MME Form 9
Rev. Nov. 65

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey

OFFICIAL DOCKET FILE

Contract No. _____ Docket No. 6631

Application
- [x] Denied
- [ ] Withdrawn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
- [X] On-site Exam. Report (Tab) 8-24-67
- [ ] 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

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
GEOLOGICAL SURVEY
So. 157 Howard Street
Spokane, Washington 99204
May 12, 1967

OFFICIAL COPY
O. M. E.
RECEIVED
MAY 15 1967
INITIALS | CODE

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: Transmittal of Application for Assistance
Daylight Mining and Milling Co. (Silver-Lead-Gold-Copper)
Red Cloud Mine
Blaine County, Idaho

Production records that accompany this application indicate that the lead values range from 51 percent of the total dollar value per ton for 3,353 tons produced during the period 1906-1918 to 67 percent for 8,484 tons produced during the period 1884-1905. These percentages are based on prices of $35.00 per ounce for gold, $1.29 per ounce for silver and $0.14 per pound for lead.

Using a rule of thumb that for silver and lead to make up 50 percent each of the dollar value, there should be 2.2 ounces silver for each percent lead, in only two cases do the sample assays indicate sufficient silver to lead and in those two cases the difference is very slight.

At three nearby mines mentioned in the application lead provided 61 percent of the total value at the Eureka, 53 percent at the Red Elephant and 46 percent at the Mayflower.

It is concluded that at the Red Cloud mine lead would have to be considered as the principal commodity.

D. R. MacLaren

Enclosures

Hailey, Idaho
May 8,1967

Office of Minerals Exploration
Department of the Interior
South 157 Howard Street
Spokane, Washington

Dear Sir:

On May 4th I mailed you an application for the Daylight Mining and Milling Co. In assembling my two copies I found an extra copy of "Item 7 (e) " "Estimate of Costs". It is possible that this sheet is missing from one of your copies. If so will you please insert the enclosed copy.

I failed to include a section by Louis Cramer, Item 3 (g). I am enclosing 4 copies, one for each of the applications and 2 for work sheets.

I regret the inconvenience I am causing you. I made an effort to avoid just such an incident but I slipped up.

It is not necessary to return any material that I have submitted.

Very truly yours,

J. L. Sawyer, Secretary
Daylight Mining & Milling Co.
P. O. Box 506
Hailey, Idaho 83333

Wallace, Idaho
May 3,1967

Office of Minerals Exploration
Department of the Interior
South 157 Howard Street
Spokane, Washington

Gentlemen:

For your consideration, I am mailing under separate cover the application of the Daylight Mining & Milling Co. for an OME assistance loan on their "Red Cloud Mine".

Very truly yours,

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Wallace, Idaho.

RECEIVED
MAY 5 1967
O.M.E.
SPOKANE, WASH.

MME Form 40
Jan. 65

RECEIVED
MAY 8 1967

Budget Bureau No. 42-R1508
Approval expires Dec. 31, 1968

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

OFFICIAL COPY
RECEIVED
MAY 15 1967

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.)*

DAYLIGHT MINING AND MILLING COMPANY
J. D. SAWYER, SECRETARY
P.O. BOX 506
HAILEY, IDAHO 83333

INITIALS | CODE

APPLICANT DO NOT USE THIS BLOCK

DOCKET NUMBER 6631
DATE RECEIVED 5/15/67
REGION I
DIVISION CODE

BUSINESS ORGANIZATION *(Check one)*

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

STATE IN WHICH FIRM IS ORGANIZED UTAH

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

NAME	ADDRESS	TITLE
EMMETT R. MC KISSICK	1142 LORRAINE DRIVE SALT LAKE CITY, UTAH	PRESIDENT
ERIN V. HOWARD	1042 CUDAHY LANE NORTH SALT LAKE CITY, UTAH	VICE PRESIDENT
J. D. SAWYER	P.O. BOX 506 HAILEY, IDAHO	SEC'Y.* TREAS.

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE
SILVER, LEAD, GOLD AND COPPER

ESTIMATED COST OF PROJECT
$ $40,000.00

PROPERTY NAME	LOCATION COUNTY	STATE
RED CLOUD MINE	BLAINE	IDAHO

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. III). 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 Office of Minerals Exploration, Department of the Interior,* ~~Washington 25, D.C. or with the nearest OME Field Office.~~ 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.

MAY 3, 1967
DATED

J. D. Sawyer
BY *(Signature)*

Secretary - Treasurer
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

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 true copies of correspondence which show: (1) date of loan request, (2) amount and terms requested, (3) proposed use of loan funds, and (4) the 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 on MME Form 52. If the agreements cannot be obtained, state reasons and provide copies of letters of refusal.

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 and sampling methods used. Support your statement with copies of assay certificates and assay maps if available.

(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) State your reasons for expecting to find ore, and 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.

(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 and address 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 also the relation of the proposed work to any existing mine workings and to *land 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 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 cost 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. 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, materials, and supervision.

(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).]

Hailey, Idaho
April 20,1967

Mr. Robert A. Williams, Manager
First National Bank of Coalville
Coalville, Utah

Dear Bob:

The board of directors of the Daylight Mining & Milling Company desire to complete an exploration program at the Red Cloud Mine near Hailey. The project was started in July 1965. Work was terminated June 2,1966 due to lack of funds.

As you are probably aware through handling both the company account and my own, that I furnished the funds for the company to carry on this exploration.

I am not now in a position to furnish all of the necessary funds that the program will call for. The total estimated cost is forty thousand dollars ($40,000.00)

Mr. Dennis S. Anderson, a friend of mine here in Hailey has agreed to put up five thousand dollars ($5,000.00) and I will put up a like amount. This leaves us with thirty thousand dollars ($30,000.00) to raise. The financial position of most of the stockholders of the company is such that securing the necessary funds from them is out of the question.

The only assets of the company is a small balance in your bank and the patented mining ground.

Will you explore any means whereby the First National Bank of Coalville might loan the necessary funds to the Daylight Co. ? An early reply would be appreciated. If there is any additional information you might need please phone me collect.

With kindest regards,

J. D. Sawyer

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

ITEM 1 (a)

The First National Bank of Coalville

COALVILLE, UTAH

April 25, 1967

Mr. J. D. Sawyer
Box 506
Hailey, Idaho

Dear Mr. Sawyer:

We are very sorry to have to inform you that due to Federal Regulations this bank is unable to advance funds for any mining activities nor can we lend money for mining explorations.

Respectfully yours,

Robert A. Williams

Cashier

RAW/ep

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

ITEM 1 (a)

Hailey, Idaho
May 1,1967

Mr. Oscar Kline, Manager
First Security Bank of Idaho
Hailey, Idaho

Dear Mr. Kline:

In July 1965 the Daylight Mining & Milling Co. started an exploration program at its Red Cloud Mine near Hailey. At that time the funds were furnished by an individual. This individual is unable to furnish the necessary funds to complete the program but will furnish another five thousand dollars ($5,000.00). Mr. Dennis S. Anderson, a stockholder in the company and a customer of yours has agreed to furnish five thousand dollars ($5,000.00).

The total estimated cost of the program is forty thousand dollars, ($40,000.00). This leaves a balance of thirty thousand dollars ($30,000.00) which the company seeks to raise.

The board of directors and management have requested that I contact you in regards to securing a bank loan for this amount.

The company is a Utah corporation, and is qualified to do business in Idaho. The company was incorporated March 14,1901 and in addition to its ownership of patented mining ground here is the owner of two patented mining properties in Utah. There are no liens or encumbrances against any of the properties.

Will you kindly look into this loan request and if approved, let me know what the interest rates and other terms are.

Very truly yours,

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

ITEM 1 (a)

First Security Bank of Idaho
NATIONAL ASSOCIATION

HAILEY OFFICE

HAILEY, IDAHO

May 1, 1967

Mr. J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho

Dear Mr. Sawyer:

Your application for a $30,000.00 developement loan on your mining property at Deer Creek is acknowledged.

It does not appear that we would be able to grant the loan for the reason that the property offered as security is no bankable security.

The application is most appreciated and if the situation should change in any way we would be most happy to review the matter agin.

Sincerely,

O. J. Cline
Manager

OJC/wt

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

ITEM 1 (a)

There are no affiliated, parent, or controlling companies or organizations envolved or affiliated with the Daylight Mining and Milling Company in this project.

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

1. FINANCIAL ELIGIBILITY

(c) THE ESTIMATED COST OF THE EXPLORATION WORK IS SET AT $40,000.00. THE DAYLIGHT MINING AND MILLING'S SHARE WOULD BE $10,000.00 ON THE BASIS OF EXPLORING FOR SILVER.

DENNIS S. ANDERSON OF HAILEY, IDAHO, WILL FURNISH THE DAYLIGHT COMPANY $5,000.00.

J. D. SAWYER OF HAILEY, IDAHO, WILL FURNISH THE DAYLIGHT CO. $5,000.00.

THE TOTAL OF $10,000.00 WILL BE DEPOSITED TO THE CREDIT OF THE DAYLIGHT MINING AND MILLING COMPANY IN THE FIRST NATIONAL BANK OF COALVILLE, UTAH, WITHIN TEN DAYS AFTER NOTIFICATION OF APPROVAL BY THE O.M.E.

IT IS POSSIBLE THAT OTHER STOCKHOLDERS MAY WISH TO PARTICIPATE TO A SMALL DEGREE AND SUCH FUNDS RECEIVED COULD BE USED FOR LONG HOLE DRILLING IF SUCH SEEMS ADVISABLE AT THE TIME.

J. D. Sawyer, Secretary
DAYLIGHT MINING AND MILLING CO.
P. O. Box 506
Hailey, Idaho

2. APPLICANT'S RIGHTS IN LAND

(a) THE DAYLIGHT MINING AND MILLING COMPANY IS THE OWNER OF THE RED CLOUD GROUP OF PATENTED MINING CLAIMS, LOCATED IN THE MINERAL HILL MINING DISTRICT, BLAINE COUNTY, IDAHO. THE PROPERTY WAS PURCHASED ON APRIL 9, 1951, FROM F. F. SAWYER AND J. D. SAWYER, THE CONSIDERATION WAS ONE-HUNDRED THOUSAND (100,000) SHARES OF THE CAPITAL STOCK OF THE DAYLIGHT MINING AND MILLING COMPANY. THE THREE LOCATIONS WERE MADE LATER BY THE DAYLIGHT CO.

THERE ARE NO LIENS, MORTGAGES, OR OTHER ENCUMBRANCES ON THE LAND.

THERE ARE NO PROPERTY TAXES THAT ARE DELINQUENT AND THE ASSESSMENT WORK ON THE THREE UNPATENTED CLAIMS HAS BEEN PERFORMED FOR THE YEAR ENDING SEPT. 1, 1967.

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P. O. Box 506
Hailey, Idaho

LEGAL DESCRIPTION

(2) THE RED CLOUD GROUP:

This Group consists of sixteen patented lode mining claims that are contiguous. They are more particularly described as follows:

Claim Name	U. S. Patent Survey No.	Acreage
Red Cloud	1257	19,786
Passumpsic	do.	19,786
Libby Jane	do.	20,638
Geraldine	do.	12,382
Florence	do.	20,653
Troy	do.	8,850
Bay State	do.	20,523
Whale	do.	20,523
Mammoth	do.	18,486
Regulator	do.	6,270
Vindicator	do.	20,646
Red Cloud No. 2	do.	2,169
Green Mountain Boy	do.	9,595
Marianna	do.	20,646
Eighty Nine	do.	9,998
Catherine	do.	20,499

A total for this Group of 251.4 acres of patented lode mining ground, plus three unpatented claims.

The Red Cloud Group of claims is situate in the Mineral Hill Mining District, Blaine County, Idaho. They are in Township 2 North, Range 17 East, Boise Meridian, and embrace a portion of Sections 8, 9, 16, and 17. The Red Cloud Group adjoins the Red Elephant Mine on the Southeast. The Red Elephant Mine had a reported production in the early days of $1,400,000. The famous mines of the Bullion District are also a short distance to the Southeast from the Red Cloud Group.

UNPATENTED MINING CLAIMS

CLAIM NAME	DATE OF LOCATION	DATE RECORDED	BOOK NO.	PAGE NO.
Rosetta	Sept. 4, 1956	Sept. 4, 1956	157	425
Virginia	July 16, 1959	July 22, 1959	157	631
Zelpha	July 16, 1959	July 22, 1959	157	630

The above locations were recorded by the County Recorder of Blaine County, Hailey, Idaho.

All the above described mining claims are contiguous and represent the only mining property owned by the Daylight Mining and Milling Co. in the State of Idaho.

There would be no part of the above described property that would not be subject to Government royalty and liens.

The only name that the property is know by is the "Red Cloud Mine".

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P. O. Box 506
Hailey, Idaho

ITEM 2 (c) is not applicable.

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J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

ITEM 3 (a)

THE MINE WAS AN UNDERGROUND OPERATION. THERE WERE FIVE ADITS DRIVEN FROM THE SURFACE ON THE VEIN WHICH ARE DESIGNATED ON THE MAP AS LEVELS 1, 2, 3, 4, AND 5.

THERE IS ALSO A LONG CROSS-CUT ADIT OR TUNNEL WHICH WITH ITS VARIOUS BRANCHES HAS A TOTAL LENGTH OF OVER 5,000 FEET AND IS DESIGNATED ON THE MAP AS NO. 13 LEVEL. THE NO. 13 LEVEL IS CONNECTED WITH NO. 10 LEVEL BY A 300-FOOT RAISE.

LEVELS 6, 7, 8, 9, and 10 ARE UNDERGROUND LEVELS WHICH DO NOT EXTEND TO THE SURFACE BUT WHICH ARE ALL CONNECTED WITH RAISES AND WINZES FROM NO. 5 ADIT DOWN TO THE NO. 13 ADIT OR CROSS-CUT.

THE NO. 13 ADIT IS APPROXIMATELY 1,100 FEET VERTICALLY BELOW THE NO. 1 ADIT.

THE MINE IS WET BELOW NO. 5 LEVEL, BUT ALL THE WATER RUNS DOWN THE RAISES AND WINZES AND OUT NO. 13 LEVEL WHICH ACTS AS A DRAIN TUNNEL.

THE FOLLOWING MAP MADE BY THE BANNOCK ENGINEERING COMPANY IN 1906 WHICH WAS JUST PRIOR TO THE CLOSING OF THE MINE, SHOWS ALL PERTINENT DEVELOPMENT THAT MIGHT BE USED IN FUTURE OPERATIONS.

LEVELS NO. 1 AND NO. 2 ARE NOT SHOWN ON THE MAP. THE VEIN WAS VERTICAL AND IF SHOWN, WOULD HAVE FURTHER CONFUSED THE MAPPING. THE PORTAL OF NO. 1 LEVEL IS VERTICALLY ABOVE THE 300 FOOT RAISE SHOWN ON 1300 LEVEL.

SINCE THIS MAP WAS MADE IN 1906, LESSEE'S HAVE PERFORMED A LITTLE WORK ON NO. 5 LEVEL AND 13 LEVEL.

THE VEIN SHOWN BY LOUIS CRAMER WHICH IS WESTERLY OF THE MAIN VEIN AND DESIGNATED AS THE RIDGE VEIN HAS NUMEROUS TUNNELS DRIVEN ON IT ALONG ITS STRIKE. CRAMER INTERPRETS THIS VEIN AS THE TOP PORTION OF THE MAIN AND HANGINGWALL VEIN. HE SHOWS THIS LOW ANGLE FAULT ON HIS MAP. THE WORK ON THIS VEIN WAS PERFORMED IN THE EARLY DAYS BY PROSPECTORS AND LESSEE'S.

AS OF LAST FALL ALL OF THE 1300 LEVEL WAS OPEN AND ACCESSIBLE EXCEPT THE DEVELOPMENT ALONG THE "YELLOW DOG DRIFT". THE PORTALS OF NO. 1, 2, 3, 4 & 5 LEVELS ARE NOW CAVED.

THE PROPERTY IS OPENED AT DEPTH WHICH MEANS THAT THERE WILL BE NO SINKING, PUMPING OR VENTILATION PROBLEMS. THE GROUND REQUIRES A MINIMUM OF TIMBER.

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P. O. Box 506
Hailey, Idaho

ITEM 3 (a) Cont'd.

ITEM 3 (b)

THE DAYLIGHT MINING COMPANY OWNS ALL THE FACILITIES DESCRIBED ABOVE.

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P. O. Box 596
Hailey, Idaho

HISTORY OF PAST PRODUCTION

The following tables taken from U. S. Geological Survey Bulletin 814 give all the available data on the early production of the Red Cloud Mine. A photostat copy of the article in this Bulletin on the Red Cloud Mine also showing this same table on production will be found as part of this report.

(From records of E. Daft and the Ketchum Smelter)

YEAR	TONS	CONTENT GOLD OZ.	SILVER OZ.	LEAD LBS.	COPPER LBS.
1884	10.80		788.1	15,394	
1885	65.99		4,464.7	85,656	
1886	100.40		6,731.5	121,109	
1887	38.30		2,874.8	36,282	
1888	11.20(a)		8,188.5	146,566	
1889	95.00	18.22	5,228.8	100,453	
1890	412.10	.43(b)	27,983.9	545,086	
1891	1,766.90	253.15	114,450.0	2,267,914	
1892	2,098.10	305.25	134,373.9	2,705,336	
1893	1,164.70	252.56	70,254.5	1,439,651	
1894	431.00	91.80	25,023.3	525,259	
1895	102.70	24.56	5,869.9	118,622	
1896	51.60	13.398	2,055.4	386,371(e)	
1897	2.40	1.07	93.7	2,213	
1898					
1899	605.00	123.83	28,933.7	596,728	73,671
1900	1,338.80	431.36	51,591.3	1,100,796	
1901	68.20	29.73	2,256.8	49,065	5,263
1902	1.70	100.3(c)	2,278.0(d)		
1903					
1904					
1905	19.20	10.6	350.8		3,162
	8,384.0	1,656.00 1,654.258	493,791.6	13,213,227(f) 10,242,501	82,096

It is apparent that there are several errors in the above table in either the content of tonnage reported. I have lettered those that I consider incorrect and the following summary of corrections shows the changes I feel warranted to make:

LETTER	AS SHOWN	RECOMMENDED CORRECTION
(a)	11.20	112.0
(b)	.43	43.0
(c)	100.3	1.003
(d)	2,278.0	22.780
(e)	386,371	38,637
(f)	13,213,227	10,242,501

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
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The following table shows production from the Red Cloud Mine from 1884 to and including 1905 with the average assays run out and embodies the table given by the U. S. Geological Survey Bulletin with the corrections I believe warranted to make and which have been summarized previously.

(From records of E. Daft and the Ketchum Smelter)
(With corrections made by applicant)

YEAR	TONS	ASSAYS GOLD OZ.	ASSAYS SILVER OZ.	ASSAYS LEAD %	ASSAYS COPPER %	CONTENT GOLD OZ.	CONTENT SILVER OZ.	CONTENT LEAD LBS.	CONTENT COPPER LBS.
1884	10.80		72.97	71.3			788.1	15,394	
1885	65.99		67.66	64.9			4,464.7	85,656	
1886	100.40		67.04	60.3			673.5	121,109	
1887	38.30		75.06	47.4			2,874.8	36,282	
1888	112.00		73.11	65.4			8,188.5	146,566	
1889	95.00	.192	55.04	55.3		18.22	5,228.8	100,453	
1890	412.10	.104	67.91	66.1		43.00	27,983.9	545,086	
1891	1,766.90	.143	64.77	64.2		253.15	114,450.0	2,267,914	
1892	2,098.10	.145	64.05	64.5		305.25	134,373.9	2,705,336	
1893	1,164.70	.217	60.32	61.8		252.56	70,254.5	1,439,651	
1894	431.00	.213	58.06	60.9		91.80	25,023.3	525,259	
1895	102.70	.239	57.16	57.8		24.56	5,869.9	118,622	
1896	51.60	.260	39.83	37.4		13.40	2,055.4	38,637	
1897	2.40	.446	39.04	46.1		1.07	93.7	2,213	
1898									
1899	605.00	.205	47.82	49.3	6.08	123.83	28,933.7	596,728	73,671
1900	1,338.80	.322	38.54	41.1		431.36	51,591.3	1,100,796	
1901	68.20	.436	33.09	36.0	3.86	29.73	2,256.8	49,065	5,263
1902	1.70	.590	13.40			1.00	22.8		
1903									
1904									
1905	19.20	.552	18.27		8.23	10.60	350.8		3,162
	8,484.89	.196	57.22	58.5	5.93	1,599.53	485,478.4	9,894,767	82,096

Note: The average assays in the totals are based on those tons that had content reported.

Could be worked for cyanide results?

PRODUCTION OF THE RED CLOUD MINE, 1906-1918
(From records of U. S. Geological Survey)
(Taken from Bulletin 814)

YEAR	ORE SOLD OR TREATED (TONS)	CRUDE ORE SHIPPED TO SMELTER	ORE TO MILL (TONS)	CONCTS. PRODUCED (TONS)	METALS RECOVERED GOLD OZ.	SILVER OZ.	LEAD LBS.	COPPER LBS.
1906	3,200	33	(a) 3,200	320		10,030	89,600	
1911	33	33			7.46	1,599	37,998	
1917	69		69	23	9.36	249	3,730	140
1918	51	40	11		22.27	414	7,100	
	3,353	73	3,280	343	39.09	12,292	138,428	140

(a) Old tailingstreated.

Note: The year 1918 shows 40 tons crude ore shipped and 11 tons to mill, but no concentrates are indicated. I believe this is an error in columnar listing and the 40 tons should be in the column as

(Continued on following page)

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Note (Continued)

"Ore to Mill" and the 11 tons listed as "Ore to Mill" should be listed in the column "Concentrates Produced". The following table is given showing these corrections.

PRODUCTION OF THE RED CLOUD MINE, 1906 - 1918 "CORRECTED"

(FROM RECORDS OF THE U. S. GEOLOGICAL SURVEY)

(Taken from Bulletin 814

YEAR*	ORE SOLD OR TREATED (TONS)	CRUDE ORE SHIPPED TO SMELTER	ORE TO MILL (TONS)	CONCTS PRODUCED (TONS)	METALS RECOVERED			
					GOLD OZ.	SILVER OZ.	LEAD LBS.	COPPER LBS.
1906	3,200		(a) 3,200	320		10,030	89,600	
1911	33	33			7.46	1,599	37,998	
1917	69		69	23	9.36	249	3,730	140
1918	51		51	11	22.27	414	7,100	
TOTAL	3,353	33	3,200	354	39.09	12,292	138,428	140

(a) Old Tailings treated.

PRODUCTION FROM THE RED CLOUD MINE
1941 AND 1942

YEAR	LOT NO.	TONS (DRY)	GOLD OZS.	ASSAYS					CONTENT		
				SILVER OZS.	LEAD %	COPPER %	IRON %	SILICA %	GOLD OZS.	SILVER OZS.	LEAD LBS.
1941	1	55,835	.125	3.675	3.4		5.9	80.4	6,979	205.19	3,797
1942	2 to 16 Incl	821,523	.1172	3.610	3.249	.115			96.283	2965.94	54,028
TOTAL		877.358	.1177	3.614	3.295	.115	5.8	81.1	103.262	3171.13	57,825

Note: The assays on copper, iron and silica were not complete, therefore, the average assays on these products represent only the average of those lots assayed.

The above product was tailings that were shipped direct to the American Smelting & Refining Co., Garfield, Utah.

The average net smelter on Lots 1 - 16 ...$ 2.61
The total net returns 2,286.85
Premium pay on lots 2 - 16, Incl..... 742.98

Total net returns $3,029.83

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ITEM 3, PHYSICAL DESCRIPTION

(d) THERE ARE NO KNOWN ORE RESERVES.

(e) THE GEOLOGIC FEATURES, MINERALS AND FORMATIONS ARE PRETTY WELL COVERED BY THE FOLLOWING COPIES OF ARTICLES, REPORTS AND MAPS AND INFORMATION FOUND ELSEWHERE IN THIS APPLICATION.

1. ACCOUNT ON THE RED CLOUD MINE IN U. S. G. S. BULLETIN 814, (GEOLOGY AND ORE DEPOSITS OF THE WOOD RIVER REGION, IDAHO)
2. REPORT BY WALDEMAR LINDGREN ON THE RED CLOUD MINE IN U. S. G. S. TWENTIETH ANNUAL REPORT. PART 3, PAGE 204. (THE GOLD AND SILVER VEINS OF SILVER CITY, DELAMAR AND OTHER MINING DISTRICTS IN IDAHO).
3. COMMENT ON THE WOOD RIVER DISTRICT IN "MINERAL DEPOSITS" BY WALDEMAR LINDGREN.
4. PUBLISHED ARTICLE IN THE "MINING AND SCIENTIFIC PRESS", DECEMBER 14, 1907, TITLED "FAULTING IN THE RED CLOUD MINE" BY H. W. TURNER.
5. MAP AND SECTIONS BY LOUIS CRAMER, MADE IN MAY 1946.

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THE MAPS AND SECTIONS MADE BY LOUIS CRAMER WHICH ARE A PART OF THIS APPLICATION SHOULD PROBABLY BE EXPLAINED.

IN 1945, THE RED CLOUD PROPERTY WAS OWNED BY F. F. SAWYER AND J. D. SAWYER. IN 1945 I APPLIED FOR AND RECEIVED A $5,000.00 REHABILITATION LOAN FROM THE RESONSTRUCTION FINANCE CORPORATION. THE WORK WAS COMPLETED THE FALL OF THE SAME YEAR.

IN MAY 1946, MR. LOUIS CRAMER WHO WAS THE EXAMINING GEOLOGIST FOR THE R. F. C. EXAMINED THE RED CLOUD MINE AND CHECKED ON THE WORK WE HAD ACCOMPLISHED. THE WAR WAS OVER AND THE R. F. C. WAS BEING PHASED OUT SO THAT PRECLUDED THE POSSIBLILITY FO CONTINUING WITH A DEVELOPMENT LOAN.

SOME OF MR. CRAMER'S MAPS, AND SECTIONS, SHOWING SOME GEOLOGY AND ASSAYS ARE CONSEQUENTLY MADE A PART OF THIS APPLICATION.

AT THE PRESENT TIME MR. CRAMER IS A CONSULTING GEOLOGIST IN SALT LAKE CITY. HIS OFFICE IS IN THE ATLAS BUILDING.

A MATTER THAT I BELIEVE IS OF SIGNIFICANCE OCCURRED IN 1959. MR. CRAMER RECOMMENDED THE RED CLOUD MINE TO A CLIENT. THE CLIENT WAS MR. RICHARD O. PIERCE WHO IS THE OWNER OR PIERCE EQUIPMENT AND STEEL COMPANY OF SALT LAKE CITY. THE PROPOSED WORK AT THAT TIME WAS THE SAME AS THE DAYLIGHT CO. HAS ALREADY PARTLY ACCOMPLISHED AND HOPES TO COMPLETE. I MET WITH MR. PIERCE BUT TERMS COULD NOT BE AGREED UPON AND THE MATTER WAS CLOSED.

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ITEM 3 REASONS FOR EXPECTING TO FIND ORE

(f) THE REASONS WHY I BELIEVE ORE WILL BE FOUND AS A RESULT OF THE PROPOSED EXPLORATION WORK ARE AS FOLLOWS:

TO AVOID CONFUSION, I WILL DESIGNATE THE NAME OF: "EAST VEIN" TO THE VEIN THAT IS REFERRED TO BY TURNER AS A "LARGE VEIN" EAST OF THE RED CLOUD VEIN AND WHICH IS THE VEIN THAT THE PROPOSED EXPLORATION WORK WILL BE PERFORMED ON. THE HANGINGWALL WILL BE THE WESTERLY WALL TO CONFORM TO THE RED CLOUD VEINS.

****

THE EAST VEIN IS ABOUT 550 FEET EAST OF THE RED CLOUD VEIN. THE "EAST VEIN" IS PARRALLEL AND WITH THE SAME GENERAL STRIKE AS THE RED CLOUD VEIN.

BOTH THE RED CLOUD VEIN AND THE "EAST VEIN" HAVE A HANGINGWALL VEIN INTERSECTING THEM. BOTH THESE INTERSECTIONS ARE NEARLY OPPOSITE ONE ANOTHER.

BOTH VEINS ARE APPARENTLY NEARLY VERTICAL.

PERMIT ME TO DIGRESS FOR A MOMENT.

THE SUMMER OF 1958 MY SON AND I WERE DRIVING THE "RAT" TUNNEL. ONE MORNING AS MY SON AND I WERE PREPARING TO LEAVE HAILEY TO DRIVE TO THE RED CLOUD AN ACQUAINTENCE OF MINE FROM PARK CITY, UTAH, APPEARED. HE WAS MR. HAROLD V. STEWART WHO HAD JUST TERMINATED HIS SERVICES AS CHIEF GEOLOGIST FOR THE UNITED PARK CITY MINES CO. AT PARK CITY, UTAH, FOR PERSONAL REASONS. HE WAS ON A VACATION AND ACCOMPANIED THE TWO OF US TO THE MINE FOR THREE DAYS. HE SPENT HIS TIME EXAMINING THE "EAST VEIN" AND ADJOINING AREA. I WAS BUSY AND DID NOT ACCOMPANY HIM AS I HAD "A ROUND IN AND A ROUND OUT TO MAKE". I WAS NOT PREPARED TO EXPEND ANY MONEY ON GEOLOGY WORK, SO I DID NOT ASK HIS OPINION. I KNEW THAT HE WAS HIGHLY REGARDED AS A GEOLOGIST.

I RETURNED TO PARK CITY AND ON NOV. 12, 1958, MR. STEWART CALLED ON ME AT MY HOME. HE STATED HE WAS IN PARK CITY ON PERSONAL BUSINESS AND THAT HE INTENDED TO TAKE UP FURTHER STUDIES AT THE COLORADO SCHOOL OF MINES AFTER THE 1st OF THE YEAR.

J. D. SAWYER, Secretary
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(Cont'd)

IF I RECALL CORRECTLY IT WAS IN RESPECT TO GEOPHYSICS. HE ASKED ABOUT THE RED CLOUD MINE AND THEN MADE THIS STATEMENT: QUOTE (OF THE PROPERTIES I HAVE EXAMINED, THERE ARE ONLY TWO THAT I COULD RECOMMEND AND THE RED CLOUD MINE IS ONE OF THEM, BUT YOU WILL HAVE TO GET TO THE INTERSECTION OF THE TWO VEINS) UNQUOTE. HE WAS REFERRING TO THE "EAST VEIN" AND ITS INTERSECTING HANGINGWALL VEIN.

THE "EAST VEIN" HAS THE SAME GENERAL STRIKE AS THE PRODUCTIVE VEINS TO THE SOUTHEAST, NAMELY THE RED ELEPHANT, MAYFLOWER, AND EUREKA, ALL OF WHICH ARE IN THE SAME MINERAL BELT.

