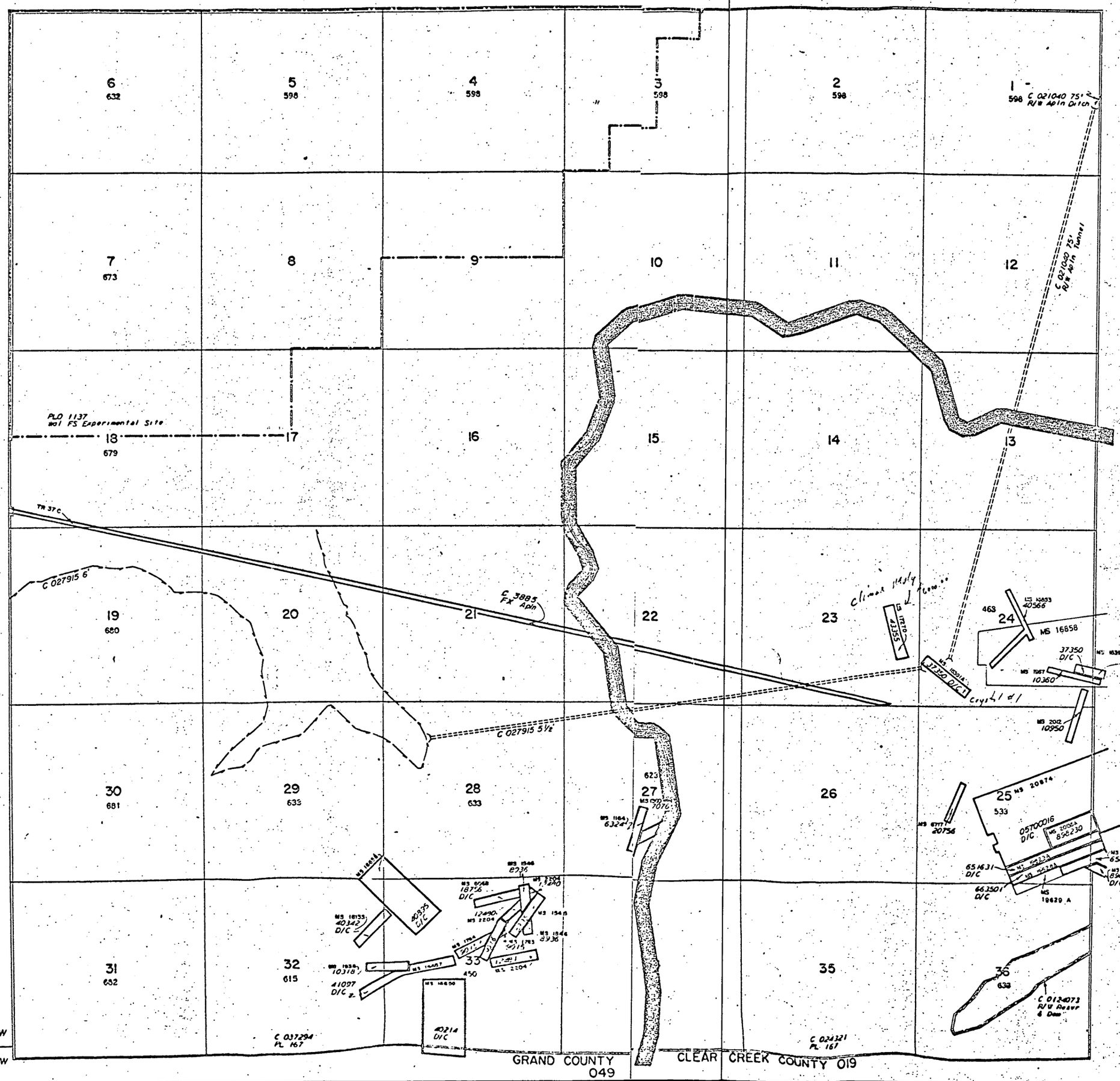


FIGURE II

Proclamation Diagram No. 1 accepted 11/12/1958

STATUS OF PUBLIC DOMAIN
LAND AND MINERAL TITLES

MT PLAT



INDEX TO SEGREGATED TRACTS				
RESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISION
37C	3S	76W	18	M&B
	"	"	19	M&B
	"	"	20	M&B
	"	"	21	M&B
	"	"	22	M&B
	"	"	23	M&B
	3S	77W	13	M&B
	"	"	14	M&B
	"	"	15	N&B
	"	"	16	S½N½SW¼NW¼, S½SW¼NW¼, SE¼NW¼SE¼NW¼, W½SW¼SE¼NW¼, M&B

FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER AND/OR OTHER PUBLIC PURPOSES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS.

All Tp included in Wdl Arapaho NF EO 7513 12/06/1936

C 024321 Determination PL 167 (Act of Cong 7/23/1955) completed 9/25/1962. All NF surface management by USFS except Jim, EGH No 3, Jack, EGH No E, Jerry Lode mining claims in Secs 25, 35.

C 037294 Determination PL 167 (Act of Cong 7/23/1955) completed 11/1/1962. All NF surface management by USFS

CURRENT TO	BY

GS DO 02
M PA 40

INSTRUCTIONS FOR USE

1. Void Previously Used Block

Standard Form No. 65
November 1961
General Services Administration
FPMR (41 CFR) 101-11.6

U.S. Government Messenger Envelope

NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM	
Mrs. McAllister WDS - USGS 1200 S. Eads, Arl, Va	STOP		STOP
	STOP	Alf Mail Property Control Section U.S. Geological Survey Washington, D.C.	STOP
	STOP		STOP
	STOP		STOP
Marjorie Hooker Rm 224 801 17th ST	STOP	SPECIAL	STOP
	STOP		STOP 209
	STOP	Jane Williams 4238	STOP
Chief, Denver Distribution Section U. S. Geological Survey Denver Federal Center - Bldg. 41 Denver, Colorado 80225 AIR MAIL POUCH	STOP	~~H. Kikuno~~ ~~Rm 4461 Interior Bldg.~~	STOP
	STOP		STOP
	STOP		STOP

Use other side

Use STOP only when messenger service between Government buildings in Washington, D.C., is required or wherever a STOP system is used. Your mail room has STOP information.

