GOVERNMENT OF INDIA

Ministry of Mines

Geological Survey of India
Central Region

Briefing Book

JUNE, 2014

BRIEFING BOOK

CENTRAL REGION

(Updated till 30th June, 2014)

EXECUTIVE SUMMARY

(Pages where change have been incorporated)

Sl. No.	*Subject*		*Pages*
	EXECUTIVE SUMMARY		
1	ORGANIZATIONAL STRUCTURE	Updated Organogram added	15
2	XIITH PLAN WORK ENVISAGED (TARGET VS. ACHIEVEMENT, M-1 & II ITEMS, FS 2014-15)	Updated data in Annexure - 2C	70
3	FINANCIAL PERFOMANCE UNDER CURRENT PLAN	Updated data in Annexure - 3	71 - 72
4	FIELD SEASON PROGRAM WORK FS 2014-15 (M-I, II, IV & IGC)	Updated text & Annexure - 4	19 - 56, 73 – 97
	PROGRESS & PENDENCY OF CHEMICAL ANALYSES REPORT OF NGCM SAMPLES	Updated Annexure - 5	98 – 100
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	MISSION - III : GEOINFORMATICS, M&C, PUBLICATIONS, GEODATA, PORTAL & STATUS OF UPDATING OF 250K MAP COMPILATION	Udated text & Annexure 8 & 9	38 – 51, 109 & 110
5	TRAINING & CAPACITY BUILDING (M-V)	Updated text & Annexure – 10	56 – 57, 111 – 112
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Cover Page Photo: Photograph showing stages of erosion of plateau top, Malsejghat, Maharashtra.

GEOLOGICAL SURVEY OF INDIA
BRIEFING BOOK
CENTRAL REGION

(Updated till 30th June, 2014)

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BRIEFING BOOK CENTRAL REGION

(Updated till 30th June, 2014)

1. INTRODUCTION

The Central Region of Geological Survey of India was established on 1st August,1967 with the Circle Offices at Madhya Pradesh (including the Circle Office of the present State of Chhattisgarh) and Maharashtra having headquarters at Bhopal and Pune respectively. The circle offices were mainly involved with the systematic geological mapping and assessment of mineral resources. At theRegional Headquarter specialised divisions like Engineering Geology, Map compilation, Geophysical investigation, Chemical Laboratory and Drilling were established.

Central Region covers geographical area of 0.751 million sq km in the states of Maharashtra (3,07,713 sq km), Madhya Pradesh (3,08,150 sq km) and Chhattisgarh (1,35,195 sq km).

Over the years, the Central Region has expanded its activities and set up its offices at Raipur, Jabalpur, Bhopal, Pune with the Headquarters in Nagpur. The activity was further expanded to Photogeology & Remote Sensing, Regional Integrated Survey, Quaternary & Environmental Geology and the Geodata Division equipped with LAN and WAN connectivity.

Geologically it represents:

- Archaean Rocks, hosting a majority of mineral occurrences in Chhattisgarh, Maharashtra & Madhya Pradesh.
- Proterozoic Rocks, including limestones and diamondiferous conglomerates of the Vindhyan in Madhya Pradesh.
- Gondwana Sequence, a storehouse for coal-lignite and refractory clays.
- Deccan Continental Flood Basalts: Late Cretaceous-Early Palaeocene: lava flows covering Peninsular shield in Madhya Pradesh, Maharashtra & Chhattisgarh and associated sedimentaries represented by Lameta and intertrappean beds.

  Geologically, the Central Region mainly comprises parts of the peninsula shield and coastal areas.

1.1 CHHATTISGARH

Geologically, Chhattisgarh constitutes rock formations ranging in age from Archaean to Recent. East-West trending Central Indian Shear Zone (CISZ) separating the Northern Crustal Province (NCP) and the Southern Crustal Province (SCP) is an important and major tectonic feature of the Region.

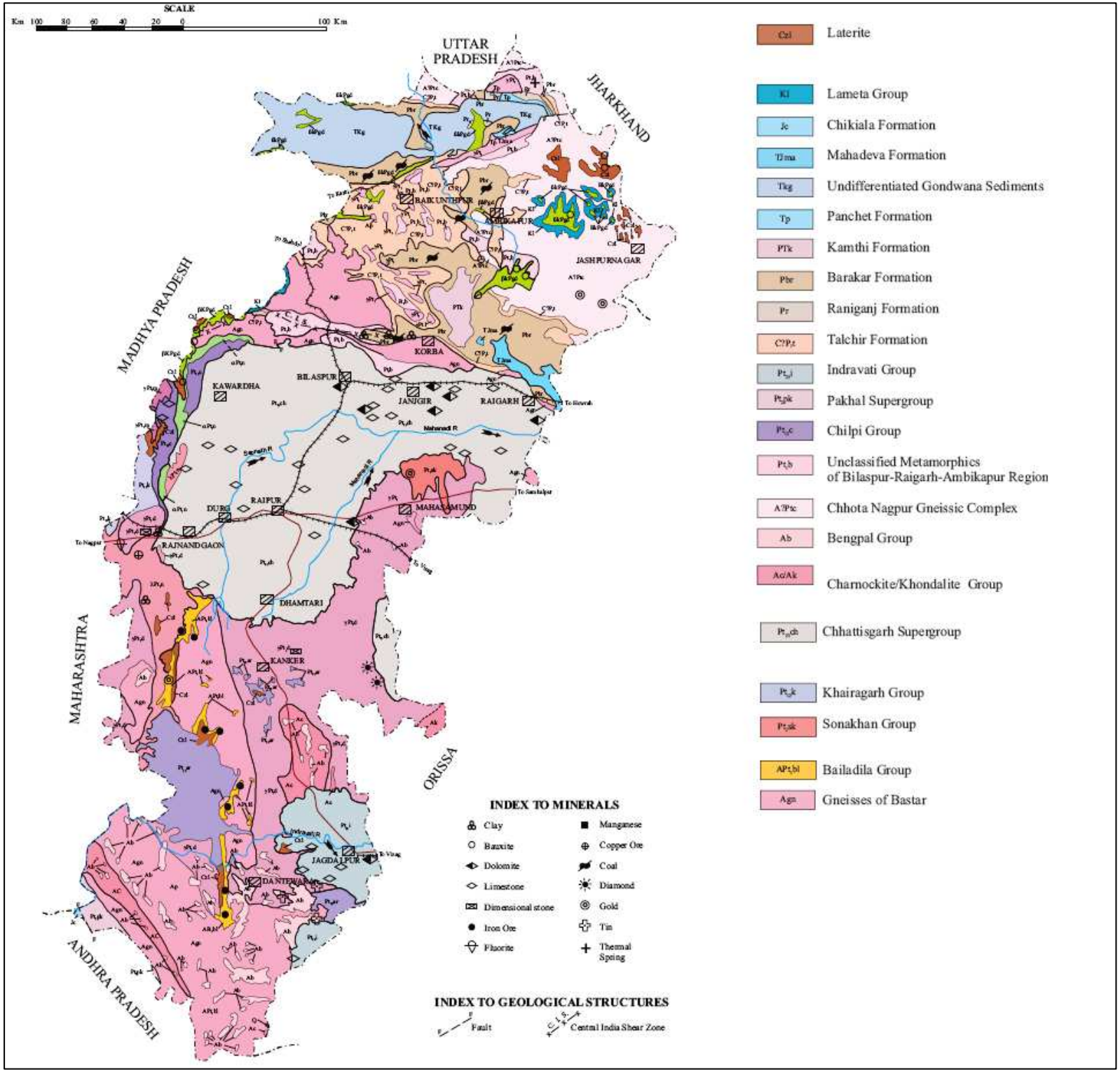
The oldest rocks in the NCP i.e. the granite gneisses and the enclaves of igneous and sedimentary rocks of Archaean age are confined to southern part of the Province forming the Bilaspur-Raigarh belt. Gneisses and granitoids exposed to the east of Mahanadi basin are designated as Chhotanagpur Gneissic Complex. Though the younger sequences of Upper Carboniferous to Lower Cretaceous Gondwana rocks are well developed in the Mahanadi and South Rewa basins, north of Baikuntapar in Surguja area, these two basins merge together. Lameta Group of rocks are exposed in the Amarkantak plateau region below the Deccan Trap. Remnants of Deccan Trap occur in the plateaus in the western and northeastern parts of Bilaspur District and southeastern and eastern part of Surguja District. Laterite and bauxite pockets occur at Jamirapat and Mainpat in Surguja District and Phutka Pahar in Korba District. Quaternary alluvium is confined to major river valleys. Significantly the NCP is devoid of any volcano-sedimentary sequence and Proterozoic cover rocks, unlike the SCP.

The SCP is an Archaean to Neoproterozoic assembly of lithotectonic packages comprising Archaean to Palaeoproterozoic Sukma, Bengpal, Bailadila and Sonakhan Groups, gneiss-granitoids and younger Meso- to Neoproterozoic cover rocks of Chhattisgarh, Indravati, and Pakhal Groups. Together they constitute the Bastar Craton. N-S trending Palaeoproterozoic volcanic rocks of Nandgaon Group extend westward in bordering Maharashtra. The Dongargarh granite and its equivalents in Madanbera and Kanker - Mainpur areas occupy major portion of South Central part of the state. Volcano sedimentary sequence of Khairagarh and Abujhmar Groups and sediments of Chilpi Group belonging to Palaeo-Mesoproterozoic unconformably overlie the older sequences and the granites in the Maikala Range and Abujhmar plateau region. The Mesoproterozoic Pakhal Supergroup of rocks occupy the Godavari valley region in the southwestern part bordering Andhra Pradesh and Maharashtra. The Meso- to Neoproterozoic Chhattisgarh Group of Rocks occupy the central plains of Chhattisgarh region. The cover sediments of Indravati-Sabari-and Pairi Groups are equivalent of Indravati Group and occupy the Jagdalpur plateau. Rocks of kimberlite affinity, some of which are diamondiferous, intrude in to the Indravati and Khariar sediments and in the gneisses. Laterite and bauxite form cappings at number of places over these rocks in Keskal- Amabera areas.

The state of Chhattisgarh is endowed with rich mineral wealth particularly the iron ore, coal, bauxite, limestone, tin and diamond. A wide range of mineral resources offering considerable opportunity for the entrepreneurs is found in the state. GSI is presently focusing its activities in the state for exploration of fertilizer minerals including rock phosphates.

COMMODITY	DISTRICT	MINERALISED LOCALITY	RESERVE/ RESOURCES
Asbestos	Bastar	Saliapara, Kommaraju Ghutta, Kondasanvali, Gollapalli.	
Barite	Raipur	Dotapur*	
Bauxite	Bastar	Keshkal, Amabera, Rowghat, Bandhanpara, Kudarwahi, Kuye, Cherbera, Budhiarmari, Pat Dongri, Halekurum Dongri, Marmakonari, Taralimetta Peak, Jarandul, near Bailadila rest house.	
	Bilaspur	Phutka Pahar, Karela Pahar, Ranaikhet Pahar.	2.206 mt***
	Raigarh	Khuria, Marol highland, Pandrapat	
	Rajnandgaon	Bodai, Daldali, Kesmarda, Bangaora, Dhanwahi, Ghamda, Rabda.	8.68 mt
	Surguja	Jamirapat, Joka Luchupat, Charhatpat, Birhor Pat, Chutai, Tatijharia, Samri, Serangdag, Kudag, Purnapani, Saraipat, Kandrasa, Barima.	45.184 mt
	Durg	Durg	0.487 mt
Coal	Bilaspur-Korba	Korba coalfield, Hasdo-Arand coalfields, Sendurgarh coalfield.	14869 mt
	Raigharh	Mand-Raigarh coalfield	15358.17 mt
	Koriya	Sohagpur, Chirimiri, Jhilimil	942.60 mt
	Surguja	Surguja- Bisrampur coalfield, Lakhanpur coalfield, Tatapani-Ramkola coalfield.	3478.93mt
Copper	Bastar	Mundatikra, Netanar, Modenar, Tongsal Dongri, Kesarpal.	
Diamond	Raipur	Payalikhand, Jangra, Kodamali, Baharadih, Bundeli.	1304000 carat
Dolomite	Bastar	Machkot-Tiria, Sakhajodi, Jhiram, Tikipodero, Gupteswar, Pulsa.	3.30 mt
	Bilaspur	Hardi-Parsoda-Ramtola-Khaira, Manikchauri, Potaidih, Pachperi, Kokri, Junwani, Deragarh, Belhadih, Akaltara, Chhatona, Lachhanpur, Baimapara, Salfa, Madku-Kirna, Dumarpara, Ralia, Chitapandaria, Hirri, Keonchi, Akalsona, Bhutidand.	529.080 mt
	Raipur	Bhatapora, Patpara, Gondadih, Dharbadih. Rajnandgaon- Mirmiria, Taregaon, Khairagarh.	529.080 mt
Fire clay	Bilaspur	Uprora, Dhajag nala, Bisnar nala, Katiabahar nala, Ama nala, Nakia, Bimalta, Lachmi nala, Manegaon, Kesla, Mahuadih, Malgaon, Madanpur, Petpora, China, nala, Dhuwan nala, Chontmar, Jhinga nala, Puta	0.272 mt
	Rajnandgaon	Ranga-Kathera-Kohka,	10.624 mt
Fluorite	Raipur	Achanakpali, Charakuta,Chiwrakuta, Ghatkachar, Makarmuta, Nawadih	

COMMODITY	DISTRICT	MINERALISED LOCALITY	RESERVE/ RESOURCES
	Rajnandgaon	Khairagarh, Kotri., Chandidongri	
Graphite	Bastar	Sabari river, Borakonde, Kamaram, Palachelama, Bote tongu.	
	Surguja	Kennapara,Manikpur	2350 t**
Iron Ore	Batar	Bailadial, Rowghat, Narainpur, Ari dongri, Penuir dongri, Perior dongri, Mundatikra, Hahaladdi, Chhota dongar	1839 mt
	Durg	Dalli, Kalwar, Kaucher, Kohan, Mahamaya.	244 mt
	Raigarh	Narsinghgarh.	
Limestone	Bastar	Kanger, Dhurwarus, Kotomsari, Jagdalpur, Manjhi dongri, Potanar, Barangi, Bebrapal, Golinadi, Netanar, Gudra, Botaras.	1476.8 mt
	Bilaspur	Akaltara, Chilhati, Arasmeta, Mohatara, Akshetara, Bargaon, Rank, Khaira, Latia, Deragarh, Jayramnagar.	1634 mt
	Durg	Semaria, Nawapara, Khapri, Achhoti, Nandini-Kumudini.	872 mt
	Raigarh	Sarang garh, Banipathar, Timariaga, Lalaghukha, Jharidih.	61.2 mt
	Raipur	Jhirpa, Rawan, Pendri, Fargada, Nipania, Karahi chandi, Sondadih, Gaitra, Amlidih, Arjuni, Turma, Jantar, Bahesa	2373 mt
	Rajnandgaon	Charvata, Muripar, Lohara	63 mt
Manganese	Bilaspur	Ratanpur, Newasa, Kamarakhol.	
Mica	Bastar	Mundval, Jungani, Kenkapal, Maita, Adwal, Kondagaon.	
	Bilaspur	Garhtora, Newapara, Raigarh- Dharamjaygarh.	
Molybdenum	Raipur	Sukhipali, Dendupahar	
Nickel	Bastar	Marbera, Kanhargaon, Chhote Bethia, Benur.	
	Rajnandgaon	Dhana, Kaurikasa	
Ochre	Bastar	Bailadila range	
	Durg	Dongaria, Gandai, Thakur Tala, Garra. Raigarh- Baherna, Kukuria, Noapani pahar, Gaipura. Surguja- Baruli.	
Phosphorite	Raipur	Acholi, Raipura, Semridih, Karanddih, Arajkund, Khapri.	
Potash	Raipur	Kesla, Bhainsa, Halwai, Khapri, Tamtora	
Sillimanite	Bastar	Samsatta, Kavlapal	
	Surguja-	Duari, Chemi.	
Thermal springs	Surguja	Son valley sector- at Tatapani, Jhor.	
Tin	Bastar	Jangarpal, Puspal, Kudripal, Bedanpal, Govindpal, Bodavada, Tongpal, Kummapada, Jalapara, Kapanar, Dharapara, Tandur, Takalpur-Kakalpur, Jhiram valley, Katekalyam, Churwada, Mundwal.	28.8 mt


SCALE
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UTTAR PRADESH
JHARKHAND
MADHYA PRADESH
MAHARASHTRA
ORISSA
ANDHRA PRADESH
RAIKUNTHPUR
AMBIKAPUR
JASHPURNAGAR
KORBA
BILASPUR
KAWARDHA
JANJGIR
RAIGARH
RAIPUR
DURG
MAHASAMUND
RAJNANDGAON
DHAMTARI
KANKER
JAGDALPUR
DANTEWARA
Laterite
Lameta Group
Chikiala Formation
Mahadeva Formation
Undifferentiated Gondwana Sediments
Panchet Formation
Kamthi Formation
Barakar Formation
Raniganj Formation
Talchir Formation
Indravati Group
Pakhal Supergroup
Chilpi Group
Unclassified Metamorphics of Bilaspur-Raigarh-Ambikapur Region
Chhota Nagpur Gneissic Complex
Bengpal Group
Charnockite/Khondalite Group
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1.2 MADHYAPRADESH

Madhya Pradesh, as a part of the Central Indian Shield (CIS) contains the rocks ranging from Archaean to Phanerozoic age. The Central Indian Shield is divided into two broad tectonic domains i.e. the Northern Crustal Province (NCP) and the Southern Crustal Province (SCP)- by a long crustal scale curvilinear ENE-WSW trending ductile shear zone called Central Indian Shear Zone (CISZ) which continues from southwest of Balaghat to north of Bilaspur in Chhattisgarh. Son-Narmada-Tapti valley (SONATA) forms a major zone of tectonic activity in this region.

The oldest litho-assemblage of Archaeans mainly consists of the gneissic complexes viz. Bundelkhand, Amgaon, Sidhi, Alirajpur, Betul and Tirodi Gneisses. The Palaeo to Neoproterozoic cover sediments are represented by Mahakoshal Group and Sausar Group covering parts of Balaghat and Chhindwara districts, Aravalli Supergroup of rocks in Jahabua District; volcano-sedimentary sequence of Betul belt; Nandgaon Group in Balaghat District; Bijawar Group in Sagar, Chhatarpur and Harda districts; Gwalior Group in Gwalior District, Chilpi Group in Balaghat District and Vindhyan Supergroup of rocks cover parts of Sidhi, Rewa, Satna, Panna, Chhatarpur, Sagar, Bhopal Shivpuri and Guna districts besides the Dongargarh granites in Balaghat District.

Late Palaeozoic-Mesozoic (200 - 100 Ma) sequences are represented by Gondwana Supergroup, Bagh Group and Lameta Group. The Gondwanas host many important coal fields in the Satpura region. Bagh Beds (100 Ma) in Dhar, Jhabua and Khargone districts is rich in faunal remains of bivalves, gastropods, ammonites and echinoids. The Lameta Formation preserves excellent vertebrate fossils including dinosaur remains and their nesting sites.

Deccan Flood Basalt Sequences (DCFB) (Upper Cretaceous-Palaeogene), mostly comprising basaltic flows and associated sedimentary beds cover a major part of southern and western part of the state. Laterite cover of Cenozoic period occurs as capping on the high plateaus formed by Deccan Traps. All the bauxite deposits in the state have formed in the Cenozoic rocks. The Quaternary sediments of Narmada valley has yielded 500, 000 years old skull of Narmada man (*Homo erectus narmadensis)* from Hathnora in Sehore District.

The state is blessed with bountiful mineral resources including Coal, Bauxite, Limestone, Dolomite, Rock Phosphate, Copper, Lead, Zinc, Manganese, Iron ores, Diaspore, Pyrophyllite and Diamond. More than half of the country's manganese production comes from the state. The state is also bestowed with huge reserves of coal in Sidhi, Singhrauli, Shahdol, Umariya and Chhindwara districts. Presently, the diamond producing mines in India

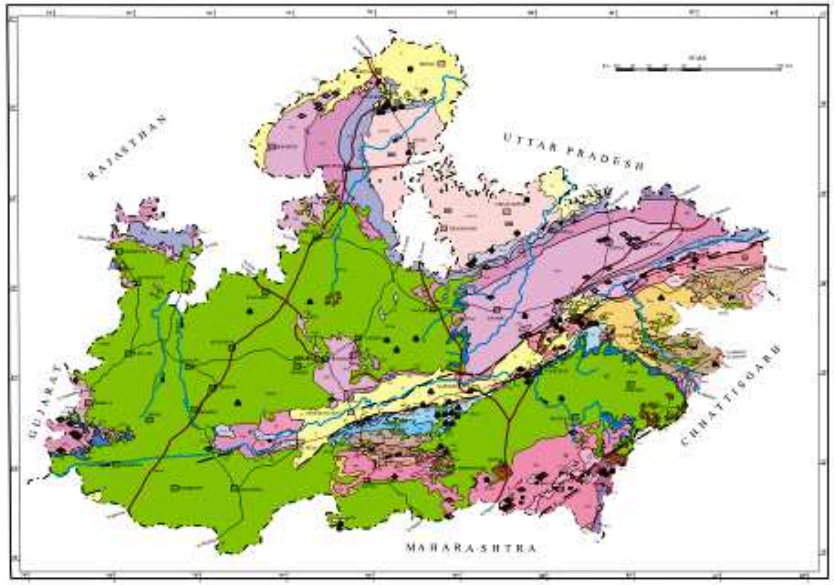
are located in Panna District. Establishing resources for Copper deposits in Malanjkhand in Balaghta District has been the most significant contribution of GSI to the National Mineral Wealth. Prospects of base metals have been proved by GSI in recent years in the Betul Belt. Sizeable resources of gold associated with copper, silver and lead have also been established recently in the Imaliya Block of Katni District. A large economically viable reserve of Refractory, SMS and BF grade low-silica dolomite proved by GSI of Sagar and Chhatarpur districts is a boon to the iron and steel industries.

COMMODITY	DISTRICT	MINERALISED LOCALITY	RESOURCES
Baryte	Dewas	Gairi*, Rehti, Andar, Pipalkota	4472 t**
	Dhar	Dhar	24,500 t
	Shivpuri -	Amola	29,702 t
	Tikamgarh	Bhoiron, Chakrada, Baldeogarh	60731 t
	Sidhi	Andheri Kho, Bari, Dhan Kho, Parkhuri, Kusilhawha, Khirkhori	82600 t
Bauxite	Balaghat	Mundi Dadar, Touri Dadar, Kauwajhar Dadar, Warjiri Dadar, Bear hill, Kot Pahar, Gad Dadar	11.318 t
	Guna	Guna	.025 mt***
	Jabalpur, Katni	Tikuri, Tikaria	10.272 mt
	Mandla	Rakti Dadar, Nanhu Dadar, Jamuna Dadar , Umargaon, Hazari Dadar, Daikribanda pahar, Pondibahra pahar, Bangla Dadar, Chikmi Dadar. Khamera and Khapripani	11.930mt
	Rewa	Dhankhania, Kumarian	17.992 mt
	Satna	Ranipur, Rajabara hill, Nongama, Naru hill, Chui hill, Khonda hill	11.185 mt
	Shivpuri	Hirapur, Mada Ganeshkhera, Akhai Mahadeo, Barkhera, Harhapura; otra.	15,000 t
	Vidisha	Basoda, Dabar, Mule, Isharwar, Kotra	5000 t
	Jhabua and Dhar	Alirajpur, Kakarwal, Darkali, Ujjar, Dhorat, Madhu Palvi, Khampani, Borda, Khaurpani	255,255 t
	Khargone	Hirakia, Kirkua, Budipahar, Chaklia, Jalkhera, Yerwada, Materkhund, Chichwani, Phuljiwar	56324 t
Coal	Betul, Chindwara and Hoshangabad	Pench-Kanhan-Valley Coalfield; Pench Valley - Sirgora, Datla; Kanhan Valley - Rakhikhol, Damua, Kali Chappar and Nandan; -	546 mt
	Tawa Valley	Tandsi, Sonada, Tandsi, Pathakhera, Dulhara, Gurgunda,	386.73mt
	Narsinghpur	Mohpani Coalfield - Gotitoria; Johilla Coalfield	7.83mt
	Shahdol District	Sohagpur Coalfield; Umaria and Korar Coalfields - Umaria valley	181.29mt
	Sidhi	Singrauli Coalfield - Son-Mahanadi Basin	11058.66mt
Copper	Balaghat	Malanjkhand, Kundikasa, Ras Dongri, Katbir Kona, Saria Patera, Pareva Dongri, Taregaon, Khandapar, Bodapahari, Jatta, Dhorli, Gidori, Manegaon, Pandatola, Shitalpani, Budbuda, Khara; Betul - Kherli Bazar, Bhawra-Tekra-Borgaon	170.906mt
	Jabalpur and Katni	Karuakup, Baragaon	0.675 mt
Dolomite	Balaghat	Agri, Ambajhiri, Dudhapur, Garjantola, Goolari, Jatta, Kandai;	93.676mt
Dolomite	Betul	Temni, Ankwari, Mandikhurd, Ghoradongri, Maramjheri, Dumarpara, Ralia, Chitapandaria, Hirri, Keonchi, Akalsona,	516.5mt
	Chhindwara	Basoda, Bichua, Lohangi, Palaspani; Damoh	47.28

COMMODITY	DISTRICT	MINERALISED LOCALITY	RESOURCES
	Jabalpur and Katni	Bheraghat, Bhirki, Charrgawan, Gangai , Murkatia, Bhula, Amgawan, Imalia, Nawalia;	110.25
	Khargone	Nayapura	288.96
	Mandla	Bhawartal, Kakaiya; Narsinghpur - Chavarpatha,	102.8
	Jhabua	Kachaldhara, Talaoli, Deoziri, Nagankheri;	635.14mt
	Seoni	Piparwani, godi;	229.085mt
Diamond	Chatarpur-Panan-Satna	Majhgawan,Ramkheria	1.3m c
Lead & Zinc (Galena & sphalerite)	Betul	Kherli Bazar, Jambara, Dhelwara, Banskahapa, Pipariya, Koparpani, Mauriya.	0.615mt
Gold	Balaghat	Tarma, Akalpur, Malanjkhand	
	Jabalpur	Imalia, Pondi, Arugwan, Newalia	
Graphite	Betul	Tikari, Maramjhiri, Chiklar, Gauthana, Bhopali, Junawani, Golighat	10,128 t
Gypsum	Shahdol	Aurerah, Silpari, Barhar, Kirrghat,	686 t
Iron Ore	Betul	Kamatpur, Amdhana, Ankawari;	8000 t
	Gwalior	Santan, Antri	132.25mt
	Jabalpur	Agaria, Bijori, Dharampur, Kanwara, Sumra;	38.9 mt
Limestone	Betul	Pandraghati, Paknadi	
	Damoh	Narsingarh, Panji, Kanaktala, Dikoria	727mt
	Dhar	Nodular, Attarsumba, Awral, Bariya, Beklya, Baghate, Chakrud, Chirakhan, Deura, Ghursal, Jhiran, Kachhanwada, Kerondia, Kheri Balwari, Nevri Khabri, Nimtoka, Sitaperi, Soyala, Zirabad	203.38mt
	Jabalpur and Katni	Chirri, Durjanpur, Niwar	794.4mt
	Jhabua	Nanpur, Walpur, Salkhera, Dabri, Kotri, Nahatra, Umri, Pipaldhela, Mohanpur, Gadwara	0.5 mt
	Khargone	Naya, Astariya, Guljhiri, Khilar, Agawara	172.2 mt
	Mandsaur	Dharari, Lalgani	222 mt
	Morena-Shivpuri-Guna	Kailaras, Palpur	279 mt
	Rewa-Satna	Bankuiyan, Bela, Chhibaura, Degraghat, Garhawarghat, Jhinna, Maihar, Naubasta, Ramnagar	1211 mt
	Sehore	Ginnurgarh hill, Gogra, Bhimkothi	18.5 mt
	Vidisha	Ganj basoda	50000 t
Manganese	Balaghat	Tirodi,Sitapar-Sukri, Ramrama, Shadhan Hurki, Gula Warki-Netra, Katangjhiri, Bharweli, Jagantola-Ghondi, Lougur, Ukwa	23.1 mt
	Jhabua	Kajli Dongri, Rambhapur, Tumdia, Parnali, Udwara, Arandifalia, Dota, Baori, Pitol, Kajili Dongri, Naharpura, Baniapara, Jharli, Nigaria, Jaikot, Amalmal, Bandiwan, and Mandli	0.04mt
Mica	Betul	Khandepapariya, Kachhar, Bisighat, Bhaldehi, Temni	
Phosphorite	Jhabua	Amliamal, Kelkua nala, Kelkua, Khatamba north, Khatamba	23.5 mt
	Sagar and Chhatarpur	Basai, Mardeora, Hirapur, Kachnar, Manakpura, Devpur, Jhalauthar, Rajghat nala, Macheri hill	40 mt
Potash	Satna	Pindra	266 mt

भारतीय भूवैज्ञानिक सर्वेक्षण
Geological Survey of India

मध्यप्रदेश का भूविज्ञान तथा खनिज मानचित्र
GEOLOGICAL AND MINERAL MAP OF MADHYA PRADESH



INDEX

Q	Alluvium
Czl	Laterite
N_1K	Katni Formation
βKPgd	Deccan Trap
Kl / Kb	Lameta/Bagh beds
Kj	Jabalpur Formation
Tb	Bagra/Denwa Formation
TP	Pachmarhi/Panchet Formation
Tkg	Undifferntiated Upper Gondwana
Pbo	Bijori Formation
Pmo	Motur Formation
PTk	Kamthi Formation
CTg	Undifferentiated Lower Gondwana
Pbr	Barakar Formation
C?P.t	Talchir Formation/Umaria beds
Pt_1^2b	Bhander Group
Pt_1^1r	Rewa Group
Pt_1k	Kaimur Group
Pt.s	Semri Group
Pt_1b	Bijawar Group
Pt_1s	Sausar Group
A?Ptc	Chhotanagpur Gneissic Complex
Agn	Gneissic Complex with Supracrustal (Amgaon/Betul-Chhindwara/ Sindhi, Tirodi gneiss)
Pt_1g	Gwalior Group
Pt.m	Mahakoshal Group
pAPt.bd	Bundelkhand Gneissic Complex

INDEX TO MINERALS

- Clay
- Bauxite
- Dolomite
- Limestone
- Iron Ore
- Phosphate
- Gold
- Pyrophyllite
- Manganese
- Copper Ore
- Coal
- Diamond
- Zinc Ore
- Opal
- Dimensional Stone

INDEX TO GEOLOGICAL STRUCTURES

Fault

Central India Shear Zone

Graphics designed by Subir Sudhi, Asstt., Geodata Dn.

1.3 MAHARASHTRA

Maharashtra exhibits a spectrum of stratigraphic sequences of rocks ranging from Archaean to Quaternary. The oldest Archaean gneisses, variously designated as Amgaon Gneiss, Bengpal Gneiss, Tirodi Gneiss and Peninsular Gneiss are well exposed in different parts of the state. The Archaean gneissic complex is unconformably overlain by the metamorphosed volcano-sedimentary rocks of Sakoli Group and banded ferruginous quartzite, metapelites, quartzites of Archaean to Palaeoproterozoic age. The 3000 m thick unfosiliferous plateformal cover sediments exposed along Godavari valley is classified into Pakhal, Penganga and Sullavai groups. Basic and ultrabasic rocks exposed in Sindhudurg District are considered to be an extension of the Chitradurga Group of rocks of Karnataka and Goa.

The Palaeoproterozoic acid volcanics and volcanoclastics of Nandgaon Group exposed in the easternmost Gondia and Gadchiroli districts, is intruded by Dongargarh Granite (2500 m.y). Khairagarh Group of rocks of Palaeo- to Mesoproterozoic age, and comprising bimodal volcano-sedimentaries, unconformably overly the Dongargarh Granite. The rocks of Sausar Group occur in Nagpur and Bhandara districts and are exposed in a 75 km wide and 210 km long belt extending into Madhya Pradesh.

The Late Palaeozoic to Mesozoic fluvial sedimentary sequence of Gondwana Supergroup is exposed in the Wardha Valley region of Chandrapur, Yavatmal and Gadchiroli districts extending northward in Kamthi and Umrer areas of Nagpur District.

A minor proportion of fossiliferous sedimentary rocks of the marine Bagh Formation and freshwater Lameta Formation are exposed below the Deccan Flood Basalt Sequences (DCFB). A major part of Maharashtra is covered by with tholeiitic basalts of DCFB (Upper Cretaceous to Palaeocene). The DCFB and associated intertrappean sediments are classified as Sahyadri Group and Satpura Group.

Quaternary deposits of the stae are mainly confined in Tapti, Purna and Godavari valleys while fluviomarine deposits occur along the west coast. Laterite cappings cover almost all the rock formations but mostly over the Deccan Trap basalts.

The eastern and southwestern parts of Maharashtra are occupied by stratigraphically older rock formations forming a repository of vast mineral wealth including manganese, coal, sillimanite, kyanite, copper, gold, tungsten, dolomite, limestone, bauxite and iron ores. GSI has remained involved with the mineral investigations for gold, tin-tungsten and basemetals and established the resources. Presently, the activities of GSI are more focused on mineral exploration for base metals and PGE (Platinum Group of Elements) in Chandrapur and

Gadchiroli districts. The geothermal prospects established along west coast are future potential for harnessing geothermal energy.

