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IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

July 7, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 10 1952

Memorandum

To: Mr. E. Wm. Ellis

From: N. E. Nelson

Subject: DMA-1427X - Evelyn Copper-Gold Claims, Cerrillos Mining District, Santa Fe County, New Mexico.

The economics of Mr. Soule's report agrees with his findings and his recommendation, as for this application and any other, is taken as sound.

An unusually clean mining job seems to have been done, since nothing worth sampling appears to have been left.

N. E. Nelson

N. E. Nelson
Geologist

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

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Geologist

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

224 New Customhouse
Denver 2, Colorado

June 23, 1952

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMA Docket 1427X, (Copper), W. Simonson, Evelyn Copper-Gold Claims, Cerrillos Mining District, Santa Fe County, New Mexico

Enclosed are three (3) copies of the final report on DMA-1427X.

One copy of this report and copy of the letter of denial was forwarded you November 2, 1951.

W. H. King

W. H. King

A. H. Koschmann

A. H. Koschmann

Enclosure

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 27 1951

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

C O P Y

November 2, 1951

Mr. W. Simonson
Sparks, Kansas

Re: DMA Docket 1427X

Dear Mr. Simonson:

Your application for a loan to explore the Evelyn Copper-Gold claims in the Cerrillos Mining District. Santa Fe County, New Mexico, has been reviewed by the Defense Minerals Administration. We have a report of a field examination made on your property to help us in judging your application.

On the basis of this report, we must conclude that the chances of finding any significant tonnage of mineable copper ore are unfavorable. The veins exposed are narrow and low in copper content. Under these circumstances, an expenditure of public funds for exploration is unwarranted, and your application is hereby denied.

We thank you for bringing the property to our attention.

Very truly yours,

Paul T. Allsman for
J. H. East, Jr.
Executive Officer
DMA Field Team, Region IV.

cc: John M. Smith, Acting Chief
Administrative Management Div.

Mining Division
Region IV

November 2, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 1427K, W. Simonsen, applicant, Evelyn Copper-Gold Claims, Cerrillos Mining District, Santa Fe County, New Mexico

The application of the subject docket was for an exploration loan of $2,000.

Copper occurs as malachite and minor chrysocolla in one to two mich fractures in hydrothermally altered shear zone in monzonite.

The proposed work was rehabilitation of the shaft to permit access to the lower workings.

The estimated reserves are a few tons, with an average of 2.5 percent copper. The geological probability of finding additional reserves by exploration is unfavorable.

The examining engineer recommends denial of the application, with which we concur.

Paul T. Allemon

Paul T. Allemon

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 27 1951

Reviewed by
DMEA OPERATING COMMITTEE

(date)

Mining Division
Date Rec'd.

NOV 1 - 1951

BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

October 30, 1951

Memorandum

Registered

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV
Tucson, Arizona

Subject : Final Report, DMA Docket 1427X, W. Simonson's Evelyn Gold-Copper Group of Claims, Cerrillos Mining District, Santa Fe County, N. Mex.

Enclosed are original and 7 copies of the above report by John H. Soule' of the Bureau of Mines. No separate geological report will be submitted by the Geological Survey.

This report has my approval.

Brochure is enclosed.

Walter R. Storms

CC P. T. Allsman (7)
Anderson
DMA-1427X
DF

WRStorms:frj

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

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-1427X, W. Simonson's Evelyn Gold-Copper Group of Claims

Cerrillos Mining District, Santa Fe County, New Mexico

John H. Soule', Mining Engineer
U. S. Bureau of Mines

October 1951

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By John H. Soule[1]

The Evelyn Gold-Copper group of patented claims is located in the Cerrillos Mining District, Santa Fe County, N. Mex. About 2,688 tons of copper ore was mined and shipped from these claims in the past. No production of copper has been made since 1929. The average copper content of the shipped ore was about 2.5 percent. A little gold and silver occurred with the copper.

W. Simonson of Sparks, Kansas, is owner of the claims and has brought suit to clear title. Simonson applied to the Defense Minerals Administration for Government assistance to rehabilitate the shaft to permit entry for examination of the mine. The application, Docket DMA-1427X, was for $2,000. The applicant already has performed some of the work and planned to submit an amended application for a considerable sum to rehabilitate and equip the mine.

The copper ore bodies occurred at the intersection of small shear zones in monzonite. The copper mineralization was largely exotic and may have been partly derived from the very narrow veins in some of the shears. There are practically no ore reserves in the mine and the possibility of finding additional reserves is remote.

A brief economic study indicates that ore of the grade previously mined could not be produced profitably under present economic conditions.

1/ Mining Engineer, U. S. Bureau of Mines.

Because the chances of finding appreciable new ore reserves are remote, because any ore found would undoubtedly be similar in character to previously mined ore and thus uneconomic at the present time, and because the preliminary work of making part of the mine accessible as indicated in the application has been done, it is recommended that the application (Docket DMA-1427X) for Government aid be denied. It also is recommended that an amended application if submitted, be denied.

W. SIMONSON'S EVELYN GOLD-COPPER GROUP OF CLAIMS
CERRILLOS MINING DISTRICT
SANTA FE COUNTY, N. MEX.
DMA-1427X

Engineering Report

By John H. Soule'
Mining Engineer
U. S. Bureau of Mines

October 1951

W. SIMONSON'S EVELYN GOLD-COPPER GROUP OF CLAIMS
CERRILLOS MINING DISTRICT,
SANTA FE COUNTY, N. MEX.
DMA-1427X

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Engineering report

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INTRODUCTION

W. Simonson of Sparks, Kansas, applied to the Defense Minerals Administration for Governmental aid in exploring his Evelyn Gold-Copper Group of claims in the northern part of the Cerrillos Mining District, Santa Fe County, N. Mex. The application, Docket DMA-1427X, was for $2,000, of which the applicant was to furnish half. The money ostensibly was to be spent in rehabilitating the Evelyn shaft so that entry could be made for examination and sampling.

The application was sent to the field for an examination of the property. The applicant had installed platforms at the collar and the first level by the time of the examination and these places were mapped. Entry to the first level was by windlass.

ACKNOWLEDGMENTS

Acknowledgment is made of the assistance rendered by W. Simonson, the applicant, in showing the examining engineer the property and by furnishing needed information. Acknowledgment also is made of the production figures furnished by A. J. Martin, chief of the Statistics Branch of the Bureau of Mines, Region IV.

LOCATION, TOPOGRAPHY AND CLIMATE

The Evelyn Gold-Copper group of claims is located in the northern part of the Cerrillos Hills in the northern part of the Cerrillos Mining District, Santa Fe County, N. Mex. (see figure 1). The claim group is more exactly located in the southern halves and astraddle the common boundary of secs. 19 and 20, T. 15 N., R. 8 E., as shown in figures 1 and 2.

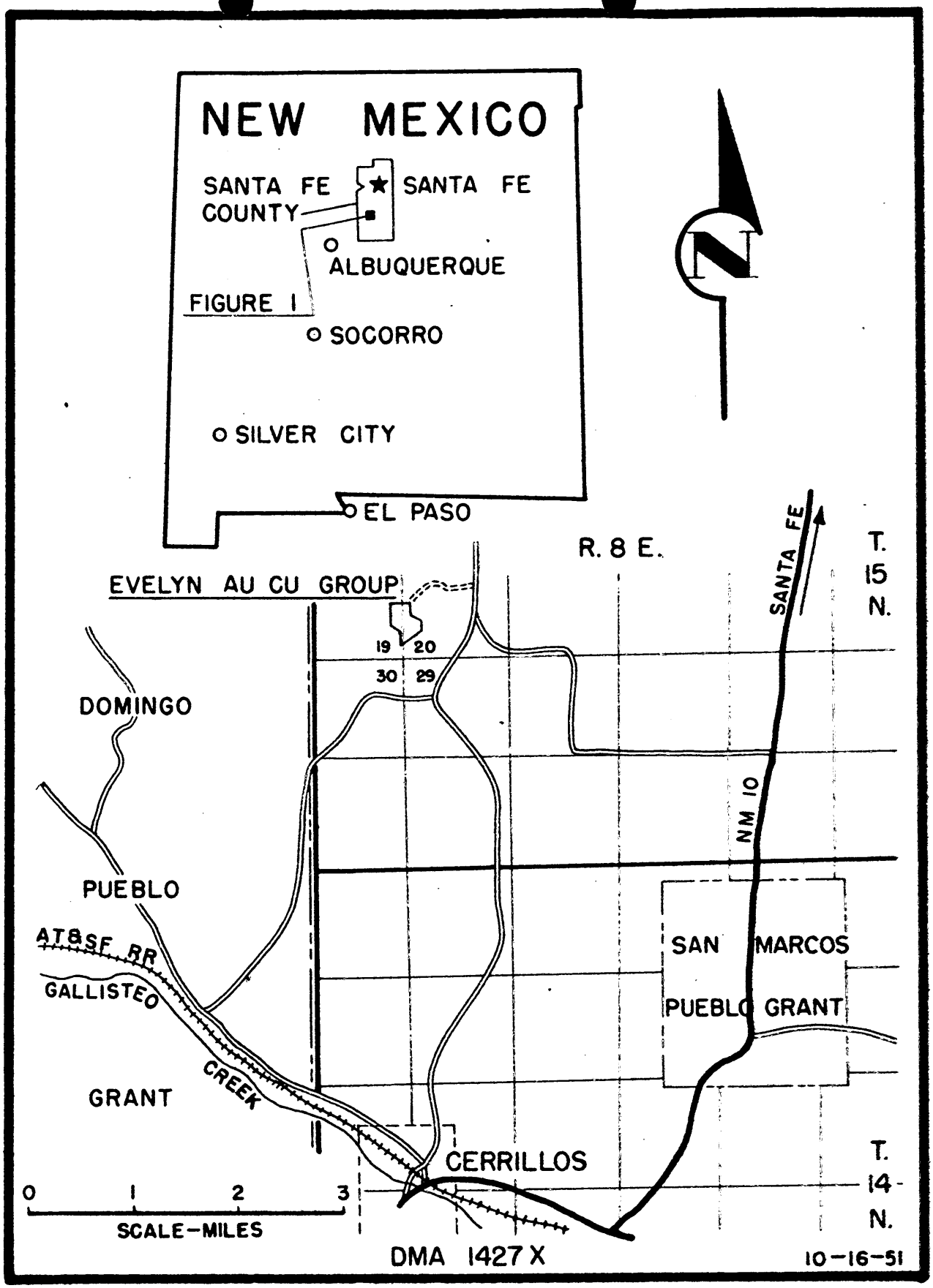

FIGURE 1.-LOCATION MAP, EVELYN GOLD COPPER GROUP, SANTA FE COUNTY, N.M.

The property is reached from Santa Fe, N. Mex., by traveling U. S. 85 southwesterly towards Albuquerque for 14 miles to a sign east of the highway reading Garrard Ranch. The Gerrard Ranch road is followed easterly, then southerly, for about three miles to the Bonanza mine which lies about one-fourth mile west of the road. An ungraded road is taken westerly past and behind the Bonanza dump, thence southwesterly for about 0.5 miles to the property at the end of the road.

The Evelyn Gold-Copper shaft is situated on the most northerly flanks of the Cerrillos Hills where the steep hill-slopes flatten to the valley floor. The area is generally not rugged. The altitude of the shaft is approximately 6,000 feet. The major peaks of the hills reach altitudes of 7,000 feet.

Vegetation consists mainly of mountain cedar, pinon pine, cactus, range grasses, and small shrubs. There is very little timber suitable for mining purposes. There are no permanent streams in the area and the water table stands at least 250 feet below the surface of the property. Northeast of the property, water stands about 125 feet below the collar of the Bonanza shaft.

Precipitation averages about 20 inches per year, largely as summer thunder showers. Winter snows usually are not severe. Temperatures range from 95 degrees in summer to below zero in the winter, but the extreme cold is usually not prolonged.

There are no living accommodations in the area. Housing and some labor are available at Madrid, about 11 miles from the property. Some labor may be obtained at Cerrillos, about 7 miles from the property. Major mining supplies are available no closer than Albuquerque, about 50 miles to the south. The main line of the Atchison, Topeka and Santa Fe railroad passes through Waldo, a loading point about 6 miles south of the property.

HISTORY AND PRODUCTION

Rich silver ores were discovered at the Cash Entry mine in 1879 and considerable activity was experienced in the district. Since the first flurry of excitement, mining has been done irregularly and on a small scale. Lead and zinc constitute the bulk of the metal production.

The Evelyn Gold-Copper group of claims probably was located prior to 1910, was surveyed for patent in 1915, and was patented in 1921. No production was recorded prior to 1926, except for a small tonnage of ore shipped in 1910. The following production figures were furnished by the Statistics Branch of the Bureau of Mines, Denver, Colo.

Production from Evelyn Gold-Copper Group

Year	Crude ore, tons	Gold, ounces	Silver, ounces	Copper, pounds	Lead, pounds
1910	26	8.1	22	1,709	--
1926	774	208.4	618	44,250	201
1927	1,561	303.7	1,040	74,496	--
1928	285	41.8	155	12,678	--
1929	42	4.2	21	2,139	--
Total	2,688	566.2	1,856	135,272	201

There was no production from the property from 1929 until recently, when W. Simonson shipped a car of dump material to the smelter at El Paso. He reported practically no copper in the shipment. A little zinc was present but he was not paid for it.

OWNERSHIP AND EXTENT

The Evelyn Gold-Copper group consists of 5 patented claims, Survey 1659. These are the Evelyn Gold-Copper, Brown Gold-Copper, Manhattan Gold-Copper, Santa Rosa, and Shannon. These are shown in figure 2. There is considerable overlap of the claims so the total area is only approximately 60 acres.

This group of claims is owned by W. Simonson of Sparks, Kansas, who acquired the property a few years ago. However, there seems to be a flaw in the title and Simonson has instituted suit to clear it.

DESCRIPTION OF THE DEPOSIT

The country rock of the district is a monzonite, forming a laccolithic (?) intrusion that consitutes the Cerrillos hills. This monzonite is flanked by Cretaceous shales and later sediemntary rocks. These are covered on the west by recent basalt flows that abutt the hills.

Numerous northeasterly-trending shear zones, containing the veins, occur in the monzonite. These zones dip steeply, generally to the west. On the Evelyn claim, the veins are very narrow and average an inch or two in thickness. The shears are somewhat wider and show evidence of hydrothermal alteration.

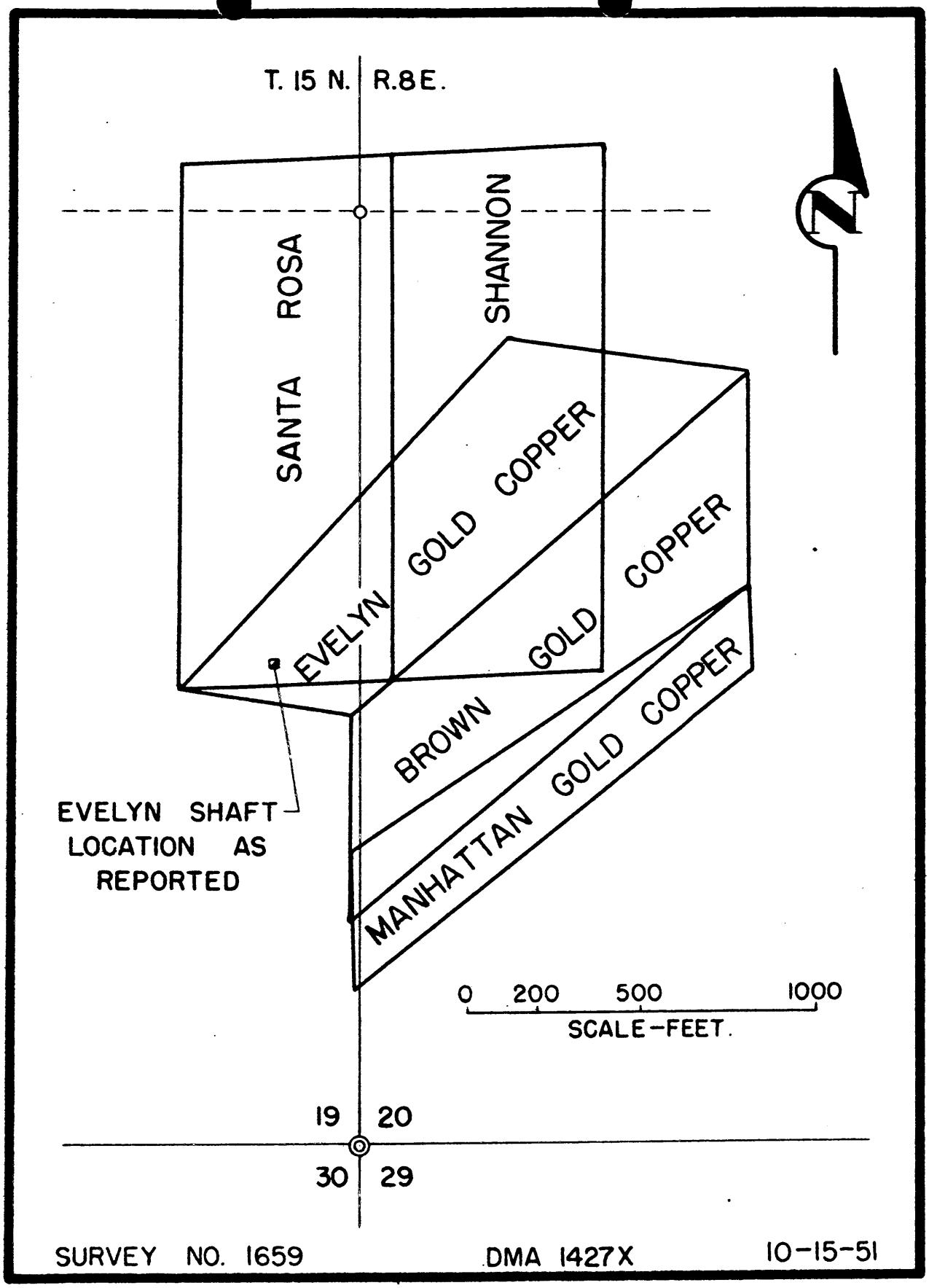

FIGURE 2.—CLAIM MAP, EVELYN GOLD COPPER GROUP

The ore bodies that were mined in and around the Evelyn shaft were largely secondary in character. They occurred at the fractured intersection of 2 or more shear zones, shown in figures 3 and 4. There is no ore remaining in the open cut at the collar of the Evelyn shaft (figure 3) and very little at the first level (fig. 4).

It seems evident that most of the copper mineralization is exotic and was derived from some unknown outside source. There is some copper in the veinlets but it seems that the quantity would be insufficient to account for the total copper that has been mined.

Copper occurs as malachite and minor chrysocolla coating the fractures in the monzonite. It was concentrated in 2 irregular ore bodies, now mined, of approximately equidimensional measurements. The remaining mineralization occurs as stain along a few narrow shear zones. Appreciable gold and silver was produced with the copper. The major mineralization seemed to be localized near the junction of intersecting shears. That the mineralized fracture zones are not continuous vertically is evident in the shaft between the mined "collar ore body" and that on the first level. Old reports indicate a lack of ore below the first level.

Elsewhere on the property other veins occur. These usually contain lead and zinc minerals. Those noted were very narrow.

