

MINUTES OF THE 46TH MEETING OF THE STATE GEOLOGICAL PROGRAMMING BOARD (SGPB) HELD AT BHUBANESWAR ON 5TH FEBRUARY 2011

46.0 : The 46th meeting of the State Geological Programming Board (SGPB) was held at Hotel Mayfair, Bhubaneswar on 5th February 2011 under the chairmanship of Sri Manoj Ahuja, IAS Commissioner-Cum-Secretary, Deptt. of Steel & Mines, Govt. of Orissa and Chairman of SGPB. Sri S.K. Das, Director of Geology & Mines and Member Secretary, SGPB and Sri S.C. Rath, Director, GSI (Operation: Orissa) were on the dais. A list of participants is annexed in Annexure-I.

46.1.0 : At the outset, Sri S.K. Das, Member Secretary, SGPB welcomed Sri Manoj Ahuja, IAS, Chairman SGPB and Sri S.C. Rath, Director, GSI (Op: Orissa) and all the participants from Central & State Govt. Deptts, PSUs, etc.

Apprising the objective of SGPB, Sri Das mentioned that the role of SGPB is to co-ordinate the geo-science activities particularly exploration in the state and to monitor exploration programme conducted by different organisations. Sri Das elaborated the role of the Directorate of Geology, Orissa in the field of exploration of various economic minerals such as coal, bauxite, iron ore, manganese, chromite, limestone, diamond, beach sand minerals and gemstone since last 50 years there by augmenting mineral resource of the state.

Briefing the recent exploration activities of the Directorate of Geology, Sri Das stated that during 2010-11, 20 investigation projects has been undertaken viz: Diamond (2), Coal (5), Geophysics (1), Chromite (1), Basemetal (1), Limestone (3), Beachsand (2), Bauxite (2), Iron Ore (1), Mineral Potential Survey (1) & Coastal Geomorphology (1). The Directorate has given thrust on exploration of bauxite and limestone in view of the recent demand. The coal investigations are being carried out on sponsored basis for CMPDI, OPGC & SETSPL.

The Directorate has set a target of 10,000 m drilling during the year 2010-11 and has procured one wire line drilling rig capable of drilling 25 m per day and can meet the challenge of deep drilling in coal fields in the years to come.

He further stated that proposal is being made to cover balance area of the state by Aeromagnetic Survey to expedite mineral exploration task. Action

plan is being formulated for study of Ni-Cr content in the minedout overburden in Sukinda valley for assessment of resource in the light of revised threshold value. He expressed that collaborative work with GSI & IBM would be necessary for mineral development of the state. He requested all the participating organisations to deliberate on their activities, achievements and advised to furnish specific suggestions during discussion.

46.2.0 : **ADDRESS BY DY. DG, GSI OP: ORISSA**

On behalf of Dy. DG, GSI Op: Orissa, Sri S.C. Rath, Director addressing the house welcomed all the delegates. He briefed the role of GSI in the growth and development of minerals in the state. Sri Rath informed the objective and implementation of five missions by the GSI in the geo-scientific sector viz: Mission-I (Baseline Geo-science Data Generation), Mission-II (National Resource Assessment), Mission-III (Geo-informatics), Mission-IV (Fundamental Multidisciplinary Geo-science and Spatial Studies) & Mission-V (Training & Capacity Building). According to Sri Rath, GSI training institute is of world standard and imparting quality training to geoscientists of GSI, other earth science organisations and universities of the country. One Field training institute has already been lunched at Baula where two batches have been trained. State Director of Geology and universities are invited to avail the facilities. He added that all the exploration data are now available in GSI portal and requested all to make best use of it. He assured that GSI will co-operate and guide any one, in the interest of the state.

46.3.0 : **OPENING ADDRESS BY THE CHAIRMAN, SGPB:**

Sri Manoj Ahuja, IAS, Commissioner-Cum-Secretary, Deptt. of Steel & Mines and Chairman, SGPB welcomed the delegates and invitees from GSI and other organisations. The chairman laid emphasis on issue of assessment of actual resource in the leasehold areas within specified period. Govt. of India is bringing amendment in MMDR Act. for assessment of ores/ minerals within the leaseholds. State Directorate of Geology should be well informed of the act for implementation. The chairman expressed satisfaction over the mission concept of GSI. He informed that there is no constraint of funds. He suggested that coordination among organisations like GSI, DG and CMPDI would increase efficiently. Universities are to be strengthened for carrying out high quality cutting edge research to produce good geoscientists and suggested the university representatives to interact with DG (O) to build up knowledge. The chairman added that about 75000 sq. km area of the state

has been covered under aeromagnetic survey and proposals has been initiated to complete aeromagnetic study in rest of the area from view point of mineral exploration. He further added that GSI & IBM should put data in the website for tenement registry. In the meanwhile Revenue Deptt, Keonjhar has started computerization of data and Steel & Mines Deptt. would digitize all the data. He laid emphasis on upgradation of present technology and expressed his hope that the discussion will be more fruitful and would enable for effective implementation of the formulation of action plan. The chairman remarked that Orissa is endowed with most minerals, hence there should be good strategy and best policy to make the state best of all in the country.