COMMODITY	DISTRICT	MINERALISED LOCALITY	RESOURCES
Bauxite	Kolhapur	Dhangarwadi*, Udgir, Ringewadi-Girgaon, Kitanwadi, Manbet, Gargoti, Waki, Nagartaswadi, Savantwadi, Kasarada, Mahipatgaon, Kalinidigarh, Panhala Fort.	80 mt
	Raigarh	Velas- Harvit, Madgarh-Gav aliwadi	2.23mt
	Ratnagiri	Nanar -Chavanwadi, Rajapur	5.262mt
	Satara	Koyna Valley, Kolgha, Javati, Kalamba, Patan;	5.75mt
	Sindhudurg	Kalve-Katt; Katanwadi- Kolambaiwadi- Dahibhav, Devgarh, Kalve	0.892 mt
	Thane	Tungar, Salsette	2.6 mt
Barite	Chandrapur	Phutana, Thanewasna. Mahadwari, Dewada, Nalesar-Uthal-Peth, Jam Tukum, Dabgaon, Gomtukum, Dongarhaldi, Tolewahi, Mandatukum, Kasargatta, Mohara, Dubarpeth	56 950 t
	Gadchiroli	Waigaon, Kopela, Jingaanur;	
	Nagpur	Ran Mangli;	
	Sindhudurg	Lore village	0.12 mt
	Sindhudurg	Kankavli- Janoli, Wagda, Gosaviwadi.	11000t
Coal	Chandrapur	Wardha Valley - Chanda Coalfields, Durgapur Block, Padampur Block, Agarjhari, Paili Bhatadi, Bhandak, Visapur, Majri- Talwasa, Ballarpur, Sasti- Rajura, Warora, Anandwan- Majra- Belgaon, Ghugus, Wirur- Chincholi	2000 mt
	Nagpur	Kamthi-Saoner, Umrer, Makardhokda, Nand, Bokhara	902 mt
	Yavatmal	Rajur-Pisgaon, Chikhalgaon, Kolar Pimpri, Ukni-Niljai-Bellora, Mugoli, Ghosna, Marki-Mangli	600 mt
Copper	Bhandara	Kitari-Purkabodi-Rangora, Umarjhari, Kesalwada-Jhargaon	0.78 mt
	Chandrapur	Thanewasna, Govindpur, Bothali, Motegaon, Chikmara, Dubarpeth	4.42 mt
	Gadchiroli	Ghot- Chamorshi, Ghot extension, Regdi, Tirkatola	
	Nagpur	Pular - Parsori, Ranmangli	1.137 mt
Fluorite	Chandrapur	Dongargaon,Nalesar-Uthalpeth	
Gold	Nagpur	Parsori (East), Parsori (West), Khapri, Kitari (North), (West), Marupar Pular, Kosari Thana, Kolari, Bhaonri Ranbori, Pahungaon Tas Rengatur	2.924 t
	Bhandara	Adyal - Kesalwara, Garara - Madgi, Etawahi - Khairi, Bhimsen Kila Pahar Purkhabori R.F., Kitari Tuthanbori,	
	Chandrapur	Thanewasna, Gondpipri	
Graphite	Bhandara	Charkhamara	
	Gadchiroli	Garewada , Chatgaon, Navegaon, Surgaon, Kumarguda;	
	Sindhudurg	Kochara, Sidwadi,	1.16 mt
Gypsum	Kolhapur	Tambyechiwadi;	
	Sindhudurg	Manegaon	
	Sholapur	Mangalwedha	
	Bhandara	Khursipar, Kanholi	6.2 mt
	Chandrapur	Asola, Lohara, Pipalgaon, Bissi	2.1 mt

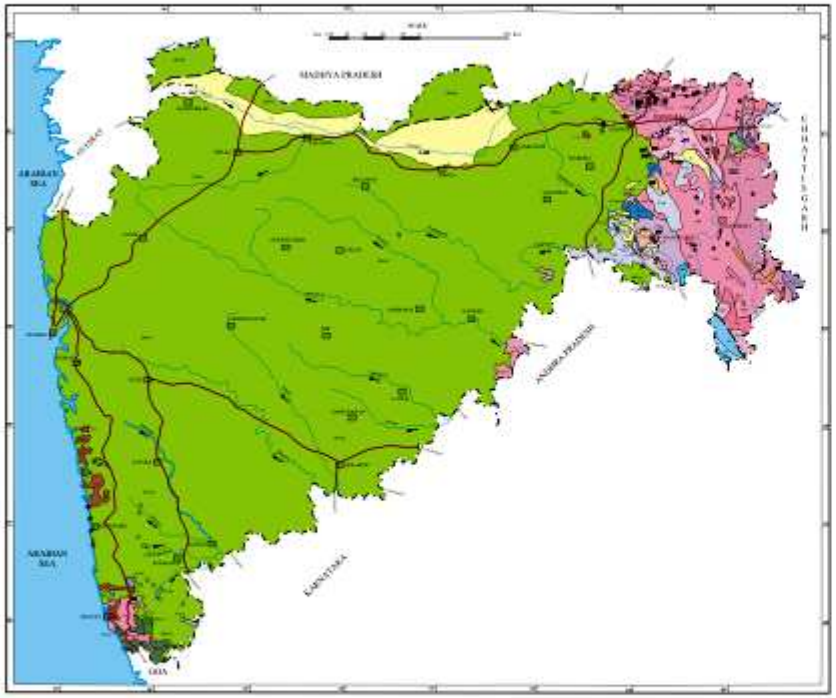
COMMODITY	DISTRICT	MINERALISED LOCALITY	RESOURCES
Iron Ore	Gadchiroli	Surjgarh, Damkod-Wadvi, Bhamragarh, Devalgaon, Fuser	118.45 mt
	Sindhudurg	Redi, Tirvade-Ajgaon-Guldave, Sateli-Satarda.	50.20mt
Kyanite	Bhandara	Dahegaon-Pardi, Girole, Nawargaon, Madheghat, Dighori-Moti, Pipalgaon, Purkabori, Sonkhari - Chikklabori, Kitari, Bampewara, Umarjhari, Sasathi, Borokirehi, Dudhala RF, Jhari, Mindha, Malda, Chikna, Jaitpuri, Ghorajari, Koilara	34 98806 t
Limestone	Amravati	Belkher-Pandari	
	Chandrapur	Naokari-Kusumbi, Sangoda, Awarpur-Gangapur and Bakardi, Naranda-Pimpri-Wanoja, Chandur-Thutra-Sonapur, Borgaon-Ergaon, Persi-Kudar Nala, dolomite Gojoli-Somanapalli, Kondhala , Soit-Niljai, Kamargaohan- Mardha, Chedvai, Kotara-Borgaon, Wirai, Rupapeth-Khadki , Javra-Tulsi, Dewala, Kanhargaon-Bhutari,Nandgaon-Ekodi, Somanpalli-Timed, Keneli-Ambejhara, Ankisha, Dhule - Kewadi-Chapdi, Wani-Manbeli	3515.20 mt
	Gadchiroli	Srikonda,Jinganpur,Dewalmari-Katepalli, Suddagudam Umanur	40.24 mt
	Nanded	Pardi, Warsaongwi, Pangri-Jhari-Wadepuri	1.95 mt
	Yavatmal	Chanaka-Bhimkumd, Chanaka-Gubri, Gubri-Karegaon, Karagaon-Pimpalshenda, Hiwra, Muktban, Sindola-Chanak-Paramdoh, Rajur, Gaurala, Patur, Gowari-Pathri, Piwardol-Gawara, Virkund	88.66 mt
Lead - Zinc	Nagpur	Ranmangli, Kolari-Bhaonri, Anjani	3.987 mt
	Sindhudrug	Lore	
Manganese	Bhandara	Dongri-Buzurg, Kurmura Laman Hurki- Pengadi, Sitasaongi, Asalpani, Karli, Ghanor North and South Sector, Bhander Bori-Miura, Goberwahi- Karli-Aswalpani Sareka Phala, Chikla Mines, Chikla, Hiura	7.173 mt
	Nagpur	Gumgaon, Parseoni, Kandri & Mansar, Satak, Beldongri, Nagardhan, Nandapuri-Chaki Lohdongri, Lohdongri -Kachurwahi, Waregaon, Waitola, Kodegaon- Gungaon, Parsoda, Gungaon Ramdongri, Goguldoh, Chokhala, Bhandarboli/ Bhimaltola, Kalkuri, Mogra, Usmipar, Bomdra, Ghoti, Tangla, Hira, Richada, Maharkund, Chikhadi, Bhomewads, Belda, Ghogra, Musemada, Kirnapur	1 mt
	Satara	Savitri Pass, Mahabaleshwar, Lingmale, Chikli, Mesgotar, Akwali, Sinola Bhekowli Tekowali, Kas, Wai; Yavatmal - Hiwri	
PGE	Bhandara	Bhimsain Killa Parae, Parsori, Kitar, etc	
Tungsten	Nagpur	Kuhi, Khobna, Agargaon, Bhaonri	8.75mt
Sillimanite	Bhandara	Pohra	

भारतीय भूवैज्ञानिक सर्वेक्षण

Geological Survey of India

महाराष्ट्र का भूविज्ञान तथा खनिज मानचित्र

GEOLOGICAL AND MINERAL MAP OF MAHARASHTRA



INDEX

- Q — Alluvium
- Cal — Laterite
- βKPgd — Deccan Trap
- Kl — Lameta Group
- Jgk — Kota Formation
- Tgm — Maleri Formation
- PTk — Kamthi Formation
- C?P₁t — Talchir Formation
- Pg | Pk/m — Penganga/Kaladgi/Badami Group
- Pt₁pk — Pakhal Supergroup
- Pt₁c | Pt₁c/Pt₁c | Pt₁c — Chilpi/Abujmar/Khairagarh Group
- Pt₁ss — Sausar Group
- Pt₁s — Sakoli Group
- Apt.p — Peninsular Gneissic Complex (older phase)
- Ac — Charnockite Group

INDEX TO MINERALS

Clay	Manganese	Zinc Ore
Bauxite	Copper Ore	Kyanite
Dolomite	Chromite	Tungsten Ore
Limestone	Coal	Ochre
Iron Ore	Barytes	Glass sand
Ilmenite	Gold	Sillimanite
	Pyrophyllite	Dimensional stone

INDEX TO GEOLOGICAL STRUCTURES

- Fault
- Central India Shear Zone
- Lonar Crater

Graphics designed by Suhas Sadhu, Asstt. Geologist Dr.

2. ORGANISATIONAL STRUCTURE

The Geological Survey of India is now formally declared as an A*ttached Office* of the Ministry of Mines, Government of India, following the recommendation of High Powered Committee (HPC) set up in 2008. Till July, 2009 it remained a *Subordinate Office*. The new organizational structure of GSI is in accordance with its new-found status. The organizational structure of GSI is substantially oriented to meet the needs for the specialization as well as multidisciplinary studies.

The Union Cabinet had constituted a High Powered Committee (HPC**)** for thoroughly reviewing the existing functioning of Geological Survey of India and for assessing its capacity to meet the emerging challenges taking into account the technological and manpower resources of the organisation. The report of the committee had been submitted and accepted. The revised organizational structure, submitted by the Committee and accepted by Government, is under the process of implementation. The ***Headquarters of Mission II*** is also located at **Nagpur**.

Current Organizational Setup of Central region:

Central Region has its Regional Headquarters at Nagpur with five operational units, which ares located at Nagpur and Pune (State Unit: Maharashta); Bhopal, Jabalpur (State Unit: Madhya Pradesh) and Raipur (State Unit: Chhattisgarh). The organogram of GSI, CR is given beneath:

Organogram of GSI, Central Region

Deputy Director General & HOD
Geological Survey of India, Central Region, Nagpur
A. K. Saha

- DDG (Chem), STSS — Dr. R. K. Moorthy (Till 31.05.2014)
  - PSS — P. K. Raut
  - CGPB & RPC — P. K. Raut ✸
  - TCS — Sajal Pal ✸
  - Mission-I Geophysics — Jai Kamal; R. K. Misra
  - Mission-IB PGRS — K. K. Naik
  - Mission-II B — Sudhibrata Ray; V. V. Magal; G. C. Mukhopadhyay; S. D. Pathbhaje (Geothermal)
  - Mission-III — Geodata: G. Gonnade; M&C: S. A. Chore; Publication: Sajal Pal
  - Mission-IV(M) — Engg. Geology: V. V. Sakhare; Earthquake Geol.: V. V. Sakahre ✸
  - Mission-IV(F) — Petrology: Manoj Moitra; Palaeontology: Ms Varsha Aglawe; Mineral Physics: Manoj Moitra ✸
  - Mission-V — RTI, Nagpur: K. C. Mahapatra; FTC, Raipur: C. R. Dash
  - Chemical — Dr. R. S. Alte
    - Petrology Lab — Manoj Moitra
    - Mineral Physics Lab — Manoj Moitra ✸
    - Palaeontology Lab — Ms Varsha A. Aglawe
    - G.T. Lab — V. V. Sakhare
    - Engineering Services — K. N. Sinha
  - Geophysics (TC) — Jai Kamal
    - Geophysics (Instrs.) — Jai Kamal
    - BBSO — Jai Kamal
  - ASS
    - Director (Finance) — G. Gonnade ✸
    - Head of Office — G. Gonnade ✸
    - Joint Director (P&A) — S. K. Sinha
  - Vigilance Officer-in-Charge — S. A. Chore ✸
  - Grievances — S. D. Pathbaje ✸
  - CPIO — K. K. Naik ✸
  - Rajbhasha Adhikari — G. Gonnade ✸
  - DCOS — S. S. Rajput
- Deputy Director General, State Unit Maharashtra — Dr. Venkataswamy
  - State Unit Maharashtra (East), Nagpur
    - TC — N. V. Nimaware ✸
    - Mission-I — M. Fulwari (GCM); Dr. A. R. Choudhuri (STM)
    - Mission-II — N. Y. Nimaware
    - Mission-III — Dr. A. R. Choudhuri
    - ASS Head of Office — N. V. Nimaware ✸
  - State Unit Maharashtra (West), Pune
    - TC — H. Athawale ✸
    - Mission-I — Bibhas Sen (STM); A. K. Singh (GCM)
    - Mission-II — B. Bhusari
    - Mission-III — H. Athavale
    - Mission-IV — M. M. Powar
    - STSS : Chem — S. Y. Katti
    - ASS Head of Office — M. M. Powar ✸
- Deputy Director General, State Unit Madhya Pradesh — P. F. Ramteke
  - State Unit MP-I Bhopal
    - TC — J. M. Gautam
    - Mission-I — H. Suryavanshi (STM); K. Y. Nandiar (GCM)
    - Mission-II — H. S. Shrivastava
    - Mission-III — K. K. Chhatri
    - Mission-IV (M) — M. C. Upadhyay
    - Mission-IV (F) — J. M. Gautam ✸
    - STSS : Chem — Y. K. Joshi
    - ASS Head of Office — H. Suryavanshi ✸
  - State Unit MP-II, Jabalpur
    - TC — H. Y. Bhai
    - Mission-I — H. Y. Bhai ✸ (GCM); J. N. Solanki (STM); Rajendra Kumar (GCM)
    - Mission-II — J. N. Solanki ✸
    - Mission-III — H. N. Bawane; M. Ghosh
    - ASS Head of Office — H. N. Bawane ✸
- Deputy Director General, State Unit Chhattisgarh — M. Sridhar ✸
  - State Unit CG Raipur
    - TC — A. P. S. Parihar
    - Mission-I — A. P. S. Parihar ✸ (STM); G. Ror; H. Mishra (GCM)
    - Mission-II — A. P. S. Parihar ✸; C. R. Dash; H. K. Thewait; R. K. Mishra
    - Mission-III — R. K. Mishra ✸
    - ASS Head of Office — V. Pandey
  - P. K. Das
  - A. Roy
- Dy. D G, RMH - I — A. S. Gill
- Dy. D G, RMH - II — M. Sridhar
- Dy. D G, RMH - III — V. P. Sabale
- Dy. D G, RMH - IV — S. Sarkar
- Deputy Director General & Head Mission-II, Nagpur — Dr. A. K. Chatterjee
  - Deputy Director General, Mission-IIA — Dr. Venkataswami
  - Deputy Director General, Mission-IIA (Min. Prog.) — D. Mohan Raj
  - Chief Engineer — P. N. Sinha
  - Director (Tech.) — P. Tarafdar

INDEX
- Dy. Director Genera/DIC
- Director
- Supdt. Geologist/Geophy./Chemist
- Sr. Geologist/Geophy./Chemist
- ✸ Additional Charge

3. ACTIVITY DOMAIN

The activities of Central Region are currently organized around seven schemes:

Schemes	Components/Activities
Mission - I	
Survey & Mapping	Specialised Thematic Mapping, Geochemical Mapping, Geophysical Mapping Geomorphological Mapping and Remote Sensing & Aerial Surveys.
Mission - II	
Mineral Exploration	Mineral Exploration for basemetal, iron ore, PGE, phosphorite and other minerals as per changing priority and for Energy minerals coal (including lignite).
Mission - III	
Geoinformatics	Data Repository & Mangement and Information Delivry. Map compilation and publication on various earth science subjects, Geoinformatics, Information Technology and dissemination of information through GSI portal in Public Domain.
Mission - IV	
Multi-disciplinary Geoscience and Special Studies	Geotechncial, environmental, landslide, earthquake geology and seismological, and microzonation studies including palaeo-climatic studies and biodiversity.
Fundamental Geoscience Studies	Research work on fundamental geoscience.
Mission - V	
Human Resource Development	Training through RTI and FTC
STSS	
Modernization	Procurement of Modern Scientific Instruments for upgradtion of all Laboratories.
Assests Procurement & Management	Acquisition and replacement of instruments/equipments in planned manner.

Items of FSP 2013-14 of GSI, Central Region are submitted in FSP-MIS.

4. ACHIEVEMENTS OF GSI CENTRAL REGION

Since the formation of Central Region as a self-contained Region, it has contributed to a great extent in development of the geoscientific database and mineral resources within the geographical limits defined by the three states Maharashtra, Madhya Pradesh and Chhattisgarh. Some of the major contribution in different fields is listed below following the present day Mission mode classification.

Mission – I:

1. Special thematic mapping on 1:25,000 scale have been completed for the whole of Sakoli Fold Belt covering about 3,500 sq km in Nagpur, Bhandara, Gondia and Gadchiroli districts.
2. Special thematic mapping on 1:25,000 scale have been completed in the Sausar Belt in Nagpur district to build up the stratigraphy and work out the genesis of the manganese ores.
3. Special thematic mapping on 1:25,000 scale have been been taken up in parts of Chandrapur and Gadchiroli districts with reference establish the PGE potentiality in the ultabasic – basic suite of rocks.
4. Geochemical Mapping as part of the NGCM program is underway in all the three state units.
5. Geophysical Mapping (GPM) program is in underway in Central Region.

Mission – II:

1. Established the Malanjkhand Copper deposit, the only porphyry type deposit in the country.
2. Established the tin deposit in Bastar district, Chhattisgarh.
3. Established tungsten deposits in Kuhi – Khobna and Bhaonri, Nagpur district, Maharashtra
4. Established the plateau bauxite deposits on the Western Ghats, Maharashtra.
5. Established sizeable bauxite resources in the Konkan belt in Ratnagiri and Sindhudurg district, Maharashtra.
6. Established the Parsori copper deposit, Nagpur district, Maharashtra.
7. Established zinc deposit in Ranbori – Bhaonri, Nagpur district, Maharashtra.
8. Established basemetal (Zinc) deposits in Betul Belt, Madhya Pradesh.
9. Established gold resources in Parsori, Kitari and Marupar in Nagpur district and Bhim Sain Killa Pahar in Bhandara district, Maharashtra.
10. Established diamond resources in Chhattisgarh.
11. Established PGE mineralization in hydrothermal quartz veins in the Sakoli Fold Belt, first of its kind in India and Asia so far.

12. Established large resources of coal resources in the various coal fields in Chhattisgarh, Madhya Pradesh and Maharshtra.
13. Established large resources of limestone, iron ores and manganese in different parts of Central Region.

The mineral resources of Central Region are given in **annexure-1.** State-wise augmentation of coal resources by Mission–IIB, GSI, CR is furnished in **annexure-IA** and UNFC conversion status for ME reports, pre-1998-99, pre-2004 and 2004-09 periods are given **annexure-1B.**

Mission – III

1. LAN/WAN have been activated throughout the various headquarters at Nagpur, Pune, Bhopal, Jabalpur and Raipur.
2. IP telephony has been established providing direct telephone connectivity with all the GSI offices and CHQ.
3. Geological maps, metadata of progress reports, progress reports and field photographs pertaining to Central Region are available in the GSI Portal.

Mission – IV

1. Palaeontological studies have resulted in finding the "Narmada man" (*Homo erectus narmadensis)* fossil skull from Hatnora area, Sehore District, Madhya Pradesh.
2. Research project to establish chemical stratigraphy of the Deccan traps completed.
3. Research projects on various aspects of dinosaur evolution taken up.
4. Provided specialist advice to ASI in the matter of preservation of World Heritage and National Heritage monuments in Maharshtra and Madhya Pradesh.
5. Provided geotechnical advice in NTPC power Projects in Chhattisgarh and Maharashtra.
6. Provided geological expert knowledge to NPCL of India at Jaitapur.

5. XII PLAN WORK ENVISAGED

The activity domain pertaining to Mission-I and II of the region and achievements (FSP related items) during XI plan period (2007-12) is given in **annexure-2A.** The achievements for the XII Plan period (F.S.2012-13 & 2013-14) and the work envisaged and achievements (till 30th June 2014) for the FS 2014-15 are furnished in **annexure-2B** and **2C** respectively.

6. FINANCIAL PERFOMANCE UNDER CURRENT PLAN

The details schemewise, monthwise distribution of approved plan funds and actual expenditure for 2014-15 is given in **annexures-3.**

7. FIELD SEASON PROGRAMME WORK, FS 2014-15

The work being carried out under different schemes are given under Activity Domain of the region under 3 above and also the progress of work so far for FS 2014-15 items are listed below in brief. The number of field days of officers, target vis-a-vis achievement and expenditure is given in a**nnexure-4**. The status of chemical analysis of NGCM samples are furnished in **annexure-5.**

The details of Pending Progress Report i.e data universe on region wise status, region wise-mission wise status, mission wise-FS wise status of all reports are furnished in **annexure-6.**

7.1 MISSION - I

7.1.1 SURVEY & MAPPING

I. ***Special Thematic Mapping:***

i) 03/STM/CR/MH/2014/001: One set of major lineament trending NNW-SSE is observed in the IRS- LISS III imagery of the Toposheet No 55P/14. Bouguer Gravity Anomaly map of the part of toposheet No 55P/13 and P/14 reflects alternative gravity highs and lows with a dominating trend of NW-SE. In the western part of Bramhapuri, the development of ferruginous laterite capping has been recorded. Along Bhuti nala section, sandstone is exposed. Geomorphologically along the southern side of the Bhuti nala, there is well developed terrace, but in the northern side, the terrace is virtually absent. It is probably due to the nala is shifting towards north due to neotectonic activity. Along Devdongri pahar, the exposed rock is multiply deformed quartzite. Three phases of deformation have been identified preceded by a shearing. Toward Desaiganj from Bramhapuri, along the eastern flank of the bridge upon Wainganga river, medium to coarse grained arkosic sandstone is exposed. Carbonaceous layer is preserved within the finer part of this sandstone.

ii) 04/STM/CR/MH/2014/02: The area mainly comprises of Bengpal Gneiss, Kamthi Sandstone, Lameta Group and Deccan Basalt. The drainage pattern is mainly dendritic in nature. Two sets of lineament trending NE-SW and NW-SE direction were observed in PGRS study.

iii) 05/STM/CR/MH/2014/03: Based on tone, texture and relief as observed in aerial photographs and satellite imagery, three different lithounits identified. Major lineaments are trending NW-SE. Overall drainage pattern is dendritic. Field studies reveal that Gneissic complex occupies the western part and quartz-chlorite schist, phyllite, quartzite and rhyolite occurs in the eastern part. The zone of contact between the contrasting lithologies is highly deformed.

Trough cross bedding and graded bedding are found in quartzite bands enclosed in quartz-chlorite schist. Structurally the area has suffered atleast two phases of deformation. A set of conjugate shear post dates all other deformational episodes.

iv) 06/STM/CR/MH/2014/04: Two major rock types identified in field are basaltic flows and granites/ granite gneisses.

v) 07/STM/CR/MH/2014/05: Four sets of lineaments have been identified from the area based on study of DEM map, satellite imagery and aerial photos. Godavari rift parallel NW-SE trending lineament is the most prominent. Three litho units identified on the basis aerial photo studies: the Deccan basaltic flows, gneisses and an unidentified rock type. Field studies in part of the area indicated the basaltic flows and gneisses.

vi) 08/ STM/CR/MH/2014/006: The field work was carried out in and around Phonda area of Sindhudurgh district of Maharashtra. Geologically the area belongs to Precambrian terrain. The rock types exposed in this area are biotite gneiss, metapelite, amphibolite of Peninsular Gneissic Complex and Supracrustals of Western Dharwar Craton of Archean age. The area also exposes rocks of Kaladgi group mainly sandstone, shale and mudstone which are deposited over peninsular gneissic complex and supracrustals. The whole sequence is capped by basaltic flows of Deccan trap and laterite; and fluvio marine deposits of recent age. The contacts between different litho units have been demarcated and representative samples have been collected for petrographic study. During mapping two faults have been inferred to be present within Kaladgi basin.

vi) 09/STM/CR/MP/2013/001: Studied the satellite imaginary of the area falls under T.S.54 K/10. Prepared the drainage map of the study area and marked the tentative location for stream sediment sample collection for heavy mineral studies. Engaged in geochemical data plotting and their interpretation. Engaged in process of heavy mineral separation at the laboratory.

vii) 10/STM/CR/MP/2013/002: Consulted previous literatures and reports related to study area. Studied the Google image related to the study area.

viii) 011/STM/CR/MP/2013/003: The Satelite imageries of the area which is fall under T.S. 55J/16 have been studied. Consulted literature, old maps and latest journals related to geology of Betul belt, Archean gneisses, Granites, Gondwana Supergroup and Deccan basaltic. Prepared the work plan for systematic field traverses in field.

ix) 012/STM/CR/MP/2013/004: Studied toposheet and geological map of toposheet no 55K/13 & 55O/1 on 1:50,000 scale and consulted literature.

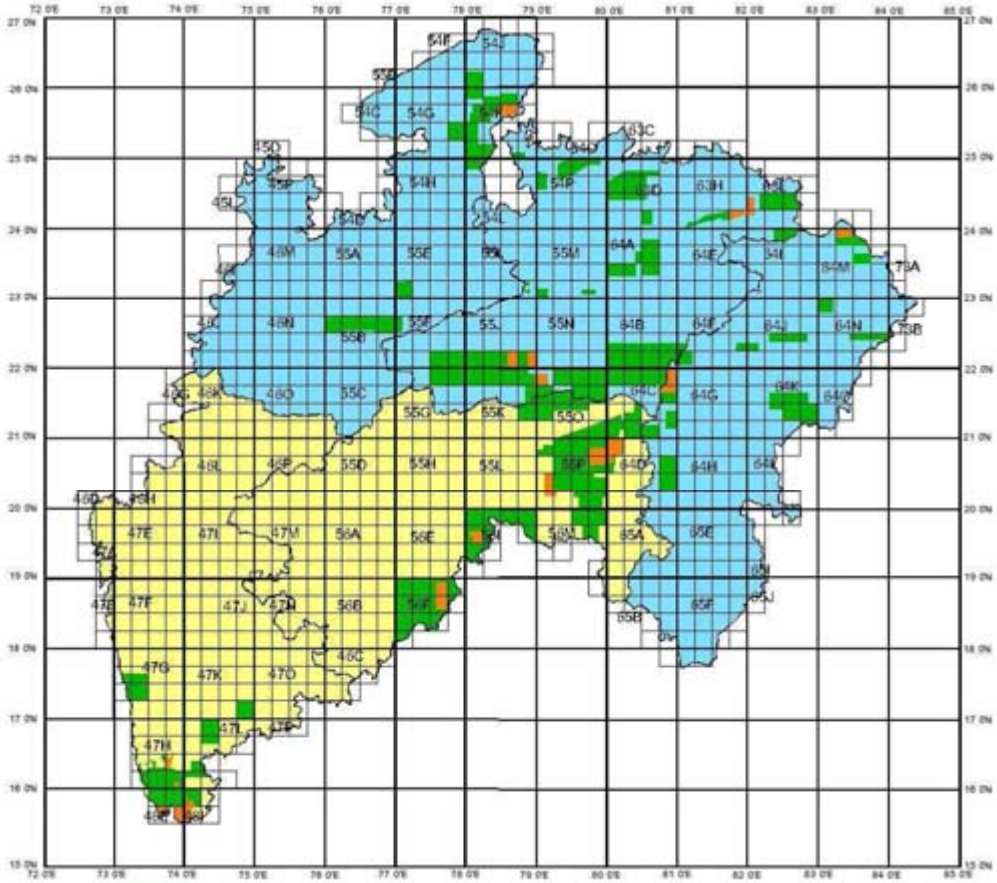
x) 013/STM/CR/MP/2013/005: During the course of mapping, it was observed that the mapped area exposes rocks of Agori Formation of Mahakoshal Group, Vindhyans, Jungel and Gondwana supergroup. Agori Formation observed in the field is dominantly represented by volcano-

sedimentary sequence and chemogenic sediments e.g., carbonaceous phyllite and dolomitic limestone. Biotite granite, isolated older supracrustals and amphibolite and plagioclase rich granite were observed occurring as enclaves within alkali feldspar rich pink granite. Contact between Mahakoshals and Older Gneisses is not observed in the area however, enclaves of older supracrustals viz. amphibolite and quartzite occur within alkali feldspar granite and granodiorite. Alkali feldspar granite is intrusive in the Mahakoshal Group of rocks. A conglomerate bed in the area marks unconformable contact of Jungel and Vindhyans.

xi) 014/STM/CR/CG/2014/006: It is a continued item. Analysis result of one rhyolite sample show 1400 ppm copper and 60 ppm zinc content. The location of the sample is south east of Kukaritola village. Two bands of haematite analysed 67.2% Fe and 65.9% Fe respectively. The area exposes rocks of Nandgaon Group, Chilpi Group, Khairagarh Group and Chhattisgarh Supergroup. Chilpi group of rocks is represented by low grade metasedimentary sequence comprising of conglomerate, slaty-shale, chert, greywacke, limestone and quartzite.

xii) 015/STM/CR/CG/2014/007: SRTM image of the area was studied with Global Mapper software. Satellite image of the area were studied with USGS earth explorer software. The area is mainly occupied by metasedimentary sequence comprising schistose quartzite, quartz-muscovite schist, garnetiferous quartz-mica-sillimenite-andalusite schist, graphite mica schist, garnetiferous quartzite, banded iron formation, calc silicate and impure marble. Granitization of the metasediments has resulted into the granitic gneiss with migmatitic variety. Ferruginous sandstone of Barakar Formation overlies the Precambrian metamorphic rocks unconfirmably. As the current item is a continued item of the previous FSP 2013-14, the map covering an area of 350 sq. km. was finalized. The geological and structural features of the area were established along with thin section studies.

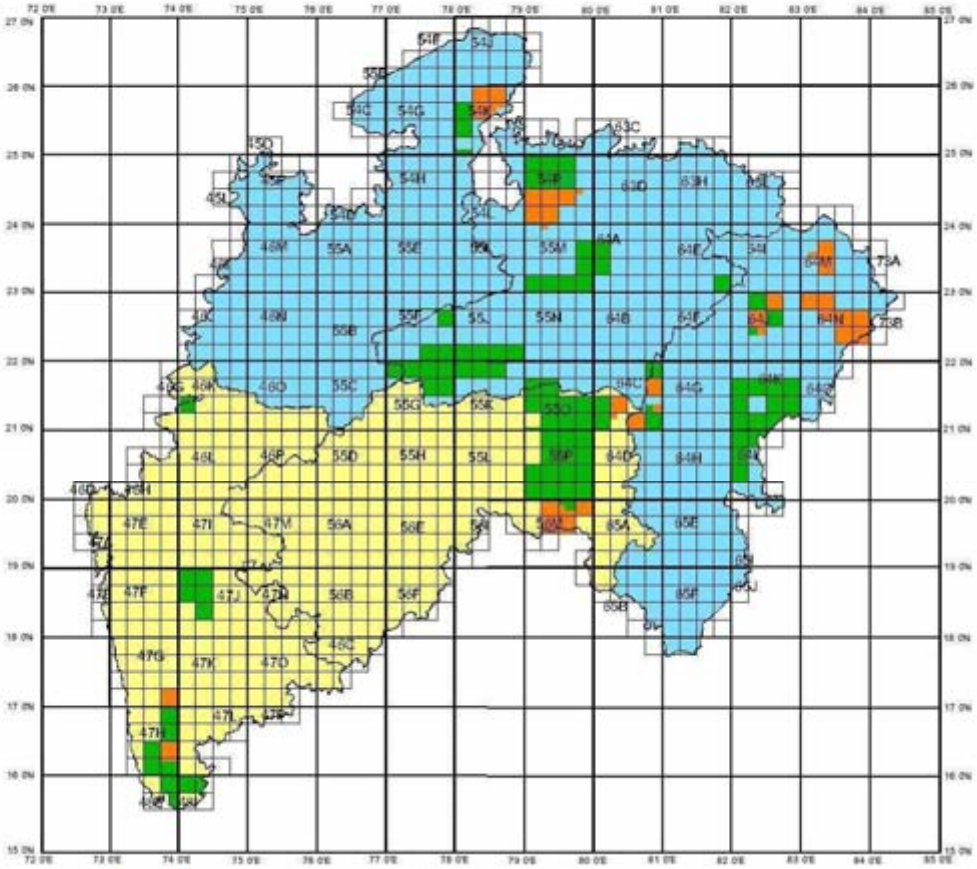
STATUS OF SPECIALISED THEMATIC MAPPING IN CENTRAL REGION



Area covered by STM till FS 2013-2014

Area under execution (FS 2014 - 2015)

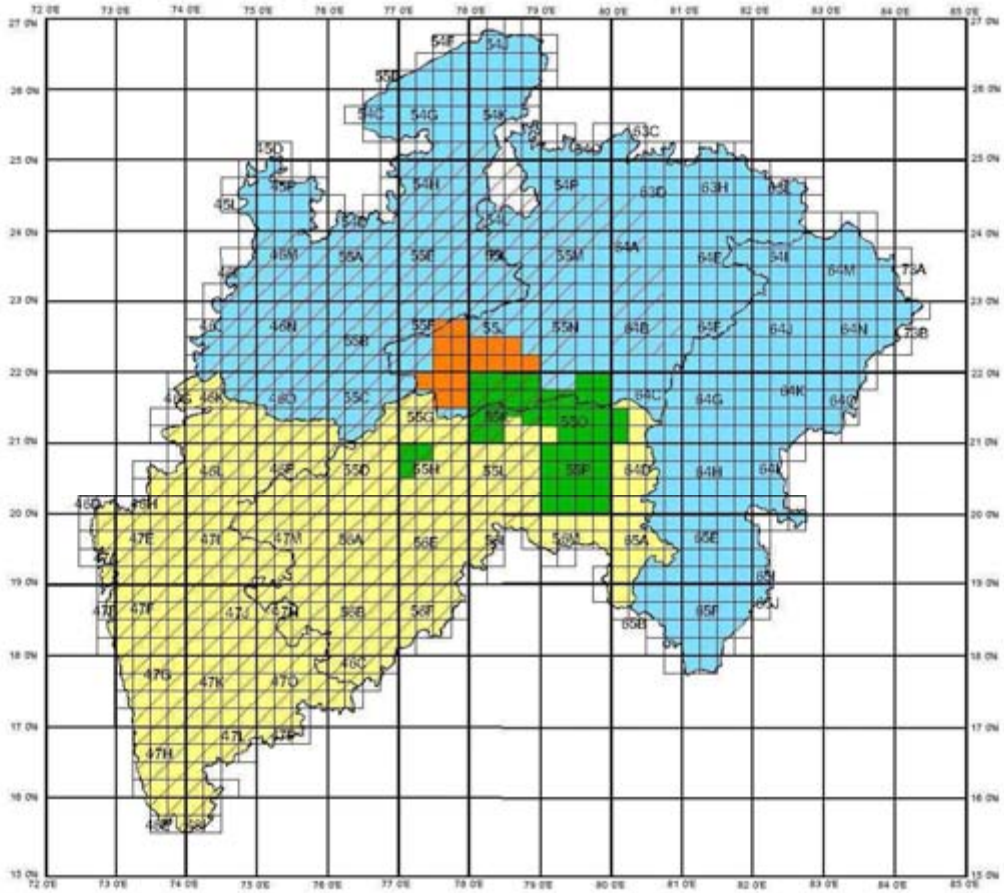
STATUS OF GEOCHEMICAL MAPPING IN CENTRAL REGION



Area covered by GCM till FS 2013 - 2014

Area under execution FS 2014 - 2015 and area proposed for FS 2015 - 2016

STATUS OF GRAVITY AND MAGNETIC MAPPING IN CENTRAL REGION



Gravity data (One station at 10 km interval)

Area covered by Gravity and Magnetic Mapping (One station per 2.5 Sq. km) till FS 2013-14

Area under execution (FS 2014 - 2015)

7.1.2 REMOTE SENSING & AERIAL SURVEY

I. Mission IB - Baseline Geosciences

Geomorphological Mapping:

Item no. 044/PRS/CHQ/M1-B/2014/29: All India Mosaic of National Geomorphological and Lineament mapping on 1:50,000 scale using satellite data.

A National project on geomorphological and lineament mapping on 1:50,000 scale under the NNRMS Standing Committee on Geology and Mineral Resources (NNRMS SC-G) was initiated in 2009 jointly by GSI and ISRO with an objective of preparing a comprehensive 1:50K Geomorphological and Lineament map of the whole country. Multi- temporal LISS-III geocoded digital data were used using ARCGIS based NRC-Geom software following National Legend Schema for executing the project. The project was carried out for three consecutive Field Season from 2010-12 to 2013-14.

The project generated statewise geomorphological and lineament geodatabase. The geodatabase has three layers geom (polygon layer for geomorphology), structure (line layer for lineament) and field (point layer for field photograph and related database). Geom has three attributes (Level-1 defining origin of landforms, level-2 for defining geomorphic class and level-3 defining landforms class). Similarly structure has two level of attributes (level-1 for origin and level -2 for nature).

A joint meeting of GSI and NRSC / ISRO was held at NRSC, Hyderabad on 19th June 2013 and agenda of preparing all India seamless mosaic of NGLM maps during 2014-15 was approved both by the Nodal Officer of ISRO and GSI. The objective of the work is to prepare a seamless national mosaic of geomorphology and lineament layers on 1:50,000 scale and upload the database in GSI portal.

During the period from April 2014 to June 2014, editing and edge matching of polygon layers of geomorphology and line layers of lineament of intra-regional border sheets of Maharashtra, Madhya Pradesh and Chhattisgarh has been initiated. A total of 43 maps / sheets of Central Region have been finalised using NRC-Geom software on ARC GIS platform and by consulting Geological Maps, District Resource Maps, SRTM DEM and Toposheets.

