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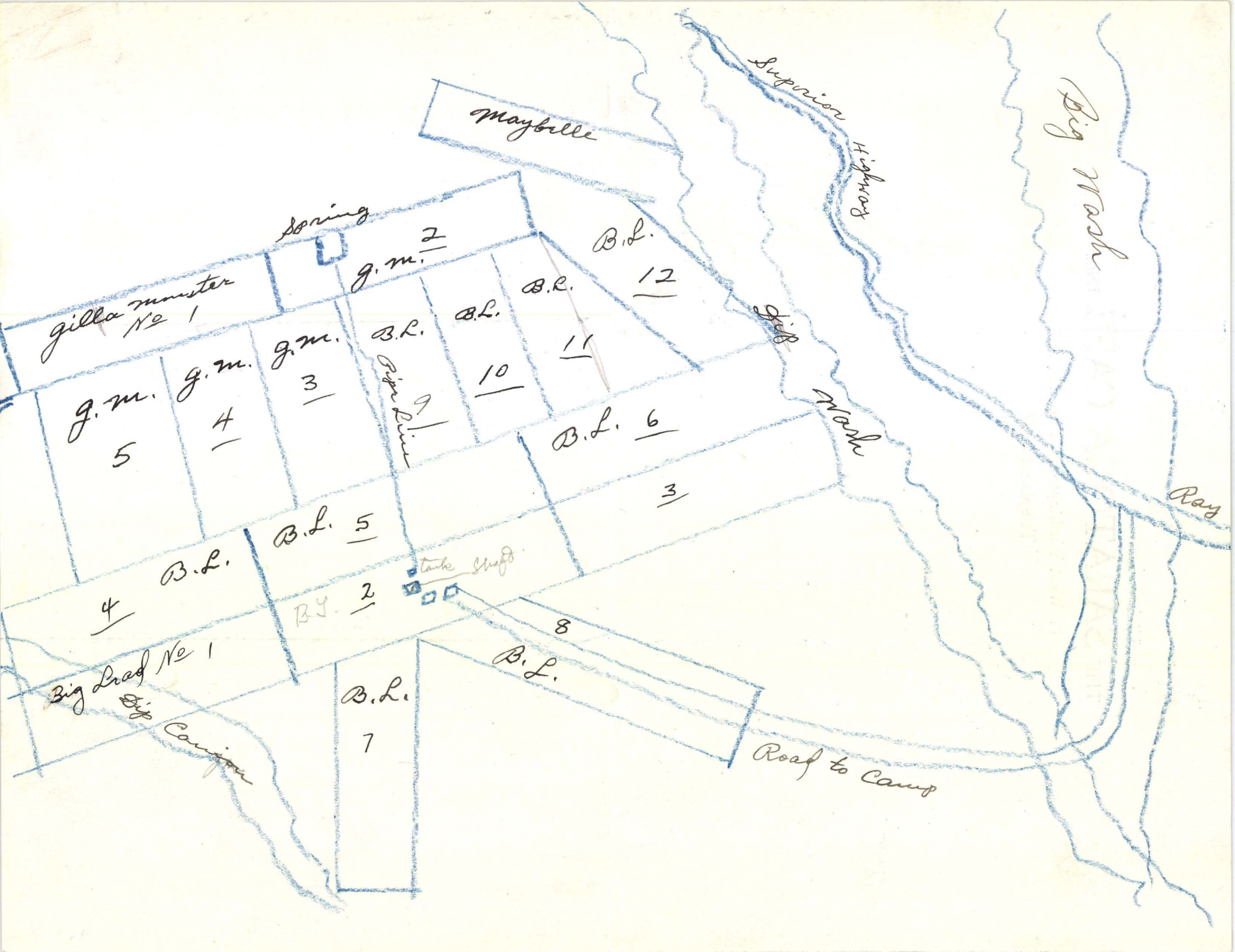
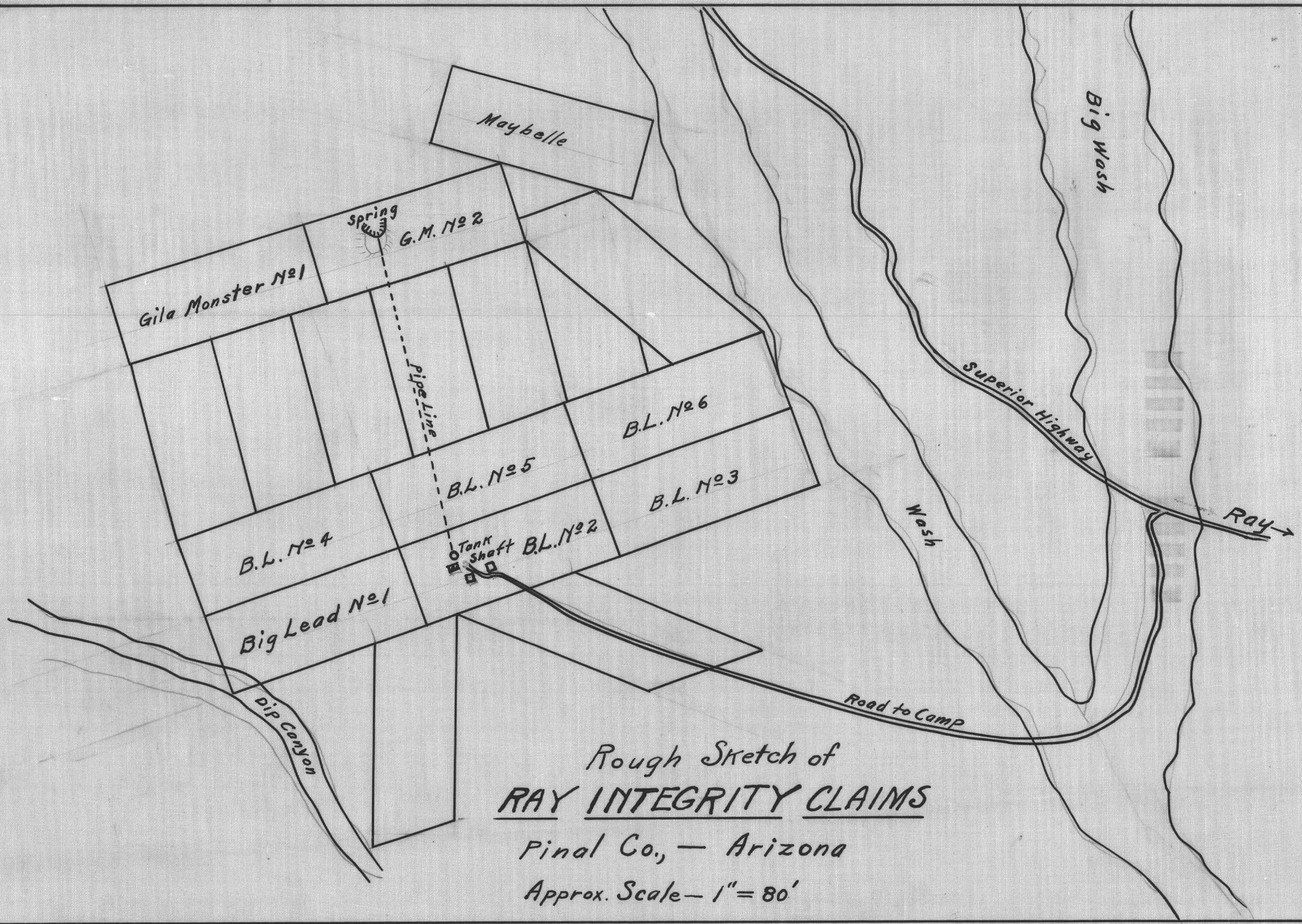