65-107

Maps
OME 6878
Echo Valley Mining

2. Identify Agency of Addressee
3. Write Clearly
4. Send Surplus Envelopes to Supply Room for Reissue

NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM	
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP

Use other side first

☆ U. S. GOVERNMENT PRINTING OFFICE: 1970-396-498/1

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
1-18	Weeks	

JAN 23 1973

Mr. Charles L. Cherry
President
Echo Valley Mining Company
628 Patterson Building
Denver, Colorado 80202

Re: OME-6878 (Silver-Gold)
Echo Valley Mining Company
Doctor Mine
Clear Creek County, Colorado

Dear Mr. Cherry:

In accordance with your letter of January 11, 1973, we consider your application as withdrawn, and have transferred it to our inactive files.

If you decide at a later date to reapply for OME assistance, you could reinstate the application by referring to this docket number and furnishing up-to-date data where it is required.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's reading file
Mineral Resources
OME reading file
Region III
Mr. Weeks
130

RWeeks:cac 1/18/73

ECHO VALLEY MINING COMPANY

628 Patterson Building

Denver, Colorado 80202

(303) 255-0153

January 11, 1973

OFFICIAL COPY
O. M. E.
RECEIVED
JAN 17 1973
INITIALS | CODE
Cec | 120 M
| 130
HK | 120
Rau | BW

Mr. Harold Kirkemo
Chief, Office of Mineral Exploration
United States Department of the Interior
Washington, D.C. 20242

Re: OMB-6878 (Silver-Gold)
Echo Valley Mining Company
Doctor Mine
Clear Creek County, Colorado

Dear Mr. Kirkemo:

Thank you for your letter of December 7, 1972 in which you suggested that we withdraw our application for exploratory assistance from your department as the evidence of the presence of eligible minerals was not sufficient in your opinion to qualify our project for such assistance. Needless to say, I was very disappointed in your response as I have a high regard for the economic potential of our project and it is our intention to continue with our exploratory program on a smaller scale to verify our opinions.

In view of our intentions, I respectfully request that you put our application on an inactive status until such a time as we can acquire more evidence to support it.

Thank you for your consideration and efforts on our behalf.

Very truly yours,

Charles L. Cherry

Charles L. Cherry
President

CLC:ch
copy: Mr. J. William Hasler

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
12/7/72	12/7/72 W. Ches	120
		120
		220

AIRMAIL

Mr. Charles L. Cherry
President
Echo Valley Mining Company
628 Patterson Building
Denver, Colorado 80202

Re: OME-6878 (Silver-Gold)
Echo Valley Mining Company
Doctor Mine
Clear Creek County, Colorado

Dear Mr. Cherry:

We have reviewed your letter of October 6, 1972, and Exhibit A describing a revised plan of exploration which is estimated to cost $64,065.00.

This information together with that previously submitted indicates that the probable content of eligible minerals in the target veins is not sufficiently certain to qualify the proposal for the OME program. Unfortunately, inaccessibility of the mine workings precludes on-site mapping, sampling, and subsequent assaying to determine the general content of metals in those veins. To obtain access into these workings presumably would be a costly project because of the heavy ground and abundant water. In view of this situation, we suggest that you consider withdrawing the application.

If, sometime in the future, access is gained into that portion of the mine which you propose to explore, you may reactivate the application by submitting the necessary sample and assay data. Expenditure of a considerable sum of money to reopen the mine for examination in connection with an OME application may not be commensurate with the modest support that OME could offer in the event of a contract.

Please let us know if you wish to withdraw the application.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Mineral Resources
OME Docket
OME Reading File
OME Region III
Mr. Weeks

RAWeeks/gla 12-7-72

Kirk: 1-8

The revised program is more nearly feasible than the original one, ~~but~~ I have reservations about horizontal drilling as a means of testing a target, and even larger reservations about inclined shafts in heavy ground that makes abundant water.

Should we refer it to the Field for recommendations? Also, Paul Theobald should be consulted about general feasibility.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
FEDERAL CENTER, DENVER, COLORADO 80225

Office of Minerals Exploration
Building 53 Room 28

November 2, 1972

OFFICIAL COPY
O. M. E.
RECEIVED
NOV 6 1972

INITIALS	CODE
Cal	120
gla	130
	120
law	130

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III

Subject: OME-6878 (Silver-Gold)
Echo Valley Mining Company
Doctor Mine
Clear Creek County, Colorado

Transmitted herewith is a revised exploration proposal from the applicant. The total estimated cost of the new proposal is $64,065.00 and is of course much more reasonable than the first program they proposed.

The applicant has not obtained bids for the work that must be contracted such as the sinking of the incline, drifting, diamond drilling, and assaying. I have discussed these items with him explaining also that we need to know the metals for which he is to assay for, as well as the frequency of sampling and the total number of assays estimated. He will send the bids to you with a copy of each bid to me.

The applicant proposes to diamond core drill down and on the vein. I cautioned him of this type of sampling and recommended that he drift on the vein and sample adequately instead of drilling as he is requesting.

The Doctor Mine, according to past history, has had some production during early Colorado mining history. Conversations with T. S. Lovering, U.S.G.S., indicate that when he examined the property many years ago the Doctor Mine vein was not too promising in that pods along the vein were very sporadic, and not too high grade over extended lengths of the vein.

The property is now inaccessible for a field examination due to some recent heavy snowfalls at elevations above 8,500 feet.

I duplicated the revised application and am retaining a copy in the Region III files.

J. William Hasler

Enclosure

J. William Hasler, Field Officer, Region III
Office of Minerals Exploration

ECHO VALLEY MINING COMPANY
628 PATTERSON BUILDING
DENVER, COLORADO 80202

OCT 10 1972

October 6, 1972

Re: OME 6878 (Silver-Gold)
Echo Valley Mining Company
Doctor Mine
Clear Creek County, Colorado

Mr. Harold Kirkemo, Chief
Office of Minerals Exploration
United States Geological Survey
Washington, D. C. 20242

Dear Mr. Kirkemo:

Thank you for your prompt reply by letter dated August 29, 1972. We have carefully considered the suggestions you have made relating to the program we proposed in our application for financial assistance dated June 26, 1972, and we now propose a much less expensive program aimed directly at proving or disproving the likelihood of the presence of a commercial deposit of eligible minerals in the immediate vicinity of the old Doctor Mine. This program, costing an estimated $64,065.00, is described in detail in the enclosed revision of Exhibit A for the application, which includes a map and cross section to illustrate the work we now propose doing.

