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No. 67 Co - file
Blush Unit file
Phone 3-4001

Jul 29 39

ARIZONA ASSAY OFFICE

315 North First Street

P. O. Box 1148

This Certifies That samples submitted for assay by **Mr. G. M. Colvocoresses** contain as follows per ton of 2000 lbs. Avoir.

[illegible]Charges \$ 15.00

Assayer Arizona Assay Office. *C.A.V.*

July 31st, 1939

REPORT ON BLUEBIRD COBALT PROSPECT

M. J. O'Brien, Limited
Ottawa, Ontario
Canada

Attention: J. A. O'Brien, President

Gentlemen:

Following your instructions I visited and examined,-
in so far as permitted,- the Bluebird Cobalt Property and beg
to submit the following report.

CONCLUSION:

This is a most unpromising prospect. The cobalt
minerals appear to have largely petered out at a depth of
30 to 60 feet and according to present showings it is never
likely to develop into a producer of cobalt, nickel, gold or
any other metals. Indications are that the Shepherd Chemical
Company intend to relinquish their lease and option and I
doubt if any further work will be undertaken by responsible
people although the owners and promoter still express a high
opinion in regard to its future.

LOCATION:

It is reported that the property comprises a group
of 41 unpatented lode claims (about 820 acres) but no map is
available. These are located near the head of Brushy wash
a tributary of Goodwin Wash in the Mount Turnbull District,

Graham County, southeastern section of Arizona. They are reached by 19.5 miles of unimproved desert and hillside road from the flag station of Geronimo on the Arizona Eastern Branch of the Southern Pacific Railway. The road distance by paved highway #80 from Geronimo to Safford, - a town of 2000 people, - is 26 miles, the road distance from Geronimo to Phoenix is 154 miles, all paved highway.

The elevation at the collar of the Bluebird Shaft is 4950'. The location is along the foothills slopes of the Santa Teresa Mountains among low ridges and hills separated by shallow gulches and sand washes.

The vegetation is semi-desert, no large trees or local timber but stunt cedar, various types of cacti, desert brush, weeds and grass. A few cattle obtain poor grazing in this vicinity and the only active mining operations are at Mt. Turnbull a few miles to the north where a small crew is developing a gold prospect. A small production of lead-silver ore formerly came from Aravaipa some 10 miles to the southwest.

HISTORY:

The Bluebird Claims were located some two years ago by a prospector named Fred Mayhew who sold part interest to Walter Lombardi, owner of a saloon in Tombstone. Lombardi was associated with a mining engineer named Jonathan Gordon who first identified the cobalt minerals and supervised the development until early in '39 by which date he had sunk the

shaft 90' and run in the adit drift nearly 100'. The property was then taken over under lease with option to purchase (at a reported price of \$40,000) by Ralph L. Crosthwaite of Chicago who is presumably acting as a promoter and later assigned his option to the Shepherd Chemical Company after the prospect had been visited by Mr. Shepherd and his engineer John Barry of El Paso.

Development continued until about the middle of June when the adit drift had been connected with the bottom of the shaft. Then the crew were suddenly laid off with recent wages and local accounts unpaid and the property was left under care of watchmen who take orders only from Crosthwaite. The wages and store accounts were subsequently settled and Crosthwaite advised the owner that work would be resumed by July 1st and left for Chicago. His latest advises now set the date for reopening at August 1st but since the July rental, as provided in the lease, is nearly a month overdue the owner, Lombardi, threatens to declare a forfeiture of the lease if payment is not made and work resumed in the very near future.

According to rumor, Barry was disappointed with the result of his development and there is a strong suspicion that the Shepherd Company have dropped out of the picture and that the resumption of operations depends upon Crosthwaite's ability to raise money from other parties.

EQUIPMENT:

Lombardi and Gordon built the last mile of road to the

mine and at the shaft erected a head frame and a small power house in which they installed a hand forge, hoist and Chicago Pneumatic compressor both operated by old automobile engines. This equipment was purchased secondhand from another mine. Attached to the power house is a small store room for tools and supplies.

The shaft has one compartment 4' x 5.5' and inclines 75° to the east. The ladder rungs are nailed on the underside of the bucket-skids.

The camp consists of 6 frame and sheet iron dwellings one of which was to serve as a change room, a pipe line supplies domestic water from a local well but the nearest substantial water supply would probably have to be obtained from the underflow of Goodwin Wash some 5 miles distant and probably at 500' lower elevation.

There is no equipment at the portal of the adit which runs N. 10° E for 230' to connect with the bottom of the shaft. It is said that this adit was driven for use as a haulage way to the proposed mill, a site for which had been selected a short distance further down the canyon.

