Government of India
Ministry of Mines

Indian Bureau of Mines

Annual Report 2021-22

Limestone Miningwith systematic Development &Afforestation

The government is keen to promote the best use of the country's mineral reserves, a sustainable domestic mining industry, reduce imports and increase the mineral sector's contribution to India's gross domestic product (GDP) from the current 1.75 per cent to at least 2.5 per cent.

Shri Pralhad Joshi Coal and Mines Minister

(International Mining Summit, organised by the Confederation of Indian Industry (CII) in association with the Ministry of Mines (Dec.2021).

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Contents

Indian Bureau of Mines (IBM)

1.0 Vision, Mission, Objectives and Functions

The Indian Bureau of Mines (IBM) is a subordinate office under the Ministry of Mines. It is engaged in the promotion of scientific development of mineral resources of the country, conservation of minerals, protection of environment in mines, other than coal, petroleum and natural gas, atomic minerals and minor minerals. It performs regulatory functions with respect to the relevant provisions of Mines and Minerals (Development and Regulation) Act, 1957 and enforcement of the rules framed there under, namely Mineral Conservation and Development Rules, 1988/2017 and Mineral Concession Rules, 1960/2016 and Environmental (Protection) Act, 1986 and Rules made there under.

It undertakes scientific, techno-economic, research-oriented studies in various aspects of mining, geological studiesand ore beneficiation studies.

1.1 Vision for IBM

"*IBM to perform as a National Technical Regulator and to discharge the developmental functions for the sustainable development of the mineral industry and to work as repository of database on mines and minerals*".

1.2 Mission

1) To ensure effective regulation of Indian Mineral Sector which promotes long term benefits for its sustainable growth.
2) To provide capacity building to State regulatory agencies and also to provide quality technical assistance to the mineral industry, and
3) To work as data bank on mines and minerals and to disseminate mineral information for policy formulations.

1.3 Objectives

i. To work as National Technical Regulator operating at national-level designing systems, processes and guidelines for regulation of the mineral sector;

ii. To function as a facilitator for creation and improvement of state-level regulatory mechanisms and to facilitate state agencies to ensure adherence to standards and parameters for scientific and systematic mining in the sector;

iii. To work as catalytic agent for development of mineral sector by evolving capability & proficiency in beneficiation techniques; dissemination of knowledge and skills in mining and allied areas through its training facilities; consultancy services.

iv. To play crucial role of that of facilitatorto the Government in matters and issues relating to the mineral sector in areas of short-medium and long-term mineral-wise strategies, mineral taxation and legislative processes.

v. To play the role of National Repository of mineral data through maintaining a data bank of mines and minerals in the country by developing advanced IT based Mineral Information System enabling the industry to report and access information online, and

vi. To broaden its interactive base and reach out to overseas counter parts through consultations and exchange programmes and to build capacity, skill & expertise through academic and training programmes at institutes of international repute.

1.4 Present Charter of Functions

In the wake of liberalization of the policy regime governing mineral sector and increasing need for adequate environment management as part of systematic and scientific mining, the mandated functions for IBM, as given for notification in Official Gazette vide Resolution No. 31/ 49/ 2014 – M. III, dated 3rd November, 2014 are given below:-

(i) Collect, collate and organize into a database, all information on exploration, prospecting, mines and minerals in the country in the shape of a National Mineral Information Repository and take steps to publish and disseminate the same;

(ii) Function as the National Technical Regulator in respect of the mining sector, and lay down regulations, procedures and systems to guide the State Governments (first tier of regulation);

(iii) Build up capacity in the system, both for regulatory as well as the developmental work, at the central level as well as at the level of the States;

(iv) Establish institutional mechanisms of coordination between the centre, the States, mineral industry, research and academic institutions and all stake holders, so as to proactively develop solutions to the demands and problems faced by the industry;

(v) Promote research on all aspects of practical relevance to the Industry and to act as bridge between research institutions on the one hand and user industry on the other;

(vi) Provide Technical Consultancy Services;

(vii) Participate in International collaborative projects in the area of regulation and development of the mineral sector;

(viii) Advise Government on all matters relating to the mineral industry; and

(ix) Undertake any such other activity as has become necessary in the light of developments in the field of geology, mining, mineral beneficiation and the environment.

1.5 Key Activities and Functions

In light of the role and charter of IBM, the key functions being performed by IBM can be broadly classified as (1) Regulatory Functions, and (2) Developmental Functions.

1.5.1 Regulatory Functions

i. Mining Plan, Review of Mining Plan & Modification in the Approved Mining Plan -Inspections and Approval (Rule 13 to 17 of Chapter V of M (OAHCEM) CR 2016; Rule 9, 10, 11 & 12 of MCDR 2017);

ii. Mining Regulations for ensuring implementations of Mining Plan, review of mining plan, Mine Closure Plan and other statutory provisions of MCDR 2017and launching of prosecutions and compounding thereof (Section 22 & 24 of MMDR Act 1957);

iii. Inspections and grant of permissions to carry out 'stoping' operations in underground mines (Rule 26 of MCDR1988/ Rule 30 of MCDR 2017);

iv. Monitoring of Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) aspects of mining operations (Rule 13 and 31 to 41of MCDR 1988/ Rule 11 and Rule 35 to 44 of MCDR 2017 and Section 10 of EP Act 1986);

v. Facilitating in calculations of State-wise, mineral-wise and month-wise royalty on *ad valorem* basisby regulating the submission of monthly and annual returns by the mining lease holders (Rule 64D of MCR 1960/ Rule 38 to 47 of M(OHEM) CR Rules, 2016 and Rule 45 of MCDR 1988/ 2017);

vi. Mine Closure Plan - Inspections, Approval and monitoringof Progressive and Final Mine Closure Plans (Rule 23A to 23F of MCDR 1988/ Rule 22 to 27 of MCDR 2017);

vii. Co-ordination with State Governments for curbing illegal mining activities (intimation of violation of Section 4(1) of MMDR Act 1957 to State Government agencies&monitoring of submission of quarterly return and compliance thereof, of illegal mining by various State Governments).

viii. As prescribed under Section 9(C) of the Act, IBM will discharge a pro- active role in NMET by furnishing inputs on mineral-wise conservation strategies, exploration gaps etc. keeping in view of the national interest.

ix. IBM administer the framework for sustainable development of the mining sector, as prescribed under section 20A (2) of the Act, through star rating of mines.

x. IBM will continue to publish the Average Sale Price (ASP) of all the major minerals through its MMS division. This information is required as per the rule 8 of Mineral (Auction) Rules, 2015 for calculating the "Value of estimated Resources" and "Value of the Mineral Dispatched" and that of 'Reserve Price' of the deposit to be put to auction.Further, based on the ASP as declared by IBM every month, assessment of ad-valorem royalty is also carried out by the State Governments.

1.5.2 Developmental Functions

(i) R&D in Mineral Processing - To play a role of a catalytic agency to promote & develop the much-needed R&D in mineral processing in the field of mineral beneficiation, mineral characterization, chemical analysis of ores and minerals and analysis of environmental samples;

(ii) Information Support and Facilitator Services- To function as a facilitator to the government in formulation of mineral policy, lending technical guidance & support for framing Mineral Acts and in articulating provisions, rules & regulations thereof and lend it the credentials to formulate strategies, articulate policy requirements and oversee their implementation at both national and State levels;

(iii) National Mineral Inventory – Periodical Updation of National Mineral Inventory reflecting the micro-level status and possession of various mineral resources of the country as per the international standards ofUNFC;

(iv) Repository on Mines & Minerals – To shoulder the responsibility for collection, processing and storage of statistical data in respect of all major minerals through statutory and non-statutory basis;

(v) Publications on topical interest – To assort process and analyze mines and mineral information generated on account of statutorily and non-statutorily collected information and supply them as important inputs for policy interventions, and

(vi) Training and Capacity Building – To provide training facilities for human resource development and to develop required technical expertise and skill inthe personnel manning the mineral industry.

2.0 Organizational set up of IBM

IBM has its headquarters at Nagpur, 4 Zonal Offices at Bengaluru, Nagpur, Udaipur and Kolkata, and 13 Regional Offices at Ajmer, Bengaluru, Bhubaneswar, Chennai, Gandhinagar, Goa, Dehradun, Guwahati, Hyderabad, Jabalpur, Nagpur, Ranchi and Raipur. During the year 2017, IBM opened two new skill development centres for sustainable mining practices at Udaipur and Kolkata.IBM has well-equipped ore dressing laboratories and pilot plants at Ajmer, Bengaluru and Nagpur.

2.1 Reorganization of IBM

In the light of transition due to change in the regulatory regime through MMDR Amendment Act, 2015 and transferring of 31 majorminerals to the list of minor minerals, IBM had submitted a road map for redefining and restructuring of the organization.

