CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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Arizona Department of Mines and Mineral Resources Mining Collection

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Or HMC file K Montana mine file. Santa Cruz Co.

MARCHIONY
4050 E. ROSEMONTE DRIVE,
PHOENIX, AZ 85024
602-569-0728

November 20, 1993

Mr. H. Mason Coggin, PE & LS
Director
State of Arizona Department of
Mines & Mineral Resources
1502 W. Washington
Phoenix, AZ 85007

Dear Mr. Coggin:

About a month ago, I visited the mineral museum and while there looked up information about the old mine at Ruby.

Some months ago, prior to my visit, my wife wrote a story about Ruby and the plans that the new owner has for the property.

Since none of this current information is in your files about Ruby, I thought you might be interested in this update.

My wife has not yet sold the story to any publication. If you might happen to know who might be interested in buying it, She would appreciate your input.

Cordially,

William Marchiony
WM/i

Mo NA (F) SANTA CRUZ CO.

ARIZONA DEPARTMENT OF HEALTH SERVICES

EVAN MECHAM, GOVERNOR
TED WILLIAMS, DIRECTOR

NOTICE OF INTENT TO (ISSUE) (A) GROUNDWATER QUALITY PROTECTION PERMIT(S)

Pursuant to Arizona Compilation of Rules and Regulations, Title 9, Chapter 20, Article 2 the Director of the Arizona Department of Health Services intends to (issue) (a) Groundwater Quality Protection Permit(s) to the following applicant(s), subject to certain special and general conditions.

Public Notice No. 38-87AZGW
Ruby Tailings Treatment Plant
K and K Mining, Inc.
P.O. Box 2706
Nogales, Arizona 85628
Township 23 South, Range 11 East, Section 5
Groundwater Quality Protection Permit No. G-0003-12

The permittee shall be authorized to operate a nondischarging cyanide heap leach for processing of old mill tailings for precious metals recovery. The facility will be located in a previously disturbed area near Ruby, Arizona twenty miles west of Nogales in Santa Cruz County. The ore pads and ponds will be constructed on existing tailings materials and will be lined with impervious synthetic liners. The pond is designed to contain all circulating fluids plus the run off from a 100 year 24 hour event.

The Notice of Disposal is available for public review Monday through Friday, 8:00 a.m to 5:00 p.m. at ADHS, Environmental Health Services, Water Permits Unit, 2005 North Central Avenue, Phoenix, Arizona 85004.

Persons may submit comments or request a public hearing on the proposed action, in writing, to ADHS at the above address within thirty (30) days from the date of this notice. Public hearing request must include the reason for such request.

RECEIVED
MAY 19 1987
DEPT. OF MINES & MINERAL RESOURCES

The Department of Health Services is An Equal Opportunity Affirmative Action Employer

Crable
Parsons
& Dooley

Certified Public Accountants, a Professional Corporation
2033 East Grant Road, Tucson, Arizona 85719 (602) 323-7147

July 11, 1985

Mr. H. A. Kinnison, President
K & K Mining, Inc.
360 E. River Road
Tucson, Arizona

Dear Mr. Kinnison,

You have asked us for our opinion as to certain aspects of the federal income tax treatment of investors in Ruby Tailings Limited Partnership. As we understand it, K & K Mining, Inc. will be the general partner (K & K) and the investors will be limited partners (Ltds.).

In the course of preparing this opinion we met with you on several occasions and are relying on information supplied by you. We have assumed that the partnership is a valid partnership and that the information you have supplied is correct. We are not qualified to express an opinion as to the accuracy or the validity of the private placement memorandum or the limited partnership agreement.

You have outlined the following program to us: The Ltds. will invest $175,000 cash in the partnership. The partnership will invest the full $175,000 in K & K. K & K will pay the costs related to the private placement and use the balance of the monies to process the tailings at Ruby, Arizona. Within 18 months the Ltds. will be repaid their investment in gold and silver, and the partnership is terminated.

Assuming that you are successful in your efforts and deliver the gold and silver to the Ltds., and gold and silver maintain a price level which results in an economic gain to the Ltds; when is their gain reportable, and is it a capital gain?

Based on current law, the Ltds. will report their gain as a long-term capital gain when (and if) they sell their gold and silver. The logic for this conclusion is as

follows: (1) the original investment by the Ltds. is not a taxable event to either the partnership or the Ltds.; it is an investment. (2) The subsequent payment by the partnership to K & K is not a taxable event to the partnership; it is also an investment, a contract for the future delivery of gold and silver. (3) The subsequent delivery to the partnership of gold and silver is not a taxable event; it remains an investment of the partnership. (4) The final distribution of gold and silver to the Ltds. in complete liquidation is not a taxable event. The basis to a partner of property received in kind in liquidation of his partnership interest is the same as the adjusted basis for his partnership interest. The holding period of a partner for property received in kind from a partnership includes the holding period of the partnership which in this case is the date, that K & K is paid.

There are three additional comments which I should make. (1) The object of the program is to provide capital gain to the Ltds. (2) Any losses of the Ltds. would be capital losses. (3) This partnership is different from most in that the program does not attempt to allocate operating expenses to the Ltds.

It is impractical to comment on all aspects of the federal and state laws that may affect the tax consequences of an investment in the partnership. The Ltds. must be encouraged to consult their own tax advisor with respect to the federal and state tax consequences of the partnership if he does not fully understand those subjects. This discussion was merely a summary of certain aspects and does not purport to be a complete analysis or listing of all potential tax risks inherent in investing in the partnership.

If there are any questions, let us know.

Very truly yours,

T. W. Parsons

Tunis Parsons

TP:kc

Montana mine
Santa Cruz Co.

OFFICE OF STATE MINE INSPECTOR

1624 WEST ADAMS, ROOM 208
PHOENIX, ARIZONA 85007-2606
(602) 255-5971

HEALTH AND SAFETY INSPECTION REPORT

COMPANY NAME: K & K MINING, INC.

MINE/PLANT NAME: Ruby Tailings

MAILING ADDRESS: P.O. Box 2706

CITY: Nogales, STATE: Az. ZIP: 85628

MINE/PLANT LOCATION: RANGE:_____, TOWNSHIP:_____, SECTION_____

Ruby Mine South of Arivaca

TELEPHONE NUMBER: IDENTIFICATION NUMBER: 10105220

STATUS: X PERMANENT _____ INTERMITTENT ____ TEMP/PORTABLE

THIS REPORT IS BASED ON AN INSPECTION MADE PURSUANT TO ARIZONA REVISED STATUTES SECTION 27-124 AND SECTION 27-128

DATE OF INSPECTION: February 23, 1987

TYPE OF OPERATION: Leaching

PRINCIPAL PRODUCT: Gold & Silver

COUNTY: Santa Cruz

COMPANY OFFICIALS:
H.A. Kinnison, President
Bruce Mattausch, Superintend

INSPECTION PARTY:

NUMBER OF EMPLOYEES: 3

H. Kinnison, President
B. Mattausch, Superintendent
Hugh Kelly, Deputy Mine Inspector
John Taylor, Deputy Mine Inspector

NO VIOLATIONS WERE OBSERVED THIS DATE

ARIZONA DEPT. OF MINES & MINERAL RESOURCES
STATE OFFICE BUILDING
416 W. CONGRESS, ROOM 161
TUCSON, ARIZONA 85701

cc; K & K Mining, Inc.

June 4, 1982

TO: Department of Mineral Resources

FROM: Janel Smith, AMPA

Re: Montana Mine, Township 23 South Range 11 East, Section 5, Santa Cruz County

Ownership confirmed with Santa Cruz County Assessor as of this date by Ruby Mines, Inc. consisting of Louis and Mary Daugherty, Genivieve G. Roberson, George A. and Dorothy Shetter, Ted Walker and Daisy Walker and Richard R. and Betty J. Frailey.

According to records in the Santa Cruz County Recorder's Office, Ruby Mines, Inc. was incorporated by all of the above on February 28, 1972 and recorded April 4, 1973. Current records in the Santa Cruz County Assessor's Office show the tax bills going to Tech Associates, 5757 Alpha Rd. #226, Dallas, Texas 75248.

The properties consists of 301.05 acres, comprised by the following patented claims:

The Philadelphia, Montana Dam, Montana Camp, Mineral No. 1 through No. 7, Mineral Survey #2206, recorded in Book 6 of Mining Deeds at page 385, Santa Cruz County, Arizona;

and

The Spear, Ruf and Ready, Protection, Laddie, Excelsior, Lerchen's Fraction, Mineral Survey #4139, recorded in Book 8 of Mining Deeds at page 262, Santa Cruz County, Arizona.

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: DON E. McCOY
   Address: BOX 171 - ARIVACA
2. Mine: MONTANA
3. No. of Claims - Patented 15
   Unpatented ?
4. Location: RUBY
5. Sec 5 Tp 23 S Range 11E
6. Mining District ORO BLANCO
7. Owner: R.R. Frailey, Louis Daugherty, Ted Walker, Dr. Shetter + Johnson.
8. Address: 2777 N. Campbell Ave.
9. Operating Co.: INTERNATIONAL OCEANOLOGY & MINING CO.
10. Address: Chicago (MIGHT BE OLD TECH RESEARCH INTERNATIONAL 5057 N. TRIPP AVE CHICAGO ILL 60630) Not Sure
    (Wm Denickelow)
11. President: 12. Gen. Mgr.:
13. Principal Metals: ? 14. No. Employed:
15. Mill, Type & Capacity: NOT READY
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☒
    (d) Production ☐ (e) Rate tpd.
17. New Work Planned: PLANNED TO WORK OLD EAGLE PICHER TAILINGS of Property in Holden Canyon.
18. Miscl. Notes:
    Don E. McCoy & Partner Bob Catney Tucson

Date: 1-5-71

(Signature)

(Field Engineer)

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Alexander Brothers.

   Address: _____

2. Mine: Brick. 3. No. of Claims - Patented None

   Unpatented _____

4. Location: NW of Ruby along Ruby Arivaca road.

5. Sec _____ Tp _____ Range _____ 6. Mining District Oro Blaco

7. Owner: Mrs. Hugo Miller

8. Address: 222 Potrero Ave. Nogales. Box 257

9. Operating Co.: None.

10. Address: _____

11. President: _____ 12. Gen. Mgr.: _____

13. Principal Metals: _____ 14. No. Employed: _____

15. Mill, Type & Capacity: _____

16. Present Operations: (a) Down ☐ (b) Assessment work ☒ (c) Exploration ☐
    (d) Production ☐ (e) Rate _____ tpd.

17. New Work Planned: _____

18. Miscl. Notes: The Alexander Brothers had a drill operating on the property and were drilling to hit the vein.

Visited the Montana Mine - Ruby gate locked. GWI WR 9/5/70

Date: 7-7-70

G. W. Irwin
(Signature) (Field Engineer)

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Personal visit

   Address: _____

2. Mine: Montana (Ruby) 3. No. of Claims - Patented ?

   Unpatented _____

4. Location: Ruby Arizona

5. Sec _____ Tp _____ Range _____ 6. Mining District Oro Blanco

7. Owner: See previous report.

8. Address: _____

9. Operating Co.: _____

10. Address: _____

11. President: _____ 12. Gen. Mgr.: _____

13. Principal Metals: _____ 14. No. Employed: _____

15. Mill, Type & Capacity: _____

16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☐ (e) Rate _____ tpd.

17. New Work Planned: _____

18. Miscl. Notes: A Donald McCoy is supposed to have a lease and option on the mine, He is reported to be planning the running of the tailings thru a plant that he is putting to-gether. The gate was locked and know one could be seen.

Date: 7-7-70

(Signature) _____ (Field Engineer)

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Self.

   Address: _____

2. Mine: Montana 3. No. of Claims - Patented _____

   Unpatented _____

4. Location: Ruby Arizone.

5. Sec 5 Tp 23S Range 11E 6. Mining District Oro Blanco

7. Owner: R. E. Frailey 1/3; Louis Daugherty 1/3; Ted Walker 1/9; Dr. Shetter 1/9

8. Address: and Mr. Johnson 1/9

9. Operating Co.: ?

10. Address: _____

11. President: _____ 12. Gen. Mgr.: _____

13. Principal Metals: Lead silver zinc. 14. No. Employed: ?

15. Mill, Type & Capacity: _____

16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☐ (e) Rate _____ tpd.

17. New Work Planned: Main G ate was locked saw no one around. There was a loader parked at the old mill. Mr. Riggs has heard that someone is planning on working the dumps (No details)

18. Miscl. Notes: _____

Date: 5-5-70

(Signature) (Field Engineer)

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Montana Mine Date May 8, 1963

District Oro Blanco District - Santa Cruz County Engineer Axel L. Johnson

Subject: Field Engineer's Report. Information from Mrs. Hugo W. Miller

References: Memorandum of Jan. 9, 1962 - Field Engineer's Report of Sept. 8, 1960 and previous reports.

Location: At Ruby, Arizona - Secs. 5 & 6, T23S, R11E

Owner: Mrs. Hugo W. Miller, 222 Potrero Avenue, Nogales, Arizona

Number of Claims: (a) Eastern part - 19 patented mining claims, with a total of 362 acres containing several houses and mine buildings were sold about Dec. 1961 at ¼ down and the balance periodically for 10 years. The claims are being deeded to the new owners as they are paid for. (See memo of Jan. 9, 1962)

(b) Western part - 11 unpatented claims. Originally there were 20 unpatented claims held by Hugo W. Miller. Assessment work has been kept up on 11 of these.

Principal Minerals: Lead and zinc with some silver.

Present Mining Activity: None at present.

Proposed Plans: Mrs. Miller plans on doing assessment work by means of diamond drilling on the 11 unpatented claims remaining, the work to start as soon as the necessary arrangements can be made. She hopes that this drilling will prove up some ore, which will make it possible for her to lease out the claims to some operator.

Mrs. Miller stated that she is selling the assay office and that all the equipment books and the remainder of the rock specimens will be included in the sale of the office.

STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA

Tucson, Arizona,
Jan. 9, 1962

MEMORANDUM

To: Frank P. Knight, Director

From: Axel L. Johnson, Field engineer

Re: Sale of Montana Mines

Information from: Hugo W. Miller, Nogales on Jan. 4,; and Richard Frailey, Tucson on 1/9

Sellers Hugo W. Miller and Gladys Miller, 222 Potrero Ave., Nogales, Arizona.

Purchasers Louis E. Daugherty, 2332 E. Elm St., Tucson; Richard Frailey, of R. R. Frailey Real Estate, 2749 N. Campbell Ave., Tucson; Dr. George A. Shetter, 1525 N. Tucson Blvd., Tucson; Frank Hardy, Tucson; and Lawrence Robeson, Tucson.

Property Involved 19 patented mining claims, with a total of 362 acres, containing several houses and mine buildings. The mining claims also contain a large amount of underground development and workings, consisting of adits, shafts, drifts, cross cuts, and old stopes.

Location of Property Sec. 5 - T 23 S - R 11 E. At the town of Ruby, about 33 miles WNW of Nogales, and 12 miles S of Arivaca.

Terms of Sale Reported to be 1/4 down, with balance to be paid periodically over an interval of 10 years. The patented claims are to be deeded to the new owners, as they are paid for.

Uses for the Property Mr. Frailey stated that the purchasers have, as yet, made no plans for the use of the property, but that a number of plans have been suggested, and are being considered. He states that the property is for re-sale or lease to any mining interests, who would wish to resume mining operations on the property. He thought, however, that, most likely, it would be developed as a recreational area.

Mr. Miller stated that he expects to retain most of the unpatented mining claims he holds, which are adjacent to the patented claims sold. He states that there were about 20 unpatented claims originally, and annual assessment work will be done to hold most of these, with a minimum of at least 10.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Montana Mines (West Part) Date Sept. 8, 1960

District Oro Blanco District, Santa Cruz Co. Engineer Axel L. Johnson

Subject: Present Status. Information from Hugo W. Miller and personal visit.

Present Mining Activity: Exploration and development - 2 men, working part time.

Present Operations: The adit, mentioned in the Sept. 25, 1958 report, is now in 105 ft., with a 30 ft. crosscut. A considerable amount of work has also been done on the surface with a bulldozer, in an attempt to uncover promising ore veins.

Additional: A geological survey is reported to have been made by Pierce Parker of the American Metal Climax Co.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Montana Mines (West Part) Date Sept. 25, 1958

District Oro Blanco District, Santa Cruz Co. Engineer Axel L. Johnson

Subject: Field Engineers Report

Location At Ruby, Arizona.

Owners Hugo W. Miller & Gladys Miller, 222 Potrero Ave., Nogales, Ariz.

Operators Same as above.

Principal Minerals Lead and Zinc, with some Silver.

Present Mining Activity Exploration and development. 2 men working part time.

Present Operations Mr. Miller is driving an adit on the Rough and Ready claims. This adit starts on the Rough and Ready No. 1 claim, at an elevation of 4238, and bears N 75 deg. E to Due East. The adit is now in about 75 ft., with 1,400 ft. more to go to intersect the 100 ft. level of the Jenkins shaft.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Montana Mines (Eastern Part) Date March 27, 1957

District Oro Blanco District, Santa Cruz Co. Engineer Axel L. Johnson

Subject: Field Engineer's Report. Personal Visit & Information from Hugo W. Miller and C. L. Jarnagin.

Location At Ruby, Ariz.

Number of Claims 15 patented mining claims & 4 unpatented claims under option to purchase by Maravilla Mineras Corp.

Owner Hugo W. Miller, 322 Potrero Ave., Nogales, Ariz.

Purchasers Maravilla Mineras Corporation, Manford C. Susman, President, 153 South Robertson Blvd., Beverly Hills, Calif. C. L. Jarnagin, Nogales, Mine Foreman.
This deal is called "an option under a contract to purchase", said option being dated on Mar. 12, 1957 and in force until May 10, 1961. It includes a cash payment made when deal was consummated plus monthly payments until May 10, 1961. The patented mining claims included in the deal are viz: The Philadelphia, Montana Dam, Montana Camp and Mineral Nos. 1, 2, 3, 4, 5, 6, & 7 -- U. S. Mineral Survey No. 2206; The San Miguel, Ruby No. 1 and Ruby No. 2 -- U. S. Mineral Survey No. 4140; and The Excelsior & Lerchen's Fraction Mining Claims, a part of U. S. Mineral Survey No. 4139 --- altogether a total of 15 patented mining claims. In addition, it includes the unpatented mining claims of Ruby No. 3, Ruby No. 4, Ruby No. 5 and Silver Top, and 4 seven buildings.

Principal Minerals Lead and Zinc, with some Silver.

Present Mining Activity Exploration work. 5 men employed.

Geology and Mineralization See Arizona Bureau of Mines bulletin No. 158, Arizona Zinc and Lead Deposits -- Part 2.

Ore Values Reported to be 5 % to 8 % in Leqd, 2 % to 8 % in Zinc, with some Silver.

Milling and Marketing Facilities The Maravilla Mineras Corp. has purchased a mill located in Sun Valley, Calif. and will dismantle same and truck it to the Montana Mine site. It is reported to be a 125 ton mill. The mill will be re-installed on the old Eagle Picher mill site at the Montana Mines.. The milling equipment is expected to arrive in about 2 weeks, and is expected to be ready for operation about May 1st.

Present Mining Operations The company is now working 5 men, who are engaged in raising and sinking on the 100 ft. level of the Wingfield shaft. The raising as well as the sinking is done in the vein, which is from 3 to 6 ft. wide at that point, with ore values approximately as indicated above.

Proposed Plans The company expects to mine the good spots on the vein, while awaiting the completion of the mill installation, and expects to ship about 8 % lead ore direct to the smelter at El Paso (A. S. & R.) After mill installation is completed, all the ore will be milled.

General Remarks The Maravilla Mineras Corp. also purchased considerable mining equipment from the Arivaca Mining Co., T. R. Thomas, Mgr. This consisted of the following: 1 diamond drill EX core; 2 compressors--360 & 105 c.f.m.: 3 Flotation cells; 1 gasolene hoist; 2 air tuggers; 2 pumps; 1 1953 truck; and lumber, track and pipe.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Montana Mines (Eastern Part) Date Dec. 12, 1957

District Oro Blanco Distridt, Santa Cruz Co. Engineer AXEL L. JOHNSON

Subject: Field Engineers Report. Personal Visit & Informationfrom Ross K. Oliver & Larry Mathis

Location At Ruby, Arizona.

Number of Claims 15 pat. claims & 4 unpat. claims under option to purchase.

Owners Hugo W. Miller & Gladys Miller, 222 Potrero Ave., Noglaes, Ariz.

Purchasers Maravilla Mineras Corp., Manford Susman, Pres., 153 S. Robertson Blvd., Beverly Hills, Calif. Local Address ----- Box 134, Nogales, Arizona.
Ross K. Oliver, Res. Manager, Box 134, Noglaes.
J. Allen, Supt.
Larry Mathis, Mill Superintendent.
See reportof Mar. 27, 1957 for details of "purchase agreement".

Principal Minerals Lead and Zinc, with some Silver.

Present Mining Activity 12 men reported to be on payroll, but only 3 men working at present. Work at present reported to be on a stand by basis --- cleaning up etc., waiting for the officials of the company in California to make up their minds about what to do. Since lastreport of Mar. 27, company has installed a mill from equipment purchased at Sun Valley, Calif. and elsewhere;and have milled a part of the bottom of the old lake bed, found to contain good lead-zinc values. The silt from the lake bed, which was milled,was said to contain from 3 to 4 % Lead and 3 to 4 % Zinc. This was treated in the mill by flotation. 23 tons of concentrates were shipped to the A. S. & R. smelter at El Paso, which ran from 25 to 30 % Lead, 0.45 oz Gold, and 26 to 27 oz. Silver. This work was discontinued on account of a decrease in ore values and too much sliming. Apparently, this source of milling grade material has been exhausted.
No ore has been milled from any other mining operations, acc. to reports by the officers.

Milling & Marketing Facilities The milling equipment, installed to date, consists of:
(1) An impact mill ----- in poor shape and of too small capacity.
(2) 1 Overstrom Screen
(3) 1 Conditioner Tank ---- 6' x 6' Denver.
(4) 8 -- # 18 - 32" x 32" Special Denver (used for rougher cells)
(5) 3 -- # 15 - 22" x 22" Denver (used for cleaner cells)
(6) 4 Tables, which have not been used.

Present Mining Operations None. Local personnel waiting for orders from main office in California, before proceeding with any mining activity.

Proposed Plans It was stated by Mr. Oliver and Mr. Mathis that the company is considering the installation of additional milling equipment required for efficient milling operation of the mine ores. This equipment would consist of:
(1) Jaw Crusher of 100 ton per day capacity ---- to crush to 1/2 " (Kue-Kun recom.)
(2) 1 Ball Mill of 100 ton per day capacity
(3) 1 Classifier
(4) 1 Settling Tank
(5) 1 Filter-Dryer
No plans for the exploration and development of the ore bodies was advanced by the officers

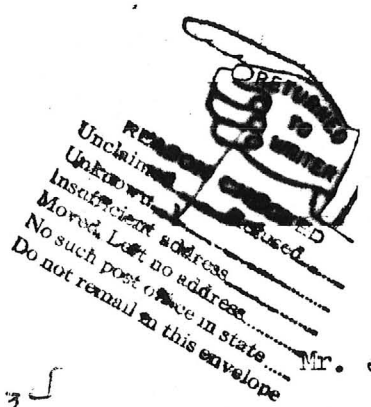
MILLER HANSON GROUP

[redacted]

Ag, Au, Pb, Zn

Santa Cruz 12 - 1 T 22 S, R 11 E

233 Grand Ave.
Hugo Miller, ~~Box 257,~~ Nogales '40



Not 13

Mr. Joseph Allen

~~Box 134~~

Nogales, Arizona

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Santa Clara Mine Date June 2, 1955

District Oro Blanco Dist., Santa Cruz Co. Engineer Axel L. Johnson

Subject: Field Engineers Visit and Information from Hugo W. Miller, and Joe Bowman.

Location Sec. 6 -- T 23 S -- R 11 E. 1 mile west of Ruby.

Number of Claims 2 unpatented claims.

Owner Hugo W. Miller, 222 Potrero Ave., Nogales, Ariz.