In summary, the program provides for (1) driving a new inclined shaft to intersect the most promising vein system about 245 feet in from the entry, at a point approximately 50 feet south of and 100 feet below the level of the old Doctor Mine tunnel, (2) then drifting north about 200 feet along the vein system to investigate its intersection with another vein in the vicinity where a vein of silver-rich galena was reportedly encountered in the Doctor Mine, and (3) coring horizontally underground for a total of about 1,000 feet from two different stations to explore the possible extensions both of this and other nearby veins which appear to intersect it. This will enable us to directly examine and sample three attractive silver-bearing galena occurrences, which assays show contain between 22 and 48 ounces of silver per ton, as well as a gold bearing porphyry. If these do not provide a significant discovery, then it is doubtful that one can be made in this area at reasonable depths.

Our plans now would be to commence the program late next spring as soon as the weather will permit, say, about June 15, and complete it by about October 15.

As indicated in our letter of August 18, 1972, we believe there is good evidence for the occurrence in the Doctor Mine area of near surface high grade ore concentrations which, if their exact location and extent can be determined, may be commercially mined either by stripping or underground stoping methods.

Accordingly, we respectfully request that you reconsider our application for financial assistance in view of the revisions we have made in our proposed exploration program.

Very truly yours,

ECHO VALLEY MINING COMPANY

Charles L. Cherry

Charles L. Cherry, President

CLC/cj

EXHIBIT A

UNDERGROUND MINERAL EXPLORATION PROJECT

ECHO VALLEY MINING COMPANY

GENERAL PROVISIONS

The purpose of this project is to conduct exploration by drifting and coring underground in a mineralized vein system containing silver-rich galena, with some gold, zinc and copper. This vein system is exposed in pre-Cambrian rocks on the surface in the Doctor Mine area, east of Jones Pass in northwestern Clear Creek County, Colorado. Some of the veins have previously been explored at a shallow depth in the Doctor Mine with apparently marginal success but heavy ground conditions, bad timbers and water flow precluded safe re-entry of the existing workings except for the first few tens of feet. Nevertheless, two reports on the mine, old assays from the mine, a more recent assay from a surface cut along the vein system south of the mine, and an assay obtained from a surface cut above the mine all indicate a potentially commercial deposit of silver-bearing galena with other associated minerals, including gold, which warrants further exploration.

DESCRIPTION OF WORK

Echo Valley Mining Company intends to start, as soon as weather permits in early 1973, an underground mineral exploration program outlined as follows:

(1) Commence mining operations approximately 50 feet south of the Doctor Mine Portal by sinking an inclined shaft due east on an inclination of 26° for approximately 245 feet. This shaft will cut the 4 foot silver rich vein examined by Dr. Harold Cook and described in his report (See Appendix B) which carries silver and gold worth close to $ 60.00 per ton on today's market plus associated

galena and zinc. The shaft will also explore the 85' porphyry dike described by Cook that carries gold worth close to $ 6.00 per ton on today's market. This shaft will terminate where Vein B is cut at a depth approximately 100 feet below the Doctor Mine cross-cut.

(2) Drift north along Vein B for 200 feet to explore at depth the intersection of Vein B with the megashear zone of which Vein E is the predominant feature. This is the area where very high grade ore was reported in the Doctor Mine cross-cut by the previous owner to be around $ 2,000.00 per ton in silver-rich galena ore.

(3) Commence 950-1000 feet of diamond coring from two underground stations as follow:

a) Core approximately 400 feet north along Vein B from the north face of the drift through the intersection of Vein B and Vein F.

b) Core approximately 300 feet northeast from the foot of the inclined shaft to the intersection of Veins C and E. Vein C has a very pronounced surface expression even under the glacial debris and slump and it may very well be highly mineralized at this depth and should be explored.

c) Core approximately 250 feet south from the foot of the incline along Vein B to the area where a surface sample of silver-rich galena ore assayed at 28 ounces of silver per ton was taken from a cut.

The drift and inclined shaft will be 7' X 8', totalling about 445 feet. It is contemplated that two six foot rounds will be completed per day; thus the mining operation will require about 2 months working 5-day weeks. The coring stations will be 15' X 15'. The horizonal cores now planned are shown on the attached map, which also shows the locations of the inclined shaft and the drift to the north. A diagrammatic cross-section of the proposed drift with its relationship to the surface exposure and position of the vein system in the Doctor Mine also is attached. The entire project should be completed in about 4 months.

This proposed work and its relationship to the major geologic features, other workings and surveyed land boundaries are described in Exhibit B, "Geologic Report and Proposal for Underground Mineral Exploration Program, Jones Pass Area".

EQUIPMENT

The equipment to be utilized is as follows:

1. Transport: Rock removal to be accomplished using 60 cubic feet rocker dump cars and 30 # track. Cable hoist.
2. Ventilation: The system will consist of 18" flexible ducting with the air circulation by an 18" electric fan.
3. Timbering: 8" X 8" square sets placed on 7'6" centers, using 3" back lagging and 2" side lagging.
4. Water and air lines: Water lines will be 1 inch in diameter and air lines will be 2 inches in diameter.
5. Mucking: Eimco 12B mucker or its equivalent.
6. Compressed air and power: Two 600 C.F.M. compressors for air and a 10 K.V.A. generator for power.

All equipment, labor and general supervision is to be supplied by a general contractor.

ESTIMATED COSTS OF PROJECT

1. Fixed Unit Costs

Category (a) - Independent contracts (Cost estimates submitted with original application)

Cutting and leveling dump, grading work area 20 hours @ $18.00/ hour	$ 360.00
Constructing 12' X 20' shop and warehouse, light construction, including materials	2,100.00
Installing track and collars, including materials	2,375.00
Sink 245' of 7' X 8' inclined shaft (approx, 26°), All-inclusive contract @ $90.00/ft.incl.hoist	22,230.00
Drive 200' of 7' X 8' tunnel (north drift), all-inclusive contract @ $65.00/ft. plus $20.00/ft. for anticipated heavy ground= $85.00/ft.	17,000.00
Water removal, new workings and possibly from old Doctor Mine, approximate	3,000.00
Underground coring stations, 15' X 15', 2 each @ $800.00	1,600.00
Underground coring,*1,000 ft. @ $9.00/ft.	9,000.00
Assays and core analyses	2,400.00
Office expense, 4 months @ $75.00 per month	300.00
Accounting, auditing, reporting	500.00
Restoration of work area, approximate	1,000.00

* Includes 50 feet additional above amounts shown on attached map.