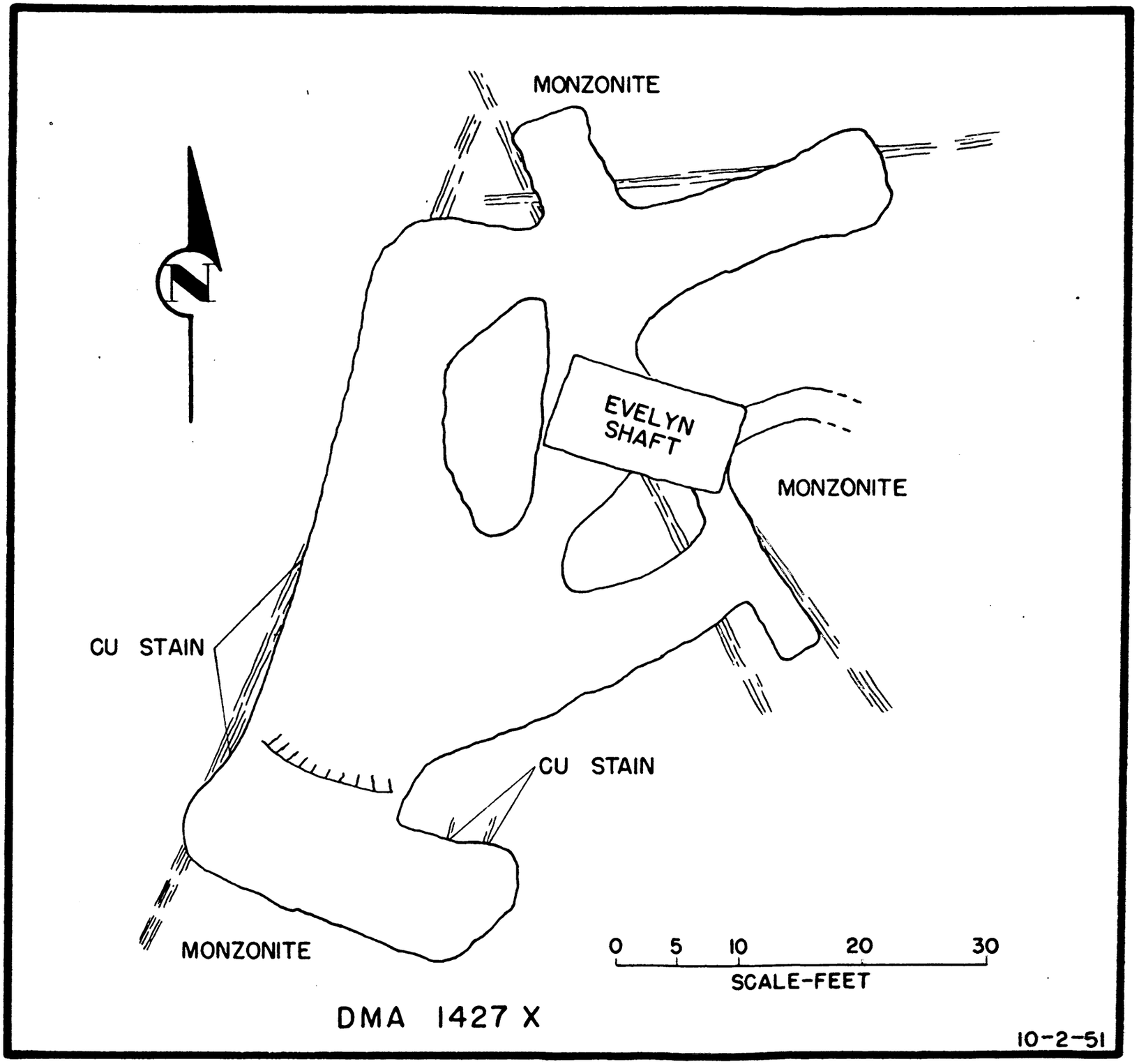

FIGURE 4.-SKETCH OF FIRST LEVEL, EVELYN SHAFT

ORE RESERVES

Judging from the assumed mineral character of the mined areas and the intervening material, which is barren excepting the narrow mineralized shears, very little copper ore remains in the mine.

There are only a few tons of copper ore that may be classified as measured or even indicated. The potential is such that the inferred reserves may be on the order of a few tens of tons of copper ore containing 2.5 percent copper. The grade figure was derived from past production records. In addition, the ore contained 0.21 ounces of gold, and 0.69 ounces of silver per ton.

PRESENT STATUS

The Evelyn Gold-Copper mine is idle at the present time. It was developed by a vertical shaft 246 feet in depth. On the property are other shafts and adits which are mostly inaccessible. The main Evelyn shaft is reported to have three levels, but only the first, at about a 50 foot depth, could be examined. Little or no ore was reportedly found or mined below the first level.

There is no equipment or facilities on the property.

PROPOSED EXPLORATION

In the application for Government aid to explore the property, the owner applied for a loan estimated at $2,000. This sum was to repair the shaft to permit entry to lower workings. At the time of the examination on September 27, 1951, the applicant had placed staging at the collar and at the first level. Entry to the first level was by windlass.

At the present time, the applicant plans to submit an amended application for a considerable sum to completely equip the mine and to retimber the shaft.

ECONOMIC FEATURES

A study of the basic costs shows the following results. The grade of the ore is assumed to be the same as the average of past production. That was 2.5 percent copper, 0.69 ounces of silver, and 0.21 ounces of gold per ton.

TABLE I. - Basic cost table.

Mining	$10.00
Freight to railroad	0.60
Rail freight to smelter	5.25
Smelter charges (base)	5.00
Smelter losses plus marketing and refining	4.25
Total	$25.10
Mine value ore per ton	20.22
Loss per ton	$ 4.88

Additional costs will be supervision, insurance, taxes, and amortization of the plant cost. This latter item will be high considering the small reserve potential.

CONCLUSIONS

The following conclusions seem justified after an examination of the Evelyn Gold Copper property:

1. Ore reserves are very small;

2. Geologic information indicates that the possibility of finding additional ore reserves is small;

3. There is practically no chance of finding ore richer than that mined in the past;

4. Economic studies indicate a loss on the operation when using only the basic costs; additional costs will increase the loss.

RECOMMENDATIONS

It is recommended that the application which already has been made, and the application yet to be submitted on the Evelyn Gold Copper group of mining claims, be denied.

FILE COPY
SURNAME:

200

Adams

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

FEB 4 - 1952

Hon. Clinton P. Anderson
United States Senate
Washington 25, D. C.

My dear Senator Anderson:

Your letter dated January 22, 1952 requesting information on the disposition of the application filed by W. Simonson, Docket No. DMA 1427X, has been referred to this agency for reply.

Please be advised that Mr. Simonson's application was denied on November 2, 1951, after a complete examination of the property was made and it was determined that the finding of any significant tonnage of minable copper ore was unfavorable.

Please do not hesitate to call on us for any further information.

Sincerely yours, 2-4-52

C. O. Mittendorf (fw)

Acting Administrator
Defense Minerals Exploration
Administration

REAdams/meb
2/1/52
cc to: Adm.Reading File
Mails & Files

OFFICE OF THE DIRECTOR

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

January 28, 1952

~~FEB 4 1952~~

Hon. Clinton P. Anderson
United States Senate
Washington 25, D. C.

My dear Senator Anderson:

With reference to your letter of January 22 asking information with regard to Defense Minerals Administration Docket No. 1427X, W. Timonson, General Delivery, Albuquerque, New Mexico about which you wrote Mr. J. L. Hast, Jr. last August:

Please be advised that the functions of Defense Minerals Administration have been transferred to the Defense Minerals Exploration Administration. Mr. C. O. Mittendorf is Acting Administrator of the agency and your letter is therefore being referred to him for consideration and reply.

Sincerely yours,

J. J. FORBES
Director

Copy to: Mr. C. O. Mittendorf

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 30 1952

ALLEN J. ELLENDER, LA., CHAIRMAN
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[illegible] JOHNSTON, S. C.
SPESSARD L. HOLLAND, FLA.
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KARL E. MUNDT, S. DAK.
C. M. MOUSER, CHIEF CLERK

United States Senate

COMMITTEE ON
AGRICULTURE AND FORESTRY

Paul Simmons
Acc 1/28/52

January 22, 1952

Mr. John J. V. Forbes
Director, Bureau of Mines
Department of the Interior
Washington, D. C.

In RE: DMA 1427X
W. Simonson
General Delivery
Albuquerque, N. M.

Dear Mr. Forbes:

On August 28, 1951, I directed a letter to Mr. J. H. East, Jr., Bureau of Mines, Denver, Colorado, expressing interest in the above application. On September 4, 1951, Mr. East replied to my communication, stating that the application had been sent to the field for investigation. Having had no further report, I am now writing you to ask what disposition has been made of the application. I will appreciate any information you may give me.

Sincerely yours,

Clinton P. Anderson

Clinton P. Anderson

RECEIVED
JAN 23 1952
BUREAU OF MINES
OFFICE OF DIRECTOR

CPA-VLFf

JAN 23 1 46 PM '52
BUREAU OF MINES
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WASHINGTON, D.C.

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JAN 24 1952
BUREAU OF MINES
MINERALS DIVISION

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

224 New Customhouse
Denver 2, Colorado

November 2, 1951

Mr. W. Simonson
Sparks, Kansas

Re: DMA Docket 1427X

Dear Mr. Simonson:

Your application for a loan to explore the Evelyn Copper-Gold claims in the Cerrillos Mining District, Santa Fe County, New Mexico, has been reviewed by the Defense Minerals Administration. We have a report of a field examination made on your property to help us in judging your application.

On the basis of this report, we must conclude that the chances of finding any significant tonnage of mineable copper ore are unfavorable. The veins exposed are narrow and low in copper content. Under these circumstances, an expenditure of public funds for exploration is unwarranted, and your application is hereby denied.

We thank you for bringing the property to our attention.

Very truly yours,

Paul T. Allsman for
J. H. East, Jr.
Executive Officer
DMA Field Team, Region IV

cc: John M. Smith, Acting Chief
Administrative Management Div.

FILE COPY
SURNAME:

Gowen

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

A.E.C

Mr. W. Simonson

Re: Docket No. DMA-1427X

Sparks, Kansas

Dear Mr. Simonson:

We are returning your copies of the report on Cash Entry No. 105 and other mines in Los Cerrillos Mining District, Santa Fe County, New Mexico by W. H. Paul, Consulting Mining Engineer, August 1929 and the report on the Evelyn Gold Copper Mining Properties and Copper Hill Tract situated in Cerrillos Mining District, Santa Fe County by W. H. Paul, M.E., Consulting Mining Engineer, August 1929.

As your application is presently being processed we discovered your note which was overlooked when your application was received, requesting these reports be returned to you within one week. We regret this delay in returning your reports and hope it has not inconvenienced you.

Very truly yours,

J. B. Gowen

J. B. Gowen, Chief
Copper Branch

Enclosures

JWAlt:en
8/9/51
Copy to: Adm. Reading File
Reports and Records Branch
Executive Officer, DMA Field Team IV
J. B. Gowen, 2612
Files - DMA Docket

Dmd 1427

Please return this copy of Paul's report to me within one week, oblige

W. Simonson
Gen. Del
Albuquerque
New Mexico

FILE COPY
SURNAME:

Gowen
Merrill
Hayes

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

AUG 13 1951

Mr. W. Simonson

Re: Docket No. DMA-1427X

Sparks, Kansas

Dear Mr. Simonson:

This is to inform you that your application for aid for and exploration project has been referred to the field team for further study. You will hear from Mr. J. H. East, Jr., Bureau of Mines, 224 New Customhouse Building, Denver 2, Colorado, or one of his staff when they are ready to visit your property.

Very truly yours,

SIGNED

Tom Lyon, Director
Supply Division

JBGowen:ez
8/10/51

Copy to Administrator's Reading File
Reports and Records Branch
Executive Officer, DMA Field Team IV
Coordinating Committee
J. B. Gowen
C. H. Wehnson
D. MacLaren
Files-DMA Docket

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

Mr. J. H. East, Jr.,
Bureau of Mines
224 New Customhouse Building
Denver 2, Colorado

Dear Sir:

We attach "Review of Application for Exploration Assistance" on:

Docket No. 14271

Commodity Copper

Applicant Mr. W. Simonson, Sparks, Kansas

Please expedite the consideration of this application with particular reference to the points raised in the attached "Review."

Very truly yours,

Chairman
Coordinating Committee

For Bureau of Mines

For Geological Survey

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. DMA-1427X

Commodity Copper

Total Amount $2,000.00

Govt. Participation $1,000.00

1. Name and Address of Applicant W. Simonson, Sparks, Kansas

2. Location of Property Santa Fe County, New Mexico

3. Mineral or metal Copper Is it listed in Section 9 of MO-5?

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination ✓

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached?

Does the lease have sufficient time to run to cover a future

productive period?

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? _____

b) MF-202 _____

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Does not state

b) Equipment and supplies To purchase timber
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* No recent information.

d) Water (question 13)* Not needed for proposed project.

e) Power (question 13)* Does not state

Is a field check needed on any of these points? Yes.

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Applicant will hire Supervisor - Supervisor's qualifications should be checked.

Is a field check needed on this point? Yes.

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? No

If not, are there sufficient data given so that you can describe the project? Yes If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? No

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is? _____

Exhibit A

Interested in a loan to replace collar and sufficient sets of timbers on down to bottom of shaft (274 feet) and platforms on the 100 and 200 foot levels, so the mine can be inspected and if found as above said shall state which it should. He would then be interested in selling, or leasing, or procuring a Government loan to go into production.

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? No

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? No If so, attach a draft.

e) Are the cost estimates reasonable? Can not tell

f) Should more information be requested from applicant? Yes

g) Is a field examination necessary to complete Exhibit A? Yes

11. Exhibit B (question 23-d)*

a) Is it applicable? No

b) If so, are sufficient data furnished?_____ If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? No Costs given

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable?_____

d) Is a field check needed? Yes

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? No

b) Is the schedule adequate for the work proposed? Not stated

c) Is the schedule excessive for the work proposed?_____

d) Are the proposed wages and salaries reasonable? Not stated

e) Is a field check needed? Yes

14. Exhibit E (question 23-c)*

a) Is it applicable? _____

b) Sufficient data? _____

c) Reasonable? _____

d) Field check needed? No

15. In your judgment, can the proposed work be done in the proposed time? No schedule given

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question?

The feasibility of the project
Cost estimates
No. of men to be employed with wages
Salary of supervisor
Any information that field team would deem necessary to help process this application

Reviewed by: [illegible]
R W [illegible]
D E McLaren
L J Johnson

Date 7/15/51 J B Bowen

97692

FILE COPY
SURNAME:

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

June 15, 1951

Mr. W. Simonson
Sparks, Kansas

Subject: DMA-1427X
Re: Exploration Loan
Evelyn Gold Copper,
Manhattan Gold Copper,
Brown Gold Copper,
Shannon Lode Claim,
Santa Rosa

My dear Mr. Simonson:

Receipt is acknowledged of your application and attachments of May 30, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1427X and was referred to Mr. J. B. Gowen, Chief, Copper Branch on June 4, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1427X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:js
cc: Strobel-2
>Files
Gowen
Lyon

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 14297X

Date received 5-31-51

Participation

W. Simonson
SPARKS
Kansas

Name and address of applicant

Date May 30-51

FILL IN THIS BLOCK

Date of application May 30-51

Estimated cost $ 2000.00

Mineral or metal Copper & a small amount of gold

Percentage of Government participation

Location of mine 12 miles south of Santa Fe New Mex

Date of filing MF-100

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

---------- By ----------
(Name of company) (Signature of authorized official)

---------- ----------
(Date) (Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 1427X

Date received 5-31-51

Participation

W. Simonson
SPARKS
Kansas

Name and address of applicant

Date May 30 51

FILL IN THIS BLOCK

Date of application May 30, 51

Estimated cost $2000.00

Mineral or metal copper & a small amount of gold

Percentage of Government participation

Location of mine 22 miles south of Santa Fe New Mex.

Date of filing MF-100

DMA Docket Number, if available

INSTRUCTIONS

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*1. Is applicant an individual, partnership, or corporation?
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16—64067-1

THE PROPERTY

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State amount of power to be used, rate per hour or other cost, and source.
*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.
15. State in detail how the ore could be shipped and how and where milled.
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    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
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	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
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24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

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The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

By

(Name of company) (Signature of authorized official)

(Date) (Title)

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16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 1427X

Date received 5-31-51

Participation

W. Simonson
SPARKS
Kansas

Name and address of applicant

Date May 30-51

FILL IN THIS BLOCK

Date of application May 30-51

Estimated cost

Mineral or metal copper & small amount of gold

Percentage of Government participation

Location of mine 27 miles south of Santa Fe - New Mex.

Date of filing MF-100

DMA Docket Number, if available

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    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
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24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

---------- By ----------
(Name of company) (Signature of authorized official)

---------- ----------
(Date) (Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Strategic Minerals
Int Bldg Ed,
Washington D.C.

Along
5-29-57

Dear Sirs:

In your instructions upon state, application may be made, partly through, only letter.

I hold title to the five claims described in the enclosed copy of Paul's report as the Welsh Gold group of claims, 60 & a fraction acres.

That does not include the other tract, cash entry 160 also described there in.

The report was made when Paul, who had a lease on the claims, was forced to quit operation in 1930 when copper went to 10¢ or less.

This property has not been worked since.

The shaft 8 X 12 seems to be.

intact. During the depression in the 30's the collar & most of timbers in shaft were carried off. I am interested in a loan to replace collar & sufficient sets of timbers on down to bottom of shaft (246 feet) & platforms on the 100 & 200 foot levels, so the mine can be inspected & if found as about Paul states, which it should, according to what men have told me, who worked for Paul, I then would be interested in selling or leasing or procuring a loan to get into production.

All work under a loan would be supervised by one Mr. McGhee, who has operated mines the greater part of his life, & who has some mining property close by. My background is not mining.

You are at liberty to make any notes for your files out of Paul's report, on the Mellen Gold Grange, & then may I ask you to return Paul's report to me within a week.

This work according to my mind McGee should run around $2,000.00 I am seeking 50% of the cost, in a Gold Brick.

Yours Truly
W. Simonson
SPARKS
Kansas

Sparks

Defense Minerals
Interior Bldg. Rd,
Washington, D.C.

Dear Sirs:

For your instructions you state, application may, be made, through, or by letter.

I hold title to the five claims, described in the enclosed copy of Paul's report as the Evelyn Gold groupes of claims, 60 to a fraction acres. That does not include the other tract, cash entry 160 also described therein and owned by me.

The report was made when Paul, who had a lease on the claims, was forced to quit operation in 1930 when copper went to 10 ¢ or less.

This property has not been worked since.

The shaft 8X12 seems to be intact. During the depression, in the 30's the and most of timber in shaft was carried off.

I am interested in a loan to ~~purchase~~ develop and sufficient sets of timbers on down to bottom of shaft (246 feet) and platforms on the 100 to 200 foot levels, so the mine can be inspected and if found as about Paul states, which it should, according to what men have told me, who worked for Paul, I then would be interested in selling or leasing, or procuring a Government loan to go into production.

All work under a Government loan would be supervised by one Mr. McGhee, who has operated mines, the greater part of his life, and now has some mining property close by. My back ground is not mining.

You are at liberty to make any notes for your files, out of Paul's report, on the Evelyn Gold Groupe, and then may I ask you to return Paul's report to me, within a week.

This work according to my man, McGhee would run around $2,000.

I am seeking 50% of thecost, in a Government loan.

Yours truly

W. Simonson
Sparks
Kansas

NEW MEXICO MINERS & PROSPECTORS ASSOCIATION

OFFICE OF THE SECRETARY

Room 10, Barnett Bldg.

P. O. Box 503
ALBUQUERQUE, NEW MEXICO

May 18, 1951

Mr. Simonson:

I have your note and additional message from Miss Edwards relative your property in the Cerrillos District.

I had the pleasure to be on that property with Dick McGhee on April 19th last when I was looking over the entire district as a general check-up. I had previously been on the property when checking copper occurrences over the state--but at that time I didn't know the owner and didn't have the benefit of being with one who knew a little about it as does McGhee. I still have very little to answer your question on but am making some assumptions along the lines following: It is not a mined-out or fully-developed copper occurrence by any means. There is, under present price-cost conditions, a favorable chance to get into commercial production following a rather heavy cost of development and additional exploration. There are no geological indications that the ore is confined to upper levels already reached nor the narrow lateral extents. Therefore, it could well follow that it is a property that deserves condieration for further development and, if private capital cannot be interested, it should be called to the attention of DMA authorities through a loan application.

Although DMA loans are not coming through yet and although we are extremely disappointed in our Federal Government's policy

regarding domestic mineral reserves, I know of no better way to direct attention to the property and at the same time protect it for future capitalization than to make loan application at an early date.

Respectfully

/s/Jack Pierce
Jack Pierce

J. H. East Jr.
Region IV Director
Defense Minerals Administration
224 New Customhouse
Denver 2, Colorado

COPY

NEW MEXICO MINERS & PROSPECTORS ASSOCIATION

OFFICE OF THE SECRETARY

Room 10, Barnett Bldg.

P. O. Box 503
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REPORT
on the

EVELYN GOLD COPPER MINING PROPERTIES AND COPPER HILL TRACT
SITUATED IN
CERRILLOS MINING DISTRICT
SANTA FE COUNTY

By

W. H. PAUL, M. E.

COUNSULTING MINING ENGINEER

August 1929

PROPERTY

The Property consists of the following patented Mining Claims:

THE EVELYN GOLD COPPER MINE
THE MANHATTAN GOLD COPPER MINE
THE BROWN GOLD COPPER MINE
THE SHANNON LODE CLAIM
THE SANTA ROSA MINE

These are known as the EVELYN GOLD COPPER GROUP of mines and are designated by the surveyer General of New Mexico as Survey No. 1659, containing 60.40 acres.

The Copper Hill Tract: This consists of the North East 1/4 of Section 30. in T.15 R.8 E of Santa Fe County New Mexico. This contains 160 acres. This is known as Cash entry No 105 and Cash Entry No 101. These cash entry claims hold all the mineral rights.

The EVELYN GOLD COPPER GROUP is situated in Section 10 and 20 in Township 15 North of range 8 East of New Mexico Maridian.

The Mines are located twenty miles due south of Santa Fe, New Mexico and about five and one half miles to Waldo Station on the Atchison-Topeka and Santa Fe Railroad.