Lessees and Operators Falcon Uranium and Oil Co., Grand Junction, Colo.(P. O. Box 362.

Officers Joe Bowman, Geologist. Jim Martin, Assistant.

Principal Minerals Uranium ore, associated with lead and copper sulphides, and copper carbonates. Ore sample determined to be uranophane by the U. S. Bureau of Mines at Tucson, Ariz.

Number of Men Working 2 (Mr. Bowman and Mr. Martin)

Production Rate No production yet. Operators are doing exploration work.

Geology The ore is found in a shattered or faulted zone in the Oro Blanco Conglomerate formation, about 140 ft. from a major fault between the Oro Blanco Conglomerate and the Ruby Diorite. The ore appears to have been deposited along cracks and fissures in the shattered rock, possibly in a secondary fault or fissure zone. The ore horizon appears to be about 3 ft. wide, but the ore is spotty and not consistent throughout the entire width. The ore horizon appears to continue in length, but more exploration work will be required to determine if the deposit will extend in length for some distance as a definite vein, or whether it is only a small blowout.

Ore Values Radiometric samples show values of 0.05 % to 7.0 % of U_3O_8.
Chemical assays show values of 0.05 % to 3.0 % of U_3O_8.
No averages have been determined as yet.

Ore in Sight and Probable None.

Present Mine Workings 1 open cut ---- 8 ft. long, 4 ft. wide, and 6 ft. deep, showing the ore values described above.
1 old filled in shaft, cleaned out to a depth of about 6 ft., showing a small amount of radioactive material. This old shaft is 10 to 15 ft. north of the open cut.

Past History These claims are a part of the Montana Mines Consolidated Group, and have been held by the owner, Hugo W. Miller, for a number of years.

Present Operations Lessees, at present, are exploring in the open cut, and sorting some of the ore broken. Hand steel is being used for drilling.

Proposed Plans Lessees plan on acquiring an air compressor and other mining machinery, in order to do extensive exploration work, or they will engage a mine contractor to do this work for them.

PHONE 152

Miller's Assay Office

ESTABLISHED 1913

HUGO W. MILLER, OWNER
REGISTERED MINING ENGINEER

233 GRAND AVENUE

NOGALES, ARIZONA

Feb. 7, 1947

Mr. Frank L. Perry,
P.O.Box 2054
Globe, Arizona

Dear Mr. Perry:-

Had a letter from Mr. Manning requesting me to have Harry Brann, Nogales Welding and Machine shop, make and estimate on two 750pound straight side hoisting buckets with trip lugs.

Before making any definite price, he has to have a sketch of just where you want the trip lugs on the bucket, and the diameter.

A bucket for 750 pounds of ore would have to be around 30" diameter and 46.5 in. high, and the price would depend on the weight of material used. He has some 5/32 inch plate which he thinks would be about right. Therefore, if you want him to make a definite bid, write him direct to 468 Grand Avenue, Nogales, Arizona.

Yours very truly,

Hugo W. Miller

Hugo W. Miller

HWM:gsm
cc: Mr. R.I.C. Manning

Thanks for the trouble sending Tom Gray & Ryan letters. Expect to go to Globe Sunday & will see Ryan. Wrote Gray for more data. Best of luck Miller

January 29, 1947

Mr. Hug[illegible]ller
233 Grand Avenue
Nogales, Arizona

Dear Hugo:

Enclosed is list of mining equipment for sale at Warren which you might be interested in.

Also enclosing copy of letter to Tom Gray at Superior regarding the compressor at the Bomboy mine.

Yours sincerely,

Roger I. C. Manning
Field Engineer

RICM:LP
Enc. 2

October 24, 1946

Mr. Hugo Miller
233 Grand Avenue
Nogales, Arizona

Dear Hugo:

Enclosed is the Ingersoll-Rand catalog and price list you requested.

With best regards,

Sincerely,

Roger I. C. Manning
Field Engineer

RICM:LP
Enc.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
~~FIELD ENGINEERS REPORT~~
NEWS ITEM

Mine Montana Mines ✓ Date April 3, 1952.

District Oro Blanco Mining Dist. Santa Cruz Co. Engineer Axel L. Johnson

Subject: News Item --- Source of Information-- Hugo W. Miller

Location At Ruby, Arizona.

Owner Hugo W. Miller, Box 257, Nogales, Ariz.

Leaser ✓Roy Bell, Ruby, Ariz.
Lease calls for the ore above the 100 ft. level of the Montana Mine.
Lease was made on Feb. 4, 1952.
Leaser is now operating the property.

Metals Mined Ores are Lead ✓ with Silver and Gold values, and a slight amount of Zinc. Ores are carbonates.

Men Employed 2.

Production Rate Varies. Operators have mined 100 tons since taking the lease over, and is ready to ship 2 carloads of ore next week.

Marketing Facilities Operators will haul the ore to Amado, and ship it from there to El Paso, Texas. Ready to ship 2 carloads next week.

Ore Values About 9 % Lead, with 13 oz. Silver and 0.15 oz. Gold

MONTANA
Ruby Ariz
Dec 1, 47

DEPARTMENT OF MINERAL RESOURCES

TO ALL PRODUCERS OF COPPER, LEAD and ZINC IN ARIZONA:

This department and others are making strenuous efforts to bring about legislation which will help ameliorate the restrictions and difficulties faced by the producers of copper, lead and zinc, and other strategic minerals.

To assist in these efforts it is advisable that we have an authentic survey of the results of the President's veto of the Allen Bill, and the results that would take place if a new bill, such as the Russell Bill, were passed by Congress. The Russell Bill includes all strategic minerals.

While we have all learned to love questionnaires just as we love stomach ulcers, will you please give the answers in your best judgment to the following questions:

1. What was your approximate production in pounds per month for the period preceding the President's veto of the Allen Bill?
   (Copper Negligible Lbs.) (Lead 12237 Lbs.) (Zinc no zinc ores Mined Lbs.)
   6 Months ave

2. What has been your average production per month since that veto has affected your price?
   5 " Average (Copper \ Lbs.) (Lead 5300 Lbs.) (Zinc 4942 Lbs.)

3. What is your estimate of your production per month for the first few months of 1948 if prices remain as they are now and no premiums are in effect?
   (Copper \ Lbs.) (Lead 5000 Lbs.) (Zinc 5000 Lbs.)

4. What is your estimate of production per month if some incentive plan such as the Russell Bill were in effect?
   (Copper \ Lbs.) (Lead 10000 Lbs.) (Zinc 10000 Lbs.)

5. General remarks: I Could do more development work & probably increase Estimate 4

XWM

An addressed envelope is enclosed for your convenience, but you will have to help with the stamp.

Yours very truly,

Chas H Dunning

CHD:mh

Chas. H. Dunning
Director

U-7031

Made out of scrap on the job
Designed & made of Bolted can be taken down & moved Portable -

C
O
P
Y

MILLER'S ASSAY OFFICE
Hugo W. Miller, Owner
233 Grand Avenue
Nogales, Arizona

June 23, 1946

"As to the labor and materials in my head frame, we used as follows:

10 - pieces 4" pipe - 22' long (4 uprights and 2 main braces)
14 - pieces 5 ft. long (spreaders for uprights & braces)
2 - rails $5\frac{1}{2}$ ft. long (for top)
2 - 8' x 8inches $5\frac{1}{2}$ ft. long (for carrying shieve-wheel) wood
2 - 3/8 inch cables (for guide wires)

"Notes - The pipe is of 4 inch diameter and weighs about 12 lbs. per linear foot. The spreaders were cut with concaved ends to fit the 4 inch pipe with a torch and a piece of 1/2 inch thick belting, about 6 inches square was used as washers between the spreaders and the upright pipes to give a shock absorbing effect. The holes for the tie-rods were burned with a torch and the rods passed through the spreaders.

"The main part of the headframe was built on the ground and hoisted to its upright position with an auxiliary smaller headframe, after being properly braced to prevent buckling. The whole headframe may be taken down and moved by the removal of about 20 nuts on the tie-rods, and top members.

"The skip which holds 9 cubic feet and its dumping mechanism is rather complicated and would require considerable detail to describe. The cost of labor and welding would naturally depend upon the ability of the welder. This work was done by my son, Hugo Searle Miller, a return veteran of the 503rd Parachute Infantry who secured his welding training with the Soler Aircraft Company in San Diego. No figures were kept as to the time and expense as he is interested with me in the development of the property. He was ably assisted by Art Mills who was a draftsman for Lockheed during the war.

"In the pictures shown, the pipe for additional braces between the rear braces and the ground have not been installed owing to the making use of the wooden headframe to carry their weight. It would make a much nicer looking headframe with the removal of the auxiliary headframe and the installing of the pipe to brace the rear braces.

(over)

"The ore bin is 12 x 12 feet by 6 feet deep and with the metal hopper is capable of storing 60 tons. We are able to load a 16-ton truck in 15 to 30 minutes. We are producing 30 tons per week with five men, working five days a week.

"Trusting that this gives you the information desired."

July 31, 1946

Mr. Hugo W. Miller
233 Grand Avenue
Nogales, Arizona

Dear Hugo:

We are enclosing herewith six enlargements together with your two negatives, as per your letter of July 22. The $3.00 you sent was the exact cost of the pictures.

I regret that the two enlargements do not show more clearly the detail of the dumping mechanism, but this is impossible due to shadows created by the head frame. However, it is a good picture of Mrs. Miller and the grandchildren.

Your transit was set right in regard to the magnetic declination and the compass that I had with me was wrong. I did have another compass in the car at the time that was set right but forgot about it - so this makes me owe for the drinks. These you may charge to me at any reputable bar in Sonora or you may wait until I arrive, which is preferable from my standpoint.

Since I haven't heard anything further in regard to the film and gears, I am presuming that they were all right.

Yours sincerely,

Roger I. C. Manning
Field Engineer

RICM:LP
Enc.

PHONE 152

Miller's Assay Office

ESTABLISHED 1913

HUGO W. MILLER, OWNER
REGISTERED MINING ENGINEER

233 GRAND AVENUE
NOGALES, ARIZONA

July 22, 1946

Mr. Roger I. C. Manning
Dept. of Mineral Resources,
304 Home Builders Bldg.
Phoenix, Arizona

Dear Mr. Manning:-

I am enclosing the two films of the head-frame taken by me. I wish you would have a 6"x10" enlargement made of each of these to go with the set you sent; also, have another one two made of the ones you took showing Art Mills and Searle and myself (6"x10" size). I want these to give each of the boys who have both gone.

I am enclosing a check for $3.00 to cover these four enlargements and two of the new ones you took on your recent trip which would show more details of the skip.

We certainly enjoyed your visit and are still eating goat! Mrs. Miller hopes the storm did not do any damage to your home while all the windows were open. We are still hoping to get enough rain at Ruby to fill the lakes.

Yours most sincerely,

Hugo W. Miller

HWM/gsm

PHONE 152

Miller's Assay Office

ESTABLISHED 1913
HUGO W. MILLER, OWNER
REGISTERED MINING ENGINEER
233 GRAND AVENUE
NOGALES, ARIZONA

July 23, 1946

Mr. Roger I. C. Manning
Dept. of Mineral Resources,
304 Home Builders Bldg.
Phoenix,
Arizona

Dear Manning:-

Your letter informing us that you had shipped the gear and films was received this afternoon. Although we have not received the gears yet to see if they are right, I am enclosing a check for $5.33 to cover the amount stated in your letter. I certainly appreciate your help in the matter.

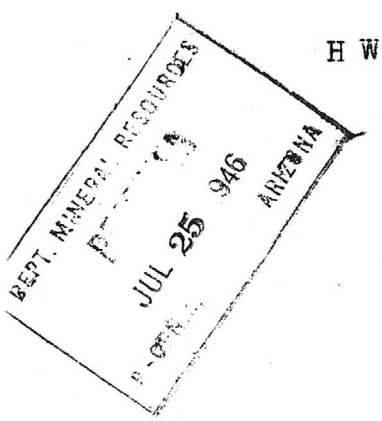
According to the survey I made of the ore body, we will have to cross-cut from between eight and sixteen feet from the 100 ft. level North into the hanging wall. We will begin this work as soon as we complete an other car of this oxide ore. I hope on your next visit that we might be able to show you added progress in our Montana venture.

Thanking you again for all of your favors,

Yours sincerely,

Hugo W. Miller

H WM/gsm



PHONE 152

Miller's Assay Office

ESTABLISHED 1913

HUGO W. MILLER, OWNER
REGISTERED MINING ENGINEER

233 GRAND AVENUE

NOGALES, ARIZONA

June 23, 1946

Mr. R. I. C. Manning
Department of Mineral Resources,
304 Home Builders Bldg.
Phoenix, Arizona

Dear Mr. Manning:-

I was indeed sorry and regretful for not being here for the meeting Thursday evening when you had made the trip by plane. I had understood from our conversation during your previous visit that you would not be able to be down for the June meeting. Therefore I will try to give you the information you wanted herewith.

First, regarding the freight rate increase, I note from PayDirt that it is to be 25% increase. I was of the opinion that it was to be 10% to which I would have had no objection, inas much as labor is being paid more by the Railroads. I think as long as the Government is willing to continue the subsidies in the mining products, such as copper, lead, and zinc, the producers of same, like myself, should share the advantages with the Railroads. But it is a question of a just and fair percentage increase based on data by some of the heavier producers. In my case, I am trucking my ores to the custom mill at Sahuarita and would only pay railroad freight on the concentrates made from my ore, and thus it would not be as big a burden as to the ones shipping to the smelter direct.

As to the labor and materials in my headframe, we used as follows:-

10 - pieces 4" pipe - 22' long (4 uprights and 2 Main braces)
14 - " 5 ft. long (spreaders for uprights & braces)
2 - rails 5½ ft. long(for top)
2 - 8x8 inches 5½ ft. long (for carrying shieve-wheel) Wood
2 - 3/8 inch cables (for guide wires)

Notes- The pipe is of 4 inch diameter and weighs about 12 lbs. per linear foot. The spreaders were cut with curved ends to fit the 4 inch pipe with a torch and a piece of ¾ inch thick belting, about 6 inches square was used as washers between the spreaders and the upright pipes to give a shock absorbing effect. The holes for the tie-rods were burned with a torch and the rods passed through the spreaders.

The main part of the headframe was built on the ground and hoisted to its upright position with an auxiliary smaller headframe, after being properly braced to prevent buckling. The whole headframe may be taken down and moved by the removal of about 20 nuts on the tie-rods, and top members.

The skip which holds 9 cubic feet and its dumping mechanism is rather complicated and would require considerable detail to describe. The cost of labor and welding would naturally depend upon the ability of the welder. This work was done by my son, Hugo Searle Miller, a return Veteran of the 503rd Parachute Infantry who secured his welding training with the Boler Aircraft Company in San Diego. No figures were kept as to the time and expense, as he is interested with me in the development of the property. He was ably assited by Art Mills who was a draftsman for Lockheed during the War.

In the pictures shown, the pipe for additional braces between the rear braces and the ground have not been installed owing to the making use of the wooden headframe to carry their weight. It would make a much nicer looking headframe with the removal of the auxiliary headframe and the installing of the pipe to brace the rear braces.

The ore bin is 12x12 feet by 6 feet ~~high~~ Deep and with the metal hopper is capable of storing 60 tons. We are able to load a 16 ton truck in 15 to 30 minutes. We are producing 30 tons per week with five men, working five days a week.

Trusting that this gives you the information desired,

Yours very truly,

Hugo W. Miller

HWM/gsm

P.S. Please tell Charlie Willis if I can possibly make it to Phoenix Saturday I will be at the entrance of the Adams Hotel by 9:00 AM or go to Prescott direct by plane.

PHONE 152

Miller's Assay Office

ESTABLISHED 1913
HUGO W. MILLER, OWNER
REGISTERED MINING ENGINEER
233 GRAND AVENUE
NOGALES, ARIZONA

Montana

June 15, 1946

Mr. R. I. C. Manning
Department of Mineral Resources,
304 Home Builders Bldg.
Phoenix, Arizona

Dear Mr. Manning:-

I was most agreeably pleased, surprised, and appreciative of the three enlargements of the pictures which you took of the Montana Shaft on your recent visit last Month. They are splendid; you and your Kodak must be "tops".

Loyde Edmonson paid me a visit with Mr. Bishop and his son and said they got some good ideas from our set-up there. He is operating at Sells. It occurred to me that Chas. Willis might use one of those pictures in the Mining World or Pay Dirt to illustrate how a small mine operator can put their slogan in "Reverse" that is, "The Small Mines of today are the Big Mines of tomorrow". In other words, the largest producer of Lead and Zinc ores in Arizona for many years becomes an ideal small operation today.

I am enclosing $1.00 bill and would like to have three of each of the pictures in small prints if it is not too much trouble; and would like to pay for the enlargements which you sent if you will let me know the price.

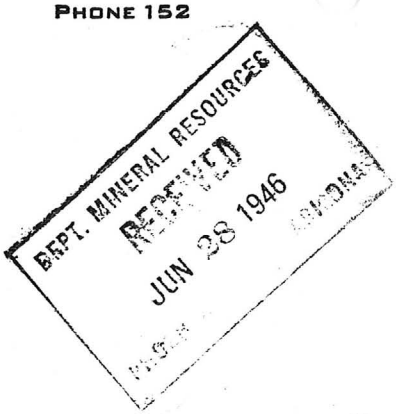
I was successful in getting a new Goodyear tire and a new Atlas tire here so am fixed for the time being. Thanks for your interest.

Yours very truly,

Hugo W. Miller

HWM/gsm

PHONE 152



Miller's Assay Office
ESTABLISHED 1913
HUGO W. MILLER, OWNER
REGISTERED MINING ENGINEER
233 GRAND AVENUE
NOGALES, ARIZONA

June 27, 1946

Mr. Roger I. C. Manning
Dept. of Mineral Resources,
304 Home Builders Bldg.
Phoenix, Arizona

Dear Mr. Manning:-

At Hugo's request I am writing to acknowledge your letter which came this morning with the Arizona Airways schedule enclosed. He had been looking it over and was in hopes he could make it; but this morning thirty-five samples on a mine examination came in and others are to follow.

He had to leave for the mine as they were waiting for stoper steel and the truck driver is going to start hauling on Saturday. So that means they have to get quite a good deal of ore broken in the next two days. Then he will have to be here to get out this big run of samples over Saturday and Sunday and Monday.

In no way possible can he see his way clear to make it to Prescott and he is so disappointed. He surely appreciated your sending the schecule and many thanks for all the many favors. Please extend his regrets to Mr. Willis and pass on the word to any others interested.

Yours sincerely,
Gladys S. Miller
(Mrs. Hugo W.)

DEPARTMENT OF MINERAL RESOURCES

REPORT TO ~~OPA~~ ON ACTIVE MINING PROJECT

GPT
Security Bldg
Phoenix

Date 5/17/45

Name of Mine Montana

Owner or Operator Hugo W Miller

Address Wickenburg

Mine Location Ruby Dist

Filing Information

File System

File No.

This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production ✓; Development ; Financing ; Sale of mine ;

Experimental (sampling) ; Owner's occasional trip ;

Other (specify)

PRODUCTION: Past and Future.

	Tons
Approx. tons last 3 months	
Approx. present rate per 3 months	
Anticipated rate next 3 months	
If in distant future check (X) here	

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per Month
Personal Cars			
Light or Service Trucks	Dodge 1934 1/2 T	700	
Ore Hauling Trucks			
Compressors			
Other Mine or Mill Eqpt.			

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Lead zinc

REMARKS: Mr Miller has recently purchased the truck and is putting it into operation on his new mining property

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By

PHONE 152

Miller's Assay Office

ESTABLISHED 1913

HUGO W. MILLER, OWNER
REGISTERED MINING ENGINEER

233 GRAND AVENUE
NOGALES, ARIZONA

May 29,1945

Mr. Charles Dunning,
413 Home Builders Building,
Phoenix, Arizona

Dear Mr. Dunning:-

I received a letter from George Ballam saying that you might be able to help me get a favorable decision from the Treasury and the Mint Director, Mrs. Nellie Ross, for the payment of the domestic price of silver on my shipments from the Montana Mine. Therefore, I am enclosing the correspondence and other data herewith.

Inasmuch as you and George visited my operation on February twenty-second, and saw the ore before it was shipped, and how I had to screen much of the newly mined ore, shipping only the fines, throwing aside the lower grade coarse, in order to keep up the grade of the car; your statements would probably carry more weight.

I was unable to make any profit mining the small carbonate lenzes of ore which the Company left and only received $347.00 for a carload which took me three months to accumulate. I paid out $500 labor, $150 trucking, $100 insurance, ran $473 worth of assays. I counted on the domestic silver price and also the A Premium on lead, neither of which I have been able to collect. Having shown such a loss on the first three months operation, I was forced to clean up around the former mill site and ship a second car to reduce my losses.

I feel that the Treasury Department has made a very unfair ruling on mill clean ups in my case of a flotation mill which treated ore mined from natural deposits. I think their ruling was meant to apply to mill clean ups where such mills, like the steel mills of the East which manufacture articles out of the metals. There is a big difference with our Western processes of concentrating crude ores. The reference to "old mill clean up" is unfair in the Treasury ruling. This was a more recent operation. Between July 1,1939 and May 16, 1940, the Eagle Picher Mining Company mined and milled an average of 400 tons per day of newly mined ore. During that 320 days, approximately 128,000 tons of ore was mined and milled, all of which contained silver for which the domestic price was obtained. To further substantiate this, I am enclosing copies of silver affidavits borrowed from the files of the Eagle Picher Company which show the Treasury Department recognized and paid the domestic price on 368,400 ounces in their lead concentrates produced after July 1,1939. My car No.1 had 338 ounces silver and car No. 2 had 704.5 ounces silver or a loss of only 1 in 365 of the above newly mined ore after July 1,1939.

Thus, my entire shipment was a very small portion of this

same concentrate which might have been shipped by the Eagle Picher Company, had their help been more thorough in cleaning up the Plant when they shut down. From your visit to the Montana Mine on Feb. 22,1945, you well know that there are no tanks, crushers, mill machinery, concentrate bins, nor ore bins, on the property. The mill clean up or concentrate was undoubtedly newly mined after July 1,1939. My car No.1 consisted mainly of newly mined ore which I took out of the ground, screenings from ore dumps which were in place prior to July 1, 1939 and a small part of this newly mined clean up left by the Company. In car No. 2, the mixture was about half mill clean ups, as above explained, plus screenings of dumps that existed prior to July 1, 1939. For this reason, all of my silver should be eligible for the domestic price of silver.

In view of the above facts, the Director of Mint should accept my affidavit stating that the silver contained in my shipments was mined after July 1, 1939, or existed in dumps on that date.

I trust that you will be able to add to the above information further facts which will clear up this issue with the Treasury Department, favorably, as it is vital to my mining operations. You well know that I have been working"from hand to mouth" for the past five years in order to develop a mine in this section.

Thanking you for your cooperation and assistance,

Yours very truly,

HWM/gsm

Hugo W. Miller

Miller's Assay Office

ESTABLISHED 1913

HUGO W. MILLER, OWNER
REGISTERED MINING ENGINEER
OPERATING MILLER-HANSON MINES, RUBY, ARIZ.
233 GRAND AVENUE
NOGALES, ARIZONA

June 5,1945

Mr. Chas. Dunning,
413 Home Builders Building
Phoenix, Arizona

Dear Mr. Dunning:-

In my letter of May 29th, I mentioned that I had not received any "A" Premium on the Lead content of my shipments from the Montana Lease, so on May 31st I wrote a rather strong Airmail letter to Mr. Strobel, and this morning I received the following telegram.

" Official notification of your quota on the Montana mine to include dumps and cleanups will be mailed by the end of this week." Landon F. Strobel-

Please keep me posted as to your progress with Mrs. Nellie Ross. I hope Mrs. Perkins' recent experience may have some effect on her. Ask Charlie Willis if he wants this "Jackass" to bray again for the next PayDirt. Perhaps one of the other "Jackasses" has already carried on, somebody should keep the ball rolling, inasmuch as Charlie did such a good job in setting up the type.

We surely miss our fellow member Hudgin, and this Council will have a hard time replacing him with another Secretary.