THE MOST PROMISING SURFACE INDICATIONS ALONG THIS "EAST VEIN" ARE FROM THIS INTERSECTION (WHICH IS NEAR THE PRESENT FACE OF THE MAIN X CUT) SOUTHEAST TO THE GOSSAN INDICATED ON THE MAP, A DISTANCE OF ABOUT 900 FEET. THIS GOSSAN AREA IS MORE EXTENSIVE THAN INDICATED ON THE MAP. ONLY THREE OF THE CUTS ON IT ARE SHOWN.

THIS PROMISING STRETCH OF THE "EAST VEIN" IS OPPOSITE THE PRODUCTIVE LENGTH OF THE RED CLOUD VEIN.

FROM WHAT I HAVE READ AND STUDIED, I HAVE THE UNDERSTANDING THAT IN A SYSTEM OF PARALLEL VEINS IT IS QUITE COMMON FOR ORE BODIES TO BE ARRANGED OPPOSITE ONE ANOTHER.

ONE OF THE ESSENTIALS OF MINERAL DEPOSITION IN A VEIN OF THIS TYPE IS THAT RECURRENT MOVEMENT WITHIN THE VEIN SHOULD HAVE TAKEN PLACE DURING MINERALIZATION. THE OUTCROPPING OF THIS "EAST VEIN" SHOWS ABUNDANT EVIDENCE OF AN EARLY DEPOSITION OF QUARTZ, FRACTURED AND LATER RECEMENTED BY SILICIOUS SOLUTIONS.

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IN THE "OLSON" AND "RAT" TUNNELS SMALL SCATTERINGS OF GALENA WERE FOUND. THE SILVER-LEAD RATIO WAS THE SAME AS FROM THE RED CLOUD VEIN. CLEAN PYRITE FROM THE RED CLOUD VEIN (IN THE UPPER LEVELS) WOULD ASSAY ABOUT ONE OUNCE IN GOLD. A SMALL KIDNEY OF ABOUT A TON THAT I ENCOUNTERED NEAR THE FACE OF THE "RAT" TUNNEL WHICH WAS ARSENOPYRITE ASSAYED AS FOLLOWS: AU. 1.3 OZ., AG. 1.0 OX. PB. 0.0 %. THE PRINCIPAL GANGUE MINERAL OF THE ORE FROM BOTH VEINS IS QUARTZ.

THE ABUNDANT EVIDENCE OF FRACTURED QUARTZ IN THE OUTCROP, THE ORE THAT WAS FOUND AS MENTIONED ABOVE, THE MASS OF GOSSAN ON THE SOUTHEAST PORTION OF THE VEIN TOGETHER WITH ABUNDANT OXIDATION PRODUCTS OF PYRITE AND POSSIBLY SIDERITE INDICATE THE VEIN HAD ACCESS TO MINERAL SOLUTIONS.

THE "EAST VEIN'S" OUTCROPPING ALONG THE AREA BEING CONSIDERED LIES PRETTY MUCH ALONG A RIDGE. THE RED CLOUD VEIN IS SITUATE IN THE DRAW WESTERLY. THE DIFFERENCE IN ELEVATION OPPOSITE NO. 5 PORTAL IS ABOUT 288 FEET. TOWARDS THE SOUTHEAST THE BOTTOM OF THE DRAW STEEPENS MORE RAPIDLY THAN THE RIDGE ON WHICH THE "EAST VEIN" OUTCROPS. THEREFORE, NO. 1 PORTAL OF THE RED CLOUD VEIN WOULD PROBABLY BE ABOUT 100 FEET LOWER THAN THE GOSSAN OF THE "EAST VEIN". THERE HAS BEEN NO ORE BODY ERODED FROM THE TOP OF THE RED CLOUD VEIN. I BELIEVE LINDREN'S STATEMENT THAT THE ORE BODIES HAVE NO RELATION TO THE PRESENT SURFACE SHOULD BE KEPT IN MIND.

THESE ARE SOME OF THE MAIN REASONS THAT I BELIEVE ORE WILL BE FOUND.

ALL OF THE PROPOSED EXPLORATION WILL BE DRIFTING ON THE VEIN AND I BELIEVE ANY ROUND COULD ENCOUNTER ORE.

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REPORT BY WALDEMAR LINDGREN

The gold and silver veins of Silver City, De Lamar, and other mining districts in Idaho, U. S. G. S. Twentieth Annual Report, Part 3, Page 204, 1900.

Red Cloud Mine - This noted vein crops on the ridge between Bullion and Red Cloud gulches, at an elevation of about 8,000 feet. The mine has been worked chiefly during the last decade but was idle in 1898. A new strike was reported in 1899, and the mine is again producing. The total production is estimated at $500,000.00 of which $150,000.00 is said to have been dividends.

The developments consist of ten levels opened by tunnels and shafts, and a deep tunnel 1,100 feet below the croppings. This lowest tunnel is a cross-cut for 1,800 feet, and its various branches have a total length of 5,000 feet. The vein, which crops in limestone and calcareous shale has a North-northwesterly strike and is nearly vertical. Figure 22 shows a section of the vein as well as several minor faults by which it has been thrown. A well-defined vein was followed for a horizontal distance of several hundred feet through the different levels down to Level 8 or 9.* The lowest tunnels, however, show slight indication of a fissure, except in so far as the rock where the vein should be is much crushed. The ore is of the ordinary kind but usually carries a few ounces in gold; some quartz gangue is also present as well as some arsenopyrite.

A short distance East of the Red Cloud a vein with prominent croppings passes through the McMahon, Whale, Mammoth, and Bay State claims. It does not appear to carry any notable values. The same vein is believed to have been found in the deep tunnel where it is also barren.

* In 1899 the continuation of an old ore shoot was found on the Hanging Wall Vein, between Levels 7 and 9, which is reported to have produced during the same year $55,000.00.

Note - Figure 22 is the same as Figure 2 of the Mining and Scientific Press, Page 747 of December 14, 1907.

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THE FOLLOWING TWO SHEETS ARE PHOTOSTATS OF AN ARTICLE APPEARING IN THE MINING AND SCIENTIFIC PRESS IN THE DECEMBER 14, 1907, ISSUE.

THE TITLE OF THE ARTICLE IS "FAULTING IN THE RED CLOUD MINE" AND WAS WRITTEN BY H. W. TURNER, MINING ENGINEER.

THIS ARTICLE, THOUGH BRIEF, GIVES SOME OF THE ESSENTIAL FACTS AND CAN BE CONSIDERED RELIABLE.

TO GIVE PROPER CREDENCE TO THIS ARTICLE, A COMMENT ON MR. H. W. TURNER IS JUSTIFIED.

In MINERAL DEPOSITS by LINDGREN, Lindgren refers to H. W. Turner as follows:

Page 464
H. W. Turner, Am. Jour. Sci., 3d ser., 47, 1894, p.467

Page 470
H. W. Turner, The Terlingua quicksilver deposits, idem, 1905, pp265-281

Page 545
H. W. Turner and F. L. Ransome
Sonora folio, Geol. Atlas 41, U. S. Geol. Survey, 1897, and other folios of the same region by Lindgren and Turner.

Page 550
H. W. Turner, Notes on the gold ores of California, Am. Jour. Sci., 3d., ser., 47, 1894: idem 3d ser., 49, 1905: Replacement deposits in the Sierra Nevada, Jour. Geol., 7, 1899, pp. 389 - 400.

Page 551
H. W. Turner, Seventieth Ann. Rept., U. S. Geol. Survey, pt.1, 1896, p.664.

Page 810
H. W. Turner and A. F. Rigers, Econ. Geol., 9 1914, pp. 359 - 391,

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Faulting in the Red Cloud Mine.

Written for the MINING AND SCIENTIFIC PRESS
By H. W. TURNER.

The Red Cloud mine is situated in the Wood River district, Idaho, in the Deer Creek drainage, about seven miles due west of Hailey, the county seat of Blaine county.

This district has long been famous for its lead-silver veins, the galena always carrying silver. The deposits are true veins occupying distinct fissures. Since the formation of the veins the rocks of the region have been extensively faulted, and the fact that a number of important mines are idle is due chiefly to the veins being lost, that is, cut off by faults. In certain cases, by judicious exploration, the veins have been recovered and production continued.

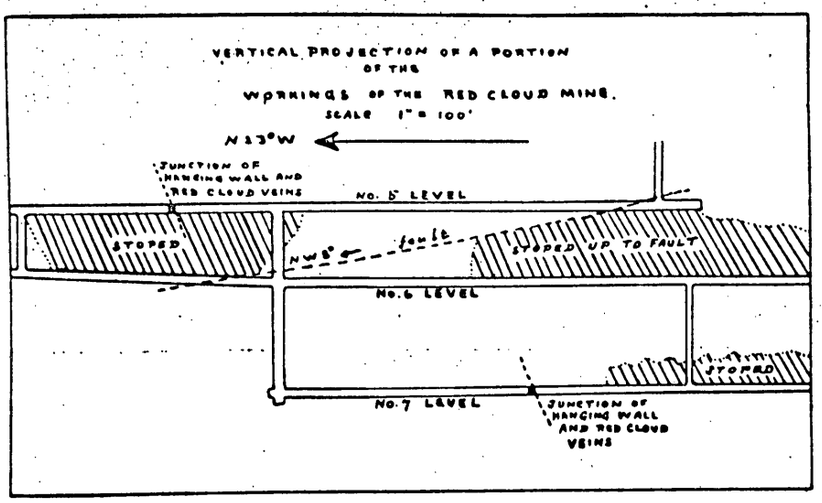

Fig. 1.

The Red Cloud deposits are in a calcareous shale, which has been shown by Waldemar Lindgren* to be of Carboniferous age. There are several veins on the property, but the two referred to in this paper are the only ones that have been developed extensively. The ore was an argentiferous galena with some blende and pyrite, and according to Mr. Lindgren, also arsenopyrite.

Between 1880 and 1902, the Red Cloud mine produced ore of a gross value of $815,802, as shown by the original records of the company in the possession of Judge Lyttleton Price, since deceased. Of this production, $680,424 came almost entirely from the main, or Red Cloud, vein and nearly all the balance, or $135,377, from the hanging-wall vein. The total product was 5,141 tons of lead (59.39%), 511,331 oz. silver (59.7 oz. per ton), and some gold, especially in the hanging-wall vein. Under the Kennelly lease, ore was extracted almost entirely from the stopes on the hanging-wall vein, 1,952 tons being shipped, containing 709 oz. gold, or 0.36 oz. per ton. The ore of this stope contained pyrite, and the gold is said to go with the pyrite.

The property was worked through adits for a vertical distance of 1,065 ft., but practically all the ore extracted came from above No. 9 level, which is only 706 ft. below the surface as measured from the mouth of No. 1 adit.

Two veins have produced practically all the ore. These are the main, or Red Cloud, vein and the hanging-wall vein. The former runs the entire length of the Red Cloud claim, and probably even farther south, toward the Red Elephant mine. It strikes about N. 23° W. true meridian, and dips westerly at a high angle, being in places nearly vertical. The hanging-wall vein branches off from the main vein to the northwest. It strikes about N. 50° W., and dips southwest at an average angle of 60°. The ore in the main vein came chiefly from the stopes to the south of the junction of the two veins.

Faulting has occurred on a small scale at numerous points in the mine, but the two movements that have affected the orebodies to the greatest extent are those herein described.

To illustrate the faulting, three sketches have been prepared. On these, only those features are shown that are exposed in the mine workings. Thus, the main vein on Fig. 3 does not appear between points X and Y, because it is not exposed in No. 6 adit between these points. Likewise the hanging-wall vein on No. 6 level is not shown as uniting with the main vein, as the point is not proven by actual work on this level, although the two veins must really join on No. 6 level, as they are proven to do on No. 5 level above and No. 7 level below. An exception was made in case of the gouge seam shown on Fig. 3. This is exposed only at the west ends of No. 8 level, No. 9A level, and in No. 10 level. No. 9A level is 15 ft. above No. 9 level.

The fault with the greatest throw is that shown in Fig. 1. A block of ground containing the upper levels of the mine has been shoved N. 20° W. a distance of about 240 ft. along a slip dipping northwesterly about 8°. This fault, or slip, cuts both No. 5 and No. 6. levels, and is best seen at the south end of No. 5 level, where the ore was stoped to the slip. By following the old stopes, the fault sur-

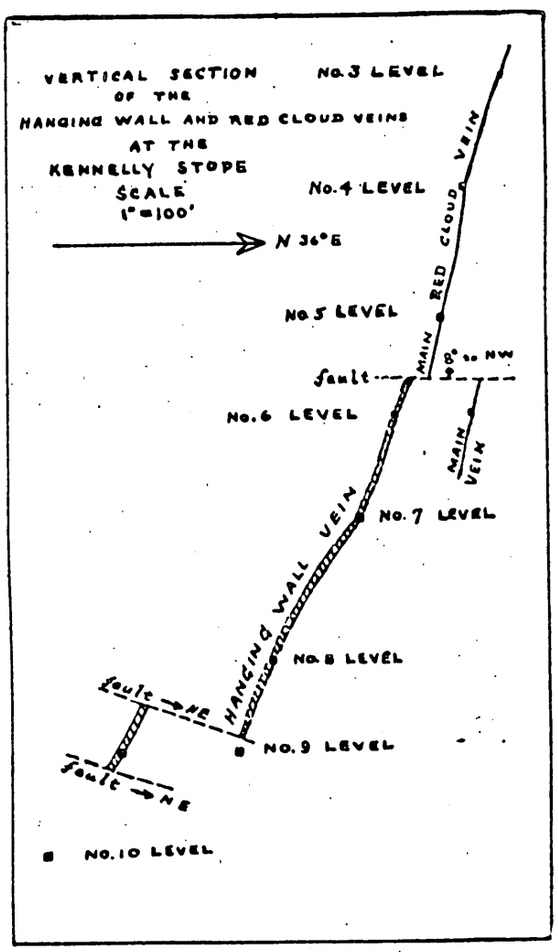

Fig. 2.

*Twentieth annual report of the U. S. Geological Survey, p. 204.

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ITEM 3 (g)

face can be seen finely exposed for study, as it everywhere forms a roof to the stope.

The vein known as the hanging-wall vein branches off to the northwest from the main vein, and the point of its junction with the main vein is shown on Fig. 1, on No. 5 and No. 7 levels. In consequence of the faulting above described, the upper portion of this hanging-wall vein has been thrown northwesterly about 240 ft., which determines the throw on this fault-plane. On No. 6 level, in consequence of this movement, the hanging-wall vein appears twice, as shown in the horizontal projection of the workings in Fig. 3. The stope A, No. 6 level, represents the portion of the vein in the thrown block, and this stope is a continuation of the Kennelly orebody, although now 240 ft. to the northwest of its original position.

About the time the stopes of the main Red Cloud vein were exhausted the Kennelly ore-shoot on the hanging-wall vein was opened up, and the vein was followed down to No. 9A level, about 15 ft. above No. 9 level. Drifts on No. 9 level failed to find any vein or ore. Subsequently a cross-cut driven to the southwest encountered the vein, and it was finally demonstrated that the vein had been thrown 90 ft. to the southwest along a slip which inclined upward approximately 15° (see Fig. 2). The vein in this block was stoped to the fault, but in underhand stoping below No. 9 level it was found that the vein was again cut off by another slip, probably parallel to that above.

Considerable work was done on No. 10 level, and in the drift shown in cross-section on Fig. 2, on No. 10 level, some easterly dipping seams were found containing pyrite and zinc-blende, and one seam with lumps of argentiferous galena, which may represent drag ore. The hanging-wall vein itself was not, however, found on No. 10 level, although it is likely that a cross-cut run to the southwest from No. 10 would soon encounter the vein.

A gouge seam (see Fig. 3) on No. 8 and No. 9 levels cut off the vein to the north. This gouge seam has a nearly north strike and dips easterly about 68°. It represents a fault with a N-S trend on a different plane from those of the faults above described.

It is absolutely demonstrated in the Red Cloud mine that the veins are displaced by two marked monuments. One of these threw a block of ground above No. 6 level 240 ft. to the north, and another at about No. 9 level threw a block of ground 90 ft. to the southwest. It is also evident that this movement was repeated just below No. 9 level, the vein again being thrown, presumably in the same direction to the southwest.

At a point 1,065 ft. vertically below the mouth of No. 1 adit, a cross-cut 1,773 ft. long was run in an easterly direction. This cut a strong gouge seam containing calcite, and showing, by washing, some grains of sulphides.

This gouge seam has a course N. 10° E. and dips southwest at about 45°. It was known as the Yellow Dog vein, and was followed by a drift for 580 ft. From this drift another cross-cut was extended east a distance of 435 ft., when a second vein was encountered and a drift, known as the Kelly, was run on this vein for about 530 ft. At one point, a few tons of galena containing 100 oz. silver per ton, were extracted. The strike of the Kelly vein is about N. 45° W. and the dip southwest, from 33° to 60°. From the Kelly drift, two cross-cuts were extended easterly each about 330 ft. in length, both of them cutting a third vein with a trend about N. 35° W. and a southwesterly dip. This third vein likewise contains grains of sulphides and vein-quartz but no commercial ore.

If we suppose that the block of ground containing the upper productive mine to have been shoved to the southwest on, say, the Yellow Dog vein, which is probably a great fault, the Kelly vein might correspond in position and trend to the hanging-wall vein and the third vein to the main or Red Cloud vein of the upper workings.

It has also been suggested that a large vein, apparently lean in ore, that exists on the surface to the east of the Red Cloud, represents one of these veins in depth. Undoubtedly more ore exists on the property, and as the expense of opening up in depth has already been incurred, it is a good gamble to make further explorations under the direction of an engineer conversant with the laws of faulting. Altogether, about 5,000 ft. of work was done on the lower adit-level without disclosing any orebody.

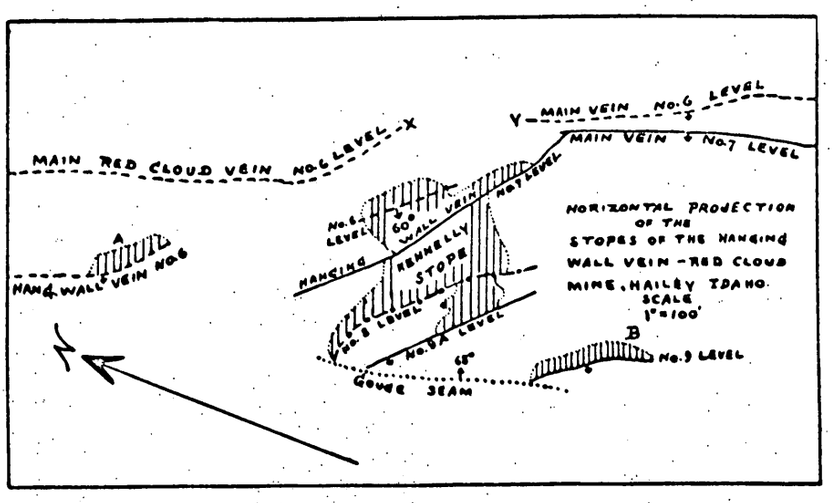

Fig. 3.

Road Distances in Nevada.

During an automobile journey through the principal mining districts of Nevada, W. Q. Wright, Pacific Coast manager for the Wellman-Seaver-Morgan Co., ascertained the actual road distances between the prominent mining camps and towns of Nevada. The trip was made over the regular roads used by automobile stage-lines, and in order to measure each distance correctly an odometer was attached to Mr. Wright's machine. It will be interesting to those who have already traveled by stage in Nevada to note the discrepancies between the distances recorded herewith by Mr. Wright and the mileage as charged for by the motor stage companies:

Localities.	Distance Miles.
Reno to Wadsworth	35
Wadsworth to Hazen	16
Hazen to Fallon	18
Fallon to Rawhide	45
Rawhide to Fairview through Monte Cristo and Eagleville	42
Fairview to Wonder	14
Wonder to Hercules	1½
Hercules to Cloverdale	94
Cloverdale to Round Mountain	39
Cloverdale to Duluth	48
Fairview to Duluth	46
Fairview to Fallon	39
Round Mountain to Manhattan by the foothill road	18
Manhattan to Tonopah	45
Tonopah to Goldfield through Diamondfield	29

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The following four sheets are photographs of an article on the Red Cloud Mine, appearing in Geological Survey Bulletin 814, "Geology and Ore Deposits of the Wood River Region, Idaho".

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pounds of lead, and 58 pounds of copper. A tunnel with its portal on the Iris claim exposed the vein under the Arizona open cut, and there are several other small tunnels on the two claims. The Plata Mining Co. has confined its efforts so far to driving a crosscut tunnel which is intended to cut the Arizona vein at depth. The portal of this tunnel is some distance down the gulch to the southeast of the old workings. On July 27, 1923, the tunnel had been driven somewhat more than 380 feet with a trend of N. 28° E. and two short drifts to the northwest had been opened from it. Soon after this date operations were suspended.

The country rock belongs to the Wood River formation and is principally dark siliceous and calcareous shale. The strata are steeply inclined, nearly vertical in a number of exposures, and vary widely in strike. They have been both folded and faulted. In one of the tunnels on the Iris claim there is a dike of granitic rock.[30] The Arizona vein strikes about N. 30° W. and dips very steeply to the southwest. The drift in the new tunnel nearest the portal follows a slightly mineralized slip that strikes N. 40° W. and stands vertical. The other is near the tunnel face and is on a similar slip that strikes N. 50° W. The banded calcareous shale near the portal of the tunnel stands nearly vertical and strikes N. 30° W. According to Mark King two veins have been struck in work done since the property was visited, and development is proceeding steadily.

RED CLOUD MINE

The Red Cloud mine is 1½ miles northwest of the Red Elephant mine, in sec. T. 2 N., R. 17 E., at an altitude of about 7,500 feet. Only the lowest level was accessible in 1913, and in it most of the side drifts were flooded. Except for the account of the work on the tailings in progress in 1923, the following description is compiled from the published descriptions by Lindgren[31] and Turner[32] and from the observations of Umpleby in the small part of the workings accessible to him. Between 1880 and 1902 the Red Cloud mine produced ore of a gross value of $815,802. The period of greatest activity was between 1888 and 1898. The tailings dump was reworked in 1906, and there has been intermittent mining since then.

[30] Landwehr, R. W., personal communication.
[31] Lindgren, Waldemar, op. cit., p. 204.
[32] Turner, H. W., Faulting in the Red Cloud mine: Min. and Sci. Press, vol. 95, pp. 747-748, 1907.

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The following tables give all available data on the production of the Red Cloud mine:

Early production of Red Cloud mine

[From records of E. Daft and the Ketchum smelter]

Year	Ore	Gold	Silver	Lead	Copper
	Tons	*Fine ounces*	*Fine ounces*	*Pounds*	*Pounds*
1884	10.8	----------	788.1	15,394	----------
1885	65.99	----------	4,464.7	85,656	----------
1886	100.4	----------	6,731.5	121,109	----------
1887	38.3	----------	2,874.8	36,282	----------
1888	11.2	----------	8,188.5	146,566	----------
1889	95.0	18.22	5,228.8	100,453	----------
1890	412.1	.43	27,983.9	545,086	----------
1891	1,766.9	253.15	114,450.0	2,267,914	----------
1892	2,098.1	305.25	134,373.9	2,705,336	----------
1893	1,164.7	252.56	70,254.5	1,439,651	----------
1894	431.0	91.80	25,023.3	525,259	----------
1895	102.7	24.56	5,869.9	118,622	----------
1896	51.6	13.398	2,055.4	386,371	----------
1897	2.4	1.07	93.7	2,213	----------
1899	605.0	123.83	28,933.7	596,728	73,671
1900	1,338.8	431.36	51,591.3	1,100,796	----------
1901	68.2	29.73	2,256.8	49,065	5,263
1902	1.7	100.3	2,278	----------	----------
1905	19.2	10.6	350.8	----------	3,162
	8,384.0	1,656.0	493,791.6	13,213,227	82,096

Production of Red Cloud mine, 1906–1918

[From records of U. S. Geological Survey]

Year	Ore sold or treated	Crude ore shipped to smelter	Ore to mill	Concentrates produced	Metals recovered			
					Gold	Silver	Lead	Copper
	Tons	*Tons*	*Tons*	*Tons*	*Fine ounces*	*Fine ounces*	*Pounds*	*Pounds*
1906	3,200	----------	[a] 3,200	320	----------	10,030	89,600	----------
1911	33	33	----------	----------	7.46	1,599	37,998	----------
1917	69	----------	69	23	9.36	249	3,730	140
1918	51	40	11	----------	22.27	414	7,100	----------
	3,353	73	3,280	343	39.09	12,292	138,428	140

[a] Old tailings re-treated.

The property has been extensively developed on 10 levels, opened by tunnels and shafts, and there is a still deeper tunnel which with its various branches has a total length of 5,000 feet. This tunnel is nearly 1,100 feet below the outcrop of the lode. It runs N. 88° E. for 1,825 feet and then extends several hundred feet southward with long drifts to the east and west at several places. About 500 feet from the turn is a raise to the upper workings.

The country rock is limestone and calcareous shale of the Wood River formation. The main vein strikes about N. 23° W. and dips steeply southwest, and a branch of it, known as the hanging-wall vein, strikes about N. 46° W. and dips more than 60° SW. Nearly all the ore was mined from stopes above level 9, which is 706 feet below the surface at the portal of No. 1 adit.

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The veins are broken by a number of faults, some of the larger of which are shown in the two sections in Figure 12. According to Turner (fig. 12, B), the fault of greatest displacement is that between levels No. 5 and No. 6. Here an ore body has been displaced 240 feet along a slip which dips only about 8° NW. At about the No. 9 level there is a fault which dips about 15° NE. and displaces the vein 90 feet. This fault may correspond to one above the No. 8 level shown in Lindgren's section (fig. 12, A), which is presumably taken through a different part of the mine from that given by

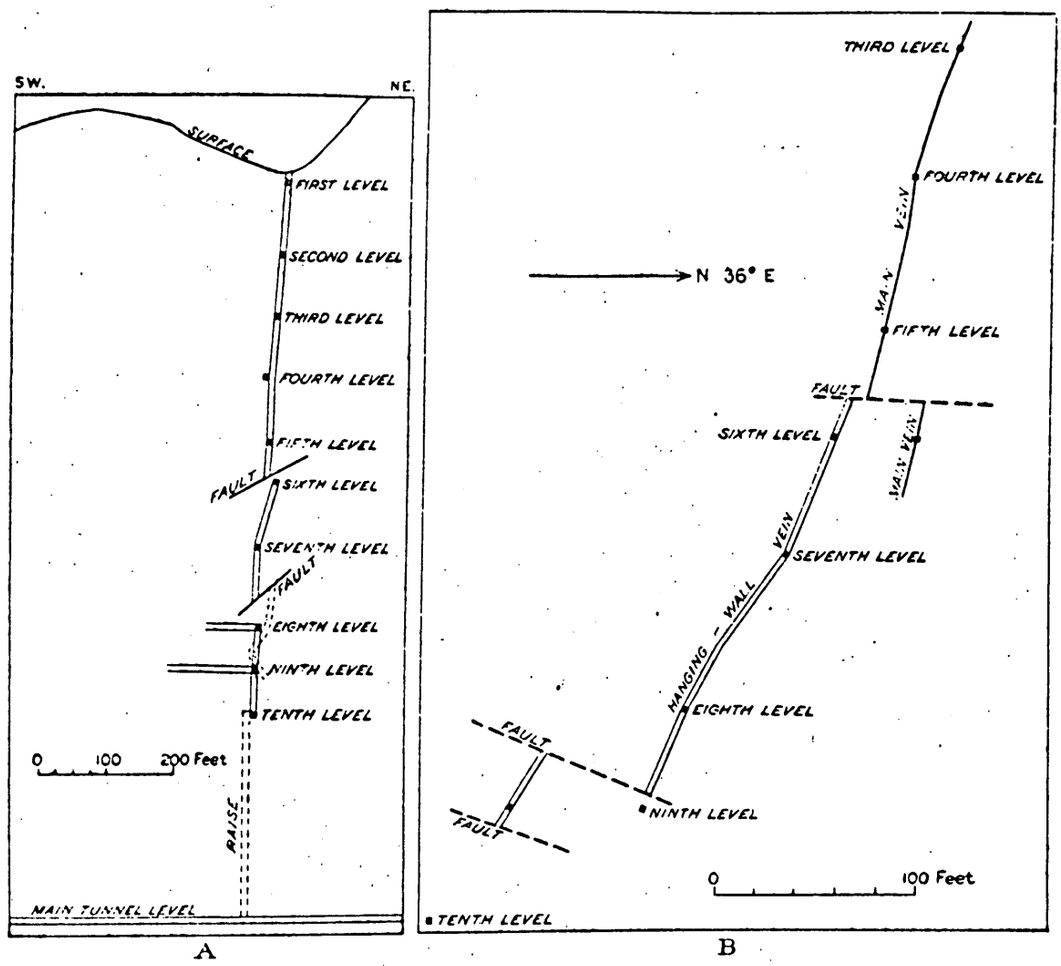

FIGURE 12.—Vertical sections of the Red Cloud vein. (After Waldemar Lindgren and H. W. Turner)

Turner (fig. 12, B). Below it is another slip, which Turner interprets as a parallel fault. The vein has not been identified below this slip, although several zones of fracture showing some mineralization are exposed in the lowest tunnel and the drifts from it. A few tons of silver-lead ore has been mined from one of these drifts. A vein with prominent outcrops but of very low grade is exposed a short distance east of the mine, and this may correspond to one of the fracture zones on the lowest level. At the turn in this lowest tunnel there is a zone of shattered rock devoid of mineralization which may represent the continuation of the main vein mined above. That this

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crushed zone represents the vein fissure is indicated by its relation to a barren cross vein recognized throughout the mine.

The ore as seen on the lower dump and near the old mill consists of sphalerite, galena, pyrite, arsenopyrite, and small amounts of tetrahedrite and chalcopyrite in a siderite-quartz gangue. In this ore, as in that from the North Star mine, the sphalerite and siderite have been extensively brecciated and cemented, largely by pyrite and arsenopyrite. The ore contains many partly replaced inclusions of the limestone wall rock. Although worked for the lead and silver it contained, the ore carries a noteworthy amount of gold.

This mine has now been shut down for some time, and most of the workings are inaccessible. In the summer of 1923 M. G. Smith was setting up jigs and tables at the mouth of Red Cloud Gulch to treat tailings from the old mill. He planned to operate his machinery with water power from a ditch out of Wolf Tone Creek and to sluice the tailings down to his plant with water from one of the mine tunnels. He intended to make pyrite, lead-silver, and zinc concentrates but expected to derive most of his profit from the pyritic concentrate. He estimated from his own samples and assays that the clean pyrite here carries an average of an ounce of gold to the ton.