46.4.0 : **CONFIRMATION OF MINUTES OF 45TH SGPB MEETING:**

The Member Secretary, SGPB sought comments on the minutes of 45th SGPB meeting and with the permission of the house the minutes were confirmed.

46.5.0 : **REVIEW OF WORK DONE FROM APRIL 2010 TO OCTOBER 2010:**

Representatives of different organisations were requested to present the achievements and highlights of work carried out by them:

46.5.1 : **GEOLOGICAL SURVEY OF INDIA, OP: ORISSA:**

Sri S.B. Roy, Director, GSI gave a brief presentation of the work undertaken in Orissa under different missions: Under Mission-I he stated that specialized Thematic Mapping (STM) of the northern contact between EGMB & Singhbhum craton in Jajpur and Dhenkanal districts, STM in Badampahar-Gorumahisani belt in Mayurbhanj district for PGE, Regional Geochemical survey in parts of Keonjhar and Jajpur districts have been undertaken.

Under Mission-II exploration for iron ore in Kasia-Thakurani sector in Keonjhar district, and in Ghoraburhani-Sagagahi block in Sundargarh district was carried out. A total of 13.71mt of iron ore under (332) category has been estimated in Ghoraburhani block upto 74.00m depth. Further exploration for manganese ore has been carried out in Barlagoda-Champusahi belt, Bolani block and Damurda South blocks in Keonjhar district which occurs in association with upper shale. He further apprised that exploration of chromite has been undertaken in Maulabhanj and Tangeria area, Raibola and Kahneipal areas of Dhenkanal district. Chromite is found to be associated with weathered and silicified serpentinites in Tangeria.

Sri Roy stated that as per MoU signed with OMC Ltd., GSI has undertaken exploration of PGE in Bangur Mines of OMC in Keonjhar district.

Stringers and lenses of chromite have been noticed in ultramafics. Magmatic breccia contains PGE mineralization while Bangur gabbro has intruded later. He added that a cluster of 20 PGE zones has been demarcated. Association of Pd, Sb, Au, and Ag has also been identified.

Under Mission-III (Geoinformatics) creation of theme based data base in degree sheet 73 D & 73 B has been undertaken. Database has been created in Oracle software for mining theme in case of coal and graphite. A total of 32 layers of spatial data namely lithology, boundary fault etc. have been generated and standardised 6-digit geometry ID has been assigned to lithounits. In mapping, theme copying of 13 toposheets have been done out of 16. Besides district geological maps of 19 districts has been prepared and loaded in the portal in which all the information would be available in a short time

Under Mission-IV, study of coastal processes in Jagatsinghpur district has been undertaken for shoreline changes, geological and geomorphological studies and beach profiling in the area between Ambiki and Siali.

46.5.2 : **National Energy Resources Mission IIB (Coal Wing):**

On behalf of GSI Mission-(IIB) coal wing, Sri R.N. Patra, Director presented the work done pertaining to coal exploration. He informed that GSI is the nodal agency for exploration of coal. He stressed on the need of energy raw materials for the growth of GDP. In energy sector 51% of the primary energy is coal in which India ranks 4th in the world.

Sri Patra drew the attention of chair regarding three areas of concern:

- Talcher coal is the only coal in India suitable for conversion into petroleum
- Underground coal may be gasified into cooking gas. For this purpose Talcher coal is most suitable having higher 'H' content.
- In Talcher area many small scale industries are coming up over the Barakars, the main coal bearing formation, which need to be restricted. Rather constructions are to be made in barren areas i.e. Precambrian, GSI has prepared Barakar map and can provide to DG (O) on request.

Action: S&M Deptt. DG (O)

He assured that GSI will provide information regarding explored and unexplored blocks to avoid duplication.

Action: GSI, Mission-IIB

Regarding Ib Valley, shallow coals are not available. Coal Bed Methane study is very important which can be utilized suitably in future.

Sri Patra gave a brief account of coal exploration in Talcher and Ib Valley coalfield by GSI (Coal Wing), Kolkata. In Talcher, exploration of coal was continued in Kudanali NE block and Simlisahi-Kunjabiharipur block under promotional scheme. In Kudanali block total of 151.15 m was drilled in one borehole (TKNF-II) where 5 regional Barakar coal seams (II, III, VI to VIII) of 4.60 m to 28.78 m thickness and one Karharbari Seam (I) of 0.86 m thickness has been recorded. In Simlisahi-Kunjabiharipur block 1729.75m has been drilled in 7 BHs. Ten regional Barkar Seam-I zones (II to XI) with thickness from 1.91m to 30.94m has been intersected. Besides 233.90 m drilling has been achieved in two BHs in Harichandrapur block where regional seam zones II & III with cumulative thickness of coal ranging from 3.51 to 18.27 m was intersected. Further under regional exploration of coal in Nuagaon north block a total of 16.40 m has been drilled in BH -TNN-1.