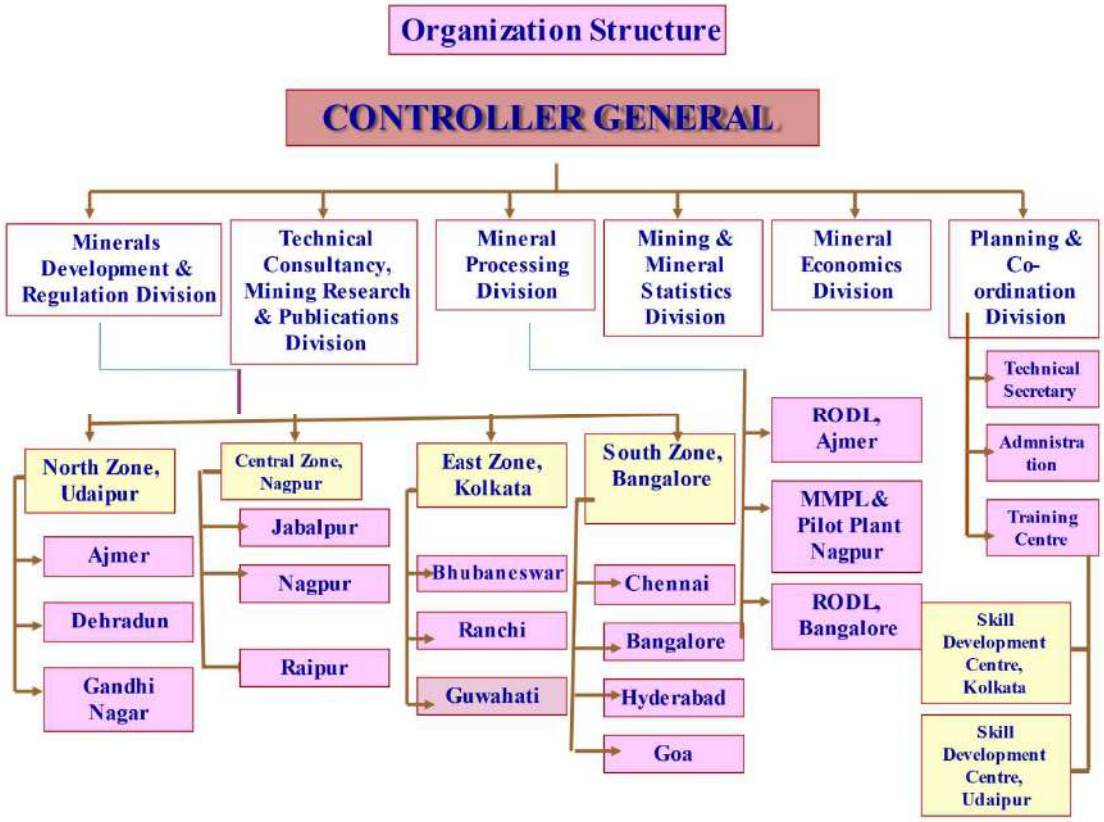
The Ministry of Mines has approved opening up of new regional office at Raipur, Gandhinagar and New Delhi/NCR, upgradation of existing sub-regional office at Guwahati to regional office to cater to the needs of North Eastern Regions. The regional offices at Raipur and Gandhinagar have already been opened. The existing regional offices at Kolkata and Udaipur have been upgraded to the zonal office (East) and zonal office (North) respectively to evenly distribute work load amongst the other two zonal offices located at Nagpur and Bengaluru. Guwahati sub regional office is also upgraded as regional office. For the purpose of skill development an Institute of 'Sustainable Development Framework' at Udaipur and Kolkata and 'Remote Sensing Centre' at Hyderabad have been opened.

2.2 Organizational Structure of IBM

IBM is organized to discharge the functions assigned to it through six technical divisions, which are as follows:

(i) Minerals Development & Regulation Division (MDRD)
(ii) Mineral Processing Division (MPD)
(iii) Mineral Economics Division (ME)
(iv) Technical Consultancy Division (TC)
(v) Mining and Mineral Statistics Division (MMS)
(vi) Planning and co-ordination Division with two sub-divisions viz. (1) Planning and Co-ordination and (2) Administration.

Fig No. 1: The existing set-up is shown in the following organisation chart.



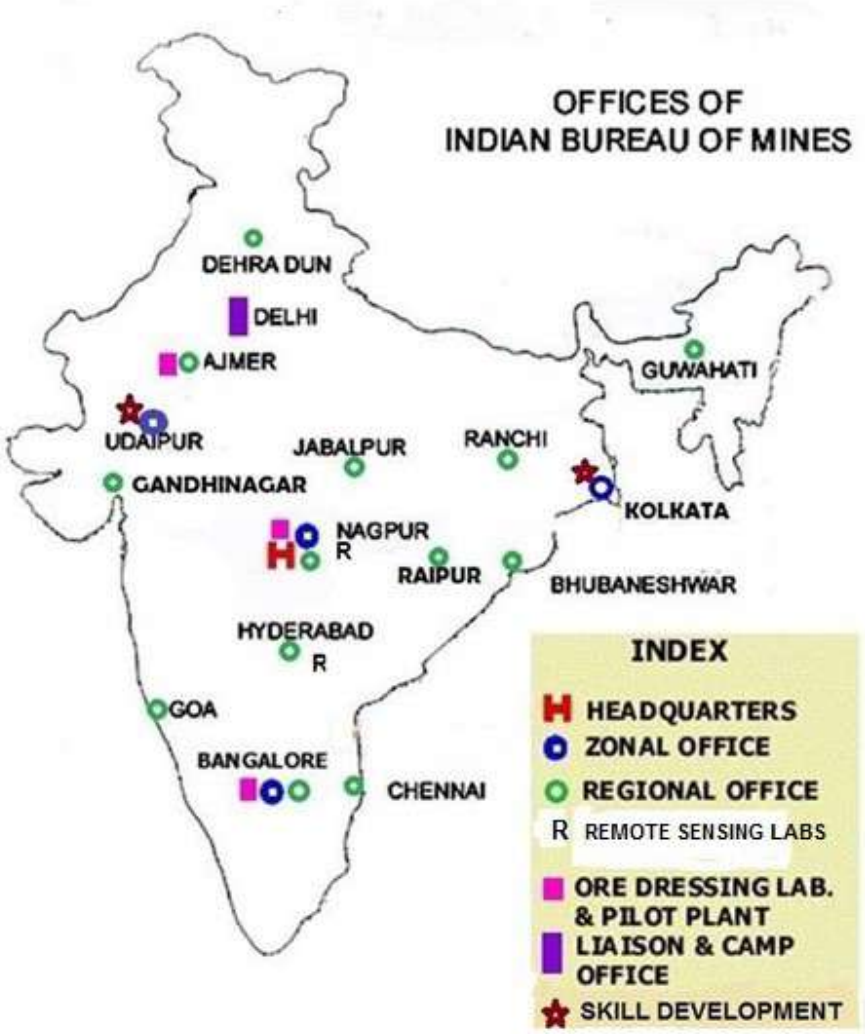
2.3 Modern Mineral Processing Laboratory and Pilot Plant

UNDP aided Modern Mineral Processing Pilot Plant and Analytical Laboratory of IBM is located at MIDC Hingna, Nagpur.

2.3.1 Regional Ore Dressing Laboratories

The Bureau has two Regional Ore Dressing Laboratories and Pilot Plants at Ajmer and Bangalore to cater to the mineral beneficiation needs of the neighbouring areas.

Fig No. 2: The location of Zonal, Regional Offices and Regional Ore Dressing Laboratories are shown in the map.



3.0 Schemes under implementation in IBM

All activities of IBM are being conducted through the following Schemes.

Scheme No 1. Inspection of Mines for scientific and systematic mining, mineral conservation and mine environment

Scheme No 2. Mineral Beneficiation Studies, utilization of low grade and sub grade ores and analysis of environmental samples.

Scheme No 3. Technological Upgradation and Modernization

Scheme No 4. Collection, processing, dissemination of data of mines and minerals through various publications

Scheme No.5. Mining Tenement System(under implementation)

3.1 Brief Description of Objective & Activities of the Schemes

3.1.1 Scheme No.1: Inspection of Mines for Scientific and Systematic mining, mineral conservation and mines environment.

3.1.1.1 Objective:

Promotion of conservation and scientific development of mineral resources and ensuring protection of mines environment in mining area through statutory enforcement as well as through promotional activities by carrying out periodical inspection/study of mines.

3.1.1.2 Brief Activities

Important activities include inspection of mines for enforcement of the provisions of Mineral Conservation and Development Rules, (MCDR) 1988/2017 and relevant provision of Mines and Minerals (Development and Regulation) Act, (MMDR) 1957, Mineral (other than Atomic & Hydro Carbon Energy Minerals) Concession Rule [M(OAHCEM)CR],2016, Environment (Protection) Act, 1986, and rules made there under, Processing and approval of mining plans, review of mining plans, modifications in approved mining plans and mine closure plan, star rating of mines under sustainable development framework, scientific studies (lump-fineratio, threshold, RMGS etc.,) Task force/ joint inspections with State Govt., handholding with State Governments to facilitate auctioning of mineral blocks,

organizing mines environment and mineral conservation weeks to promote awareness to minimize environmental degradation as well as to boost reclamation and afforestation activities, spot guidance to mines management in all the aspects of mineral development followed with issue of violation/suggestions to adopt appropriate technology, launching prosecution against mine owners for violation of provisions of MCDR, 1988/2017 wherever necessary, facilitatinggovernment on savedcases of mineral concessionsand other policy issues etc.

3.1.2 Scheme No. 2: Mineral Beneficiation Studies – utilization of low grade and sub-grade ores and analysis of environmental samples

3.1.2.1 Objective

Most of the mineral deposits found in the nature fall short of the grade required by the consuming industries and therefore needs upgradation by ore dressing process. IBM suggests ways and means for their economic utilization as a part of conservation studies of the department which is a statutory obligation of IBM. This is primarily to help directly or indirectly to the mineral industry to exploit the mineral resources of the country.