(i) Hyperspectral Mapping

Item No. 043/PRS/CR/MH/2014/28: Hyperspectral mapping in parts of Sakoli & Sausar Belt, Bhandara and Nagpur districts Maharashtra and Balaghat district, Madhya Pradesh.

Remote Sensing division CR has taken up an item on Hyperspectral mapping for generation of rock spectral library and preparation of relative mineral abundance map where ever the alteration zone is present especially in non vegetated area. The study area falls in SOI TS no

55 O/10, 11 & 12 where both Sausar & Sakoli group of rocks are exposed. The toposheets were rectified using Arc GIS software and location map of the study area has been prepared. One strip of Hyperspectral data has been downloaded from USGS site and processing has been initiated. The spectral subset, atmospheric correction & georeferencing have been carried out using ENVI software. One scene of multispectral airborne LANDSAT 8 (recently launched) data for the study area has been downloaded and processed. An attempt has been made to prepare an alteration (clay and iron oxide alteration) map of the study area using band ratio techniques. These maps were validated with existing geological map of the study area. Two scenes of multispectral airborne Advanced Space borne Thermal Emission and Reflected spectroradiometer (ASTER) data have been procured from Japan Space System through NRSC (National Remote Sensing Agency), Hyderabad. The preprocessing of ASTER data like crosstalk correction, layer stack of VNIR (Visible to Near Infra Red) and SWIR (Short Wave Infra Red), atmospheric correction using FLAASH, spatial subset, NDVI (Normalize difference vegetation Index) of the study area were performed using ENVI software. The different band ratio techniques were applied, Relative Band Depth (RBD) image, Mineral Indices (MI) map were generated using band math algorithms in ENVI software. An attempt has been made to prepare a possible phyllitic and argillic alteration minerals map of the study area. The concentration of phyllitic and argillic alteration minerals has been interpreted wherever the barren exposures (like meta rhyolite, schist, BIF, silicified quartz vein) are exposed and also in abandoned and active mines area (Dongri Buzurg mines).

(ii) Service item

Item no. 045/SER/CR/HQ/2014/04: Assistance in digital/visual PGRS studies.

The PGRS division rendered assistance to the officers of various divisions in Remote Sensing Studies in image interpretation and preparation of lineament map and visual interpretation of aerial photographs. Extraction and image interpretation of IRS image of 27 toposheets of various projects of current FSP were completed as follows

A) Provided interpreted data as softcopy for Toposheet nos. 55 P/3, 4 7, 8, 55 P/13 P/14, 56 M/6, M/9, M/10, M/13, 56 I/2, 55 P/6, P/10, 64 D/1, 56 F/9, 55 P/9 55 F/10, 64C/7 and 64 C/8 to the Geologists, of State Unit Maharashtra and Central Region.

B) Preparation and submission of soft copy interpreted IRS & ETM+ data along with vector files for TS nos. 55 P/5 & 55 P/9 using ERDAS & Arc GIS software on request from Director, Geodata division, CR.

C) Provided IRS LLISS III image of Jabalpur area as softcopy for Toposheet nos. 55 M/12, 55 M/16, 55 N/9, 55 N/13, 64 A/4 and 64 B/1 to Shri Prem Babu, Suptdg. Geologist, FTC, Raipur for imparting the training to the Geologists of 37th OCG.

7.2 MISSION - II
MINERAL EXPLORATION

MISSION-II A

7.2.1 NATURAL RESOURCE ASSESSMENT (NON-ENERGY RESOURCES)

Non-Ferrous Minerals:

Item No. 056/ME/CR/CG/2014/37: During period under review the officer was engaged in consultation of SOP for mineral exploration and DID on bauxite, preparation of base map for field work. Completed 2.5 sq. km LSM on 1:12,500 scale, collected 4 nos. BRS, 2 no. PCS, 6 nos. samples for chemical analysis. The area comes under T.S. No. 64F/04 in Chilpi area of Kabirdham dist. and exposes rocks of Deccan volcanic of upper cretaceous to palaeocene age and Laterites of Cenozoic age. Laterite occurs as capping on Deccan Basalt and it is hard to soft, massive, highly porous and sparsely pisolitic. These litho units are observed around Chilpi Ghat, Rajadhar, Lup, Salhewara, Khilahi village. Laterite is occurring as capping on Deccan basalt.

Strategic Minerals:

Item No.059/ME/CR/CG/2014/39: The officers were engaged in consulting literature regarding REE, previous reports, geological maps and general information Dossier. Geologically, the area is mainly covered by granitoids (Dongargarh Granitoids) exposed in the low lying area as well as in the high hills. Aplites (microgranite), quartz veins, quartz reefs and epidote veins occur within the granitoids.

051/ME/CR/MH/2014/033:

Study and interpretation of aerial photograph of the study area and prepared lineament map of toposheet No.55P/06 & 55P/10. Carried out regional traverses in part of toposheet no. 55P/6 & 10. The lithounits exposed in the study area are Bengpal gneiss, amphibolites, quartz–tourmaline vein, pegmatite, aplite and quartz vein. **Quartz-tourmaline** vein is observed in the Lawari reserve forest which showing the trend of N30W. The quartz-tourmaline vein of this area is showing needle shaped tourmaline crystals. In the Amboli area, one prominent quartz-tourmaline vein is located. The trend of this vein is N25^{0}W. Some quartz-tourmaline vein is also noticed along the road side on way to Shankarpur. In the Lawari reserve forest, quartz vein is observed. Some mafic enclaves within the gneissic rock are also observed in the north of Amboli village isr and along the roadside towards to Shankarpur village. Towards the Surajpur village the basement gneiss is exposed.

Precious metals and Minerals:

i) 053/ME/AU/CR/MP/2013/030: GOLD INVESTIGATION (Bhopal)

An area of 3.0 sq km by reconnoitory mapping & LSM on 12,500 scale has been completed. The rocks exposed in the area include granite gneisses, tremolite-actinolite schist, bimodal volcanic that includes metarhyolite, meta pillowed basalt, amphibolite, meta-gabbro and meta-pyroxenite. Major structural elements including foliation lineation and fold axes have been recorded in the area. Analytical results of all 400 BRS and 175 stream sediments samples of FS 2013-14 have been received. Some of the samples show significant values of Zinc and some of the sample show encouraging Pb values. Gold (Au) values above detection limit have been recorded in 12 samples out of 273 bedrock samples, 2 values of 70ppb & 60ppb from quartz vein and metapyroxenite of Parsori area, 8 samples show values 26 ppb, 27 ppb, 27 ppb, 28 ppb, 28 ppb, 29 ppb, 29 ppb & 30 ppb are from Toranwara area and out of these 04 samples are of quartz vein, 01 sample from pyroxenite and the rest are soil sample. Gold value of 34 ppb in one sample has also been recorded from the rhyolite of Khirki Buzurg area. Another value of 34 ppb Au has also been reported in chemical analysis of soil sample from Nimjhiri area. Zn values of 4 Bedrock samples of 10,700 ppm, 15800 ppm, 9800 ppm and 9200 ppm has been recorded from quartz vein, altered rhyolite of Toranwara area and from quartz vein and gabbro from Kanhargaon-Nimjhiri area respectively. Lead (Pb) values of 2 BRS 1430ppm and 1440ppm has been reported from quartz vein and amphibolite of Toranwara area respectively.

Base Metal Investigations

047/ME/CR/MH/2014/030: SU: Maharashtra, Nagpur

Field work in Nai Dilli and Lal Heti area was carried out to the check accessibility for drilling proposed borehole in the investigation area. Geology of the area was studied and sample for thin section and ore stub preparation were collected. Borehole location plan was prepared.

048/ME/CR/MH/2013/034: Regional traverses were taken around Rajoli, Bamni, Petgaon, Kalamgaon, Khatera and Kukarhetti areas to understand regional geological set up of the study area and to identify mineralizing quartz reefs and quartz veins in the study area. One prominent quartz reef is exposed in Bamni area having trend N55^{o}W- S55^{o}E and width varies from 5-15m extending upto a strike length of 400 m. Two sets of prominent joint N60^{o}E/84°NW and N40^{o}W/75°SW is developed in the reef. The quartz reef is milky white in nature and oxidized at places. Mineralization is observed in the form of galena, chalcopyrite and pyrite. Surface staining of malachite is also observed on the reef. Bed rock samples (03 Nos) are collected from the quartz reef. Two small quartz veins are exposed near Khatera and Bamni village respectively having width 1 to 2 m and extend up to a few meters. Lateritic hills are observed near Kalamgoan and Kukarhetti villages. Patches of Penganga sandstone is exposed to the South of Naleswar village. The sandstone is medium grained and ferruginous in nature.

050/ME/CR/MH/2014/032: As a part of aerial reconnaissance studies, the satellite imagery and aerial photograph were consulted. Carried out regional traverses in Silejhari, Dighori, Sanghari and Jhari areas to understand regional geological set up of the study area and to identify possible zones of mineralization. The rocks of the study area belong to Gaikhuri and Dhabetekri formation of Sakoli Group and basement Amgaon gneiss. The Gaikhuri Formation consists of quartzite, phyllite and carbonaceous phyllite. The Dhabetekri Formation is represented by the alternate sequence of meta-basalt, phyllite, ferruginous phyllite, with impersistant chert interbands. Development of NS trending silicified zones and intrusive quartz veins have also been recorded. Disseminations and stringers of sulphide minerals, which include mainly **chalcoppyrite, pyrite and galena,** along with the magnetite and hematite are observed in the chert bands and quartz veins of the area. Presence of red, yellow and green ochres in the silicified zones within quartzites is also recorded from 2 km W of Silejhari village.

054/ME/BM/CR/MP/2014/035: The officer was engaged in consultation of the previous report, pre-field preparation, camp site selection and establishment of camp at Mordongri. Recconnoitery field work in Belkheri area was carried out. Survey work initiated in Belkheri area.

Search for kimberlite clan rocks, SU: CG, Raipur

Item No. 057/ME/CR/CG/2013/31: (Gariaband district, Chhattisgarh)

During period officers were engaged in preparation of drainage map of study area. The Aeromagnetic map pertaining to the area was studied and the magnetic values ranges from 43800 to 43900 gammas.

Item No. 058/ME/PS/CR/CG/2014/38: The officers were engaged consultation of reports pertaining to the Kimberlite clan rock, carried out regional reconnaissance and stream sediment survey in parts of T.S. No. 64L/5& 6, Gariaband District, C.G. 15 sq km reconnaissance mapping was completed. A total of 10 nos. SSS were collected for heavy mineral studies. The area under study is covered with granitoids of Dongargarh grainite.

RARE EARTH ELEMENTS

049/ME/CR/MH/2014/032: Regional traverse were taken around Deolapar, Morphata, Chaowri, Dalara Junewani, Goreghat, Pindkapar, Sitapur and Lodhatola in part of TS 55O/6. The area is occupied by Biotite gneiss of basement gneissic complex and Sausar Group of rocks are represented by quartz mica schist, marble and calc-silicates which are intruded by granite, quartz veins and number of pegmatite veins. The regional trend of lithounits is WNW – ESE with variable dips towards south and SW. S_1 foliation is parallel to bedding plane. Easterly plunging folds of F_2 generation are reported from TBG and calc-sillicates. Two veins of coarse grained pegmatite have been recorded which are intruded into S1 plane of TBG. Pegmatite veins are

composed of quartz, K feldspar, plagioclase, muscovite and garnet. Samples have been submitted to chemical lab for analysis.

Fertiliser and industrial Minerals:

Item No. 060/ME/CR/CG/2014/40: (Gypsum in Akola-Patora-Bhusandi-Karesara and adjoining area in parts of 64 Bemetara district, Chhattisgarh)

The Officer was engaged in consultation of old GSI reports of Bemetara area, DID on Bauxite and SOP for mineral exploration. Regional traverses were taken in parts of T.S. No. 64G/5& 9 and completed LSM of 8 sq. km. on 1:12,500 scale, collected 5 nos. BRS and 3 nos. PCS samples. Stromatolitic limestone and ferruginous shale are the major lithounits observed during the field traverse. Alternate sequence of ferruginous shale and calcareous shale units was noticed in Karua nala section. Small broken pieces of gypsum were found along with ferruginous shale in borewell dug material near Khati village.

Item No.055/ME/CR/MP/2014/36: (Glauconite Investigation, SU: M.P, Jabalpur)

The officer was engaged in consultation of literature and preparation of map and reports.

040/ME/GR/CR/MP/2013/029: **(Graphite Investigation, SU: MP, Bhopal)**

BH No. BBT-01 has intersected Graphite mineralization from 69.30 m to 87.00m (17.70 m) with a true width of 11.55 m. The results indicate weighted average of 7.11% FC X 11.55m (true width) with highest value of 13.54% FC and lowest value of 0.61% FC. BH. NO. BBT-02 has intersected Graphite mineralization from a depth of 64.80m to 101.50 (36.70m) with a true width of 25.95 m. The results indicate weighted average of 8.60% FC X 25.95m (true width) with highest value of 13.54% FC and lowest value of 0.61% FC. BH. No, BBT-03 has intersected graphite mineralization from a depth of 67.30 to 77.00 m (9.70m) with a true width of 6.85m. The results indicate weighted average of 7.11% FC X 11.55m (true width) with highest value of 13.54% FC and lowest value of 0.61% FC. BH. No, BBT-04 has intersected graphite mineralization from a depth of 64.40 to 106.40 m (42.0 m) with a true width of 29.69m. A total of 43 samples has been generated and has been submitted to IBM, OD Lab for analysis. Due to non availability of forest clearance, drilling has been spill over to three boreholes falling in the central Graphite band. All the three boreholes have been fixed on ground. BH. No, BBT-05 has intersected graphite mineralization from a depth of 70.30 to 118.85 m (48.55 m with a true width of 34.33 m. A total of 47 samples have been submitted to IBM, OD Lab, Nagpur on 27/06/14. BH No, BBT-06 has intersected graphite mineralization from a depth of 47.60 to 95.00 m (47.40 m) with a true width 0f 33.34 m. A total of 34 Nos of samples has been generated and are ready for submission. BH NO.BBT-07 has intersected Graphite mineralization from a depth of 71.00m and is continuing till the present running depth i.e. 88.60 m. Drilling in BH No. BBT-07 is in progress.

MISSION-II B

7.2.2 NATURAL RESOURCE ASSESSMENT (ENERGY RESOURCES – COAL)

During the 1st Quarter of the Field Season 2014-15, exploration for coal has been taken-up in Mahanadi Valley Coalfield, Chhattisgarh, Son Valley Coalfield, Chhattisgarh and Madhya Pradesh, Wardha Valley Coalfield, Maharashtra and Pench Valley Coalfield, Madhya Pradesh. A total of 13 coal investigation items are under execution out of which 10 items have been taken up in FS 2014-15. Remaining three items namely Bhurkumdhana Sector of Pench Valley Coalfield, Jhamkola Area and Dabhadi Sector of Wardha Valley Coalfield are of spill over items of previous FS 2013-14. One item of current FS i.e Harri block of Sohagpur Coalfield is expected to commence on completion of Malka block of the same coalfield.

I. BRIEF DESCRIPTION OF SPILL OVER ITEMS OF FS 2013-14, CARRYING OUT IN FS 2014-15

PROJECT: PENCH VALLEY COALFIELD, MADHYA PRADESH

BHURKUMDHANA SECTOR (continuing item of FS 2012-13) **under 'Time Extension'**

056/2013-14/ME/CR/NEnR/2012/049

In Pench Valley Coalfield, occurrence of Barakar Formation with intersection of coal zones has already been established below the Deccan Trap in the ongoing as well as already explored sectors. The subsurface data revealed that the regional trend of the Gondwana Sequence in this part is NNE-SSW to NE-SW with 2˚ to 3˚ dip towards northwest.

The regional coal exploration in Bhurkumdhana Sector was commenced in April 2012. The area is covered by flows of Deccan Trap. The trap is underlain by Motur and Barakar formations respectively.

During the period from April 2014 to June 2014, a total 294.30m has been drilled in two boreholes namely PBK- 4A & 5 by two drill units (Unit-478 & 481). Borehole PBK-4 was abandoned at 299.50m depth on 22.02.2014 within Motur Formation. The borehole is re-drilled as PBK-4A at the adjacent area and reached upto a depth of 410.30m and progressing in Barakar Formation. Contact between Motur & Barakar was marked at 403.25m depth. Another borehole PBK- 5 commenced on 06.06.13 and abandoned at 484.50m on 20.05.14 in Motur Formation due to drilling difficulties. The Drill Unit -478, engaged in drilling operation in borehole PBK-5, has been shifted to Dhorakuhi Sector of same Coalfield. Large Scale Mapping (1:12,500 scale) target has already been completed in previous FS.

PROJECT: WARDHA VALLEY COALFIELD, MAHARASHTRA

JHAMKOLA AREA (continuing item of FS 2012-13) **under 'Time Extension'**

058/2013-14/ME/CR/NEnR/2012/050

The regional exploration for coal in Jhamkola area was commenced in April 2012. The area is covered with Deccan Trap. During the period from April 2014 to June 2014, a total of 721.50m has been drilled in two boreholes namely WJ-3A & 4B by two outsourced drill units of M/s. APC Drilling & Construction Co., Namakkal, T.N. The borehole WJ-3A commenced on 21.04.14 and progressed from upto 546.50m. The Deccan Trap/ Motur contact is at 110.62m and Motur/ Barakar contact is at 460.55m depths. The borehole has been closed at 546.50m depth on 17.06.14 within Barakar Formation. Three regional Barakar coal seams have been intersected within the depth range from 521.95m to 540.59m. Individual seam thickness varies from 0.55m to 3.20m.

Another borehole WJ-4 commenced on 22.03.2014 and abandoned on 241.00m depth on 30.04.2014 due to drilling difficulties within Motur Formation. The borehole is re-drilled as WJ-4A in the adjacent area but stuck again within Motur Formation at 222.00m depth. Again the borehole is re-drilled as WJ-4B and progressed up to 183.00m. The borehole is now passing through Motur Formation. The Deccan Trap/Motur contact is marked at 75.77m depth. From borehole data, it is revealed that the regional trend of the Gondwana Sequence is NW-SE with dip varies from 4˚ to 6˚ towards northeast.

DABHADI SECTOR (continuing item of FS 2013-14) **under 'Time Extension'**

059/2013-14/ME/CR/NEnR/2013/038

The regional exploration for coal in this sector was commenced in December 2013. The studied area is covered with Deccan Trap of Ajanta Formation of Sahyadri Group. During the period from April 2014 to June 2014, a total 471.00m has been drilled by one outsourced drill unit of M/s. APC Drilling & Construction Co., Namakkal, T.N. The first borehole in this sector WDD-1 commenced on 17.04.2014 but abandoned on 26.05.2014 at 243.00m depth within Motur Formation due to drilling difficulties. Re-drilling of the borehole as WDD-1A in the adjacent location was commenced on 11.06.14 and progressed up to 471.00m. The Motur-Barakar formational contact was marked at 363.89m depth. Currently the borehole is passing through Barakar Formation and has intersected three Barakar coal seams within the depth of 438.88m to 452.58m. Individual seam thickness varies from 0.80m to 4.06m.

2 sq km of large scale mapping (1: 12,500 scale) has been carried out during this period.

II. BRIEF DESCRIPTION OF ITEMS OF FS 2014-15

PROJECT: PENCH VALLEY COALFIELD, MADHYA PRADESH

DHORAKUHI SECTOR (New item of FS 2014-15)

061/2014-15/ME/CR/NEnR/2013/037

The exploration in Dhorakuhi sector commenced in January 2014 by initiation of LSM (1:12,500) in FS 2013-14. As per FS2014-15 the drilling in this sector is schedule to commence in July 2014 but commenced early by one month. During the period from April 2014 to June 2014, a total 154.00m has been drilled in first borehole PDK- 1 by one drill unit (Unit-478). The borehole PDK-1 is progressing through Deccan Trap.

PROJECT: WARDHA VALLEY COALFIELD, MAHARASHTRA

WADHONA-PHUKTA AREA (New item of FS 2014-15)

062/2014-15/ME/CR/NEnR/2014/041

The regional exploration in this area commenced in April 2014. The area is covered by Deccan Trap. During the period from April 2014 to June 2014, 11 sq km large scale mapping was carried out in 1:10, 000 scale. The studied area is covered by flows of Deccan Trap of Ajanta and Chikli formations of Sahyadri Group. Exploration by drilling in this area is yet to be commenced.

PROJECT: MAHANADI VALLEY COALFIELDS, CHHATTISGARH

MAND – RAIGARH COALFIELD

SAMARSINGHA BLOCK (continuing item of FS 2010-12)

063/2014-15/ME/CR/NEnR/2010/053

Regional exploration for coal in Samarsingha block was commenced in December 2011. 383.50m drilling was achieved in 3 boreholes namely, MRSS-12, 13 (completed) and MRSS-14 (in progress). Three regional Barakar coal seams / zones (Seam I, II & XIII in ascending order) have been intersected between the depths of 106.68m (Seam XIII, MRSS - 14) and 529.90m (Seam I, MRSS - 12). Thickness of individual coal seam / zone varies from 2.23m (Seam XIII, MRSS - 14 in 2 split sections) to 6.85m (Seam I, MRSS - 12). Seam I is an important seam with thickness varying from 4.15m (MRSS - 13) to 6.85m (MRSS - 12) and intersected between the depth range of 450.72m (MRSS - 13) and 529.90m (MRSS-12).

Large scale mapping (1:10,000 scale) has already been completed during the previous Field Season. The block area is covered by sediments of Barakar Formation and Barren Measures. The eastern part is covered with hill forming Kamthi Fm.

PURUNGA BLOCK (New item of FS 2014-15)

064/2014-15/ME/CR/NEnR/2014/042

Regional exploration for coal in Purunga block was commenced in May 2014. The area is covered by lithounits of Barren Measures and Barakar Formation. A total of 590.80m drilling was achieved in 2 boreholes namely MRPR-01 and MRPR-02 (both in progress). Altogether, nine regional Barakar coal seams (III to X & XII in ascending order) were intersected. Thickness of individual coal section varies from 0.50m to 5.79m.

0.50 sq km large scale mapping (1:10,000 scale) has been carried out during this period which reveals that the block area is covered by lithounits of Barren Measures and Barakar Formation.

AMLIDHONDA BLOCK (continuing item of FS 2012-13)

065/2014-15/ME/CR/NEnR/2012/051

Regional exploration for coal in this block was commenced in April 2012. 517.70m drilling was achieved in 2 boreholes viz MRA-15 and MRA 17 (in progress). Five regional Barakar coal seams (Seam- IV, VI+VII, IX and X in ascending order) and a few local seams were intersected between 170.65m and 318.84m depths. Thickness of individual coal section varies from 0.69m to 2.56m.

Large scale mapping (1:10,000 scale) has already been completed during the previous Field Season. The block area exposes argillaceous rocks of Barren Measures lying conformably over the arenaceous rocks of Barakar Formation.

GARE (SOUTH) BLOCK (New item of FS 2014-15)

066/2014-15/ME/CR/NEnR/2014/043

Regional exploration for coal in this block was commenced in June 2014 by the initiation of geological mapping of the block. 0.5 sq km was mapped on 1:10,000 scale. The area exposes rocks of Barren Measures which is represented by dark grey shale with ferruginous bands, mudstone, siltstone and very fine to fine grained ripple laminated and plane laminated sandstone.

Drilling in this block is planned to be carried out by outsourced drill rigs and is expected to commence very shortly.

PROJECT: SON VALLEY COALFIELD (EAST), CHHATTISGARH

TATAPANI – RAMKOLA COALFIELD

PIPRAUL BLOCK (continued item of FS 2013-14)

067/2014-15/ME/C/CR/NEnR/2013/039

Regional exploration for coal in this block was commenced on 08.11. 2013 under promotional programme. The major part of the block area is mostly covered with rocks of Barakar Formation and Barren Measures, whereas rocks of Panchet Formation is exposed over a small area in north-western part. A total of 482.30m drilling was achieved in two boreholes (both in progress) namely TRP-3 & 4. Both the boreholes are running through the Barakar Formation. No significant coal seams/zones have been intersected during this period. Only a few thin bands of coal of about 10 cm to 30 cm thick have been intersected within depth range 298.30m to 336.30m in borehole TRP-3. Barakar Formation in these boreholes is characterized by dirty grayish white to dirty white, coarse to very coarse grained, faintly cross bedded & cross

laminated, medium to poorly sorted, micaceous, feldspathic sandstone with occasional laminae and bands of grey mudstone, siltstone with coal streaks. During the period 1 sq km LSM in 1: 10,000 scale has been carried out within the block.

PROJECT: SON VALLEY COALFIELD (EAST), MADHYA PRADESH

SINGRAULI COALFIELD

SARAI (WEST) BLOCK (continued item of FS 2012-13)

068/2014-15/ME/CR/NEnR/2012/052

During the period from April 14 to June 14, a total 290.45m was drilled by two drill units (U-327 & 484) in three boreholes (SSW-7: completed and SSW-9 & 10 in progress).

Three local Raniganj coal seams/zones have been intersected in the depth range of 5.58m to 50.19m in borehole SSW-10. The thickness of the Raniganj coal seams varies from 1.11m (SSW-10) to 1.77m (SSW-10). Within Barakar Formation, one regional coal seam has been intersected at a depth of 538.50m (Seam VII in SSW-9). The thickness of this coal seam is 0.60m.

Large Scale Mapping (1:10,000 scale) of 0.75 sq km area has been completed. Rocks of Pali Formation occur over Raniganj Formation & Barren Measures and occupy the major hills in the south central part of the area. The western part of the area exposes rocks of Raniganj Formation which occurs as small hillocks. A small surface outcrop of Raniganj coal seam occurs near the ongoing SSW-10 borehole in the western part of Sarai (West) sector. However, stratas of Raniganj Formation, Barren Measures and Barakar Formation have been intersected in the boreholes drilled.

PROJECT: SON VALLEY COALFIELD (WEST), MADHYA PRADESH

SOHAGPUR COALFIELD

BIHAR BLOCK (continuing item of FS 2012-13)

069/2014-15/ME/C/CR/NEnR/2012/053

Regional exploration for coal in this block was commenced on 19.12.2012 under promotional programme. The block area is mostly covered by Lameta Formation with Barren Measures in the north-east corner. A total of 481.60m drilling was done in 4 boreholes (SBR-10 & 11 completed and SBR-12 & 13 in progress). Altogether four regional Barakar coal seams (I to IV-in ascending order) and two local seams (L1 & L2) have been intersected between 151.70m and 302.83m depth. Cumulative thickness of individual coal section varies from 1.10m to as much as 5.18m. A total of 3 sq km LSM 1: 10,000 scale has been carried out during this period.

MALKA BLOCK (continuing item of FS 2013-14)

070/2014-15/ME/C/CR/NEnR/2013/040

Regional exploration for coal in this block was commenced on 08.03.2013 under promotional programme. The major part of the block area is covered by the sediments of Raniganj Formation, whereas some part in the middle and southern part are covered by the basic intrusive. A total of 691.25m drilling was achieved in three boreholes namely SMLK-2, 3 & 5. In Barakar Formation, four regional coal seams (Seam – I, III to V in ascending order) and one Local Barakar seam (L1) has been intersected between 437.19m and 642.50 m depths. Cumulative thickness of individual Barakar coal section varies from 0.55m to as much as 4.95 m. In Raniganj Formation, four coal zones/seams have been intersected within the depth range from 14.90 m to 27.30 m with individual seam thickness ranging from 0.90m to 1.40m. A total of 1 sq km Large Scale Mapping in 1: 10,000 scale has been carried out during this period.

7.2.3 GEOTHERMAL

The Geothermal Division has restarted functioning at GSI, CR, Nagpur to take up the geothermal investigations in the areas covered by Central Region, Southern Region and Eastern Region. Most of the geothermal fields in this area are having low to medium enthalpy geothermal resources which may become viable for power generation in future with advancement of technology. Therefore, the Division has taken up FSP items for monitoring of discharge, temperature and composition in these areas. On the basis of monitoring and the previous data, the detailed work on geothermal investigation can be planned in ensuing field seasons. The Manuguru is one of the geothermal manifestation area in Godavari basin which is seems to be suitable for further detailed study on the basis of monitoring carryied out during FSP 2013-14. During FSP 2014-15, two items have been proposed for monitoring of discharge, temperature and composition of hot springs of Son-Narmada valley and Peninsular Geothermal areas and monitoring discharge and temperature of hot springs of Andhra Pradesh, Tamilnadu and Karnataka. Another collaborative item with NTPC Ltd entitled “Exploration for Geothermal Resource Assessment at Tatapani Geothermal Field, Balarampur District, and Chhattisgarh” has been taken up preparation DPR for power generation and other ancillary uses.

SER/CR/NEnR/2013/075 (Proposal ID: 2014096 of FSPMIS):

The item is entitled “Exploration for Geothermal Resource Assessment at Tatapani Geothermal Field, Balarampur District, Chhattisgarh”. Under this the detailed mapping of 5 sq. km and topographic survey of 3.25 Sq. Km in Tatapani Geothermal Field have been completed during March to June 2014. Twenty five water samples from hot springs, exploratory bore wells, hand pumps and dug wells present in the study area have been collected for total chemical analysis. Four Gas samples from hot springs have been collected and submitted to BARC for analysis. Twenty five rock samples for petrographic study and twenty samples for XRD study

have been collected and submitted to petrology and mineral physics laboratory respectively. During field work, it was observed that nine boreholes (hand pumps) located in the northeast of Tatapani nala and around Tatapani village bear thermal water. The temperature of water in boreholes ranges from 40°C to 72°C. Thermal logging was conducted for these hand pumps for calculating thermal gradient, heat flow of the area, interpretation indicative temperature at various the depths etc. The maximum temperature of 99.3°C has been attained at depth of 55m in a hand pumps.

The hot springs located at Tatta (Tatha alias Balbal) near Mandal, Latehar District, Jharkhand and Jhor (Gandwani), Surajpur District, Chhattisgarh was monitored to find out regional relationship. At Tatta, the gas emission is moderate with medium to big bubble and sulphur smell and the temperature of hot springs measured in range of 63.4 to 64.7^{o}C. At Jhor (Gandwani), the hot water of 40°C to 41.5^{o}C temperature is discharging with strong smell of sulphur and moderate gas emission.

GT/CR/NEnR/2014/046(Proposal ID: 2014225 of FSPMIS): Title of the item - Monitoring discharge and temperature of hot springs of Andhra Pradesh, Tamilnadu and Karnataka.

The main objective of the item is to identify geothermal activity and related geological investigation and water sampling for total water analysis and isotope study in the area around known hot water spring of Andhra Pradesh, Tamil Nadu and Karnataka. This will help in identifying the potential target for detailed geothermal investigation in future. The consultation of unpublished geological reports of the area was done as a pre-field preparation. The field work for this item was initiated in last week of June 2014 and the monitoring was carried out for Godavari geothermal field of Telangana State. Geothermal manifestations exist in the form of hot spring at Bugga, boreholes drilled by GSI and SCCL (Singareni Coal Company Ltd) in Manuguru area and public utility bore well in Bhadrachalam, Khammam district, Telangana.

GT/CR/NEnR/2014/045(Proposal ID: 2014173 of FSPMIS): Title of the item: Monitoring of discharge, temperature and composition of hot springs of Son-Narmada valley and Peninsular Geothermal areas, Central India.

The main objective of the item is to monitor hot water springs in Satpura-Tapi Sector located at Anakdeo (Dara), Indwa, Kundwa, Nazardeo, Sanapdeo, Ram Talab, Unapdeo (Adavad), Khadgaon, Changdev, and Sanapdeo (Varla) in Narmada Valley Sector, located in Baheba and Son Valley Sector located at Papreri. The preliminary work of literature consultation has been done.

7.3 MISSION - III

7.3.1 GEOINFORMATICS

7.3.1.1 Portal:

The GSI Enterprise Portal has become functional in entire CRO by implementing WAN connectivity. The connectivity **now enables 79 IP telephones** (Nagpur -50, Bhopal-12, Jabalpur-4, Raipur-5, and Pune-8) of the Region to be voice activated with the rest of GSI. The Load/Upload utility for 50K geological maps now enables the Region to directly upload digital maps onto the Portal in the GIS domain. All **1071** geological maps of the Central Region have been uploaded onto the Portal. In the Photo-Gallery module of the Portal, **750** field photographs have been uploaded for Central Region till June 2014.

Thirty Four (34) case Studies on different aspects of scientific activities in central region have been uploaded onto the Portal (**Annexure-7**). The Video-conferencing facility is also functional in the Region. Action initiated for implementation of Portal Phase–III. An e-governance cell has been opened in Geodata division, CR, Nagpur.

7.3.1.2 GEODATA DIVISION, CR, NAGPUR

The Geodata Division has four items for FS 2014-15**.** These are:

1. Updation and linking of Oracle database with 50K GMS (Geological Map Series) spatial database and additional data entry in Geoscientific database. Item No. 081/DB/CR/M-III/2013/047
2. Uploading of Geological Maps of 1:50K into GSI Portal and preparation of toposheet wise layouts (ArcGIS format) of all the 50K edge- matched/finalized 2nd edition GMS of the Region. Item No. 080/SER/CR/HQ/2014/11
3. Creation of Exploration model of Sakoli Fold Belt, Maharashtra through prospective maps to find out new target areas for gold, basemetal, tungsten & associated minerals. Item No. 082/RP /CR/PSS/2013/045
4. Implementation of Phase III of Portal, Maintenance of LAN, Management/ Administration of various Transactional Application of Portal Multi-Module Data uploading onto GSI Portal and Service to other Division/Projects on request. Item No. 132/SER/CR/HQ/2014/036

1. **Updation and linking of Oracle database with 50K GMS (Geological Map Series) spatial database and additional data entry in Geoscientific database. Item No. 081/DB/CR/M-III/2013/047**

Nature of work	Targets for FS 2014-15	Achievements during the FS 2014-15
1. Updation of Geometry-id and attribute data including the Geometry-id in Oracle database as per the Geometry-id of the corresponding 50K GMS maps	32 toposheets belonging to two degree sheets (64C and 64D)	Prepared inventory of progress reports pertaining to 64 C and D Registration, rectification and georeferencing of 32 toposheets 64C/1 to 16 & 64D/1 to 16 on 16 ticks for data extraction purpose.
2. Data checking and updating the database in themes – Mining, Geochemical, Drilling, Geophysics, Environmental, Natural Hazards, Rock sample analysis and PGRS: Checking of attribute data in geoscientific database with their corresponding reports	Input of thematic data for approx. 200 reports	A total of **19 progress reports** were sought after for extraction of the data. **Geochemical - 5 Nos. reports** (13328, 13329, 21259, 21835, 20205 checked, & data restored in geoscientific database) Thematic dump files of 64 C and D were sent to CHQ for retrieval into geoscientific database. Data pertaining to 27 boreholes, 10 investigation area and 14 geochemical survey of 64 C , D,was retrieved.
3. Input of additional data pertaining to Thematic domains of Mining, Geochemical, Drilling, Geophysics, Environmental, Natural Hazards, Rock sample analysis and PGRS	As available	**14 reports** (22376, 22504, 22416, 22366, 22469A, 5003, 305, 14080, 603, 12306, 22383, 16925) Drilling theme–4 report (51 boreholes) Geochemical Theme – 6 reports Environmental theme – 1 report PGRS theme – 1 report Geophysics theme – 2 reports (105270, 109912) **Mining** E_Prospect= 3 E_Block =7 E_MO=2 **Geochemical** H_Investigation Area=3 H_Geochemical Survey=3

4. Additional Graphic data input : Mining (out of maximum 3 layers), Environmental (out of maximum 32 layers), Natural Hazards (out of maximum 11 layers), and PGRS (out of maximum 11 layers)	As available	PGRS theme – 3 maps (RLI0002, RBO0002, RTL0002) Environmental theme- 2 maps (Landuse ENV_LANDU_NAG40)

Highlights :

- A total of **19** progress reports were sought after for extraction of data for oracle tables of geoscientific database.
- Under Drilling theme, extracted data from **4 progress report** (22376, 22504, 22416, 14080). Derived lat/long of **51** boreholes.
- Under Geochemical theme, extracted data from **6 progress reports** (22366, 22469A , 5003, 305, 603, 12306). Derived lat /long of 409 geochemical samples. Entered three Investigation area id (103-Deorighat, 104-Kauchar, 105-Kirgahatola) and three Geochemical Survey id (103-Deorighat, 104-Kauchar, 105-Kirgahatola) in Oracle tables.
- Checked **5** progress report (13328,13329, 21259, 21835, 20205) and found that the data exists in geoscientific database.
- Data from **2** progress reports (105270, 109912) were entered in Geophysics theme of geoscientific database.
- Digitized 3 maps -photo-interpreted lithology (RLI002), boundary (RBO002) and fractures (RTR002) of progress report 16925 under PGRS theme. Prepared attribute tables as per the spatial file format of GSI portal. Uploaded the maps in geoscientific database.
- Under Environmental theme, digitized 2 maps of landuse (1.Chowki & Mohla block, 2. Mohla & Manpur block) (AccNo. 22383), Preparation of attribute table as per spatial file format is in progress.
- Digitised boundaries of 2 prospect and 5 blocks using ArcGIS.
- In oracle tables of Mining Exploration theme, entered **3 prospects** (Kotri Rift Zone-23, Awalgaon-Deorighat-24, Korgahatola-18), **7 Blocks** (3 blocks in prospect 23 (Gurpher-1, Sonadehi-2, Gurwandi-3), 2 blocks in prospect 24 (Awalgaon-1 and Deorighat-2) and 2 blocks (Kirgahatola-1 and Lammeta-2) in prospect 18.
- Digitised boundaries of 2 prospect and 5 blocks using ArcGIS. In oracle tables, entered **2 prospects** (Kotri Rift Zone-23, Awalgaon-Deorighat-24), **5 Blocks** (3 blocks in prospect 23 (Gurpher-1, Sonadehi-2, Gurwandi-3) and 2 blocks in prospect 24 (Awalgaon-1 and Deorighat-2)
- Management of data entry work in drilling and geochemical themes. Also trained newly engaged 2 data entry persons for data entry work in geochemical and drilling theme.