In Ib Valley coalfield, exploration was continued in Piplimal-Khairkuni block under promotional drilling. In Piplimal-Khairkuni block a total of 685.40m has been drilled in two BHs. Four regional Barakar coal seam zones (Parkani, Lajkura, Rampur & Ib top to bottom) ranging in thickness from 5.44 m (Ib) to 41.18 m (Lajkura) were intersected. Further in Khariapara block, a total of 282.30 m drilling has been done in one borehole. Two regional Barakar coal seam zones (Belpahar & Parkhani) ranging in thickness from 14.31m (Parkani) to 21.83 m (Belpahar) has been recorded.

46.5.3 : DIRECTORATE OF GEOLOGY, ORISSA:

The exploration activities of the Directorate of Geology, Orissa was presented by Sri T. Mohanta, JDG. He informed that in total 20 mineral investigations have been carried out by the Directorate during the field season 2010-11.

Explaining about the diamond exploration of conducted in Supuli Valley of Nuapada district for primary diamond, He informed that 23 cu.m of excavation has been achieved in two trenches and eight pits for collection of bulk samples. Besides, exploration for diamond from primary source around Darrimunda in Nuapada district will be taken up shortly.

Regarding exploration of coal Sri Mohanta apprised that drilling in Bhubaneswari block of Talcher coalfield for CMPDIL is in progress to assess reserve of Seam-I. A total of 694.45m drilling has been achieved in four

boreholes. Thickness of Seam-I in three split sections varies from 1.23 to 8.49 m in between 171.30 to 238.95 m depth. In addition, another coal project in Arkhpal block of Talcher coalfield has been initiated at the instance of SETSPL.

In Ib valley coalfield drilling is in progress in Madhupur block at the behest of CMPDIL. During the period under review a total of 1022.30 m drilling has been achieved in five boreholes. Lajkura coal seam (Top & bottom) the only workable seam in the block has been subdivided into four sub-sections. In Manoharpur coal block, drilling has been carried out at the instance of OPGC Ltd. One borehole has been drilled with 163.70 m drilling and work is in progress. Sri Mohanta apprised that drilling in Kudopali block has been undertaken for CMPDIL for RQD & physico-mechanical tests and a total of 196.90 m has been done in two boreholes.

Under project geophysics it was reported that integrated geophysical survey to locate ultramafic/chromite occurrences to the South of Mahagiri hill range has been taken up in 50mX10m grid and 0.1 km² is achieved. Total magnetic intensity (TMI) varies from 43926nT to 46244nT. Exploration for chromite to the south of Mahagiri range in Jajpur district is taken up through close spaced geochemical sampling (50mX50m grid) from 'B' zone. In total 0.25 km² area has been geologically mapped on 1:2,000 scale alongwith 69.34 m³ of excavation and collection of 136 geochemical samples.

Under project basemetal, investigation is undertaken to the north of Kesharpur in Mayurbhanj district. A total of 37 km² area has been covered under litho-structural mapping on 1:25,000 scale. Quartz-biotite-chlorite schist and metabasites have been encountered in course of geological mapping which are suspected to be copper bearing.

Further the Directorate has taken up three limestone/dolomite investigations i.e. two in Sundargarh district and one in Bargarh district. Investigation around Orantoli, Udarama and Rangamati in the northern limb of Gangpur Group is in progress. Similarly investigation in the southern limb of Gangpur Group around Mundagaon, Jarangloi and Lahadabudi is under progress. A total of 35 km² area has been covered by geological mapping on 1:50,000 scale. Limestone/dolomite investigation around Jharbandh in the western part of Nuapada-Putka belt of Bargarh district is in progress. An area of 35 km² has been covered in 1:50,000 scale.

Regarding investigations in respect of heavy minerals in beach sand, two projects i.e one along Puri coast & another along Jagatsinghpur coast have been taken up. An area of 0.50 sq. km has been covered by geomorphological mapping on 1:2,000 scale and auger drilling of 921.58m have been done in Hunda sector along Puri coast. The other project being carried out along coastal tracts of Jagatsinghpur district between Devi River confluence in the SW to Paradeep in the NE for collection of pilot samples at 500mX100m grid by auger drilling upto a depth of 2m to delineate potential blocks. A total of 515.60m auger drilling has been achieved during the period.

Sri Mohanta gave a brief account of two bauxite investigations conducted in Kalahandi district. One over the plateau occurring to the SE of Kaniguma featured with well developed scarp sections having gibbsitic bauxite as blankets. An area of 15 km² has been covered in the area by geological mapping on 1:50,000 scale. The other over Lingapadar plateau having altitude of +1000 m and featured with well developed scarps where 20 km² area has been geologically mapped on 1:50,000 scale.