With kindest regards, I am,

Yours very truly,

Hugo W. Miller

HWM/gsm

B/L

SUMMARY OF CARS

No.	Date	Dry Weight	Assays Oz. Au.	Oz. Ag.	% Cu	Paid Smelter Net	
1	9/25/39	37.1960	0.06	16.40	0.30	$303.21	← 1939
2	10/11/39	32.2140	0.07	17.40	0.46	299.97	
3	11/1/39	48.2705	0.08	10.95	---	277.40	
4	11/21/39	44.6270	0.05	9.38	---	163.18	
5	12/12/39	38.6905	0.055	11.48	---	203.85	← 1940
6	1/5/40	35.2965	0.04	8.45	---	94.36	
7	1/16/40	35.2530	0.038	8.18	---	84.92	
8	1/27/40	36.3385	0.04	7.00	0.30	42.23	
9	2/14/40	33.2625	0.053	6.92	---	77.38	
10	4/18/40	42.3465	0.100	6.45	---	152.88	← 1941
11	7/3/41	53.6960	0.07	10.02	---	252.94	
12	8/8/41	42.4900	0.065	9.25	---	164.07	
13	8/20/41	36.2755	0.048	11.36	---	178.29	
14	8/29/41	31.6835	0.12	19.80	---	398.39	
15	9/16/41	37.0560	0.14	21.60	---	301.82	
16	10/2/41	37.5100	0.13	11.45	---	280.32	
17	10/15/41	30.9845	0.065	8.20	---	94.12	
18	10/30/41	30.3350	0.07	10.70	---	153.44	
19	11/10/41	49.6130	0.12	19.45	---	606.26	
20	12/8/41	48.9820	0.062	10.66	---	218.25	← 1942
21	1/2/42	39.4480	0.050	13.10	---	228.43	
22	1/12/42	54.0980	0.080	21.40	0.30	642.72	
23	1/22/42	43.3160	0.065	18.70	0.20	433.00	
24	2/2/42	43.6175	0.100	22.60	0.35	578.23	
25	2/16/42	40.2750	0.120	16.40	0.20	407.95	
26	3/9/42	52.1200	0.115	24.76	---	773.15	
27	3/23/42	41.0270	0.100	24.00	0.35	577.53	
28	4/9/42	47.1080	0.100	23.00	0.30	636.22	
29	5/8/42	43.6590	0.070	21.60	0.12	508.22	
30	6/8/42	36.9750	0.060	13.50	---	226.12	
31	6/29/42	46.8495	0.05	14.20	0.35	295.59	
32	7/9/42	49.3555	0.07	18.70	0.30	492.15	
33	7/23/42	53.6085	0.10	25.60	0.29	785.06	
34	8/5/42	51.5160	0.10	28.00	0.50	837.05	
35	8/24/42	50.0400	0.12	27.00	0.20	802.59	
36	9/10/42	46.6205	0.17	33.30	0.28	974.68	
37	9/15/42	43.7440	0.21	27.60	0.20	838.49	
38	10/13/42	44.0295	0.103	14.55	0.20	377.40	
39	10/28/42	59.2720	0.08	15.50	0.35	484.78	
40	11/30/42	46.6695	0.055	8.70	—	146.74	
41	12/2/42	45.1595	0.068	15.41	—	353.04	
42	12/15/42	41.1075	0.087	18.00	—	412.31	
43	12/24/42	47.2910	0.100	23.20	0.50	620.40	← 1943
44	1/25/43	50.9700	0.110	22.53	—	580.84	
45	2/13/43	50.8850	0.110	27.50	—	738.87	
47	4/12/43	52.5270	0.106	21.65	—	604.20	
46	3/11/43	54.2825	0.210	34.27	—	1159.94	
48	4/20/43	38.0000	0.04	10.50	—	131.92	
49	5/17/43	44.1580	0.06	11.11	—	145.09	
50	6/3/43	46.5150	0.065	13.0	—	297.60	
51	6/17/43	43.0795	0.078	15.8	—	370.02	
52	7/7/43	56.9835	0.105	16.24	—	467.20	
53	7/20/43	41.2210	0.100	14.2	—	271.98	
54	8/7/43	45.2460	0.125	28.53	—	715.03	
55	8/31/43	47.5790	0.100	18.7	—	458.69	
56	9/13/43	46.6300	0.075	14.38	—	276.77	
57	10/11/43	45.2995	0.095	16.90		377.58	
58	10/25/43	47.1425	0.115	28.30		729.39	
59	11/8/43						
60							

MM-51

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date October 24, 1940

1. Mine Miller-Hanson Group
2. Mining District & County Oro Blanco District
3. Former name Griffith-Jenkins, then Southern Copper Co., then E. K. Hanson.
4. Location 1 mile west of Ruby. West extension of Montana Mine of Eagle Picher Lead Co.
5. Owner Mrs. E. K. Hanson and ..... Hugo W. Miller .....
6. Address (Owner) 641-8th St., Douglas, Ariz. 233 Grand Ave., Nogales, Ariz.
7. Operator Hugo W. Miller
8. Address " (Operator) " "
9. President Not incorporated
10. Gen. Mgr. Hugo W. Miller
11. Mine Supt. None
12. Mill Supt. None
13. Principal Metals Silver and gold, lead and zinc.
14. Men Employed None at present
15. Production Rate 10 carloads shipped in sinking shaft 85 feet and shallow surface prospect holes.
16. Mill: Type & Cap. None
17. Power: Amt. & Type Hand and portable compressor.
18. Operations: Present Seeking capital or buyer for property.
19. Operations Planned First: 2 churn-drill holes approximately 165 ft. each as shown on blueprints attached. Can be contratted for $2 a foot on 8-inch holes, samples in 5-foot sections, holes to determine character of mineral at 200 and 300-ft. inclined depth on two different ore shoots. Churn-drill holes advisable for water well and handling mine water more efficiently and economically when future development work is in progress.
20. Number Claims, Title, etc. 7 claims recorded and titled in name of Mrs. E. K. Hanson (with Miller holding deed for half interest under working lease and option), to wit: Brick, Santa Clara, Ruff and Ready No. 1. La Paz, Davis, Irish Mag, and Ruth. 7 claims or fractions in name of Hugo W. Miller and family, to wit: Rubiana North Fraction Annex, R.N.F.A. No.2, High, Wide and Handsome, Fred Pyeatt, Brick Extension, Gladie, Rubiana Dam Site.
21. Description: Topography & Geography Rough, rolling hills and arroyos, accessible with several roads making each claim easily accessible. Geology: Intrusive diorite or grano-diorite with overlaying masses of Oro Blanco conglomerate, rhyolite and andesite. Geography: Claims situated ontt he Ruby-Arivaca-Amado County highway kept up by Pima and Santa Cruz counties. 36 miles to Amado, railroad station on S.P. between Tucson and Nogales.
22. Mine Workings: Amt. & Condition Main shaft on Brick claim 85 ft. on 54 degree incline. Tunnel and winze on east end of Ruff and Ready shows zinc-lead sulfides. Numerous surface prospect holes. Workings all in good condition, but contain water from surface rains.

(over)

23. Geology & Mineralization: c indications are wh qua v ıs and silicified breccia or conglomerate between the Oro Blanco conglomerate as a hanging wall and the grano-diorite as a footwall. A mixture of calcite and quartz with manganese oxide leaving light porous gossan on the La Paz, Davis, Gladie vein shows a maximum width of 50 ft. in the canyon with a possible ore shoot 1,000 ft. long indicated by the outcrops.

24. Ore: Positive & Probable, Ore Dumps, Tailings: Positive ore developed is shown on the assay plan of the Brick shaft and shafts on same ore shoot 150 ft. to West, both of which produced ten carloads totaling 383.495 dry tons containing 22.89 total ozs. gold and 3906.17 total ozs. silver, or an average of 0.06 oz. gold and 10.2 ozs. silver per ton. The mine dumps remaining show about 0.03 oz. gold and 5.0 ozs. silver. One small ore dump on the Ruff and Ready of a few tons adjacent to the Co.'s. patented ground shows 0.06

24-A Vein Width, Length, Value, etc.: (ozs. gold, 2.4 ozs. silver, 2.0 per cent (copper, 9.5% lead, 16.0% zinc.)

25. Mine, Mill Equipment & Flow Sheet: No mill, no mining equipment. Shaft well timbered, double compartment and excellent head frame.

26. Road Conditions, Route: Excellent county high way within 150 feet of main workings. Truck haul to railroad at Amado $2 to $2.50 per ton.

27. Water Supply: Shaft makes about 50 to 100 gallons of water an hour. Ample water for camp purposes and Ruff and Ready claim well. Water for large milling operation could probably be arranged for from the Eagle Picher's mine and reservoirs and lakes made by artificial dams.

28. Brief History: These claims have been held during the past 25 years for the sole purpose of selling them on the strength of the showing of the Montana mine and not until August, 1939 did the owners endeavor to prove by actually uncovering commercial ore on same that these claims in themselves could stand on their own merit. By much sampling and detailed prospecting and assaying undertaken by Hugo W. Miller through lease and option to buy the above mentioned production became a matter of record.

29. Special Problems, Reports Filed: The Eagle Picher Co. in November took a working option on four claims for $30,000 and continued the last 50 ft. of the 85 ft. present shaft on the Brick claim, and did numerous surface trenchings which failed to even uncover solid rock in places. The shutdown of their Ruby operation naturally stopped their work. The special problem is to determine the character of ore in depth.

30. Remarks: Before the Montana mine produced about 7 million dollars gross a diamond drilling program was carried out, and later production justly rewarded the chances taken. In my opinion $1000, with two chrun-drill holes as shown on the attached blueprint may be all that is needed to justify the vertical shafts necessary to develop the ores which might be proven to exist since the Montana operation itself has demonstrated it continued to greater depths.

31. If property for sale: Price, terms and address to negotiate.
Hugo W. Miller, Box 257, Nogales, Arizona has full right to negotiate all of these 14 claims. The terms are a total of $50,000 for the 14 claims, or fractions in three years time with applied royalties of 10 per cent of the sale of ores or mill products. A minimum of $5000 at the end of one year, $10,000 additional at the end of 2 years and $35,000 at the end of 3 years, with a minimum of 300 ft. of drilling per month or a cash payment of $100 a month in order to keep valid the option. All equipment underground to remain on property. Attached find three blueprints and summary of shipments of 10 carloads.

32. Signed: Hugo W. Miller

33. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA

OWNERS MINE REPORT

Date October 24, 1940

Mine Miller-Hanson Group

District Oro Blanco District

Location one mile west of Ruby. West extension of Montana Mine of Eagle Picher Lead Co.

Former name Griffith-Jenkins, then Southern Copper Co., then E. K. Hanson

Owner Mrs. E. K. Hanson ..... and Hugo W. Miller.....

Address 641 8th St., Douglas, Arizona 233 Grand Avenue, Nogales, Arizona

Operator Hugo W. Miller

Address " "

President not incorporated

Gen. Mgr. Hugo W. Miller

Mine Supt. none

Mill Supt. none

Principal Metals Silver and gold, lead & zinc

Men Employed none at present

Production Rate ten carloads shipped in sinking shaft 85 feet and shallow surface prospect holes

Mill: Type & Cap. none

Power: Amt. & Type hand & portable compressor

Operations: Present seeking capital or buyer for property

Operations Planned First: two churn-drill holes approximately 165 feet each as shown on blueprints attached. Can be contracted for $2 a foot on 8-inch holes samples in five-foot sections, holes to determine character of mineral at 200 and 300-ft inclined depth on two different ore shoots. Churn-drill holes advisable for water well and handling mine water more efficiently and economicall when future development work is in progress.

Number Claims, Title, etc. Seven claims recorded and titled in name of Mrs. E. K. Hanso (with Miller holding deed for half interest under working lease and option), to wit: Brick, Santa Clara, Ruff & Ready No. 1., La Paz, Davis, Irish Mag, and Rut Seven claims or fractions in name of Hugo W. Miller and family, to wit: Rubiana North Fraction Annex, R.N.F.A. No. 2., High, Wide & Handsome, Fred Pyeatt, Bric Extension, Gladie, Rubiana Dam Site.

Description: Topog. & Geog. Rough, rolling hills and arroyos, accessible with several roads making each claim easily accessible. with
Geology: Intrusive diorite or grano-diorite/overlaying masses of Oro Blanco conglomerate, rhyolite and andesite.
Geography: Claims are situated on the Ruby-Arivaca-Amado County highway kept up by Pima & Santa Cruz counties. 36 miles to Amado, railroad station on S.P. between Tucson & Nogales.

Mine Workings: Amt. & Condition Main shaft on Brick claim 85 feet on 54 degree incline. Tunnel and winze on east end of Ruff & Ready shows zinc-lead sulfides. Numerou surface prospect holes. Workings all in good condition, but contain water from surface rains.

(over)

Geology & Mineralization The ore indications are white quartz veins and silicified breccia or conglomerate between the Oro Blanco conglomerate as a hanging wall and the grano-diorite as a footwall. A mixture of calcite and quartz with manganese oxide leaving light porous gossan on the La Paz, Davis, Gladie vein shows a maximum width of 50 ft. in the canyon with a possible ore shoot 1000 ft long indicated by the outcrops.

Ore: Positive & Probable, Ore Dumps, Tailings Positive ore developed is shown on the assay plan of the Brick shaft and shafts on same ore shoot 150 feet to West, both of which produced ten carloads totalling 383.495 dry tons containing 22.89 total ozs. gold and 3906.17 total ozs. silver, or an average of 0.06 oz. gold and 10.2 ozs. silver per ton. The mine dumps remaining show about 0.03 oz. gold & 5.0 ozs. silver. One small ore dump on the Ruff & Ready of a few tons adjacent to the Company's patented ground shows 0.06 ozs. gold, 2.4 ozs. silver, 2.0 per cent copper, 9.5% lead, 16.0% zinc.

Mine, Mill Equipment & Flow Sheet
No mill, no mining equipment. Shaft well tinbered, double compartment and excellent head frame.

Road Conditions, Route Excellent county high way within 150 feet of main workings. Truck haul to railroad at Amado $2 to $2.50 per ton.

Water Supply Shaft makes about 50 to 100 gallons of water an hour. Ample water for camp purposes on Ruff & Ready claim well. Water for large milling operation could probably be arranged for from the Eagle Picher's mine and reservoirs and lakes made by artificial dams.

Brief History These claims have been held during the past twenty-five years for the sole purpose of selling them on the strength of the showing of the Montana Mine and not until August 1939 did the owners endeavor to prove by actually uncovering commercial ore on same that these claims in themselves could stand on their own merit. By much sampling and detailed prospecting and assaying undertaken by Hugo W. Miller through lease and option to buy the abovementioned production became a matter of record.

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Remarks
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Signed.....

Use additional sheets if necessary. Attached find three blueprints and summary of shipments of ten carloads.

SURVEY OF OPERATING MINES

MILLER-HANSON GROUP

By: George A. Ballam

June 10, 1942

This property is located in the Oro Blanco Mining District about one mile west of Ruby. It is owned by Hugo W. Miller, 233 Grand Ave., Nogales.

The values are in silver, but recent development shows strong indications of lead and copper. Two cars of ore were shipped, taken from the surface just west of the old shaft. A new shaft has been sunk 60' on an incline, with about 50' of drifting whence the ore is being mined at present.
4 men are employed

George A Ballam

PRIVATE PLACEMENT MEMORANDUM

Ten Limited Partner Units
At $5,000.00 Per Unit

RUBY TAILINGS LIMITED PARTNERSHIP
A Limited Partnership
Formed Under the Laws of the State of Arizona
Minimum Investment - One Unit - $5,000.00

THE LIMITED PARTNER UNITS OFFERED HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (HEREINAFTER REFERRED TO AS THE "FEDERAL ACT"), OR THE SECURITIES ACT OF ARIZONA (HEREINAFTER REFERRED TO AS THE "ARIZONA ACT"), IN RELIANCE UPON EXEMPTIONS PROVIDED UNDER REGULATION D OF THE FEDERAL ACT, AS PROMULGATED BY THE UNITED STATES SECURITIES AND EXCHANGE COMMISSION, SECTION 44-1844 OF THE ARIZONA REVISED STATUTES, AND RULE R14-4-126 AS PROMULGATED BY THE ARIZONA CORPORATION COMMISSION. THESE SECURITIES HAVE NOT BEEN APPROVED BY THE SECURITIES AND EXCHANGE COMMISSION, OR THE ARIZONA CORPORATION COMMISSION, NOR HAVE THOSE COMMISSIONS PASSED UPON THE ACCURACY OR ADEQUACY OF THIS MEMORANDUM. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE. ANY LIMITED PARTNER UNITS PURCHASED PURSUANT HERETO WILL BE REQUIRED TO BE HELD BY THE PURCHASER UNLESS THEY ARE SUBSEQUENTLY REGISTERED UNDER THE FEDERAL OR APPLICABLE STATE SECURITIES ACTS OR AN EXEMPTION FROM SUCH REGISTRATION IS AVAILABLE. THERE IS NO PUBLIC MARKET FOR THE THE LIMITED PARTNER UNITS AND NONE IS LIKELY TO DEVELOP. THE LIMITED PARTNERSHIP SHALL BE UNDER NO OBLIGATION TO REGISTER THE LIMITED PARTNER UNITS UNDER THE FEDERAL OR STATE ACTS OR TO COMPLY WITH ANY OTHER EXEMPTIONS UNDER THE FEDERAL OR STATE SECURITIES ACTS.

THE INFORMATION CONTAINED IN THIS PRIVATE PLACEMENT MEMORANDUM IS FURNISHED ON A CONFIDENTIAL BASIS FOR USE BY THE OFFEREE FOR WHOM IT IS INTENDED. THIS PRIVATE PLACEMENT MEMORANDUM DOES NOT CONSTITUTE AN OFFER TO ANYONE OTHER THAN THAT OFFEREE.

The Partnership undertakes to make available to every offeree, during the course of this transaction and prior to sale, the opportunity to ask questions of, and receive answers from, the Partnership or any person acting on its behalf concerning information necessary to verify the accuracy of information made available herein. The Limited Partner Units to which this material relates may be offered only to persons meeting certain minimum investor suitability standards as set forth in applicable federal and state acts and regulations.

Ten Limited Partnership units will be offered and sold, bringing an aggregate total of $50,000.00 to the Limited Partnership. The General Partner intends to sell these units itself, and does not anticipate paying or receiving any commissions for the sales. However, the General Partner reserves the right to pay such commissions to registered broker/dealers if in the judgement of the General Partner it is advisable to do so in order to sell all of the Units. In such an event, the Limited Partnership would receive net proceeds of $50,000.00 less the amount of such commissions.

THESE ARE SPECULATIVE SECURITIES
THE PURCHASE OF WHICH INVOLVES A CONSIDERABLE RISK

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1. Transferability of the Units is restricted and investors may find it impossible to liquidate their investments in the event of emergency or for any other reason.

2. Investment in the Partnership involves material Federal income tax risks, including the possibility that the Internal Revenue Service will treat the Partnership as an association taxable as a corporation for Federal income tax purposes, rather than as a partnership. The Partnership does not intend to procure an advance ruling from the Internal Revenue Service that the Partnership is a partnership for Federal income tax purposes. Moreover, there is a possibility that the Internal Revenue Service will treat the metals distributed at the dissolution of the Partnership as ordinary income rather than capital gains.

3. The estimates of costs to develop and to operate the heap leaching procedure may be erroneous. Estimated costs associated with the sale of precipitate or costs of on site refining may be higher than anticipated. The sampling or assaying of the top five feet of the pile may be erroneous. Any or all of these errors, omissions, or miscalculations could cause the failure to deliver the metals to the Partnership.

4. The recovery of silver and gold from the process may be less than anticipated. Consequently, the projected revenue may be too little to sustain the operation and also provide the projected returns of silver and gold for the Partners.

5. The market price of silver and gold might be too low to provide sufficient revenue to sustain the operation and also provide the projected returns of silver and gold for the Partners.

6. Numerous factors over which the Partnership will have no control will affect the success of the Partnership, including, but not limited to those herein cited.

Any funds paid for the purchase of Limited Partner Units ("Units") offered hereunder initially will be placed in an interest-bearing account with a bank transacting business in Tucson, Arizona. The offering of Units will terminate on 15 February 1986. If by that date all ten Units offered hereunder have not been subscribed to, then any funds previously paid by

subscribers will be returned, such subscribers will not become Limited Partners of the Partnership, and the offering made hereunder will terminate. If amounts paid by subscribers are returned pursuant to the foregoing, each subscriber shall receive, in addition to his subscription, the proportionate amount of interest earned by his subscription. In the event that all ten Units offered hereunder are sold by the applicable date set forth above, such interest shall be paid to the Partnership along with all other funds in such interest bearing account.

No person has been authorized to give any information or to make any representations, other than those contained in this Private Placement Memorandum, in connection with the offering made hereunder, and, if given or made, such information or representations must not be relied upon as having been authorized by the partnership or the General Partner. This Private Placement Memorandum does not constitute an offer to sell or solicitation of an offer to buy securities in any state or to any person to whom it is unlawful to make such offer of solicitation in such state.

Prospective investors are not to construe the contents of this Private Placement Memorandum as legal, accounting or tax advice. Each prospective investor should consult his or her own counsel, accountant and business advisor as to legal, tax and related matters involved with respect to an investment in the Partnership.

This investment involves a considerable risk and is suitable only for persons who have no need for liquidity in their investments.

There is no public or other market for the units nor is it anticipated that such a market will develop. Transfer of the units will be limited under various federal and state acts and regulations. For this reason, an investor will be required to retain ownership of the units and bear the economic risk of his or her investment for an indefinite time.

The date of this Private Placement Memorandum is 15 November 1985.

SUMMARY OF THE OFFERING

This Summary is qualified in its entirety by the detailed information appearing elsewhere in this Memorandum.

General Partner

The General Partner of the Partnership is K & K Mining, Inc., an Arizona corporation. The stockholders and directors of the corporation are Henry Almyr Kinnison, and Jean C. Gallagher.

Purpose of Partnership

The purpose of the Partnership is to accumulate silver and gold for investment purposes. To this end the Partnership will engage K & K Mining, Inc., in its separate capacity as operating company, to treat mine tailings now existing at Ruby, Arizona, to extract some of the remaining silver and gold in the tailings. K & K Mining, Inc. now holds a lease on those tailings, which lease permits such treatment and extraction upon payment of royalty. Specifically, the Partnership will pay to K & K Mining, in advance, the proceeds of the sale of partnership Units, for which payment K & K Mining will undertake to deliver to the Partnership the metals to be distributed to each Partner.

Objectives of the Partnership

The objective of the Partnership is to accumulate and distribute a specific number of ounces of silver and gold to each Partner, at a favorable cost, for investment purposes.

There is no assurance that this objective will be attained.

Financing

The Partnership will not require loans, since K & K Mining, Inc., in its separate capacity as operating company, will secure any financing which may be necessary. It is believed that the initial subscriptions, together with one loan of $25,000 which will be made to K & K Mining, Inc., and which may be secured by the operation and any product generated, will provide sufficient funds to permit the operation to proceed by selling product. However, if for any reason K & K Mining, Inc., as operating company, deems it advisable to take out more loans secured by the operation or by product held in the account of the Partnership it may do so.

Minimum Investment and Payment for Units

The minimum investment required by Limited Partners is the purchase of one Unit for $5,000.00, payable upon execution and delivery of the Limited Partnership Agreement attached hereto.

Allocation of Benefits

There are no tax benefits anticipated for the Partnership.

The only benefits allocated will be metals, distributed at the time of dissolution of the Partnership. These will be 800

ounces of silver (999 fine) and 10 ounces of gold (999 fine) to be distributed to the owner of each Limited Partner Unit, and 1,200 ounces of silver (999 fine) and 15 ounces of gold (999 fine) to be distributed to the General Partner, such distribution to be at the time of dissolution of the Partnership. The time of such dissolution will be at the expiration of 18 months from the formation of the Limited Partnership, which formation will be upon filing with the Secretary of State of Arizona within one week of completion of sale of units. However, the General Partner reserves the right to distribute the same amount of metal prior to the expiration of 18 months, causing the dissolution of the Partnership at the time of such distribution.

