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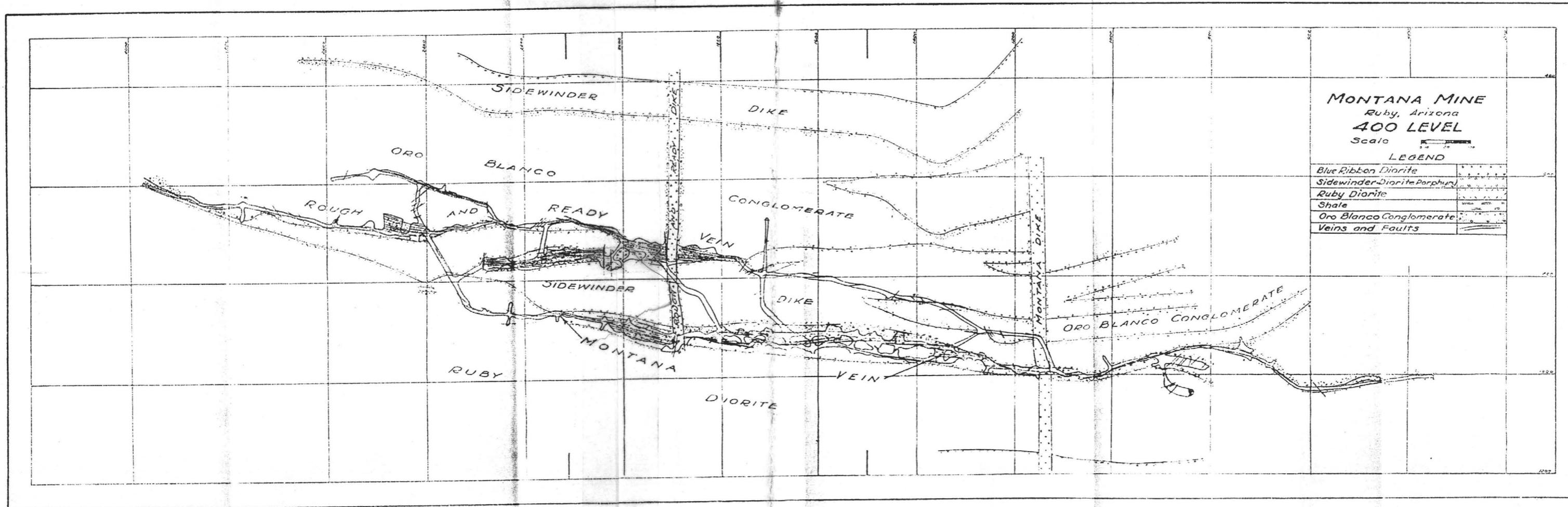


Plate XXXIII.—Montana Mine, 400 level.

MONTANA MINE

AND VICINITY
RUBY, ARIZONA.