3.1.2.2 Brief Activities

Important activities include development of beneficiation process flow-sheet/know how of low grade ores and minerals in laboratory and pilot plant scale and to generate process data/parameters for design of commercial concentrator, development of process parameters for agglomeration studies, mineralogical analysis/examinations, recovery of values from plant tailing and ore slimes, catering to the R & D needs in minerals beneficiation, special studies of Platinum Group of Elements (PGE), Rare Earth Elements (REEs) and technology metals, knowledge sharing with stakeholders, imparting training in mineral processing, mineralogy, chemical/environmental analysis to scientists from overseas and Indian Institutions etc.

3.1.3 Scheme No. 3: Technological upgradation and Modernisation

3.1.3.1 Objectives

(i) Implementation of Mining Surveillance System (MSS), Implementation of "SudoorDrushti" with National Remote Sensing Centre, Hyderabad, preparation of Mineral Maps with forest overlays.
(ii) Consultancy services on charge and promotional basis to mining industry on mining, geological & environmental aspects.
(iii) Development of new mining methods for scientific and systematic development of mineral resources and management of mining wastes.
(iv) Human resources and infrastructure development in IBM.

3.1.3.2 Brief Activities

a) Implementation of MSS which is a satellite-based monitoring system to establish a regime of responsive mineral administration, through public participation, by curbing instances of illegal mining activity through automatic remote sensing detection technology. The advantages of remote sensing technology-based monitoring system are that it is transparent, bias-free and independent system with deterrence effect ('eyes watching from the sky').

b) Implementation of "SudoorDrushti" with National Remote Sensing Centre, Hyderabad, for monitoring of mining activities using satellite imagery and capacity building of IBM officers including technical support for setting up of remote sensing laboratory in IBM. The project would facilitate to monitor periodic changes of the mining areas within the mining lease boundary.

c) Preparation of mineral maps with forest overlays covering the whole country with the details of free holds and lease holds areas and other prospecting mineral deposits, infrastructure etc. These multi mineral leasehold maps on a scale 1:50,000 with forest overlays are required to facilitate early environmental and forest clearance of mining projects by Ministry of Environment and Forests and Climate Change (MoEFCC), generation of environmental base line data for mining projects, preparation of Regional Environment Impact Assessment (REIA), Environment Impact Assessment (EIA) and Environment Management Plan (EMP) for mining

projects as well as risk analysis and preparation of disaster management plan, geotechnical investigations, design of stoping methods and preparation of mining feasibility reports and detailed project reports.

d) To Impart training to scientific, technical and other cadres of IBM and also to persons from the mining industry, state/central govt. organization to update the skill and knowledge as an adjunct to human resources development.

3.1.4 Scheme No.4: Collection, processing, dissemination of data on mines and minerals through various publications

3.1.4.1 Objectives:

IBM collects data on mines and minerals through statutory returns and other means with a view to process, analyze and disseminate the data through various statistical and technical publications **as Indian Minerals Year Book, Monthly Statistics of Mineral Production, Mineral Industry at a Glance, Statistical Profiles of Minerals. IBM publications are available on IBM website through weblink**
"http://ibm.nic.in/index.php?c=pages&m=index&id=68&mid=23927".

3.1.4.2 Brief Activities:

Updation of National Mineral Inventory (NMI) by adopting UNFC system covering non-coal and non-atomic minerals in the whole country. It is a globally understandable system, incorporating existing terms in order to make them comparable and compatible, thus enhancing international communication. The reserves/ resource figures with their unique codes and terminologies clearly demonstrate the procedures adopted in the investigation and evaluation of mineral prospect. This is an essential activity to be continued in tune with the National Mineral Policy, wherein special thrust has been given for attracting private investment.

Collection of data through statutory returns, collection of ancillary statistics on fuels, minor minerals, metals production, mineral trade and market prices of minerals through correspondence with various agencies, collection of information

on mining laws of various countries, market survey of demand and supply of minerals and metals, dissemination of data through periodic publications as Indian Minerals Year Book, Monthly Statistics of Mineral Production, Mineral Industry at a Glance, Statistical Profiles of Minerals etc., publishing state wise/mineral wise Average Sale Price (ASP) of minerals and metals for royalty calculation (disseminated through IBM weblink http://ibm.nic.in/index.php?c=pages&m=index&id=912&mid=23791)

3.1.5 Scheme No. 5: Mining Tenement System (MTS)

3.1.5.1 Objective of the Scheme:

MTS would primarily involve automating the entire mineral concession life-cycle, starting from identification of area and ending with closure of the mine; and connecting the various stakeholders for real-time transfer of electronic files and exchange of data. This shall enable effective management of mineral concession regime and transparency in mining operations, transportation of ore with the help of online electronic weighbridges and check-posts.

In some developed countries like Australia and Canada, a specialized software for processing and procedural part of granting various mineral concessions like RP, PL and ML has been designed and developed which is in operation since long. This system displays the details regarding ownership and other details such as area granted, mineral worked, tenure of the concession, taxes, compliance of rules and regulations, area available for grant, quality and quantity of the ore deposit, area relinquished after reconnaissance of RP and PL, prospecting reports available, details of infrastructure, land details with ownership status, etc. This online computerised system has been found very user friendly, as it provides the information in visual graphic form, known as Geographical Information System (GIS) and textual form. The computerization of land records, processing of applications for various concessions and transparency in the system has drastically reduced the time required for taking decisions in these countries. The information available online has speeded up the decision-making process and has attracted huge investment in mining industry.

3.2 Evaluation of IBM Schemes:

At the beginning of the 15 th Finance Commission period, the IBM schemes haveevaluated by third Party namely Administrative Staff College of India (ASCI). Ministry of Mines, Government of India vide letter No.37/11/2017-Mines IIIdated1.2.2021 has approved for engagement of Administrative Staff College ofIndia (ASCI) for evaluation of the ongoing schemes of IBM. Evaluation Reportsubmitted by ASCI along with Scheme wise inputs in SFC Formats have been submitted to the Ministry.

Ministry of Mines vide letter No.37/11/2017-M.III dated 31.8.2021 conveyed approval for continuation of IBM Schemes in the period of 15th Finance Commission, with a direction to take suitable action on relevant provisions on Mining Technology furnished under Para No.6.3 to 6.5 and 9.2 to 9.4 of NMP 2019 and formulate appropriate Schemes for implementation of the provisions of NMP 2019. Accordingly action is in progress.

3.3 IBM Advisory Board

The formation of an Advisory Board is for strengthening the links between IBM and the various organizations interested in or connected with the functions of the IBM and to enable the Government to have objective appraisal of the effectiveness of the working of the IBM and of the ways and means by which its utility and effectiveness can be continually enhanced.

In view of the major changes in legislative framework brought about by the MMDR Amendment Act, 2015 & MMDR Amendment Act, 2021 & rules made there under, Government vide Order No.35/3/2015-M.III dated 2.7.2021 has reconstituted IBM Advisory Board to provide the appropriate advice to the Government to equip IBM in new scenario for its effective functioning. Action for preparation of Agenda items is in progress.

Order No.35/3/2015-M.III dated 2.7.2021 referred above is enclosed at **Annexure 1.**

4.0 IBM performance during 2021-22

4.1 Salient Achievements 2021-22

(i) For promotion of scientific development and conservation of mineral resources and ensuring protection of mines environment in mining areas, IBM carried out **1347**inspection of mines for enforcement of provision of MCDR, 2017 and examination of MP/RMP/Mod.M.P./FMCP, disposed **30**mining plans, **177**review of mining plan and **10** final mine closure plans.

(ii) For up gradation and utilization of low grade and sub-grade ores and minerals, IBM carried out **40**Ore dressing investigations, **17424**chemical analysis and **2344** mineralogical studies.

(iii) Mining Tenement System: In the year 2021-22, the system is being developed through National Informatics Centre (NIC). Some of the modules, such as Registration and Returns module have already been developed and are operational, whereas some modules, which include Mining Plan, Star Rating also,are under development stage. Amongst these Mining Plan module is likely to be online by July, 2022. The system will digitize most of the activities in a transparent manner with facility of quick retrieval of data.

(iv) Star Rating of Mines: As part of “Azadi ka Amrit Mahotsav”, fifth National Conclave on Mines and Minerals has been organized on 23.11.2021. For the performance year 2017-18; 2018-19 and 2019-20, 57, 52 and 40 mines respectively were felicitated by Hon’ble Minister of Mines in the 5th Conclave for achieving five star rating.During 2021-22, 1034 Mines have filed online star rating templates for assessment years 2020-21 under Rule 35 of MCDR, 2017. Validation process was in progress.

(v) Mining Surveillance System (MSS): In the third phase in 2021-22, 177 preliminary triggers are generated for major minerals and uploaded on the portal for further transmission to the state governments. During

2021-22, field verification reports in respect of 79 triggers for major minerals have been received out of which unauthorized mining in ten cases of major minerals have been confirmed by the state governments.

(vi) Project "SudoorDrushti": Under the Project "SudoorDrushti" action for setting up of "GIS & Remote Sensing Centre at IBM HQ, Nagpur and at IBM Hyderabad was in progress and installation of the Hardware was over. IBM finalized SOP for carrying out drone survey as per the provisions of Rule 34A of MCDR, 2017.
IBM organized two training programmeson the Basics of Geographic Information System and Processing of Drone Survey data on GIS platform at GIS centre, IBM,Nagpur for IBM officers during the month of March 2022 in which 11 officers participated.
IBM procured hardware & software for processing of Drone Survey Data, through Central Stores, IBM for IBM HQ and Nine Regional offices namely Ajmer, Bangalore, Bhubaneswar, Chennai, Gandhinagar, Hyderabad, Jabalpur , Ranchi and Raipur.

