

David Arnold
ITEM 50

1. CARDINAL MINES.

2. on the Sky Line Ridge
3. Lie north of the Hog Back Brecciated Dikes, about 1500 feet north of the Inman Mines, and about half a mile south of Drew Mines, and about a mile overlooking the Mine Mercury Mines.
4. Reached by a very poor road from the Drew Mines.
5. The altitude is about 8800 feet high.
6. Three claims, 60 acres.
7. There was some development and exploration work on these grounds, but there is no record of the production, of which there was a small amount.
8. The predominating rock is altered limestones very similar to the Red Wing formations, and also the Inman Formations. About 2/3 of the widths have been faulted down in blocks, the lowermost block being the ground of the Mine Mercury Mines. The diabase outcrops are very analogous to those noted at Red Wing and Inman Grounds, and again indicate extensive commercial deposits of mercury. The andesites, diorites, and other igneous rocks noted at Red Wing and along Sky Line Ridge recur here.
9. Cinnabars are predominating mercury values, and it is likely that the other associated mercury minerals will be found here.
10. Four pounds per ton to eighty pounds or more per ton.
11. Lie between values of Inman and Red Wing ores, say about eight to twenty pounds per ton.
12. Two or three thousand tons.
13. As noted in Item 9.
14. A. There is about 25,000 tons of probable ore.
B. There is about 75,000 tons of possible ore.
15. Will run between six and twenty pounds per ton.
16. If any past operations, home made pipe retorts.
17. The ore cannot be concentrated.
The ore will be hauled either to Inman or Red Wing Plants.
18. There is one tunnel, reported to be 400 or 500 feet in.
There is one shaft about 60 feet deep.
Several open cuts and trenches are scattered over the property.
19. The extent of drifting within the tunnel is not known yet.

18. continued. The quantity of other workings is about 300 feet.
19. Not known yet.
- 20A. Dumps. About 200-300 tons in all.
21. Not tested.
22. Very large quantities available for underground power shovelling.
23. The water supply developed at Red Wing will be adequate for all operations on Sky Line Ridge.
24. One small camp, for four or five men.
25. None.
26. None.
28. None.
29. Reserves for either Inman or Red Wing Operations.
27. To be hauled over proposed new road from Drew Mines towards Inman Mines.
30. Cost of Mining, the same as for Red Wing Mines. say \$1.50 a ton.
31. Same as for Red Wing Plant, say \$1.00 per ton.
32. Theore cannot be concentrated.
33. Same as noted for either Inman or Red Wing Mines.
34. Same as note for Inman or Red Wing.
35. Same as noted for Inman or Red Wing.
36. The price of the property is \$20,000.
37. The price of the property for all cash is \$10,000.
38. The price is \$20,000. \$2,000. down. \$100. a month for first 6 months. then \$150.00 a month next six months, and then thereafter \$200.00 a month paid in 5 years. or out of 10% royalties of gross receipts.
39. On July 21, the writer made a visit to the property and found good ore in three different places that goes between 50 and 100 lbs. per ton. The ore was then being sacked. In one place the width was over eight feet wide, and the formation not gone through. This formation was very akin to the big rooms noted at Red Wing.

Old Holes on Red Wing

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1. **RAWSON- HOGBACK BRECCIATED DIKES.**

2. This property adjoins on the north side of the Inman Mines. *on the Hogback of the SKYLINE RIDGE BETWEEN INMAN & Cardinal Mines*
3. Best reached by the road, present, through Drew Mines, to the ground of Cardinal Mines.

The road between Drew Mines to Cardinal Mines must be reconstructed and then extended to the Inman and Red Wing Mines.

4. The altitude is about 8,000 feet.
5. Either one or two claims.
6. Entirely Virgin; never tested.
7. The cinnabar values and other minerals may be contained in several parallel wide dikes of brecciated limestone conglomerate. The width is about from twenty feet to seventy five feet wide. They seem to be more or less identical with the placers of the Inman Mines, except that they have not been weathered as the Inman dike has been. The dikes are about a thousand feet long, perhaps appreciably less.
8. Probable Cinnabars and associate minerals found in the Inman Placers may be occurent here.
9. Not known yet.
10. Not tested.
11. None proven.
12. None.
13. B. Very large tonnage of possible ores, over 200,000 tons.
14. Not known.
15. None mined in the past.
16. The ore cannot be concentrated.

Of same type as either Inman or Red Wing Ore.