There is a good automobile road from Santa Fe to the mines. A good road down grade of 51/2 miles to Waldo where the ore can be loaded on the railroad. The mines are located at the foot of a range of Mountains at about an elevation of 6000 feet above Sea level.

TITLE

The present title rests in W. H. Paul who has a two years lease and Option of $30,000 on the mine. The Royality on the ore is ten per cent of the net value. The Net Value is the amount left after deducting the cost of the hauling Freight smelting charges. In case the ore is treated at the mine the cost of treatment will be deducted.

GEOLOGICAL FORMATION

The Geological Formation consists of Andisite Porphyry. The vein is a deposit about fourty feet wide and appears to have acourse about S43 degrees West. In the Old Spanish Mine which is located about one half mile south of the Evelyn Mine, in this shaft the shale was cut at a depth of 300 feet. Just how deep the shale is, is not know, but would probably be 500 feet. Limestone deposit occur below the shale in the Santa Fe Creek and show about 50 ft thick of Limestone underlaying the shale.

Below the Limestone the Granite rocks occur.

It is probable that the Andesite porphyry will be thicker in the Evelyn Mine than in the old Spanish mine. The present shaf has been sunk to a depth of 246 feet. So far no Sulphide ore has been found, the ore occuring as a very silicious ore avering 86 Silica. The copper occurs as a Carbonate of Copper the whole average of the vein being about 3%. The Gold Contents average about of an ounce and Silver averages from one half an ounce to ounce.

DEVELOPMENT

The principal development has been made EVELYN GOLD COPPER MINE. This consists of a shaft which has been sunk to a depth of 247 feet.

The vein of the Evelyn Mine shows a width of forty feet from wall to wall. An open pit was sunk on the vein to a depth of about 25 feet and for a length of fifty feet. From this open cut fifty-five carloads of 50 tons each was shipped to the El Paso Smelter. This is shown on report sheets accompaning this report.

The following Drifts have been driven from the shaft at fifty feet deep. A drift is run across the vein for 40 feet. Their is a stope on the south side which shows about 25 in length and 20 feet high.

On the East side of the shaft a drift was driven about 30 feet, This showed 20 feet of ore and then porphyry.

A drift was driven 30 feet N, 50 degrees from the shaft and a small raise put up.

At one hundred feet deep-

A drift was driven about 26 feet N.50 W

A small stope was made on the south side of the shaft.

A drift was driven from the shaft to the south for about 30 feet, arai and chute was put in at 20 feet and a small stope made here.

At the 200 ft. level a short cross cut was made on the vein.

At the 247 foot bottom of the shaft no work has been done.

ASSAYS OF THE VEIN

The Map accompaning this report shows where the ore was taken from and the numbers on the map indicate the number of the sample on the map.

SAMPLES OF THE ORE FROM DUMPS AND SURFACE

		Gold	Silver	Copper	Insoluble
Vein Out Crop	No.1 East of Shaft	0.44	1.00	3.4	88%
" " "	No.2 Dump on North	0.45	0.7	2.8	54
" " "	No.3 Dump to North	0.45	0.6	2.3	89
" " "	No.4 East Dump	0.52	1.0	5.3	56.2
" " "	No.5 Dump West	0.56	0.9	4.4	53.6

These show the grade and class of ore. The Dump samples represent the ore that was mined out from the surface to the 100 ft level.

The ore was mined from an open cut and fifty five cars were shipped to the El Paso Smelter of the American Smelting and Refining Company.

The first ten cars were taken from the dump. This represents the ore that was mined from sinking the shaft to a depth of 100 ft. The shaft is fifteen feet long and 6 feet wide and a small tonnage obtained from the short drifts at the 50 foot level.

From the dump there was shipped 441.32 Ton. This ore averaged according to the American Smelting and Refining Company, returns net tons 441.32 Gold 0.271 Silver 0.82 Copper 3.00%. This includes part of the ore taken from the surface.

The ore was settled on a basis of Copper Deduct 8 lbs from assay, this amount added to the assay of 0.4 should make the copper contents average 3.40%. The average price for copper was 13.38 cent per pound, from which was deducted 2.50 cents per pound and copper was settled on a basis of 10.88 cents per pound. Gold was paid for at $19.50 per ounce. Silver was settled on a deduction of 0.50 ounce deducted, giving an average of 0.2 at 532 cent gave 11 cents.

These shipments represent the value of the ore that came from the shaft for a distance of 100 feet.

ORE FROM SURFACE PIT

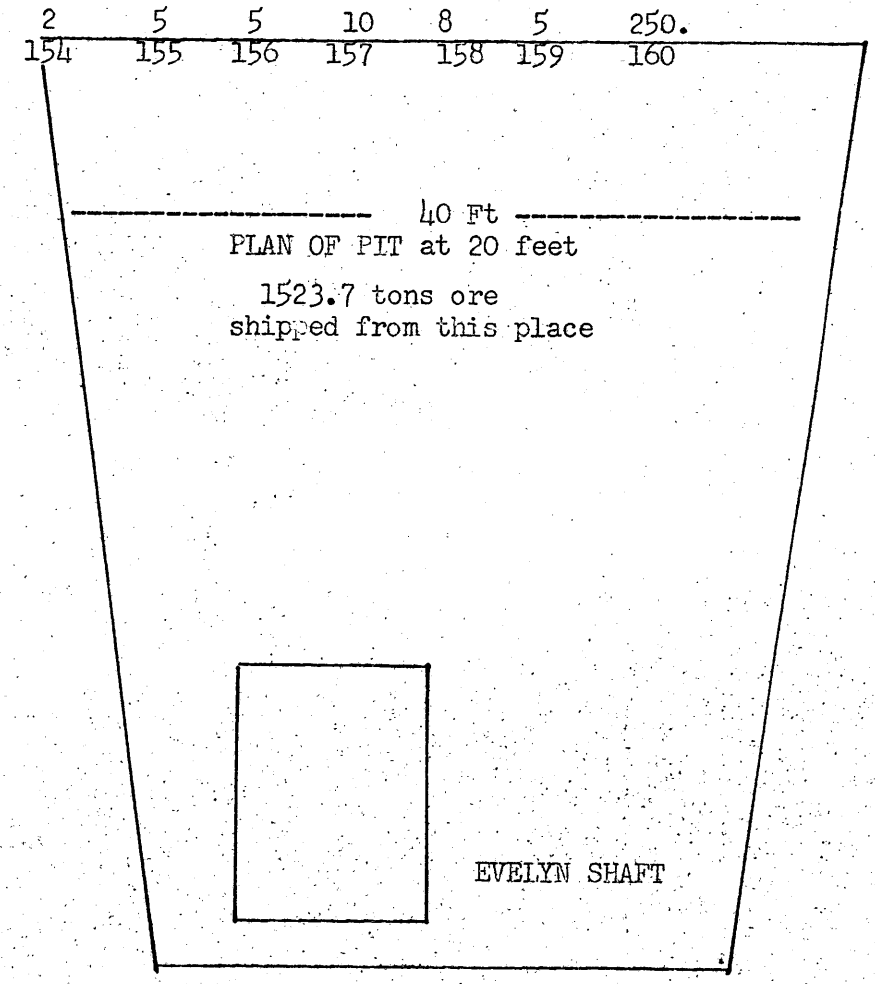
Thirty carloads of ore were extracted from the pit to the Southwest of the shaft. The ore averages about 40 feet wide across the vein and for 50

feet from the shaft and to a depth of 20 feet across this stope.

The ore taken out here amounted to 3,047,380 pounds or 1,523.69. This ore brought from the returns of the American Smelting and Refining Co. El Paso Smelter.

Gold ozs 0.2125 Silver 0.67 Copper 2.47%

The South west face of this stope gave to follows assays



Results of samples taken across face of pit at depth of 20 feet and about 50 feet from shaft:

Sample No.	Width	Gold	Silver	Copper
154	2 ft.	0.25	0.6	2.2%
155	5	0.36	0.9	1.8
156	5	0.34	0.9	3.24
157	10	0.25	0.7	2.80
158	8	0.34	0.9	2.00
159	5	0.24	0.7	1.2
160	5	0.30	0.9	2.30
Weighted Av.	40'	.298	.81	2.28

The average of seven samples taken from the south end of the pit shows as follows:

Gold 0.298 ounces Silver 0.7 oz Copper 2.22%

This is over 40 feet wide at this place.

The vein still shows low grade ore on south wall.

Sample 140	8 ft	Gold 0.08	Silver 0.2	Copper 0.7
Sample 141	8 ft	Gold 0.12	Silver 0.2	Copper 0.4

These two samples represent the wall of the vein 140 being at 30 feet from the shaft and 141 being at the s.w. corner of the stope, the vein here being about 8 feet wide.

VALUE OF CARS OF ORE SHIPPED FROM FIFTY FOOT STOPE

Seven cars of lot 41 to 49 were extracted and shipped from the stope above the fifty foot level. These were shipped to the American Smelting and Refining Company, El Paso Smelter. The shipment amounted to 688,596 lbs 344.3 ton averaged Gold 0.171 Silver 0.6 Copper 2.34%.

SAMPLES OF ORE ASSAYED IN 50 FOOT WORKINGS

STOPE PLAN OF STOPE AND DRIFTS AT 50 FEET

30 Pillar
31
N70 W Drift
29 2827

25 26
S70e Drift
32
SHAFT 20 21 22

SIDES OF DRIFT # 70 DEGREES E 22 FEET

	Length	Gold	Silver	Copper
Sample 20	5	0.20	0.5	2.40%
" 21	5 to 11½	0.50	0.9	2.40%
" 22	11½ to 20	0.24	0.7	0.5
" 23	3 ft loin	0.61	0.0	4.90
" 24	4 ft 2 in	0.52	0.9	2.8
" 25	8 ft 3	0.44	1.1	1.5
" 26	10 ft	0.20	0.7	0.8

SAMPLES FROM DRIFT N 70 W

No.	Width	Gold	Silver	Copper
27	10 ft	0.51	1.3	1.3 %
28 6 in vein		0.49	1.4	14.8%
29	10 to 20 ft	0.40	1.0	2.40
30	15 ft south wall	0.51	1.0	2.20
31 6 in vein		0.48	1.4	12.5
32	S.E. end shaft	0.56	1.1	6.7

SAMPLES FROM ORE IN FIFTY FOOT STOPE

1 A Mandy Top Stope	0.20	0.90	1.8% 86Lilica
1 A Richards "	0.16	0.54	2.0
2 A Grab Bottom "	0.10	0.40	2.0
1 A Mandt Top Stope	0.15	0.55	3.50
4 A Bottom Stope 100 ft	0.14	0.56	6.8
5 A Top of Stope " "	0.08	0.50	4.3
6 Sample Vein S of shaft	0.12	0.58	3.3

These samples were taken in April 1929 and represent the exact value of the ore now showing in the top of the stope.

Sample No 4 A was taken from the large pieces of ore in bottom of the stope and shows a width of ten feet here. This place represents a big change in the value of the copper content.

It would appear that at this point the copper value has become more enriched. I would look for this grade of ore to continue downward.

SAMPLES TAKEN FROM SHAFT AT 100 FEET

SAMPLE NO	Gold	Silver	Copper
231 Drill from 5 ft hole west side of shaft	0.17	0.7	2.4
232 Drillings from hole 5 ft deep near side	0.16	0.7	2.7
237 Drilling from hole 6 ft in S W. Drift	0.16	0.7	4.0

GENERAL SAMPLE OF ORE
100 feet to 200

	Gold	Silver	Copper
Grab over ore in pit from 100 to 200 feet	0.30	0.8	2.00%

I was not at the mine when the shaft was sunk from the 100 foot level to 246. I understand that not many assays were made.

No sulphide ore was encountered in sinking to a depth of 246 feet.

No cross cutting was made across the vein. The shaft I think is north of the main ore body and is more in the foot wall than in the vein proper.

ORE SHIPMENTS FROM MINE

A total of 62 cars of ore has been shipped from the property. Fifty five were shipped by W. H. and R. B. Paul and seven by Mr. Grubnau and Miller. I do not have the returns on Mr. Grubnau and Mr. Miller. The returns are shown in statement accompaning the report.

SMELTER RETURNS

The results obtained from the smelter; The cost of treatment is as follows:

Hauling ore to Waldo from Mine	$ 2.15
Freight Waldo to El Paso	2.50
Treatment charge on Ore	3.50
	$ 8.15
Cost of mining	2.00
Total	$10.15

These are too high to make the low grade ore pay.

TESTS MADE ON THE ORE

The ore consists of Copper Carbonate about 3.% copper Insluble 86% No Lime Iron 3.5% The iron is insoluble in acid and is combined with the siliaca and is not soluble unless fused.

TESTS MADE ON ORE FROM MINE

SURFACE ORE:

Sample take over outcroptof the vein.

Weight 100 grams Gold 0.50 Silver 0.70 Copper 5.70

Leached with 8 grams of Ferric Sulphate and 30 grams of Sulphuric Acid.

Extraction by Amalgation after leaching with Sulphuric Acid.

Gold 0.32 Copper 0.28 ACE

Extracted 54% of Gold All copper

EXTRACTION BY SODIUM CYANIDE

HEADS	Gold	0.50AG	o.70	Copper 0.20 to trace
TAILS	Gold	0.02	0.00	Copper None

Extraction of Gold 96% Extraction of Silver 100% Extraction of Copper 100.00

Test made at Colorado School of MinesDecember 1925.

The test made by amalgamation was not very satisfactory. It was found that it was necessary to extract all the copper before the Gold would amalgamate. This was done by heating the Sulphuric Acid solution.

The test by Cyanide showed a complete extraction of both gold and silver.

TESTS MADE ON ORESFROM THE MINE

The following samples were taken from the mine Stopes from the 50 foot level and from the 100 foot level.

SAMPLE	GOLD	SILVER	COPPER
No 1 Top of Stope 10 feet	0.15	0.55	3.50
No 2 Broken ore in stope	0.10	0.40	2.0
These samples were taken from the 50 foot stope.			
No 4 Ore in Bottom 10 feet wide	0.14	0.56	6.8%
No 5 Ore in top of stope	0.08	0.50	4.3
No 6 Grab of Ore south stope 100 foot level	0.12	0.50	3.3

METHOD OF MAKING TESTS

These tests were made at the Colorado State School of Mines at Golden, Colorado and at the office of Richards and Son, Denver, Colorado Assays were made by E. R. Mandy, Leadville, Colorado and by Richards and Sons.

LEACHING WITH SULPHURIC ACID

Test	Amount	Sample	Assays. Gold	Silver	Copper
No 1	50 grams	No 1	0.16	0.55	3.5
	Leached with Sulphuric Acid 10cc and hot water.				
No	50		0.16	0.55	0.3
	This was leached a second time with sulphuric acid.				
No 1	50	No 1	0.16	0.55	0.0
	Complete leaching of copper being effected.				

The tailing from this No 1 Sample were treated with Sodium Cynanide solution.

The Tailings were assayed by J. W. Richards and Sons

No 1 Gold trace Silver None

This showed a complete extraction of the Gold Copper Silver.

No.2 Test: This was made from taking from Sample No 1 and No 2 the 50 foot level and stope and mixing equal amount of ore from No 4 Sample from 100 feet.

	Weight	ASSAYS Gold	Silver	Copper
No2 1, 2 and 4 samples	50	.016	0.55	3.40

Leaching with Lo CC Sulphuric Acid and boiling with a 5cc of Sulphuric Acid. The entire copper contents were dissolved.

The residue after leaching assayed-

		Gold	Silver	Copper
Sample No 2	50 grams	0.16	0.55	None

These were treated with a 1% Sodium Cyanide solution and tailing assayed by J. W. Richard and Son.

These samples showed a complete extraction of all the Gold, Silver and Copper.

The tailing were assayed by J. W. Richard and Son and show that it contained no gold or no silver and that every bit of the gold and silver had been extracted. The sample of the extracted metal was sent to Mr. Mandy but arrived in such a way that they could not be assayed.

TEST BY AMALGATION

After the different sample had been leached with Sulphuric Acid and all the copper extracted they were amalgated by using mercury and these were put in bottles.

No 1 Sample Mixture of No 1 and No 2 Sample from 50 foot stope and No 4 sample from No 100 stope.

This sample assayed Gold 0.14 Silver 0.80 Copper 3.4%

This sample was treated with Sulphuric Acid and all the copper taken out and then treated with mercury.

Four different samples were treated this way. This was assayed and gave the following extraction:

No 1	Gold 0.13	Silver 0.15 ozs
No 2	Gold 0.13	Silver 0.20 "
No 3	Gold 0.13	Silver 0.15 "
No 4	Gold 0.13	Silver 0.20 "

No 2 sample was from the grab of the ore broken in the 50 ft stope. The sample No 2 ran Gold 0.10 Silver 0.70oz Copper 2.00%

The extraction by treatment with Sulphuric Acid and Mercury was-

Gold 0.13 Silver 0.20 Copper All

In this sample more gold was recovered that the assay of the crude ore indicated.

Sample No 4 Copper from floor of 100 ft stope width ten feet.

Sample No 4	Gold 0.14	Silver 0.56	Copper 6.8
Recovered	Gold 0.13	Silver 0.20	Copper all

These different tests all indicate that by this method all of the gold most of the silver and the copper can be recovered either by amalgamating the ore using mercury or by using sodium cyanide which appears to dissolve all the gold and silver.

If mercury was used to collect the gold and silver it would be necessary to use silver plated copper plates and recover the amalagame containing the gold and silver. The Gold could be seperated by dissolving the retorted amalgam in nitric acid and dissolving the silver. This could be dissolved electricized and the silver precipitated out as pure silver. The gold would be pure gold and could be sold to the mint at $20.67 per ounce at the U.S. Mint at Denver, Colorado.

The silver could be shipped East and sold on the market price.

The copper would be precipitated out on copper plates by using a low voltage current about 12 volts and 1500 amperes and pure electric copper be obtained. This would bring the present market price of 17¾ to 18 centsper pound.

MILL FOR TREATING THE ORE

The mill for treating the ore would consist of crusher size 9x12 which would crush the ore to bin. This is now erected on the mine. From the bin the ore would go to a ball mill one about 4x6 feet which would crush one hundred tons daily from the Ball Mill. This would be ground to about 40 mesh product to amalgate or Cyanide the tailing. For dissolving the copper it would require three tanks which should be lead lined to prevent the acid from disolving the iron tanks. Nine thousand pounds of Sulphuric Acid would be used estimating that the ore would average Gold 0.25 Silver 0.7 Copper 3.5%.

The solution would be drawn off in lead pipes and would go to the precipitating boxes.

The Copper would be precipated as pure Electric Copper and the acid recovered back as Sulphuric Acid and would be stored in lead line tank where it could be pumped back by compressed air.

After the acid had dissolved out all the copper lime or rock or burnt lime cold be added to dissolve the acid and the solution of a very small amount of Cyanide used to dissolve the Gold and Silver.

The solution would go to precipitating tanks using zinc either shaving or fine precipitated zinc. This would be followed by a small press and the gold and silver precipitate. This could be melted and refined. Apparently the process would work by using Silver Copper plates and the gold and silver recover. I believe the Cyanide would be the best to use as it would dissolve all the silver.

POWER

The plant would be driven by electric power. Electric Power can be obtained from the Cirrillos and Madrid Coal Mining Company by building a line six miles in length. The current generated is 60 2200 volts. They have two 1000 H.P. Generator sets at the coal mine. They have offered this power at a price of two cents a kilowatt hour plus a service cost of $1.50 per month. This is about as low a price as can be obtained any place.

It might be possible to obtain a Deisel Oil Engine of 150 H.P. Completed with Generator of 150 H.P. located in New Mexico. This plant is not being used as has had very little work. This would generate power at probable one cent and it may be obtained as cheap as the electric line would cost. I am now negociating for this plant.

They are now building a high voltage line from Perjimillo to Santa Fe, New Mexico. This line will be 44,000 volt and would require a very expensive transformars to reduce and as we would not need over 200 H.P. it would be better to get the power from the Los Cerrillos and Madrid Coal Company or the Deisel Engine.

EQUIPMENT

The present equipment consists of a gallows from fifty-five feet in height. Two sets Ore bins about 20X20 square and 20 feet high.

The Equipment consists of a Sullivan Air Compressor Belt driven Size 8X10 with capacity to drive two air drills.

The power for driving the Sulivan Air Compressor is a Buick six cylinder Gasoline engine of 50 H.P. This is connected by a belt to the air compressor.

The hoist is a 15 H.P. Gasoline engine connected to a single drum and operated by breaks. There are two large buckets and rope of 500 feet.

There is one Denver Rock Drill with 170 lbs of drill steel.

A complete Blacksmith shop with bellows pipe connecting to the air tank and necessary equipment to sharpen machine drills.

A large receiver tank 5X20 is connected to the air compressor.

There is a Roo One and one half ton truck and a touring car Chevorolet Modle 1923.