GEOLOGY AND ORE OCCURRENCE:

Since this is emphatically not a mining district neither the U. S. Government or State geologists have ever given it any detailed study. The country to the east is mainly Paleozoic

granite and gneiss with intrusive dikes while to the east there are a series of Tertiary intrusives and flows, mainly porphyries.

Approaching the claims from the southeast I noted a large area of rhyolite but in the vicinity of the shaft the principal rocks were monzonites or andesites intruding a coarse granitic rock which has been referred to as a granodiorite.

Narrow seams and veins of iron pyrites and arsenopyrite are to be seen in the andesite particularly at or near one of the contacts which is close to the shaft. The outcrop of the main vein, (if one may so term it), had been entirely covered by the dump and the shaft is lagged as far down as one could see from the collar but I was shown a typical fragment of this outcrop which was mainly iron-stained-quartz some 10" wide with iron oxide and sulphide and a 2 to 4" seam of smaltite probably intermixed with cloanthite. I was told by Lombardi that sections of this vein assayed 10% cobalt and up to \$14.00 in gold but believe that this could only have been true over very narrow widths and very close to the surface.

In none of the other vein outcrops which I examined was any cobalt mineral to be noted.

The shaft followed down on the vein which was said to have had a width of 2 to 6' and where the adit drift came in at an angle and at a depth of 90' the total length of vein exposed was 27'.

From all the information which I could obtain and all the observations which I was able to make it appeared reasonably certain that the cobalt minerals steadily gave place to pyrites and arseno-pyrite as depth was gained and little or no cobalt persisted to the level of the drift.

The shaft dump was very largely composed of waste rock but a small section, perhaps 10 or 12 tons showed cobalt bloom and had been thoroughly sampled. This was said by Lombardi to run 2% cobalt. My check sample of this pile ran 0.65% cobalt and trace of gold per ton. There was considerable arsenic present.

The adit dump was also almost entirely waste but very small piles of material that appeared to have been sorted out as ore showed iron sulphides with no visible cobalt minerals.

Two grab samples which I took from these piles assayed as follows:-

Au.	Co.
0.01	Trace, iron sulphide no arsenic
0.01	0.19%, iron sulphide with small quantity arsenic.

No shipments of ore have been made from the property and except for a few hand picked samples it seems apparent that there was nothing to ship nor do I believe that any ore has been left in place except a few pounds near the outcrop and around the collar of the shaft. There are a number of pits

and trenches on other veins or seams but none of them showed anything more than stringers of iron oxide and sulphide from which picked samples will often yield assays in gold but which have no commercial value. The optimism which prompted the consideration of a mill needs no comment.

To sum up; neither the geology nor surface showings can be considered as in any sense promising for the development of a cobalt mine or any other kind of a mine and while the cobalt-nickel occurrence is of scientific interest, I am persuaded that it does not and never did justify any expenditure for development. As a rough guess some \$10,000 has been spent on the property aside from any payments which may have been made to the original locators or present owners.

GENERAL:

Prior to visiting this mine I had been told in Phoenix that the work was positively to be resumed early in July and I therefore expected to find a crew of men on the job with Barry or his representative in charge.

I had obtained two letters of introduction to Barry or his Superintendent and one of them coming from the State Department of Mineral Resources should have procured me access to the property under any ordinary conditions but the two Mexican caretakers were most firm in insisting that no one could take any samples nor enter the shaft or tunnel without a written order from Crosthwaite and one of them remained stationed in the entrance of the tunnel, the other close to the

shaft during all the time that I was in that vicinity.

A suspicion naturally arises that the unusual secrecy surrounding this showing is due to a desire to conceal the true conditions which are vastly different from those which have been reported in the press and while I much regret that it was impossible for me to examine and sample the shaft and admit I am very well satisfied that the two samples taken from the lower dump are fairly representative of anything that could have been seen and that my opinion of the present and future value of the property would not have been materially changed by even the most thorough investigation.

I have made this report somewhat longer and more detailed than the conclusion might seem to justify with the idea that being a producer of cobalt you will very likely have this property brought to your attention at some future time in which case the record may prove useful.

In Tombstone I took pains to establish a friendly personal contact with Lombardi who knows little of mines and mining but seemed to be sincere in his confidence as to the value of the Bluebird. He promised to keep me advised of any future developments which I shall communicate to you as such information may come along.

Yours very truly,

E. M. Colver

GMC:MF
(See next page)

P.S. I have had the pulps from my samples saved by the local assayer and will forward these to Deloro if you so desire but in view of the result and limited scope of my investigation it seemed better to await your instructions before going to any further expense.

G.M.C.

NOTES RE BLUEBIRD COBALT MINE

7/14/39

Two engineers who have been at the mine or in its vicinity recently advised that since the property was taken over by the Sheppard Chemical Co. of Chicago a shaft has been sunk to a depth of 80 - 90' on the vein and an adit drift run in 240' to connect with the bottom of the shaft. (No mention as to whether this adit is a drift along the vein or a crosscut.)