17. No development work.
18. None.
19. None.
20. None.
- 20A. None
21. Very large quantities available for surface power shovelling.
22. None needed as the water supply developed at Red Wing will suffice for all mines on the Sky Line Ridge.

22. With development work, there is also a large quantity available for underground power shovelling.
23. None.
25. None.
26. Over the new road to be built from Drew Mines towards Inman Mines.
26. The ore mined is to be hauled either to Inman or Red Wing Plants.
28. Stated in 26.
29. Depends on capacities of Inman and Red Wing Plants.
30. Cost of mining per ton about 50 cents per ton, on basis of 100 tons a day.
31. Add for hauling, say 25 cents over either Inman or Red Wing costs.
32. The ore cannot be concentrated.
33. Same as noted for Inman and Red Wing.
34. Same as for Inman and Red Wing.
35. Same as for Inman and Red Wing.
36. Price of property either \$500.00 or \$1000. CASH.
39. The ore that will be obtained in mining operations is hauled to either Red Wing or Inman Plants, and adds to potential reserves

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23. None.
24. None.
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- 37.
- 38.
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ROBERT R. POLLOK
MINING AND PETROLEUM ENGINEER
AND OPERATOR

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Mina, Nevada.
April 30, 1940.

Mr. Ralph Arnold,
Subway Terminal Bldg,
Los Angeles, Calif.

Dear Mr. Arnold:-

This morning I have advices that we can get the other big cinnabar placer, that is mentioned in a California state report stated to carry 25,000,000 yards of cinnabar placers, with tenor of 3 to 5 obs. per ton.

The letter states there is already 140,000 tons proved in sight that will carry between 5 and 7 lbs. per ton. That the values are divided between the fines and the medium crystals. All of the gravel goes under two inch cubes.

The owners state that the deal can be made on a royalty basis, but I have to go into the field to get the definite proposition; I don't know how much they ask, or if they want a perpetual royalty.

This property is in North California, about 85 miles or more from Grants Pass. I have known of this property for 13 years. Attempts were made to save values by hydraulicking, and of course the results were dismal failures.

The proposed flow sheet consists of excavating the top gravel with power shovels, and tramming the same to a reduction plant. It is suggested that the capacity of the plant shall be between 300 and 500 tons a day. The reduction plant will consist of a battery of 50 ton day units. Because of the values in fines, the rotary furnace must be adjusted to provide for these fines and the moisture of the gravel must not exceed ten percent. This is very easily done.

I am not able to get away for Grants Pass to get a definite price from the owners.

Yours truly,

Robert R. Pollok

ROBERT R. POLLOK
MINING AND PETROLEUM ENGINEER
AND OPERATOR

Mina, Nevada.
July 1st, 1940.

Mr. Ralph Arnold,
Subway Terminal Bldg,
Los Angeles, Calif.

*Red Wing -
Inman
Ione
Montgomery -*

Dear Mr. Arnold:

I went down to Las Vegas Saturday, and returning last night got your letters of June 28th, and have just received yours of the 29th.

I will get all commission agreements requested; I am getting one from Messrs. Messenger and Betty, the owners of Red Wing, and will go to Tonopah to get one from Mr. Inman. The option on that property at Ione is being made out to me, or has been signed already, so I will make a separate paper for you. I must go to Reno to get a paper from the party who has the Montgomery Mines.

Red Wing?
I showed the letters to Messrs. Betty and Messenger; They say that when the deal is assured, they will probably not ask for any cash down payments; they will want minimum monthly payments. However we will have to sound out Mr. Inman, but I think he will come way down on first down payment.

As for Ione, \$5,000. must be paid down, etc. of which we get nothing, etc. But in view of the immense quantity ready for power-shovelling, I don't think your principals will object. As for Montgomery, I must inquire again as to the minimum down payment, but Mr. Messenger thinks like I do that when we are all present, the owners of Montgomery will become very reasonable, except as to the first down payment.

I wish to draw your attention to the facts:

- 1st. With equipment, concentrating, at Ione, we can start operations at once at the rate of 500 to 1000 tons a day.
- 2nd. Montgomery Mines Operations can be started immediately after installing stoping and haulage equipment on the basis of 150 tons a day.

Mr. Messenger says that when the deal is assured, we shall meet you either in Las Vegas or in Los Angeles. We will try to get the owner in Reno to come along, but he is a very busy doctor.