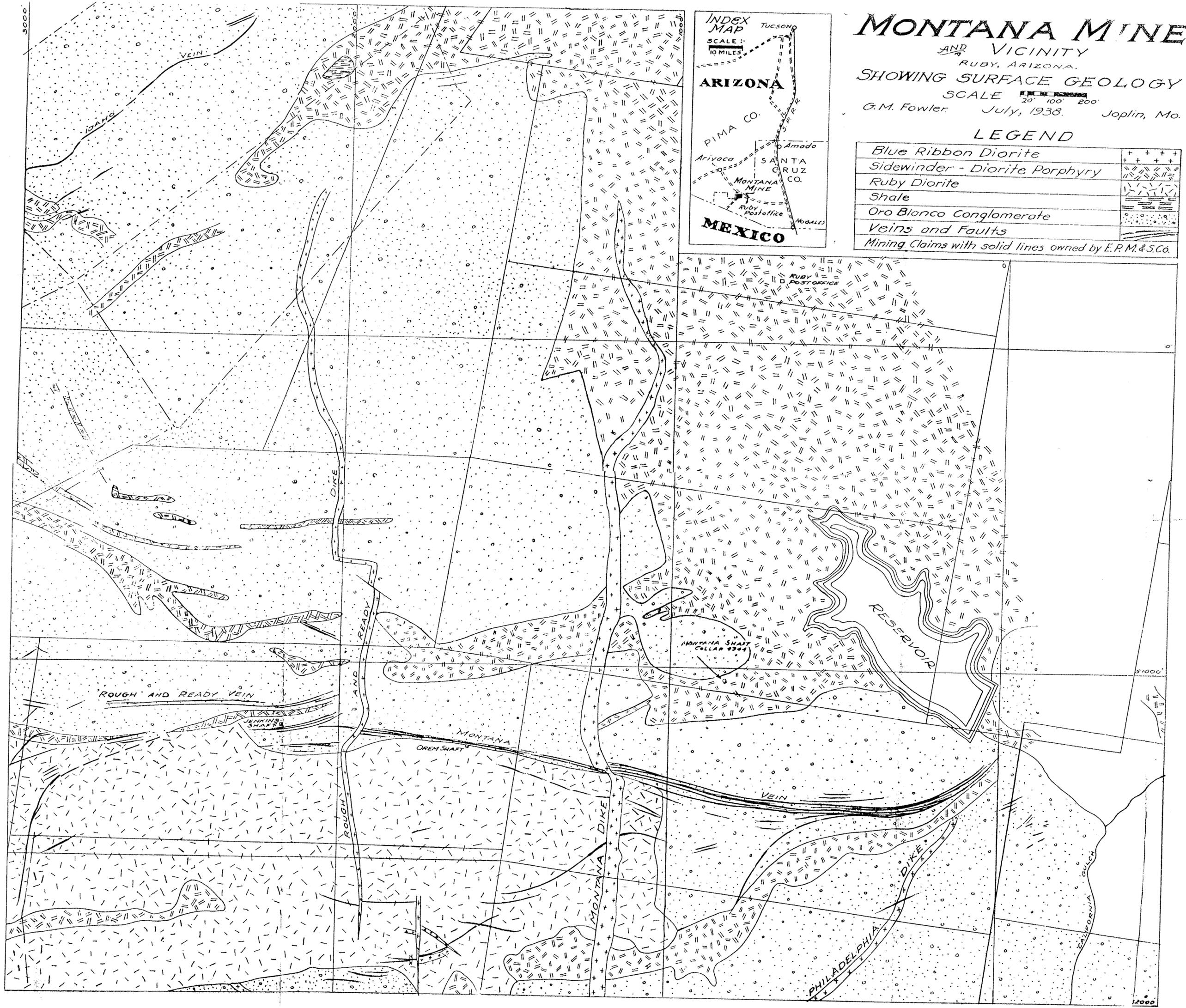
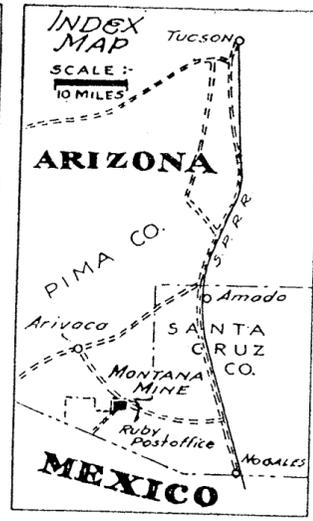
SHOWING SURFACE GEOLOGY

SCALE 1" = 20' 100' 200'

G.M. Fowler July, 1938. Joplin, Mo.

LEGEND

Blue Ribbon Diorite	++++
Sidewinder - Diorite Porphyry	
Ruby Diorite	
Shale	
Oro Blanco Conglomerate	
Veins and Faults	
Mining Claims with solid lines owned by E.P.M. & S.Co.	