Regarding investigations of iron ore around Harmutu, Panduliposi areas of Keonjhar district, it was stated that geological mapping over an area of 12 km² has been completed on 1:25,000 scale. Occurrence of iron ore has been reported near Harmutu. Besides iron and manganese occurrences have been encountered around Panduliposi. Sri Mohanta apprised the Board regarding work done in Mineral Potential Survey around Mokia and Jamuguda areas in Nabrangpur district. During the course of mapping of 41 km² on 1:25,000 scale, lithounits such as granite gneiss, quartzite, sandstone, shale with intrusions of gabbro/dolerite has been reported. Floats of secondary iron ore (goethite) has been encountered in the area lying 2 km east of Kuchiaguda.

Field work relating to geomorphology project will be executed shortly in the coastal tract from Dansol upto Orissa-West Bengal border for study of coastal geomorphology.

46.5.4 : **ORISSA MINING CORPORATION Ltd.:**

Sri P.K. Bose, DGM (Geology), OMC Ltd. presented the exploration activities of OMC Ltd. during the review period. The objectives of exploration are:

- Exploring additional resource of ore/minerals through detailed assessment of ML & PL areas.

- Grade wise assessment of ore reserves for mine planning (OC/UG).
- Quality control of ore production as per requirement of industries.
- Proving of barren areas.

Sri Bose apprised that OMC has intensified exploration for iron ore, manganese and chromite confining to the leasehold. He stated that constraint in exploration particularly drilling in forest area is being faced by OMC. As per guidelines of MoEF drilling is being taken up in the leaseholds

Sri Bose highlighted the progress of work done in respect of geological mapping, drilling (DTH & coring) and sampling for (i) chromite in south Kaliapani, Kaliapani and Kathapal areas of Jajput & Dhenkanal district.

(ii) iron ore in Seremda, Bhadrasahi, Balda-Palsa, Jajang, Unchbali, Khanbandh, areas in Keonjhar district and Koira-Kasira, Koira-Bhanjapali, Kurmitar and Rantha leaseholds of Sundargarh district and Daitari leasehold of Keonjhar and Jajpur districts – Iron ore has been explored in Sindhumundi area. (iii) Manganese in Dalki, Parlipada, SGBK M.L. in Keonjhar district. He mentioned that exploration for PGE is being done in Bangur and Baniapank M.L. by GSI. The brecciated zone is reported to contain Pd.

To a query of the Member Secretary, Sri Bose replied that below BHJ lies very hard iron ore. Earlier boreholes have penetrated thin bands of BHJ. There is no programme for drilling beyond BHJ this year by OMC. However, he assured that next year OMC will plan to puncture BHJ in Khandadhar area.

46.5.5 : **CMPDI:**

Sri V. Khosla, CMPDI gave a brief outline of exploration activities in Talcher and Ib Valley coalfields. CMPDI has achieved 20,536 m drilling in Talcher coal field in Subhadra W, Lingaraj, Sakhigopal 'B' Meenakshi, Baitarani 'E' coal blocks and 9606m in Ib Valley coal fields in Banapatra, dip side of Garjanbahal, Prajapara and its dip extension. He further mentioned that DG (O) has drilled 351.55 m in ALB coal project and 541.30 m in Madhupur coal block. The drilling in Kudopali block has been successfully done by DG (O).

46.5.6 : **ATOMIC MINERALS DIVISION (DIRECTORATE FOR EXPLORATION AND RESEARCH):**

Sri Vinod J. Katti, Regional Director, AMD presented the progress of work done during the period under review. He explained about uranium investigation, Rare Metal and Rare Earth exploration, beach sand and off

shore investigations conducted in Orissa. Uranium investigation has been carried out in (1) Southern part of Daitari IOG and northern limb of Mahagiri hill along Tomka- Talangi-Patna areas in Jajpur district (2) Southern part of Mankarchua basin along Gurusanga-Mankarchua-Timi tract in Angul and Deogarh districts.

In these areas Quartz Pebble Conglomerates (QPC) are interbedded with quartzite recording low radioactivity and are favorable site of uranium mineralization.

He further stated that under Proterozoic unconformity investigations, Eastern part of Chhatisgarh basin in Bargarh district has been covered. Detailed radiometric survey and geological mapping has been done over an area of 9 sq. km during this period. Two favourable zones were identified for possible occurrence of uranium mineralization in the above area.

Regarding Rare Metal and Rare Earth Investigations, Sri Katti apprised that detailed survey has been undertaken around Pandikimal in Sundargarh dist. and an area of 0.85 sq. km is achieved and 1273 kg (Nb-Ta) and 2550 kg beryl have been recovered.

Under beach sand and off shore investigations it was informed that Nunia nadi (Nechanpur) to Panchapara nadi (Bagda) tract in Balsore district has been surveyed. An area of 0.8 sq. km has been covered along Kasapal-Gimgaria coast. Besides 14 boreholes have been drilled from 7.50m to 18m depth with 166.50 m drilling. Survey in 200mX100m grid shows lean mineralization of heavy minerals i.e. 5% over small stretches. Width varies from 200-1000 m while most of the area is covered by tidal flats. Investigation is in progress.

