

**1ST MEETING OF
CENTRAL GEOLOGICAL PROGRAMMING BOARD (CGPB) COMMITTEE ON
FERROUS MINERALS (IRON, MANGANESE, CHROMITE, ETC.)
27th & 28th JULY, 2009**

MINUTES

01.01.00 The 1st meeting of the reconstituted CGPB Committee on Ferrous Minerals (Group-I) was held on 27th and 28th July, 2009 in the B. Srikantan Conference Hall of GSI, AMSE Wing, Bangalore under the Chairmanship of Shri M.M. Swamy, Dy. DG and HOD, ER, GSI and the Convener of the CGPB Committee (Group-I). The list of members and invitees who attended the meeting is appended as annexure.

01.02.00 **WELCOME ADDRESS BY THE MEMBER SECRETARY**

Shri J.N. Ray, Director, Technical Coordination Division-I, ER, GSI and Member Secretary of the reconstituted CGPB Committee on Ferrous Minerals (Group-I) welcomed all the members and invitees present in the meeting. He thanked Dr. A.K. Sinha, Dy. DG, AMSE Wing, GSI, Bangalore for accepting the proposal of hosting the meeting. He stated that Karnataka is one of the States rich in ferrous minerals and thus Bangalore was chosen as the venue for the meeting. He hoped that the two days deliberations and discussions would be very much fruitful and would led to meaningful recommendations. He requested Shri M. M. Swamy, DDG & HOD GSI, ER & convener of the CGPB Committee (Gr-I) to preside over the meeting.

01.03.00 **OPENING REMARKS BY THE CHAIRMAN**

Shri M. M. Swamy, Dy. DG, and HOD, ER, GSI and the Convener of CGPB Committee (Group-I) on Ferrous Minerals thanked Dr.A.K. Sinha, Dy. DG, AMSE Wing, GSI, Bangalore for hosting the meeting. He welcomed all the participants including Shri R.N. Srivastava, Dy.DG, Op: Karnataka & Goa, Shri H.P. Saxena, DDG, Op: A.P., SR, GSI, Shri B.K. Jena, Dy. DG, Op: Orissa, GSI, ER, Shri A.C.R. Das, Industrial Adviser, Ministry of Steel, New Delhi and other delegates from state DGMs and private/ multinational organizations for attending the meeting. He impressed upon the role of CGPB in organizing regular meetings to coordinate activities of GSI, IBM, MECL, NMDC, State DGMs and other private companies in formulation and effective implementation of field programmes in the field of exploration and prospecting for mineral commodities of the country in addition to Geological mapping and other societal issues related with geoscience. He emphasized the importance of this committee which deals with ferrous minerals which are the back bone of India's economic / infrastructure growth. He requested all the members to actively participate in the deliberations and come out with positive suggestions in the true spirit of national development. The Chairman, then requested Dr. A.K.Sinha, Dy. DG, AMSE Wing, GSI, Bangalore to give his

comments in connection with the meeting.