The ore occurs in a series of east-west veins in fine grained andesite which are close to and parallel with a contact between andesite and grano-diorite. Apparently, only one vein has so far been developed to any extent and this in the shaft,- and perhaps in portions of the drift,- is said to have a width of 4 to 7 feet.

The average grade of the ore is reported to be about 2% cobalt while some high grade ore has been mined carrying around 17% cobalt and up to \$12.00 gold value per ton. Gold value of the average grade ore not known but from 300 to 400 tons of this material are now on the dump and if a sufficient tonnage is developed it is expected that a mill will be built.

It is locally reported that the Sheppard Co. are well pleased with the present showing but were not satis-

fied with their local management and therefore closed down for a time in June expecting to start again early in July (as they are supposed to have done) and to push the work more strenuously under the direction of one of their own engineers from the east.

Above information phoned me by Sam Coupal and contained in letters to him from Miles Carpenter and another one of his field engineers.

Bluebird Cobalt Mine

for

June 7th, 1939

M. J. O'Brien, Limited
Ottawa,
Canada.

Attention: J. G. Dickenson

Dear Sir:

Mr. Colvocoresses is at present in Prescott and sent down to me the following clipping which he asked to have copied and forwarded on to you.

This article is taken from the Arizona Republic, newspaper published at Phoenix, Arizona, June 4th, 1939.

"LARGE COBALT DEPOSIT FOUND"

"Safford, Arizona, June 3 --- Considerable excitement has prevailed in local mining circles as a result of the discovery of what is reported to be an important cobalt deposit in the Turnbull mining district of the Graham mountain region west of here.

Considerable secrecy concerning the strike has been maintained but it is learned that the Bluebird property, consisting of 41 claims, has been leased by the owners to Ralph L. Crothwaite of Chicago, assertedly connected with the Shepherd Chemical Company and that a development program has already been launched.

According to Los Angeles assayers, this is the first commercial deposit of cobalt in the United States. Cobalt is defined as a tough, lustrous white metal related to and occurring with iron and nickel. Its principal use is as a component of stellite and of certain alloy steels.

Under terms of the lease, which fixes a price of \$50,000, the lessee must begin development immediately of sufficient ore to justify installation of a 50-ton mill and 15-ton pilot mill.

The lessee has already completed a bunkhouse and mess hall and the crew is now developing water for use at the mill."

Mr. Colvocoresses may be in the office the end of this week but possibly not until the end of next week, however, all important mail is being forwarded.

Yours very truly,



M. Fountain, Secretary

SAFFORD COBALT DISCOVERY REGARDED HIGHLY IMPORTANT

Considerable excitement has prevailed in mining circles around Southern California for several days as a result of the discovery of what is reported to be an important cobalt deposit in the Turnbull mining district of the Graham Mountain region west of Safford, Ariz.

Considerable secrecy concerning the strike has been maintained, but it was learned yesterday that the Bluebird property, consisting of 41 claims, has been leased by the owners to Ralph L. Crothwaite of Chicago, assertedly connected with the Shepherd Chemical Co., and that a development program has already been launched.

Initial Discovery

According to Los Angeles assayers this is the first commercial deposit of cobalt ever found in the United States, the nearest present mining of the mineral being on the Canadian side, north of Idaho. Cobalt is defined as a tough, lustrous white metal, related to and occurring with iron and nickel. Its principal use is as a component of stellite and of certain alloy steels.

Reports from Safford are to the effect that in taking over the Bluebird property, owned by W.L. Lombardi of the Crystal Bar in Tombstone, and Fred.D. Mayhem of Benson, the operators agreed to immediately develop sufficient ore to operate a 50-ton mill. Purchase price of the claims is said to be approximately \$50,000. A 15-ton pilot mill is to be erected immediately.

Stockpiling Ore

The operators are said to have already put a shaft down more than 100 feet. Ore is being taken out as rapidly as possible and is being stockpiled. It is said that the ore is being weighed and assayed as fast as it comes to surface, and that the operators are paying royalty on this ore without milling it.

According to dispatches the ore is testing all the way from 4 to 29 per cent cobalt. One of the nearest mining camps is Geronimo, down in the southeastern part of Arizona. The original sample is said to have been at the Crystal Bar in Tombstone for weeks before a Tombstone assayer took an interest in it and volunteered to make a test to determine its content.

Bluebird Cobalt Mine

April 24th, 1939

M. J. O'Brien, Limited
Ottawa, Canada

Attention: Mr. J. G. Dickenson

Re: Cobalt Discovery

Dear Mr. Dickenson:

Your favor of the 20th instant received this morning and I hasten to reply.