Dr. Smith and I are reasonable, and will gladly come down, along the lines you indicate for you share equally with each of us.

For your own information, I had a letter from a responsible party in England asking for a large quantity of mercury, and asking that we convey an idea of quantity we would contract for directly with the buyers and contractors for the British Government. I replied at once by ocean airmail, that with the consolidation of the four mines, we would entertain contracts for 10,000 flasks or more, deliverable sixty days after start of operations or as soon as furnaces were installed at the rate of 2000 to 3000 flasks a month. This assured tender is based on Ione and Montgomery ore in sight or developed. I asked for advances if that was possible so that

we could operate ourselves. Of course I am asking in vain, but during
thesetimes surprises are the rules of the day.

Yours truly,

Robert Pollok

ROBERT R. POLLOK
MINING AND PETROLEUM ENGINEER
AND OPERATOR

Mina, Nevada.
July 24, 1940.

Mr. Ralph Arnold,
Subway Terminal Bldg,
Los Angeles, Calif.

Dear Mr. Arnold:

I enclose letter~~x~~ received from Mr. Olesen that explains all. I wrote you a separate letter, of which I sent copy to Mr. Crawford. I did not mention your name because I thought that if either Mr. Crawford or Mr. Olesen had any idea of your interest, they might try to trade on your reputation, just the same way it happened with Ione, etc.

I wrote, as you will note, asking that they telegraph me, and if I get such word, I shall relay the news.

On the other hand, to know that we can get the property for \$15,000. Cash is good news. you and I will have to discuss the compensation for Dr Piersall; a different attitude is taken in view of the misrepresentations made me, etc.

If we can get Cardinall Mines for \$10,000. Cash, and the Inman mines for \$15,000. Cash, that will be fine, but as for Red Wing, you will have to negotiate personally, etc. I think I can get the hogback Dike Mines very cheaply, perhaps \$500.00 Cash per claim, etc. There may be only one claim, when the price may be \$1000. but if there are two, I think I can get both for \$1000.

It may seem apparent that the acquisition of the properties for all cash may accelerate the financial structure, for with all properties owned outright, I see no reason why the R. F. C. will not advance funds, etc. This is only a suggestion. With the Montgomery Mines owned outright, and the presentation of the statement that there is 15,000 to 25,000 tons and as much as 50,000 tons blocked out, assuring a minimum supply of 250,000 lbs. of mercury and MORE, is sure to recommend the loan of \$100,000.

With the acquisition of the Cardinal mines, we shall have plenty of good ore, say 2% to 6% to sweeten the feed at either the Inman or the Red Wing furnace.

If I had the \$15,000. Cash now, I would not hesitate to buy at once the Montgomery Mines. It is an assured investment.

Sincerely,

Robert R. Pollok

Montgomery
Cardinal
Red Wing
Hogback

Cardinal
Red Wing
Hogback

R.F.C.
Montgomery

Cardinal
Red Wing
Inman
Montgomery

24th ?

*Cardinal
Inman*
Today, taking advantage of the opportunity to reconnoiter the route for the proposed road between Inman and Drew Mines, I passed through the Cardinal Mines properties. The proposed road is near the Skyline of the Cardinal ground towards Inman, and passes through a Modified Replica of the Red Wing Formations, but here, cut into three blocks by faults.

*Cardinal
Inman*
Here are three mining claims of Cardinal along a stretch of 3,000 feet, and between the Cardinal ground and the Inman Mines are two or three very large dikes of brecciated conglomerate limestone, which seems to be identical with the placer material formation found at Inman. Therefore I am not very sure now if the Inman placer material is derived from hillside washes, but, instead, is softened and altered brecciated conglomerate limestone. Therefore it is very interesting to speculate whether or not the dikes carry values as noted at Inman, varying between 4 and 10 lbs. per ton. These dikes are contained in one or two claims paralleling the Inman ground.

*Cardinal
Red Wing*
The Cardinal ground is very interesting, and should be embraced in the consolidation of the mines now under consideration. There are small old workings on the property that seem to have been constructed under incompetent management, as there were observed a good many lenses across the strike of the limestone, as noted at Red Wing, all carrying excellent values. The last assessment work done a month ago, a trench, opened up a pocket of ore, not developed, that runs between two and six percent.

