Minutes of the 49th Meeting of the Central Geological Programming Board held at New Delhi on 24th -25th August, 2011

49.00.00	The 49th meeting of the Central Geological Programming Board (CGPB) was held on 24th – 25th August 2011 at ICAR, Pusa, New Delhi. Simultaneously with the Meeting, an exhibition was organized and the theme of the exhibition was 'Geophysics' of Geological Survey of India and other sister organisations. Shri Dinsha J Patel, the Hon'ble Minister of State for Mines (Independent charge), could not grace the opening ceremony as well as the inauguration of the Exhibition due to other pressing engagements. Shri S. Vijay Kumar, Secretary, MoM chaired the meeting. Shri S. K. Srivastava, AS[M] and Shri. A Sundaramoorthy, DG (Acting), GSI and members of CGPB incuding State Governments, Public Sector Undertakings, other stakeholders, officers from GSI, and various invitees attended the meeting. A list of members/ participants of the 49th CGPB meeting is appended at Annexure I.
49.00.01	The meeting started with inauguration of the exhibition arranged by GSI along with participants from HCL, MECL, IBM, AMD, FUGRO, etc. with main theme as 'Geophysics'. The Secretary (Mines) inaugurated the exhibition. The Secretary (Mines) and Additional Secretary (Mines) highly appreciated the quality of poster presentation and the work carried out by GSI and participating organizations. The exhibition earned wide appreciation from different spheres as well.
49.01.00	**INTRODUCTION BY MEMBER SECRETARY, CGPB**
49.01.01	Dr. Prabhas Pande, Addl. Director General (PSS-P&M), Geological Survey of India and Member Secretary, CGPB at the onset welcomed the Chairman CGPB, Shri. S.Vijay Kumar, Secretary (Mines), Shri S. K. Srivastava, Additional Secretary (Mines), and Shri. A Sundaramoorthy, Director General, GSI,, esteemed guests from Ministry of Mines and Planning Commission, members/delegates of the CGPB, representatives of State and Central Government Departments, Public Sector Undertakings, other stakeholders and members of the press and electronic media.
49.01.02	Dr. Prabhas Pande, Member Secretary gave a brief presentation on the functioning of CGPB and highlighted its principal mechanism. He mentioned that CGPB coordinate between different Earth Science Governmental Agencies and State Government Departments for formulation and preparation of programmes in the domain of earth sciences with close coordination between Geological Survey of India, various Ministries, organizations, State DGMs and other stakeholders. He mentioned that CGPB was functioning since 1966 and has been revamped in 2009 to include Public Institutions and private investors. He also mentioned the importance of SGPB in the context of CGPB. He elaborated on the mandate of the CGPB which is to coordinate and evaluate programmes of various departments, define priorities of exploration projects, making necessary arrangements for training of personnel and advice the Government on various steps of the exploration. With overwhelming participation of members, particularly of 21 State DGM's,

	he requested all to actively participate and interact during CGPB deliberation.
49.02.00	**WELCOME ADDRESS BY THE DIRECTOR GENERAL**
	Shri. A Sundaramoorthy, DG (Acting), GSI extended warm welcome to Shri Vijay Kumar, Secretary (Mines) Shri S.K Srivastava, Additional Secretary (Mines), Dr. Prabhas Pande, ADG,GSI and all representatives of State and Central Governments, PSUs, officers of Ministry of Mines and Planning Commission, academicians and private entrepreneurs and colleagues of GSI. He specially welcomed Shri Vijay Kumar, Secretary (Mines) and stated that he is instrumental in taking CGPB to such a great height and introduction of bi-annual meeting of CGPB. He added that CGPB is a platform to share ideas and deliberate on the earth science activity conducted in the country. He also reiterated that CGPB provides scope to avoid duplication of work by different organizations. He expressed his gratitude towards Additional Secretary (Mines) for taking keen interest in conducting and guiding CGPB meetings.
49.03.00	**ADDRESS BY THE ADDITIONAL SECRETARY, MoM**
	Shri S.K Srivastava, Additional Secretary (Mines) in his address to the house welcomed Shri Vijay Kumar, Secretary (Mines), Director General, Additional Director General (PSS -P&M), officers and colleagues of GSI, Ministries and other State and Central Government representatives & PSUs and special invitees. He congratulated GSI for bagging the e-forum award. While stating on certain technical and administrative issues related to the functioning of CGPB and GSI, he stressed on timely circulation of minutes and desired that follow up actions should also be promptly sent by all concerned, so that a well structured road map could be prepared. He assured full assistance on technical and administrative matters from MoM. He advised that in the extended field season of 2010-2012 the present shortfall should be covered up by the field parties of GSI and added that the qualitative aspects of the field outputs should be improved. He informed the house that he attended two RAC meetings of GSI in order to have an exchange of ideas with the Regions and mentioned that the deliberations at the meeting helped him to evaluate the constraints faced by the field parties. He complemented GSI for showing satisfactory performance in clearing the pending progress reports within the extended time limit and also taking up the challenge for peer reviewing and externally reviewing of the progress reports. With a mixed response on the peer review of reports, he encouraged to set the priorities and improve the quality of work to make an all out effort to call it “centre of excellence”. He also emphasized that since more officers have been recruited, the additional manpower of GSI should be gainfully utilized. He advised, if required, new field items may be taken up by GSI during the remaining part of the FS 2010-12. He looked forward for active participation, frank discussions, and constructive deliberations from all about the actions of the last CGPB and on the proposed new agendas of the 49th CGPB.
49.04.00	**RELEASE OF GSI PUBLICATIONS**
49.04.01	Thereafter GSI publications were released by Secretary (Mines), Additional Secretary (Mines) and Director General, GSI totaling about five

	GSI publications. The publications released include 1) Annual Report of GSI for 2010-2011, 2) Detail Information Dossier (DID) on base metal resources of India, 3) GSI Miscellaneous publication 30, part XII on Geology and Mineral resources of Rajasthan (3rd Edition), 4) SOP of Mission IA and 5) Manual of Geochemical Analysis.
49.05.00	**ADDRESS BY SHRI DINSHA J. PATEL, HON'BLE MINISTER OF STATE (INDEPENDENT CHARGE), GOVT. OF INDIA**
49.05.01	Shri Dinsha J Patel, Hon'ble Minister of State for Mines due to his preoccupation was unable to grace the occasion. Dr. K. Rajaram, Deputy Director General, read out the speech on his behalf. Hon'ble Shri Dinsha J. Patel appreciated selecting 'Geophysical Survey' as the central theme of the exhibition being held alongside of 49th CGPB. The surface and near-surface mineral deposits discovered so far have reached almost a critical stage of exploitation and will last for only a limited time. It is, therefore, imperative on the part of geoscientists to locate new reserves, particularly from deeper horizons, so as to match up with the demands of the future, he felt. He observes that sophisticated geophysical surveys will play a crucial role. It is understood that high resolution geophysical studies are going to be conducted in near future for locating the deeper seated mineral deposits. He expressed happiness that GSI has already initiated Hyperspectral Mapping, and will be taking up soon Heliborne Geophysical Survey. He considered such measures would provide a quantum boost to the search for mineral deposits. The Phase I and II of the GSI Portal have already been accomplished, and it is inspiring that GSI has bagged the best Public Choice Aware for Government to Government Enterprise Portal conferred by e-world forum on 2nd August, 2011. He complimented that GSI is now progressing well towards achieving e-governance in all spheres of its activities. A major stride has been taken towards dissemination of geospatial information through the GSI in the form of providing information on the geoscientific data collected by GSI over the past 160 years. Shri Patel observed that acquisition of modern laboratory instruments, advanced aerial and marine survey vessels and up-gradation of the drilling fleet will certainly equip GSI to deliver its best to the Nation. He was delighted to inform that the GSI Training Institute had started operating in ten States through its Field Training Centres (FTC) and Regional Training Institutes (RTI). GSITI has also started catering to the training needs of the geoscientists from the State Departments of Geology and Mining (DGM), various PSUs, Private Organisation and those from the neighbouring SAARC and some African countries. It is encouraging to know that the MoM/GSI have entered into a number of MoUs with various countries for International cooperation in the fields of mineral exploration, geosciences-involving societal issues, transfer of technology and capacity building. The implementation of these MoUs would certainly go a long way in adoption of the best initernational practices and will equip GSI with the latest technological know-how. Quality Management process in GSI has gathered momentum. Standard Operation Procedures in vital areas of geoscientific activities of GSI will soon be introduced in the work curriculum. Likewise, the process for making GSI laboratories ISO-

	compliant will provide high credence to its labs. Shri patel expressed his confidence that that all these measures are definitely going to make a paradigm shift in the work culture of GSI and enhance its credibility in the field of geoscience. Shri Patel ushered the hope that the benefits of the biannual exercise of CGPB will come only when all its members and other stakeholders actively participate and cooperate and that the renovated CGPB is playing its role to expectations because of cooperation and participation of all the participating members.
49.06.00	**ADDRESS BY SHRI VIJAY KUMAR, SECRETARY [Mines]**
49.06.01	Shri Vijay Kumar, Secretary, MoM, welcomed Additional Secretary (Mines), Director General, GSI, Additional Director General, officers of GSI, Central Ministries, State Govt. Organizations and other stakeholders in geosciences. He congratulated MoM and GSI for bringing in palpable and sustainable improvements in the CGPB. He pointed out that the restructuring of GSI on the basis of HPC report of 2009 is part of long going processes and through its implementation more and more autonomy is being given to the Organization. The activities of GSI at different levels are improving along with the development of scientific activities. GSI is trying to meet challenges. He stated with confidence that GSI will successfully pay back the government investment through their work. He was hopeful that the new incumbents would pick up the right skill, knowledge and attitude from the guidance of senior geoscientists. He reminded that GSI has not yet fully utilized the advantage of vision document of 2009. He desired that along with the quality improvement proper utilization of modernization report will help GSI choosing right equipment, technology, concept and programme, and the recommendation of HPC will certainly help in the development of GSI. He also mentioned the State and Central Government Departments should take advantage of the training and capacity building initiatives of GSI. He encouraged having more collaborative and synergetic assignments with central and other State Government Departments under the aegis of geo-science partnership. With quantum leap in nature of data dissemination through GSI portal, he explained that state government should take advantage of the same. He emphasized that value and knowledge are to be collated with the field data for the interpretation of the geo-scientific data and development of new concepts. He emphasiszed on improving the planning abilities, time bound execution and quality of the scientific work. He emphasized that the increased human resources in GSI should be properly utilized and trained. He added that knowledge dissemination within the organization should be taken up in more collaborative and less hierarchical spirit.
49.07.00	**SPECIAL LECTURE BY SHRI P. B MAITHANI, DIRECTOR, AMD ON "REE EXPLORATION IN INDIA"**
49.07.01	Owing to the current demand and importance of REE minerals in the industrial sector, search and exploration of these commodities have gained momentum in recent past. In view of this, a special lecture during the 49th CGPB was organized for awareness amongst the delegates of the 49th CGPB. Shri P.B Maithani, Director, AMD, presented a thorough account of "Rare metal and rare earth exploration in India and its relevance to

	atomic energy programme". He dealt upon the rare earth minerals, their occurrence in India in the states of Bihar, Maharashtra, Rajasthan, Orissa, Karnataka, Andhra, Tamilnadu, etc. and usage with special reference to electronic industry, catalytic converters, automotives. He emphasized on the pegmatite bodies as sources of REEs. He also dealt on the prospects and challenges of exploring the placer occurrences and AMD's plan in this venture. He mentioned that the basic objectives of REE exploration in India lies in attaining self sufficiency in strategic mineral resources and to meet the requirement of Indian Atomic Energy Programme.
49.08.00	**CONFIRMATION OF THE MINUTES OF THE 48TH CGPB**
49.08.01	The Member Secretary, CGPB thereafter drew attention to the circulated minutes of the 48th CGPB and requested the delegates to provide their comments. As there were no comments, the Minutes were confirmed with the permission of the Chair.
49.09.00	**HIGHLIGHTS OF ACTIVITIES OF GEOLOGICAL SURVEY OF INDIA DURING F.S. 2010-12**
49.09.01	After confirmation of the minutes of the 48th CGPB, Director General, GSI presented brief highlights of activities during the F.S. 2010 -2012. He stated that as per the High Power Committee (HPC) recommendations GSI has started functioning in Mission-Region hybrid matrix mode from F.S. 2010-2012 and that during the XIIth plan GSI shall implement recommendations in all spheres of its activities. He briefed the house about GSI's functions, contributions, policy formulation, scientific activities, technology infusion, thrusts areas of geoscientific activities viz., mineral exploration, multidisciplinary study, inter-alia contribution, international participation including bilateral programmes and IGCP programmes, etc. He emphasized on the modernization aspect in GSI with upgradation of laboratories at National, Regional and Operational levels, and also with special reference to airborne and marine surveys. He presented brief highlights on the programmes that have been taken up under each mission i.e., Mission–I (Baseline Geoscience Data generation) --146 items, Mission-II -107 items, Mission-III -- PORTAL Management; Geodatabase creation, Mission-IV (Fundamental Geoscience)-- 137 items in Geotechnical, Landslides, Glaciology, and Seismology. Mission-V (Training) -- 110 courses and 3 International Courses for African Participants. He briefed the house about the broad framework of human resource development in GSI, and also GSI's initiative in developing resources of NER. He also informed the house about the introduction of Project: OCBIS on GSI portal. He also informed that the GSI Portal has received Silver Award for "Best Government Portal " for the National Awards for e-Governance in 2010-2011. He expected all to utilize the geoscientific data of GSI under improved dissemination strategy through GSI portal.
49.10.00	**REVIEW OF FOLLOW UP ACTIONS ON DECISIONS TAKEN DURING 48TH CGPB MEETING**
49.10.01	Dr. Prabhas Pande, Member Secretary, CGPB initiated the discussion. In total 33 action taken items were discussed.

