

**MINUTES OF THE 49<sup>TH</sup> MEETING OF THE KERALA STATE  
GEOLOGICAL PROGRAMMING BOARD**

Date : 01.08.2012

Venue : Banquet Hall, Government Guest House,  
Thycaud, Thiruvananthapuram.

Time : 11.00 A.M – 02.15 P.M.

Participants : Separate list appended.

**Proceedings:**

**49.1.0:**The Member Secretary and Director of Mining & Geology Shri C. Balaraman welcomed Shri K.S. Srinivas.IAS, Chairman, SGPB Secretary to Government, Industries (IP) and all delegates to the 49<sup>th</sup> SGPB meeting.

**49.2.0:**In his welcome speech, Director of Mining and Geology informed that in the year 2011-12, the Revenue Collection of the Department has been increased by 21% compared to last year. This was achieved by the valuable and sincere efforts of the officers of the Department. He added that the Government of Kerala had set up a committee for the modernization of the Department of Mining & Geology. He briefly explained dual functions of exploration and implementation of Acts and Rules on Mineral administration entrusted upon the Department. The Member Secretary also informed that based on the direction of Hon. Supreme Court, the Department is also involved in the inventorisation of the Gem stones in the Sree Padmanabha Swamy temple, Thiruvananthapuram.

**49.3.0:** Thereafter as per the request of the Chairman, members and invitees introduced themselves.

**49.4.0:**The Chairman, Shri K.S. Srinivas, IAS, in his key note address mentioned that when compared to other states of India, the State of Kerala is not rich in mineral resources and hence mining activity also is not much prominent in Kerala. He pointed out that with the limited staff strength of the Department of Mining and Geology, it is very difficult for them to curb all the illegal mining activities of the State. He added that there is a proposal for the modernization of the Department of the Mining and Geology. The Chairman then mentioned about the rich heavy mineral deposits of Chavara region which is being extracted by IRE and KMML. He commented on the activities of the mining welfare Board. The Chairman encouraged all members of the SGPB for an open discussion on the matters related with the mining sector. He also informed that SGPB should act as a platform for mutual interaction between the different organizations in the industrial sector. The Chairman concluded his keynote address with a remarkable comment on the work being taken up by the Geological Survey of India, Kerala Unit on the project of Varkala Cliff as a National Geological monument/Geopark.

**49.5.0:**Thereafter the member Secretary sought clarifications if any on the minutes of the 48<sup>th</sup> SGPB meeting.

**49.5.1:**Shri S. Singanenjiam, Director and HOD, Geological Survey of India, State Unit : Kerala invited attention to para 3.4 of the minutes of 48<sup>th</sup> SGPB meeting regarding Maruda gold prospect. Deputy Director explained that the Ministry of Environment and Forest has not given clearance so far. He added that in the 50<sup>th</sup> CGPB meeting it was informed that a pilot study was being conducted in Odisha and based on the results of that study the Ministry would consider the other proposals to carry out exploration in forest areas.

**49.5.2:**Deputy Director enquired about whether the inventory of land slides prepared by GSI Kerala unit has been transferred to Department of Mining and Geology, Shri Singanenjiam replied that the same has been transmitted to the Director of Mining and Geology.

**49.5.3:**Shri P.K. Bharathan, Geologist, KCCP commented on the para 3.5 regarding Kommangala Padavu, Kasargod and said that the KCCP has applied for NOC to the District Collector. He also requested about the

investigation report of Kommangala Padavu. Deputy Director replied that it is being finalized and furnished to M/s. KCCP Limited soon.

49.5.4: Shri P. Praveen Kumar, Senior Geologist, Marine and coastal Surveys Division, Mangalore invited attention to para 3.2 of the minutes and Director of Mining and Geology has not sent proposal on seabed study in Kollam – Kayamkulam area. Deputy Director replied that Director of Mining and Geology will send a proposal after consultation with IRE, KMML and Government of Kerala.

