MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

RECEIVED
FEB 7 1972
O. M. E.
SPOKANE, WASH.

LIEN AND SUBORDINATION AGREEMENTS 1/

To the United States of America:

That certain land in the County of JEFFERSON, State of MONTANA,

described ~~as follows~~ 2/ INLETTER OF INTENT DATED JANUARY 22, 1972 & COPY ATTACHED

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

WILLIAM M. HAND 3/

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same. 4/

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

NONE KNOWN

Certified True Copy
William M. Hand

1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease /or contract, deed, or other document/ dated_____, and recorded in Book_____, Page____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

3/ Insert name exactly as it appears in the Application MME Form 40.

4/ Subparagraph 1(a) does not apply to the holder of a claim, lien, or encumbrance.

A:U

4. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land or any production therefrom, furnishing the Government with two true copies of such notice; and

5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions None (State "None" or "See Annex No. ____".)

Dated this 22nd day of January, 1972.

Box 0 (Street)
Whitehall, Montana (City & State)

Francis H. [illegible] (Seal)

(Street)
(City & State)
(Seal)

(Street)
(City & State)
(Seal)

(Street)
(City & State)
(Seal)

(Street)
(City & State)
(Seal)

(Street)
(City & State)
(Seal)

I, _____ (Name), certify that I am the _____ (Title—Secretary, etc.) of the corporation named herein; that _____ (Name), who signed this agreement was then _____ (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Certified True Copy
Wilbur M. Hand

RECEIVED
FEB 7 1972
O. M. E.
SPOKANE, WASH.

_____ (Corporate Seal)

INT.-CUP. SUR., WASH., D.C. 21103

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

RECEIVED
FEB 7 1972
O.M.E.
SPOKANE, WASH.

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

LIEN AND SUBORDINATION AGREEMENTS[1]

To the United States of America:

That certain land in the County of JEFFERSON, State of MONTANA,

described as follows:[2]

Name	Book of Lode Locations	Page
Southveiw	54	437
Southveiw No. 2	54	442
Shamrock	54	31

IN "LETTER OF INTENT" DATED JANUARY 22, 1972. (and herein attached)

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

William M. Hand [3]

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same.[4]

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

None Known

Certified True Copy
William M. Hand

1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease /or contract, deed, or other document/ dated_____, and recorded in Book_____, Page____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

3/ Insert name exactly as it appears in the Application MME Form 40.

4/ Subparagraph 1(a) does not apply to the holder of a claim, lien, or encumbrance.

(Weber)

RECEIVED
FEB 7 1972
O. M. E.
SPOKANE, WASH.

4. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land or any production therefrom, furnishing the Government with two true copies of such notice; and

5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions None (State "None" or "See Annex No. ____".)

Dated this 22nd day of January, 19 72.

Charles O. Walker (Seal) P. O. Box 235 (Street) Whitehall, Montana (City & State)

(Seal) (Street) (City & State)

(Seal) (Street) (City & State)

(Seal) (Street) (City & State)

(Seal) (Street) (City & State)

(Seal) (Street) (City & State)

Certified True Copy
William M. Stone

I, _____ (Name), certify that I am the _____ (Title—Secretary, etc.) of the corporation named herein; that _____ (Name), who signed this agreement was then _____ (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____ (Corporate Seal)

MME Form 9
Rev. Nov. 65

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey

OFFICIAL DOCKET FILE Contract No. _____ Docket No. 6866

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
- [x] 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

Received 2/16/72

United States Department of the Interior

GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

February 7, 1972

OFFICIAL COPY
O. M. E.
RECEIVED
FEB 10 1972
INITIALS | CODE

MEMORANDUM

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: New application (silver and gold)
William M. Hand
Weber-Hill Property
Jefferson County, Montana

Forwarded herewith is a new application from Mr. William M. Hand, Dillon, Mont., for OME assistance to explore an area about 3 miles northeast of Whitehall, Mont. The designation Weber-Hill refers to the property owners. Easterly-striking veins on the Lucky Hit (owned by Frances Hill) and the South View (owned by Charles Weber) claims have yielded ores containing gold, silver, copper, lead, and zinc in the early 1950's (Roby, et al., 1960). The applicant plans to explore extensions of the veins by "drilling down-the-hole percussion work in an inclined manner along the outcrop of the vein. The holes are to be about 5 inches in diameter, the cuttings recovered pneumatically and split. Significantly mineralized material will be assayed. Some six thousand feet of drilling is anticipated". The estimated cost of the work is $22,495.50.

American Exploration and Development Company, an American subsidiary of Placer Development Limited, Vancouver, British Columbia, has been working at the Golden Sunlight, about a mile southeast of the applicant's property, for more than three years. Included in their work has been a study to determine if the gold and silver can be economically leached from mined rock. The U.S.B.M. reported on some of this activity in their Report of Investigations 7305. A small leach pile was erected in 1970 and research has continued. (The U.S.B.M. study was not continued.) Mr. Garwood, the local engineer for AMEX, told me in a telephone conversation today that they plan to start a pilot plant operation soon to obtain more data on the leach process. Apparently they have achieved some success in leaching the old and silver from the shale. Problems to be solved are whether channels develop in the leach pile, does the gold and silver reprecipitate, and can previously leached material form the base on which to pile unleached ore. According to USBM RI 7305, ore valued at less than $2.35 per ton cannot be considered economic.

The applicant's objective is to develop ore that can be leached. He believes that the ore mineral is gold contained in rusty hematite stain on the surfaces of the shale. Actually, the report by Roby, et al (1960), describes the ore as being in veins as much as 6 feet thick. Mr. Garwood thought that the ore in the NW¼ of Sec. 19 is probably confined to fairly high-grade veins, rather than being disseminated in fractured shale.

The applicant states that he took samples along a roadcut in shale over a 120-foot width. Sampling was with a shovel about every couple of feet; the bulk obtained was then split on a Jones riffle. Assay data indicated 0.01 to 0.02 ounces gold and 0.1 to 0.2 ounces silver per ton. These are nearly threshold values and I don't see how they can be considered promising, regardless of the efficiency of a leach process.

The application is similar to the one docketed OME 6865. There is a question of the applicant's ability to finance the operation, and an almost complete lack of geologic information on which to base any kind of a judgment regarding the merits of the proposal. The assay data submitted certainly do not offer much encouragement.

Survey and patent numbers of the patented claim are missing and the required number of MME form 52 are not included. These omissions need not be brought to the applicant's attention unless he can furnish more promising geologic and assay data to justify a field examination of the property.

REFERENCES CITED

Ageton, R. W., Krempasky, G. T., and Rice, W. L., 1969, A systems approach to recovering gold resources in Jefferson County, Montana: U.S.B.M. Report of Investigations 7305, 16 p.

Roby, R. N., Ackerman, W. C., Fulkerson, F. B., and Crowley, F. A., 1960, Mines and mineral deposits (except fuels) Jefferson County, Montana: Montana Bur. of Mines and Geology Bull. 16, 122 p.

Willard P Puffett

W. P. Puffett

Enclosure

MME Form 40
(Revised Nov. 71)

Form approved
Budget Bureau No. 42-R1368

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
FEB 7 1972
O. M. E.
SPOKANE, WASH.

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.)*

William M. Hand
30 S. Arizona
Dillon, Montana 59725

APPLICANT DO NOT USE THIS BLOCK

DOCKET NUMBER: 6866

DATE RECEIVED: 2/10/72

REGION: I

DIVISION CODE:

BUSINESS ORGANIZATION *(Check one)*

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

STATE IN WHICH FIRM IS ORGANIZED: Montana

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

NAME	ADDRESS	TITLE

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE: Silver and Gold

ESTIMATED COST OF PROJECT: $22,495.50

PROPERTY NAME	LOCATION COUNTY	STATE
Weber-Hill	Jefferson	Montana

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.

February 2, 1972
DATED

William M. Hand
BY *(Signature)*

Operator
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).]

FEDERAL LAND BANK ASSOCIATIONS

P.O. BOX 189 BOZEMAN, MONTANA 59715

TELEPHONE: 587-4421

D. M. FULTON, MANAGER

RECEIVED
FEB 7 1972
O. M. E.
SPOKANE, WASH.

Dillon, Montana
1-20-72

Mr. William M. Hand
Dillon, Montana

Dear Mr. Hand:

In answer to your letter of 1-19-72: The Federal Land Bank makes only loans on agricultural lands for agricultural purposes. Your requested purpose would not qualify for a loan from us.

Sincerely yours,

Keith F. Newby

Keith F. Newby
Assistant Manager

Certified True Copy
Bill Hand

COPY

RECEIVED
FEB 7 1972
O. M. E.
SPOKANE, WASH.

