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06/04/86

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: RAY EASTERN COPPER CLAIMS

ALTERNATE NAMES:

CLAIMS MS 3993
TOP NOTCH
LITTLE FRANK
MINERAL BASIN
RAY EASTERN COPPER COMPANY

GILA COUNTY MILS NUMBER: 46

LOCATION: TOWNSHIP 2 S RANGE 14 E SECTION 14 QUARTER NE
LATITUDE: N 33DEG 15MIN 45SEC LONGITUDE: W 110DEG 53MIN 00SEC
TOPO MAP NAME: PINAL RANCH - 7.5 MIN

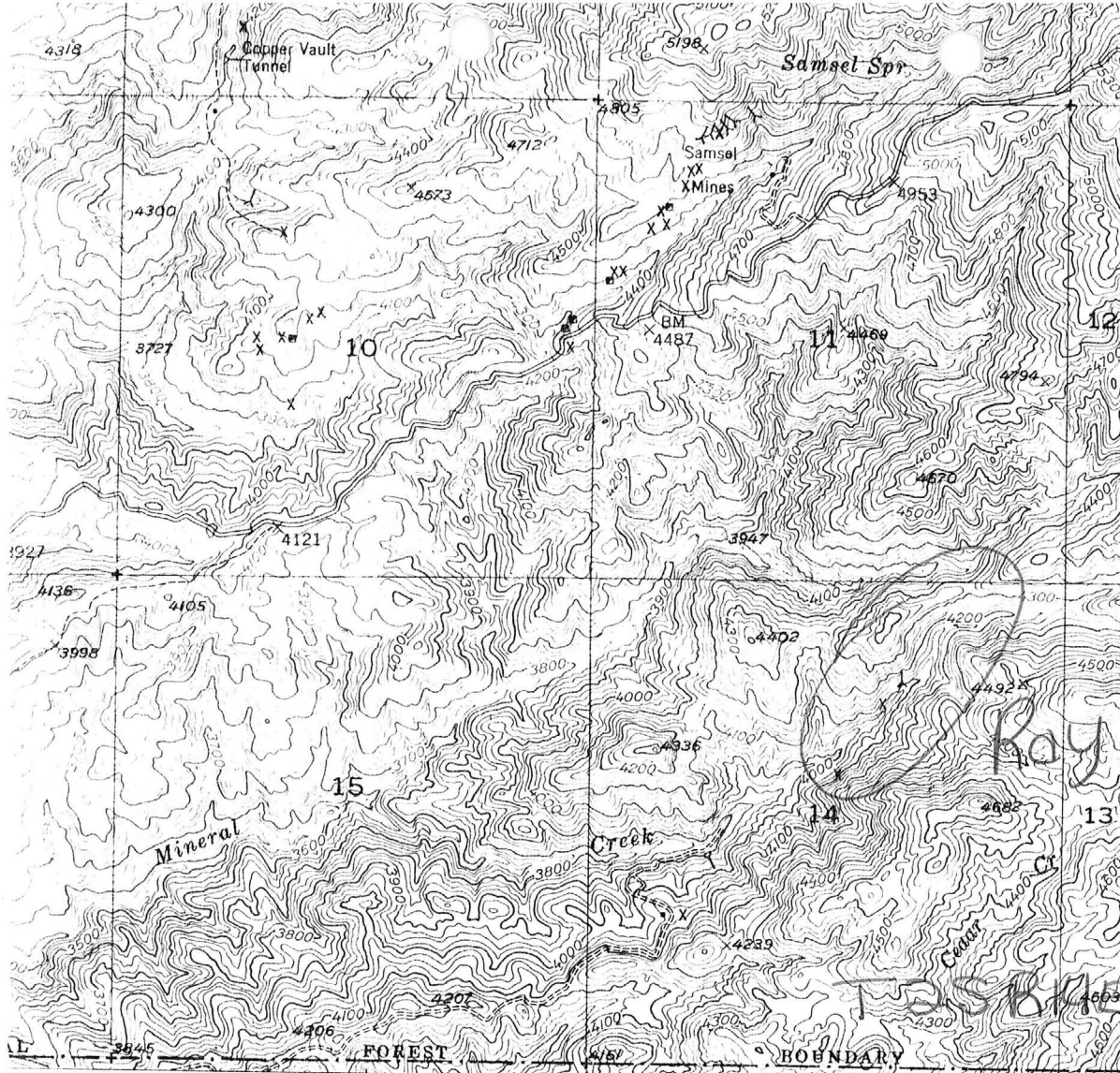
CURRENT STATUS: PAST PRODUCER

COMMODITY:

COPPER
GOLD
SILVER
LEAD
ZINC

BIBLIOGRAPHY:

ADMMR RAY EASTERN COPPER CLAIMS FILE
BLM MINING DISTRICT SHEET #653
WEED, W.H. "COPPER HANDBK" VOL. XI, P 746 1912
ADMMR "U" FILE, Pb 8
CLAIMS EXTEND INTO SECTION 11



830 000 FEET
(CENTRAL)

Ray Eastern
Copper
Co.

Sec. 14 NE

1810000 FEET (CENTRAL)

INTERIOR GEOLOGICAL SURVEY, RESTON, VIRGINIA

33°15'
110°52'30"

(RAY 1:62500)

ROAD CLASSIFICATION

HARD-SURFACE ALL WEATHER ROADS		DRY WEATHER ROADS
Heavy-duty	4 LANE 16 LANE	Improved dirt
Medium-duty	4 LANE 16 LANE	Unimproved dirt
Loose-surface, graded, or narrow hard-surface		
U. S. Route	State Route	

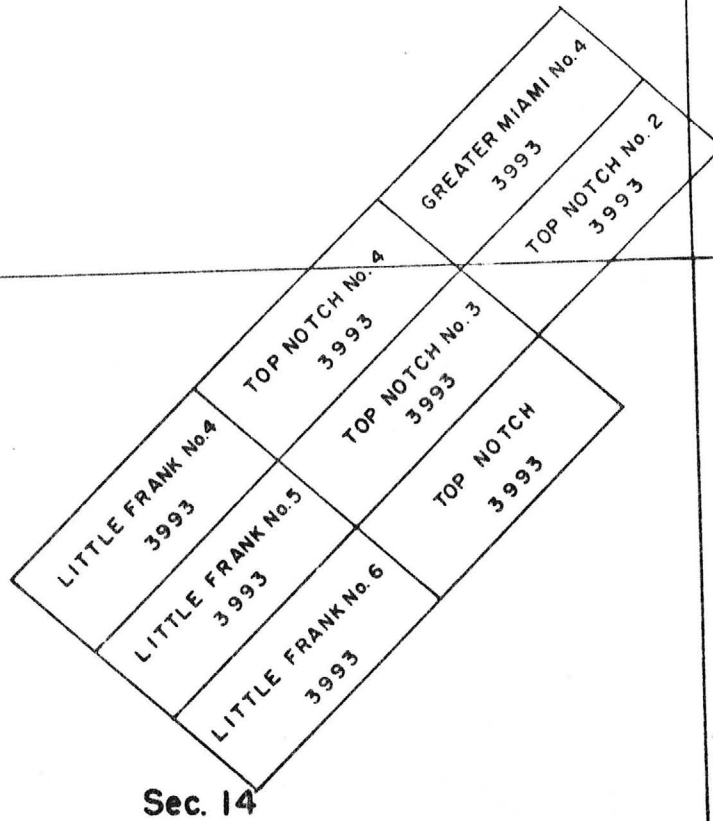
PINAL RANCH, ARIZ.

N3315-W11052.5/7.5

1948

Sec. 11

Sec. 12



Sec. 14

Sec. 13

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine TOP NOTCH Pb., Zn., Cu. Date September 28, 1943
or Little Frank
District Globe Engineer Earl F. Hastings
Subject: Reconstruction Finance Corporation
Mine Loan

Docket No.
Date Application Received
Date of Report

Phx C-239
August 26, 1943
September 27, 1943

1. Name and address of applicant (correspondent):
Robert T. Jones, Box 1757, Globe, Arizona.
2. Character of project and estimated cost thereof:
Pb., zn., cu. Repair road to property; clean out, enlarge and retimber shaft; sink additional 50 feet and drift laterally. \$5,000.00.
3. Location of property:
Globe Mining District, Sec. 14, T 2 S, R 14 E, Gila County, Arizona.
4. Applicant's interest in or ownership of property:
Applicant is owner by location and deed from former wife.
5. Loan requested:
\$5,000.00.
6. Loan recommended:
None.
7. Comments:
 - (A) There are only two even remotely specific references to ore occurrence in the docketed material. They are:
 1. A single assay certificate representing 28" of ore in the shaft 35 feet below the collar.
 2. A selected sample from the mine dump by E. D. Morton of the Eagle Picher Mining and Smelting Co.
 - (B) Development is lacking and the project resolves itself into one of exploration.
 - (C) Even though such exploration be reasonably successful, marketing conditions for complex ores are such from this locality that local beneficiation would be required for other than highly selected ores.
 - (D) It does not appear that the property warrants this expenditure and that which would necessarily follow. The loan is therefore not recommended.