49.6.0: With the above discussions the minutes of the 48<sup>th</sup> SGPB was approved by the members.

49.7.0: Director of Mining and Geology then invited the participants for the presentation of work done during the period from July 2011 to June 2012 and the proposals for the Year 2012-13

**GEOLOGICAL SURVEY OF INDIA KERALA UNIT.**

49.7.1: Shri Singanjam, Director and HOD presented the project on preserving the Varkala Cliff as a National Geological monument/Geopark

49.7.2: In the discussion followed Shri Ansari, Scientist NIIST, Thiruvananthapuram enquired whether any development activities can be carried out in the cliff area, if it is declared as a national monument. Shri Singanjam explained coastal regulation zone Rules has to be prevailed.

49.7.3: Shri John Mathai, Scientist, CESS emphasized the restrictions for development as per CRZ and Environmental protection Act and suggested GSI has to take more attention for the protection of Varkala Cliff.

(Action GSI, Kerala Unit)

Shri Shafeeq Ahmed, Director presented the summary of work carried out by GSI in the field season (2011-2013)

- Study of the structure and tectonostratigraphy of the area between Wandur and Edakkara, Nilambur gold belt, Malappuram District, Kerala with a bearing on gold mineralization.
- Specialized thematic mapping of the Precambrian metamorphics and intrusives in the vicinity of Bavali Tectonic Zone (BTZ), Irikkur – Payyannur sector, Kannur District, North Kerala.
- Geochemical mapping of the southern part of the Precambrian Peninsular Shield in parts of Kozhikode and Malappuram districts, Kerala.
- Geochemical mapping of the Kozhikode Iron Ore Belt, Kozhikode and Malappuram Districts, Kerala.
- Preliminary investigation for PGE in the Attapadi valley, Palakkad District, Kerala.
- Detailed site specific study of landslides at Varkala beach, Varkala village, Chirayinkil Taluk, Thiruvananthapuram district, Kerala.
- Detailed site specific study of Narippara landslide, Padinjarethara village, Vythiri Taluk, Wayanad district, Kerala.
- Detailed site specific study of Kuppukada landslide, maruthonkara village, vadakara taluk, Kozhikode district, Kerala.
- Detailed site specific study of Kunnamangalam vayal landslide, Kottapadi village, Vythiri taluk, Wayanad district, Kerala.

**49.7.4:** The Chairman enquired about whether the study of Kunnamangalam – Vayal landslides, Wayanad district was carried out on any specific request and further enquired whether the observations and recommendations were communicated to the concerned authorities/Government of Kerala. GSI replied that the CESS has conducted a preliminary study and the GSI carried out a detailed study on landslides of that area. The revenue/local authorities requested for the detailed study including remedial measures. All the reports were submitted to Revenue Authorities.

49.7.5: The Chairman suggested that all the scientific observations and recommendations on Natural Hazards has to be communicated to appropriate bodies such as IDRb, Disaster Management Cells, Revenue Secretary etc. for the effective implementation.

(Action CESS, GSI)

49.7.6: Shri John Mathai, CESS opined that CESS and GSI had identified landslide prone areas and the reports were transferred to Disaster Management Cell. He also opined that every panchayat is having a watershed management scheme and through this scheme the mitigative measures can be implemented.

49.7.7: Deputy Director of Mining and Geology invited attention to the Geo Chemical mapping of the Southern part of the Pre Cambrian peninsula shield in parts of Kozhikode and Malappuram districts regarding the uniformly high values of Va, Ni and Ga . He informed that the CGPB committee III insisted to carry more studies on Vanadium and Gallium. In this context Deputy Director enquired whether there is any scope for further studies for the said elements. Shri Shafeeq Ahmed, Director. GSI answered that the threshold values are found to be meager for further prospecting.