COPY

30 S. Arizona St.
Dillon, Mt. 59725
January 19, 1972

Federal Land Bank Association

Dillon, Montana 59725

Attention Mr. Keith Newby

Gentlemen:

Mineral deposits in the Bannack area of Beaverhead County and the St. Paul Gulch area five miles northeast of Whitehall, Montana have profitable potential for which I wish to explore. Financial assistance will be required for approximately twelve (12) months to the extent of $ 46,000.00 on March 1, 1972. The sum would be repayable 50% plus accrued interest on March 1, 1973, 25% on June 1, 1973 and the balance on September 1, 1973 bearing interest at the rate of eight percent (8%).

My financial statement is attached.

I would appreciate your written reply.

Very truly yours,

William M. Hand

Certified True Copy
William M. Hand

STATE BANK & TRUST COMPANY
ESTABLISHED 1899
DILLON, MONTANA

RECEIVED
FEB 7 1972
O. M. E.
SPOKANE, WASH.

January 17, 1972

Mr. William M Hand
30 So Arizona St
Dillon, Montana 59725

Dear Bill:

Thank you for your letter of January 19, 1972 requesting a loan of $46,000.00 for the purpose of certain mineral explorations.

We regret to inform you that we are unable to make a loan of this type.

Yours truly,

Jack W. Lovell
Jack W. Lovell
Cashier

JWL/b

Certified True Copy
William M. Hand

RECEIVED
FEB 7 1972
O. M. E.
SPOKANE, WASH.

COPY

COPY

30 S. Arizona St.
Dillon, Montana 59725
January 19, 1972

State Bank and Trust Company

Dillon, Montana 59725

Attention: Mr. Jack Lovell,

Gentlemen:

Mineral deposits in the Bannack area of Beaverhead County and the St. Paul Gulch area five miles north east of Whitehall, Montana have profitable potential for which I wish to explore. Financial assistance will be required for approximately twelve (12) months to the extent of $ 46,000.00 beginning on March 1, 1972 and repayable one half plus interest accrued on March 1, 1973, 25% on June 1, 1973 and the balance on September 1, 1973 bearing interest at rate of eight percent (8%).

My financial statement is attached.

I would appreciate your written reply.

Very truly yours,

William M. Hand

Certified True Copy
William M. Hand

Box 0
Whitehall, Montana
January 22, 1972

RECEIVED
FEB 7 1972
O. M. E.
SPOKANE, WASH.

Mr. William M Hand
30 S. Arizona St.
Dillon, Montana 59725

LETTER OF INTENT

Dear Mr. Hand:

In order that you may properly explore the herein mentioned lands, claimed by me, it is my intent to enter into a purchase-option agreement with you on the following mining claims in St.Paul Gulch about six (6) miles N.E. of Whitehall, Jefferson County, Montana. W½ Sec.19 T. 2 N.; R. 3 W.

Claim Name	Recorded in Book No.	Page No.	Balder, Mt.	Yr. Represent. Work Recorded
Lucky Heat	Patented 2 (Frances W. Wolfe)	235	Line	6 (Treasurer)
Bayonza Lode (unpatented)	46	242		

I offer to sell my rights and defend the title thereafter for Thirty thousand & No/100 Dollars ($30,000.00) payable as follwos:

		Date
$ 2,500.00	on or before	September 1, 1972.
$ 2,500.00	on or before	July 1, 1973.
$ 5,000.00	on or before	Nov. 1, 1973.
$ 20,000.00	on or before	Jan. 1, 1974.

Royalty amounting to twenty percent (20%) of the net profit from operating these deposits is to be paid semiannually and credited to the above pymt schedule.

I agree to sign and properly execute a deed, the title of which is acceptable to my attorney, and place it in escrow in the Whitehall State Bank at your cost, together with a copy of the agreement and adequate instructions.

Representation work and the filing thereof shall be at your cost.

This agreement may be terminated anytime at your option by certified mail so stating or by default, in which case, either party has sixty (60) days to correct the fault.

The writter agrees to sign a "Lien and Subordination Agreement" to procure an Office of Minerals Exploration Loan but it is understood that the Lien is payable from production, is limited to the actual extent of government participation and is not collectable on demand as a bank note is.

Reciept of ten dollars ($10) is hereby acknowledged.

Accepted:

William M. Hand

Very truly yours,

Frances W. Wolfe

Witnessed by:

Certified True Copy
William M. Hand

Box 235
Whitehall, Montana
January 22, 1972

RECEIVED
FEB 7 1972
O. M. E.
SPOKANE, WASH.

Mr. William H. Hand
30 S. Arizona St.
Butte, Montana 59725

LETTER OF INTENT

Dear Mr. Hand:

In order that you may properly explore the herein mentioned lands, claimed by me, it is my intent to enter into a purchase-option agreement with you on the following mining claims in St. Paul Gulch about six (6) miles N.E. of Whitehall, Jefferson County, Montana. W½ Sec. 19 T. 2 N., R. 3 W.

Claim Name	Recorded in Book No.	Page No.	Holder, Mt.	Yr. Represent. Work Recorded
South View	Book 54	437		
South View No. 2	Book 54	442		
Shamrock	Book 54	31		
[illegible] (Book of Deeds)	Book 100	151		

I offer to sell my rights and defend the title thereafter for

Ten Thousand Dollars ($ 10,000.00) payable as follows:

		Date
$ 2,500.00	on or before	Sept. 1, 1972
$ 2,500.00	on or before	July 1, 1973
$ 5,000.00	on or before	April 1, 1975
$	on or before	

Royalty amounting to twenty percent (20%) of the net profit from operating these deposits is to be paid semi-annually and credited to the above part schedule.

I agree to sign and properly execute a deed, the title of which is acceptable to my attorney, and place it in escrow in the Whitehall State Bank at your cost, together with a copy of the agreement and adequate instructions.

Representation work and the filing thereof shall be at your cost.

This agreement may be terminated anytime at your option by certified mail as stating or by default, in which case, either party has sixty (60) days to correct the fault.

The writer signs a "Lien and Subordination Agreement" to procure an Office of Minerals Exploration Loan but it is understood that the lien is payable from production, is limited to the actual extent of government participation and is not collectable on demand as a bank note is.

Receipt of ten dollars ($10) is hereby acknowledged.

Very truly yours,

Charles Weber — Sample Man

Accepted:

William H. Hand

Certified Trace Copy
William H. Hand

William M. Hand
30 S. Arizona
Dillon, Montana

Weber-Hill Property

Item 1. (b) OME Financial Eligibility:

I am not affiliated with any other concern, not a parent and am not influenced by outside control.

(c) It is a sincere desire to incorporate, broaden the financial base and dilute the risk and reduce my financial participation. Efforts are being exerted in this direction with encouragement. However, should this prove too time consuming and costly, an attempt will be made to approach established companies offering an option to purchase if they will advance the entire cost with 75% being returned. Should outside sources of capital be withheld it is the operator's desire to "Poor Boy" it with his own money and credit but it is sincerely felt that outside participation can be found thereby giving the project its best chance.

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Item 2.(a) Applicant's Right in Land--An optionee with right of purchase.

The land is negotiated for a lease with option to purchase. Without government participation, the program cannot be commenced--negotiations were entered into resulting in the attached copies of "Letter of Intent" setting forth the general conditions. With encouragement from this application, the three instruments will be prepared and properly executed. This arrangement was undertaken because it is felt to be somewhat a standard form for the mining industry.

There are no known liens, mortgages or other encumbrances in the land.

(b). Applicant's Rights in Land-Legal Location.

Weber claims are recorded as follows:

Name	Book of Lode Locations	Page
Southview	54	437
Southview No. 2	54	442
Shamrock	54	31

They are recorded in the County Clerk and Recorder's Office, Jefferson County Courthouse, Boulder, Montana. The owners name is Charles O. Weber (a single man) Box 235, Whitehall, Montana. W½ Sec. 19, T. 2 N, R. 3 W about 6 miles NE of Whitehall, Montana.

The Hill Claims are Lucky Heat(Patented) recorded in Book 2, Page 235 Line 6, Treasurer's Office, Jefferson County, Boulder, Montana. The Bananza Lode (unpatented) is recorded in Book 46, Page 242, County Clerk's

and Recorder's Office in Boulder, Montana. Both bear ownership name of Frances W. Wolfe, her name by former marriage. Owners name now is Frances Hill, Box 0, Whitehall, Montana. Located in the W½ of T 2 N, R 3 W, Sec. 19 about 6 miles NE of Whitehall, Montana.

There is no request to exempt any lands from Government liens or royalty.

(c) Applicant's Right in Land--Lien and Subordination Agreements: Five copies of the Lien and Subordination Aggrements on form MME 52 are attached for both properties.

Item 3. (a) Physical Description: Existing workings and facilities:

The general area of the Golden Sunlight Mine, generally regarded as one of the major gold reaourses in the United States, is dotted with prospect holes and minor workings.