Because of my long connection with the International Nickel Company and having mined cobalt ore for them both in New Caledonia and Canada, I have naturally been interested in any discoveries of these metals which came to my attention. There are a number of showings of nickel and cobalt in Arizona, Nevada and California but none of these have as yet been made the basis of any commercial operation and those which I have visited have appeared too small or too low grade to be of substantial interest. However, the Blue Bird Mine, mentioned in your letter and in the enclosed clippings, may quite possibly prove to be entirely different.

The discovery of ore at the Blue Bird was reported something over a year ago. A man named Lombardi of Tombstone and Jonothan Gordon who is an old-time mining operator and engineer, presented this property to a local mining company who were not interested in cobalt but none the less had some of their samples assayed and found that these contained on the average 3.4% cobalt.

The owners claimed that the values in their ore were principally nickel until after they had sunk their shaft to a depth of between twenty and thirty feet when cobalt, occurring as cobaltite, began to predominate and at a depth of something over thirty feet they stated that the ore would average better than 7% cobalt but I have no details as to the width of the vein nor any subsequent development work tending to determine the length of the showing and the quantity of such ore which had been or might be developed.

More recently it has been locally reported that this property was optioned to a number of different concerns, including some company from Cleveland, Ohio and also the Chicago outfit mentioned in the newspaper clipping of April 10th which you enclosed.

Mr. J. G. Dickenson

-2-

April 24th, 1939

I am given to understand that the property is still open for dealings with any responsible concern who would undertake the development and operation but I have very little personal knowledge concerning its probable value and I doubt if it has been investigated by anyone who has had experience in cobalt and nickel mining.

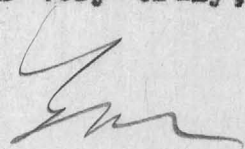
Should you desire to have me make a personal examination of this property, I should be very glad to do so and since your Company is one of my regular and most valued clients, my charges would be based on a per diem of \$50.00 plus the necessary expenses. I believe that it would probably be necessary to visit Tombstone as well as the mine itself and the trip and preparation of the report would probably require four or five days.

Our local assayers have not had much experience in cobalt determinations and I would suggest that it would be advisable for me to split my samples and send portions of these directly to you for assay at Ottawa or Deloro. In fact, there would be no particular point in having any of these determinations made in Arizona unless you were in a hurry to learn the results. The total out-of-pocket expense involved in the trip, other than the cost of assaying the samples, would not exceed \$60.00 and might be less and should you desire to have me make this investigation, I could pretty surely arrange to do so during the next week or ten days although I am working at present on some mining litigation for one of the large copper companies which has first call on my time but is not likely to keep me continuously busy until after the 15th of May *or then for only a few weeks.*

I note your suggestion in reference to communicating with Mr. Offer in Kingman but judging by his letter of April 10th to you, it does not appear that he has made any personal inspection of this property and therefore I doubt if he would be able to give me much information regarding its merits or the possibilities of other similar discoveries in that vicinity all of which I should hope to thoroughly investigate if you decide to have me undertake this work.

Personal regards.

Yours very truly,



GMC:MF

VIA AIR MAIL

NOTES RE BLUEBIRD COBALT MINE

Discovery reported in early 1938. Samples given to the Eagle-Picher Co. by Jonathan Gordon assayed 3.4% cobalt.

Owners claimed that values were principally in nickel for first 20 to 30 ft. of shaft when cobalt came in occurring as cobaltite and some distance below the average grade was 7% cobalt.

Price for cobalt oxide (70 @ 71%) = \$1.67 @ 1.77 per lb.

World production of cobalt 1933 in metric tons:

	Metric Tons
Australia	1
Belgium Congo	618
Ontario	212
China (about))	250
Burma	113
Morocco	617
Rhodesia	118

TOTAL	1934
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Probably over 2000 tons at present.

GRAHAM COUNTY

(Taken from Bureau of Mines Bulletin No. 119 - Oct. 15, 1925)

Very few data have been published regarding the geology of this county. Gilbert crossed the region in 1873 and recorded a few facts as to the rocks noted. He stated that Mount Graham is made up of gneiss and syenite; that Gila and Peloncillo mountains and Natanes Plateau consist of eruptive rocks mainly "trachytes," which in the latter plateau are 460 feet thick and capped by 1000 feet of "sanadine" dolerite. I found that the area of granite and schist in the Pinaleno Range was of large extent, but flanked in places, especially to the south, by igneous rocks of Tertiary age. These igneous rocks in a thick, slightly tilted succession also constitute the greater part of the Peloncillo and Gila mountains and Natanes Plateau as stated above.

Jones has briefly described the rocks exposed on the south slope of Gila Mountain north of Fort Thomas where he found rhyolite, andesite, and obsidian with interbedded yellow tuffs, lying mostly horizontal or gently inclined. Schwennesen gives data as to the relations of the valley fill, Gila conglomerate, and lake deposits in the Gila Valley in the western part of the county.