ARIZONA DEPARTMENT OF MINERAL RESOURCES

Earl F. Hastings, Projects Engineer

TOP NOTCH

Pb, Zn, Cu

Gila

4 - 4

S 14, T 2 S, R 14 E

Robt. T. Jones, Box 1757, Globe

'43

MEMORANDUM:

To: George Ballam
From: Earl F. Hastings
Subject: Top Notch or Little Frank Mine
Globe Mining District
Robert T. Jones, owner

August 27, 1943

We have an application from the above applicant for a \$5,000.00 RFC loan. In the docketed evidence, the applicant states that the property was inspected August 1, 1943 by an engineer of the U. S. Bureau of Mines from Tucson. Would you call on Mr. Hedges and obtain as much information on this property as is possible.

Earl F. Hastings
Projects engineer

PROSPECTUS

RAY EASTERN
COPPER COMPANY

WITH ENGINEER'S REPORTS
PHOTOGRAPHS AND MAPS



— 1911 —

PROPERTIES ON MINERAL CREEK, RAY MINING
DISTRICT, NEAR GLOBE, ARIZONA

Am. H. S.

REPORT

ON THE

Ray Eastern Copper Property

GLOBE, ARIZONA



BY

Edmond Louis DeLestry, E. M., E. C., A. M.

GENERAL MANAGER

DeLESTRY ENGINEERING COMPANY

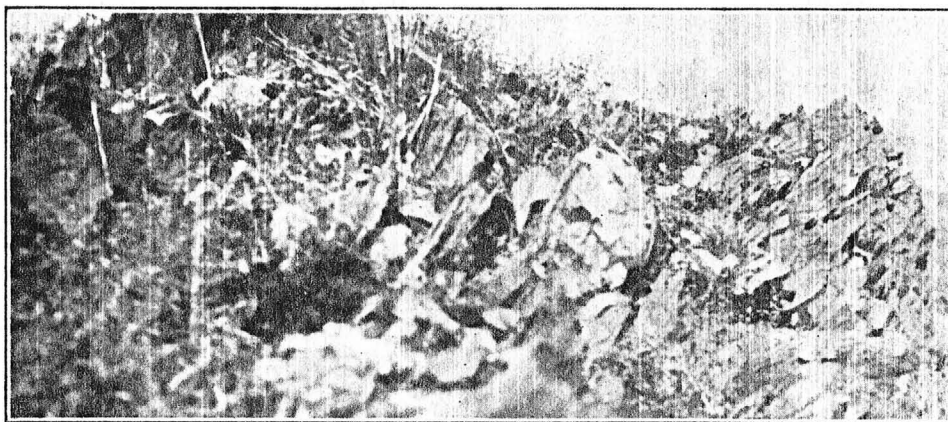
ST. PAUL, MINNESOTA

Special arrangements are being completed to install a battery of the new process Jones smelters which means the reduction of ore at one-tenth the former cost.

From every point of view this is an exceptional stock offering. The value will rapidly increase with active mining work. The sale at 80 cents is limited to the present requirements of the company. Place your order immediately either through our offices or through your own brokers or our accredited selling agents.

Respectfully submitted,

GUARANTEED SECURITIES COMPANY,
Fiscal Agents & Registrars,
St. Paul, Minn.



A SECTION OF THE GREAT COPPER LEDGES
—GOSSAN—
RAY EASTERN PROPERTY.

COMPANY'S STATEMENT.

Property, water power and rights, etc.....	\$450,000.00	
Camp, equipment, animals, tools	50,000.00	
Development work, etc.	40,000.00	
		\$540,000.00

TREASURY.

1 Million Shares at 0.80	\$800,000.00	
1 Million Shares at 1.00	1,000,000.00	
2 Million Shares at market (not included) ..		\$1,800,000.00

ORE RESERVES.

300,000 tons proven shipping ore shaft No. 1		
workings at \$110	\$33,000,000.00	
Lower grade ores for concentration estimated ..	1,000,000.00	
		34,000,000.00
		\$36,340,000.00

Not counting 2 million shares reserve stock.

COMPARATIVE STATEMENT.

As an illustration of the value of the stocks of the Ray-Kelwin-Mineral Creek Mining District, we give herewith a short table showing the starting prices and their present selling values according to the latest quotations on the stocks of some of the properties under development in that district.

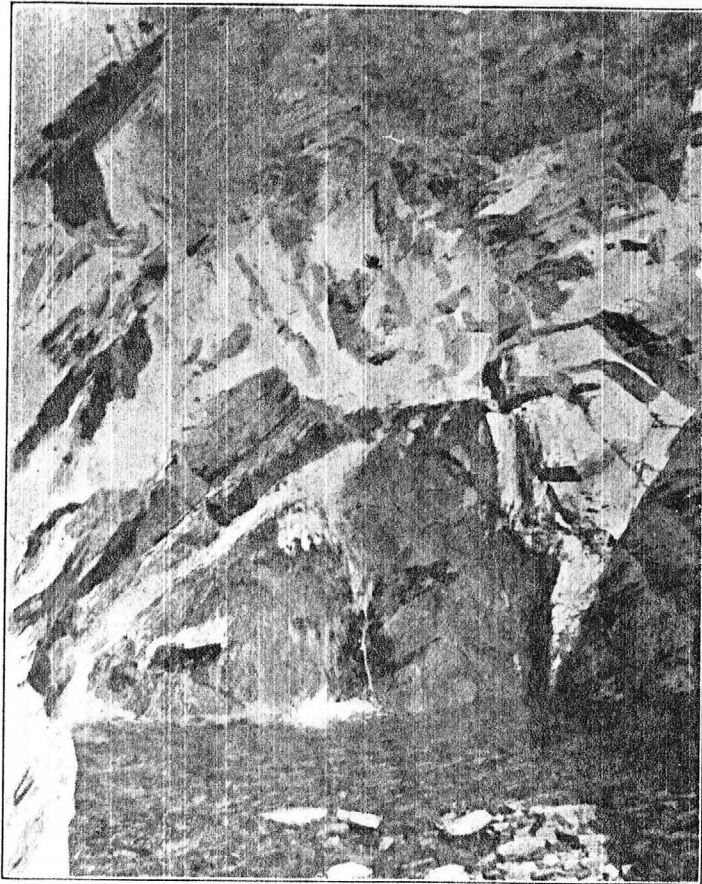
Company	Starting Price per share	Present Price
Ray Consolidated	\$5.00	\$19.25
Ray Central	1.00	2.56
Gila	3.00	7.75
Chino	5.00	21.87
Miami	7.50	18.75
Inspiration	1.50	9.37
Keystone	0.75	3.25
Cole Dev.	0.30	2.50

Ray Eastern now offered at 80 cents, on a known ore development is a remarkably attractive and cheap offering. The stock based upon the ore reserves of the property should be selling around about \$2.50 and with Treasury reserve of four-fifths of its stock value unsold should have a value of \$5.00 a share.

Investors will make no mistake in securing at its present offering as an investment proposition as well as for speculative rises in the immediate future, some of this stock.

ORE TESTS.

Ore shipments from No. 1 shaft amounting to about 15 cars have been made with a view of testing the ore and these yielded a net return of \$110.00 a ton at the smelter. The ore is the famous peacock ore, carrying great values in gold and silver with about 24% copper. About three hundred thousand tons of this high grade ore have proven up in the open workings. On other sections of the property ore formations of lesser value have been proven and twelve claims of the group have been prepared for and surveyed for the issue of patents.