Spillover work of FS 2013-14

- Carried out quantification of spillover work of FS 2013-14.
- Exported features classes of prospect and blocks into shape files and uploaded 16 prospects and 60 block maps under Mining theme of Portal database.
- Carried out bulk uploading of analytical results of 5080 samples of 26 progress reports 21244, 20858, 17578, 22413, 18351, 17554, 16512, 15259, 22615, 105481, 15890, 15787, 18628, 106285, 21430, 22446, 17469, 14570, 21258, 22868, 18189, 22591, 19628, 22626, 20276, 15765 for 65 oxides and elements viz., SiO2, TiO2, Al2O3, Fe2O3, FeO, MgO, CaO, Na2O, K2O, +H2O, MnO, P2O5, S, Cr2O3, V2O5, LOI, Cu, Pb, Zn, Ni, Co, Au, Ag, As, Al, Mo, W, Sn, Zr, Sb, Bi, Cr, V, Ba, Sr, Rb, Ga, Be, Y, La, Nb, Sn, Ta, Ca, Ti, Mn, Ge, Cd, Ce, Cs, Pr, Nd, Sm, Eu,

Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Th, U.

- Preparation of excel file containing analytical data of **48** boreholes PK-1 to 12 from progress report 22396, SK-10, 11, 12, 13, 14, 15 from progress report 19266, boreholes KWG-11, KWG-12, M-2, M-3, M-4, MG-3, MG-4 from progress report 22344, boreholes KG-1 to KG-9 from progress report 22449, GST-1, 2, 3, GSR-8, GSN-5 from progress report 18630, KNE-1, 2, 3, 4, 5 from progress report 18598, MNKB-1, 2, 3, 4 from progress report 22869 to be sent to CHQ for upload.
- Finalised 4 maps of PGRS themes, Lithology, Boundary, Trend lines and lineaments pertaining to 55P/5 and 9 as per Spatial file format and uploaded on Portal database.
- Extraction and entry of data from 9 progress reports under Geophysical theme. The work done in FS 2013-14 from total **370** reports.
- Point id generation of **441 samples** (Pregress report 22868- 200 sampels, 18189- 241 samples) in Geochemical exploration domain of Geoscientific database. Point id generation of 35 samples of progress reports 15765 out of 913 samples, 25 samples of progress report 19628 out of 251 samples and point id correction in lat long values of 340 point ids from progress report 15765.
- Data entry in drilling theme of Geoscientific database for a total of **1031** analytical results of the borehole core samples of Pular-Parsori gold belt, Nagpur District, Maharashtra (Report Acc.No.22023- KG-1: **54 nos.** and KG-3**: 71** of Kitari block-2; KW-1: **28 nos.,** KW-2: **102 nos.** and KW-3: **129 nos.** of Kitari block-2A; MG-1: **63 nos,** MRG-1: **227 nos**, MRG-2: **76,** MRG-3: **119 nos.,** MRG-4: **32 nos.,** MRG-5: **45 nos,** MRG-6: **63** and MRG-7: **22 nos** of Kitari - Marupar Area)
- Data entry in Oracle tables of lithology, sample, batch of sample, Analytical sample description for boreholes PPG-8 to 16, MNKB-1 to 4, KG-1 to 9 under Drilling theme.
- Data entry in oracle tables of Sample description, Analytical sample description and Batch description of Borban-Satrapur Block (Acc.no.22868) in Geochemical exploration domain of Geoscientific database.

- Preparation of .txt file for (**46 samples** with **each 16 elements**) for bulk uploading of geochemical theme.
- Provided guidance for outsourced data entry work in Geoscientific database to data entry persons. Entry of data pertaining to drilling and geochemical theme through outsourcing is in progress.
- Entry of data pertaining to drilling and geochemical theme through outsourcing is in progress. Till date total boreholes entered are 812 Nos,
- Mailed to CHQ for lexicon update for “Laboratory code” table of Oracle database in drilling theme. Details of Fire Assay method for Au analysis, like its Sample digestion, Lower and upper detection limit was search on internet and mailed to Sri. Niladri Hazra, CHQ for updation of lexicon under “Laboratory code” table of oracle database for HGML, BGML and Shiva Labs.
- Mails to Sri. Auditeyu Bhattacharya, DDG, and submitted data in 15 excel files pertaining to 46 boreholes for bulk uploading in geoscientific database.
- Discussion with Sri. Niladri Hazra, Suptd. Geologist, Geodata and Database Center, CHQ on IP regarding preparation of batch of samples for progress report 17765 for AAS and Spectroscopy methods of analysis for same samples.

Name of Officers:
Ms Jaya R. Chavhan (PT), Sr. Geologist
S. Manju (PT), Sr. Geologist
D.V. Punekar (PT), Sr. Geophysicist, Geophysics Dn.

2. **Uploading of Geological Maps of 1:50K into GSI Portal and preparation of toposheet wise layouts (ArcGIS format) of all the 50K edge- matched/finalized 2nd edition GMS of the Region. Item No. 080/SER/CR/HQ/2014/11**

Nature of work	Target for 2014-15	Cumulative achievements as on 31.03.2014	Achievements during the FS 2014-15	Cumulative Achievements
• Checking and digital edge matching of authenticated maps received from M&C Division, CR and State Units of Maharashtra and MP & CG (Nagpur, Pune, Jabalpur, Bhopal and Raipur)	As required	**653 Nos**	Checking of 46K/4, 8, 11, 12, 15, 16	**653 Nos**
• Uploading on the GSI Enterprise Portal.	As required	**647 Nos.**	1 No. (46K/8)	**648 Nos**
• Preparation of toposheet-wise RGB layouts (ARCGIS format) of all the inter-regional 50 K edge matched and authenticated maps and printing of the same alongwith all the map elements and legends as per the approved template of M&C	186 inter-regional and inter-operational sheets	**186 Nos** Layouts of inter-regional and inter-operational sheets are completed along with all the map elements and legend as per the approved template of M&C, at Regional level National level approved template, colour scheme, alphanumeric code and Geometry ids are awaited from CHQ	-Nil-	**186 Nos** Layouts of inter-regional and inter-operational sheets are completed along with all the map elements and legend as per the approved template of M&C, at Regional level National level approved template, colour scheme, alphanumeric code and Geometry ids are awaited from CHQ

Highlights:

- Engaged in checking of 50 k data of 46K/8 received from Geoinformatics, Pune and uploaded in GSI Portal as second edition.
- Provided 1:50k geological map data in pdf format pertaining to 55F/12, 16, 55J/4 to Dr. Kamleshwar Ratre, Geologist, Geophysics Division, 64L/4 to Ms. Savita Chaurpagar, Paleontology Division, 63D/12, 64E/1, 5, 9 to Sri. S.S.Wase, Sr. Geologist, M&C Division,

64C/7, 8 to Smt Alka Kumari Mishra, Geologist, Proj.: Geochemical Mapping SUM.

- Provided 1:50 k geological vector map data of **70 sheets** (.mdb, .mxd, shapes, rasters of 55C/1 to 14; 55G/1, 2, 5, 6, 7, 9, 10, 11, 13, 14, 15; 55O/1, 2, 5, 6, 9, 10, 13, 14; 55K/1, 2, 3, 5, 6, 9, 10, 11, 13, 14, 15; 64C/1, 2, 5 to 16; 64D/5 to 16) to Ms Mamta Kashyap, Geologist, MCP Division, SUM for project compilation of 250k GQM.
- Provided geological Map of Maharashtra on 1:2 M scale in jpeg format and geological map of 187 sheets of State Unit : Maharashtra, on Formation level to Sri. B. Bhusari, Director, PSS, Pune
- Provided geological map data of 63L/04 on 1:50 k scale in pdf and jpeg format to Smt Savita Chaurpagar, Geologist, Paleontology Division.
- Provided geological map data of 46J/6, 7, 8 on 1:50 k scale (.mdb, .mxd. rasters, shape files, geological notes, legend files, security certificate) to Shri K. K. Chhatri, Director, Geodata, Bhopal, for 1:250k compilation.
- Provided geological map data of 55G/ 5, 9, 10, 13, 14 on 1:50 k scale in pdf and jpeg format to Sri. Ravi Gorle, Geophysicists, Geophysics Division.
- Provided geological 50k map data of 42 sheets (47H/7, 45L/14, 15, 45P/2, 6, 10, 14, 56F/9, 10, 55P/11, 16, 56M/13, 14, 64C/6, 7, 10, 11, 15, 64D/4, 6, 7, 8, 11, 65A/3, 4, 7, 8, 12, 65B/5, 9, 10, 13, 14, 15, 65F/3, 4, 7, 8, 65G/1, 64N/9, 10, 13 - .mdb files) to Ms. Shalini Patil, Senior Geologist, TC Division for finding OGP areas. Also provided GIS support and guidance for finding out the OGP areas using geology polygon layer.
- Provided geological map data of 14 sheets of 65A/1 to 11, 14 and 15, 65E/13 to Sri. B.K.Mishra, Suptd. Geologist, Raipur for 1:250k compilation. The data include first edition .mxd, .mdb files, rasters of FDO's, geological notes, second edition shape files and .mdbs.
- **Provided geological digital vector/raster data of 1071 sheets of Central Region to Map and Cartography Division.**
- Trained Ms Shalini Patil, Sr. Geologist, in calculating additional OGP areas in 42 sheets using ArcGIS.

Name of Officer: Ms. Jaya R. Chavhan (PT), Sr. Geologist

3. Creation of Exploration model of Sakoli Fold Belt, Maharashtra through prospective maps to find out new target areas for gold, basemetal, tungsten & associated minerals. Item No. 082/RP /CR/PSS/2013/045

Nature of work	Targets for FS 2014-15	Achievements during the FS 2014-15	Cumulative for FS 2013-14 and 2014-15

1. Study of geological and metallogenic setting of Sakoli Fold Belt, Maharashtra in context with the known mineral belts of the world.	Study of geological and metallogenic setting of Sakoli Fold Belt, Maharashtra in context with the known mineral belts of the world	List of commodity wise investigation prepared	Consulted literature on gold and tungsten mineralisation .
2. **Data Preparation :** Capturing and integration of :	As necessary		
i. Surface and sub surface geology (lithology, contact, fold)*		-	Data pertaining to lithology and boundary layer is available in 1:50 k maps Prepared mosaic of digital geological layers, Converted vector map to raster, Classification of units into 8 classes for analysis.
ii. Controlling structural elements (shear zone, fault)*		-	Buffering of Fault and dyke layer in raster Ma p of fold axes digitised. Excel file containing lat/long of mineral occurrences submitted, structural trend map is submitted. Digitization of ore body map is in progress Work is in progress
iii. Mineral occurrences*		-	
iv. Surface alteration*		-	
v. Surface map of ore body*		Digitization of ore body map is in progress	
vi. Geochemical data (positively and negatively correlatable elemental distribution maps)#		Krigging of Bi, Se, Ag, Cd, Hg Preparation of evidence map by boolean method	Point feature class 55P/5 , 9 Interpolated geochemical data for gold values and created surface Krigging of Bi, Se, Ag, Cd, Hg Preparation of evidence map by boolean method

vii. Surface geophysical data (gravity, magnetic, resistivity (IP,SP)) @		Digitisation of gravity and magnetic lineament	Point feature class generated for gravity and magnetic anomalies Interpolated geophysical gravity and magnetic data and created surface for analysis Digitisation of gravity and magnetic lineament
viii. Aero geophysical (magnetic, radiometric) data @		Digitisation of magnetic lineaments	Data received Digitisation of aeromgnetic map of **55P/ 5 and9** Digitisation of magnetic lineaments
ix. Hyperspectral data^		-	Mineral abundance map 55P/5received
x. Alteration zone map from ETM data^		-	Shape files of alteration zone maps of 55P5, 9 received on 17 Jan,2014, received ETM, IRS image
xi. Lineament map from NGLM data^		-	Lineament map from NGLM data received
xii. Bore hole data *		Preparation of borehole collalr, survey, lithology and assay data in excel file for 42 boreholes for 3D generation using "Target" software	Format is provided to Sri. Ratnakar, Sr. Geologist, Mission-II Preparation of borehole collalr, survey, lithology and assay data in excel file for 42 boreholes for 3D generation using "Target" software
xiii. Laboratory study data* a. EPMA b. Stable isotope c. XRD d. Chemical Analysis e. Fluid Inclusion			

3. Processing of data $	As necessary	Installation of evaluation version of software "TARGET" from Geosoft Corp. Exploring the capabilities of TARGET for processing of borehole data Attempted conversion of aero-geophysical contour data into polygon layer for finding anomaly. The experiment has not worked out as projected Digitisation of important localities of 55P/5 and 9 Processing of geochemical data , Krigging for Bi, Ag, Cd, Hg, Se and extraction of evidence maps by Boolean method. Digitisation of drainage map of 55P/5 and 9 is in progress	Processing data in progress Various evidences maps prepared for gold mineralisation on test basis. Aerogeophysical digital map overlaid on Geology and submitted to Sri. D.V.Punekar in hard copy and softcopy for interpretation Installation of evaluation version of software "TARGET" from Geosoft Corp. Exploring the capabilities of TARGET for processing of borehole data Attempted conversion of aero-geophysical contour data into polygon layer for finding anomaly. The experiment has not worked out as projected Digitisation of important localities of 55P/5 and 9 Processing of geochemical data , Krigging for Bi, Ag, Cd, Hg, Se and extraction of evidence maps by Boolean method. Digitisation of drainage map of 55P/5 and 9 is in progress.
4. Predictive map $ 5. Preparation of 2D/3D GIS analysis in both knowledge driven and data driven methodology	As necessary	-Nil-	-Nil-

*****Input from Project : Economic Geol, # Input from Project : Geochemical Mapping, @Input from Geophysical Division, ^Input from Remote Sensing Division, $Input from GeodataDivision

G. C. Mukhopadhyay (PT), Designation:Senior Geologist, **M&C, CR**
Ms Jaya R. Chavhan (PT) Designation:Senior Geologist, Geodata Division, CR
A. C. Bansod (PT), Designation:Asst. Geologist, **Regional Geochemical Division, CR**
Ratnakar Bhaisal(PT), Designation:Senior Geologist, **Economic Geology, SUM**
U. K. Ghosh (PT) Designation:Geologist, **PGRS, CR**
D.V.Punekar (PT), Designation: Sr. Geophysicists, **Geophysics, CR**

HIGHLIGHTS/SUMMARY OF WORK DONE:

- Processing of chemical NGCM data for Project Mineral Prognostication including interpolation

of Bi, Se, Ag, Hg values and created surface as Bi. Se, Ag, Hg has moderately positive co-relation with Au. Surface for Cd also created as it is strongly co-related to Au in present study area. Processed this data for preparing evidence maps using Boolean method of finding predictive areas.

- Prepared a list of commodity wise investigation done in 55P/5 and 9.

- Downloaded data of boreholes from geoscientific database and lat long values of all the 828 boreholes are converted to degree decimals, prepared a point feature class and clipped for 55P/5 and 9. Prepared a excel file containing data of borehole details of 55P/5 and 9 in excel and printed for ready reference.
- Engaged in preparation of borehole collar, survey, lithology and assay data of 42 boreholes in excel format for 3D generation.

- Discussion with Sri. V. K. Khadse, (Retd. Director, GSI) and Director Geodata, regarding aeromagnetic interpretation. As per his suggestion, marked anomaly axis and magnetic lineaments on hard copy map.

- Engaged in digitisation of orebody map for Zinc mineralization from progress report 17469 on Kolari Bhaonri zinc prospect. The work is in progress.

- Georeferenced and projected toposheets of 55P/5 and 9 in UTM zone 44N. Prepared a geodatabase feature class for digitization of drainage of 55P/5 and 9 and monitored the work of digitization of drainage map of 55P/5 and 9.
- Digitization of few important localities from toposheets 55P/5 and 9.
- Attempted conversion of aero-geophysical contour data into polygon layer for finding anomaly. The experiment has not worked out as projected.
- Discussion with Sri. Ratnakar Bhaisal, Sr. Geologist, for project Mineral prognostication regarding borehole data.
- Installation of evaluation version of software "TARGET" from Geosoft Corp. Exploring the capabilities of TARGET for processing of borehole data

4 Implementation of Phase III of Portal, Maintenance of LAN, Management/ Administration of various Transactional Application of Portal Multi-Module Data uploading onto GSI Portal and Service to other Division/Projects on request. Item No. 132/SER/CR/HQ/2014/036

IT INFRASTRUCTURE AND CONNECTIVITY (STSS)	
#Nature of work	**Achievements during the FS 2014-15**
1. Implementation of Phase – III of Portal.	➢ Under Phase-III of Portal, the LAN switches have already been upgraded by CHQ assigned vendor, M/s. HCL Comnet Ltd. Creation of proposed additional LAN Nodes will be done as per issuance of Work Order by M-III HQ, CHQ, Kolkata.

2. Maintenance of LAN/WAN	➢ **GSI Portal/WAN/LAN**: Attended to regular monitoring of (a) connectivity of Portal/IP telephones, (b) LAN switches. Coordinated with HelpDesk/Data Centre, CHQ in case of Portal/IP connectivity failures. Attended to to the checking of WAN Router in LAN Server room by service engineer from M/s. HCL Comnet Ltd., Nagpur towards troubleshooting Portal functioning problems. Attended to the replacement of Modem connected to WAN Router by BSNL, Nagpur. Attended to the troubleshooting of LAN Nodes/Passive cabling problems for Portal availability. Attended to the extension of LAN Node in Dy. D.G. & RMH-II's chamber by passive cabling vendor. ➢ **AMC**: Attended to regular monitoring of comprehensive onsite AMC of PCs and peripherals by onsite CAMC engineer from M/s. M.K. Enterprises, Nagpur. Also attended to the monthly preventive maintenance of HP Designjet 800 AO size colour plotter and Contex Crystal Xl 42" Plus A0 size colour scanner by AMC Engineers from M/s. Astral Informatics Pvt. Ltd., Nagpur and M/s. CADD Centre, Nagpur respectively. The CAMC of A0 size scanner has been renewed for a year w.e.f. 13.05.2014 through AP&M Dn., CR. ➢ **Antivirus Updation**: Regularly updated Quick Heal virus definition files through Broadband in Antivirus Console for auto-updation in LAN Nodes. Regularly checked Antivirus Console for the updation in LAN Nodes.
3. Upgradation of hardware/software infrastructure	➢ A desktop in Geodata Division was configured for online placement of Purchase Orders to DGS&D. Online Purchase Order for the supply of 38 nos. PCs have been given to DGS&D by AP&M Division with technical assistance from Geodata Division. In addition, Purchase Order has also been issued by AP&M Dn. for supply of a PC for Project Mineral Prognostication.

4. Management/ Administration of transactional applications of Portal.	**Portal Management/FSPMIS/HRMIS**: Shri G. Gonnade Director(G) attended to the work of local System Administrator of Portal for CR which included managing the organizational role of employees of CRO in Organogram, and Transactional applications Module: Claims & FSPMIS. Shri S.S. Sadhu, Assistant, updated employee data of CR in Common Module. ➢ Coordinated with HelpDesk/Data Centre for getting solution for transactional application problems of User Divisions. ➢ Contacted State Units, Engineering Division and Accounts Sections of CR, Nagpur for seeking Claims Module Usage Data per month. The monthly data received from the State Units & RHQ were compiled and submitted to M-III, CHQ.
5. Uploading of field photographs in Photo-gallery, submission of case studies and other multi-module data for uploading in Portal.	➢ No field photographs/Case studies were received from User Divisions during the period under review.
6. Digital assistance to user Divisions in Portal applications, scanning/printing of >A4 size maps/plates, presentations in various meetings, videoconferencing etc	➢ Digital assistance were rendered to the officers of Geotechnical Lab., Reg. Geochemical Dn., M&C Dn., Parks & Museum, M-II Projects, etc. for online entry of their FSP proposals through FSPMIS. The Director(G), Geodata Dn., as Nodal Officer, coordinated the uploading of FSP items onto Portal by all the Divisions/Projects of CRO through FSPMIS. ➢ Assisted User Divisions in online submission of leave/joining/tour approval in Portal. ➢ Digital assistance to User Divisions were provided for scanning/printing of >A4 size maps/plates through A0 size colour scanner/plotter. Scanning of 116 Nos > A4 size maps/plates and printing of 48 Nos.> A4 size map/plates were carried out through A0 size colour Scanner/plotter. S/Shri Pawan Kumar and Aman Sontakke, Technical Assistants rendered the assistance. ➢ Digital assistance were rendered in the presentations during meetings in Fermor/Auden Hall.. Shri Viswanath Prasad, Technical Assistant, assisted in the operation of LCD Projector-Desktop/Laptop during presentations. Technical assistance were rendered during Video-conferencing meetings. ➢ Geological maps/plates were printed through A0 color plotter on the occasion of inauguration of IGC-2020 Cell by DG, GSI.
Name of Officer: Shri S.K.Basak, Sr. Geologist	

7.3.2 Published Reports & Journal:

The detail status of publication and list of publications brought out by the central region during the period April 2014 to June 2014 is given in a**nnexure-8**.

7.3.3 Data dissemination, M&C Division, CR:

Published Maps: GSI will continue to print and publish maps of different scales and themes both as hard copy prints and soft copy (pdf) format after obtaining statutory clearance from SOI/MOD as required. These maps are sold at a price not exceeding the printing cost and other processing charges. While the present system will continue, hereafter all State Geological & Mineral maps as and when published will be available in GSI portal as raster images for free viewing in the public domain. The map sale procedure will follow the guidelines as published in the dissemination policy. All other maps printed and published by GSI will also be uploaded as thumbnail images. Along with this, an Internet Map Service has been created through uploading of multiple thematic layers of 1:2m Geological Map of India as vector image for free viewing and querying. In future, all maps published by GSI in the scale of 1:1m and smaller will be uploaded as vector images.

1: 250K New Series GQM compilation: Total target of FSP 2014-15 target is **9 (Inter-Regional)** sheets: 46D, 47L, 65F, 54G, 54J, 45P, 54K, 63L, 56M

Present status

- *54H (Target of SU: MP, Bhopal for FS 2013-14): Compiled by M&C, CR and sent to CHQ for scrutiny.
- 47L: Compilation is in final stage
- 56M, 54G: Compilation in progress

Inter-regional sheets CR part (< 50% CR) **submitted for compilation at WR and NR:**

1. 54K, 54L, 54O, 63L: Data sent to NR for FSP 2014-15.
2. 46G, 46H, 46I, 45L: Data sent to WR for FSP 2014-15.

1:250K scrutiny/authentication:

GQMs compiled by SUs and scrutinized at M&C, CR and sent back to respective SUs for finalization

1. **55B, 46P, 47M: (**MCP, Nagpur)
2. **47N, 47G :** (MCP, Pune)
3. **63H : :** (SU: Jabalpur)

(Total: 6 nos)

Under Scrutiny at M&C, CR:

1.	**55D, 55A**	**:** (MCP, Nagpur)
2.	**47A, 47E, 47J, 47F&B, 47I , 46O**	**:** (MCP, Pune)
3.	**46M**	**:** (SU: Bhopal)
4.	**54P , 64B , 63D, 64E, 64A, 55M**	**:** (SU: Jabalpur)

(Total: 15 nos)

The detail status of progress of 250K compilation work of CRO is enclosed in **annexure-9.**

7.4 MISSION – IV

7.4.1 MULTIDISCIPLINARY STUDIES

7.4.1.1 Engineering Geology:

Geotechnical Studies:

During the period from April 2014 to June 2014, geotechnical investigations for total 3 (three) sponsored items were carried out by the Engineering Geology Division, Central Region, Nagpur which includes various stages of investigations for dams and tunnels covering Madhya Pradesh, Chhattisgarh and Maharashtra.

Listed Item No. *098/EG/C/CR/HQ/2014/052*

1. PENCH DIVERSION PROJECT, Chhindwara District, Madhya Pradesh.
2. KHINDSI FEEDER CANAL PROJECT, Nagpur District, Maharashtra.
3. KOCHI BARRAGE PROJECT, Nagpur District, Maharashtra.

Additional Item:

1. Upper Tilwara canal scheme Project, Dist. Seoni, MP

Highlights of the work carried out:

1. Pench Diversion Project, Chhindwara District, Madhya Pradesh

a. Foundation geological mapping (1:100 scale) of 6 stilling basin blocks (A1, A7, B1, B7, C1 & C4), totaling 2300 m^2 area.

b. Foundation geological mapping (1:100 scale) in Head Sluice towards left flank, covering 1278.9 m^2 area.

c. 3D U/G Geological Mapping at Diversion Tunnel (1:100 scale) for 1850 Running Meter

2. Khindsi Feeder Canal Project, Nagpur District, Maharashtra

Foundation Geological Mapping (1:200) and geotechnical assessment of open canal between RD 9690m - 9810m (120m) and RD 10230m -10350m (120) for 240m length of canal (comprising 1680m^2 of canal base and 7840 m^2 of wall area).

3. Kochi Barrage Project, Nagpur District, Maharashtra

Foundation geological mapping of Block No. 12 on 1:100scale covering 684 m^2.

Upper Tilwara canal scheme Project, Dist. Seoni, MP

Core logging of 9 boreholes with cumulative length of 75m.

7.4.1.2 Earthquake Geology Division

Item No.: 105/SEI/CR/HQ/2014/55

Title: Seismic Hazard Microzonation, Satara, Koyna and Warna areas.

Highlights:

- Consultation of reports, District Resource map, geological maps and Seismotectonic Atlas of Satara-Koyna-Warna area for taking up the assignment for FSP 2014-15. Updated Earthquake datasheet from IMD website.
- Consultation of degree sheet 47G, K & L and toposheet no. 47G/11, 12, 13, 14, 15, 16, 47K/1, 2, 4 & 47L/1 for demarcation of Satara, Koya and Warna area for fieldwork to be carried out in FS: 2014-15.
- Central Groundwater Board, Central Region, Nagpur has been approached for collection of groundwater data of Satara and Sangli district for liquefaction potential assessment.
- Preparation of Lineament, Drainage and Geomorphological map of Satara area with the help of RSAS Division.
- Engaged in report writing of Seismic Hazard Assessment of Pune Urban Agglomeration pertaining to FS: 2013-14. Digitized SPT sample, groundwater data, soil profile samples, intensity of population, house data and structural data in the geological map of Pune covering toposheet no. 47F/14 & 15. Depth vs. N-Values and moisture content graphs were prepared. Estimated values of soil friction and cohesion based on uncorrected Standard Penetration Test (SPT) blow counts. Consultation of literature from Geochemical Testing Method II, Standard Penetration Test Correction, Test method for Liquid Limit, Plastic Limit & Plasticity Index, Subsurface Exploration using Standard Penetration Test, & Cone Penetration Test and Reliability of using Standard Penetration Test in predicting properties of silty clay with sand soil.

7.4.2 FUNDAMENTAL GEOSCIENCE

IGC 2020 PROGRAMS

IGC CELL - DECCAN VOLCANISM DIVISION

The IGC Cell was inaugurated on 14.06.2014 by the then Director General of GSI, Dr. S. K. Wadhawan, at GSI, CR Nagpur. From this field season onwards two new RP items has been taken up in collaboration with Deccan Volcanism Division, GSI, SUM, Pune. This division has been reopened in Pune in presence of Dr. S. K. Wadhawan, the then DG, GSI.

Item no. **138/RP/IGC/CR/MH/2014/68:** "Study of mafic rich/picritic lava flows/lobes and intrusive from the Deccan Volcanic Province to understand their origin and to comment their fertility in terms of Pt-Pd mineralization" will be dealt with the picrite basaltic flows of Deccan Basalts. As the picritic basalts and other Mg rich flows have been reported by various workers, a database has to be prepared with various aspects of Mg-rich flows like altitude of occurrence, thickness variation, geochemistry etc.

Item **139/RP/IGC/CR/MH/2014/69** titled **'**Building-up of 3D volcanic facies architecture of Diveghat Formation of Deccan Traps' aims to characterize the 'mixed' flows of Diveghat Formation to identify the volcanic facies, building the 3D architecture to model the change in the style of eruption of Deccan basalts through space and time.

A very fruitful training was held in Pune from 22/04/2014 to 03/05/2014. This training included field component to identify different flows using flow characteristics, inter-flow horizons etc. Identification of various lava morphology has been given due importance. Geomorphological features of Deccan country have been studied. A picritic basalt flow has been studied in Khopoli. Lava channel identified in Kanherwadi, Nagar district has been visited. Giant Phenocryst Basalts which are evolved flows and serve as marker horizons have been studied. Different unique thin sections have been shown by the faculties. Geochemistry of basalts was also a part of this training.

The picrites samples from Khopoli shows phenocrysts of olivine altered to iddingsite and pyroxene, plagioclase laths surrounded by ground mass. Differentiating factors like pipe vesicles, clinker top and base are important for judging pahoehoe and aa flows. Identification of Lava lobes, lava fingers, inflation clefts, rubbly pahoehoe etc are important for flow morphology.

Item No.140/2014-15/RP/IGC/CR/2014/70: Title: Study of Gondwana Super Group sequence of Satpura Basin, Chhindwara and Hoshangabad district, Madhya Pradesh.

Geological traverses have been taken across the strike of basin. Characterise Bijori, Pachmari, Denuwa formations. Studied the nature of interformational contact. Section

measurement and collected the samples for petrology, palynology, trace element analysis and clay mineralogical studies. Consulted scientific literature related to Satpura Gondwana basin.

Petrology:

RP item No. 087/RP/CR/HQ/2014/049: Title - Petrological and geochemical studies of mafic-ultramafic granulite and associated rocks from Nayaharwani area, BBG belt, Bhandara district, Maharashtra.

RP item No. 088/RP/CR/HQ/2014/050: Title - Petrology and geochemistry of Nickel bearing meta-ultramafic rocks of the Padhar mafic-ultramafic suite, Betul Belt, Madhya Pradesh.

Consultation of previous reports and literatures pertaining was carried out for both the items.

- **Supervision of thin section laboratory and petrological studies for outside agencies (082/SER/CR/ HQ /2013/015):**

  02 nos. of samples were received from outside agencies were studied and petrographic reports along with microphotographs were submitted to Director, TCS, GSI, CR, Nagpur.

- **Gem testing studies (083/SER/CR/ HQ /2013/016):**

  07 nos. of gemstones were received from private parties, subsequently tested and reports were submitted to Director, TCS, GSI, CR, Nagpur.

THIN SECTION LABORATORY
Sample preparations: (from April, 2014 to June, 2014)

Item	**Apr**	**May**	**Jun**	**Cumulative (April, 2014 to June, 2014)**
Thin sections	20	24	29	73
Thin Polished sections	8	10	11	29
Diamond polish sections	51	29	57	137
Polished blocks	-	15	-	15
Polished stubs	-	2	10	12

Outside agencies	-	02	-	2
Gem studies	-	04	03	7

COAL PETROGRAPHY LAB

FSP Code- 084(Service Item)/SER/CR/HQ/2013/017:

The rank and macerals analysis of four (04) coal samples i.e. two (2) from Amlidhonda Block and two (2) from Samarsingha Block of Mand Raigarh CF has been carried out in this period.

Name of officer: Rashmi Rekha Naik						
Nature of work 1. Coal / Lignite petrographic studies	Target for the F.S. 2014-15	ACHIEVEMENTS				
		Till last month (April to May'14)	During month (June'14)	Sample of FS 14-15	Sample of FS 13-14	Cumulative
1. Maceral Analysis	36 sample	-	4	-	4	4
2. Fluoreoscence Scanning	36 sample	-	4	-	4	4
3. Rank Analysis	36 sample	-	4	-	4	4
4. Micro Cleat Analysis	As Nece.	-	-	-	-	-
5. Photomicrography	As Nece.	-	-	-	-	-
6. Coal sample processing	As Nece.	-	8	-	8	8
7. Sample received		2	6	3	2+1*	8

* Item No. 016 / GCM / CR / MP / 2013 /013

Highlights:

Amlidhonda Block, Mand Raigarh Coalfield-

The coal is of Clarodurite type, having high proportion of inertinite and moderately high percentage of liptinite. There is no suitable vitrinite (collotellinite) band for rank study. The high percentage of inertinite suggests warm and oxidising climate prevailed during the colification process.

Samarsingha Block, Mand Raigarh Coalfield

Vitrinite rich coal with subordinate amount of inertinite. Sample no. 4 shows moderately high proportion of liptinite where as sample no. 3 shows sparse amount of liptinite and high in mineral matter. Rank wise the coal can be categorized under **High Volatile Bituminous B type**. The high percentage of vitrinite suggests cold and humid climate prevailed during the colification process.

Mineral Physics:

Item No.092/SER/CR/HQ/2014/17: Processing and separation of clay minerals, XRD analysis and identification of mineral phases in geological samples.

Separation and clay mineral processing work is under progress.

Palaeontology:

Item No: 094/RP/CR/HQ/2014/051: Palynostratigraphic study of subsurface Gondwana sediments of Sarai- West Block and adjoining areas, Son Valley, Singrauli District, Madhya Pradesh.

Highlights:

- Regional geological traverse were taken along Bargaon – Waidhan – Kanchan Road Section in SOI Toposheet No 63L/04. In the study area the Pali-Tiki Formation (equivalent to

Panchet) composed of sand stone and shale forming positive relief and the Raniganj Formation consist of sandstone, siltstone, clay and coal seams. Some places the clay and silt stone of Raniganj Formation forming bad land topography.

- The lower Gondwana sediments having a faulted contact with basement of Andalusite Pyrophillete of Parsaori Formation and the granite gneiss of Chhotanagpur Gneissic Complexes (CGC).
- Two faults noticed during the field work one NE-SW and throw towards NW, another fault ENE-WNW having a southern throw.
- Visited the bore hole SSW-7, south of Sivagarh Protected forest (N 24^0 01'28".0 & E 82^0 09'35".5, RL 401), studied and logged.
- The samples were collected from borehole no SSW-7 from different levels and submitted for maceration and palynological slide preparation. The bore hole closed at a depth of 642.45 m in Barakar Formation.
- In SSW-7 bore hole intersected the Pali? Formation followed by Raniganj, Motur and Barakar Formation. For establishing the systematic palyno and litho facies assemblage the samples collected from various levels of the bore hole and prepared the lithologs.
- The contact between Pali and Raniganj Formation (38.80?), Raniganj/ Barren Measure (325.00?) and Barren Measure / Barakar Formation (517.00?) has been noticed in logging.
- 15 nos. of suitable samples were collected from various levels and submitted for maceration and palynological slide preparation.
- 30 m thick dolerite sill? noticed during the bore hole logging. The bore hole closed at a depth of 642.45 m in Barakar Formation.