49.10.02	Initiating the discussion on Para 48.10.04 for policy on a) publications by GSI scientists in scientific journals b) participation in national and international seminars, c) defining areas of specialization and encouraging specialization for the purpose, Member Secretary informed the house, that all the three aspects have been attended and the draft policy of (a) has already been floated in portal for inviting comments & final policy on (b) has been circulated; the formulation of draft policy for (c) will be completed by September, 2011-when the same will be put up in portal for comments before finalisation. [Action: GSI]
49.10.03	Regarding special emphasis needed to be given by the States for exploration and mining of offshore resources under Para 48.10.05, Member Secretary invited comments from DGM, Andhra Pradesh. DGM, Andhra Pradesh replied that this issue was discussed during the SGPB meeting held on 29.07.2011 and stated that they wanted to have a MoU with GSI. Member Secretary replied that GSI is already having programmes of sea bed mapping and investigation of placers from Orissa coast to south of Vishakhapatnam. Additional Secretary (Mines) advised A.P. Government to chalk out an operational programme with GSI instead of having an MoU. DGM- Andhra Pradesh wanted to settle the issue after a detailed discussion with GSI. Details of these will be apprised in te next CGPB meeting. [Action: DGM, AP / GSI]
49.10.04	During discussion on Para 48.10.06 & 48.13.16, representative from CMPDI mentioned that as per IPO, mineral data are to be furnished in JORC for listing while UNFC data are universally available and maintaining two parallel classification systems becomes problematic. Additional Secretary (Mines) mentioned that the issue of raising resources by JORC, IBM should explore the possibilities because this issue is related to Coal Ministry at present. Additional Secretary (Mines) inquired about the progress regarding UNFC to JORC conversion. IBM replied that JORC depends on the competency of the competent person and hence first a competent person is to be identified followed by identification of institutions, which will register the competent person. IBM mentioned that this matter was discussed recently in a meeting. The competent person should ensure that reserve calculated is actually to be mined by the company. He added that the geological part of the JORC is similar to UNFC and that banking part etc. has more to do with the competency of the competent person. Secretary (Mines) mentioned that India need to have JORC certified personnel, as JORC is a reporting format where investors need to know what is exploitable and degree of credibility of the data under commercial situations following Australian standards. Secretary (Mines) mentioned that MECL should be in forefront for implementation of JORC in India. For JORC certification the qualified person first needs to be registered with Australian institute of mining and metallurgy. MECL also mentioned that JORC registration is very specific as it requires experience in particular type of deposit for considerable number of years. MECL added that already four officers have been identified from MECL (two

	from mining sector and two from energy sectors) for registration and once registered they will be sent for training. Secretary (Mines) advised to address the key component of creating the capability and suggested that stock exchange and bankers should identify the JORC certified person. Geological Society of India mentioned that at present there is no JORC certified person in India. Geological Society of India emphasized that the implementation of JORC will materialize only when the bankers/ stock exchange people sponsor the project from the beginning. Additional Secretary (Mines) confirmed from MECL that UNFC input data forms a part of the JORC system and hence at National level the UNFC data is to be maintained. Secretary (Mines) mentioned that IBM who is already in the committee with SEBI should sort out the issues by organizing meetings. Representative from Data Code, Nagpur mentioned that GSITI should also take initiative for training of personnel for JORC certification. IBM should take the lead and work out an action plan in consultation with MECL, GSI, SEBI and other stake holders. This action plan be presented in the next CGPB meeting. [Action: IBM]
49.10.05	On collaborative work as per Para 48.10.07, regarding manganese, gold and PGE investigations, DGM- Tamilnadu commented that they are in full agreement with the PGE analysis as mentioned in the agenda note. DGM-Tamilnadu mentioned that the analysis report of the already submitted samples under the collaborative programme is to be received. Deputy Director General, SR commented that there had been no joint programme with DGM- Tamilnadu but a letter has been received to finalize the modalities of sample collection for PGE analysis. GSI, SR expressed their willingness to help and sort out this matter. DGM - Tamilnadu, requested to get 300 PGE samples analyzed from GSI, SR, Hyderabad. One representative from DGM -Tamilnadu, will visit GSI, SR to fix up the modalities. GSI commented that this analysis can be taken up to ppb level. Deputy Director General (Chemical) mentioned that ICPMS instrument which has been made operational recently can analyze up to 5ppb level for PGE at GSI, SR. Progress on this will be reported in the next CGPB meeting [Action: DGM- Tamilnadu & GSI] DGM, MP expressed satisfaction with the progress of the work for Jhabua deposit. Member Secretary informed that Buniyar base metal investigation of J&K has already been taken up.
49.10.06	Regarding geological reports of iron, bauxite, limestone, graphite, granite and pyroxenite of Jharkhand State as per Para 48.10.08, DGM, Jharkhand replied that the matter has already been sorted out. The item is concluded.
49.10.07	Regarding issue of tenement registry to streamline the data filing system and for authentication of reports as per Para 48.10.10, GSI commented that action is to be initiated from DGMs and stakeholders. Member Secretary mentioned that action plans are not being provided along with the reports from the stakeholders, which create hindrance for proper assessment of the

	report. He mentioned that 131 reports have been already uploaded although responses have only been received from IBM and few DGMs. Secretary (Mines) inquired if the RP reports form part of FSMIS data. GSI informed that only metadata of RPs are uploaded in GSI portal. Member Secretary commented that uploading of full RP report is difficult under the present dissemination policy. Secretary (Mines) advised to bring in changes of the dissemination policy and to decide upon putting it in the public domain. Regarding two years lock in period of the RP data, Secretary (Mines) mentioned that it is applicable only for non-relinquished data. DGM, Andhra Pradesh informed that the statutory RP carried out by Private companies are being released at the state level after two years of lock in period. Secretary (Mines) advised to proactively use the RP data after bringing in necessary modification in the dissemination policy by GSI. He commented that not getting the RP data for use amounts to wasting of natural resource. GSI to work out land issue further guidelines in this regard in consultation with MoM. [Action: GSI]
49.10.08	Regarding the MoU signed between GSI and NHPC, for palaeoseismological and MEQ studies related to the Tamanthi Project, Myanmar, as per Para 48.10.11, Member Secretary mentioned that work has already been completed, interim report for the MEQ studies have been submitted to NHPC and the final report is under preparation and will be submitted within the stipulated period. [Action: GSI]
49.10.09	Regarding the issue of not conveying note of dissent on the minutes of the meeting held with Ministry of Environment on 17.06.2010 as per Para 48.10.12, where the project by project mode (or case to case basis) of approval for density of boreholes (per sq km) / borehole diameter and other exploration strategy in the forest area was mentioned. Dr. S.K Wadhawan, Deputy Director General, SU: Rajasthan, WR mentioned that presently MoEF provide clearance of 20 boreholes/10 sq. km. Since MoEF is still open to discuss on this issue, he suggested to convene a meeting with MoEF after the parliamentary session. Representative of Singerreni Coal field mentioned that at least12-15 boreholes/sq km. in the forested part of the Godavari basin is a prerequisite for prospecting but they are not in receipt of necessary clearance. Additional Secretary (Mines) instructed Dr. HSM Prakash, Director (Tech), MoM to sort out this issue with MoEF to provide a general clearance for prospecting in the forest areas rather than issuing clearance on case to case basis. Representative of Tata Steel informed as per the latest legislation, MoEF is allowing 12 boreholes/10 sq.km and up to 1 borehole/1 sq. km area. It is also mentioned in the legislation to complete exploration in the mining lease area within 5 years and the resources are to be brought as per UNFC. Secretary (Mines) commented that in leasehold areas drilling should not be a problem and the case of Tata Steel differs from the case of Singerreni Coal field. Tata Steel should convince MoEF by ensuring suboptimal utilization of forested land by mining. Tata Steel replied that MoEF needs a third stage clearance in terms of cutting of trees in the forest land before which drilling will not be

	allowed. Society of Geoscientists and Allied Technologists (SGAT), Orissa mentioned that in order to reassess the mineral deposit in all the mining lease areas in the forested parts of Orissa, pursuance of case to case basis with MoEF, will cause functional problem and clearance should be given by MoEF. Additional Secretary (Mines) advised Director (Tech)-MoM to take up the two specific cases of Singereni and Tata Steel with MoEF for decision and also review of general guidelines. [Action: Director (Tech)-MoM]
49.10.10	Regarding policy guidelines for establishing National Drill Core Libraries as per Para 48.10.14, Member Secretary informed the house that GSI has already made a concept paper on Drill core library and a presentation will follow in CGPB on the subject. The item is concluded.
49.10.11	On the issue of analysis of drill core samples for PGE as per Para 48.10.15, Directorate of Commerce and Industries, Manipur requested that if GSI can carry out sample analysis free of cost, the way IBM is offering. Member Secretary replied that 150 samples have already been received for which charges have been received. The PGE samples analysis will be taken up free of cost only after receipt of samples from DGM, Manipur. Member representing DGM, Manipur assured that duplicate samples will be sent for PGE analysis. Additional Secretary (Mines) advised GSI to follow the IBM mode as a part of special dispensation for NE Region. (Action: Directorate of Commerce and Industries, Manipur/GSI)
49.10.12	Regarding holding SGPB meetings as part of Para 48.10.16, DGM, Kerala, Orissa and Rajasthan expressed their desire to convene SGPB Meeting of their respective states once in a year. Director General, GSI mentioned that convening of two SGPB Meetings a year is a policy decision taken by MoM. GSI suggested the state DGMs to convene at least one meeting between the months of June and August, so that the necessary information for the programme finalization for the subsequent field season by GSI may be completed after considering the priorities of the States. Member Secretary confirmed that at least one meeting of SGPB per year is must even for the non-mineral rich states and the states should ensure providing proper inputs for programme finalization GSI. Additional Secretary(mines) once again reiterated that it is in the interest of State to convene SGPB meetings every year and this paractise should continue. (Action:All State DGMs)
49.10.13	Regarding resources of lignite not being included in the national inventory of lignite as part of Para 48.10.17, Additional Secretary (Mines) enquired about States, which are having lignite reserves and have not supplied the relevant data as per the prescribed format. The Para in particular concerns with the submission of database by DGM, Gujarat. The point could not be discussed as DGM, Gujarat was not present during discussion on this point. [Action: DGM, Gujarat / Mission-IIB, GSI]
49.10.14	Regarding the future regional exploration of coal in already explored CBM awarded blocks that have been handed over/relinquished as part of Para 47.11.16, Member Secretary informed the house the action taken by GSI has already been indicated in the agenda note. He informed according to Director General Hydrocarbon (DGH), Coal bed methane (CBM)

	exploration in the country is underway and as per agreement with the allottees the exploration programme may continue for 5 to 8 years and the areas can only be released after that period. DGH assured that whenever such information is required, that can be supplied to GSI. Subsequently a meeting was held on 07.07.2011 and 08.07.2011 at Natural Energy Resources Division, GSI Kolkata between DGH and representatives of Mission-IIB, GSI. DGH informed that the private entrepreneurs who have been allotted CBM exploration lease have not yet finally relinquished any of the blocks. However, DGH informed that as soon as the areas are released, the required information would be communicated to GSI. As such, these areas are not being currently considered for coal exploration. No representative of DGH was present at the meeting. The item is concluded.
49.10.15	Regarding issues on hydro-power/river linking project, dimensional stone and monitoring of landslide as part of Para 48.10.19, Member Secretary informed the house that as a follow up to the item, correspondence with the NIRM regarding instrumentation and monitoring of landslide study was made and a meeting between GSI and NIRM was fixed at Kolkata on 2nd August 2011; but nobody turned up from NIRM at the meeting. Member Secretary expressed hope that probably by September, 2011 a meeting can be arranged with NIRM. (Action: NIRM/GSI)
49.10.16	Regarding Quality management (QM) of GSI as part Para 48.11.01, DGM, Karnataka replied that the feedbacks regarding QM in GSI has already been conveyed. DGM, Karnataka expressed their willingness to have a committee constituted by GSI to monitor or review the reports of DGM, Karnataka. Member Secretary welcomed the idea and assured that GSI will take up the job of reviewing Karnataka reports and requested Deputy Director General, Southern Region to take the initiative in this regards. Deputy Director General, SR agreed in principle to review reports of DGM, Karnataka. Shri R.H. Sawker of Geological Society of India proposed that GSI scientists may guide the geologists of the State DGMs in the field as well. Member Secretary replied that this culture is already in vogue and requested DGMs to place request for field interaction to the concerned regions of GSI so that field interactions may be arranged at camps for promotion of science in the country. DGM, Karnataka added that besides reviewing of their reports by GSI, they look forward to GSI's guidance for standardization of the reports. Shri G. Dasgupta, Director, Q&M Cell of GSI replied that the basic methodology and standardization of data as conceived by GSI can be shared with DGMs and they in course can choose the peer reviewers from within their system. (Action: DGM, Karnataka/GSI)
49.10.17	Regarding basepaper on Marine and Coastal Survey as part of Para 48.12.04, Representative of NCAOR, Ministry of Earth Sciences replied that for sharing of data a meeting is proposed amongst all of the participating organization of MoES and GSI. He mentioned that the specifications and protocols of the survey have already been finalized and it will be communicated to GSI shortly.