In 1921 I visited part of the Turnbull Range and the region about Stanley and Arivaipa where Bolsa quartzite, Abrigo limestone, Martin and Tornado limestones, and various crystalline rocks were observed. They are broken by faults and penetrated by dikes and sills of igneous rocks. Later a more detailed examination was made by Ross especially in relation to mineral deposits.

M. J. O'BRIEN, LIMITED

CABLE ADDRESS
"CALABOGIE"
OTTAWA

HEAD OFFICE
OTTAWA, CANADA

KINDLY ADDRESS
ALL CORRESPONDENCE TO
THE COMPANY

OFFICE OF THE GENERAL MINES MANAGER

May 18th, 1939.

G. M. Colvocoresses, Esq.,
1102 Luhrs Tower,
Phoenix, Arizona.

Dear Mr. Colvocoresses:

I beg to acknowledge your letter of May 10th re Blue Bird cobalt prospect, from which I note that you have confirmed through Mr. Lombardi (partner of Mr. Jonathan Gordon) that the Blue Bird Mine is positively no longer available. That being the case, there would be no object in our asking you to go to any further expense on our behalf. If, as you anticipate, you hear from Mr. Gordon in due course, we should be glad to learn whether or not it was the Shepherd Chemical Company, or what other party it was, who secured the long term lease on the Blue Bird cobalt prospect, with option to purchase.

With reference to the postscript to your letter of May 10th, any information which we have here seems to indicate that any of these southern cobalt prospects would be very low in grade and of negligible tonnage, and while we would not feel warranted in engaging an engineer to keep us posted on these erratic occurrences, we would, of course, appreciate receiving any information which may come to your attention from time to time. Should you at any time hear of any specific property which would appear to you as having sound merit, you might find it convenient to communicate some definite proposal to us, at which time we could consider the matter in the light of the market situation at that time.

Yours very truly,

M. J. O'BRIEN, LIMITED

J. P. Dickenson
General Mines Manager.

JGD:EA.

July 11th, 1939

M. J. O'Brien, Limited
900 Victoria Building
Ottawa, Canada

Attention: J. G. Dickenson

Re: Bluebird Cobalt Mine

Dear Mr. Dickenson:

Yesterday I obtained some information regarding this property which may be of interest.

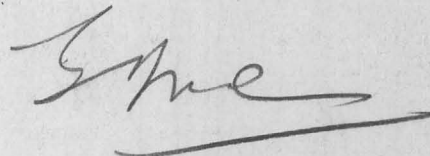
The development work is proceeding steadily under the direction of an El Paso Mining Engineer named Barry who is, I understand, a very competent man. He has recently expressed himself to a personal friend of mine as being well pleased with the showings so far developed and apparently believes that this prospect may form the basis of a commercial mining operation of small or moderate size in which case it will be the first cobalt producer that has been opened up anywhere in this part of the country.

I have started another line of inquiry but may not receive any report from that source for some little time and of course all such information is at best only hearsay.

Through our mutual friend I believe that I could at any time secure an excellent introduction to Barry and obtain permission to visit and examine the property since so far the Shepherd Company have apparently not excluded visitors although they are not giving out much information to the public.

I have in mind a trip to another property in the same section of the State which I may take during the next two weeks and should you desire to have me visit the Bluebird, some saving in expense would be effected through combining these two trips. I should, of course, take every care not to disclose the interest of the O'Brien Company in this matter nor even to suggest my association with you of which no one in that part of the State has any knowledge.

Yours very truly,



GMC:MF

January 22nd, 1940

Mr. Jonathan Gordon
514 N. Highland Avenue
Tucson, Arizona

Re: Bluebird Cobalt Mine

file

Dear Sir:

Replying to your favor of January 15th I do not believe that the eastern parties on whose behalf I investigated the Bluebird Mine last summer would be in any way interested in negotiating for lease or option on this property. However, I will advise them of the present circumstances and should I be mistaken in the above matter you will hear from me again in the course of the next two weeks or so, otherwise you and Mr. Lombardi may definitely understand that we are not prepared to talk business on this matter.

Thanking you for having advised me of the situation, I remain

Yours very truly,

GMC:MF

July 31st, 1939

REPORT ON BLUEBIRD COBALT PROSPECT

M. J. O'Brien, Limited
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Attention: J. A. O'Brien, President

Gentlemen:

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to submit the following report.

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30 to 60 feet and according to present showings it is never
likely to develop into a producer of cobalt, nickel, gold or
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Company intend to relinquish their lease and option and I
doubt if any further work will be undertaken by responsible
people although the owners and promoter still express a high
opinion in regard to its future.