A small house has been built on the property for the accomodation of the foreman.

This equipment is ample to operate the mine.

There is a chest of carpenter tools saws brace axes shovels picks hamers; also a Drill Column for attaching the drill to when drilling.

ORE IN SIGHT

The present shaft is now 246 feet deep. The ore shows in the pit a width of 40 feet from wall to wall. The pit shows a lenght of 50 feet from the shaft to the wall. The wall shows the vein continuing into the mountain.

At 50 feet there has been made a cross drift and stope. This shows the vein 40 feet wide and continuing to the southeast.

At the 100 foot level a drift has been driven across the vein and shows width of 40 feet. A small stope was made and is still in ore. At the 200 foot level a drift was driven to the south and shows ore for 20 feet with ore in the face.

No cross cuts were made at the bottom.

From the present work the mine shows an ore body 40 feet wide 246 feet deep and 50 feet long and will probably continue another 50 feet.

The ore in sight is 40 feet wide by 50 feet long and 246 feet deep. This would show 49,200 tons of ore which I believe will average Gold 0.25 Silver 0.70 Copper 3.50%.

With a leaching Plant the Copper Gold Silver can all be recovered. The ore would bring:

Gold 0.25 ozs at 20.67		$5.27
Silver .7 " " .22		.36
Copper 3.50% 70 lb at 18		11.60
	Value	17.23

COST OF MINING AND TREATING THE ORE

MINING COSTS

On a hundred ton basis the ore can be mined for fifty cents per ton. Stopes can be so made that the ore can be mined in large quantities and raised to the surface.

MILLING COST

To treat 100 tons it requires two men on shift per day or on three shift. 6 men at $5.00 or $30.00.

Electric Power generated at 2 cents a kilo watt hour would cost about $100 a day.

Shipping Copper to New York at $12.50 per ton on 105 tons would be $1312.50 or $0.437 per ton.

Hauling could be done in the company truck for $1.00 per ton or a cost of $.035 cent s per ton on Hundred ton basis.

Acid Expense - Ten Thousand pounds required to dissolve copper.

10,000 lbs of Sulphuric Acid will cost in Denver $2.00 per One Hundred pounds and $15.00 for 1,500 lb drums. These are used to ship the acid and are credited back when returned to Denver.

COST SULPHURIC ACID

10,000 lbs Sulphuric Acid at Denver		$200.00
7 Barrels at $15.00		105.00
Freight Denver to Waldo		150.00
	Total amount	$455.00

This acid would be used over and over, being regenerated by the electric precipitation of the copper.

QUICK SILVER

This is qouted at $128.00 per 75 lb flask. Freight would be $1.30 per 100 pounds. This could be used with amalgating plates, but I believe the Cyanide method would also recover the silver and gold.

SODIUM CYANIDE

This would cost about 20 cents a pound. The amount necessary to disolve t the gold and silver would not be over one half a pound or 50 lbs about $10.00 a 100 tons or ten cents to recover the Gold and Silver per ton. About one half of the Cyanide is regenerated when the Gold and Silver contents are precipitated by zinc.

ZINC PRECIPITATION

Fine zinc in powder form is now generally used to precipitate the Gold and Silver present in the Cyanide Solution. This would cost about ten cents a pound. On an estimate that the solution will contain 0.25 ozs Gold and 0.7 oz. Silver 100 ton would contain about 95 ounces or it would require about 6 lbs of zinc powder to precipitate the gold and silver.

OTHER COSTS

It would be necessary to seperate the Gold and Silver. This can be done by dissolving the gold and silver in nitric acid. The silver could be recovered as pure silver electrically precipitate. The gold

would be shipped to the United States Mint at Denver and would be paid for at $20.67 per ounce. It might be that the Mint would be willing to buy the silver with the gold. This would have to be arranged with them. They would charge a refining charge to seperated the gold and silver that would probably be more than it would cost at the mine.

There would be small express charge from Waldo to the Denver Mint.

PRODUCTION

I estimate that the ore will run as follows:

Gold	0.27 oz. per ton at 20.67 per oz		$5.27
Silver	.70 " " " " .75 " "		.36
Copper	3.50% or 70 lbs per ton 15 cent lb		11.50
	Value per ton		17.23

COST OF PRODUCTION

Mining 100 tons at	$1.00 per ton	$1.00	
Milling 100 tons at	2.00 " "	2.00	
Royality at 10 on	11.73 " "	$1.17	
	Cost per ton	$4.17	4.17
	Net value per ton		13.06

On Basis of 100 tons a day this would net $1306.00

On Basis of 3000 tons a Month this- net 39180.00

RESPECTFULLY SUBMITTED

Consulting Mining Engineer

40,000 ÷ 100 = 400 days ore supply
$1,300. X 400 = $520,000.

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At the 247 foot bottom of the shaft no work has been done.

ASSAYS OF THE VEIN

The Map accompaning this report shows where the ore was taken from and the numbers on the map indicate the number of the sample on the map.

SAMPLES OF THE ORE FROM DUMPS AND SURFACE

		Gold	Silver	Copper	Insoluble
Vein Out Crop	No.1 East of Shaft	0.44	1.00	3.4	88%
" " "	No.2 Dump on North	0.45	0.7	2.8	54
" " "	No.3 Dump to North	0.45	0.6	2.3	89
" " "	No.4 East Dump	0.52	1.0	5.3	56.2
" " "	No.5 Dump West	0.56	0.9	4.4	53.6

These show the grade and class of ore. The Dump samples represent the ore that was mined out from the surface to the 100 ft level.

The ore was mined from an open cut and fi ty five cars were shipped to the El Paso Smelter of the American Smelting and Refining Company.

The first ten cars were taken from the dump. This represents the ore that was mined from sinking the shaft to a depth of 100 ft. The shaft is fifteen feet long and 6 feet wide and a small tonnage obtained from the short drifts at the 50 foot level.

From the dump there was shipped 441.32 Ton. This ore averaged according to the American Smelting and Refining Company, returns net tons 441.32 Gold 0.271 Silver 0.82 Copper 3.00%. This includes part of the ore taken from the surface,

The ore was settled on a basis of Copper Deduct 8 lbs from assay, this amount added to the assay of 0.4 should make the copper contents average 3.40%. The average price for co per was 13.38 cent per pound, from which was deducted 2.50 cents per pound and copper was settled on a basis of 10.88 cents per pound. Gold was paid for at $19.50 per ounce. Silver was settled on a deduction of 0.50 ounce deducted, giving an average of 0.2 at 532 cent gave 11 cents.

These shipments represent the value of the ore that came from the shaft for a distance of 100 feet.

ORE FROM SURFACE PIT

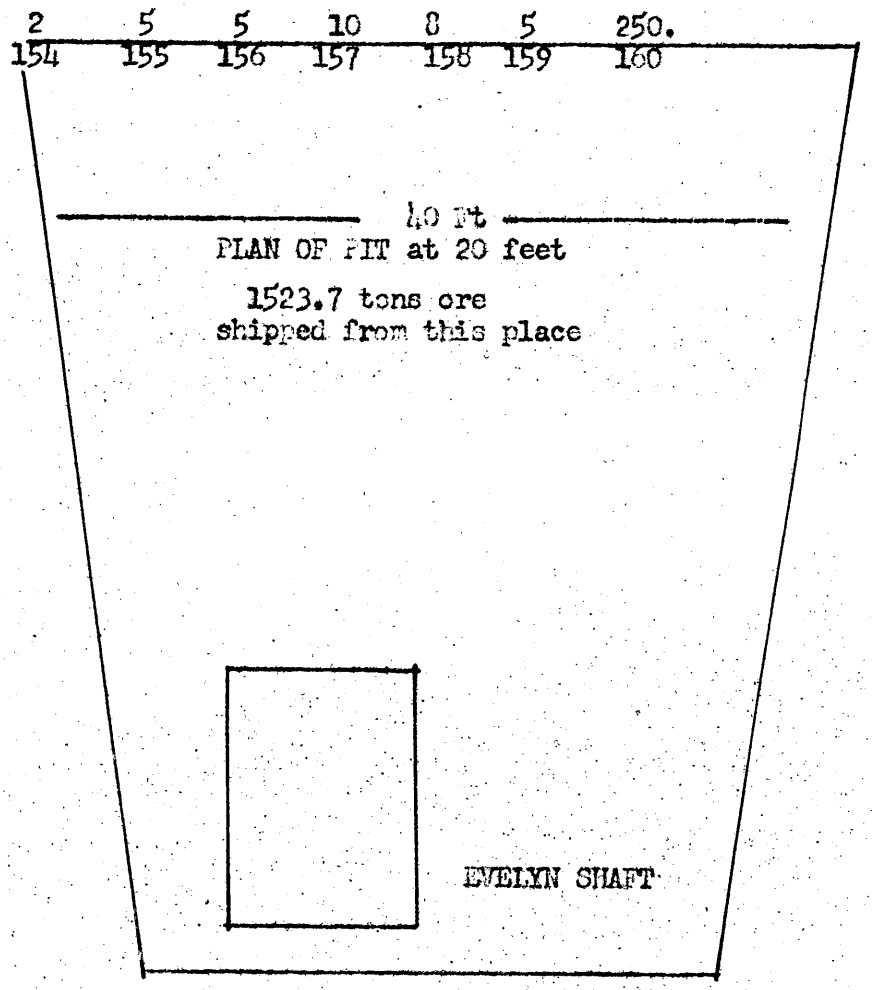
Thirty carloads of ore were extracted from the pit to the Southwest of the shaft. The ore averages about 40 feet wide across the vein and for 50

feet from the shaft and to a depth of 20 feet across this stope.

The ore taken out here amounted to 3,047,380 pounds or 1,523.69. This ore brought from the returns of the American Smelting and Refining Co. El Paso Smelter.

Gold ozs 0.2125 Silver 0.67 Copper 2.47%

The South west face of this stope gave to follows assays



Results of samples taken across face of pit at depth of 20 feet and about 50 feet from shaft:

Sample No.	Width	Gold	Silver	Copper
154	2 ft.	0.25	0.6	2.2%
155	5	0.36	0.9	1.8
156	5	0.34	0.9	3.24
157	10	0.25	0.7	2.80
158	8	0.34	0.9	2.00
159	5	0.24	0.7	1.2
160	5	0.30	0.9	2.30
Weighted Av.	40'	.298	.81	2.28

The average of seven samples taken from the south end of the pit shows as follows:

Gold 0.298 ounces Silver 0.7 oz Copper 2.22%

This is over 40 feet wide at this place.

The vein still shows low grade ore on south wall.

Sample 140	8 ft	Gold 0.08	Silver 0.2	Copper 0.7
Sample 141	8 ft	Gold 0.12	Silver 0.2	Copper 0.4

These two samples represent the wall of the vein 140 being at 30 feet from the shaft and 141 being at the s.w. corner of the stope, the vein here being about 8 feet wide.

VALUE OF CARS OF ORE SHIPPED FROM FIFTY FOOT STOPE

Seven cars of lot 41 to 49 were extracted and shipped from the stope above the fifty foot level. These were shipped to the American Smelting and Refining Company, El Paso Smelter. The shipment amounted to 688,596 lbs 344.3 ton averaged Gold 0.171 Silver 0.6 Copper 2.34%.

SAMPLES OF ORE ASSAYED IN 50 FOOT WORKINGS

STOPE PLAN OF STOPE AND DRIFTS AT 50 FEET

30 Pillar
31
N70 W Drift
29 2827

25 26
S70c Drift
32
SHAFT 20 21 22

SIDES OF DRIFT # 70 DEGREES E 22 FEET

	Length	Gold	Silver	Copper
Sample 20	5	0.20	0.5	2.40%
" 21	5 to 11½	0.50	0.9	2.40%
" 22	11½ to 20	0.24	0.7	0.5
" 23	3 ft loin	0.61	0.0	4.90
" 24	4 ft 2 in	0.52	0.9	2.8
" 25	8 ft 3	0.44	1.1	1.5
" 26	10 ft	0.20	0.7	0.8

SAMPLES FROM DRIFT N 70 W

No.	Width	Gold	Silver	Copper
27	10 ft	0.51	1.3	1.3 %
28 6 in vein		0.40	1.4	14.8%
29	10 to 20 ft	0.40	1.0	2.40
30	15 ft south wall	0.51	1.0	2.20
31 6 in vein		0.48	1.4	12.5
32	S.E. end shaft	0.56	1.1	6.7

SAMPLES FROM ORE IN FIFTY FOOT STOPE

1 A Mandy Top Stope	0.20	0.90	1.8% 86Lilica
1 A Richards "	0.16	0.54	2.0
2 A Grab Bottom "	0.10	0.40	2.0
1 A Mandt Top Stope	0.15	0.55	3.50
4 A Bottom Stope 100 ft	0.14	0.56	6.8
5 A Top of Stope " "	0.08	0.50	4.3
6 Sample Vein S of shaft	0.12	0.58	3.3

These samples were taken in April 1929 and represent the exact value of the ore now showing in the top of the stope.

Sample No 4 A was taken from the large pieces of ore in bottom of the stope and shows a width of ten feet here. This place represents a big change in the value of the copper content.

It would appear that at this point the copper value has become more enriched. I would look for this grade of ore to continue downward.

SAMPLES TAKEN FROM SHAFT AT 100 FEET

SAMPLE NO	Gold	Silver	Copper
231 Drill from 5 ft hole west side of shaft	0.17	0.7	2.4
232 Drillings from hole 5 ft deep near side	0.16	0.7	2.7
237 Drilling from hole 6 ft in S W. Drift	0.16	0.7	4.0

GENERAL SAMPLE OF ORE
100 feet to 200

	Gold	Silver	Copper
Grab over ore in pit from 100 to 200 feet	0.30	0.8	2.00%

I was not at the mine when the shaft was sunk from the 100 foot level to 246. I understand that not many assays were made.

No sulphide ore was encountered in sinking to a depth of 246 feet.

No cross cutting was made across the vein. The shaft I think is north of the main ore body and is more in the foot wall than in the vein proper.

ORE SHIPMENTS FROM MINE

A total of 62 cars of ore has been shipped from the property. Fifty five were shipped by W. H. and R. B. Paul and seven by Mr. Grubnau and Miller. I do not have the returns on Mr. Grubnau and Mr. Miller. The returns are shown in statement accompaning the report.

SMELTER RETURNS

The results obtained from the smelter; The cost of treatment is as follows:

Hauling ore to Waldo from Mine	$ 2.15
Freight Waldo to El Paso	2.50
Treatment charge on Ore	3.50
	$ 8.15
Cost of mining	2.00
Total	$10.15

These are too high to make the low grade ore pay.

TESTS MADE ON THE ORE

The ore consists of Copper Carbonate about 3.% copper Insluble 86% No Lime Iron 3.5% The iron is insoluble in acid and is combined with the siliaca and is not soluble unless fused.

TESTS MADE ON ORE FROM MINE

SURFACE ORE:

Sample take over outcroptof the vein.

Weight 100 grams Gold 0.50 Silver 0.70 Copper 5.70

Leached with 8 grams of Ferric Sulphate and 30 grams of Sulphuric Acid.

Extraction by Amalgation after leaching with Sulphuric Acid.

Gold 0.32 Copper 0.20 ACE

Extracted 54% of Gold All copper

EXTRACTION BY SODIUM CYANIDE

HEADS	Gold	0.50AG	o.70	Copper 0.20 to trace
TAILS	Gold	0.02	0.00	Copper None

Extraction of Gold 96% Extraction of Silver 100% Extraction of Copper 100.00

Test made at Colorado School of MinesDecember 1925.

The test made by amalgamation was not very satisfactory. It was found that it was necessary to extract all the copper before the Gold would amalgamate. This was done by heating the Sulphuric Acid solution.

The test by Cyanide showed a complete extraction of both gold and silver.

TESTS MADE ON ORES FROM THE MINE

The following samples were taken from the mine Stopes from the 50 foot level and from the 100 foot level.

SAMPLE	GOLD	SILVER	COPPER
No 1 Top of Stope 10 feet	0.15	0.55	3.50
No 2 Broken ore in stope	0.10	0.40	2.0
These samples were taken from the 50 foot stope.			
No 4 Ore in Bottom 10 feet wide	0.14	0.56	6.8%
No 5 Ore in top of stope	0.00	0.50	4.3
No 6 Grab of Ore south stope 100 foot level	0.12	0.50	3.3

METHOD OF MAKING TESTS

These tests were made at the Colorado State School of Mines at Golden, Colorado and at the office of Richards and Son, Denver, Colorado Assays were made by E. R. Mandy, Leadville, Colorado and by Richards and Sons.

LEACHING WITH SULPHURIC ACID

Test	Amount	Sample	Assays. Gold	Silver	Copper
No 1	50 grams	No 1	0.16	0.55	3.5
	Leached with Sulphuric Acid 10cc and hot water.				
No	50		0.16	0.55	0.3
	This was leached a second time with sulphuric acid.				
No 1	50	No 1	0.16	0.55	0.0
	Complete leaching of copper being effected.				

The tailing from this No 1 Sample were treated with Sodium Cynanide solution.

The Tailings were assayed by J. W. Richards and Sons

No 1 Gold trace Silver None

This showed a complete extraction of the Gold Copper Silver.

No.2 Test: This was made from taking from Sample No 1 and No 2 the 50 foot level and stope and mixing equal amount of ore from No 4 Sample from 100 feet.

	Weight	ASSAYS Gold	Silver	Copper
No2 1, 2 and 4 samples	50	.016	0.55	3.40

Leaching with Lo CC Sulphuric Acid and boiling with a 5cc of Sulphuric Acid. The entire copper contents were dissolved.

The residue after leaching assayed-

		Gold	Silver	Copper
Sample No 2	50 grams	0.16	0.55	None

These were treated with a 1% Sodium Cyanide solution and tailing assayed by J. W. Richard and Son.

These samples showed a complete extraction of all the Gold, Silver and Copper.

The tailing were assayed by J. W. Richard and Son and show that it contained no gold or no silver and that every bit of the gold and silver had been extracted. The sample of the extracted metal was sent to Mr. Handy but arrived in such a way that they could not be assayed.

TEST BY AMALGATION

After the different sample had been leached with Sulphuric Acid and all the copper extracted they were amalgated by using mercury and these were put in bottles.

No 1 Sample Mixture of No 1 and No 2 Sample from 50 foot stope and No 4 sample from No 100 stope.

This sample assayed Gold 0.14 Silver 0.80 Copper 3.4%

This sample was treated with Sulphuric Acid and all the copper taken out and then treated with mercury.

Four different samples were treated this way. This was assayed and gave the following extraction:

No 1	Gold 0.13	Silver 0.15 ozs
No 2	Gold 0.13	Silver 0.20 "
No 3	Gold 0.13	Silver 0.15 "
No 4	Gold 0.13	Silver 0.20 "

No 2 sample was from the grab of the ore broken in the 50 ft stope. The sample No 2 ran Gold 0.10 Silver 0.70oz Copper 2.0%
The extraction by treatment with Sulphuric Acid and Mercury was-

Gold 0.13 Silver 0.20 Copper All

In this sample more gold was recovered that the assay of the crude ore indicated.

Sample No 4 Copper from floor of 100 ft stope width ten feet.

Sample No 4	Gold 0.14	Silver 0.56	Copper 6.8
Recovered	Gold 0.13	Silver 0.20	Copper all

These different tests all indicate that by this method all of the gold most of the silver and the copper can be recovered either by amalgamating the ore using mercury or by using sodium cyanide which appears to dissolve all the gold and silver.

If mercury was used to collect the gold and silver it would be necessary to use silver plated copper plates and recover the amalagame containing the gold and silver. The Gold could be seperated by dissolving the retorted amalgam in nitric acid and dissolving the silver. This could be dissolved electricized and the silver precipitated out as pure silver. The gold would be pure gold and could be sold to the mint at $20.67 per ounce at the U.S. Mint at Denver, Colorado.

The silver could be shipped East and sold on the market price.

The copper would be precipitated out on copper plates by using a low voltage current about 12 volts and 1500 amperes and pure electric copper be obtained. This would bring the present market price of 1775 to 18 cents per pound.

MILL FOR TREATING THE ORE

The mill for treating the ore would consist of crusher size 9x12 which would crush the ore to bin. This is now erected on the mine. From the bin the ore would go to a ball mill one about 4x6 feet which would crush one hundred tons daily from the Ball Mill. This would be ground to about 40 mesh product to amalgate or Cyanide the tailing. For dissolving the dopper it would require three tanks which should be lead lined to prevent the acid from disolving the inon tanks. Nine thousand pounds of Sulphuric Acid would be used estimating that the ore would average Gold 0.25 Silver 0.7 Copper 3.5%.

The solution would be drawn off in lead pipes and would go to the precipitating boxes.

The Copper would be precipated as pure Electric Copper and the acid recovered back as Sulphuric Acid and would be stored in lead line tank where it could be pumped back by compressed air.