The Weber Property is on the west end of what is regarded as the Gold Vein and is prospected by two shafts about 30 feet deep and a cross cut about 100 feet long. No work is presently being done.

It is felt that the eastward extention of the gold vein may be found to outcrop on a fraction of the Hill Property namely Bananza Lode. This claim bears very little work but the adjacent claim to the north, Lucky Heat, has a shaft several hundred feet in depth and has produced several thousand tons of gold ore and appreciable money.

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(b) Physical Description--Operators interst in operation.

The operator has no interest in past operations.

(c) Physical Description--Past Productions.

Re: "Mines and Mineral Deposits, Jefferson County, Montana" Bull. 16 Montana Bureau of Mines and Geol., Page 84, Lucky Hit.

The Lucky Hit is listed as follows: "Production was almost continuous from 1932 to 1954 during which time a total of 6,174 tons ore were mined. Recovered metals total 2,995 oz. gold, 13,850 oz. silver, 22,529 lbs. copper, 333,699 lbs. lead and 78,195 lbs. of zinc." The other claims have reported but unrecorded production.

(d) Physical Description--Ore Reserves: The operator has no knowledge of ore reserves.

(e) Physical Description--Geologic Features:

The area of interest is a host rock of shale. Values are supposedly due to the outcrop of the steeply dipping E-West Vein. Please refer to Reproduction "A" of USBM RI7305. The ore mineral is gold contained in rusty hemetite stain on the surfaces of the shale.

(f) Physical Descr[illegible]ion--Samples and sampling:

Samples were taken along a road cut in the shale over a 120 foot width. This was accomplished by taking a partial shovel each couple of feet thereby accumulating a large sample which was later crushed and split on a Jones Riffle. Sample No. 5906 assayed 0.01 oz. gold per ton and 0.2 oz. silver per ton. The data was rechecked by Sample No. 5963 which showed 45 feet 0.02 oz./ton gold and 0.1 oz./ton silver. Copies of Assay Certificates are not attached.

It is felt that development of cyanide heap leach treatment may be applicable to these ores. The possibility is good that substancial tonnages of economic oxide outcrop may be available. This material could be cheaply mined using earth moving equipment and readily treated yielding a gold and silver bullion.

(g) Physical Description--Techanical Information.

Attached herewith are Reproduction "A" USBM R I 7305, Pages 4-15 less 5 and 6, and Copy Geoligic Map of Jefferson County. None need be returned.

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Item 4. (a) Accessibility of Property--Who and Where:

The OME Representative should contact: William M. Hand, 30 S. Arizona St., Dillon, Montana. Phone Area 406-683-4420 or Western Mining & Exploration Co., Box 1298, Dillon, Montana 59725. Phone Area 406-683-4446 and leave message on recording. Additionally, Mr. Charles Weber, 512 1st West, Whitehall, Montana(P.O. Box 235) may be contacted to lend assistance. Phone Area 406-287-3866.

The property can be reached by ordinary passenger car except in the winter(and then via snow machine) by proceeding on the street leading from Whitehall to Interstate 90. Prior to reaching the superhighway entrance, turn to the right and paralell the Interstate for approximately ½ mile and turn to the left and cross Interstate 90 on an overpass. Continue on this dirt road for about 6 miles holding to the right the last mile or so when the road gets steeper. Please refer to Reproduction "B" USGS topomap "Black Butte Mountain"

(b) Accessibility of Property--Supply and Shipping point:

The logical supply and shipping point would be Whitehall, served by Bus and Railroad 7 miles away.

Item 5. (a) Exploration Work--Description:

Proposed exploration amounts to drilling down-the-hole percussion work in an inclined manner along the outcrop of the vein. The holes are to be about five(5") inches in diameter, the cuttings recovered pneumatically and split. Significantly mineralized material will be assayed. Some six thousand feet (6,000') of drilling is anticipated.

For locations refer to maps I and II. The rock formation is shale which is found to assay in gold. Mine workings include about fifty (50') feet of shaft, drift and stopes.

(b) Exploration Work--Access Roads.

Hopefully, drill sites and access roads can be held to a minimum. Equipment, hopefully, will negotiate the terrain.

(c) Exploration Work--Suggested Stating and Finishing Time.

Work should commence about July 10, or upon availability of equipment made possible by execution of the Berdic Project. Anticipated rate of progress is 250'/day and require (9) nine weeks for completion.

Item 6. (a). Experience:

The operator has more than twenty-four years of mining operation experience at the Maulden or Hand Mine located at Argenta some 20 miles west of Dillon, Montana. Production records can be submitted or they can be gotten from the Albany Office of the U. S. Bureau of Mines. Your inquiry is invited. The operation was not large but a small producer of crude ore suitable for direct smelting without concentration. Some 70,000 tons were produced having a value of just about $3,000,000.

It was operated as a family business, a sole proprietership.

References are: Montana Hardware Co., Butte, Montana: Att; Mr. Carveth, manager,. State Bank and Trust Co., Dillon, Montana: Att: Mr. Lovell, and Mr. Paris Robert, President, 1st National Bank, Twin Bridges, Montana.

7. Estimate of Costs:

Fixed costs: drill site prep. and road maint. each--	250.00-----		500.00
(a) Independent contracts----------	none		
(b) Personal services:			
Take home pay----------		3,200.00	
Consultant Fees(Engineer Services)----------		9,000.00	
			-----12,200.00
(c) Material and Supplies:			
350 sample bags----------	175.00		
2 drill bits at $250.00 each----------	500.00		
3 barrels oil at $75.00 each----------	225.00		
3,000 gal. gasoline at 20¢----------	600.00		
500 gal. gasoline at 40¢----------	200.00		
Misc. hand tools----------	200.00		
Sample collecting supplies----------	200.00		
Cement----------	200.00		
			----- 2,300.00

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(d) Operating Equipment:

Truck Rental	150.00	
Compressor and drill	3,750.00	
		3,900.00

(e) Initial Rehabilitation and repairs:	none	
(f) New Buildings, Fixtures and Installations:	none	
(g) Miscelaneous:		
Workmans Accident Insurance	670.00	
Soc.Sec. Fed. & State Withholding	1,230.00	
Employment Security Ins.	125.00	
Assaying	1,370.00	
Office Account Exp. 2 mo. @ $100.00 mo.	200.00	
		3,595.50
TOTAL ESTIMATED COST OF PROJECT		22,495.50
GOVERNMENT PARTICIPATION @ 75 %		16,871.25

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A SYSTEMS APPROACH TO RECOVERING GOLD RESOURCES IN JEFFERSON COUNTY, MONT.

Introductory Review

By Robert W. Ageton, George T. Krempasky, and William L. Rice

* * * * * * * * * * * report of investigations 7305

Pages 4-15
Less 5 & 6
Item 3g

UNITED STATES DEPARTMENT OF THE INTERIOR
Walter J. Hickel, Secretary

BUREAU OF MINES
John F. O'Leary, Director
Oct. 1969

Reproduction

W. M. Hand
30 S. Arizona Street
Dillon, Montana 59725

In addition, several areas were resampled by AMEX, the samples were split, and AMEX and the Bureau's Reno Metallurgical Laboratory each assayed the splits for gold and silver. Results were compared statistically with each other and with the original set of samples. A variance analysis computed between the 1968 and older samples, and between Bureau and company assays of the resampled areas, from assumed identical locations gave acceptable hypotheses of equal means (gold values), but proved differences in silver values. A test for independence showed that there is sufficient evidence to state that the gold values are independent of the silver values, and that there is a significant difference in their means.

Most test work is still in progress, and indications are that a gold mine is feasible in the area. The results of the current work and of the continuing studies in this area will comprise the balance of the Bureau's series reporting on this portion of the Heavy Metals Program. The current report describes the physical and historical features of the Golden Sunlight area and its mineral deposits.

ACKNOWLEDGMENTS

Grateful acknowledgment is made to E. A. Scholz, Vice President, American Exploration and Mining Co., for making company data available for the study, and to H. Goudey, Vice President, Exploration, and R. G. Garwood, Senior Engineer, for their valuable comments and suggestions.

LOCATION AND ACCESS

The Golden Sunlight deposit is in the Whitehall mining district, south-central Jefferson County, Mont. (fig. 2). The district is about 5 miles east and 1-1/2 miles north of the town of Whitehall, which is situated 26 miles east of Butte and 56 miles south of Helena, Mont. Whitehall is served by the Northern Pacific and Milwaukee Railroads; primary highway access is by Interstate 90, State Highway 287, and Secondary State Highway 281. Secondary access to the Golden Sunlight is by an unpaved graded road extending about 2-1/2 miles north from Interstate 90 to the mine.