46.5.7 : **INDIAN BUREAU OF MINES:**

Sri S. Chakraborty, Asst. Mining Geologist IBM presented the summary of work done by IBM.

Item of work undertaken are:

- Inspection of mines
- Approval of mining plan
- Approval of scheme of prospecting
- Approval of PMCP/FMCP
- Grant of recognition to persons for preparation of mining plan (RQP)
- Mines Environment and Mineral Conservation week celebrations, 2010-11

He informed the Board that IBM has taken up a National Mineral Inventory (NMI) updation for all minerals in the state. Achievements in administration of MCDR are 198 and NMI updation is 302. Besides out of 32 mining plans received, 24 have been approved. Similarly 44 schemes of mining has been approved out of 50 mining plans received.

Sri R.N. Patra, Director, GSI enquired from IBM regarding year wise production data in respect of each mineral. In reply, Sri Chakraborty informed that Hand Book for minerals is being prepared. This year IBM is updating the mineral resource. Member Secretary suggested IBM to provide mineral wise data.

(Action: IBM)

46.5.8 : **CENTRAL GROUND WATER BOARD, SOUTH EASTERN REGION:**

Smt. S. Sarkar, Asst. Hydrologist, Central Ground Water Board gave a brief outline of work done during the period as follows:

- Ground water management studies conducted in parts of Bargarh, Keonjhar and Sonapur districts. Besides pollution studies on ground water quality of Angul-Talcher section were also done. In total 13,604 sq. km area has been covered against target of 13,000 sq. km in respect of the above items.
- Ground water exploration: - Exploratory drilling has been carried out to establish aquifer geometry. In total 25 wells has been drilled in 7 dists.
- Ground water regime monitoring: This item has been conducted in 30 districts through observation well.
- Geophysical studies which includes Resistivity survey (21 nos.) and borehole logging in 1 location.
- Hydrochemical studies conducted in respect of 497 samples
- Artificial recharge and rain water harvesting studies
- Hydrology Project-II
- (i) Publicity and Public Awareness Programme (ii) 48 proposals have been forwarded to Central Ground Water Authority, New Delhi for issuance of NOC.
- Ground water resource assessment

46.5.9 : **DIRECTORATE OF GROUND WATER SURVEY AND INVESTIGATION:**

On behalf of GWS&I, Orissa, Sri Deepak Kar, Geologist presented the summary of work done during the review period:

- Ground water table and water sample collection have been completed in 1035 network stations.

- Water quality analysis in five laboratories
- Block-wise re-estimation of ground water resource
- Remote Sensing survey in 5 blocks
- Work under Hydrology project Phase-II under World Bank Assistance is in progress which includes
 - ❖ DSS activities in upper Mahanadi Basin
 - ❖ PDS activities in coastal districts of Orissa

45.5.10 : **IDCOL**

Sri C.S. Mishra, Head (Mines) IDCOL apprised that during the period under review no prospecting work has been done by IDCOL. He added that the Corporation has limited scope for prospecting as it is confined to the leaseholds only. IDCOL has proposed to undertake drilling in Talangi Chromite Mines through DG (O). Drilling of iron and manganese in Roida-C mines is also planned.

45.5.11 : **P.G. DEPTT. OF GEOLOGY, UTKAL UNIVERSITY:**

Prof. P. Behera, HOD, P.G. Deptt. of Geology briefly outlined the activities during 2010-11 which includes:

- Research work on phyllosilicates of Keonjhar district
- Hydro-geological and hydro-geochemical evaluations of coastal aquifers of Orissa
- Research work on manganese and iron deposits of North Orissa
- Beach erosion along Puri coast.

Professor Behera further brought to the notice of the chair that there is limited budget provision for undertaking research work which is the primary job of the university. He further pointed out that:

- Students should be associated with DG (O) in the field for better learning. In this context, proposal has been sent to Govt. but no action has been taken so far.
- Sophisticated instruments may be installed by DG (O) at P.G. Deptt. of Geology for analysis and resource generation

46.5.12 : **CHIEF ENGINEER PROJECT, PLANNING & FORMULATION:**

Sri A.K. Rout, Asst. Director, CEPP&F informed the Board that no work was done during the review period. He stated that the work of the organisation is the foundation drilling conducted for dam site considerations and usually work is executed after November every year.

46.5.13 : **MECL:**

Sri S.K. Thakur, MECL informed the Board that no work has been done during the review period. He further stated that MECL is undertaking 3 years of assignments: Viz.

- Detailed exploration sponsored by Ministry of Mines and Ministry of Coal etc.
- Contractual work sponsored by NTPC, CMPDI, OMC
- Other jobs including analysis

He informed that geological report in respect of Nuagaon-Telisahi coal exploration has been submitted to OMC Ltd.

46.5.14 : **NALCO:**

Sri P.K. Behera, Sr. Manager (Geology) NALCO informed that bauxite exploration has been confined to Panchpatmali plateau in Koraput district. Production drilling in 25 mX25 m is in progress. A total of 2860.26 m drilling has been achieved in 23 boreholes.