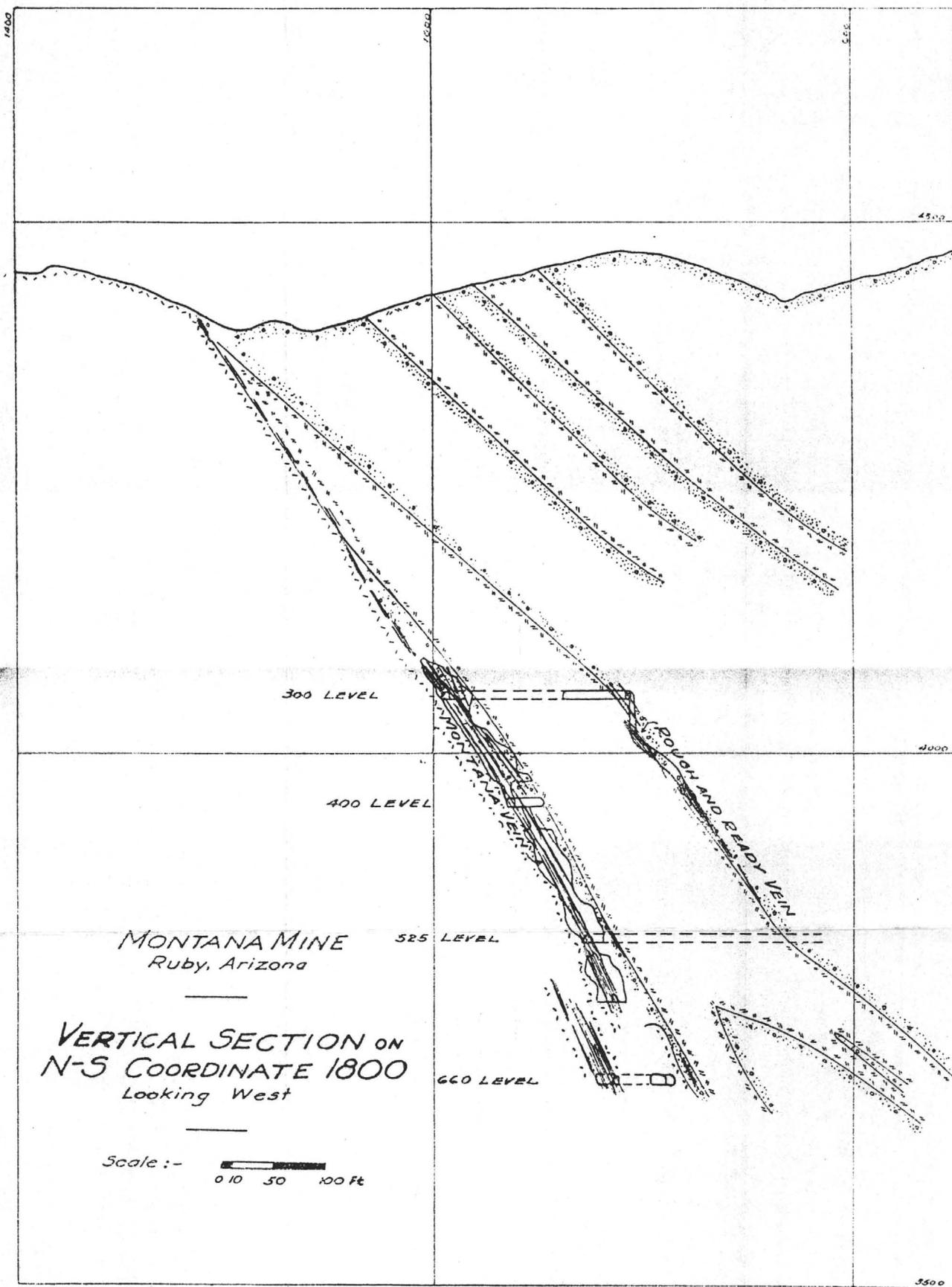


Plate XXXIV.—Montana Mine, vertical section.

The Engineering and Mining Journal

VOLUME 96

NOVEMBER 29, 1913

NUMBER 22

The Oro Blanco District of Arizona

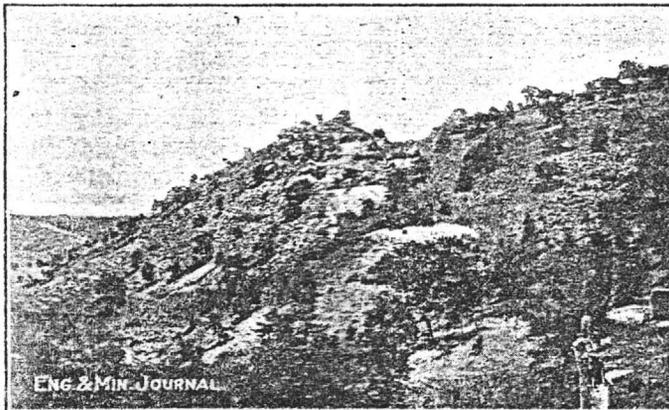
BY MAXWELL C. MILTON*

SYNOPSIS—A neglected district originally worked by Spaniards and Indians. Overpromoted by Americans, it lost caste and is only now beginning to be seriously explored. Gold, silver and copper are of importance in the order named.

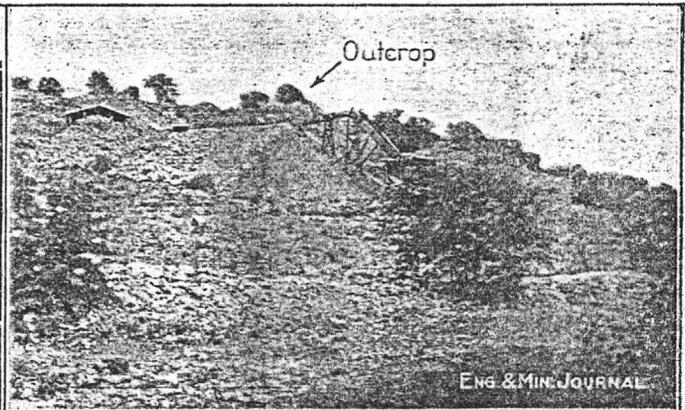
The Oro Blanco mining district is in the western part of Santa Cruz County, Ariz., approximately 70 miles south-southwest from Tucson. The nearest railroad point is Amado, a station on the Nogales branch of the Southern Pacific R.R., about 35 miles from the town of Oro Blanco.

ized area is a conglomerate made up of fragments of crystalline igneous rocks. A large portion of these fragments is angular, and in places the rock has the appearance of a volcanic breccia. The age of this rock has not been determined. The most widely distributed rock on the surface is rhyolite, which in many places has a decidedly porphyritic texture. Isolated areas of the rhyolite, sometimes comprising 20 or more acres, have been intensely silicified, and such areas always carry appreciable quantities of gold.