PASS GROUP

The Pass group is 1½ miles northwest of Bullion, about the head of Narrow Gage Gulch, a tributary of Deer Creek, in sec. 9, T. 2 N., R. 17 E. It lies within the area of sedimentary rocks a few hundred yards back from the quartz monzonite. The principal development is on the Argent claim, which was worked for many years prior to 1900 and is credited with a production of about $160,000. A little ore has been produced since then. The following tables give the available data on the early production. Presumably the production credited to the Pass mine came from claims of this group other than the Argent. The records of the United States Geological Survey show that 1 ton of ore yielding 99 ounces of silver and 1,571 pounds of lead was shipped in 1911.

Early production of Pass mine

[From records of E. Daft and Ketchum smelter]

Year	Ore	Gold	Silver	Lead
	Tons	*Fine ounces*	*Fine ounces*	*Pounds*
1885	28.5	----------	3,997.8	37,124
1886	74.5	----------	7,496.0	92,228
1887	6.5	----------	571.2	9,015
1897	19.8	----------	1,515.6	23,260
1899	69.0	0.14	4,675.0	80,745
	198.3	.14	18,254.7	242,372

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ITEM 4 ACCESSIBILITY OF PROPERTY

ITEM 4 (a)

ANY ONE REPRESENTATIVE WHO MAY WISH TO EXAMINE THE PROPERTY WILL BE MET IN HAILEY, IDAHO, AND TAKEN TO THE MINE BY:

J. D. SAWYER, 410 WEST BULLION STREET, HAILEY, IDAHO

TELEPHONE 788-4146

IF AN EMERGENCY SHOULD ARISE AND J. D. SAWYER SHOULD BE OUT OF TOWN, THEN CONTACT:

DENNIS S. ANDERSON, 318 4th AVENUE SOUTH, HAILEY, IDAHO

TELEPHONE 788-2966

TO REACH THE PROPERTY (RED CLOUD MINE) DRIVE NORTH THROUGH HAILEY ON HIGHWAY 93, three miles TO A SIGN INDICATING THE DIRECTION TO THE CLARENDON HOT SPRINGS. AT THIS POINT TURN LEFT (WEST) AND PROCEED UP DEER CREEK PAST THE CLARENDON HOT SPRINGS TO A FOREST SERVICE MARKER INDICATIONG "WOLFTONE CREEK", THEN TURN LEFT AND PROCEED UP WOLFTONE CREEK ABOUT A MILE, THE ROAD THEN LEAVES WOLFTONE CREEK AND TURNS LEFT AND BEGINS TO CLIMB STEEPLY TO THE PROPERTY.

THERE IS WHAT WOULD BE CLASSED AS A POOR ROAD FROM WOLFTONE CREEK UP TO NO. 13 LEVEL AND ON UP TO NO. 5 LEVEL. THIS ROAD IS ABOUT 1.7 MILES LONG. IT IS ADEQUATE FOR THE PROPOSED WORK. THE PORTAL OF THE CROSS CUT WHERE THE PROPOSED WORK IS TO TAKE PLACE IS ABOUT 227 FEET NORTHERLY AND 40 FEET BELOW THE NO. 5 ADIT. IT IS ADVISABLE TO USE A 4-WHEEL DRIVE VEHICLE WHICH WILL BE FURNISHED BY EITHER SAWYER OR ANDERSON.

ITEM 4 (b)

THE SHIPPING AND SUPPLY POINT IS HAILEY, IDAHO. THE DISTANCE FROM THE UNION PACIFIC RAILROAD DEPOT AT HAILEY TO NO. 5 ADIT OF THE RED CLOUD MINE is 15.1 MILES.

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THE FOLLOWING THREE (3) SHEETS ARE PHOTOSTATS FROM:

"MINERAL DEPOSITS" BY WALDEMAR LINDGREN.

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O. M. E.
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relatively poor in silver, but is sometimes recovered as a by-product in concentration.

Chalcopyrite is less abundant than tetrahedrite; pyrite is not conspicuous; while arsenopyrite and pyrrhotite occasionally appear, particularly in granitic country rock.

The ore-bodies often replace calcareous shales along the vein; but these shales appear to have been little altered, except for the introduction of metallic minerals and some siderite. In granular, feldspathic rocks close to the vein, sericite, carbonates, and a chlorite rich in iron develop in large amounts and sulphides are introduced. A complete replacement by sulphides is unusual. Sodium is almost wholly removed, but potassium fixed as sericite and calcium fixed as carbonate remain.

The structure of the ore is generally massive, and large bodies of galena are common. Smaller veins may show banded structure, but rarely comb structure. Sometimes a thin layer of quartz may be found along the wall, then a narrow comb of calcite, while the mass of the vein consists of massive galena, alternating with bands of sphalerite and containing intergrown tetrahedrite. The galena frequently shows phenomena of pressing, gliding, and recrystallization.

The width of the veins rarely exceeds a few feet, and part of this is usually crushed country rock. Their outcrops are inconspicuous.

The ore-shoots are markedly irregular and the cost of mining is therefore high. A marked deterioration may often be observed in depth; the large bodies of rich silver ore—aside from those affected by the surface enrichment—are found comparatively near the surface and the lower levels commonly show pinched veins or a predominance of sphalerite, pyrite, and quartz.

The upper, oxidized parts of the veins are usually enriched by secondary silver chloride, native silver, and pyrargyrite.

Wood River, Idaho.[1]—The silver-lead veins near Hailey, Idaho, on the Wood River, north of the Snake River lava plains, discovered in 1864, yielded a production of more than $25,000,000, most of it from 1880 to 1896. A small output is still maintained.

The district lies a few miles east of the eastern contact of the great granitic batholith of central Idaho, and the prevailing rocks are calcareous shale, quartzite, and limestone of Carboniferous age, compressed in northwestward-striking folds (Fig. 230). These sedimentary rocks are intruded by a minor batholith of diorite and quartz monzonite, following the general direction of the strata and from 2 to 3 miles wide. The deposits are fissure veins arranged in two parallel linked systems (Fig. 229) along

[1] W. Lindgren, Wood River mining district, *Twentieth Ann. Rept.*, U. S. Geol. Survey, pt. 3, 1900, pp. 218–231.

J. B. Umpleby, L. G. Westgate, C. P. Ross, and D. F. Hewett, *Bull.* 814, *idem*, 1930

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the contacts of the batholith and in places cutting across the contacts into the granitic rock. Some of the veins follow lamprophyric dikes. Their strike generally cuts the stratification at an acute angle and their dip is prevailing 50° southwest. The outcrops are inconspicuous. Most of the veins are in calcareous shale.

The ore consists of galena, sphalerite, and tetrahedrite, with but little pyrite and chalcopyrite; the gangue is siderite, or intermediate

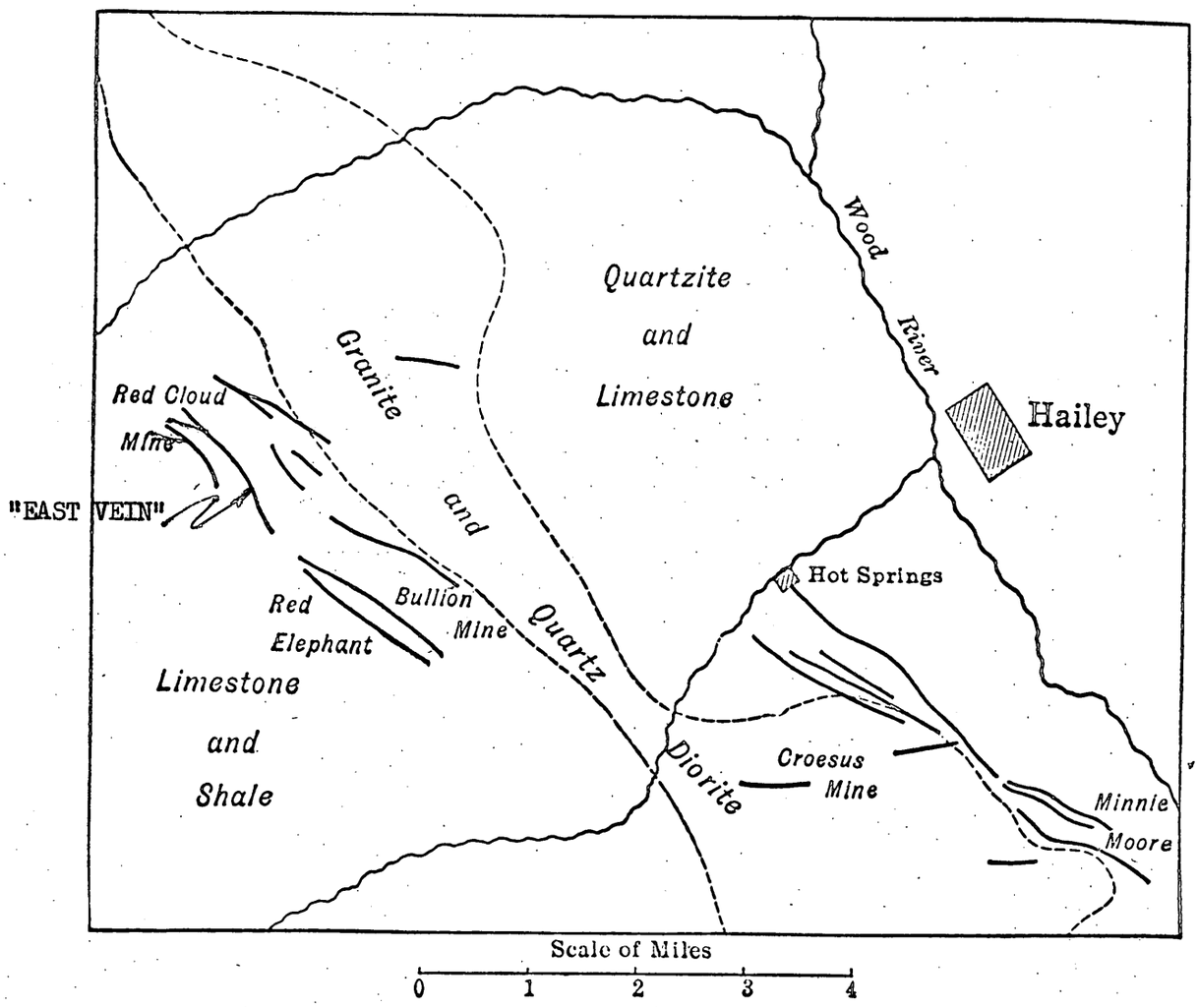

FIG. 229.—Vein system near contact of intrusive mass in Carboniferous sediments, Wood River district, Idaho.

calcium, iron, and magnesium carbonates, with a little quartz. The ore minerals have massive structure, sometimes roughly banded. Second-class ore consists of seams of carbonate gangue with small grains of galena. As there are no smelting works in the district, the ores and concentrates must be shipped; the shipments consist of high-grade ore containing 40 to 50 per cent of lead and 50 ounces of silver per ton; a little gold is usually present.

Most of the veins are narrow, although they may in places widen out into bodies of galena many feet wide.

The ore-bodies are irregularly scattered along the veins and are for the most part replacements of calcareous shale by galena. Some of these replacement bodies lie obliquely across the strike of the vein and may be several hundred feet long and 10 to 30 feet wide. In a few places the

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developments have been carried far below the adit levels, but on the whole, the levels below a depth of 600 to 800 feet have shown fewer and poorer ore-bodies than the upper parts of the veins. There is little indication of sulphide enrichment, and the oxidized zone is shallow.

The post-mineral erosion has been very deep; the ore-bodies have no relation to the present surface. Deeper exploration might well encounter new ore. The Minnie Moore, one of the most productive veins, was cut off by intense post-mineral faulting (Fig. 230).

While some of the veins in the granitic rocks have the same character as those in the shales, others carry gold as the principal metal; they

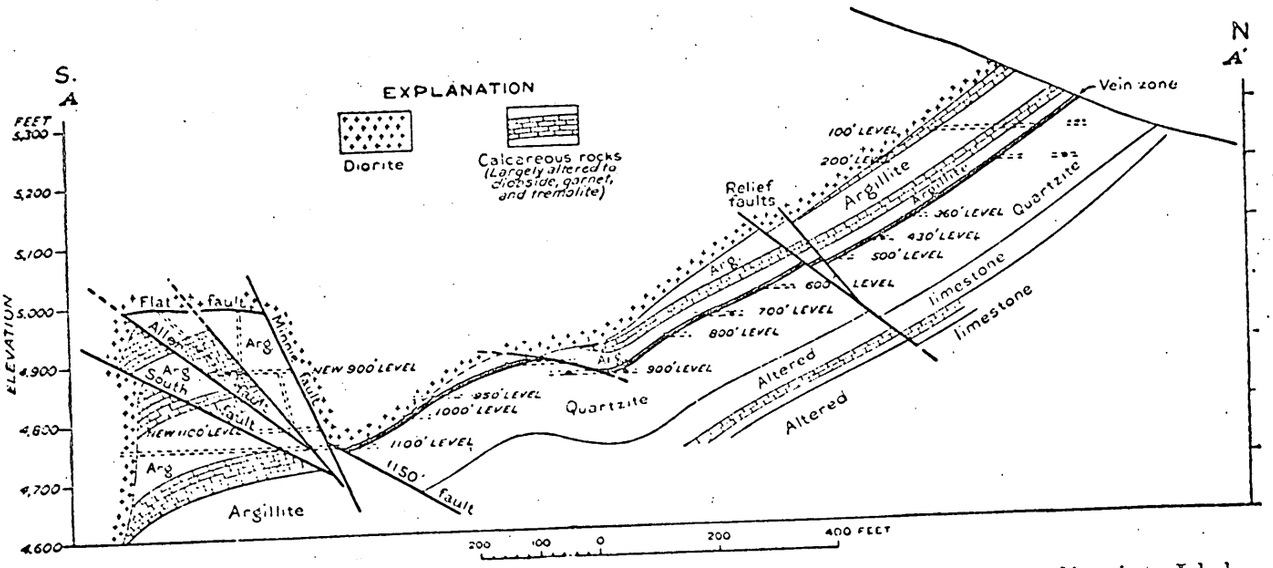

FIG. 230.—Geologic cross-section of the Minnie Moore mine, Wood River district, Idaho. Black represents vein zone. (*After D. F. Hewett, U. S. Geol. Survey.*)

contain quartz, calcite, siderite, pyrrhotite, arsenopyrite, and chalcopyrite. The metasomatic alteration results in sericitization and carbonatization.

Slocan, British Columbia.[1]—The veins of the Slocan district have yielded lead and silver to a value of about $45,000,000. They are mainly contained in the clay slates of the Slocan series, the age of which is possibly Carboniferous. The sedimentary rocks are intruded by granite (the Nelson batholith), quartz porphyry, and lamprophyric dikes. The fissure veins have a general northeast direction and high southeast or northwest dip. Where the veins intersect the igneous rocks quartz is the prevailing gangue mineral. In the sedimentary rocks the gangue is mainly siderite or manganosiderite. A specimen gave, for instance, 59 per cent $FeCO_3$, 27 per cent $MnCO_3$, 12 per cent $MgCO_3$, and 2 per cent $CaCO_3$. The ore minerals are sphalerite, galena, and tetrahedrite, rich in silver. Pyrite and chalcopyrite are fairly common; pyrrhotite is less

[1] W. L. Uglow, *Econ. Geol.*, 12, 1917, pp. 643–662.
A. M. Bateman, (Slocan), *idem*, 20, 1925, pp. 554–572.
M. E. Bancroft, Geol. Survey Canada, *Summ. Rept.*, 1919, pt. B, pp. 41–46; *idem*, 1917, pp. 28–41.
C. W. Drysdale, *idem*, 1916, pp. 56–57, with map.

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ITEM 5. EXPLORATION WORK:

(a) The proposed exploration work would consist of nine hundred (900) feet of drifting.

The minimum size of the drift will be 5½ ft. wide by 7 feet high. An effort will be made to keep these dimensions to avoid as much timbering as possible.

The proposed work will consist entirely of drifting on the vein, except where a possible fault may offset the vein. The surface shows no indication of any major fault.

All evidence indicates the structure (vein) will be of considerable width. The drift will be driven in the vein along the right hand wall. The vein will probably be nearly vertical but the right hand wall facing southeast will be designated the "hanging wall" to conform with the designation in the old Red Cloud workings, where the same situation exists.

On the surface nearly vertically above the face of the "Main X Cut" appears to be the point of intersection of another vein "Hanging Wall Vein" with the "East Vein".

Near the face of this main X Cut a fault was encountered that strikes about South 72 degrees East and dips Northeasterly 45 degrees. The upper block has been moved down and to the Northwest. Therefore, it is probable that the strong structure that was encountered about 45 feet back from the face in the "Main X Cut" is the intersecting or hanging wall vein. If this is true, then providing the line of intersection is vertical, the intersection of the two veins is to the Southeast. I see no purpose in extending the Main X Cut further at this time to prove it. By drifting on the structure in the Main X Cut, that work already has been started on, would encounter the intersection, or, if I am wrong, it would develop that all the work was on the main "East Vein".

The following map shows the proposed work and the features discussed above.

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ITEM 5. EXPLORATION WORK

(b) THERE IS A ROAD TO THE PORTAL OF THE CROSS CUT WHERE THE PROPOSED WORK WILL BE CARRIED ON. THERE WILL BE NO MONIES EXPENDED ON ROAD WORK.

(c) IF AN O. M. E. CONTRACT IS EXECUTED, I WOULD ESTIMATE THAT WORK (DRIFTING) WOULD BE STARTED WITHIN TEN (10) DAYS. AFTER A DISCUSSION WITH THE CONTRACTOR IT APPEARS THAT A SAFE ESTIMATE ON RATE OF ADVANCE WOULD BE TWO HUNDRED (200) FEET PER MONTH. A FIVE DAY WORK WEEK WOULD BE FOLLOWED UNLESS IT APPEARED THAT SIX DAYS WOULD BE NECESSARY TO COMPLETE THE WORK BEFORE BAD WEATHER. ON THIS BASIS IT WOULD TAKE FOUR AND A HALF MONTHS TO COMPLETE THE PROJECT.

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ITEM 6. EXPERIENCE

J. D. SAWYER WHO IS A DIRECTOR OF THE DAYLIGHT MINING AND MILLING COMPANY AND ALSO HOLDS THE POSITION AS SECRETARY, TREASURER AND MANAGER, WILL CONDUCT THIS EXPLORATION WORK.

J. D. SAWYER IS THE APPLICANT ON BEHALF OF THE DAYLIGHT AND MILLING CO.

THE APPLICANT WAS EMPLOYED IN THE ENGINEERING DEPARTMENT OF THE UNITED STATES SMELTING, REFINING AND MINING CO. (SALT LAKE OFFICE) FROM 1921 TO NOV. 16, 1926 AS A TRACER AND LATER AS A DRAFTSMAN.

FROM NOV. 16, 1926 TO JUNE 15, 1950 THE APPLICANT WAS EMPLOYED BY THE SILVER KING COALITION MINES CO. OF PARK CITY, UTAH, WHICH AT PRESENT IS PART OF THE UNITED PARK CITY MINES CO. EMPLOYMENT WHILE WITH THE SILVER KING COALITION MINES CONSISTED OF SOME ENGINEERING WORK, TIME KEEPER, COST ACCOUNTANT AND OFFICE MANAGER.

THE NEXT 10 YEARS I OWNED AND OPERATED A RETAIL COAL BUSINESS AND ON TWO OCCASIONS CONDUCTED SOME MINING AT THE RED CLOUD MINE IN THE SUMMER.

THE LAST SIX YEARS I HAVE BEEN RETIRED. PRESENT AGE 63.

ON THE 21st DAY OF JULY 1965 I ENTERED INTO AN AGREEMENT WITH THE DAYLIGHT MINING AND MILLING COMPANY WHEREBY I WOULD FURNISH THE DAYLING CO. WITH THE FUNDS TO RUN AT LEAST A 500 FOOT X CUT. 595 FEET OF WORK WAS PERFORMED. IT IS FROM THE END OF THIS X-CUT THAT THE PROPOSED DRIFITNG ON THE STRUCTURE (VEIN) IS PROPOSED IN THIS APPLICATION. A QUARTER OF MILE OF NEW ROAD WAS BUILT AND NO. 13 LEVEL PORTAL REPAIRED AND A GOOD, WELL CONSTRUCTED BUILDING ERECTED. ALL MACHINERY AND EQUIPMENT WAS SOLD IN AUGUST 1966. THE NET COST TO ME FOR THIS WORK WAS $23,100.84. THIS WAS A COMPANY OPERATION UNDER MY SUPERVISION.

I AM NOT A MINING ENGINEER OR GEOLOGIST, BUT A LITTLE MINING SHOULD HAVE RUBBED OFF ONTO ME. ANY PROBLEMS THAT MAY COME UP THAT I CANNOT HANDLE, YOU CAN REST ASSURED I WILL ENLIST COMPETENT ADVISORS.

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(cont'd)

ITEM 6 EXPERIENCE CONT'D

THE CONTRACTOR, MR. PETE BROWN, OF BROWN BROS. CONTRACTING CO., WILL CONDUCT THE WORK. HE IS EXPERIENCED AND CAPABLE. HE HAS DONE CONSIDERABLE SUCH WORK FOR PHILLIPS PETROLEUM CO. AND MANY OTHER REPUTABLE COMPANIES. HE HAS ALSO WORKED FOR ME AND HIS SERVICES WERE VERY SATISFACTORY.

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ITEM 7. ESTIMATE OF COSTS:

(a) INDEPENDENT CONTRACT:

The total cost for 900 feet of drifting will be $35,000.00

A bid by Brown Bros. Construction Co. is shown on the following sheet. This bid on the 900 feet of drifting includes all necessary timbering, track work, pipe work, and whatever road work is necessary.

All equipment, including ventilation equipment will be furnished.

The company is to furnish all rail and other track materials, all pipe and fittings for both air and water lines and whatever mine timber and timber for the waste dump is required.

There are no other mine contractors in this area. The nearest point where a contractor could be found would be Salt Lake City, Utah.

Boyle Bros. Drilling Co. of Salt Lake are in this business but I doubt if they would entertain any interest in as small a job as this. All the mining work they do, I understand is on a cost plus basis. I am not including diamond drilling.

I hope you will not insist on other bids as going through this formality under the circumstances would be costly to us and I am sure would serve no purpose.

(b) PERSONAL SERVICES:

There will be no cost for supervision. J. D. Sawyer will supervise the work and take care of the accounts.

Geological services $1,000.00

This charge is not an estimate, it is an arbitrary figure. The purpose is to have the funds if necessary.

There is a geologist here in Hailey but I do not know how competent he is.

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

Brown Brothers Construction Co., Inc.

P. O. Box 441
Hailey, Idaho
83333

April 19, 1967

Daylight Mining & Milling Co.
% J. D. Sawyer, Secretary
Hailey, Idaho

This is a letter of contract for tunnel work on the Red Cloud property.

The 1st.	200 ft.	$ 35.00	per ft.
3rd.	100 ft.	37.00	per ft.
4th.	100 ft.	38.00	per ft.
5th.	100 ft.	39.00	per ft.
6th.	100 ft.	40.00	per ft.
7th.	100 ft.	41.00	per ft.
8th.	100 ft.	42.00	per ft.
9th.	100 ft.	43.00	per ft.

Total $ 35,000.00 for 900 feet of tunnel-5½ ft. wide by 7 ft. high

$40/ft

If work can be started by June 20, 1967 completion will be in four and a half months.

The above price includes all labor, workman' compensation insurance, payroll taxes, mining equipment, tools, explosives, necessary timbering, road work and track and pipe work.

It is understood that the Daylight Mining and Milling Company will furnish the mine rail, mine ties and all other track material. It is also understood and agreed that the Daylight Co. will furnish all necessary mine timber, timber and lumber etc. necessary on the waste dump. The company is to furnish all pipe and fittings for both air and water lines.

Signature------- Pete Brown

Brown Brothers Construction Co., Inc.
Box 441
Hailey, Idaho 83333

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

ITEM 7 (a)

ITEM 7. ESTIMATE OF COSTS

(c) OPERATING MATERIALS AND SUPPLIES:

20 lb. rail, (15 ft. lengths) 900 ft. track or 1800 ft. rail. 600 yds. x 20 equals 12,000 lbs or 6 ton. 6 ton at $179.50 (F.O.B. Pueblo, Colo.)	$1,077.00
Freight: Pueblo, Colo. to Hailey, Idaho is $2.74 per 100 lbs or $54.80 a ton. 6 ton at $54.80	328.80
Unloading and haulage to mine: Estimated at $10.00 per ton. 6 ton at $10.00	60.00
Total estimated cost of 6 ton of 20 lb. rail delivered to mine	$1,465.80
Fish Plates: 120 pairs at $0.58 per pair F.O.B. Pueblo, Colo.	69.60
Freight on fish plates: 4 lbs. per pair or 480 lbs. 480 lbs at $2,74 per 100 lbs.	13.15
1 keg of track spikes (estimated)	100.00
1 keg of track bolts (estimated)	150.00
2 20 lb. track turn outs (switches) Estimated cost $35.00 each (2nd hand)	70.00
Mine Ties: 800 4x6x2'6" equals 4000 board ft. 4000 board feet at $70.00 per 1000 equals	280.00
TOTAL ESTIMATED COST OF 900 FEET OF TRACK	$2,148.55
AIR & WATER PIPE 882 ft. (42 lengths) of 2" Std. black pipe 882 ft. at $0.71 per ft.	626.22
882 ft. (42 lengths) of 3/4" Std. Black pipe 882 ft. at $0.23 per ft.	202.86
Miscl. pipe fittings	67.32
TOTAL FOR AIR AND WATER LINES	$896.40
Mine timber	$955.05
This charge for mine timber is not an estimate, it is an arbitrary figure. I can not forsee the amount that might be necessary. Whatever timber is necessary will cost $70.00 per 1000 board feet.	
TOTAL FOR OPERATING MATERIALS & SUPPLIES	$4,000.00

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

ITEM 7 ESTIMATE OF COSTS:

(d) THERE WILL BE NO COSTS FOR OPERATING EQUIPMENT AND TOOLS LISTED UNDER THIS ITEM.

(e) THERE WILL BE NO INITIAL REHABILITATION OR REPAIRS NECESSARY.

(f) THERE WILL BE NO NEW BUILDINGS, FIXTURES AND INSTALLATIONS INSTALLED OR PURCHASED.

NOTE:

THE DAYLIGHT CO. BUILT A WELL CONSTRUCTED AND ADEQUATE BUILDING DURING AUGUST 1965. THIS BUILDING IS LINED AND INSULLATED WITH CORRUGATED IRON ROOF AND SIDES. IT IS LOCATED ABOUT 100 FT. FROM THE PORTAL WHERE THE PROPOSED WORK WILL TAKE PLACE.

(g) THERE WILL BE NO COSTS OF REPAIRS AND MAINTENANCE OF ANY OPERATING EQUIPMENT LISTED IN 7 (d). THERE WILL BE NO COSTS OF ANALYTICAL OR ACCOUNTING WORK OR ANY OTHER ITEMS LISTED IN ITEM 7 (g).

NOTE:

THERE IS NEW 20 Pound rail (track), 2 inch air line and water line in place from the surface to the face where the proposed work will begin.

J. D. Sawyer, Secretary
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Hailey, Idaho

VIEW LOOKING SOUTH: PORTALS OF #1,#2,#3 #4 & #5 LEVELS ON THE RED CLOUD VEIN ARE IN DRAW TO RIGHT OF QTZ. OUTCROP. THE QTZ. OUTCROP IS THE"EAST VEIN".

VIEW LOOKING S.W.: NO.5 DUMP IS INDICATED. JUST TO THE LEFT OF X IS THE PORTAL OF THE MAIN X CUT TO THE "EAST VEIN".

VIEW LOOKING NORTHEAST: SHOWING THE "EAST VEIN ALONG THE RIDGE AND THE HANGING WALL VEIN INTERSECTING IT IN PROXIMITY OF THE FIR TREE ON THE LEFT. THE FACE OF THE "MAIN X CUT" IS BETWEEN THE TWO FIR TREES ON THE LEFT AND A SHORT DISTANCE BEYOND.

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

pounds of lead, and 58 pounds of copper. A tunnel with its portal on the Iris claim exposed the vein under the Arizona open cut, and there are several other small tunnels on the two claims. The Plata Mining Co. has confined its efforts so far to driving a crosscut tunnel which is intended to cut the Arizona vein at depth. The portal of this tunnel is some distance down the gulch to the southeast of the old workings. On July 27, 1923, the tunnel had been driven somewhat more than 380 feet with a trend of N. 28° E. and two short drifts to the northwest had been opened from it. Soon after this date operations were suspended.

The country rock belongs to the Wood River formation and is principally dark siliceous and calcareous shale. The strata are steeply inclined, nearly vertical in a number of exposures, and vary widely in strike. They have been both folded and faulted. In one of the tunnels on the Iris claim there is a dike of granitic rock.[30] The Arizona vein strikes about N. 30° W. and dips very steeply to the southwest. The drift in the new tunnel nearest the portal follows a slightly mineralized slip that strikes N. 40° W. and stands vertical. The other is near the tunnel face and is on a similar slip that strikes N. 50° W. The banded calcareous shale near the portal of the tunnel stands nearly vertical and strikes N. 30° W. According to Mark King two veins have been struck in work done since the property was visited, and development is proceeding steadily.

RED CLOUD MINE

The Red Cloud mine is 1½ miles northwest of the Red Elephant mine, in sec. T. 2 N., R. 17 E., at an altitude of about 7,500 feet. Only the lowest level was accessible in 1913, and in it most of the side drifts were flooded. Except for the account of the work on the tailings in progress in 1923, the following description is compiled from the published descriptions by Lindgren[31] and Turner[32] and from the observations of Umpleby in the small part of the workings accessible to him. Between 1880 and 1902 the Red Cloud mine produced ore of a gross value of $815,802. The period of greatest activity was between 1888 and 1898. The tailings dump was reworked in 1906, and there has been intermittent mining since then.

[30] Landwehr, R. W., personal communication.
[31] Lindgren, Waldemar, op. cit., p. 204.
[32] Turner, H. W., Faulting in the Red Cloud mine: Min. and Sci. Press, vol. 95, pp. 747-748, 1907.