The Whitehall mining district is in the southern end of the Bull Mountain Range. The Golden Sunlight group of claims are in secs 19, 20, and 30, T 2 N, R 3 W, on the rounded nose and east flank of the southern termination of the Bull Mountains (fig. 3). The property consists of patented and unpatented mining claims, with contiguous owned and leased agricultural land acquired for possible plant and tailings disposal sites.

Elevations in the district range from about 4,500 to 6,500 feet above sea level. The climate is arid, with under 10 inches average annual precipitation; July temperatures average 67° F, average January temperature is 21° F. The hillslopes are largely grass covered, with sparse pine, juniper, and scrub cedar timber.

HISTORY AND PRODUCTION

The Whitehall district was not operated in the early days of mining in Montana; the first claims were staked at the Golden Sunlight in April 1890 by Anthony A. Hedley. Later in the same year, American Development and Mining Co. acquired Hedley's interests and staked the first claims on Mineral Hill.

A stamp mill was constructed by American Development in about 1895, but was not successful, and milling operations were abandoned in 1905. During the period 1890-1910 a considerable tonnage of high-grade ore was shipped to various smelters from the so-called "Old Sunlight" workings. The estimated production for this period is 75,000 tons of ore having a gross value of $1,500,000.

In 1910 the property was acquired by H. C. Bacorn and Associates. During the term of their operations (1910-17) three long adits were driven in the Sunlight workings and two in Mineral Hill, although relatively little ore was recovered by this development.

From 1917 to 1935 various parts of the property were mined on a small scale by lessees; the aggregate tonnage and value from the leasing operations were comparatively small.

In 1920, John B. Wellcome and Alex McKay gained control of the property; their heirs gave The Anaconda Company an option to purchase the claims in 1935. During that year Anaconda carried out a mapping, sampling, and diamond drilling program that resulted in its declining to exercise the purchase option.

The A. O. Smith Corp. of Milwaukee, Wis., obtained a lease and option to purchase the Sunlight holdings from the Wellcome and McKay heirs in 1936. A. O. Smith embarked on a comprehensive program of exploration, development, and metallurgical testing that resulted in the production of a small tonnage of direct shipping ore in 1938. In 1939 Smith subleased the property; the lessees continued to make small shipments to smelters up to 1946.

The A. O. Smith Corp. took fee title to the Golden Sunlight in early 1946 and gave Martin Brothers of Butte, Mont., an option to purchase. Martin Brothers and Associates sponsored additional exploratory and metallurgical testing work, but no production resulted and Martin Brothers soon gave up its option.

In 1955-56 an attempt was made by White Development Co. to operate the mine as a moderate-volume open pit operation. A glory hole and connecting conveyor belt haulage adit were developed in Mineral Hill to mine a low-grade ore body centered around a breccia pipe. The ore was upgraded by screening, and the screen concentrates treated by cyaniding. The operation ran into difficulties and had only a token production.

American Exploration and Mining Co., San Francisco, Calif., has an option to purchase the Golden Sunlight property; it is currently investigating the deposit.

Roby (5, p. 63)[5] states, "Production for the Golden Sunlight group totals 154,308 tons of ore which yielded 57,117 ounces of gold, 78,089 ounces of silver, and 55,503 pounds of copper." The tenor of this production, based on recovery, is 0.373 ounce gold per ton, 0.51 ounce silver per ton, and 0.018 percent copper.

Table 1 gives a chronological production record in terms of tonnage and gross ore value.

TABLE 1. - Production from the Golden Sunlight deposit, Jefferson County, Mont.

Year	Tonnage	Gross value
1890-1910	75,000	$1,500,000
1910-17	5,000	200,000
1917-35	10,000	226,000
1936	4,733	149,747
1937	1,393	29,394
1938	3,329	55,440
1939	14,584	276,311
1940	4,376	72,435
1941	4,998	108,233
1942	15,393	156,692
1943	16,380	185,267
1944	14,958	177,004
1945	10,171	106,882
Total	179,955	3,243,405

The discrepancy between Roby's total tonnage figure and that of table 1 is due to differing estimates for the 1890-1910 era production.

GEOLOGY

General Statement

The Whitehall mining district is largely underlain by Precambrian clastic sedimentary rocks that are overlain to the north by a thick sequence of lower to middle Paleozoic quartzites, sandstones, limestones, and shales (figs. 4 and 5). Mesozoic lava flows form a capping over part of the Paleozoic rocks. Tertiary lakebed sedimentary rocks occupy some foothill and lowland areas; bedrock on the lower hill slopes is mantled to a large degree by Tertiary alluvial fan gravels.

The Precambrian rocks are intruded by sills, dikes, and irregularly shaped igneous bodies of Tertiary age that were emplaced in at least two stages.

[5]Underlined numbers in parentheses refer to items in the bibliography at the end of this report.

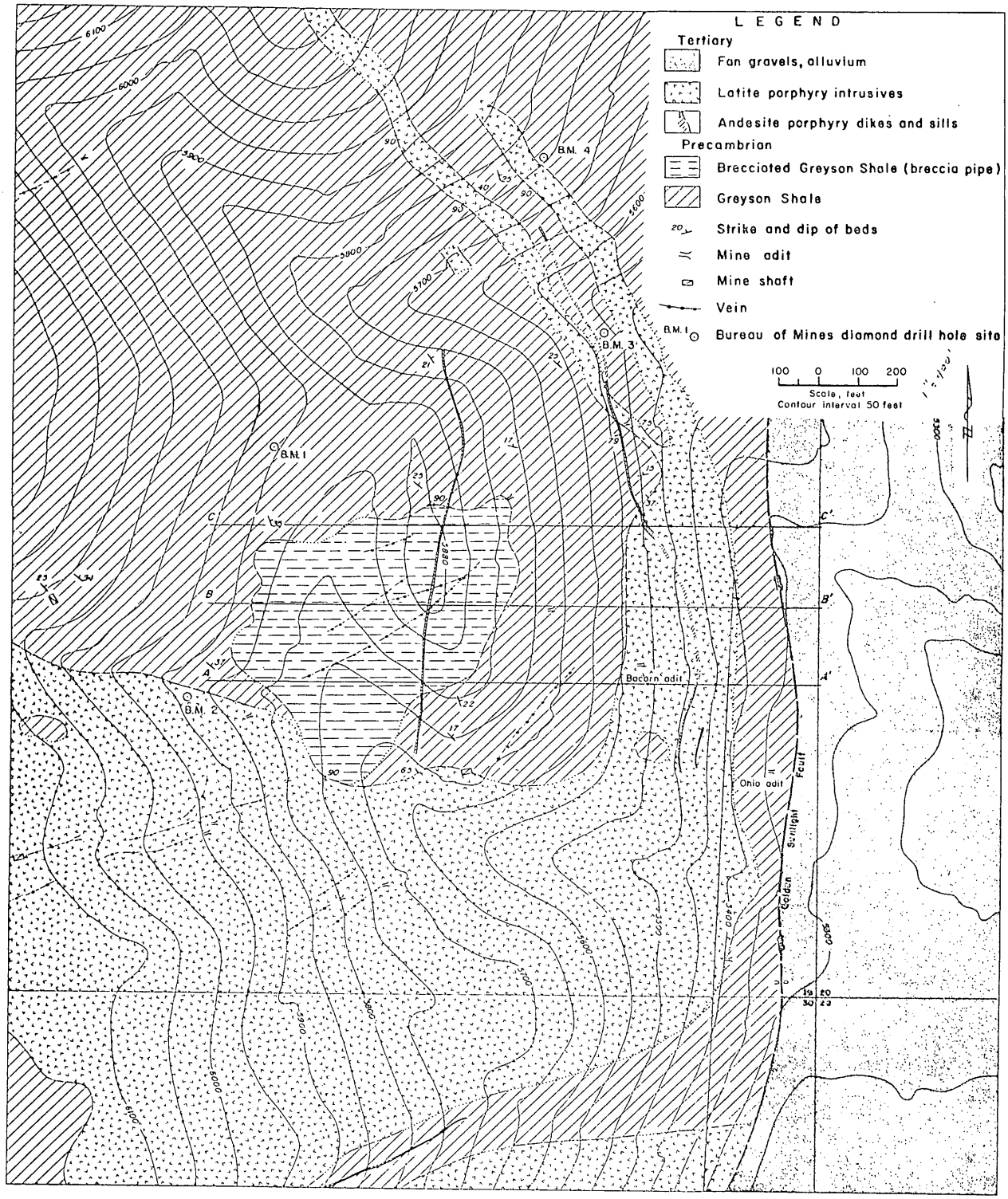

FIGURE 4. - Geological Map.