In point of quantity the only other important rock is a



AUSTRALITZ HILL



OLD GLORY MINE

IN THE ORO BLANCO DISTRICT, ARIZONA

The district was worked to some extent by the Spaniards and Indians before the occupation of Arizona by the Americans, but the placers and rich outcrops early attracted prospectors. During the late '80s and early '90s the district was active, but most of the money was spent on reduction works rather than on underground development. As is usual, this kind of mining met with financial disaster in nearly every case. Until 1912, I believe there was only one shaft in the district over 300 ft. deep, but a ride of a few hours on a horse would take one to the wrecks of eight or nine mills ranging in size from five to 40 stamps. Since 1911 there has been a renewed activity in the camp along more conservative lines, and while these efforts have not been rewarded by large success, the district is still in a fair way to develop some profitable mines.

RYHOLITE AND PORPHYRITE MOST IMPORTANT ROCKS

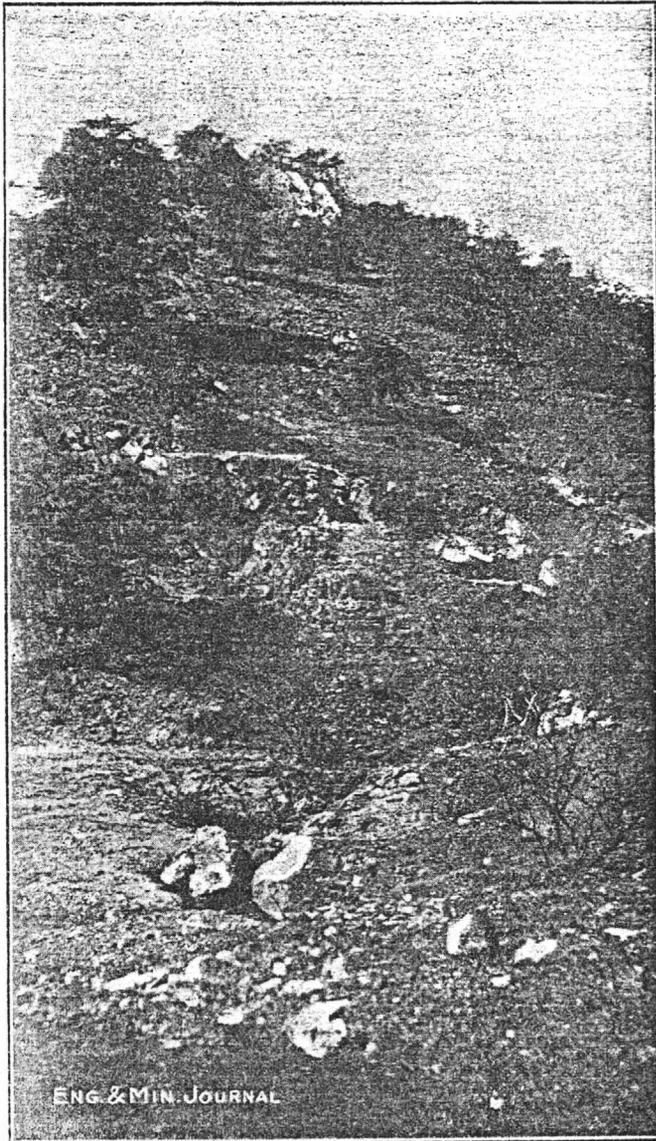
The only sedimentary rock outcropping in the mineral-

quartz-monzonite porphyrite or a quartz-diorite porphyrite, occurring as an intrusion several miles in both length and width. In hand specimens this rock, bluish-gray in color, has a distinct porphyritic texture. Phenocrysts of white feldspar are abundant and well developed, crystals $\frac{1}{4}$ in. long being frequently seen. Small crystals of a ferromagnesian mineral are present in considerable quantities, being characteristically lath-shaped. Quartz is sparsely developed as rounded phenocrysts but is always present. Thin sections, under the microscope, show the feldspar to be plagioclase. The plagioclase has suffered much decomposition, being altered to kaolin, sericite, and in some places almost completely to calcite. The sericitization would indicate that some of the alteration at least was due to deep-seated action rather than weathering. The ferromagnesian mineral is hornblende which has been altered to chlorite. The quartz phenocrysts show some resorption by the groundmass, which is composed of an intimate mixture of quartz and orthoclase.

*Labourer & Milton, mining engineers. Tucson, Ariz.

GOLD AND SILVER THE PRINCIPAL MINERALS

Mineralization has been spread over a large area and has a great range in species. Gold and silver have attracted the most attention and are probably the most widely distributed. Native gold occurs in the placers and in the oxidized outcrops of all the veins. It also occurs free in some of the veins below water level, and, as mentioned, in the silicified rhyolite. Occasional small pieces of native silver have been found. Tellurides have been reported, but I have never seen any. The metallic gold has silver in combination and is about 600 fine. Gold also occurs associated with pyrite and chalcopyrite; in which deposits the copper is a valuable constituent.