49.7.8: Shri C. Balaraman, Director of Mining & Geology enquired whether GSI has conducted any studies on the extension of Eleyottimala, Iron Ore deposit. Shri Singanencham, GSI replied that GSI conducted only the Geo Chemical mapping of Kozhikode district and not conducted a study on the extension of Iron Ore deposits of Eleyottimala.

49.7.9: Dr.Rugmini Sukumar,CSIR –NIIST enquired whether the undiagnosed skin diseases in the sole part of the foot of people noticed in Kozhikode and Malappuram districts are due to the presence of any specific elements in the soil. The GSI replied that the study is not completed. Dr. Rugmini Sukumar extended their facilities for the study if needed. In the discussion Chairman suggested the results of the study has to be reported to the ICMR or any Medical Research Organization.

(Action GSI)

## GSI MARINE COASTAL SURVEY DIVISION :- KOCHI

49.8.1: Dr. Thomas Mathai, Director operations west coast II detailed the ongoing programmes of the Division.

- Geological appraisal of Azhikkal port, Kannur.
- Preliminary Geological studies at Ponnani Harbour

### Proposed Programmes

- Geotechnical appraisal of Nileshwaram, Kasargod
- Geological and Geo environmental studies of the Central part of the Vembanad lagoon.

In the presentation he also informed that for the study on Manjeshwaram port needs a specific request from the Government or related agencies.

49.8.2 Chairman suggested that a study on the beach washings of heavy mineral deposits of Kayamkulam – Kollam stretch will be much helpful to IRE and KMML and he also opined that IRE & KMML can fund for the study and also enquired about the depletion of heavy minerals in the region. Shri Praveenkumar, GSI Marine and Coastal Survey division, Mangalore answered that the study on the slope profile of the sea coast will be much helpful in this regard. Deputy Director informed that on the 51<sup>st</sup> CGPB on 24<sup>th</sup> August, Director of Mining and Geology Kerala will present a proposal for sea bed mapping in the Kayamkulam – Kollam stretch, if KMML and IRE forward proposals to Government sufficiently early.

(Action IRE & KMML)

49.8.3: Shri Joseph Thomas, Deputy conservator of Forests, Kerala Forest Department enquired about the Coastal erosion occurring especially on the northern parts of Kerala which is affecting the Coastal eco system. Dr. Thomas Mathai, GSI, Marine Wing explained that most of the present Coastal Protection measures like Sea wall, groin etc. are found to be failure. A new strategy has to be formulated with the Co-operation of experts in fields of Engineering, PWD, Irrigation, Oceanography and Geology.

49.8.4: Shri V.K. Mahanudevan, Chief Engineer, IDRIB irrigation informed that they are implementing the currently available technologies for the protection of Sea Coast. He also enquired whether any new technology is

available for the protection of the Sea Coast. Dr. Thomas Mathai, GSI explained about the "Near Shore Protection methods" as a new technology for coastal erosion.

GSI MARINE AND COASTAL SURVEYS DIVISION- MANGALORE

49.8.5:Shri Praveenkumar, Senior Geologist presented the work done by the GSI marine and Coastal surveys , Mangalore during the period from July 2011 to June 2012 it includes.

- The Bathymetric study and sampling for an area of 200 Sq.Km of Azhikkal harbour and Ponnani Kerala to evaluate relict sand body.
- Study on the delineation of submerged paleo channels of Bharatapuzha and evaluation of construction grade sand.

Shri Praveenkumar also pointed out that the sand pocket identified in Kerala offshore complies well with the fine aggregate classification for concrete as per Indian and British standards. The medium and fine sand can be utilized for plastering and flooring. He concluded the presentation by emphasizing that the off-shore sand is considered the most viable alternative for river sand with respect to availability, ease of extraction, environmental impact and cost.

49.8.6:Dr. Nandakumar, Central Ground water Board enquired about the removal of Salinity of marine sand for construction. Shri Praveenkumar answered that a minimum of 80mm rainfall for 5 days will reduce the salinity of marine sand to the construction grade.