After the acid had dissolved out all the copper lime or rock or burnt lime cold be added to dissolve the acid and the solution of a very small amount of Cyanide used to dissolve the Gold and Silver.

The solution would go to precipitating tanks using zinc either shaving or fine precipitated zinc. This would be followed by a small press and the gold and silver precipitate. This could be melted and refined. Apparently the process would work by using Silver Copper plates and the gold and silver recover. I believe the Cyanide would be the best to use as it would dissolve all the silver.

POWER

The plant would be driven by electric power. Electric Power can be obtained from the Cirrillos and Madrid Coal Mining Company by building a line six miles in length. The current generated is 60 2200 volts. They have two 1000 H.P. Generator sets at the coal mine. They have offered this power at a price of two cents a kilowatt hour plus a service cost of $1.50 per month. This is about as low a price as can be obtained any place.

It might be possible to obtain a Deisel Oil Engine of 150 H.P. Completed with Generator of 150 H.P. located in New Mexico. This plant is not being used as has had very little work. This would generate power at possible one cent and it may be obtained as cheap as the electric line would cost. I am now negociating for this plant.

They are now building a high voltage line from Perjimillo to Santa Fe, New Mexico. This line will be 44,000 volt and would require a very expensive transformars to reduce and as we would not need over 200 H.P. it would be better to get the power from the Los Cerrillos and Madrid Coal Company or the Deisel Engine.

EQUIPMENT

The present equipment consists of a gallows from fifty-five feet in height. Two sets Ore bins about 20X20 square and 20 feet high.

The Equipment consists of a Sullivan Air Compressor Belt driven Size 8X10 with capacity to drive two air drills.

The power for driving the Sulivan Air Compressor is a Buick six cylinder gasoline engine of 50 H.P. This is connected by a belt to the air compressor.

The hoist is a 15 H.P. Gasoline engine connected to a single drum and operated by breaks. There are two large buckets and rope of 500 feet.

There is one Denver Rock Drill with 170 lbs of drill steel.

A complete Blacksmith shop with bellows pipe sonnecting to the air tank and necessary equipment to sharpen machine drills.

A large receiver tank 5X20 is connected to the air compressor.

There is a Rco One and one half ton truck and a touring car Cheverolet Modle 1923.

A small house has been built on the property for the accomodation of the foreman.

This equipment is ample to operate the mine.

There is a chest of carpenter tools saws brace axes shovels picks hamers; also a Drill Column for attaching the drill to when drilling.

ORE IN SIGHT

The present shaft is now 246 feet deep. The ore shows in the pit a width of 40 feet from wall to wall. The pit shows a lenght of 50 feet from the shaft to the wall. The wall shows the vein continuing into the mountain.

At 50 feet there has been made a cross drift and stope. This shows the vein 40 feet wide and continuing to the southeast.

At the 100 foot level a drift has been driven across the vein and shows width of 40 feet. A small stope was made and is still in ore. At the 200 foot level a drift was driven to the south and shows ore for 20 feet with ore in the face.

No cross cuts were made at the bottom.

From the present work the mine shows an ore body 40 feet wide 246 feet deep and 50 feet long and will probably continue another 50 feet.

The ore in sight is 40 feet wide by 50 feet long and 246 feet deep. This would show 49,200 tons of ore which I believe will average Gold 0.25 Silver 0.70 Copper 3.50%.

With a leaching Plant the Copper Gold Silver can all be recovered. The ore would bring:

Gold 0.25 ozs at 20.67		$5.27
Silver .7 " " .22		.36
Copper 3.50% 70 lb at 18		11.60
	Value	17.23

COST OF MINING AND TREATING THE ORE

MINING COSTS

On a hundred ton basis the ore can be mined for fifty cents per ton. Stopes can be so made that the ore can be mined in large quantities and raised to the surface.

MILLING COST

To treat 100 tons it requires two men on shift per day or on three shaft. 6 men at $5.00 or $30.00.

Electric Power generated at 2 cents a kilo watt hour would cost about $100 a day.

Shipping Copper to New York at $12.50 per ton on 105 tons would be $1312.50 or $0.437 per ton.

Hauling could be done in the company truck for $1.00 per ton or a cost of $.035 cent s per ton on Hundred ton basis.

Acid Expense - Ten Thousand pounds required to dissolve copper.

10,000 lbs of Sulphuric Acid will cost in Denver $2.00 per One Hundred pounds and $15.00 for 1,500 lb drums. These are used to ship the acid and are credited back when returned to Denver.

COST SULPHURIC ACID

10,000 Lbs Sulphuric Acid at Denver		$200.00
7 Barrels at $15.00		105.00
Freight Denver to Waldo		150.00
	Total amount	$455.00

This acid would be used over and over, being regenerated by the electric precipitation of the copper.

QUICK SILVER

This is qouted at $128.00 per 75 lb flask. Freight would be $1.30 per 100 pounds. This could be used with amalgating plates, but I believe the Cyanide method would also recover the silver and gold.

SODIUM CYANIDE

This would cost about 20 cents a pound. The amount necessary to disolve the gold and silver would not be over one half a pound or 50 lbs about $10.00 a 100 tons or ten cents to recover the Gold and Silver per ton. About one half of the Cyanide is regenerated when the Gold and Silver contents are precipitated by zinc.

ZINC PRECIPITATION

Fine zinc in powder form is now generally used to precipitate the Gold and Silver present in the Cyanide Solution. This would cost about ten cents a pound. On an estimate that the solution will contain 0.25 ozs Gold and 0.7 oz. Silver 100 ton would contain about 95 ounces or it would require about 9 lbs of zinc powder to precipitate the gold and silver.

OTHER COSTS

It would be necessary to seperate the Gold and Silver. This can be done by dissolving the gold and silver in nitric acid. The silver could be recovered as pure silver electrically precipitate. The gold

would be shipped to the United States Mint at Denver and would be paid for at $20.67 per ounce. It might be that the Mint would be willing to buy the silver with the gold. This would have to be arranged with them. They would charge a refining charge to seperated the gold and silver that would probably be more than it would cost at the mine.

There would be small express charge from Waldo to the Denver Mint.

PRODUCTION

I estimate that the ore will run as follows:

Gold	0.25 oz. per ton at $20.67 per oz		$ 5.27
Silver	.70 " " " " .53 " "		.36
Copper	3.10% or 70 lbs per ton 16 cent lb		11.60
	Value per ton		17.23

COST OF PRODUCTION

Mining 100 tons at	$1.00 per ton	$1.00	
Milling 100 tons at	2.00 " "	2.00	
Royality at 10 on	$ 11.73 " "	1.17	
	Cost per ton	$4.17	4.17
	Net value per ton		13.06

On basis of 100 tons a day this would net $1306.00

On basis of 3000 tons a month this- net 39180.00

RESPECTFULLY SUBMITTED

Consulting Mining Engineer

40,000 ÷ 100 = 400 days ore supply
$1,300. X 400 = $520,000.

REPORT

ON

CASH ENTRY NO. 105 AND OTHER MINES

IN

LOS CERRILLOS MINING DISTRICT

SANTA FE COUNTY NEW MEXICO

BY

W.H. ANDL

CONSULTING MINING ENGINEER

August 1929

PROPERTY

This property Cash Entry No 105 was originally known as the Copper Hill Tract and consists of 160 acres being the North East ¼ of Section 30 in Township 15 Range 8 East in Santa Fe County New Mexico.

This was patented as Cash Entry No. 105 and this has all the mineral rights.

VEINS

In this tract of land there are a number of veins. The Geology and the formation is the same as the Evelyn Gold Copper Mine and consists of overflows of Andesite Porphyry. This has been fissured and forms the main veins of this section.

TOM PAYNE VEIN

This has been one of the important mines of this section. The Tom Payne Mine lays about 300 feet south of the south line of the Cash Entry Mine No 105. The Tom Payne Mine has a shaft 300 feet in depth and three Level at 100-200 and 300 feet. Level No 200 has been driven north to the line of Cash Entry No 105.

At this point the vein shows a width of five feet and runs 5% lead 15% zinc and 3 ozs Silver.

No ore was encountered on the Tom Payne Mine until it reached a depth of One hundred feet and from there down the ore turned to sulphides of lead zinc and carried silver. The vein shows a width of from 5 to 15

feet. The ore occuring in solid form and easily seperated from the gangue. The walls have a soft streak of talc between the ore and the porphy which makes it very easy to mine and the costs are very low.

The ore occurs as a lead zinc sulphide. 3,500 tons of ore were treated at a Concentrating Mill at Los Cerrillos, New Mexico. The ore averaged 8% lead 15% zinc and 3 oz silver. The concentrates ran 60% lead 25 oz silver and the zinc concentrates averaged 45% zinc. The ore was crushed by Crusher Rolls and Put over W Wilfley Table. The Tailing run 4% lead and 6 to 8% zinc so the the saving was not very good. With a modern mill using flotation a much better saving can be accomplished and higher values in both the lead and zinc concentrates obtained.

This vein passes thru the Cash Entry No 105 for the entire distance of about one mile. There are mumbers of shafts and the out crop will average 6 feet wide None of the shafts are over twenty feet deep and show only slow grade ore carying a lettle lead silver and zinc. This vein shouldchange to sulphides at 100 feet and should make a very good mine lead, zinc silver.

No. 1 VEIN

About 300 feet south of the out crop of the Tom Payne Vein t is is shaft 25 feet dum which shows a quartz vein about five feet wide. A sample take on this vein from quartz gave 3.76 ounces Gold. Sample from the dump ran 0.56 oz Gold. This vein shows the best gold values found here. Do you thing this is the vein Patterson had Alex do smoe work on? There has been no work done on it except this one shaft. The vein continues to the east, averages about 5 feet wide. This is about 300 feet east of the west line of the tract.

No.2 VEIN

About the middle of the Cash Entry Claim No 105 and about 300 feet south of the north side there is a pit about ten feet deep. There there

is a deposit of copper a out 10 feet thick samples take of the ore on the dump ran - Gold 0.20 oz Copper from 7.5% to 12% and some samples ran 14 oz Silver.

DEPOSIT OF IRON ORE

There is a deposit of Magnetic Iron ore out cropping in the gulch about the middle of the Cash Entry No 105. This shows about ten feet wide and extends for about 100 feet. This assays 70% iron. It has no value in Lead Zinc or Copper. It would be valuable to be used to flux the lead ore if a smelter were erected to treat the lead concentrates.

CONCLUSION

The ore deposits on the Cash Entry No 102 have never been developed. The surface and pits sunk on the vein show veins of 6 feet wide.

From the ores found in the Tom Payne Mine this should pass into a Lead Zinc Silver. Sulphide ore and there should be found a very large tonnage of this class of ore.

The surface deposits of Copper appear to be the same as the Evelyn Gold Copper mine and care about the same amount of Gold Better Silver and more copper. In one way this may be the Evelyn Vein as the outcrop is covered with debris and no work has been done to open it up. The direction on the outcrop is about the same as the Evelyn Deposit and this may be the continuation of this mine.

Limestone outcrop occur in the Cienega Creek of a good grade of and show good grade of Limestone. This could be obtained and used as a flux should a Smelter be installed.

At Waldo there are the old furnaces of the Cerrillos and Albuquerque Coal Mines which at one time were used to produce coke. This could now be used again and an excellent grade of coke obtained.

BROWN GOLD COPPER MINE

A Cross cut tunnel about 250 feet long was driven from this claim

into the mountain. Two low grade veins were cut in this tunnel. This could be driven ahead and considerable depth obtained by driving on these vein. The veins are not being encountered at sufficient depth to find ore.

RESPECTFULLY SUBMITTED

Consulting Mining Engineer

REPORT
ON
CASH ENTRY NO. 105 AND OTHER MINES
IN
LOS CERRILLOS MINING DISTRICT
SANTA FE COUNTY NEW MEXICO

BY
W.H. PAUL

CONSULTING MINING ENGINEER
August 1929

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No.2 VEIN

About the middle of the Cash Entry Claim No 105 and about 300 feet south of the north side there is a pit about ten feet deep. There there

is a deposit of copper a out 10 feet thick samples taken of the ore on the dump ran - Gold 0.20 oz Copper from 7.5% to 12% and some samples ran 14 oz Silver.

DEPOSIT OF IRON ORE

There is a deposit of Magnetic Iron ore out cropping in the gulch about the middle of the Cash Entry No 105. This shows about ten feet wide and extends for about 100 feet. This as a as 70% iron. It has no value in Lead Zinc or Copper. It would be valuable to be used to flux the lead ore if a smelter were erected to treat the lead concentrates.

CONCLUSION

The ore deposits on the Cash Entry No 102 have never been developed. The surface and pits sunk on the vein show veins of 6 feet wide.

From the ores found in the Tom Wayne Mine this should pass into a Lead Zinc Silver. Sulphide ore and there should be found a very large tonnage of this class of ore.

The surface deposits of Copper appear to be the same as the Evelyn Gold Copper mine and care about the same amount of Gold Better Silver and more copper. In one way this may be the Evelyn Vein as the outcrop is covered with debris and no work has been done to open it up. The direction on the outcrop is about the same as the Evelyn deposit and this may be the continuation of this mine.

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At Kelly there are the old furnaces of the Socorro and Albuquerque Coal Mines which at one time were used to produce coke. This could now be used again and an excellent grade of coke obtained.

BROWN GOLD COPPER MINE

A Cross cut tunnel about 250 feet long was driven from this claim

into the mountain. Two low grade veins were cut in this tunnel. This could be driven ahead and considerable depth obtained by driving on these vein. The veins are not being encountered at sufficient depth to find ore.

RESPECTFULLY SUBMITTED

_____

Consulting Mining Engineer

5-29-51

Defense Minerals
Interior Bldg. Ad,
Washington, D.C.

Dear Sirs:

For your instructions you state, application may, be ~~amde~~, partly through, or by letter.

I hold title to the five claims, described in the enclosed copy of Paul's report as the Evelyn Gold groupes of claims, 60 to a fraction acres. That does not include the other tract, cash entry 160 also described therein and owned by me.

The report was made when Paul, who had a lease on the claims, was forced to quit operation in 1930 when copper went to 10 ¢ or less.

This property has not been worked since.

The shaft 8X12 seems to be intact. During the depression, in the 30's the and most of timber in shaft was carried off.

I am interested in a loan to ~~purchase~~ and sufficient sets of timbers on down to bottom of shaft (246 feet) and platforms on the 100 to 200 foot levels, so the mine can be inspected and if found as about Paul states, which it should, according to what men have told me, who worked for Paul, I then would be interested in selling or leasing, or procuring a Government loan to go into production.

All work under a Government loan would be supervised by one Mr. McGhee, who has operated mines, the greater part of his life, and how has some mining property close by. My back ground is not mining.

You are at liberty to make any notes for your files, out of Paul's report, on the Evelyn Gold Groupe, and then may I ask you to return Paul's report to me, within a week.

T. M. CRAMER, PRESIDENT · JOHN A. WOOD, 1ST VICE-PRES. · T. A. SNEDDEN, 2ND VICE-PRES. · JACK C. PIERCE, SEC.-TREAS.

NEW MEXICO MINERS & PROSPECTORS ASSOCIATION

OFFICE OF THE SECRETARY
ROOM 10, BARNETT BLDG.
P. O. BOX 503
ALBUQUERQUE, NEW MEXICO

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J. A. FREEMAN, JR., GRANTS
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ALLAN B. BOWMAN, LORDSBURG
HOMER C. HIRSCH, EL PASO
J. T. LEWIS, JR., BAYARD

May 18, 1951

Mr. Simonson:

I have your note and additional message from Miss Edwards relative your property in the Cerrillos District.

I had the pleasure to be on that property with Dick McGhee on April 19th last when I was looking over the entire district as a general check-up. I had previously been on the property when checking copper occurrences over the state---but at that time I didn't know the owner and didn't have the benefit of being with one who knew a little about it as does McGhee. I still have very little to answer your question on but am making some assumptions along the lines following: It is not a mined-out or fully-developed copper occurrence by any means. There is, under present price-cost conditions, a favorable chance to get into commercial production following a rather heavy cost of development and additional exploration. There are no geological indications that the ore is confined to upper levels already reached nor to narrow lateral extents. Therefore, it could well follow that it is a property that deserves consideration for further development and, if private capital cannot be interested, it should be called to the attention of DMA authorities through a loan application.

Although DMA loans are not coming through yet and although we are extremely disappointed in our Federal Government's policy regarding domestic mineral reserves, I know of no better way to direct attention to the property and at the same time protect it for future

This was left in Pierce's office

capitalization than to make loan application at an early date.

Respectfully

Jack Pierce

Jack Pierce

J. H. East Jr.
Region IV Director
Defense Minerals Administration
224 New Customhouse
Denver 2, Colorado.

NEW MEXICO MINERS & PROSPECTORS ASSOCIATION

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Respectfully

/s/Jack Pierce
Jack Pierce

J. H. East Jr.
Region IV Director
Defense Minerals Administration
224 New Customhouse
Denver 2, Colorado

COPY

REPORT

ON

CASH ENTRY NO. 105 AND OTHER MINES

IN

LOS ORAILLAS MINING DISTRICT

SANTA FE COUNTY NEW MEXICO

BY

W.H. PAUL

CONSULTING MINING ENGINEER

August 1929

PROPERTY

This property Cash Entry No 105 was originally known as the Copper Hill Tract and consists of 160 acres being the North East ¼ of Section 30 in Township 15 Range 8 East in Santa Fe County, New Mexico.

This was patented as Cash Entry No. 105 and this has all the mineral rights.

VEINS

In this tract of land there are a number of veins. The Geology and the formation is the same as the Evelyn Gold Copper Mine and consists of overflows of Andesite porphyry. This has been fissured and forms the main veins of this section.

TOM PAYNE MINE

This has been one of the important mines of this section. The Tom Payne Mine lays about 200 feet south of the south line of the Cash Entry Mine No 105. The Tom Payne Mine has a shaft 300 feet in depth and three level at 100-200 and 300 feet. Level No 200 has been driven north to the line of Cash Entry No 105.

At this point the vein shows a width of five feet and runs 6% lead 15% zinc and 3 ozs Silver.

No ore was encountered on the Tom Payne Mine until it reached a depth of One hundred feet and from there down the ore turned to sulphides of lead zinc and carried silver. The vein shows a width of from 5 to 15

feet. The ore occuring in solid form and easily seperated from the gangue. The walls have a soft streak of talc between the ore and the porphy which makes it very easy to mine and the costs are very low.

The ore occurs as a lead zinc sulphide. 3,500 tons of ore were treated at a Concentrating Mill at Los Cerrillos, New Mexico. The ore averaged 8% lead 15% zinc and 3 oz silver. The concentrates ran 60% lead 25 oz silver and the zinc concentrates averaged 45% zinc. The ore was crushed by Crusher Rolls and Put over a Wilfley Table. The Tailing run 4% lead and 6 to 8% zinc so the the saving was not very good. With a modern mill using flotation a much better saving can be accomplished and higher values in both the lead and zinc concentrates obtained.

This vein passes thru the Cash Entry No 105 for the entire distance of about one mile. There are numbers of shafts and the out crop will average 5 feet wide None of the shafts are over twenty feet deep and show only slow grade ore carying a lettle lead silver and zinc. This vein shouldchange to sulphides at 1 0 feet and should make a very good mine lead, zinc silver.

No. 1 VEIN

About 300 feet south of the out crop of the Don Payne Vein is is shaft 25 feet dun which shows a quartz vein about five feet wide. A sample take on this vein from quartz gave 3.76 ounces Gold. Sample from the dump ran 0.56 oz Gold. This vein shows the best gold values found here. Do you thing this is the vein Patterson had Alex do some work on? There has been no work done on it except this one shaft. The vein continues to the east, averages about 5 feet wide. This is about 300 feet east of the west line of the tract.

No.2 VEIN

About the middle of the Cash Entry Claim No 105 and about 300 feet south of the north side there is a pit about ten feet deep. There there

is a deposit of copper about 10 feet thick samples taken of the ore on the dump ran - Gold 0.20 oz Copper from 7.5% to 12% and some samples ran 14 oz Silver.

DEPOSIT OF IRON ORE

There is a deposit of Magnetic Iron ore out cropping in the gulch about the middle of the Cash Entry No 105. This shows about ten feet wide and extends for about 100 feet. This assays 70% Iron. It has no value in Lead Zinc or Copper. It would be valuable to be used as flux if a smelter were erected to treat the lead concentrates.

[illegible]

The ore deposits on the Cash Entry No 102 have not been developed. The surface and pits sunk on the vein show veins of 5 feet wide.

From the ores found in the Don Payne Mine this should pass into a Lead Zinc Silver. Sulphide ore and there should be found a very large tonnage of this class of ore.

The surface deposits of Copper appear to be the same as the Evelyn Gold Copper mine and carry about the same amount of Gold better Silver and more copper. In one way this may be the Evelyn Vein as the outcrop is covered with debris and no work has been done to open it up. The direction on the outcrop is about the same as the Evelyn Deposit and this may be the continuation of this mine.