ONE OF THE WATER POWER SITES
RAY EASTERN PROPERTY

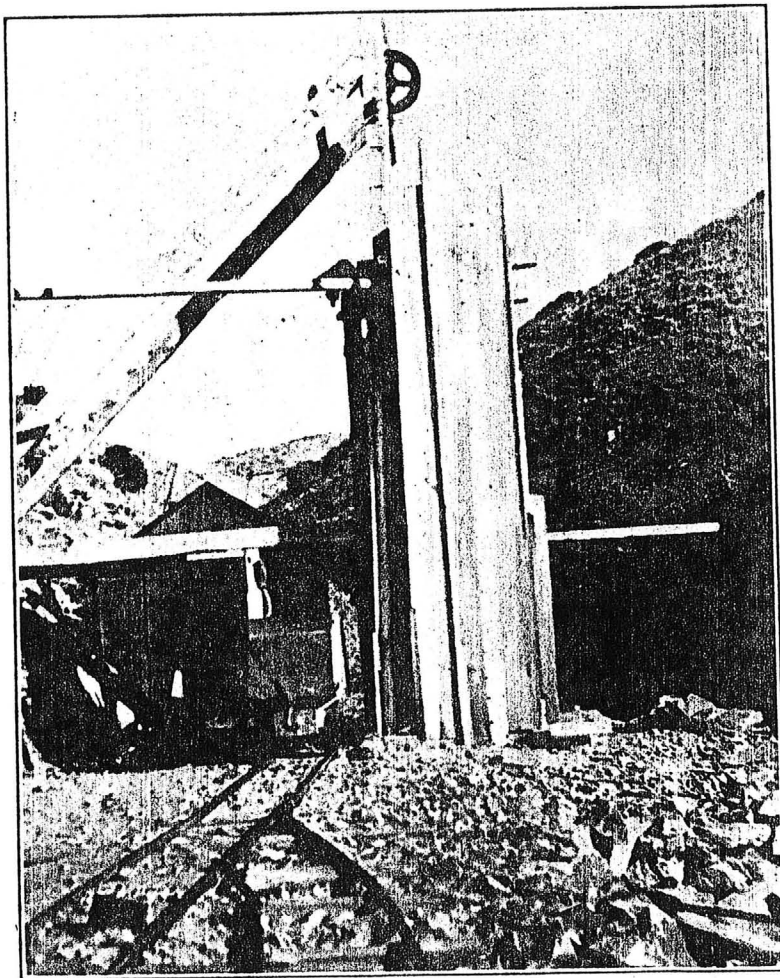
IMMEDIATE OPERATION.

Upon the completion of the present sale of Treasury stock the company will immediately develop its water power, install a heavier hoisting plant, etc., and proceed as rapidly as possible to develop the property to the shipping point. The high grade ore can be shipped to smelter at a big profit. The lower grade ores will be assembled for local treatment.

This is the first public offering of this stock at any price and we have positive assurance that on completion of this sale the price will be advanced to par, prior to listing.

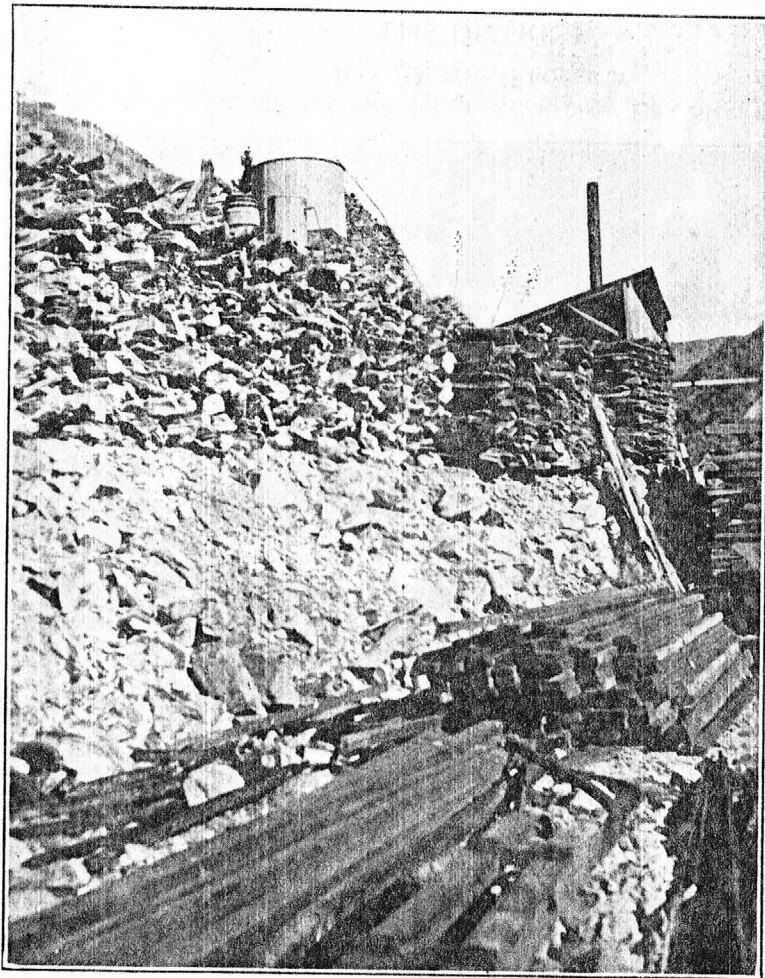
THE CAPITALIZATION

of the Ray Eastern is only Five Million Dollars. Of this amount there remains at this time at the company's disposal Four Million Dollars of shares. Only One Million shares will be offered for sale, leaving a treasury reserve of Three Million shares. This is exceptional in mining flotations, but the company has decided that this property shall be offered to investors on a basis of absolutely square dealing and honest financing.



NEW ERA SHAFT AND HOIST
RAY EASTERN PROPERTY.

Big prices have been and are being paid for properties in the district. Some of the best known mines in the section are Miami, Keystone, Black Warrior, Orphan, Gibson, Little Miami, Independence, El Capitan, National Copper, Pinto Creek Copper, Silver King, Ray Consolidated, Ray Central, Ray Northern, Arizona Hercules, Troy-Manhattan, Little Man, Summit, Bobtail, Inspiration and others. More than Twenty Millions of Dollars are being expended in active development in all directions from our property.



SAW MILL AND FRAMING SHED
RAY EASTERN PROPERTY.

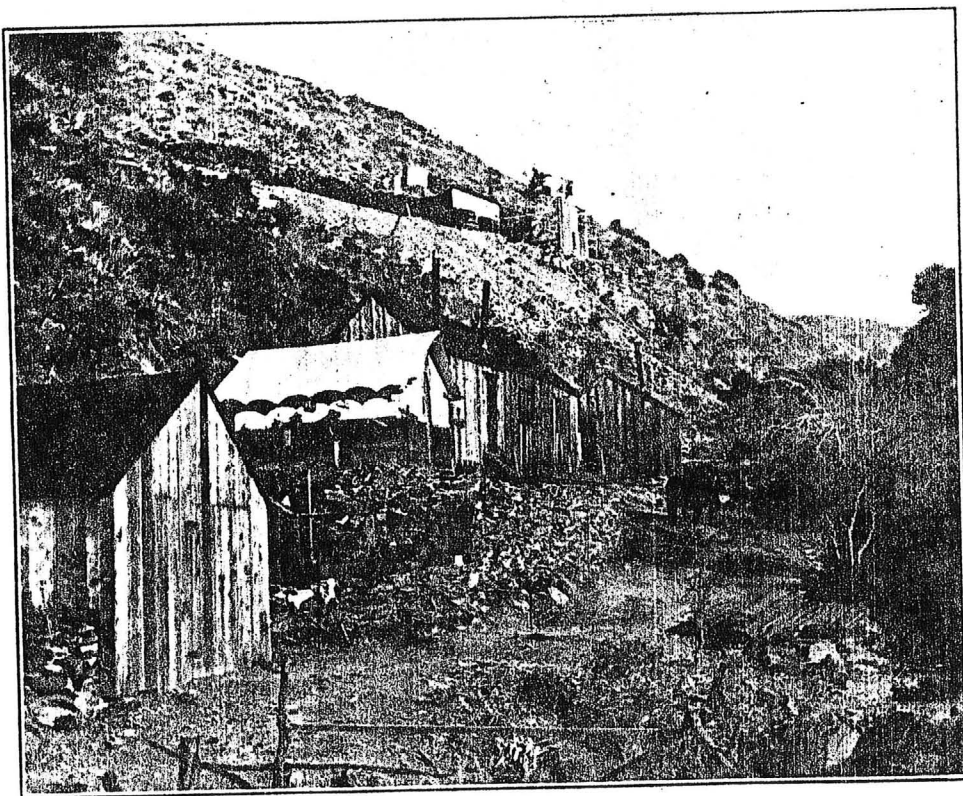
The recent sale of the Gibson Mine to a Boston Syndicate provides for the immediate expenditure of Three Quarters of a Million Dollars. It is also a known fact that the Ray Consolidated Mines have passed into the hands of the Lewissohns, the great Copper operators. These two big sales this season bring the big operators right to our doors and will do much to attract attention to the rich country on the Mineral Creek divide.

WATER POWER ESTIMATE.

For the water power and the dam site there exist most favorable conditions. Near the proposed dam location a split of land, or rather solid rock, abruptly interposes at right angles, forming an effective water break to the violent torrents, in front of which the channel of the stream contracts to a narrow gorge in which the dam will be placed.

Making a preliminary calculation of the dam, it will contain approximately 137,776 cubic feet solid contents. By constructing it in the form of a shell, with a concrete interior the masonry can be modified by detail study. Its height will be about 130 feet above existing beds of stream, requiring a length on top of some 360 feet, and at its base some eighty odd feet. Its thickness will depend on its detailed design, allowing 97 feet at the base and 20 feet at the top, we have a fair approximation.

For the reservoir we estimate that at a height of 130 feet there would be impounded 10,428,000 cubic feet of water, and when conveyed one half mile down the stream, gaining a fall of 400 feet that 1,500 hundred horse power would be developed, and by constructing some auxiliary dams it could be maintained for every day in the year.