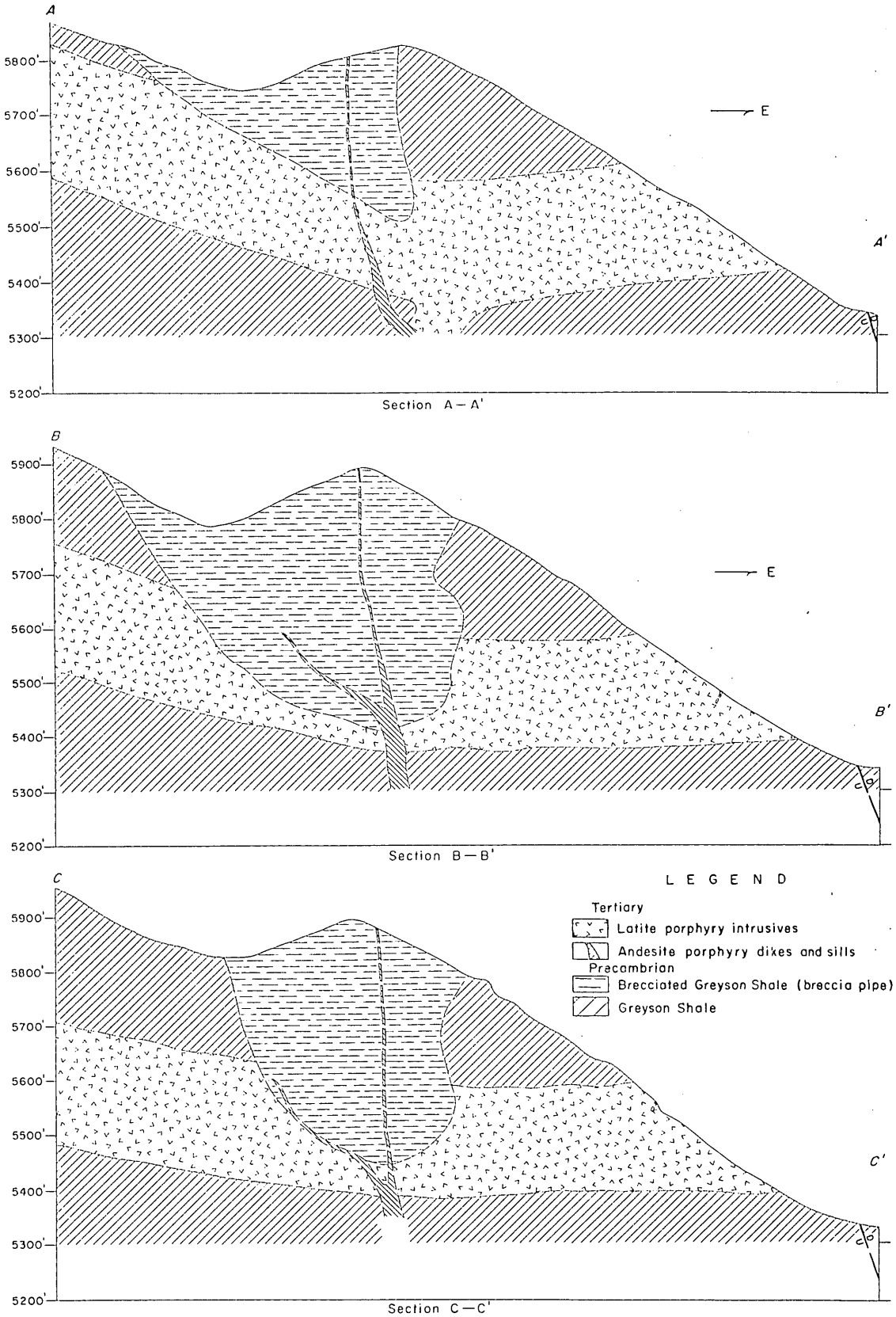

FIGURE 5. - Cross Sections.

The sedimentary rocks in the Golden Sunlight area strike northwest and dip from 15° to 35° NE, a few minor flexures and rolls occur in the bedded rocks. Major normal faults with a large strike-slip component bound the mining district on the east and west sides. Many faults of probable minor displacement cut both igneous and sedimentary rocks. A breccia pipe of silica-cemented shale, probably related to intrusive activity, occurs in the Golden Sunlight workings.

Sedimentary Rocks

Precambrian sedimentary rocks mapped in the vicinity of the Golden Sunlight mine are assigned to the Lahood Formation and the Greyson Shale belonging to the North Boulder Group of the Belt Series. The Lahood Formation rocks crop out about one-half mile south of the mine workings, beyond the boundary of the present map, but are mentioned because of possible occurrence at depth. The Lahood Formation has an approximate thickness of 1,800 feet in the mining district, and is comprised of alternating silty shale and arkosic sandstone, with minor amounts of conglomerate, siltstone, mudstone, and black limestone. In the area south of the Golden Sunlight, arkosic sandstone predominates. The sandstone is hard, resistant, variable in grain size, and is dark green to dark greenish-gray in color. Bedding thickness varies between a few inches to a few feet; in places, a prominent vertical joint set causes the rock to break out in rectangular blocks.

The Greyson Shale overlies the Lahood Formation rocks with no apparent discordance; the contact is gradational, with the base of the Greyson placed where the first underlying gray-green arkosic sandstone bed appears. This shale attains a thickness of 2,700 feet in the mining district, and is comprised mostly of tan, light gray, reddish-brown to purple silty shale, with lesser medium grained tan-gray quartzite. The shale is generally thin-bedded, fissile, and readily splits out into thin plates and shards; quartzite members are thicker bedded and exhibit a blocky jointing.

The Greyson Shale is generally well fractured and complexly jointed (possibly due in part to intrusive disturbance in the Golden Sunlight area). Because the shale breaks down to form smooth, soil-covered slopes, natural exposures are rare--most of the information concerning the shale was obtained from examining roadcuts, prospect pits, and mine openings.

Tertiary lakebed sedimentary rocks of the Bozeman Formation occupy foothill and lowland areas east of the mining district. The Bozeman Formation consists of poorly consolidated white, yellow, and red, partly tuffaceous siltstone and mudstone.

Igneous Rocks

Several small intrusive masses, having the composition of latite porphyry, crop out in the southern end of the mining district. The fresh latite is a hard, dense, light to medium gray, porphyritic rock, with prominent euhedral to anhedral feldspar laths in a fine-grained matrix. No quartz or ferromagnesian minerals are visible in hand specimens. Thin sections examined by

Alexander (1, p. 82) and Rambosek (4, p. 14) showed that orthoclase and plagioclase feldspar phenocrysts occur in nearly equal proportions in a matrix of finely crystalline feldspar, unidentifiable minerals, and small amounts of quartz. Both the phenocrysts and ground mass have been altered and are characterized by very fine sericite throughout.

The latite masses are intruded both concordantly and discordantly into the Precambrian sedimentary rocks; some individual latite bodies have both concordant and crosscutting aspects.

The latite is a ridge-former; where it appears in outcrop, large masses of blocky talus mantle the slopes below these exposures.

The latite body cropping out near the Golden Sunlight mine and exposed in the underground workings is an eastward-tilted tabular mass having a convex-downward configuration. It could best be described as an irregular-shaped intrusion having sill-like aspects, for it is only partly concordant with the surrounding shales, and has dikes branching off the main body. Underground information indicates that the latite magma may have entered the sedimentary rocks through a feeder dike located below the igneous mass. The latite body is about 200 feet thick in the Golden Sunlight area, and appears to thin to the north. Although the pipelike body of brecciated and silicified Greyson Shale occurring at the Golden Sunlight probably bears a direct genetic connection to the latite intrusion, in general, there is practically no evidence of intrusive-induced deformation in the sediments.

Small-scale dikes and concordant bodies of intermediate to basic composition occur throughout the district. Where fresh, the rock is hard, dense, porphyritic, and dark gray to dark gray-green to black in color. Megascopically visible constituents are plagioclase, biotite, and, in some instances, hornblende laths occurring as phenocrysts in a dense, fine-grained ground mass. Many of these intrusive bodies are altered to a soft, gray, incoherent material resembling gouge.

Owing to the paucity of outcrops on the soil-covered shale slopes, most of the dikes were observed in prospect cuts, roadcuts, and in underground workings. These rocks occur most frequently as dikes, although sill-like and irregularly shaped bodies were observed in mine workings. Generally, the dikes are less than 10 feet thick; they appear to have been emplaced along faults or zones of weakness, because small displacements of the intruded rocks and/or gouge zones frequently accompany the dikes. The dikes crosscut the sedimentary rocks and latite porphyry intrusives, and apparently represent the latest stage of igneous activity in the district.

Structure

The Precambrian sedimentary rocks in the vicinity of the Golden Sunlight mine form a homocline, with the beds striking northwesterly and dipping 15° to 35° NE; a few local, small-scale flexures or rolls occur in the shales.