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Consulting Mining Engineer

NEW MEXICO MINERS & PROSPECTORS ASSOCIATION

OFFICE OF THE SECRETARY

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Respectfully

/s/Jack Pierce
Jack Pierce

J. H. East Jr.
Region IV Director
Defense Minerals Administration
224 New Customhouse
Denver 2, Colorado

C O P Y

REPORT
on the

EVELYN GOLD COPPER MINING PROPERTIES AND COPPER HILL TRACT
SITUATED IN
CERRILLOS MINING DISTRICT
SANTA FE COUNTY

By

W. H. PAUL, M. E.

COUNSULTING MINING ENGINEER

August 1929

PROPERTY

The Property consists of the following patented Mining Claims:

THE EVELYN GOLD COPPER MINE
THE MANHATTAN GOLD COPPER MINE
THE BROWN GOLD COPPER MINE
THE SHANNON LODE CLAIM
THE SANTA ROSA MINE

These are known as the EVELYN GOLD COPPER GROUP of mines and are designated by the surveyer General of New Mexico as Survey No. 1659, containing 60.40 acres.

The Copper Hill Tract: This consists of the North East 1/4 of Section 30. in T.15 R.8 E of Santa Fe County New Mexico. This contains 160 acres. This is known as Cash entry No 105 and Cash Entry No 101. These cash entry claims hold all the mineral rights.

The EVELYN GOLD COPPER GROUP is situated in Section 19 and 20 in Township 15 North of range 8 East of New Mexico Maridian.

The Mines are located twenty miles due south of Santa Fe, New Mexico and about five and one half miles to Waldo Station on the Atchison-Topeka and Santa Fe Railroad.

There is a good automobile road from Santa Fe to the mines. A good road down grade of 51/2 miles to Waldo where the ore can be loaded on the railroad. The mines are located at the foot of a range of Mountains at about an elevation of 6000 feet above Sea level.

TITLE

The present title rests in W. H. Paul who has a two years lease and Option of $30,000 on the mine. The Royality on the ore is ten per cent of the net value. The Net Value is the amount left after deducting the cost of the hauling Freight smelting charges. In case the ore is treated at the mine the cost of treatment will be deducted.

GEOLOGICAL FORMATION

The Geological Formation consists of Andisite Porphyry. The vein is a deposit about fourty feet wide and appears to have acourse about S43 degrees West. In the Old Spanish Mine which is located about one half mile south of the Evelyn Mine, in this shaft the shale was cut at a depth of 300 feet. Just how deep the shale is, is not know, but would probably be 500 feet. Limestone deposit occur below the shale in the Santa Fe Creek and show about 50 ft thick of Limestone underlaying the shale.

Below the Limestone the Granite rocks occur.

It is probable that the Andesite porphyry will be thicker in the Evelyn Mine than in the old Spanish mine. The present shaf has been sunk to a depth of 246 feet. So far no Sulphide ore has been found, the ore occuring as a very silicious ore avering 86 Silica. The copper occurs as a Carbonate of Copper the whole average of the vein being about 3%. The Gold Contents average about of an ounce and Silver averages from one half ar ounce to ounce.

DEVELOPMENT

The principal development has been made EVELYN GOLD COPPER MINE. This consists of a shaft which has been sunk to a depth of 247 feet.

The vein of the Evelyn Mine shows a width of forty feet from wall to wall. An open pit was sunk on the vein to a depth of about 25 feet and for a length of fifty feet. From this open cut fifty-five carloads of 50 tons each was shipped to the El Paso Smelter. This is shown on report sheets accompaning this report.

The following Drifts have been driven from the shaft at fifty feet deep. A drift is run across the vein for 40 feet. Their is a stope on the south side which shows about 25 in length and 20 feet high.

On the East side of the shaft a drift was driven about 30 feet, This showed 20 feet of ore and then porphyry.

A drift was driven 30 feet N. 50 degrees from the shaft and a small raise put up.

At one hundred feet deep-

A drift was driven about 26 feet N.50 W

A small stope was made on the south side of the shaft.

A drift was driven from the shaft to the south for about 30 feet, arai and chute was put in at 20 feet and a small stope made here.

At the 200 ft. level a short cross cut was made on the vein.

At the 247 foot bottom of the shaft no work has been done.

ASSAYS OF THE VEIN

The Map accompaning this report shows where the ore was taken from and the numbers on the map indicate the number of the sample on the map.

SAMPLES OF THE ORE FROM DUMPS AND SURFACE

		Gold	Silver	Copper	Insoluble
Vein Out Crop	No.1 East of Shaft	0.44	1.00	3.4	88%
" " "	No.2 Dump on North	0.45	0.7	2.8	54
" " "	No.3 Dump to North	0.45	0.6	2.3	89
" " "	No.4 East Dump	0.52	1.0	5.3	56.2
" " "	No.5 Dump West	0.56	0.9	4.4	53.6

These show the grade and class of ore. The Dump samples represent the ore that was mined out from the surface to the 100 ft level.

The ore was mined from an open cut and fi ty five cars were shipped to the El Paso Smelter of the American Smelting and Refining Company.

The first ten cars were taken from the dump. This represents the ore that was mined from sinking the shaft to a depth of 100 ft. The shaft is fifteen feet long and 6 feet wide and a small tonnage obtained from the short drifts at the 50 foot level.

From the dump there was shipped 441.32 Ton. This ore averaged according to the American Smelting and Refining Company, returns net tons 441.32 Gold 0.271 Silver 0.82 Copper 3.00%. This includes part of the ore taken from the surface.

The ore was settled on a basis of Copper Deduct 8 lbs from assay, this amount added to the assay of 0.4 should make the copper contents average 3.40%. The average price for copper was 13.38 cent per pound, from which was deducted 2.50 cents per pound and copper was settled on a basis of 10.88 cents per pound. Gold was paid for at $19.50 per ounce. Silver was settled on a deduction of 0.50 ounce deducted, giving an average of 0.2 at 532 cent gave 11 cents.

These shipments represent the value of the ore that came from the shaft for a distance of 100 feet.

ORE FROM SURFACE PIT

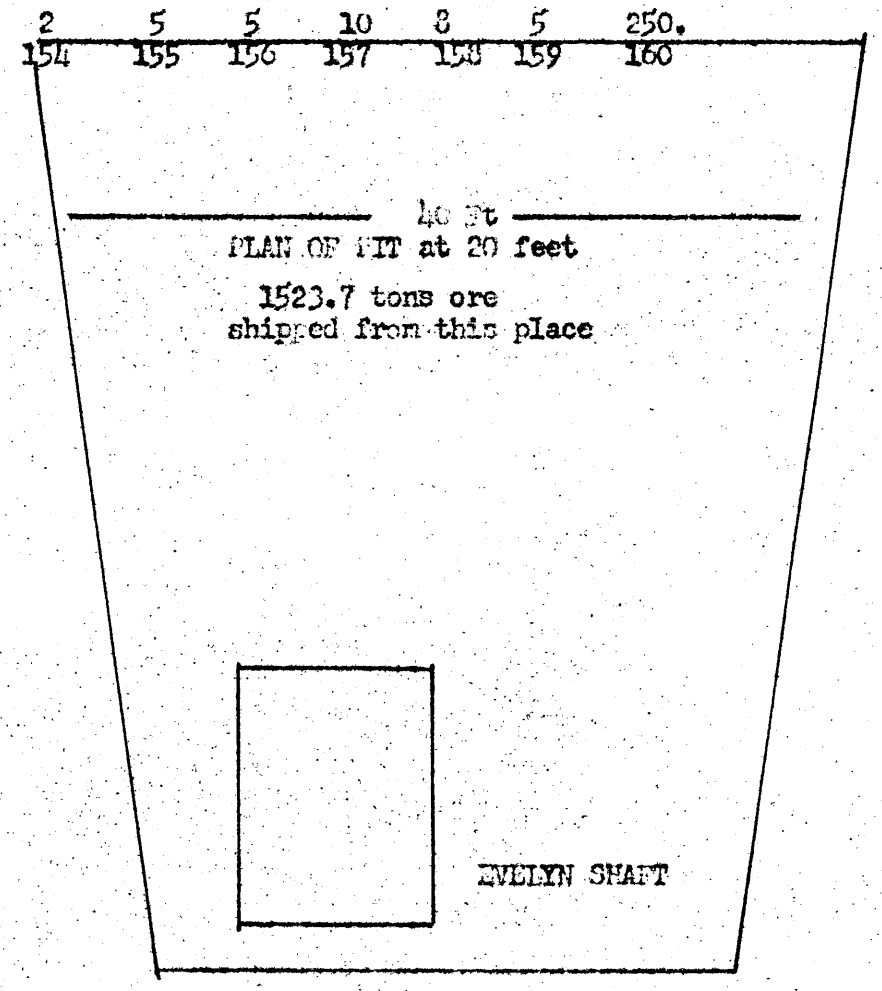
Thirty carloads of ore were extracted from the pit to the Southwest of the shaft. The ore averages about 40 feet wide across the vein and for 50

feet from the shaft and to a depth of 20 feet across this stope.

The ore taken out here amounted to 3,047,380 pounds or 1,523.69. This ore brought from the returns of the American Smelting and Refining Co. El Paso Smelter.

Gold ozs 0.2125 Silver 0.67 Copper 2.47%

The South west face of this stope gave to follows assays



Results of samples taken across face of pit at depth of 20 feet and about 50 feet from shaft:

Sample No.	Width	Gold	Silver	Copper
154	2 ft.	0.25	0.6	2.2%
155	5	0.36	0.9	1.8
156	5	0.34	0.9	3.24
157	10	0.25	0.7	2.80
158	8	0.34	0.9	2.00
159	5	0.24	0.7	1.2
160	5	0.30	0.9	2.30
Weighted Av.	40'	.298	.81	2.28

The average of seven samples taken from the south end of the pit shows as follows:

Gold 0.298 ounces Silver 0.7 oz Copper 2.22%

This is over 40 feet wide at this place.

The vein still shows low grade ore on south wall.

Sample 140	6 ft	Gold 0.08	Silver 0.2	Copper 0.7
Sample 141	8 ft	Gold 0.12	Silver 0.2	Copper 0.4

These two samples represent the wall of the vein 140 being at 30 feet from the shaft and 141 being at the s.w. corner of the stope, the vein here being about 6 feet wide.

VALUE OF CARS OF ORE SHIPPED FROM FIFTY FOOT STOPE

Seven cars of lot 41 to 49 were extracted and shipped from the stope above the fifty foot level. These were shipped to the American Smelting and Refining Company, El Paso Smelter. The shipment amounted to 688,596 lbs 344.3 ton averaged Gold 0.171 Silver 0.6 Copper 2.34%.

SAMPLES OF ORE ASSAYED IN 50 FOOT WORKINGS

STOPE PLAN OF STOPE AND DRIFTS AT 50 FEET

30 Pillar
31
N70 W Drift
29 2827

25 26
S70e Drift
32
SHAFT 20 21 22

SIDES OF DRIFT # 70 DEGREES E 22 FEET

	Length	Gold	Silver	Copper
Sample 20	5	0.20	0.5	2.40%
" 21	5 to 11½	0.50	0.9	2.40%
" 22	11½ to 20	0.24	0.7	0.5
" 23	3 ft loin	0.61	0.0	4.90
" 24	4 ft 2 in	0.52	0.9	2.8
" 25	8 ft 3	0.44	1.1	1.5
" 26	10 ft	0.20	0.7	0.8

SAMPLES FROM DRIFT N 70 W

No.	Width	Gold	Silver	Copper
27	10 ft	0.51	1.3	1.3 %
28 6 in vein		0.40	1.4	14.8%
29	10 to 20 ft	0.40	1.0	2.40
30	15 ft south wall	0.51	1.0	2.20
31 6 in vein		0.48	1.4	12.5
32	S.E. end shaft	0.56	1.1	6.7

SAMPLES FROM ORE IN FIFTY FOOT STOPE

1 A Manly Top Stope	0.20	0.90	1.8% 86Lilica
1 A Richards "	0.16	0.54	2.0
2 A Crab Bottom "	0.10	0.40	2.0
1 A Mandt Top Stope	0.15	0.55	3.50
4 A Bottom Stope 100 ft	0.14	0.56	6.8
5 A Top of Stope " "	0.08	0.50	4.3
6 Sample Vein S of shaft	0.12	0.58	3.3

These samples were taken in April 1929 and represent the exact value of the ore now showing in the top of the stope.

Sample No 4 A was taken from the large pieces of ore in bottom of the stope and shows a width of ten feet here. This place represents a big change in the value of the copper content.

It would appear that at this point the copper value has become more enriched. I would look for this grade of ore to continue downward.

SAMPLES TAKEN FROM SHAFT AT 100 FEET

SAMPLE NO.	Gold	Silver	Copper
231 Drill from 5 ft hole west side of shaft	0.17	0.7	2.4
232 Drillings from hole 5 ft deep near side	0.16	0.7	2.7
237 Drilling from hole 6 ft in S.W. Drift	0.16	0.7	4.0

GENERAL SAMPLE OF ORE
100 feet to 200

Grab over ore in pit from 100 to 200 feet

Gold	Silver	Copper
0.30	0.8	2.00%

I was not at the mine when the shaft was sunk from the 100 foot level to 246. I understand that not many assays were made.

No sulphide ore was encountered in sinking to a depth of 246 feet.

No cross cutting was made across the vein. The shaft I think is north of the main ore body and is more in the foot wall than in the vein proper.

ORE SHIPMENTS FROM MINE

A total of 62 cars of ore has been shipped from the property. Fifty five were shipped by W. H. and R. P. Paul and seven by Mr. Grubnau and Miller. I do not have the returns on Mr. Grubnau and Mr. Miller. The returns are shown in statement accompaning the report.

SMELTER RETURNS

The results obtained from the smelter; The cost of treatment is as follows:

Hauling ore to Waldo from Mine	$ 2.15
Freight Waldo to El Paso	2.50
Treatment charge on Ore	3.50
	$ 8.15
Cost of mining	2.00
Total	$10.15

These are too high to make the low grade ore pay.

TESTS MADE ON THE ORE

The ore consists of Copper Carbonate about 3.% copper Insluble 86% No Lime Iron 3.5% The iron is insoluble in acid and is combined with the silicea and is not soluble unless fused.

TESTS MADE ON ORE FROM MINE

SURFACE ORE:

Sample take over outcroptof the vein.

Weight 100 grams Gold 0.50 Silver 0.70 Copper 5.70

Leached with 8 grams of Ferric Sulphate and 30 grams of Sulphuric Acid.

Extraction by Amalgation after leaching with Sulphuric Acid.

Gold 0.32 Copper 0.28 ACE

Extracted 54% of Gold All copper

EXTRACTION BY SODIUM CYANIDE

HEADS	Gold	0.50AG	0.70	Copper 0.20 to trace
TAILS	Gold	0.02	0.00	Copper None

Extraction of Gold 96% Extraction of Silver 100% Extraction of Copper 100.00

Test made at Colorado School of MinesDecember 1925.

The test made by amalgamation was not very satisfactory. It was found that it was necessary to extract all the copper before the Gold would amalgamate. This was done by heating the Sulphuric Acid solution.

The test by Cyanide showed a complete extraction of both gold and silver.

TESTS MADE ON ORES FROM THE MINE

The following samples were taken from the mine Stopes from the 50 foot level and from the 100 foot level.

SAMPLE	GOLD	SILVER	COPPER
No 1 Top of Stope 10 feet	0.15	0.55	3.50
No 2 Broken ore in stope	0.10	0.40	2.0
These samples were taken from the 50 foot stope.			
No 4 Ore in Bottom 10 feet wide	0.14	0.56	6.8%
No 5 Ore in top of stope	0.08	0.50	4.3
No 6 Grab of Ore south stope 100 foot level	0.12	0.50	3.3

METHOD OF MAKING TESTS

These tests were made at the Colorado State School of Mines at Golden, Colorado and at the office of Richards and Son, Denver, Colorado Assays were made by E. N. Mandy, Leadville, Colorado and by Richards and Sons.

LEACHING WITH SULPHURIC ACID

Test	Amount	Sample	Assays. Gold	Silver	Copper
No 1	50 grams	No 1	0.16	0.55	3.5
	Leached with Sulphuric Acid 10cc and hot water.				
No	50		0.16	0.55	0.3
	This was leached a second time with sulphuric acid.				
No 1	50	No 1	0.16	0.55	0.0
			Complete leaching of copper being effected.		

The tailing from this No 1 Sample were treated with Sodium Cynanide solution.

The Tailings were assayed by J. W. Richards and Sons

No 1 Gold trace Silver None

This showed a complete extraction of the Gold Copper Silver.

No.2 Test. This was made from taking from Sample No 1 and No 2 the 50 foot level and stope and mixing equal amount of ore from No 4 Sample from 100 feet.

	Weight	ASSAYS Gold	Silver	Copper
No2 1, 2 and 4 samples	50	.016	0.55	3.40

Leaching with Lo CC Sulphuric Acid and boiling with a 5cc of Sulphuric Acid. The entire copper contents were dissolved.

The residue after leaching assayed-

		Gold	Silver	Copper
Sample No 2	50 grams	0.16	0.55	None

These were treated with a 1% Sodium Cyanide solution and tailing assayed by J. W. Richard and Son.

These samples showed a complete extraction of all the Gold, Silver and Copper.

The tailing were assayed by J. W. Richard and Son and show that it contained no gold or no silver and that every bit of the gold and silver had been extracted. The sample of the extracted metal was sent to Mr. Mandy but arrived in such a way that they could not be assayed.

TEST BY AMALGATION

After the different sample had been leached with Sulphuric Acid and all the copper extracted they were amalgated by using mercury and these were put in bottles.

No 1 Sample Mixture of No 1 and No 2 Sample from 50 foot stope and No 4 sample from No 100 stope.

This sample assayed Gold 0.14 Silver 0.80 Copper 3.45

This sample was treated with Sulphuric Acid and all the copper taken out and then treated with mercury.

Four different samples were treated this way. This was assayed and gave the following extraction:

No 1 Gold 0.13 Silver 0.15 ozs
No 2 Gold 0.13 Silver 0.20 "
No 3 Gold 0.13 Silver 0.15 "
No 4 Gold 0.13 Silver 0.20 "

No 2 sample was from the grab of the ore broken in the 50 ft stope. The sample No 2 ran Gold 0.10 Silver 0.70oz Copper 2.0%
The extraction by treatment with Sulphuric Acid and Mercury was—

Gold 0.13 Silver 0.20 Copper All

In this sample more gold was recovered that the assay of the crude ore indicated.

Sample No 4 Copper from floor of 100 ft stope width ten feet.

Sample No 4 Gold 0.14 Silver 0.56 Copper 6.8
Recovered Gold 0.13 Silver 0.20 Copper all

These different tests all indicate that by this method all of the gold most of the silver and the copper can be recovered either by amalgamating the ore using mercury or by using sodium cyanide which appears to dissolve all the gold and silver.

If mercury was used to collect the gold and silver it would be necessary to use silver plated copper plates and recover the amalagame containing the gold and silver. The Gold could be seperated by dissolving the retorted amalgam in nitric acid and dissolving the silver. This could be dissolved electricized and the silver precipitated out as pure silver. The gold would be pure gold and could be sold to the Mint at $20.67 per ounce at the U.S. Mint at Denver, Colorado.

The silver could be shipped East and sold on the market price.

The copper would be precipitated out on copper plates by using a low voltage current about 12 volts and 1500 amperes and pure electric copper be obtained. This would bring the present market price of 17½ to 18 centsper pound.

MILL FOR TREATING THE ORE

The mill for treating the ore would consist of crusher size 9x12 which would crush the ore to bin. This is now erected on the mine. From the bin the ore would go to a ball mill one about 4x6 feet which would crush one hundred tons daily from the Ball Mill. This would be ground to about 40 mesh product to amalgate or Cyanide the tailing. For dissolving the copper it would require three tanks which should be lead lined to prevent the acid from disolving the inon tanks. Nine thousand pounds of Sulphuric Acid would be used estimating that the ore would average Gold 0.25 Silver 0.7 Copper 3.5%.

The solution would be drawn off in lead pipes and would go to the precipitating boxes.

The Copper would be precipated as pure Electric Copper and the acid recovered back as Sulphuric Acid and would be stored in lead line tank where it could be pumped back by compressed air.

After the acid had dissolved out all the copper lime or rock or burnt lime could be added to dissolve the acid and the solution of a very small amount of Cyanide used to dissolve the Gold and Silver.

The solution would go to precipitating tanks using zinc either shaving or fine precipitated zinc. This would be followed by a small press and the gold and silver precipitate. This could be melted and refined. Apparently the process would work by using Silver Copper plates and the gold and silver recover. I believe the Cyanide would be the best to use as it would dissolve all the silver.