Maybelle
Superior Highway
Big Wash
Spring
Gilla monster No 1
g.m. 2
B.L. 12
B.R.
B.L. 11
g.m. 3
B.R. Pipe Line
B.L. 10
Dip
Wash
g.m. 5
g.m. 4
B.L. 6
3
B.L. 5
B.L. 4
Tank Stuff
B.Y. 2
8
B.L.
Big Lead No 1
Dip
Canyon
B.L. 7
Road to Camp
Ray



Rough Sketch of

RAY INTEGRITY CLAIMS

Pinal Co., — Arizona

Approx. Scale — 1" = 80'

C O P Y

P H E L P S D O D G E C O R P O R A T I O N

Copper Queen Reduction Works

Douglas, Arizona.

April 29, 1929.
File 90-C

Mr. C. M. Colvocoresses,
Humboldt,
Arizona.

Dear Sir:

In response to your request of the 25th inst. will state that there are no through freight rates on ore or concentrates published from Ray to any smelters. The freight rates from Ray to Ray Junction and from Ray Junction to Douglas are as follows:

Values	$10.00	$15.00	$20.00	$30.00	$40.00	$50.00	$75.00	$100.00
Ray to Ray Junc.	.15				.50	.60		
Ray Junc. to Douglas		2.10	2.40	2.70	5.00	5.30	5.90	4.50

The 15¢ rate from Ray to Ray Junction is on ore only, minimum 50 tons, while the 50¢ and 60¢ rates, also the rates from Ray to Douglas, apply to both ore and concentrates, minimum 50 tons.

Our open schedule for purchase of lead ore and concentrates in the Ray District is as follows:

PAYMENTS

Gold: If .03 ozs. or more per ton contained, at $20.00 per oz.

Silver: Deduct 5% of the content, provided the minimum deduction shall be 1/2 oz. per ton of ore or concentrate, and pay for remainder at New York Quotation.

Copper: Deduct 10% of the content, provided the minimum deduction shall be 15 lbs. per ton of ore, or concentrate, and pay for remainder at New York Quotation, less 6¢ per lb.

Lead: Pay for 90% of the dry assay (wet assay less 1.5 units), with an additional payment of 1% for each unit of dry lead contained in excess of 6%, to a maximum payment of 95%, at New York Quotation, less 1.4¢ per lb. No payment will be made when less than 3.5% dry assay contained.

New York Quotation: By New York Quotation is understood the average quotations for silver, electrolytic copper and common desilverized lead as published in the Engineering & Mining Journal for the week ending with Wednesday prior to sampling at our works.

Iron: Full content at 6¢ per unit.

Manganese: If 2% or more contained, at 6¢ per unit.

Available Lime: If 2% or more contained, at 8¢ per unit.

DEDUCTIONS

Base Treatment: On ore and concentrates delivered f.o.b. our works, Douglas Arizona, $4.50 per ton; this charge shall be increased by 10% of the excess payments fof gold, silver, copper and lead over $25.00 per ton, provided maximum base treatment charge shall be $6.50 per ton.

Insoluble: Charge for full content at 10¢ per unit.

Sulphur: Allow 1% free; charge for excess over 1% per unit, provided maximum charge shall be $2.00 per ton of ore or concentrate.

Sintering: On concentrates only, there will be an additional charge of $1.00 per ton, provided maximum charge for sintering and sulphur shall be $2.00 per ton.

Zinc: Allow 6% free; charge for excess over 6% at 30¢ per unit.

Arsenic: Allow 1% free; charge for excess over 1% at $1.00 per unit.

Antimony and Tin: Combined, allow 4/10% free; charge for excess over 4/10% at $1.50 per unit.

Bismuth: Allow as bismuth free of charge, 2/10 of 1% of the wet lead contained; charge for bismuth in excess of the free allowance at 50¢ per lb.