- 01.03.01 Dr. A.K.Sinha, Dy. DG, AMSE Wing, GSI, welcomed all the delegates and emphasized that the State Karnataka has the special significance in view of the ferrous minerals, commodities that pertain to this Committee/ Group. He hoped this meeting would come out with constructive suggestions on future course of action.
- 01.03.02 Shri R.N. Srivastava, Dy.DG, Op: Karnataka & Goa welcomed all the dignitaries and remarked about the threshold values of the minerals, particularly chromite. He suggested for revaluation of all the deposits in the light of present threshold values.
- 01.04.00 **CONFIRMATION OF THE MINUTES OF THE 10TH MEETING ON METALLIC MINERALS**
- 01.04.01 Member Secretary, CGPB Committee Gr-I tabled the minutes of the 10th meeting which had been circulated to all the members. Since there was no request for modification, the minutes of the 10th meeting were accepted unanimously.
- 01.05.00 **DISCUSSION ON THE FOLLOW UP ACTION OF 10TH MEETING**
The Chairman requested the Member Secretary to discuss on the issue. Member Secretary, CGPB Committee Gr-I informed that no follow up action was made known by any member. He then discussed relevant chapters of the 10th meeting of CGPB Subcommittee Gr-I (Metallic Minerals) para wise.
- 01.05.01 On elaborate discussion on para 10.08.01 regarding furnishing information on the status of green field, brown field and lease hold areas by the State DGMs to GSI and IBM, Dr. Madhukar representative of DGM, A.P. replied that they had furnished the data to IBM and have the plan to put the same into their website. He also informed the house that DGM, A.P. received number of lease applications and virtually there is no area left for exploration by government departments. Dr. A.K.Sinha, Dy. DG, AMSE Wing, GSI added that GSI, AMSE Wing has prepared the map on status of RP and is being periodically updated with the data input from DGMs. In this context, Shri D.V. Pichamuthu, representative from FIMI pointed out that DGMs did not clear the applications within a reasonable time and some state DGMs had taken even 8-9 years to issue clearance for RP. Shri N.B. Sadigale, Dy. Director, DGM, Maharashtra informed the house that the status of free hold areas is being notified in their website from time to time. Dr. Bhake, Mineral Economist from IBM emphasized that after the lock-in-period (usually for 3 years) State DGMs have to ensure vacating the land provided for RP. Shri B.K. Jena, DDG, Op:Orissa, GSI, ER also informed that DGM Orissa has not provided required data on vacated land in RP areas in Orissa. Member Secretary pointed out that availability of this data from the DGMs will help GSI to formulate the Annual Programme. He then requested all the DGMs to send the information in electronic mode so that the same can be periodically updated in real time situation. The Chairman cited the examples where in GSI could not formulate its mineral investigation programme due to lack of intimation of free hold areas by some DGMs inspite of repeated requests. He requested all the State DGMs to provide the details about green field and lease hold status (RP, PL & ML) to IBM as well as to

GSI.

(Action: All State DGMs)

01.05.02 On para 10.08.04 regarding holding of the SGPB meeting by the State DGMs in time before the CGPB meeting, Dr. G. Madhukar , Jt. Director of DGM, A.P. informed that the SGPB will be held in first week of August, 2009. Shri K. Selvaraj, Dy. Director of DGM, T.N informed that the meeting has already been held. The SGPB meeting pertaining to Maharashtra was not held till date as informed by Shri N.B. Sadigale, Dy. Director, DGM. Shri R.N. Srivastava, Dy.DG, GSI, Op: Karnataka & Goa informed that SGPB of Karnataka will be held on 1st August, 2009. Shri A.K. Mishra, Director, GSI, Op: Chhattishgarh, Raipur informed the house that SGPB Chhattishgarh was likely to be held in the month of July, 2009 but no communication had been received till date. The Chairman stressed the need of conduction of SGPB meetings in time to understand the need of the states before launching effective Field Season programmes. He requested all State DGMs to conduct SGPB meetings in time and send the minutes of the SGPB meetings so that the same could be taken care of by CGPB.

(Action: All State DGMs)

01.05.03 On para 10.08.07 regarding the requirement of reports by DGM Chhattishgarh from GSI, CR, Raipur no representative from the DGM was present to reply. Hence, the action in this regard is not known to the House.

(Action: DGM, Chhattishgarh)

01.05.04 On para 10.08.15 regarding submission of a comprehensive map by DGMs to GSI showing status of PL, ML and free hold areas, Shri N.B. Sadigale, Dy. Director, DGM, Maharashtra informed the house that they will submit it shortly.

(Action: DGM, Maharashtra)

01.05.05 On para 10.09.03 regarding resource augmentation or depletion of iron ore with 45% Fe cut off, Shri D.P. Selvam of NMDC informed that the realtime resources are being actually augmented consistently

01.05.06 Regarding reassessment of iron ore at Mailaram area, as mentioned in para 10.09.11 Dr. G. Madhukar, DGM, A.P. informed that it is related with copper ore and not iron. Thus it should be corrected in the minutes. The area name stands corrected to Bayyaram following input by Shri H.P. Saxena, DDG, GSI, Op:A.P.