8. MISSION – V

8.1 TRAINING & CAPACITY BUILDING

The Geological Survey of India, Central Region has a Regional Training Institute with office located at Nagpur. The Field Training Centre, under this RTI is located at Raipur. The RTI has recently started functioning, but the FTC is one of the oldest training centres in GSI functioning from early sixties. These Centers impart training in geology, natural hazards, drilling & surveying and other specialized training as per the needs of department, State Government and university students. Activities of the RTI and FTC are listed in Annexure-10.

***Courses conducted at FTC, Raipur*:**

1. 37th OCG Batch C PGRS and Geological mapping module
2. 37th OCG Batch H PGRS and Geological mapping module

Courses conducted by RTI, Nagpur:

1. Training on Deccan and other basaltic provinces of India
2. Training on Geochemical data processing and interpretation.
3. Awareness of Computer Applications for Group C Staff of Central Region
4. Training on ARC GIS for officers of CR (Outside FSP)
5. Weekly lecture on MS Excel-2007 (Outside FSP)

9. MUSEUM AND CURATORIAL ACTIVITIES

The Central Region a has a Regional Museum and Curatorial Division located at Nagpur having rock, mineral and fossil specimens displayed following a specific stratigraphic theme. Detailed information on the occurrence of minerals in the Central Region is displayed both as posters and back-lits. The museum has a distinction of having a vast collection of diverse types of dinosaur eggs.

Significantly, the Museum has acquired a life size-model (in fiber-glass) of a Late Cretaceous snake (*Sanajeh indicus*) predating upon a sauropod hatchling inside a nest. The model is based on the preparation and study of the snake fossil under a joint collaborative programme involving GSI, C.R. and University of Michigan Museum of Palaeontology (UMMP) under MoU. The model has been presented by UMMP to GSI.

There are large number of visitors including the students both at school and college levels, researchers and professional. Specimens in the Museum are also made available to the students and researchers as a reference material.

In addition museums are also located in the operational offices at Bhopal, Jabalpur and Pune highlighting the local geology and mineral occurrence.

Recently Home Theatre for Audio-video presentation to visitors has been procured, also added to plastic model of Snake predating dinosaur eggs and some specimens & exhibits to the museum. Sound system has been procured and installed successfully.

10. PARKS AND MUSEUMS (Outside GSI)

The Director, Petrology Division, CR visited the State Museum in Nagpur and had a discussion with Dr. A.V. Bhoyar, Curator and Museum In-charge, accordingly the state authorities have allotted a separate gallery for GSI samples. A roadmap has been prepared by GSI, CR to go ahead to equip the State Museum with GSI exhibits. The budgetary provision has also been workedout.

Similar intitatives are also under process for State Museum of Chhatisgarh and Madhya Pradesh states. The Director-in-Charge and the Director, PSS, GSI, State Unit: Madhya Pradesh,

Bhopal visited Regional Museum of Natural History (RMNH) on 16.08.2012 and they had a discussion with Dr. S. Sethuramalingam, Scientist-E and In-Charge, RMNH, Bhopal regarding establishment of geological gallery. The In-Charge of RMNH has agreed to extend their support to establish geological gallery at Bhopal.

11. LIBRARY

GSI, CR has a well-established Regional Library at Nagpur. No book has been procured during the period April 2014 to June 2014. Position of books in Nagpur library is given in the Table below.

Location	Books in English	Books in Hindi	Technical Books	Rule Books etc
Nagpur	3878	1847	3878	369

In addition, all the operational offices at Jabalpur, Raipur, Pune and Nagpur are also having the library facilities with selected earth science journals, text books and GSI reports.

12. REGIONAL CORE REPOSITIRY

GSI has carried out drilling for exploration of base metal, chromite, gold, diamond, manganese, bauxite, limestone, coal etc for establishing stratigraphy and to test geothermal energy in a few selected areas, in the states of Maharashtra, Madhya Pradesh and Chhattisgarh. The job of preservation of drill core generated from these investigations by Central Region, AMSE Wing and Coal Wing was taken up from the field season 2003-04. The Regional Drill Core Repository for Central Region, GSI is established in a 150’ long and 100’ wide shed located at GSI, Seminary Hills, Nagpur.

Nearly 26,000 m of drill cores (Nearly 6051 boxes) obtained from 96 field investigations carried out by Central Region, MEC Ltd., Nagpur and AMD, Nagpur have been preserved in the Regional Core Library with access to the fellow scientists, researcher and students from various earth science organization and University for research and academic activities.

Storage of technical data pertaining to the Drill Core preserved

For storage of data pertaining to the drill cores preserved, a computer application using MS Access for storage of data and Visual basics for display has been programmed. The fields for the details include information on Project, Boreholes, Lithology, Trace elements analyses data, Whole rock analyses data, Petrological details of thin and polished sections examined, EPMA studies carried out and Storage details of the boxes in the repository. The Application has the facility Search the Project number and other details using six different criteria like Title of the Project, District, State, and Geologists associated, Commodity and Item code.

While collecting the drill core it was felt necessary to store the information about the drill core preserved in digital form. For this the Central Region, GSI, developed a unique computer application using latest techniques for storage and retrieval of data.

Dr. S. K. Wadhawan, Director General visited core repository of GSI, Central Region, Nagpur on 13th June 2014.

13. SCIENTIFIC EVENT/WORKSHOP/SYMPOSIUM/ EXHIBITIONS

GEOCLUB ACTIVITIES:

On 20th June 2014 lectures was organized at Auden Hall, GSI, CR, Nagpur on the subject "Strain and shear analysis" and Evolution of greenstone belt". The lectures were delivered by Dr. Abhinaba Roy, Sr. Dy. Director General (Retd.).

14. RAC/OAC/ROC/STAGE REVIEW/TERM REVIEW & OTHER MEETINGS

The minutes of the meetings have been uploaded in the GSI Portal. Details of holding of the meetings for the offices covered under Central Region are given in a**nnexure-11**.

15. HRD, ESTABLISHMENT, PAYROLL, HRMIS, FSPMIS, e-SERVICE BOOK

The service particulars such as promotion, transfer details etc. in respect of the entire employee are being updated in GSI Portal.

The monthly pay and allowances of all the officers and staff of GSI, Central Region are being processed through Pay Roll module of GSI Portal. The salaries of employees of Central Region are deposited in their respective bank acconts through Electronic Clearing System (ECS).

The Service Book of all newly recruited officers and staffs have been prepared through GSI Portal. All the particulars and details related to service matters of the employees are regularly updated in the e-Service Book.

For proper monitoring, execution and smooth functioning of various modules viz. HRMIS, FSPMIS, Laboratory Management and Pay roll, nodal officers have been declared for the Central Region, Nagpur and for state unit offices of Maharashtra, Madhya Pradesh and Chhatisgarh.

Establishment:

Employment Position in the central region and total number of employees in Group 'A', Group-B (Gazetted & Non-Gazetted), Group 'C' & MTS posts are furnished in **annexure - 12.**

16. VEHICLES & TRANSPORT INFRASTRUCTURE

Current position of vehicles in Central Region is listed in a**nnexure-13.**

17. PROCUREMENT STATUS OF MAJOR EQUIPMENTS, MODERNIZATION

The efforts to meet emerging challenges GSI, CR is constantly upgrading its technology both for field as well as laboratory equipment. Detailed programme of modernization of the laboratories through new instrument purchase is given in **annexure-14.**

18. PERFORMANCE OF DRILLING UNITS & DEPLOYMENT OF MACHINES

The details are are provided in **annexure-15**.

19. LEGAL MATTERS & GRIEVANCE CASES

Legal Matters:

Status of legal matters and court cases etc for Central region is included in a**nnexure-16**.

There is no grievance case pending in Central Region.

20. OUTSOURCING OF ROUTINE SERVICES:

Sl. No.	Item of Outsourcing (on monthly contract)	Place	No. of Persons	Effective from Date
1	Cleaning & Sweeping of office buildings (Housekeeping)	Entire Office complex, Nagpur	13	16.04.12 *Extension given upto 15.04.2014*
2	Contractual worker for assistance in computer data entry, stores, labs & general duty	Nagpur	24	01.03.2012
			16	01.09.2012
			7	From March 2013
3	Watch and ward duty, CR, Ngpur	Nagpur	5	10.01.2012
4	Chemists on contractual basis in Chemical Lab., CR, Nagpur	Chemical Divn Nagpur	2 Chemists*	10.08 2011 *Discontinued from 31.07.2012
5	Watch and ward duty, State Unit, Pune	Office complex, Pune	4	01.07.2011
6	Contractual worker for cleaning and sweeping duty, Pune	Pune	3	
7	Watch and ward duty, SU: MP, Bhopal	Office complex building, Bhopal	3	November 2012
8	Watch and ward duty, SU: MP, Jabalpur	Jabalpur	2	
9	Contractual worker for assistance in computer data entry & general duty	Jabalpur	3	
10	Contractual worker for cleaning and sweeping duty, Jabalpur	Jabalpur	1	
11	Watch and ward duty, SU: MP, Jabalpur	BBS observatory, Jabalpur	4	
12	Watch and ward duty, FTC, Raipur	FTC, Raipur	4	

21. ESTATE MATTERS

The Central Region has its own office buildings at Nagpur, Bhopal, Jabalpur, Raipur & Pune. Besides this there are residential quarters at Pune & Jabalpur.

Excluding Raipur, all other office buildings are 20 or more years old and in need of regular maintenance every year. Earlier CPWD used to maintain these building from the budget grant received by it from the union Govt. Since last three or four years the CPWD has been treating routine maintenance as deposit work (due to scarcity of funds with them) & asking for budget allotment for the same. The CRO has been given meager budget allotment under minor works head during last few years. As such no routine maintenance has been done through CPWD. As a result, the buildings are in pathetic condition profusely leaking, sanitary and plumbing lines have been damaged extensively, boundary & parapet walls weakened. Street lighting, old electrical wiring has weakened/damaged especially in chemical labs due to acidic fumes. This situation is creating problems every now & then in smooth functioning of office. Estate details for the Central Region set up is tabulated below.

Sl. No.	GSI, CR, Nagpur	Cost	Area
01	New Office Complex Building, Seminary Hills	--	Total plinth area 8954.4 Sq.mts. Total land area 49939.3 sq.mts.
Sl.No.	**SU: MP, Jabalpur**	**Cost**	**Area**
01	Office Building 167, Sanjeevani Nagar, Veer Sawarkar Ward, Jabalpur	Land cost, Rs.5,74,992/-. Building cost Rs. 35,26,807/- (As in 1996)	2894 Sq.mts.
02.	Residential Building Colony, 167, Sanjeevani Nagar, Veer Sawarkar Ward, Jabalpur	Land cost,s. 3536807/- Building cost Rs.70,62,081/-	3226.80 Sq.mts.
03	Broad Band Seismic Observatory, Bargi Hills, Jabalpur, Khasra No. 865/5 Patwari Halka No. 28/33	Rs. 25/- (Allotted by State Govt. of MP)	20230 sq.mts
Sl.No.	**SU: MAH, Pune**	**Cost**	**Area**
01	Office Complex, Alandi Road, Pune	N.A	7198.00 Sq m.
02.	Residential Buildings, Alandi Road, Pune	N.A.	9323.10 Sq.m.
03	Total area		16521.10 Sq m
Sl.No.	**SU: CG, Raipur**	**Cost**	**Area**
01.	Behind Ayurvedic College, Raipur	Rs.38,15414/- Date of purchase - 17.06.1988	4.5 Acre (196020 Sq.ft.) Plinth area- 1788 sq.mt.

22. TECHNICAL CONSULTANCY SERVICES

A- Internal Resource Generation for the period April 2014-June 2014:

Sr. No.	GSI Services	Resource Generated (Rs.)
1	Gemstone testing (7)	6,639

2	Laboratory Services such as Petrographic, SEM-EDX, Chemical analysis, etc	21,127
3	Geo-technical investigation	9,95,717
4	MoU projects	0
5	Others	2,170
6	CAG Para 12.2 (Pending Payments)	1,12,044
7	Sale of Reports (2)	1,53,820
8	Sale of Maps (98)	26,265
9	Sale of Publications (2)	322
	Total(Rs.)	**13,18,104**

A.	**Internal Resources Generation**	**Rs. 13,18,104/-**
B.	**Service Tax & Education Cess received (April 2014 to June, 2014)**	***Rs. 1,14,423/-**
C.	**Pending Service Tax: CAG Para 12.1 received April 2014 to June, 2014)**	**Rs. 52,483/-**
D.	**Grand Total of amount received April 2014 to June, 2014)**	**Rs. 14,85,010/-**

* Based on data obtained from the Costing Section, GSI, CR

B- Details of MoU Projects during FSP 2013-14:

Sr. No	Name of Project	Sponsoring Agency	Cost and date of MoU	Advance received (Rs.)
1.	Exploration for iron ore in Kabirdham Forest area, District Kawardha, CG	CMDC, Raipur, CG	1. MoU was signed on 07/01/2012 Cost estimated - **Rs.** 5,11,45,040/- 2. Supplementary MoU signed on 09/05/2014. Revised cost estimated - **Rs. 5,34,87,649/-**	1. **Rs.** 2,32,47,750/- received in Jan-2012 2. **Rs. 1,25,00,000/-** received in Jan-2014
2.	Geotechnical Investigation of Barethi Super Thermal Power Project, Chhatarpur District, MP	NTPC, Raipur, CG	**Rs. 4,68,120/-** 14/01/2013	**Rs.** 3,27,684 (70%) received in May 2013
3	Investigation for Geothermal Resources at Tatapani, Balrampur District, Chhattisgarh.	NTPC, New Delhi	Collaboration Project 07/01/2014	-

23. RESULTS FRAMEWORK DOCUMENT (RFD)

Results Framework Document (RFD) is an instrument for evaluation of performance, accountability and good governance, practiced by many institutions and public departments the World over. In India, the RFD was introduced through the honorable President's address to the Parliament on 4th June, 2009, which focused on effective delivery of public services, ensuring increased decentralization, transparency and public accountability. The Prime Minister's approval

on 11/09/2009 made it mandatory for each department to prepare RFD consisting of departmental objectives and inter-se priorities set out by the Ministry concerned. The Minister in-charge will approve the proposed activities, schemes and success indicators for the Ministry/ Department. Completed RFD has to be submitted by departments to the secretariat by 15th April every year, putting it on departmental website/portal.

Ministry of Mines put forth the RFD for GSI in February 2011. Consequently, RFD was made functional in GSI, through the DG's, letter dated 10/06/2011, followed by a workshop on 20/10/2011 at CHQ. RFD of Central Region has been reported regularly since September, 2011.

RESULTS FRAMEWORK DOCUMENT – Central Region

- The contents of RFD-CR, 2014-15 are arranged Mission wise.
- The RFD, CR 2014-15 for the Month of June, 2014 is furnished in enclosed **annexure-17.**

Annexure – 1

MAJOR MINERALS RESOURCES [UNDER VARIOUS UNFC CATEGORIES] ESTIMATED BY THE REGION, SHOWING STATE-WISE, FIVE-YEARLY INCREMENT, FOR THE LAST 10 YEARS. (RESOURCES AS ON 30.06.2014)

SR. NO	COMMODITY/ MINERAL	STATE	1995	2000	2005	2010
1	**GOLD (Au)**	**CG** **Sonadehi**		At 0.10 gm/t Au cut-off, estimated resource is **2283927.95 tonne, with 1608.014 Kg of gold,** with an average grade of 0.699gm/t Au. At 0.60 gm/t Au cut-off, estimated resource is **217293.20 tonne, with 1008.36 Kg of gold,** with an average grade of 4.64 gm/t Au. (UNFC Code 332)		
2	**GOLD (Au)**	**CG** **Sheetalpur, Bejhar, Chachar and Puro-Michgaon**		Resource estimated only for Bhelwapani block at 0.2 gm/t cut off about **605773.28 tonne with 462.48 kt Au** with an average grade of 0.76 gm/t with true width 2.256-6.20m for a strike length of 415m (UNFC Code 332)		
3	**GOLD (Au)**	**CG** **Baghmara block, Sonadehi**		Resources estimated at 0.10 g/t Au cut off around **1898825.36 tonne with 1196.117 kg of gold** with an average grade of 0.778 g/t Au for a strike length of 645.50m to a av. Vertical depth of 136m. (UNFC Code 332)		
4	**GOLD (Au)**	**MH** **Parsori West**		0.588 mt at 0.5 g/t Au with gold =**1.653 tonnes** OR 0.346 Mt (at 1.0 g/t = 1.304 tonnes upto 110 m RL) (UNFC Code 332)		
5		Marupar-Pular-Kosori Block		1.59 tonnes of gold, Av. Gr.-1,93g/t 3767.34 tonnes of Cu –Av. Gr-1.33% 1.014 tonnes of Ag Av. Gr.-3.65 g/t (UNFC Code 332)		

SR. NO	COMMODITY/ MINERAL	STATE	1995			2000	2005	2010
6	GOLD (Au)	MH Bhimsain Killa Pahar	**Total resources to Bhimsain Killa Pahar block has been estimated to be 57.00 tonnes of ore with average grade of 1.84 g tonne Au upto 30m depth with gold content of 105 kg. (UNFC Code 332)**					
7	**GOLD (Au)**	**MP** Imaliya				**0.2 mt** with average 2gm/t Au &100gm/t Ag;1.2% (UNFC Code 332)		
8	**GOLD (Au)**	**MP** Chakaria (UNFC Code 332)	Zone	Estimated tonnage of ore 332	Grade of Au			
			A	24,375t	2.75gm/t			
			B	20,675t	1.29gm/t			
			C	16,350t	0.90gm/t			
			D	15,900t	1.80gm/t			
			E	3750t	0.74gm/t			
			F	12,450t	0.69gm/t			
9	**Basemetal**	**MP** **Banskhapa-Pipariya**	**1995-96---0.29 mt,** with 7.2% Zn; 1.65% Cu; 150 ppm Cd; 7 ppm Ag. **1996-97---1.36 mt** with 3.4% Zn;1.17% Cu, with a strike length of 600m,av width of 5.5m and depth 120m 332 (UNFC Code 332)					
10	**Basemetal**	**MP** **Mauriya**				**1.51 mt ore;** Zn 7.88%; Cu 0.78%; Pb 1.83%; Ag 77 gpt (UNFC Code 332)		
11	**Basemetal**	**MP** **Ghisi**				**0.28 mt ore;** Zn 0.26%; Cu 0.26%; Pb 0.68%; Ag 45 gpt (UNFC Code 332)		
12	**BASEMETAL**	**MP** **Dehalwara**				**1.12 mt ore** with 1.83% Zn, 0.45% Pb. 0.26% Cu;		

SR. NO	COMMODITY/ MINERAL	STATE	1995	2000	2005	2010
				(UNFC Code 332)		
13	**Basemetal**	**MP Koparpani**		**1.37 mt ore;** Zn 0.85 %; (UNFC Code 332)		
14	**BASEMETAL**	**MP** **Bhuyari**		**1.56 mt ore** with 2% Zn, 0.44% Pb & 0.12% Cu ; (UNFC Code 332)		
15	**BASEMETAL**	**MP** **Biskhan**				**1.87 mt** 1.14% Zn (UNFC Code 332)
16	**COPPER**	**MH** **Thanewasna**			**6.64 mt** of 0.50% Cu cut off grade Cu-1.5% to 1.63%. (UNFC-332)	
17	**COPPER**	**MH Dubarpeth-Karanji**			A total resource of 1.343 mt(at 0 .50% cut-off grade with average grade of 0.91% Cu. (UNFC Code 332)	
18	**MANGANESE (Mn)**	**MH** **Parsoda and Nagardhan-Chokhala**	**0.1781 mt** of Mn (UNFC Code 332)			
19	**IRON ORE**	**Aridongri Chhatisgarh**	**10.01 million tone with grade of 62.28% Fe**	G3 stage UNFC code (333)	62.28%	Year - 2011
20	**MANGANESE (Mn)**	**Parseoni Extension area, Savali block & Mohagaon block, Nagpur District, Maharashtra, FS 2010-12**		**<u>FS 2010-12</u>** i) Savali Block, G3 stage: 64152 tonnes --- 7.65% Mn 1312.2 tonnes, --- 25.12% Mn, UNFC code (333) ii) Mohgaon Block, G4 (334): 0.014 million tones --- 11.01% Mn		
21	**PHOSPHORITE**	**I) Dhanpura – Khatoma block, & ii) Piploda block, Jhabua district, Madhya Pradesh, FS 2010-12**		**<u>FS 2010-12</u>** i) Piploda block: 614615.63 tonnes (333) – 15% P_2O_5 ii) Khatoma: 275705.13 tonnes (333) --- 7.858 P_2O_5		
22	**BAUXITE**	**Tantar block, Dindori district, Madhya Pradesh** **FS 2010-12**		**<u>FS 2010-12</u>** 173.960 (334) million tones Metallurgical grade-II with average of 49.7% Al_2O_3		
23	**PHOSPHORITE**	**Prospecting for phosphorite mineralization in western part of Harda inlier, parts of Modri, Sadkhera & surrounding area, Khargone dist., Madhya Pradesh, FS 2012-13**		**<u>FS 2012-13</u>** **22,500 tonnes with P_2O_5 16.66% (or 50,625 tonnes with P_2O_5 8.46%)**		

Annexure – 1A

STATE-WISE AUGMENTATION OF COAL RESOURCES BY MISSION–IIB, CR
(In million tonnes)

STATE	YEAR							Total
	1995	2000	2005	2010	2011	2012	2013	
CHHATISGARH	26971.11	940.93	1977.75	1897.60	2598.24	1565.90	1322.89	52169.04
MP	14849.79	105.29	1799.19	1291.91	1138.11	1250.53	684.91	25061.17
MH	6602.47	120.47	43.00	379.34	225.32	348.68	81.95	10964.04

*Data Source: Indian Coal Resource 2013: Compiled by GSI

Annexure – 1B

NUMBER OF REPORTS MADE UNFC COMPLIANT

Pre-2004:

A total of **75** investigation reports for basemetal, gold, KCR, PGE, manganese, bauxite, dimension stones carried out by Nagpur, Bhopal, Jabalpur, Raipur and Pune have been made UNFC Compliance.

FSP 2004 – 2009:

A total of **31** progress reports for investigation of KCR, basemetal, gold, phosphorite, bauxite, flux grade magnesium and PGE carried out from Nagpur, Bhopal, Jabalpur and Raipur have been made UNFC Compliance.

Pre-1998-99:
During the current Field Season a total of **78** progress reports for basemetal, gold, KCR, manganese, dimension stones carried out by Nagpur, Bhopal, Raipur and Pune have been made UNFC Compliance.

Annexure – 2A

ACTIVITY DOMAIN PERTAINING TO MISSION I & II OF THE REGION AND ACHIEVEMENTS [FSP RELATED ITEMS] DURING THE XI PLAN PERIOD [2007-12]

S. No	Major Activity area	Programme Target F.S. 2007-08	Achievement of F.S. 2007-08	Programme Target F.S. 2008-09	Achievement of F.S. 2008-09	Programme Target F.S. 2009-10	Achievement of F.S. 2009-10	Programme Target F.S. 2010-12	Achievement of F.S. 2010-12 (up to 31.03.2012)
I. Survey and Mapping									
a)	Ground Survey								
i)	Special Thematic Mapping (sq. km)	950 sq.km	950 sq.km	775sq.km.	783 sq.km.	675 sq.km	680 sq.km	4615 sq km	**4683 sq km**
ii)	Geochemical mapping (sq. km) – samples collected	3252 sq.km	3272 sq.km	3260 sq.km	2922 sq.km	3226 sq.km	3236 sq.km.	11020 sq.km	**11061 sq km**
iii)	Geophysical Mapping (sq. km)	2100 sq.km	2100 sq.km	2100 sq.km	2000 sq.km	2100 sq.km	2100 sq.km	4900 sq.km (Revised)	**4900 sq km**
II. Mineral Exploration									
i)	Large Scale Mapping (sq. km.)	275 sq.km	250sq.km	75 sq.km.	70 sq.km.	60 sq.km.	60 sq.km.	225sq.km	**216.5 sq km**
ii)	Detailed Mapping (sq. km.)	1.1 sq.km	1.1 sq.km	0.6 sq.km.	0.6 sq.km.	1.3 sq.km.	1.18 sq.km.	6.95 sq.km.	**6.95 sq km**
iii)	Drilling (metre)	565 M	530.15 M	NA	NA	600 M	291.5 M	2790.80 M*	**1797.85 M**

*Includes 800m by DGM Maharashtra for which the progress is 121.8m. The drilling targets and progress for M-IIB Coal not included.

Annexure – 2B

ACTIVITY DOMAIN PERTAINING TO MISSION- I & II OF THE REGION AND ACHIEVEMENTS [FSP RELATED ITEMS] DURING THE XII PLAN PERIOD [2012-17] (FOR THE FIELD SEASON 2012-13 & 2013-14)

Sl. No	Major Activity area	Programme Target F.S.2012-13	Achievement of F.S. 2012-13	Programme Target F.S.2013-14	Achievement of F.S. 2013-14
I. Survey and Mapping					
a)	Ground Survey				
i)	Specialized Thematic Mapping (sq km)	6,640	**6715 sq km**	**5375 sq km**	**5392 sq km**
ii)	Geochemical mapping (sq km) – samples collected	13,796	**13,406 sq km**	**16696 sq km**	**16732.5 sq km**
iii)	Geophysical Mapping (sq km)	5,800	**5800 sq km**	**9100 sq km**	**7150 sq km**
II. Mineral Exploration					
i)	Large Scale Mapping (sq km.)	823.09	**832.09 sq km**	**1035 sq km**	**1058.16 sq km**
ii)	Detailed Mapping (sq km.)	14.7	**12.7 sq km**	**3.7 sq km**	**3.7 sq km**
iii)	Drilling (metre) (M-IIA + M-IIB)	22,900	**22339.8 m** (MIIA- 1906.80; MIIB - 20433.00)	**27,225 m (MIIA-2500 m; MIIB – 24725 m)**	**20739 m (MIIA-1143 m; MIIB – 19596 m)**

Annexure – 2C

ACTIVITY DOMAIN PERTAINING TO MISSION- I & II OF THE REGION AND ACHIEVEMENTS FOR THE FIELD SEASON 2014 - 15 (AS ON 30.06.2014)

Sl.	Major Activity area		Programme Target F.S.2014-15		Achievement for FS 2014-15 (Upto 30.06.2014)
I. Survey and Mapping					
1	Reconnaissance mapping (1: 50,000 scale)		**1400 sq km**		**15 sq km**
2	Specialised thematic mapping (1:25,000)		**5250 sq km**		**87.3 sq km**
3	Geochemical Mapping (1: 50,000 scale)		**17600 sq km**		**80 sq km**
4	Geophysical mapping (1: 50,000 scale)		**12600 sq km** **(Including Spillover of 2100 sq km)**		**732 sq km** **(Including Spillover of 222 sq km)**
II. Mineral Exploration					
5	Large scale mapping (1:10,000 to 25,000 scale)		**862 sq km**		**38.09 sq km**
6	Detailed mapping (1:1000 to 5000 scale)		**15 sq km**		**0 sq km**
7	Drilling	Mission-IIA	**3000 m ***	**Total =**	**631.9 m @**
		Mission-IIB	**24080 m**	**27080 m**	**5141.4 m $**

* Including spillover target of 700 m.
@ Including spillover of 631.9 m
$ Including spillover & re-drilling of 1549.8 m

Annexure – 3

SCHEMEWISE, MONTHWISE DISTRIBUTION OF APPROVED PLAN FUNDS AND ACTUAL EXPENDITURE FOR 2014 - 15

TARGET VIS-A -VIS ACTUAL EXPENDITURE UPTO 30.06.2014

(Rs. In lakhs)

2014-15 SCHEME	OUTLAY	April, 2014		May, 2014		June, 2014		Total	
		TARGET	EXPEND	TARGET	EXPEND	TARGET	EXPEND	TARGET	EXPEND
Mission - I (Survey & Mapping)	-	3.90	3.51	3.92	0.97	4.29	0.60	23.03	5.08
Mission - II (Mineral Exploration)	28.00	23.76	59.73	8.85	38.35	22.03	18.54	139.92	116.61
Mission - III (Inform Dissemination) (IT+OE(Pub+OAE+Adv&Pub))	157.00	-	5.64	6.00	1.02	2.30	3.06	14.37	9.72
Mission - IV (Research & Develop.)	59.00	-	15.41	4.04	14.83	16.46	4.05	28.04	34.29
Mission - IV B (Investigation)	41.25	0.05	-	0.55	0.42	1.25	-	3.22	0.42
Mission - V (Training)	3.20	-	3.79	9.74	1.84	1.65	1.62	26.94	7.24
Schedule Tribe Sub Plans	9.50	3.10	4.89	12.22	12.03	8.91	13.97	138.03	30.88
Modi & Replace (ME+MV+OE(S&M+C&T))	100.00	32.90	8.26	7.90	18.77	1.41	1.84	46.37	28.87
Minor Works	105.50	-	-	0.34	-	0.44	-	2.66	-
DIR & ADMN (PLAN)	40.37	36.16	47.59	21.31	65.55	43.05	44.03	195.57	157.18
TOTAL (PLAN)	**543.82**	**99.87**	**148.82**	**74.88**	**153.76**	**101.79**	**87.71**	**618.15**	**390.29**
DIR & ADMN (NON PLAN)	706.62	**636.73**	808.35	**413.10**	430.79	**349.29**	416.32	**2,446.67**	**1,655.47**
TOTAL TARGET / EXPEND	**1,250.44**	**736.59**	**957.17**	**487.98**	**584.56**	**451.08**	**504.03**	**3,064.82**	**2,045.76**

(Rs. In lakhs)

2014-15 SCHEME	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter		Total	
	TARGET	EXPDT	TARGET	EXPDT	TARGET	EXPDT	TARGET	EXPDT	TARGET	EXPDT
Mission - I (Survey & Mapping)	12.12	**5.08**	10.91	-	15.34	-	29.34	-	**67.71**	**5.08**
Mission - II (Mineral Exploration)	54.64	**116.61**	85.29	-	52.39	-	41.31	-	**233.63**	**116.61**
Mission - III (Inform Dissemination) (IT+OE(Pub+OAE+Adv&Pub))	8.30	**9.72**	6.07	-	32.16	-	1.60	-	**48.13**	**9.72**
Mission – IV A (Research & Develop.)	20.50	**34.29**	7.54	-	3.77	-	8.25	-	**40.06**	**34.29**
Mission - IV B (Investigation)	1.85	**0.42**	1.37	-	1.17	-	3.99	-	**8.38**	**0.42**
Mission - V Training)	11.39	**7.24**	15.55	-	4.65	-	6.56	-	**38.15**	**7.24**
Schedule Tribe Sub Plans	24.23	**30.88**	113.80	-	56.21	-	50.72	-	**244.96**	**30.88**
Modi & Replace (ME+MV+OE(S&M+C&T))	42.22	**28.87**	4.15	-	96.02	-	26.68	-	**169.07**	**28.87**
Minor Works	0.78	-	1.88	-	44.56	-	1.34	-	**48.56**	-
DIR & ADMN (PLAN)	100.52	**157.18**	95.05	-	69.19	-	83.33	-	**348.09**	**157.18**
TOTAL (PLAN)	**276.53**	**390.29**	**341.62**	-	**375.47**	-	**253.12**	-	**1,246.74**	**390.29**
DIR & ADMN (NON PLAN)	1,399.12	1,655.47	1,047.55	-	1,165.35	-	756.24	-	**4,368.26**	**1,655.47**
TOTAL TARGET / EXPEND	**1,675.65**	**2,045.76**	**1,389.17**	-	**1,540.82**	-	**1,009.37**	-	**5,615.00**	**2,045.76**

Modernisation And Replacement= Mach.& Equip. + Minor Works+ OE(Sup & Mat)+OE(Cloth & Tentages)

Information And Dissemination= Mission III[IT+OE(Pub)+OE(OAE)+OE(Adv & Pub)]

Human Resource Development (Plan)= DTE+ OE(V)+ Prof. Serv.

Annexure – 4

MISSION WISE PRO-RATA RCA EXPENDITURE IN DIFFERENT PROJECTS VIS-À-VIS TARGETS AND ACHIEVEMENTS FIELD SEASON 2014 - 2015 (UPTO 30.06.2014)

Sl No	Item	Name of Officer		Target for FS 13-14	Achievements	Field Days	Total Exp. (in Rs)	Per day per head Exp. (in Rs.)
MISSION I - BASELINE GEOSCIENCE								
	MISSION-I	**SPECIALIZED THEMATIC MAPPING (1:25000)**						
	MI - STM	**MAHARASHTRA (NAGPUR)**						
1	003/STM/CR/MH/2014/001	Sanjoy Ganguly	STM	350 sq km	7	3	14845/-	2474/-
		Nilasree Ray Chowdhury	PS	50 Nos.	4	3		
		Dr. Anjan Rai Choudhuri (Sup Off.)	BRS	30 Nos.	0	2		
			PCS	30 Nos.	0			
			SSS	15 Nos	0			
			REE	15 Nos	0			
			EPMA	05 Nos	0			
2	004/STM/CR/MH/2014/02	Smita Priyadarshini Ojha	STM	350 sq km	0	0	Nil	Nil
		Varsha Sahu	PS	50 Nos.	0	0		
		Dr. Anjan Rai Choudhuri (Sup Off.)	BRS	50 Nos.	0	0		
			PCS	20 Nos.	0			
			SSS	15 Nos.	0			
			REE	10 Nos.	0			
			EPMA	05 Nos.	0			
			CHEM	50 Nos.	0			
3	005/STM/CR/MH/2014/03	Kashif Iqbal	STM	350 sq km	40	13	21398/-	793/-
		Neelendra Kumar	PS	30 Nos.	4	14		
		Dr. Anjan Rai Choudhuri (Sup Off.)	BRS	50 Nos.	3	2		
			PCS	20 Nos.	2			
			SSS	15 Nos.				
			REE	10 Nos.				
			EPMA	10 Nos.				
			CHEM.ANAL	90 Nos.				