At the time of dissolution of the Limited Partnership and upon distribution to the Partners of the benefits cited, all items of value owned by the Partnership, and any cash on hand, will revert to the General Partner at no cost to it. The total and only benefits to the Limited Partners will be the metal hereinbefore cited. All assets remaining in the Partnership after distribution of metals to the Partners will be transferred to the General Partner upon dissolution of the Partnership, at no cost, as deferred compensation for the organization, administration, expertise, and use of lease rights, made available to the Partnership by the General Partner. Further deferred compensation will accrue to K & K Mining, Inc. through the retention of equipment, chemicals, product, etc. acquired during the Partnership.

An intangible benefit may accrue in the ownership of the metal. The General Partner believes that under present federal tax law the only federal taxes levied on the value of the metal distributed will be capital gains taxes. This may permit holding the metal until the owner decides that circumstances or prices are favorable for a sale. Of course, there is no assurance that the Internal Revenue Service may not rule otherwise.

Compensation

The General Partner will undertake, as K & K Mining, Inc., to furnish the expertise, make available the lease rights, and organize and direct the efforts to produce the metals to be distributed to the Partners. For these considerations K & K Mining, Inc. will be paid, by the Partnership, in advance of disbursement, the funds of the Partnership, which will be used to buy equipment and chemicals, pay salaries, royalties, and all other costs required to produce the silver and gold for disbursement. All assets remaining after the distribution of metals and dissolution of the Partnership will be retained by or transferred to K & K Mining, Inc. as deferred compensation for organization, administration, expertise, and use of lease rights, in lieu of profits. Individuals who are stockholders of the General Partner will work on the project and will be paid at a nominal rate. For example, H. A. Kinnison, of K & K Mining, Inc., will work full time on the project, supervising, organizing, and directly participating in the actual processing. For this he will be paid no more than $1,500 per month during the term of the Limited Partnership.

Economic Basis for extracting Gold and Silver from the Ruby Mines Tailings Pile

The following data and analysis show the economic justification for using a heap leach cyanidation process to extract existing gold and silver from the top, enriched, portion of the Ruby Mines Tailings. Calculations have shown the undertaking to be viable for the top 110,000 tons of the pile if the price of silver remains above $5.00 per ounce and the price of gold above $250.00 per ounce. In fact, the same calculations indicate that the project can break even and produce metals to be distributed to an investor as proposed at even somewhat lower prices than that. At the present writing gold stands at $318.50 and silver at $6.37. The price of silver is the more important, since approximately two thirds of the value extracted will be in the form of silver. Accordingly, the price of silver for the past 24 years has been analyzed in terms of constant dollars and the present prices are shown to be lower than the average.

For the purposes of the analysis estimated "worst case" assumptions have been used, and conservative estimates have been adopted. It has been assumed that silver and gold will have to be sold for operating cash at a price of $5.00 per ounce for silver and $250 per ounce for gold, and it has been assumed that only 90% of the value of the metals will be received at the time of sale of precipitate. The enriched portion of the pile has itself been conservatively estimated. The use of more expensive sodium hydroxide rather than lime was assumed for a portion of the leaching. A recovery of 65%, rather than the probable 70% and 74%, has been assumed. Generous contingency factors have been included in the cost estimates.

At this writing, with the price of silver at $6.37 per oz, and using the conservative estimates mentioned, the project stands well above breakeven. As it proceeds, there is reason to expect that at least some economies of operation can be effected and that silver prices will rise above the present levels during at least part of the time ahead, making the project more secure than this analysis shows.

Analysis and Data - Leach Ruby Tailings

Ruby is the town, south of Arivaca, in the Oro Blanco Mining District, which supported the Montana mine. The vein was probably discovered in early Spanish days, but there was no large scale production until Eagle-Picher Mining and Smelting Co. began operating the mine in 1928. It operated until May, 1940, during which time a total of 773,000 tons of ore were milled. The ore contained 3 to 6 percent zinc and 3 to 5 percent lead as well as 0.05 to 0.075 oz per ton of gold and 5 to 6 oz per ton of silver. The mill employed differential flotation to remove the lead and zinc minerals. The silver was mostly carried by tetrahedrite, which generally occurred as specks in the galena, and so was recovered in the lead circuit.

The tailings pile is about 1100 ft. long and 300 to 500 ft. wide at the top. It lies in a canyon with fairly steep sides and is some 50 feet thick at its deepest point. The volume has been roughly calculated from surveys and it has been confirmed that it contains somewhat more than 700,000 tons.

In 1974 Mountain States Research and Development did extensive metallurgical testing for the owners, and in the process drilled 27 auger holes from the surface to bedrock, sampling at five foot intervals beginning at five feet below the surface, to yield a composite sample which was assayed. These assays showed that the whole pile averaged 0.009 oz/ton of gold and 0.97 oz/ton of silver. This can be considered to be definitive for that portion of the pile five feet and more from the surface.

In early 1982 Kenneth Kamrath and H.A. Kinnison took a total of 59 samples from the pile, 44 from the surface to 5-1/2 ft. depth and 15 more below 5-1/2 ft. and above 22-1/2 ft. These samples were assayed, and when the assays were plotted according to depth from the surface they showed an enrichment, greatest near the surface and decreasing down to about five feet, at which point, and below, the assays confirmed the work by Mountain States which began at five feet depth. The average values of the top five feet appear to be 1.6 oz/ton of silver and 0.02 oz/ton of gold.

The probable mechanism by which this enrichment occurred stems from the fact that the pile has blocked a side canyon and has formed a lake at the side of the pile. This source of water has kept it pretty much saturated over the forty five years it has been there. It is supposed that Eagle-Picher may have used small amounts of cyanide in their flotation process, which is quite common, and that over the years the lake supplied water which moved toward the surface by capillary action, carrying some dissolved gold and silver with it. The water would have evaporated at the surface, leaving a residual enrichment for a few feet into the surface.

The top area of the tailings is 11.26 acres, which indicates a bit over 24,000 tons per foot of depth. Allowing

for side slopes of the canyon there are some 110,000 tons in the top five feet which apparently assay an average 1.6 oz/ton of silver and 0.02 oz/ton of gold.

Kamrath and Kinnison had a bottle test run to determine recoveries with cyanide. A four hour agitation yielded 96% of the gold and 57% of the silver. A column test was then run to determine the recoveries to be expected if the tailings were heap leached. The material was leached for 17 days and then washed for a day and a half. This test showed recoveries of 74% of the silver and 70% of the gold. Experience from various operations has indicated that ultimate recovery rates in the field are usually very close to or the same as found in column or bucket tests, the major difference being that equal field recoveries take from three to six times as long to attain as in the column tests. There are various techniques for shortening these times, which will be tried on the Ruby tailings. Since the test showed that most of the extraction occurred in ten days, and that a further large proportion occurred during the final wash, a tentative period of forty five days per pile is used in the leaching calculations.

A major consideration when working the pile is water. The main source of water is the lakes on the property, while a secondary source is the mine itself. A requirement of approximately 100,000 cubic feet per month is anticipated, which will be comprised of evaporation losses, domestic use, and miscellaneous. The lakes, when full, contain at least one million cubic feet, probably two million. Accurate depths are not known, so this is not sure. The mine water is less certain, but from the information available it seems that there may be at least 120,000 cubic feet in the mine, probably more. The mine also makes a little water, functioning as a well, but the amount is not known. The side, or easterly, lake is fed by a drainage area of approximately 680 acres, while the northerly lake is fed by a drainage area of approximately 230 acres. With a total reserve available of 11 to 20 times the monthly requirement and with the makeup available from catchment areas and the mine it seems reasonably sure that there will be enough water; that at worst activities might have to be curtailed during a couple of the dry months in early summer.

The property lends itself to very low cost operation. It is planned to work the top 110,000 tons right on the existing pile. The top will be cut down about 5', plastic liners placed directly on the portion uncovered, then the material replaced on the plastic to a depth of 12 to 15 ft. This would all be done with only a loader. The hauls are very short and the material is fine and easily handled. It will take about 14 working days to build the first 5,000 ton heap, since some of the material will be handled twice.

There is some equipment available at the site, which can be used. There are three precipitation units which were built at Tombstone, and which use the Merrill-Crowe process of

precipitating gold and silver on zinc dust. They need some overhaul, and are not as large as they should be, but will serve. There are miscellaneous pumps and motors and an excellent power supply and electrolytic tank, to be used for final refining. This unit would not be used until after 20-30,000 tons were processed, at which time it is planned to set up a furnace to smelt and refine gold and silver. In the initial stages the operation would rely on the sale of precipitate, which will will bring approximately 90% of the value of gold and silver contained.

The estimated costs, for development and initial operation, are shown in Table 1. These costs refer only to the initial work to be done. Continuing operating costs are estimated at $5.00 per ton, with gold and silver in the form of precipitate. When a smelter is set up, the cost of refining is estimated to be less than the 10% reduction allowed for the sale of precipitate.

The estimated metals production, sales, and amounts retained, together with the value of the metals retained (taken as 90% of the indicated value) are shown in the following Table. These estimates are shown for gold and silver prices of $250/$5.00, indicating that the operation is secure for those and any higher prices of silver and gold. The assumptions are:

a) 65% recovery of gold & silver
b) $17,500 per month operating costs (3,500 tons/month)
c) assay: silver=1.6 oz/ton and gold=0.02oz/ton
d) Receive 90% of gold & silver value on sale of precipitate

In order to be reasonably assured that the prices received for metals will not fall below the costs of producing them, minimum prices to be expected for silver have been projected. It is assumed that prices for the less important gold component will be proportional. The average yearly price of silver and the consumer price index for the years 1961 through 1984 were taken from market data statistics. The changes in the CPI were assumed to represent inflation of the dollar. The average price of silver for each year was divided by the average CPI for that year, giving a price of silver in terms of the 1967 dollar. The average price in 1967 dollars for those 24 years was $2.47/oz. This, multiplied by the present CPI ratio of 3.20 gives an average price over 24 years of $7.90 per ounce for silver, expressed in today's dollars. This is 24% above the present price, $6.37/oz as this is written. There were two major distorting factors during those years tending to counter each other. It has been reported that from 1957 through the early 1970s the federal government sold nearly two billion ounces of silver from stockpiles, depressing prices. There are now only some 150 million ounces remaining in those stockpiles. The Hunt brothers' incursion into the silver market during 1979 and early 1980 caused a tremendous price escalation for a short time. It isn't clear whether these two factors canceled each other or whether one was dominant.

If it is assumed that the two distorting factors cancel each other and that the average price over the past 24 years represents the price to be expected for the future, then $7.90/oz represents the expected price of silver. If it is assumed that the government sales had no effect but that the Hunts' buying did, and therefore the years 1979 and 1980 are taken out of consideration, the same calculation shows an average price for the 24 years of $6.66/oz in today's dollars. If only the years 1975 through 1984 are considered, except for 1979 and 1980, thereby presumably removing the effects of both major factors, the average price in today's dollars is $9.44/oz.

There are several fundamental factors, such as the increasing per capita use of silver in some emerging nations and the decline in supply caused by the closing of major copper mines, which would imply the probability of rising silver prices in the future. Without considering these factors however, it is seen that even a conservative rationale for predicting the price of silver shows that there is a comfortable margin between the price expected and the probable cost to produce silver and gold from the tailings pile at Ruby.

TABLE 1 - ESTIMATED COSTS

Install fence		$ 5,000	
Chemicals			
NaCN	$6,480		
NaOH	1,050		
CaO	250		
Zn	335		
DE	85		
Odds and ends	500		
		$ 8,700	
Assay Unit		4,500	
Plastic		2,900	
Perforated Pipe		600	
Radio Telephone		3,000	
Refurbish Precip. Units		2,100	
Miscellaneous Piping		1,000	
Electrical System		1,500	
Generator		3,000	
Truck Rentals		200	
Loader		5,000	
Royalty		1.667	
Wages		8,000	
Fuel		1,000	
Insurance		1,500	
Total			$49,167
Contingency - 20%			9,833
Total Funding Needed			$59,000

ESTIMATED METALS PRODUCTION, SALE, AND BALANCE - BY MONTH

ESTIMATED WORST CASE

Assume silver price = $5.00/oz; gold price = $250.00/oz.
Assume 65% recovery of both silver and gold.
Receive 90% value of metals on sale; require $17,500/mo.

Mo	Produce (oz)		Sell (oz)		Retained (Oz)		Value
	Ag	Au	Ag	Au	Ag	Au	
1-4	0		0		0		0
5	3,640	45.5	2,390	30	1,250	15.5	$ 9,112
6	3,640	45.5	2,390	30	2,500	31.0	18,225
7	3,640	45.5	2,390	30	3,750	46.5	27,337
8	3,640	45.5	2,390	30	5,000	62.0	36,450
9	3,640	45.5	2,390	30	6,250	77.5	45,562
10	3,640	45.5	2,390	30	7,500	93.0	54,675
11	3,640	45.5	2,390	30	8,750	108.5	63,787
12	3,640	45.5	2,390	30	10,000	124.0	72,900
13	3,640	45.5	2,390	30	11,250	139.5	82,012
14	3,640	45.5	2,390	30	12,500	155.0	91,125
15	3,640	45.5	2,390	30	13,750	170.5	100,237
16	3,640	45.5	2,390	30	15,000	186.0	109,350
17	3,640	45.5	2,390	30	16,250	201.5	118,462
18	3,640	45.5	2,390	30	17,500	217.0	127,575
	After refining charge(fine oz)				15,750	195.3	127,575
	Distribute to Partners				8,000	100.0	65,000
	Remaining				7,750	95.3	62,575
	Sell to pay loan and interest				4,100	50.0	33,000
	Total Remaining				3,650	45.3	$29,575

Note: The value of retained silver and gold is carried at 90% of actual value to reflect the 10% refining charge not otherwise accounted for. After refining charge the ounces retained are reduced by 10% and valued at actual prices assumed.

INVESTOR PROFORMA

It is planned to sell ten units of the Partnership at $5,000 each. Distribution to the investor for each unit to be made on or before the expiration of eighteen months after the formation of the Partnership is:

Limited Partner:	800 ounces of silver (999 fine) 10 ounces of gold (999 fine)
General Partner:	1,200 ounces of silver (999 fine) 15 ounces of gold (999 fine)

The value to the investor of 800 ounces of silver and 10 ounces of gold for several different sets of silver/gold prices is shown below. The value of gold is assumed to be fifty times that of silver, which has been approximately the case during the early part of 1985.

SILVER/GOLD PRICE	VALUE OF 800 oz. Ag 10 oz. Au	PERCENT INCREASE OVER $5,000	YEARLY COMPOUNDED % INCREASE
3.85/192.00	$ 5,000	-0-	-0-
4.00/200.00	5,200	4.00	2.64
5.00/250.00	6,500	30.00	18.82
6.00/300.00	7,800	56.00	33.58
6.37/318.50	8,281	65.62	38.74
7.90/395.00	10,270	105.40	58.76
9.00/450.00	11,700	134.00	72.04
12.00/600.00	15,600	212.00	104.75
15.00/750.00	19,500	290.00	133.73
20.00/1,000	26,000	420.00	176.39

Thus it is seen that the price of silver would have to fall below $3.85 and the price of gold below $192 for the distribution to be valued at less than $5,000. At prices of 6.37/318.50 (as this is written), the compounded annual percent increase over $5,000 would be 38.74, and at 7.90/395 (silver at the 24 year average - in today's dollars) the compounded annual increase would be 58.76%, assuming that the distribution is made at the expiration of eighteen months.

K & K MINING, INC. - KEY PERSONNEL

H. A. KINNISON

Mr. Kinnison was born in Tucson. He attended Tucson public schools, the University of New Mexico, the University of California at Berkeley, and graduated from the University of Arizona College of Mines in 1951 with a degree in Mining Engineering. He is a Registered Professional Engineer in Arizona. Mr. Kinnison has worked on engineering projects in the Far East and Alaska as well as in the United States. Since 1963 he has operated his own Consulting Engineering business in Tucson and has operated a construction company as well. He has designed and supervised the construction of many large scale projects in various parts of the world.

BRUCE E. MATTAUSCH

Mr. Mattausch was born in Spokane, Washington. He attended public schools there and took a degree in Mechanical Engineering at Spokane Community College. He worked for more than ten years for the Anaconda Mining Co. at Sahuarita, doing heavy equipment maintenance and repair and electrical diagnostics and repair. He has owned and operated a restaurant in Sierra Vista, Arizona, and has engaged in various real estate ventures in Southern Arizona. He is very well versed in the hands-on operation of all kinds of mechanical and electrical process equipment.

JEAN C. GALLAGHER

Ms. Gallagher was born in Hammond, Indiana, and raised in New Jersey. She attended Maryville College in Maryville, Tennessee. She has been President of a corporation engaged in buying, operating, and selling mobile home parks in New Jersey and Arizona. She is a licensed Real Estate Broker in Arizona and has been practicing in Real Estate since 1972. She operates her own Brokerage in Tucson.

MINING LEASE

THIS MINING LEASE, entered in to this 1st day of May, 1985, between RUBY MINES, an Arizona corporation, (herein called "Owner"), and K & K MINING, INC., an Arizona Corporation, (herein called "Lessee"):

WITNESSETH:

WHEREAS, Owner owns the patented mining claims collectively known as the Ruby Mine and described as follows:

The Philadelphia; Montana Dam; Montana Camp; Mineral No. 1; Mineral No. 2; Mineral No. 3; Mineral No. 4; Mineral No. 5; Mineral No. 6; Mineral No. 7; all as more fully described in the Patent thereof, Survey No. 2206, as described and recorded in Book 6 of Mining Deeds at page 385;

and

The Spear; Ruf and Ready; Protection; Laddie; Excelsior; Lerchen's Fraction; all as more fully described in the Patent thereof, Survey 4139, as recorded in Book 8 of Mining Deeds at page 262;

WHEREAS, Owner desires to grant to Lessee and Lessee desires to acquire the right to extraction and processing operations on said mining claims in said Ruby Mines;

Now, THEREFORE, in consideration of the mutual covenants terms and conditions herein set forth, and the payment of ONE THOUSAND DOLLARS ($1,000.00), receipt of which is hereby acknowledged, Owner hereby leases to Lessee and Lessee hereby leases from Owner, the above described patented mining claims known as the Ruby Mine situated in the Oro Blanco Mining District of Santa Cruz County, Arizona, and hereinafter referred to as the " Leased Premises".

1. RIGHTS GRANTED TO LESSEE. Owner hereby grants to Lessee the exclusive right and privilege to enter upon, and take possession of, the mine tailings and dumps, all concentrates, mineral or mineral products of every kind whatsoever, together with the exclusive right to enter upon and occupy the Leased Premises with workmen and equipment and to use a certain percentage of the water on the premises, including water within the mine itself, but never to the point of completely drying both the upper and lower lakes.

2. TERM. The term of this Mining Lease shall commence as of its date and -- unless sooner terminated pursuant to Paragraph 3 below -- shall continue until the expiration of seven years after the date first above written.

3. PAYMENTS. All payments to Owners are to be made to RUBY MINES, c/o: DOROTHY SHETTER, 4530 N. Camino del Obispo, Tucson, AZ 85704.

If this mining Lease shall be in effect on the following dates, Lessee shall make the payments, specified opposite each date below, to said Treasurer in behalf of the Owner.

Ninety days after the acceptance of this Lease, royalty payments shall be paid to the Owner at the rate of forty-five cents (45¢) per cubic yard of processed material, and shall be applied to the minimum monthly payments. Whenever Royalty payments exceed the monthly payments, the excess shall be kept by the Owners; whenever Royalty payments are less than the monthly payments, the shortage shall be paid to the Owners.

Minimum monthly payments are as follows:

$1,000. for securing bulk samples for testing purposes, to be paid on execution hereof as hereinbefore provided;
Months 1 through 12 at $400./month minimum, to be paid by the first day of each month beginning Aug. 1, 1985;
Months 13 through 24 at $800./month minimum, to be paid by the first day of each month beginning Aug. 1, 1986;
Month 25 and each month thereafter at not less than $4,000./month, to be paid by the first day of each month beginning Aug. 1, 1987.

4. DISSEMINATION OF INFORMATION AND RECORDS.

(a) Lessee agrees to keep complete accounts showing the cubic yardage of all materials processed , which may be inspected by Owner at any reasonable time. Lessee agrees to keep records of all geology, geochemistry, geophysics and engineering studies in accordance with industry standards; and upon termination of this Lease, copies of all such records, reports, maps, drill logs, drill cores, data, surveys, and engineering studies shall be turned over to the Owner.

(b) At approximately yearly intervals, Lessee shall furnish to Owner a summary of royalty & other payment data accumulated during the period covered by the report.

(c) Owner, through its officers or authorized agents -- at Owner's sole risk and expense -- may, at any reasonable time, enter upon and inspect Lessee's operations.

5. PROTECTION FROM LIENS. Lessee shall pay all expenses incurred by it in its operation on the Leased Premises and permit no liens to arise thereon by reason of any operations of Lessee and shall post "No Lien" notices in a conspicuous location on the Leased Premises.

6. INDEMNITY. Lessee shall save and defend Owner harmless from any loss, cost or damage on account of damage to property or injury to or death of any person or persons arising out of Lessee's operations on or about the Leased Premises.

7. REMOVAL OF PROPERTY BY LESSEE. Lessee shall be entitled, when not in default, hereunder from time to time during the term hereof and during the 90-day period following the expiration or any earlier termination of this Mining Lease to remove from the Leased Premises all its personal property thereon or therein which is owned by Lessee, or of which Lessee is entitled to possession, under the terms of its arrangements with the owner or owners of such property excepting that which has become mine fixtures, such as pipe, timbers, and rails.

8. DEFAULT. If Lessee shall be and remain in default hereunder and shall fail to correct the default within 30 days after receipt of written notice from Owner specifying the default this Mining Lease shall then be subject to termination at the election of Owner by means of a written termination notice given by Owner to Lessee at any time while the default continues.

9. INSURANCE. Lessee agrees that at all times during the period of this Lease, it shall keep the Property posted in accordance with the statutes of Arizona in such cases made and provided, by utilizing the following form:

> " NOTICE TO ALL EMPLOYEES ON THIS PROPERTY AND TO ALL OTHERS WHOM IT MAY CONCERN:
>
> Notice is hereby given to all persons performing labor or furnishing skill, materials, machinery, or other fixtures or supplies of any kind, in, to, or on any mine or mill upon this property, or any part thereof, that the undersigned, the Owners of said property, are not and will not be responsible for any labor performed or skill, materials, machinery, or upon said property, or part thereof, nor shall the interest of said Owners be subject to any lien to property. Aforesaid property is being operated by K & K MINING, INC., an Arizona Corporation, to whom all persons must look for payment. "
>
> RUBY MINES
>
> BY L. W. ROBERSON
> PRESIDENT

(a) Lessee shall carry suitable liability insurance to give protection to all parties concerned.

10. FORCE MAJEURE. The time for performance of any act or other than the making of any payment required under this Mining Lease and completing assessment work shall be extended by the period of any delay or inability to perform to the extent that such delay or inability to perform is due to fire, strikes, labor disturbances, riots, civil commotions, war (whether de facto or formally declared), acts of God, any present or future law or governmental regulation or any other cause beyond the con-

trol of the party in default. This paragraph shall be operative only if the party desiring an extension of time notifies the other in writing within 30 days after obtaining knowledge of the delay or inability to perform.

11. NOTICES. Any notices required or permitted hereunder shall be effective when addressed as specified below and deposited postage prepaid and registered or certified in the United States Mail:

If to Owner:

Dorothy Shetter
4530 N. Camino del Obispo
Tucson, AZ 85704

If to Lessee:

K&K MINING, c/o H. A. Kinnison
1305 W. Miracle Mile
Tucson, AZ 85705

Either party may, by notice given to the other, change its address for future notices hereunder. Notices shall be deemed to have been given as of the date of mailing within the continental United States in accordance with the requirements of this paragraph 11.

12. SUCCESSORS AND ASSIGNS. This Mining Lease shall extend to, inure to the benefit of and be binding upon the respective successors and assigns of the parties hereto and the heirs, executors, estates, successors and assigns of each person who is now or who hereafter becomes a party hereto.