(vii) For Strategic dissemination of information on new technologies, equipment processes, and practices IBM had organized an Interactive meet between major equipment manufactures and industry players at Bengaluru on 22nd October 2021.

(viii) In order to acquaint the State Govts with the latest rules and regulations in the mining sector, IBM had organized two "Online Training Programme on Latest Amendments in MMDR Act and Rules made there under for Capacity Building of State Govt. Officials" through its zonal offices for the benefit of State Govts under the jurisdiction of respective zones at Udaipur and Nagpur in the month of Oct.21.

(ix) IBM gathered information through its Regional Offices on the best practices being adopted by the lease holders in their respective region on the aspects such as Scientific methods of mining; Use of state of art mining machinery; R&D in the areas of rock mechanics, ground control, energy conservation, environmental protection, etc.; and Development and introduction of robotics in mining sector and its compilation in the form of Technical Publication is in progress.

(x) To sensitize the importance of mineral conservation and protection of environment, Mines Environment and Mineral Conservation Weeks were kept as low profile events this year due to Covid 19 Pandemic and was observed at mine level.

(xi) IBM provided various statutory inputs to ministry of Mines such as i) Case wise inputs on Section 10 A (2) (b) matters and ii) Comments on area limit relaxation matters under Section 6 (1) (b)

(xii) For dissemination of data and statistics on mines and minerals, IBM released 18statistical & Technical Publications andpublished State **wise/mineral wise Average Sale Price** of Minerals up to January, 2022 and of Metals up to February, 2022which have been hosted on IBM website.

(xiii) **Inputs for Replying Parliament Questions (PQs) & Ministry References:** Inputs for replying 212 PQs and450 Ministry references was furnished to Ministry.

(xiv) Updation of National Mineral Inventory: During the year, data collection by literature survey,correspondence and field visit to exploration & exploitation agencies for 46 major minerals was in progress. Processing, scrutiny, verification and finalization of deposit- wise inventories completed for 5745 deposits up to March, 2022. Data entry, verification for computerization of inventoriescumulatively completed up to March, 2022 for5981deposits.

(xv) Implementation of amended Rule 45 of Mineral Conservation and Development Rules (MCDR) 1988/2017: Rule 45 of MCDR, 1988/2017 has made it mandatory for all mining lease holders, for any person, or company engaged in trading or storage or end use or export of minerals mined in the country to register online with IBM to keep accounts of mineral flow. Up to March, 2022, registration position for major minerals plus 31 minor minerals was that: total 6401 mining leases, 3714 units of end users, 6566 traders, 1989 stockiest and 1127 exporters have registered with IBM.

(xvi) IBM created geo-database for multi-mineral leasehold maps with forest overlays in respect of major mineral bearing states which is being updated periodically.

(xvii) As part of the capacity building of human resources, IBM conducted 12training programmes have been organized in which 201 IBM and 522 Industry personnel participated and revenue of Rs.10,44,000/- was generated.In addition, two capacity building programmes for State Govt. officers were organized at Nagpur and Udaipur under the aegis of Central & North Zone respectively in which 53 officers of various State Govts have participated.

(xviii) **IBM restructuring & Expansion:** After the cabinet approval, detailed discipline-wise, revised sanctioned strength of IBM, is notified vide Gazette notification No. 31/72/2009-M.III.Vol.I (part–I) dated 15th May, 2018, published on 17.5.2018.For implementation of new manpower strength, recruitment Rules of some disciplines (mining stream up to CCOM, geology, mineral economics, administration, library stream, Rajabhasha stream, private secretary & stenographers) have been notified and for the other disciplines they are under finalization at various stages.The posts which includes merger or up gradation have not taken up forfilling up for want of revised Recruitment Rules.In respect of the posts of Group B and C, where the authorities of IBM are competent to make appointment, the DPCs are being conducted regularly and for Direct Recruitment the requisitions are being sent to SSC.

During 2021-22, proposals for DPC to 89 posts as per the existing RRs and revised RRs has been sent to Ministry for holding DPCs at UPSC/Ministry in respect of Gazetted posts. Further, In respect of the 74 posts of Group B and C, where the authorities of IBM are competent to make appointment, the DPCs have been conducted during 2021-22.

(xix) Evaluation of IBM's continuing schemes: At the beginning of the 15th Finance Commission period, the IBM schemes have again been evaluated by third Party namely Administrative Staff College of India (ASCI). Ministry of Mines, Government of India vide letter

No.37/11/2017-Mines III dated 1.2.2021 had approved for engagement of Administrative Staff College of India (ASCI) for evaluation of the ongoing schemes of IBM.

Evaluation Report assubmitted by ASCI along with Scheme wise inputs in SFC Formats and subsequently comments of IBM on recommendations of ASCI weresubmitted to the Ministry for seeking approval for continuation in the period of 15th Finance Commission.

Ministry of Mines vide letter No.37/11/2017-M.III dated 31.8.2021 conveyed approval for continuation of IBM Schemes in the period of 15th Finance Commission, with a direction to take suitable action on relevant provisions on Mining Technology furnished under Para No.6.3 to 6.5 and 9.2 to 9.4 of NMP 2019 and formulate appropriate Schemes for implementation of the provisions of NMP 2019. Accordingly, action is in progress.

(xx) **Record of data on NMET Contribution**: IBM devised Standard Proforma for obtaining data from State Governments in terms of provisions of Rule 7(5) of NMET (Amendment) Rule, 2018. Further as per Rule 7(6) of NMET (Amendment) Rule 2018 the nodal officers of IBM regularly coordinates with the respective state governments/ UT Departmentsand Lease Holders to collect & reconcile the data on royalty & NMET.

(xxi) During 2021-22, as per the framework received from Ministry of Mines, all the IBM offices observed SwachhataPakhwada during 16th-30th November 2021 in office premises as well in mining site areas, nearby villages and schools with action points covering:

Plan for Swachhata Pakhwada-2021

Clean & Swachh mines:

a. Implementation of Clean/Green Energy Initiatives at Mines
b. Targeting adjoining villages/ towns/ areas to make plastic free village
c. Launching of pilot schemes of zero waste mines
d. Swachhta message dissemination through banners, posters etc.
e. Hygiene kits for the labours/workers.
f. Massive tree plantation and Shramdaan

5.0 Activity wise Performance of IBM 2021-22

The activities of IBM have been conducted through the four continuing schemesencompassing the mandates as enshrined in its charter of functions, by six divisions of IBM. Performance relating to various activities of IBM during the year 2020-21 is given hereinafter.

5.1 Inspection of Mines

During the year 2021-22, total1347 inspections for enforcement of the provisions of Mineral Conservation and Development Rules (MCDR) 2017 and for examination of mining plans/ review of mining plan /mine closure plans were carried out. Consequent to inspection of mines, 1694 violations were pointed out as against 1296 violations in 2020-21, in respect of 787mines. Total 1029 violations were rectified during the year. 269 violations were further rectified after issue of show cause notices. Mining operations were suspended under Rule 11(2) of MCDR 2017 in 23mines for not carrying out mining operations in accordance with the approved mining plan/ review of mining plan and recommended13cases for suspension of leases to State Government for non-submission of online returns/ discrepancies in submitted returns. Details of state wise inspections carried out during 2021-22 are indicated in table No. 5.1A and follow up of MCDR administration in the form of violations pointed out etc are shown in table No. 5.1B.

Table No.5.1A: Inspection of Mines carried out by IBM during 2021-22

Sl.No.	State	MCDR	Mining Plan	SDFRating	RPPL etc	Total
1	Andhra Pradesh	66	39	0	0	105
2	Assam	1	0	0	0	1
3	Bihar	1	1	0	0	2
4	Chhattisgarh	61	43	0	0	104
5	Goa	8	2	0	0	10
6	Gujrat	129	32	0	0	161
7	Haryana	0	0	0	0	0
8	Himachal Pradesh	30	11	0	0	41
9	J & K	4	0	0	0	4
10	Jharkhand	47	21	0	2	70
11	Karnataka	85	44	0	1	130
12	Kerala	0	0	0	0	0
13	Madhya Pradesh	106	109	0	0	215
14	Maharashtra	62	34	0	2	98
15	Manipur	0	0	0	0	0
16	Meghalaya	16	10	0	0	26
17	Orissa	96	47	0	2	145
18	Punjab	0	0	0	0	0
19	Rajasthan	45	23	11	0	79
20	Sikkim	0	0	0	0	0
21	Tamil Nadu	73	41	0	0	114
22	Telangana	26	13	0	0	39
23	Uttaranchal	2	0	0	0	2
24	Uttar Pradesh	1	0	0	0	1
25	West Bengal	0	0	0	0	0
TOTAL		859	470	11	7	1347

Table No. 5.1B: Principal Violations of MCDR, 2017 detected by IBM during 2020-21 and 2021-22