01.05.07 On para 10.09.13 regarding information on iron ore investigation in Sindadurg district to be provided by DGM Maharashtra to GSI, CHQ, Shri N.B. Sadigale, Dy. Director, DGM replied that they did not receive the minutes. Member Secretary informed that the minutes were sent to all the members of the committee.

01.05.08 On para 10.09.14 regarding MOIL to assess the ore reserve under UNFC system, there was no representative from the MOIL in the meeting to confirm the action taken. Hence it could not be discussed.

01.05.09 On para 10.09.17 regarding DGM, M.P. to carry out the exploration work (viz.

mapping, sampling, grade-reserve calculation etc.) in a systematic way, there was no representative from the DGM and hence, it could not be discussed.

01.05.10 On para 10.09.17 regarding exploration for low grade iron ore, Shri R.N. Srivastava, DDG, GSI, Op: K&G informed that the information has already been sent to Shri A.K. Saha, Director, and Nodal officer, GSI, ER for assessment of low grade iron ore.

01.06.00 **REVIEW OF WORK FROM OCTOBER, 2008 TO MAY, 2009**

01.06.01 There was no representative from DGM, Orissa; hence their work could not be reviewed.

01.06.02 Dr. C.V. Raman, Geologist (Sr.) , DGM, Karnataka presented the work done and informed the house about two low grade iron ore prospects explored by mapping on 1: 50,000 scale and estimation of reserves thereof. The grade varies between 38 and 50% Fe. The Chairman questioned the need for remapping the area on 1:50000 scale when the entire country had already been mapped by GSI on this scale and the geological maps are already available in GSI portal. He reiterated to consult GSI reports and stressed the need of systematic approach in targetting / exploration/estimation of ore reserves along the BIF band. Shri B.K. Jena, DDG, GSI, Op: Orissa wanted to know which part of the BMQ band is associated with iron ore. Shri A.K. Ray, Geologist (Sr.), GSI, CHQ queried about the method adopted for reserve calculation. Dr. Raman replied that it was only the preliminary stage of investigation. Most members including NMDC, DGM, A.P. along with the Chairman observed that the reserve estimation should not have been attempted until the ore body is systematically studied. The Chairman informed that GSI has decided to train officers of State DGMs free of cost in GSI, TI. State DGMs may contact GSI, TI or access to GSI Portal for all necessary information.

(Action: DGM, Karnataka)

01.06.03 There was no representative from DGM, Jharkhand; hence their work could not be reviewed.

01.06.04 Shri N.B.Sadigale, Dy. Director, DGM, Maharashtra informed that the organization has no item of investigation in the current field season. However, the DGM has proposed a collaborative item on manganese investigation with GSI, CR which may be considered as an agendum.

01.06.05 There was no representative from M/s Jindal Steel & Power Limited; hence, their work could not be reviewed.

01.06.06 There was no representative from MOIL, Nagpur; hence, their work also could not be reviewed.

01.06.07 Shri Ajit Saho, Project Leader, India Iron Ore from M/s Rio-Tinto informed the

house about the work done in brief. He emphasized that Rio-Tinto had applied for number of RPs for multiple commodities and also been looking for iron ore. Apart from that, the organization was engaged in joint venture with NMDC, OMC etc. in the field of mineral exploration. In Malangtoli area, they had applied for RP for the same block for which NMDC also had applied. On a query from the Member Secretary about RPs in Jharkhand state by Rio-Tinto, Shri Saho informed that five RPs have been launched in an area of about 8600 sq km in the extension part of the horse shoe belt.