13. TAXES. Lessee shall pay all state and county taxes on the patented mining claims and other mining property, assessments upon any and all structures and other improvements, machinery, equipment, tools, supplies, and personal property whatsoever placed upon the Leased Premises by the Lessee. Lessee shall also pay all federal, state and county

"net proc[illegible]", production, severance or similar [illegible]s assessed against Lessee or Owner (other than taxes due from Owner by reason of payments made to Owner hereunder) and other taxes assessed against Lessee on account of his operations hereunder.

14. CARETAKERS. Lessee may desire to have his own caretakers, or he may wish to keep the present caretakers, BILL EYEBERSE and PATRICIA MILLER, and have them work under his supervision.

15. FENCE. Lessee will fence the tailings pile and any other area needing protection, with suitable stock improved fencing of at least four strands of barbed wire, with steel posts ten feet apart. Lessee will also fence, in the same manner, the two improved lakes.

16. CHEMICALS. All chemicals which may be harmful or will pollute in any way the two bodies of water will not be tolerated by the owners. Any chemicals used shall be guarded by suitable fences to prevent entry by animals and be posted to warn humans of danger. Lessee shall be responsible for any loss of fish due to the use of chemicals and, if the fish should be killed by his chemicals, shall restock the lakes with a suitable amount and variety of fish at a proper time of the year.

17. BUILDINGS. Lessee shall refurbish the buildings he may wish to secure and make more liveable, or to be used as warehousing. Lessee shall also see that unused buildings are not destroyed or vandalized.

18. RESTORATION OF AREA. At the termination hereof, any area that has been mined will be restored as nearly as possible to its present state, except that the processing of the tailings will proceed in such fashion that at the completion of processing the tailings pile it will have been moved to the south to increase the lake area. If possible, the new pile will be constructed so as to form one large lake of approximately thirty five acres. If this is not feasible, the upper lake may remain as is, but the lower lake will be enlarged by the moving of the pile to the south. When the dam formed of

tailings is completed it will be faced with plastic or bentonite or otherwise sealed to prevent seepage through it.

It is expected of the Lessee to care for the grounds and care for the buildings. It is also expected that the Lessee shall leave the said grounds and buildings in a better state of repair than they were found when Lessee took over said premises.

IN WITNESS WHEREOF, the parties hereto have executed this Mining Lease as of the day and year first above written.

RUBY MINES

L. W. Roberson, President

K & K MINING

H. A. Kinnison, President

LIMITED PARTNERSHIP AGREEMENT
OF RUBY TAILINGS LIMITED PARTNERSHIP

THIS LIMITED PARTNERSHIP AGREEMENT, made and entered into as of 14 January, 1986, by and between K & K Mining, Inc., an Arizona Corporation, as General Partner; and those persons who shall be admitted as Limited Partners;

WITNESSETH:

WHEREAS, the parties hereto desire to form a Limited Partnership for the purposes hereinafter set forth; and

WHEREAS, the parties desire to define the terms of their association in such Limited Partnership in writing;

NOW, THEREFORE, the parties mutually agree as follows:

ARTICLE I

FORMATION, NAME, PLACE OF BUSINESS, PURPOSE AND TERM

Formation. The parties hereto do hereby form a Limited Partnership pursuant to the provisions of the Uniform Limited Partnership Act of the State of Arizona.

Name, Place of Business. The Partnership shall be conducted under the name and style of RUBY TAILINGS LIMITED PARTNERSHIP; provided, however, that the Partnership shall have the right to transact business under such fictitious names as the General Partner may designate. The place of business and principal office of the Partnership, unless changed by the General Partner, shall be 260 E. River Road, Tucson, Arizona 85704. Notification of any such change in the Partnership's place of business and principal office shall be forthwith given to the Limited Partners.

Purpose. The purpose and character of the business of the Partnership is to acquire silver and gold for investment purposes, to be distributed to the partners. To this end the Partnership will engage K & K Mining, Inc., in its separate capacity as operating company and not as General Partner, to process the tailings pile at Ruby to extract some of the remaining silver and gold. Such processing is expected to be done by means of the "heap leach" cyanaide method.

Commencement and Term of Partnership. The term of this Partnership shall commence upon the filing of the Certificate of Limited Partnership pertaining to the Partnership in the office of the Secretary of State of Arizona, which filing will be done as soon as practicable after the completion of sale of the ten Units authorized herein. The term of this Partnership shall expire when all of the owners of the ten Limited Partnership Units shall have received the full amount of metals herein agreed, or when the Partnership shall have been otherwise dissolved as given in ARTICLE V. The metals will be

distributed on or before 18 months after the formation of the Partnership.

ARTICLE II

PARTNERS' CAPITAL CONTRIBUTIONS

General and Limited Partners. The General Partner will make no contributions in cash to the Limited Partnership. The General Partner will contribute at no cost to the Partnership the previously done sampling, assaying, research, and analysis. K & K Mining, Inc., which is also the General Partner, will make available the expertise and the lease rights to the tailings pile, organize and direct the efforts to produce the metals to be distributed, and in general conduct the operation. K & K Mining, Inc. will perform the actual processing of the tailings pile and the production of silver and gold, either with its own forces or, when it deems advisable, by means of contract. For this, K & K Mining, Inc. will be paid by the Partnership, in advance of disbursement, all of the funds contributed to the Partnership.

The General Partner is hereby authorized to sell ten Units in the Partnership for $5,000.00 each. Upon payment of $5,000.00, or a multiple of $5,000.00, and execution of this agreement the investor shall become eligible to be a Limited Partner and will become a Limited Partner when the Limited Partnership is formed by filing with the Secretary of State of Arizona.

All cash subscriptions to the Partnership will be placed in an interest bearing account with a bank or savings and loan association located in Tucson, Arizona. If insufficient subscriptions to the Partnership are received, or if for any other reason the Partnership is not formed, each investor will have returned to him the full amount of his subscription and the proportionate interest earned by his subscription.

Partnership Capital. No Partner shall be paid interest on any Capital Contribution except as provided in the preceding paragraph. No Partner shall have the right to withdraw or receive any return of his Capital Contribution, except as specifically provided herein.

Liability of Partners. No Limited Partner shall be liable for the debts, liabilities, contracts or any other obligations of the Partnership, nor shall he be required to lend funds or make any other contributions to the Partnership beyond his initial contribution of $5,000.00 per Unit. The stockholders of the General Partner shall have no personal liability for the repayment to the Limited Partners of the Capital Contributions made by the Limited Partners.

ARTICLE III

DISTRIBUTION OF BENEFITS TO PARTNERS

General. There are no tax benefits nor any cash benefits anticipated for the Partnership.

At the expiration of eighteen months or such prior time as designated by the General Partner, the Partners shall have distributed to them the following:

Limited Partners, for each Limited Partnership Unit owned;
800 troy ounces of silver (999 fine), and
10 troy ounces of gold (999 fine)
General Partner;
1,200 troy ounces of silver (999 fine), and
15 troy ounces of gold (999 fine).

These are the sole and only benefits and recompense the Limited Partners will receive in return for their capital contributions.

The General Partner shall receive, after distribution to the Partners of the benefits herein specified, and simultaneously with the liquidation of the Partnership, any items of value acquired by the Partnership.

ARTICLE IV

RIGHTS, POWERS AND DUTIES OF PARTNERS

Management and Control of the Partnership. The General Partner, except insofar as it may be unlawful or in contravention of this agreement, shall have the exclusive right to manage the business of the Partnership and is hereby authorized to take any action and to do anything and everything it deems necessary to the furtherance of the purposes and objectives of the Partnership.

No Limited Partner shall participate in or have any control over the Partnership business or shall have any authority or right to act for or bind the Partnership in any manner whatsoever.

It shall be the duty and obligation of the General Partner to use its best efforts and abilities to conduct the business of the Partnership so as to protect the interests of the Limited Partners and to achieve the purposes and objectives of the Partnership.

ARTICLE V

DISSOLUTION AND LIQUIDATION OF THE PARTNERSHIP

Events of Dissolution. The Partnership shall dissolve when the Partners shall have received the benefits hereinbefore specified, or; the Partnership shall dissolve upon unanimous vote of all the Limited Partners and the General Partner, or; the Partnership shall dissolve upon the entry of a decree of judicial dissolution, or; the Partnership shall dissolve upon

the voluntary or involuntary sale of the assets of the Partnership, provided, however, that the General Partner will not make any voluntary sale of the assets of the Partnership without the unanimous consent of the Limited Partners.

Dissolution of the Partnership shall be effective on the day on which the event occurs giving rise to the dissolution, but the Partnership shall not terminate until the Partnership's Certificate of Limited Partnership shall have been canceled and the Partnership shall have been liquidated as provided herein. Notwithstanding the dissolution of the Partnership, prior to the termination of the Partnership the business of the Partnership and the affairs of the Partners, as such, shall continue to be governed by this agreement.

Liquidation. Upon dissolution of the Partnership by reason of the Partners having received the benefits hereinbefore specified, the liquidation of the Partnership will consist of transferring all of the assets and liabilities of the Partnership to the General Partner. Upon dissolution of the Partnership for any other reason the General Partner will liquidate the assets and liabilities and distribute the proceeds as follows:

(a) If the total proceeds are $50,000 or less, then the proceeds will be distributed to the Limited Partners in proportion to the amount of capital contribution made by each.

(b) If the total proceeds are greater than $50,000, then $50,000 will be distributed to the Limited Partners as in (a) above and the remainder will be distributed as follows:

80% to the Limited Partners in proportion to their capital contributions,and

20% to the General Partner.

ARTICLE VI

MISCELLANEOUS PROVISIONS

Operations. K & K Mining, Inc., in its separate capacity as operating company and not as General Partner, will perform the actual work of developing the operation, processing the material and producing the silver and gold to be distributed. It will employ either its own forces or contract to have work done, as it deems best. K & K Mining, Inc. will be paid by the Partnership for this work and all other expenses incident to the business of the Partnership. Such payment will be made by the Partnership, from Partnership funds, in advance of disbursement by K & K Mining, Inc.. From time to time, as the project proceeds, K & K Mining, Inc. will sell either metals or precipitate to acquire funds to continue the operation. As metals surplus to the requirements of the operation are accumulated they will be transferred from K & K Mining Inc. and placed in storage in the account of the Partnership until a total of 9,200 troy ounces of silver and 115 troy ounces of gold are accumulated, except that some of such metals may be withdrawn or sold if in the judgement of the General Partner it is advisable in order to further the interests of the Partnership.

K & K Mining, Inc. will perform the work cited above, and be paid for the work by the Partnership capital contributions. K & K Mining, Inc. will undertake to perform the work without profit, but will, upon dissolution of the Partnership, receive all of the remaining assets of the Partnership and retain all items of value which it has acquired, in lieu of profits.

Key Personnel. H. A. Kinnison of K & K Mining, Inc. will work full time on the project, supervising, organizing, and directly participating in the actual processing. For this he will be paid only nominal compensation, not to exceed $1,500.00 per month. Any other personnel furnished by K & K Mining, Inc. will be paid on only a nominal basis. A "Key Man" insurance policy will be maintained on H. A. Kinnison.

Transferability of Interests. Limited Partners' interests are not generally transferable. In the event of the death or adjudication of incompetence or insanity of a Limited Partner, his guardian or conservator or, if he becomes bankrupt, the receiver or trustee of his estate shall have all rights of a Limited Partner for the purpose of settling or managing his estate. The death, dissolution, adjudication of incompetence or bankruptcy of a Limited Partner shall not dissolve the Partnership.

Meetings. A meeting of the Limited Partners for any purpose may be called by the General Partner and shall be called by the General Partner upon receipt of a request in writing signed by a majority in Interest of the Limited Partners.

Appointment of General Partner as Attorney-in-Fact. Upon execution of this Agreement, each Limited Partner shall execute and deliver to the General Partner a Special Power of Attorney, on the form attached hereto and by this reference made a part hereof.

Investment Intent. Each Limited Partner hereby represents and warrants that the acquisition of such Limited Partner's Interest is for investment purposes only and not with the view to subsequently resell all or any portion of such Interest. Each Limited Partner understands that the transferability of his Interest is restricted and that he cannot expect to be able to readily liquidate his investment in case of an emergency; and that the capability of K & K Mining, Inc. to produce and distribute the metals projected may be adversely affected by a variety of economic and physical conditions over which the Partnership has no control. Each Limited Partner further represents that he is capable of bearing a total economic loss of his investment in the Partnership.

Binding Provisions. The covenants and agreements contained herein shall be binding upon, and inure to the benefit of, the heirs, executors, administrators, personal representatives, successors and assigns of the respective parties hereto.

Severability. Each provision of this Agreement shall be considered severable and, if for any reason any provision or provisions hereof are determined to be invalid and contrary to any existing or future law, such invalidity shall not impair the operation of or affect those portions of this Agreement which are valid.

Mailings. Any notifications required or permitted to be given by one party hereto to another under this Agreement shall be in writing and shall either be personally delivered or mailed by United States mail, first class, registered or certified, return receipt requested, postage prepaid and properly addressed as follows:

If to the General Partner or the Partnership	260 E. River Road Tucson, Arizona 85704
If to a Limited Partner	The mailing address set forth herein

Either the General Partner or Limited Partners may change the address to which notifications shall be sent by giving written notice to the other party at the address given above.

Acknowledgement. Limited Partner acknowledges that he or she has read and understood all of the Private Placement Memorandum and is fully aware of the risks inherent in this investment.

IN WITNESS WHEREOF, the undersigned have executed this Agreement as of the date written.

General Partner

K & K Mining, Inc.
An Arizona Corporation

By _____
H. A. Kinnison, President

Limited Partner
Owner of 2 Units of the Partnership

_____

Address 5149 Galileo Drive

Sierra Vista, Arizona 85635

SPECIAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned hereby irrevocably makes, constitutes and appoints, K & K Mining, Inc., an Arizona corporation, with full power of substitution, as his true and lawful attorney and agent with respect to the affairs of Ruby Tailings Limited Partnership, a Limited Partnership organized under the laws of the State of Arizona ("Partnership"), as long as the undersigned remains a Limited Partner of the Partnership, with full power and authority in his name, place and stead , to execute, acknowledge (if required), swear-to, deliver, file, and record on his behalf in the appropriate public offices and publish the following instruments and counterparts thereof:

1. A Certificate of Limited Partnership of the Partnership or amendment thereto pursuant to which the undersigned and other purchasers of Units in the Partnership are named and admitted as Limited Partners;

2. Any other instrument which may be required to be filed by the Partnership under the laws of any state, the United States or any other jurisdiction;

3. Any and all amendments, modifications or cancellations of such Certificate or instrument;

4. Certificates of fictitious or assumed name:

5. All certificates and other instruments and amendments thereto which the General Partner of the Partnership deems appropriate or necessary to qualify, or continue the qualification of , the Partnership or otherwise comply with the laws of the jurisdiction where the Partnership may do business or own property in order to maintain the limited liability of the Limited Partners and to comply with all applicable laws of such jurisdiction;

6. All conveyances and other instruments or documents which the General Partner of the Partnership deems appropriate or necessary to reflect the dissolution and termination of the Partnership;

7. Any instrument which may be required to be filed and/or recorded by the Partnership pursuant to any applicable law, or which the General Partner of the Partnership deems advisable to file and/or record.

The foregoing power and authority of substitution grants to said attorney and agent, its successors and assigns, each the full power and right to substitute any person (as said word

is defined in Arizona Revised Statutes, Section 29-301(11)) as the attorney and agent herein with the full power and right to act on behalf of the undersigned as set forth herein.

The undersigned does hereby give and grant unto said attorney and agent full power and authority to do and perform all and every act and thing whatsoever requisite and necessary to be done in accomplishing the foregoing, as fully to all intents and purposes as the undersigned might or could do if personally present, hereby ratifying and confirming all that said attorney and agent shall lawfully do or cause to be done by virtue of these presents.

This Special Power of Attorney is coupled with an interest and is irrevocable and shall survive the disability and incompetency of the undersigned and shall survive any assignment by the undersigned of the whole or any portion of the undersigned's interest in the Partnership. The undersigned hereby waives any and all defenses which may be available to contest, negate or disaffirm the action of his attorney and agent hereunder taken in good faith under this Special Power of Attorney.

The power and authority hereby granted by the undersigned to his said attorney and agent shall be limited by the provisions of A.R.S. 29-311(B) and any other required limitations provided by applicable law.

The personal pronoun "his" as used herein shall be deemed to include the feminine and neuter genders as well as the masculine gender and the singular of such personal pronouns shall include the plural

(Individual)

_____ _____

Husband Wife

(Corporate)

_____

an_____corporation

By_____

Its_____

(Partnership)

_____

a_____

(General/Limited) Partnership

By_____

General Partner

ACCREDITED INVESTOR CERTIFICATION

The undersigned, being desirous of purchasing a Limited Partner Unit(s) in RUBY TAILINGS LIMITED PARTNERSHIP (the "Partnership"), hereby certifies to the Partnership and the General Partner thereof that the undersigned is an accredited investor as defined in Rule 501(a) of Regulation D promulgated by the United States Securities and Exchange Commission for the following reason:

(Check one or more of the following:)

_____ A. The undersigned is a natural person whose net worth at the time of purchase of such Unit(s) exceeds $1,000,000.00 (including net worth of the undersigned's spouse, if applicable)

_____ B. The undersigned is a natural person who had an income in excess of $200,000.00 in the current year.

_____ C. The undersigned is a person who will purchase at least $150,000.00 of the Unit(s) and such purchase does not exceed twenty percent (20%) of the undersigned's net worth at the time of sale, or joint net worth with the undersigned's spouse.

_____ D. The undersigned is an entity in which all of the equity owners are accredited investors.

Date: _____, 1985

_____
Investor

_____
Investor

Ann Marchiony

4050 East Rosemonte Drive
Phoenix, AZ 85024-3750

Office: 602-569-0728
Fax: 602-569-9104

RUBY: A GEM OF A NATURALIST'S DREAM CAMP

by Ann Marchiony

Nestled deep in a wild and rugged region of Arizona, south of the Atascosa Mountains, is an old deserted 300 acre mining town, called Ruby, elevation 4200 feet. All that is found now near the two lakes are a tailings pile of about 700,000 tons of mineral residue, rusted skeletons of heavy equipment and approximately 24 restorable structures.

Ruby is a two hour car ride from the city of Tucson, into southern Arizona's Santa Cruz county; the hard part is the last 14 miles--a long stretch of narrow, unpaved, winding mountain road as it climbs along a ridge, drops down and crosses over Sycamore Creek.

The best part of the trip is the oak-savannah covered terrain, host to a multitude of flora and fauna, among them several threatened and endangered species. The map of Ruby shows Sycamore Canyon and the Goodding Research Natural Area a few miles to the east; northwest of the ghost town is the Buenos Aires National Wildlife Refuge.

A trail system extends from the Refuge, closely following the box canyon through which Sycamore Creek flows, along the Mexican border to Ruby, then meanders on to Sycamore Canyon and the Gooddings Area.

The late Leslie N. Goodding, a noted Arizona botanist, for whom the area is named, called the canyon a "hidden botanical garden."

This garden, surrounded by the Oak Savannah Vegetation Type, with plant and animal life found nowhere else in the country, serves as a living museum, an outdoor laboratory for nature scientists.

The southern counties of Arizona are the only areas in the United States that contain a representative growth of the Mexican Blue Oak. One plant, Psilotum, is so rare that this is the only place west of eastern Texas, where it is known to grow. Another rare plant, Goodding Ash, named for Goodding who first discovered it, is also found here.

Uncommon species of plant life found in the Goodding Research Natural Area are Yewleaf willow; Tourmey Oak; Kidney wood; also Maidenhair Fern and Trailing Fern.

Hundreds of bird species, uncommon and a few rare, have been observed: five species of rare birds that migrate through or inhabit the area are the Copper-tailed Trogon, on its way to nesting grounds in the Atascosa and Santa Rita mountains.

The Green Kingfisher and the Rose Throated Becard, a rare Arizona breeding bird, are both found only near the Mexican/Arizona border; the beardless flycatcher nests in willows along the border; and the

Louisiana Water-thrush, is a regular winter resident. Along with ground animals common to Southern Arizona, there are a few reptiles and the rare Vine Snake.

In 1960, Ned Daugherty, who had lived in Ruby as a child, purchased the property for its historic value, environmental importance and recreation opportunities. "My love for the old town," he said, "and its technical capabilities, were my basic impetus for buying it."

Today, working through his San Diego company, In Site, plans are underway to bring back the sparkle befitting the mining town's name. More importantly, Ruby will be established as a joint ecological research/cultural interpretation center.

"I don't believe that there is another similar project to be found anywhere in this country, or in the world, for that matter," said Daughterty.

Approximately two dozen buildings will be renovated including the schoolhouse, jail, general mercantile, mine complex, and the infirmary.

"Our project is not to restore Ruby, but to rehabilitate it," explained Daugherty. "Some of these buildings will be used as museums and mining displays for cultural interpretation to limited public tours, and others as laboratories, conference/seminar rooms, passive recreational amenities and accommodations for visiting academicians and scientific researchers.

"Our first and most important tasks are to stabilize and document the buildings: spray the adobe walls with an organic stabilizing agent, put covering where roofs used to be, or simply patch them.

"We have already put up discretionary fences to allow only small animals to enter and keep the cows away from the few walls that still stand. Incidently, the state of Arizona has done environmental tests at the site and has stated that it is totally clean."

Several state agencies in Arizona have provided digital environmental data which were used for mapping and analysis of discreet attributes such as topography, vegetation, soils, hydrography and land use patterns. With the data, an array of planning technologies is being used to produce a product which is both comprehensive and affordable.

"Utility requirements for the site and facilities will be met by several innovative alternative energy systems, including solar

photovoltaic and wind turbines," Daugherty said. "Naturally occurring thermal differential will be used to drive wind generators, concealed at the mouth of mine tunnels. Interior space heating and cooling will also be captured from the stream of constant 72 degree air emitted from more than seven miles of these mine drifts."

Now that Ruby is on the National Register of Historic Places, the call is out for modern day Prospectors to donate volunteer support of both equipment and funds to the Ruby Project.

However, it wasn't until the summer of 1992 that he applied to the Arizona Heritage Fund Program for the first grant titled "Bricks and Mortar," which covered the planning and emergency stabilization work. Now, due to these beginnings, numerous domestic and international organizations and funding agencies are interested in the project.

The colorful history of the area names the Spanish explorers as the first to travel the area in the 1500's. Mining claims were first patented in the early 1900's, and sometime in the '20s, a million dollar stamp mill was erected by Goldfield Consolidated. Soon after this, the Eagle Pitcher Lead Company bought the property rights and successfully mined it until the early 1940's when declining metal prices and ore depletion forced abandonment.

The settlement, once rich in gold, silver, lead and zinc, was first called Montana Mine. In 1909, Julius F. Andrews, storekeeper and postmaster, changed the name of the settlement to Ruby in honor of his wife, the former Lille B. Ruby.

While Ruby's heyday was during the 20's and 40's, in 1935, 2,000 people lived in tents, adobes and midwestern type frame houses on the slopes of Ruby. As did most other mining camps, it attracted the rough and lawless, and renegade Apaches and Mexican bandits brought violence and tragedy.

"Now, with matching funds available from Arizona's State Parks and Fish and Game," Daugherty concluded, "we anticipate completion of the Ruby Project in three to five years."

"I agreed with the Park Rangers from the U.S. Forest Service, working within the Nogales Ranger District, Coronado National Forest. This whole area is a haven for botanists and naturalists and soon Ruby will be their main camp."

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Mr. Stephen Monteleone
806 Security Bldg.
Los Angeles, California

Montana Mine (file)

Dear Sir:

In compliance with your verbal request, I have made a careful investigation of the properties owned by the Oro Blanco Mining Company in Oro Blanco Mining District, Santa Cruz County, Arizona. The Company, I find, have claims located to cover a large vein which is traceable for several miles through this District, having a trend northwesterly and southeasterly. Development work on the property consists of shafts from ten to twenty feet in depth. In addition to this a tunnel has been started at the base of the mountain at the south end of this group of claims of which you have maps which also shows this work.

The tunnel has been driven with a view of intersecting the large vein referred to and which, at the surface, shows copper carbonates containing from one and one half to eight percent copper with occasional fragments of red oxide. General conditions indicate leaching of the oxidized copper-bearing sulphides and an enriched ore zone below. There are also numerous smaller veins on the property but the assay results from samples taken, which are hereto attached, show that the metal values are not sufficient to permit the ore to be mined and shipped to smelters at a profit. A number of the veins could however, be worked profitably with a modern well equipped mill operating in the district.