Rule No	No. of Violations Pointed out 2020-21	No. of Violations Pointed out 2021-22	Rule description
11(1)	300	482	Rule11 (1) - Mining operations in accordance with mining plans
11(3)	06	02	Rule 11 (3) - Submission of Review of Mining Plan / Scheme of mining
20	01	01	Rule 20 - Notice of opening of mine
23	02	01	Rule 23 - Submission of progressive mine closure plan
26 (2)	155	210	Rule 26 (2) - Responsibility of the holder of mining lease to submit yearly report
27(2))	6	12	Rule 27(2) - Submission of Financial assurance
28(1)	14	21	Rule 28 (1) - Notice of temporary discontinuance of mining operations
31(4)	30	34	Rule 31(4) - Maintenance of plans and sections
33	70	64	Rule 33 - Copies of plans and sections to be submitted
35,36,37, 38, 39,40,41, 42,43,44	225	166	**Protection of environment:** Rule 35, 36, 37, 38, 39, 40, 41, 42, 43, 44 - Sustainable mining, removal and utilization of topsoil, Storage of overburden, waste rock Precaution against ground vibrations, Control of surface subsidence, Precaution against air pollution, Discharge of toxic liquid, Precaution against noise, Permissible limits and standards, Restoration of flora respectively.
45(5)(b)	63	43	Rule 45 (5) (b) - Submission of Monthly Return
45(5)(c)	69	59	Rule 45 (5)(c) - Submission of Annual Return
55(1)(c)(i)	40	52	Rule 55(1)(c)(i) - Employment of Whole time Mining Engineer/Geologist
55(1)(c)(ii)	38	25	Rule 55(1)(c)(ii) - Employment of Part time Mining Engineer/Geologist
Others	277	675	
Total	**1296**	**1847**	

5.2Mining Plan, Review of Mining and Mine Closure Plan

The Mineral (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 and the Mineral Conservation and Development Rules, 2017 stipulate that mining operations are required to be conducted as per an approved Mining Plan and after extraction of minerals, the mines are required to be reclaimed as per an approved Mine Closure Plan. The Mining Plans are approved by the IBM and in case of mines of minor minerals including 31 notified (on 10.02.2015) non-metallic or industrial minerals; the powers have been delegated to respective State Governments. The Mine Closure Plan is required to comprise a Progressive Mine Closure Plan (PMCP) prepared for five yearly periods of the successive Review of Mining Plans which is now a component of Mining Plan and a Final Mine Closure Plan (FMCP), before the final closure of the mine. Mine Closure Plan is expected to address issues relating to environment protection including air, water and land protection, management of top soil and overburden, reclamation and rehabilitation of land and control on ground vibration, surface subsidence and restoration of flora.

Till the year 2021-22 (upto 31st March 2022), Financial Bank Guarantees for a value of RS. 32,71,85,12,923/- i.e., Rs. 3271.8512923 crores[as per revised per hectare rate of Rule 27(1) of MCDR, 2017] have been collectedand certificates under Rule 29A of MCR 1960 / 21(4) of MCDR, 2017 have been issued for --- cases (excluding 31 minor minerals) of partial or full surrender of lease area.

During the year 2021-22, 21 Mining Plans were approved and 09 not approved, 150 Review of Mining Plan were approved and 27 not approved and 08 Final Mine Closure Plans approved and 02 were not approved. State-wise break-up is given in the following table 5.2A.

Table No. 5.2A: State-wise Mining Plans/Review of Mining Plans / Schemes of Mining/Final Mine Closure Plans approved by IBM during 2021-22

S. No	State	Mining Plans		Review of Mining Plan		FMCP	
		Approved	Not Approved	Approved	Not Approved	Approved	Not Approved
1	Assam	0	0	2	0	0	0
2	Andhra Pradesh	0	1	15	4	1	0
3	Jharkhand	0	1	2	3	0	0
4	Bihar	0	0	0	1	0	0
5	Chhattisgarh	3	4	28	1	1	0
6	Delhi	0	0	0	0	0	0
7	Goa	0	0	1	1	0	0
8	Gujarat	3	1	47	6	0	0
9	Himachal	0	0	3	2	0	0
10	Haryana	0	0	0	0	0	0
11	J & K	0	0	2	0	0	0
12	Karnataka	0	0	14	3	0	0
13	Kerala	0	0	0	0	0	0
14	Madhya Pradesh	0	0	0	0	0	0
15	Maharashtra	2	0	1	0	1	0
16	Meghalaya	1	0	4	2	0	0
17	Manipur	0	0	0	0	0	0
18	Odisha	11	2	22	1	5	2
19	Rajasthan	0	0	0	0	0	0
20	Sikkim	0	0	0	0	0	0
21	Tamilnadu	1	0	7	2	0	0
22	Telangana	0	0	1	0	0	0
23	Uttar Pradesh	0	0	0	0	0	0
24	Uttaranchal	0	0	1	0	0	0
25	West Bengal	0	0	0	0	0	0
Total		**21**	**09**	**150**	**27**	**08**	**02**

IBM monitors the progress of reconnaissance permits and prospecting licences.

5.3Mines Environment and Mineral Conservation (MEMC) week celebration

IBM plays a key role in fostering greater awareness and inculcates competition amongst the mine owners by organising Mines Environment and Mineral Conservation (MEMC) Week in different mining areas in the country towards the protection and restoration of mine environment with sustainable development.The Indian Bureau of Mines celebrated Mines Environment and

Mineral Conservation (MEMC) Week under the territorial jurisdictions of its various regional offices during the year 2021-22for creationand propagation of awareness on mineral conservation and environmental protection in mining areas at very low profile at mine level by individual mines due to Covid 19 pandemic.

5.3.1. Jabalpur Region:MEMC Week was celebrated during 16th -22nd May 2021 through virtual mode without incurring single rupee expenditure. The participating mines were evaluated on the basis of exhibiting the PPTs, Slides, Video Clips, Live through Drone (UAV) along with various documents by 08 nos. of inspection teams during the week and the certificates were issued the award winning mines through email.

Prize Distribution & Valedictory function of the "Mines Environment & Mineral Conservation Week- 2020-21" was organized on 28.05.2021 under the auspicious agies of IBM's Jabalpur office through virtual mode on Google Meet platform. The program was graced by Shri PN Sharma- Chief Controller of Mines Incharge&Dr. Pradeep Kumar Jain- Chief Mineral Economist from IBM Headquarters and Shri Mukund P. Chaudhari- Chairman-cum-Managing Director, M/s MOIL Limited & Shri Anant V. Masade, Joint General Manager (Safety & Environment), M/s MOIL Limited, host of the MEMC Week 2020-21 along with 127 nos. of various participants i.e. Mining Lease holders, Mine Managers & Senior Officers from the Mining Industry of Madhya Pradesh State.

The entire gamut of week celebration was paperless.

5.3.2 2. **Gandhinagar Region:** The inspection on the occasion of 29th Mine Environment & Mineral Conservation week-2021-22 was completed during the period from 21-02-2022 to 28-02-2022. A final day function with award distribution ceremony would be organized by the host organization M/s Saurashtra Cement Ltd, (A Mehta Group Company), at Ranavav, Porbandar, Gujarat in 2022023.

5.4 New Initiatives by MDR Division

5.4.1 Application of Drone Technology in mining

Furthering the efforts to utilize new technology, the Ministry of Mines has explored the applicability of the Unmanned Aerial Vehicles (UAV) Technology or commonly referred to as 'UAVs' for the mining sector.

The UAVbased remote sensing is an emerging technology, increasingly used in agriculture, environmental, geology, mining, town planning and forestry applications and other applications. UAV's, typically operate at lower altitudes than manned aircraft and are also able to provide unique data with regard to spatial resolution angle of view. Compared to manned fixed-wing aircraft, typically used in aerial remote sensing, UAVs can provide lower ground sample distances (GSD) or higher spatial resolutions on the ground.

After a successful pilot project during 2020-21 to ascertain the efficacy of using Unmanned Aerial Vehicles (UAV) to monitor the mining activities in the country, necessary amendments were made in the Mineral Conservation and Development Rules 2017 to include submission of digital images to IBM. The MCDR, 2017 vide rule 34A now mandates the mineral concession holders to submit digital aerial images to IBM on an annual basis. The digital images to be submitted to IBM will be based on drone (UAV) survey of the mines having production capacities of more than 1 million ton or lease area of 50 hectares or more based on the Standard Operating Procedure laid down by IBM. For other mines the lessee will be required to submit satellite images based on the SOP laid down by IBM.

The regular survey of the mines using drones will bring in more transparency and create more awareness to work following the proposals in the mining plans. The miners can self-regulate themselves to ensure that all their activities are restricted within the lease area and meet the requirements of the mining plan. In effect all future submissions of mining plans or modifications will be based on drone survey carried out in the mines resulting in better and scientific mining plans reflecting the actual ground realties. The mine surveys can

be taken up at a faster pace using drone surveys there by increasing the accuracy and also reducing the time of survey.

To facilitate the regional offices in processing the drone and satellite image data, necessary hardware & software infrastructure is being provided progressively in a phased manner.

For capacity building of IBM officials to process the drone and satellite image data on GIS platform, necessary hands-on training on "Basics of GIS & Processing of Drone Survey Data" has been commenced from March 2022. A road map has been carved out to train all the officials of the MDR Division through a series of in-house training program to develop expertise in processing the aerial images and to make appropriate use of these images in inspection of mines and approval of mining plans. The First batch of 04 participants from IBM HQ were imparted training by the officers of GM&MM Cell from 02.03.2022 to 11.03.2022.