The mining district is situated in an upthrown fault block bounded on the east and west by north-trending faults with a large normal component. One of these structures, the Golden Sunlight fault, occurs just east of the mine, and separates Precambrian sedimentary rocks from the Tertiary lakebed sediments. The Golden Sunlight fault has a normal displacement (with the fault plane steeply inclined to the east) of about 2,000 feet, and a right-lateral strike-slip component of approximately 1,600 feet. Many faults of diverse orientations cut the older sedimentary rocks and the latite porphyry intrusion near the mine, but it is thought these structures are mostly of small displacement. A zone about 40 feet wide, suspected to represent the junction of several faults, occurs underground 120 feet west of the portal in the Ohio level adit, but surface expression of this structure is obscured by overburden.

A pipelike body of silica-cemented, brecciated shale is centered above the principal underground workings of the Golden Sunlight mine. The breccia pipe has the general configuration of a downward-apexing cone that is ovoid in cross section. Individual shale breccia fragments are angular, and vary in size from 1/8 inch to 2-1/2 inches, with the 3/4-inch size predominating. The fragments have been rotated and disturbed to the extent that original bedding in the shale cannot be discerned. The cementing material is dark gray, fine-grained hard silica; pyrite occurs as finely disseminated particles and as fissure and vug fillings throughout the brecciated body. Greyson Shale in contact with the breccia pipe is well silicified, contains moderate to abundant pyrite, and although well fractured is otherwise little disturbed. Many diversely oriented faults of probable small displacement occur around the periphery of and within the pipe itself.

Rambosek (4, p. 21) credits the formation of the breccia pipe to the release of excessive pressures of magmatic gases, presumably a late phase in the igneous activity that produced the latite porphyry masses.

MINERAL DEPOSITS

Early mining efforts in the district were confined to lodes emplaced along shear zones, and to relatively narrow quartz-filled fissure veins worked strictly for high-grade gold ores. Later attempts were made to exploit a large, low-grade disseminated gold deposit at the Golden Sunlight property.

At the Golden Sunlight, the majority of the gold is thought to be carried by pyrite, although a limited amount of free gold is reported to be present with a small amount of silver. Pyrite is the dominant sulfide mineral. Minor chalcopyrite occurs, and a very small amount of molybdenite and thin coatings of a dark gray metallic mineral that may be chalcocite are also in evidence. Gangue minerals in the veins are primarily quartz, with small percentages of calcite and barite.

Hydrothermal alteration in the rocks within and surrounding the ore deposit is evidenced by silicification, sericitization in the shale, feldspar, and in the latite porphyry, and by bleaching in the shale.

There is a large gold-bearing mineralized zone characterized by both fissure veins and disseminated gold-bearing pyrite in the Mineral Hill area of the Golden Sunlight claims. Within this zone four mineralized structures are apparent:

1. Sulfides (primarily pyrite) disseminated through a sill-like latite porphyry intrusive body, and occuring in a network of irregular fractures within the intrusive rock.

2. An irregular, cone-shaped breccia pipe filled with mineralized shale fragments and a small amount of latite porphyry fragments in a matrix of silica and pyrite. Pyrite also occurs in numerous fractures and vugs within the pipe.

3. Gold-bearing pyrite deposited along bedding planes, fractures and fault surfaces in silicified, sericitized shale, and pyrite disseminated in shale without regard to bedding planes or fracture surfaces.

4. Quartz veins and mineralized shear zones cutting the shale, latite, and breccia pipe.

The core of this mineralized zone, centered around the breccia pipe, has been mined for the vein-type ores, and to a moderate extent for the gold-bearing material from the breccia pipe. The central part of the zone has been extensively explored by trenching and drilling on the surface, and by horizontal and vertical drilling in the underground workings.

MINE WORKINGS

The principal mine workings in the Golden Sunlight group of claims are located at Mineral Hill, in the E½SE¼ sec 19, T 2 N, R 3 W. A rather complex system of diversely oriented steeply dipping veins and a flattened, cone-shaped breccia pipe have been explored and exploited through three main level adits, several sublevel openings, a glory hole, and a system of interconnecting raises, winzes, and shafts. Early mining of the vein-type gold ores was done by open stope methods; the later attempt to exploit the low-grade disseminated breccia pipe ore employed a glory hole ore pass to drop open pit mined material down to a conveyor haulage system in a lower level adit.

The Golden Sunlight proper workings are located about one-fourth mile south of Mineral Hill, in the E½NE¼ sec 30. A parallel system of northeast striking, nearly vertical veins was developed by three levels through long crosscut adits driven westerly into the hill. Open stope methods, with some stopes driven through to the surface, were employed in mining.

Other veins and small vein systems were mined through a host of small-scale adits and shafts. The claims are opened on the surface by extensive bulldozer trenches and cuts, and by many hand-dug prospect holes.

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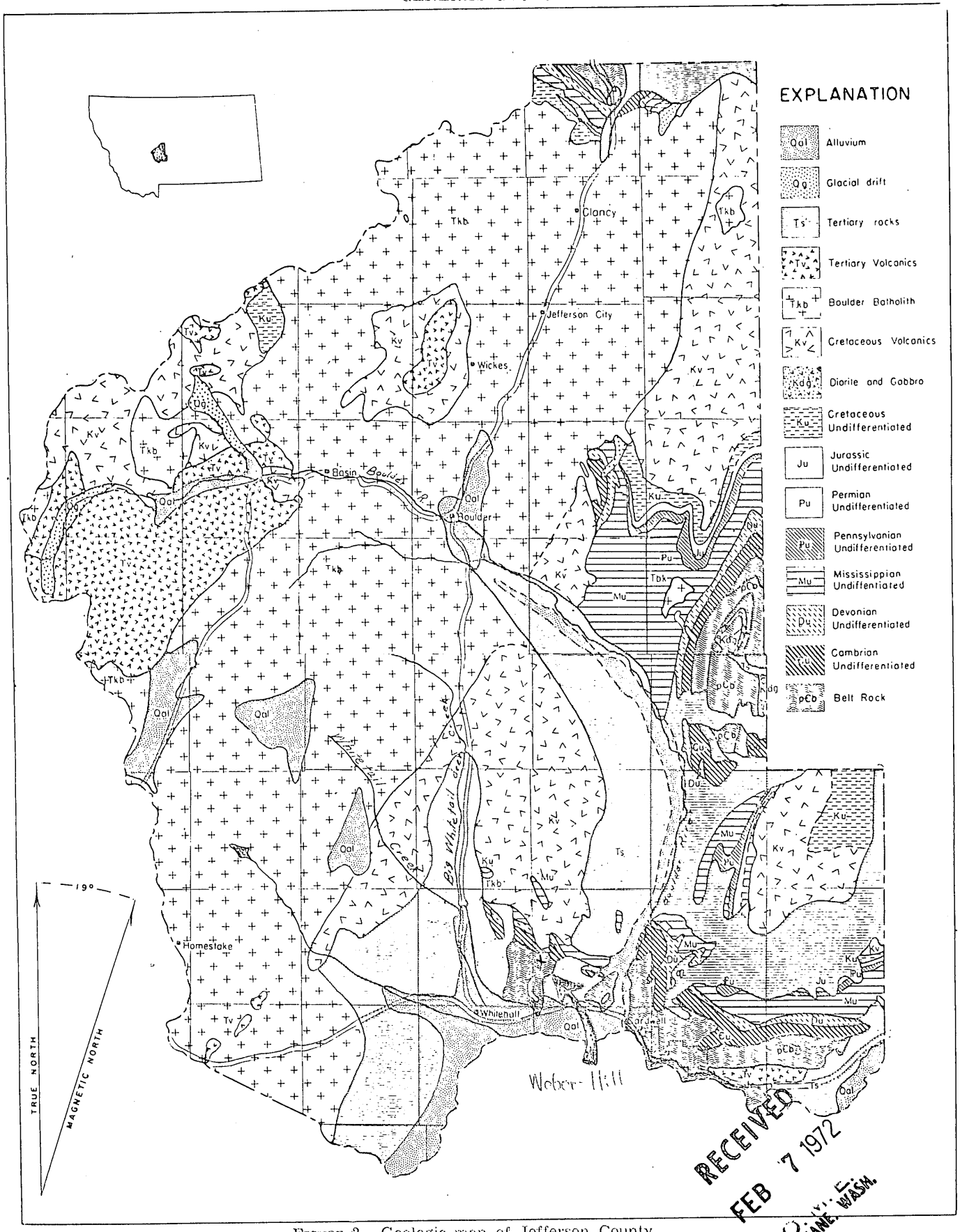

FIGURE 2.—Geologic map of Jefferson County.