Sampling: On lots of less than 30 tons dry weight, there will be an additional charge for sampling of 50¢ per ton or fraction of a ton short of 30 tons.

If your friends are in position to give me a pretty close idea of the assay and analysis of their contemplated production, together with name and location of property, I might perhaps be able to better these terms somewhat.

Yours very truly,

(Signed) H. J. Bishop

Ore Buyer.

GEORGE M. COLVOCORESSES
MINING AND METALLURGICAL ENGINEER
HUMBOLDT, ARIZONA

April 30, 1929.

Ray Integrity Mining Company,
c/o S. C. Colachis,
11 West Washington Street,
Phoenix, Arizona.

Gentlemen:

Pursuant to your request I have examined the RAY INTEGRITY MINE, and beg to submit the following report:

LOCATION AND GENERAL CONDITIONS

I am informed that this property consists of 18 Unpatented Mining Claims, known as the Big Lead Nos. 1 to 8, (incl.) Gila Monster Nos. 1 to 9, (incl.) and May Belle. (See attached sketch) The titles to these claims I did not check, but understand that they are in order and that all assessment work has been regularly done and properly recorded.

These holdings lie in the Pioneer Mining District, Pinal County, Arizona, not far from Walnut Canyon. The elevation is approximately 2800 feet, and the property is reached by a fair auto road 1.5 miles from its junction with the Ray Superior Highway. The distance from the Mine to Ray is 5.7 miles, to Superior 13 miles, and to Phoenix 79 miles. Ray is the nearest railroad point, and ore or concentrates would be trucked there for shipment.

The country covered by the claims is rough and hilly, cut by many canyons which drain down to Walnut Creek and to the Gila River which lies about 5 miles to the South. The surface is rocky and barren, with no large trees, but with a plentiful growth of cactus, mesquite and various desert shrubs. An excellent gravity water supply is obtained from a spring one-half mile distant from the shaft, with which it is connected by a 1-1/2 inch pipe line.

HISTORY

The claims are said to have been located many years ago by a man named Fink, from whom they passed into the hands of Joe Myers about 1918. Considerable work was done by Fink and his partner, Owens, also

by Myers, who finally transferred the ownership to the present company or syndicate, in 1924. The present owner carried on development, sinking the main shaft and extending the adit drift and lower level (as shown on the blue print) until they turned it over in 1928 to leasers whose work consisted in gouging out of all the pay shoots and pockets of ore which they could find, and with no corresponding development to the great detriment of the appearance of the mine.

GEOLOGY

According to the U. S. Geological Survey, the country is mainly composed of a series of pre-Cambrian rocks, the oldest of which is the Final Schist, which occurs in two varieties and through which the granite and the porphyry have intruded at intervals. The schist is underlain by a large batholite of granite which outcrops to the south where it has broken through the upper sedimentaries and tilted them so that all of these formations strike east and west and dip steeply to the north. Above the schist with its intrusions of porphyry is found a layer of Devonian limestone. In the immediate vicinity of the mine the strata have been much faulted and folded so that their exact relation to one another is not always clear, and the rocks themselves have been altered, principally the sericite and chlorite schist, the latter having in places the appearance of diorite or diorite schist.

The veins occur near the intrusions of porphyry from which the ores were no doubt originally derived, and the vein filling is quartz and calcite and the economic minerals are principally galena (lead sulphide) and zinc sulphide, with which is associated a certain amount of iron pyrites, traces of copper and gold and a small quantity of silver. The veins appear to have been formed by the filling of the fault fissures caused by the prophyry intrusions or subsequent upheavals, but they are not particularly strong or persistent.