	(Action: GSI/ NCAOR/MOES)
49.10.17	Regarding the base document on aeromagnetic survey for national aeromagnetic mapping programme, as part of Para 48.12.05, DGM Karnataka, inquired about the status of the request they placed for extension of the survey of the area falling under Sargur Schist Belt. R.H.Sawker of Geological Society of India mentioned that Mysore Minerals was the first to find out chromite deposits in Sargur Schist belt. In order to initiate the work in the area, an initiative was taken up by Geological Scoiety of India to train geologists of state DGM's, Mysore minerals, GSI, Student of Geology Departments of universities and NGRI. A team was constituted consisting of one officer each from DGM, NGRI, GSI and University. The work moved on in phases. First, the area was exposed to mapping by the participating members and later the data was consolidated. Prof. Naldrik from Canada was invited to provide training. Shri R.H. Sawker mentioned that in the third stage geoscientists with working experience in the great dyke of Rhodesia will be invited in Dec. 2011 for identification of mineralized zone of nickel sulphides and platinum ore deposits. It was also told that the AMSE wing of GSI has already identified some sulphide mineralized zone in this belt. Keeping these developments in view, he suggested to select this area as priority area under heliborne survey. Member Secretary informed that the Heliborne Survey Unit of GSI will be operational by the end of the month of September, 2011 and GSI will be ready to provide services for different states from October, 2011 onwards. GSI said under the priority item first the 600 sq. km area of Shimoga Schist Belt has been chosen for flying the heliborne unit. [Action: RSAS-GSI]
49.10.18	Regarding the development of facilities at GSI Lab-Shillong, NER as per Para 48.12.06, the representative of Directorate of Commerce and Industries, Manipur mentioned that the chemical analysis in GSI Lab. of some of the samples sent by Directorate of Commerce and Industries, Manipur gives encouraging results; he desired to get the analysis of PGE samples at GSI Chemical Laboratory, Shillong. He suggested the possibility of upgrading the GSI, Shillong Laboratory and to include PGE analysis within the ambit of this laboratory. Member Secretary replied that till the upgradation of NER lab is complete, GSI, SR can provide services for analysis of the PGE elements of the samples of Manipur. Director General, GSI emphasized that the samples can be sent to Kolkata for analysis using ICPMS. Member Secretary assured that by another one year the ICPMS will be installed at NER. The progress on this will be reviewed in the next CGPB meeting. [Action:GSI]
49.10.19	Regarding the reassessment of Iron ore reserve of leasehold area as part of Para 48.13.03, Shri Jai Prakash Singh, Director, Geology, DGM, Jharkhand stated the legal position of this issue and asserted that DGM is the authority to sanction entry of GSI in the lease hold area for reassessment of iron ore. Member Secretary replied that carrying out reassessment in the lease hold area doesn't come under the purview of GSI as per GSI's mandate/charter

	and even if this is done the regular programmes of GSI will suffer. Member Secretary read out the portion of the document where it is mentioned that DGM, Jharkhand wanted to take up the job of reassessment in the leasehold areas with the apprehension that lessee is not reflecting the exact reserve amount and that GSI may carry out reassessment of the area if it is converted to freehold. The house discussed on the issue of offering the reassessment by MECL if State Government took final decision on the issue. MECL agreed to undertake the work of reassessment of iron ore at the specified area. Secretary (Mines) observed that under Rule 27(3), Jharkhand may ask for second opinion about correctness of the reserve shown by the lessee. Shri Jai Prakash Singh, Director DGM, Jharkhand informed that the State wanted to reassess the area for correctness of the reserve. Secretary (Mines) informed that full reassessment of the area will be in violation of the lease rule, only sample checking may be done. The Secretary (Mines) suggested for review of the problem by forming a protocol comprising of IBM, GSI and State Government. He also advised the DGM, Jharkhand to write to MoM to workout the protocol for solving the problem. [Action: DGM, Jharkhand/IBM/ GSI]
49.10.20	Regarding The "Mineral Inventory" and "Baseline Data of Mineral Resources" of the State of West Bengal as per Para 48.13.06, DMM, WB replied that they are satisfied with the answer given by GSI in the agenda note and would like to exchange ideas and information in this regard. GSI mentioned that the customized data for the districts in 1:250K maps may be offered to DMM, WB. The item is concluded.
49.10.21	Regarding the feasibility of adopting the new process of lease application by DMM, WB as part of Para 48.13.07, Smt. Malabika Jha, Director informed that DMM, WB has initiated work in this particular project and preliminary discussion was held with the officers of GSI but the matter is yet to be discussed with IBM. Shri M.Sen Gupta, Chief Mining Geologist, IBM suggested areas may be demarcated by using GPS and mentioned that a number of companies are there who can perform this type of work. Smt. Jha replied that DMM,WB has already undertaken this exercise (Action:DMM,WB/IBM/GSI)
49.10.22	Regarding investigation for Platinum Group Elements (PGE) in collaboration with Geological Survey of India, Kerala Unit as part of Para 48.13.08, DGM, Kerala replied that although preliminary discussion was held with GSI but this programme has not being taken up by DGM, Kerala due to some other priority item in the current field season. The collaboration with GSI will be taken up after completion of the priority item. The item is concluded.
49.10.23	Regarding closed space drilling for PGE exploration at Sittampundi and Mettupalayam belt as part of Para 48.13.10, the Member Secretary informed the item will be discussed under the new agenda item put up by TAMIN. Hence, the item is concluded.
49.10.24	On para 48.13.11 regarding Heliborne Survey in undivided Koraput district, Orissa, Member secretary mentioned that answer has already been

	made under 49.10.17 and this may be taken up as new agenda item. Hence, the item is concluded.
49.10.25	Regional exploration in the adjoining areas of recently approved mining lease of Baryte mineral by IBM in respect of Village – Gadi Sunkapur, Taluka – Hungund, District – Bagalkot of Karnataka State and exploration of exposures / outcrops of Iron ore on either side of National Highway No. 17 (Mumbai-Goa NH) for non-mining purpose, as part of Para 48.13.14: Regarding the first part, GSI, SR stated that the Baryte deposit is within the schist belt and not associated with Bhima Formation. Part of the area is leased out and is beyond GSI's purview. Regarding the second part GSI, CR informed, that the work pertaining to exposures / outcrops of Iron ore on either side of National Highway No. 17 (Mumbai-Goa NH) will be taken up during next Field Season. The representative of DGM, Karnataka, requested to rethink this issue of investigating the Baryte mineral. Member Secretary informed that the item of investigation beyond leasehold area may be considered but the same has to be submitted as a new agenda item for consideration. [Action: DGM, Karnataka]
49.10.26	Regarding procedures of bill raising and payments as per Para 48.13.18, CMFRI requested GSI in last CGPB Committee - V meeting to adhere to follow the norms of bill raising and payment as practiced in CMPDI. GSI agreed to this and mentioned that payment will be made on monthly basis and that bills submitted by CMFRI will be cleared following the norm practiced at their end. The item is concluded.
49.10.27	Regarding Geological Monuments and Geoparks under Para 48.13.20, Member Secretary mentioned that already a concept note has been prepared and will be circulated. The issues will be dealt during a separate presentation session. The item is concluded.
49.10.28	Regarding geophysical Prospecting for Chromite in Manipur by GSI/MECL of Para 48.13.22, Directorate of Commerce and Industries, Manipur mentioned that only surface investigation have been carried out and suggested for one or two borehole drilling at Kwatha and Hangkau areas. The house discussed about the proposal and invited MECL to workout the proposal of drilling for chromite at Kwatha and Hangkau areas. MECL while agreeing to the proposal asked for the relevant data so that the investigation proposal of chromite may be formulated. MECL mentioned that as per the mandate of MECL, drilling can only be taken up after availability of G4 or G3 level survey report and wanted Directorate of Commerce and Industries, Manipur to provide all the available reports. GSI, NER confirmed that all available geophysical report have been provided to Directorate of Commerce and Industries, Manipur. GSI, NER also added that if required the available geological report will also be provided. GSI, NER further mentioned that GSI is already pursuing one STM item during the current FS and proposing one G4 investigation in the next field season. Member secretary requested Directorate of Commerce and Industries, Manipur to consider a collaborative field item on

	preliminary assessment of chromite with GSI during FS 2012-13 after which the drilling may be proposed. DGM, Manipur agreed to the proposal. (Action: Directorate of Commerce and Industries, Manipur /GSI, NER / MECL)
49.10.29	Regarding the Lithostratigraphic Mapping of Barail and Surma Sediments in Tamenglong and Churachandpur Dist., Manipur as part of Para 48.13.23 for locating coal occurrences, Member Secretary informed that one STM item is scheduled to be taken up by GSI, NER during FS 2012-13 to delineate the extent and quality of the coal occurrences in the Churachandpur Dist. of Manipur. Directorate of Commerce and Industries, Manipur expressed satisfaction to that. (Action: GSI, NER)
49.10.30	Regarding the exemption of fees/charge on all training programme conducted by GSI for the participants of Manipur State as part of Para 48.13.24. Member Secretary conveyed that Director General, GSI has agreed to exempt fees/ charges and provide TA/DA for NER participants for GSITI training. Directorate of Commerce and Industries, Manipur expressed their satisfaction and assured that this will enable greater number of participation from NER states. (Action: All NER State DGM)
49.10.31	Regarding Geo-environmental Appraisal of Imphal Valley of Manipur as part of Para 48.13.25, , Directorate of Commerce and Industries, Manipur raised the issue of Arsenic pollution in Imphal and Tubal districts and requested CGWB to take up some mitigation programme in that area. He further added that as per GSI study in 2008, arsenic pollution (As:140 ppb concentration) is reported in the area: however, CGWB carried out investigation way back in 1990s when no such pollution was reported. CGWB replied that 16 boreholes were drilled way back in 1990s and if Directorate of Commerce and Industries, Manipur, provides some concrete proposal the same may be considered by CGWB during the XII Plan period. He mentioned that mitigation doesn't come under the mandate of CGWB. GSI proposed to forward the investigation report of 2008 to Directorate of Commerce and Industries, Manipur for formulation of concrete proposal for investigation programme for arsenic pollusion for CGWB. (Action: GSI / Directorate of Commerce and Industries, Manipur/CGWB)
49.11.00	**PRESENTATIONS BY EXTERNAL EXPERTS OF TERM & STAGE REVIEW COMMITTEES ON GSI PROGRAMMES**
49.11.01	Member Secretary, CGPB initiated the presentations of two external experts. He mentioned that there had been a change in the review system of GSI's work by bringing in external experts during the Term Review (Regional level) and Stage Review (State level) meetings. He introduced eminent academician Prof. Tapas Bhattacharyya, University of Calcutta who was present during the Term Review of CHQ, Kolkata and renowned exploration geologist Dr. L. K. Nanda, Regional Director, AMD, Western Region, Jaipur who attended the Stage Review meeting of GSI, OP: Rajasthan, and offered their services as external experts.

49.11.02	Prof. Tapas Bhattacharyya, University of Calcutta shared his observations on GSI with special reference to the Term Review attended by him on 30.05.2011 at Kolkata. Prof. Bhattacharyya acclaimed GSI for being the flag bearer of Indian geosciences. He commented that in spite of GSI's concerted effort in the field of geosciences through decades, it is not identified as a scientific organization. He emphasized that the erudite expertise earned over years by the geoscientists at GSI should be put to practice and that transfer of personnel should take place with caution and foresight. Specialists should be allowed to practice specialization. He suggested to form core groups within GSI with expertise on particular geological terrains and topics. He mentioned that in spite of advancement of technologies, mapping seemingly taking a back seat in the present agenda of GSI and it should be made mandatory to collect field data and its processing with reinforcement of techniques, systematic target oriented mapping with new goals and perspective. Prof. Bhattacharyya advocated that new recruits should be trained in specialised mapping techniques. He added that geologists should not be pressurized to work under hostile weather/other condition of the terrain during odd months of the year as physical presence does not necessarily guarantee mental participation and, hence, fieldwork should be properly planned. He further opined that productivity of GSI scientists must not always be weighed in terms of minerals discovered or papers published and this kind of work should also be acknowledged. He mentioned the importance of experienced geoscientists for project planning and execution and suggested that projects submitted by young scientists should be examined from an unbiased point of view, as GSI needs to diversify its goals at par with global standards. Projects to be formulated with more contemporary relevance. He added that the regional offices executing a project should enjoy a freedom to chalk out the final details and execution of the item. He mentioned that although GSI scientists are slow in publishing their work, his visit to the Term review meeting bear witness to the good quality of the work being carried out by GSI. He eulogized GSITI for its excellent training facility especially at Chitradurga, Karnataka and Zawar, Rajasthan centers. He also suggested that some of the geoscientists may be rendered administrative and managerial trainings to become good administrator. He commended the idea of hosting GSI as a National Centre of Excellence. He appreciated the glorious tradition of GSI and MoM working hand in hand. He ended his speech by expressing that GSI should keep on renewing itself to meet the challenges of science and society but that should be made in harmony with all the people of this Govt. organization.
49.11.03	Dr. L.K. Nanda, Regional Director, AMD, Western Region presented his views regarding the work being carried out by GSI, OP: Rajasthan. He praised the well-structured mission mode of GSI with clear objective for an effective deliverables. During his discussion, Dr. Nanda appreciated the work carried out with special reference to STM and investigations on minerals. With a view to locating concealed ore bodies, he suggested following methodologies – (i) significantly increase inputs of high resolution multi-parameter airborne / ground geophysical survey and

	geochemical survey (ii) enhance drilling productivity by procurement of high performance hydrostatic rigs, outsourcing, dawn to dusk drilling and other measures. He also suggested having additional input of mobile geochemical van equipped with instruments like Atomic Absorption Spectrometer, UV VIS spectrophotometer, N2 Laser fluorimeter, for rapid on-field analysis of samples. While appreciating the workflow under Mission–III (Geoinformatics), he suggested having computerization of database at all levels of activity, switching over to digital technology for production of documents and maps, preparation and publication of utility thematic maps, dissemination of value added knowledge products. He appreciated the well-defined objectives of different Projects; methodology adopted and commented that the expected deliverables are in conformity with the objectives. He emphasized that in new prospect areas, substantial increase of inputs in airborne / ground geophysical exploration techniques and intensification of STM should be carried out with thorough conceptual modeling using integration and interpretation of high resolution multi-spectral remote sensing data, aerial photo interpretation, geological, geochemical and multi-parametric airborne/ground geophysical data using GIS platform and other advanced computer techniques. He recommended creation of a Central Forest Cell in GSI to speed up implementation of drilling projects in the forest-covered areas. Dr. Nanda recommended quality geological deliverables through collaborative efforts including Sister Organisations, Research Institutes and Universities.
49.11.04	Secretary (Mines) complemented GSI's initiative for externally reviewing its work. He mentioned as per HPC recommendations the Term and Stage reviews are conducted more systematically and with this, the quality of work in GSI is bound to improve. He stated that the reorientation of the Stage and Term review in GSI has been carried out with the motto of improving the quality of the work. He expressed his satisfaction over the external experts' comments on GSI's work. He mentioned that in recent years there has been massive inflow of new recruits, which has created massive training requirements for GSITI. He emphasized that in order to maintain a good quality of work, the new recruits need to be guided in the field. He commented that while the need for specialization continues, the objective of the transfer policy in GSI is to expose geoscientists to different geological milieu to orient them for future senior management positions. He felt the need for improvement in projectisation aspect of field season programme. He expressed his concern over issues like feedbacks from trainees regarding boarding, lodging and transportation facilities and advised GSI to initiate necessary steps to improve the conditions. The Secretary (Mines) appreciated the idea of mobile testing for mineral exploration as advocated by Dr. L.K Nanda and suggested DG, GSI to consider posting of a Central Forest Officer at DGCO, New Delhi. He expressed his concern about the proper placement of huge numbers of lady geologists, quality of equipments, quality of supervision, predicaments related to lab analysis and advised that a proper road map should be there to address these issues. He further added that Term Review material is to be prepared mainly by the supervising officers and to be subjected to post