Category (b) - Personal Services

Subcategory (a) - Supervision and technical services

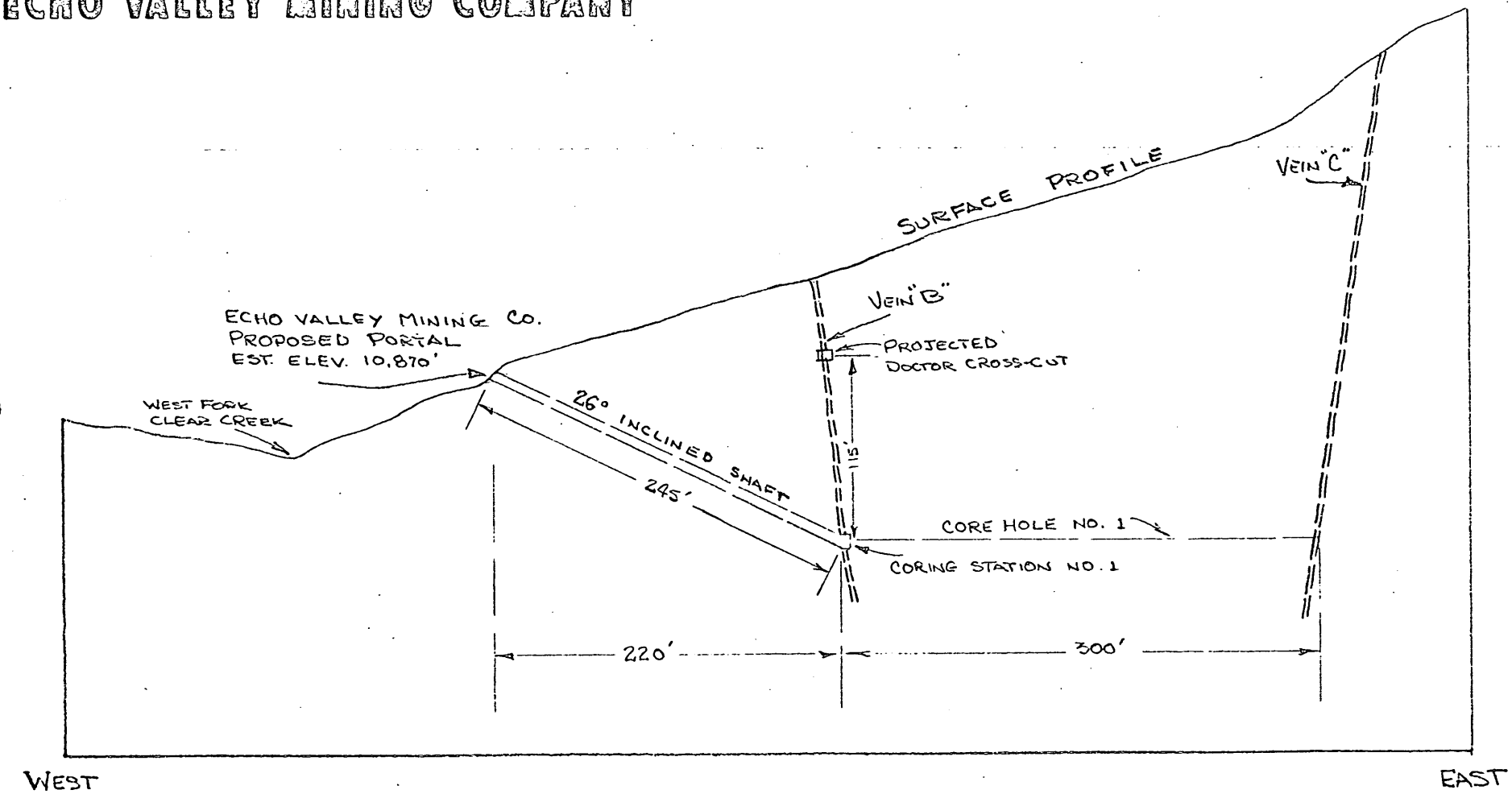
Geological and engineering consultants, 16 days @ $100.00 per day	$ 1,600.00