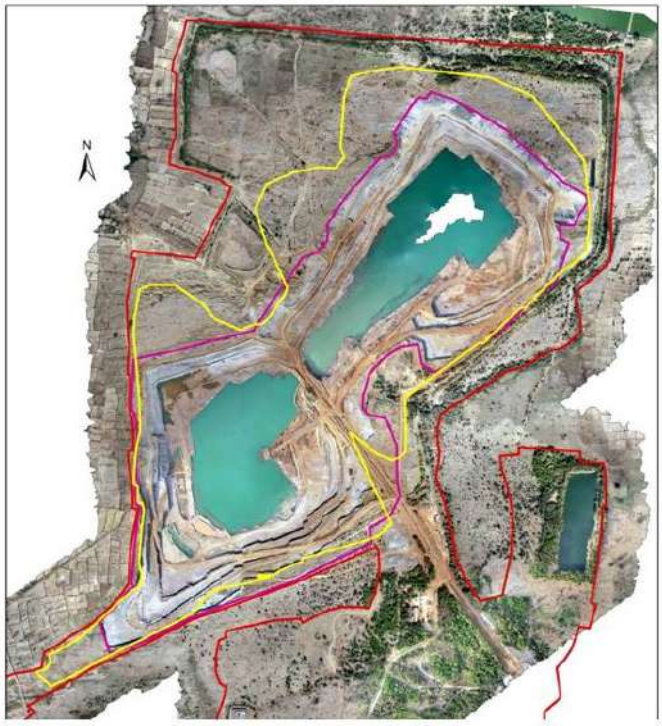
During the year 2021-22, necessary inputs provided to Ministry of Mines for framing of Rule 34A of MCDR 2017. The Standard Operating Procedure for mine owners for submission of data to IBM as per Rule 34A of MCDR 2017 has been finalized and hosted on the IBM website. The Standard Operating Procedure for IBM officials for processing of drone and satellite image data received by IBM as per Rule 34A of MCDR 2017 has been finalized and circulated to all regional offices.

UAV technology can be extensively applied in the mining sector, i.e. for

i. Carrying out overall survey of mine for monitoring the mining and allied activities in and around the mining area.
ii. Lease boundary demarcation using the Ground Control Points (GCPs) and geo-referencing of the leases, monitoring of illegal mining activities etc.
iii. Volumetric estimation of excavation, reclamation and periodical stock piles monitoring.
iv. Change detection analysis over a period of time using previously surveyed data.
v. Monitoring of land use and environmental impact in and around mining area.

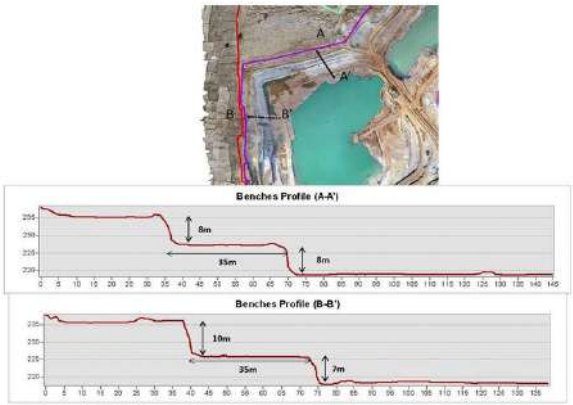
vi. Virtual inspection of mines for regulatory purpose.

vii. Preparation of contour survey and survey map for filing to various regulatory agencies as well internal use of the industry.



Pit Monitoring

Orthomosaic image of drone survey superimposed by lease boundary (red color line), Ultimate Pit Limit (yellow color line) from mining plan proposal and actual pit limit (pink color line).

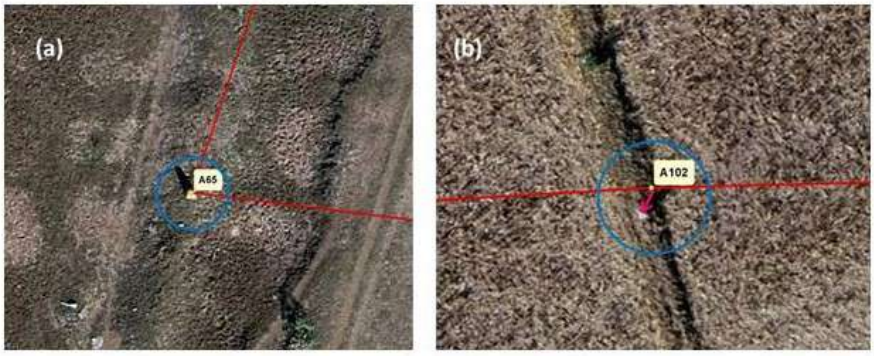


Pit Benches Profile Analysis

Benches height varies from 7 to 10m, width of the benches is about 35m

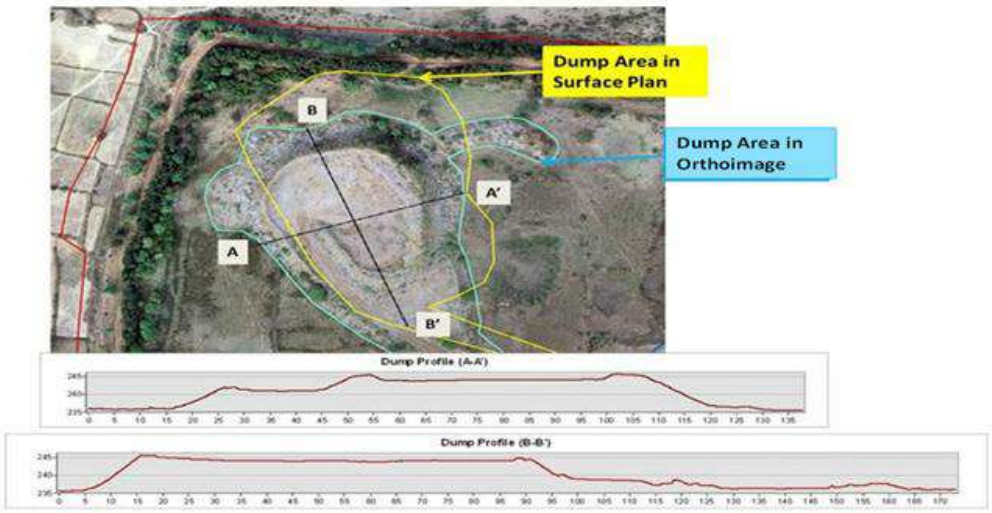
Mine Reclamation Monitoring

Orthoimage showing Proposed Backfill area (blue colour line) and back filled area (yellow coloured line)



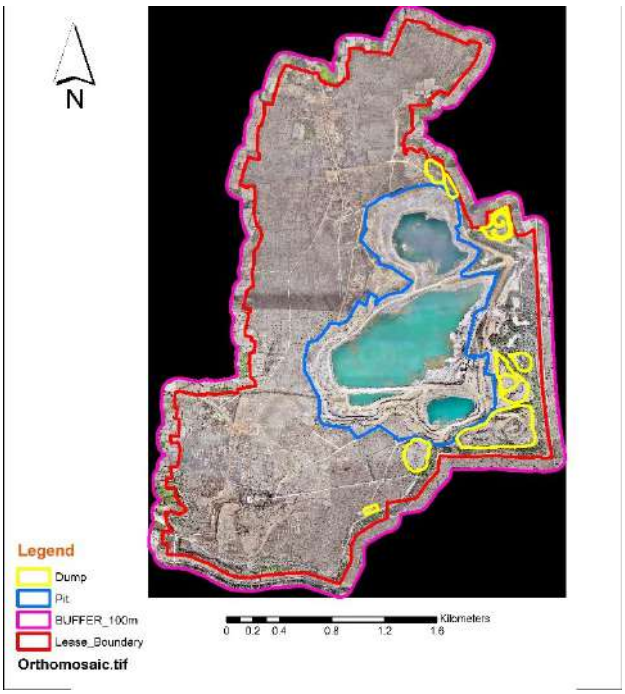
Boundary Pillar Cross-check

Orthoimage showing lease boundary pillars. (a) Pillar No. A65, no shift in lease boundary pillar (b) Pillar No. A102 about 60cm shift in the boundary pillar.



Dump location and profile

Orthoimage showing Dump location as per surface plan (yellow colour line) and Dump location as seen in orthoimage (blue coloured line). Height of the Dump is about 10m as seen in the profile generated.



Drone Image of a mine superimposed by GIS layers

The advantages of UAV Survey are

(i) UAV Survey in mining can improve the overall efficiency of large mine site and quarry management by providing accurate and comprehensive data detailing site conditions in a very short time.
(ii) The data accuracy and authenticity is better than the traditional survey.
(iii) High resolution (cm level) data of UAV provides high accuracy and more precise volumetric measurements than traditional surveying methods.
(iv) Stockpiles of irregular shape and exhibiting craters can be easily surveyed with great precision than using traditional methods.
(v) UAV Survey is faster, less human intervention in mine and easily-repeatable mining surveys at low cost.
(vi) Changes between two surveys can be tracked and highlighted automatically.
(vii) UAV aerial images can be used to generate point clouds, digital surface models, digital terrain models and a 3D reconstruction of a mining site, including its stockpiles.
(viii) Helps in creating a digital data base which can be used and retrieved at ease and compared.
(ix) Data generated over a period of time can be stored in digital platform and the time series data can be compared. The data can be used for systematic and scientific mine closure planning, monitoring of reclamation, rehabilitation activities in lease area.

5.4.2 Best out of Waste:

National Mineral Policy, 2019 thrusts on having an adequate and effective legal and institutional framework promoting zero-waste mining as the ultimate goal and a commitment to prevent sub-optimal and unscientific mining. In accordance with the National Mineral Policy, 2019, suitable provision has been made under Rule 12(1) (k) of Minerals (Other than Atomic and Hydrocarbons Energy Minerals) Concession Rules, 2016 for use of inferior grade mineral /waste as minor mineral. Overburden or waste rock; mineral below the threshold value, which is generated during the course of mining or beneficiation of the mineral; any minor mineral extracted along with the mineral for which lease is granted; are now allowed to be disposed off with the permission of the concerned State Govt. and in consultation with Indian Bureau of Mines. This has helped in marching towards

the goal of zero waste mining and for generating the economy out of the dead stock.