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Hailey, Idaho

ITEM 3 (g)

The following tables give all available data on the production of the Red Cloud mine:

Early production of Red Cloud mine

[From records of E. Daft and the Ketchum smelter]

Year	Ore	Gold	Silver	Lead	Copper
	Tons	*Fine ounces*	*Fine ounces*	*Pounds*	*Pounds*
1884	10.8	----------	788.1	15,394	----------
1885	65.99	----------	4,464.7	85,656	----------
1886	100.4	----------	6,731.5	121,109	----------
1887	38.3	----------	2,874.8	36,282	----------
1888	11.2	----------	8,188.5	146,566	----------
1889	95.0	18.22	5,228.8	100,453	----------
1890	412.1	.43	27,983.9	545,086	----------
1891	1,766.9	253.15	114,450.0	2,267,914	----------
1892	2,098.1	305.25	134,373.9	2,705,336	----------
1893	1,164.7	252.56	70,254.5	1,439,651	----------
1894	431.0	91.80	25,023.3	525,259	----------
1895	102.7	24.56	5,869.9	118,622	----------
1896	51.6	13.398	2,055.4	386,371	----------
1897	2.4	1.07	93.7	2,213	----------
1899	605.0	123.83	28,933.7	596,728	73,671
1900	1,338.8	431.36	51,591.3	1,100,796	----------
1901	68.2	29.73	2,256.8	49,065	5,263
1902	1.7	100.3	2,278	----------	----------
1905	19.2	10.6	350.8	----------	3,162
	8,384.0	1,656.0	493,791.6	13,213,227	82,096

Production of Red Cloud mine, 1906–1918

[From records of U. S. Geological Survey]

Year	Ore sold or treated	Crude ore shipped to smelter	Ore to mill	Concentrates produced	Metals recovered			
					Gold	Silver	Lead	Copper
	Tons	*Tons*	*Tons*	*Tons*	*Fine ounces*	*Fine ounces*	*Pounds*	*Pounds*
1906	3,200	----------	[a] 3,200	320	----------	10,030	89,600	----------
1911	33	33	----------	----------	7.46	1,599	37,998	----------
1917	69	----------	69	23	9.36	249	3,730	140
1918	51	40	11	----------	22.27	414	7,100	----------
	3,353	73	3,280	343	39.09	12,292	138,428	140

[a] Old tailings re-treated.

The property has been extensively developed on 10 levels, opened by tunnels and shafts, and there is a still deeper tunnel which with its various branches has a total length of 5,000 feet. This tunnel is nearly 1,100 feet below the outcrop of the lode. It runs N. 88° E. for 1,825 feet and then extends several hundred feet southward with long drifts to the east and west at several places. About 500 feet from the turn is a raise to the upper workings.

The country rock is limestone and calcareous shale of the Wood River formation. The main vein strikes about N. 23° W. and dips steeply southwest, and a branch of it, known as the hanging-wall vein, strikes about N. 46° W. and dips more than 60° SW. Nearly all the ore was mined from stopes above level 9, which is 706 feet below the surface at the portal of No. 1 adit.

J. D. Sawyer, Secretary
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The veins are broken by a number of faults, some of the larger of which are shown in the two sections in Figure 12. According to Turner (fig. 12, B), the fault of greatest displacement is that between levels No. 5 and No. 6. Here an ore body has been displaced 240 feet along a slip which dips only about 8° NW. At about the No. 9 level there is a fault which dips about 15° NE. and displaces the vein 90 feet. This fault may correspond to one above the No. 8 level shown in Lindgren's section (fig. 12, A), which is presumably taken through a different part of the mine from that given by

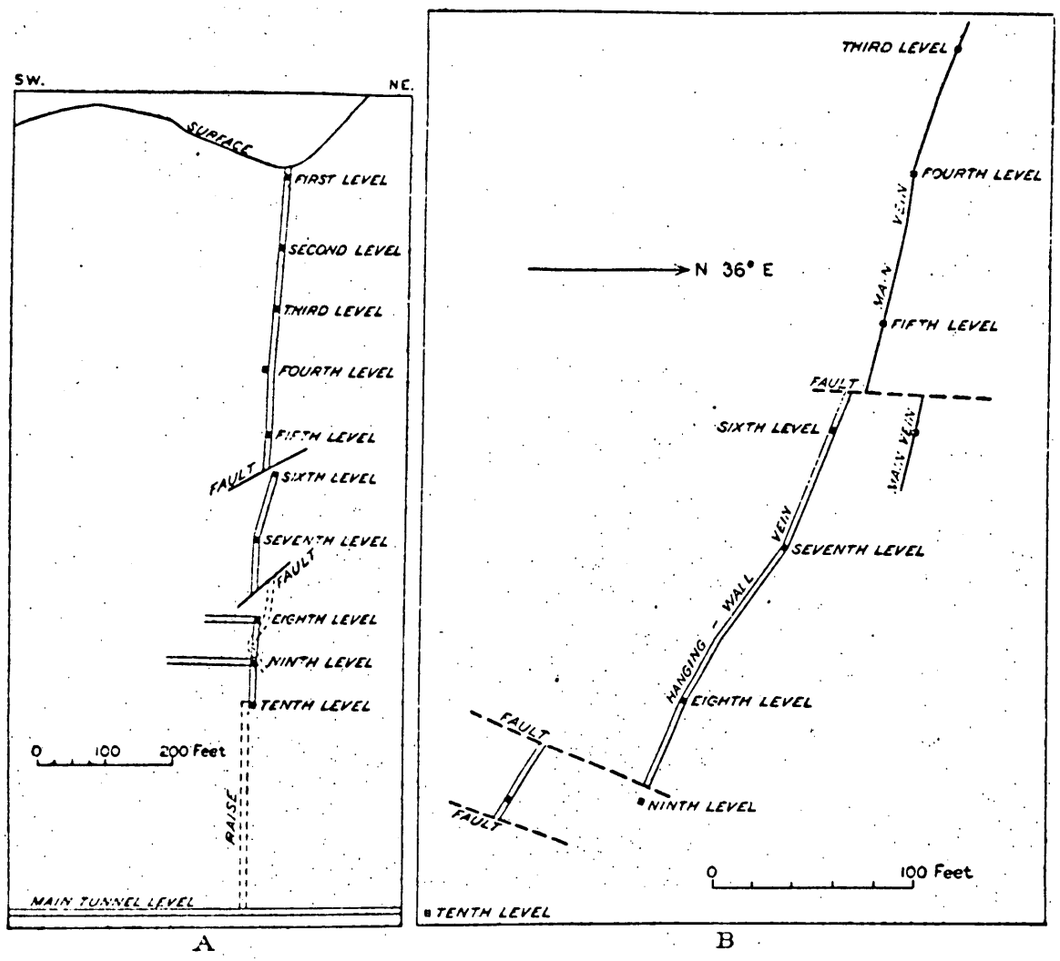

FIGURE 12.—Vertical sections of the Red Cloud vein. (After Waldemar Lindgren and H. W. Turner)

Turner (fig. 12, B). Below it is another slip, which Turner interprets as a parallel fault. The vein has not been identified below this slip, although several zones of fracture showing some mineralization are exposed in the lowest tunnel and the drifts from it. A few tons of silver-lead ore has been mined from one of these drifts. A vein with prominent outcrops but of very low grade is exposed a short distance east of the mine, and this may correspond to one of the fracture zones on the lowest level. At the turn in this lowest tunnel there is a zone of shattered rock devoid of mineralization which may represent the continuation of the main vein mined above. That this

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crushed zone represents the vein fissure is indicated by its relation to a barren cross vein recognized throughout the mine.

The ore as seen on the lower dump and near the old mill consists of sphalerite, galena, pyrite, arsenopyrite, and small amounts of tetrahedrite and chalcopyrite in a siderite-quartz gangue. In this ore, as in that from the North Star mine, the sphalerite and siderite have been extensively brecciated and cemented, largely by pyrite and arsenopyrite. The ore contains many partly replaced inclusions of the limestone wall rock. Although worked for the lead and silver it contained, the ore carries a noteworthy amount of gold.

This mine has now been shut down for some time, and most of the workings are inaccessible. In the summer of 1923 M. G. Smith was setting up jigs and tables at the mouth of Red Cloud Gulch to treat tailings from the old mill. He planned to operate his machinery with water power from a ditch out of Wolf Tone Creek and to sluice the tailings down to his plant with water from one of the mine tunnels. He intended to make pyrite, lead-silver, and zinc concentrates but expected to derive most of his profit from the pyritic concentrate. He estimated from his own samples and assays that the clean pyrite here carries an average of an ounce of gold to the ton.

PASS GROUP

The Pass group is 1½ miles northwest of Bullion, about the head of Narrow Gage Gulch, a tributary of Deer Creek, in sec. 9, T. 2 N., R. 17 E. It lies within the area of sedimentary rocks a few hundred yards back from the quartz monzonite. The principal development is on the Argent claim, which was worked for many years prior to 1900 and is credited with a production of about $160,000. A little ore has been produced since then. The following tables give the available data on the early production. Presumably the production credited to the Pass mine came from claims of this group other than the Argent. The records of the United States Geological Survey show that 1 ton of ore yielding 99 ounces of silver and 1,571 pounds of lead was shipped in 1911.

Early production of Pass mine

[From records of E. Daft and Ketchum smelter]

Year	Ore	Gold	Silver	Lead
	Tons	*Fine ounces*	*Fine ounces*	*Pounds*
1885	28.5	----------	3,997.8	37,124
1886	74.5	----------	7,496.0	92,228
1887	6.5	----------	571.2	9,015
1897	19.8	----------	1,515.6	23,260
1899	69.0	0.14	4,675.0	80,745
	198.3	.14	18,254.7	242,372

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
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Hailey, Idaho

ITEM 3 (g)

Faulting in the Red Cloud Mine.

Written for the MINING AND SCIENTIFIC PRESS
By H. W. TURNER.

The Red Cloud mine is situated in the Wood River district, Idaho, in the Deer Creek drainage, about seven miles due west of Hailey, the county seat of Blaine county.

This district has long been famous for its lead-silver veins, the galena always carrying silver. The deposits are true veins occupying distinct fissures. Since the formation of the veins the rocks of the region have been extensively faulted, and the fact that a number of important mines are idle is due chiefly to the veins being lost, that is, cut off by faults. In certain cases, by judicious exploration, the veins have been recovered and production continued.

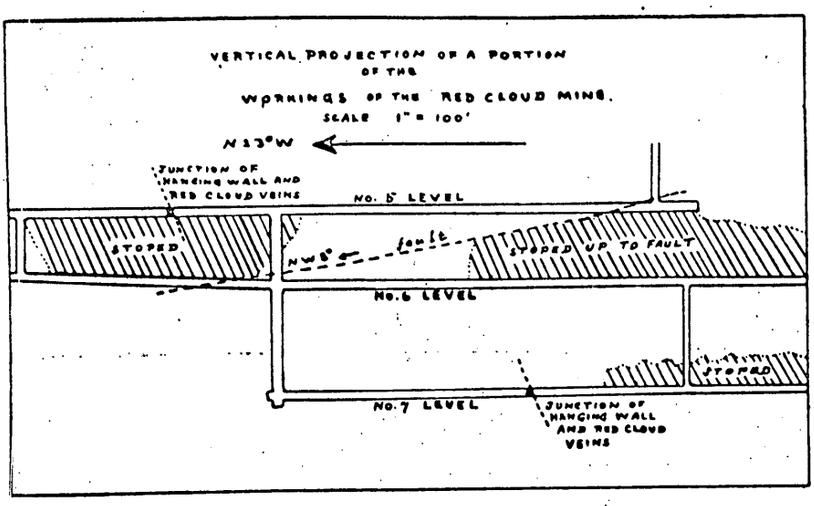

Fig. 1.

The Red Cloud deposits are in a calcareous shale, which has been shown by Waldemar Lindgren* to be of Carboniferous age. There are several veins on the property, but the two referred to in this paper are the only ones that have been developed extensively. The ore was an argentiferous galena with some blende and pyrite, and according to Mr. Lindgren, also arsenopyrite.

Between 1880 and 1902, the Red Cloud mine produced ore of a gross value of $815,802, as shown by the original records of the company in the possession of Judge Lyttleton Price, since deceased. Of this production, $680,424 came almost entirely from the main, or Red Cloud, vein and nearly all the balance, or $135,377, from the hanging-wall vein. The total product was 5,141 tons of lead (59.39%), 511,331 oz. silver (59.7 oz. per ton), and some gold, especially in the hanging-wall vein. Under the Kennelly lease, ore was extracted almost entirely from the stopes on the hanging-wall vein, 1,952 tons being shipped, containing 709 oz. gold, or 0.36 oz. per ton. The ore of this stope contained pyrite, and the gold is said to go with the pyrite.

The property was worked through adits for a vertical distance of 1,065 ft., but practically all the ore extracted came from above No. 9 level, which is only 706 ft. below the surface as measured from the mouth of No. 1 adit.

Two veins have produced practically all the ore. These are the main, or Red Cloud, vein and the hanging-wall vein. The former runs the entire length of the Red Cloud claim, and probably even farther south, toward the Red Elephant mine. It strikes about N. 23° W. true meridian, and dips westerly at a high angle, being in places nearly vertical. The hanging-wall vein branches off from the main vein to the northwest. It strikes about N. 50° W., and dips southwest at an average angle of 60°. The ore in the main vein came chiefly from the stopes to the south of the junction of the two veins.

Faulting has occurred on a small scale at numerous points in the mine, but the two movements that have affected the orebodies to the greatest extent are those herein described.

To illustrate the faulting, three sketches have been prepared. On these, only those features are shown that are exposed in the mine workings. Thus, the main vein on Fig. 3 does not appear between points X and Y, because it is not exposed in No. 6 adit between these points. Likewise the hanging-wall vein on No. 6 level is not shown as uniting with the main vein, as the point is not proven by actual work on this level, although the two veins must really join on No. 6 level, as they are proven to do on No. 5 level above and No. 7 level below. An exception was made in case of the gouge seam shown on Fig. 3. This is exposed only at the west ends of No. 8 level, No. 9A level, and in No. 10 level. No. 9A level is 15 ft. above No. 9 level.

The fault with the greatest throw is that shown in Fig. 1. A block of ground containing the upper levels of the mine has been shoved N. 20° W. a distance of about 240 ft. along a slip dipping northwesterly about 8°. This fault, or slip, cuts both No. 5 and No. 6. levels, and is best seen at the south end of No. 5 level, where the ore was stoped to the slip. By following the old stopes, the fault sur-

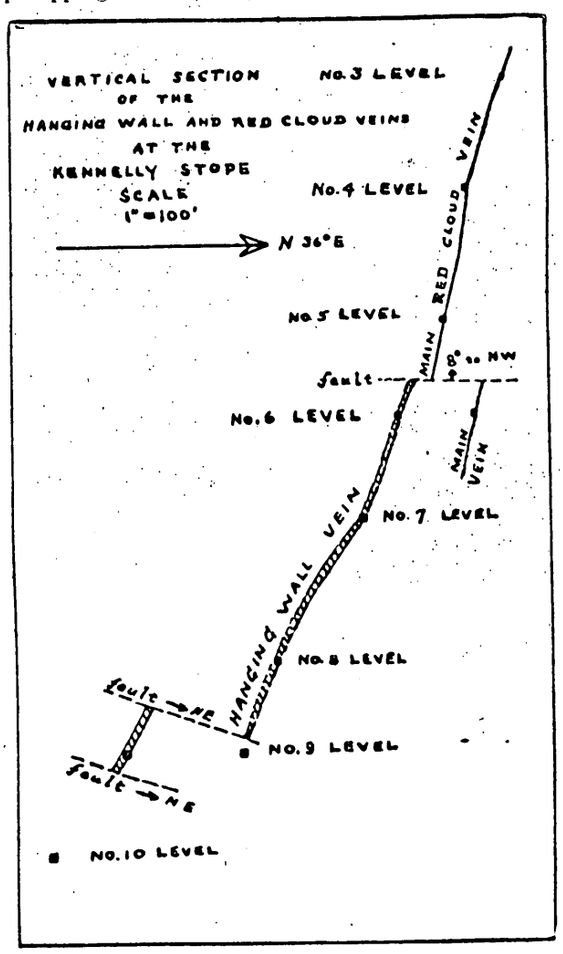

Fig. 2.

*Twentieth annual report of the U. S. Geological Survey, p. 204.

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ITEM 3 (g)

face can be seen finely exposed for study, as it everywhere forms a roof to the stope.

The vein known as the hanging-wall vein branches off to the northwest from the main vein, and the point of its junction with the main vein is shown on Fig. 1, on No. 5 and No. 7 levels. In consequence of the faulting above described, the upper portion of this hanging-wall vein has been thrown northwesterly about 240 ft., which determines the throw on this fault-plane. On No. 6 level, in consequence of this movement, the hanging-wall vein appears twice, as shown in the horizontal projection of the workings in Fig. 3. The stope A, No. 6 level, represents the portion of the vein in the thrown block, and this stope is a continuation of the Kennelly orebody, although now 240 ft. to the northwest of its original position.

About the time the stopes of the main Red Cloud vein were exhausted the Kennelly ore-shoot on the hanging-wall vein was opened up, and the vein was followed down to No. 9A level, about 15 ft. above No. 9 level. Drifts on No. 9 level failed to find any vein or ore. Subsequently a cross-cut driven to the southwest encountered the vein, and it was finally demonstrated that the vein had been thrown 90 ft. to the southwest along a slip which inclined upward approximately 15° (see Fig. 2). The vein in this block was stoped to the fault, but in underhand stoping below No. 9 level it was found that the vein was again cut off by another slip, probably parallel to that above.

Considerable work was done on No. 10 level, and in the drift shown in cross-section on Fig. 2, on No. 10 level, some easterly dipping seams were found containing pyrite and zinc-blende, and one seam with lumps of argentiferous galena, which may represent drag ore. The hanging-wall vein itself was not, however, found on No. 10 level, although it is likely that a cross-cut run to the southwest from No. 10 would soon encounter the vein.

A gouge seam (see Fig. 3) on No. 8 and No. 9 levels cut off the vein to the north. This gouge seam has a nearly north strike and dips easterly about 68°. It represents a fault with a N-S trend on a different plane from those of the faults above described.

It is absolutely demonstrated in the Red Cloud mine that the veins are displaced by two marked monuments. One of these threw a block of ground above No. 6 level 240 ft. to the north, and another at about No. 9 level threw a block of ground 90 ft. to the southwest. It is also evident that this movement was repeated just below No. 9 level, the vein again being thrown, presumably in the same direction to the southwest.

At a point 1,065 ft. vertically below the mouth of No. 1 adit, a cross-cut 1,773 ft. long was run in an easterly direction. This cut a strong gouge seam containing calcite, and showing, by washing, some grains of sulphides.

This gouge seam has a course N. 10° E. and dips southwest at about 45°. It was known as the Yellow Dog vein, and was followed by a drift for 580 ft. From this drift another cross-cut was extended east a distance of 435 ft., when a second vein was encountered and a drift, known as the Kelly, was run on this vein for about 530 ft. At one point, a few tons of galena containing 100 oz. silver per ton, were extracted. The strike of the Kelly vein is about N. 45° W. and the dip southwest, from 33° to 60°. From the Kelly drift, two cross-cuts were extended easterly each about 330 ft. in length, both of them cutting a third vein with a trend about N. 35° W. and a southwesterly dip. This third vein likewise contains grains of sulphides and vein-quartz but no commercial ore.

If we suppose that the block of ground containing the upper productive mine to have been shoved to the southwest on, say, the Yellow Dog vein, which is probably a great fault, the Kelly vein might correspond in position and trend to the hanging-wall vein and the third vein to the main or Red Cloud vein of the upper workings.

It has also been suggested that a large vein, apparently lean in ore, that exists on the surface to the east of the Red Cloud, represents one of these veins in depth. Undoubtedly more ore exists on the property, and as the expense of opening up in depth has already been incurred, it is a good gamble to make further explorations under the direction of an engineer conversant with the laws of faulting. Altogether, about 5,000 ft. of work was done on the lower adit-level without disclosing any orebody.

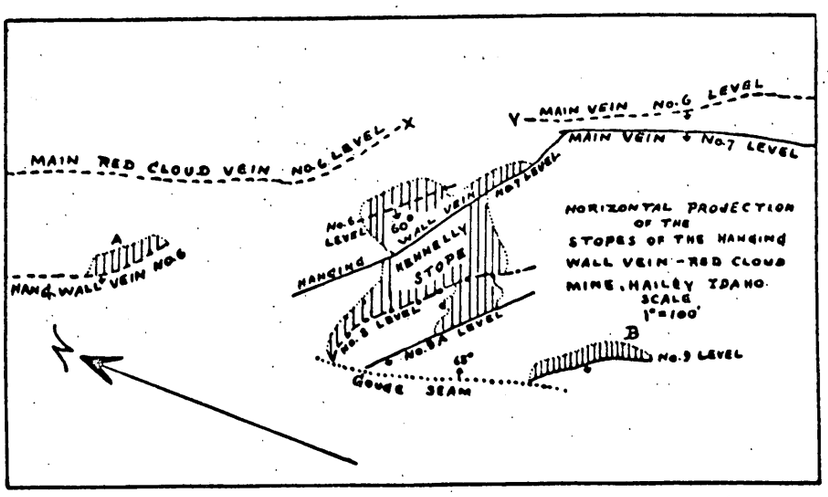

Fig. 3.

Road Distances in Nevada.

During an automobile journey through the principal mining districts of Nevada, W. Q. Wright, Pacific Coast manager for the Wellman-Seaver-Morgan Co., ascertained the actual road distances between the prominent mining camps and towns of Nevada. The trip was made over the regular roads used by automobile stage-lines, and in order to measure each distance correctly an odometer was attached to Mr. Wright's machine. It will be interesting to those who have already traveled by stage in Nevada to note the discrepancies between the distances recorded herewith by Mr. Wright and the mileage as charged for by the motor stage companies:

Localities.	Distance Miles.
Reno to Wadsworth	35
Wadsworth to Hazen	16
Hazen to Fallon	18
Fallon to Rawhide	45
Rawhide to Fairview through Monte Cristo and Eagleville	42
Fairview to Wonder	14
Wonder to Hercules	1½
Hercules to Cloverdale	94
Cloverdale to Round Mountain	39
Cloverdale to Duluth	48
Fairview to Duluth	46
Fairview to Fallon	39
Round Mountain to Manhattan by the foothill road	18
Manhattan to Tonopah	45
Tonopah to Goldfield through Diamondfield	29

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DAYLIGHT MINING & MILLING CO.
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THE FOLLOWING THREE (3) SHEETS ARE PHOTOSTATS FROM:

"MINERAL DEPOSITS" BY WALDEMAR LINDGREN.

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

relatively poor in silver, but is sometimes recovered as a by-product in concentration.

Chalcopyrite is less abundant than tetrahedrite; pyrite is not conspicuous; while arsenopyrite and pyrrhotite occasionally appear, particularly in granitic country rock.

The ore-bodies often replace calcareous shales along the vein; but these shales appear to have been little altered, except for the introduction of metallic minerals and some siderite. In granular, feldspathic rocks close to the vein, sericite, carbonates, and a chlorite rich in iron develop in large amounts and sulphides are introduced. A complete replacement by sulphides is unusual. Sodium is almost wholly removed, but potassium fixed as sericite and calcium fixed as carbonate remain.

The structure of the ore is generally massive, and large bodies of galena are common. Smaller veins may show banded structure, but rarely comb structure. Sometimes a thin layer of quartz may be found along the wall, then a narrow comb of calcite, while the mass of the vein consists of massive galena, alternating with bands of sphalerite and containing intergrown tetrahedrite. The galena frequently shows phenomena of pressing, gliding, and recrystallization.

The width of the veins rarely exceeds a few feet, and part of this is usually crushed country rock. Their outcrops are inconspicuous.

The ore-shoots are markedly irregular and the cost of mining is therefore high. A marked deterioration may often be observed in depth; the large bodies of rich silver ore—aside from those affected by the surface enrichment—are found comparatively near the surface and the lower levels commonly show pinched veins or a predominance of sphalerite, pyrite, and quartz.

The upper, oxidized parts of the veins are usually enriched by secondary silver chloride, native silver, and pyrargyrite.

Wood River, Idaho.[1]—The silver-lead veins near Hailey, Idaho, on the Wood River, north of the Snake River lava plains, discovered in 1864, yielded a production of more than $25,000,000, most of it from 1880 to 1896. A small output is still maintained.

The district lies a few miles east of the eastern contact of the great granitic batholith of central Idaho, and the prevailing rocks are calcareous shale, quartzite, and limestone of Carboniferous age, compressed in northwestward-striking folds (Fig. 230). These sedimentary rocks are intruded by a minor batholith of diorite and quartz monzonite, following the general direction of the strata and from 2 to 3 miles wide. The deposits are fissure veins arranged in two parallel linked systems (Fig. 229) along

[1] W. Lindgren, Wood River mining district, *Twentieth Ann. Rept.*, U. S. Geol. Survey, pt. 3, 1900, pp. 218–231.

J. B. Umpleby, L. G. Westgate, C. P. Ross, and D. F. Hewett, *Bull.* 814, *idem*, 1930

J. D. Sawyer, Secretary
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P.O. Box 506
Hailey, Idaho

the contacts of the batholith and in places cutting across the contacts into the granitic rock. Some of the veins follow lamprophyric dikes. Their strike generally cuts the stratification at an acute angle and their dip is prevailing 50° southwest. The outcrops are inconspicuous. Most of the veins are in calcareous shale.

The ore consists of galena, sphalerite, and tetrahedrite, with but little pyrite and chalcopyrite; the gangue is siderite, or intermediate

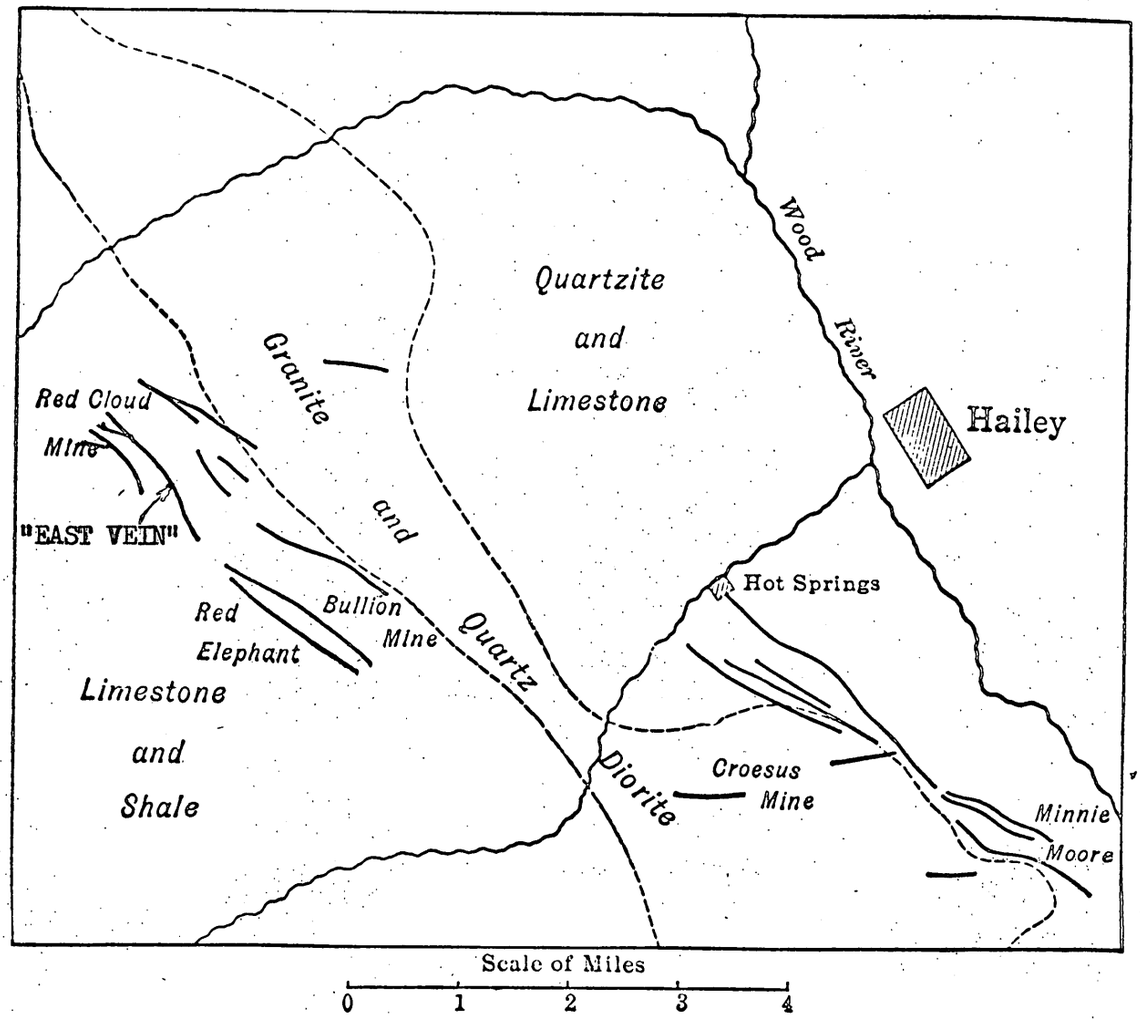

FIG. 229.—Vein system near contact of intrusive mass in Carboniferous sediments, Wood River district, Idaho.

calcium, iron, and magnesium carbonates, with a little quartz. The ore minerals have massive structure, sometimes roughly banded. Second-class ore consists of seams of carbonate gangue with small grains of galena. As there are no smelting works in the district, the ores and concentrates must be shipped; the shipments consist of high-grade ore containing 40 to 50 per cent of lead and 50 ounces of silver per ton; a little gold is usually present.

Most of the veins are narrow, although they may in places widen out into bodies of galena many feet wide.

The ore-bodies are irregularly scattered along the veins and are for the most part replacements of calcareous shale by galena. Some of these replacement bodies lie obliquely across the strike of the vein and may be several hundred feet long and 10 to 30 feet wide. In a few places the

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ITEM 3 (g)

developments have been carried far below the adit levels, but on the whole, the levels below a depth of 600 to 800 feet have shown fewer and poorer ore-bodies than the upper parts of the veins. There is little indication of sulphide enrichment, and the oxidized zone is shallow.

The post-mineral erosion has been very deep; the ore-bodies have no relation to the present surface. Deeper exploration might well encounter new ore. The Minnie Moore, one of the most productive veins, was cut off by intense post-mineral faulting (Fig. 230).