4	006/STM/CR/MH/2014/04	Niketan. Khedekar	STM	350 sq km	15	12	19184./-	914/-
		Jevvarathinam.K	PS	30 Nos.	5	9		
		Dr. Anjan Rai Choudhuri (Sup Off.)	BRS	30 Nos.				
			PCS	20 Nos.				
			SSS	15 Nos.				
			REE	10 Nos.				
			EPMA	10 Nos.				
			CHEM.ANAL	60 Nos.				
5	007/STM/CR/MH/2014/05	Ramprasad R	STM	350 sq km	7.3	7	26885/-	3841/-
		P Hari Kumar	PS	50 Nos.	5	0		
		Dr. Anjan Rai Choudhuri (Sup Off.)	BRS	40 Nos.	2			
			PCS	20 Nos.				
			SSS	20 Nos.				
			REE	10 Nos.				
			EPMA	10 Nos.				
			CHEM.ANAL	70 Nos.				
	MI - STM	**MAHARASHTRA (PUNE)**						
1	008/STM/CR/MH/2014/06	Sasmita Prusty	STM	350 sq km	18	12	23720 /-	593 /-
		Yogendra Singh	PS	50 Nos.	13	28		
		B. Sen (Sup Off.)	BRS	50 Nos.	0			
			PCS	10 Nos.	0			
			EPMA	10 Nos.	0			
			PGE	5 Nos. (if nec.)	0			
	MI - STM	**MADHYA PRADESH (BHOPAL)**						
1	009/STM/CR/MP/2013/001	Suresh Kumar Bhardwaj	STM	525 Sq km	0	0	Nil	Nil
		Vikas Kumar Suman	BRS	30 Nos.	0	0		
		VSSA Naidu B	PS	50 Nos.	0	0		
		Hemraj Suryavanshi (Sup Off.)	PCS	25 Nos.	0	0		
			REE	50 Nos.	0			
			SSS	15 Nos.	0			
			EPMA	10 Nos.	0			

2	010/STM/CR/MP/2013/002	Mohammad Atif Raza	STM	525 sq km	0	0	Nil	Nil
		Parwez Akhter	BRS	50 Nos.	0	0		
		Hemraj Suryavanshi (Sup Off.)	PS	50 Nos.	0	0		
			EPMA	As Nec	0			
			PCS	25 Nos.	0			
			REE	50 Nos.	0			
			PGE	15 Nos.	0			
3	011/STM/CR/MP/2013/003	Sharwan Ram	STM	350 sq km	0	0	Nil	Nil
		Arun Kumar	BRS	40 Nos.	0	0		
		Sandeep Singh Chouhan	PS	30 Nos.	0	0		
		Hemraj Suryavanshi (Sup Off.)	EPMA	As Nec	0	0		
			PCS	15 Nos.	0			
			REE	15 Nos.	0			
			PGE	07 Nos.	0			
4	012/STM/CR/MP/2013/004	Kishan Lal Tank	STM	350 sq km	0	0	Nil	Nil
		Dashrath Kumar Joshi	BRS	50 Nos.	0	0		
		Hemraj Suryavanshi (Sup Off.)	PS	25 Nos.	0	0		
			EPMA	As Nec	0			
			PCS	20 Nos.	0			
			REE	10 Nos.	0			
			PGE	15 Nos.	0			
	MI - STM	**MADHYA PRADESH (JABALPUR)**						
1	013/STM/CR/MP/2013/005	Utkarsh Tripathi	STM	525 sq km	0	0	Nil	Nil
		Yuvaraj M	BRS	80 Nos.	0	0		
		Ravisankar D	PS	45 Nos.	0	0		
		J. N. Solanki (Sup Off.)	PCS	25 Nos.	0	0		
			REE	15 Nos.	0			
			EPMA	10 Nos.	0			
			SEM	10 Nos.	0			
			PGE	10 Nos.	0			
	MI - STM	**CHHATTISGARH (RAIPUR)**						
1	014/STM/CR/CG/2013/006	S.R. Mohanty.	STM	525 sq km	0	0	Nil	Nil
		Velladurai, S.	BRS	90 Nos.	0	0		
		A. P. S. Parihar (Sup. Off.)	PS	44 Nos.	0	0		

			EPMA	15 Nos.	0			
			PCS	25 Nos.	0			
			REE	20 Nos.	0			
			SEM-EDX	10 Nos.	0			
2	015/STM/CR/CG/2013/007	K. C. Das	STM	350 sq km	0	0	Nil	Nil
		Animesh Mukherjee	BRS	30 Nos.	0	0		
		A. P. S. Parihar (Sup. Off.)	PS	15 Nos.	0	0		
			EPMA	8 Nos.	0			
			PCS	15 Nos.	0			
			REE	8 Nos.	0			
			SEM-EDX	8 Nos.	0			
	MISSION-I	**GEOCHEMICAL MAPPING (1:50000)**						
	MI - GCM	**MAHARASHTRA (NAGPUR)**						
1	016/GCM/CR/MH/2014/07	Pradipta Sur	GCM	800 sq km	0	0	Nil	Nil
		Debjani Sarkar	SSS	800 Nos.	0	0		
		Manohar Fulmari (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Flood Plain	As Avlb	0			
			Duplicate	12 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
2	017/GCM/CR/MH/2014/08	Mallesh Ganji	GCM	800 sq km	0	0	Nil	Nil
		Dileep Hasde	SSS	800	0	0		
		Manohar Fulmari (Sup Off)	Composite	200	0	0		
			Soil	10	0			
			Regolith	10	0			
			Water	10	0			
			Humus	As Avlb	0			
			Flood Plain	As Avlb	0			
			Duplicate	12	0			
			HMS	10	0			
			PS	10	0			

			XRD	10	0			
3	018/GCM/CR/MH/2014/09	Jidesh. P. C	GCM	800 sq km	80	13	21246 /-	1634 /-
		Shashi Kant	SSS	800 Nos.	80	0		
		Manohar Fulmari (Sup Off)	Composite	200 Nos.	20	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Flood Plain	As Avlb	0			
			Duplicate	12 Nos.	1			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
4	019/GCM/CR/MH/2014/10	Ramesh Guguloth	GCM	800 sq km	0	0	Nil	Nil
		P. S. Adhau	SSS	800 Nos.	0	0		
		Manohar Fulmari (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Flood Plain	As Avlb	0			
			Duplicate	12 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
5	020/GCM/CR/MH/2014/11	Alka Mishra	GCM	800 sq km	0	0	Nil	Nil
		Maya Patle	SSS	800	0	0		
		Manohar Fulmari (Sup Off)	Composite	200	0	0		
			Soil	10	0			
			Regolith	10	0			
			Water	10	0			
			Humus	As Avlb	0			
			Flood Plain	As Avlb	0			
			Duplicate	12	0			
			HMS	10	0			

			PS	10	0			
			XRD	10	0			
	MI - GCM	**MAHARASHTRA (PUNE)**						
1	021/GCM/CR/MH/2014/12	D. N. Fulzele	GCM	800 sq km	0	0	Nil	Nil
		Gautam Chand Garg	SSS	864 Nos.	0	0		
		S. Y. Katti (Sup Off)	Composite	216 Nos.	0	0		
			Soil	9 Nos.	0			
			Regolith	9 Nos.	0			
			Water	9 Nos.	0			
			Humus	As Avlb	0			
			Flood Plain	As Avlb	0			
			Duplicate	9 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
	MI - GCM	**MADHYA PRADESH (BHOPAL)**						
1	022/GCM/CR/MP/2014/13	Koyel Bhatta	GCM	800 sq km	0	0	Nil	Nil
		Shraddha Kumari	SSS	800 Nos.	0	0		
		K. V. Nambiar (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Nec	0			
			Flood Plain	As Nec	0			
			Duplicate	10 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
2	023/GCM/CR/MP/2014/14	Shradha Shukla	GCM	800 sq km	0	0	Nil	Nil
		Jayshree S. Meshram	SSS	800 Nos.	0	0		
		K. V. Nambiar (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			

			Humus	As Nec	0			
			Flood Plain	As Nec	0			
			Duplicate	10 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
3	024/GCM/CR/MP/2014/15	Sunil Rawat	GCM	800 sq km	0	0	Nil	Nil
		Sandeep Kumar	SSS	800 Nos.	0	0		
		K. V. Nambiar (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Nec	0			
			Flood Plain	As Nec	0			
			Duplicate	10 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
	MI - GCM	**MADHYA PRADESH (JABALPUR)**						
1	025/GCM/CR/MP/2014/16	Vikash Chandra	GCM	800 sq km	0	0	Nil	Nil
		R. Balamurali	SSS	800 Nos.	0	0		
		H. Y. Bhai (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	12 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
2	026/GCM/CR/MP/2014/17	Seema Yadav	GCM	800 sq km	0	0	Nil	Nil
		Raghupathi Chanagoni	SSS	800 Nos.	0	0		
		H. Y. Bhai (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			

			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	12 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
3	027/GCM/CR/MP/2014/18	Nagendra Gautam	GCM	800 sq km	0	0	Nil	Nil
		Deepu T R	SSS	800 Nos.	0	0		
		Rajendra Kumar (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	12 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
4	028/GCM/CR/MP/2014/19	Suresh Kumar	GCM	800 sq km	0	0	Nil	Nil
		Manish Kumar Gupta	SSS	800 Nos.	0	0		
		Rajendra Kumar (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	12 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
5	029/GCM/CR/MP/2014/20	Bijay Kumar Das	GCM	800 sq km	0	0	Nil	Nil
		Mohd Tabish Ansari	SSS	800 Nos.	0	0		
		Rajendra Kumar (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			

			Duplicate	12 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
	MI - GCM	**CHHATTISGARH (RAIPUR)**						
1	030/GCM/CR/CG/2013/018	Sooraj S.	GCM	800 sq km	0	0	Nil	Nil
		S. Chatterjee	SSS	800 Nos.	0	0		
		H. Mishra (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	As Avlb	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	10 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
2	031/GCM/CR/CG/2013/019	B. C. Pattanayak	GCM	800 sq km	0	0	Nil	Nil
		N. Khalkho	SSS	800 Nos.	0	0		
		H. Mishra (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	As Avlb	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	10 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
3	032/GCM/CR/CG/2013/020	K. Nagaraju	GCM	800 sq km	0	0	Nil	Nil
		R. B. Jalem	SSS	800 Nos.	0	0		
		H. Mishra (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	As Avlb	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	10 Nos.	0			

			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
4	033/GCM/CR/CG/2013/021	Shreyasi Mahapatra	GCM	800 sq km	0	0	Nil	Nil
		Sanjukta Mahanta	SSS	800 Nos.	0	0		
		H. Mishra (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	As Avlb	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	10 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
5	034/GCM/CR/CG/2014/21	Sarita Kabi	GCM	800 sq km	0	0	Nil	Nil
		Rankshetre P. T.	SSS	800 Nos.	0	0		
		Gautam Roy (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	10 Nos.	0			
			Pan Conc	30 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
6	035/GCM/CR/CG/2014/22	Somprakash Sahu	GCM	800 sq km	0	0	Nil	Nil
		R. K. Mallah	SSS	800 Nos.	0	0		
		Gautam Roy (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	10 Nos.	0			
			Pan Conc	30 Nos.	0			

			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
7	036/GCM/CR/CG/2014/23	Sarmishta Mazumdar	GCM	800 sq km	0	0	Nil	Nil
		Sayani Khan	SSS	800 Nos.	0	0		
		Gautam Roy (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	10 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
8	037/GCM/CR/CG/2014/24	Srinivasan K.	GCM	800 sq km	0	0	Nil	Nil
		Sanjib Bhoi	SSS	800 Nos.	0	0		
		Gautam Roy (Sup Off)	Composite	200 Nos.	0	0		
			Soil	10 Nos.	0			
			Regolith	10 Nos.	0			
			Water	10 Nos.	0			
			Humus	As Avlb	0			
			Duplicate	10 Nos.	0			
			HMS	10 Nos.	0			
			PS	10 Nos.	0			
			XRD	10 Nos.	0			
	MISSION-I	**GEOPHYSICAL MAPPING (1:50000)**						
	MI - GPM	**GEOPHYSICS DIVISION, CR, NAGPUR**						
1	039/GPM/CR/HQ/2014/25	K. N. Prasad	GPM	3500 sq km	222 sq km	6	32091/-	1070 /-
		Ravi Gorle	Samples	125 Nos.	15 Nos.	12		
		P. K. Jain				12		
		R. K. Misra (Sup Off)				0		
2	040/GPM/CR/HQ/2014/26	B. Bala Krishna	GPM	3500 sq km	0	0	Nil	Nil
		S. R. Baswani	Samples	125 Nos.	0	0		
		Anil Kumar				0		

		R. K. Misra (Sup Off)				0		
3	041/GPM/CR/HQ/2014/27	S. K. Bhattacharya	GPM	3500 sq km	0	0	Nil	Nil
		Kamleshwar Ratre	Samples	125 Nos.	0	0		
		Chandrabadan Tiwari				0		
		Jai Kamal (Sup Off)				0		
4	036/GPM/CR/HQ/2013/028	S. K. Bhattacharya	GPM	2100 sq km	510	45	79492 /-	611 /-
	Spillover	Kamleshwar Ratre	Samples	75 samples	36	47		
		Chandrabadan Tiwari				38		
		R. K. Misra (Sup Off)						
MISSION II - NATURAL RESOURCES ASSESSMENT								
	MISSION-II A	**MINERAL RESOURCES ASSESSMENT**						
	M II - A	**MAHARASHTRA (NAGPUR)**						
1	047/ME/CR/MH/2014/30	Ramanath Barik	Drilling	1000 m	0	4	6278 /-	1570 /-
		N.V. Nitnaware (Sup Off)	PT	50 cu m	0	0		
			PS	30 Nos.	1			
			PCS	15 Nos.	0			
			OM Studies	30 Nos.	1			
			PTS	50 Nos.	0			
			CS	150 Nos.	0			
			EPMA	5 Nos.	0			
			SEM-EDX	10 Nos.	0			
2	048/ME/CR/MH/2013/034	D. Bikram Khuntia	LSM	50 sq km	0	3	1500/-*	500/-
		N.V. Nitnaware (Sup Off)	PT	50 cu m	0			
			BRS	50 Nos.	3		Expenditure borrowed from officer of item no.047/ME	
			Soil	150 Nos.	0			
			PS	15 Nos.	0			
			PCS	15 Nos.	0			
			OM Studies	15 Nos.	0			
			PTS	50 Nos.	0			
			EPMA	10 Nos.	0			
			SEM-EDX	10 Nos.	0			
			XRD	10 Nos.	0			
			Isotope	5 Nos.	0			

			Fluid Inclusion Studies	5 Nos.	0			
3	049/ME/CR/MH/2014/31	Meena Gupta	LSM	100 sq km	0	3	3060/-*	510/-
		Ravichandran. D	DM	1 sq km	0	3	Expenditure borrowed from officer of item no.047/ME	
		N.V. Nitnaware (Sup Off)	PT	25 cu m	0	1		
			GP Survey	10 L km	0			
			BRS	100 Nos.	4			
			SSS	50 Nos.	4			
			PS	25 Nos.	2			
			OM Studies	15 Nos.	1			
			PTS	25 Nos.	0			
			EPMA	5 Nos.	0			
			SEM-EDX	10 Nos.	0			
			XRD	10 Nos.	0			
	GP Link : 049/ME/CR/MH/2014/31	A. V. Kulkarni	GP Survey	10 L km	0	0	Nil	Nil
		S. K. Bharti				0		
		Achman Sharma				0		
		R. K. Misra (Sup Off)				0		
4	050/ME/CR/MH/2014/32	Avik Manna	PGRS Studies	200 sq km	150	4	Nil	Nil
		N.V. Nitnaware (Sup Off)	LSM	50 sq km	0	1		
			DM	1 sq km	0			
			PT	50 cu m	0			
			BRS	50 Nos.	4			
			SSS	50 Nos.	0			
			PS	20 Nos.	4			
			OM Studies	10 Nos.	3			
			PTS	50 Nos.	0			
			EPMA	5 Nos.	0			
			SEM-EDX	5 Nos.	0			
			XRD	5 Nos.	0			
5	051/ME/CR/MH/2014/33	Arif Mohmmad	PGRS Studies	200 sq km	100	7	9766 /-	1395 /-
		N.V. Nitnaware (Sup Off)	DM	2 sq km	0	0		

			PT	25 sq km	0			
			BRS	50 Nos.	4			
			PS	15 Nos.	1			
			OM Studies	5 Nos.	0			
			PTS	25 Nos.	0			
			EPMA	5 Nos.	0			
			SEM-EDX	5 Nos.	0			
			XRD	5 Nos.	0			
	M II - A	**MAHARASHTRA (PUNE)**						
1	052/ME/CR/MH/2014/34	D. S. Jeere	PGRS Studies	720 sq km	20	0	Nil	Nil
		Banashree. K. Thakur	LSM	100 sq km	0	0		
		M. I. Treesa	DM	1 sq km	0	0		
		Bhaskar Bhusari (Sup Off)	BRS	100 Nos.	0	0		
			PS	60 Nos.	0			
			GCSS	100 Nos.	0			
			Panning	50 Nos.	0			
			PCS	10 Nos.	0			
			OM Studies	10 Nos.	0			
			EPMA	5 Nos.	0			
			SEM-EDX	10 Nos.	0			
			XRD	10 Nos.	0			
			PGE	20 Nos.	0			
	M II - A	**MADHYA PRADESH (BHOPAL)**						
1	053/ME/CR/MP/2013/030	S A Ahmad	LSM	100 sq km	3	5	38345 /- *	4793 /-
	*Expenditure includes double numbers of laboures for speed up the project work as per instruction received.	Asrar Ahmed	BRS	400 Nos.	7	2		
		H. S. Shrivastava (Sup Off)	SSS	175 Nos.	8	0		
			PS	10 Nos.	0			
			EPMA	10 Nos.	0			
			Fluid Inclusion Studies	10 Nos.	0			
2	054/ME/CR/MP/2014/35	Biswajeet Lenka	DM	1 sq km	0	8	33119 /- *	2759 /-
	*Expenditure includes double numbers of laboures for speed up the project work as per instruction received.	H. S. Shrivastava (Sup Off)	Drilling	800 m	0	4		
			PT	As Nec	0			
			GP Survey	10 L km	0			

			BRS	50 Nos.	0			
			SSS	150 Nos.	0			
			PS	20 Nos.	0			
			PCS	15 Nos.	0			
			PTS	As Nec	0			
			CS	75 Nos.	0			
	GP Link: 054/ME/CR/MP/2014/35	A. V. Kulkarni	GP Survey	10 L km	0	0	Nil	Nil
		S. K. Bharti				0		
		Achman Sharma				0		
		R. K. Misra (Sup Off)				0		
3	040/ME/CR/MP/2013/029	Biswajeet Lenka	Drilling	200 m	260.45	28	69061 /-	2466.5 /-
	Spillover	H. S. Shrivastava (Sup Off)				4		
	M II - A	**MADHYA PRADESH (JABALPUR)**						
1	055/ME/CR/MP/2014/36	Ashwani Raju	PGRS Studies	100 sq km	0	0	10065 /-	-
		Narpat Singh Solanki	LSM	100 sq km	0	0		
		Rajendra Kumar (Sup Off)	PT	As Nec	0	0		
	M II - A	**CHHATTISGARH (RAIPUR)**						
1	056/ME/CR/CG/2014/37	R. K. Martha	LSM	50 sq km	2.5	5	11900 /-	2380 /-
		D.K.Thawait (Sup Off)	DM	2 sq km	0	2		
			PT	As Nec	0			
			BRS	25 Nos.	4			
			PCS	10 Nos.	2			
			PTS	50 Nos.	0			
			SEM-EDX	5 Nos.	0			
			XRD	5 Nos.	0			
			Channel	50 Nos.	0			
2	057/ME/CR/CG/2013/031	S. M. Dewalkar	PGRS Studies	700 sq km	0	0	Nil	Nil
		N. D. Raut	Recon. Mapping	700 sq km	0	0		
		B.K.Mishra (Sup Off)	DM	5 Nos.	0	0		
			PT	As Nec	0			
			SSS	150 Nos.	0			
			PS	20 Nos.	0			

			PCS	20 Nos.	0			
			PTS	As Nec	0			
			EPMA	100 Nos.	0			
			HMS	20 Nos.	0			
3	058/ME/CR/CG/2014/38	Anita Singh	PGRS Studies	700 sq km	0	5	13338 /-	1905.43 /-
		K. Sivakumar	Recon. Mapping	700 sq km	15	2		
		B.K.Mishra (Sup Off)	PT	As Nec	0	2		
			SSS	150 Nos.	10			
			PS	20 Nos.	2			
			PCS	20 Nos.	0			
			PTS	As Nec	0			
			EPMA	100 Nos.	0			
			HMS	150 Nos.	0			
4	059/ME/CR/CG/2014/39	B. V. Thomas	LSM	100 sq km	0	0	Nil	Nil
		J. R. Punnoose T.	PT	100 sq km	0	0		
		A. P. S. Parihar (Sup Off)	BRS	25 Nos.	0	0		
			SSS	100 Nos.	0			
			PS	25 Nos.	0			
			PTS	100 Nos.	0			
			EPMA	10 Nos.	0			
5	060/ME/CR/CG/2014/40	T.P.Sahoo	LSM	100 sq km	8	14	7950 /-	567.86 /-
		D.K.Thawait (Sup Off)	DM	2 sq km	0	2		
			Drilling	500 m	0			
			PT	As Nec	0			
			BRS	50 Nos.	5			
			PCS	25 Nos.	3			
			PTS	As Nec	0			
			CS	100 Nos.	0			
6	047/ME/CR/MPCG/2010/035	Rohan Das	Drilling	500 m	381.05	35	85310 /-	2437.43 /-
		C. R. Dash				0		
MISSION II - NATURAL RESOURCES ASSESSMENT								
	MISSION-II B	**NATURAL ENERGY RESOURCES**						
1.	061/2014-	L. Khasdeo (PT) : Project-in-	D/GBL :	1300 m	154.00m	2 days	Expenditure of exploration for	

	15/ME/CR/NEnR/2013/037 **Dhorakuhi Sector**, Pench Valley Coalfield, Chhindwara District, Madhya Pradesh.	charge Sr. Geologist K. Rajbanshi (PT) Geologist Supervisory Officer: Vijay V. Mugal, Suptdg. Geologist	LSM(1:12,500) : CS : GPBHLOG : PET STUDY : CPS : Updating of CF Map (1:50000)	5 sq km 25m 650 m 3 samples 2 nos. 5 sq km	-- -- -- -- -- --	Nil 1 day	Bhurkumdana & Dhorakuhi sectors are operated from GSI Camp : Parasia	
2.	062/2014-15/ME/CR/ NEnR/2014/041 **Wadhona-Phukta Area,** Wardha Valley Coalfield, Yavatmal & Wardha districts, Maharashtra	K. Rajbanshi (PT) : Project-in-charge Geologist L. Khasdeo (PT), Sr. Geologist Supervisory Officer: Vijay V. Mugal, Suptdg. Geologist	D/GBL LSM(1:10,000) CS GP: BHLOG PET STUDY CPS Updating of CF Map (1:50000)	1300m 70 sq km 10m 650m 2 samples 2 nos 70 sq km	Yet to be commenced 11 sq km -- -- -- -- 11 sq km	7 days 4 days Nil	Rs. 40,155/-	Rs.3,650/-
3.	063/2014-15/ME/CR/ NEnR/2010/053 **Samarsingha Block ,** Mand-Raigarh Coalfield, Raigarh District, Chhattsgarh. Project : Mahanadi Valley Coalfield.	N.K.Dang : Project-in-charge Geologist A. Dey (PT) Geologist Supervisory Officer: G. C. Mukhopadhyay, Suptdg. Geologist	D/GBL LSM(1:10,000) CS GP: BHLOG PET STUDY CPS CBM Study Updating of CF Map (1:50,000)	650 m Nil 25 m Nil Nil Nil 1 borehole Nil	383.50m Nil 20.16 m 977.40m 2 samples 2 nos. Nil Nil	18 days 11 days 2 days	Rs.1,04,348/-	Rs.3,598/-
4.	064/2014-15/ME/CR/ NEnR/2014/042 **Purunga Block ,** Mand-Raigarh Coalfield, Raigarh District, Chhattsgarh. Project : Mahanadi Valley Coalfield.	N.K.Dang : Project-in-charge Geologist A. Dey (PT) Geologist Supervisory Officer: G. C. Mukhopadhyay, Suptdg. Geologist	D/GBL LSM(1:10,000) CS GP: BHLOG PET STUDY CHEM STUDY CPS CBM Study Updating of CF Map (1:50,000)	2800 m 4 sq km 100m 1300m 2 samples 3 samples 3 nos 1 borehole 4 sq km	590.80m 0.50 sq km 41.06m Nil Nil Nil Nil Nil 0.50 sq km	7 days 5 days 1 day	Expenditure for the item is carried out from the RCA of Samarsingha Block.	
5.	065/2014-15/ ME/CR/	Joseph Milton S: Project-in-	D/GBL	1130m	517.70m	14days	Rs.78,827/-	Rs.3,153/-

	NEnR/2012/051 **Amlidhonda Block,** Mand-Raigarh Coalfield, Raigarh District, Chhattsgarh. Project : Mahanadi Valley Coalfield.	charge Geologist A. Dey (PT) Geologist Supervisory Officer: G. C. Mukhopadhyay, Suptdg. Geologist	LSM(1:10,000)	Nil	Nil	11days 2 days		
			CS	75m	22.81m			
			GP: BHLOG	Nil	Nil			
			PET STUDY	Nil	Nil			
			CPS	Nil	Nil			
			CBM Study	Nil	Nil			
			Updating of CF Map (1:50,000)	Nil	Nil			
6.	066/2014-15/ ME/CR/ NEnR/2014/043 **Gare (South) Block,** Mand-Raigarh Coalfield, Raigarh District, Chhattsgarh. Project : Mahanadi Valley Coalfield.	Joseph Milton S: Project-in-charge Geologist A. Dey (PT) Geologist Supervisory Officer: G. C. Mukhopadhyay, Suptdg. Geologist	D/GBL	5200m	Nil	2 days 1day Nil	Expenditure for the item is carried out from the RCA of Amlidhonda Block.	
			LSM(1:10,000)	10 sq km	0.5 sq km			
			CS	230m	Nil			
			GP: BHLOG	1820m	Nil			
			PET STUDY	10 samples	Nil			
			CPS	10 nos.	Nil			
			CBM Study	1 borehole	Nil			
			Updating of CF Map (1:50,000)	10 sq km	0.5 sq km			
7.	067/2014-15//ME/C/ CR/NEnR/2013/039 **Pipraul Block,** Tatapani-Ramkola Coalfield, Surguja District. Project : Son Valley Coalfield (East).	S. Tirkey: Project-in-charge Geologist Md. Merajuddin Khan (PT) Geologist S.Kahali (Additional assignment) Geologist Supervisory Officer: S. Ray, Director	D/GBL	2600m	482.30m	8 days Nil 12 days Nil	Rs.93,900/-	Rs.4,695/-
			LSM(1:10,000)	4 sq km	1 sq km			
			CS	50m	Nil			
			GP: BHLOG	1500m	Nil			
			PET STUDY	2 samples	Nil			
			CPS	3 nos.	Nil			
			Updating of CF Map (1:50,000)	4 sq km	1 sq km			
8.	068/2014-15/ME/CR/ NEnR/2012/052 **Sarai (West) Block,** Singrauli Coalfield, Singrauli District, Project : Son Valley Coalfield (East).	D.R.Majhee: Project-in-charge Geologist Md. Merajuddin Khan (PT) Geologist K.C.Sahoo(Additional assignment) Geologist G. C. Mukhopadhyay, Suptdg. Geologist	D/GBL	2600m	290.45m	25 days Nil 4 days Nil	Rs.96,847/-	Rs.3,340/-
			LSM(1:10,000)	5 sq km	0.75 sq km			
			CS	20m	4.61m			
			GP: BHLOG	1500m	Nil			
			CPS	2 nos.	Nil			
			CBM Study	1 borehole	Nil			
			Updating of CF Map (1:50,000)	5 sq km	0.75 sq km			
9.	069/2014-15/ME/C/CR/ NEnR/2012/053 **Bihar Block**, Sohagpur Coalfield, Shahdol District. Project : Son Valley Coalfield (West).	K.C.Sahoo(PT): Project-in-charge Geologist A. Soni (PT), Sr. Geologist S.Kahali(PT)	D/GBL	2600m	481.60m	12 days 8 days 8 days	Rs.70,199/-	Rs.2,507/-
			LSM(1:10,000)	5 sq km	3 sq km			
			CS	80m	16.28m			
			GP: BHLOG	2100m	418.32m			
			CPS	2 nos.	2 nos.			
			Updating of CF	5 sq km	3 sq km			

		Geologist Supervisory Officer: S. Ray, Director	Map (1:50,000)			Nil		
10.	070/2014-15/ME/C/CR/ NEnR/2013/040 **Malka Block,** Sohagpur Coalfield, Shahdol District. Project : Son Valley Coalfield (West).	A. Soni (PT): Project-in-charge Sr. Geologist K.C.Sahoo(PT): Geologist S.Kahali(PT) Geologist Supervisory Officer: S. Ray, Director	D/GBL	2200m	691.25m	9 days	Rs.71,310/-	Rs.2,547/-
			LSM(1:10,000)	1 sq km	1 sq km			
			CS	30m	24.19m	11 days		
			GP: BHLOG	1800m	615.15m			
			PET STUDY	1 sample	1 sample	8 days		
			CPS	1 no.	3 nos.			
			Updating of CF Map (1:50,000)	1sq km	1 sq km	Nil		
SPILLOVER ITEMS								
1.	056/2013-14/ ME/ CR/ NEnR/2012/049 **Bhurkumdhana Sector,** Pench Valley Coalfield, Chhindwara District, Madhya Pradesh **(Spill over item : Time extended)**	L. Khasdeo (PT) : Project-in-charge Sr. Geologist K. Rajbanshi (PT) Geologist Supervisory Officer: Vijay V. Mugal, Suptdg. Geologist	D/GBL	950m	294.30m	11 days	Rs. 88,380/-	Rs.5,892/-
			LSM(1:12,500)	Nil	Nil			
			CS	33m	--	4 days		
			GP: BHLOG	935m	--			
			PET STUDY	1sample	--			
			CPS	1 no	--	2 days		
			Updating of CF Map (1:50000)	Nil	Nil			
2.	058/2013-14/ME/CR/ NEnR/2012/050 **Jhamkola Area,** Wardha Valley Coalfield, Yavatmal District, Maharashtra **(Spill over item : Time extended)**	K. Rajbanshi (PT) : Project-in-charge Geologist L. Khasdeo (PT), Sr. Geologist Supervisory Officer: Vijay V. Mugal, Suptdg. Geologist	D/GBL **(Outsourced)**	1350m	721.50m	23 days	Rs. 41,060/-	Rs.1,244/-
			LSM(1:12,500)	Nil	Nil			
			CS	20m	5.35m	10 days		
			GP: BHLOG	650m	--			
			PET STUDY	Nil	Nil			
			CPS	4 nos	5 nos	2 days		
			Updating of CF Map (1:50000)	Nil	Nil			
3.	059/2013-14/ ME/ CR/ NEnR/2013/038 **Dabhadi Sector** Wardha Valley Coalfield, Yavatmal District, Maharashtra **(Spill over item : Time extended)**	K. Rajbanshi (PT) : Project-in-charge Geologist L. Khasdeo (PT), Sr. Geologist Supervisory Officer: Vijay V. Mugal, Suptdg. Geologist	D/GBL (Outsourced)	3250m	471.00m	14 days	Rs. 22,016/-	Rs.1,048/-
			LSM(1:12,500)	2 sq km	2 sq km			
			CS	35m	6.98m	7 days		
			GP: BHLOG	1100m	--			
			PET STUDY	8 samples	2 samples			
			CPS	8 nos	2 nos	2 days		
			Updating of CF Map (1:50000)	2 sq km	2 sq km			
	MISSION-IIB	**PROJECT : GEOTHERMAL**						
1	**072/GT/CR/NEnR/2014/045**	Mukund Kumar	Inventory of hot springs of Central	Satpura-Tapi Sector –Jalgaon,	Nil	Nil	Nil	Nil

			India	Dhule & Khargon districts, Son-Narmada Valley Sector - Baheba in Mandla District and Papreri in Shahdol District				
		Bishnu Prasad Biswal	Monitoring discharge and temperature	15 hot springs	Nil	Nil	Nil	Nil
		S.D. Patbhaje, Supervisory officer	Water samples for complete water analysis	50 Nos.	Nil	Nil	Nil	Nil
			Water samples for Isotope analysis**	25 Nos.	Nil	Nil	Nil	Nil
			Gas Analysis*#	As necessary	Nil	Nil	Nil	Nil
			Rock sampling for PS & XRD study	25 Nos.	Nil	Nil	Nil	Nil
2	**073/GT/CR/NEnR/2014/046**	Bishnu Prasad Biswal	Traverse Mapping 1:25000 scale	10 L Km		**5**	**8703**	**1740.60**
		S.D. Patbhaje, Supervisory officer	Monitoring discharge and temperature	Mannargudi to Thiruthuraipundi, Vettaikaranpudur, Arantangi area, Bendruteertha, Bandaru Gadavari Basin and Mahanandi Group in Cuddapah Basin = 45 Nos.	06			
			Water samples for Complete water analysis	75 Nos	10 Nos			
			Water samples for Isotope analysis**	20 Nos	10 Nos			
			Rock sampling for PS & XRD study	20 Nos.	03 Nos			

3	**074/SER/CR/NEnR/2013/075**	Mukund Kumar	LSM (1:10000 scale)	3.0 Sq. Km	4.84 Sq. Km	**65**	**60826**	**935.78**
		P.B. Sarolkar, Chief Party Leader	Topographical Survey (1:10000 scale)	-	3.25 Sq. Km	**Nil**		
		S.D. Patbhaje, Supervisory officer	Water samples	20 Nos	28	**07**		
			Gas Analysis	As necessary	04			
			PS	-	25			
			XRD, EPMA study	-	20			
			Thermal Logging of Handpump by Geophysics Divn *	-	522m			
MISSION IV - FUNDAMENTAL & MULTIDISCIPLINARY GEOSCIENCE								
	MISSION-IV	**PETROLOGY DIVISION, CR, NAGPUR**						
1	087/RP/CR/HQ/2014/49	Vivek P. Malviya *	LSM (sq km)	15 sq km	0	0	Nil	Nil
	*Dr. Vivek Malviya - Transferred to GSI, NR, Lucknow with effect from 15.05 .2014.	Manoj Moitra (Sup Off)	Publication	As Nec	0	0		
			PS	30 Nos.	0			
			PCS	20 Nos.	0			
			SEM-EDX	As Nec	0			
			EPMA	5 Nos.	0			
			PGE	As Nec	0			
2	088/RP/CR/HQ/2014/50	Vivek P. Malviya *	LSM (sq km)	20	0	0	Nil	Nil
	*Dr. Vivek Malviya - Transferred to GSI, NR, Lucknow with effect from 15.05 .2014.	R. R. Meshram	Publication	As Nec	0	0		
		Manoj Moitra (Sup Off)	PS	25	0	0		
			PCS	20	0			
			SEM-EDX	As Nec	0			
			EPMA	As Nec	0			
			PGE	As Nec	0			

	MISSION-IV	**PALAEONTOLOGY DIVISION, CR, NAGPUR**						
1	094/RP/CR/HQ/2014/51	Arun Bhadran	Lithologging of cores & generation of samples	100 m	45	6	7949 /-	1324.83 /-
		Savita N. Chaurpagar	Publication	As Nec	0	0		
		Varsha A. Aglawe (Sup Off)	Palynological study	40 Nos.	15	0		
			Clay Mineralogy	20 Nos.	7			
			SEM study of palynomorphs	As Nec	0			
	MISSION-IV	**ENGINEERING GEOLOGY DIVISION, CR, NAGPUR**						
1	098/EG/C/CR/HQ/2014/52	M. V. Dhakate *				1		
	* Transferred to Guwahati	R. H. Chavan				22		
	** Superannuated on 30.04.2014	D. Chakraborty #				3		
	$ Joined EG Division, GSI-CR, Nagpur as Supervisory Officer on 01-05-2014.	N. V. Venkataraman (Sup Off) **				0		
	# Joined EG Division, GSI-CR upon transfer from GSI-NER on 12-05-2014.	V. V. Sakhare (Sup Off) $				9		
	MISSION-IV	**ENGINEERING GEOLOGY DIVISION, PUNE**						
1	099/EG/C/CR/MH/2014/53	V. V. Sakhare *				4		
	* Transferred to CR, Nagpur	M. M. Powar (Sup Off)				0		
	MISSION-IV	**ENGINEERING GEOLOGY DIVISION, BHOPAL**						
1	100/EG/C/CR/MP/2014/54	Ramanand Kumar				18		
		Arun Kumar				10		
		M. C. Upadhyay (Sup Off)				4		
	MISSION-IV	**PROJECT : LANDSLIDE**						
1	102/LHZ/CR/MH/2013/053	Atul Kohli				2	4230 /-	1057.5 /-
		Ashish Bhandari				2		
		C. D. Singh (Sup Off)				2		

2	103/LHZ/CR/MH/2013/052	Atul Kohli				5	13656 /-	1241.45 /-
		Ashish Bhandari				6		
		S. Mhatre (Surveyor)				6		
		C. D. Singh (Sup Off)				6		
3	104/SER/CR/MH/2014/22	Atul Kohli *				11	1000 /-	250 /-
	* Days including training of 9 days in May-14	Ashish Bhandari *				11		
		C. D. Singh (Sup Off)				0		
	MISSION-IV	**DIVISION : EARTHQUAKE GEOLOGY, CR, NAGPUR**						
1	105/SEI/CR/HQ/2014/55	Mukesh Verma				0		
	* Superannuated on 30.04.2014	Jeyabal S.				0		
	$ Joined EQG Division, GSI-CR, Nagpur as Supervisory Officer	N. V. Venkataraman (Sup Off) *				0		
		V. V. Sakhare (Sup Off) $				0		
2	106/SER/CR/HQ/2014/23	Mukesh Verma				0		
	* Superannuated on 30.04.2014	Jeyabal S.				0		
	$ Joined EQG Division, GSI-CR, Nagpur as Supervisory Officer	N. V. Venkataraman (Sup Off) *				0		
		V. V. Sakhare (Sup Off) $				0		
	MISSION-IV	**DIVISION : GEOPHYSICS, CR, NAGPUR**						
1	GP Link : 105/SEI/CR/HQ/2014/55	A. K. Pahwa				0		
	* Left Charge	D. Livinston				0		
		S. P. Chaube				0		
		R. K. Misra (Sup Off) *				0		
		Jai Kamal (Sup Off)				0		
2	GP Link : 106/SER/CR/HQ/2014/23	A. K. Pahwa				0		
	* Left Charge	D. Livinston				0		
		S. P. Chaube				0		
		R. K. Misra (Sup Off) *				0		
		Jai Kamal (Sup Off)				0		