Item 3g

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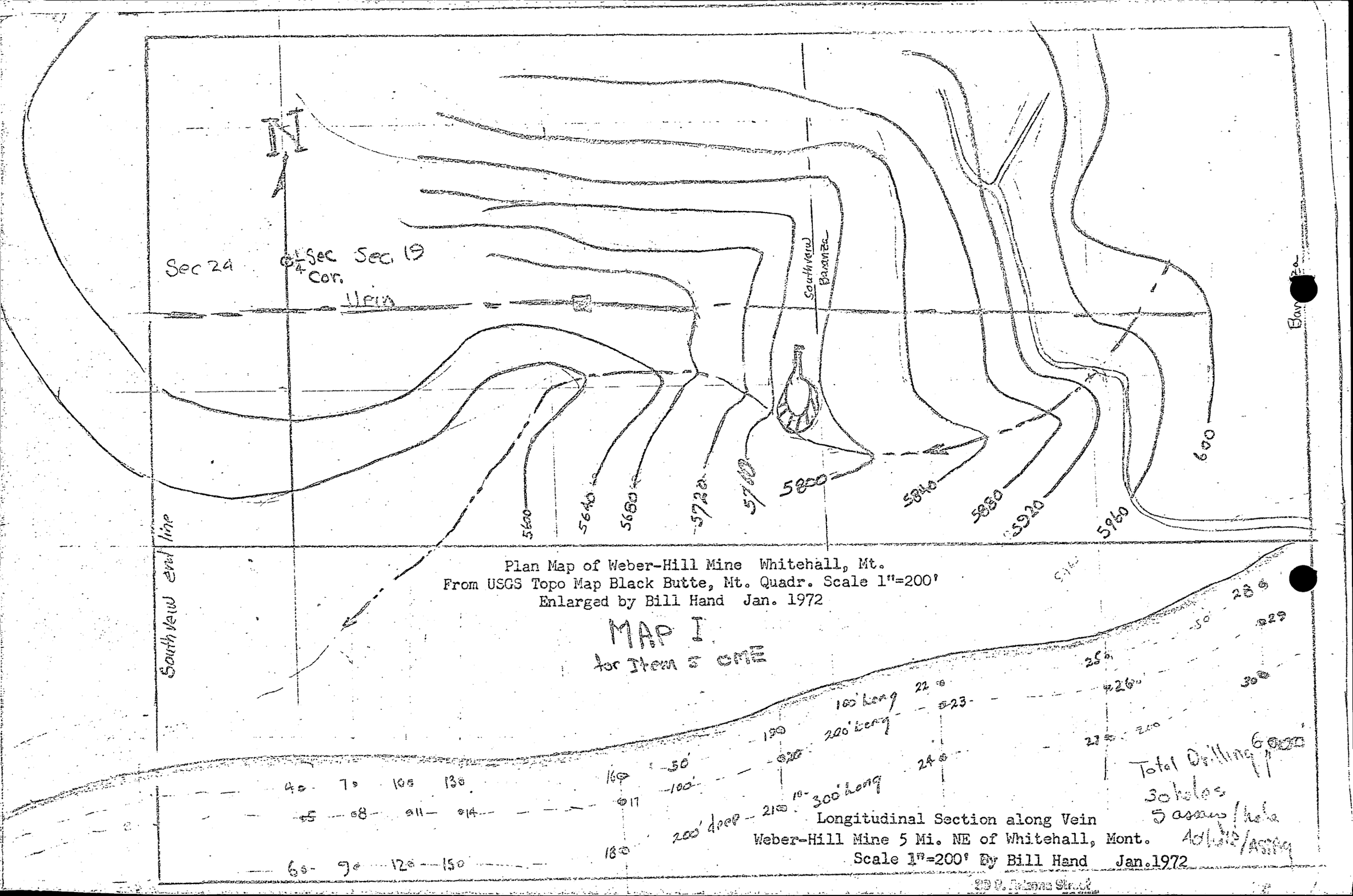
FEB 7 1972
SPOKANE, WASH.

W. M. Hand
30 S. Arizona Street
Dillon, Montana 59725



Plan Map of Weber-Hill Mine Whitehall, Mt.
From USGS Topo Map Black Butte, Mt. Quadr. Scale 1"=200'
Enlarged by Bill Hand Jan. 1972

MAP I
for Item 5 OME

Longitudinal Section along Vein
Weber-Hill Mine 5 Mi. NE of Whitehall, Mont.
Scale 1"=200' By Bill Hand Jan.1972

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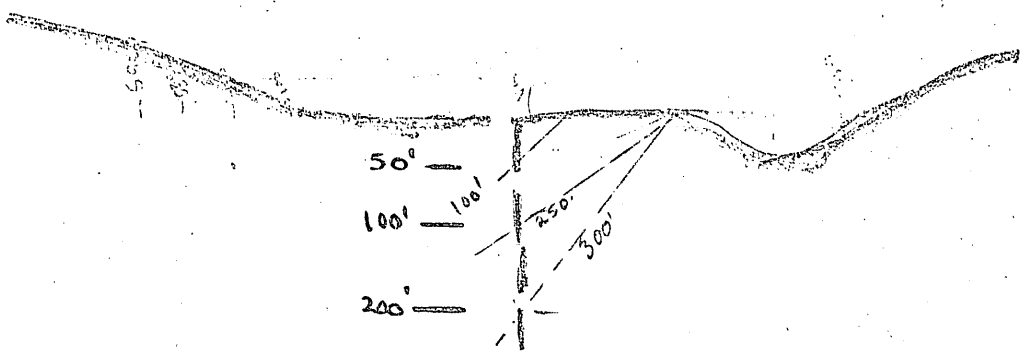
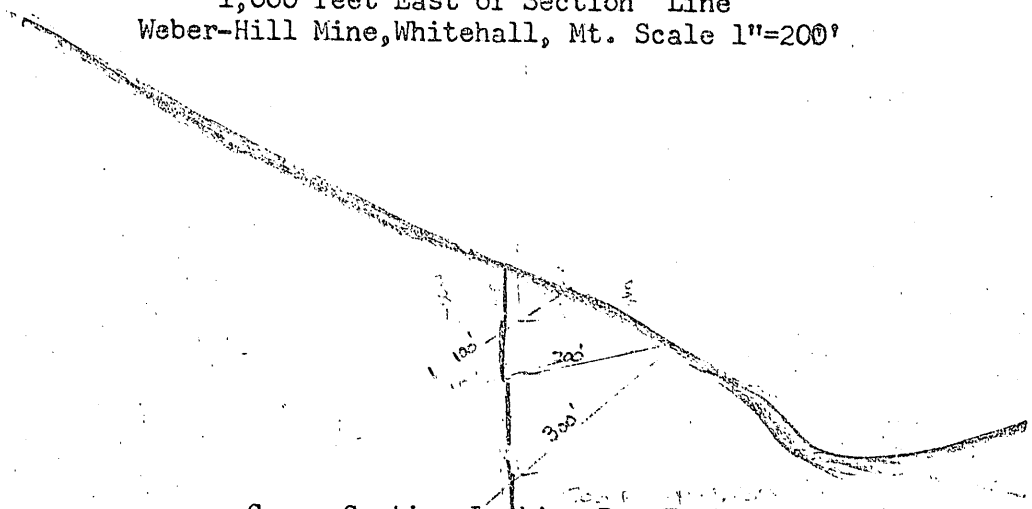
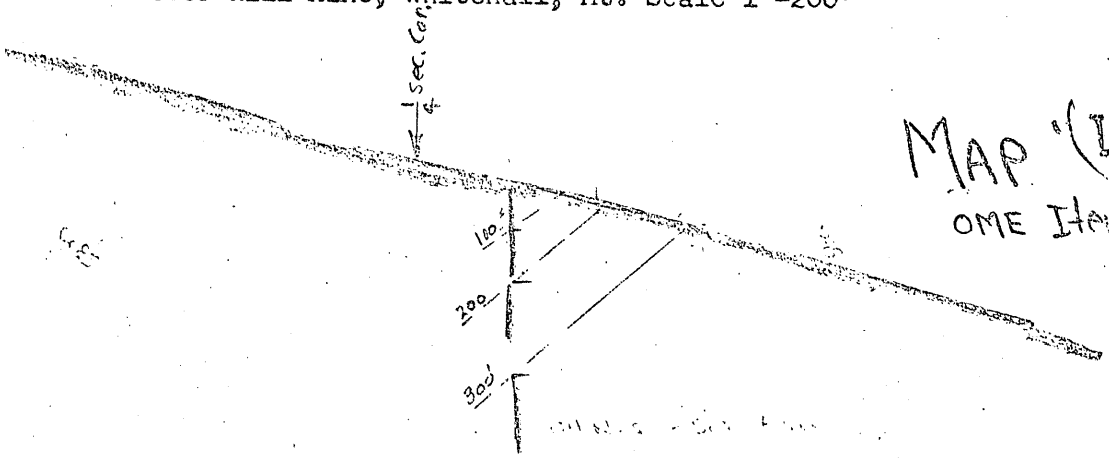


Cross Section Looking Due East
1,000 feet East of Section Line
Weber-Hill Mine, Whitehall, Mt. Scale 1"=200'



Cross Section Looking Due East
500 Feet East of Section Line
Showing Drill Hole Layout
Weber-Hill Mine, Whitehall, Mt. Scale 1"=200'



MAP (II)
OME Item 5

Cross Section Looking Due East
On Section Line
Showing Drill Hole Location

By Bill Hand Jan., 1972

30 S. Arizona Street
Dillon, Montana 59725

OME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code

MAR 1 0 1972

Mr. William M. Hand
30 S. Arizona Street
Dillon, Montana 59725

Re: OME-6866 (Silver-Gold)
William M. Hand
Weber-Hill Claims
Jefferson County, Montana

Dear Mr. Hand:

In accordance with your letter of March 5, 1972, we consider your application as withdrawn, and have transferred it to our inactive files.