	facto analyses by QM cell, New Delhi. AS [Mines] advised to start fieldwork in different Regions except for areas like NER where in the month of September it would be difficult to start field work due to rain. [Action: GSI]
49.12.00	**PRESENTATION BY DGM, CHHATTISGARH**
49.12.01	DGM, Chhattisgarh provided a detail account of the geology and present status of mineral/ore availability (coal, iron ore, bauxite, limestone, dolomite, tin etc.) in the states of the Chhattisgarh. DGM, Chhattisgarh touched upon the topics of scenario of mineral based industries, mineral resources, mineral concession granted, adherence to National Mineral Policy 2008 etc. DGM, Chhattisgarh presented glimpses of Chhattisgarh's mineral potentiality, mineral investigations carried out in 2010-11, mineral investigation proposals - 2011-12, 12th five year plan (Year 2012-17), relinquished/ operational RPs and applied PLs. DGM, Chhattisgarh demonstrated the Mining Tenement Registry System adopted by them. The representative of DGM, Chhattisgarh highlighted aspects of work from 'whole to part', consistency of accuracy, independent check, authenticity, owing to use of International Terrestrial Reference Frame (ITRF), legality accuracy concept for checking. He further showed how to prepare tenement registry with DGPS survey on a grid base map. Chairman, CGPB congratulated DGM, Chhattisgarh for their excellent work.
49.13.00	**PRESENTATION OF MODERNISATION COMMITTEE REPORT**
49.13.01	Dr. Anil Joshi, Director, Mission-IV, GSI presented the gist of the Report of the Committee on Modernisation in the Geological Survey of India. He mentioned that with a view to facilitate and improve the data collection, analysis, interpretation, storage and dissemination, pursue innovative exploration strategy, to imbibe the technological innovations, to act as a credible geoscientific data provider to the nation and to keep up with the policy guidelines; the modernization initiatives are being undertaken by GSI. He pointed out that as per HPC recommendations, upgradation of equipments are being carried out for Geological studies (including Marine), Geological laboratories, Survey and Drawing equipment, Chemical Laboratories, Geophysical, Airborne and Laboratory Studies, Drilling including Deep drilling and Geoinformatics. He mentioned that the present committee was constituted in June 2009 with members from GSI, academic and private institutions and gave a brief account of the historical development of the modernization efforts in GSI. He informed that the mandate of the Committee on Modernisation included carrying out stock taking of the existing laboratory facilities and instrumentation in GSI, to assess and identify the facilities requiring replacement, upgradation and induction of new technology, to carve out a modernisation programme in consonance with the Vision and Charter of GSI, and to set up a priority in terms of technology induction as per the requirement for the next 4 Five Year Plans. Brief outline of Mission-wise modernisation strategy was highlighted which *inter alia* include induction of hydrostatic deep drilling technique, digital borehole camera etc. Dr. Joshi described how it took a stride in the field of modernization in X Plan followed by the initiatives of the HPC, the process of transformation of GSI began from a field oriented

	survey to a technology savvy department. The results of the drive have been showing up with introduction of improved instruments for the fieldwork, quicker analytical results, successful operation of GSI portal, training and capacity building initiatives, etc. Dr Joshi ushered the confidence that report would give a definite direction to the modernisation process in GSI.
49.13.02	During discussion, couple of suggestions was received on the modernisation report of GSI. Representative of FIMI suggested that emphasis is to be given to procurement of instrument with regards to the requirement of Mission II as a priority in the XII Five Year Plan. Representative of Tata Steel suggested procurement of deep drilling machines with both non-coring and coring up to 1000m, Hyper logger capable of scanning the entire core as being used in Australia, borehole camera with borehole imaging technique, specific software etc. Secretary (Mines) appreciated the idea and informed about the method of co-operative research (CRC). He advised GSI to consider these issues before finalizing the document by sending mails to Australian company and such modern methodology may be explored and utilised. MECL has already procured 3 multi-parametric loggers (UK make) with capacity of 2000 m. [Action: GSI]
49.13.03	Shri R. H. Sawkar, Secretary, Geological Society of India raised the issue of performance of drilling equipments and urged that a feasibility report to be prepared with recovery percentage assessment. He also suggested that a mobile pilot plant for metallurgical test might be employed in GSI. DG, GSI informed new laboratories will be set up as part of Centre of Excellence in Faridabad, Kolkata and Bangalore where multiple analyses would be taken up.
49.13.04	DGM, Manipur requested to modernize the laboratories at Shillong to have REE/PGE analysis facility for NER states. DG, GSI assured that new labs will definitely be established at NER. Shri G.S. Jaggi, OSD, MoM pointed out that as per Annexure 10, p.119 of HPC report ICPMS, DMS, chromatograph will be procured for NER under the XII Five Year Plan.
49.13.05	DGM, Chhattisgarh inquired whether GSI has any plan to drill at deeper level to tap the geothermal energy from the geothermal fields of India and MT survey with special reference to Tatapani geothermal belt, Chhattisgarh. Shri P. B. Sarolkar, Director, NER, GSI replied that GSI completed work on potential of Tatapani geothermal field in 1998 where pilot R&D project for 300 KW done and which has been validated by Magnetotelluric studies carried out by NGRI. He added, in order to tap energy deeper probing is needed and MECL can contribute in that. The drill machine is similar to oil drill costing up to Rs.20-25 crores. Additional Secretary (Mines) inquired about other utilities of such drill machine and suggested that request can be put to organization like ONGC for deploying such rig on loan. Shri Sarolkar supplemented that the same drilling rig can also be of use for other geothermal field, CBM exploration, deep coal drilling. ONGC expressed their willingness to venture into the field of non-conventional energy resources.

	[Action: MECL/ONGC]
49.13.06	Representative of Data Code stated that many private entrepreneurs are coming up with geological/chemical labs. However, if the sample analysis and the maintenance of the labs of GSI can be upgraded by outsourcing private entrepreneurs then it will be a welcome scenario. Secretary (Mines) welcomed the idea and advised DG, GSI to look into the matter. Private entrepreneurs may collaborate with Government so that bankers can support private entrepreneurs in that effort. Data Code also suggested procurement of aircrafts through institutions with Govt.-private entrepreneurship. [Action: GSI]
49.13.07	Shri G. S. Jaggi, OSD, IC-HPC, MoM raised the issue of procurement of seismometers (both 120 mili second mobile, and 240 mili second broadband) by GSI. Since MOES and IMD are also carrying out similar type of work with establishment of broadband observatories, there is possibility of replication of work. AS (Mines) inquired whether GSI is duplicating, overlapping or complementing the work of MoES. Shri S. G. Gaonkar, Dy.D.G, Mission-IB, emphasized that the studies carried out by GSI, IMD and MOES are being integrated and this matter has already been discussed with sister organizations/ministries like NGRI, MOES, IMD. AS (Mines) advised DG, GSI to take a look into the aspect and appraise status in the next meeting. [Action: GSI]
49.13.08	ISM, Dhanbad inquired about any plan of GSI in setting up of laboratory at mineral rich state of Jharkhand. Secretary (Mines) clarified that instead of creating laboratory on State basis, emphasis is being given on capacity building for DGM. States to build their own laboratories as geoscience partnership with GSI. Additional Secretary (Mines) advised the State DGMs to take help of the Modernisation Report of GSI for their own benefit.
49.14.00	**PRESENTATION ON QUALITY MANAGEMENT IN GSI**
49.14.01	Shri G. Dasgupta, Director, QM Cell, GSI presented a thorough account of the Quality Management in GSI. He mentioned that based on the recommendation of the HPC the Quality Management Cell was created at DGCO, New Delhi to help devise new mechanisms and systems for quality management and quality control in GSI, to implement quality management systems and procedures, to ensure selection of consultant for quality audit and conduct evaluation studies. During 48th CGPB meeting A Report on Quality Management was also presented for feedback and to which States of Karnataka, Tamil Nadu, Meghalaya, Jharkhand, West Bengal, Haryana and H.P have responded. The critical areas identified are (i) collection of credible inputs in the form of basic field data (ii) dependable laboratory output (iii) a well-structured end product in the form of Reports/Publications. With this, a three-stage approach has been implemented in GSI with SOPs, internal quality check and technical auditing by engaging an external agency. Major steps in quality

	management in GSI includes committee meetings, floating dialogue box in GSI portal, feedback forms and posting of Quality Managers at CHQ/RHQ and SHQ, ISO Certification of Labs, Peer-review of 10% of Reports (FS 2007-08), peer-review of 20% of Reports (FS 2008-09), rechecking of 5% NGCM samples, conceptualization of the Modus Operandi for QM in GSI, conceptualization of the Modus Operandi for Report Scrutiny. A flow chart for quality management at SHQ and RHQ levels and reporting system at various levels were also presented.
49.14.02	Additional Secretary (Mines) expressed his views about the mixed reaction received for the reports, which were sent for peer review. He advised for larger sampling (in terms of quantity) for peer reviewing. Secretary (Mines) emphasized to address the issue of quality management by improving the fieldwork and put a check of the work through Stage Review/Term Review by external reviewers. Director QM Cell, GSI said that the reports classified as below average would be upgraded through further input. Secretary (Mines) commented that at every level of Stage Review or Term Review, there is always scope for improving the work done by introducing quality inputs by reviewers. Additional Secretary (Mines) declared that advisory would be issued for field officers so that there would be adequate and sufficient data taken for the reports. He also added that Term Review, Stage Review and QM cell should work in a concerted effort. He advised State DGMs to implement similar quality management and provide feedback for the GSI system. Additional Secretary (Mines) advised that SOPs prepared by GSI would be distributed to State DGMs and pointed out that much importance has been given to SOPs to evolve a country wide standard technique. He invited comments/ suggestions for improving the SOPs. The quality management system of GSI is being demonstrated to the State DGMs for their benefit. Shri A.K. Tyagi, ONGC mentioned that they had enlisted peer reviewers and system of peer institute. ONGC suggested peer review of the report at the draft stage instead of reviewing the final report and providing time to the workers for adding value to the report removing gaps in knowledge. ONGC also informed that the Peer Group gives directions to the work while reviewing the reports. Additional Secretary (Mines) advised GSI to go though the system of ONGC and adopt their best practises. TATA steel mentioned about the core recovery aspects, which largely control the assessment of mineral and the repeatability of analysis as per international code. [Action: GSI/MoM/State DGMs]
49.15.00	**PRESENTATION ON NATIONAL GEOMORPHOLOGICAL MAPPING, HYPERSPECTRAL MAPPING**
49.15.01	Smt. Saswati Chattarjee, Director, GSI presented a detailed account of the National Geomorphological Mapping and Hyperspectral Mapping projects undertaken by GSI and its partners ISRO and NRSA. GSI took five pilot projects on Geomorphological Mapping to prepare 50k map with the duration of three years. The product of this exercise would be an Oracle based GIS analysis. It has multiple application such as, exploration strategy, mine planning and development, mine reclamation, environment

	management, geohazard mitigation, landslide, flood, tsunami, earthquake, seismic microzonation, river basis analysis, ground water exploration, town planning, engineering project and civil application and military application. By the year-end 1000 maps will be completed out of 4500 maps in 50k scale. GSI took up a pilot project on Hyperspectral studies in FS 2009-10 in Hutti-Muski schist belt, Karnataka in collaboration with NRSA and SAC, Ahmedabad to study the hyperspectral signature and remote sensing. After completion of the project, hyperspectral survey of mineralized belts of Jharkhand, Orissa, Rajasthan and Gujarat were undertaken in 2010-12. The projects in Rajasthan and Gujarat are in collaboration with SAC and were for three years and continuing. The objective of the hyperspectral mapping is to collect hyperspectral signature and prepare a national spectral database of rocks and minerals jointly with other organizations. The concept note in this regard has already been submitted.
49.15.02	DGM, Arunachal Pradesh enquired whether there is any overlapping in hyperspectral work with so many players. It was clarified that there was no overlapping since it has been discussed in SGPB with other organizations and the spectral library would be prepared jointly. DGM, Andhara Pradesh expressed that the map prepared in 1:25000 scale will be helpful for mine planning and, as such, work may be prioritized in mineralized belts. Secretary (Mines) responded that 50k map is in right scale and depending on the manpower GSI can go up to 1:25000 scale. DGM, Orissa expressed that the State has prepared geomorphological map on 1:25000 scale for the entire coast of Orissa. DGM, Orissa offered that if needed data can be shared. GSI commented there is provision for incorporating collateral data and may be done under guidance of NRSC. DGM, Chhattisgarh mentioned that some private companies are using hyperspectral data for exploration. But the utility is largely unknown to the State DGMs; therefore State DGMs must be acquainted with hyperspectral data. De Beers announced that they have successfully utilized hyperspectral signatures to locate some of the kimberlite pipes. It has also agreed to arrange one-day workshop at Bangalore on hyperspectral mapping in their lab to pass on their experience. Secretary (Mines) directed all State Govts. to take advantage of this and get De Beers included in the CGPB Committee where hyperspectral mapping is included. [Action: GSI/ all state DGMs/ De Beers]
49.16.00	**PRESENTATION ON NATIONAL AIRBORNE GEOPHYSICAL MAPPING**
49.16.01	Shri S. G. Gaonkar, Dy. D.G, Mission-IB made the presentation on National Airborne Geophysical Mapping and opined that that airborne geophysics is a cost effective rapid geophysical exploration technique for the whole country. He discussed the deliverables of the project comprising aeromagnetic (total field), gamma ray spectrometer and gravity data-sets, varieties of filtered/ derived aeromagnetic, spectrometric and gravity maps, depth to sources of geophysical anomalies and combined interpretation

	maps (including basement lithology). A seamless map of entire country would be prepared. Thus, it would be useful for targeting blocks for mineral investigation, oil, ground water, tectonic studies, etc. Recommendation of the Expert Committee was highlighted and indicated that gravity survey to be included, general flight altitude (500 m altitude, 120 m line spacing) to vary in the Himalayas.
49.16.02	Representative of ONGC expressed that such an ambitious project for coming 15 years with existing technology may not be feasible. He argued that technology available may become obsolete and redundant after 2-3 years and new technology would come. Therefore, pilot projects may be taken up in all Regions concurrently and subsequently next set of technology may be utilised for the future projects. FIMI mentioned about maintaining scale of mapping. Secretary (Mines) expressed that the methodology should be adopted that would change as per need of the hour. He advised to look into all the resources within the country and outside for new technology. The stakeholders and Planning Commission would provide necessary funding. However, he cautioned to look into the reasons why DGH failed on a similar project decade back. It should be learning lesson for GSI. [Action: RSAS, GSI]
49.17.00	**PRESENTATIONS ON NATIONAL DRILL CORE LIBRARY**
49.17.01	Dr. K. Rajaram, Dy. D.G, Central Region presented a vivid picture of the core library in different parts of the world particularly USA, Canada, Germany and Australia and also presented the details of the core library developed by GSI, Central Region, Nagpur. He also expressed that Rs. 10.55 Crores (road map) project has been prepared and submitted to DG, GSI as a "Centre of Excellence". Shri G.S Jaggi, Director, OSD, HPC recounted that it is in the RFD items and need to be finalized and concretization has to be done by March 2012. Dy. DG, ER suggested to preserve the marine cores. Dy.DG, NR suggested preserving the ice cores. Dr. Rajaram expressed that maintaining 4 degree temperature may not be possible in the present set up for preserving ice core. MECL inquired the accessibility of the cores by any scientists to get the details. Dr. Rajaram clarified that cores of AMD, MECL etc. are kept in the library. Additional Secretary (Mines) desired to have a proper integrated approach and to work in a time bound manner to set up core libraries. Regional library can start in ad hoc basis and after sufficient time they can attain the national status. [Action: GSI]

49.18.00	**AGENDA OF 49TH MEETING OF CGPB**
49.18.01	The comments of GSI on each of the new Agenda items of 49th CGPB were sequentially placed before the House (available in the Agenda notes of 49th CGPB meeting) by the Member Secretary, CGPB for discussion and further actions. Dr. Prabhas Pande, Member Secretary, CGPB requested all the members to go through the status given by GSI for each of the Agenda in the volume "Agenda notes for 49th CGPB". The status note as given in the Agenda paper may also kindly be consulted along with the Minutes of the meeting.