EAST OUTCROP OF MONTANA MINE

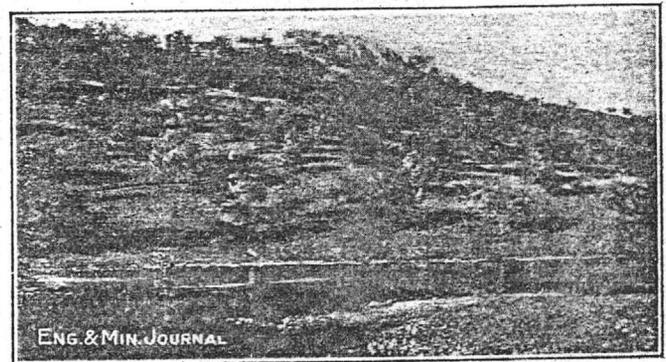
Silver occurs associated with lead and zinc. In one deposit consisting of an intimate mixture of lead and zinc sulphides, silver is present in the ratio of one ounce to the per cent. of zinc; 50% of the silver is in the zinc. In other lead-zinc deposits the silver goes with the lead. Antimony and arsenic have been reported from one deposit. In general the oxidized zone has but a small vertical extent and sulphide minerals come in at a few feet below the outcrops. Further, the transition from oxidized minerals to primary minerals is sharp; there is no appreciable zone of secondary enrichment deposits.

There are several types of deposits. In the southern part of the district the veins are fractures filled with fragments of the wall rock held together by a soft gouge, in which there is considerable manganese. In these veins the principal value is in free gold, and the absence of silicification is notable. It is possible that development will show a zone of secondary enrichment in these deposits. In the northern part of the district the veins are replacements of country rock by quartz. The mineralization is of two kinds, lead-zinc carrying silver and subordinate amounts of copper, and pyrite-chalcopyrite carrying gold and silver. In the latter class the gold value is in excess of all other constituents. Silicified areas of rhyolite carrying free gold form another type of deposit which might be designated as blankets. The value in this type is very erratically distributed; mill runs have been made on \$20 ore but the average value is probably nearer \$5 per ton.

Gash veins in the rhyolite are mineralized by gold, silver and minor amounts of galena and pyrite. Quartz-filled fissures are neither numerous nor well mineralized. There has been some faulting in parts of the district but in most cases the displacement is slight.

SEVERAL PROPERTIES OF SMALL DEVELOPMENT

The property which has received the most recent publicity is the Australitz, which is situated in the north-western part of the district near the town of Oro Blanco. This deposit is a flat vein 4 to 12 ft. wide carrying gold and silver associated with pyrite and chalcopyrite. The mine is credited with having produced approximately \$90,000 from a small ore shoot. It has been developed by about 800 ft. of adit and one shaft 125 ft. off the vein. The property is now idle. The Montana, about three miles east of the Australitz, is the best example of the replacement type of vein. A shear zone, approximately 100 ft. wide, has been more or less replaced by quartz. About 20 ft. on the hanging-wall side of this zone has been well mineralized by an intimate mixture of lead and zinc sulphides carrying silver and minor amounts of cop-



WEST OUTCROP OF MONTANA MINE

per sulphide. This property has developed a large tonnage and is being worked.

To the south of the Montana, the McDonald and Old Glory properties are located on areas of silicified rhyolite. These mines are credited with a production of over half a million dollars. Some development work is being carried on at the McDonald property. South of Old Glory are the Oro Blanco and Tres Amigos mines. The latter is developed by many thousands of feet of adits and shafts but is now idle. Mineralization occurs in both the breccia and silica-replacement types of deposits.

South of the Warsaw is the Grubstake. This mine is the best example of breccia type of vein. The breccia is 4 ft. wide, carrying good values in free gold. The property is being worked and test mill runs indicate that over 75% of the gold can be saved by amalgamation. West of the Grubstake is the Oro mine, where a shaft 340 ft. deep has followed a quartz vein in which gold in pyrite is the principal mineral. It has a small crew of men developing the oreshoot. Southeast of the Grubstake is the Nelson property where a shaft and adits are reported to have developed considerable gold ore. The deposit is of the breccia type. While this list does not include all the properties in the district, it does include most of those on which serious work has been done.

WORKING CONDITIONS

An exceptionally good class of Mexican labor is available for prospecting purposes. Wood and water are scarce but sufficient exist for preliminary work. Many places afford excellent sites for storage dams; in fact, there are several of these dams in the district now. Transportation is the chief difficulty. In the mineralized area there are no good roads. Freight to and from the railroad varies from \$8 to \$20 per ton. In a word, the working conditions are those met with in all the outlying districts of the Southwest.