SURFACE PLANT AND EQUIPMENT

The shaft is provided with a good headframe, the two compartments are well timbered and serviceable equipped. The power house is a frame building covered with sheet iron, with open sides and a con-

crete floor. The principal equipment consists of one 60-HP Foos Gas Engine, from which a 300 Cu. Ft. Ingersoll-Rand Imperial-type compressor is driven by a belt. There is a Foos 15 HP Gas Engine hoist with provision for belting same to a small Ingersoll vertical compressor of sufficient capacity to run one drill, thus permitting small scale development operations to be carried along with great economy. There is also a small blacksmith shop with blower and several drills, both stopers and jackhammers, and the necessary steel and fittings. The water from the spring runs by gravity into a concrete tank located a short distance away from and above the power house. The fuel oil is hauled to the mine by trucks. All of the equipment is apparently in good condition and quite sufficient to provide for additional development and a small production with efficiency and economy.

The leasers who operated during part of 1928 erected some mill machinery near the shaft for the treatment of their low grade ore. This comprised a jaw crusher, two Huntington mills, some tables and a K. & K. flotation machine, all of which were purchased second hand and are obsolete, and now practically worthless.

The camp consists of two frame and sheet iron buildings suitable, respectively, for boarding house and bunk house, and located a short distance from the shaft:- all the above being situated on the Big Lead No. 2 claim.

UNDERGROUND WORK AND ORE BODIES

The shaft inclines 82° from the horizontal, toward the north. The depth is approximately 140 feet, that is 75 feet from the collar to the main or adit level, then 51 feet to the second level, below which there is a sump 14 feet deep. The shaft walls stand up well and the timbers, pipes and ladders are in good condition.

The underground workings which comprise a first or adit level and a second level run from the shaft are shown on the attached blue print as they were roughly surveyed with a Brunton transit. The adit was started before the shaft was sunk and followed a fairly strong fissure which showed mineralization, but little or no commercial ore, until the vicinity of the shaft was reached when ore was found in the main vein and in cross fissures as noted on the blue print by hatching.

The ore occurs in pockets or lenses, associated with altered diorite or clorite schist, and with the porphyry intrusions and the veins show a width of 4 to 8 feet of quartz and porphyry impregnated with disseminated galena, and shot through with narrow streaks of high grade ore, which is almost pure galena.

From these veins the company mined and shipped a considerable tonnage of ore as mentioned later in this report, and the leasers who operated in 1928 gouged out all of the high grade which was then in sight and also as much low grade as they thought they could mine with profit, and since they did no additional development their work stopped whenever the vein became lean or pinched, and their operations are responsible for the present condition of the mine, which naturally has an unfavorable appearance, with almost no high grade and only a very small quantity of low grade ore left exposed in the workings. It is, however, most probable that further development will serve to prove up some lenses similar to those which have been mined, and that further production could be made as this development proceeds.

Without attempting to describe in detail all of the original occurences of ore which have now been largely taken from the mine, I would mention particularly that a favorable showing exists in the crosscut lying to the south and a little to the west of the shaft, and in the footwall, and that some good ore was found farther west and near the shaft on the adit level, and was stoped down on both sides of the shaft for some 25' below. A continuation of this ore shoot is noted east of the shaft on the second level, and indications point to the ore shoot pitching to the East, as it goes deeper, so that the most favorable method of further development would be to continue the shaft downwards and then to crosscut and drift to the east in the expectation of picking up the downward extension of this orebody. The west drift on the adit level should also be extended as far as ore may be found or indications favorable to the discovery of another lense further to the west.

Generally speaking, I am of the opinion that all of the work which has been done to date is too near the surface to permit the finding of any extensive body of ore. The upper sections of the veins have been leached and the orebodies are too pockety and small, and the pock-

ets occur at too infrequent intervals to make regular production profitable in this horizon. The future of the property must therefore, in my judgment, depend upon the results of deeper development and in all probability no very large or permanent ore shoots will be encountered until work has proceeded to a depth of 200 or 300 feet further, and perhaps until the water level is gained, which will very likely be found at the elevation of the Gila River, some 500 feet below the bottom of the present mine workings.