AGENDA: 1	***Investigation of Banded Hematite Magnetite Quartzite in Kamrup District bordering Meghalaya*** *A small area of about 1.2 sq km near Kampadoli village of Boko in Kamrup District, Assam(Toposheet no.78O/1&5) was surveyed by the DGM, Assam during the field season 2008-09 during which two veins of Banded Hematite Magnetite Quartzite were located across the Boko river flowing through the area from south to north direction. The general trend of the occurrence is N 55^{0}E to S 55^{0}W with dip ranging from 59° to 85° towards SE. The major portion of the BHMQ veins seems to have extended towards the territory of Meghalaya. The thickness of the BHMQ bands ranges from 0.50m to 1.00m. Considering the increased economic importance of iron ore in the present day context, it has become very essential to ascertain the actual extension and potentiality of the existence of iron ore deposit in Kamrup district bordering Meghalaya. With the limited resources it is difficult for DGM, Assam to carry out the entire task by itself. Hence, it is proposed to have a detailed geological investigation of the entire border area in collaboration with GSI during the fields' season 2011-12* *(Suggestion: DGM, Assam)*
49.18.02	Shri U. K. Behra Dy. DG & HOD, NER informed that GSI has carried out systematic geological mapping in the area and observed that the iron ore bodies are small, detached pockets and may be explored upto G-3 level of investigations. GSI may take up the programme in FS 2012-13 in collaboration with DGM, Assam. DGM, Assam requested GSI to take up the item in the current FSP, if possible. Additional Secretary (Mines) reiterated that GSI would take up a few new items in the ongoing FSP on a selective basis. He advised that GSI would reassess the deployment of officers of GSI, SU: Assam and re-examine whether it can be taken up in the current FS, failing which the programme will be taken up in the next FS 2012-13. [Action: GSI/ DGM, Assam]
AGENDA: 2	***Detailed investigation of coal in Singrimari area of Dhubri district, Assam*** *Existence of Gondowana coal in Singrimari area of Dhubri district was first reported by C.S. Fox in 1935. GSI covered a part of the area by detailed mapping and drilling earlier and reported occurrence of 4 to 5 million tonnes of coal of carboniferous age. However, the northwestern part of the deposit is yet to be covered by detailed exploration. Moreover, there is a reported occurrence of tertiary coal towards south of Singrimari Tiniali covering an area of 2.0sq.km. Considering the possibility of occurrence of a large deposit of Gondowana and Tertiary coal in the entire area it has been proposed to carry out detailed exploration/evaluation of the coal deposit in and around Singrimari area (Toposheet no.78G/14) of*

	Dhubri district, Assam in collaboration with GSI during the field season 2011-12. *(Suggestion: DGM, Assam)*
49.18.03	Dy. DG, NER informed that GSI already started the work of this project. DGM Assam agreed to deploy one geologist to be associated in the project. Additional Secretary (Mines) advised that depending on the result of initial exploration, additional programme of coal exploration for the area south of Singrimari as submitted by DGM, Assam will be taken up. [Action: GSI/ DGM, Assam] Regarding work in the Bhadoi- Pancholi area, DGM, Assam informed that joint traverse was made with MECL. Due to the law and order problem in that forest covered area, DGM, Assam expressed unwillingness to carry out work for the time being. Additional Secretary (Mines) requested DGM, Assam to attend CGPB Committee meetings regularly where most of the issues can be sorted out and advised DGM, Assam to submit a status of the said area to CGPB Committee V. Additional Secretary (Mines) directed that GSI would provide TA/DA for the trainees from the DGMs of NER to attend GSI Training Institute courses. [Action: GSI/ DGM, Assam]
AGENDA: 3	*In the previous 46th CGPB meeting, the Special Secretary (Mines) assured to the members that MoM will help capacity building at State level with regard to explorations. Therefore it is requested to MoM to come out with a clear guidelines in the context of type of help extended to strengthen the State DMGs.* *(Suggestion: DMG, Karnataka)*
49.18.04	Dr. K. Ayyasami, Dy. DG, Mission-V, informed that GSI training institutes are providing free of cost training to all State Govt. candidates. The training programmes are to be viewed from GSI portal. Seats are also kept reserved for the State Govt. participants for their capacity building. Additional Secretary (Mines) advised DGM, Karnataka to go through the training portal of GSI and take the benefit. DGM, Karnataka informed that 40 geologists have already been trained by GSITI, Chitradurga center and that the training is upto their satisfaction.
AGENDA: 4	*As IBM is the custodians of the region wise resource assessment data, since they have the data on village level maps. Hence, IBM may be requested to ascertain the position of resource assessments of the respective States.* *(Suggestion: DMG, Karnataka)*
49.18.05	IBM informed that the resource assessment of the respective States would be available in the revised mineral inventory book in one year. It is also informed that resources estimation and assessment is done on cadastral map with superimposition over toposheet and georeferencing. IBM already suggested the States to digitize cadastral maps (khasra).

	Chhattisgarh has already done it. Some of the States have started working on it. Unless the States make the digitized khasra maps available to IBM, lease area cannot be demarcated on it. Additional Secretary (Mines) advised that all the cadastral maps to be georefernced and the quantum of deposits to be identified in that. Additional Secretary (Mines) directed IBM to present a concept paper and detail presentation in the next CGPB. [Action: IBM/ all state DGMs] DGM, Andhra Pradesh informed that they have digitized cadastral map of Cuddahpah District for minor minerals from the hard copy of revenue department and sought advice whether the digitized cadastral maps need to be approved by the State Revenue department. Hard copies are authenticated by Revenue Department. Additional Secretary (Mines) indicated that as long as concerned revenue department authenticates the map it would be valid. DGM, Orissa expressed that 117 mine tenement registry have been completed for iron, manganese, chromium. Khasra maps obtained from Department of Land Records are superimposed on toposheets but there is deviation in spite of georeferencing. IBM commented that georeferencing has to be done through GPS. Geological Society of India desired that a circular should be issued from IBM stating that resource assessment to be done in cadastral scale by State DGMs. Datacode opined that people from Revenue department should be involved and special session of SGPB may be called where Revenue department has to participate. Additional Secretary (Mines) accepted the suggestion and advised that Revenue departments to be invited for discussion and it should start from mineral rich States. [Action: All State DGMs/ IBM]
AGENDA: 5	*The Karnataka State is having a long range of mafic and ultramafic group of rocks in Sargur Schist Belt of Karnataka. Therefore M/s. MECL may be requested to take up exploration programmes for PGE mineralization on promotional basis.* *(Suggestion: DMG, Karnataka)*
49.18.06	It is been discussed in SGPB with the MECL. Status given in the Agenda notes may please be referred.
AGENDA: 6	*The Central Ground Water Board is having vast resources and expertise in the field of establishment of mapping aquifer systems, aeromagnetic studies and geogenic which causes contamination of aquifers and artificial recharge studies. It is requested the organization to take up studies in Karnataka in at least one micro basin in each district. The findings of these studies may be provided to the State DMGs for further course of action.*

	(Suggestion: DMG, Karnataka)
49.18.07	CGWB informed that (i) aeromagnetic study is not in their domain; (ii) regarding geogenic study CGWB monitor the quality of ground water in States and the data can be shared; (iii) District wise Mapping of aquifer system – CGWB have 5 pilot projects for aquifer mapping in micro scale of the entire country and one of the proposed project is in Karnataka. Therefore, data on outcome of the project can be shared. In XII plan, the project may be extended by CGWB. [Action: CGWB]
AGENDA: 7	*Forest clearance issues* *The private agencies involved in mineral exploration in the State are facing problems for acquiring latest forest maps in the State. For this, CCF from Karnataka has informed in the deliberations of the 44th SGPB meeting that earlier forest maps could be used to get the forest clearances. The chairman of the SGPB meeting insisted to make available the relevant circulars to all the field officers, so that quick decisions are taken at the field level.* *(Suggestion: DMG, Karnataka)*
49.18.08	Regarding forest clearance issue, this has been discussed during follow up action of 48th CGPB vide para 49.10.09
AGENDA: 8	*The Government of India circular dated 19.8.2010 modifying section 1-3(v) Forest Conservation Act, categorically states that "Prospecting of any mineral under PL would be a stage between survey, investigation and mining; as such permission under FC Act would be required. However, in case of metallic ores test drilling upto 20 bore holes per 10 sq. kms. for prospecting exploration or reconnaissance without felling of trees shall not attract the provisions of the Act."* *In the light of the above Act, even Governmental organizations (GSI, AMD, MECL) including State DMGs will not be allowed to carry out drilling, pitting and trenching unless they obtain clearance from the concerned DFOs. This issue has already been addressed by the MoM in the previous CGPB meeting, also suggested for allowing the MoEF to permit geo-scientific investigations by Governmental agencies for prospecting/exploration without attracting provisions of F.C. Act, 1980 provided there is no felling of trees.* *Even prospecting operations are not approved by the concerned authorities within the areas proposed / held under mining leases on the basis that ML is for mining and not for prospecting.* *(Suggestion: DMG, Karnataka)*
49.18.09	Regarding forest clearance issue, this has been discussed during follow up action of 48th CGPB vide para 49.10.09
AGENDA: 9	*Proposal for Geological Exploration of Diamond in Simdega District*

	In Jharkhand State Diamond mineralization is reported in Simdega district. It was reported locally that in ancient times diamond was mined by the local villagers in this area. In the recent years some private companies have also carried out geological exploration work in and around Kinkel and Kurdeg of Simdega district for diamond. This area falls under toposheet no. 73B/2/3 and approximate boundary of possible deposition may lie around 22020'-22040'N Latitude and 8405'-84015'E Longitude. *In the interest of the state, it is essential to investigate low volume high value Mineral i.e. diamond mineralization in the area. Geological setting of the area is favorable for diamond mineralization. Since DMG does not have expertise for carrying out geological exploration of Diamond. This exploration programme can be taken by GSI as priority basis.* *(Suggestion: DGM, Jharkhand)*
49.18.10	DGM, Jharkhand expressed their satisfaction on the reply of GSI as given in the Agenda notes.
AGENDA: 10	*Proposal for Geological Exploration of Beryl in Simdega District (Toposheet: 73B/2)* *In Jharkhand State Beryl mineralization is reported in and around Basentoli area of Simdega district. This area falls under toposheet no. 73B/2 around 22032'N Latitude and 84012'30"E Longitude.* *Initial report indicates Beryl mineralization in the pegmatite vein. Since Beryl is an important atomic mineral, therefore this area needs intimated attention and can be systematically explored for Beryl mineralization. Geological setting of the area is favorable for Beryl mineralization. Hence, it is requested to take up Beryl exploration programme in the area.* *(Suggestion: DGM, Jharkhand)*
49.18.11	DGM, Jharkhand expressed their satisfaction on the reply of GSI as given in the Agenda notes.
AGENDA: 11	*Proposal for Geological Exploration of Platinum group of elements in East Singhbhum District* *Department of Mines & Geology have mapped serpentenised peridotite belt of Saraikela-Kharsawan and East Singhbhum District of the State. In the East Singbhum District serpentenised peridotite has been occurring in the South of Singhbhum thrust zone (STZ) that is being utilized as flux in iron ore industry by Tata Steel. Platinum group of elements has been reported from the contact of ultra-basic and granite-gnessic rock deposits of Bhitardari, Jhagarsai and surrounding areas. Hence, it is proposed to take up geological exploration programme for platinum group of elements in these areas.* *(Suggestion: DGM, Jharkhand)*

49.18.12	DGM, Jharkhand expressed their satisfaction on the reply of GSI as given in the Agenda notes.
AGENDA: 12	*DMG Jharkhand is carrying out Geological Exploration in 6 different Coal Blocks and drilling in 3coal blocks allotted to PSU's in Jharkhand. State DMG of Jharkhand has asked for some technical help from G.S.I. for preparation of G.R. G.S.I. had initially deputed one officer for technical help. This officer has now left GSI and no one has replaced him in spite of repeated request. G.R. preparation of Latehar, Burhakhap and Rajbar Coal block is almost in final stage. We required some urgent help in field and for finalization of G.R.* *(Suggestion: DMG, Jharkhand)*
49.18.13	DGM, Jharkhand expressed their satisfaction on the reply of GSI as given in the Agenda notes.
AGENDA: 13	*The enhancement of exploration quantum and speed are getting affected due to non-availability of statutory prospecting permission for drilling in forest areas from Forest Departments of States and MOEF, New Delhi. Exploration programme in number of blocks could not be started due to non-availability forest permission. The problem will continue if the existing norm for granting permission from MOEF/State forest authority of 15-20 boreholes per 10 Km is not revised to 15-20 boreholes per Km2 for detailed exploration. Permissions for exploration in 21 blocks, applied under existing rules, are still pending and exploration in forest area of these blocks could not be taken up.* *Therefore there is urgent need to change the existing norm of drilling in forest areas and matter is needed to be addressed at the earliest* *(Suggestion: CMPDI)*
49.18.14	Regarding forest clearance issue, this has been discussed during follow up action of 48th CGPB vide para 49.10.09
AGENDA: 14	*MGMI is a body which has more than 100 years of its existence. All through the century the Institute is associated in enhancing the cause of Mineral industries for advancement though its relentless persuasion. It has vast wealth of expertise (3000 members) in different sectors of earth sciences. Presently MGMI is member of CGPB.* *It is therefore earnestly requested that this great Institute to be included as a member of Quality Management Group for GSI.* *(Suggestion: MGMI)*
49.18.15	MGMI desired to take part in the exercise of quality management of GSI. GSI mentioned that notification regarding involvement of organizations in the exercise already exists where MGMI is not a member. However, expertise of MGMI may be utilized for peer review of GSI reports and MGMI may nominate some senior scientists from their organization to be on QM's panel of peer-reviewers. Additional Secretary (Mines) advised DG, GSI to examine the proposal.