GENERAL CAMP SCENE NEAR NEW ERA SHAFT
RAY EASTERN PROPERTY.

THE DISTRICT.

The Southwestern corner of Gila County and the adjoining district of Pinal County are now being opened up in energetic manner and many high-class properties are being developed in the same in all directions from the properties of this company.

It would be useless to enter into a discussion of analogies in a district so fully demonstrated as the one under consideration.

On this property the Diabase Dykes or intrusions are numerous and well marked by their outcrops. The Quartzite ledges also are unmistakable and the conditions demonstrating the "Contact" nature of the formation are excellent and indicate the existence of high grade ore bodies along these contacts. This is especially true of the upper ground where 17 cars of high grade ore have been taken from the shaft and shipped to the smelters, yielding a great profit.

Whether the lower ground will become a disseminated ore section can only be demonstrated by further work, but indications of this possibility are already apparent. In that case the property would develop into two distinct mines.

1.—DEVELOPMENT WORK AND PROSPECTING.

In the matter of development work and prospecting at the time of the making of this report sufficient has been carried forward to prove my contention of the value of the property being beyond dispute.

The ore taken from these workings and tested by a number of high class and reputable assayers and chemists proves that this property demonstrates the existence of zones one and two above mentioned. With this contention firmly established, the existence of the final zone is beyond doubt.

The work may be divided into two groups—the upper group, and the "Down Creek" group, (about one mile from the starting point.)

On the UPPER GROUP the permanent work consists of a two-compartment shaft which has reached a depth of 250 feet. Stations are cut on two levels and high grade shipping ore has been encountered on both levels. To prove the strike, a prospect shaft was sunk a quarter of a mile up creek to a depth on line with this level and the same formation encountered. The ore occurs between quartzite and lime and cannot help increasing in volume as work is continued and deepened.

On the "DOWN CREEK" group a tunnel was driven. This tunnel has already cut two leads of high grade glance, the normal depth from the outcrop being less than 150 feet. Its line of development if continued for 1,000 feet will cut all the known ledges as indicated on the surface by outcrops and will attain a vertical depth from the main cropping of nearly 500 feet.

In my opinion, sufficient work of a prospect character has been performed on the entire property to place it in the "Preferred Prospect Class," with ninety-nine chances out of a hundred in its favor of becoming a big producer of high grade ores. For the quality of the same I refer you to the assay reports in your possession.

The work has been carried on in good, minerlike fashion. Serviceable buildings, first-class tools, and good equipment are on the ground and the property need not offer any apologies for bidding for financial support.

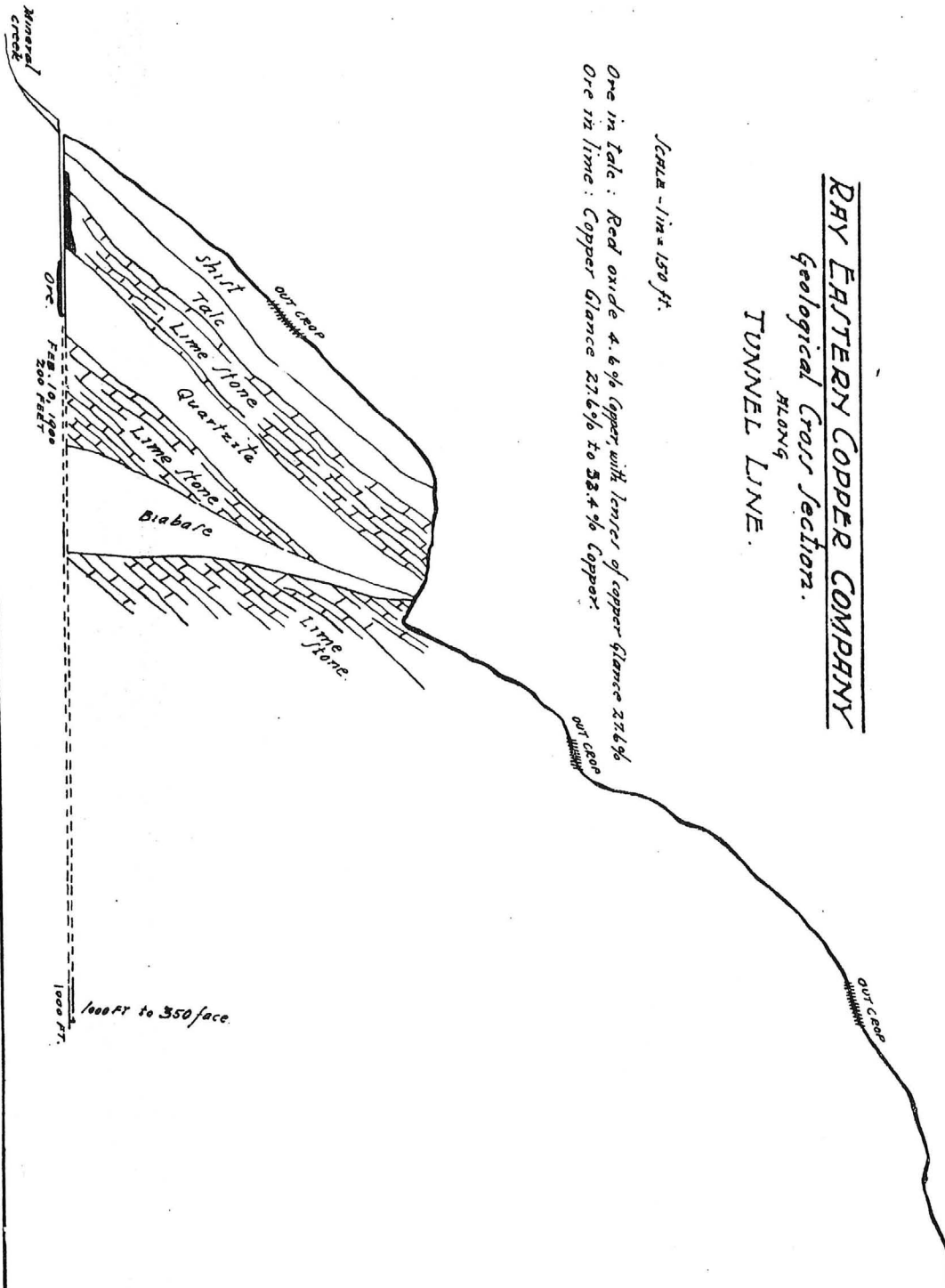
2.—OUTCROPS AND ORE HORIZONS.

Seldom in my travels through the copper section have I seen so large and extensive a true outcrop as is visible on this property. Beginning at the most easterly line to the western end line of the property, a distance of more than one mile, the outcrop is plainly visible on both sides of Mineral Creek. There are numerous ledges all well marked.

DAY EASTERN COPPER COMPANY
Geological Cross Section.
 ALONG
 TUNNEL LINE.

SCALE - 1 in = 150 ft.

Ore in Talc: Red oxide 4.6% Copper, with lenses of copper glance 22.6%
 Ore in lime: Copper Glance 27.6% to 33.4% Copper



The horizons might be divided into divisions—the New Era-Copper Ear claims horizon and the Contact-Old Timer horizon. The work of the proving of the property is being carried forward along these subdivisions, as it should be, operations at this time being confined to the first subdivision.

3.—CHARACTER OF ORES.

FIRST HORIZON—Shaft No. 1, *NEW ERA* claim, shipping ore, self-fluxing, peacock colored, between quartzite and lime. Carries 29% iron, 24.5% sulphur, 2-oz. silver, 12.61% copper, 2 to 3-oz. gold. A most desirable ore for any smelter.

SECOND HORIZON—*OLD TIMER* tunnel. Deserves special mention.

- (a) First encountered in a talc formation, which in itself was a valuable concentrating formation, and which led to a red sulphide of copper, bearing 4% ore, with 39.4% iron and 36.4% sulphur. Imbedded in this mass occurs the glance carrying 27.6% copper, 2-oz. silver, 24.5% iron, 22% sulphur. A most desirable smelting ore.
- (b) Second strike in limestone—copper glance, as above, with slight variations only.

There are many other and lesser workings, all of which have shown the existence of workable ore, although no attempt has as yet been made to block out any ore, the company not having had sufficient funds at any time to do so, it being the intention to satisfactorily prove the ground as ore bearing.

Preliminary survey for patent has been completed, the posts set, painted, the official mineral monuments established. There are no debts against the property.

4.—CONCLUSIONS.

1. I believe the foregoing complete statement carries with it its own conclusion. This property has reached a point when it requires capital sufficient to equip it with a proper mining plant. Its location is a district where immense capital—many Millions of Dollars—is being expended in development work and the fact that ore of a paying character has been encountered wherever work has been done on this property should prove sufficient recommendation to invite a strong organization with ample capital to take over this property.

2. I believe from \$350,000 to \$500,000 expended under practical and economic management will in about 18 months develop it into a producing mine.