Thank you for your interest in the OME program.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: DRF
Mineral Resources
OME reading file
Region I
Mr. Kirkemo
130

CCurtin/cac 3/10/72

RECEIVED
MAR 9 1972
INITIALS CODE
Cac 120 M
HK 120

30 S. Arizona St.
Dillon, Mt. 59725
March 5, 1972

United States Department of the Interior

Geological Survey Washington Office

Washington, D. C. 20242

Attention: Mr. Harold Kerkimo, Head - Office of Minerals Exploration

Dear Mr. Kirkemo:

Re: OME-6866 (Silver-Gold)
William M. Hand
Weber Hill Claims
Jefferson County, Mont

Thank you for your letter of February 24, 1972.

I light of your objective comments, I withdraw my OME application for further evaluation.

Very truly yours,

William M. Hand

William M. Hand

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
2/24/72	RWeeks	Weeks
		120
2/24	cal	220
		120M

AIRMAIL

FEB 24 1972

Mr. William M. Hand
30 South Arizona
Dillon, Montana 59725

Re: OME-6866 (Silver-Gold)
William M. Hand
Weber-Hill Claims
Jefferson County, Montana

Dear Mr. Hand:

We have reviewed your application for financial assistance to explore the Weber-Hill group of claims. Additional information would be needed for a number of items in the application, except that the geologic information and your assay data do not support your expectations for finding an exploitable low-grade deposit of silver-gold ore. Unless more favorable data are submitted, further consideration of your application is not warranted.

Present budgetary constraints on the OME program place a severe limit on us, so that only the more promising proposals can be considered for modest assistance. We regret that this is the situation, but unless additional information is forwarded that would indicate a more favorable target, we would suggest that you consider withdrawing the application.

From the limited geological information available to us about the immediate area of the Weber-Hill claims, there is no reported brecciated zone comparable to that described at the Golden Sunlight Mine. The ore recovered from the Lucky Hit is reported to have been from mineralized veins up to six feet thick, and was mined conventionally. There are no reports of ore being disseminated in fractured shales in this area, and the minable ore bodies must have been relatively small since the reported production totalled only some 6,000 tons in over 20 years of operations.

The assay data you reported is too low a grade to suggest that the values could be recovered economically through conventional treatment. The reported values of 0.01 to 0.02 oz. gold per ton and 0.1 to 0.2 oz. silver per ton also appear to be substantially below the grade of material presently being considered for treatment by leaching at the Golden Sunlight Mine. The possibility of finding a large tonnage of material containing significantly higher values than those you reported has not been demonstrated.

The economic and technical problems of open cut mining and heap leach treating of this material have not been discussed in your application. While this is a real problem that would have to be investigated rather intensively, it is not at present justified by the low values you have reported. The outlook for developing and operating the property by the method you propose is not promising.

We will be glad to review any additional information you may submit that would answer the questions mentioned above. However, after you have reviewed any additional geologic and assay information you may have and then decide to withdraw the application, please advise us.

Incidentally, we note that cash necessary to meet the operator's share of costs in the event of a contract is not immediately available. We would have to be assured that you could finance your share of the costs with cash less a fair allowance for use of equipment you may own and possibly allowance for supervision if you were the supervisor. This problem, however, is secondary to those concerning geology, and the value and recovery of the silver and gold.

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 I
Mr. Weeks
Mr. Kirkemo

RAWeeks/gla 2-24-72

February 15, 1972

Mr. William M. Hand
30 S. Arizona
Dillon, Montana 59725

Subject: OME-6866

Dear Mr. Hand:

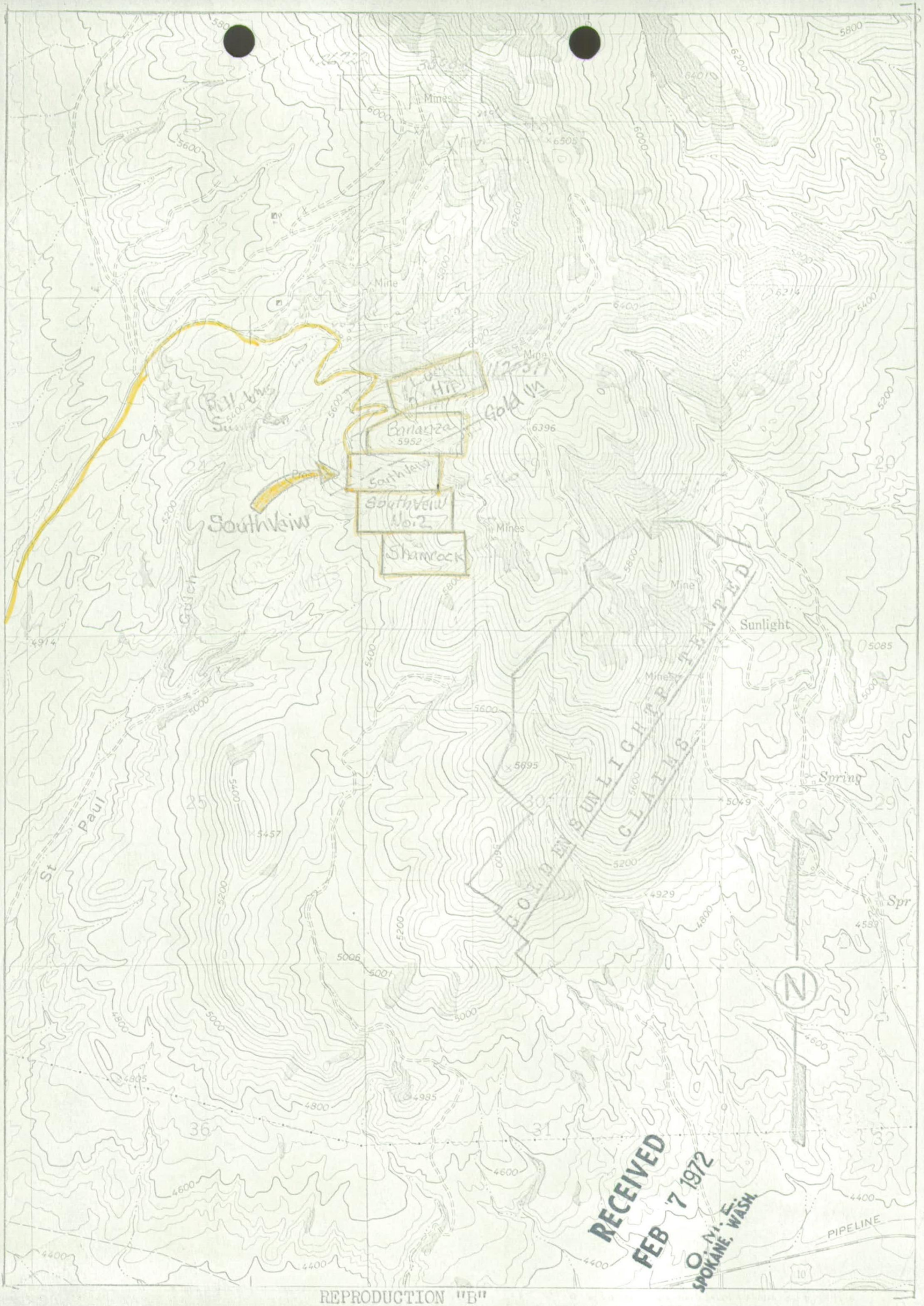
Your application for exploration assistance, dated February 2, 1972, submitted to our office at Spokane, Washington, has been assigned docket number OME-6866.

Please identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Harold Kirkemo
Chief, Office of
Minerals Exploration

Copy to Region I



REPRODUCTION "B"
U.S.G.S. Topomap "Black Butte, Mont."
Hill-Weber Property-Scale 1"=200'
Item 4a

W.M.Hand
30 S. Arizona Street
Dillon, Montana 59725