July 20, 1940.

Mr. Rolfe N. Chaffee,
610 First Nat. Bank Bldg.
Duluth, Minnesota.

Dear Sir:

As instructed, I have examined the gold mining property of the Rational Mines, Inc., in Yuma Co., Arizona. The following is a preliminary report, made because of an expressed desire for haste. It will be followed later by a more complete and detailed report.

The specific and primary purpose of this examination was to determine whether or not there existed on the property 200,000 tons of blocked out and proven ore which would yield a net profit of $6.00 per ton, as was claimed by representatives of the Company. The secondary but still important purpose was to obtain all possible information bearing on the value of the property as a possible producer of gold.

Most of the prospecting and development work has been done on lode claim Gold Belt No.1. Over most of this claim and continuing on into the two claims Gold Belt No.2 and Gold Belt No.3, there occurs a belt of schist, striking roughly northwest and southeast, and dipping to the northeast at about 60 degrees.

This schist contains veins and veinlets of quartz interlayered with the schist, as well as some cross veins. Accompanying the quartz there have been deposited free gold and gold-bearing pyrite, both in the veins and in the adjacent schist. In all the upper part of this schist belt the pyrite has been completely oxidized, and it is with this oxidized deposit that we are at present principally concerned. Sulphides below the oxidized zone begin to appear about 20 feet below Tunnel No.5.

Goodman Vein.

Toward the footwall side of this schist zone there is a definite and more or less continuous vein of quartz, known as the Goodman Vein. The quartz itself varies in thickness from only a few inches to 11 or 12 feet. The vein, while not continuously exposed, can be traced over most of the length of the 3 claims mentioned. On the Gold Belt Roll Claim several shafts and many prospect holes have been put down by former operators, while other small prospect holes show the vein to continue on through the other two claims. The only drifting of consequence which has been done on this vein is 90 feet in the footwall drift of Tunnel No.5.

Sampling of this Goodman Vein was done by the writer in the places and with the results shown below.
1. Samples 5, 7, and 8 in the footwall drift, No.3 Tunnel, and Sample 88 in the surface showing above, shows,
   Estimated Width 6 Ft.—Average Value $10.50 gold per ton.

2. Samples 28 and 29, taken in a prospect hole about 150 feet easterly along the strike from the above locality and 50 feet above it, shows,
   Width 11 Ft.—Value $10.60 gold per ton.

3. Samples 21, 22, and 27, taken at or near the Spanish Shaft, show,
   Estimated Width 11 ft.—Value $10.15 gold per ton.

4. Sample 40, taken in 6 channels over about 6 feet of mostly quartz at the Incline Shaft, shows.
   Width 6 Ft.—Value $19.60 gold per ton.

Note that the distance along the strike between the first and the last of these samples is about 850 feet. The vein apparently continues on through the remainder of this claim, a distance of 300 feet, and then on through the other two claims, a distance of 2000 feet more. It is of course not exposed over all of this distance.

These showings indicate the importance of the Goodman Vein as a probable producer of ore of good grade occurring over substantial widths. The amount of work done on the vein however, is not enough to block out any substantial tonnage of ore.

Hanging Wall Ore Zone.

Toward the hanging wall side of this belt of schist is another vein or zone carrying good values. It is developed by Tunnels No.2 and No.3, as indicated below. Samples No.17, 18, 19, 20, 29, 31, 32, 33, and 34, taken along the hanging wall drift of No.2 Tunnel; and Samples No.43 and 44, taken in No.3 Tunnel, indicate and practically prove up an ore shoot 300 feet long, with an estimated width of 7 feet, and an average estimated stoping height of any 60 feet, above the No.2 Tunnel. This block would contain about 12,400 tons of ore. Its average grade, from the samples listed, is estimated at $9.60 per ton gold.

The last 69 feet of this hanging wall drift, from the above show to the breast showed only low values, namely $1.75 per ton in Sample 35 and $1.05 per ton in Sample 10.