While some of the veins in the granitic rocks have the same character as those in the shales, others carry gold as the principal metal; they

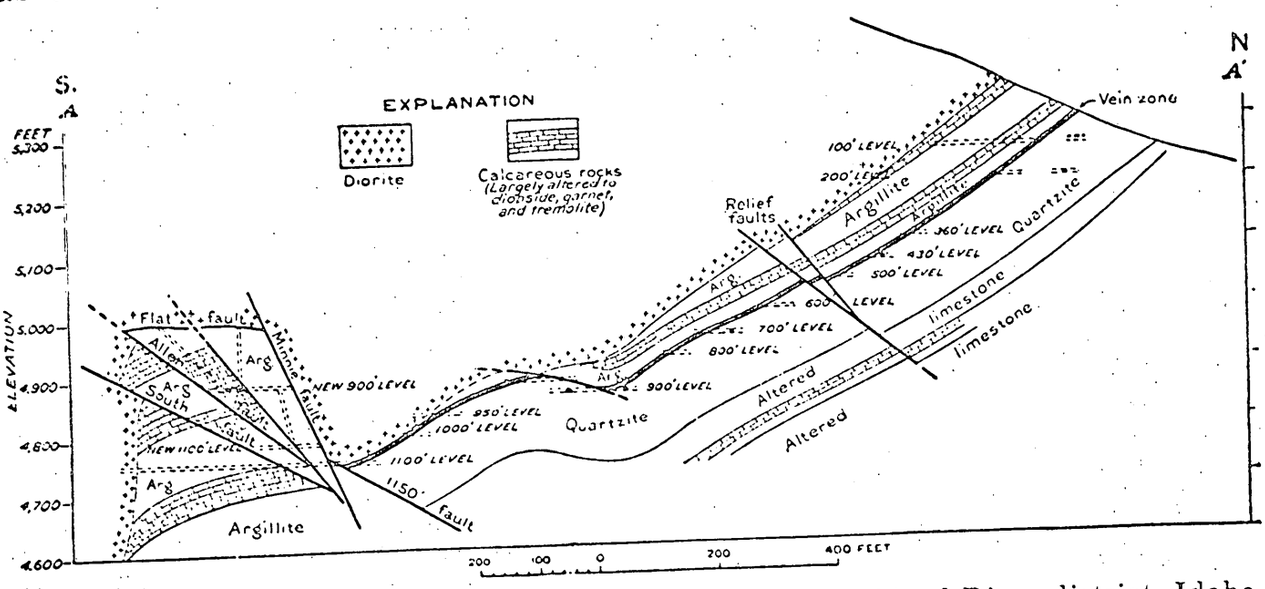

FIG. 230.—Geologic cross-section of the Minnie Moore mine, Wood River district, Idaho. Black represents vein zone. (*After D. F. Hewett, U. S. Geol. Survey.*)

contain quartz, calcite, siderite, pyrrhotite, arsenopyrite, and chalcopyrite. The metasomatic alteration results in sericitization and carbonatization.

Slocan, British Columbia.[1]—The veins of the Slocan district have yielded lead and silver to a value of about $45,000,000. They are mainly contained in the clay slates of the Slocan series, the age of which is possibly Carboniferous. The sedimentary rocks are intruded by granite (the Nelson batholith), quartz porphyry, and lamprophyric dikes. The fissure veins have a general northeast direction and high southeast or northwest dip. Where the veins intersect the igneous rocks quartz is the prevailing gangue mineral. In the sedimentary rocks the gangue is mainly siderite or manganosiderite. A specimen gave, for instance, 59 per cent $FeCO_3$, 27 per cent $MnCO_3$, 12 per cent $MgCO_3$, and 2 per cent $CaCO_3$. The ore minerals are sphalerite, galena, and tetrahedrite, rich in silver. Pyrite and chalcopyrite are fairly common; pyrrhotite is less

[1] W. L. Uglow, *Econ. Geol.*, 12, 1917, pp. 643–662.
A. M. Bateman, (Slocan), *idem*, 20, 1925, pp. 554–572.
M. E. Bancroft, Geol. Survey Canada, *Summ. Rept.*, 1919, pt. B, pp. 41–46; *idem*, 1917, pp. 28–41.
C. W. Drysdale, *idem*, 1916, pp. 56–57, with map.

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ITEM 3 (g)

REPORT BY WALDEMAR LINDGREN

The gold and silver veins of Silver City, De Lamar, and other mining districts in Idaho, U. S. G. S. Twentieth Annual Report, Part 3, Page 204, 1900.

Red Cloud Mine - This noted vein crops on the ridge between Bullion and Red Cloud gulches, at an elevation of about 8,000 feet. The mine has been worked chiefly during the last decade but was idle in 1898. A new strike was reported in 1899, and the mine is again producing. The total production is estimated at $500,000.00 of which $150,000.00 is said to have been dividends.

The developments consist of ten levels opened by tunnels and shafts, and a deep tunnel 1,100 feet below the croppings. This lowest tunnel is a cross-cut for 1,800 feet, and its various branches have a total length of 5,000 feet. The vein, which crops in limestone and calcareous shale has a North-northwesterly strike and is nearly vertical. Figure 22 shows a section of the vein as well as several minor faults by which it has been thrown. A well-defined vein was followed for a horizontal distance of several hundred feet through the different levels down to Level 8 or 9.* The lowest tunnels, however, show slight indication of a fissure, except in so far as the rock where the vein should be is much crushed. The ore is of the ordinary kind but usually carries a few ounces in gold; some quartz gangue is also present as well as some arsenopyrite.

A short distance East of the Red Cloud a vein with prominent croppings passes through the McMahon, Whale, Mammoth, and Bay State claims. It does not appear to carry any notable values. The same vein is believed to have been found in the deep tunnel where it is also barren.

* In 1899 the continuation of an old ore shoot was found on the Hanging Wall Vein, between Levels 7 and 9, which is reported to have produced during the same year $55,000.00.

Note - Figure 22 is the same as Figure 2 of the Mining and Scientific Press, Page 747 of December 14, 1907.

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The following table shows production from the Red Cloud Mine from 1884 to and including 1905 with the average assays run out and embodies the table given by the U. S. Geological Survey Bulletin with the corrections I believe warranted to make and which have been summarized previously.

(From records of E. Daft and the Ketchum Smelter)
(With corrections made by applicant)

YEAR	TONS	ASSAYS GOLD OZ.	ASSAYS SILVER OZ.	ASSAYS LEAD %	ASSAYS COPPER %	CONTENT GOLD OZ.	CONTENT SILVER OZ.	CONTENT LEAD LBS.	CONTENT COPPER LBS.
1884	10.80		72.97	71.3			788.1	15,394	
1885	65.99		67.66	64.9			4,464.7	85,656	
1886	100.40		67.04	60.3			673.5	121,109	
1887	38.30		75.06	47.4			2,874.8	36,282	
1888	112.00		73.11	65.4			8,188.5	146,566	
1889	95.00	.192	55.04	55.3		18.22	5,228.8	100,453	
1890	412.10	.104	67.91	66.1		43.00	27,983.9	545,086	
1891	1,766.90	.143	64.77	64.2		253.15	114,450.0	2,267,914	
1892	2,098.10	.145	64.05	64.5		305.25	134,373.9	2,705,336	
1893	1,164.70	.217	60.32	61.8		252.56	70,254.5	1,439,651	
1894	431.00	.213	58.06	60.9		91.80	25,023.3	525,259	
1895	102.70	.239	57.16	57.8		24.56	5,869.9	118,622	
1896	51.60	.260	39.83	37.4		13.40	2,055.4	38,637	
1897	2.40	.446	39.04	46.1		1.07	93.7	2,213	
1898									
1899	605.00	.205	47.82	49.3	6.08	123.83	28,933.7	596,728	73,671
1900	1,338.80	.322	38.54	41.1		431.36	51,591.3	1,100,796	
1901	68.20	.436	33.09	36.0	3.86	29.73	2,256.8	49,065	5,263
1902	1.70	.590	13.40			1.00	22.8		
1903									
1904									
1905	19.20	.552	18.27		8.23	10.60	350.8		3,162
	8,484.89	.196	57.22	58.5	5.93	1,599.53	485,478.4	9,894,767	82,096

Note: The average assays in the totals are based on those tons that had content reported.

PRODUCTION OF THE RED CLOUD MINE, 1906-1918
(From records of U. S. Geological Survey)
(Taken from Bulletin 814)

YEAR	ORE SOLD OR TREATED (TONS)	CRUDE ORE SHIPPED TO SMELTER	ORE TO MILL (TONS)	CONCTS. PRODUCED (TONS)	METALS RECOVERED GOLD OZ.	METALS RECOVERED SILVER OZ.	METALS RECOVERED LEAD LBS.	METALS RECOVERED COPPER LBS.
1906	3,200	33	(a) 3,200	320		10,030	89,600	
1911	33	33			7.46	1,599	37,998	
1917	69		69	23	9.36	249	3,730	140
1918	51	40	11		22.27	414	7,100	
	3,353	73	3,280	343	39.09	12,292	138,428	140

(a) Old tailings treated.

Note: The year 1918 shows 40 tons crude ore shipped and 11 tons to mill, but no concentrates are indicated. I believe this is an error in columnar listing and the 40 tons should be in the column as

(Continued on following page)

J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P. O. Box 506
Hailey, Idaho

The following table shows production from the Red Cloud Mine from 1884 to and including 1905 with the average assays run out and embodies the table given by the U. S. Geological Survey Bulletin with the corrections I believe warranted to make and which have been summarized previously.

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(With corrections made by applicant)

YEAR	TONS	ASSAYS				CONTENT			
		GOLD OZ.	SILVER OZ.	LEAD %	COPPER %	GOLD OZ.	SILVER OZ.	LEAD LBS.	COPPER LBS.
1884	10.80		72.97	71.3			788.1	15,394	
1885	65.99		67.66	64.9			4,464.7	85,656	
1886	100.40		67.04	60.3			673.5	121,109	
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1894	431.00	.213	58.06	60.9		91.80	25,023.3	525,259	
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1901	68.20	.436	33.09	36.0	3.86	29.73	2,256.8	49,065	5,263
1902	1.70	.590	13.40			1.00	22.8		
1903									
1904									
1905	19.20	.552	18.27		8.23	10.60	350.8		3,162
	8,484.89	.196	57.22	58.5	5.93	1,599.53	485,478.4	9,894,767	82,096

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(From records of U. S. Geological Survey)
(Taken from Bulletin 814)

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					GOLD OZ.	SILVER OZ.	LEAD LBS.	COPPER LBS.
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(Continued on following page)

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1904									
1905	19.20	.552	18.27		8.23	10.60	350.8		3,162
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Note: The average assays in the totals are based on those tons that had content reported.

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(From records of U. S. Geological Survey)
(Taken from Bulletin 814)

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1917	69		69	23	9.36	249	3,730	140
1918	51	40	11		22.27	414	7,100	
	3,353	73	3,280	343	39.09	12,292	138,428	140

(a) Old tailingstreated.

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(Continued on following page)

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DAYLIGHT MINING & MILLING CO.
P. O. Box 506
Hailey, Idaho

OME Form 7
(2/63)

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Date	Surname	Code
9/19	Peterson	120
9/19/67	Kirkbemo	120
"	Johnson	110
9/20	Kilgour	220
9/20	Lingo	
		110
		220

SEP 2 0 1967

AIRMAIL

Daylight Mining and Milling Company
P. O. Box 506
Hailey, Idaho 83333

Re: OME-6631 (Silver-Gold-Copper)
Daylight Mining and Milling Company
Red Cloud Mine
Blaine County, Idaho

Gentlemen:

Careful study of your application for financial assistance in exploring the subject property and of other information available to us indicates that the probability of disclosing significant ore reserves on the property is not sufficiently promising to justify Government participation therein. Accordingly, we must inform you that your application for exploration assistance is denied.

We regret the necessity for this action, which, however, is taken without prejudice to the property. Should you perform additional work on the property which discloses evidence that could materially change this opinion, we shall be pleased to consider a new application at that time.

We wish to thank you for your interest in the minerals exploration program and for bringing your property to our attention.

Sincerely yours,

FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Division File
Econ. Geol. File
OME Docket
OME Reading File
OME Region I
Mr. Peterson
130

23263

MME Form 7
(2/63)

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Date	Surname	Code
9/18		120
9/19/67	Kirkham	120
	(~~on leave~~)	110
		220
		120M

Original copy

Memorandum

To: The File

From: E. C. Peterson, Office of Minerals Exploration

Subject: OME -6631 (Silver, Gold, and Copper)
Red Cloud Mine
Blaine County, Idaho

Justification for Denial of Application

In his examination report the Field Officer recommends that the subject application for assistance be approved, although conceding that the probability of a significant ore discovery by the proposed work is considered a "long shot." His recommendation is based chiefly on past ore production records of the Red Cloud mine, and also the proposed work appears to be in a favorable ore horizon.

However, after a careful review of the report and data submitted by the Applicant, I recommend that the application be denied on the basis that insufficient geological evidence is known to determine if a specific target exists that warrants' exploration.

In this connection, it is questionable whether the Applicant's exploration target is actually a mineralized body (East vein?) as he surmises, or as believed by the Field Examiner, a quartzite mass with a smaller mineralized vein within the outcropping. A sample taken from an oxidized zone of the outcrop assayed a trace of gold and 0.2 ounce silver per ton.

In addition, no sulfide mineralization was observed by the examiner in the Olson (7,747 elevation) and Rat Tunnels (7,690 elevation), and in the Main crosscut (7,660 elevation). In these workings a shear zone, thought to be faulted segments of the outcropping (East vein?) is exposed, and assays of samples taken along this zone showed extremely weak mineralization occurring at these depths.

Published reports by Lindgren (1900), Turner (1907), and Umpleby (1930), briefly describe a weakly mineralized vein outcropping east of the Red Cloud vein, and add no support to the applicant's proposal.

23263

Because of the possibility that an eligible exploration target may exist in this area, I recommend that the application be denied without prejudice to the property. If additional work performed by the Applicant provides adequate geological data to support a project the OME could consider a new or amended application at that time.

I have discussed my recommendation with the Field Officer and he is in agreement to deny without prejudice.

Edward C. Peterson

E. C. Peterson

cc: Director's Reading File
Division File
Economic Geology File
OME Docket
OME Reading File
Mr. Peterson

ECPeterson/bsl 9/18/67

Ome

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
So. 157 Howard Street
Spokane, Washington 99204
August 24, 1967

AUG 28 1967
(Dispatched)

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: Application Examination Report
OME-6631 (Silver-Gold-Copper)
Daylight Mining and Milling Co.
Red Cloud Mine
Blaine County, Idaho

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O. M. E.
RECEIVED
AUG 31 1967

INITIALS	CODE
gla	130
~~Hy~~	~~110~~
~~ED~~	~~120~~ P

LOCATION

The Red Cloud mine is located in the Mineral Hill Mining District in secs. 8, 9, 16, 17, T. 2 N., R. 17 E. B.M.

PROPERTY

The applicant owns 16 patented and 3 unpatented lode mining claims which are:

Patented

Claim	Survey No.	Claim	Survey No.
Red Cloud	1257	Mammoth	1257
Passumpsic	"	Regulator	"
Libby Jane	"	Vindicator	"
Geraldine	"	Red Cloud No. 2	"
Florence	"	Green Mountain Boy	"
Troy	"	Marianna	"
Bay State	"	Eighty Nine	"
Whale	"	Catherine	"

The Bureau of Land Management verified that the claims are patented and that the patent was issued prior to the use of patent numbers.

Unpatented

Claim	Book	Page
Rosetta	157	425
Virginia	157	631
Zelpha	157	630

ON-SITE EXAM.RPT.

The unpatented claims are recorded in the Blaine County Courthouse, Hailey, Idaho.

GEOLOGIC SUMMARY

Rocks in the area of the claims are limestone, calcareous shale, and quartzitic beds of the Wood River formation of Pennsylvanian age (Umpleby, et al., 1930, p. 31). About 1-7/8 miles southwest of the Red Cloud claim there is a medium-grained granitic stock, and about seven-eighth of a mile to the northeast there is a stock of quartz monzonite. Both intrusives are believed to be Cretaceous in age and to be related to the Idaho batholith. The rocks have been sheared and the shear zones, in and along which most of the ore bodies are found, have been faulted.

At the Red Cloud mine there are two strong mineral-bearing fissures, the Red Cloud or main vein which strikes about N. 23° W. and dips nearly vertically, and the Hanging Wall vein which branches northwesterly from the Red Cloud striking about N. 50° W. and dipping 75°-80° SW.

Of a third vein Lindgren (1900) says: "A short distance East of the Red Cloud a vein with prominent croppings passes through the McMahon, Whale, Mammoth, and Bay State claims. It does not appear to carry any notable values. The same vein is believed to have been found in the deep tunnel where it is also barren." Of the same vein Umpleby (1930) says: "A vein with prominent outcrops but of very low grade is exposed a short distance east of the mine, and this may correspond to one of the fracture zones on the lowest level." Referring to the applicant's figure 26, either the structure followed by the Kelly drift or those at the east end of the Vindicator crosscut appear to project to locations fairly close to the northwest limit of the iron-stained quartz outcrop, which the applicant calls the East vein. The Red Cloud and Hanging Wall veins have been developed through 11 levels to a maximum depth of about 1,065 feet. However, very little ore was produced below the No. 9 level. The East vein has not been developed except for three or four caved surface pits.

The Red Cloud and Hanging Wall veins have been offset by several faults, one of which dips 8° NW.; along this fault a block of ground containing the first five levels has been shoved to the NW. a distance of 240 feet. The veins have also been thrown 90 feet to the southeast by another fault above the No. 9 level that dips about 15° NE. Unfortunately, the strike of these faults is not indicated. There is a third slip interpreted as being parallel to the one above the No. 9 level, at about level No. 10, below which the veins have not been identified with certainty although there are several zones of fracturing showing some mineralization exposed in level No. 13 (Umpleby, et al., 1930, p. 157).

Ore bodies occur along shear zones especially where the rock has been crushed and to a limited extent at places in the walls as replacement deposits. Most of the ore produced came from above level No. 9, about 700 feet below level No. 1. Ore minerals are galena, sphalerite, pyrite, arsenopyrite and small amounts of tetrahedrite and chalcopyrite in a gangue of siderite, quartz, and crushed rock.

At the time of the examination all adits except the Olsen, Rat, level No. 13, and the Main crosscut from which the exploration drift is proposed were caved and inaccessible. Therefore, the above description of the salient features has of necessity been compiled from sources listed under "Bibliography."

EXAMINATION

Between the No. 5 level dumps and the Olson Tunnel (plate 1) at two good exposures, limestone beds strike S. 5° E. and dip 30° E. Just inside the portal of the Olson Tunnel a shear zone, brecciated over a width of 2 feet, strikes S. 40° E. and dips 80° NE. No sulfides were seen, but there was considerable heavy limonitic staining. From a point about 45 feet in from the portal a drift has been driven for some 300 feet at an average bearing of S. 25° E., the first 90 feet or so in unmineralized limestone. From this point to the face the drift follows an increasingly sheared zone that dips nearly vertically, is slightly limonite-stained, and becomes harder with some silicification toward the end of the drift. However, there was no sign of sulfide mineralization. The applicant believes that this represents the East vein.

The Rat Tunnel is about 130 feet S. 58° W. of, and 60 feet lower than, the Olson Tunnel. It has been driven N. 82° E. for 55 feet, then N. 70° E. for 185 feet, and finally N. 42° E. for about 100 feet. At 90 feet the tunnel cut a 2- to 3-foot wide shear zone that strikes S. 30° E. and dips 65° SW. The applicant believes that this represents a hanging-wall split from the East vein, however, except for weak limonitic staining there was no evidence of sulfides or other vein minerals in this exposure.

About 150 feet from the portal another shear zone 2 to 5 feet wide strikes S. 45° E. and dips 80° SW. to vertically. This has been followed by drifts for about 20 feet northwesterly and 50 feet southeasterly at which point the strike swings to S. 30° E. and the dip steepens to the vertical. The drift was continued along the new bearing for about 60 feet. Just east of the crosscut a lens of quartz about 10 feet long and 1 to 2 feet wide is exposed in the southwest wall near the drift floor. The applicant says that a sample he took from this lens assayed 1.3 ounces gold and 1.0 ounce silver per ton and nil lead. A sample taken by the applicant for the

examiner across a width of 1 foot assayed 0.02 ounce gold and 3.4 ounces silver per ton and 7.5 percent lead. Two other samples, one from the northwest face and one from the southeast face assayed respectively trace gold and 0.1 ounce silver per ton, and trace lead over a width of 2 feet and 0.04 ounce gold and 0.3 ounce silver per ton and trace lead over a width of 2 feet.

Only the one true quartz lens was seen, but as one follows the shear zone there is a slight increase in silicification and limonitic staining toward the SE.

The portal of the Main crosscut, from which it is proposed to start the exploration, is about 240 feet S. 15° W. of and 30 feet lower than the portal of the Rat Tunnel. This crosscut has been driven S. 80° E. for 530 feet, across limestone and calcareous shale beds. About 60 feet from the portal the beds strike S. 5° E. and dip 60° easterly. This crosscut should have exposed the shear zones projected from the Olsen and Rat Tunnels somewhere between 390 and 450 feet from the portal. This interval was carefully examined along both walls, but other than some cross jointing, nothing resembling these shears was found.

From about 485 feet to the face the crosscut is in a zone of shearing that strikes about S. 40° E. and dips vertically. The shearing is in siliceous limestone, is pretty much devoid of visible sulfides, and, along the north side of the crosscut appears to be cut off by another zone of shearing that strikes about S. 70° E. and dips 40° NE. The applicant believes the former represents either the main East vein or a branch from it and that the latter is a fault that has offset the East vein much as the 8° NW. dipping fault has offset the Red Cloud and Hanging Wall veins.

The S. 40° E. striking shear has been followed for about 40 feet southeasterly by a drift. On the NE. wall is a small area of vuggy quartz from which a sample was chipped; it assayed trace each of gold, silver, and lead and nil copper.

About 550 feet easterly from the level No. 5 portal is a bold outcrop of rusty brown, medium- to coarse-grained rock that may be the East vein described by Lindgren and Umpleby. To the examiner it looks more like a bed of quartzite of somewhat limited extent that occupies a portion of a ridge crest bearing about S. 25° E. and rising to the south.

Ascending the ridge from the north, bedrock is limestone to a point about due east of the Rat Tunnel portal. Here, bold outcrops of quartzite, 2 to 5 feet high comprise bedrock. For 650 to 700 feet southerly the surface of the quartzite is irregular, particularly along the southwest limit of the outcrop. In contrast to the limestone areas, timber and thick underbrush cover the quartzite so that

the northeast limit of the area could not be definitely located. Continuing up the ridge, the boldness of the outcrops and the amount of brush cover gradually diminish and limestone again makes up the bedrock. As nearly as could be determined the quartzite area is about 700 feet long and up to 150 feet wide.

Two debris-filled surface cuts were seen, one within the quartzite area and one south of the area. The former was so filled by debris and covered by underbrush that nothing of value could be seen. However, a sample from this pit or near it taken some time ago assayed only trace gold and 0.2 ounce silver per ton and 0.4 percent lead. At the latter cut the debris was heavily coated with limonite but was so thick that no vein could be identified, however, the heavy limonite could well represent one. Although I do not consider the entire quartzite area as a vein, there may be a vein within it and I concur with Lindgren (1900) and Umpleby (1930) that any such vein is poorly mineralized.

PRODUCTION

The applicant indicates what he believes to be six errors in the tabulation of production between 1884 and 1905 given by Umpleby (1930, p. 156). Grade calculations, involving the items he suggests should be changed, certainly indicate that something is wrong. The only ones I seriously question are his proposals (c) and (d). Here, the figures given by Umpleby indicate 59 ounces gold and 1,340 ounces silver per ton. However, 59 ounces silver per ton and 67 percent lead are nearly enough in line to suggest that possibly the 100.3 should be ounces silver and the 2,278.0 should be pounds lead. To be consistent all production figures used here will be those used by Umpleby as furnished by E. Daft and the Ketchum smelter.

The total production from the Red Cloud and 10 other mines, all located in T. 2 N., R. 17 E., is shown in table 1. It should be noted that at the Red Cloud that the average grade of 8,384 tons produced during the 16 year period of 1884-1905 is 0.197 ounce gold and 58.89 ounces silver per ton and 78.80 percent lead. That of 3,353 tons produced during the years 1906, 1911, 1917, and 1918 dropped to 0.012 ounce gold and 3.66 ounces silver per ton and 2.06 percent lead; and that of 877 tons produced during 1941 and 1942 was 0.11 ounce gold and 3.61 ounces silver and 3.29 percent lead.

Table 1

Mine	Period	Tons	Ounces Au	Ounces Ag	Pounds Pb	Oz/Ton Au	Oz/Ton Ag	Percent Pb
Red Cloud	1884-1942	12,614	1,798.0	509,253	13,278,152	0.142	40.37	52.63
Mayflower	1882-1901	3,606	--	545,493	4,308,131	--	151.27	59.74
Bullion	1881-1908	3,276	0.51	485,182	3,518,288	Tr	148.10	53.70
Jay Gould	1882-1906	4,019	4.80	422,565	5,282,590	0.001	105.14	65.72
Red Elephant	1882-1918	15,158	52.00	959,701	9,508,902	0.003	63.31	31.37
Eureka	1883-1891	1,079	--	82,733	1,199,356	--	76.67	55.58
Idahoan	1882-1906	9,147	--	591,547	10,548,390	--	64.67	57.66
Whale	?	253	--	27,410	311,089	--	108.34	61.48
Bay State	?	197	--	29,610	216,038	--	150.30	54.83
Garfield	?	37	--	4,053	43,003	--	109.54	58.11
King of the Hills	?	47	--	4,175	59,285	--	88.83	63.07
Total		49,433	1,855.31	3,659,724	48,273,224	0.037	74.03	48.83

SUMMARY

Ore worth some $13,314,140 at present day prices has been mined from 11 mines located in T. 2 N., R. 17 E. Of this total about $2,811,900 worth of ore has come from the Red Cloud mine, mostly from the Red Cloud and Hanging Wall veins above the No. 9 level the altitude of which is about 7,380 feet.

Lindgren (1900) and Umpleby (1930) describe a vein of very low grade with prominent croppings a short distance east of the Red Cloud vein. They believe the same vein has been exposed near the easterly end of the deepest working (altitude about 7,060 feet) where it has little, if any, value. The "prominent croppings" seen by the examiner had more of the character of a quartzite bed. Within the area of quartzite exposure two trenches were so full of debris that no vein could be seen, however, heavy limonite staining could indicate the presence of a vein. The only sample assay available shows trace gold and 0.2 ounce silver per ton and 0.4 percent lead at the surface, but this is northwesterly from the heavier limonite staining.

The Olson Tunnel (altitude 7,747 feet) and the Rat Tunnel (altitude 7,690 feet) expose shear zones which probably are the same; the Main crosscut (altitude 7,660 feet) also exposes a shear zone which could be the faulted continuation of the one exposed in the Olson and Rat Tunnels. Five samples taken at different places along this shear showed erratic and low values as follows:

Sampler	Width (feet)	Oz/T Au	Oz/T Ag	Percent Pb
Applicant (pre-appln.)	Grab(?)	1.30	1.0	0
OME examiner	2	0.04	0.3	Tr
Do.	2	Tr	0.1	Tr
Appl. for examiner	1	0.02	3.4	7.5
OME examiner	(Area)	Tr	Tr	Tr

The first and fourth of the above samples were taken from the only true quartz lens, about 10 feet long by 1 to 2 feet wide, seen along this shear. The fifth sample was taken in an area of vuggy quartz on the east wall of the Main crosscut drift. Should this shear zone represent the same low-grade vein mentioned by Lindgren and Umpleby, as the applicant believes, the sampled localities are 400-500 feet northwest of the heavily limonite staining seen on the surface. The altitude of the proposed exploratory drift is about 280 feet above the lower favorable stoping limits in the Red Cloud workings and 400 - 500 feet below the altitude of the limonite at the surface.

CONCLUSIONS

It is concluded that there is a vein, weakly mineralized but heavily limonite stained at the surface about 700 feet east of the level No. 5 portal and that this vein, again weakly mineralized, has been found near the east end of level No. 13. It is also concluded that the apparent weak mineralization at the surface may well be the result of leaching; from the lower grades found in the Red Cloud and Hanging Wall vein, at the level No. 13 horizon, the weak mineralization of the easternmost veins at that level could be expected. It is further concluded that the proposed exploration drift is within a favorable horizon for the formation of one or more ore shoots or bodies, but, on the basis of presently available information, it is impossible to estimate the chance of finding a significant ore body on the East vein. Therefore, this can only be considered conservatively as a long shot venture with no better than a fair chance of success. However, in view of the total reported production from this Township and Range of which the Red Cloud mine produced 25.5 percent of the tonnage and 21.1 percent of the dollar value (at present day prices) it is concluded that, in this case, a long shot venture is justified.

RECOMMENDATIONS

Because of the long shot nature of the project, a two-stage program is recommended. The objective of Stage I is to cut the probable East vein about 300 feet north of the heaviest limonite-stained, debris-filled trench and, by long holing, to be sure that this drift is not being driven near but parallel to a better mineralized portion of the shear zone along which it is being driven. The purpose of Stage II, which should depend upon the success of Stage I, is to explore the East vein by drifting toward the heaviest limonite staining. However, should the Stage I drift cut the East vein at an ore shoot, Stage II should permit drifting in both directions at least to the limits of the ore shoot. Also, should the Stage I drift not cut the East drift but is following a strong well-mineralized vein at 500 feet, it should be continued. If a vein is offset by faulting, crosscutting to the offset portion may be done.

Stage I.--Starting at the breast of the existing drift in the Main crosscut, drift along the shear zone approximately S. 40° E. for not more than 500 feet. At a point 200 feet from the starting point and at 50-foot intervals thereafter, long holes shall be drilled 25 feet into the northeast wall of the drift. If the long hole cuttings from two consecutive holes indicate significant sulfide mineralization, the drift shall be turned to intersect and then follow the vein to its junction with the East vein or until a maximum of 500 feet of drift and/or crosscut has been driven.

Stage II.--If the Stage I drift cuts the East vein or if it is following a strong and well-mineralized structure at the end of Stage I, additional drifting not to exceed 400 feet may be driven as follows:

1. If the intersection of the Stage I drift with the East vein is in an ore zone, drifting may be done along the East vein to the southeast and/or to the northwest.

2. If the intersection is in a zone of less than ore grade, drifting on the East vein shall be to the southeast. However, if, after drifting at least 200 feet southeasterly the mineral character of the vein shows no improvement, and with prior Government approval confirmed in writing, the balance of the drifting on the East vein may be driven northwesterly.

3. If the Stage I drift does not intersect the East vein but is following a strong and well-mineralized structure, this drift may be extended beyond the 500-foot maximum. In this event, should the East vein be cut further east than expected, provisions under (1) or (2) above shall be followed.

COSTS

The applicant has no operating supplies or equipment. He proposes to have a contractor provide labor, compressor, mine cars, drills, air and water hose, tramer, mucking machine, vent line and fan, and small tools. He will buy rail, fish plates, spikes, two switches, ties, air and water pipe with fittings, and mine timber.

The only contractor who was willing to bid on these terms itemized lengths of drift at prices of $35.00 per foot for the first 200 feet, at $37.00 per foot from 200 to 300 feet, and increasing the rate by $1.00 per foot for each 100 feet thereafter, for an average cost of $38.89 per foot. Bids were solicited from two other contractors, one of whom would only consider terms of cost plus, the other of whom declined to bid.

Except for his estimate of 800 ties for 900 feet of drift, or one tie every 1.12 feet and possibly his arbitrary sum for timbering, the applicant's estimated costs are realistic. One tie per 3.5 feet or say 260 ties should be sufficient.