	[Action: DG, GSI]
AGENDA: 15	*During last three decades many mineral deposits including potash were investigated and rendered unviable based on quality, quality mineability, etc. as per the know-how and requirements then prevailing.* *With change of scenario because of improved metallurgical methods, enormous rise in demand and improved mining methods these deposits warrants reassessment and/or evaluation if done then how many of such deposits identified so for as viable entity.* *(Suggestion: MGMI)*
49.18.16	List of the deposits as desired is given in the Agenda notes. GSI cannot re-evaluate mineral resources from old GSI reports at present. However for iron, the cut off grade has come down from 55% to 35% and GSI will be taking up the work of reassessment in freehold areas. In draft report of XII plan, GSI is going for potash and phosphorite exploration in 750 sq km target area. Additional Secretary (Mines) reminded that aspects of mining are not under the purview of CGPB; only exploration aspects can be discussed. The areas to be taken up for fresh exploration is decided by CGPB and its Committees.
AGENDA: 16	*Land acquisition is becoming a serious problem for entrepreneurs specially, because most of the major mineral deposits are in tribal area where issue is very sensitive.* *Question is whether steps taken for addressing this problem by the Government to help entrepreneurs and for growth of mineral industries.* *(Suggestion: MGMI)*
49.18.17	GSI mentioned that land acquisition is a policy decision taken by Central and State Governments. GSI has no comments to offer in this regard.
AGENDA: 17	*In view of faster depletion of iron, manganese, chromite resources of the country and likely increase in coming decade due to proposed development of consuming industries, there is urgent need for comprehensive reassessment of available resources for future. In this connection the low grade, sub-grade and marginal grade resources need evaluation for proper utilisation, planning along with R&D efforts. SGAT has been recommending this for last several years. There are many constraints to execute such a massive programme, which has to be deliberated in CGPB and has to be planned and executed jointly by the State and Central Governments, MECL, IBM and others.* *(Suggestion: SGAT)*
49.18.18	SGAT expressed the need for re-assessment of low-grade iron in the border/ periphery zone and felt that GSI is competent enough to re-assess the same. IBM responded that they are already on the job. New

	threshold values have been formulated and lower cut off grade have been set. New cut off to be assessed by lessee/ GSI. However, for fresh exploration the new cut off value (e.g., cut off of iron ore 35%) is considered for mining plan. IBM issued article 27 (2) asking State Govt. to be vigilant so that in the remaining period of the lease, the leaseholder has to explore the entire deposit, otherwise the lease will be cancelled. SGAT referred the case of chromite, where mining can go below 70m in Sukinda valley with the advancement of modern technology. IBM replied that the said ore is friable, there would be inundation problem in the mines, and mining would not be viable. MECL expressed that many reports have been prepared taking the lower threshold values. But there are no takers. Additional Secretary (Mines) stated that chromite is of great relevance. MoM is in interaction with the Government of Orissa on this. The exercise of the reassessment has been initiated by IBM and Govt. is working on the issue. [Action:IBM/MECL]
AGENDA: 18	*To take up Integrated Geophysical Surveys in Godavari Valley Coalfield, where potential coal bearing formations likely to occur at shallow depths below the Traps cover and younger sediments, so as to facilitate delineation of suitable blocks for exploration.* *(Suggestion: SCCL)*
49.18.19	SCCL informed that law and order situation has improved. SCCL is ready the take care of the explosives for geophysical survey and 1 to 2 geophysicists can be provided from SCCL to work with GSI. Since SCCL do not have geophysical instruments, GSI is requested to take geophysical survey in Godavari coalfield. GSI stated that, in the deployment of geophysicists in GSI Southern Region, the priority has been given for geophysical mapping. Besides, geophysical support for mineral exploration and seismic microzonation are also crucial programmes in Southern Region. Though, the proposed programme is attractive, but considering the total manpower in geophysics stream of GSI, particularly in Southern Region, at present it can not be taken up. However, with new entrance of geophysicists the same would be taken up.
AGENDA: 19	*Further Modification is required in the forest guidelines allowing to take-up 15-20 boreholes per one sq. km for detailed Exploration for Coal.* *(Suggestion: SCCL)*
49.18.20	Regarding forest clearance issue, this has been discussed during follow up action of 48th CGPB vide para 49.10.09.
AGENDA: 20	*Necessary guidelines are required to be framed out, atleast to cover*

	Coal Reserves in the block completed by Detailed Exploration, under UNFC, as is the case with other minerals in India, and is very essential to avoid over estimation of extractable reserves for any future investigations likely to take place. *(Suggestion: SCCL)*
49.18.21	SCCL opined that some guidelines as well as training on classification of resource of coal is required since it is currently following the ISP system and not the UNFC. IBM responded that MCGR method is applied for non-fuel mineral. Additional Secretary (Mines) felt the need for reconciliation, and advised a dialogue between GSI and IBM so that the matter may be sorted out with SCCL and necessary guidelines are issued. [Action: M-IIB, GSI/IBM/SCCL]
AGENDA: 21	*Requirement of GRs and other reports free of cost from GSI by NLC pertaining to lignite exploration in the country for the Integrated Lignite Resource Information System (ILRIS) projects which is being implemented by them on behalf of Ministry of Coal.* *(Suggestion: Ministry of Coal)*
49.18.22	CMPDI confirmed that they were getting GSI reports with the undertaking not to use for commercial purpose. *(Action: MOC / MOM)*
AGENDA: 22	*Geo-Hydrological studies at Ramnad area by CGWB:* *As the exploration in Ramnad area has unearthed a sizable lignite deposits, a detailed study on Geo-Hydrological conditions of the above area which is very close to sea will be of immense contribution for planning the exploitation of these resources in future.* *Hence CGWB may be advised to take up the Geo-Hydrological study in the Ramnad area.* *(Suggestion: NLC)*
49.18.23	CGWB responded that they are already carrying out joint work with NLC. The lignite in the Ramnad area is in deeper level, and CGWB does not have rigs, which can go up to 500 to 600 m. Therefore, geo-hydrological work at that depth could not be taken up at Ramnad.
AGENDA: 23	*Supply of borehole data of coastal areas in Tamilnadu* *Borehole data including the geophysical log details pertaining to the coastal areas of Tamilnadu is useful for planning the regional exploration for lignite.* *Hence ONGC may be advised to spare the coastal areas data with NLC for planning the future lignite exploration.* *(Suggestion: NLC)*
49.18.24	ONGC explained that its data would not be of much help for lignite

	exploration by NLC since depth of investigation of ONGC is much below lignite occurrence. Geophysical logs are obtained more than 2 km below depth of lignite. However, they have no objection on data sharing.
AGENDA: 24	*Exploration of Iron - manganese ore deposits of Singhbhum (West) distt. of Jharkhand state* *Iron - manganese ore deposits of Singhbhum (West) distt. of Jharkhand state is a part of popularly known horse show shaped. 'Bonai synclinorium and belonging to the 'Iron Ore Group' of early Pre-cambrian formations. The Iron Ore deposit in this sector is mainly in the western limb of the above Syncllinorium. The western limb is a hilly, upland tract and having hills alternating with valleys, steep mountains, deep forests on the mountain slopes, and in the river basins, some stretches of comparatively level or undulating country for which it has not been properly explored. With the increasing demand of iron ore in the country, GSI may initiate exploration with mapping on 1:10,000 scale along with litho-structural mapping for this mineral belt.* *(Suggestion: IBM)*
49.18.25	GSI commented that only after taking the clearance from forest department, work could be taken up in the next FSP. IBM agreed to pass on all the information regarding areas without forest cover. DGM, Jharkhand also pointed out that non-availability of forest clearance is hindering the exploration. Additional Secretary (Mines) advised to refer specific cases to MOEF. If clearance could not be obtained, then MoM will take up the issue with MOEF on a case-to-case basis and will request MOEF to review the existing guidelines, if required for getting the clearance within a limited time frame. [Action: GSI/ IBM/MOEF/MoM]
AGENDA: 25	*UNFC to continue as basis of reporting of mineral reserves/resources in the country* *Indian Bureau of Mines is of the view that the JORC Code arid the Listing Rules require a 'public report', which includes a statement appearing in a takeover document, issued by a public mining company concerning its exploration results, mineral resources or ore reserves to be based on, and fairly reflect, estimates and supporting documentation prepared by a 'Competent Person', A 'Competent Person' is a person having a minimum of five years relevant experience and has to be a member or fellow of a recognized Institute of the country. It sets minimum standards for public reporting of exploration results, mineral resources and ore reserves based on extensive guidelines on the criteria to be considered for the work being undertaken by a Competent Person and provides a mandatory system for classification of tonnage/grade estimates according to geological confidence and*

	technical/economic considerations. *The Government adopted UNFC system vide Gazette Notification NO.185 dated 17-4-2003 through an amendment in Mineral Conservation & Development Rules (MCDR), 1988 which makes it statutory for all non-coal major mineral mine-owners to report to Indian Bureau of Mines their reserve/resource data as per UNFC for Mining lease, Prospecting licence and Reconnaissance permits. The Geological Survey of India and State DGMs are also reporting mineral resource as per UNFC system for the National Mineral Inventory.* *Principles of the UNFC code involves a clear and. unambiguous presentation of Information reasonably required and based on work undertaken and information compiled by the Recognized Qualified Person (RQP); It is strongly felt that the existing well established UNFC system with-increased monitoring activity, periodic updating of the code and enhancing the role of RQP in line with 'the Competent Person under JORC with suitable amendment in MCDR, 1988 can full fill the listing requirements of Indian Stock Exchanges and there is no need to switch over to JORC code just for a few companies, who are likely to come up with IPO.* *(Suggestion: IBM)*
49.18.26	The issue has already been discussed. The status has been reflected in the Agenda notes as at 49.10.04 and action be taken accordingly..
AGENDA: 26	*In the 48th CGPB meeting, TAMIN requested GSI to take up the exploration of closed space drilling for PGE at Sittampoondi and Mettupalayam belt. As per the minutes of the meeting, TAMIN had a detailed discussion with GSI and CGM officials on 10.02.2011. Accordingly, TAMIN sent the minutes of the 54th SGPB meeting to the Director General, GSI, Kolkata to take up further follow up action on the recommendation of the SGPB along with a detailed proposal. It is requested to take up the above issue for discussion.* *(Suggestion: TAMIN)*
49.18.27	Shri S.C. Rath, Dy.DG, Op. Tamil Nadu informed that GSI would be taking up drilling at 100m spacing in the next FSP. Additional Secretary (Mines) advised that TAMIN, GSI, MECL to hold a meeting and urgently initiate necessary steps for operationalisation. [Action: TAMIN/GSI/MECL]
AGENDA: 27	*Prospecting of molybdenum ore in Velampatti South Block in Harur Taluk-Additional borehole drilling to re-asses the reserves- GSI to take up the work to reassess the molybdenum occurrences in TAMIN's prospected area so that TAMIN will take further follow-up action for filing PL/ML application for molybdenum after study of techno-economic feasibility report.* *(Suggestion : TAMIN)*

49.18.28	Action has already been taken by GSI. If there are any inadequacies, TAMIN may bring it to the notice of GSI for further action.
AGENDA: 28	*Standard samples for calibration and commissioning of XRF and AAS* *GMRDS/CGM-Gujarat is pursuing Geological mapping project after executing MOU with GSI for necessary support. XRF and AAS instruments have already been procured for the purpose of analysis of samples generated so far. The instruments need calibration first so that further work of analysis may be undertaken. Tender for procurement of standard samples have already been invited. In the meantime GSI was requested for providing standard samples for calibration and a letter in this regards given to Director General, GSI on 9th August 2011 for providing the standard samples on loan from GSI Laboratory so that analysis of samples may be initiated.* *(Suggestion: CGM-Govt. of Gujarat)*
49.18.29	CGM, Gujarat said that they had obtained analyses for 38 elements instead of 68 elements. Dr. N.K. Roy, Dy. DG (Chemistry), GSI informed that GSI has supplied the data of 400 samples of 39 elements and CGM, Gujarat is requested to intimate which are the elements that have not been done. GSI would be able to analyse 59 elements by the end of March 2012. The analyses of PGE elements are outsourced. GSI chemists are engaged in CGM, Gujarat laboratory to calibrate the instruments with the GSI chemical standards. Subsequently when the standards of CGM instruments would arrive, again GSI would extend help in calibration. CGM, Gujarat agreed to take up the issue bilaterally. Additional Secretary (Mines) understood that GSI is already involved in calibration of the instruments of CGM, Gujarat and requested DG, GSI to expedite the work and sort out the problem, if any. A clear and specific report on this will be placed in the next CGPB meeting. [Action: GSI/ CGM, Gujarat]
AGENDA: 29	*GSI Portal: The dissemination of data in public domain through the portal is indeed a laudable step by GSI. However, as may be seen, the investigation reports in the portal do not consist of plates or annexures as listed in the report. As such, the information in the portal is not complete in the absence of geological map and plates. It would therefore be desirable if the maps and annexures are also incorporated along with the report in the portal.* *It has also been observed that by and large, the portal consists of investigations done by GSI before 2000, whereas the portal needs to be updated by the latest investigation reports for the period up to 2008-09.* *[Suggestion: Association of Economic Geologists (AEG)]*
49.18.30	Notes. Due action will be taken by GSI.
AGENDA: 30	*Priority for Heliborne (Electro-Magnetic) Geophysical Surveys in the*