Schist Between Goodman Vein And Hanging Wall Zone.

The only considerable workings between these two is represented by the crosscut in the No.3 Tunnel. This, while it does not cross the schistosity at right angles, nevertheless does give a fair idea of the material between the Goodman Vein and the Hanging Wall Zone, at least at this place. Sampling by the writer showed that for a distance of 122 feet, measured southerly from the hanging wall drift toward the Goodman Vein, the average value is only 77 cents per ton, as shown by Samples 1, 2, 3, and 4. (Note that the distance to the footwall drift is 137 feet. The last 15 feet is considered a part of the mineralization of the Goodman Vein. It ran $14.70 per ton, as shown by Sample 8.
There are some quartz showings on the surface between the Goodman Vein and the Hanging Wall Zone and there may be some worthwhile values here. But there certainly are no workings or showings which are enough to serve as a basis for any estimate of tonnage or value.

Moreover, some values have been obtained by the writer and by others stratigraphically below the Goodman Vein and some distance from it, but again there is nothing on which to base any estimate of tonnage or grade.

Conclusions.

My conclusions as regards this property are therefore as follows:

1. There is not 200,000 tons of ore of any mineable grade blocked out and proven on this property. In fact the only ore reasonably blocked out and proven is about 12,480 tons, averaging about $9.60 per ton, shown up by No.3 and No.4 Tunnels in what has been called the Hanging Wall Zone, to which might be added about 2400 tons, averaging $10.60 per ton in the Goodman Vein and partially proven by the footwall drift of No.3 Tunnel and the surface workings above.

2. In my opinion the property nevertheless has a great deal of merit. As far as present indications and workings show, this lies principally in the Goodman Vein, supplemented by the occurrence in what has been called the Hanging Wall Zone. The fact that only 2400 tons of ore is given as partially proven in the Goodman Vein, should not be permitted to obscure the worth of this vein.

3. As regards the mining of any considerable part of the schist belt other than the Goodman Vein and the Hanging Wall Zone, the following. Despite the fact that some values have been obtained in the schist outside of and removed from the above two zones, there is nothing now to indicate that such mining in this area can be done. In fact the only crosscut we have across the schist between the Goodman Vein and the Hanging Wall Zone shows very low values, averaging 77 cents per ton over 128 feet of crosscut in the No.3 Tunnel. The same thing applies to any schist below the Goodman Vein or above the Hanging Wall Zone.

It is not intended to state here that there is not a possibility that some considerable part of this schist belt can be mined, but there is nothing now to show that it can. If later developments show that this is possible, the schist will almost certainly be much lower in grade than anything discussed up to now. On the other hand, if it should develop that the mining of the main schist belt appeared possible, a much lower grade could be worked at a profit.

4. In the foregoing only 12400 tons in the Hanging Wall Zone and 2400 tons in the Goodman Vein have been estimated as proven up or partially proven up. It is nevertheless the writer's opinion that at least 20000 to 25000 tons of ore of approximately the grade shown or a little less, could be counted on to supply a small mill if
such a small mill was planned.

Finally, I wish to again call attention to the Goodman Vein. This is a strong persistent vein, carrying good values over substantial widths wherever it has been opened up by prospecting. It appears to cover a length of about 800 feet on the Gold Belt No.1 claim, and possibly more, and to continue on through Gold Belt No.2 and Gold Belt No.3 claims, a further distance of 3000 feet. It is known to go down for more than 100 feet and there is good reason to suppose that it will go to considerable depth. While it is not known that the gold values will continue undiminished into the sulphides underneath the oxidized zone, there is good reason to believe that they will. In my opinion, the Goodman Vein offers the best chance of developing a profitable mine.

Trusting that this gives you the information required at this time,

I am

Respectfully,

William H. Craig

307 First National Bank Bldg.
Duluth, Minnesota.

Original and one copy to Hollo H. Chaffee, Duluth, Minn.
One copy to George H. Allison, Blythe, California.
One copy to Karl A. Clemons, Chicago, Illinois.