- 01.06.08 Dr. Bhake, Mineral Economist of IBM informed the house about the activities of the organization. On a request from Shri Pichamuthu of FIMI about the reduction of time span of ore reserve estimation from the existing 5 years norm, Dr. Bhake replied that it was a huge task to handle about 14,000 deposits and IBM got the data from the individual mine owners after 9 months and subsequently these were processed through BRGM system which itself is a long process, hence difficult to reduce the time span. Dr. Madhukar of DGM, A.P. wanted to know if IBM is considering downward revision of cut off grade for iron ore to 45% Fe while calculating reserve. Dr. Bhake replied that IBM has proposed only threshold values that are yet to be accepted by Ministry. Shri G.C. Das, Director, GSI, Op: Orissa wanted to know about the permissible limit of silica and alumina in 45% Fe ore. Member Secretary also opined that IBM has to fix the optimum values of other constituents when fixing threshold values of any mineral commodity. Shri G.C. Das pointed out that this aspect had not been considered in a meeting on threshold values at Bhubaneswar organized by IBM.
- 01.06.09 There was no representative from OMC, Bhubaneswar; hence, their work could not be reviewed.
- 01.06.10 There was no representative from DGM, Chhattishgarh; hence, their work also could not be reviewed.
- 01.06.11 Shri A.C.R. Das, Industrial Adviser of Ministry of Steel informed the house about the present situation of iron ore in Indian scenario. Demand of iron ore is increasing steadily. He discussed about the requirement of beneficiation and up-gradation of iron ore and its use in industry. The present consumption is in the order of 85 billion tonnes. The requirement would double by 2013-2014. But lumps are mostly used in BF and mini BF. Fines are neither sufficient nor of high grade. Ores with less than 55% Fe are not used but dumped without beneficiation. Even when blending is resorted to, ores with not less than 58% Fe is used. At present pelletisation and sintering is done with fines in a limited way, the former process being costlier. The use of low grade iron ore and iron ore fines is negligible. He emphasized on the utilization of low grade iron ore and iron ore fines through beneficiation. Two R&D techniques for upgrading low grade fines and slimes are being proposed. Rs.118 crore fund has been earmarked for the purpose and NML, RRL, IIT, are being considered for the R&D work. The first method involves conversion of low grade ore to ultrafine and then to pellets

/sinters. The second method involves reduction of +55% Fe ore to small granules (3-5 mm), mixing with non-coking coal and direct smelting without sintering. This technology mooted is yet to be developed. Later, a pilot plan will be set up to ensure feasibility of the method. This low cost option is being explored for beneficiation of low grade fines. He also informed that sintering is the more internationally accepted technology and SAIL is thinking of pilot plant for sintering. Shri Pichamuthu from FIMI confirmed that NMDC was doing very advance stage of beneficiation using Roman technology. Shri D.P. Selvam of NMDC added that 25% + grade of iron ore had been tried for beneficiation.

- 01.06.12 Shri G.C. Pathak, Sr. Manager (Geology) of MECL informed the house about the work done and cited an example of deep drilling up to 1000 m in Australia for iron ore exploration. Shri B.K. Jena, DDG, GSI, Op: Orissa opined that detail structural mapping is very much essential to prognosticate the depth of iron ore deposits before starting actual exploration.

(Action: MECL)

- 01.06.13 Shri D.P. Selvam, Jt. General Manger (investigation) of NMDC briefed the House about the work done. Member Secretary stressed the need of considering the structure of the deposit before putting any vertical borehole. Shri G. C. Das, Director, GSI, OP: Orissa and Shri Ajit Saho, PL of Rio-Tinto also supplemented this point.

(Action: NMDC)

- 01.06.14 Mr. Selvaraj, Dy Director of DGM, T.N. informed that they had not done any work related to ferrous mineral during the period under review.

- 01.06.15 Dr. G. Madhukar of DGM, A.P. informed the House about iron ore prospects in the State. He informed that number of applications were received for PL/ ML for iron ore in Cuddapah, Kurnool, Warangal and Khammam districts. Lot of court cases are pending. Practically, there is no area left as free hold. In Khammam area, the grade is good (66-67% Fe) but all occur as float ore.