5.4.3 Capacity Building:

Indian Bureau of Mines has been instrumental in capacity building of IBM employees, personnel deployed in mining industry and State Government employees, through it's training programmes. Various trainings imparted include, training on MSS & space application, training on drone surveying, training on GIS, training on reserves/resource classification etc. etc.

5.4.4 Simplified Mining Plan Templates

As per the NITI Aayog recommendations simplified Mining Plan Template draft has been prepared by a committee constituted for the purpose. The same has been circulated to all Zonal / Regional offices and other stakeholders for suggestions and comments. NITI Aayog suggested preparing the Mining Plan as a output-outcome document.

Accordingly vide CCOM circular No. 1/2021 a new format of submission of Miningplan was issued on 7.6.2021. It was also advised in the Circular to sensitize and facilitate the stake holders for preparation of miningplan as per new guidelines. A Video conference on the implementation of new miningplanformat was also taken by CCOM office with the Regional Offices on 11.6.2021. Regional Offices were directed to conduct hand holding of mining industry within their region by conducting virtual or otherwise meetings or workshops to sensitize and educate the mining industry about the new format.

5.5Mineral Beneficiation

Mineral beneficiation studies including mineralogical testing and chemical analysis intimately relates to both conservation and development of mineral resources. During the year 2021-22, **40**ore dressing investigations, **17424**chemical analysis, **2344** mineralogical examinations and 03 in-plant study were completed. Salient Data of Ore Dressing investigations on Iron Ore is available on IBM website on link https://ibm.gov.in/index.php?c=pages&m=index&id=232.

5.5.1 Some of the salient achievements of ore dressing investigations are as follows:

5.5.1.1 <u>COPPER ORE:</u>

Bench scale beneficiation studies on Copper bearing sample from Ladana-Diggi Block, of Udaipur dist, Rajasthan for Geological Survey of India, Western Region, Jaipur, Rajasthan (IBM/AJM/RI No. 669).

A Copper bearing sample from Ladana-Diggi Block of Udaipur District, collected by GSI as a part of G-2 exploration was received at Regional Mineral Processing Laboratory, Indian Bureau of Mines, Ajmer for bench scale beneficiation studies. The aim of bench scale beneficiation study was to evolve a process flow sheet producing a copper concentrate assaying more than 18% Cu with maximum possible recovery.

The "as received" sample assayed 0.60% Cu, 8.60 % Fe(T), 49.01 % SiO_2, 9.46% Al_2O_3, 10.70% CaO, 5.82% MgO, 0.79% S(T), 1.48% TiO_2, 0.01% Zn, 0.01% Pb, 0.96% LOI, 85.59% AI, 0.25% MnO, 2.1% Na_2O and 0.32% K_2O.

Chalcopyrite and covellite are the main copper bearing minerals present in very minor amount, Chalcopyrite and covellite occurs as very fined grained to medium grained (30µm to 210µm) anhedral crystals, finely associated with silicate gangue, carbonates, other sulphides and oxide minerals. At a very few places, chalcopyrite is interlocked with covellite and also showing interlocking with carbonates and silicate gangue. Most of the chalcopyrite grains carry extremely fine-grained inclusions of iron oxides, carbonates and silicate gangue. At places, veins of chalcopyrite occur within the cracks and fractures of silicate gangue.

Series of flotation tests were carried out on the sample at optimum mesh of grind i.e. 84.2% -200 mesh. A final flotation test was carried out on optimized condition and reagent and their point of addition to produce a copper concentrate assaying 25.76% Cu, with 90.05% copper recovery (Wt% yield 2.10). This concentrate is a having good copper grade and recovery which meets the copper grade required for smelter plant. The final concentrate assayed 25.76% Cu, 29.68 % Fe(T), 4.26 % SiO_2, 6.32% Al_2O_3, 0.30% CaO, 1.34% MgO, 30.14% S(T), 9.56 % AI, 0.26% Na_2O and 0.12% K_2O, 0.85% Zn with traces of TiO_2, MnO and Pb.

The final resulst confirm that, although the Copper bearing sample from Ladana-Diggi Block of Udaipur District, collected by GSI as a part of G-2 exploration deposit is slightly lower grade in comparison to most of the operating copper mines around the world, it has potential to produce a metallurgical grade concentrate. However, weight percent yield is around 2.10% only.

5.5.1.2 IRON ORE (DRILL CORE):

Bench scale beneficiation study on an iron ore (Drill core) sample (G-2 stage exploration, Gandhalpada West Block, Kendujhar district, Odisha for Geological Survey of India, Bhubaneswar (IBM/NGP/RI No. 2234)..

An iron ore (drill core) sample, G2 stage exploration from Gandhalpada West Block,, Kendujhar district, was received through Geological Survey of India, Bhubaneshwar, for bench scale beneficiation studies at the Modern Mineral Processing Laboratory and Pilot Plant, Indian Bureau of Mines, Nagpur. The aim of the investigation was to study the amenability of the sample to beneficiation to produce a marketable grade iron ore concentrate.

The as received sample assayed 54.14% Fe(T), 3.85% Al_2O_3, 12.31% SiO_2, 0.49% CaO, 0.18% P_2O_5, 0.35% MgO, 0.43% TiO_2, 0.61% Mn, 0.01% S(T) and, 3.67% LOI.

The as received sample consists of major amount of hematite, subordinate to minor amount of goethite/limonite, quartz and clay. Very minor amounts of gibbsite, mica (muscovite, biotite) with traces of zircon and pyrite.

Dry beneficiation route employing magnetic separation and wet beneficiation route employing magnetic and gravity separation were carried out to upgrade the Fe content.The best process evolved comprised of –

(i) crushing the as received ore to minus 10 mesh size, first by open circuit in laboratory jaw crusher followed by stage crushing in laboratory roll crusher in closed circuit with a 10 mesh screen.
(ii) wet grinding of the representative minus 10 mesh crushed product in a laboratory rod mill in closed circuit with a 70 mesh sieve.
(iii) desliming the ground all minus 70 mesh product in a laboratory hydro-classifier, resulting in two fractions namely sand and slime.

(iv) subjecting the sand fraction on a quarter deck Deister table resulting in three products namely Cleaner table concentrate, Cleaner table tails and Rougher table tails.

(v) subjecting the slime fraction to fine particle recovery in a Mozley Multi Gravity Separator, subjecting the rougher MGS concentrate to two cleanings, sbjecting the II Cleaner concentrate to wet high intensity magnetic separation, subjecting the rougher Mag. fraction to one cleaning, thus yielding. Cl. Mag., Cl. Non Mag., Rough. Non.Mag., MGS Midd., MGS IICl.Tails, MGS ICl.Tails and, MGS R.Tails.

The composite concentrate obtained by the this route assayed 63.37% Fe (T), 0.91% Al_2O_3 and 3.62% SiO_2 and, 2.55% LOI with a total Fe recovery of 36.8% (Wt% yield: 31.3).

The concentrate is suitable for use in iron and steel industry after agglomeration.

Another grade II concentrate assayed 62.24% Fe (T), 1.06% Al_2O_3 and 5.51% SiO_2 and, 2.90% LOI with a total Fe recovery of 48.3% (Wt% yield: 41.8).

The sample is amenable to beneficiation.

5.5.1.3 <u>IRON ORE:</u>

Beneficiation studies on an iron ore sample from Dalpahar, Ps-Joda, Keonjhar, Odisha for M/s AarkaaMagtek Private Limited, Bangalore (IBM/BNG/RI No. 921).

The objectives of the investigation were (a) to carry out detailed mineralogical and chemical analysis studies of the sample, and (b) to upgrade the iron content with maximum possible grade and recovery at coarser size and if necessary with regrinding of middling.

The as received sample assayed 40.56% Fe(T), 3.53% FeO, 58.0% Fe_2O_3, 39.94% SiO_2, 0.45% Al_2O_3, 0.24% CaO, 0.18% MgO, 0.11% Na_2O, 0.08% K_2O, 0.08% P, 0.09% S(T), 0.17% TiO_2, and 0.36% LOI.

The sample consists major amounts of hematite, Martitized magnetite and quartz with very minor amount of goethite/limonite, pyrite and traces of clay, mica, amphibole and ilmenite.

The original sample was stage crushed to -1 mm size, and subjected to gravity separation by tabling. The table concentrate obtained assayed 65.42% Fe(T), 6.12% SiO_2, 0.26% Al_2O_3 with Fe(T) recovery 62.9% (Wt.% yield: 40.0). The table middling and tails obtained was reground to -100# and subjected to Mozley gravity concentration. The Mozley gravity concentrate obtained assayed 66.09% Fe(T), 5.2% SiO_2, 0.2% Al_2O_3 with Fe(T) recovery 30.0% (Wt.% yield: 19.0). The composite gravity concentrate thus obtained assayed 65.65% Fe(T), 5.83% SiO_2, 0.24% Al_2O_3 with Fe(T) recovery 92.5% (Wt.% yield: 59.0).

Efforts was made for recovery of silica sand to achieve zero waste process. The gravity & tails subjected to wet low intensity magnetic separation at 6 kilo gauss. The nonmagnetic silica sand concentrate obtained assayed 96.15% SiO_2 with 59.8% SiO_2 recovery, (Wt.% yield: 24.6). This process developed is as a "NEAR ZERO WASTE PROCESS" where about 91.5% by weight of mined materials can be utilized.