Recent Oil Developments in Texas and Louisiana

BY W. E. WRATHER*

Oil developments in Texas and Louisiana have been of unusual interest during the past summer. Within a period of four months, three new pools have been discovered, two in the heavy-oil district along the Gulf Coast, and one in the light-oil district of northwestern Louisiana. It is yet too early to do more than guess at their probable extent and productivity, but despite this fact they justify a feeling of optimism, particularly the two heavy-oil discoveries, which have revived the hope that the Gulf Coast region may continue an important producer of fuel oil for some time.

The failure to find new pools of importance, together with the steady decline of old production and the attendant rise in the price of fuel oil had grown alarming. In June, 1908, when the Goose Creek and Markham pools were discovered, the coastal fields were producing between 45,000 and 48,000 bbl. of oil per day. Both developed into small pools, in which it has been impossible to secure and maintain any reliable production. In September, 1910, the Vinton pool in southwestern Louisiana was discovered. It also proved of small extent though very prolific. The producing area of the field covered about 60 acres, which to date has produced approximately 6,250,000 bbl. of oil and is now making about 5000 bbl. daily.

The present total daily output of the nine older heavy-oil pools is about 21,000 bbl. This oil has constantly gained in favor with the refiners as it has become better known, and perhaps half of the total present production is refined. The daily average consumption of the railroads in the Southwest alone is estimated at 26,500 bbl. A large industrial consumption has been built up in this section also, and even though large quantities of residuum

are supplied to the fuel-oil trade by the refineries, a deficit arises, to meet which Mexican oil is being imported at Gulf ports at the rate of 800,000 to 1,000,000 bbl. per month. This amount will probably be increased as soon as additional tankers are available, unless home production can be increased to meet the shortage. Despite the importation of Mexican oil, which can be roughly valued laid down at American ports at 75c. per bbl., the price of heavy oil in the coast fields has risen to \$1 to \$1.25 per bbl. The high sulphur content of Mexican oil, its corrosive properties, disagreeable burning odor, and heavy gravity, militate against its becoming as popular with consumers as the lighter gravity, more fluid fuel produced here, though the railroads are largely turning to it from necessity. The Southern Pacific R.R., through its subsidiary, the East Coast Oil Co., is now a large producer of Mexican oil, and at present is using it exclusively for fuel on its Texas and Louisiana lines.

The two new coastal pools are located, one in extreme southeastern Texas near Orange, the other at Edgerley, about 25 miles further east, in southwestern Louisiana. At Orange, the Rio Brave Oil Co., the fuel department of the Southern Pacific R.R., on Aug. 17, completed a 250-bbl. flowing well at a depth of 3150 ft., the deepest commercial oil yet found along the Gulf Coast with the exception of the 3300-ft. oil north of Humble. A few days earlier, the Gulf Refining Co. finished a 2350-ft. well at Edgerley, which flowed 600 bbl. of jet-black oil, testing 15° (Baumé) gravity, with considerable salt water. Judging from the unusually heavy gravity of the oil, the main pool at Edgerley has probably not been tapped.

Both pools evidently belong to the familiar "salt dome" type, though at neither place has rock salt nor crystalline gypsum yet been found. As no surface elevation is apparent, it is thought that perhaps the salt core will prove to be too deeply buried to be reached in ordinary drilling, as at Batson and Jennings. Pronounced surface-gas seepages at these two localities have attracted attention since the discovery of oil at Spindletop in 1901, and several test wells have been drilled at each place.

The light-oil pool of northwestern Louisiana is at Mansfield, about 45 miles east of south from the Caddo field. On May 10 the Gulf Refining Co. brought in a 1500-bbl. flowing well, which is at present flowing about 500 bbl. daily from a depth of about 2400 ft. The formation encountered is almost identical with that at Caddo, the gravity of the oil is the same (44° Baumé), and it seems extremely probable that the pool will prove to be located on the same, or on a structural fold parallel to that which determines the north-northwest axis of the Caddo field. This supposition cannot be justified, however, by the surface geology as the region is one of slight relief, largely mantled with alluvial soil along Red River, and too few drill records are available to be of service in showing the attitude of the sand. It seems however, that there is a gentle dip eastward into Red River Parish, as well as southward. The shallow gas sand (800 ft.), which has furnished such phenomenal gas wells at Caddo, is here gas-bearing also, but the gas wells seldom exceed 4,000,000 or 5,000,000 cu.ft. per day, and it is unlikely that the gas will prove much of an asset, aside from furnishing fuel for development.