It has been suggested that a means of developing the mine in depth would be to run a crosscut from the gulch which heads some 700 feet south of the shaft, but in order to gain the desirable depth it would be necessary to proceed considerably farther down the gulch and to make the crosscut correspondingly longer. Therefore, as a means of proving up the ore surrounding the shaft, I would not advocate this procedure, but since there are some good showings of ore exposed in the gulch itself, it might be advisable to start such a crosscut following one of these cross-leads and in the hope of intersecting some east-west striking veins, which are indicated on the surface as lying between the gulch and the shaft.

POSSIBLE PRODUCTION AND COSTS

The work of the leasers has left the mine in such shape that practically no developed ore can be estimated in place and only a small and uncertain tonnage can be classed as probable.

At two points where a little high grade ore remained, and at one place where there was a fair showing of low grade ore, I took samples as follows:

#1 - Vein on West side of crosscut stope above adit level (marked #1 on blueprint)

Width 1 foot

Gold - Trace
Silver - 1.08 oz.per ton
Lead -23.5 %

#2 - Vein at West end of adit level (marked #2 on blueprint).

Width -1 foot

Gold - trace
Silver - 2.78 oz. per ton
Lead -20.3 %

#3 - Low grade ore. From undercut in floor of East drift on 2nd level (Marked #3 on blue-print)

Width - 5 feet	Gold	- Nil
	Silver	- 0.68 oz. per ton
	Lead	- 4.5%

These samples, coupled with the partial record of shipments indicate that a small quantity of high grade ore containing about 20% lead could be mined and sorted up to over 30% grade for shipment, or, if the entire vein were broken, the high grade and low grade together should average about 7% lead, and since the ore is very suitable for concentration a small milling plant could treat it locally for the production of a 50% lead concentrate/containing about 8.5 oz. of silver to the ton. 8 to 1 ratio

Assuming a market price for silver of 55¢ per oz. and for lead @ 7¢ per lb., and using the latest schedules of freight rates and smelter terms which I have obtained from the nearest lead smelter, at Douglas, Arizona, (as per copy of letter attached), it appears that you should be paid for silver and lead $68.90 per ton of concentrates, less freight and smelter charges and deductions amounting to about $11.90 per ton, making the net value of one ton of concentrates $57.00, which would represent a net value of the ore as mined of $7.125 per ton.

Estimating that the cost of mining and normal development should be $3.50 per ton and the cost of milling and trucking concentrates to the railroad would be $1.625 per ton these costs total $5.125 leaving a net profit of $2.00 per ton of ore mined.

It would therefore appear that if a substantial tonnage of 7% ore, such as is indicated in the present workings, can be developed that reasonably profitable operations would be assured on the basis of a 7¢ lead market, but, until such a tonnage is actually found to exist, the future of the property is uncertain and must depend altogether upon the results of future development.

SURFACE SHOWINGS AND DEVELOPMENT RECOMMENDED

At various points on the property outcrops of mineral are noted, principally galena disseminated in schist or porphyry as in narrow stringers, but with two exceptions noted below, these would not seem sufficiently attractive to justify any additional work.

The showings in the South gulch, while somewhat scattered, indicate well mineralized ground and justify further prospecting with pits and tunnels, and, if any extensive scheme of development should be undertaken, a long cross-cut might be started toward the shaft with the idea of exploring all the intervening ground.

The other promising surface showing is found on the Gila Monster No. 1 Claim, approximately one mile south of the shaft, and at a slightly higher elevation. At this point there is a strong vein striking nearly east and west, and dipping slightly to the north. This vein is on a contact between the porphyry and schist and not far from the limestone capping, and shows disseminated galena and some narrow bands of solid ore.