	MISSION-IV	**DIVISION : GEOPHYSICS, BBSO, NAGPUR**						
1	107/SER/CR/HQ/2014/24	D. Livinston				0		
	* Left Charge	S. P. Chaube				0		
		S. D. Marathe				0		
		R. K. Misra (Sup Off) *				0		
		Jai Kamal (Sup Off)				0		
S & T SUPPORT SYSTEM								
	STSS	**PROJECT : GEOPHYSICAL BOREHOLE LOGGING, GEOPHYSICS DIVISION, CR, NAGPUR**						
1	130/SER/CR/NEnR/2014/34	L. K. Khatri	BH Logged	As Req	16 Nos.	14	76778 /-	1872 /-
	* Transferred to SR	R. K. Gedam	BHlog Metreage	-	2502.67 m	11		
		P. N. Wahurwagh				13		
		R. V. Meshram				3		
		S. K. Bhattacharya				0		
		C. B. K. Sastry *				0		
		Jai Kamal				0		
INTERNATIONAL GEOLOGICAL CONGRESS - 2020 (IGC - 2020)								
1	138/RP/IGC/CR/2014/68	Seema Dash	Database Creation	Western Deccan Lava Pile	Databse from 12 reports & 2 publications	13	Nil	Nil
		Trina Vyas	Section Measurements	As Nec		12		
		Bhaskar Bhusari	PS	50	0	1		
			PCS	20	0			
			REE	10	0			
			EPMA	10	0			
					0			
2	139/RP/IGC/CR/2014/69	Poushali Chatterjee *	Literature Collection	-	47J/4, 8, 12, 16	13		
	* Included 9 days of Training in April-14	Paramita Paul *	PGRS Study	-	-	14		
		Bibhas Sen (Sup Off) *	Thematic Mapping	200 sq km	0	13		
			PS	50				
			PCS	20				
			REE	10				
			EPMA	10				
3	140/RP/IGC/CR/2014/70	R. G. Khangar	Traverse	50 L km	10	5	9125 /-	1140.63 /-

		L. Khasdeo	Grain size analysis	30 Nos.	0	3		
		Rashmi Rekha Naik	Petrological studies	30 Nos.	4	0		
		Savita N. Chaurpagar	Palynological studies	30 Nos.	11	0		
		V. V. Mugal (Sup Off)	Clay mineralogical Studies	30 Nos.	11	3		
			Carbon, Nitrogen & Phosphorous analysis	15 Nos.	3			
			Trace element and REE	10 Nos.	2			
			SEM Study of Palynomorphs & microfossils	As Nec	0			

Annexure – 5

PROGRESS & PENDENCY REPORT OF CHEMICAL ANALYSES OF NGCM SAMPLES (as on 30.06.2014)

Item	Particular									
Machine Capacity In the Region [no of samples] per month	*Pkg.A*	*Pkg.B*	*Pkg.C*	*Pkg.D*	*Pkg.E*	*Pkg.F*	*Pkg.G*	*Pkg.H*	*Pkg.I*	*Pkg.J*
	400	200	800	150	250	200	600	600	-	300
Capability to analyze in the Region [no of samples] per month	*Pkg.A*	*Pkg.B*	*Pkg.C*	*Pkg.D*	*Pkg.E*	*Pkg.F*	*Pkg.G*	*Pkg.H*	*Pkg.I*	*Pkg.J*
	200	200	100	150	250	200	600	600	-	300

Details of sample Analysis of Field Season **2012-13**	Month	Apr2012	May12	Jun12	Jul12	Aug12	Sep12	Oct12	Nov12	Dec12	Jan2013	Feb13	Mar13	Total
	Collected													
	Submitted to lab.	**0**	**15**	**51**	**0**	**49**	**6**	**25**	**242**	**445**	**914**	**296**	**1515**	**3558**
	Analyses Reported [up to the month of:-] [For Field Season 2012-13]													
	Pkg.A	Nil	Nil	Nil	Nil	Nil	Nil	Nil	121	94	132	162	387	896
	Pkg.B	Nil	Nil	Nil	Nil	Nil	Nil	Nil	100	Nil	450	428	415	1393
	Pkg.C	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	121	121	133	160	535
	Pkg.D	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	121	383	306	407	1217
	Pkg.E	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	121	Nil	404	247	772
	Pkg.F	Nil	Nil	Nil	Nil	Nil	Nil	Nil	45	30	272	286	268	901
	Pkg.G	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	464	504	219	1187
	Pkg.H	Nil	Nil	Nil	Nil	Nil	80	35	6	94	294	213	465	1187
	Pkg.I	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Pendency [up to the end of the month:-] [For Field Season 2012-13]													
	Pkg.A	Nil	15	66	66	115	121	146	267	618	1400	1534	2662	
	Pkg.B	Nil	15	66	66	115	121	146	288	733	1197	1065	2165	
	Pkg.C	Nil	15	66	66	115	121	146	388	712	1505	1668	3023	
	Pkg.D	Nil	15	66	66	115	121	146	388	712	1243	1233	2341	
	Pkg.E	Nil	15	66	66	115	121	146	388	712	1626	1518	2786	
	Pkg.F	Nil	15	66	66	115	121	146	343	758	1400	1410	2657	
	Pkg.G	Nil	15	66	66	115	121	146	388	833	1283	1075	2371	
	Pkg.H	Nil	15	66	66	115	41	31	267	618	1238	1321	2371	
	Pkg.I	Nil	15	66	66	115	121	146	388	833	1747	2043	3558	

Details of sample Analysis of Field Season **2012-13**	Month	Apr2013	May13	Jun13	Jul13	Aug13	Sep13	Oct-13	Nov-13	Dec-13	Total
	Collected										
	Submitted to lab.	**269**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3827**
				Analyses Reported [up to the month of:-December] [For Field Season 2012-13]							
	Pkg.A	339	193	Nil	781	554	853	211	Nil	Nil	**3827**
	Pkg.B	451	379	453	453	436	262	Nil	Nil	Nil	**3827**
	Pkg.C	152	320	515	497	492	671	356	239	50	**3827**
	Pkg.D	210	272	374	375	505	427	398	49	0	**3827**
	Pkg.E	489*	603*	402*	105	279	773*	326	78	0	**3827**
	Pkg.F	176	86	321	724	273	619	700	27	0	**3827**
	Pkg.G	Nil	400	413	500	514	521	292	Nil	Nil	**3827**
	Pkg.H	531	262	490	502	535	320	Nil	Nil	Nil	**3827**
	Pkg.I	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	**Nil**
				Pendency [up to the end of the month:- December] [For Field Season 2012-13]							
	Pkg.A	2592	2399	2399	1618	1064	211	Nil	Nil	Nil	**Nil**
	Pkg.B	1983	1604	1151	698	262	Nil	Nil	Nil	Nil	**Nil**
	Pkg.C	3140	2820	2305	1808	1316	645	289	50	Nil	**Nil**
	Pkg.D	2400	2128	1754	1379	874	447	49	Nil	Nil	**Nil**
	Pkg.E	2566	1963	1561	1456	1177	404	78	Nil	Nil	**Nil**

	Pkg.F	2750	2664	2343	1619	1346	727	27	Nil	Nil	**Nil**
	Pkg.G	2640	2240	1827	1327	813	292	Nil	Nil	Nil	**Nil**
	Pkg.H	2109	1847	1357	855	320	Nil	Nil	Nil	Nil	**Nil**
	Pkg.I	3827	3827	3827	3827	3827	3827	3827	3827	3827	**3827**

Details of sample Analysis of Field Season **2013-14**	Month	Apr2013	May13	Jun13	Jul13	Aug13	Sep13	Oct13	Nov13	Dec13	Jan14	Feb14	Mar14	Total
	Collected													
	Submitted to lab.	**0**	**0**	**188**	**44**	**14**	**0**	**79**	**12**	**450**	**639**	**894**	**1681**	**4001**
		Analyses Reported [up to the month of:- MARCH,2014] [For Season 2013-14]												
	Pkg.A	Nil	Nil	Nil	Nil	Nil	Nil	Nil	126	Nil	120	448*	252	**946**
	Pkg.B	Nil	Nil	Nil	Nil	Nil	Nil	246	79	Nil	37	345	433	**1140**
	Pkg.C	Nil	Nil	Nil	Nil	Nil	Nil	Nil	325	Nil	170	152	250	**897**
	Pkg.D	Nil	Nil	Nil	Nil	Nil	Nil	Nil	213	Nil	239	353	98	**903**
	Pkg.E	Nil	Nil	Nil	Nil	Nil	Nil	Nil	246	Nil	0	567*	307	**1120**
	Pkg.F	Nil	Nil	Nil	Nil	Nil	Nil	Nil	247	54	154	248	305	**1008**
	Pkg.G	Nil	Nil	Nil	Nil	Nil	Nil	223	102	Nil	219	103	407	**1054**
	Pkg.H	Nil	Nil	Nil	Nil	Nil	Nil	Nil	325	Nil	210	242	0	**777**
	Pkg.I	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0	0	0	**0**
	Pkg.J	Nil	Nil	Nil	Nil	Nil	Nil	Nil	325	Nil	170	152	0	**647**
		Pendency [up to the end of the month:- MARCH,2014] [For Field Season 2013-14]												
	Pkg.A	Nil	Nil	188	232	246	246	325	211	661	1180	1626	3055	**3055**
	Pkg.B	Nil	Nil	188	232	246	246	79	12	462	1064	1613	2861	**2861**
	Pkg.C	Nil	Nil	188	232	246	246	325	12	462	931	1673	3104	**3104**
	Pkg.D	Nil	Nil	188	232	246	246	325	124	574	974	1515	3098	**3098**
	Pkg.E	Nil	Nil	188	232	246	246	325	91	541	1180	1507	2881	**2881**
	Pkg.F	Nil	Nil	188	232	246	246	325	90	486	971	1617	2993	**2993**
	Pkg.G	Nil	Nil	188	232	246	246	102	12	462	882	1673	2947	**2947**
	Pkg.H	Nil	Nil	188	232	246	246	325	12	462	891	1543	3224	**3224**
	Pkg.I	Nil	Nil	188	232	246	246	325	337	787	1426	2320	4001	**4001**
	Pkg.J	Nil	Nil	188	232	246	246	325	12	462	931	1673	3354	**3354**

Details of sample Analysis of Field Season **2013-14**	Month	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Total
	Collected													
	Submitted to lab.	**853**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4854**
		Analyses Reported [up to the month of:- JUNE,2014] [For Season 2013-14]												
	Pkg.A	68	577*	Nil										**1591**
	Pkg.B	323	83	113										**1659**
	Pkg.C	257	231	242										**1627**
	Pkg.D	296	328	362										**1889**
	Pkg.E	291	229	82										**1722**
	Pkg.F	312	308	689*										**2317**
	Pkg.G	313	504	502										**2373**
	Pkg.H	577	237	727										**2318**
	Pkg.I	Nil	Nil	Nil										**0**
	Pkg.J	507	231	242										**1627**
		Pendency [up to the end of the month:- JUNE,2014] [For Field Season 2013-14]												
	Pkg.A	3840	3263	**3263**										**3263**
	Pkg.B	3391	3308	**3195**										**3195**
	Pkg.C	3700	3469	**3227**										**3227**
	Pkg.D	3655	3327	**2965**										**2965**
	Pkg.E	3443	3214	**3132**										**3132**
	Pkg.F	3534	3226	**2537**										**2537**
	Pkg.G	3487	2983	**2481**										**2481**
	Pkg.H	3500	3263	**2536**										**2536**
	Pkg.I	4854	4854	**4854**										**4854**
	Pkg.J	3700	3469	**3227**										**3227**

Note: ***The chemical analysis of packages-A & H were completed by August, packages-B to G were complete by December, 2013 for FSP-2012-13***

#Analytical results of all Non-NGCM samples except 300 samples under FSP: 2013-14 were communicated to respective Project Directors.

**Partly in house and partly through outside Region Laboratories of G.S.I.*

1. ICP-MS is also utilized for the analysis of Non-NGCM project samples for REE and trace elements in NGCM water samples.

2. XRF is also utilized for the analysis of Non-NGCM project samples for Whole rock analysis and trace elements.

3. 200 NGCM samples of SRO, Hyderabad were analyzed for Package-"A" with approval of HoD, GSI, CR, Nagpur on priority in the month of October, 2013.

4. 737 &342 NGCM samples of SRO, Hyderabad were analyzed for Package-"D" and Package-"E" respectively with directives of DDG (Chem.), CCL, GSI, Kolkata on priority in the month of November& December, 2013.

5. 30 NGCM samples were analyzed for Package-"A" in the month of Feb, 2014& for Package-"H" in the month of April, 2014 under round robin test for internal quality check with directives of DDG (Chem.), CCL, GSI, Kolkata on priority.

6. 502 NGCM samples of WRO, Jaipur were analyzed for Package-"D" with directives of DDG (Chem.),CCL, GSI, Kolkata on priority in the month of March & April, 2014.

Annexure – 6

PENDING PROGRESS REPORT
(Status from 1st April 2014 to 30th June 2014)

DATA UNIVERSE ON REGION WISE STATUS OF PENDING PROGRESS REPORTS

Month	April- 2013 to June-2013	July-2013 to Sept.-2013	October-2013 to Dec.-2013	Jan-2014 to March-2014	April-2014	May-2014	June-2014	Total
No. of Reports Released	**2**	**47**	**16**	**01**	**01**	**---**	**---**	**67**

Data Universe on Region Wise-Mission wise Status of Pending Progress Reports

REGION	**MISSION-I**						**MISSION-II**		**MISSION-III**	**MISSION-IV**		**TOTAL NO. OF PROGRESS REPORTS PENDING**
	GM	**STM**	**GCM**	**GPM**	**AS / RS**	**MCS**	**MI**	**M-II B**		**MULTI-DISP**	**FUNDA-MENTAL (R&D)**	
Central Region	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	M-I: Nil						***M-II: Nil***		***M-III: Nil***	***M-IV: Nil***		

List of Circulated Reports for FS 2012-13

Sl.No.	Item No.	FS	Title of The Report	Authors
1	003/STM/CR/MP/2012/001	2012-13	Specialised Thematic Mapping of Bundelkhand Gneissic Complex and Associated Rocks in Dabra-Hinotia-Sitapur area, in Parts of Datia, Gwalior and Shivpuri Districts, Madhya Pradesh.	M.K. Rajak, V.K. Suman
2	004/STM/CR/MPCG/2012/002	2012-13	Specialized Thematic Mapping of Deccan Trap Complex and associated Rocks in Anandpur-Lateri-Tajpura area in Parts of Guna and Vidisha Districts, Madhya Pradesh.	Sharwan Ram, K.L. Tank
3	005/STM/CR/MP/2012/003	2012-13	Specialised Thematic Mapping of Vindhyan Supergroups of Rocks and Deccan Trap Basalt in Parts of Bhopal and Sehore Districts, Madhya Pradesh.	S.K. Bhardwaj, Arun Kumar
4	006/STM/CR/MP/2012/004	2012-13	A report on specialized Thematic Mapping of Proterozoic Rocks and Gondwana Supergroup Rocks in Salaiya-Ranipur area, Betul District, Madhya Pradesh.	Garvesh Raj, Md. Atif Raza, S.S. Chouhan, Parwez Akhter
5	007/STM/CR/MP/2012/005	2012-13	*Report on Specialised Thematic Mapping in Unclassified Mahakoshal and Older Granite Gneiss in Magardha-Semariya-Barambaba area, Satna, Sidhi and Shahdol Districts, Madhya Pradesh.* *(Parts of TS No.63H/7, 8, 11, 12 & 15)*	Utkarsh Tripathi, Yuvraj M., Ravisankar D., *M. K. Gupta*
6	008/STM/CR/MP/2012/006	2012-13	A Report on Specialized Thematic Mapping in Bijawar Group of Rocks and Bundelkhand Granite /Gneisses in Sendhapa-Dharampura-Bajno-Kawar area, Chhatarpur and Sagar Districts, Madhya Pradesh. (Parts of T.S. No. 54P/6, 7, 10 & 14)	Jayapal S., Suresh Kumar, Ashwani Raju M.T. Ansari,
7	009/STM/CR/CG/2012/007	2012-13	Specialised Thematic Mapping In Mangikhuta-Karutola-Morkutum-Chichola Belt, Rajnandgaon District, Chhattisgarh. (Part of T.S. No. 64C/08 & 12)	R K Martha, Bimal Ray, Sooraj S., S. Chatterjee
8	010/STM/CR/CG/2012/008	2012-13	Report on Specialized Thematic Mapping in Bilaspur-Raigarh-Surguja Metamorphic Belt in Bohla-Hariharpur-Sewadih area, Surguja District, Chhattisgarh. (In Parts of T.S. No. 64M/9)	Dr. K Nagaraju, Nandu Khalkho, Rohan Das
9	011/STM/CR/CG/2012/009	2012-13	A Report on Specialized Thematic Mapping in Chilpi-Ranidahra-Palak area in Kawardha (Kabirdham) District, Chhattisgarh. (In Parts of T.S. No. 64F/4)	T.P. Sahoo, K.C. Dass
10	012/STM/CR/MH/2012/010	2012-13	Report on Thematic Mapping of Archaean Gneiss Terrain, Western Bastar Craton in Chimur Neri Nawargoan area, Chandrapur District, Maharashtra.	Rajkumar M., Jeevarathinam K, Kashif Iqbal, Pitambar Pati
11	013/STM/CR/MH/2012/011	2012-13	Thematic Mapping of Archaean Gneiss Terrain, Western Bastar Craton in Mundipar and Kalimati area, Gondia District, Maharashtra.	Tapan Moharana, S.P. Ojha, Ritesh Kumar, Kamalakannan D.
12	014/STM/CR/MH/2012/012	2012-13	Final report on Thematic Mapping of Archaean Gneiss Terrain, Western Bastar Craton in Bhisi and Nagbhid	Dr. Sanjoy Ganguly, Dr. Paramita Paul, Atri Roychowdhury,

			area, Chandrapur and Bhandara District, Maharashtra.	Neelendra Kumar
13	016/GCM/CR/MP/2012/014	2012-13	An Interim Report on Geochemical Mapping in Toposheet No. 55J/8 in Parts of Betul & Chhindwara Districts, Madhya Pradesh.	Chhaya Minz, Shradha Shukla
14	017/GCM/CR/MP/2012/015	2012-13	An Interim Report on Geochemical Mapping in Parts of Chhindwara District, Madhya Pradesh. (Toposheet No. 55J/12)	R.K. Ghadei, Sandeep Kumar
15	018/GCM/CR/MP/2012/016	2012-13	Interim Report on Geochemical Mapping in Toposheet No. 55J/16 in Parts of Chhindwara District, Madhya Pradesh.	Dr. Pradeepkumar T., Asrar Ahmad A.,
16	019/GCM/CR/MP/2012/017	2012-13	Interim Report on Geochemical Mapping in Toposheet No. 55K/9 in Parts of Betul and Chhindwara Districts, Madhya Pradesh.	V.S.S.A Naidu Badireddi, Sunil Rawat
17	020/GCM/CR/MP/2012/018	2012-13	Interim Report on Geochemical Mapping in Toposheet No. 54P/1 and 54P/2 in Parts of Tikamgarh and Chhatarpur Districts, Madhya Pradesh.	Rimjhim Singh, R. Chanagoni, Vikash Chandra, Deepu T.R.
18	21/GCM/CR/CG/2012/019	2012-13	Interim Report on Geochemical Mapping in Sonakhan Granite Greenstone Belt, Raipur & Mahasamund Districts, Chhattisgarh. (Toposheet Nos. 64K/2 & 4)	Vivek V. Kumar, B.C. Pattanayak, R.B. Jalem
19	023/GCM/CR/CG/2012/021	2012-13	**Interim Report on Geochemical Mapping in Bastar Craton and Chhattisgarh Basin, Raipur District (Presently Dhamtari and Gariabandh Districts), Chhattisgarh.** **(T.S. No. 64L/3)**	B. V. Thomas, **J.R. Poonnose T.**
20	024/GCM/CR/MH/2012/022	2012-13	Geochemical Mapping in Toposheet No. 55O/02 in parts of Nagpur District, Maharashtra. (Interim Report)	Jidesh P.C. Jeyabal S.
21	025/GCM/CR/MH/2012/023	2012-13	Geochemical Mapping in Toposheet No. 55O/3 in parts of Nagpur District, Maharashtra.	Rini Sasidharan, Monika Mishra
22	026/GCM/CR/MH/2012/024	2012-13	Geochemical Mapping in Toposheet No. 55O/15 in Parts of Gondia District, Maharashtra.	Dr. Mukesh Verma, Ramesh Guguloth
23	028/GCM/CR/MH/2012/026	2012-13	Geochemical Mapping in Toposheet No. 55P/6 in parts of Chandrapur District, Maharashtra. (Interim Report)	Ramprasad R., S.K. Dave
24	031/GCM/CR/MH/2012/028	2012-13	Interim Report on Geochemical Mapping of Toposheet No. 47H/11, Sindhudurg District, Maharashtra.	Poushali Chatterjee, Seema Dash, B.K. Thakur
25	032/GCM/CR/MH/2012/029	2012-13	Interim Report on Geochemical Mapping of Toposheet No. 46K/03 Nandurbar District, Maharashtra and Surat District, Gujarat.	Vishnu C.S., K.M. Gadpayle
26	034/GPM/CR/HQ/2012/030	2012-13	A Report on Geophysical Mapping in Parts of Degree Sheet 55K and 55O. (Toposheet Nos. 55K/13, 14, 15 & 55O/2)	Mehdi Hasan, Ravi Gorle, Anil Kumar
27	035/GPM/CR/HQ/2012/031	2012-13	Report on Geophysical Mapping in Parts of Degree Sheet 55O. (Toposheet Nos. 55O/3, 6, 7 & 8)	V. N. Singh, S. K. Bharati,

				C. B. Tiwari
28	036/GPM/CR/HQ/2012/032	2012-13	A Report on Geophysical Mapping in Part of Degree Sheet 56I. (Part of T.S. No. 56I/13)	Dr. R.K. Gedam, Vinoda N.K., Dr. S.K. Bhattacharyya
29	038/ PRS/CR/MH/2012/033	2012-13	Report on Application of Hyper Spectral Remote Sensing for Generation of Spectral Library in Parts of Sakoli Belt, Bhandara District, Maharashtra.	U.K. Ghosh, M.P. Kesari
30	041/ME/CR/GR/MP/2012/034	2012-13	Investigation For Graphite in Tikari, Gauthana, Chiklar and surrounding areas, Betul District, Madhya Pradesh. (G-4 Stage)	B. Lenka, S.A. Ahmad
31	042/ME/FERT/CR/MP/2012/ 035	2012-13	Prospecting For Phosphorite Mineralization in Western part of Harda inlier by delineation of Phosphorite bands in parts of Modri, Sadkhera and surrounding area, Khargone District, Madhya Pradesh. (G-4 Stage)	Dr. R.K. Sharma, Balaji B.
32	044/ME/FERT/CR/ MP/2012/037	2012-13	A Report on Detailed Prospecting of Phosphorite in Tauro and Surajpura Blocks, Sagar and Chhatarpur Districts, Madhya Pradesh. (G-3 Stage)	Prabhakar Lakra, R. Balamurali
33	046/ME/PM/CR/MPCG/2012/ 039	2012-13	Re-appraisal for PGE in Mayurnacha-Konpara-Jamjhor and Madhuban areas of Jashpur district, Chhattisgarh. (G-4 Stage)	S.R. Mohanty K. Sivakumar M.L. Yadav
34	047/ME/PM/CR/CG/2012/040	2012-13	Report on "Preliminary Investigation for PGE and Ni in Chandranagar-Lohardadar areas, Raipur District, Chhattisgarh. (Stage G-4)" (T.S. No. 64K/14)	Navneet Raut, Dr. Seema Dewalkar
35	051/ME/SM/CR/MH/2012/04 3	2012-13	Report on Investigation for Molybdenum and associated Mineralization in Khobna area, Sakoli Fold Belt, Nagpur District, Maharashtra. (Stage G-4)	Gargi Chakraborti Priyanka Chatterjee,
36	052/ME/PS/CR/MH/2012/044	2012-13	Search for Kimberlite Clan Rocks based on Diamond Indicator Minerals in Tirodi and Amgoan Gneiss, Nagpur and Bhandara Districts, Maharashtra. (Stage G-4)	Ratnakar Bhaishal, Dr. V. Kumaravel
37	053/ME/CR/MH/2012/045	2012-13	Investigation for Noble and associated Metals in the Funnel Facies of Acid Volcanic Vents located in Gothangaon-Goharli area, Sakoli Fold Belt, Nagpur District, Maharashtra. (Stage– G4)	Ramanath Barik, Madhusudan D.G., Dr. R.K. Gedam, Vinoda N.K. Dr. S.K. Bhattacharyya,
38	054/ME/CR/ MH/2012/046	2012-13	Report on Regional Assessment For REE & RM in the Pegmatite Bodies in Sausar Mobile Belt, Nagpur District, Maharashtra. (Stage- G4)	Meena Gupta, Avik Manna, Dr. M. Sharif, Dr. R. Meshram
39	062/ME/CR/NEnR/2010/006	2010-12 & 2012-13	Final Report on Regional Exploration for Coal in Teram block, Mand-Raigarh coalfield, Raigarh District, Chhattisgarh.	J.K. Naik S. Ray, Joseph Milton S.
40	MIE/CW/CW/2009/013	2009-10 to 2012-13	Final Report on Regional Exploration for Coal in Pachri Block, Sohagpur Coalfield, Shahdol District, Madhya Pradesh.	S. Kabiraj, Manju S., A. Biswas
41	086/RP/CR/HQ/2012/056	2012-13	A Report on Clay Mineralogical, Geochemical and Environmental Magnetic study of Quaternary Fluvial Sequence in Eastern parts of Narmada Basin, Madhya	Dr. V. P. Malviya, H.Y. Bhai

			Pradesh. (Linked with IGCP-582)	
42	088/RP/CR/HQ/2012/057	2012-13	A Report on Palynofacies and Lithofacies of Coal bearing Gondwana sequence of Wardha valley for Stratigraphic Correlation and inferences on Environment of deposition.	Vijay V. Mugal, Arun Bhadran
43	095/LHZ/CR/MH/2012/061	2012-13	Report on Landslide Hazard Macrozonation in Parts of Ratnagiri District. (TS No. 47H/5)	C.D. Singh A. Kohli

EG Geotechnical Investigation Reports
Circulated Reports for FS 2012-13

Sl.No.	Title of the Report	Authors
1	Report on Geotechnical Investigation of the Proposed Super Thermal Project, near Selda-Dalchi village, Khargone District, Madhya Pradesh. (NTPC Sponsored Project) FSP Code: 091/EG/C/CR/HQ/2012/058	Vishal V. Sakhare, R.H. Chavan
2	Progress Report on Mapping of COT from RD 1755 m to RD 2315 m Talamba Major Irrigation Project, Kudal Taluka, Sindhudurg District, Maharashtra. FSP No. **094**/EG/C/CR/MH/2012/060	V.V. Sakhare
3	Post Disaster Reconnaissance of Slope failures / Landslides in response to media reports / Call from Sindhudurg District Administration. FSP Item No. **096**/SER/CR/MH/2012/026	A. Kohli, C.D. Singh
4	Report on Geotechnical investigation of Kochi Barrage Project, Nagpur district, Maharashtra. FSP No. 091/EG/C/CR/HQ/2012/058	R.H. Chavan
5	Preliminary Report on Geotechnical Investigation of Mohgaon Medium Tank Project, District Chhindwara, Madhya Pradesh. FSP No. 091/EG/C/CR/HQ/2012/058	R.H. Chavan
6	Geotechnical Investigation of Samoda Barrage Project, Raipur District, Chhattisgarh. FSP Item no 091/EG/C/CR/HQ/2012/058	P.P. Kalpande
7	Geotechnical Investigation of Sheorinarayan Barrage, Janjgir-Champa District, Chhattisgarh. FSP Item no 091/EG/C/CR/HQ/2012/058	P.P. Kalpande
8	A Note on Geotechnical Investigation of Reported Unusual Sounds and Tremors at Dungariya, Rabadiya, Jamgod and Khatamba Villages of Dewas District, Madhya Pradesh.	Ramanand Kumar, V.S. Choudhury
9	Progress Report on Construction Stage Geotechnical Investigation of Bilgaon Medium Tank Project, Dist. Dindori, Madhya Pradesh.	V. S. Choudhary
10	Third Progress Report on Construction Stage Geotechnical Investigation of Singhpur Barrage Project, Dist. Chhatarpur, M.P.	V. S. Choudhary, Ramanand Kumar, V.S. Choudhury
11	Progress Report on Construction Stage Geotechnical Investigation of Mahuar Medium Tank Project, Dist. Shivpuri, Madhya Pradesh.	R.L. Sahu, Ramanand Kumar, V. S. Choudhary,
12	Third Progress Report on Pre-Construction Stage Geotechnical Investigation of Upper Betwa Projects under the Ken-Betwa Link Scheme (Phase-II) in Raisen, Vidisha, Sagar, Ashoknagar and Shivpuri Districts, Madhya Pradesh.	S.K. Gogia, V. S. Choudhary
13	Progress Report on Construction Stage Geotechnical Investigation of Keetkhedi Medium Tank Project, Dist Shajapur, M.P.	J. M. Gautam
14	Second Progress Report on Construction Stage Geotechnical Investigation of Semri Medium Tank Project, Dist. Raisen, M.P.	Ramanand Kumar, V.S. Choudhury
15	First Progress Report on Pre-Construction Stage Geotechnical Investigation of Sonera Khamkheda Project, District Ashoknagar, M.P.	Ramanand Kumar
16	First Progress Report on Pre-Construction Stage Geotechnical Investigation of	Ramanand Kumar

	Panchamnagar Project Complex, District Sagar, M.P.	
17	First Progress Report on Feasibility Stage Geotechnical Investigation of Five Irrigation Projects Proposed in Panna District, M.P.	R.L. Sahu, Ramanand Kumar
18	Progress Report on Construction Stage Geotechnical Investigation of Upper Kaketo Project, Dist. Shivpuri, Madhya Pradesh.	Ramanand Kumar
19	Second Progress Report on Construction Stage Geotechnical Investigation of Sonpur Project Complex, Dist Sagar, Madhya Pradesh.	Ramanand Kumar
20	Construction stage Geotechnical Investigation of Mandhan Nala Project, Chhindwara District, Madhya Pradesh.	M.V. Dhakate, P.P. Kalpande
21	**Second Report on Construction stage Geotechnical Investigation of Khindsi Feeder Canal Project, Nagpur District, Maharashtra.** Code No. 058/EG/C/CR/HQ/2012/091	M.V. Dhakate, P.P. Kalpande R.H. Chavan
22	Construction stage Geotechnical Investigation of Pench Diversion Scheme, Chhindwara District, Madhya Pradesh. **Code No. 058/EG/C/CR/HQ/2012/091**	M.V. Dhakate, P.P. Kalpande
23	A report on geotechnical investigations of the additional fuel storage and associated structure, Bhaba Atomic research center project, Tarapur, district Thane, Maharashtra. Item no. 091/EG/C/CR/HQ/2013/049.	R.H. Chavhan Jeyabal S.