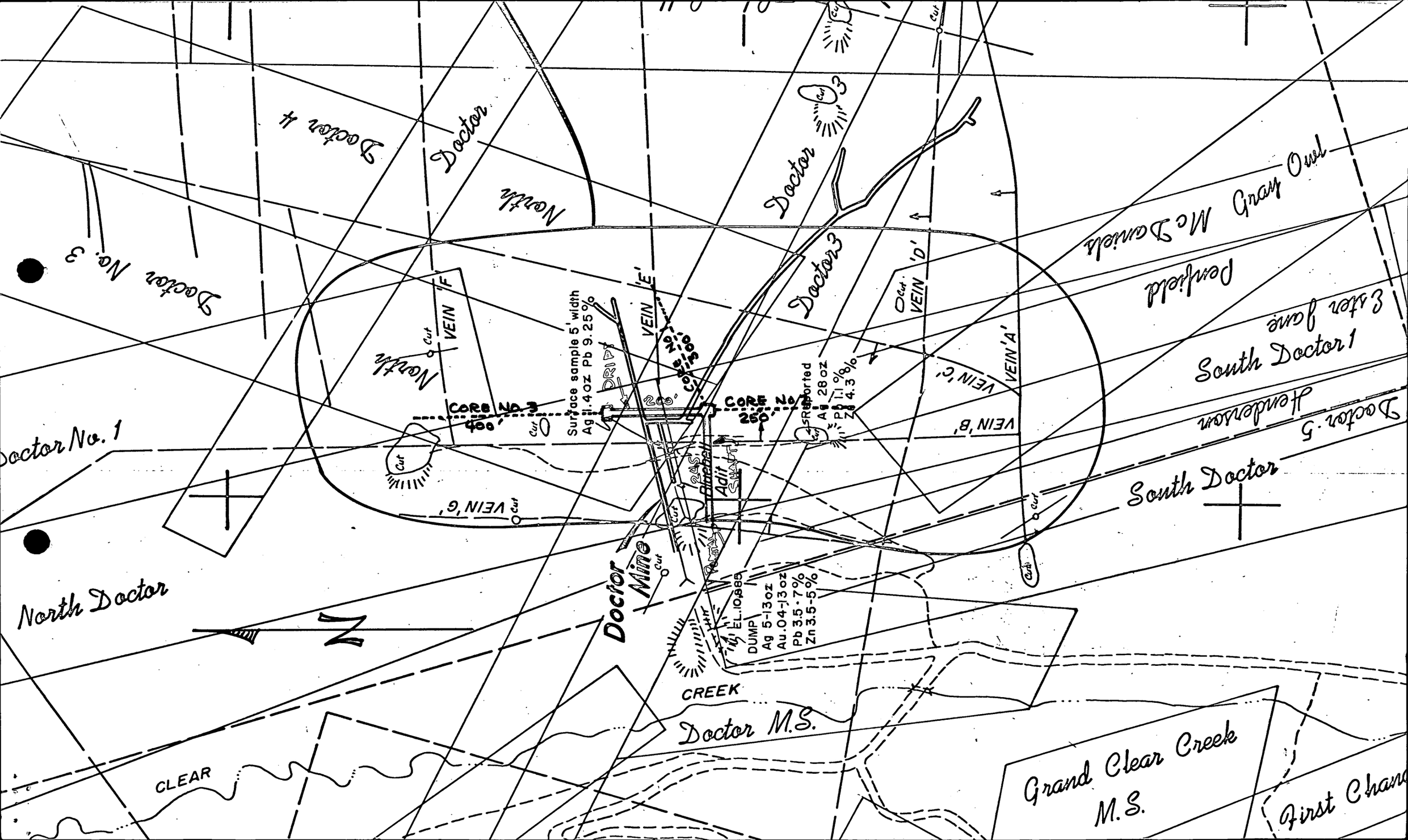
Category (g) - Miscellaneous

Consultants' travel expenses - 1,600 miles @ 15¢ per mile	240.00
Road maintenance, 20 hours @ $18.00 per hour	360.00
TOTAL FIXED UNIT COSTS:	$ 64,065.00
LOAN REQUIREMENTS @ 75%:	$ 48,048.75

WEST - EAST SECTION

ECHO VALLEY MINING COMPANY




Doctor No. 1
Doctor No. 3
Doctor 4
Doctor
North
Doctor 3
Doctor 3
Gray Owl
McDonald
Penfield
Elder Jane
South Doctor 1
Anderson
Doctor 5
South Doctor
North Doctor
N
Doctor Mine
VEIN 'F'
VEIN 'E'
VEIN 'D'
VEIN 'C'
VEIN 'B'
VEIN 'A'
VEIN 'G'
CORE No. 3
400'
CORE No. 1
250'
200'
Surface sample 5' width
Ag 1.4 oz Pb 9.25%
DRIFT
Reported
Ag 28 oz
Pb 1.1%
Zn 4.3%
Adit
Shaft
DUMP
Ag 5-13 oz
Au .04-13 oz
Pb 3.5-7%
Zn 3.5-5%
CREEK
Doctor M.S.
CLEAR
Grand Clear Creek
M.S.
First Chance

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code

AUG 29 1972

Mr. Charles L. Cherry
President
Echo Valley Mining Company
628 Patterson Building
Denver, Colorado 80202

Re: OME-6878 (Silver-Gold)
Echo Valley Mining Company
Doctor Mine
Clear Creek County, Colorado

Dear Mr. Cherry:

Mr. Chester Jones, Denver, Colorado, phoned me yesterday to inquire about action on your application for financial assistance to explore the Doctor mine. I told him we had received your letter of August 18, 1972 regarding values of various metals in samples and trial shipments, but had not proceeded further in processing the application.

We questioned the eligibility of the property for OME assistance in our first letter to you because that was the most important question to settle. Since then, our budget for the current fiscal year was established, and we now know that we are unable to offer assistance to the extent requested in your application. In fact, the Government's share in a contract for the amount requested would exceed the total amount available to the OME program in any quarter this fiscal year. Under this circumstance, only a less extensive program could be considered - one which offers a good probability of making a significant discovery of eligible metals by the proposed work.

Although your letter of August 18 offered some information on the presence of eligible minerals or metals, it is still unknown whether specific exploration targets can be delineated where these metals constitute the principal values. The possible presence of such targets in inaccessible workings cannot be accepted as sole evidence in support of an OME project. Even if accessible targets can be outlined, it is unlikely at this late date that a project could be approved and started before winter arrives.

In view of the above situation, we suggest that you consider a less extensive exploration program offering eligible mineral targets which can be confirmed in a field examination by samples and subsequent assays.

We will keep your application in active status for the next two months and hope to hear from you again soon.

Sincerely yours,

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's reading files
Mineral Resources
OME reading file
Region III
Mr. Kirkemo

HKirkemo/cac 8-29-72

ECHO VALLEY MINING COMPANY
628 Patterson Building
Denver, Colorado 80202

Copy to Region III
9/28/72

OFFICIAL COPY
O. M. E.
RECEIVED
AUG 22 1972
INITIALS | CODE
Cal | 120
| 120
Bwelks

August 18, 1972

Mr. Harold Kirkemo
Chief, Office of Minerals Exploration
United States Department of the Interior
Geological Survey
Washington, D. C. 20242

Re: OME - 6878 (Silver-Gold)
Echo Valley Mining Company
Doctor Mine
Clear Creek Co., Colorado

Dear Mr. Kirkemo:

Thank you for your letter of July 27, 1972 acknowledging receipt of our application for O.M.E. exploration assistance in the Doctor Mine area, Clear Creek County, Colorado.

In your letter you point out that the preponderance of values in the samples and trial shipments of ore from the Doctor Mine indicate that the combined value of silver and gold averages less than 15% of the total value of the ore. You also stated that the other 85% of the value of the ore is in lead and zinc which are not eligible for O.M.E. exploration assistance.

We concur with your observations, and, if the referred to values were the best we thought we could anticipate, it would probably not be prudent to undertake further exploration. However, we believe there is enough evidence for higher grade ore concentrations that an exploratory program mainly for silver and gold is definitely warranted in at least a part of the area under consideration.

First, the report written by Dr. Harold J. Cook (Appendix B, Page 2) refers to a rich vein of silver ore (Colorado Smelting and Refining Co. Assay Report for Dr. Harold Cook - Timberline No. 4 ore and assay for Austin Milling Corp. Doctor No. 2 ore) which he states is about 115 feet in from the portal, (not observable on the surface because of glacial debris) and contains over 22 ounces of silver per ton in a four foot width, excluding a 1-2 inch vein that averages .06 ounces of gold and 48.4 ounces silver per ton. This would give an average value at current prices of $46.32 per ton. Dr. Cook also mentions a porphyry dike adjacent to the silver vein that contained around .08 - .1 ounces of gold per ton which at current free world prices would bring $6.00 to $6.50 per ton. Also, in this report, he mentions important ore deposits

between the rich vein sampled and the portal in a timbered area that should be explored along with indications of ore in the back of the north-south cross-cut on the north side of the main tunnel (along Vein B).