LOCATION:

It is reported that the property comprises a group
of 41 unpatented lode claims (about 620 acres) but no map is
available. These are located near the head of Brushy wash
a tributary of Goodwin Wash in the Mount Turnbull District,

Graham County, southeastern section of Arizona. They are reached by 19.5 miles of unimproved desert and hillside road from the flag station of Geronimo on the Arizona Eastern Branch of the Southern Pacific Railway. The road distance by paved highway #80 from Geronimo to Safford,- a town of 2000 people,- is 26 miles, the road distance from Geronimo to Phoenix is 154 miles, all paved highway.

The elevation at the collar of the Bluebird Shaft is 4250'. The location is along the foothills slopes of the Santa Teresa Mountains among low ridges and hills separated by shallow gulches and sand washes.

The vegetation is semi-desert, no large trees or local timber but stunt cedar, various types of cacti, desert brush, weeds and grass. A few cattle obtain poor grazing in this vicinity and the only active mining operations are at Mt. Turnbull a few miles to the north where a small crew is developing a gold prospect. A small production of lead-silver ore formerly came from Aravaipa some 10 miles to the southwest.

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EQUIPMENT:

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mine and at the shaft erected a head frame and a small power house in which they installed a hand forge, hoist and Chicago Pneumatic compressor both operated by old automobile engines. This equipment was purchased secondhand from another mine. Attached to the power house is a small store room for tools and supplies.

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There is no equipment at the portal of the adit which runs N. 10° E for 230' to connect with the bottom of the shaft. It is said that this adit was driven for use as a haulage way to the proposed mill, a site for which had been selected a short distance further down the canyon.

GEOLOGY AND ORE OCCURRENCE:

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granite and gneiss with intrusive dikes while to the east there are a series of Tertiary intrusives and flows, mainly porphyries.

Approaching the claims from the southeast I noted a large area of rhyolite but in the vicinity of the shaft the principal rocks were monzonites or andesites intruding a coarse granitic rock which has been referred to as a grano-diorite.

Narrow seams and veins of iron pyrites and arsenopyrite are to be seen in the andesite particularly at or near one of the contacts which is close to the shaft. The outcrop of the main vein, (if one may so term it), had been entirely covered by the dump and the shaft is lagged as far down as one could see from the collar but I was shown a typical fragment of this outcrop which was mainly iron-stained-quartz some 10" wide with iron oxide and sulphide and a 2 to 4" seam of smaltite probably intermixed with cloanthite. I was told by Lombardi that sections of this vein assayed 10% cobalt and up to \$14.00 in gold but believe that this could only have been true over very narrow widths and very close to the surface.

In none of the other vein outcrops which I examined was any cobalt mineral to be noted.

The shaft followed down on the vein which was said to have had a width of 2 to 6' and where the adit drift came in at an angle and at a depth of 90' the total length of vein exposed was 27'.

From all the information which I could obtain and all the observations which I was able to make it appeared reasonably certain that the cobalt minerals steadily gave place to pyrites and arseno-pyrite as depth was gained and little or no cobalt persisted to the level of the drift.

The shaft dump was very largely composed of waste rock but a small section, perhaps 10 or 12 tons showed cobalt bloom and had been thoroughly sampled. This was said by Lombardi to run 2% cobalt. My check sample of this pile ran 0.65% cobalt and trace of gold per ton. There was considerable arsenic present.

The adit dump was also almost entirely waste but very small piles of material that appeared to have been sorted out as ore showed iron sulphides with no visible cobalt minerals.

Two grab samples which I took from these piles assayed as follows:-

Au.	Co.
0.01	Trace, iron sulphide no arsenic
0.01	0.19%, iron sulphide with small quantity arsenic.

No shipments of ore have been made from the property and except for a few hand picked samples it seems apparent that there was nothing to ship nor do I believe that any ore has been left in place except a few pounds near the outcrop and around the collar of the shaft. There are a number of pits

and trenches on other veins or seams but none of them showed anything more than stringers of iron oxide and sulphide from which picked samples will often yield assays in gold but which have no commercial value. The optimism which prompted the consideration of a mill needs no comment.

To sum up; neither the geology nor surface showings can be considered as in any sense promising for the development of a cobalt mine or any other kind of a mine and while the cobalt-nickel occurrence is of scientific interest, I am persuaded that it does not and never did justify any expenditure for development. As a rough guess some \$10,000 has been spent on the property aside from any payments which may have been made to the original locators or present owners.

GENERAL:

Prior to visiting this mine I had been told in Phoenix that the work was positively to be resumed early in July and I therefore expected to find a crew of men on the job with Barry or his representative in charge.

I had obtained two letters of introduction to Barry or his Superintendent and one of them coming from the State Department of Mineral Resources should have procured me access to the property under any ordinary conditions but the two Mexican caretakers were most firm in insisting that no one could take any samples nor enter the shaft or tunnel without a written order from Crosthwaite and one of them remained stationed in the entrance of the tunnel, the other close to the

shaft during all the time that I was in that vicinity.