POWER

The plant would be driven by electric power. Electric Power can be obtained from the Cirrillos and Madrid Coal Mining Company by building a line six miles in length. The current generated is 60 2200 volts. They have two 1000 H.P. Generator sets at the coal mine. They have offered this power at a price of two cents a kilowatt hour plus a service cost of $1.50 per month. This is about as low a price as can be obtained any place.

It might be possible to obtain a Deisel Oil Engine of 150 H.P. Completed with Generator of 150 H.P. located in New Mexico. This plant is not being used as has had very little work. This would generate power at probable one cent and it may be obtained as cheap as the electric line would cost. I am now negociating for this plant.

They are now building a high voltage line from Ferjimillo to Santa Fe, New Mexico. This line will be 44,000 volt and would require a very expensive transformers to reduce and as we would not need over 200 H.P. it would be better to get the power from the Los Cerrillos and Madrid Coal Company or the Deisel Engine.

EQUIPMENT

The present equipment consists of a gallows from fifty-five feet in height. Two sets Ore bins about 20X20 square and 20 feet high.

The Equipment consists of a Sullivan Air Compressor Belt driven Size 8X10 with capacity to drive two air drills.

The power for driving the Sulivan Air Compressor is a Buick six cylinder gasoline engine of 50 H.P. This is connected by a belt to the air compressor.

The hoist is a 15 H.P. Gasoline engine connected to a single drum and operated by breaks. There are two large buckets and rope of 500 feet.

There is one Denver Rock drill with 170 lbs of drill steel.

A complete Blacksmith shop with bellows pipe connecting to the air tank and necessary equipment to sharpen machine drills.

A large receiver tank 5X20 is connected to the air compressor.

There is a Reo One and one half ton truck and a touring car Chevrolet Modle 1923.

A small house has been built on the property for the accomodation of the foreman.

This equipment is ample to operate the mine.

There is a chest of carpenter tools saws brace axes shovels picks hamers; also a Drill Column for attaching the drill to when drilling.

ORE IN SIGHT

The present shaft is now 246 feet deep. The ore shows in the pit a width of 40 feet from wall to wall. The pit shows a lenght of 50 feet from the shaft to the wall. The wall shows the vein continuing into the mountain.

At 50 feet there has been made a cross drift and stope. This shows the vein 40 feet wide and continuing to the southeast.

At the 100 foot level a drift has been driven across the vein and shows width of 40 feet. A small stope was made and is still in ore. At the 200 foot level a drift was driven to the south and shows ore for 20 feet with ore in the face.

No cross cuts were made at the bottom.

From the present work the mine shows an ore body 40 feet wide 246 feet deep and 50 feet long and will probably continue another 50 feet.

The ore in sight is 40 feet wide by 50 feet long and 246 feet deep. This would show 49,200 tons of ore which I believe will average Gold 0.25 Silver 0.70 Copper 3.50%.

With a leaching Plant the Copper Gold Silver can all be recovered. The ore would bring:

Gold 0.25 ozs at 20.67		$5.27
Silver .7 " " .22		.36
Copper 3.50% 70 lb at 18		11.60
	Value	17.23

COST OF MINING AND TREATING THE ORE

MINING COSTS

On a hundred ton basis the ore can be mined for fifty cents per ton. Stopes can be so made that the ore can be mined in large quantities and raised to the surface.

MILLING COST

To treat 100 tons it requires two men on shift per day or on three shift. 6 men at $5.00 or $30.00.

Electric Power generated at 2 cents a kilo watt hour would cost about $100 a day.

Shipping Copper to New York at $12.50 per ton on 105 tons would be $1312.50 or $0.437 per ton.

Hauling could be done in the company truck for $1.00 per ton or a cost of $.035 cent s per ton on Hundred ton basis.

Acid Expense - Ten Thousand pounds required to dissolve copper.

10,000 lbs of Sulphuric Acid will cost in Denver $2.00 per One Hundred pounds and $15.00 for 1,500 lb drums. These are used to ship the acid and are credited back when returned to Denver.

COST SULPHURIC ACID

10,000 lbs Sulphuric Acid at Denver	$200.00
7 Barrels at $15.00	105.00
Freight Denver to Waldo	150.00
Total amount	$455.00

This acid would be used over and over, being regenerated by the electric precipitation of the copper.

QUICK SILVER

This is qouted at $128.00 per 75 lb flask. Freight would be $1.30 per 100 pounds. This could be used with amalgating plates, but I believe the Cyanide method would also recover the silver and gold.

SODIUM CYANIDE

This would cost about 20 cents a pound. The amount necessary to disolve the gold and silver would not be over one half a pound or 50 lbs about $10.00 a 100 tons or ten cents to recover the Gold and Silver per ton. About one half of the Cyanide is regenerated when the Gold and Silver contents are precipitated by zinc.

ZINC PRECIPITATION

Fine zinc in powder form is now generally used to precipitate the Gold and Silver present in the Cyanide Solution. This would cost about ten cents a pound. On an estimate that the solution will contain 0.25 ozs Gold and 0.7 oz. Silver 100 ton would contain about 95 ounces or it would require about 8 lbs of zinc powder to predipitate the gold and silver.

OTHER COSTS

It would be necessary to seperate the Gold and Silver. This can be done by dissolving the gold and silver in nitric acid. The silver could be recovered as pure silver electrically precipitate. The gold

would be shipped to the United States Mint at Denver and would be paid for at $20.67 per ounce. It might be that the Mint would be willing to buy the silver with the gold. This would have to be arranged with them. They would charge a refining charge to seperated the gold and silver that would probably be more than it would cost at the mine.

There would be small express charge from Waldo to the Denver Mint.

PRODUCTION

I estimate that the ore will run as follows:

Gold	0.2[illegible] oz. per ton at 20.67 per oz		$ [illegible].27
Silver	.10 " " " " .[illegible] " "		.36
Copper	0.10% or 70 lbs per ton 11 cent lb		11.00
	Value per ton		17.23

COST OF PRODUCTION

Mining 100 tons at	$1.00 per ton	$1.00	
Milling 100 tons at	2.00 " "	2.00	
Royality at 10% on	11.73 " "	1.17	
	Cost per ton	$4.17	4.17
	Net value per ton		13.06

On Basis of 100 tons a day this would net $1306.00

On basis of 3000 tons a month this- net 39180.00

RESPECTFULLY SUBMITTED

Consulting Mining Engineer

40,000 ÷ 100 = 400 days ore [illegible]
$1,300. X 400 = $520,000.

REPORT
ON
CASH ENTRY NO. 105 AND OTHER MINES
IN
LOS CERRILLOS MINING DISTRICT
SANTA FE COUNTY NEW MEXICO

BY
W.H. PAUL

CONSULTING MINING ENGINEER
August 1929

PROPERTY

This property Cash Entry No 105 was originally known as the Copper Hill Tract and consists of 160 acres being the North East $\frac{1}{4}$ of Section 30 in Township 15 Range 8 East in Santa Fe County New Mexico.

This was patented as Cash Entry No. 105 and this has all the mineral rights.

VEINS

In this tract of land there are a mumber of veins. The Geology and the formation is the same as the Evelyn Gold Copper Mine and consists of overflows of Andesite Porphyry. This has been fissured and forms the main veins of this section.

TOM PAYNE VEIN

This has been one of the important mines of this section. The Tom Payne Mine lays about 300 feet south of the south line of the Cash Entry Mine No 105. The Tom Payne Mine has a shaft 300 feet in depth and three level at 100-200 and 300 feet. Level No 200 has been driven north to the line of Cash Entry No 105.

At this point the vein shows a width of five feet and runs 8% Lead 15% zinc and 3 ozs Silver.

No ore was encountered on the Tom Payne Mine until it readhed a depth of One hundred feet and from there down the ore turned to sulphides of lead zinc and carried silver. The vein shows a width of from 5 to 15

feet. The ore occuring in solid form and easily seperated from the gangue. The walls have a soft streak of talc between the ore and the porphy which makes it very easy to mine and the costs are very low.

The ore occurs as a lead zinc sulphide. 3,500 tons of ore were treated at a Concentrating Mill at Los Cerrillos, New Mexico. The ore averaged 5% lead 15% zinc and 3 oz silver. The concentrates ran 60% lead 25 oz silver and the zinc concentrates averaged 45% zinc. The ore was crushed by Crusher Rolls and Put over W Wilfley Table. The Tailing run 4% lead and 6 to 8% zinc so the the saving was not very good. With a modern mill using flotation a much better saving can be accomplished and higher values in both the lead and zinc concentrates obtained.

This vein passes thru the Cash Entry No 105 for the entire distance of about one mile. There are numbers of shafts and the out crop will average 6 feet wide None of the shafts are over twenty feet deep and show only slow grade ore carying a lettle lead silver and zinc. This vein shouldchange to sulphides at 100 feet and should make a very good mine lead, zinc silver.

No. 1 VEIN

About 300 feet south of the out crop of the Tom Payne Vein this is shaft 25 feet dum which shows a quartz vein about five feet wide. A sample take on this vein from quartz gave 3.76 ounces Gold. Sample from the dump ran 0.56 oz Gold. This vein shows the best gold values found here. Do you thing this is the vein Patterson had Alex do smoe work on? There has been no work done on it except this one shaft. The vein continues to the east, averages about 5 feet wide. This is about 300 feet east of the west line of the tract.

No.2 VEIN

About the middle of the Cash Entry Claim No 105 and about 300 feet south of the north side there is a pit about ten feet deep. There there

is a deposit of copper about 10 feet thick samples take of the ore on the dump ran - Gold 0.20 oz Copper from 7.5% to 12% and some samples ran 14 oz Silver.

DEPOSIT OF IRON ORE

There is a deposit of Magnetic Iron ore out cropping in the gulch about the middle of the Cash Entry No 105. This shows about ten feet wide and extends for about 100 feet. This assays 70% iron. It has no value in Lead Zinc or Copper. It would be valuable to be used to flux the lead ore if a smelter were erected to treat the lead concentrates.

CONCLUSION

The ore deposits on the Cash Entry No 102 have never been developed. The surface and pits sunk on the vein show veins of 6 feet wide.

From the ores found in the Tom Payne Mine this should pass into a Lead Zinc Silver. Sulphide ore and there should be found a very large tonnage of this class of ore.

The surface deposits of Copper appear to be the same as the Evelyn Gold Copper mine and care about the same amount of Gold Better Silver and more copper. In one way this may be the Evelyn Vein as the outcrop is covered with debris and no work has been done to open it up. The direction on the outcrop is about the same as the Evelyn Deposit and this may be the continuation of this mine.

Limestone outcrop occur in the Cienega Creek of a good grade of and show good grade of Limestone. This could be obtained and used as a flux should a Smelter be installed.

At Waldo there are the old furnaces of the Cerrillos and Albuquerque Coal Mines which at one time were used to produce coke. This could now be used again and an excellent grade of coke obtained.

BROWN GOLD COPPER MINE

A Cross cut tunnel about 250 feet long was driven from this claim

into the mountain. Two low grade veins were cut in this tunnel. This could be driven ahead and considerable depth obtained by driving on these vein. The veins are not being encountered at sufficient depth to find ore.

RESPECTFULLY SUBMITTED

_____

Consulting Mining Engineer

REPORT
on the

EVELYN GOLD COPPER MINING PROPERTIES AND COPPER HILL TRACT

SITUATED IN

CERRILLOS MINING DISTRICT

SANTA FE COUNTY

By

W. H. PAUL, M. E.

COUNSULTING MINING ENGINEER

August 1929

PROPERTY

The Property consists of the following patented Mining Claims:

THE EVELYN GOLD COPPER MINE
THE MANHATTAN GOLD COPPER MINE
THE BROWN GOLD COPPER MINE
THE SHANNON LODE CLAIM
THE SANTA ROSA MINE

These are known as the EVELYN GOLD COPPER GROUP of mines and are designated by the surveyer General of New Mexico as Survey No. 1659, containing 60.40 acres.

The Copper Hill Tract: This consists of the North East 1/4 of Section 30. in T.15 R.8 E of Santa Fe County New Mexico. This contains 160 acres. This is known as Cash entry No 105 and Cash Entry No 101. These cash entry claims hold all the mineral rights.

The EVELYN GOLD COPPER GROUP is situated in Section 10 and 20 in Township 15 North of range 8 East of New Mexico Maridian.

The Mines are located twenty miles due south of Santa Fe, New Mexico and about five and one half miles to Waldo Station on the Atchison-Topeka and Santa Fe Railroad.

There is a good automobile road from Santa Fe to the mines. A good road down grade of 51/2 miles to Waldo where the ore can be loaded on the railroad. The mines are located at the foot of a range of Mountains at about an elevation of 6000 feet above Sea level.

TITLE

The present title rests in W. H. Paul who has a two years lease and Option of $30,000 on the mine. The Royality on the ore is ten per cent of the net value. The Net Value is the amount left after deducting the cost of the hauling Freight smelting charges. In case the ore is treated at the mine the cost of treatment will be deducted.

GEOLOGICAL FORMATION

The Geological Formation consists of Andisite Porphyry. The vein is a deposit about fourty feet wide and appears to have acourse about S43 degrees West. In the Old Spanish Mine which is located about one half mile south of the Evelyn Mine, in this shaft the shale was cut at a depth of 300 feet. Just how deep the shale is, is not know, but would probably be 500 feet. Limestone deposit occur below the shale in the Santa Fe Creek and show about 50 ft thick of Limestone underlaying the shale.

Below the Limestone the Granite rocks occur.

It is probable that the Andesite porphyry will be thicker in the Evelyn Mine than in the old Spanish mine. The present shaf has been sunk to a depth of 246 feet. So far no Sulphide ore has been found, the ore occuring as a very silicious ore avering 86 Silica. The copper occurs as a Carbonate of Copper the whole average of the vein being about 3%. The Gold Contents average about of an ounce and Silver averages from one half an ounce to ounce.

DEVELOPMENT

The principal development has been made EVELYN GOLD COPPER MINE. This consists of a shaft which has been sunk to a depth of 247 feet.

The vein of the Evelyn Mine shows a width of forty feet from wall to wall. An open pit was sunk on the vein to a depth of about 25 feet and for a length of fifty feet. From this open cut fifty-five carloads of 50 tons each was shipped to the El Paso Smelter. This is shown on report sheets accompaning this report.

The following Drifts have been driven from the shaft at fifty feet deep. A drift is run across the vein for 40 feet. Theirt is a stope on the south side which shows about 25 in length and 20 feet high.

On the East side of the shaft a drift was driven about 30 feet, This showed 20 feet of ore and then porphyry.

A drift was driven 30 feet N. 50 degrees from the shaft and a small raise put up.

At one hundred feet deep-

A drift was driven about 26 feet N.50 W.

A small stope was made on the south side of the shaft.

A drift was driven from the shaft to the south for about 30 feet, arai and chute was put in at 20 feet and a small stope made here.

At the 200 ft. level a short cross cut was made on the vein.

At the 247 foot bottom of the shaft no work has been done.

ASSAYS OF THE VEIN

The Map accompaning this report shows where the ore was taken from and the numbers on the map indicate the number of the sample on the map.

SAMPLES OF THE ORE FROM DUMPS AND SURFACE

		Gold	Silver	Copper	Insoluble
Vein Out Crop	No.1 East of Shaft	0.44	1.00	3.4	88%
" " "	No.2 Dump on North	0.45	0.7	2.8	54
" " "	No.3 Dump to North	0.45	0.6	2.3	89
" " "	No.4 East Dump	0.52	1.0	5.3	56.2
" " "	No.5 Dump West	0.56	0.9	4.4	53.6

These show the grade and class of ore. The Dump samples represent the ore that was mined out from the surface to the 100 ft level.

The ore was mined from an open cut and fifty five cars were shipped to the El Paso Smelter of the American Smelting and Refining Company.

The first ten cars were taken from the dump. This represents the ore that was mined from sinking the shaft to a depth of 100 ft. The shaft is fifteen feet long and 6 feet wide and a small tonnage obtained from the short drifts at the 50 foot level.

From the dump there was shipped 441.32 Ton. This ore averaged according to the American Smelting and Refining Company, returns net tons 441.32 Gold 0.271 Silver 0.82 Copper 3.00%. This includes part of the ore taken from the surface.

The ore was settled on a basis of Copper Deduct 8 lbs from assay, this amount added to the assay of 0.4 should make the copper contents average 3.40%. The average price for copper was 13.38 cent per pound, from which was deducted 2.50 cents per pound and copper was settled on a basis of 10.88 cents per pound. Gold was paid for at $19.50 per ounce. Silver was settled on a deduction of 0.50 ounce deducted, giving an average of 0.2 at 532 cent gave 11 cents.

These shipments represent the value of the ore that came from the shaft for a distance of 100 feet.

ORE FROM SURFACE PIT

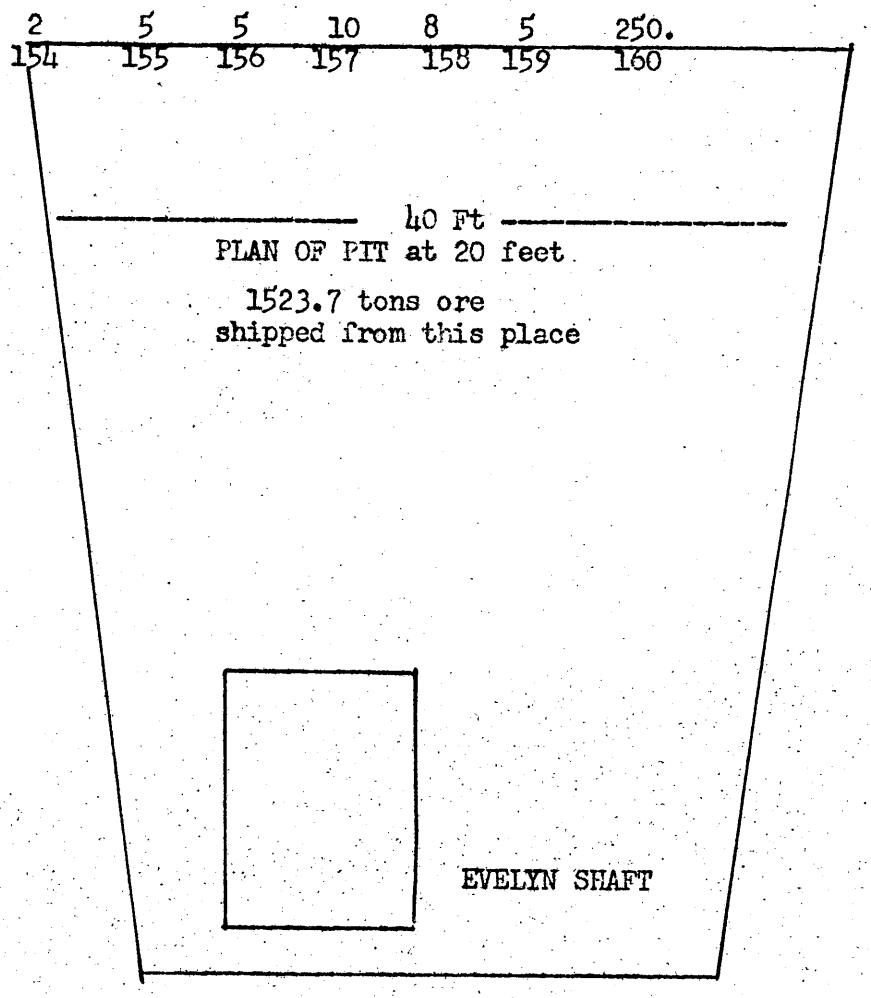
Thirty carloads of ore were extracted from the pit to the Southwest of the shaft. The ore averages about 40 feet wide across the vein and for 50

feet from the shaft and to a depth of 20 feet across this stope.

The ore taken out here amounted to 3,047,380 pounds or 1,523.69. This ore brought from the returns of the American Smelting and Refining Co. El Paso Smelter.

Gold ozs 0.2125 Silver 0.67 Copper 2.47%

The South west face of this stope gave to follows assays



Results of samples taken across face of pit at depth of 20 feet and about 50 feet from shaft:

Sample No.	Width	Gold	Silver	Copper
154	2 ft.	0.25	0.6	2.2%
155	5	0.36	0.9	1.8
156	5	0.34	0.9	3.24
157	10	0.25	0.7	2.80
158	8	0.34	0.9	2.00
159	5	0.24	0.7	1.2
160	5	0.30	0.9	2.30
Weighted Av.	40'	.298	.81	2.28

The average of seven samples taken from the south end of the pit shows as follows:

Gold 0.298 ounces Silver 0.7 oz Copper 2.22%

This is over 40 feet wide at this place.

The vein still shows low grade ore on south wall.

Sample 140	8 ft	Gold 0.08	Silver 0.2	Copper 0.7
Sample 141	8 ft	Gold 0.12	Silver 0.2	Copper 0.4

These two samples represent the wall of the vein 140 being at 30 feet from the shaft and 141 being at the s.w. corner of the stope, the vein here being about 8 feet wide.