It is recommended that the bid price and the estimates be used as a basis for the OME cost estimates to arrive at a unit cost contract price.

Stage I

500 feet of drift and/or crosscut, 5' x 7' section; rate of advance 5 ft/shift, 2 shifts per day, 22 days/month, estimated time required 50 days or 2.27, say 2.5 months.

Drifting and/or crosscutting

1. Independent Contracts	None
2., 3., and 4.	
1 Geologist, ½ time at $30/day	$ 3.00/ft
Labor, FICA and other insurance, mine cars, drills, air and water hoses, tramer, mucking machine, tools, and ventilation equipment	36.80/ft
Rail, 20#, 1,000 ft, delivered to mine at $244.30/T (less 50% - no salvage)	0.82/ft
Fish plates, spikes, etc.	0.37/ft
143 ties, 4" x 6" x 2'6" at $70/M b.f.	0.10/ft
1 track switch at $35.00 (less 50% - no salvage)	0.04/ft

2., 3., and 4. (Continued)

Air line, 2" w/fittings, 480 ft at $0.75/ft (less 50% - no salvage)	$ 0.36/ft
Water line, 3/4" w/fittings, 480 ft at $0.26/ft (less 50% - no salvage)	0.13/ft
Total drifting and crosscutting	$41.62/ft

5. and 6. None

7. Miscellaneous

Long hole drilling 175 ft at $1.30/ft	$227.50	
75 samples assayed for Au, Ag, and Pb at $6.60 each	495.00	$722.50

Timbering

It is difficult to estimate the amount of timbering that may be required. Very little timber was necessary in the three adits that were entered. The cost of one standard drift set including blocking and two collar braces is about $17.20 or $3.44 per 5-feet interval. ? 1-foot The "arbitrary figure" of $935.05 for timbering would provide for 277.6 feet of timbering or about 30 percent of his proposed drifting. This is a reasonably safe estimate. At this rate, it is estimated that possibly as much as 150 feet of timber may be required.

It is estimated that 1 shift should be able to stand, block, and lag three sets or 15 feet per shift and 30 feet per day. Time required for 150 feet of timber is estimated to be 10 shifts or 5 days. Installing timber is included in the contractor's specifications, however, much of the equipment for which allowance is included in the drifting price cannot properly be charged to timbering. To arrive at a fair cost for labor, three men at going rates will be arbitrarily used in this estimate computation.

1. Independent Contracts None

2. Labor and Supervision (per shift)

2 miners at $24/day	$48.00
1 tramer-helper-framer at $20.80/day	20.80
	$68.80
FICA and other insurance at 15%	10.32
Total	$79.12
At 15 ft/shift	$5.27/ft

3. Operating Materials and Supplies

62 posts, 8"x8"x7'	=	2,315 bf
31 caps 8"x8"x5'4"	=	1,047 bf
60 collar braces 4"x6"x4'4"	=	320 bf
400 lagging 2"x12"x5'	=	4,000 bf
		7,682 bf
at $70/M		$551.74
Plus 10% wedges, blocks, etc.		55.17
		$606.91

At 150 feet of timber, $4.03 say $4.00/ft

Total for timber $9.27/ft

Stage II

400 feet of drift and/or crosscut, 5' x 7' section; rate of advance 5 ft/shift, 2 shifts per day, 22 days/month, estimated time required 40 days or 1.81, say 2 months.

Drifting and/or Crosscutting

1. Independent Contracts None

2., 3., and 4.

1 Geologist, ½ time at $30/day	$ 3.00/ft
Labor, supervision, FICA and other insurance, mine cars, drills, air and water hoses, tramer, mucking machine, tools, and ventilation equipment	41.50/ft
Rail, 20#, 800 ft, delivered to mine at $244.30/T (less 50% - no salvage)	0.82/ft
Fish plates, spikes, etc.	0.37/ft
1 track switch at $35.00 (less 50% - no salvage)	0.03/ft
114 ties, 4" x 6" x 2'6" at $70/M	0.10/ft
Air line, 2" w/fittings, 400 ft at $0.75 (less 50% - no salvage)	0.37/ft
Water line, 3/4" w/fittings, 400 ft at $0.26/ft (less 50% - no salvage)	0.13/ft
Total drifting and crosscutting	$46.32/ft

5. and 6. None

7. Miscellaneous

100 samples assayed for Au, Ag, and Pb at $6.60 each $660.00

Timbering

It is estimated that 120 feet of drift may require timber. At 15 feet of timbering per shift it is estimated that 8 shifts or 4 days will be required.

1. Independent Contracts None

2. Labor and Supervision (per shift)

2 miners at $24/day	$48.00
1 trammer-helper-framer at $20.80/day	20.80
	$68.80
FICA and other insurance at 15%	10.32
Total	$79.12

At 15 ft/shift $5.27/ft

3. Operating Materials and Supplies

50 posts, 8"x8"x7'	=	1,867 bf
25 caps, 8"x8"x6'4"	=	844 bf
48 collar braces 4"x6"x4'4"	=	416 bf
320 lagging 2"x12"x5'	=	3,200 bf
		6,327 bf
at $70/M		$442.89
Plus 10% wedges, blocks, etc.		44.29
		$487.18

At 120 feet of timber, $4.06 say $4.00/ft

Total for timber $9.27/ft

RECAPITULATION

Stage I

500 ft drift and/or crosscut at $41.~~62~~/ft	$20,810.00
150 ft drift timber at $9.~~27~~/ft	1,390.50
~~175~~ 170 ft long hole drilling at $1.30/ft	~~227.50~~
75 assays for Au, Ag, Pb at $6.60 each	495.00
Total - Stage I	$22,923.00
Government participation at 75 percent	$17,192.25

Stage II

400 ft drift and/or crosscut at $46.~~32~~/ft	$18,528.00
120 ft drift timber at $9.~~27~~/ft	1,112.40
100 assays for Au, Ag, Pb at $6.60 each	660.00
Total - Stage II	$20,300.40
Government participation at 75 percent	$15,225.30
Total - Stages I and II	$43,223.40
Government participation at 75 percent	$32,417.55

D. R. MacLaren

Enclosure
Distribution:
CME
USGS(SRO)
Docket
MacLaren

BIBLIOGRAPHY

Lindgren, Waldemar, 1900, The gold and silver veins of Silver City, DeLamar, and other mining districts in Idaho: U. S. Geol. Survey Twentieth Ann. Rept., Part II, p. 190-231.

Turner, H. W., 1907, Faulting in the Red Cloud Mine: Mining and Scientific Press, Dec. 14, 1907, p. 747-748.

Umpleby, Joseph B., Westgate, Lewis G., Ross, Clyde P., 1930, Geology and ore deposits of the Wood River Region, Idaho: U. S. Geol. Survey Bull. 814, pts. 1 and 2, p. 6-208.

MME FORM 6 REFERENCE SLIP

REV. 2-59 O. ICE OF MINERALS EXPLORATION

TO:		DATE	INITIALS
1.	Chief, OME	7/21/67	
	Re: OME-6631 (Silver-Gold-Copper)		
2.	Daylight Mining & Milling Co.		
	Red Cloud Mine		
3.	Blaine County, Idaho		
4.			
	D. R. MacLaren		
5.	D. R. MacLaren		
FROM:	Fld. Officer, Reg. I		

FOR: Check items for action desired

____ Action ____ Reply for signature of ____

____ Approval ____ Investigate ____ Surname

____ Comment ____ Recommendations ____ Signature

____ Conference ____ Rewrite ____ File

____ Instructions X Your information

REMARKS:

INT.-DUP. SEC., WASH., D.C. M56300-62

[illegible], Idaho
[illegible] 11, 1967

[illegible] 24 [illegible]

INITIALS	CODE
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Mr. [illegible] Mac Larem, Field Officer
United States Department of the Interior
Office of Minerals Exploration,
Geological Survey
No. 157 Howard Street
Spokane, Washington 99204

Dear Mr. MacLaren:

In accordance with your request I contacted two other contractors. I am enclosing two sets of my letters to them together with their answers or bids.

[illegible],

/s/ J. D. Sawyer

J. D. [illegible] Secretary
Davis [illegible] Milling Co.
P.O. Box
Hailey, Idaho

RECEIVED

Hailey, Idaho
July 3,1967

STAN JOHNSON CONSTRUCTION CO.
P.O. BOX 217
HAILEY, IDAHO

Dear Stan:

The Daylight Mining & Milling Co. is contemplating having 900 feet of drifting performed at its Red Cloud Mine west of Hailey. This work will be on a contract basis and we wondered if you would care to put in your bid.

The Daylight Mining & Milling Co. has no equipment so all such mining equipment necessary would have to be furnished by the party contracting the work. It would be necessary for you to have a compressor, mine cars,drills,air and water hoses,air or battery trammer,mucking machine,necessary tools and ventilation equipment.

The Daylight Co. will furnish the rail and other track materials, the air and water lines together with the necessary pipe fittings. The Company will also furnish all the necessary timber and lagging.

If you are interested, I will be pleased to meet with you and discuss the matter fully and I will also take you to the mine so that you can size matters up.

Very truly yours,

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho

RECEIVED
JUL 13 1967
SPOKANE, WASH.

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho

STAN JOHNSON CONSTRUCTION

P.O. BOX 217 HAILEY PHONE 788-4174
HAILEY, IDAHO 83333 KETCHUM PHONE 726-3744

ALL KINDS OF EXCAVATING

July 7, 1967

Mr. J.D. Sawyer, Secretary
Daylight Mining & Milling co.
P.O. Box 506
Hailey, Idaho

Dear Mr. Sawyer:

Your Letter of July 3rd received. It would be nearly impossible to secure any miners at present. I would not like to put in a bid and if I was awarded the contract not be able to start on account of the labor picture. I will continue to look around and see if something might come up to change the picture.

Yours Truly:

Stanley D Johnson

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho

Hailey, Idaho
July 5,1967

Mike Ivie- Contractor
P.O. Box 325
Bellevue, Idaho 83313

Dear Mr. Ivie:

The Daylight Mining & Milling Co. is contemplating 900 feet of exploration work at its Red Cloud Mine 15 miles west of Hailey. This proposed work will be put up on a bid basis.

The Daylight Mining & Milling Co. has no equipment so all mining equipment such as a compressor,mine cars, air and water hoses, air or battery trammers, mucking machine, tools, and ventilation equipment will be furnished by the contractor.

The Daylight Co. will furnish the rail and other track materials, the air and water lines with necessary pipe fittings and all necessary timber and lagging.

The proposed exploration work will consist of 900 feet of 5x7 drift, to be driven in the vein,except where possibly ofset by a fault.

If you are interested, I will be pleased to meet with you and discuss the matter more fully and also to take you to the property so you may make an examination as to conditions.

Very truly yours,

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho.

RECEIVED
JUL 1 1967
SPOKANE, WASH.

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho

MIKE IVIE - CONTRACTOR

BOX 325

BELLEVUE, IDAHO 83313

OFFICE: 788-4114

SHOP: 788-2743

Bellevue, Idaho
July 8, 1967

Daylight Mining & Milling Co.,
P. O. Box 506
Hailey, Idaho
J. D. Sawyer

Dear Sir;

I received your letter of 7/5/67, requesting a bid for driving 900 feet of 5x7 drift at the sight of your Daylight Mining & Milling Co., 15 miles West of Hailey, Idaho.

In light of my past experience, I would not consider doing this job other than Cost plus 10%.

Yours truly,

Mike Ivie

Mike Ivie - Contractor
Box 325
Bellevue, Idaho.

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho

MME FORM 6 REFERENCE SLIP

REV. 2-59 ICE OF MINERALS EXPLORATION

	DATE	INITIALS
TO: Chief, OME	6/29/67	
1. Re: OME-6631 (Silver-Gold-Copper)		
2. Daylight Mining & Milling Co.		
Red Cloud Mine		
3. Blaine County, Idaho		
4. D. R. MacLaren		
5. D. R. MacLaren		
FROM: Fld. Officer, Reg. I		

OFFICIAL COPY
O. M. E.
RECEIVED
JUL 3 1967

FOR: Check items for action desired

____ Action ____ Reply for signature
____ Approval ____ Investigate
____ Comment ____ Recommendations
____ Conference ____ Rewrite
____ Instructions X Your information

INITIALS	CODE
	Surname
	Signature
	File

REMARKS:

INT.-DUP. SEC., WASH., D.C. M56300-62

Hailey, Idaho
June 26,1967

United States Department of the Interior
Office of Minerals Exploration
Geological Survey
No. 157 Howard Street
Spokane, Washington 99204

Re: OME-6631 (Silver, Gold, and Copper)
Red Cloud Mine
Blaine County, Idaho

Dear Mr. MacLaren:

After our discussion last week relative to the values of the different metals in the Red Cloud area a pertinent fact occurred to me. It is relative to the gold values.

The gold was associated with the pyrite and every effort was made while the mine was in production to eliminate the iron pyrite from the shipments, even so the available records indicate 0.2 ounces per ton for the production.

It was the practice at the time to pan off (in the stopes) the pyrite and other gangue minerals and waste. In addition to this, a large amount of pyrite was put over the waste dump. The evidence of this can be seen in No. 5 dump. Louis Cramer for the R.F.C. in 1946 took a sample from the N.W. portion of No.5 dump and is shown on his map to run .05 ounces of gold per ton and his estimate was 7000 tons of ore that carried this value.

In the rear of our present building below No.5 dump which was near the top of the old concentrator, there was a pile of iron pyrite which was tossed aside to avoid milling. In 1945 while I was cleaning up No. 5 dump we piled old timbers and boards near this spot and burned it. The pyrite caught fire and burned all summer to our great discomfort. The tailings from this concentrator, which consisted of fine sand assayed .12 ounces of gold per ton. This assay was the average from 8[illegible] tons shipped to the A.S. & R. at Garfield, Utah.

Today this pyrite would be shipped with the silver-lead product. The grade of the ore would not approach by a considerable amount, that shipped in the early days due to the pyrite content.

The same ore mined and shipped today in my opinion would run between .3 and .4 ounces of gold per ton. The ratio of silver and copper to the lead would not change but the "percentage" of gold to the "total" values would change considerable when figured on a much lower "silver,lead and copper" value.

I am enclosing two copies of a letter from a Mr. M.J. Smith to Mrs Florence Shepherd. This letter was a part of my application to the R.F.C. in 1945. Mr. M.J. Smith is the M.O. Smith mentioned in that portion of U.S.G.S. Bulletin 814 and which is a part of my application. Mrs Shepherd

was one of the former owners of the Red Cloud Mine. This enclosure is to substantiate my thoughts and opinions relative to the gold values of the Red Cloud orebody.

Very truly yours,

/s/ J. D. Sawyer

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P. O. Box 506
Hailey, Idaho

RECEIVED
JUN 29 [illegible]

COPY OF LETTER FROM M. J. SMITH TO MRS. FLORENCE SHEPHERD

Mill City, Nevada
February 20, 1940

Dear Mrs. Shepherd:

Your two letters of recent dates have been at hand for some time. I tried once more to locate the party of whom I spoke awhile ago in connection with some of my tracings from the complete map of the Red Cloud that I made while there. Don't seem to be able to locate him at all now. As there is over three miles of levels and sublevels with numerous manways connecting them, all of which were shown on a scale of fifty feet to an inch, it is out of the question to try to give an outsider anything more than a very rough approximation of general conditions.

There are eleven main levels, #1, 2, 3, 4, 5 levels are adits, that is they run direct from the surface; #6, 7, 8, 9, 10 have no direct outlet to the surface, but are connected with the upper levels by manways and chutes; #10 level is the upper end of the so called 300 foot raise from the lower tunnel which is mapped as the #13 level; #11 and #12 levels could have been driven from this raise. Stations were cut at these points in the raise but nothing further.

The vertical distance from #1 level to #13 level is about 1000 feet; the greater part of the ore was taken out through the #5 level.

A small concentrator consisting of power jigs was erected here, and about 1500 tons of ore treated. The better ore was hand sorted in the mine to about 50% lead. The concentrates from lower grade ran about the same. Both products carried about half an ounce of gold, while the silver averaged close to 1½ ounces of silver to each unit (percent) of lead. The lead minerals, mostly galena but some carbonate too, carried practically all of the silver, while the gold accompanied the pyrite. In hand sorting they aimed to "cob" out all the pyrite, and the same with the jigs. Such pyrite, with its accompanying gold, as could not be separated clear either by hand cobbing or jigging, accounts for the gold contents of all shipments. Rail rates and smelter schedules were several times higher the present rates.

The average trend of the main vein is about N 22 W with a steep dip (80° – 85°) S. W. The hanging wall vein is about N 50 W with a dip of 60° S. W. They thus diverge both on dip and strike while the ore shoots pitch very decidedly to the S. E.

On and near the surface the ore shoots were small and irregular but increased in size with the depth until a maximum of nearly 600 feet was attained in the Main vein on the #5 level; from there on down it decreased in both volume and values until at the #9 level which is about 700 feet deep vertically, it was no longer worth while.

The Hanging Wall vein does not seem to have done so well, as the maximum length of the ore shoot wasn't over 250 feet. This was on the #8 level. It was cut off by a rather flat fault just below #9 level and nothing more was seen of it except a few

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho

J. D. Sawyer

streaks of "drag" ore on the #10 level. So the ore shoots seem to die out at about 700 feet, vertical depth and the lower tunnel never showed anything at all although intersecting the projections downward of all the important ore shoots above. It would be a rather poor gamble to spend any money or time trying to find the comparatively small segment of Hanging Wall vein that was possibly faulted off below. Incidentally, the 700 foot region seems to be very close to the "roots" of the ore shoots in that section.

There are very strong geological reasons for this line of reasoning, which of course cannot be gone into here. The best bet is to drive S. E. along main vein toward the Red Elephant, and the best set up would be on the #3 level. It is already much farther in than any of the others. The camp could be established on the #5 level where we lived for awhile. By cutting out a station just inside #3 level, one could install a compressor plant inside, clear of snow and frost, while access to it during heavy snow could be easily had through #5 level close to camp. There is nearly 2000 feet of unprospected ground between face of #5 (this could be #3) level and the Red Elephant ground which adjoins on the S. E. There are several places on the upper levels where a little prospecting might easily open up segments of ore shoots that were "side stepped" as it were by the early miners. Some of the "slips" were evidently mistaken for true walls and followed for considerable distances without results. Without an accurate map of levels, supplemented by longitudinal sections of the vein and, even more important, a goodly number of vertical cross sections of same, it is almost a hopeless quest, so far as anything worth while is concerned. I saw several places where by doing a few hundred dollars worth of work we could probably have taken out enough "scattered" products to break even on the mining, but to do so involved a lot of track and new stock which we could not afford and yet was not attractive enough to enlist financial help.

My program was based on the established fact that there was about 25 or 30 thousand tons of concentrating ore available on dumps and in old stope fillings which under the right kind of management would net around $1.00 per ton profit, based on lead at 5¢, silver at 50¢ and gold at $20.00. We had a small plant down on Wolftone which with a few additions could handle about 60 tons per eight hour shift. We fixed up the house at #5 and #13 levels and laid quite a lot of our own track inside. My plan was to get the needed equipment to start milling these reserves at once and then out of the profits drive #3 tunnel to the required objective. There are three veins on surface, principally on Green Mt. Boy, which in their normal course should intersect the main vein at about 250/300 feet beyond present face of #3 level.

I failed to find a single exception to the rule that (in that district) the crossings or intersections of veins invariably were good sized shoots of ore. Along with such equipment as we had on the ground at the time, it would not have taken over five to six thousand to quickly get into production, after which of course, the income from the foregoing reserves would not only pay costs of all prospecting for new ore but also pay a handsome profit of itself independent of such new ore as might be found at the certain objectives. I wrote scores of letters to people who were "dabbling" in mining in a haphazard way, and also to others who had made money in such ventures, but could not get enough to

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho

do what was needed. Our boys worked like trojans to help along but without the needed equipment we simply could not handle enough tonnage to even get enough ahead to buy the stuff ourselves. I just wasted several of the most vital years of my life trying to interest someone, but that district has a "Black Eye" on the outside. One of our old Goldfield crowd wrote me from San Francisco at the time saying "That if I could drag that Red Cloud a few hundred feet across the line into Nevada, he would be with me with both feet and all the money needed", but added that "just as soon as you broached any mining proposition that was located in South Central Idaho, or Southern Oregon to people on the coast, they would just walk away from you". I simply had to walk away and leave it, coming back down here just a little ahead of the depression, but not early enough to get another start. During the years I was there and at the Red Bird Mine (Now Henry Ford's) and also the Leadbelt, I lost all touch with the old crowd here. Many had died, others moved away or went broke so it was no easy job getting a new start. The new price of gold made it possible to work up a small tailings dump that netted pretty good, but lacked a lot of liquidating the obligations incurred during so many lean years. This present layout lags now because of lack of enough tankage and other accessories with which to handle the needed tonnage, but looks as though I would be able to land what I want in the spring. So far as I am concerned I have not the least intention of leaving Nevada for Idaho, even though I had ample funds, and one could not do with less than $10,000. I wouldn't consider ever going near that district again. The loss of my boy Clarence, my Pal as he was more than a son, has put a blackout on things that will never completely light up again. This is a far superior country by every way of comparison, and I made the greatest blunder of my life when I moved to Idaho. For a person who knows both mining and milling thoroughly, and can command the necessary capital, the Red Cloud on the general plan outlined is a sure fire proposal, for the reason is well capable of underwriting itself. For one not skilled in both mining and milling, it is of course a gamble, but much better than many others. For the ordinary small leaser whose sole hope is to quickly uncover a worth while amount of shipping ore it is almost a hopeless task. In the matter of Dr. Glasgow, I had some correspondence with him years ago but never met him personally. He and some others took over a property only a short distance south of here. That was in 1930. They moved an old mill in but never accomplished anything. I know of him by heresay that he is a "nut" on mining.

Now, Mrs. Shepherd, I can't forget that you folks were mighty good to our boys when they were in Hailey and the least I can do in appreciation is to give you all the information at hand that may be of use to you in handling the ground. By way of conclusion I would suggest that all "mysterious" finds of ore, "dark hints" of something extra good and similar yarns be heavily sprinkled with salt. The only criterion of paying ore shoots is the smelter returns from same. In regard to the Lone Pine ground, the vein which shows on same is almost certainly a continuation of "Hanging Wall" vein of the Red Cloud. I surveyed the workings when Kent had it. They were slightly over on Red Cloud ground at the time but nothing in sight. So far as that fantastic find of $15,000 for Lone Pine is concerned, it is more suggestive of

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho

J. D. Sawyer

astronomy than mining valuation. However, that is out of my province. Before you or anyone else can do anything or form any accurate ideas of the Red Cloud it will be necessary to clear out the portals of Lower Tunnel #13 and one of the uppers, preferrably #5 level, then make a survey and plat, not forgetting the cross sections and longitudinal sections afore referred to.

Any other specific questions that come up after such preliminary work I will gladly answer if within my knowledge and memory.

Trusting that this may help you and your co-partners in visualizing the conditions as I last saw them, I am

Yours very truly,

(Signed) M. J. Smith

J. D. Sawyer, Secretary
Daylight Mining & Milling Co.
P.O. Box 506
Hailey, Idaho

J. D. Sawyer

GEOLOGICAL SURVEY
So. 157 Howard Street
Spokane, Washington 99204
June 16, 1967

Ga 120m
110
EP 720P

Mr. J. D. Sawyer, Secretary
Daylight Mining and Milling Company
P. O. Box 506
Hailey, Idaho 83333

Re: OME-6631 (Silver, Gold, and Copper)
Red Cloud Mine
Blaine County, Idaho

Dear Mr. Sawyer:

Thank you for your telephone call of June 13, 1967.

This will confirm my plan to arrive at Etchen's Lodge in Ketchum during the late afternoon or early evening of June 21. I will call you upon my arrival to arrange a time for meeting and visiting the Red Cloud property the next day.

Sincerely yours,

D. R. MacLaren
Field Officer, OME
Region I

DRMacLaren/mls

cc: OME

Director's Reading File

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
6/5/67	On trip	120
6/5/67	Kikkemo	120
		110
		220
		120M

AIRMAIL

JUN 5 1967

Memorandum

To: Field Officer, Region I

From: Chief, Office of Minerals Exploration

Subject: OME-6631 (Silver, Gold, and Copper)
Daylight Mining and Milling Company
Red Cloud Mine
Blaine County, Idaho

We are referring the subject application to you for further consideration, a field examination if warranted, and recommendations.

As you have noted, past production records and assay information submitted with the application suggest that the Red Cloud property is chiefly a lead deposit. However, it should be noted that these data also indicate eligible minerals may be present in quantities sufficient to qualify the property for OME assistance.

We requested Mr. Thor H. Kiilsgaard to review this application, but having not been on the property since 1949, at which time most of the workings were closed, he could not effectively appraise the Applicant's proposal.

FRANK E. JOHNSON

Frank E. Johnson

cc: Director's Reading File
Division File
Economic Geology File
OME Docket
OME ReadingFile
Mr. Peterson
130

ECPeterson/gla 6-5-67

23263

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
6/5/67	On trip	120
6/5/67	Kirkemo	120
		110
		220
		120M

AIRMAIL

JUN 5 1967

Daylight Mining and Milling Company
P. O. Box 506
Hailey, Idaho 83333

Re: OME-6631 (Silver, Gold, and Copper)
Daylight Mining and Milling Company
Red Cloud Mine
Blaine County, Idaho

Gentlemen:

Your application for exploration assistance has been reviewed in our Washington office and referred to Mr. D. R. MacLaren, Field Officer, Region I, Office of Minerals Exploration, U. S. Geological Survey, South 157 Howard Street, Spokane, Washington 99204.

Mr. MacLaren will notify you if additional information concerning the application is needed, and possibly to make arrangements for a field examination.

Sincerely yours,

FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

cc: Director's Reading File
DivisionFile
Economic Geology File
OME Docket
OME Reading File
OME Region I
Mr. Peterson

ECPeterson/gla 6-5-67

23263

May 15, 1967

Daylight Mining and Milling Company
J. D. Sawyer, Secretary
P. O. Box 506
Hailey, Idaho 83333

Subject: OME-6631

Gentlemen:

Your application for exploration assistance, dated May 3, 1967, submitted to our office at Spokane, Washington, has been assigned Docket No. OME-6631.

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

Sincerely yours,

Frank E. Johnson
Chief, Office of
Minerals Exploration

Copy to Region I

Government Messenger Envelope

65-205

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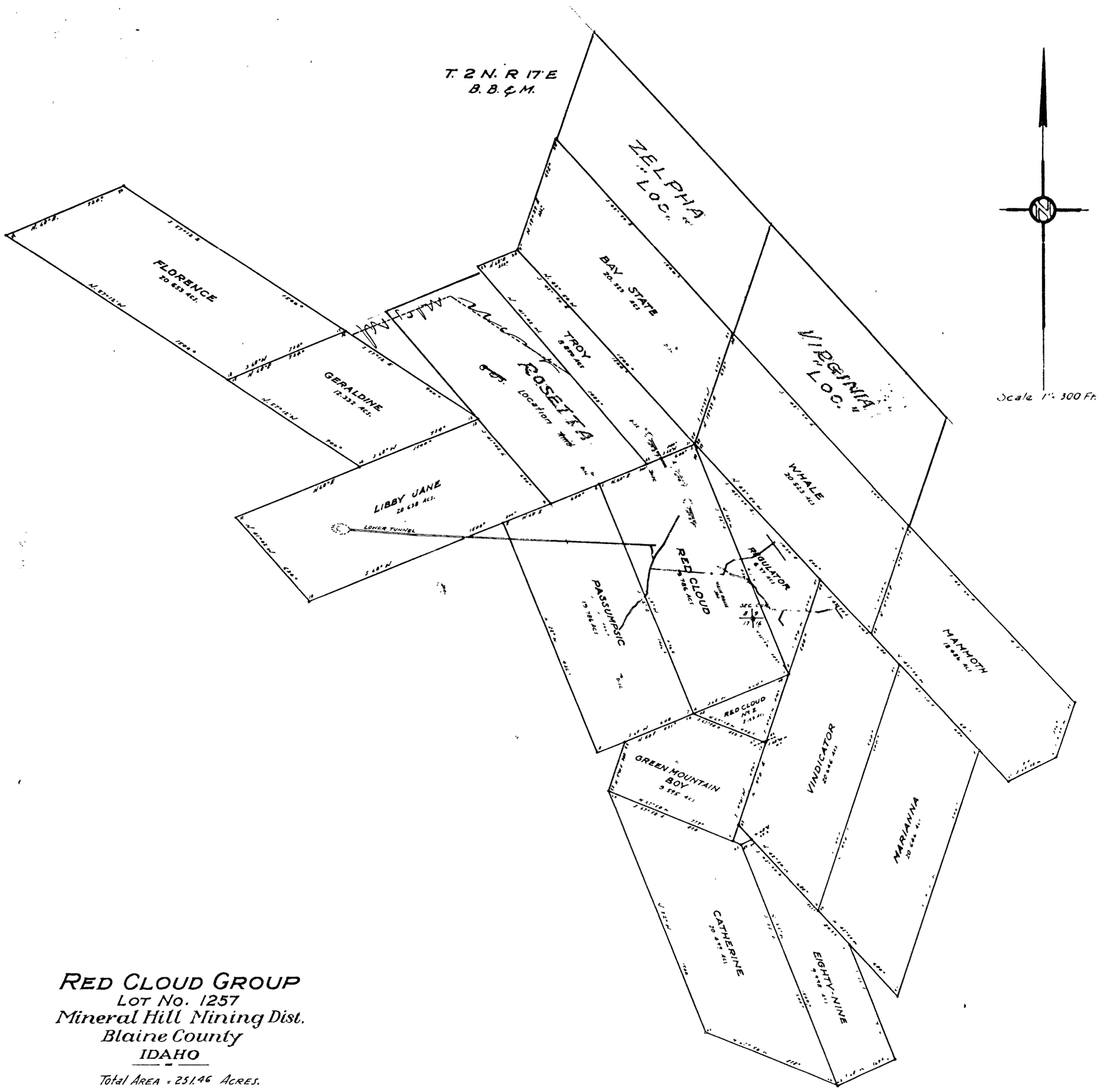
P		STOP		STOP



RED CLOUD GROUP

LOT NO. 1257

Mineral Hill Mining Dist.