- 01.06.16 Shri Durairaj, Director, GSI, TN, P&K presented the work done. He informed that GSI had been carrying out iron ore investigation since F.S. 2005-2006 and presently working in Chengam area in Tiruvannamalai district. Member Secretary pointed out that no progress is shown under PT target. In reply, Shri Durairaj informed that nearly 20 cum PT was done during last month. On query from Shri A. Ray, Geologist (Sr.), GSI, CHQ, Shri Durairaj informed that the reserve of Kelur area is 13.93 m.t. with 33.90% Fe. In reply to a query from Shri A.K. Ray, Geologist (Sr.), GSI, CHQ, Shri Durairaj also stated that there are five BIF bands, identified in this area and iron ore of the area is not sulphide bearing.

- 01.06.17 Shri G.C. Das, Director, GSI, Op: Orissa presented the work done on iron ore investigation. He described three investigations on iron ore of which one was of exploration category, one STM and the other a prospecting item. On a query from

Shri A.K. Ray, Geologist (Sr.), GSI, CHQ, Shri Das informed that 9 boreholes had been completed during the current F.S. Shri A.K. Mishra, Director, GSI, Chhattishgarh Unit, queried whether the phyllite is actually metamorphosed acid volcanics. Shri Das replied that it would be confirmed after getting petrochemical results. On a query from Member Secretary regarding the close association of dolomite and chert with sharp contact which form under contrasting pH condition, Shri Das informed that it was local and both are of primary origin. Shri Das while presenting the prospecting item of Baliadihi area informed that though it was not a good prospect but the objective was to take up a project of low grade iron. Fe content varies from 42- 59.3% in BHJ, lateritic ore and laminated ore. On a query from Shri A.K.Mishra, Director, GSI, on the parent rock for laterite, Shri Das informed that it is both shale and BHJ and laterite occurs as cappings. Shri S.K. Jena, Director, GSI, Op: Orissa supplemented that gold content in the samples analysed is below detection limit. Shri S.K. Jena then presented the work done on manganese investigation.

- 01.06.18 Shri A.K. Grover, Director, GSI, WR, Jaipur presented the work done in respect of the iron ore investigations of Rajasthan. In his deliberations, he informed that there are plenty of old workings in Rajgarh, Nimla areas. Iron ore investigations were carried out in the area east of Khetri copper belt where the zone is characterized by albitisation. Besides Cu prospects, discontinuous zone of U-Mo-V plus Fe-ore with pinch and swell structure is recorded in 70 km X 5 km albitite zone in Ajabgarh Group of Delhi supergroup, while there is a parallel continuous Fe-ore zone outside the albitite zone. The mineralogy is mainly hematite with minor magnetite. Weighted average of Fe content within albitised zone is 57.82% while outside the zone it is 45.62%. The iron ore rich areas have poor basemetal and manganese signature. Ground geophysical survey was used to bring out the covered iron ore bodies which could be proved by drilling. Iron ore in Karath area is associated with albitite zone and calc-silicate rock with fenite. On a query from Shri D.P. Selvam, Jt General Manager, NMDC regarding ore reserve estimation Shri Grover informed that the present study involved a general assessment of the reserves. He informed that M/s Jindal was working in Pur-Banera belt, Central Rajasthan, in Bhilwara area where they had estimated the reserve of iron ore. Answering to a query of Shri A.K. Ray, Geologist (Sr.), GSI, CHQ about the proposal of drilling during next year, Shri Grover informed that Bagholi-Karath area will be taken up for detail exploration including drilling after systematic ground geophysical survey with inclined boreholes at 250 m interval upto a vertical depth of 40 to 60 m. 5km long iron ore occurrence at Toda in forest area is considered for detail exploration. The committee recommended drilling for Fe-ore in Bagholi. Sri Grover also explained the plan for drilling in the area where magnetic anomaly is higher ($> 9000 \gamma$) having no surface exposure. Shri Das suggested drilling from the known area with surface exposure and proceed towards covered anomalous areas. On a query from the Chairman regarding discontinuous bands and fold pattern of iron ore bodies, Shri Grover replied that it was difficult to bring out the pattern of the ore body as the area was soil covered, but the bands show apparent continuity with some pinch and swell structure. These were also

confirmed by the geophysical anomaly. Chairman appreciated the presentation and also appraised the scope of the further work in this area.