	OGP areas in the programme of GSI: *Whereas litho probe studies to indentify potential areas for precious metals / minerals by GSI are in progress alongwith programme of National Aeromagnetic Survey, but It is strongly felt that more emphasis for Heliborne Geophysical Surveys at 50m height may be given in OGP - Archaen and Proterozoic areas in the annual programme on priority. There is somewhat lack of integration of geological and geophysical data in the investigations carried out by GSI and this aspect needs to be given top priority for identifying concealed mineral deposits particularly for gold and diamond.* *[Suggestion: Association of Economic Geologists (AEG)]*
49.18.31	Notes for further FS action plan.
AGENDA: 31	*Mandate of GSI:* *It may be observed that in most of the investigations carried out by GSI, the geological data confine to G-3/G-4 level for resource assessment as per UNFC. This preliminary geological data in most of the cases is not sufficient for taking investment decisions for risky venture of detailed exploration. In view of this, it is for consideration if the mandate of GSI for carrying out some more detailed exploration / investigation is modified up to G-1 level for resource assessment. It is felt that the useful data upto G-I level of UNFC will encourage investors for carrying out further prospecting / exploration and to establish feasibility of mineral deposits.* *[Suggestion: Association of Economic Geologists (AEG)]*
49.18.32	The observation was noted. However it was pointed out that exploration activities will need to be carried out as per the mandate of GSI.
AGENDA: 32	*MoEF may be approached to allow search, through exploration, for coal/lignite deposits that may occur within Buffer zones at the periphery of Sanctuary areas.* *(Suggestion: Committee – V, CGPB)*
49.18.33	Not discussed
AGENDA: 33	*MoC and MoM may be requested to introduce Dual Mineral Licensing Policy for Coal and Lignite exploration* *(Suggestion: Committee – V, CGPB)*
49.18.34	Not discussed
AGENDA: 34	*MoC may be requested to categorically instruct all allotees of coal/lignite exploration to send Geological Reports to NEnR, M-IIB, GSI, Kolkata and CMPDIL, Ranchi and also the relevant report to NLC, Neyveli for timely incorporation of resources in the National Inventory*

	(Suggestion: Committee – V, CGPB)
49.18.35	Not discussed
AGENDA: 35	*MoC to consider revision of rates for Promotional Exploration of Coal & Lignite, so that the agencies involved could achieve the given drilling targets with all efforts by centralizing the available resources* *(Suggestion: Committee – V, CGPB)*
49.18.36	Not discussed
AGENDA – 36: Late Receipt	*Constitution of Technical Advisory Committee (TAC) by GSI in consultation with NDMA, which will be involved in various action plans as enumerated in the guidelines (para 11.5.2 on page 102)* *(Suggestion: NDMA)* *Action by Ministry of Mines for establishing a Center of Landslide Research Studies and Management (CLRSM) as proposed in the Guidelines (para 11.5.2 on page 101) in consultation with NDMA. This Center will be the nodal point to undertake all research activities towards landslide mitigation and also act as an advisory body for State Government departments and Union Territories as well as Central Government on various Landslide Projects. GSI to look into the matter so that there is no duplication between its own divisions like Engineering Geology Division or other related divisions and the new proposed Center.* *(Suggestion: NDMA)* *The essential / short term / long term goals as listed under Guidelines to be placed before the CGPB for record as well as for inclusion in all the future activities / programs of GSI/MoM.* *(Suggestion: NDMA)* *GSI, the Nodal Agency for Landslides, may consider taking up selective Mitigation / Projects as part of the next Five Year Plan, as mere studies of Landslides will not address the concerns of people affected by Landslides.* *(Suggestion: NDMA)* *Shifting of Landslide Division for UP and Uttarakhand from Lucknow to Dehradun for their effective utilisation in the hilly state which is more vulnerable to Landslides.* *(Suggestion: NDMA)*
49.18.37	NDMA requested MoM to take up mitigation programme of landslide/ pilot projects with support from Planning Commission in landslide prone States. NDMA also urged MoM to develop a monitoring and early warning system for some devastating landslide porne areas. This technology can be transferred to State Govts. since States hardly have

	any geotechnical expertise. Additional Secretary (Mines) recounted that it is to be evaluated to the extent of resources that can be provided to GSI on landslide issues (monitoring and early warning system). It has to be resolved that who would mitigate the landslide disaster, the State Govt. or other agencies of Central Government. At the present stage, GSI is not in a position to take up mitigation programme. GSI will certainly take up the task as per mandate given to them. Additional Secretary (Mines) suggested MOES to be included in the group. The issues will be discussed in the inter-ministerial meetings to workout the solution. Director(T) to coordinate and convene such a meeting urgently. [Action: MoM/NDMA]
AGENDA – 37: Late Receipt	*Project Sampark in J&K State is facing problem for construction of the road Loren-Barapather-Jamiawali Gali- Basam Gali due to involvement of National Park Sanctuary Land.* *(Suggestion: Border Roads, Sampark)*
49.18.38	In the absence of representative of Border Roads, Dy. DG, GSI, NR stated that the concerned GSI office might be contacted for necessary geotechnical investigation. However, since the proposed tunnel passes through wild life sanctuary, feasibilities/modalities are also to be worked out keeping these aspects in mind. [Action: Border Roads, Sampark]
AGENDA – 38: Late Receipt	*Requirements of Instruments/equipments for modernisation.* *(Suggestion: DGM, Nagaland)*
49.18.39	DGM, Nagaland requested to provide instruments/equipments for modernisation. They also advocated for strong connectivity between SGPB and CGPB. Additional Secretary (Mines) requested DGM, Nagaland to submit the proposal for consideration. GSI would try to provide the instruments instead of cost of instruments. Additional Secretary (Mines) also commented that GSI would look into the demands of entire NER States. All NER States have been requested to submit their proposal by September 2011. [Action: GSI/ DGM, Nagaland/ All NER State DGMs]
AGENDA – 39: Late Receipt	*Training Needs of DGM, Nagaland- submitted proposal for 10 Courses to the FTC, NER.* *(Suggestion: DGM, Nagaland)*
49.18.40	Dr. K. Ayassami, Dy. DG, Mission-V requested DGM, Nagaland to go through GSI Portal for the Training Institute Course calendar and they should be in contact with the RTI, Shillong and FTC, NER for training programme. Additional Secretary (Mines) reiterated that the TA/DA of the NER candidates would be borne by GSI.

	[Action: GSI/ DGM, Nagaland]
AGENDA – 40: Late Receipt	*Geophysical Prospecting of chromite in Manipur by GSI and MECL.* *(Suggestion: Directorate of Commerce and Industries, Manipur)*
49.18.41	Regarding prospecting of chromite, this has been discussed during follow up action of 48th CGPB vide para 49.10.28. Additional Secretary (Mines) advised all the states of NER to submit the lists of proposals by September, 2011 for consideration. [Action: GSI/MECL/ all state DGMs of NER]
AGENDA – 41: Late Receipt	*Lithostratigraphic Mapping of Barail and Surma sediments in Tamenglong and Churachandrapur Districts, Manipur for locating Coal Occurrences.* *(Suggestion: Directorate of Commerce and Industries, Manipur)*
49.18.42	Regarding the issue, this has been discussed during follow up action of 48th CGPB vide para 49.10.29 [Action: GSI, NER]
AGENDA – 42: Late Receipt	*Heliborne Survey in the Manipur portion of the Arakan-Chin Ophiolite Belt for prospecting of Ni, Cr, Cu, PGE/PGM and other associated minerals.* *(Suggestion: Directorate of Commerce and Industries, Manipur)*
49.18.43	Additional Secretary (Mines) responded that action plan for Heliborne Survey by GSI be worked out keeping these aspects in mind.
AGENDA – 43: Late Receipt	*Opening of a GSI full fledged Office at Imphal exclusively for Manipur.* *(Suggestion: Directorate of Commerce and Industries, Manipur)*
49.18.44	Additional Secretary (Mines) agreed that the matter would be looked into.
AGENDA – 44: Late Receipt	*Ground water investigation by the Central Ground Water Board in the Imphal Valley in Thoubal and Bishnupur District of Manipur in Arsenic polluted areas for mitigation of health hazards.* *(Suggestion: Directorate of Commerce and Industries, Manipur)*
49.18.45	CGWB intimated that they had no plan of distilating water but if Arsenic is detected they would seal the well. CGWB has no mandate for construction of storage tank or treatment plant. However, CGWB can guide in designing the tube wells so that aquifers responsible for releasing arsenic can be sealed. Additional Secretary (Mines) advised that Regional Director, CGWB, Assam, GSI and Directorate of Commerce and Industries, Manipur would hold a meeting to resolve the

	issue. [Action: CGWB/GSI/ Directorate of Commerce and Industries, Manipur]
AGENDA – 45: Late Receipt	*Exemption of fees/charge on all training programme conducted by GSI.* *(Suggestion: Directorate of Commerce and Industries, Manipur)*
49.18.46	DG, GSI has declared that no fees will be taken from the State Govt. of NER. Moreover, TA/DA of the trainees will be paid by GSI.
AGENDA – 46: Late Receipt	*Chemical analysis of chromite and geochemical samples from ophiolite belts of Manipur in the GSI's laboratories free of charges.* *(Suggestion: Directorate of Commerce and Industries, Manipur)*
49.18.47	Additional Secretary (Mines) commented that GSI labs would make all effort to accommodate chemical analysis of NER States and this would be givne due priority status would be reviewed in the next CGPB meeting.
AGENDA – 47: Late Receipt	*Supply of equipments and vehicles: to the DGM, Manipur by GSI under its NE assistance programme.* *(Suggestion: Directorate of Commerce and Industries, Manipur)*
49.18.48	Additional Secretary (Mines) agreed that instruments may be provided by GSI, but vehicles cannot be provided. [Action: GSI]
AGENDA – 48: Late Receipt	*Request for supply of toposheet wise geological maps with structural information on 50K scale for groundwater mapping.* *(Suggestion: Tamilnadu Water Supply & Drainage Board)*
49.18.49	Additional Secretary (Mines) requested TAMIN to place demand to GSI for 50k geological map (paper prints) except for the restricted areas. Additional Secretary (Mines) advised GSI to follow the dissemination policy. [Action: TWSDB/GSI]
AGENDA – 49: Late Receipt	*MOU between SAARC Disaster Management Centre, New Delhi and Geological Survey of India for collaborative studies on issues of natural disasters and Societal impacts for developing Capacity Building / Advocacy programs for mutual benefit of SAARC-people* *(Suggestion: SAARC Disaster Management Centre)*
49.18.51	Additional Secretary (Mines) expressed that GSI would work out the feasibility in consultation with SAARC DMC, since such training involving SAARC countries may warrant line of credit from Ministry of External Affairs.

AGENDA – 50: Late Receipt	*MOU for sharing Public -domain real-time Geoscientific data of Geological Survey of India for mutual benefit of People of SAARC Member states* *(Suggestion: SAARC Disaster Management Centre)*
49.18.52	Additional Secretary (Mines) stated that the feasibility of MoU with GSI should be studied in detail. SAARC may keep contact with GSI in this regard and initiate all necessary steps. [Action: SAARC/ GSI/MoM]
AGENDA – 51: Handed over during the meeting	*DGM Andhra Pradesh wanted to draw attention on the followinge items:* 1. *Rule for mining conditions and mining leases* 2. *Explore the possibility of existence of coal bed methane beyond 600 m* 3. *Treat the public sector company SCCL as per MECL/GSI/CMPDI/AMD under section 4* 4. *Study of Rare Metal in mica bearing pegmatite in Nellore Mica Belt* *(Suggestion: DGM, Andhra Pradesh)*
49.18.53	Dy. DG & HOD Southern Region indicated that profit-making organization cannot be exempted. Dy. DG & HOD, Southern Region also assured to render all help to the DGM, AP as per decision to be taken up in CGPB Committee meeting/ SGPB regarding study of rare metal in pegmatite. Item may be taken up in next FS. Additional Secretary (Mines) directed to have a tripartite meeting involving AMD/GSI/DGM to solve the rare metal issue. It should be discussed in meeting of SGPB as well as relevant committee meeting of CGPB and a concrete action plan be developed with clear time lines. [Action: AMD/GSI/DGM, AP]
49.19.00	NHPC conveyed their thanks to GSI for carrying out the geological and geophysical survey in Tamanthi project, Myanmar. NHPC got the geological report from GSI; however, it desired to have the draft geophysical report by 7th September 2011. Member Secretary, CGPB mentioned that all efforts would be made to hand over the draft report to NHPC in time.
49.20.00	**CONCLUDING REMARKS BY ADDITIONAL SECRETARY (MINES)**
49.20.01	Shri S. K. Srivastava, Additional Secretary (Mines), while concluding the session highlighted the following: 1. Systematic presentation of follow up actions and agenda items during the meeting by Dr. Prabhas Pande, Member Secretary was appreciated. 2. Due to superannuation, services of many of the GSI officers will not be available in next Central Geological Programming Board. CGPB members placed on record their appreciation of the sincere and dedicated work put in

	by them and conveyed theire co best wishes for a happy and productive retired life. 3. Participants of the State DGMs are complemented for the quality of discussion. States will be given all assistance as far as possible, and their requests will be considered favourably. 4. Some of the Central Govt. Departments /agencies did not turn up for the meeting and communication to be made to all the members of CGPB for attending CGPB meeting positively 5. Follow up action of the 49th CGPB meeting to commence immediately, even without waiting for the minutes and a continuous review and monitoring be done by DG, GSI and other senior officials.
49.21.00	**VOTE OF THANKS**
49.21.01	Shri S. G. Gaonkar, Dy. DG, Mission-IB, GSI proposed the vote of thanks.