Reports Circulated in Month of April 2014

Sl. No.	Title of the Report	Authors	Date of Circulation
1	Regional Exploration for Coal in Maiki (North) Block, Sohagpur Coalfield, Shahdol District, Madhya Pradesh. (Stage G-2) FSP Item No. 066/ME/C/CR/NEnR/2010/010	A. Soni, S. Datta,	30.04.2014

Annexure - 7

CASE STUDIES UPLOADED IN GSI PORTAL

STATE UNIT: MADHYA PRADESH

MISSION- II		
1.	CASE STUDY OF MUARIYA ZN-PB-CU DEPOSIT, BETUL DISTRICT, MADHYA PRADESH	H.S. SHRIVASTAVA & M.N. PRAVEEN
MISSION- 1V (Multidisciplinary)		
2.	KEN-BETWA LINK PROJECT – A CASE STUDY	R.L. SAHU
3.	INDIRA SAGAR PROJECT, KHANDWA DISTRICT, MADHYA PRADESH	R.L. SAHU
4.	PENCH DIVERSION PROJECT, CHHINDWARA DISTRICT, MADHYA PRADESH, A CASE STUDY	M.P. SRIVASTAVA, GAUTAM SAHA & M.V. DHAKATE,
5.	CONSERVATION OF MALA DEVI JAIN TEMPLE AT GYRASPUR	PROJ: ASI, CR, NAGPUR
6.	CONSERVATION OF JAIN MONUMENTS AROUND GWALIOR FORT	PROJ: ASI, CR, NAGPUR
7.	CONSERVATION OF BHIMBETKA ROCK SHELTERS, RAISEN DISTRICT, MADHYA PRADESH	PROJ: ASI, CR, NAGPUR
8.	CONSERVATION OF ELORA CAVES	
9.	SEISMIC HAZARD AND RISK MICROZONATION OF JABALPUR URBAN AREA, MADHYA PRADESH	OPN. MP, CR, NAGPUR
10.	MORPHOTECTONICS OF THE CHAMBAL AND THE YAMUNA VALLEYS IN THE WESTERN MARGINAL GANGETIC ALLUVIAL PLAINS	M. N. MISHRA & L.L. VISHWAKARMA
MISSION- 1V (FUNDAMENTAL)		
11.	REVEALING DIET OF SAUROPOD DINOSAURS: A GLOBAL CONTRIBUTION FROM INDIA	DR. D.M.MOHABEY
12.	PHYSICAL VOLCANOLOGICAL FEATURES IN DECCAN TRAPS	A.B. SABALE, BHOPAL
13.	ENVIRONMENTAL GEOCHEMICAL MAPPING IN BHILWARA AREA	B. BEHERA, OP. RAJASTHAN

STATE UNIT: MAHARASHTRA

MISSION- II		
1.	REE (RARE EARTH ELEMENTS) ABUNDANCE IN KIMBERLITE SPECIFIC INDICATOR MINERALS OF DIAMONDIFEROUS & BARREN KIMBERLITES ARE FOUND TO BE USEFUL GEOCHEMICAL TOOL IN DIAMOND EXPLORATION	R.S.BAINS, K.SASHIDHARAN & P.K. RAUT
2.	GOLD MINERALISATION IN SAKOLI FOLD BELT	K.SASHIDHARAN,
3.	PLATINUM INCIDENCES FROM AURIFEROUS QUARTZ VEINS OF BHIMSAIN KILLA PAHAR AREA, SAKOLI FOLD BELT, BHANDARA DISTRICT	K.C. MAHAPATRA
4.	HETI Ni- PGE PROSPECT, BASTAR CRATON, CHANDRAPUR DISTRICT	M.L. DORA

MISSION- III		
5.	INFORMATION ABOUT REGIONAL DRILL CORE REPOSITORY	V.K. KHADSE
MISSION- 1V (FUNDAMENTAL)		
6.	PRELIMINARY ASSESSMENT OF TECTONICS-CLIMATE INTERACTION IN TAPI BASIN OF CENTRAL INDIA	
7.	LONAR CRATER- A GEOLOGICAL AND ECOLOGICAL ENIGMA	DR. M. BODAS, SHRI B. SEN & SHRI K.K.K. NAIR
8.	DECCAN CONTINENTAL FLOOD BASALTS ERUPTION TRIGGERED END CRETACEOUS - EARLY PALAEOCENE FLORAL CHANGE: EVIDENCE FROM THE INDIAN SUBCONTINENT - A CASE STUDY FROM NAND-DONGARGAON BASIN	DR. D.M.MOHABEY & Smt. BANDANA SAMANT
9.	CRUSTAL XENOLITHS IN A DECCAN DYKE, NORTH OF RANALA : A WINDOW TO LOOK WHAT LIES BELOW DECCAN TRAPS IN TAPI RIVER AREA.	BIBHASH SEN
MISSION-IV - (Multidisciplinary)		
10.	CONSERVATION OF BUDDHIST CAVES AT AURANGABAD, MAHARASHTRA	PROJ: ASI, CR, NAGPUR
11.	CONSERVATION OF PITALKHORA CAVES, AURANGABAD, MAHARASHTRA	PROJ: ASI, CR, NAGPUR
12.	GEOSCIENTIFIC STUDIES FOR CONSERVATION OF AURANGABAD GROUP OF CAVES, AURANGABAD DISTRICT	N.V. NITNAWRE
13.	MULTIDISCIPLINARY GEOSCIENTIFIC STUDIES FOR THE CONSERVATION OF AJANTA CAVES	PROJ: ASI, CR, NAGPUR
14.	ANALYSIS OF HYDRIDE FORMING ELEMENTS BY VG-AAS	S. CHANDRAWANSHI
15.	NEUTRON ACTIVATION ANALYSIS AT GSI LABORATORY, PUNE	Ms. K.K. DESHMUKH

STATE : CHHATTISGARH

1.	SONAKHAN GRANITE GREENSTONE BELT	DR. M.P. CHAWADE
MISSION- IV(MULTIDISCIPLINARY)		
2.	GEOTHERMAL EXPLORATION AT TATAPANI GEOTHERMAL FIELD, SURGUJA DISTRICT	DR. P. B. SAROLKAR

RHQ, CR, NAGPUR

1.	REVISITING CENTRAL CRYSTALLINES IN PINDAR AND RAMGANGA VALLEYS, KUMAON HILLS, UTTARAKHAND – AN EXPEDITION BASED CASE STUDY	I.K. MISHRA
2.	CAESIUM ANOMALIES IN SURFACE AND GROUND WATER IN EASTERN PART OF SOHAGPUR COALFIELD, MADHYA PRADESH - A CASE STUDY	P. GANGOPADHYAY
3.	THE COKING COAL OF BAHERABAND AREA IN THE EASTERN PART OF SOHAGPUR COALFIELD, SHAHDOL DISTRICT, M.P. - A CASE STUDY	DR. A.K. GROVER
4.	OCCURRENCES OF LOW VOLATILE BITUMINOUS COAL AT VERY SHALLOW DEPTH IN SINGRAULI COALFIELD	K. R. PRAVEEN, S. C. MITRA, S. N. CHAUDHURI & R. M. FRINCY

Annexure – 8

PUBLICATIONS

ACHIVEMENTS FOR THE PERIOD FROM 01.04.2014 TO 30.06.2014

1. Rec. Vol 148, Pt. 6 (Extended Abstracts, 2013-14) -----**Material invited. Compilation is under process.**
2. Misc. Pub 30, Pt XXI of Madhya Pradesh (3rd revised edition) ---**Under Modification**
3. Bull. Sr. A Bulletin Series A (Kimberlite Clan Rocks of M.P., Chhattisgarh and M.S.)- **Printed & released**
4. Marathi version of Misc. Pub.30, part II (Geology and Mineral Resources of M.S.): **Printed & released**
5. Special Publication (Landslide Inventory in Western Maharashtra)--- **Compilation is under process.**
6. GSI, CR, e-News Volume 30---- **Material invited. Compilation is under process.**

LIST OF PUBLICATIONS BROUGHT OUT

Sl. No.	Title of Publication	Periodicity of Publication	When last published (Date)	Whether Available	
				Soft Copy	Hard Copy
1.	Marathi version of Misc. Pub.30, part II (Geology and Mineral Resources of M.S.)	-	14th July 2014	Yes	Yes
2.	Bull. Sr. A Bulletin Series A (Kimberlite Clan Rocks of M.P., Chhattisgarh and Maharashtra) F.S. 2012-13	-	15th July 2014	Yes	Yes

Annexure – 9

STATUS OF 250KCOMPILATION
BY CENTRAL REGION,
During FS 2014-15
(As on 30.06.2014)

076/2014-2015/MAP/CR/MIII/HQ/2013/043

1. Compilation: Inter-Regional sheets	2. Scrutiny of GQMs as compiled and received from State Units
• 47L: Compilation in final stage • 56M,54G: Compilation in progress • *54H (Target of SU: MP, Bhopal for FS 2013-14): Sent to CHQ for scrutiny. **(Target 9 GQMs)** Inter-regional sheets CR part submitted for compilation at WR and NR (< 50% CR): • 54K, 54L, 54O, 63L: Data sent to NR for FSP 2014-15 • 46G, 46H, 46I, 45L: Data sent to WR for FSP 2014-15.	**55B, 46P, 47M** (MCP, Nagpur) **47N, 47G** (MCP, Pune) **63H** (SU: Jabalpur) **Under Scrutiny** **55D, 55A** (MCP, Nagpur) **54P , 64B , 63D, 64E, 64A, 55M** (SU: Jabalpur) **46M** (SU: Bhopal) **47A, 47E, 47J, 47F&B, 47I , 46O** (MCP, Pune)

Authentication/Updating of 50K GMS: All the 1071 Geological Maps (1:5)K GMS) have been updated and authenticated for uploading into GSI portal by June 2014.

Annexure - 10

TRAINING COURSES/ WORKSHOP CONDUCTED BY RTI NAGPUR FOR FS 2014-15
(Status upto 30.06.2014)

1. Courses conducted by RTI Nagpur FS 2014-15

Sl No	Course	Date	Course conducted/ not conducted	Core Faculty (No. of lecture/ Session	Guest faculty	No. Of Participants
1.	Training on Deccan and other basaltic provinces of India	22/04/2014 To 3.5.2014	FSP Conducted		Prof. Dr. .Duraiswamy, Prof. L.K.Khirsagar, Prof. Hetu Seth, Prof. Kanchan Pande, Prof. V.S.Kale, Prof. Vivek Kale, Prof. A.G.Desai, Prof. S.J.Sangode, Shri A.B.Sable. Dr. Bodos, Dr. B.Sen, Shri B.Bhusari, Dr. P.B.Sarolkar, Shri N.Venkatraman, Dr. Sekhar Sarkar	24 officers from GSI, WR, ER and CR
2.	Training on Geochemical data processing and interpretation.	19.05.2014 to 23.5.2014	FSP Conducted	Shri Anand Agasty (6 Sessions)	Dr. Venkataswamy, DDG, CR, Shri PK.Raut, Director, CR	21 officers of GSI CR
3.	Awareness of Computer Applications for Group C Staff of Central Region	23.06.2014 to 27.6.2014	FSP Conducted	K.C.Mahapatra (2 sessions) Shri A.Nirwan (2 sessions) Shri Anand Agasty (4 Sessions)	Shri Suhas. S. Sadhu, Asstt. Geodata	12 staff from GSI CR
4	Training on ARC GIS for officers of CR	07/04/2014 to 12/04/2014	OFSP	Shri Anand Agasty (10 sessions)	Smt. Jaya Chavan	10 from GSI, CR
5	Weekly lecture on MS Excel-2007	01/04/2014 to 30/06/2014	OFSP	Shri Anand Agasty (7 sessions)		15 from GSI, CR

FTC RAIPUR

Sl No	Course	Date	Course conducted/not conducted	Core Faculty (No. of lecture/ Session	Guest faculty	No. Of Participants
1.	37th OCG batch C, PGRS and Geological Mapping module	2.4.2014 to 1.5.2014	FSP Conducted	Shri. Prem Babu(49 sessions) Dr. Mathew Joseph (7 sessions) CR Dash (18 sessions)	A.S.Khan, Sr. Geologist (Retd.)	30 trainee officers
2.	36th OCG batch H, PGRS and Geological Mapping module	17.5.2014 to 15.6.2014	FSP Conducted	Shri. Prem Babu(52sessions) Dr. Mathew Joseph(21 sessions) CR Dash (3 sessions)	A.S.Khan, Sr. Geologist (Retd.)	27 trainee officers

Annexure - 11

LIST OF RAC/OAC/STAGE REVIEW/TERM REVIEW & OTHER MEETINGS WITH DATE AND STATUS OF UPLOADING OF MINUTES (AS ON 30.06.2014)

REGION/STATE	*RAC/OAC/ROC REVEIWMEETINGS*	*PLACE*	*DATE OF MEETING*	*MINUTES STATUS*
CENTRAL REGION	*XII_CR_04_RAC*	*Nagpur*	*15th March 2013*	*Uploaded*
	XII_CR_05_RAC	*Nagpur*	*25th June 2013*	*Uploaded*
	XII_CR_06_RAC	*Nagpur*	*24th September 2013*	*Uploaded*
	STAGE REVIEW	*Nagpur*	*8th October 2013*	*Uploaded*
	XII_CR_07_RAC	*Nagpur*	*24th December 2013*	*Uploaded*
	XII_CR_08_RAC	*Nagpur*	*21st March 2014*	*Uploaded*
	XII_CR_09_RAC	*Nagpur*	*26th June 2014*	*Uploaded*
SU: Maharashtra	*XII_SUM_04_OAC*	*Nagpur*	*14th March 2013*	*Uploaded*
	XII_SUM_05_OAC	*Nagpur*	*24th June 2013*	*Uploaded*
	XII_SUM_06_OAC	*Nagpur*	*23rd September 2013*	*Uploaded*
	STAGE REVIEW	*Nagpur*	*7th October 2013*	*Uploaded*
	XII_SUM_07_OAC	*Nagpur*	*23rd December 2013*	*Uploaded*
	XII_SUM_08_OAC	*Pune*	*18th March 2014*	*Uploaded*
	XII_SUM_09_OAC	*Nagpur*	*25th June 2014*	*Uploaded*
SU: MP&CG	*XII_MP&CG_04_OAC*	*Nagpur*	*14th March 2013*	*Uploaded*
	XII_MP&CG_05_OAC	*Bhopal*	*21st June 2013*	*Uploaded*
SU: Madhya Pradesh	*XII_MP_06_OAC*	*Bhopal*	*17th September 2013*	*Uploaded*
	STAGE REVIEW	*Bhopal*	*4th October 2013*	*Uploaded*
	XII_MP_07_OAC	*Bhopal*	*16th December 2013*	*Uploaded*
	XII_MP_08_OAC	*Bhopal*	*19th March 2014*	*Uploaded*
	XII_MP_09_OAC	*Bhopal*	*23rd June 2014*	*Uploaded*
SU: Chhattisgarh	*XII_CG_06_OAC*	*Raipur*	*20th September 2013*	*Uploaded*
	STAGE REVIEW	*Raipur*	*4th October 2013*	*Uploaded*
	XII_CG_07_OAC	*Raipur*	*18th Decemberr 2013*	*Uploaded*
	XII_CG_08_OAC	*Raipu*	*19th March 2014*	*Uploaded*
	XII_CG_09_OAC	*Raipu*	*18th June 2014*	*Uploaded*

Annexure - 12

EMPLOYMENT POSITION IN THE CENTRAL REGION

(GROUP 'A' POSTS)

Grade	Geology	Geophysics	Geoph.Instt.	Chemical	Eng.	Minl. Phy.	Admin.	Survey	AP &M
JTS	140	06	02	16	06	-	02	02	--
STS	30	06	02	07	03	02	--	--	01
JAG	47# (Suptdg. Geo -23 & Dir. 24)	02	---	02	01	---	01	--	--
SAG	9#	--	---	--	01	---	--	--	--
HAG	-	----	---	---	---	---	--	--	--
TOTAL	**226**	**14**	**04**	**25**	**11**	**02**	**03**	**01**	**01**
Grand Total	**287**								

Including Directors & Dy.D.G of National Mission-II Headquarter,

TOTAL NUMBER OF EMPLOYEES IN GROUP 'B' (GAZETTED), 'B' [NON-GAZETTED], 'C' & MTS

Group	Total No. of Employees Sanctioned / In Position
Group – B (Gazetted)	-- / 17
Group – B [Non-gazetted] (both Min. & Technical)	321 / 148
Group – C (both Min. & Technical)	573 / 277
MTS (erstwhile Group 'D')	148 / 90

Annexure – 13

VEHICLES AND TRANSPORT INFRASTRUCTURE

(Vehicle Position as on 30.06.2014)

A. Field going vehicles/Office vehicles

Sl.No.	Particulars/ Types of vehicle	Kilometers run				Total	Sanctioned strength of Drivers	Drivers in position
		Less than 25000 km	25001-<50000 km	50001-<150000 km	>150000			
1	Jeeps	-	-	15	79	94	121	57
2	Pick up	-	-	-	-	0		
3	Amb ISZ / Mark-IV	-	-	1	4	5		
4	Indica	-	-	1	-	1		
5	Bolero	-	-	-	5	5		
6	Qualis	-	-	-	1	1		
7	Truck (LCV)	-	-	4	1	5		
8	Truck (HCV)	-	0	10	23	33		
9	Geologger van	-	-	-	1	1		
					Total	**145**		

Age wise Status of Vehicles

B. Field Vehicles / Office vehicles

Sl. No.	Particulars	Vehicles less than 6 years	Vehicles more than 6 years & less than 10 years old	Vehicles more than 10 years & less than 15 years old	Vehicles more than 15 years	Total
1	Jeeps	-	1	24	69	94
2	Pick up	-	-	-	-	0
3	Amb ISZ / Mark-IV	-	-	1	4	5
4	Indica	-	-	1	-	1
5	Bolero	-	-	4	1	5
6	Qualis	-	1	-	-	1
7	Truck (LCV)	-	-	4	1	5
8	Truck (HCV)	-	-	2	31	33
9	Geologger van	-	-	-	1	1
					Total	**145**

Annexure – 14

PROCUREMENT STATUS OF MAJOR EQUIPMENTS/ MODERNIZATION ITEMS/ MACHINERY EARLIER PROPOSED FOR PROCUREMENT DURING F.Y. 2013 - 14
(AS ON 30.06.2014)

ME Head: Stores Received and payment released / to be released:

Sl. No	Description	Indenting Division	Qty	Estimated Cost in Rs.	Remarks
1.	Diamond Bit & Reamer Shell of diff. sizes	Engineering Division	160 Nos. (out of 990 Nos.)	3.17 lakhs	**Fund is not available since 04.05.12. Purchase order for 160 Nos. of different Diamond bits & Reamer Shells for Rs. 3,16,596.00 was placed on 24.1.14. Predispatch inspection carried out and material received. Bill processed. Payment made.**
2.	Pipe Wrench Jaw Kit for Rigid make	Engineering Division		11.41 lakhs	Tendering done with due date of opening as 10.09.2013. File sent to TEC for technical evaluation. File recd on 31.10.13 with the acceptance of TEC's recommendations. TEC sought some clarifications from the firms. TEC over and price bid is scheduled to be opened on 10.12.13. Price bid opened and file sent to Sr. TAC**. Sr. TAC over. Sanction obtained and Purchase Order placed. Pre-dispatch inspection carried out and material recd on 28.3.14. Bill sent for payment. Payment made.**
3.	PX Casing TC Shoe Bits, Core Bits, HX Casing TC Shoe Bits, BX casing TC Shoe Bits, & BX Casing TC Core Bits.	Engineering Division	130 Nos.	1.67 lakhs	Fund is not available for Rs. 1,67,180.00 since 18.02.2013**. P.O placed on 24.1.14 with due date of delivery as 28.08.14. predispatch inspection carried out and material recd and bill to be sent for payment. Payment made.**
4	Spares for Advanced Leica DM 2500P Microscope for Jabalpur (Proprietary)	Petrology Divn.	4 items	2.5 lakhs	Tender enquiry has been sent to the firm for quotation on 30.04.2013. Quotation received and the file sent to Jr. TAC for recommendations. Jr. TAC over and the recommendations were accepted by DDG & HOD, CR. File sent to Dir(F) for allocation of fund. Fund not available. P.O. placed on 24.1.14. Consignment received and was handed over to the indenting Division, i.e. Petrology Division, Jabalpur. Installation completed and Stock certificate received. **Payment made.**

Procurement status of stores under ME head for the F.Y. 2014-15 (As on 30.06.2014)

Sl. No	Description	Indenting Divn	Qty	Estimated Cost in Rs.	Remarks
1.	Diamond Bit & Reamer Shell of diff. sizes	Engineering Divn	740 Nos. (out of 990 Nos.)	24.18 lakhs.	Sanction obtained on 03.05.12. **Fund is not available since 04.05.12. Purchase order on M/s. Vajratools, Mumbai issued on 25.4.14 for Rs. 24,17,940.00. Predispatch inspection is scheduled on 02.07.14.**
2.	T-6, D/T Core Barrels 116mm-20 Nos. 101mm-40 Nos. 86mm-40 Nos. & 76mm-20 Nos	Engineering Divn	120 Nos.	47.08 lakhs.	File to Sr. TAC on 08.06.12 for evaluation of price Bid. File is with DDG(D). Sr. TAC meeting over. File to DDG for Financial sanction. Financial accorded. File resubmitted to Dir(F) on 31.12.12 for allotment of fund. Fund is not available since 26.12.12 for Rs. 47,07,540.00. P.O. placed on 08.05.14.

Contd…

Procurement status of stores under ME head for the F.Y. 2014-15 (As on 30.06.2014)

Sl. No	Description	Indenting Divn	Qty	Estimated Cost in Rs.	Remarks
3.	Spares for RD -100 Rig -45 iems (PAC item)	Engineering Divn	45 items	**8.59** lakhs.	File to Sr. TAC on 16.07.12. Sr. TAC over file to DDG for financial sanction. Financial sanction obtained and file to Dir(F) for fund allotment. **Fund is not available since 22.1.13. P.O released on 25.4.14. L.R. copy received. Material yet to be received.**
4.	Spares for RD 900 Pump – 26 Spares (PAC item)	Engineering Divn	26 items	12.08 lakhs	File to Sr. TAC on 16.07.12. Sr. TAC on 23.08.12. Fund is not available since 11.09.12. **P.O released on 25.4.14.**
5.	High pressure Delivery Hose of length 7.5, 9 etc	Engineering Divn.		2.92 lakhs	Sanction obtained and the file with Dir(F) for fund provision. **Fund is not available since 03.01.13. P.O released on 25.4.14.**
6.	NW & BW Drill Rods	Engineering Divn.	100 & 200 nos. res	24.60 lakhs	**Tender opened on 31.01.13 and sent to TEC for technical evaluation. Price bid opened on 18.04.13. File sent to Sr. TAC for evaluation. Sr. TAC over and the acceptance of DDG & HOD, CR is received. Fund is not available. P.O. released on 23.4.14.**
7.	NX Casing with coupling 3mtrs, 2mtrs & 1 mtr – 320 Nos.	Engineering Divn.	320 Nos.	12.30 lakhs.	Due date of opening of the quotations is 14.05.13. Quotations were opened and TEC constituted and file with Sr. TEC for evaluation. Sr. TEC over and letters sent to disqualified firms. Price bid opened on 05.02.14 and file sent to Sr. TAC for recommendations. Sr. TAC sought extension of validity period of the quotation and the firm has extended the validity of the quotation. The file is with Sr. TAC for recommendations. TAC over sanction obtained and P.O released on **23.04.14.**
8.	Geological Compass	Petrology Divn	54 Nos.	12.00 lakhs.	Tender due on 04.03.14. TEC over and the firms have been informed about the date of demonstration of their compasses i.e. on 04.04.14. TEC over and the price bid of the technically qualified firms is due on **05.05.14. Price bids opened and TAC over. File sent to DDG& HOD, CR for financial sanction. P.O. released on 11.6.14.**
9.	Petrol Operated Hand drill Machine	Geophysics	1 No.	4.00 lakhs.	Price bid opened on 02.04.13 and the file sent to Sr. TAC through the Indentor i.e. Director, Geophysics (Instrumentation) for recommendations.
10.	HWT Core Barrels – 14 Nos. NWT Core Barrels – 25 Nos. T-6 D/T Core Barrels	Engineering Divn.	14 & 25 Nos. res.	3.82 lakhs.	Tendering done with due date of opening on **20.05.14.** Only two quotations received and the due date extended upto **10.06.14.** Only two quotations received and the due date extended upto **03.07.14.**
11.	TC Bits 116mm, 101mm,86mm,76mm & NWT etc	Engineering Divn.		9.00 lakhs.	Tender floated with due date of opening on 19.6.14. three quotations received and are opened. File to be sent to DDG for constitution of TEC for evaluation of technical bids.
12.	GPS	Petrology Divn	60 Nos.	9.00 lakhs.	Technical bids opened and the file sent to DDG&HOD for constitution of TEC. TEC over and the file has been sent to DDG & HOD, CR for review of TEC's recommendations. Demonstration of GPS was held on 29.04.14 and the other scheduled on 02.05.14. Demonstration over and the price bids of the technically qualified firms have been opened. File sent to Sr. TAC. The process has been scrapped. Letter to Director Petrology to submit a fresh proposal with modified specifications.

Contd….

Sl. No	Description	Indenting Divn	Qty	Estimated Cost in Rs.	**Remarks**
13.	Magnetic Susceptibility measurement Instrument	Geophysics Inst.	1 No.	4.00 lakhs.	Tender due on 13.03.14. Only one quotation received and the file referred to the indenting division for comments. Tender due date was extended upto **15.05.14. Three quotations received and the file sent to TEC.**
14.	I). NW Drill Rod II). BW Drill Rod	Engineering Divn.	700 & 1200 Nos. res.		Proposal sent to CPMC on 31.10.12. CPMC approval recd on 15.05.14. Open Tender floated with due date of opening on **22.07.2014.**
15.	NW Drill Rods	Engineering Divn.	200 Nos.		Tender floated with due date of opening on 10.07.14.
16.	Multi Electrode Resistivity Sounding & Imaging system with accessories	Geophysics Instt.	1 No.	70.00 lakhs.	Sr. TAC held on 26.4.12. As per Sr. TAC recommendations letter to firm 09.05.12 for some clarifications. Reply recd on 01.06.12. File to Sr. TAC on 06.06.12 for T/E. File recd on 20.02.13 and file sent to DDG on 25.02.13 for nominating TEC. TEC Constituted and file sent to TEC on 05.03.13 for Tech. evaluation. TEC over and firms to be intimated about the price bid opening date. Price bid opened on 23.05.13 and the file sent to Sr. TAC through the Director, Geophysics Division for recommendations.
17.	Borehole Logging System- 1 No. (Geophy Ins)	Geoph. Instt.	1 No.	70.00 lakhs	TEC Constituted and file sent to TEC on 25.03.13 for Tech. evaluation. TEC gave its recommendations on 25.4.13. DDG & HOD, CR referred the file to Sr. PAC on 26.4.13. Sr. PAC held on 11.6.13 and its recommendations were accepted by DDG & HOD on 03.9.13. Letter sent to firm for giving one more opportunity to demonstrate their product on 06.09.13. File was referred back to Sr. PAC on 27.12.13. Sr. PAC held on 03.4.14 and sought some clarifications from the firms. The recommendations were accepted by DDG & HOD on 28.4.14 and the file referred to AP & M Division on 28.4.14. letter sent to firm and reply received and the file is submitted to DDG.
18.	X-Ray Defractormeter & its ancillary units (XRD instrument)	Min. Physics	1 No.	140 lakhs	With the approval of DDG, TB opened on 20.03.12. File to TAC on 30.04.12 for T/E and sought some clarifications from the firm. File to Sr. TAC on 03.07.12 for T/E. As per recommendations of Sr. TAC, DDG has nominated two Officers on 23.07.12 to visit the site / lab where similar XRD machine is functioning. Report recd and the file to Sr. TAC for Technical evaluation. Sr. TAC over. **Price bid to be opened on 03.01.13.** Price bid opened and the file referred to Sr. TAC through indenting Division for evaluation of the price bid. File received at AP & M seeking some clarifications in the quotation. Letter sent to firm for seeking clarifications. Firm vide their letter extended the validity of the quotation upto August'13 and sought some more time to give classification of the items in price bid. Reminder letter sent. Reply yet to be received from the firm. Reply received and the file sent to Sr. TAC through Director, Min. Physics for recommendations. The file sent back to AP & M Division for seeking some more clarifications (break-ups) in the items quoted by the firm. Reply recd from the firm and the file submitted to Sr. TAC for recommendations. Sr. TAC over and the file was referred to DCOS by DDG & HOD, for some clarifications. The reply along with file sent to DDG & HOD, CR. File sent to Dir(F) for ascertaining the availability of the fund. Fund is not available. DDG remarked to wait for availability of fund.

Annexure – 15

PERFORMANCE OF DRILLING UNITS AND DEPLOYMENT OF MACHINES

(AS ON 30.06.2014)

Sl. No.	Mineral	Area/Block	State	Unit	Model of Rig	Target as per FSP	Progress till Last month	Progress during month (in meter)	Progress during FSP (in meter)	Remarks
1	2	3	4	5	6	7	8	9	10	
Mission IIA										
1	Iron	Kabirdham	CG	414	RD-30	500mtr till 30th June14(spill over)	76.65	60.85	137.50	
2	Iron	Kabirdham	CG	436	RD-30		80.20	81.90	162.10	
3	Iron	Kabirdham	CG	416	RD-60		1.00	76.95	77.95	
4	Graphite	Betul	MP	435	RD-30	200m(spill over)	118.85	132.00	250.85	Shifting 08 days
			Sub Total				276.70	351.70	628.40	
Mission IIB										
5	Coal	Sarai(west)	MP	327	Russian	1300	192.50	15.30	207.80	Rig replaced by Unit486
6	Coal	Sarai(west)	MP	484	RD-100	1300	0.00	82.65	82.65	B/Hole started on 23/06/14
7	Coal	Bihar Block	MP	493	KME-100	1300	88.15	24.45	112.60	Fishing 14 days
8	Coal	Bihar Block	MP	486	KME-100	1300	307.70	57.30	365.00	Rig replaced by Unit331
9	Coal	Malka Block	MP	482	RD-100	1300	130.60	83.05	213.65	
10	Coal	Malka Block	MP	468	RD-100	1300	199.95	73.95	273.90	B/Hole closed on 27/06/14
11	Coal	Malka Block	MP	487	KME-100	1300	172.30	31.55	203.85	Breakdown 18days (Rig & Pump)
12	Coal	Amlidhondha	CG	387	Vol 300	4580	291.70	154.00	445.70	
13	Coal	Amlidhondha	CG	473	RD-100		88.40	252.90	341.30	
14	Coal	Samarsingha	CG	474	RD-100		299.30	50.00	349.30	Truck breakdown and water hauling stoppage for 15days

15	Coal	Purunga	CG	475	RD-100		228.95	126.75	355.70	
16	Coal	Pipraul Block	CG	480	RD-100	1300	273.40	50.20	323.60	Fishing 15days
17	Coal	Pipraul Block	CG	485	KME-100	1300	105.15	53.55	158.70	Fishing 18days
18	Coal	Bhurkumdana/Dhorakuhi	MP	478	RD-100	1300	83.80	154.00	237.80	B/Hole started on 04/06/14
19	Coal	Bhurkumdana/Dhorakuhi	MP	481	RD-100	1300	233.90	41.80	275.70	
			Sub Total				2695.80	1251.45	3947.25	
			Total				2972.50	1603.15	4575.65	

	Target(meter)	Progress Till Last Month(meter)	Progress During Month(meter)	Progress During FSP(meter)
Mission II-A		276.70	351.70	628.40
Mission-II-B		2695.80	1251.45	3947.25
Total		2972.50	1603.15	4575.65

Outsourcing	June14	Total(meter)
	573.50	1414.50

Annexure – 16

STATUS OF PENDING COURT CASES IN GEOLOGICAL SURVEY OF INDIA, CENTRAL REGION, NAGPUR
(AS ON 30.06.2014)

TOTAL NUMBER OF CASES PENDING IN PREVIOUS MONTH ENDING MAY, 2014.	54 (Fifty Four)
TOTAL NUMBER OF CASES ADDED IN PRESENT MONTH ENDING **JUNE, 2014.**	01 (One)
TOTAL NUMBER OF CASES DISPOSED IN MONTH ENDING JUNE 2014.	Nil
TOTAL NUMBER OF CASES PENDING IN PRESENT MONTH ENDING **JUNE, 2014**	55 (Fifty Five)

TOTAL NUMBER OF CONTEMPT CASES PENDING IN PRESENT MONTH ENDING **JUNE, 2014**	Nil

1 Central Administrative Tribunal (CAT)	**-**	**35 (Thirty Five)**
2. High Court	**-**	**17 (Seventeen)**
3. Supreme Court	**-**	**Nil**
4. Other Courts	**-**	**03 (Three)**
5. Contempt	**-**	**Nil**

TOTAL		**55 (Fifty Five)**

Annexure – 17

RESULTS FRAMEWORK DOCUMENT (RFD) 2013-14

(Updated upto 30.06.2014)

SECTION 2

Table : Results Framework Document (RFD)- CENTRAL REGION 2014-15

Sr. No	Objective	Weight	Action	Success Indicator	Unit	Weight	Target/ Criteria value					Achievements upto 30/06/2014
							Excellent	Very Good	Good	Fair	Poor	
							100%	90%	80%	70%	60%	
1	**Mission :I - Basic Earth Science Data Generation**	20	1.1 Ground Geological Mapping	1.1.1 Specialised Thematic Mapping (on 1:25,000 scale) covering area	Sq Kms	6.00	5250	5000	4750	4500	4250	**67.3**
			1.2 Survey in Obvious Geological Potential (OGP) area	1.2.1 Maps produced by the Geochemical Mapping(GCM) on 1:50,000 scale covering area	Sq Kms	8.00	18000	17500	17000	16500	1600	**80**
				1.2.2 Maps produced by the GPM 1:50,000 scale covering area	Sq Kms	6.00	10500	10000	9500	9000	8500	**732**
2	**Mission : II – Augmentation of Resources for the National mineral Inventory of IBM and Coal and Lignite**	18	2.1 Intensify regional exploration of minerals.	2.1.1 Augmentation to National Mineral Inventory (for FS ending 31st March 2014)	Date	4.00	31-12-2014	31-01-2015	28-02-2015	15-03-2015	22-03-2015	**To be held in time**
				2.1.2 Maps produced by the Large Scale mapping (LSM) on 1: 25,000 to 10,000 scale covering area	Sq Kms	3.00	865	840	800	775	750	**38.09**
				2.1.3 Maps produced by the Detailed Mapping (DM) on < / = 1 : 5000 scale covering area	Sq Kms	3.00	15	14.5	14	13.5	13	Nil
				2.1.4 Drilling (in mt.) Mission-IIA	Metre	3.00	3000	2800	2500	2300	2000	**631.90**
				2.1.5 Drilling (in mt.) Mission-IIB	Metre	5.00	23000	22000	21500	21000	20500	**5141.40**
3	**Mission : III - Geoinformatics and Dissemination of Earth Science Data to stakeholders**	12	3.1 Finalization and circulation of reports	3.1.1 Circulation of finalised Reports 2013-14 (95% of reports)	Date	5.00	01-12-2014	07-12-2014	15-12-2014	22-12-2014	27-12-2014	-
			3.2 Geoinformatics Services & products	3.2.1 Uploading of unpublished report circulated for the FS 2013-14 as per dissemination policy by 31st March 2015	Nos.	3.00	41	39	37	36	35	-
				3.2.2 GSI technical publications	Nos	4.00	4	3	2	-	-	**1**
4	**Mission : IV – Multidisciplinary and Fundamental Geoscience**	9	4.1 Climate change and Natural Hazard Studies	4.1.1 Seismic microzonation / hazard assessment of cities	Nos (nos of cities)	2.00	2	1	-	-	-	**Nil**
				4.1.2 Landslide hazard assessment studies (nos. of projects)	Nos.	3.00	3	2	1	-	-	**3 projects (2 Std & 1 SER)**
			4.2 Research and Development	4.2.1 Peer reviewed Scientific publications by scientists of GSI in National and International scientific journals (including GSI's)	Nos	4.00	12	11	10	9	8	**2 abstracts and 2 full papers processed**
5	**Mission : V-Capacity Building in Earth Science Sector**	10	5.1 Training Courses by GSITI	5.1.1 Training courses for GSI officers	Nos (number of courses)	7.00	9	8	7	-	-	**6 (FSP-5, OFSP-1)**
				5.1.2 Training courses for others. (State Govts, PSUs, International Participants etc.)	Nos	3.00	4	3	-	-	-	-
6	**Quality Management of Geoscientific Activities**	10	6.1 Peer Review of FSP Programmes	6.1.1 Internal Peer Review of 100% field items proposed for FS 2015-16.	Date	2.00	31-01-2015	01-02-2015	04-02-2015	05-02-2015	07-02-2015	**To be held in time**
				6.1.2 External Peer Review of 20% field items proposed for FS 2015-16.	Date	1.00	31-01-2015	15-02-2015	20-02-2015	22-02-2015	28-02-2015	**To be held in time**
			6.2 Reviews / monitoring	6.2.1 Holding of Term Review Meetings for review and appraisal of ongoing projects	Date	2.00	15-03-2015	18-03-2015	20-03-2015	22-03-2015	25-03-2015	**To be held in time**
				6.2.2 Finalisation of FS of GSI including five Missions Targets: [Mission-I: Baseline Geoscience Data; Mission-II : Natural Resource Assessment; Mission-III: Geoinformatics; Mission-IV : Fundamental and Multidisciplinary Geosciences and Mission-V : Capacity Building & Training (for the FS 2015-16 i.e. 04/15 – 03/16)	Date	1.00	31-01-2015	07-02-2015	13-02-2015	20-02-2015	28-02-2015	**To be held in time**
			6.3 Peer Review of unpublished reports	6.3.1 Internal Peer Review of 100% reports of the Field Season 2013-14 i.e. period ending 31 March 2014.	Date	2.00	31-12-2014	07-01-2015	14-01-2015	21-01-2015	28-01-2015	**To be held in time**
				6.3.2 External Peer Review of 20% reports of the Field Season 2013-14 i.e. period ending 31 March 2014.	Date	2.00	31-01-2015	15-02-2015	20-02-2015	22-02-2015	25-02-2015	**To be held in time**
7	**Improvement in the functioning of GSI**	8	7.1 Online implementation of various working modules through GSI portal	7.1.1 Online approval of FSP items by FSPMIS module	% of online vs. all	2.00	90	80	70	60	50	**91%**
				7.1.2 Online implementation of Tour Management Module	% of online vs. all	1.00	90	80	70	60	50	**94.70%**
				7.1.3 updating of HRMIS database	% of possible updates	1.00	95	80	70	60	50	**Data not yet received**
				7.1.4 Implementation of Leave Module	% of online apply vs. all	1.00	95	80	70	60	50	**71.69%**
			7.2 Biannual Meeting of CGPB –Group-IV	7.2.1 Meeting for fixing priorities and work plan in different sub-domains with the partners and stakeholders	Date	1.00	31-01-2015	07-02-2015	15-02-2015	22-02-2015	28-02-2015	**To be held in time**
			7.3 Holding of RAC/OAC	7.3.1 RAC Meetings	Nos.	1.00	4	3	-	-	-	**1**
				7.3.2 OAC Meetings	Nos.	1.00	4	3	-	-	-	**1**
***Efficient Functioning of the RFD System**		3	Timely submission of Draft RFD (2015-16) for approval	On-time submission	Date	2.00	05-03-2015	06-03-2015	07-03-2015	10-03-2015	11-03-2015	**18-03-2014**
			Timely submission of Results for RFD (2013-14) for approval	On-time submission	Date	1.00	15-04-2014	16-05-2014	17-05-2014	18-05-2014	19-05-2014	**08-04-2014**
***Enhanced Transparency/Improved Service delivery of Ministry/Department**		3	Rating from Independent Audit of Implementation of Citizen's/Clients Charter (CCC)	Degree of implementation of commitments in CCC	%	2.00	100	95	90	85	80	-
			Independent Audit of Implementation of Grievance Redress Management (GRM) system	Degree of success in implementing GRM	%	1.00	100	95	90	85	80	-
*** Administrative Reforms**		7	Update organizational strategy to align with revised priorities	Date	Date	2.00	01-09-2014	02-09-2014	03-09-2014	04-09-2014	05-09-2014	-
			Implementation of agreed milestones of approved Mitigating Strategies for reduction of potential risk of corruption (MSC)	% of implementation	%	1.00	100	90	80	70	60	-
			Implementation of agreed milestones for ISO 9001	% of implementation	%	2.00	100	95	90	85	80	-
			Implementation of milestones of Prepare an action plan for innovation	% of implementation	%	2.00	100	90	80	70	60	-

* Mandatory objectives.

(Sajal Pal), Suptdg. Geologist & Nodal Officer (RFD)