49.8.7:Chairman enquired about the feasibility of mining the off-shore sand. Shri Praveenkumar answered that environmental impact of mining of the off-shore sand is comparatively less than the impact caused by trawling and he also informed that the working cost will be about Rs.27/tonne excluding the capital cost and other related.

(Action :GSI Marine & Coastal surveys Division, Mangalore)

## **CENTRAL GROUND WATER BOARD**

**49.9.0:**Dr. Nandakumar, Regional Director, CGWB presented the following proposed works of CGWB.

- As a part of aquifer mapping in national level on 1:50,000/1:10,000 scale an area of about 20,000 Sq.Km is proposed to be covered during XII plan.
- Impact of backwaters and Anthropogenic intervention on Ground water regime in the low lying areas of Kuttanad region, Alappuzha and Kottayam District.
- Impact of Ground water development on the Laterite tunnels in Kasaragod District.
- Sustainability of Ground water in hard rocks and impact of sand mining from rivers on the ground water regime in parts of Palakkad, Malappuram and Thrissur Districts.
- Ground water regime monitoring and strengthening of Ground water observation well network.
- Revision of Dynamic Ground water resources (as in March 2011)
- Technical Assistance to Government organization as per requests.
- Ground water Regulation/Awareness/Workshop as per the direction from Ministry of water Resources.
- Implementation of demonstrative artificial recharge projects in co-ordination with State agencies in XI plan.
- Hydrology Project II – Awareness Raising Training.

Dr. Nandakumar requested all organizations for sharing data on, Geo physical studies, Isotope studies, Remote sensing studies etc. for the successful completion of the project.

**49.9.1:**Dr. S.N.Kumar, Head of the Department of Geology, University of Kerala enquired about the opportunities for the Geology students in the National Aquifer mapping programme. Dr. Nandakumar answered that there will be



opportunities for Geology students as intake or by means of outsourcing of projects.

**DEPARTMENT OF ATOMIC ENERGY**  
**ATOMIC MINERALS DIRECTORATE FOR EXPLORATION AND**  
**RESEARCH, THIRUVANANTHAPURAM**

**49.10.0:**Shri K. Balachandran, Officer in-charge briefly explained the following:

- Sampling of Azhikode – Chavakkad and Chavakkad – Ponnani coastal sectors of Kerala for chemical characterization of Zircon and Monozite.
- Sampling of Chavara barrier beach and eastern extension deposits to identify the occurrence of Xenotime.
- Technical meeting on World Thorium resources under the age is of IAEA & IREL convened at Thiruvananthapuram from October 17 – 21 and AMD has 3 technical papers.
- Mineralogical analysis of Ponnani – Beypore coastal Sector.
- Finally he informed that the four reports were submitted to their head quarters at Hyderabad..

**49.10.1:**Deputy Director, Shri R. Radhakrishnan Nair enquired whether these reports can be made available to Government of Kerala. The officer in-charge answered that even though most of the reports are confidential, the resource reports can be made available based on the request.

**49.11.0: CENTRE FOR EARTH SCIENCE STUDIES**

Shri John Mathai, Scientist explained about the various activities carried out by the Geo Science Division, CESS during July 2011 – June 2012. This includes.