VALUE OF CARS OF ORE SHIPPED FROM FIFTY FOOT STOPE

Seven cars of lot 41 to 49 were extracted and shipped from the stope above the fifty foot level. These were shipped to the American Smelting and Refining Company, El Paso Smelter. The shipment amounted to 688,596 lbs 344.3 ton averaged Gold 0.171 Silver 0.6 Copper 2.34%.

SAMPLES OF ORE ASSAYED IN 50 FOOT WORKINGS

STOPE PLAN OF STOPE AND DRIFTS AT 50 FEET

30 Pillar
31
N70 W Drift
29 2827

25 26
S70e Drift
32
SHAFT 20 21 22

SIDES OF DRIFT # 70 DEGREES E 22 FEET

	Length	Gold	Silver	Copper
Sample 20	5	0.20	0.5	2.40%
" 21	5 to 11½	0.50	0.9	2.40%
" 22	11½ to 20	0.24	0.7	0.5
" 23	3 ft loin	0.61	0.0	4.9c
" 24	4 ft 2 in	0.52	0.9	2.8
" 25	8 ft 3	0.44	1.1	1.5
" 26	10 ft	0.20	0.7	0.8

SAMPLES FROM DRIFT N 70 W

No.	Width	Gold	Silver	Copper
27	10 ft	0.51	1.3	1.3 %
28 6 in vein		0.40	1.4	14.8%
29	10 to 20 ft	0.40	1.0	2.40
30	15 ft south wall	0.51	1.0	2.20
31 6 in vein		0.48	1.4	12.5
32	S.E. end shaft	0.56	1.1	6.7

SAMPLES FROM ORE IN FIFTY FOOT STOPE

1 A Mandy Top Stope	0.20	0.90	1.8% 86Lilica
1 A Richards "	0.16	0.54	2.0
2 A Grab Bottom "	0.10	0.40	2.0
1 A Mandt Top Stope	0.15	0.55	3.50
4 A Bottom Stope 100 ft	0.14	0.56	6.8
5 A Top of Stope " "	0.08	0.50	4.3
6 Sample Vein S of shaft	0.12	0.58	3.3

These samples were taken in April 1929 and represent the exact value of the ore now showing in the top of the stope.

Sample No 4 A was taken from the large pieces of ore in bottom of the stope and shows a width of ten feet here. This place represents a big change in the value of the copper content.

It would appear that at this point the copper value has become more enriched. I would look for this grade of ore to continue downward.

SAMPLES TAKEN FROM SHAFT AT 100 FEET

SAMPLE NO	Gold	Silver	Copper
231 Drill from 5 ft hole west side of shaft	0.17	0.7	2.4
232 Drillings from hole 5 ft deep near side	0.16	0.7	2.7
237 Drilling from hole 6 ft in S W. Drift	0.16	0.7	4.0

GENERAL SAMPLE OF ORE
100 feet to 200

	Gold	Silver	Copper
Grab over ore in pit from 100 to 200 feet	0.30	0.8	2.00%

I was not at the mine when the shaft was sunk from the 100 foot level to 246. I understand that not many assays were made.

No sulphide ore was encountered in sinking to a depth of 246 feet.

No cross cutting was made across the vein. The shaft I think is north of the main ore body and is more in the foot wall than in the vein proper.

ORE SHIPMENTS FROM MINE

A total of 62 cars of ore has been shipped from the property. Fifty five were shipped by [illegible]. H. and R. B. Paul and seven by Mr. Grubnau and Miller. I do not have the returns on Mr. Grubnau and Mr. Miller. The returns are shown in statement accompaning the report.

SMELTER RETURNS

The results obtained from the smelter; The cost of treatment is as follows:

Hauling ore to Waldo from Mine	$ 2.15
Freight Waldo to El Paso	2.50
Treatment charge on Ore	3.50
	$ 8.15
Cost of mining	2.00
Total	$10.15

These are too high to make the low grade ore pay.

TESTS MADE ON THE ORE

The ore consists of Copper Carbonate about 3.% copper Insluble 86% No Lime Iron 3.5% The iron is insoluble in acid and is combined with the siliaca and is not soluble unless fused.

TESTS MADE ON ORE FROM MINE

SURFACE ORE:

Sample take over outcroptof the vein.

Weight 100 grams Gold 0.50 Silver 0.70 Copper 5.70

Leached with 8 grams of Ferric Sulphate and 30 grams of Sulphuric Acid.

Extraction by Amalgation after leaching with Sulphuric Acid.

Gold 0.32 Copper 0.28 ACE

Extracted 54% of Gold All copper

EXTRACTION BY SODIUM CYANIDE

HEADS	Gold	0.50AG	o.70	Copper 0.20 to trace
TAILS	Gold	0.02	0.00	Copper None

Extraction of Gold 96% Extraction of Silver 100% Extraction of Copper 100.00

Test made at Colorado School of MinesDecember 1925.

The test made by amalgamation was not very satisfactory. It was found that it was necessary to extract all the copper before the Gold would amalgamate. This was done by heating the Sulphuric Acid solution.

The test by Cyanide showed a complete extraction of both gold and silver.

TESTS MADE ON ORES FROM THE MINE

The following samples were taken from the mine Stopes from the 50 foot level and from the 100 foot level.

SAMPLE	GOLD	SILVER	COPPER
No 1 Top of Stope 10 feet	0.15	0.55	3.50
No 2 Broken ore in stope	0.10	0.40	2.0
These samples were taken from the 50 foot stope.			
No 4 Ore in Bottom 10 feet wide	0.14	0.56	6.8%
No 5 Ore in top of stope	0.08	0.50	4.3
No 6 Grab of Ore south stope 100 foot level	0.12	0.50	3.3

METHOD OF MAKING TESTS

These tests were made at the Colorado State School of Mines at Golden, Colorado and at the office of Richards and Son, Denver, Colorado Assays were made by E. P. Mandy, Leadville, Colorado and by Richards and Sons.

LEACHING WITH SULPHURIC ACID

Test	Amount	Sample	Assays. Gold	Silver	Copper
No 1	50 grams	No 1	0.16	0.55	3.5
	Leached with Sulphuric Acid 10cc and hot water.				
No	50		0.16	0.55	0.3
	This was leached a second time with sulphuric acid.				
No 1	50	No 1	0.16	0.55	0.0
	Complete leaching of copper being effected.				

The tailings from this No 1 Sample were treated with Sodium Cynanide solution.

The Tailings were assayed by J. W. Richards and Sons

No 1 Gold trace Silver None

This showed a complete extraction of the Gold Copper Silver.

No.2 Test: This was made from taking from Sample No 1 and No 2 the 50 foot level and stope and mixing equal amount of ore from No 4 Sample from 100 feet.

	Weight	ASSAYS Gold	Silver	Copper
No2 1, 2 and 4 samples	50	.016	0.55	3.40

Leaching with Lo CC Sulphuric Acid and boiling with a 5cc of Sulphuric Acid. The entire copper contents were dissolved.

The residue after leaching assayed-

		Gold	Silver	Copper
Sample No 2	50 grams	0.16	0.55	None

These were treated with a 1% Sodium Cyanide solution and tailing assayed by J. W. Richard and Son.

These samples showed a complete extraction of all the Gold, Silver and Copper.

The tailing were assayed by J. N. Richard and Son and show that it contained no gold or no silver and that every bit of the gold and silver had been extracted. The sample of the extracted metal was sent to Mr. Handy but arrived in such a way that they could not be assayed.

TEST BY AMALGATION

After the different sample had been leached with Sulphuric Acid and all the copper extracted they were amalgated by using mercury and these were put in bottles.

No 1 Sample Mixture of No 1 and No 2 Sample from 50 foot stope and No 4 sample from No 100 stope.

This sample assayed Gold 0.14 Silver 0.80 Copper 3.4%

This sample was treated with Sulphuric Acid and all the copper taken out and then treated with mercury.

Four different samples were treated this way. This was assayed and gave the following extraction:

No 1	Gold 0.13	Silver 0.15 ozs
No 2	Gold 0.13	Silver 0.20 "
No 3	Gold 0.13	Silver 0.15 "
No 4	Gold 0.13	Silver 0.20 "

No 2 sample was from the grab of the ore broken in the 50 ft stope. The sample No 2 ran Gold 0.10 Silver 0.70oz Copper 2.00%

The extraction by treatment with Sulphuric Acid and Mercury was-

Gold 0.13 Silver 0.20 Copper All

In this sample more gold was recovered that the assay of the crude ore indicated.

Sample No 4 Copper from floor of 100 ft stope width ten feet.

Sample No 4	Gold 0.14	Silver 0.56	Copper 6.8
Recovered	Gold 0.13	Silver 0.20	Copper all

These different tests all indicate that by this method all of the gold most of the silver and the copper can be recovered either by amalgamating the ore using mercury or by using sodium cyanide which appears to dissolve all the gold and silver.

If mercury was used to collect the gold and silver it would be necessary to use silver plated copper plates and recover the amalagame containing the gold and silver. The Gold could be seperated by dissolving the retorted amalgam in nitric acid and dissolving the silver. This could be dissolved electricized and the silver precipitated out as pure silver. The gold would be pure gold and could be sold to the mint at $20.67 per ounce at the U.S. Mint at Denver, Colorado.

The silver could be shipped East and sold on the market price.

The copper would be precipitated out on copper plates by using a low voltage current about 12 volts and 1500 amperes and pure electric copper be obtained. This would bring the present market price of 1775 to 18 cents per pound.

MILL FOR TREATING THE ORE

The mill for treating the ore would consist of crusher size 9x12 which would crush the ore to bin. This is now erected on the mine. From the bin the ore would go to a ball mill one about 4x6 feet which would crush one hundred tons daily from the Ball Mill. This would be ground to about 40 mesh product to amalgate or Cyanide the tailing. For dissolving the copper it would require three tanks which should be lead lined to prevent the acid from disolving the inon tanks. Nine thousand pounds of Sulphuric Acid would be used estimating that the ore would average Gold 0.25 Silver 0.7 Copper 3.5%.

The solution would be drawn off in lead pipes and would go to the precipitating boxes.

The Copper would be precipated as pure Electric Copper and the acid recovered back as Sulphuric Acid and would be stored in lead line tank where it could be pumped back by compressed air.

After the acid had dissolved out all the copper lime or rock or burnt lime cold be added to dissolve the acid and the solution of a very small amount of Cyanide used to dissolve the Gold and Silver.

The solution would go to precipitating tanks using zinc either shaving or fine precipitated zinc. This would be followed by a small press and the gold and silver precipitate. This could be melted and refined. Apparently the process would work by using Silver Copper plates and the gold and silver recover. I believe the Cyanide would be the best to use as it would dissolve all the silver.

POWER

The plant would be driven by electric power. Electric Power can be obtained from the Cirrillos and Madrid Coal Mining Company by building a line six miles in length. The current generated is 60 2200 volts. They have two 1000 H.P. Generator sets at the coal mine. They have offered this power at a price of two cents a kilowatt hour plus a service cost of $1.50 per month. This is about as low a price as can be obtained any place.

It might be possible to obtain a Deisel Oil Engine of 150 H.P. Completed with Generator of 150 H.P. located in New Mexico. This plant is not being used as has had very little work. This would generate power at probable one cent and it may be obtained as cheap as the electric line would cost. I am now negociating for this plant.

They are now building a high voltage line from Perjimillo to Santa Fe, New Mexico. This line will be 44,000 volt and would require a very expensive transformers to reduce and as we would not need over 200 H.P. it would be better to get the power from the Los Cerrillos and Madrid Coal Company or the Deisel Engine.

EQUIPMENT

The present equipment consists of a gallows from fifty-five feet in height. Two sets Ore bins about 20X20 square and 20 feet high.

The Equipment consists of a Sullivan Air Compressor Belt driven Size 8X10 with capacity to drive two air drills.

The power for driving the Sulivan Air Compressor is a Buick six cylinder gasoline engine of 50 H.P. This is connected by a belt to the air compressor.

The hoist is a 15 H.P. Gasoline engine connected to a single drum and operated by breaks. There are two large buckets and rope of 500 feet.

There is one Denver Rock Drill with 170 lbs of drill steel.

A complete Blacksmith shop with bellows pipe sonnecting to the air tank and necessary equipment to sharpen machine drills.

A large receiver tank 5X20 is connected to the air compressor.

There is a Reo One and one half ton truck and a touring car Cheverolet Modle 1923.

A small house has been built on the property for the accomodation of the foreman.

This equipment is ample to operate the mine.

There is a chest of carpenter tools saws brace axes shovels picks hamers; also a Drill Column for attaching the drill to when drilling.

ORE IN SIGHT

The present shaft is now 246 feet deep. The ore shows in the pit a width of 40 feet from wall to wall. The pit shows a lenght of 50 feet from the shaft to the wall. The wall shows the vein continuing into the mountain.

At 50 feet there has been made a cross drift and stope. This shows the vein 40 feet wide and continuing to the southeast.

At the 100 foot level a drift has been driven across the vein and shows width of 40 feet. Assmall stope was made and is still in ore. At the 200 foot level a drift was driven to the south and shows ore for 20 feet with ore in the face.

No cross cuts were made at the bottom.

From the present work the mine shows an ore body 40 feet wide, 246 feet deep and 50 feet long and will probably continue another 50 feet.

The ore in sight is 40 feet wide by 50 feet long and 246 feet deep. This would show 49,200 tons of ore which I believe will average Gold 0.25 Silver 0.70 Copper 3.50%.

With a leaching Plant the Copper Gold Silver can all be recovered. The ore would bring:

Gold 0.25 ozs at 20.67		$5.27
Silver.7 " " .22		.36
Copper 3.50% 70 lb at 18		11.60
	Value	17.23

COST OF MINING AND TREATING THE ORE

MINING COSTS

On a hundred tonsbasis the ore can be mined for fifty cents per ton. Stopes can be so made that the ore can be mined in large quantities and raised to the surface.

MILLING COST

To treat 100 tons it requires two men on a shift per day or on three shaft. 6 men at $5.00 or $30.00.

Electric Power generated at 2 cnets a kilo watt hour would cost about $100 a day.

Shipping Copper to New York at $12.50 per ton on 105 tons would be $1312.50 or $0.437 per ton.

Hauling could be done in the company truck for $1.00 per ton or a cost of $.035 cents per ton on Hundred ton basis.

Acid Expense - Ten Thousand pounds required to dissolve copper.

10,000 lbs of Sulphuric Acid will cost in Denver $2.00 per One Hundred pounds and $15.00 for 1,500 lb drums. These are used to ship the acid and are credited back when returned to Denver.

COST SULPHURIC ACID

10,000 lbs Sulphuric Acid at Denver	$200.00
7 Barrels at $15.00	105.00
Freight Denver to Waldo	150.00
Total amount	$455.00

This acid would be used over and over, being regenerated by the electric precipitation of the copper.

QUICK SILVER

This is qouted at $128.00 per 75 lb flask. Freight would be $1.30 per 100 pounds. This could be used with amalgating plates, but I believe the Cyanide method would also recover the silver and gold.

SODIUM CYANIDE

This would cost about 20 cents a pound. The amount necessary to disolve the gold and silver would not be over one half a pound or 50 lbs about $10.00 a 100 tons or ten cents to recover the Gold and Silver per ton. About one half of the Cyanide is regenerated when the Gold and Silver contents are precipitated by zinc.

ZINC PRECIPITATION

Fine zinc in powder form is now generally used to precipitate the Gold and Silver present in the Cyanide Solution. This would cost about ten cents a pound. On an estimate that the solution will contain 0.25 ozs Gold and 0.7 oz. Silver 100 ton would contain about 95 ounces or it would require about 8 lbs of zinc powder to predipitate the gold and silver.

OTHER COSTS

It would be necessary to seperate the Gold and Silver. This can be done by dissolving the gold and silver in nitric acid. The silver could be recovered as pure silver electrically precipitate. The gold

would be shipped to the United States Mint at Denver and would be paid for at $20.67 per ounce. It might be that the Mint would be willing to buy the silver with the gold. This would have to be arranged with them. They would charge a refining charge to seperated the gold and silver that would probably be more than it would cost at the mine.

There would be small express charge from Waldo to the Denver Mint.

PRODUCTION

I estimate that the ore will run as follows:

Gold	0.25 oz. per ton	at $20.67 per oz	$ 5.27
Silver	.70 " " " "	.53 " "	.36
Copper	3.50% or 70 lbs per ton	18 cent lb	11.60
		Value per ton	17.23

COST OF PRODUCTION

Mining 100 tons at	$1.00 per ton	$1.00	
Milling 100 tons at	2.00 " "	2.00	
Royality at 10% on	11.73 " "	1.17	
	Cost per ton	$4.17	4.17
	Net value per ton		13.06

On Basis of 100 tons a day this would net $1306.00

On Basis of 3000 tons a Month this- net 39180.00

RESPECTFULLY SUBMITTED

Consulting Mining Engineer

40,000 ÷ 100 = 400 days ore supply
$1,300. X 400 = $520,000.

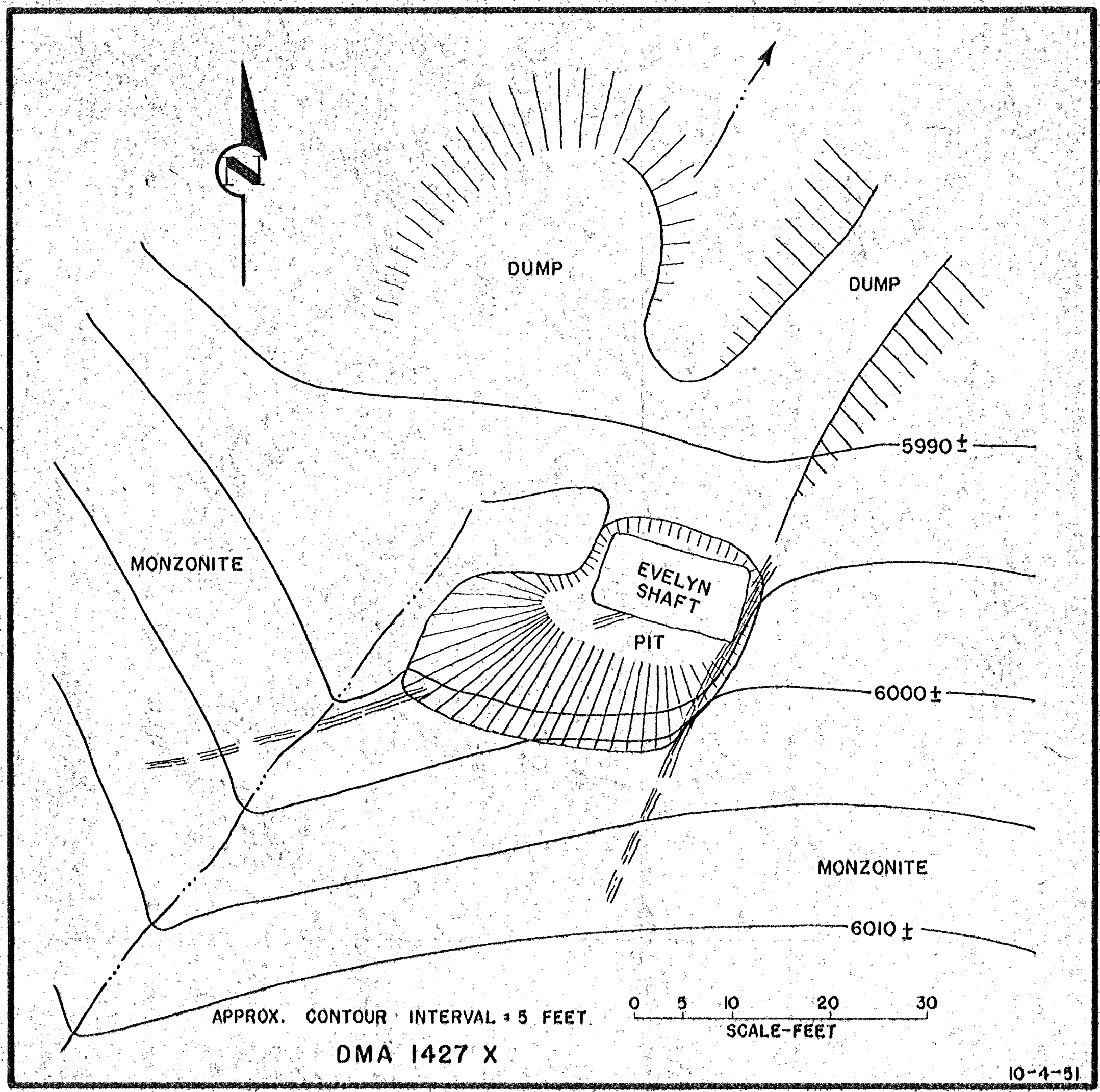


FIGURE 3.—SKETCH AT COLLAR, EVELYN SHAFT