46.6.0 : **DISCUSSION ON THE FOLLOW UP ACTION ON THE MINUTES OF 45TH SGPB:**

Thereafter the Member secretary initiated discussions on the Action taken on the suggestions of 45th SGPB. He informed that some follow up actions has been taken by the participating organisations. He discussed relevant suggestions and recommendations made para wise.

45.8.1 : **Preparation of exploration status map of the state.**

Member Secretary conveyed that information has not been received from IBM. In this context, GSI emphasized upon identification of Nodal agency and role of participating agencies and suggested to hold regular meeting to finalise the matter. Sri T. Panda, JDG (L-I) suggested that organisations including GSI & IBM should provide their area covered maps to DG (O) for compilation. Sri Rath, Director, GSI suggested that specific maps required to be asked for. Representatives of IBM conveyed that the matter will be looked into, Sri Vinod J. Katti, AMD stated that their organisation has already provided maps of beach sand exploration in Puri coast to DG (O). He assured that they would provide updated maps to DG (O) on request. Member Secretary, Sri S.K. Das requested all the organisations to send the updated maps.

Action: GSI, IBM, DG(O), AMD

Further IBM was advised to examine the matter and to reply.

Action: IBM

The OMC was advised to send maps of their explored prospects.

Action: OMC

45.8.2 : **Framing guideline for carrying out exploration in the leaseholds:**

As desired by Member Secretary, Sri Chakraborty, IBM reported that guideline for exploration in leasehold areas by lessees have been issued. He was advised to send a copy to DG (O), Sri S.K. Das, Sr. Manager, OMC Ltd. informed that OMC is facing problem for exploration within forest areas. Sri T. Panda, JDG (L-I) advised OMC to execute exploration work in non forest areas. It was further apprised by Sri Das, OMC that non forest areas constitute a small part compared to total lease area. Hence without relaxation of drilling norms in forest area by MoEF, exploration can not be completed. He stated that MoEF has permitted to drill only one BH in 40 Ha area which is quite inadequate for exploration. Sri Das suggested that a nodal committee may be formed including GSI, IBM and DG (O) to examine and formulate plan for deciding number of BHs to be drilled. Sri P.K. Bose, DGM, OMC suggested that a lessee is required to complete exploration of a deposit so that ML would be granted. Taking part in the discussion Sri Chakraborty, IBM assured that the matter will be examined. Sri P.K. Bose, DGM enquired whether private lessees are carrying out exploration as per UNFC norms. In this context, Sri Katti, Regional Director, AMD apprised that they have inducted one IFS Officer on deputation to take up the matters relating to forest and have been successful to some extent. Sri Bose suggested to form a committee to look into the problems in existing norms for exploration in forest area and suggest remedial measures. The Member Secretary suggested to form a committee comprising Sri T. Panda, JDG (L-I), P.K. Bose, DGM (OMC) and Sr. C.S. Mishra, Head (Mines) IDCOL to prepare a draft proposal for submission to MoEF.

Action: DG (O), IBM, OMC, IDCOL

45.8.3 : **Supply of leasehold maps to GSI and DG (O) by IBM:**

In this context, the representative of IBM reported that a letter has been sent to Headquarters for taking proper action in the matter, Sri S.K.Das, Member Secretary instructed IBM to expedite the matter.

Action: IBM

45.8.4 : **Preparation of Tenement Registry:**

In compliance Sri S.K.Das, Director of Mines informed that this item is being taken up by the Collector, Keonjhar and has progressed a lot.

Action: DM(O)

45.8.5 : **To workout modalities for involving students of P.G. Deptt. of Geology, U.U in exploration:**

Prof. P. Behera, HoD suggested that Govt. should provide funds to

promote research facilities and develop knowledge among the future geologists of the Directorate of Geology. He added that in this regard a proposal has been sent to Steel & Mines, Deptt. Govt. of Orissa. But no action is taken so far. He requested DG (O) to expedite the issue. To a quarry by Member Secretary, Prof. Behera replied that since funding by UGC is quite inadequate the contribution will be fruitful in the interest of the Directorate. Sri T. Panda, JDG (L-I) informed that the proposal is pending at Govt. level.

In this regard, Sri Katti Regional Director informed that P.G. students of Utkal Universities can be sent to AMD for short tenures for training in geological mapping, structural mapping etc. for which AMD will pay. Sri S. Mishra, Geologist supplemented that the case of pass out students should not be considered.

45.8.6 : **Constraints of exploration due to forest problem:**

Member Secretary informed that the matter has already been discussed earlier and appropriate steps will be taken up at the earliest.

45.8.7 : **Analysis of bauxite samples:**

No representative from IMMT was present Sri T. Panda, JDG (L-I) suggested that the help of IMMT would be taken up for mineralogical studies when required.