3. Further, I am satisfied that sinking a three-compartment shaft equipped fully to attain from 1,000 to 2,000 feet will after the 500 foot level is reached duplicate the results of the Gibson mine and more than pay for its development.

4. Considering the cost of fuel and power, the development of the possible water power if only used and available half the year will save the entire cost of the property inside of five years.

5. The transportation problem is not difficult or expensive of solution and I am satisfied that other mines or mines owners in the district would join with money or labor, in the construction of a good wagon road to Kelwin and the Railway Franchises have been already granted and preliminary surveys made for the construction of an Electric Belt Line and Power System which would tap this property when constructed and advantageous terms can be arranged then for regular tonnage.

ORE RESERVES.

Supplementing the foregoing report, which was written during the stages of earlier development, we add hereto an estimate of the ore body as shown by the open workings.

Shaft No. 1 has been sunk to the 250-foot level. Drifts have been run on the 100 and 200-foot levels. Ore has been extracted and shipped for testing purposes from the 100-foot level and a small amount from the 200-foot level. No ore has been taken from any of the other workings.

Shaft No. 2 was started up the Creek from No. 1 shaft a distance of 600 feet northeasterly on the strike of the vein, which is easily traceable for a distance of 3,600 feet. In the open workings this vein is workable for six feet in width.

To estimate the positive ore body, we illustrate as follows:

Block No. 1, Shaft No. 1—200-foot level to 300-foot level, 100 feet.

Six feet wide to Shaft No. 2—600 feet northeasterly, proven ground.

600x6x100 equals 360,000 cubic feet.

Divided by 10 (10 cubic feet to the ton), equals 36,000 tons at \$110, \$3,960,000

Block No. 2, Shaft No. 2—100 foot-level to 300-foot level, 6 feet wide,
traced for 3,000 feet.

200x6x3,000 equals 3,600,000 cubic feet.

Divided by 10 equals 360,000 tons at \$110. \$39,600,000

Gross tonnage \$43,560,000

Deduct 25 per cent operating expenses. 10,890,000

Balance \$32,670,000

Continued development work by ample working shafts with adequate machinery will demonstrate the correctness of these figures. But if cost of equipment and unforeseen expenses of development work should increase the percentage above given to double the amount, there still would remain for the benefit of the Five Million shares of capitalization, the handsome net balance of nearly \$22,000,000 in high grade ore without considering any alteration of ore values below the present levels nor the ore bodies to be uncovered with greater depth. As these estimates cover only a fraction of the company's holdings, it seems to us that a proposition that has nearly \$5.00 in ore reserves for each share of capital; that will have three-fifths of its capital stock untouched in its treasury, is a safe one to back for equipment and further development. A much larger tonnage can be estimated by following the outcrop of the vein.

REPORT

on the Property of the

RAY EASTERN



BY
DWIGHT E. WOODBRIDGE
MINING ENGINEER

DULUTH, MINNESOTA, APRIL, 23, 1909

RECOMMENDATION.

The present plant and equipment has become entirely inadequate to carry the property to a paying stage.

A new two or three-compartment shaft should be sunk to the 1,000-foot level on the south side of the Creek and the levels run east 200 feet to intercept the veins in their southerly dip. A two-drum hoisting plant should be purchased and installed, the water power developed to drive all machinery and the expenditure of a few hundred thousand dollars will then open the mine and ore bodies to a workable stage and at a great profit.

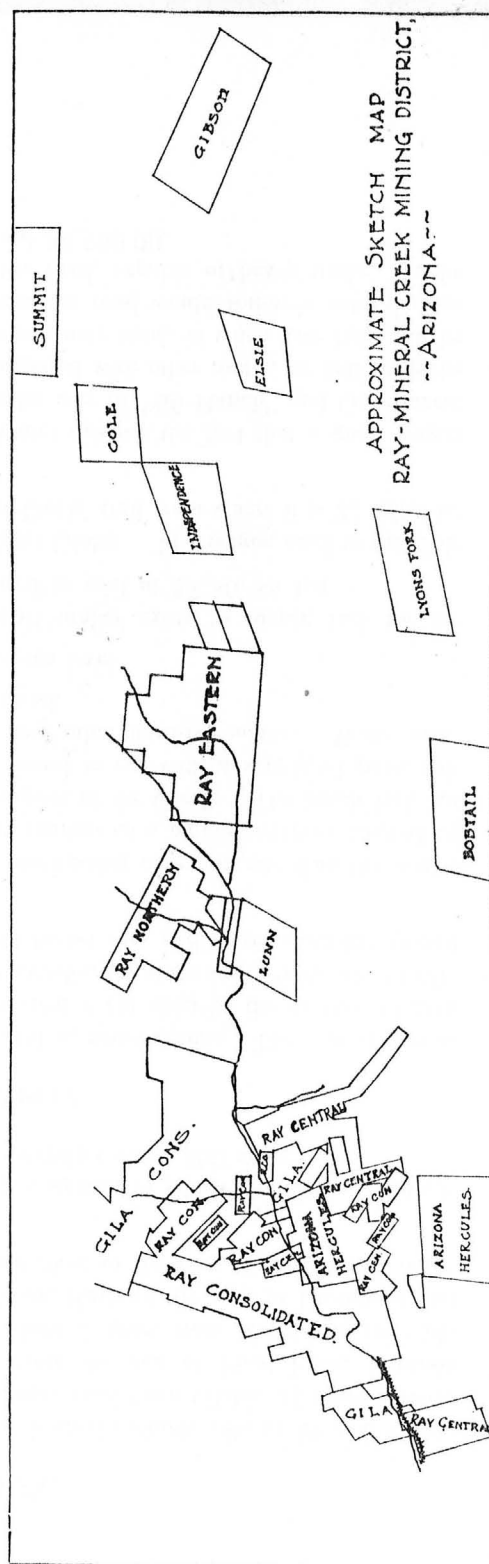
We have not taken into consideration the lower grade ores, running 3 to 7 per cent in copper sulphides on the lower claims of the group. These will form a proposition that can be solved at a later date when the company has reached a stage of progress where some of the net earnings may be applied to the handling of these ores, which will then form a very valuable asset of the enterprise, for local treatment.

Respectfully submitted,

DELESTRY ENGINEERING COMPANY,

By E. L. DELESTRY,

E. M., E. C., A. M., Ph. D.



LOCATION.

The property known as the Ray Eastern is located on both sides of Mineral Creek, in Gila County, Arizona, about 15 miles by wagon road from Globe, $2\frac{1}{2}$ miles easterly from Government Springs and about 2 miles from the foot of Pinal Peak, Latitude $33^{\circ} 15' N.$, Longitude, $110^{\circ} 55' W.$ It is about 7 miles from Kelwin on the Gila River on the new main line of the Southern Pacific Railway, by way of Lordsburg and Phoenix to Los Angeles, and where the smelting plant of the Ray Consolidated Copper Co. is now being built.

The holdings comprise 14 claims forming a square, to which is added a rectangle 7,500 feet long by 600 feet wide. The area comprises about 360 acres.

TOPOGRAPHY.

The topography may be described in general as mountainous. The central portion of the tract where the principal workings are located is cut deep by the canyons of both branches of Mineral Creek. The ground rises rapidly, the slope being from 44° to 60° toward the Creek bed, affording many excellent tunnel sites and ample dumping ground for the shafts.

The water supply is excellent. By the construction of a concrete dam the waters of Mineral Creek can be readily stored for any purpose in a natural reservoir formed by and at the junction of the North and South branches of the Creek. The South fork has been visited by me in many dry seasons and found to run with a supply of pure, soft mountain water remarkably free from alkalis and other intrusive matter. Water sufficient for a thousand-ton plant can readily be stored.

The average elevation is 3,800 feet above sea level.

In the surrounding country sufficient small timber exists to supply fuel for the boilers, and this is being assembled as compared to coal at \$2.36 per ton.

The property at this time is reached from Globe. The wagon road to the Cole and Independence mines is used to the head of Davis' trail from where it is $2\frac{1}{2}$ miles by saddle horse to the property.

Preliminary surveys made by me this Winter disclose the fact that a good wagon road can be built from the Independence Mine by way of "66 Ranch" and Government Springs to this property at a trifling cost as compared with other routes, by following the valley, and this portion has recently been made a county road, so when once built will be maintained at public expense. From the Springs the road would follow a natural ridge with easy grades to the property, and the entire road, capable of heavy traffic, can be surveyed, staked and built at a cost not to exceed \$4,500.00.

The property of this Company consists of fourteen claims approximately full sized and lie on Mineral Creek, which is a small and somewhat intermittent branch of the Gila River, on the Southern watershed of the Pinal Mountains. They lie about a mile East of the Western boundary of Gila County, in the Pinal Schist formation which is characteristic of the Globe District.