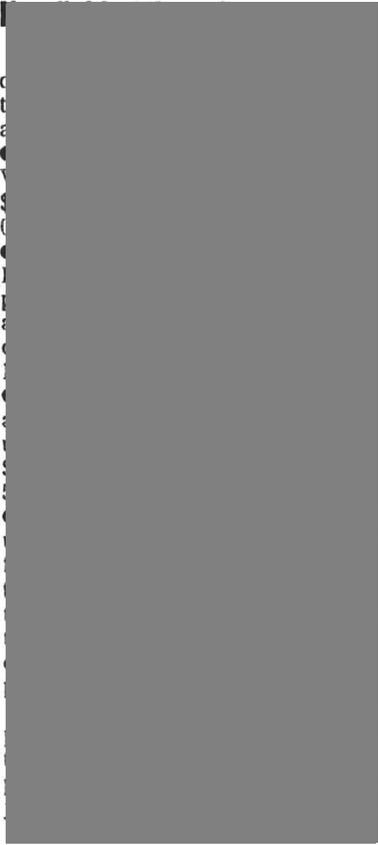
The production of the Electra field in north Texas continues to increase steadily. On Jan. 1, 1913, it averaged 15,000 bbl. daily, and it is now estimated at over

*Beaumont, Texas.

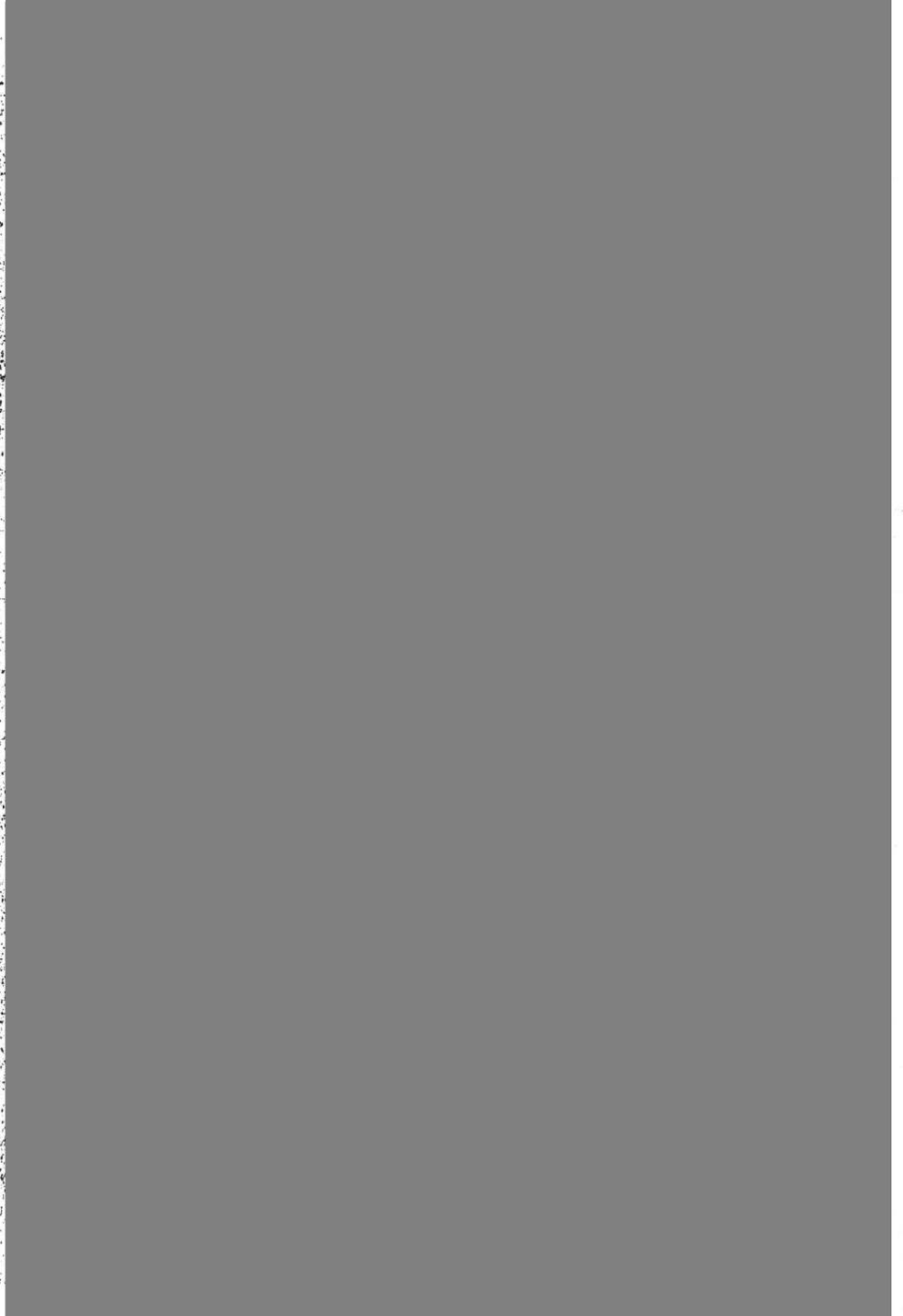
CANADA'S BUSINESS NEWSPAPER

REPORT ON **BUSINESS**

26th YEAR, NO. 6,449 ■ FRIDAY, FEBRUARY 5, 1988



2 get probation fine



March, 21, 88

To: Niror Mineral Ventures Inc.