45.8.8 : **Status of Jillingdhar Gemstone deposit:**

Smt. Nirupama Das, Manager (Geology), OMC Ltd. elaborated regarding status of Jillingdhar gemstone deposit, and informed that no mining activity has been taken up by OMC, in the area. Member Secretary advised that one or two grams gem quality ruby, if recovered would be considered economic. Smt. Das reported that OMC is going to revive its operation.

Action: OMC Ltd.

45.8.9 : **Creation and updation of Data Bank:**

As per directive of Member Secretary, Sri P.C. Mishra, Geologist informed that DG (O) has already initiated compilation and updation of exploration data. But no information has been received from IBM. GSI was requested to provide data on manganese exploration since no adequate data is available in their portal. S.B. Roy informed that since some reports have not been finalised all the data can not be supplied. Member Secretary asked T. Panda, JDG (L-I) to furnish views. Sri Panda informed that AMD has made exercise nicely on beach sand deposits in Orissa coast and provided information to D.G. (O). Similar efforts are expected from other organisations. He suggested that GSI and DG (O) should sit together to finalise mineral

resource. Sri S.B. Roy suggested that DG (O) should write a letter to GSI in this regard. Member Secretary assured that a meeting will be held for finalisation of the issue.

Action: GSI, IBM, DG (O) & DM (O)

45.8.10 : **Relaxation of forest problem by MoEF:**

Matter has been discussed earlier. Action would be taken up accordingly.

45.8.11 : **Collaborative programme for PGE exploration:**

Sri S.N. Parida, DDG informed that it was decided earlier to take up exploration of PGE in Sukinda area by DG (O) in collaboration with GSI for which GSI would provide laboratory and logistic support. But no action has so far been taken. Sri Rath, Director, GSI advised to send specific proposals to GSI so that the matter will be taken up.

45.8.12 : **Notification and reservation of areas for geological exploration:**

In this regard Sri S.K. Das, Director of Geology informed that areas have already been reserved for exploration of diamond in Nuapada district by DG (O). Steel & Mines, Govt. of Orissa has been moved for reservation of areas for iron ore exploration in Baliapahar, Badamgarh Pahar and Deoghar in Sundargarh district. Besides reservation proposal for bauxite exploration is under active consideration of Govt.

Action: S&M Deptt.

To a query by Sri R.N. Patra, Director, GSI regarding objective of reservation, Sri Das, clarified that reservation is being done to stop granting of lease till completion of exploration

45.8.13 : **Reimbursement of expenditure in respect of coal block explored by DG (O):**

Sri A.K. Mohanty, JDG stated that in the past DG (O) has completed exploration of coal in Nuagaon-Kanloi and Rail coal blocks. Further Patrapada block has been explored by GSI on promotional basis. In the meanwhile some of the blocks have been allotted to different companies. He suggested that such exploration expenditure should be reimbursed by the user company. In this context R.N. Patra, Director, GSI opined that since it was promotional work, question of reimbursement of exploration expenditure does not arise.

45.9.0 : **SUGGESTIONS FROM DIFFERENT ORGANISATIONS:**

Member Secretary requested various organisations to furnish suggestions for discussion in the house.

45.9.1 : **Suggestions from GSI:**

- Timely holding of SGPB meeting: Sri S.B. Roy, Director suggested that objective of SGPB is to send suggestions and recommendations

in respect of explorations for discussion in CGPB. He requested that SGPB meeting should be held prior to CGPB meeting.

Action: DG (O)

- Estimation of resource as per UNFC norm: Sri Roy suggested that resource must be estimated as per UNFC norms

Action: All Members

45.9.2 : **Suggestion from DG (O):**

Sri T. Panda, JDG (L-I) elaborated the following suggestions of the DG (O):

- Bauxite exploration: DG (O) has given thrust on bauxite exploration and proposes to carryout a comprehensive bauxite exploration programme in the state. A five year exploration programme for bauxite exploration has been submitted to Govt.
- Ni-Cr in OB dumps: DG (O) is proposing to assess resource and grade of Ni and low grade chromite in overburden dumps in Sukinda valley in the light of revised threshold value. This will help in augmentation of the resource and achieve zero waste mining
- Aeromagnetic Survey: It is proposed to cover balance 50% of the areas of the state by Aeromagnetic Survey to expedite mineral exploration. In this context a proposal has been submitted for approval in the CGPB to cover the area by Heliborn survey

Action: G.S.I., DG (O)

- Disclosure of resource within leasehold: It is requested that all lessees should provide information on the resource confined to the lease area to DG (O) for compilation.

Sri P.K. Bose suggested that a copy of mining plan may be submitted to DG (O) for reference as it contains all information. **Action: DM (O)**

To a query from S.C. Rath, Director, GSI on UNFC, Sri Bose informed that OMC is also dealing with Economic & Feasibility axis. Sri S.K. Das, OMC supplemented that OMC is calculating both geological and mineable reserve.