- 01.06.19 Shri A.K. Mishra, Director, GSI, Chhattishgarh unit, presented the work done on iron ore investigation. He informed that the deposits in Parwi area, Kanker district, are of high grade though they are of very small dimension. Mining had already been started in Aridongri area. In the iron ore deposits, the BMQ and iron ore bands (mostly massive specularite and associated magnetite bands) occurred together within Bengpal gneiss and associated (quartz) mica schist. On a query from Shri A.K. Ray, Geologist (Sr.), GSI, CHQ regarding the status of chemical analyses of the iron ore bands, Shri Mishra informed that analyses were received for band III only. He also informed that in F.S. 2009-2010, P-II stage investigation was proposed with DM, pitting/ trenching along with scout drilling for all the bands.

Shri Mishra informed that SGPB meeting of Chhattishgarh had not been conducted till date. However a collaborative programme on iron ore investigation with DGM was on the pipe line and DGM has to get the forest clearance for the item. Shri Mishra added that the main problem for taking up the item was not the forest clearance but the law and order problem. Chairman suggested that state DGM should be proactive to take safety and security measures for the officers of GSI. He insisted that before taking up such project, the assurance may be obtained in writing from the DGM.

(Action: GSI, Op: Chhattishgarh, Raipur/ DGM, Chhattishgarh)

On a query from Mr. Ajit Saho, PL, Rio-Tinto about the collaborative programme Shri Mishra clarified that it was discussed with DGM not Chhattisgarh Mineral Development Corporation (CMDC).

- 01.06.20 Shri R.N. Srivastava, DDG, GSI, Op: Karnataka &Goa informed the house about iron ore investigations carried out in Karnataka during previous field seasons. No item on ferrous minerals exists during the current field season. However during Field Season (2009-2010) there would be one item of iron ore investigation in Sandur Schist belt in collaboration with Govt. of Karnataka. Representative of DGM, Karnataka informed the house about the inability of his department in providing a geologist to work with GSI on collaboration mode. Chairman suggested Shri R.N. Srivastava to confirm this statement from the DGM, Karnataka before finalizing the collaborative programme.

(Action: DDG, GSI, Op: K &Goa)

- 01.06.21 Shri Pichamuthu of FIMI informed the house that the estimated ore reserve in Bellary- Hospet mine area is not going to last long due to continuous mining. He requested GSI to take up deep drilling programme within the mine area to augment the reserve. Chairman replied that GSI does not go for any deep drilling activities in existing mining lease area.

01.07.00 **AGENDA FOR DISCUSSION:**

In the meeting three main agenda were proposed to be discussed. These were:

01.07.01 i) Scope of inclusion of other commodities in Ferrous Group besides Iron, Manganese and Chromite: Agenda from the Member Secretary, CGPB Committee, Group-I.: Under this point the Member Secretary proposed that considering similar chemical characteristics, geochemical behaviour and close spacio-temporal association with iron, the elements like Nb, Ta and V may be incorporated in the group of ferrous minerals for this committee. Dr. Pichamuthu of FIMI stressed on the inclusion of titaniferous- vanadiferous magnetite. However, Shri D.P. Selvam of NMDC emphasized that recovery of titanium from titaniferous magnetite is a costly affair. Ilmenite (as titanium commodity) had already been incorporated in Group –III. Shri A.K. Grover suggested that some sample (5-10%) of iron ore may be tested for gold and if found encouraging, these could be intimated to other Committee pertaining to precious minerals. Chairman suggested that all the members may think over the issue of inclusion of other elements in this group for further discussions in the next meeting.