A suspicion naturally arises that the unusual secrecy surrounding this showing is due to a desire to conceal the true conditions which are vastly different from those which have been reported in the press and while I much regret that it was impossible for me to examine and sample the shaft and edit I am very well satisfied that the two samples taken from the lower dump are fairly representative of anything that could have been seen and that my opinion of the present and future value of the property would not have been materially changed by even the most thorough investigation.

I have made this report somewhat longer and more detailed than the conclusion might seem to justify with the idea that being a producer of cobalt you will very likely have this property brought to your attention at some future time in which case the record may prove useful.

In Tombstone I took pains to establish a friendly personal contact with Lombardi who knows little of mines and mining but seemed to be sincere in his confidence as to the value of the Bluebird. He promised to keep me advised of any future developments which I shall communicate to you as such information may come along.

Yours very truly,

S. M. Colver

GMC:MF
(See next page)

P.S. I have had the pulps from my samples saved by the local assayer and will forward these to Delore if you so desire but in view of the result and limited scope of my investigation it seemed better to await your instructions before going to any further expense.

G.M.C.

(Item copied from The Mining Journal for July 30th, 1939)

"The Cobalt Gold Mining Company, Henry J. Von Wyl, 2026 Ivanhoe Street, Denver, Colorado, president, recently completed 2,518 feet of diamond drilling, comprising a total of 16 holes. This work is stated to have proved the presence of nickel ore to a depth of 100 feet below the lower tunnel level, or 300 feet below the surface. J. H. Rodgers, 420 Security Building, Denver, has recommended further diamond drilling to prove the ore to a depth of 500 feet and the driving of a crosscut tunnel to further open the ground at 500 feet. With this in mind the company plans 3,000 feet of drilling and 100 feet of tunnelling. The company, Ward Yeager of Gold Hill, general manager and purchasing agent, owns its property at Gold Hill. Values are in nickel, cobalt, copper, gold, and silver."

COPY

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Date June 24, 1939

Mine Bluebird

Engineer Newton Wolcott

District Mount Turnbull District, Graham

Location 18 miles south of Geronimo on NE slope of the Santa Teresa Mts.

Former name

Owner Walter Lombardi

Address Tombstone, Arizona.

Fred Mayhugh

Address Benson, Tucson, or El Paso. Mail address not known.

Operator Ralph L. Crosthwaite

President

Gen. Mgr.

Mine Supt. Jonathan Gordon

Mill Supt.

Principal Metals Cobalt, nickel, gold, arsenic

Men Employed Only watchman on job at time of visit.

Production Rate

Mill: Type & Cap.

Power: Amt. & Type Single drum hoist and stationary compressor, both powered by automobile engines.

Operations: Present

Property not operating at time of visit, but watchman stated that work is supposed to be resumed after July 1st.

Operations Planned Operators plan to install mill.

Number Claims, Title, etc. Forty-one claims in group. Not known whether patented in any part.

Description: Topog. & Geog. Property located in upper foothills of Santa Teresa mountains at an elevation of approximately 4300 ft. Sparsely wooded and fairly steep hills.

Mine Workings: Amt. & Condition Apart from assessment and location workings, the main workings consist of an incline shaft 90 feet in depth which connects at the bottom with a tunnel approximately 230 feet in length. This is all new work, and therefore accessible.

Mineralization & Geology *See 2 Aug* *Ulysses*
Geology & Mineralization The ore as observed in hand specimens occurs as what appears to be a smaltite-chloanthite combination, associated with pyrite. Gold values up to 12 dollars per ton are reported. Mineralization has taken place along a series of east-west veins which are close to and roughly parallel with a contact between a fine grained andesite and granodiorite. The veins are in the andesite.

Ore: Positive & Probable, Ore Dumps, Tailings

Since most of the development work has been done on the vein, the dumps would in all probability class as good mill ore. There are probably three or four hundred tons of this material on the surface.

Mine, Mill Equipment & Flow Sheet

Road Conditions, Route Cross railroad at first crossing east of Geronimo and take main road south. Keep to main road for a distance of 13 miles, then take turn to west up sand wash. Road would probably be difficult in places during the rainy season, and it would be wise to inquire about conditions at Geronimo before going up.

Water Supply There is a good domestic supply developed at shallow depth in the canyon at the mine, and it appears likely that sufficient can be developed for milling purposes also.

Brief History This property was discovered about two years ago, and the owners proceeded slowly with the development. All ore extracted to date has been stock-piled. The cobalt-nickel values were at first unsuspected. Assay reports are entirely a matter of heresay, but Carpenter may be able to get authentic information on this point from the owners. Operation of the property was taken over on some sort of an arrangement by Mr. Ralph L. Crosthwaite about the first of this year. The present operators have built a camp consisting of about six frame houses and a change-room.