- Studies on laterite to assess the use of rock powder as geo-nutrient.
- Studies on granulites to examine disposition and inter relationship of gneissic variants and their genesis by various methods.
- Studies on mafic igneous activity for undertaking the petrogenesis of continental magmatism , nature of mantle sources and to understand the geodynamic continental configurations to evaluate the position of Indian shield with reference to super continental assembly and dispersal.
- Studies on Paleo fluids in the petroliferous basins of western off-shore, India in collaboration with Oil and Natural Gas Corporation (ONGC)
- Monitoring of Earth quake occurred in Kerala and the studies on recent Seismicity in Kerala region.
- Studies on Land subsidences due to soil piping and stability of slopes of railway cuttings between Kayamkulam – Kollam – Ernakulam section of Southern Railway.
- Initiated for the formation of Hazard, Vulnerability and risk Assessment Cell in collaboration with Institute of Land Disaster Management under Revenue Department. Data on hazards such as landslides, floods, drought, lightning and coastal hazards and man made disasters are being collected.
- Rain water harvesting and Ground water recharge in Chadayamangalam block.
- Technical support was extended to the Mullaperiyar cell for the preparation of detailed project report on New Mullaperiyar Dam and on matters of Scismicity around the Dam.
- Feasibility studies carried out to increase the water supply to 2 MLD at Sabarimala by harvesting the stream at Kunnar.
- A methodology was developed for rapid sand auditing in the rivers of Kerala. Training was given to the NGO's/representatives by Revenue Department on river bank mapping and sand auditing.

21

#### **49.12.0: STATE GROUND WATER DEPARTMENT**

Shri A.G. Gopakumar, Hydro-geologist explained about the various physical achievements during the year 2011-12. He also briefed the various ongoing programmes of the department for the year 2012-13 which include.

- Ground water investigation, resource assessment & Development and procuring of required drilling equipments.
- Programmes on Control and regulation of Ground water by implementing measures to prevent the misuse of ground water as well as providing Ground water to all people.
- As per the National Hydrologic Project, the State ground water Department in collaboration with Irrigation Department will continue the preparation of Data Bank on Surface water and Ground water.
- Under the Rajiv Gandhi Drinking water mission about 50 programmes are proposed to be implemented.
- 30 Nos. of Artificial recharge structures are planning to be implemented.

**49.12.1:**Chairman Suggested that there should be a mutual interaction between Central Ground water Board and State Ground water Department for implementing various programmes. Shri Gopakumar, answered that already all projects are being discussed with CGWB and in future also the same will be followed.

#### **49.13.0:DEPARTMENT OF MINING AND GEOLOGY – MINERAL EXPLORATION AND PROSPECTING DIVISION.**

Shri Radhakrishnan Nair, Deputy Director presented the progress of exploration and Prospecting Division and the proposed programme for the field season 2012-13.

- Investigation programmes carried out during 2011-2012 for Bauxite and China Clay in Aravanchal area, Taliparamb Taluk, Kannur District.
- Investigation for Bauxite and China clay in Peringome East and West blocks, Perigome Village, Taliparamba Taluk, Kannur District.
- Detailed investigation for China Clay in Kakkolil, Pattamukku and Kanjirakode areas in Mulavana village, Kollam District as per the request of Kerala Ceramics Limited, Kundara.
- Investigation for Bauxite/Aluminous Laateite from Vidya nagar to Manjeshwaram in Kasargod district by using remote sensing techniques.
- Minor mineral quarry mapping in Malappuram and Wayanad districts were completed during the field season and the quarry mapping of Kasaragod district was commenced during the month of June 2012.
- One Geologist of the Department was deputed to Assist the committee for inventerisation of Gem Stones in Sree Padmanabha Swamy Temple.
- Director of Mining & Geology attended the 49<sup>th</sup> Meeting of the CGPB held in August 2011 and 50<sup>th</sup> meeting of CGPB held in February 2012. The officers of this Department attended the 6<sup>th</sup> meeting of CGPB committee II, III, IV and VI. Also the Deputy Director in charge of the Exploratory and Prospecting division attended the 7<sup>th</sup> meeting CGPB committees II, III, IV, VI and XI.

**49.13.1:** Shri P.K. Bharathan, Geologist, KCCP Limited enquired about the topographic survey or Kommangal padavu, Kasaragod district. The Deputy Director replied that the report will be submitted to M/s. KCCP Limited after the final approval of the report by the Director of Mining & Geology.

