

CORRESPONDENCE

“HOW MUCH GOLD THERE IS AT HUTTI”

[The following two letters have been received making constructive as well as destructive Comments on the Editorial note which appeared in the October issue of the Journal (vol. 44, No. 4). We reproduce below the two Comments and Reply from the original authors – Ed.]

(1)

The first letter is from H.S.M. Prakash, No. 608, 45 Cross, Jayanagar, 6th Block, Bangalore 560 011.

To make gold mining attractive, floating of new private companies has to be encouraged by giving some subsidies and incentives. Every prospect (to start with old/ancient workings) should be probed to a depth of 200 meters. If KGF and Johannesburg can go up to 3 km and Hutti can go beyond 1 km, why not Bellara or Yeppamanu or Bisanattam or Jonnagiri or Gadag go beyond 1 km. All schist belts are similar in almost all respects. Then, there should be by and large equal potential in all the schist belts. We should not be carried away by sampling only the top oxidised portions, outdated exploration techniques and analytical methods. Isolated exploration programmes in different belts will not give a comprehensive picture about continuity of structural controls, metallogeny etc. Intensive beltwise programmes will lead to proper understanding of a particular gold province. There are more than 65 old working groups in Karnataka, more than 20 in Andhra Pradesh and equal number in Kerala and other States. A thorough reevaluation of these workings in the light of the recent developments in conceptual approach and mining techniques will definitely lead to atleast 10 potential mines, small or big. We will have to change our views about the size of the mine, life of the mine and size of the companies. Mechanisation wherever possible will reduce the salary bills. Also, the mining townships should be considered as hamlets by the State governments and all facilities such as medical, education, transport, electricity, community development etc., should be provided in return for the taxes paid by the company and its employees. When small villages, where nothing is produced, are given these facilities, why not extend the same to a useful economic industry like gold mining. This will reduce the expenditure on the part of the mining companies and may be used for exploration programmes (R & D) in new areas and the saved expenditure will add to a profitable golden venture.

(2)

The second letter is from M. Ziauddin, formerly of the Geological Survey of India, (26, 15th Cross, J.P.Nagar, IV Phase, Bangalore - 560 078). He writes:

1. The entire paper “How much gold is there at Hutti?” is an exercise in futility as has been brought out clearly in the following lines.

2. The authors have postulated that in all the gold producing countries, gold has come from auriferous granite-greenstone regions and have linked the potentiality of gold to be directly proportional to its areal extent (5 Km²/658 tonnes of gold). They have also stated

without amplification that the geological conditions prevalent in other countries are also similar. But what exactly they are, are best known to the authors themselves. The facts, however, belie the contention in as much as about 75% of the total world gold production (barring the erstwhile USSR & China) has come from Precambrian conglomerates of South Africa and not the greenstones. In so far as the remaining part of the production, chiefly coming from USA, Canada and Australia is concerned let me briefly review the exact position. With regard to USA most of the gold including placers has come from 5 districts: (i) In Motherlode, California gold mineralisation is in phyllites, slates, schists, and greenstones of Jurassic and Carboniferous, whereas in Grass Valley it is in Paleozoic to Jurassic rocks and the intrusive granite pluton. (ii) In Cripple Creek, Colorado, mineralisation is in Tertiary volcanic craters while in San Juan region it is in Paleozoic and Mesozoic sediments. (iii) In South Dakota, mineralisation is found in the Homestake formation comprising altered precambrian sediments. (iv) In Alaska Juneau, it is in altered Triassic volcanic rocks. (v) Gold mineralisation in Nevada is in sediments of Tertiary age. Most of the Canadian deposits are in Temiskaming sediments and Keewatin metavolcanics of Precambrian age. The gold deposits of Australia (Kalgoorlie) are in the Older and Younger greenstones of Precambrian age while those of Bendigo and Ballart are in folded slates and sandstones of Ordovician age. The Moro Velho gold deposit of Brazil is in pegmatite. The USSR vein gold deposits are in granitic rocks of Paleozoic.

3. It will be seen from the above that the contention of granite-greenstone as a source of gold all over the world is a fallacy not borne out by facts and that the geological milieu, is also not similar. After demolishing the theoretical premise on which the edifice of potentiality of Hutti gold deposit has been built, let me turn specifically to the edifice itself, namely, How much gold is there at Hutti?

4. It is well known that a gold-bearing reef consists of an oreshoot, lean ground and barren ground and that for purposes of reserves estimation it is the cumulative strike lengths of the oreshoots which is taken into consideration with a reasonable cut-off depending upon economics of mining and profitability and not the entire reef itself. In the present case, the total strike length (16.95 km) of all the reefs has been considered for reserves estimation.

5. Furthermore, the best howler of the century is the projection of depth from an approximate 700 metres for all the reefs to a giant leap of 3000 metres by drawing a wrong analogy from KGF. Projections to certain reasonable depths are made on the basis of the behaviour of the oreshoots in the upper levels such as pitch, underground exploratory drill holes and development data as well as other geological and geophysical data. At a time when gold mining has been privatised and foreign investment is encouraged such absurd appraisals as those by the authors would make the investors shy and take to their heels leaving their skins behind. Again, for purposes of reserves and grade estimations other factors such as, mining losses, dilution and allowance for non recoverable gold which is likely to go into the tailings depending upon the metallurgical operations are also taken into consideration. Generally, there is always a difference between the *in situ* geological reserves and grade and the recoverable reserves and grades which may be about 1-2 gm/t. If this provision is made applicable both the reserves figures and grade would come to a naught and the claim will become a myth. The most fatal mistake which has been committed by the authors is to render the paper gold into rupees without any feasibility studies and preparation of a project profile. Unless the costing is done, the value of gold of more than 30,500 crores less 2000 crores is

of no consequence especially when mining is envisaged to a depth of 3 km. If KGF is any guide, the BGML is unable to mine gold from a depth of 3 km when the grade is 10 gm/t. The mineable grade in one of the South African mines is more than 10 gm/t at a depth of 3.5 km.