45.10.0 : **VOTE OF THANKS:** The meeting ended with a vote of thanks by Sri T, Panda, JDG (L-I)

ANNEXURE – I
LIST OF PARTICIPANTS OF 46TH SGPB MEETING HELD ON 5TH FEBRUARY, 2011

Chairman: Sri Manoj Ahuja, Commissioner-Cum-Secretary, Deptt. of Steel & Mines, Govt. of Orissa

Member Secretary: Sri S.K. Das, Director of Geology (and I/C Director of Mines Govt. of Orissa)

Sl. No.	Name & Designation	Organisation
1	Sri M. R. Patnaik, Addl. Secretary	Deptt. of Steel & Mines, Govt. of Orissa
2	Sri B. N. Behera, Dy. Secretary	Deptt. of Steel & Mines, Govt. of Orissa
3	Sri N. C. Das, Under Secretary	Deptt. of Steel & Mines, Govt. of Orissa
4	Sri S.C. Rath, Director	GSI, OP: Orissa
5	Sri S.B. Roy, Director	GSI, OP: Orissa
6	Sri P.C.Patra, Geologist (Sr.)	GSI, OP: Orissa
7	Sri R.N. Patra Director	GSI Mission-II (B), Kolkata
8	Sri K.C. Das, Geologist	GSI Mission-II (B), Kolkata
9	Smt. M. Patnaik, JDG (L-I)	Dir. of Geology, Orissa
10	Sri T. Panda, JDG (L-I)	Dir. of Geology, Orissa
11	Sri T. Mohanta, JDG (L-II)	Dir. of Geology, Orissa
12	Sri A.K. Mohanty, JDG (L-II)	Dir. of Geology, Orissa
13	Sri A.T. Das, JDG (L-II)	Dir. of Geology, Orissa
14	Sri D.N. Pani, JDG (L-II)	Dir. of Geology, Orissa
15	Sri S.N. Parida, JDG (L-II)	Dir. of Geology, Orissa
16	Sri S.K. Padhi, DDG	Dir. of Geology, Orissa
17	Sri M.R. Mishra, DDG	Dir. of Geology, Orissa
18	Sri G.K. Bhuyan, DDG	Dir. of Geology, Orissa
19	Sri M.K. Senapati, DDG	Dir. of Geology, Orissa
20	Smt. A.B. Mishra, DDG	Dir. of Geology, Orissa
21	Sri J.P. Panda, DDG	Dir. of Geology, Orissa
22	Sri M.D. Behera, Geologist	Dir. of Geology, Orissa
23	Sri P.C. Mishra, Geologist	Dir. of Geology, Orissa
24	Smt. S. Jena, Geologist	Dir. of Geology, Orissa
25	Sri S. Mishra, Geologist	Dir. of Geology, Orissa

26	Sri D. Sharma, Geologist	Dir. of Geology, Orissa
27	Sri P.K. Bose, DGM (Geology)	Orissa Mining Corporation Ltd.
28	Sri J.D. Mishra, Sr. Manager (Geology)	Orissa Mining Corporation Ltd.
29	Sri S.K. Das, Sr. Manager (Geology)	Orissa Mining Corporation Ltd
30	Smt. N. Das, Sr. Manager (Geology)	Orissa Mining Corporation Ltd
31	Sri K. Ch. Rath, Manager (Geology)	Orissa Mining Corporation Ltd
32	Smt. T. Basa, Manager (Geology)	Orissa Mining Corporation Ltd
33	Sri A.K. Singh, Manager (Geology)	Orissa Mining Corporation Ltd
34	Sri B.B. Mishra, Manager (Geology)	Orissa Mining Corporation Ltd
35	Sri S.k. Nayak, Manager (Geology)	Orissa Mining Corporation Ltd
36	Sri S. Mishra, Dy. Manager (Geology)	Orissa Mining Corporation Ltd
37	Sri P.K. Behera, Dy. Manager (Geology)	Orissa Mining Corporation Ltd
38	Sri B.K. Parida, Dy. Manager (Geology)	Orissa Mining Corporation Ltd
39	Sri V. Khosla, Chief Manager (Geology)	CMPDI
40	Sri Vinod J. Katti, Regional Director	AMD
41	Sri S. Chakraborty, Asst. Mining Geologist	IBM
42	Smt. Sumitra Sarkar, Asst. Hydrologist,	CGWB
43	Sri Deepak Kar, Geologist	GWS&I
44	Sri B.K. Sahoo, Geologist	GWS&I
45	Sri C.S. Mishra, Head (Mines)	IDCOL
46	Prof. P. Behera, HoD P.G. Deptt.	P.G. Deptt of Geology, U.U.
47	Sri A.K. Rout, Asst. Director	(E,PP&F)
48	Sri S.K. Thakur	MECL, Ranchi
49	Sri Jayant Kumar	MECL, Ranchi
50	Sri P.K. Behera, Sr. Manager (Geology)	NALCO
51	Dr. G. Chatterjee, Manager (Geology)	NALCO
52	Dr. R.C. Mohanty, President	SGAT