To the south of your holdings, recent developments of mineral interests are important. What is known as the Kelwin district is an old and once active region, abandoned for a number of years until recently, but which is once more coming into prominence through the reopening of the Ray, Calumet-Kelwin and other mines. These lie some four miles in a general southerly direction from your property. The Ray is probably destined to become one of the important copper mines of the United States, and has already developed an enormous low grade ore body. From a transportation point of view, at least, its bearing on the future of the Ray Eastern is important. Ray has recently let contracts for a 2,000 concentration mill.

I refer to these properties, as they show the region is a broadly mineralized one, and because they indicate the possibilities of the district in the future, both in a development and transportation way, which is a serious and important question.

If a paying mine is made here its outlet will be by way of Mineral Creek and Kelwin instead of Globe, as the cost will be very much less. This will be especially true after the Ray secures direct railway connection with the Phoenix and Eastern by a line soon to be constructed.

Developments on these properties consist of some 1,150 feet of work. This work includes a tunnel on the Contact Claim, in which operations are now going on, which I examined. A shaft on the Iowa-Charleston claims 100 feet deep; a tunnel on the Old Timer claim about 318 feet long, but its portal now out of repair; a shaft 250 feet deep on the New Era claim; two compartments and a tunnel 75 feet long on the April Fool claim, and some minor workings.

On the Contact Claim a tunnel has been driven 195 feet through schist toward a diorite intrusion that can be traced on the summit of the hill, where it breaks through the schist, in the form of a dyke. This may be cut by the tunnel with some 200 feet further depth. The tunnel is in schist and a schist that carries disseminated through it some copper mineral. A sample taken of this rock from the hanging wall of the vein 90 feet from the portal and showing no copper sulphides was taken by me for assay and returned traces of copper. This, you must remember, is the country rock. At a point 86 feet in the tunnel some ore makes in the back. This is a seam dipping with the bedding planes of the schist, that is about 50 degrees from the horizontal, toward the northwest, and may widen as it goes down, and is quite likely to do so. This ore is a black sulphide, and a sample taken for a length of 50 feet, from 90 to 140 feet from the portal, gave returns of 6,825 copper. At about 160 feet another sheet comes in above it, dipping nearly parallel and continuing to and across the face, and how much further no one can guess. This second ore shoot is stronger and better than the first. The breast of the tunnel is in softer ground, changing and improving in character. A stream of water is coming in under considerable pressure. I suggested that at some point behind

this flow, and as near it as convenient, a winze be sunk on an incline following this ore and developing it in depth as far as might be advisable and practicable. I believe results will justify the sinking. At the breast the vein shows some iron stain and a better character of ore.

The ore showing here is doubtless a reconcentration from the schist in its bedding planes. If there is at depth, a fault plane, or some other condition that may have allowed concentration to take place on a larger scale, there is a possibility of considerable ore body.

The surface of this claim near the discovery monument shows a diabase dyke crossing the formation which has probably much to do with the mineralization hereabouts.

On the Old Timer claim the surface shows evidence of mineralization below and a good ledge. Work on the tunnel is reported to have shown a good ledge therein, but it was inaccessible at the time of my visit.

A well defined ledge runs across the Monarch and April Fool claims exposed for more than 1,000 feet down into the creek bed of a branch of Mineral Creek and up the other side. This is opened on the April Fool by a tunnel 75 feet long which is in schist intruded by porphyry. It shows some copper ore; the walls are covered by copper sulphate that has resulted from the oxydization of mineral in the schist and the water coming out is very strong in copper. Indication of values at greater depth are fair. In my opinion, this showing is one of the best I was able to find on the Company's property at any point where I could examine it. This lead trends about northwest and southeast, and is exposed by two holes on the Monarch, in addition to the tunnel.

Abundant signs of ledges are to be seen at various other points over the Company's property, and some of them may be worth examination when the Company has funds ample for their development. The schist is more or less broken by diabase and porphyries at several localities.

Ample water power for practically any need of the Company can be had by a cheap development of Mineral Creek on the Company's property.

A very considerable mining activity is growing up in the Ray district, which is close by to the south, and this will probably extend. I think you are safe in figuring that the interest of copper miners in the country surrounding you will increase rather than diminish, for a long time to come. Not only has the Ray let contracts for mills, etc., but other properties in the vicinity are being taken by strong people, the Lewisohns among the rest. The Ray is backed by the Utah Copper people, Messrs. Hayden, Stone & Co., and their friends, a very heavy combination. It is reasonable to look for something of a mining boom in this general region. Whether or not it shall extend as far as the property of the Ray Eastern is for those interested to determine.

(Signed) DWIGHT E. WOODBRIDGE.

Duluth, Minn., April 23, 1909.

I hereby certify that the foregoing report by Dwight E. Woodbridge is a true and correct copy of the original on file.

(Notarial Seal.)

H. BOYER,
Notary Public,
Ramsey, County, Minn.

My Commission expires October 12, 1916.

REPORT

on the Property of the

Ray Eastern Copper Company



==BY==
E. T. SATCHELL

Globe, Arizona, March 9, 1909

SATCHELL BROTHERS,

Assayers, Chemists and Metallurgists,

P. O. Box 1005,

130 Broad Street, Globe, Arizona.

March 9th, 1909.

Ray Eastern Copper Company,
St. Paul, Minn.

Gentlemen:

At the request of Mr. E. L. De Lestry I visited your Property, situated at the head of Mineral Creek, Gila County, Arizona, and herewith submit briefly my opinion on the Property as I saw it.

This opinion is given as you will understand, strictly in confidence, and I trust it may be of some benefit to you.

Yours very truly,

(Signed) E. T. SATCHELL.

RAY EASTERN.

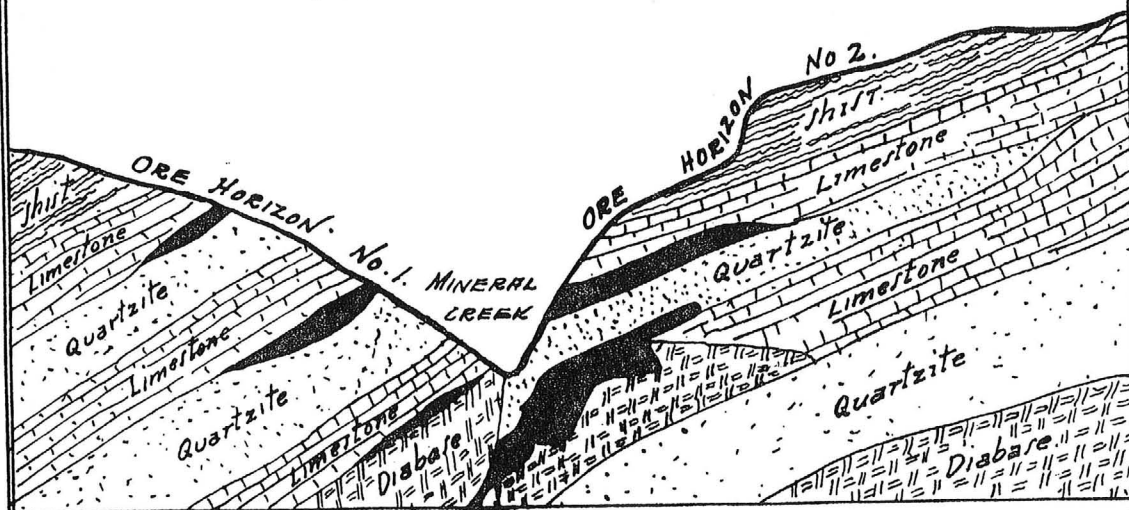
The property known as the Ray Eastern is situated in Gila County, Arizona, at the head of Mineral Creek, about 15 miles west of Globe. It consists of fourteen claims and is known as the New Era group of mining claims.

The Old Timer has one particularly strong ledge which crops on the company's ground and is well mineralized on the surface. A sample taken from a dump showed good values in copper, gold and silver.

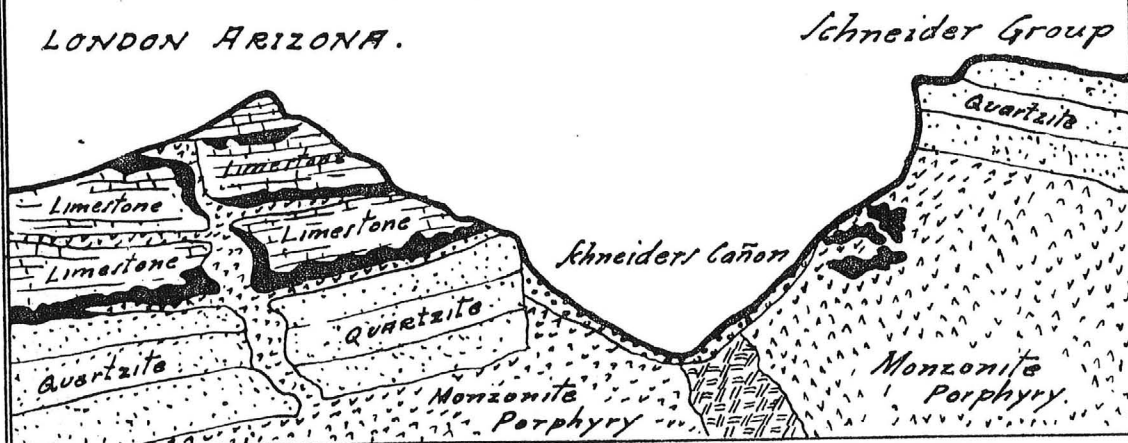
The tunnel on the Contact shows that there is a natural concentration of mineral on the seams, where the water has leached out the mineral from above. This concentration of mineral assays high in iron, and carries some copper values. It is the writer's opinion that this tunnel should be driven at least 100 feet more, and then a winze sunk. Ore in commercial quantities should be encountered in doing this work. The mineralogical condition in this tunnel is peculiar and would lead one to expect that there was a large deposit of sulfide ore in the Contact claim.