6. Because of harpings on a wrong note, it is no wonder that the Geological Programming Board has turned down the proposal of creating a Gold Commission/ Authority.

7. The authors have expressed their firm conviction about the immense potentiality of gold in India and at the same time expressed a doubt about it by punctuating it with a question mark in respect of Hutti. It is hoped that they will show their courage of conviction also at least in the case of Hutti field otherwise I can only pray "Forgive them Lord they do not know what they are saying".

The authors have furnished the following reply

The following are our replies to the points made by your correspondent who, instead of reinforcing his arguments with data, has only indulged in intemperate language.

1. No exercise is futile which has the aim of waking those who have gone to sleep, oblivious of the paramount need for increasing production of gold in the country.

2. The irate critic has totally missed the message intended to be conveyed in our note. It was intended to project the fact that the auriferous greenstone belts of Karnataka, especially those in the eastern part of the craton, are potentially rich, containing significant amounts of gold, and in no way inferior to the gold-bearing greenstone belts of the other continents. The purpose behind the note was not the drawing up of a feasibility or project report. It was a plea for action.

3. Great mineral discoveries are made by those who have dared and taken a certain amount of risk. Drilling for oil in desert regions with no surface indication and offshore are instances in point. Geological arguments point to a possibility of striking a rich resource. There is no way of proving beforehand with absolute certainty the availability of ore.

4. The estimated overall *in situ* reef grades within the block are based on the actual results from the original 17 years and recent 40-odd years of production. These indicate an overall payability percentage (ore-shoots) for all lateral development to date of 47%, lean ground (fringes of ore-shoots and isolated lengths of ore) of 12%, and barren ground (which carries some, usually low values) of 41%. An overall reef grade, (based on these percentages and actual grade for ore-shoots and estimated grades for lean and low-grade ground) has only been applied to the developed portions of the reefs. The remaining unexplored portions of the reefs have been given an estimated grade of 1.03 gm/t. The note is an approximate estimate of the possible total gold content of the block.

5. The Hutti reefs are gold-quartz veins hosted in shear zones which, in general, have great depth penetration, as demonstrated in the Kolar Gold Field. The depth of the Hutti schist belt was determined in 1986-88 by the Geological Survey of India to be 3.5 km. and it is reasonable to assume that the shear zones will extend in depth. Gold has not rained from heaven, but has come from below, from the mantle region. Whether the appraisal deters or attracts foreign investors, remains to be seen. The present indications are, that they are very much impressed by the distinct possibility of stepping up gold production. Such foreign

investment is not, however, a panacea for the officially induced malaise which has debilitated the industry for the past 30 years.

Hutti gold mines started in a small way with a production of just fortytwo tonnes per day. It has steadily and surely developed step by step despite the constraints of official policies. Today it has a broken reserve of 6,75,000 tonnes, a proved reserve of 2.61 million tonnes, and a probable reserve of 3 million tonnes, a total of 6.285 million tonnes, at a grade of 6.67 gm/t, to a depth of only 720 metres. A much larger tonnage of possible reserves of lower grade also exists. Provided adequate resources are made available preferably through public participation and there is efficient management, the mine will continue to develop level after level and reach 3000 m level eventually. There is no doubt about it. It is not fanciful thinking, but based on hard reality, and reasonable assumptions and projections.

6. In our note we have utilised all the geological evidence available which suggests the continuity of ore, both along strike and depth, indicating the existence of substantial quantities of gold in Hutti and its neighbourhood. Nobody can take exception to such an exercise except those who like the critic of very limited vision who believe that the present set up cannot be improved and refuse to look forward to a better future. Hutti, truly, is a giant gold prospect with plenty of potential.

Those who are forever taking aim, will score no hits, and the future lies with people who dare to take a certain amount of risk. Far from scaring away investors, our recent analysis of the gold scene in India, has served to enlarge their vision and quicken their responses. We are glad that the Hutti gold mine authorities have decided on increasing the milling capacity from 1000 to 3000 tonnes per day. A great deal of planning and wise management is needed to achieve the necessary targets and they should go ahead with their development programme despite the carping criticism.

The discouraging aspect facing us is the lethargy of official agencies and the 'do nothing' attitude of governments. A more positive outlook and a new initiative is necessary, freed from the shackles of the past, which only an independent Gold Authority can be expected to take. Hence our plea for creating such an authority. If this is ignored, it is the country which suffers, letting go an opportunity to forge ahead.

7. If the country has to become economically independent and not lead a miserable existence on borrowed money, it must gear itself up to take a quantum leap in gold exploration and mining. To facilitate this, it is advisable to prepare preliminary estimates of possible total gold content of the known auriferous blocks, for which information is available, to depths beyond those reached by recent limited drilling or underground investigations. A start has been made in this direction with the Hutti mining block where plenty of information was readily available. Let critics come out with their own estimates. Mere lamenting and (mis) quoting from the Bible (St. Luke, ch. 23, v. 34) is no answer. Let there be some constructive thinking with the aim to build a prosperous India.

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