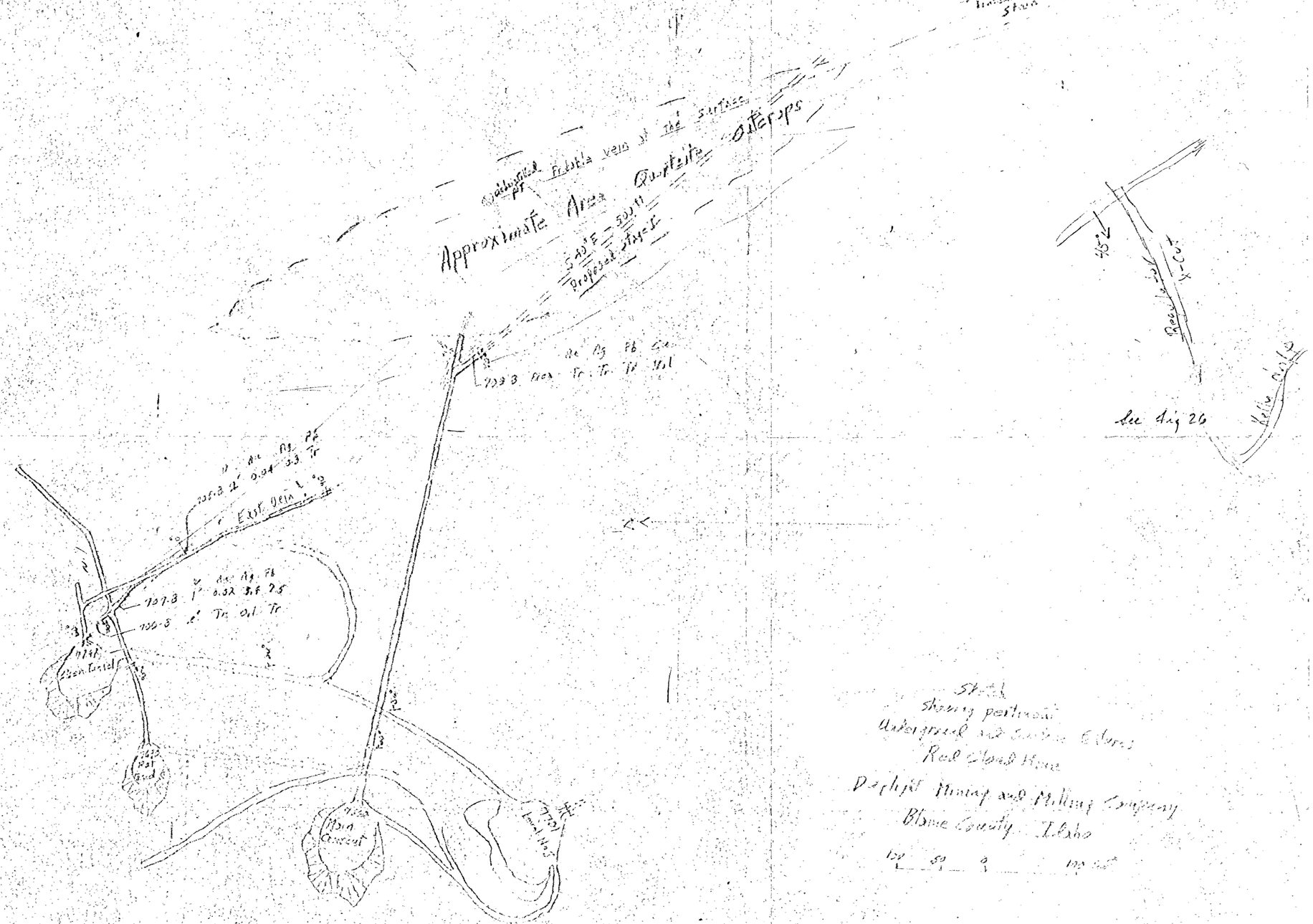
Blaine County

IDAHO

Total AREA = 251.46 ACRES.

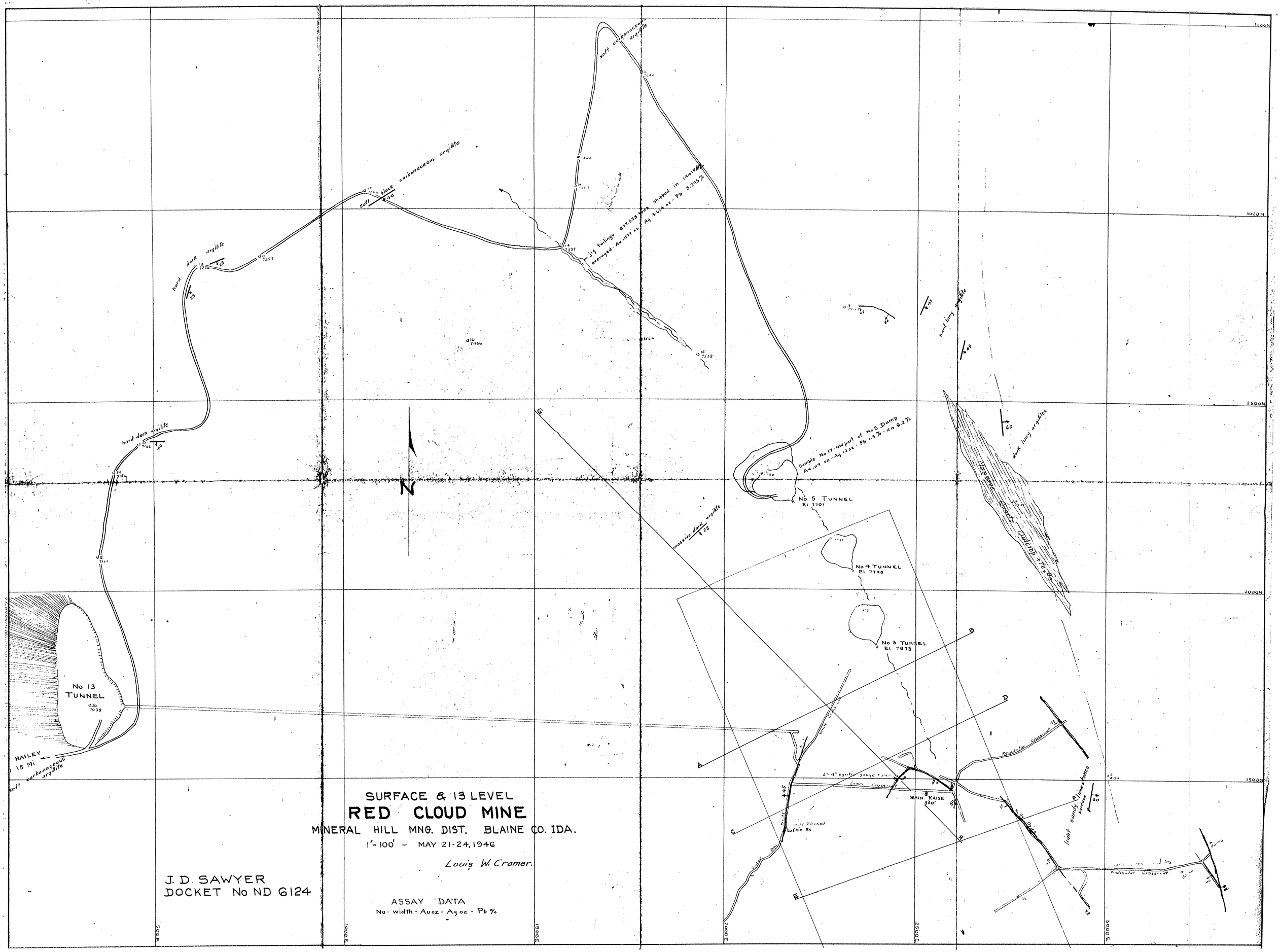
U.S. Interior Department
Geological Survey

GMC-5609



Sketch
Showing portion
Underground workings
Red Cloud Mine
Dorfjill Mining and Milling Company
Blaine County Idaho

Plate 1


SURFACE & 13 LEVEL
RED CLOUD MINE
MINERAL HILL MNG. DIST. BLAINE CO. IDA.
1" = 100' - MAY 21-24, 1946
Louis W. Cramer.
J. D. SAWYER
DOCKET No ND 6124
ASSAY DATA
No - width - Au oz - Ag oz - Pb %
No 13 TUNNEL
El 7938
HAILEY 15 Mi
soft carbonaceous argillite
hard dark argillite
hard dark argillite
soft black carbonaceous argillite
soft carbonaceous argillite
jig tailings 27,358 tons shipped in 1944
averaged Au .177 oz Ag 3.614 oz Pb 3.295%
Sample No 17 - NW part of No 5 Dump
Au .09 oz - Ag 1.1 oz - Pb 1.3% - Zn 6.2%
No 5 TUNNEL
El 7701
No 4 TUNNEL
El 7798
No 3 TUNNEL
El 7873
massive dark argillite
hard limy argillite
dark limy argillite
Mass Stope
Quartz Outcrop
Regulator Cross-cut
Main Raise 30'
Lower Cross-cut
Vindicator Cross-cut
Kelly Drift
Lufkin Rs
Lufkin Dn
2'-4" pyrite gouge
light sandy limestones surface
500E
1000E
1500E
2000E
2500E
3000E
3500N
3000N
2500N
2000N
1500N

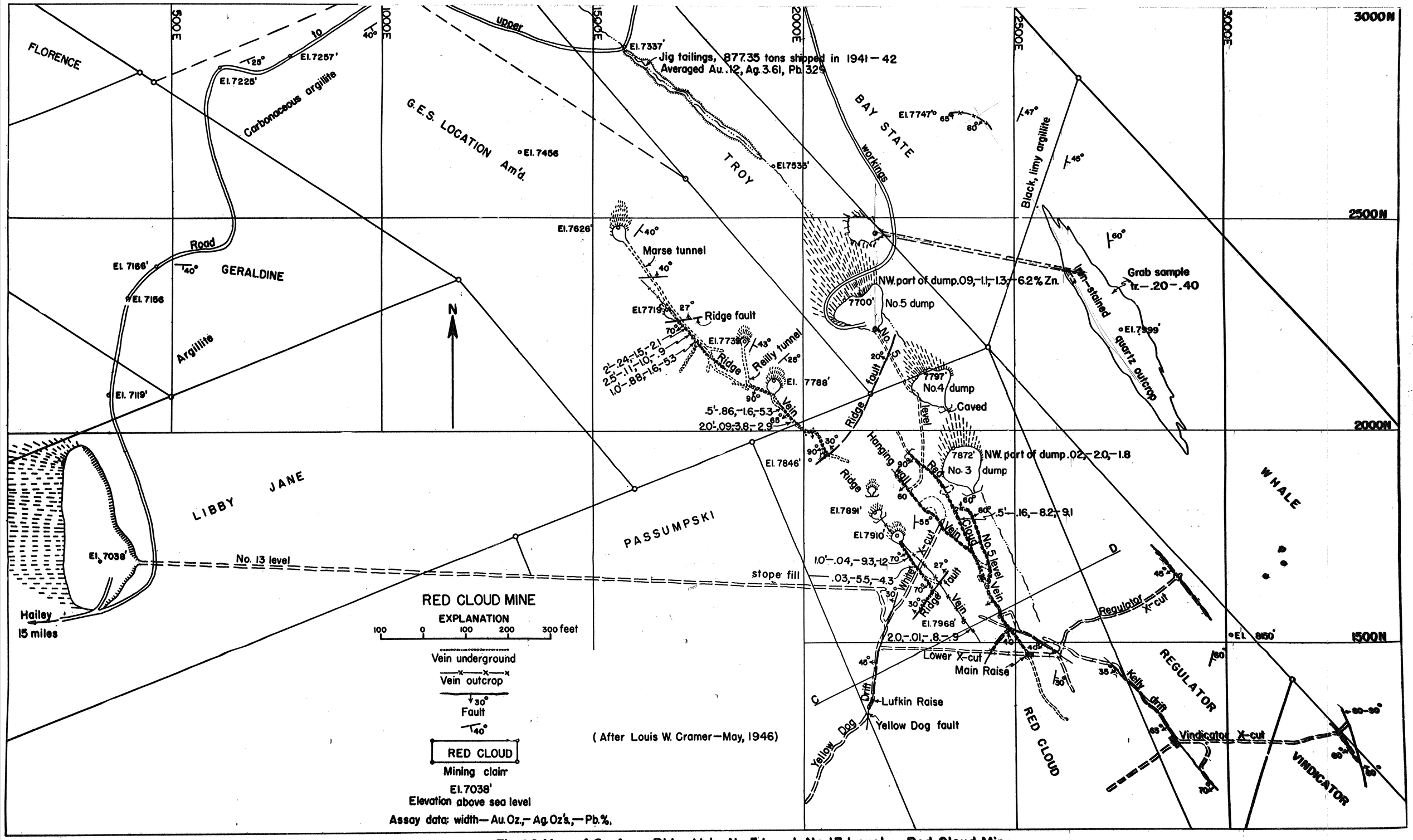
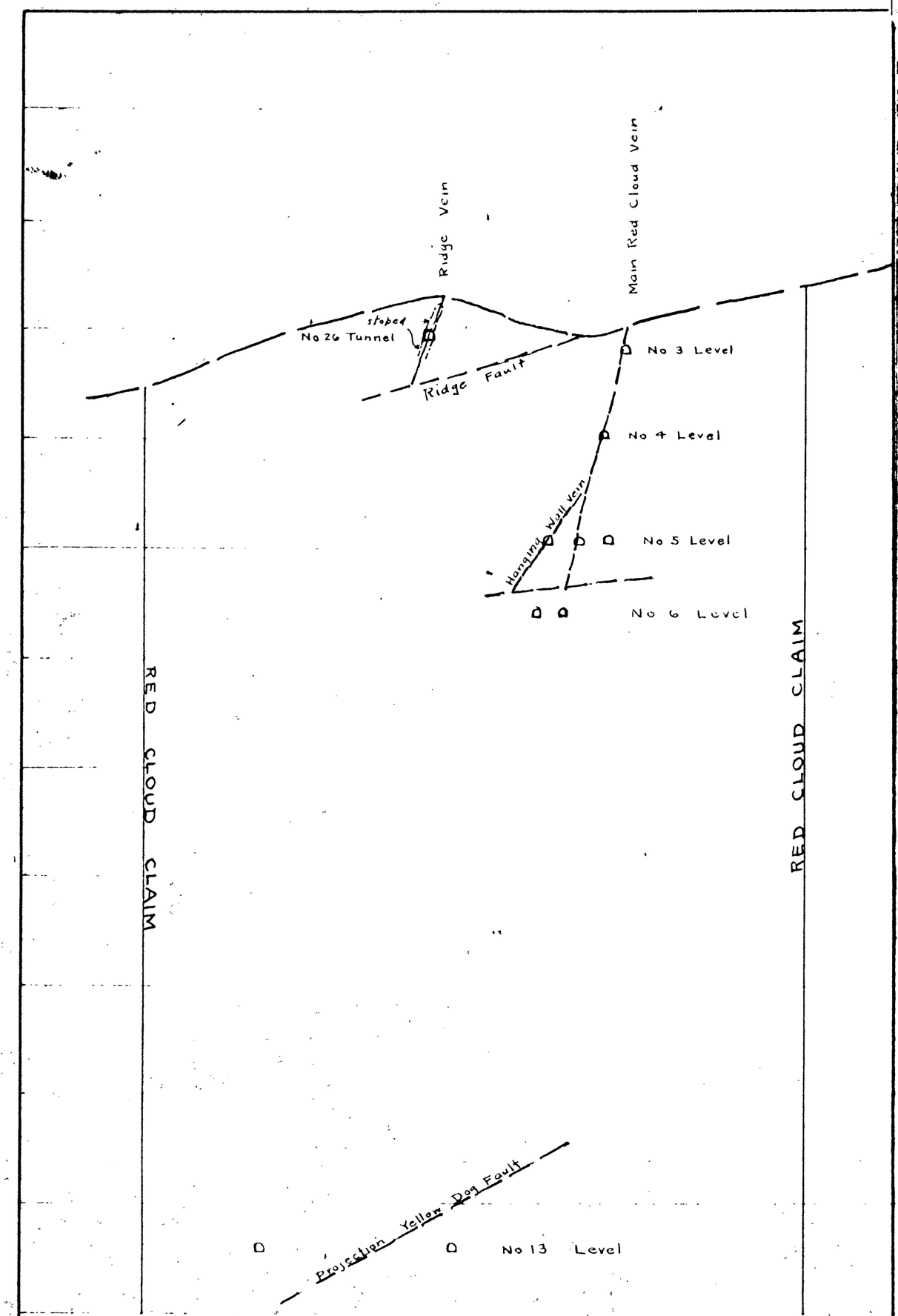
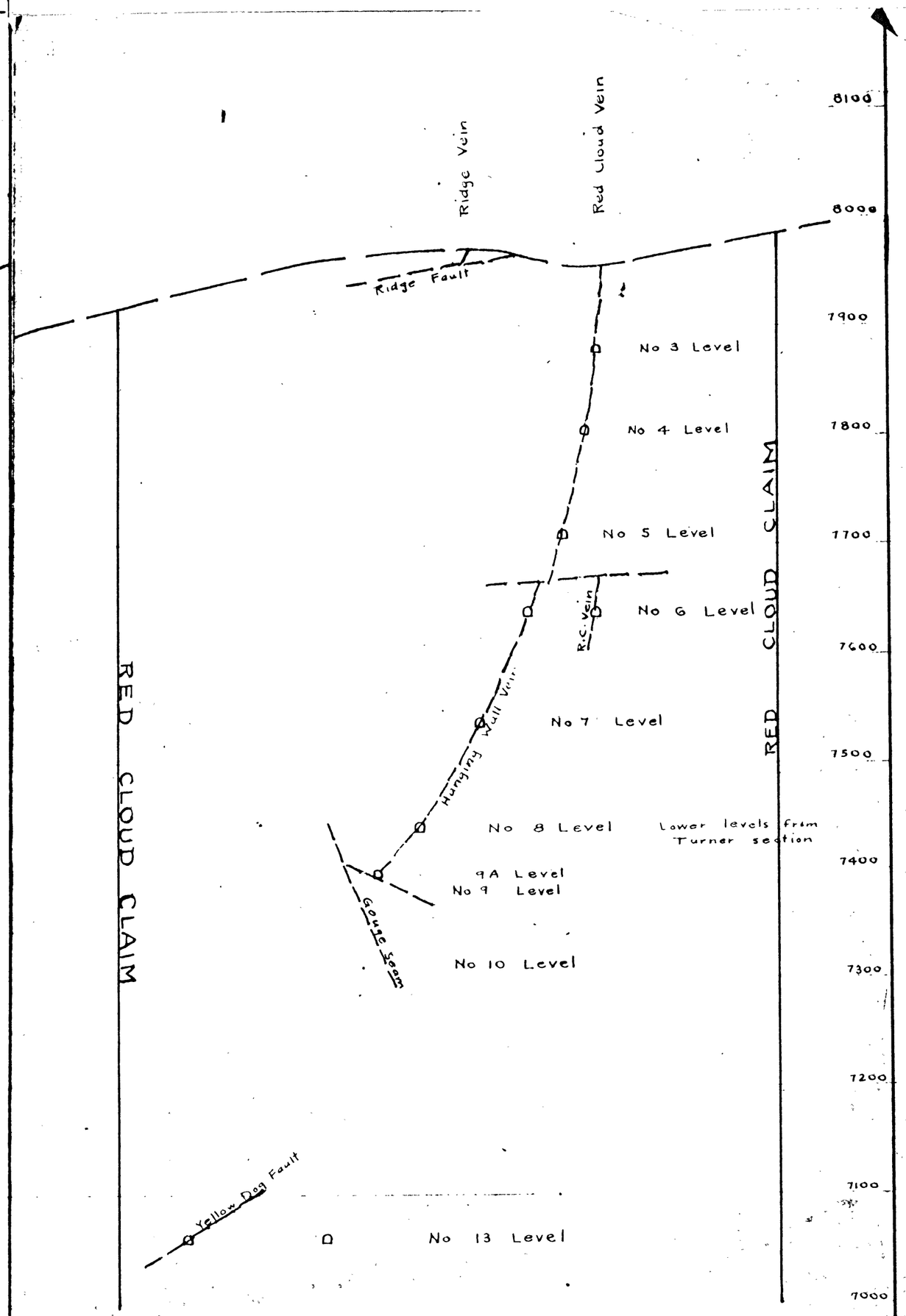


Fig. 26. Map of Surface, Ridge Vein, No. 5 Level, No. 13 Level — Red Cloud Mine



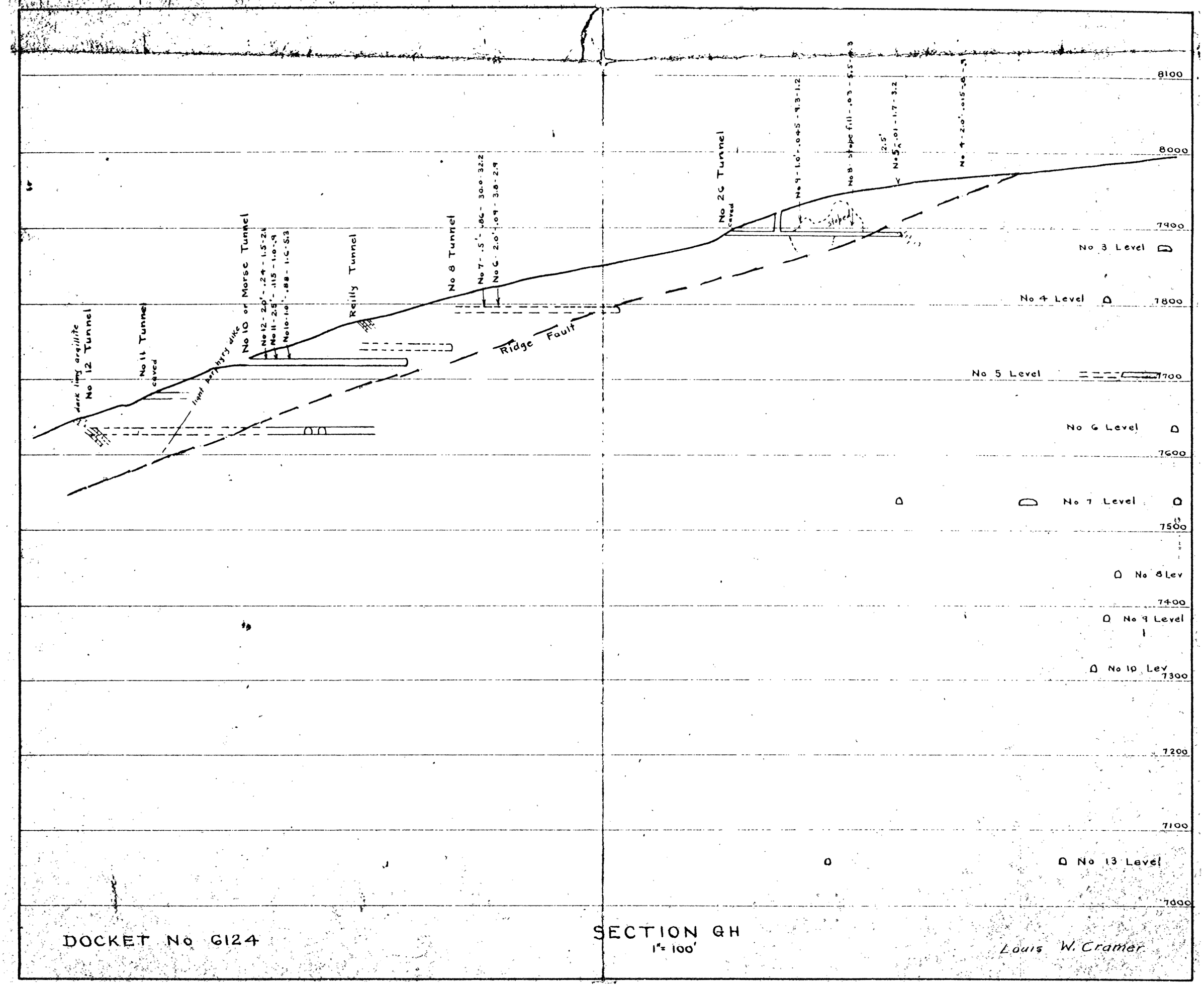
SECTION AB
1" = 100'



SECTION CD
1" = 100'

DOCKET No 6124

Louis W. Cramer.



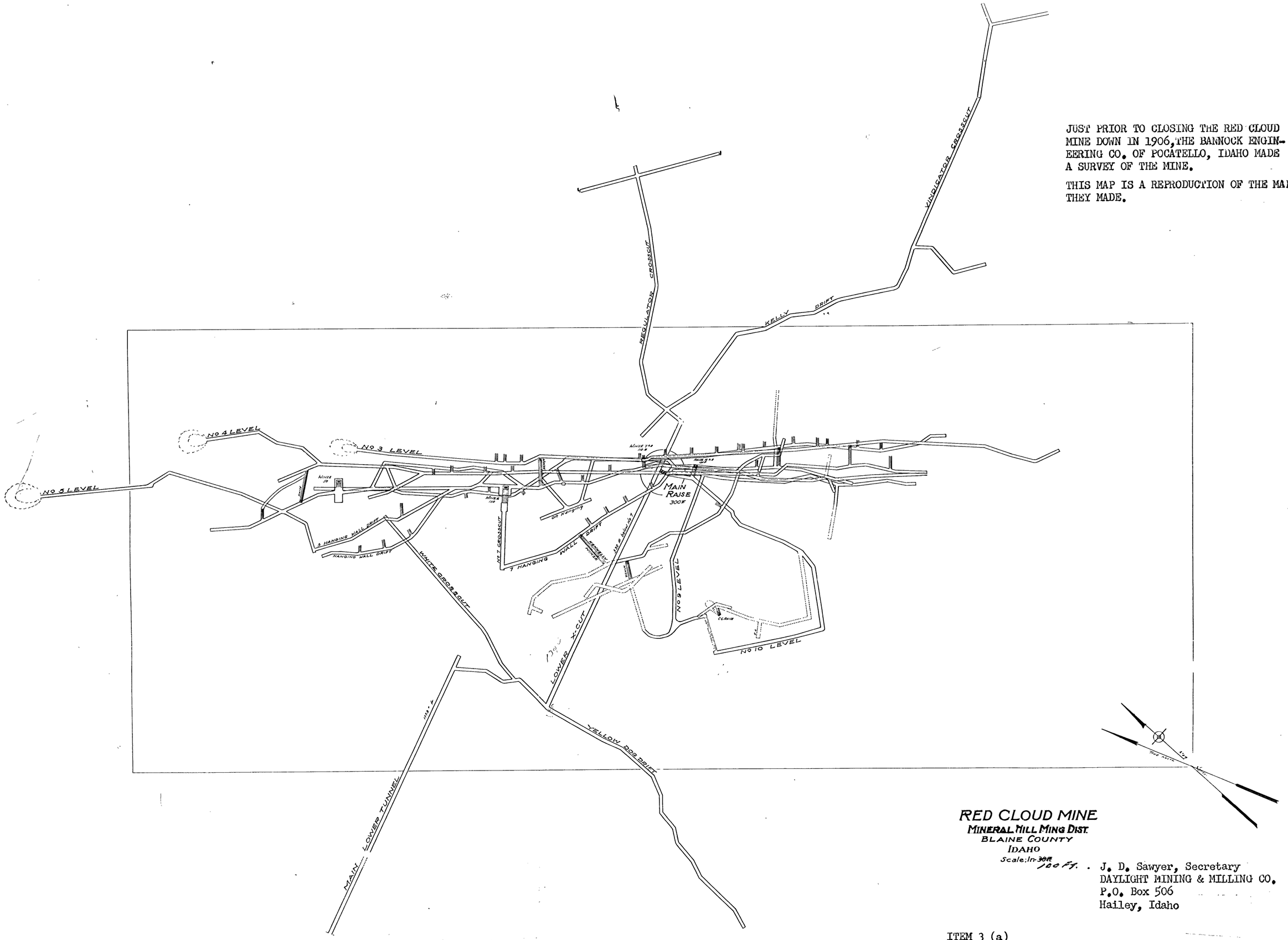
DOCKET No 6124

SECTION GH
1" = 100'

Louis W. Cramer

JUST PRIOR TO CLOSING THE RED CLOUD MINE DOWN IN 1906, THE BANNOCK ENGINEERING CO. OF POCATELLO, IDAHO MADE A SURVEY OF THE MINE.

THIS MAP IS A REPRODUCTION OF THE MAP THEY MADE.



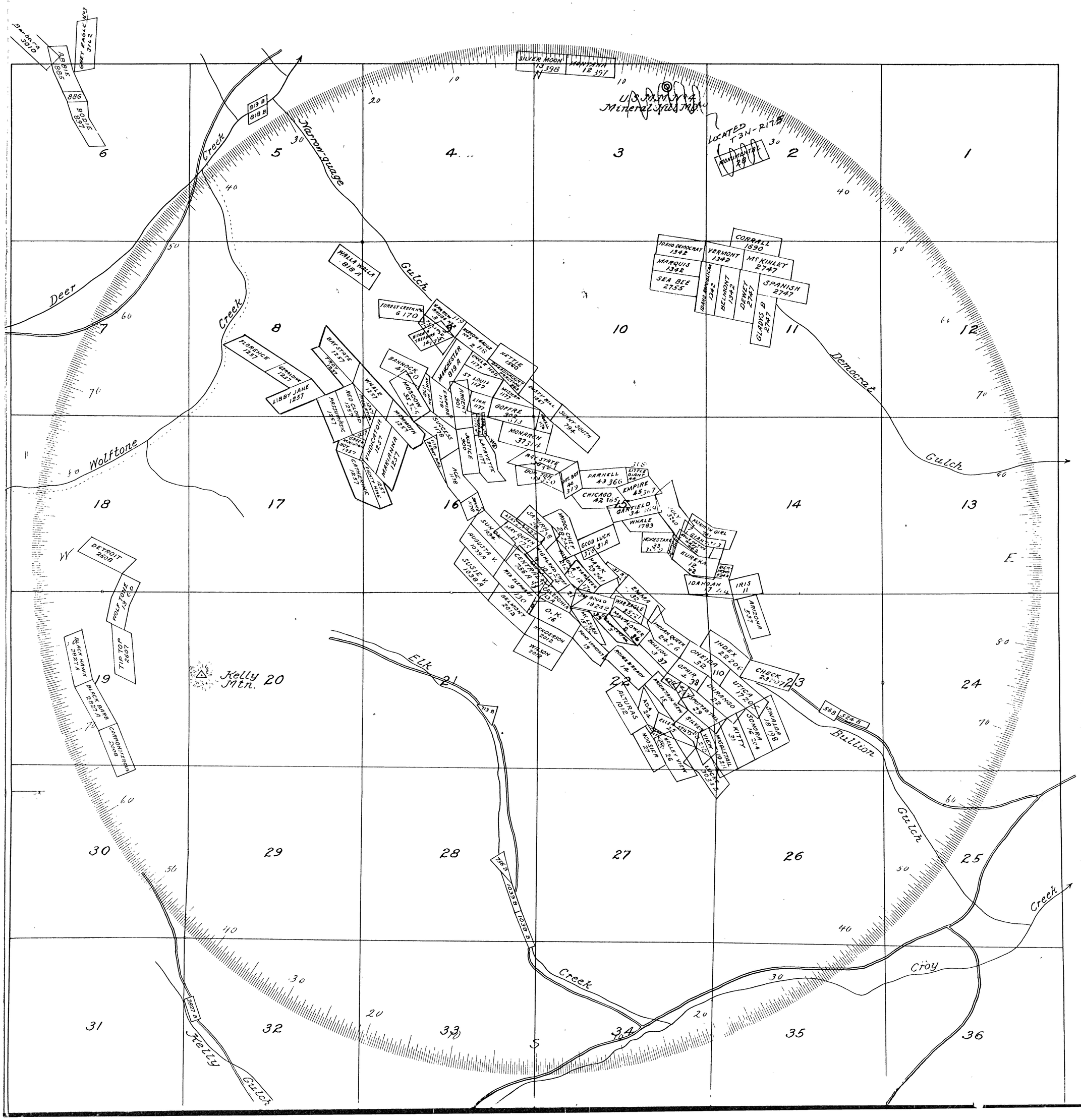
RED CLOUD MINE
MINERAL HILL MING DIST.
BLAINE COUNTY
IDAHO
Scale: In ~~30 ft~~ 100 ft.