(Action DMG)

- 49.13.2: Dr. S.N. Kumar, Head, Department of Geology, University of Kerala enquired whether all the details of rock type is included in the Mineral Information system. Deputy Director answered that details of rock types are included in certain locations but not all locations. In future all details will be incorporated.
- 49.13.3: Shri Jose Thomas, Mines Manager, Malabar Cements Limited requested Director of Mining & Geology to include investigation for limestone in the proposed programme. Shri Radhakrishnan Nair, Deputy Director informed that almost all limestone occurrences are studied either by the DMG or other agencies.
- 49.13.4: Shri Ansari, Scientist, NIIST mentioned about an office memorandum from the Ministry of Environment and Forest regarding the environmental clearance for mining activities. Deputy Director replied that as per the order of the Hon.ble Supreme Court all mining leases including areas less than 5 hectares, requires environmental clearance.
- 49.13.5: Shri John Mathai, Scientist, CESS emphasized that before granting mining permits they should obtain an Environmental Clearance and the mining activity should be in accordance with an approved mining plan prepared by a recognized qualified person, Shri C. Balaraman, Director of Mining & Geology replied that as per the order of the Hon.ble Supreme Court on 27.2.12, no mining leases are being granted without Environmental Clearance.
- 49.13.6: Shri John Mathai, Scientist, CESS further opined that there should be some efforts to identify some large areas reserved exclusively for mining/quarrying activities so that the entire taluk/district will get sufficient material from that zone. The same area also has to be notified only for mining with the concurrence of LSGD Department. Shri C. Balaraman, Director of Mining & Geology informed that the Department is presently doing quarry mapping in some districts. Based on those data cluster quarry areas can be identified and the same will be brought to Government.
- 49.13.7: Dr. S.N. Kumar : Head, Department of Geology, University of Kerala, Kariyavattom suggested that strengthening of the department of Mining & Geology is essential for the effective implementation of mining laws and Exploration activities. He further requested the SGPB has to make a strong plea to the Government. Both the Chairman and Director of

Mining & Geology agreed to the same and also informed the proposals for the modernization of the Department has been forwarded to the Government for consideration.

**49.13.8:**Shri John Mathai, CESS suggested that establishment of Taluk level offices with a Geologist would definitely enhance the capability of the Government to attend Geology related natural hazards on appropriate time. He also opined that Geologist working in a local area is relatively competent to furnish a scientific report.

**49.13.9:**Dr. Rugmini Sukumar, Scientist, NIIST informed that NIIST, Thiruvananthapuram got the approval of Ministry of Environment and Forest for the preparation of Environmental Clearance reports.

**49.14.0:****NOMINATION OF NEW MEMBERS IN SGPB**

As per the agenda item No.8, Director of Mining & Geology pointed out the need for the inclusion of Kerala state Environment and remote sensing centre as a new member organization. Chairman agreed for the inclusion of new member in the SGPB.

(Action DMG)

**49.15.0:**Shri T. Karthikeyan, Manager (Mines) KMML, Chavara suggested that while granting mining leases priority should be given to the Companies which are having value addition of minerals. He also opined that online payment for royalty has to be implemented as in some other States. The Chairman agreed to it and informed that Government will take up this as a part of the modernization subject to feasibility studies.

**49.16.0:**Dr. S.N. Kumar, Head, Department of Geology, University of Kerala informed that Department will celebrate its 50<sup>th</sup> anniversary in the year 2013. He extended the Co-operation of all SGPB members to the same. He also informed that the Government of Kerala sanctioned Rs.1 crore to the Geology Department, University of Kerala to establish a Geological Museum and Rock Garden in the Geology Department.

**49.17.0:**Shri Karappan kutty, Chief Engineer, Dam Safety, KSEB pointed out that enough sand is available in the reservoirs of KSEB which can be extracted. He also pointed out that due to the siltation, the capacity of the

25

reservoirs has been reduced to about 30%. He seeks the co-operation of all other related departments for getting the clearance for restoring the Dam capacity to the initial level. Deputy Director Shri Radhakrishnan Nair suggested that Kerala State Inland Navigation Department and GSI Marine Wing can make a study in this aspect.