(Action: All the members)

01.07.02 ii) DGM, Jharkhand submitted proposal for the field season 2009-2010 as collaborative item with GSI, Eastern Region on limestone and iron ore. The DGM, Jharkhand is requested to furnish necessary detail information required as per the format of GSI FSP programme for consideration by GSI, ER. Furthermore, they were requested to be in touch with GSI, Op:B&J, Patna and Ranchi offices for any assistance required. No information has been received till date in spite of discussion on this point in SGPB, Jharkhand meeting held on 25.07.2009. Moreover, no member of DGM, Jharkhand was present in the meeting to discuss this issue. Hence, the agendum could not be discussed. The Chairman commented that if the required information is not provided, GSI, ER will not be in a position to take up such programmes. Member Secretary also pointed out that the issue of the payment of Rs. 17 lakhs by DGM, Jharkhand to MOEF towards compensatory afforestation for Ghatkuri iron ore investigation (to be taken up by GSI ER) had not yet been cleared. No confirmation from DGM, Jharkhand was received till date.

(Action: DGM, Jharkhand)

01.07.03 iii) DGM, Maharashtra submitted a manganese ore investigation programme as a joint venture item with GSI, CR, Nagpur. On this issue Shri Sadigale, Dy Director, DGM, Maharashtra informed the house about the background of the joint venture. He informed that DGM, Maharashtra will provide one officer for data processing. Chairman suggested that since it was a collaborative programme, responsibilities may be equally shared. He also suggested that officer of DGM, Maharashtra may better carry out regular field work on equitable basis and the samples have to be analyzed by DGM. Regarding geophysical input, the Chairman suggested that after one or two months of mapping, geophysical party may go for their survey. Detailed mapping may be done later on completion of LSM for the entire area. Chairman also suggested that ore body dimensions have to be checked and the target for LSM may have to be revised downward in view of the ore body dimension and which may not be exceeding 2 sq. km.

All earlier work of GSI have to be incorporated in the background.

(Action: DGM, Maharashtra)

01.07.04 In the miscellaneous item, Shri G.C.Pathak from MECL discussed about forest problem in mineral exploration. The member from MOEF was absent. Hence, nothing could be discussed.

Shri Pathak observed the poor attendance in the meeting. He insisted on making the presence of the members in the meeting mandatory.

Shri A.K. Mishra differed on the point and suggested that along with the minutes of the meeting a polite letter may be sent from the Convener stating that the presence of every member is very much essential for the Committee to discuss all the crucial matters even if the members have no material to present/review. He also suggested to inform CGPB about the poor attendance of the members.

Shri Mishra also informed that there is a provision of participation of one member from each State DGM sponsored by GSI. Shri A.K. Ray, Geologist (Sr.) from GSI, CHQ confirmed the point.

(Action: Member Secretary)

01.08.00 **DISCUSSIONS ON THE TOR OF THE COMMITTEE**

01.08.01 On point 1 of TOR it was suggested that all the State DGMs formulate a five year rolling plan as developed in GSI. Shri Pichamuthu of FIMI suggested taking this point as agenda in all SGPB meetings.

(Action: All DGMs)

01.08.02 On point 2 of TOR on utilization of budget, Shri G.C.Pathak informed that there was no proposal on investigation for the ferrous minerals inspite of having budget provision.

01.08.03 On point 3 of TOR, it was felt that fixing of cut-off values may be delayed as the threshold values proposed by IBM are yet to be approved by the MOM

01.08.04 On point 4 of TOR on public-private partnership, Shri A.K.Ray, Geologist (Sr.), GSI, CHQ informed that recently there was a proposal from De Beers with GSI about magneto-telluric survey and DeBeers had signed MoU. Shri Ajit Sahu, PL, Rio-Tinto also informed that they were doing some work in the Horse Shoe Basin in Orissa in collaboration with govt. departments.

01.08.05 Point 5 of TOR, is being taken care of.

01.08.06 On point 6 on the issue of preparation of status map, Shri Madhukar of DGM, A.P. informed that IBM was doing it. But Dr. Bhake, from IBM explained that they were mainly doing in respect of the mining activity, and not for exploration. Chairman suggested that preparation of status map should be commodity wise and state wise. Member Secretary stressed that it should be done also by state DGMs conveniently in GIS mode for uploading in their respective portals. Chairman

requested all the State Govt. departments and Private agencies to come forward on this issue.