Dear sir,

The Golden Mining Co. would like to present this opportunity to established mines.

We have 400 acres in the Oro Blanco mining district, that we will be releasing (Lease with Option to Buy) bases. We are presently soliciting Arizona based mines ONLY. There is 20 continuous claims with a lode bearing quartz outcrop which follows a north/south direction and is visible at the surface for approximately 3,000 feet. At this time there has been no core drilling. There is however an existing tunnel, running in a north/south direction, going horizontally into a hill for a distance of 60 feet, with one inclined offshoot running to the northeast. The geology of the area is rather complex, and heavily mineralized. Principle formation is a series of metamorphosed quartzites, intercalated volcanic rocks and conglomerates. There is approximately 50 tons of ore blocked out of the existing tunnel. This ore assays at .325 ounces, gold and 14.2 ounces silver. This ore may be used by leasing party to determine average yield. Leasing party must furnish copies of all assays, millruns, and core drillings. Lease option will be valid for a period of 6 months with option to buy. Lease holder will be required to do a minimum of 5 core hole drillings from a depth of 500 to 1000 feet. The area contains large tonnage of material that ranges to .325 gold. We think our assay reports are conservative considering samples were taken near the surface. The area is accessible within 5 miles to regular vehicles and to the center of the claims with 4 wheel vehicles. With a little improvement of existing road, heavy equipment could be moved in.

We invite your own field geologist and mining engineers to inspect these claims and take your own samplings.

We believe these claims will be vary profitable as most of the ore is free milling and could be worked by either tunnel or openpit operations.

Please see attached copies of assay reports. For further information, or for an appointment to set-up a field trip please contact;

Jerry Fitch
General Manager,
(602)742-9807

Thank You,



ANALYSIS OF GEOLOGICAL SAMPLES

Fortuna

To: Beaver Research Laboratories
 3250 262nd Street
 Alcorn Grove, B.C.
 V0X 1A0

Workorder: 5538

Completed: 05-Sep-86

Attn: Mr. G. Byerley

Re: Chemical Analysis of Dore Bead

Sample type	Dore Bead
Lab Reference #	5538-005
Analyzed by Plasma Emission Spectroscopy (ICAP)	
Method used	lucua regia fire assay bead
Bead Weight	0.1513 g
Precious Metals	
Silver	Ag 1762000
Gold	Au 237000
Palladium	Pd 20
Platinum	Pt 86.
Rhodium	Rh < 30
Results in	ppm

If the bead was produced from 1.0 AT of Ore, then these results calculate to

Silver	Ag	115.4
Gold	Au	35.9
Palladium	Pd	0.003
Platinum	Pt	0.013
Rhodium	Rh	< 0.005
Results in		oz/T

Analyst: *Gilbert*

1435 SOUTH 10TH AVENUE
TUCSON, ARIZONA 85713

Jacobs Assay Office

Registered Assayers



PHONE 622-0813

65115

Tucson, Arizona,

9/16/36

Sample Submitted by Mr.

FORTUNA GOLD, MARVIN JAMESON

Sample Marked	GOLD Ozs. per ton ore	GOLD Value per ton ore	SILVER Ozs. per ton ore	COPPER Per cent Wet Assay	LEAD Per cent Wet Assay	Per Cent Wet Assay	Per Cent Wet Assay	TOTAL CONTENT per ton ore
LOBOS								
5-1 40lb	0.472		< 0.05					293.622 Mg
7-1 25lb	0.705		< 0.05					274.104 "
8-1 25lb	0.801		< 0.05					311.429 "
9-1 40lb	0.198		< 0.05					123.172 "
9-2 25lb	0.587		< 0.05					228.226 "
Charges \$		54 ⁰⁰						

1435 SOUTH 10TH AVENUE
TUCSON, ARIZONA 85713

Jacobs Assay Office

Registered Assayers



PHONE 622-0813

Tucson, Arizona,

2 Aug

1938

Sample Submitted by Mr.

ARIMEX MINING

Sample Marked	GOLD Ozs. per ton ore	GOLD Value per ton ore	SILVER Ozs. per ton ore	COPPER Per cent Wet Assay	LEAD Per cent Wet Assay	Per Cent Wet Assay	Per Cent Wet Assay	Per Cent Wet Assay
1926	36.5 grs	0.226	30 "		0.02 per (2000#)			0.00044
1927	39.0 grs	0.265	24 "		" " "			0.00252
1928	7.4 grs	NIL	33 "		" " "			—
1929	17.7 grs	0.655	31 "		" " "			0.00136
1932	8.7 grs	NIL	—					—
1933	26.5 grs	NIL	—					—
Charges \$		120 ⁰⁰ pl.		Very respectfully, 				