A second line of evidence indicating that an exploration program for silver and gold on the Doctor Group of claims is warranted is the presence of "a large quantity of important ore, on the dump" (Wemlinger - Page 1 and Phillips Brothers Assay Reports) that was not milled even though a mill was present on the property. This implies that at least some of the stope ore from the Doctor Mine must have been high grade in order to allow the dumping of material worth $50.00 to $60.00 per ton based on present prices (see A.S. & R. Assay Reports for Phillips Brothers).

A third line of evidence is the presence of silver ore in a highly oxidized and leached surface cut of vein 'B' (See Skyline Labs Analysis Report for Dr. M. E. Cottrell - Sample #1). The vein in the location of this cut reportedly is some 30 feet wide and the sample was a grab sample from this vein. The sample appears to have been taken from an intersection of Vein 'A' with some of the NE-SW trending quartz-bearing veins that are exposed on the surface in the high saddle northeast of the mountain covered by the Doctor Claims. It would require the disruption of much of the surface on the hillside to cut deep enough along this vein to observe the intersection below the leached and oxidized area. However, the presence of the silver-bearing ore (28 oz. per ton) in this highly leached and oxidized zone implies that even higher grade ore may exist at depth which also indicates underground exploration is warranted.

Because these occurrences all are along the lower slope of the hillsides, we are also convinced that with properly conducted mining operations and careful handling of the ore, this area is favorable for a commercial strip mining operation without causing permanent damage to the environment. We hesitate to try to commence such an operation, however, without doing underground exploration to verify the results of our surface mapping and our own and other parties' sampling.

Further, it is our belief that a 50 to 150 ton ball mill can be operated at or near this site for a reasonable profit by concentrating stope ore and/or strip ore from the Doctor Claims and ore from other small mines in this area.

We shall be happy to show any of your field personnel around the property at their convenience and explain our plans and thinking concerning this project to them. It is our firm opinion that we can convince you of the merit of this project once an understanding has been gained of the physical relationships of the various ore occurrences to the previous mining, the surface topography and the location of other mines and access roads in the area.

Thank you for your consideration in this matter.

Very truly yours,

ECHO VALLEY MINING COMPANY

Charles L. Cherry

Charles L. Cherry, President

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
7-27	Weeks	

JUL 27 1972

Echo Valley Mining Company
628 Patterson Building
Denver, Colorado 80202

Re: OME-6878 (Silver-Gold)
Echo Valley Mining Company
Doctor Mine
Clear Creek County, Colorado

Gentlemen:

Your application for exploration assistance, dated June 26, 1972, has been assigned Docket No. OME-6878. Please identify all future correspondence relating to this application by this docket number.

We enclose for your information a copy of Exhibit A entitled "Notice to Prospective Federally Assisted Construction Contractors" which describes certain recent additional regulations and requirements. This should be filed with your copy of the application.

A preliminary review of the data you provided with your application suggest that the preponderance of values in the samples and trial shipments of ores were associated with lead and zinc, neither of which is eligible for OME exploration assistance. According to the information furnished, the combined value of silver and gold, which are eligible, averages less than 15 percent of the total value.

OME regulations require that the principal values in an OME exploration project must be due to the presence of eligible minerals. Do you have additional information to show that one could reasonably expect the principal values in your target area to be in silver and gold? In the absence of such additional information, it would not be possible for us to further consider your application, and we would suggest that you withdraw it.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's reading file
Mineral Resources
OME reading file
Region III
Mr. Kirkemo
Mr. Weeks
RWeeks/cac 7-27-72

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BERTHOUD PASS QUADRANGLE

COLORADO

7.5 MINUTE SERIES (TOPOGRAPHIC)

SE/4 FRASER 15' QUADRANGLE

Mapped, edited, and published by the Geological Survey as part of the Department of the Interior program for the development of the Missouri River Basin

Control by USGS and USC&GS

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1953. Field check 1957

Polyconic projection. 1927 North American datum
10,000-foot grid based on Colorado coordinate system, north and central zones
1000-meter Universal Transverse Mercator grid ticks, zone 13, shown in blue

Unchecked elevations are shown in brown

GN MN 0°31' 9 MILS 14° 249 MILS

UTM GRID AND 1957 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

COLORADO

QUADRANGLE LOCATION

ROAD CLASSIFICATION

Medium-duty — Light-duty

Unimproved dirt

U.S. Route

BERTHOUD PASS, COLO.
SE/4 FRASER 15' QUADRANGLE
N3945—W10545/7.5

1957

AMS 4863 IV SE—SERIES V877

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1964

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS GEOLOGIC INVESTIGATIONS
MAP I-443

Base by U.S. Geological Survey, 1957

TRUE NORTH
MAGNETIC NORTH
14°
APPROXIMATE MEAN DECLINATION, 1965

SCALE 1:24 000

1 ½ 0 1 MILE

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

COLORADO
QUADRANGLE LOCATION

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1965—G65008

Geology by Paul K. Theobald. 1959–62, assisted by Bevan M. French, 1960, William D. Quinlivan, 1961, and Gary C. Curtin, 1962

EXPLANATION

QUATERNARY

Qls — Landslide deposits

Qrg — Rock glaciers

Qm2 / Qm1 — Glacial deposits

Qm_2, drift; morainal forms range from little modified to modified; soil from poorly developed to well developed; includes drift of at least two ages.

Qm_1, drift; morainal forms barely recognizable; integrated drainage; abundant slump

TERTIARY

Middle Tertiary

Tr — Porphyritic rhyolite

Quartz and sanidine phenocrysts in aphanitic groundmass; altered; forms dikes and volcanic center at Red Mountain

TERTIARY(?)