Along the hanging wall in this tunnel, a good deposit of sulfide ore is shown, which at tunnel level is at least 10 inches in thickness and between this and the foot wall there is 18 inches of Talc, carrying about 3 per cent copper in the form of Chalcocite. This claim is worthy of further development.

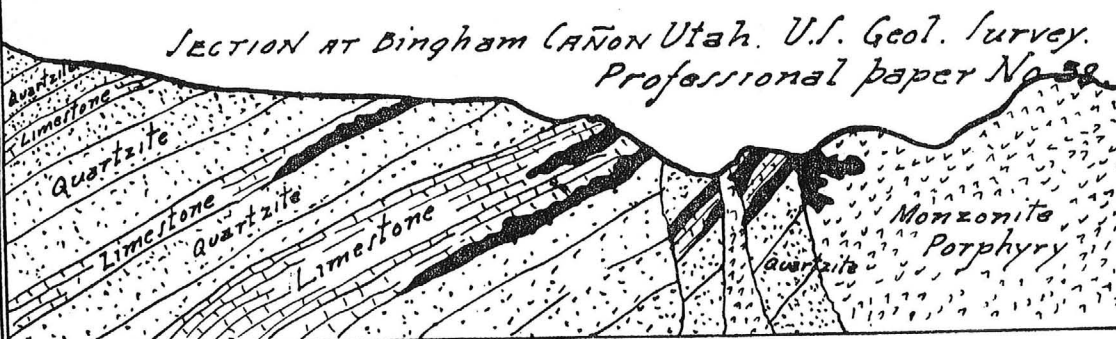
CROSS SECTIONS
OF
WELL KNOWN COPPER DEPOSITS.
SHOWING STRUCTURES ANALAGOUS TO
RAY EASTERN COPPER CO.



SECTION OF LONDON-ARIZONA,
LONDON ARIZONA.



SECTION AT Bingham Cañon Utah. U.S. Geol. Survey.
Professional paper No. 32



On the New Era, directly East of the shaft and running about parallel to the South Fork of Mineral Creek, there is a good strong ledge, capped with gossan and the small tunnel which has been driven, shows good quality ore in the face, in the form of sulfides proper. This tunnel is about 25 feet in length. Development should be done along the following lines:

The shaft should be sunk to a depth of at least 300 feet and cross cuts run East and West, thus giving a depth of about 350 feet on the ledge.

Since visiting the property I have read Mr. DeLestry's report and in my opinion it is geologically correct.

Considerable water power could be developed at a reasonable cost, and I believe the property to be of merit and to be worthy of further development along the lines herein outlined.

Respectfully submitted,

(Signed) E. T. SATCHELL.

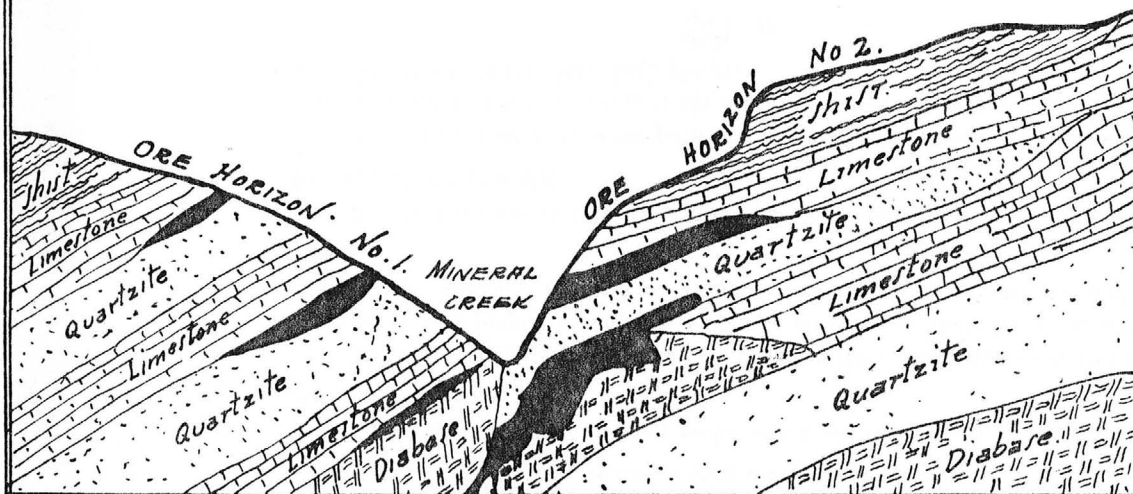
I hereby certify that the foregoing report by Mr. E. T. Satchell is a true and correct copy of the original on file.

(Notarial Seal.)

H. BOYER,
Notary Public,
Ramsey County, Minn.

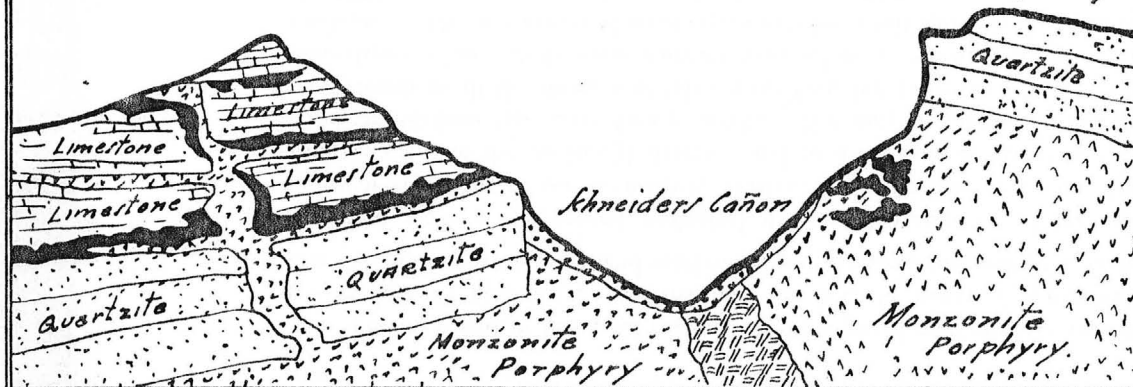
My Commission expires October 12, 1916.

CROSS SECTIONS
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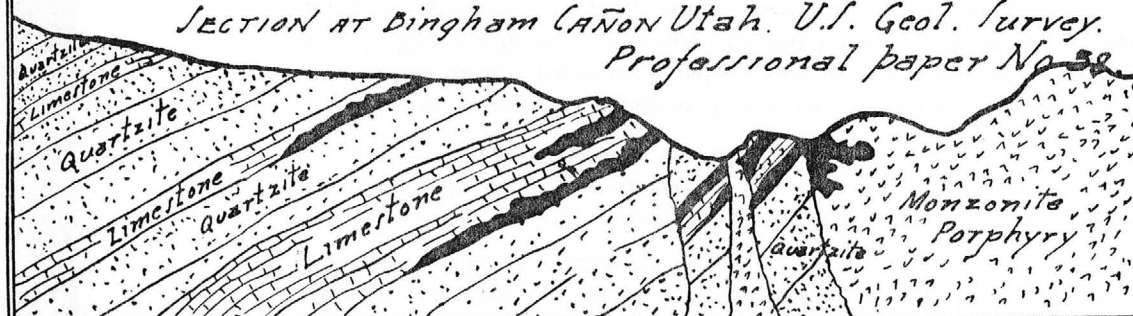