(Action: All members)

01.08.07 On point 7 of TOR on data sharing and dissemination it was suggested that all the members have to find out a methodology as this committee is a nodal agency. Dr. G. Madhukar, DGM, A.P. suggested that all the portals of State Govt. may be linked with GSI portal. Chairman suggested that the format and standardization on data sharing and dissemination may be decided in the next meeting.

(Action: All members)

01.08.08 Regarding the point 8 of TOR it was discussed that IBM was already doing the job. Hence, it was suggested that this point may be deleted from the TOR.

(Action: Member Secretary)

01.08.09 On point 9 of TOR, Dr. Madhukar of DGM, A.P. informed that it was the biggest problem of getting information regularly. He suggested that the committee should monitor it. Chairman suggested that all the members have to be proactive on this issue and this point will again be discussed in the next meeting.

(Action: All members)

01.08.10 Regarding the point 10 of TOR it was made known that the committee had already been doing the job. IBM has been carrying out beneficiation and they publish the data in IBM year book at regular intervals.

01.08.11 On point 11 of TOR it was suggested that any state DGM can approach GSI for training their personnel in GSI, TI.

01.09.00 **CONCLUDING REMARKS BY THE CHAIRMAN**

Shri M.M. Swamy expressed his sincere thanks to all the member organizations and special invitees. He expressed his satisfaction as the discussions were held in a cordial atmosphere. He pointed out that brainstorming on TOR was very fruitful. He informed that it was the first meeting as per the new directive and expressed the hope that all concerned members of the committee will henceforth think and work proactively in the greater interest of the country.

The meeting ended with vote of thanks.

RECOMMENDATIONS/ DECISIONS:

- ✓ All the State DGMs to provide the details about green field and lease hold status (RP, PL & ML) to IBM as well as to GSI.
- ✓ All State DGMs to send the minutes of the SGPB meetings so that the same could be considered by CGPB.
- ✓ State DGMs to formulate a five year rolling plan as is being introduced in GSI.
- ✓ Preparation of investigation status map should be commodity wise and state wise and in GIS mode.
- ✓ All the State Govt. departments and Private agencies to come forward on the issue of preparation of investigation status map.
- ✓ Structure and genesis of ore deposits to be considered as prime factor for exploration of any ore deposit.
- ✓ The optimum values of other constituents may be considered when fixing threshold value of any mineral commodity.
- ✓ 5-10% of iron ore samples may be tested for gold and if result is encouraging, these may be intimated to other Committee pertaining to precious minerals.
- ✓ For the use of low grade iron ore and iron ore fines, more technology has to be developed and lab scale- cum- commercial/ industrial scale pilot plant may be tested.
- ✓ All the members may think about the possibility of inclusion of other related elements in this group.
- ✓ Any state DGM may approach GSI for training their personnel in GSI, TI.
- ✓ Point no. 8 of the TOR of the Committee has to be deleted from the TOR.
- ✓ The format on data sharing / dissemination and its standardization is to be discussed in the next meeting.
- ✓ Portal of all the State Govts may be linked up with GSI portal.

LIST OF PARTICIPANTS

Convener: Shri M.M. Swamy, Dy. Director General, GSI, ER
Member Secretary: Shri J.N. Ray, Director, Technical Coordination Division-I, GSI, ER

Sl.No.	Name, Designation and Organization
1.	Dr. A.K. Sinha, Dy. Director General, GSI, AMSE Wing, Bangalore.
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12.	Shri A. K. Grover, Director, GSI, Op: Rajasthan, WR, Jaipur.
13.	Shri D.V. Pichamuthu, Director, FIMI, SR. Bangalore.
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19.	Shri N. B. Sadigale, Dy. Director, DGM, Maharashtra.
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21.	Syad Abraham, Sr. Geologist, DGM, Karnataka.
22.	Dr. C.V. Raman, Sr. Geologist, DGM, Karnataka.
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