General of Ore a Prospect
From the West side of the Skyline Ridge, one can practically see the Quadrangle Bowl of the Cinnabar Deposits of Mount Pilot, which limits are very definitely shown; the writer has strengthened his opinion that an aeroplane map should be taken of this Quadrangle, after which the surface geological data can be detailed, with which to construct the actual mercury mining geology more plain than ever. There are observed plainly major faults, and the relativity of the deposits to the indicators of diabase, and probably andesite and other igneous rocks not yet identified.

It was very interesting to note that the Red Wing and the Inman Mines are located among the highest raised blocks, with that of the Cardinal, following. The Cinnabar Mercury (Spencer-Anderson Mines) are located in the third down cast fault block, almost in the center of the bowl. The writer has therefore a better impression now of certain mines located along Dunlap Canyon, as they are found more or less along a major fault line and along contacts, too.

There is gained the impression that there is some considerable area of open ground available for location, but until the areal map is made, and the surface geological data correlated, it is best to let this opportunity ride.

However, there is no doubt, that the ground carrying the brecciated conglomerate dikes should be optioned immediately, and the dikes then sampled. The Cardinal ~~Mines~~ must be acquired, too.

24th? The Cardinal Mines can be bought for either \$20,000. down, with terms, or outright for \$10,000. Cash. I am therefore writing and asking if I shall get options on Cardinal Mines. I can get the dike ground from Dawson, now at ~~Hamm~~ frog.

PLEASE INQUIRE OF FAIRCHILD OR FAIRBANKS AREAL SURVEY Co. what their fees for making complete contour map with intervals of 25 feet on an approximate area of 16 or 20 square miles are.

The West side is about four miles long, and across the quadrangle four or five miles. Altitude from 6500 to 9200 feet.

If the Lone Mine is obtainable, it is the quickest and largest money maker, after which comes the Montgomery Mines. For the Long Pull, the group of Red Wing, Inman, and Cardinal Mines will be the most consistent and steady Mint.

With the Red Wing, the Inman, and The HogBack Dikes, and the Cardinal Mines, too, along the East Side of the Quadrangle some 10,000 feet long, along the principal strike of the Sky Line Ridge, down to a point beyond the Drew Mines, some 5,000 feet more, we have practically covered the main apex formations of the Quadrangle, and the other deposits in the Quadrangle Bowl can be correlated into place by the aerial survey, and the complementary geological mapping, after which it is known how the formations will run, and then the remaining open ground, found so, of which some is very good can be easily located.

It is a surprise that there was no real geological surveying ever done, or that its significance was never appreciated.

I thought that was observed today would be very interesting for your attention, and meantime please authorize me to complete negotiations for Cardinal Options as well as those for HogBack Dike Claims.

Joe Cornelius, who owns one-half of Cardinal Mines, is very reasonable but Joe Harris, now at Winnemucca, though only about 24 years old, may not be so. Cornelius seems confident we can get option on following lines.

1. Outright Sale for \$10,000. Cash.
2. \$20,000. NET, \$2,000. down Balance out of 10% Royalties. Minimum Monthly payments, after 90 days after exercising option, \$100. for one year, then \$200. a month. and thereafter, \$300. a month. 4 or 5 years Bond and Lease.

The father of Harris recently sold a cinnabar claim at Winnemucca for \$15,000. Cash.

I told Cornelius that on account of development programs for other

properties, we may not wish to start any work on Cardinal except the road, and the necessary assessment work required annually, but I felt sure that after the geology survey was completed, the various good small holes already opened up and showing 2 to 10% would be developed and the ore obtained retorted in the Inman furnace. This policy is advisable, as the Cardinal Workings are only about 4000 feet from the proposed site of the Inman furnace.

As Dawson is considered by the writer a very good superintendent for Red Wing and Inman operations, I am ^{almost} sure that he ~~would~~ ask Cash for his HogBack Dikes, and that we can get each claim for \$1000. or \$1500. apiece but that has to be confirmed.

From my observations from The Cardinal Roost, it seems that ten or more good claims are available for location, but that has to be checked up. Perhaps still more as there is considerable ground between Cardinal and Drew that may be open.

Awaiting your reactions and comments, I am,

Yours truly,

Robt R Pollok

Perhaps you can strike a better bargain with Cornelius and Harris. I feel the price should not be over \$15,000. but I am not used to haggling, etc. It is suggested that if anything definite develops, you come here for 3 days to decide whether or not the aerial survey should be made.

R.R.P.

P.S. I enclose sketch to show relation of the different groups along the Skydine Ridge.