Tm — Monzonite porphyry

Feldspar phenocrysts in aphanitic groundmass; altered; forms dikes and irregular masses

Ta — Porphyritic andesite

Feldspar and hornblende phenocrysts in trachytic groundmass; altered; forms dikes and small masses

PRECAMBRIAN

spm / spb / sps / spf — Silver Plume Granite and metamorphic rocks

spm, Silver Plume Granite crowded with metamorphic rock fragments; locally an intrusion breccia. Unit subdivided (larger inclusions shown diagrammatically):

spb, mixture of Silver Plume Granite and biotite gneiss and migmatite (gnbm).

sps, Silver Plume Granite containing interlayered biotite-sillimanite gneiss and quartz biotite gneiss (gns).

spf, Silver Plume Granite containing feldspathic biotite gneiss (gnf)

spp / spe / spg / spc — Silver Plume Granite

spp, muscovite pegmatite, alaskite, and aplite.

spe, equigranular muscovite-biotite quartz monzonite, medium-grained, massive.

spg, seriate porphyritic biotite-muscovite quartz monzonite, trachytoid flow structure, tabular microcline prominent.

spc, coarse-grained biotite-muscovite quartz monzonite

hla — Biotite-hornblende lamprophyre

Chiefly hornblende, biotite, feldspar, quartz; porphyritic; forms irregular masses and dikes

qdh — Hornblendite and quartz diorite

Intergradational intrusive rock types; forms dikes and irregular masses; associated with biotite-magnetite pegmatite

bcg — Boulder Creek Granodiorite

Gneissic rock ranging from biotite quartz monzonite to hornblende biotite granodiorite; forms inclusions in Silver Plume Granite

Order may not reflect age

gnbm — Biotite gneiss and migmatite

Strongly foliated contorted coarse-grained migmatitic biotite gneisses; generally has cataclastic texture and contains mylonite seams

gnq / gns — Interlayered biotite-sillimanite gneiss and quartz-biotite gneiss

gns, coarse-grained sillimanite-biotite-quartz gneiss containing subordinate thin layers of quartz-biotite gneiss.

gnq, fine-grained quartz-biotite gneiss and subordinate sillimanite-biotite-quartz gneiss

gnb — Biotite gneiss

Fine-grained biotite-quartz-plagioclase gneiss; locally migmatitic, containing pink microcline pegmatite

gnh — Hornblende gneiss

Interlayered gneisses characterized by hornblende, plagioclase, pyroxene, and epidote

gnf — Feldspathic biotite gneiss

Light-colored granular poorly foliated quartz-plagioclase-biotite gneiss

Contact

Dashed where approximately located; short dashed where inferred or gradational; dotted where concealed

Fault

Zones of shattered rock, abundant gouge, usually altered. Dashed where approximately located; short dashed where inferred; dotted where concealed