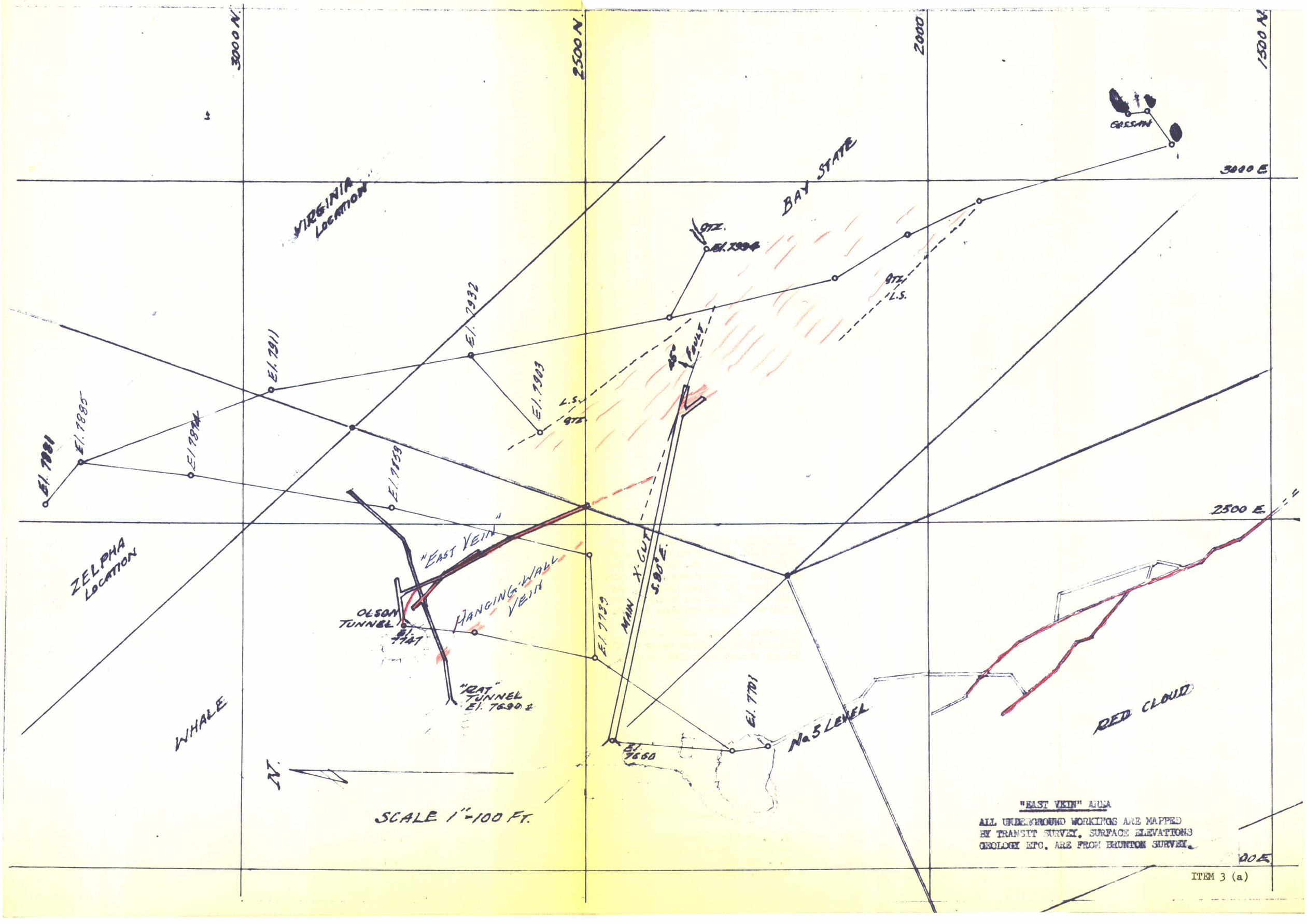
J. D. Sawyer, Secretary
DAYLIGHT MINING & MILLING CO.
P.O. Box 506
Hailey, Idaho

ITEM 3 (a)

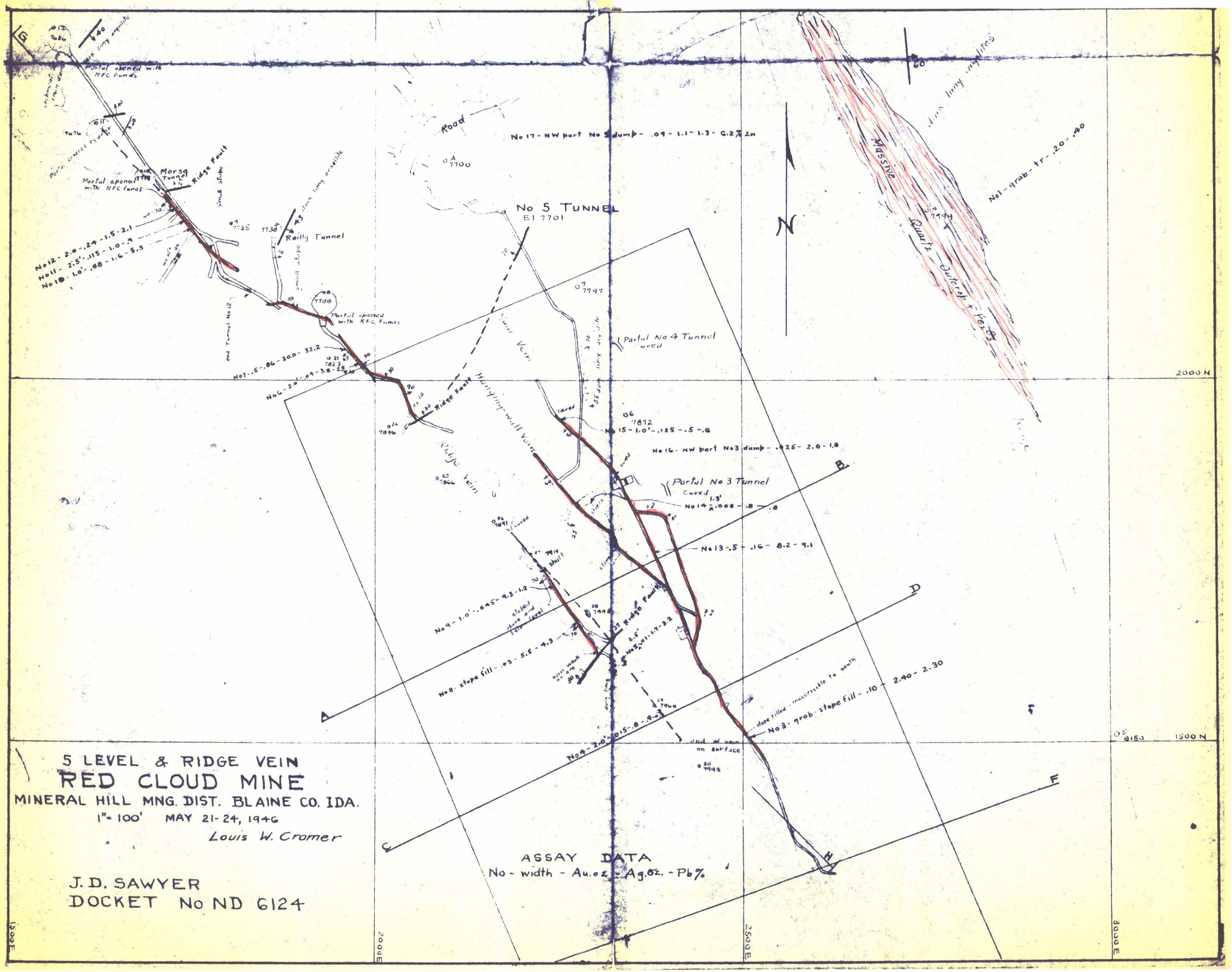
Mineral Hill Mining District

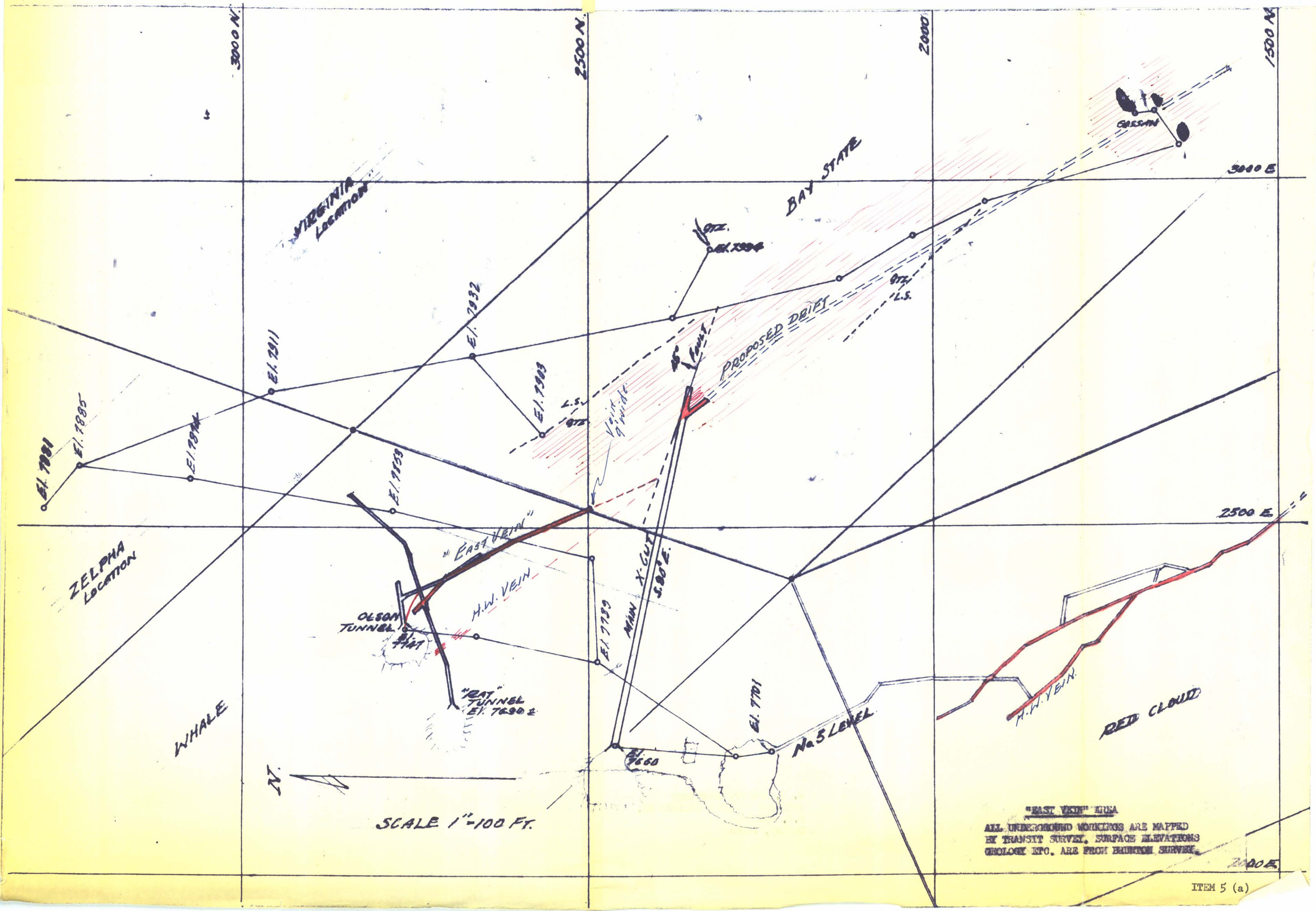
T. 2 N., R. 17 E.



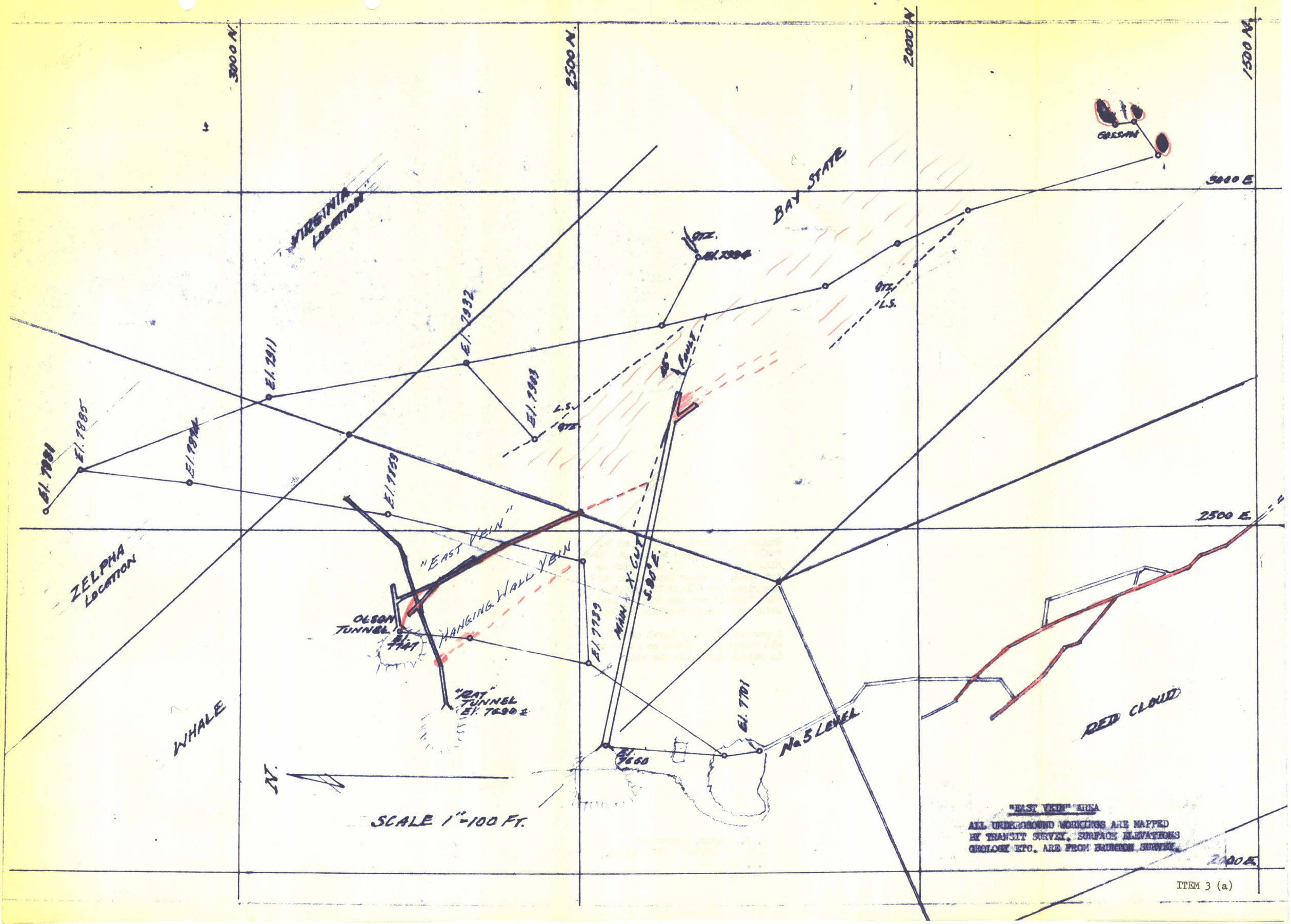

3000 N.
2500 N.
2000
1500 N.
3000 E
2500 E.
GRESSAN
BAY STATE
VIRGINIA LOCATION
ZELPHA LOCATION
WHALE
RED CLOUD
El. 7881
El. 7885
El. 7891
El. 7911
El. 7932
El. 7903
El. 7959
El. 7939
El. 7904
El. 7701
El. 7660
El. 7690 ±
El. 7147
"EAST VEIN"
HANGING-WALL VEIN
OLSON TUNNEL
"RAT" TUNNEL
MAIN X-CUT
S.80° E.
No. 5 LEVEL
45° FAULT
QTZ.
L.S.
N.
SCALE 1" = 100 FT.
"EAST VEIN" AREA
ALL UNDERGROUND WORKINGS ARE MAPPED BY TRANSIT SURVEY. SURFACE ELEVATIONS GEOLOGY ETC. ARE FROM BRUNTON SURVEY.

ITEM 3 (a)

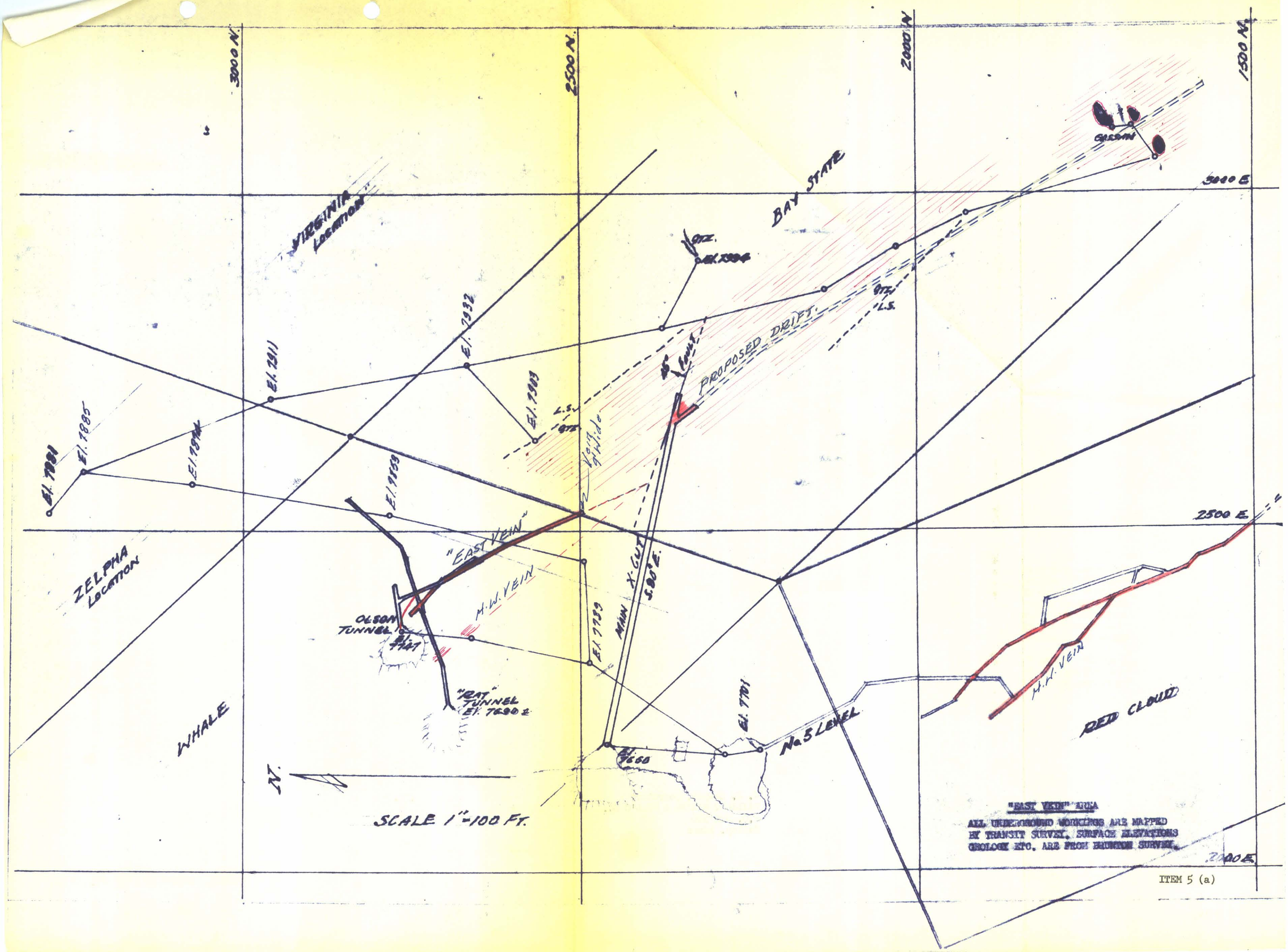

5 LEVEL & RIDGE VEIN
RED CLOUD MINE
MINERAL HILL MNG. DIST. BLAINE CO. IDA.
1"= 100' MAY 21-24, 1946
Louis W. Cramer
J. D. SAWYER
DOCKET No ND 6124
ASSAY DATA
No - width - Au.oz. - Ag.oz. - Pb%
No 5 TUNNEL
El 7701
Morsa Tunnel
Ridge Fault
Reilly Tunnel
Portal opened with RFC funds
Portal No 4 Tunnel
Portal No 3 Tunnel
Massive Quartz Outcrop
Hangingwall Vein
Ridge Vein
Road
No 17 - NW part No 5 dump - .09 - 1.1 - 1.3 - 0.2% Zn
No 1 - grab - tr - .20 - .40
No 12 - 2.0 - .24 - 1.5 - 2.1
No 11 - 2.5' - .115 - 1.0 - .9
No 10 - 1.0' - .08 - 1.6 - 5.3
No 7 - .5 - .06 - 30.0 - 32.2
No 6 - 2.0' - .09 - 3.0 - 2.9
No 15 - 1.0' - .125 - .5 - .6
No 16 - NW part No 3 dump - .025 - 2.0 - 1.8
No 14 - 1.3' - .008 - .8 - .8
No 13 - .5 - .16 - 8.2 - 9.1
No 9 - 1.0' - .045 - 9.3 - 1.2
No 8 - stope fill - .03 - 5.5 - 4.3
No 4 - 2.0' - .015 - .8 - .9
No 3 - grab - stope fill - .10 - 2.40 - 2.30
stope filled - inaccessible to south
end of vein on surface
end Tunnel No 12
small stope
caved
2000 N
1500 N
1500 E
2000 E
2500 E
3000 E
A
B
C
D
E
F
H


3000 N.
2500 N.
2000
1500 N.
3000 E
2500 E
2000 E
VIRGINIA LOCATION
ZELPHA LOCATION
WHALE
BAY STATE
RED CLOUD
GRESSIN
PROPOSED DRIFT
"EAST VEIN"
H.W. VEIN
OLSON TUNNEL
"RAT" TUNNEL
El. 7885
El. 7881
El. 7874
El. 7911
El. 7932
El. 7903
El. 7939
El. 7939
El. 7701
El. 7660
El. 7147
El. 7690±
MAIN X-CUT
S.80°E.
No. 5 LEVEL
N.
SCALE 1"=100 FT.
"EAST VEIN" AREA
ALL UNDERGROUND WORKINGS ARE MAPPED BY TRANSIT SURVEY. SURFACE ELEVATIONS GEOLOGY ETC. ARE FROM BRUNTON SURVEY.

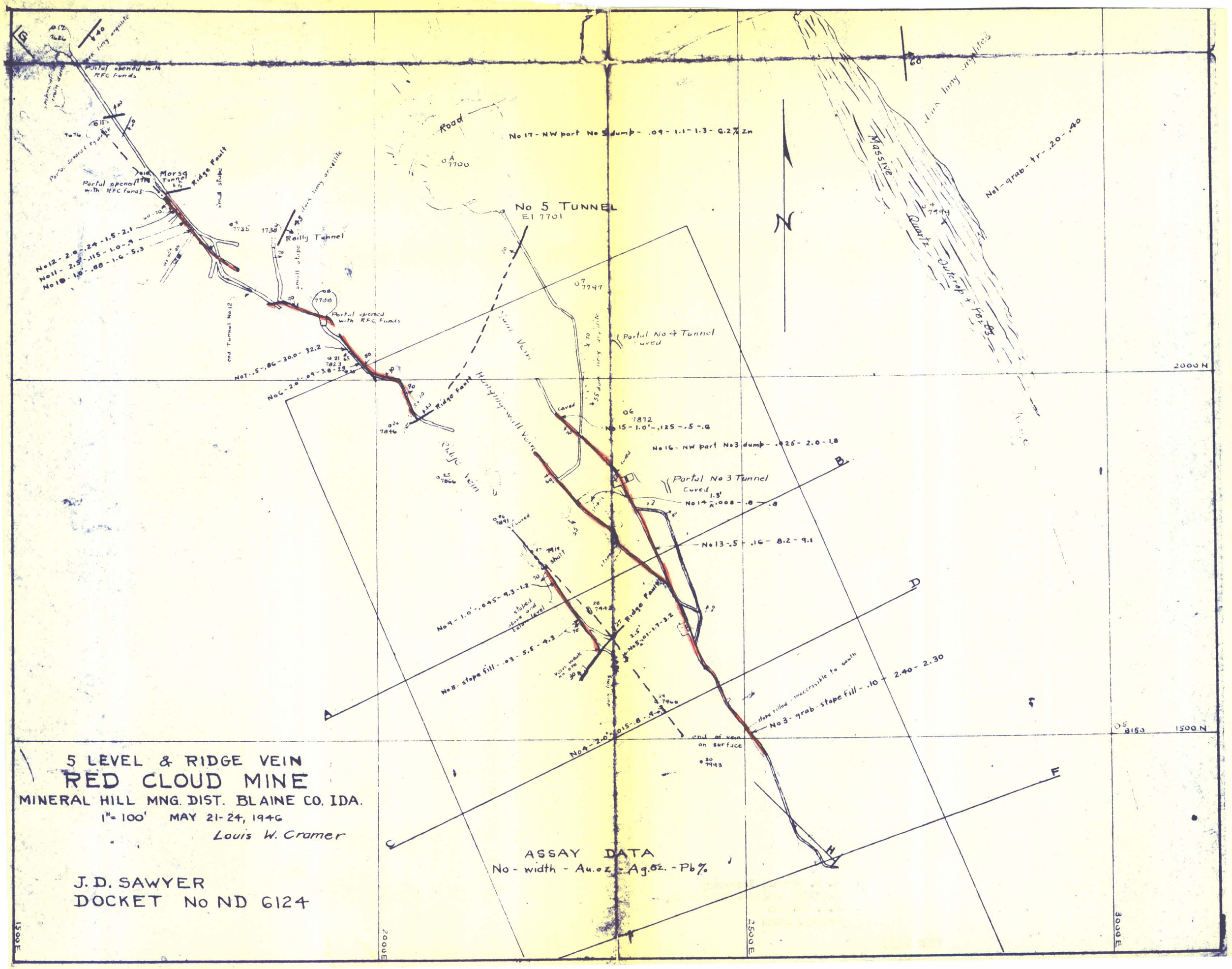
ITEM 5 (a)


3000 N.
2500 N.
2000 N.
1500 N.
3000 E
2500 E
2000 E
VIRGINIA LOCATION
ZELPHA LOCATION
WHALE
BAY STATE
RED CLOUD
GASSAW
El. 7981
El. 7985
El. 7974
El. 7911
El. 7932
El. 7903
El. 7959
"EAST VEIN"
HANGING WALL VEIN
OLSON TUNNEL
El. 7947
"RAT" TUNNEL
El. 7690 ±
MAIN X-CUT
S.80°E.
El. 7959
El. 7701
No. 5 LEVEL
El. 7660
OTZ.
OTZ. L.S.
L.S.
OTZ.
N.
SCALE 1"=100 FT.
"EAST VEIN" AREA
ALL UNDERGROUND WORKINGS ARE MAPPED BY TRANSIT SURVEY, SURFACE ELEVATIONS GEOLOGY ETC. ARE FROM BRUNTON SURVEY.

ITEM 3 (a)


3000 N.
2500 N.
2000 N.
1500 N.
3000 E
2500 E
2000 E
VIRGINIA LOCATION
BAY STATE
ZELPHA LOCATION
WHALE
RED CLOUD
PROPOSED DRIFT
"EAST VEIN"
H.W. VEIN
OLSON TUNNEL
"RAT" TUNNEL
MAIN X-CUT
S.80°E.
No. 5 LEVEL
El. 7931
El. 7885
El. 7911
El. 7932
El. 7903
El. 7959
El. 7959
El. 7791
N.
SCALE 1"=100 FT.
"EAST VEIN" AREA
ALL UNDERGROUND WORKINGS ARE MAPPED BY TRANSIT SURVEY. SURFACE ELEVATIONS GEOLOGY ETC. ARE FROM BRUNTON SURVEY.

ITEM 5 (a)


5 LEVEL & RIDGE VEIN
RED CLOUD MINE
MINERAL HILL MNG. DIST. BLAINE CO. IDA.
1" = 100' MAY 21-24, 1946
Louis W. Cramer
J. D. SAWYER
DOCKET No ND 6124
ASSAY DATA
No - width - Au.oz. - Ag.oz. - Pb%
No 5 TUNNEL
El 7701
Morsg Tunnel
Ridge Fault
Reilly Tunnel
Portal opened with RFC funds
Portal No 4 Tunnel
Portal No 3 Tunnel
Humphrey-Hall Vein
Ridge Vein
Road
Massive Quartz Outcrop
No 17 - NW part No 5 dump - .09 - 1.1 - 1.3 - 0.2% Zn
No 1 - grab - tr - .20 - .40
No 12 - 2.0 - .24 - 1.5 - 2.1
No 11 - 2.5' - .115 - 1.0 - .9
No 10 - 1.0' - .88 - 1.6 - 5.3
No 7 - .5 - .86 - 30.0 - 32.2
No 6 - 2.0' - .09 - 3.8 - 2.9
No 15 - 1.0' - .125 - .5 - .6
No 16 - NW part No 3 dump - .025 - 2.0 - 1.8
No 14 - 1.3' - .008 - .8 - .8
No 13 - .5 - .16 - 8.2 - 9.1
No 9 - 1.0' - .045 - 9.3 - 1.2
No 8 - stope fill - .03 - 5.5 - 4.3
No 4 - 2.0' - .015 - .8 - 4.3
No 3 - grab - stope fill - .10 - 2.40 - 2.30
stope filled - inaccessible to south
end of vein on surface
2000 N
1500 N
1500 E
2000 E
2500 E
3000 E