**49.18.0:** Shri Praveen Kumar, GSI Mangalore suggested that the duration of SGPB is insufficient and it requires one full day. Shri C. Balaraman, Director agreed to conduct the SGPB as one day (Forenoon and afternoon sessions) from next year onwards.

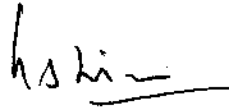
(Action DMG)

**49.19.0: VOTE OF THANKS**

Shri D.P. Sreekumar, Deputy Director, Directorate of Mining & Geology delivered vote of thanks.

The meeting concluded at 02.15 P.M.

**Minutes approved by**



ps/26.9

22

**LIST OF PARTICIPANTS OF THE 49<sup>TH</sup> SGPB MEETING**  
**HELD ON 1<sup>ST</sup> AUGUST 2012**

Sl.No.	Name of Institution	Officers who attended the Meeting
1	Geological Survey of India, Division Marine and Coastal Surveys, GSI Mangalore	P.Praveenkumar Sr.Geologist
2	Geological Survey of India, Marine and Coastal Surveys Division, Cochin	Dr.Thomas Mathai, Director OPWC II
3	Geological Survey of India, OP.TNP & K Kerala Unit, Thiruvananthapuram	1. S.Singanenjam Director & HOD 2. Shafeeq Ahmed Director TC
4	Atomic Minerals, Directorate for Exploration and Research, Thiruvananthapuram	K.Balachandran Officer in charge
5	Central Ground Water Board, Thiruvananthapuram	1. Dr.Nanda Kumar, Regional Director 2. T.S.Anitha Syam Sr.Hydro geologist
6	National Institute for Inter Disciplinary Science and Technology, Thiruvananthapuram	1. Dr.Rugmini Sukumar, Principal Scientist 2. .J.Ansari, Scientist
7	Ground Water Department, Kerala	A.G.Gopakumar, Hydro Geologist
8	Kerala Forest Department	Joseph Thomas IFS, Deputy Conservator of Forest
9	Irrigation Department (IDRB), Thiruvananthapuram	V.K.Mahanudevan, Chief Engineer, Investigation and Design
10	Department of Geology University of Kerala, Kariyavattom	Dr.S.N.Kumar, Head of the Department.
11	Directorate of Industries and Commerce, Thiruvananthapuram	P.T.Rosamma, Joint Director
12	Indian Rare Earths Ltd, Chavara, Kollam	Gopal Sahoo, DGM (Mining)
13	Mineral Exploration Corporation Ltd, South Zone	D.Mohan, Sr.Manager (Geology)



14	The Kerala Minerals & Metals Ltd, Chavara, Kollam	1. T.Karthikeyan, Manager (Mines) 2. V.Sreenivasan, Asst.Manager (Mines) 3. R.Haridasan R.SO
15	Malabar Cements Ltd, Walayar, Palakkad	Jose Thomas, Manager Mines
16	Centre for Earth Science Studies, Akkulam, Thiruvananthapuram	John Mathai, Scientist
17	Kerala State Electricity Board Dam Safety, Pattom, Thiruvananthapuram	Karappankutty K.K Chief Engineer
18	Kerala Clays and Ceramics Products Ltd, Kannur, Kerala	1. S.Ashok Kumar, Managing Director 2. P.K.Bharathan, Geologist
19	The Kerala Ceramics Ltd, Kundara, Kollam	Samson A., Deputy Manager, i/c of MM
20	Industries Department Govt. Secretariat	1. RajaGopal K.S., Deputy Secretary 2. Bhuvanendran Nair, Section Officer
21	Department of Mining and Geology, Thiruvananthapuram	1. C.Balaraman, Director of Mining & Geology 2. D.P.Sreekumar, Deputy Director 3. R.Radhakrishnan Nair, Deputy Director