The property is wholly in a prospective state and from results obtained from adjoining properties, which you have under consideration, I would recommend the holding of this group of claims together as they will undoubtedly, later, on, be of large value.

As you are aware, while I was engaged on the examination of the Oro Blanco Company's property, I was very much interested with the mineral indications on the properties immediately south and adjoining this group of claims and found that this area was owned and controlled by two parties, one property known as the Ragnoroc Group consisting of three patented claims owned by a party at Buffalo, New York, and the adjoining property south of Ragnoroc Group consisting of five claims known as the Austerlitz Group. This property is owned by Dr. Noon of Nogales, Arizona.

On the Austerlitz Group a large amount of surface work has been prosecuted as well as under ground work by means of a tunnel. This work being in the oxidized zone and for some reason, probably lack of mining experience, this tunnel was driven away from the ore vein, having cut the vein at a point not heavily mineralized, they drove on not realizing that the vein had been intersected.

In 1912, Woodworth and Layne opened up a large body of sulphide ore by running a cross cut from this tunnel at the point the vein showed, and from the ore they extracted, their report to the State Commissioner showed that they shipped in 1912, 1414.5 dry tons of ore and 18.4 dry tons of concentrates for which they received $57,224.44. What they shipped in 1913 is not known as the shipments were reverted to Selby & Company, San Francisco, California, but it is

estimated that over $96,000.00 was shipped from this property during their term of lease, but due to the method of mining with lack of timber, etc., a cave occurred, at which time they ceased operations, and it will now require a shaft north of their workings to intersect this ore body at a lower depth. Maps accompanying this report will show the proposed shaft.

The Austerlitz and adjoining claims show an oxidized surface ore zone. The ore of which will average well in gold and silver and often run to high grade. The sulphide ores opened up at greater depth are extensive, and as shown by smelter returns, of good commercial value.

I was fortunate enough to secure a report made by Mr. F. B. Schermerhorn which I hereby attach as it is very complete in detail, he having made a thorough and exhaustive examination, as careful reading of his report will show. His examination and also that of another Mining Engineer, Percy C. Sharp, made for another party, practically correspond, and it must be noted that both these reports were made before the sulphide zone and ore at greater depth were discovered or before the operation of Woodworth and Layne who extracted the $96,000.00 from the property.

In addition shipments made later by Dr. Noon and his son who extracted from the gold bearing oxidized zone in the Barkley tunnel, 5,300 pounds ore, sampled gold $13.60 and silver 14 ounces per ton and from a point on the Fisher vein 5,100 pounds which ran $38.86 gold and 18 ounces silver and from other points on the property 20,900 pounds of ore sampling gold $30.00, silver 17 ounces.

In conclusion I will say while the Austerlitz property has considerable merit, present development work is not sufficient to place ore in sight for economical extraction, but I am led to believe, from my superficial examination and from the facts herein, that further exploration would result in the discovery of important ore bodies such as would place the property in rank with many of the large paying mines of the southwest.

There are producing properties in the district which are operating night and day running their mills to full capacity. The Montana Mine, only a short distance from the Austerlitz, and on the same ore zone, is operating a mill of 200 tons per day capacity and I am reliably informed that these properties are now paying enormous dividends.

The Montana Mine, located on the same ore zone as the Austerlitz, is situated about eight thousand feet in a southwesterly direction from the Austerlitz property, and though a large daily production of commercial ore has been maintained for past years, the workings of the property have only been prosecuted to a depth of two hundred (200) feet, thus indicating that the vein has not only maintained a good average width, but also a uniform metal value. Operations are now under way to sink the present working shaft on this property, to a depth of five hundred (500) feet. Work will then be prosecuted to block out ore for economical extraction so that the present plant may be increased to handle one thousand tons or more of ore per day.

At the Yellow Jacket Mine which is also on the same ledge as the Austerlitz property, and which lies about 15000 feet in a northwesterly direction from the Austerlitz, operations are also under way for increased production. This mine, like the Montana, has been a large producer of gold and silver ore, and considering that its deepest workings are not more than one hundred and fifty feet, this property has made an unusual showing; and taking into consideration these developed mines on both ends of the Austerlitz property and which are located on the same ore zone as the Austerlitz, in connection with the unusual returns from the limited developments the Austerlitz has received, and the large quantity of ore showing on the surface, or in the oxidized zone, and what has been mined and worked in arastras by the Indians and Mexicans, (a primative method which is sometimes employed to-day by the Indians and Mexicans in remote districts in the Republic of Mexico), as well as the large tonnage which was bought and treated by the different small Mills operating in the earlier days in this District as shown by records, the Austerlitz Mine may be considered a proven property and not an undeveloped prospect, and will under careful management by experienced mining men, be developed into a very large and profitable producer of gold, silver and copper ores, from which large returns may be expected for many years to come, and taking into consideration the price and terms upon which this property has been acquired, I most earnestly recommend the development work as herein set forth.

Conditions as to transportation in this district have been greatly improved upon within the last year. The Montana Mining Company having completed a good auto road from the district to Nogales, a distance of only twenty-three miles.

I enclose blue prints from maps made by engineers employed by the owners of the Austerlitz group, and while I have had no opportunity to make a survey of the property, I am of the opinion, from my personal observation of the workings on the property that these maps are correct. I have added, however, a proposed shaft which you will note to be sunk to a depth of 180 feet. This should intersect the ore vein which I called to your attention during our visit to the property.

Trusting that this report will give you a clear idea of conditions and awaiting your further instructions, I am,

Respectfully submitted.

/s/ J. W. Bible

Mining Engineer.

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REPORT ON

THE AUSTERLITZ CONSOLIDATED MINING GROUP

By F. B. Schermerhorn, M. E.

HISTORICAL:

The Austerlitz group of mines is situated in the Oro Blanco Mining District, Santa Cruz County, Arizona. The early history of this district is lost in the mystic reaches of the past. If was probably placer mined by the Axtecs and later worked by the Spanish Friars. The Tumacacori Mission was established by the Spanish Friars about 1530 and is known to have been one of the wealthiest missions ever established in the present limits of the United States. They operated these mines until about 1830, when, because of differences with the Mexican Government, they dismantled and closed the mission and returned to Spain.

After the departure of the Spanish Fathers, the Mexicans began working in the district. There are still to be seen in a strip of territory about a mile wide and three miles long, the remains of seventy odd of the old arastras. In all this time that the district had been worked, from the time of the Axtecs down to the American occupation in 1849, nothing but the surface of the ores had been worked. No shafts had been sunk nor tunnels driven. The reason for this is that the surface ores were very rich on the divide and average about sixty feet in with. There are also two parallel ledges, one on either side, each about one hundred feet distant from the main ledge, each of these parallel ledges averaging about eight feet in width. At the time of the American occupation in 1849, the ores upon the surface still averaged about $30.00 per ton gold and silver, but at this time the discovery of gold in California caused both the Americans and Mexicans to desert this district for the new eldorado.

About 1865 a man by the name of Clinton Thompson returned from California to the district. He located several claims, among them the Austerlitz, and began working the ores in arastras. Some two years later Thompson was killed by the Indians.

In 1869 Mr. Townsend of New York, having heard of the district from Thompson, sent a mining engineer from New York to re-locate the properties. The engineer sent out by Townsend located the Austerlitz Group and began development of the property.

Mr. Townsend for the purpose of better protecting his interestsin the district, sent over from San Francisco a Doctor Noon, who is still residing in Santa Cruz County. Mr. Townsend got into financial difficulties and deeded all his right, title and interest in the Austerlitz Group to Dr. Noon, in whose possession the title has since remained. The Doctor has made several attempts to work the property, but has never made more than a trivial success of any of these attempts, because of lack of funds with which to properly equip the property as well as a lack of knowledge of mining operations. He has leased the property a number of times, as a matter of fact, all of the money that has ever been made out of the property has been made by the leasers. I succeeded in getting hold of the details of two lists of ores which were shipped to the Arivaca Mill.

1st.	au	3.50	ozs.	ag	12.00	value	$76.00
2nd.	"	.925	"	"	10.00	"	23.00
3rd.	"	9	"	"	8.00	"	22.00
4th.	"	7	"	"	11.00	"	19.50
5th.	"	65	"	"	12.20	"	18.60
6th.	"	7	"	"	12.30	"	20.50
Average		1.232			10.75		30.00
Tails		1.102			8.26		23.25
Amt. saved or		92%			82%		98%

The next record of a mill run that I got hold of was 90 tons run at the same mill, July 19th to 25th.

BATTERY ASSAYS

1st.	day	au	1.00	ag	13.00	value	26.50
2nd.	"	"	.70	"	11.00	"	19.50
4th.	"	"	1.00	"	11.00	"	25.50
5th.	"	"	.75	"	10.25	"	20.12
			.55	"	8.00	"	15.00
Average			.80		10.65		21.37
Tails			12		2.60		3.70
			68		8.05		17.67
Saved or			85%		80%		

The above is what the mill actually paid for the ores. In 1894 a mining man by the name of Charles J. Barkley, who was from Gibbonsville, Idaho, entered into an agreement to purchase the property for $40,000.00. While returning from Idaho to the property, he took pneumonia, which developed into quick consumption, and Mr. Barkley died at Indio, California a few weeks later. Mr. Barkley planned and began all the real developments that had ever been made on the property.

In 1902 Percy G. Sharp, a mining engineer from Los Angeles, sampled the property and from the 36 samples that he took, he got an average of 835 au. and ag. 6.21 oz., being gold $16.70 and silver $3.10 per ton.

In April of the present year, T. B. Wilde, a mining engineer from Goldfield, Nevada, took 26 samples from the dumps of the Austerlitz Group, from which he obtained an average of 6.12 gold and silver per ton. (Mr. Wilde made many subsequent assays, his total average was $9.00 silver at 54 cents).

GEOLOGY.

The Geological history of this section has never as yet, so far as I am informed, been inquired into by the United States GEOLOGICAL SURVEY but inasmuch as the Tumacacori-Oro Blanca ranges of mountains are composed of rhyolites, andesites, and dacyte, these mountains are one of the results of the revolution which occurred at or near the close of the cretaceous period. The general course of the gold and silver bearing veins also of the various dykes, is northwest and southeast trend, and the dip northeast. The mineral bearing zone or belt extends from the Austerlitz northwesterly into the desert and

southeasterly into Mexico. The width of this particular belt is about 200 feet. The length, although undeveloped to any particular extent except a short distance both northwest and southeast of the Austerlitz, is probably 40 or 50 miles. Along this gold belt it is worked for the placer gold by both Mexicans and Indians.

WOOD, WATER, ETC.

This district is well watered. There are numerous springs in the various gulches of the range of mountains from which an abundant supply of water can be obtained. The rainfall in this section, I am informed, averages 18 inches a year. Timber consists wholly of live oak. A plentiful supply for fuel purposes can be obtained in the Austerlitz Group and purchases from the reserve, but all mining timbers and lumber for other purposes must be obtained elsewhere. There is an excellent wagon road from Tucson some 80 miles northeast, to the property. There is also a very good road from Nogales, some 45 miles to the eastward, but in its present condition, heavy loads of freight could not be brought over it.

DEVELOPMENT

Most of the development of this property consists of open cuts exposing large bodies of ore lying blanket form on the eastern side of the mountain. These ore bodies are for the most part simply large fragments or bodies of ore, which have broken off from the ledges and slid down the mountain side. There is a shaft near the western side line of the Austerlitz, which has been sunk to a depth of 130 feet. The shaft was evidently for the purpose of catching various ledges from the Austerlitz-Parallel columns, this group consisting of five claims. The shaft should strike the east parallel vein at a depth of 230 feet. There is also a tunnel known as the Barkley tunnel, 461 feet in length, cutting clear through the mountain. Of this tunnel I will speak more fully later.

The silver in these ores is in the form of a chloride, and from long exposure, the dumps have been considerable leached by the action of the elements, the fine gold also being carried down to the bottom of the piles. Therefore, it is fair to conclude that all samples taken from the dumps are below the average value of the ore, the samples having been taken, in every instance, from the top of the dumps. I would expect that in these dumps the actual value recovered would be equal, if not in excess of, the values shown by the assays taken. I commenced sampling near the extreme south end of the Austerlitz Claim very near the top of the mountain.

Sample No. 1. Open cut in the blanket. Blanket about 12 feet thick, much ore exposed. Sample of ore pile of 12 tons.

Sample No. 2. Open cut in blanket. Thickness of blanket never determined. Large amount of ore in sight. Sample ore dump of 20 tons.

Sample No. 3. Opening on small spur vein. Vein 20 inches wide. Hole 4 feet square sunk to a depth of about 5 feet. No. 6 shaft 35 feet deep, sunk on across vein or spur between the main ridge and the west parallel ridge, said shaft was sunk to depth of 35 feet. Sample of this dump and second class ore taken from shaft, all the first class ore having been removed. The first class ore in this vein, was worked in an arastra and the actual value of the ore

from this shaft is unknown to the owner.

No. 7. Over 50 feet open cut run in on the top of the ledge. Face cut 12 feet high. This cut was run so long ago that its history is not known even to the oldest inhabitant. Took grab samples of the waste piled up along the side of the cut.

No. 7A. Was taken from a small pile placed near the entrance of this cut.

No. 8. Sample across the face of this cross ledge, ledge 3 feet wide.

No. 10. Taken from same as No. 9. Over 400 tons second class ore. This ore has been carefully assorted, it is very high grade and was shipped to the smelters, some shipments running as high as $158.00 per ton in gold and silver. Lower grade ores were shipped to Arivaca, one averaging $26.75 gold and silver and another lot averaging $17.67 gold and silver, received and paid for by the Arivaca Mill. This ore, I am informed, all came out of the 65 foot shaft before mentioned.

No. 11. Sample taken from an old pile of 10 tons. This place from which this ore was obtained, is unknown, but probably out of the cut before mentioned as Nos. 4 and 5.

No. 12. A sample from a dump of 20 tons, place from which it was taken is unknown. At this there place are a dozen small piles or lots of ore, which were taken at the bottom of the 65 foot shaft by the present owners, the ore being closely associated, the first class being put into these small piles and the second class being thrown over the dump.

No. 13. Open cut on blanket. Heavy body of sulphate showing underneath the ore. Sampled one pile of 35 tons of these heavy sulphates.

No. 14. Sample pile of 60 tons of unsorted ore taken out above the body of sulphates before mentioned.

No. 15. Open cut on claim known as the Addition. Goodly showing of ore. Sample 21 ton lot.

No. 16. Sampled open cut on blanket. Plenty of ore showing. Sampled pile of 10 tons.

No. 17. Open cut blanket of milky white quartz. Sampled lot of 25 tons. This work was done by Clinton Thompson. So far as the present owners know. This lot of ore has never been sampled.

No. 18. In an open cut down on the Addition claim, about 300 feet from the east side of the Austerlits. Very large amount of ore showing. Sample lot of 100 tons of all second class ore. The ore from this cut was closely assorted, the first class ore being worked in an arastra.

No. 19. An open cut in an alluvial deposit in the bottom of a little draw. In running this cut 50 tons of ore was taken out and piled up on the dump. Considerable ore still shows on the face and sides of the cut.

No. 20. A lot of 60 tons of ore and waste was taken out at point 12 on map of the Barkley tunnel.

No. 21. Lot of 100 tons taken from point marked "Upraise" on map of Barkley tunnel.

No. 22. In the summer of 1898, Charles J. Barkley, before mentioned as having made an agreement to purchase the property, started to run a cross-cut tunnel through the mountain. This tunnel, either fortunately or unfortunately, as you may wish, as soon as he cut through the surface soil or drift, struck a northeast, southwest fault line. There was both a vertical and lateral movement along this fault line. The fault line is badly broken for a distance of 50 feet. The lateral movement along this line turned the ore from the northwest, southwest course to a southwest northeast course. The bodies along this fault line considerably mixed up, being irregular in occurrence, but as a rule, not badly shattered or leached. The throw so far as I have been able to judge from the surface, is 80 feet. The foot wall side of the fault line seemingly moved farther westward than the hanging wall side did eastward. The first ore struck in this tunnel was at a point 140 feet distant from the portal at the 249 foot station, an upraise was started.

No. 23. Just beyond the upraise a cross-cut was run, intersecting the 65 foot shaft at the bottom, 30 feet distant from the tunnel. Two drifts I understand, are run out on the ore from the bottom of this shaft. Drifts and shafts are caved in so that it was impossible to get into them to examine them. At a point on this cross-cut, 12 feet from the tunnel, another drift has been driven a distance of 135 feet. This drift is very irregular in its course, and was evidently run for the purpose of striking a 3 foot ledge, which shows on the surface spoken of under Nos. 6, 7 & 8. If it was the intention of this cross-cut, it was not run far enough by about 50 or 60 feet. The drift was run during the past winter by T. B. Wilde of Goldfield, Nevada. Coming back to the tunnel, a distance of 30 feet further along the tunnel, Charles J. Barkley ran a cross-cut in the hanging wall of the fault, cutting the top of a very large ore shute. The appearance of the ore is the same as that which appears in the uprise and is evidently a part of the same ore body and separated from it during faulting which took place along the false fissure. Sample 23 was taken 18 feet in length across the top of this ore shute.

No. 24. The tunnel had been driven 69 feet further at this time of Barkley's death. Later at this point a cross-cut had been run to the left into the footwall. The footwall of the fault is a dacite. Evidently the intrusion of this dacite dyke is the cause of the faulting. The width of the dacite dyke has as yet not been determined. Its presence is only indicated on the surface by boulders lying in the soil. Going back to the point at which the Barkley work on the tunnel was stopped, a turn was made at nearly right angles to the course of the drift and a point ten feet farther on the body is badly broken and mixed ore was encountered, which was continued for a distance of 11 feet. From this point, the drift is continued on as a cross-cut for 45 feet, usual signs of ore in the tunnel again appear along the cross-cut. Going back again to the station 21 feet to the right of the face of the tunnel where Barkley stopped work, the general course of the tunnel was changed somewhat and driven forward to the surface on the western side of the hill. At a point marked 12 on the map, ore was struck on the right hand side of the tunnel, a drift was run off at an acute angle to the right for a distance of 25 feet all the way through. The large sample was taken from the side and top of the ore near the middle of the drift.

No. 25. Commencing at the same point marked 12 on the plat another drift was run off at right angles from the tunnel for a distance of 15 feet, at which place

it cut completely through the ore. A large sample from sides, top and bottom was taken in this drift 6 feet back from the face.

No. 26. From point 12 on the plat the ore is exposed on the right side of the tunnel for a distance of 40 feet at a point midway between 12 on the plat and the end of the ore shute, a large sample was taken. The tunnel has been driven ahead from point 12 on a map a distance of 140 feet, to day light on the western side of the hill.

No. 27. Sampled 150 tons of ore lying on the hillside about 200 feet south of the north end land of the parallel plane.

No. 28. Sampled 50 tons of refuse or waste, lying below an open cut upon the parallel near the north end centre.

No. 29. Sampled second class ore and waste of 300 tons, taken from the open cut slightly east of the north end centre of the parallel claim.

No. 30. Sampled 400 tons of second class ore and waste taken from east of No. 29.

No. 31. Sampled 900 tons of second class ore and waste taken from an open cut about 50 feet northeast from No. 30.

No. 32. Sampled 300 tons of second class ore taken from the same open cut as No. 31.

No. 33. Sampled 8 tons of ore taken from the bed immediately under or down the side of the hill from No. 31.

No. 34. Sampled 50 tons of unassorted ore taken from the slide.

No. 35. Open cut. Large amount of ore showing, being evidently in place. One wall showing cut. Sampled 25 ton lot of ore.

No. 36. Large excavation. Thousand of tons of ore have been removed. Opened by the fathers for its rich gold and silver ores. The excavation has slid in so badly that the bottom of the work cannot be seen. There is still considerable ore left, showing above the debris which covers the bottom of this excavation. Sampled a 75 ton lot, evidently second class ore, which I found lying or piled near the outer edge of the dump.

No. 37. Sampled another 100 ton lot lying near No. It is about the same character as No. 36.

No. 38. Sampled another pile of 150 tons of the same character as Nos. 36 and 37. This excavation shows the vein to be very wide, how wide, it is not possible to determine at present. Only the hanging walls is exposed, vein evidently in place.

A deep gulch separates the Austerlitz from the Ragnaroc Mining Claim, which adjoins the Austerlitz upon its northwest end.

The ore of the Ragnaroc comes down the side of the gulch nearly to the

Austerlitz and in fact the vein has been opened upon the line separating the two claims. Upon the Ragnaroc, the width and the dip of the vein can be easily taken. I found that upon the Ragnaroc the width of the vein or ledge taken at right angles to the foot wall is a little over 60 feet while the dip is about 55 degrees east.

No. 39. A cut 100 feet southeast of the large excavation before mentioned a ledge has been opened exposing a foot wall.

The ore here is apparently in place and evidently the foot wall of the ledge. Sampled lot of 25 tons.

No. 40. Sampled lot of 60 tons which was picked up out of the creek below No. 33. Nothing is known as to whom or by whom this ore was piled. It was evidently put aside for the purpose of working it through an arastra.

No.41. Sampled 25 tons taken from an open cut below No. 40.

No. 42. Large excavation on the north bank of the gulch. Very large amount of ore shown in and around the opening. Sampled 400 ton lot second class ore.

No. 43. Ore taken from the bottom of the gulch. The recent rains have stripped the bottom of the gulch at this place immediately below No. 42, exposing the ore along the bottom of the gulch for a distance of 75 feet. How much farther down the gulch it extends cannot be determined accurately, but it is probably less than 20 feet further. Near the lower side of this exposed ore body, Charles J. Barkley sunk a hole in the ore to a depth of ten feet. This exposure at the bottom of the gulch is very important, as it is the lowest point upon the Austerlitz of the Ragnoroc that can be seen. Sampled atlot of 115 tons taken from the bottom of the gulch.

No. 45. Sampled at lot of 50 tons taken from an opening on the hillside immediately upon the line between the Austerlitz and Ragnoroc.

No. 46. Sampled lot of 500 tons taken from an opening made on the ledge upon the Austerlitz just below the line between the two claims. This was done very long time ago.

No. 47. Sampled a lot of 25 tons. This lot is a kind of land mark, it having been known to have been there at least 50 years ago. It was evidently taken out by the Spaniards who worked an arastra. The place from which it was taken is unknown but it was probably taken from an opening in No. 46.

	OUNCES PER TON		VALUE PER TON OF 2000 POUNDS		
	AU.	AG.	AU.	AG.	TOTAL.
1.	0.76	6.1	$15.30	$3.97	$19.17
2.	0.28	5.4	5.60	3.57	9.11
3.	0.16	2.4	3.20	1.56	4.76
4.	0.18	3.3	3.60	2.80	5.40
5.	0.06	0.4	1.20	-----	1.20
6.	0.08	trace	1.60	-----	1.60
7.	1.48	7.4	29.60	4.81	34.41
8.	0.16	2.3	3.20	1.50	4.70
9.	0.08	7.5	1.60	4.88	6.48
10.	0.68	3.6	13.60	2.34	15.94
11.	0.06	1.4	1.20	.91	2.11
12.	0.28	2.1	5.60	-----	6.97
13.	0.18	3.6	3.60	2.34	5.94
14.	0.10	trace	2.00	-----	2.00
15.	0.56	6.3	11.20	4.10	15.30
16.	0.12	1.5	2.40	.98	3.38
17.	0.24	1.7	4.80	.91	5.71
18.	0.18	0.7	3.60	-----	3.60
19.	0.18	0.7	3.60	-----	3.60
20.	1.76	6.3	35.20	4.10	39.30
21.	0.44	4.0	8.80	3.25	12.05
22.	0.16	1.2	3.20	.78	3.98
23.	0.07	0.8	1.41	-----	1.41
24.	0.08	2.1	1.60	1.37	2.97
25.	0.64	11.6	12.80	7.54	20.34
26.	0.16	7.8	3.20	5.07	8.27
27.	0.38	trace	7.60	-----	7.60
28.	0.24	trace	4.80	-----	4.80
29.	0.20	trace	4.00	-----	4.00
30.	0.14	trace	2.80	-----	2.80
31.	0.04	trace	.80	-----	.80
32.	0.16	trace	3.20	-----	3.20
33.	0.16	5.8	3.77	3.77	6.97
34.	0.14	17.22	2.80	11.18	13.98
35.	0.28	3.9	5.60	2.54	8.14
36.	0.40	6.0	8.00	3.80	11.80
37.	0.32	8.4	6.40	5.46	11.86
38.	0.10	6.1	2.00	3.97	5.97
39.	0.08	2.0	1.60	1.30	2.90
40.	0.18	1.2	3.60	.72	4.38
41.	0.16	0.6	.20	-----	3.20
42.	0.14	trace	2.80	trace	2.80
43.	0.17	1.5	3.40	.98	4.38
44.	0.22	4.0	4.40	2.80	7.00
45.	0.36	4.6	7.20	2.99	10.19
46.	0.16	3.2	3.20	2.08	5.28
47.	0.16	2.5	3.20	1.63	4.83

This table was compiled from lot of ores which according to assays are unmistakably ores.