Several years ago an open cut was put in along this vein for a length of some 60 feet, sloping down to a shaft near its center which has a total depth of 50 feet, but which unfortunately is inaccessible at the present time. Some good ore was mined and a sample of material picked from the dump contained 23.5% lead, 1.38 oz. silver and a trace of gold. There are other showings of ore along the vein, and further prospecting is clearly indicated, and principally because of the geology and type of vein, this prospect seems to me more promising than at any other point on the property. I would accordingly recommend that this shaft should be provided with ladders, and, if, as I anticipate, some ore is found in the bottom, then further work should be done with hand steel, and, if results are encouraging, either an air line could be run from the shaft or a portable compressor installed in order to permit additional and more extensive development.

On the southwestern slope of the hill at a point a quarter of a mile distant from the main workings, an adit was once run bearing N. 30 E for a distance of some 70 feet. Near the end a crosscut 30

feet on each side was driven, and half way between the portal and cross-cut a small winze was sunk. These workings are in quartz porphyry and near the contact with the schist, and they show considerable ironstained rock, principally near the faulting and folding of the formation. A little galena is disseminated in the porphyry, and some low grade ore is now left in the winze, and near the breast of the drift, but conditions here do not appear sufficiently favorable to justify any further development at the present time..

As to the best means of proving up additional ore from the main workings, I think that the first or adit level should be extended and the vein which shows in the drift and undercut stope should be followed further to the west as it appears likely to make ore in another shoot indicated beyond the present workings and in that case the ore might be picked up at greater depth by some short cross-cuts to be run into the footwall from the west drift on the 2nd level.

On the 2nd level the ore which is found in the last drift and undercut should be followed further east and into the hanging wall as it seems to dip in that direction.

The shaft should be deepened and additional levels run in under the ore shoots at intervals of fifty feet at the outset, but later at longer intervals if the ore shoots become more regular and continuous,as I believe will prove to be the case,but perhaps only after an additional 200 or 300 feet of depth has been gained.

This plan of development coupled with the cross-cut from the gulch on the south and the other work mentioned in connection with the surface showings will involve a very considerable expenditure, and should only be undertaken in case sufficient funds; say, not less than $50,000, are available to see it through to a finish.

CONCLUSION

The geology and general indications of the property are favorable for the development of a small lead producer, and it is probable that a number of ore pockets will be found irregularly located throughout the veins, but near the surface where oxidation has reduc-

ed the values, these do not occur with sufficient frequency nor of sufficient size to permit production on a profitable scale, and it is clearly indicated that work must be carried to a considerably greater depth if any substantial ore bodies are to be found and any steady and profitable production is to be maintained.

The property is still a prospect and, as such, the money which may be expended in endeavoring to convert it into a mine must be classed as a purely speculative investment.

The development of some similar prospects in the vicinity of Ray has recently been encouraging, and at least two of these have become steady and, I am told, profitable producers, and have thus attracted the attention of large companies seeking to open up lead mines in this State.