Remarks At the time of my visit to the property, a watchmen had been left in charge with strict orders to let nobody enter the mine workings, and these orders were observed implicitly. Personal observations were, therefore, confined to the surface, and were not entirely satisfactory. Ore on the dump indicated more than just stringer width, and it is understood that the vein varies in width from two feet up.

If property for sale: Price, terms and address to negotiate. The property is apparently tied up at present, but Carpenter's report will doubtless contain information on this point.

Signed.....NEWTON WOLCOTTA.....

M. J. O'BRIEN, LIMITED

CABLE ADDRESS
"CALABOGIE"
OTTAWA

HEAD OFFICE
OTTAWA, CANADA

KINDLY ADDRESS
ALL CORRESPONDENCE TO
THE COMPANY

20th April, 1939.

OFFICE OF THE GENERAL MINES MANAGER

AIR MAIL

G. M. Colvocoresses, Esq.,
Mining and Metallurgical Engineer,
1103 Luhrs Tower,
Phoenix, Arizona.

Dear Mr. Colvocoresses,-

Through Mr. D. P. Shuler, of 1960 Olive Ave., Long Beach, California, and quite independently through a friend of mine, Mr. William Offer, of Kingman, Arizona, there has been reported to us a Cobalt discovery known as the "Blue Bird" property, near Safford, Arizona, regarding which I enclose a copy of a newspaper clipping dated April 10th, 1939, the name of the publication being unknown to us. There does not appear to be very much in Mr. Shuler's letter, copy of which I enclose, but there appears to be considerable information in that of Mr. Offer, and of Mining Engineer Gordon, enclosed.

Would you please advise if you know anything about this discovery, and whether you would be willing to go and appraise its possibility for us, and what the expenditure for so doing would likely be.

I think you would be well advised to communicate with Mr. Offer, if your preliminary enquiries as to the merits of the property suggest that it may have worthwhile possibilities, or that there may be similar properties available nereby.

With kind regards,

Yours very truly,

M. J. O'BRIEN, LIMITED,



General Mines Manager.

JGD:B
Encl.

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C
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Y

Kingman, Ariz.,
April 10th, 1939

Mr. J. G. Dickenson,
Ottawa, Ont.

Dear Mr. Dickenson,-

I have your letter of some time ago re Cobalt Oxide. It is a fact that the owner of the property in question has shipped several tons of his ore to New York, the Cobalt Oxide content of which was close to 3%, and he was paid at the rate of \$1.70 per pound for the contained cobalt oxide-less some minor charges for recovery, etc.

I am enclosing you abbreviated copy of a letter from the manager of a mine down Tombstone way, to whom I had written for some details of this occurrence. By the way, it was not in evidence at surface I was told, but came in below, or rather was first identified in the workings with other ores. If I had the price I would closely investigate many similar and widely scattered occurrences, with like geology and ore associations, for there is a keen demand for such discoveries.

I am just in receipt of a letter from my boy, Neil, who tells me that his application for work this summer with your company has been refused. I have an idea, Jack, that you are little interested in my efforts out in the West. You may be right - I do not know. However, you could strain a fixed rule or two and make a place for Neil, if you were so disposed, and I hope you are. He needs a job, it is not well for kids to be idle.

Thanking you for your attention, I remain,

Yours very truly,

Bill Offer

P.S. What do you hear is wrong with Lake Shore Mines - the stock down to \$35.00!

C
O
P
Y

Blue Bird Mines,
Fort Thomas, Ariz.
April 2, 1939.

Mr. W. C. Offer,
Kingman, Ariz.

Dear Mr. Offer,-

Replying to your letter of the 22nd inst.

The extent of the Cobalt mineralization is now known at present. (My informant told me eight feet in places, W.O.)

There is ore - of Cobaltite principally, of from $\frac{1}{2}$ to 1% to 21% Cobalt; However, the highgrade is not in great quantity.

There seems to be plenty of 2% to $2\frac{1}{2}$ % ore to be mined. Makes a clean and high grade concentrate.

The ore is found principally in the Apache group so far - in the altered Mescal limestone. Some mineral has been found in the upper basalt members of the group. There is much to be learned about this yet. Apologies for the paucity of information.

Yours very truly,

Jonathan Gordon,

Mining Engineer.

C
O
P
Y

1960 Olive Ave.,
Long Beach, Calif.
April 10, 1939

M. J. O'Brien, Limited,
Ottawa,
Ont.

Dear Mr. O'Brien,-

Enclosed find a clipping which may be of interest to you. This cobalt discovery was made some months ago, and I wrote the discoverer at the time, but received no reply of any consequence. This is all the information I have regarding the matter.

Yours very truly,

D. P. Shuler.