NO.	AMOUNT	VALUE PER TON	TOTAL VALUE
1.	12	$19.17	$230.04
2.	20	9.11	182.20
4.	75	5.40	405.00
7.	50	34.41	1720.50
7A	150	4.70	705.00
9.	50	15.94	797.00
11.	10	6.97	69.70
12.	20	5.94	118.80
14.	40	15.30	612.00
15.	20	3.38	67.60
16.	50	5.71	285.16
17.	25	3.60	90.00
18.	100	3.60	360.00
19.	50	39.30	1965.00
20.	60	12.05	732.00
21.	100	3.98	398.00
27.	150	8.60	1140.00
28.	50	4.80	240.00
29.	300	4.00	1200.00
32.	300	3.20	960.00
33.	8	6.97	56.76
34.	150	13.98	2097.00
35.	25	8.14	203.50
37.	100	11.86	1186.00
38.	150	5.97	895.50
40.	60	4.38	262.80
41.	25	3.20	80.00
43.	115	4.38	503.70
44.	252	7.00	175.00
45.	50	10.19	509.50
46.	500	5.28	2640.00
47.	25	4.83	120.75

An average value per ton of ore on dumps ready for milling $7.45.

Average of assays per ton, $8.28 Lots Nos. 1, 7, 14, 19, 20, and 34, were unassorted ore. Average value per ton $9.28 Lots of these unassorted ores $20.32.

In case of lots Nos. 5 and 6, I was informed that the waste had been piled upon a lot of good ore. No. 31 is as shown by the assays, to be the only real waste dump of the property. Nos. 10, 13, 23, 30, 39 and 42, should be resampled, as I am of the opinion that they are real ores.

The showing made is really a remarkable one when we take into consideration the fact that with the exception of six lots, viz. Nos. 1, 7, 14, 19, 20 and 34 every lot sampled were thrown out for waste. Further you must remember that with the exception of the lots of unassorted ore, these dumps

have been exposed to the elements for many years, some of them for more than half a century. From the creek bottom ten thousand or more tons (how much more cannot be determined just at present) that will according to the assay average over $5.00 per ton. At least seven thousand tons of ore of an average value of $4.00 per ton can be taken out from the above tunnel. On the eastern side of the hill some ten thousand or more tons of ore can be gotten off the surface that should average above $10.00 per ton. Exploration alone can determine the tonnage to be gotten off from this property. Exploration will also show the real value of these ores, which will probably average considerably higher than the average shown by the samples which I have taken. Mr. Barkley who had the best opportunity to determine the true value of the property, as he spent a great deal more time taking his measurements to make his estimate of the tonnage and spent several months in sampling and testing the ores from the various showings placed the surface tonnage approximately at one hundred thousand tons, with the average of $7.50. I am inclined to accept his estimate as being more nearly accurate than my own.

In regard to the handling of this property, the deal for the property having been closed upon receipt of analysis and assays, depends a great deal upon the scale upon which it is desired to operate the property. It will take at least $5000.00 to put the property in good working condition. It will take $7500.00 more to put a 10 stamp mill upon the property. Would advise as soon as convenient to do so, the erection of a small cyanide plant for the purpose of handling the large amount of ores exposed at the bottom of gulch. This will cost about $5000.00 or more. At least $7500.00 more should be set aside as a kind of emergency fund. This amount $25,000.00, I believe to be amply sufficient with which to commence operation. The entire plant should be enlarged owing to the profits obtained from the property. A deep tunnel should be commenced at a low point as practicable which will be down near the forks of the creek. A tunnel started at this point will encounter the eastern ledge at about one hundred and fifty feet distant from the portal.

The tunnel should be continued not only on to the main ledge, but to the western parallel ledge. It should also turn and follow the main ledge into the hill. A tunnel such as I have outlined, fifteen hundred feet in length would give vertical depth from the ledge of some five hundred feet. It would also have the advantage of being driven for at least 1200 feet of its length upon the main ledge. Such a tunnel would make it possible to handle all ores cheaply and rapidly. It would also develop the character of the ores upon depth and would decide the kind of a plant necessary to operate the property on a large scale. Of course if it should be desired to work this property upon a larger scale, these estimates would have to be proportionately increased. The deepest working is upon Tres Amigos or OLD ORO BLANCO property. A depth of 265 feet has been attained upon that property and the ores at the bottom of the shaft are still free milling and higher values than were obtained anywhere else on the property.

The ledge is also quite as strong upon the Oro Blanco as upon the Austerlitz.

With careful and intelligent management, the Austerlitz will make one of the large gold mines in the United States.

Signed F. B. Schermerborn, M.E.

El Paso, Texas
Sept. 10th 1907.

GEOLOGIC REPORT

ON THE

M O N T A N A M I N E
(Montana Mines Operations)

AND VICINITY

RUBY, SANTA CRUZ COUNTY, ARIZONA

May 29, 1931

George M. Fowler,
Joplin, Missouri.

CONTENTS

GEOLOGIC REPORT
on the
MONTANA MINE
(Montana Mines Operations)
and Vicinity
RUBY, SANTA CRUZ COUNTY, ARIZONA

INTRODUCTION AND ACKNOWLEDGMENTS

We spent several weeks during March and April, 1931, at the Montana Mine at Ruby, Arizona, on geologic work. This work was done in order to outline future prospecting and development and to attempt to determine the present and ultimate merits of the property. A digest of our work is given in this report. We believe that the report summarizes all essential data regarding this property. It is based entirely upon our observations while at the property.

A separate supplementary report, regarding the geology of mines and areas of other than Eagle-Picher Lead Company ownership contiguous to, and near, the Montana Mine, is included with this report. If additional ore is developed in the area described in the supplementary report, it is probable that it could be milled at the Montana Plant to the best advantage.

We did not examine in detail the Gold Boulder Group and the Eagle Claim, which are part of the Montana Mines Operations, because the mineralization in these areas is unimportant under existing conditions.

Particular thanks are due to Messrs. E. D. Morton and Walter Pfrimmer, Superintendent and Engineer, respectively, at the Montana Mine, for their assistance and cooperation. They are to be commended for the excellent records which they have assembled regarding the property.

INTRODUCTION AND ACKNOWLEDGMENTS - Continued:

We had access to two previous geologic reports on the Montana property, one of which was prepared by Mr. C. J. Sarle, Mining Geologist, Tucson, Arizona, dated March 5, 1927, and the other by the Eagle-Picher Lead Company organization, dated January 1, 1931.

Sarle's map of the surface geology was checked by us and found to be accurate except along and near the Montana Vein outcrop. We remapped this area in detail and prepared a new map showing the surface geology by Sarle and ourselves.

The Montana Mine was remapped in its entirety, as were all accessible workings on the property. Diamond drill logs, maps, and records which had been compiled by Messrs. Frank K. Lerchen, E. D. Morton, Walter Pfrimmer, and T. L. Gregory, were studied and utilized. Where special information was desired the diamond drill cores were reexamined by us.

HISTORY

The Montana lode was located in the late 70's. The first mill (Ten Stamp) was built on the property in 1891. The operation of this mill was discontinued in 1893.

In 1916 the Goldfield Consolidated Company built a mill, including a flotation unit, which they operated for several years. Adverse economic conditions, several years later, made it necessary to cease operations.

In 1926 the Eagle-Picher Lead Company obtained an option on the property. They found an ore shoot in the Montana Vein by means of diamond drilling. In May, 1928, they completed a 300 ton mill and commenced operations.

In the past Company built reservoirs on the property were utilized for conserving the water for milling purposes. Lack of rainfall in 1928 necessitated building a four inch pipe line from the Santa Cruz River south of Amado to the Montana Mine, a distance of approximately 16 miles. For two years there has been sufficient rainfall to fill all of the reservoirs. The pipe line is ready for use in emergencies.

HISTORY - Continued:

To date no other company has undertaken extensive mining development in the vicinity of Ruby, Arizona. Numerous companies and individuals control acreage in the region.

PROPERTY

The Eagle-Picher Lead Company, operating locally as the "Montana Mines Operations", control the Montana Group which comprises ten patented claims, namely, the Philadelphia, Montana Dam, Montana Camp, Mineral No. 1, Mineral No. 2, Mineral No. 3, Mineral No. 4, Mineral No. 5, Mineral No. 6, and Mineral No. 7; and thirteen unpatented claims, namely, Ruf and Ready, Protection, Spear, Laddie, Excelsior, Fraction, Eagle, San Miguil, Ruby No. 1, Ruby No. 2, Ruby No. 3, Ruby No. 4, and Ruby No. 5.

LOCATION AND PHYSICAL FEATURES

The Montana Mine is located at Ruby, Santa Cruz County, Arizona, in the Oro Blanco Mining District. Ruby lies about 75 miles southwest of Tucson, 30 miles northwest of Nogales, and about 4 miles north of the Mexican Border. It is situated at the head of a small basin which drains southward into Mexico. The settlement consists of a postoffice, store, and numerous residences which are utilized in connection with the mining operations. The camp is owned and controlled by the mining company.

The elevation at the mine is approximately 4300 feet above sea level. It is approximately 800 feet above Amado in the Santa Cruz Valley.

The region supports a fair growth of desert trees and shrubs.

Water for domestic purposes is obtained from several nearby springs and wells.

The climate is mild, with no extremes in temperature. All operations in connection with the property can be carried on throughout the year.

LOCATION AND PHYSICAL FEATURES - Continued:

Amado, a station on the Southern Pacific Railroad, 58 miles from Ruby, and midway between Tucson and Nogales, is the shipping point for the Montana Mine. Concentrates and supplies are hauled by trucks over an all-year mountain road. The rate for hauling concentrates in 1930 was $4.50 per ton.

Timber for mining and general purposes is shipped by rail from distant points and trucked to the mine. Wood, for domestic purposes, is obtained in the immediate vicinity of the mine.

The topography in the vicinity of the Montana Mine is one of marked relief. The extremes in elevations exceed two thousand feet. Montana Peak, a noted landmark of the region, has an elevation of 6559 feet, according to surveys by Mr. Pfrimmer.

PLANT AND EQUIPMENT

The Montana Mine has been developed by means of a vertical shaft 710 feet deep, and is fully equipped with a steel head frame, electric hoist, and all necessary accessories with which to carry on mining operations.

The mill has a capacity of 300 tons of ore per 24 hours. It is a fully equipped flotation plant.

Power, for mining and milling purposes, is generated by 6 Fairbanks-Morse Diesel engines which have an aggregate capacity of 960 horse-power. The Santa Cruz River pumping plant, mentioned earlier in this report, utilizes a 120 horse-power Worthington Diesel engine.

Briefly, the Montana Mines Operations have a complete plant with all necessary machinery and buildings with which to carry on mining and milling operations.

DEVELOPMENT

The Eagle-Picher Lead Company and their predecessors have done extensive development at the Montana Mine. This work comprised the adits, shafts, raises, drifts, and 25 diamond drill holes of various depths, aggregating 16,674 feet of drilling. The important drill holes are shown diagrammatically on the several maps which accompany this report.

At the Montana Shaft the mine has been developed by a surface tunnel, by levels from the vertical shaft, and by numerous raises. These working levels aggregate several thousand feet in length. The levels have been designated as: Tunnel, 100, 200, 300, 400, 525, and 625 Level.

Numerous shorter adits, cuts, and pits are to be found on the property. Such openings, in the vicinity of the Montana Mine, are shown on the several maps which accompany this report.

The data furnished by the underground workings and the several diamond drill holes have been utilized to the fullest extent in this report.

GEOLOGY

No attempt was made to classify the formations as to geologic age because this would have meant additional work and is unnecessary in a report of this nature. The relative ages of the several formations and their influence upon the ore deposits are stated.

The country rock in the vicinity of the Montana Mine is practically all of igneous origin. A few small inclusions of shale and limestone (probably of Cretaceous Age) occur sporadically. The igneous rock comprises, almost exclusively, diorite of several ages and diorite breccia. The areal geologic map and the sections show the formations in detail.

Rhyolites and associated rocks are found within a few miles of the Montana Mine. Their relations to other formations were not determined because it was unnecessary for this examination.

GEOLOGY - Continued:

The dark diorite and the diorite breccia are older than the Montana Vein mineralization. All other formations, except the shale, slate and limestone inclusions, are of more recent origin.

Dark Diorite:

The older diorite is found in numerous irregular areas in the vicinity of the mine. Westward and southward, within a radius of three miles, numerous exposures of similar diorite were noted. This diorite is the oldest igneous formation noted in the immediate vicinity of the Montana Mine. It is distinguished from the younger diorites by being darker, finer grained, and more dense. It contains phenocrysts of quartz, feldspar, and hornblende in a dark, fine grained groundmass.

This older diorite contains dikes of undifferentiated diorite of more recent origin. Where these conditions were noted, and had a bearing on our problem, they are shown on the map. In less important areas it was needless to make this distinction.

Breccia:

The second formation in sequence is a diorite breccia which covers large areas in the vicinity of Ruby and to the south and west. This breccia is made up very largely of diorite "pebbles", which vary in size from 8 or 10 inches in diameter down to small grains. On the surface the "pebbles" comprise those which could best resist attrition and are the harder, smaller, and finer grained material. Quartz is found sparingly in the breccia.

Light Diorite:

The third formation in sequence is a greyish diorite porphyry of coarse texture. It weathers rapidly into large and small grains.

GEOLOGY - Continued:

This formation occurs as dikes and, possibly, as surface flows; the latter are most prominent in the area nearly around and north of the Montana reservoir. We have designated the dike of this age, which lies directly north of the Montana Vein, as the "Sidewinder Dike".

The Surface Map No. 1, Map No. 9, and several vertical sections show a large dike south of the Montana Vein. It is similar to the Sidewinder Dike in age and characteristics. It is probable that the several outcrops of this formation that were mapped south of the Montana Vein represent a single dike nearly a mile in length. This dike, being later than the vein, probably replaces it in part at depth.

These dikes vary greatly in size and shape. They are numerous in the area contiguous to the Montana Vein. They generally have an easterly-westerly strike and dip about 40 degrees to the north. Numerous dikes of this age outcrop and were mapped in the vicinity of Ruby.

That other dikes exist at depth is evidenced by numerous fissures containing altered brecciated material.

Underground the brecciated material is found in the fissure above the Sidewinder Dike, and in other fissures along and near the Montana Vein. In some instances, as between the 500 and 600 foot levels, soft diorite was forced in along the hanging wall of the vein, necessitating a change in mining methods and the extensive use of timber in the mining operations.

Where the diorite was forced into the vein, it has often replaced the mineralization, thus accounting for the absence of the mineralization in the Montana Vein in some instances in diamond drill holes.

Fourth-Dyke Diorite:

The fourth formation in sequence comprises several prominent dikes of diorite porphyry. For convenience we have designated these dikes as: "Rough and Ready", "Montana", and "Philadelphia."

GEOLOGY - Continued:

Most of the dikes have a nearly northerly-southerly strike and dip nearly vertical. They are generally fine grained and weather to a soft bluish-grey color. In all instances observed, the Montana Vein is cut by these dikes with practically no displacement.

Recent Volcanics: Flows and Tuffs:

The fifth formation in sequence consists of flows and tuffs of igneous origin which cover large areas northerly and easterly from the Montana Mine. This formation fills in the very irregular, older topography to a depth of several hundred feet, sometimes attaining a thickness of 1000 feet or more. It is soft and erodes rapidly leaving a very dissected topography. In numerous arroyos the older, harder underlying formations are exposed.

ORE DEPOSITS

Montana Vein:

The Montana Vein strikes nearly east and west and dips from 40 to 65 degrees to the north. The vein can be traced on the surface for a distance of approximately 3000 feet.

On the surface, at intervals, the vein makes a very prominent, resistant, white quartz outcrop up to 50 feet in width. Such outcrops occur directly south of the Montana Mill and near the Jenkins Shaft.

Underground the vein often comprises several branches, each varying from a few inches to ten feet or more in width.

The ore deposits were influenced, as to size and character, by the nature of the contiguous country rock and by definite structural conditions. In horizons of maximum shattering, or replacement where favorable reservoir conditions for ore deposition were formed, the entire area between the more important branches of the vein mineralized, making an ore body 50 or more feet in width and several hundred feet long. Where structural conditions were unfavorable, unaltered country rock is found between branches of the vein.

ORE DEPOSITS - Continued:

The best ore is confined to the part of the vein that is within the breccia. Where the vein cuts the older (dark) diorite, the mineralization is tight and less important.

The pitch of the ore shoot in the Montana Vein is to the northwest at an angle of from 40 to 60 degrees. Practically all of the commercial ore developed in the Montana Mine to date has been confined to this single ore shoot.

Structural conditions, observed on the surface, determine the pitch of the Montana ore shoot. It is certain that any other large ore shoots that may be developed in this vein will have the same pitch as the one already developed.

Sidewinder Vein:

A little ore was mined from the Sidewinder Vein on the 100 foot level. This so-called vein is in reality the brecciated material so often found in fissures above dikes. In this instances the mineralization is found in the fissures directly above the Sidewinder Dike.

It will be needless to look for extensions of the Sidewinder Vein as this type of ore deposit is unimportant in the Montana Mine.

Minor Veins:

A number of minor veins were mapped in the area contiguous to the Montana Vein. These minor veins are particularly numerous a few hundred feet south of the Orem Shaft and the Montana Shaft. They are contemporaneous with the Montana Vein system.

The minor veins are not important as a source of commercial mineralization. Shafts and tunnels on these veins show them to be composed almost entirely of white quartz with no commercial value. They vary in width from a few inches to several feet.

Reference to the surface geologic map, Map No. 1, will show the major and minor veins at the Montana Mine.

ORE DEPOSITS - Continued:

Minerals:

The ores of the Montana Mine are complex, comprising largely galena, spalerite, chalcopyrite, tetrahedrite, and pyrite. The lead, zinc and copper minerals contain fair amounts of gold and silver. As is usual, the gold is closely associated with the lead and the high percentage of it is recovered in the lead concentrate.

The silver is present in the tetrahedrite, and possibly in the lead, zinc and copper minerals mentioned above.

CONDITIONS EFFECTING MINING AND MILLING OPERATIONS

Permanent water is not found in the mine workings, except in the winze from the 525 foot level. In this winze the water stands about 40 feet below the 525 foot level, which is the deepest working level in the mine at this time.

Labor is plentiful at all times. Wages compare with that paid in other Arizona camps.

The Sidewinder Dike will continue to give trouble in mining operations because of its tendency to swell and cave. The relation of this dike to the mine workings is clearly shown on the several plan maps and sections which are included with this report.

Mining Methods:

The mining methods of the Montana Mine have had to be changed several times, due to conditions encountered as development progressed. The caving system formerly used had to be changed to a square set system, due to the trouble caused by the Sidewinder Dike. The latter system is largely in vogue at this time.

Milling Methods:

The lead, copper and zinc minerals are closely associated, making fine grinding followed by selective flotation imperative.

CONDITIONS EFFECTING MINING AND MILLING OPERATIONS - Continued:

The ore, as delivered to the mill during a representative period, assayed approximately:

Gold Ozs.	.04
Silver Ozs.	5.50
Lead %	5.00
Zinc %	6.00
Copper %	.30

The ratio of concentration of the above ore during the last period of operation at the Montana Mine was 12.007:1 for the lead, and 12.827:1 for the zinc. This ore produced concentrates of the following analysis:

	Gold Ozs. Per Ton	Silver Ozs. Per Ton	Lead %	Zinc %	Copper %
LEAD CONC.	0.674	74.02	57.05	10.06	5.094
ZINC CONC.	0.070	12.40	2.79	52.36	0.720

Costs: Mining and Milling:

During the principal period of operation - August, 1929 to April, 1930 - the total operating costs vary, according to the report of the local management, from $4.37 to $9.43 per ton. The average for the period being $6.82. It is said that the necessary change in mining methods stated above was largely responsible for the high costs.

The Montana Mine management believes that the future total costs should not exceed $6.00 per ton.

ORE RESERVES

Following the suspension of operations in the summer of 1930, the entire mine was thoroughly and carefully sampled by the engineers in charge at the property. We have checked their methods and results and see no reason to materially change their figures. Accordingly, the "Montana Mine Ore Reserves" tabulation by Walter Pfrimmer, as of July 15, 1930, is included and made a part of this report.

Montana Mine Ore Reserves
By Walter Pfrimmer
7/15/50

Block No.	Tons	Total Tons	Au	Ag	Pb	Zn	Cu
2 - 1	3,370		0.057	4.40	4.00	8.10	0.20
2 - 3	3,820		0.024	5.50	4.30	7.90	0.21
2 - 5	4,200		0.057	8.75	6.20	7.10	0.28
200 Level		11,390	0.046	6.37	4.91	7.66	0.23
3 - 1	1,700		0.029	4.65	7.06	10.59	0.23
3 - 3	1,898		0.036	4.30	4.48	5.79	0.27
3 - 5	4,650		0.055	5.79	4.10	5.30	0.27
3 - 7	3,265		0.55	4.78	4.20	4.90	0.26
300 Level		11,513	0.047	5.02	4.63	6.05	0.26
4 - 5	5,640		0.037	3.66	4.97	5.44	0.23
4 - 7	7,575		0.030	3.43	4.99	6.68	0.22
4 - 9	6,069		0.039	3.88	4.36	4.95	0.25
4 - 11	9,994		0.049	6.63	7.68	7.35	0.32
4 - 13	10,070		0.054	9.08	9.04	9.69	0.40
4 - 15	9,095		0.057	8.29	9.29	8.78	0.48
4 - 17	12,503		0.049	6.69	6.93	6.87	0.34
400 Level		60,936	0.047	6.37	7.07	7.35	0.32
5 - 3	2,494		0.094	13.77	10.19	9.75	0.47
5 - 5	18,979		0.073	9.45	7.81	7.47	0.38
5 - 7	26,496		0.048	7.21	6.49	6.13	0.39
5 - 9	24,269		0.052	7.61	7.09	9.43	0.41
5 - 11	21,885		0.055	7.35	7.59	8.59	0.39
5 - 13	14,308		0.058	9.05	7.41	8.88	0.45
4 - 15 sub	3,877		0.056	8.53	7.12	5.64	0.45
500 Level		118,308	0.060	8.13	7.88	8.43	0.40
Mine Dump		1,020	0.060	7.55	6.77	7.81	0.40
Total Mine		197,167	0.052	7.30	6.92	7.91	0.36

ORE RESERVES - Continued:

We believe that the Developed Ore can and should be mined without dilution. Where necessary Pfrimmer allowed for dilution.

Pfrimmer's estimate was confined exclusively to Developed Ore. We have, therefore, added to his figures our estimate of Probable and Possible Ore. With this addition the aggregate ore reserves of the Montana Mine, as of this date, are as follows: (See Map No. 8)

DEVELOPED ORE (Pfrimmer's figures): ---------- 197,167 Tons

The average assay of this ore is as follows:

Gold	0.052	Ozs.
Silver	7.30	Ozs.
Lead	6.92	%
Zinc	7.91	%
Copper	0.36	%

PROBABLE ORE:

Block A	7,000	Tons
Block B	12,000	"
Block C	2,708	"
		21,708 Tons

POSSIBLE ORE:

Block D	22,100	Tons
Block E	73,959	"
		96,059 Tons

AGGREGATE DEVELOPED, PROBABLE AND POSSIBLE ORE - 314,934 TONS

Note:

In estimating the grade of the Probable and Possible Ore we assumed that it would be the same as the average grade of the Developed Ore.