LIST OF PARTICIPANTS – 49th CGPB

Sl.No.	Name	Designation	Department/Organisation
1	Shri S.Vijay Kumar	Secretary	Ministry of Mines
2	Shri S.K.Srivastava	Addl.Secretary	Ministry of Mines
3	Shri A.Sundaramoorthy	Director General (Acting)	Geological Survey of India
4	Dr. Prabhas Pande	Addl.Director General	Geological Survey of India
5	Shri S.K.Nayak	Jt.Secretary	Ministry of Mines
6	Shri G.Srinivas	Jt.Secretary	Ministry of Mines
7	Shri Suresh Kishnani	Director	Ministry of Mines
8	Dr.HSM Prakash	Director (Tech)	Ministry of Mines
9	Shri G.S.Jaggi	Director, IC-HPC	Ministry of Mines
10	Shri Bhupal Nanda	Director	Ministry of Mines
11	Shri RK Malhotra	Director	Ministry of Mines
12	Shri HL Sharma	Sr.Tech. Director	NIC-MoM
13	Shri Gaurav Kumar	Dy.Secretary	Ministry of Mines
14	Dr Prem Chand	Pr. Secretary	Ind. & Comm. Dept., AP
15	Shri BRV Susheel Kumar	Director	DGM, AP
16	Shri GP Upadhaya	Secretary	Dept. of Indus. Dev., Sikkim
17	Shri RV Sharma	Dy.Director	DGM, Bihar
18	Shri Jayant Kumar Pashine	Jt.Director	DGM, Chhattisgarh
19	Dr.Datta Mainkar	Dy.Director	DGM, Chhattisgarh
20	Shri KC Samria	Comm. & Secretary	DMM, Assam
21	Shri LC Bezbarua	Director	DGM, Assam
22	Shri V Vyasa	Commissioner	CGM, Gujarat
23	Shri Arun K Sharma	State Geologist	DIC, Himachal Pradesh
24	Dr.Jai Prakash Singh	Director	DGM, Jharkhand
25	Shri Asutosh Prasad	Dy.Director	DGM, Jharkhand
26	Shri DR Veeranna	Addl.Director	DGM, Karnataka
27	Shri RK Sharma	Director	DGM, Madhya Pradesh
28	Shri SK Shah	Sr.Geologist	DGM, Madhya Pradesh
29	Shri VS Sawakhande	Director	DGM, Maharashtra
30	Shri RS Kalamkar	Dy.Director	DGM, Maharashtra
31	Shri JK Sinha	Addl. Director	DGM, Manipur
32	Shri DK Bhattacharya		DMR, Mehgalaya
33	Dr. E Laloo	Sr.Geologist	DGM, Meghalaya
34	Shri Trilochan Mohanta	Jt.Director	DGM, Orissa
35	Shri S Singh Bimbra	State Geologist	DIC, Punjab
36	Dr.SS Jamrani	Suptd. Geologist	DGM, Rajasthan
37	Shri TA Subbiah	Jt. Director	DGM, Tamil Nadu
38	Dr.RK Dalea		DGM, Uttar Pradesh
39	Smt. Malavika Jha	Director	DMM, West Bengal
40	Shri Somnath Das	Sr.Geologist	DMM, WB
41	Shri C Balaraman	Director	DGM, Kerala
42	Shri O Koratemjen	OSD	DGM, Nagaland
43	Shri K Arhomo Lotha	Jt.Director	DGM, Nagaland
44	Shri Vir Singh	Sr.Geologist	DGM, Haryana
45	Dr H Lallenmawia	Jt. Director	DGM, Mizoram
46	Shri TT Gamdik	Secretary (G&M)	Arunachal Pradesh
47	Dr.S Chaudhari	Jt.Director	DGM, Arunachal Pradesh
48	Shri PB Maithani	Director	AMD, Hyderabad
49	Major General RC Padhi	DDG, Military Survey	Ministry of Defence
50	Shri CS Gunewar	Controller General	IBM
51	Shri M Sengupta	Chief Mining Geologist	IBM
52	Shri Parag M Tadlimbekar	Sr.Mining Geologist	IBM

Sl.No.	Name	Designation	Department/Organisation
53	Shri Narendra U Kadu	Astt. Editor	IBM
54	Shri RV Dhabekar	Sr. Technical Asstt.	IBM
55	Shri RB Tyagi	Dy.Advisor(Minerals)	Planning Commission
56	Prof. BC Sarkar	HOD, Deptt. of Appl. Geol	ISMU
57	Dr John Kurian P	Scientist-D	NCAOR
58	Mrs. Nandita Choudhury	Sr.Pr.Scientist	CIMFR
59	Shri MS Babu Rao	GM (Exploration)	SCCL
60	Shri B Venkata Naidu	AGM (Geology)	SCCL
61	Dr G Uday Bhaskar	SuptdGeophysicist	SCCL
62	Dr G Durga Vara Prasad	Sr. Geophysicist	SCCL
63	Shri S Sengupta	Sr.Advisor	DGH
64	Dr.SK Jain	Scientist-D	CGWB
65	Shri LK Nanda	Regional Director	AMD
66	Shri MK Khandelwal	Dy. Regional Director	AMD
67	Shri SS Bakshi	Director	CWC
68	Shri VKS Visen	GM (Exploration)	MECL
69	Shri S Mitra	Sr. Manager(Geophysics)	MECL
70	Shri Ashu Mathur	Manager (Geology)	MECL
71	Dr SK Haldar	Director(Tech)	MECL
72	Shri Yogesh Sharma		MECL
73	Shri PM Basheer Ahmed	CMD	TAMIN
74	Shri R Purushothama	AGM	TAMIN
75	Dr KVVS Gautam	General Manager (E)	CMPDIL
76	Shri E Hanumantha Rao	HoD (Geology)	NLC
77	Shri LP Sonkar	Sr.Advisor	FIMI
78	Dr R Bhardwaj	AGM (Exploration)	HCL
79	Shri VN Mishra	Dy. Manager (E)	HCL
80	Shri Remu Gulepi	Manager(Mktg.)	HCL
81	Shri AK Tyagi	GM (Geology)	ONGC
82	Dr AK Moitra	Council Member	MGMI
83	Shri RH Sawkar	Secretary	Geological Society of India
84	Shri Tapas Bhattacharya	Professor (Geology)	Univ. of Calcutta
85	Pro. AK Pachauri	Sr. Consultant	NDMA
86	Shri SBS Chauhan	Chairman	AEG, Delhi Chapter
87	Shri Manoj Basu	GM	NHPC
88	Dr RC Mohanty	President	SGAT
89	Shri Ajay Kr Singh	GM	Fugro
90	Shri ROD Pullin	MD	Fugro
91	Shri Amit Sood	India Représentative	Fugro
92	Dr.LK Das	Chief Consultant (GP)	Fugro
93	Shri I Sanyal		Rungta Mines Ltd., Orissa
94	Dr OP Mishra	Director	SAARC, DMC
95	Shri Arun Kalra	Head, Business Dev.	De Beers India Pvt. Ltd.
96	Dr VP Mishra	Dy. Director General	Geological Survey of India
97	Shri Harsh Gupta	Dy. Director General	Geological Survey of India
98	Shri BB Prasad	Dy. Director General	Geological Survey of India
99	Dr S Madabhushi	Dy. Director General	Geological Survey of India
100	Shri Mukul Tiwari	Dy. Director General	Geological Survey of India
101	Dr H Sarvothaman	Dy. Director General	Geological Survey of India
102	Dr S Mukerji	Dy. Director General	Geological Survey of India
103	Shri UK Behera	Dy. Director General	Geological Survey of India
104	Dr Indra Prakash	Dy. Director General	Geological Survey of India
105	Dr K Ayyasami	Dy. Director General	Geological Survey of India
106	Shri SG Gaonkar	Dy. Director General	Geological Survey of India

Geological Survey of India

Sl.No.	Name	Designation	Department/Organisation
107	Shri SC Rath	Dy. Director General	Geological Survey of India
108	Dr SK Wadhawan	Dy. Director General	Geological Survey of India
109	Smt Y Suguna Thulasi	Dy. Director General	Geological Survey of India
110	Shri NK Roy	Dy. Director General	Geological Survey of India
111	Shri Dinesh Kumar	Dy. Director General	Geological Survey of India
112	Shri AK Malaviya	Dy. Director General	Geological Survey of India
113	Shri R Jayakumar	Dy. Director General	Geological Survey of India
114	Shri K Rajaram	Dy. Director General	Geological Survey of India
115	Shri Samit Bhattacharya	Dy. Director General	Geological Survey of India
116	Shri Khirod Parida	Dy. Director General	Geological Survey of India
117	Shri DRV Ramana Murty	Dy. Director General	Geological Survey of India
118	Shri Binod Kumar	Dy. Director General	Geological Survey of India
119	Shri Sumant Gupta	Dy. Director General	Geological Survey of India
120	Shri LS Jain	Dy. Director General	Geological Survey of India
121	Shri P Sarkar	Director	Geological Survey of India
122	Shri K Balasubramanian	Director	Geological Survey of India
123	Shri MS Jairam	Director	Geological Survey of India
124	Shri Rajeev Srivastava	Director	Geological Survey of India
125	Dr Subimal Mukherjee	Director	Geological Survey of India
126	Shri M Mohan	Director	Geological Survey of India
127	Shri GP Mohapatra	Director	Geological Survey of India
128	Shri S Dayanand	Director	Geological Survey of India
129	Shri RN Patra	Director	Geological Survey of India
130	Dr SP Venkata Dasu	Director	Geological Survey of India
131	Shri PB Sarolkar	Director	Geological Survey of India
132	Shri GK Gupta	Director	Geological Survey of India
133	Shri Partha Singha	Director	Geological Survey of India
134	Shri B Nageswaran	Director	Geological Survey of India
135	Shri Harbans Singh	Director	Geological Survey of India
136	Shri Bhaskar Chakraborti	Director	Geological Survey of India
137	Shri N Kutumba Rao	Director	Geological Survey of India
138	Smt Saswati Chatterjee	Director	Geological Survey of India
139	Shri Nitish Das	Director	Geological Survey of India
140	Shri Pratip Gupta	Director	Geological Survey of India
141	Shri SK Chakraborty	Director	Geological Survey of India
142	Shri PA Ramesh Babu	Director	Geological Survey of India
143	Shri AK Saha	Director	Geological Survey of India
144	Shri M Hariprasad	Director	Geological Survey of India
145	Shri M Chakradhar	Director	Geological Survey of India
146	Shri M Raju	Director	Geological Survey of India
147	Shri Eshwara Basappa	Director	Geological Survey of India
148	Shri S Balakrishnan	Director	Geological Survey of India
149	Shri G Das Gupta	Director	Geological Survey of India
150	Shri Sanjiv Sharma	Director	Geological Survey of India
151	Shri Virendra Kumar	Director	Geological Survey of India
152	Dr Anil Joshi	Director	Geological Survey of India
153	Shri YC Kar	Director (GP)	Geological Survey of India
154	Dr. LN Singh	Director (GP)	Geological Survey of India
155	Shri Alok Ku. Mukherjee	Director (GP)	Geological Survey of India
156	Shri SR Samaddar	Director (GP)	Geological Survey of India
157	Dr Dinesh Gupta	Director (GP)	Geological Survey of India
158	Shri Rajendra Sharma	Director (GP)	Geological Survey of India
159	Shri Kalyan Mukherjee	Director (GP)	Geological Survey of India
160	Dr Baldau Singh	Director (GP)	Geological Survey of India

Geological Survey of India

Sl.No.	Name	Designation	Department/Organisation
161	Dr N Venkataramana	Director (GP)	Geological Survey of India
162	Shri RM Sundaram	Suptd. Geologist	Geological Survey of India
163	Shri Arunabha Das	Suptd. Geologist	Geological Survey of India
164	Shri Prasanta Mishra	Suptd. Geologist	Geological Survey of India
165	Shri MA Karim	Suptd. Geologist	Geological Survey of India
166	Shri M Koshy John	Suptd. Geologist	Geological Survey of India
167	Shri MC Upadhyay	Suptd. Geologist	Geological Survey of India
168	Shri SK Bohra	Suptd. Geologist	Geological Survey of India
169	Dr Asutosh Joshi	Suptd. Geologist	Geological Survey of India
170	Shri Asit Saha	Sr. Geologist	Geological Survey of India
171	Shri DK Mukhopadhyay	Sr. Geologist	Geological Survey of India
172	Shri Gautam Chatterjee	Sr. Geologist	Geological Survey of India
173	Shri TK Jana	Sr. Geologist	Geological Survey of India
174	Shri S Sen	Sr. Geologist	Geological Survey of India
175	Shri Anshuman Acharyya	Sr. Geologist	Geological Survey of India
176	Shri Kamlesh Mukhopadhyay	Sr. Geologist	Geological Survey of India
177	Shri Tanay Dutta Gupta	Sr. Geologist	Geological Survey of India
178	Shri Rakesh Kumar	Sr. Geologist	Geological Survey of India
179	Shri Gautam Saha	Sr. Geologist	Geological Survey of India
180	Dr J.Bagchi	Sr. Geologist	Geological Survey of India
181	Shri Prem Prakash	Sr. Geologist	Geological Survey of India
182	Shri SN Bhagat	Sr. Geologist	Geological Survey of India
183	Shri Debasish Rout	Sr. Geologist	Geological Survey of India
184	Dr Sreemati Gupta	Sr. Geologist	Geological Survey of India
185	Smt Pushplata	Sr. Geologist	Geological Survey of India
186	Dr Snigdha Ghatak	Sr. Geologist	Geological Survey of India
187	Dr Amar Singh	Sr. Geophysicist	Geological Survey of India
188	Shri DV Punekar	Sr. Geophysicist	Geological Survey of India
189	Shri RK Misra	Sr. Geophysicist	Geological Survey of India
190	Shri Balaram Das	Sr. Geophysicist	Geological Survey of India
191	Shri AK Lahiri	Sr. Geophysicist	Geological Survey of India
192	Shri NVS Murty	Sr. Geophysicist	Geological Survey of India
193	Shri AB Ekka	Geologist	Geological Survey of India
194	Shri RR Singh	Geophysicist	Geological Survey of India
195	Shri KV Satyanarayana	Geophysicist	Geological Survey of India
196	Shri Bijay Krishna Nandi	Geophysicist	Geological Survey of India
197	Shri Mehdi Hasan	Geophysicist	Geological Survey of India
198	Shri SM Syiem	Geophysicist	Geological Survey of India
199	Shri SP Chaubey	Geophysicist	Geological Survey of India
200	Shri H Channabasanagdvm	Geophysicist	Geological Survey of India
201	Shri V Ramamurty	Geophysicist	Geological Survey of India
202	Shri Ravi Kumar Bandi	Geophysicist	Geological Survey of India
203	Shri PC Bairwa	Asstt. Geophysicist	Geological Survey of India

Government of India
Ministry of Mines

F.No.4[11]2011-M.I New Delhi, the 3rd October, 2011

To

Director General
Geolocial Survey of India
27, J. L. Nehru Road
Kolkata-700 016.

Subject:- Appoved minutes of the 49th CGPB held on 24-25 August, 2011.

Sir,

I am directed to refer to your mail dated 20.9.2011 on the above mentioned subject and forward herewith a copy of the approved minutes of the 49th CGPB held lon 24-25 August, 2011 at New Delhi for necessary action at your end.

Yours faithfully,

Encl; as above

(Dr. H.S.M. Prakash)
Director9Tech.)