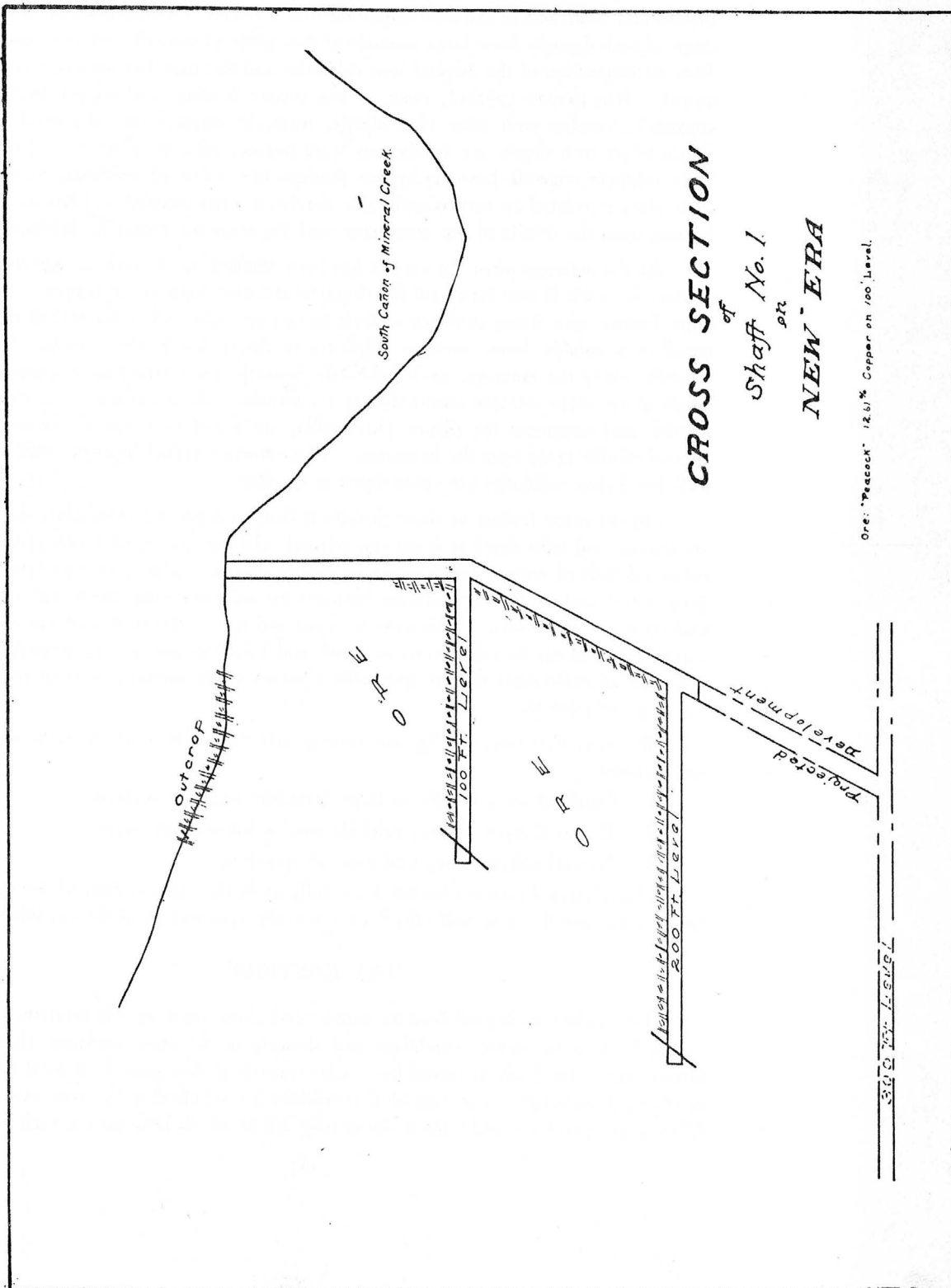
SECTION OF LONDON-ARIZONA,
 LONDON ARIZONA.

Schneider Group



SECTION AT Bingham Cañon Utah. U.S. Geol. Survey.
 Professional paper No. 32





We should, in consideration of this property, pay particular attention to the third feature above enumerated. Here the contact and proximity of igneous rocks, especially quartz, porphyries with limestones, and the susceptibility of the latter to the action of the heated mineralizing solutions, have resulted in the replacement of the limestones with ore and accompanying minerals. Such an occurrence is classified as a contact-metamorphic deposit and forms one of the most important that is mined. Through weathering the outcrops of such deposits show large amounts of iron oxide (limonite) and iron stains derived from decomposition of the original iron sulphides and the oxidation of magnetic and iron garnet. Iron pyrites (pyrite), more or less copper bearing, and copper pyrites (chalcocopyrite), together with some zinc blende, were the original ores deposited. This is shown when such depths are reached as were beyond surface influences. The changes these sulphide minerals have undergone through the action of oxidizing waters, which have often circulated to very considerable depths, is characteristic and has an important bearing upon the details of ore occurrence and the economic results in development.

At the outcrops often the copper has been leached out to such an extent that little or none is visible in any form, yet the characteristic associates of the copper minerals and other features give strong evidence of their former presence and of the withdrawal of the metal in a soluble form, such as sulphate, to lower levels, there to be redeposited. Usually along the outcrops, or immediately beneath, the characteristic green and blue colors of the more common oxidized copper minerals, such as carbonates, malachite, and azurite, and sometimes the silicate chrysocolla, are found in strong evidence and often form workable areas from the beginning. These forms continue in depth often to 200 to 300 feet before sulphides are encountered in quantity.

An important feature of these changes is that, as a general rule, when the sulphides are encountered with depth it is not the original sulphide, pyrite, or chalcocopyrite, but the richer sulphide of copper (chalcocite) or copper glance. This occurs in zones often of great extent and marks the transition between the oxidized zone above and the original undecomposed ore below. This zone is considered one of the most valuable parts of the copper belt and can be relied upon as a rich and valuable asset of any property. Below this zone of enrichment the ore gradually changes to its original form of pyrite, often carrying chalcocopyrite.

We may, therefore, sum up our findings into three classes of ore to be encountered and handled:

1. Oxidized ores, usually in large quantities near the surface.
2. Richer Copper glance, sulphide ore, in intermediate zone.
3. Normal sulphide ore, final zone of operation.

I have entered into this matter more fully as in the consideration of the property of the Ray Eastern the same will afford a more ready appreciation of the conditions existing.

RAY EASTERN.

The various geological features enumerated above exist on this property to such an extent, both as to surface conditions and showing in the open workings, that only the merest tyro in the business would hesitate to concede to this ground its great value as an ore-bearing property. The structural conditions are identical with those existing at the Gibson, Independence and Cole mines nearby, all of which have proven their value.



RAY EASTERN.

The property here presented consists of 18 full sized Mining Claims, approximately 360 acres, all ready for final government patent, with the preliminary survey completed and the posts set.

There is a good camp and a large amount of mining material and supplies upon the property; a wire fence encloses pasture land for the pack animals, and wells of splendid domestic water are in place.

The Boarding House has a capacity to take care of 50 men and can be readily enlarged. Hundreds of feet of underground work have proven the ground to be well mineralized and 17 thirty ton cars of ore have been shipped out of the New Era Shaft, from the 100 and 200 foot levels, which netted \$110 a ton at the smelter in gold, silver and copper.

Attention is called to the exhaustive report made by Mr. E. L. DeLestry, of the DeLestry Engineering Company, which is fully borne out by additional reports of such conservative and high class engineers as Mr. Dwight M. Woodbridge of Duluth and Mr. E. T. Satchell of Globe.

The expenditure for equipment and development of the property of about \$550,000.00 will make it a paying mine and there is much evidence that a 3 compartment working shaft, will pay its own way from ore shipments after proper depth is reached.

With a little extra capital water power can be cheaply developed that will in 4 years fuel saving pay practically the purchase price of the property. In all the workings ore has been encountered that will pay. The property however, requires more depth.

It has all the earmarks of the famous Gibson Mine, which has already produced more than a Million Dollars worth of high grade ore. It is fully as good as the Cole Mine, recently sold for a high price. It is but 4 miles from the very center of operations of the various "Ray" companies whose tremendous success is too well known to require repetition.

There is now in place a substantial camp including Boarding House, Manager's Office, Sleeping quarters for a full crew of men, Barn, Store Room, Blacksmith Shop, Saw Mill and Framing Shed, Hoist, Gallows Frame, Tankage as required to work the plant. The equipment consists also of Air Blower for the Shaft, Tracks and Ore Cars, Mining and Carpenter Tools of every description.

The property possesses one of the rarest of nature's gifts in Arizona, namely Water Power. South Canyon of Mineral Creek can be developed with a concrete dam to furnish several hundred horse-power to drive electric machinery. If concentration plants or other plants should ever be desired or become necessary this same water supply can be relied upon. And above all the water is pure and soft and remarkably free from alkaline matter.

On the New Era, directly East of the shaft and running about parallel to the South Fork of Mineral Creek, there is a good strong ledge, capped with gossan and the small tunnel which has been driven, shows good quality ore in the face, in the form of sulfides proper. This tunnel is about 25 feet in length. Development should be done along the following lines:

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Respectfully submitted,

(Signed) E. T. SATCHELL.

I hereby certify that the foregoing report by Mr. E. T. Satchell is a true and correct copy of the original on file.

(Notarial Seal.)

H. BOYER,
Notary Public,
Ramsey County, Minn.

My Commission expires October 12, 1916.