MAPS

The following maps accompany and are made a part of this report:

PROPERTY MAP - MONTANA MINE AND VICINITY	No. 0
SURFACE GEOLOGIC MAP (Scale: 1" = 200')	1 — only map with Report.
TUNNEL LEVEL (Scale: 1" = 50')	2
100' LEVEL - " " "	3
200' LEVEL - " " "	4
300' LEVEL - " " "	5
400' LEVEL - " " "	6
525' LEVEL - " " "	7
LONGITUDINAL PROJECTION IN PLANE OF VEIN - LOOKING N	8
VERTICAL SECTION ON COORDINATE 325	9
" " " " 765	10
" " " " 820	11
" " " " 1050	12
" " " " 1200	13
" " " " 1350	14
" " " " 1500	15
" " " " 1600	16
" " " " 1800	17
" " " " 2112	18
" " " " 2400	19
" " " " 2800	20

(Small maps of parts of the Idaho and Warsaw Groups are bound with the Supplementary Report.)

MAPS - Continued:

Surface Maps:

Ownership - Map No. 0:

This map shows the location and ownership of the more important mining claims in the immediate vicinity of Ruby, Arizona. Numerous companies and individuals control mining claims in the area bordering this map.

Surface Geology - Map No. 1:

This map shows the surface geology in the vicinity of the Montana Mine.

The several ages and kinds of diorite described under "Geology" are outlined in color on this map. For convenience, we have designated the three prominent nearly north-south dikes that cut the Montana Vein as the "Rough and Ready", "Montana" and "Philadelphia" respectively.

The outcrops of the several veins are designated in red. The importance of the Montana Vein in relation to its numerous complementary veins is shown graphically on this map. The Montana Vein is the most important. The Idaho Vein is decidedly less important. The small veins south of the Montana Vein are unimportant.

The outcrop of the Montana Vein terminates abruptly at both ends. It narrows from a width of a number of feet into numerous short minor stringers.

Eastward, near the Philadelphia Dike, the strike of the Montana Vein, due to structural conditions, takes a decided turn to the left. This strike is exaggerated, particularly near the east end of the vein, because of the very rough topography along its outcrop.

Westward, from near the Jenkins Shaft (located on the Ruf and Ready Claim), the Montana Vein separates into numerous minor fissures. The walls of the vein are the unfavorable diorite (of the earlier age) instead of the favorable breccia. Also, the Sidewinder Dike follows the vein and probably replaces it westward in depth.

MAPS - Continued:

For the reasons stated in the preceding paragraph, we believe that the chances are decidedly against finding commercial ore in the Rough and Ready No. 1 Claim.

Plan Maps:

Six plan maps accompany this report. They are listed and described in the index of the maps given above and are designated as "Maps No's 2 to 7" inclusive.

Tunnel Level - Map No. 2:

This map shows the Montana Vein and workings on the Tunnel Level where the vein is within breccia walls almost exclusively. It also shows the location of the several vertical sections which accompany this report, and should be used for reference in studying the plan maps.

100 Level - Map No. 3:

This map shows the geology and mine workings in the 100 foot level. The Montana Vein mineralization is confined to the breccia.

The Sidewinder Fissure and "Vein" were prospected on this level. Eastward and westward from the mine workings the fissure widens and the dike rock fills the fissure.

Near the west end of the mine workings the Montana Dike cuts the vein at right angles. The workings were caved and inaccessible beyond this point.

200 Level - Map No. 4:

This map shows the Sidewinder Fissure and Dike on the hanging wall of the vein for its entire distance.

Drifts have been extended westward from the Montana Dike. It is possible that unimportant splits of the Montana Vein may be found in the footwall.

Eastward, on this level, the Montana Vein separates into several small unimportant splits.

MAPS - Continued:

300 Level - Map No. 5:

This map shows the Sidewinder Dike in relation to the Montana Vein.

Eastward, on this level, the workings were caved and inaccessible beyond a point about 100 feet east of the Montana Shaft. This area is probably barren.

400 Level - Map No. 6:

This level cuts longitudinally through the largest and most important ore shoot that has been developed in the Montana Mine to date. This map shows the horizontal limits of the deposit westward to north-south Coordinate 1900 West. The Longitudinal Projection (Map No. 8) shows the vertical limits and pitch of the ore shoot eastward from the same coordinate.

525 Level - Map No. 7:

This level is a few feet under the Montana ore shoot as developed to date. The drifting and crosscutting on this level shows that the Montana Vein has split into several small veins and numerous stringers. These veins contain only small unimportant tonnages of ore.

Westward, on this level, some of the branches of the Montana Vein may develop commercial ore in the pitch of the ore shoot that was developed above this level. Additional prospecting is warranted to determine this point (see "Recommendations for Prospecting and Development").

Longitudinal Projection - Montana Vein - Map No. 8:

This longitudinal projection shows the Montana Vein in a vertical plane. It is included in order to show the pitch of the ore shoots, the ore reserve blocks, the mine workings along the vein, and the point at which the several diamond drill holes (indicated by numerals and circles) have penetrated the vein.

MAPS - Continued:

The red coloring represents the Montana ore shoot as developed to date. The red numerals refer to Pfrimmer's ore reserve blocks. The Probable Ore blocks are outlined in brown. The Possible Ore blocks are outlined in yellow.

The circles and letters A, B, C, D, E, and F represent proposed prospect drill holes (see under "Recommendations for Prospecting"). When these holes are completed, it will be possible to predict the ultimate production from the Montana Mine within reasonable limits.

Vertical Sections:

Twelve vertical sections are included with this report. They are largely self-explanatory. These sections are on north-south planes at (approximately) right angles to the Montana Vein. They are included in order to utilize all available data from diamond drill holes, and underground work. In spacing the sections along the vein they were placed at the several points at which the greatest amount of data were available.

Map No. 12 and others show the relation of the Sidewinder Dike and Fissure to the Montana Vein. It also shows a coarse grained diorite (which is more recent than the vein) in the footwall of the Montana Vein. It is possible that this Dike will displace and replace the Montana Vein in depth.

Maps No's 14 and 15 show the Montana Vein at the greatest depth at which it has been prospected. One of the diamond drill holes penetrated the Vein at a point more than 500 feet (in the plane of the vein) below the present lowest mining level. The assays from the diamond drill cores are stated on these maps. The Vein is made of several splits which are too low grade to be classed as commercial ore. It is very probable that other drill holes in this horizon and eastward will show similar tendencies. Westward the vein, at depth, in the continuation of the known ore shoot, may contain commercial ore.

MAPS - Continued:

Collectively, these sections show the profiles, formations, and mineralization for more than 3000 feet along the Montana Vein. In connection with the other maps they show the geology along the Montana Vein to an extreme depth of more than 1000 feet.

PRODUCTION

Only meagre production records regarding the Montana Mine are available. It is probable that the earlier records were lost. Complete records, since 1926, are obtainable at the Montana Mines Operations office at Ruby, Arizona.

RECOMMENDATIONS FOR PROSPECTING

Diamond Drill Holes:

A maximum of six diamond drill holes, aggregating 3140 feet, are recommended in this report. The drilling should be done in the order: A, B, C, F, G, D, and E. If hole B is blank, it will be unnecessary to drill hole C. If hole D is blank, it will be unnecessary to drill hole E.

- -

Proposed Diamond Drill Hole A:

Cut footwall of vein at an Elevation of 4275 feet.

Latitude - 1235 feet South.

Departure - 1200 feet West.

Continue hole 50 feet past the point where the drill hole cuts the footwall.

Approximate depth of this hole, if drilled in a North-South plane and with a dip of 70 degrees to the South, will be 175 feet.

- -

RECOMMENDATIONS FOR PROSPECTING - Continued:

Proposed Diamond Drill Hole B:

Cut footwall of vein at an Elevation of 4210 feet.

Latitude - 1165 feet South.

Departure - 1304 feet West.

Continue hole 50 feet past the point where the drill hole cuts the footwall.

The approximate depth of this hole, if drilled in a North-South plane and with a dip of 70 degrees to the South, will be 250 feet.

- -

Proposed Diamond Drill Hole C:
(Do not drill this hole unless ore is found in Hole B)

Cut footwall of vein at an Elevation of 4130 feet.

Latitude - 1100 feet South.

Departure - 1408 feet West.

Continue hole 50 feet past the point where the drill hole cuts the footwall.

The approximate depth of this hole, if drilled in a North-South plane and with a dip of 70 degrees to the South, will be 320 feet.

- -

Proposed Diamond Drill Hole D:

Cut footwall of vein at an Elevation of 3500 feet.

Latitude - ~~715~~ 695 feet South.

Departure - 1740 feet West.

Continue hole 50 feet past the point where the drill hole cuts the footwall.

The approximate depth of this hole, if drilled in a North-South plane and with a dip of 70 degrees to the South, will be ~~1135~~ feet.

RECOMMENDATIONS FOR PROSPECTING - Continued:

Proposed Diamond Drill Hole E:
(Do not drill this hole unless ore is found in Hole D)

Cut footwall of vein at an Elevation of 3685 feet.

Latitude - 770' 804 feet South.

Departure - 1690 feet West.

Continue hole 50 feet past the point where the drill hole cuts the footwall.

The approximate depth of this hole, if drilled in a North-South plane and with a dip of 70 degrees to the South, will be 825 feet.

- -

Proposed Diamond Drill Hole F:

Cut the footwall of vein at an Elevation of 4175 feet.

Latitude - 1025 feet South. (approximate)

Departure - 2045 feet West.

Continue hole 100 feet past the point where the drill hole cuts the footwall.

The approximate depth of this hole, if drilled in a North-South plane and with a dip of 70 degrees to the South, will be 440 feet.

- -

Proposed Diamond Drill Hole G:

Cut the footwall of vein at an Elevation of 4230 feet.

Latitude - 1060 feet South.

Departure - 2240 feet West.

Continue hole 100 feet past the point where the drill hole cuts the footwall.

The approximate depth of this hole, if drilled in a North-South plane and with a dip of 70 degrees to the South, will be 365 feet.

UNDERGROUND DEVELOPMENT

Development Work - 300 Foot Level:

At a point 10 feet North of the main drift in the crosscut, which is at the West end of the 300 Foot Level, a well mineralized split of the vein is exposed. Drift West on this split to prospect the vein to the West.

Development Work - 400 Foot Level:

Continue the drift West on the vein at the West end of the 400 Foot Level. Good ore is exposed in the face of this drift and this ore body should be prospected to the West.

Development Work - 525 Foot Level:

At a point in the crosscut north, on the 525 Foot Level, the coordinates of which are 864 South and 1575 West, a drift has been started West on the main split of the vein. Continue the drift West on this split to prospect the vein under the ore bodies on the 400 Foot Level.

SUMMARY AND CONCLUSIONS

The Montana Mine has been worked sporadically for more than fifty years. The principal development is confined to the period of Eagle-Picher Lead Company operation. This period dates from 1926. The mill was completed in 1928. The exploration and development work has been confined very largely to the Montana Vein. Other veins, within the area to which this examination is confined (see Map No. 1), are of minor importance.

Practically all of the production from the Montana Vein has come from a single ore shoot. This ore shoot pitches to the northwest. If other important ore shoots are developed in this vein, they will show similar tendencies.

SUMMARY AND CONCLUSIONS - Continued:

The aggregate Developed, Probable, and Possible Ore, as of this date, at the Montana Mine is approximately 315,000 tons, of which 197,000 tons is classed as Developed Ore (see Page 12).

To date the Montana ore shoot has been developed from the surface to the 525 foot level. A very few additional diamond drill holes will be necessary in order to prospect this ore shoot, on its pitch, below the present mine workings and to explore the vein laterally from the present workings. This proposed work is stated in detail under "Recommendations for Prospecting". The drilling should be done in the order and manner designated.

When the proposed prospecting, as outlined under "Recommendations for Prospecting", has been finished, the aggregate ultimate production of the mine may be stated within close limits, except at depths of 500 or more feet below the present mine workings. At such greater depths the chances are against developing commercial ore because the mining costs will increase and the values will probably not be higher.

Dikes of the Sidewinder age lessen the chances of finding ore in the Montana Mine, both vertically and laterally, in parts of the vein as yet unprospected.

The chances are decidedly against the Montana Vein continuing eastward or westward beyond the acreage owned or controlled by the Eagle-Picher Lead Company.

We found no mysteries in connection with the ore deposits of the Montana Mine. This report is a digest of the geology, as interpreted by us. We hope that the report may be used profitably in prospecting, developing and mining the ore deposits at the Montana Mine.

Respectfully submitted,

Geo. M. Fowler.

Geo. M. Fowler-
C
Joplin, Missouri

PRELIMINARY REPORT

on the

SMALLER MINES AND PROSPECTS

near

THE MONTANA MINE

RUBY, ARIZONA.

May 29, 1931.

Geo. M. Fowler,
Joplin, Missouri.

PRELIMINARY REPORT
on the
SMALLER MINES AND PROSPECTS
near
THE MONTANA MINE
RUBY, ARIZONA

INTRODUCTION AND ACKNOWLEDGMENTS

While engaged in the examination of the Montana Mine in April, 1931 we spent several days examining some less important mines and prospects in the immediate vicinity of Ruby, Arizona. This was done in an attempt to find other possible sources of ore for the Montana Mill, the only concentrating mill in the vicinity of Ruby.

Lack of data, accessibility, surveys, and development in connection with most of the properties necessitated that this report be of a preliminary nature. Some of the properties were accessible in part only, due to caved ground or water.

In some instances we had access to reports regarding the several properties. These data were digested and due credit is given in this report for such information.

All of the mines mentioned in this report are idle at this time.

LOCATION

The smaller mines and prospects in the vicinity of the Montana Mine are located on all sides, except the east. Some of them are contiguous and some are several miles distant. Mines more distant need not be considered at this time.

No surface map is included with this report because of inadequate data. All of the mines and prospects described are within a radius of three miles from the Montana Mine.

HISTORY

The Oro Blanco District (of which the area in the vicinity of Ruby is a part) is one of the oldest in Arizona. The early mining was confined to placer gold and to small quartz veins containing gold. Gold mining, both placer and quartz, is carried on in a small crude way at this time.

Underground mining dates from about 1849. Many thousand feet of underground work has been done in the district as a whole. There has been but little activity in the district, except at the Montana Mine, in recent years.

PROPERTY

There are many mines and prospects in the vicinity of Ruby. Our work was confined to three groups. Others may have equal merits.

We visited the following mines:

Idaho Group.

Warsaw Group.

Austerlitz Group.

IDAHO GROUP

The surface geology of the Idaho Group is shown on Map No. 1. The country rock is diorite breccia and diorite of several ages. Numerous small inclusions of shale and slate were disregarded in preparing this map. Idaho veins are contemporaneous with the Montana Vein. The former veins are smaller and less important. They are confined largely to the diorite breccia areas.

The underground workings at the Idaho Mine aggregate several hundred feet. They consist of adits, drifts, and winzes. Some of the winzes were inaccessible because of water.

IDAHO GROUP - Continued:

Only a small tonnage of ore has been extracted from the mine. The ore is confined, largely, to small shoots, up to 5 feet in width, in quartz and mineralized breccia.

The common ore minerals are sphalerite galena and chalcopyrite, with fair values in gold and silver.

No samples were taken because there is practically no developed ore in the mine at this time.

Maps:

A geologic map of the principal underground workings is included with and made a part of this report.

Conclusions:

It is evident that the ore shoots in the Idaho Mine are small. The property warrants a little additional prospecting if the ore can be purchased by the Montana Mines Operations upon very favorable terms and in connection with ore from other similar mines of the vicinity.

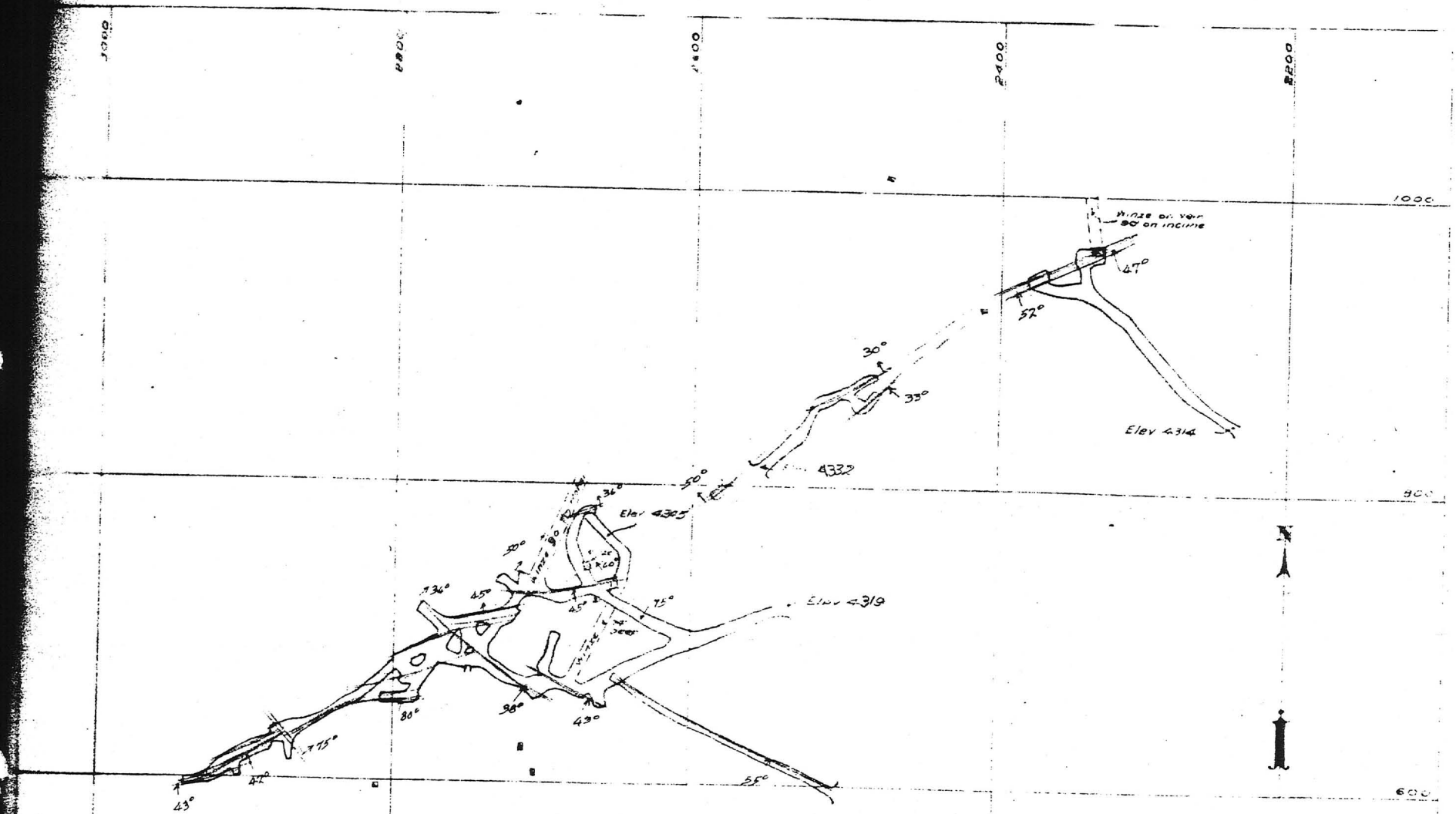
It is probable that the mine can be worked to best advantage by a small operator.

Definite geologic recommendations can be prepared when needed.

WARSAW GROUP

No surveys of the Warsaw Mine were available. We made a survey of the principal accessible workings. It is included with this report.

The mine is located about 3 miles southeasterly from the Montana Mine. It has been owned for many years by John Maloney, a local prospector and mine operator.



Compass Survey

UNDERGROUND WORKINGS

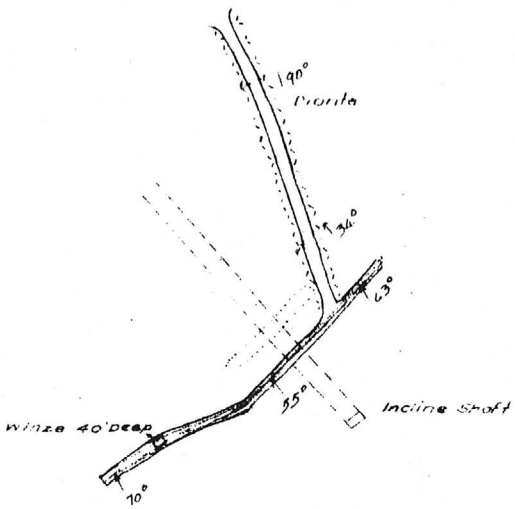
IDAHO GROUP

RUBY, ARIZONA.

Scale: 1" = 100'

G. M. FOWLER.

APRIL 1931. JOPLIN, MO.



Compass Survey

UNDERGROUND WORKINGS

WARSAW MINE

(one of Several Adits)

RUBY, ARIZONA.

Scale : 1" = 100'

G. M. FOWLER .

APRIL 1931. JOPLIN, MO.

WARSAW GROUP - Continued:

The country rock in the vicinity of the Warsaw Mine is predominately diorite of several kinds and ages. Diorite breccia is less abundant than in the immediate vicinity of Ruby. Several large dikes of quartz porphyry were noted. No attempt was made to establish the relative ages of the several formations nor their influence upon the ore deposits.

Several prominent veins outcrop in the diorite. Their general strike is northeasterly-southwesterly. They vary in width from a few inches to 10 feet. Quartz is the principal gangue mineral.

Only part of the underground workings were accessible. The map which accompanies this report shows one of the veins.

The common ore minerals are galena, sphalerite and chalcopyrite, which carry fair values in gold and silver.

This mine warrants additional study after maps have been assembled.

AUSTERLITZ GROUP

Most of the data regarding this property were greatly condensed from a report by Mr. F. B. Schermerhorn, made about 20 years ago. This report is on file at the Montana Mines Operations at Ruby, Arizona. No surveys were available.

The Austerlitz group of mines were located in 1865. At first the ore was treated in arrastres.

At an early date the property came into, and has remained, in the possession of Dr. A. H. Noon, who now lives in Nogales, Arizona.

The property is located about 3 miles westerly from the Montana Mine.

The workings consist of numerous cuts, pits, shafts, and adits. Many of them inaccessible. The workings aggregate several thousand feet.

The country rock is similar to that in the vicinity of Ruby.

AUSTERLITZ GROUP - Continued:

To date mining operations have been confined largely to the oxidized ore which carries chiefly values in gold and silver. Arsenopyrite was observed on the mine dump. Quartz is the chief gangue mineral.

The veins on this property are numerous. They vary greatly in size and strike.

Sampling by several engineers about 30 years ago gave gold (largely) and silver values up to $20.00 per ton. It is probable that all available commercial ore has been removed from the property, consequently, it is needless to list assays. Their chief value is to show the grade and character of the ore mined in the past.

This mine should be examined in more detail.

CONCLUSIONS AND RECOMMENDATIONS

Three groups of mines - the Idaho, Warsaw, and Austerlitz - all within a radius of 3 miles of the Montana Mine, were examined in a very preliminary way. It was needless to make a more detailed survey because no maps were available.

The mineralization in the mines we visited is important enough to warrant additional study. It is possible that less developed promising areas, unknown at this time, may exist.

We, therefore, recommend that the area bounded by the Montana, Warsaw, Austerlitz, and Idaho Mines be examined in more detail. This work can be done very largely by Messrs. Morton and Pfrimmer. It is probable that the U. S. Surveyor General Office for Arizona, local engineers, and others could supply many needed surface and underground maps. Shipment records could probably be supplied, in part, by smelters and other.

CONCLUSIONS AND RECOMMENDATIONS - Continued:

No expenditures for prospecting or development are recommended at this time. Such work can be undertaken later. Any ore developed would add to the life of the Montana Mine.

Respectfully submitted,

Geo. M. Fowler.

Geo. M. Fowler-
c

Joplin, Missouri
May 29, 1931.