Cataclasized rock and(or) mylonite

Bearing and plunge of lineation
May be combined with foliation symbol

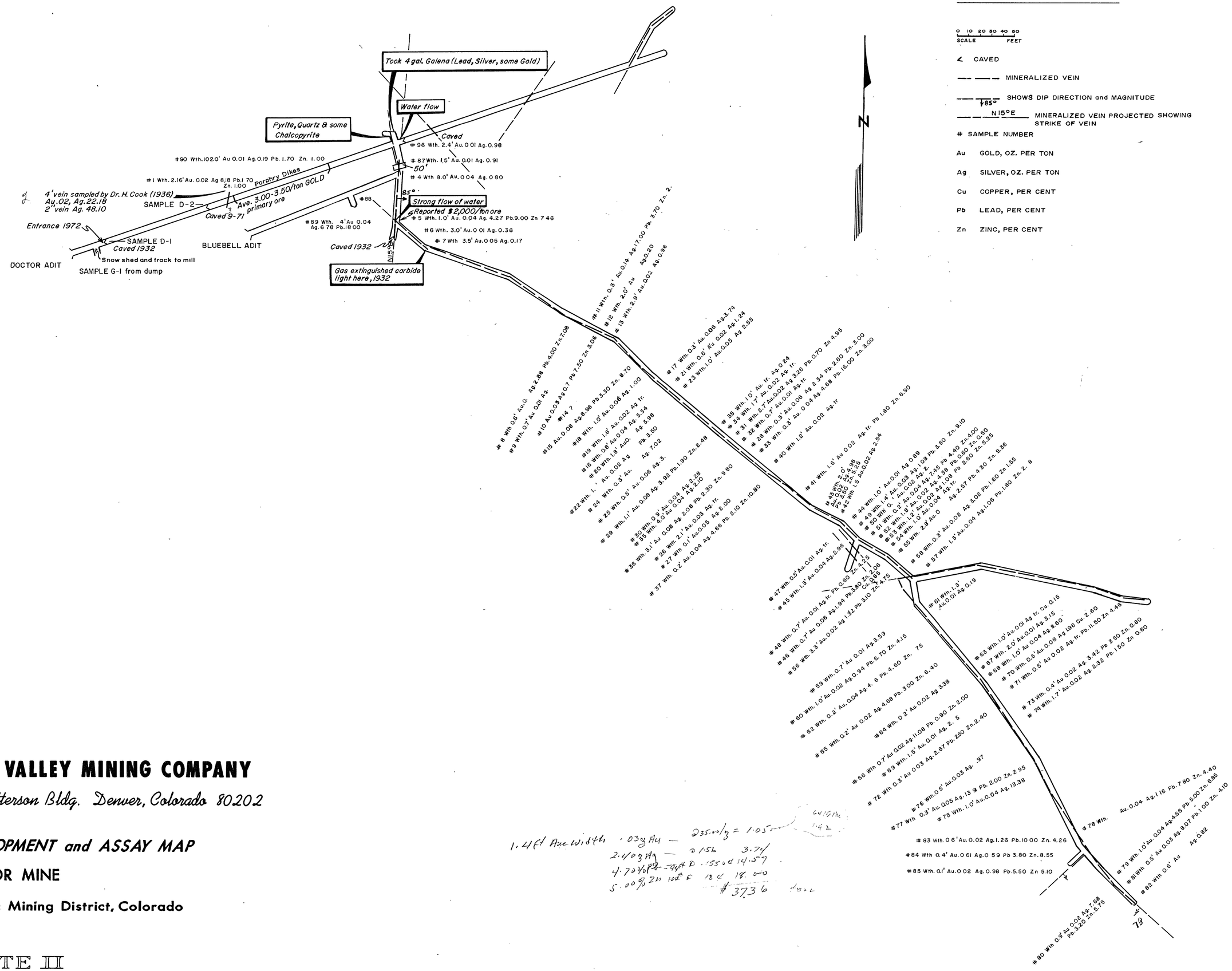
Strike and dip of foliation

PRELIMINARY GEOLOGIC MAP OF THE BERTHOUD PASS QUADRANGLE CLEAR CREEK AND GRAND COUNTIES, COLORADO

By
Paul K. Theobald

1965

For sale by U.S. Geological Survey, price 50 cents



ECHO VALLEY MINING COMPANY

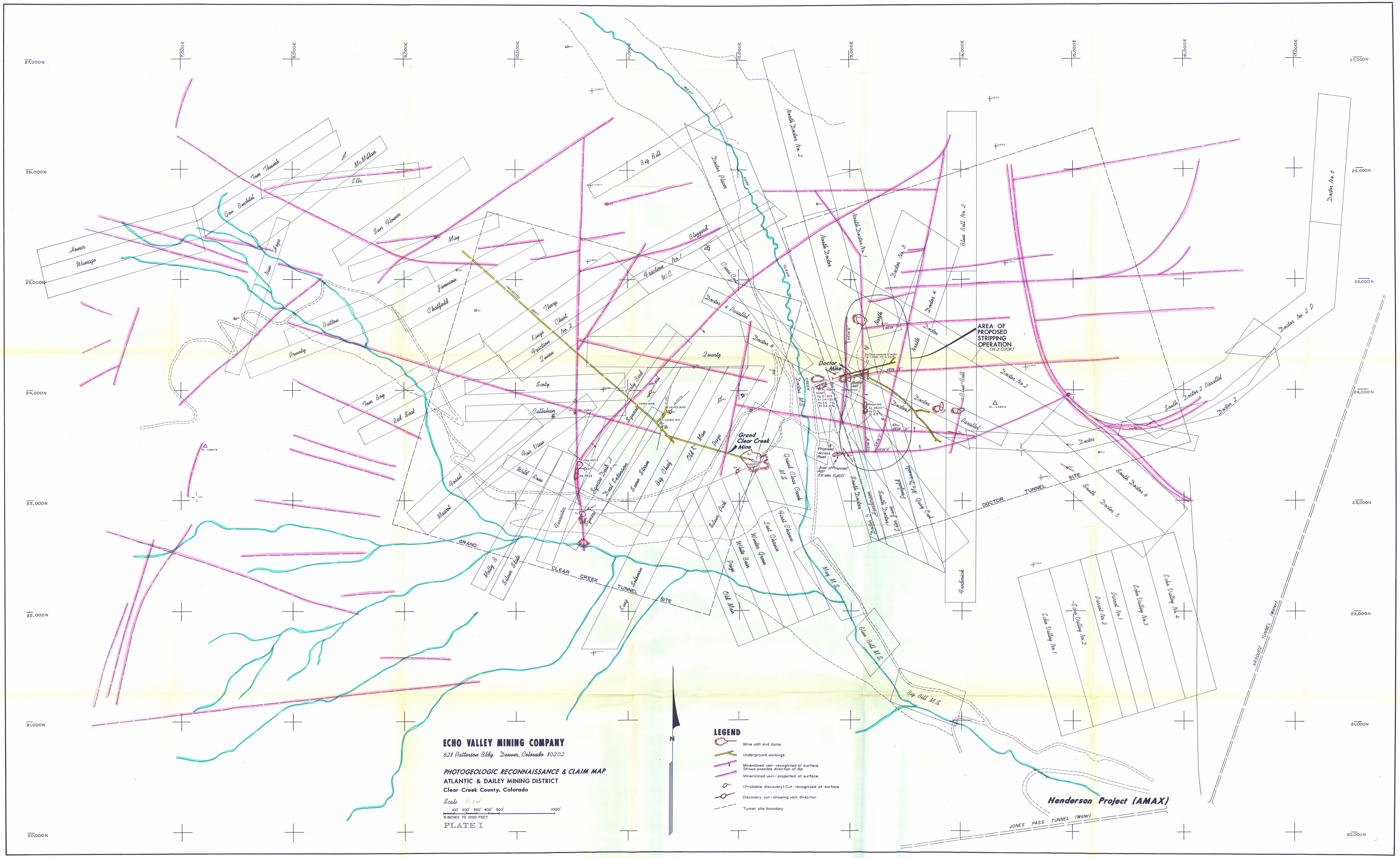
628 Patterson Bldg. Denver, Colorado 80202

DEVELOPMENT and ASSAY MAP

DOCTOR MINE

Atlantic Mining District, Colorado

PLATE II


ECHO VALLEY MINING COMPANY
628 Patterson Bldg. Denver, Colorado 80202
PHOTOGEOLOGIC RECONNAISSANCE & CLAIM MAP
ATLANTIC & DAILEY MINING DISTRICT
Clear Creek County, Colorado
Scale 1" = 200'
100' 200' 300' 400' 500' 1000'
5 INCHES TO 1000 FEET
PLATE I
LEGEND
Mine adit and dump
Underground workings
Mineralized vein-recognized at surface Shows possible direction of dip
Mineralized vein-projected at surface
(Probable discovery) Cut-recognized at surface
Discovery cut-showing vein direction
Tunnel site boundary
N
AREA OF PROPOSED STRIPPING OPERATION (H.J. COOK)
Doctor Mine
Grand Clear Creek Mine
GRAND CLEAR CREEK TUNNEL SITE
DOCTOR TUNNEL SITE
Henderson Project (AMAX)
JONES PASS TUNNEL (Water)
VASQUEZ TUNNEL (Water)
Tom Thumbs
McMillan
Ella
Gen. Buckhold
Sun Flower
Homer
Wamego
Jupe
May
Big Bell
Doctor Alone
North Doctor No. 2
North Doctor No. 1
North Doctor
Blue Bell No. 2
Doctor No. 6
Doctor No. 3
Doctor 4
Doctor No. 2
Doctor No. 2 P.
South Doctor 2 Parallel
Doctor 2
Doctor 3
Doctor 4 Parallel
Doctor 4 C
Doctor M.S.
Blue Bell
Blue Bell M.S.
Big Bell M.S.
Grand Clear Creek M.S.
Mon M.S.
Graduation No. 1
W.C.
Bloggard
Jamison
Chatfield
Thorp
Kings Chest
Graduation No. 2
Quartz
Scaly
Callahan
Tom Bay
Red Seal
Battan
Drunty
Fair View
Wild Rose
Masson
Molly B.
Silver Slide
Silver Pick
Pope
Old Mob
Wildcat Boss
Wonder Queen
Black Chance
Grand Chance
Big Chief
Old C
Mon
Sunset
Second Sunset
Second Dock
Sunset Federation
Sunset Dock
Silver Slide
King Solomon
Appendix
Grubstake
Prospect
Mc Donald
Pump Chief
Blue Bell
Echo Valley No. 1
Echo Valley No. 2
Parent No. 1
Parent No. 2
Echo Valley No. 3
Echo Valley No. 4
South Doctor 4
South Doctor 5
South Doctor 2 Parallel
Surface sample S' width
Proposed Access Road
Area of Proposed Adit
Est. elev. 10,800'
EL. 11,480.4
EL. 11,087.5