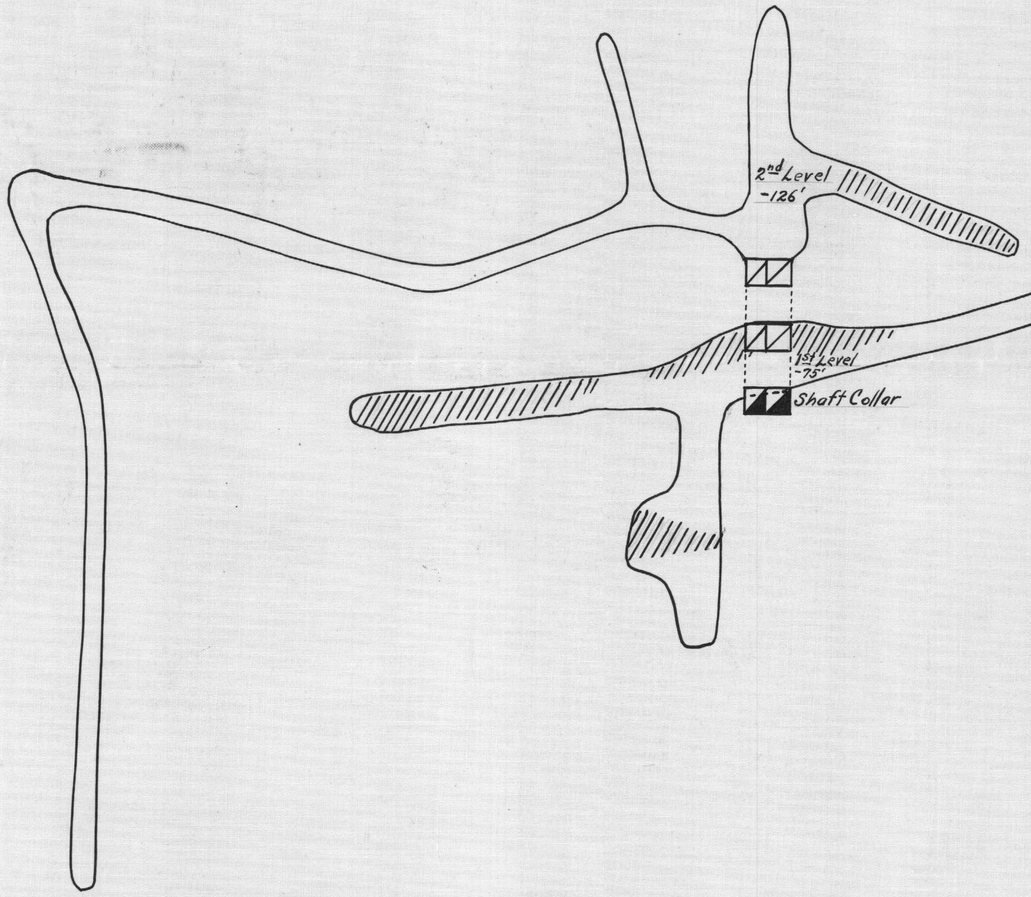
The proper development of the Ray Integrity is an attractive mining venture but will require a very substantial expenditure and should only be undertaken by a company or syndicate amply financed for just such purposes and after carefully considering all the evidence bearing on the chances for the possible failure as well as the success of the enterprise.

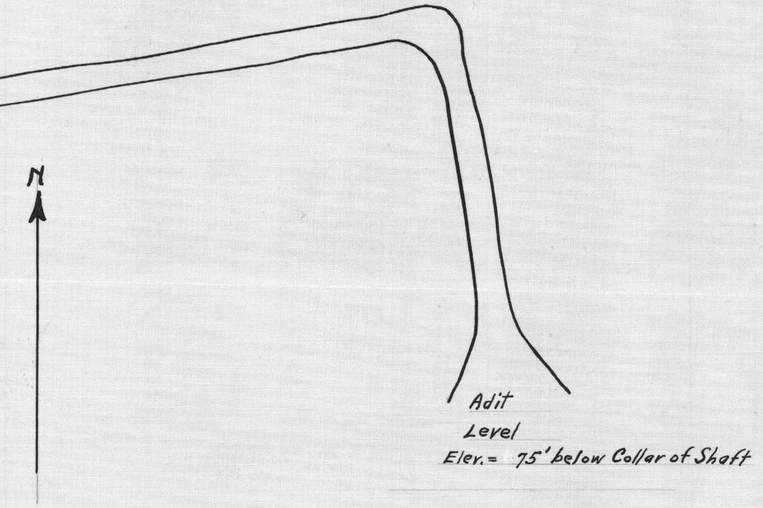
Yours very truly,

G. M. Colcord

GMC:EBH.

Encl. A - Sketch of Claims - from Owner's Drawing.
B - Plan of Underground Workings in Mine
C - Copy of letter from Phelps Dodge & Co.





Plan Map of

RAY INTEGRITY MINE

Ray, — Arizona

Scale — 1" = 20' April, 1929