Thus, stage grinding and gravity separation by employing tabling at -1 mm and regrinding of table middling and tails to -100 mesh and gravity/magnetic separation could yield a relatively better grade, recovery and yield of both an iron ore concentrate and a silica sand concentrate. This process route is recommended from the minerals conservation point of view.

5.5.1.4 MAGNETITE IRON ORE:

Bench scale beneficiation studies on a Magnetite Iron Ore, Drill Core Sample, G-2 Level Exploration From Majos Area, Jamui District, Patna, Bihar for Geological Survey of India, Bihar.(IBM/NGP/RI No. 2241).

A Magnetite iron ore drill core sample, G-2 level exploration, weighing about 250Kg from Majos area, Jamui district, Bihar was received from Geological Survey of India, Patna, Bihar at the Modern Mineral Processing Laboratory and Pilot Plant, Indian Bureau of Mines, Nagpur for bench scale beneficiation studies. The objective of the study was to assess amenability of the sample to beneficiation and to produce iron concentrate suitable for industrial end use.

The as-received sample assayed 34.67% Fe (T), 12.76% FeO, 39.38% SiO_2, 3.43% Al_2O_3, 2.45% CaO, 1.76% MgO, 0.17% Na_2O, 0.63% K_2O, 1.38% P_2O_5.

Mineralogical studies revealed that the sample consist major amounts of magnetite/ martitized magnetite and quartz with subordinate amounts of mica (muscovite,

biotite), minor amounts of chlorite, hematite, and feldspar (microcline, plagioclase). Apatite, amphibole, pyroxene, carbonates (calcite), ilmenite, tourmaline, garnet, pyrite, monazite, epidote and zircon are noticed in traces.

Different beneficiation studies such as Screening, Gravity and Magnetic Separation at different size were attempted in various combinations to enhance the iron content in the sample.

Best results were obtained under following test conditions. The as-received sample crushed to -10 mesh size was stage ground to all -70 mesh size. Tabling on -70 mesh size yielded a concentrate assaying 67.39% Fe (T), 19.96% FeO, 3.53% SiO_2, 0.17% Al_2O_3, 0.11% Na_2O, 0.13% K_2O, 0.05% P_2O_5 with Fe (T) recovery of 83.6% and weight percent yield of 43.0.

From the bench scale beneficiation study it is observed that the sample is amenable to beneficiation and a high grade concentrate with a high recovery could be obtained.

5.5.1.5 COPPER ORE:

Bench scale beneficiation studies on a Copper Ore, Drill core sample, G2 Level Exploration, from Baraganda Copper Deposit, Giridih District, Jharkhandfor M/s Mineral Exploration Corporation Limited (MECL) ,Nagpur (IBM/NGP/RI No..2243)

A drill core copper sample G2 Level Exploration, from Baraganda copper deposit, GiridihDistrict, Jharkhand, was received from M/s MECL, at the Modern Mineral Processing Laboratory& Pilot Plant, Indian Bureau of Mines, Nagpur for conducting bench scale beneficiationstudies. The objective of the investigation was to assess the amenability of the sample tobeneficiationand to produce a copperconcentratesuitable forindustrial use.

The as received sample assayed 0.82% Cu, 0.14% Pb, 0.46% Zn, 3.48 ppm Ag, 4.57% Fe,6.84 % Fe_2O_3, 73.2% SiO_2, 3.46% Al_2O_3, 2.08%CaO, 2.32% MgO, 2.58 % S, 0.41% TiO_2,0.71%C and 75.63%acid insoluble.

The mineralogical studyrevealedthat the sample consists major amounts of quartz and mica(muscovite, biotite) with minor to very minor amounts of feldspar (plagioclase, orthoclase),amphibole, garnet, pyrite, **chalcopyrite**, chlorite,

carbonate (calcite), sphalerite, pyrrhotiteand tourmaline. Traces of galena, covellite/chalcocite, monazite, arsenopyrite, magnetite,hematite and goethite/limonite are noticed in the sample.

Detailed beneficiation studies comprising of optimization of mesh of grind, froth flotation,selection of reagentsetc. were carried out by varying different parameters for concentrationof copper bearing minerals. The beneficiation processes adopted and results obtained are asfollows

i. Aflotation test at optimized grind of 31.5% through -200 mesh was conducted with SIPX, MIBC, Sodium Silicate, pH: Natural inRoughing, 9-10 at 1st and 2nd cleaning. **The 2nd Cleaner Float obtained assayed 23.47% Cu,2.11% Pb, 1.31% Zn with wt. % 2.7 and wt recovery of 83%Cu, 47.8% Pb and8.0%Znrespectively.**

ii. An additional flotation test at optimized grind wasconducted with SIPX, MIBC, Sod. Silicate , pH: 9-10. Therougher float was regrind followed by cleaning, t**he 2nd Cleaner Float obtained assayed 24.01% Cu, 3.62% Pb, 2.59% Zn with wt.% 2.5 and wt. Recovery of 79.3Cu, 69.2% Pb and 13.8% Zn respectively.**

The bench scale beneficiation studies suggest that low grade copper ore sample is amenable to beneficiation by froth flotation technique. A high grade copper concentrate with high recovery could be obtained which is suitable for industrial uses in smelters.

5.5.1.6 COPPER ORE:

Bench scale beneficiation studies on a lean grade Copper ore, G-2 level exploration, Drill core sample from Dudhiashol Block, Mayurbhanj District for Geological Survey of India, Bhubaneswar, Odisha (IBM/NGP/RI No. 2244).

A low grade copper ore, drill core sample from Dudhiashol area of Mayurbhanj District, Odisha was received from Geological Survey of India, at the Modern Mineral Processing Laboratory & Pilot Plant, Indian Bureau of Mines, Nagpur for conducting bench scale beneficiation studies. The objective of the investigation was to assess amenability of the sample to beneficiation and to produce a copper concentrate suitable for industrial use.

The as received sample assayed 0.32% Cu, 0.017% Pb, 0.0647% Zn,53.1% SiO_2, 11.77% Al_2O_3, 15.51% Fe_2O_3,1.07 % S(T), 3.05%CaO, 2.57% MgO, 1.24% TiO_2, 0.94 P_2O_5, 677 ppmNi, 128 ppm Co, 44 ppm Mo and 2.28% LOI respectively.

The sample consists of major amounts of mica (biotite >> muscovite) with subordinate amounts of quartz, feldspar (orthoclase, plagioclase) and minor amounts of pyroxene, amphibole and pyrite. Chalcopyrite, chlorite, garnet, apatite, pyrrhotite, hematite, goethite, sphalerite, carbonate, azurite, arsenopyrite, galena and monazite are noticed in very minor to traces.

Chalcopyrite is the major copper contributing mineral in the sample. Appreciable amount of Nickel and Cobalt are also present in the sample. Mineralogical study revealed that Nickel and cobalt are contributed by pentlandite and pyrrhotite. Majority of the pyrrhotite grains carry nickel and cobalt in the lattice.

Detailed beneficiation studies comprising of grinding, froth flotation, etc. were employed by varying different parameters for concentration of copper bearing minerals. The beneficiation process route evolved and results obtained are as follows:

The as received -10# crushed sample was ground in a ball mill to 72% Passing -200mesh size and subjected to froth flotation with two stage cleaning.

The copper concentrate (2^{nd} cleaner concentrate) obtained assayed 23.12% Cu,1.1%Pb, 0.76 % Zn, 0.22% Ni, 0.17% CowithCurecovery of 77.7% and wt%yield 1.1.

This study revealed that lean grade copper ore sample is amenable for beneficiation. Froth flotation with two stages of cleaning yielded a high grade concentrate with maximum recovery. The copper concentrate produced by the developed process route is suitable for smelters. The concentrate produce also contains Nickel, Cobalt, Lead and Zinc which can be recovered as by product during extraction process.

5.5.1.7 BASE METAL:

Beneficiation studies on a Base Metal mineralization (Zn-rich Ore) (Drill core) sample from Dehalwara, Betul district, Madhya Pradesh (G-2 stage investigation) for Geological Survey of India, Madhya Pradesh (IBM/NGP/RI No. 2235).

The objective of this investigation was to study the amenability of the sample to beneficiationandto produceasuitableconcentrate formetallurgicaluse.

The as received sample assayed 1.02% Zn, 0.09% Cu, 0.14% Pb, 69.05% SiO_2, 12.45%Al_2O_3, 4.60% Fe(T), 0.85% CaO,2.45% MgO, 1.00% S, 28ppm Co, 30ppm Ni, 08ppm Agand 114ppm Mo.

Mineralogical study revealed that the sample consists majoramounts of quartz and mica (muscovite, biotite) with minor to very minor amount of feldspar (Plagioclase, orthoclase), garnet, amphibole, sphalerite, pyrite, galena, pyrrhotite and chalcopyrite. Among the sulphides, sphalerite is the major valuable mineral occurring in predominant amounts.

Two beneficiation routes were adopted comprising of grinding of as received sample to 60% passing minus -200 mesh followed byflotation.

Beneficiation Route I: TheCu-Pbrougher flotationandZnrougher floatationofthe groundmaterial Cu-Pbrougherfloatwas furthersubjectedto threecleaningstages, (a) the 3rd Cu-Pb cleaner float was subjected for Cu float yielded a copper concentrate assaying 14.85%Cu, 2.90%Pb, 8.48%Zn with 46.1% curecovery (Weight% yield being 0.3), (b) Cu tails yielded a Lead concentrate assaying 2.42% Cu, 10.42% Pb, 4.6 % Zn with 68.8% Pb recovery (Weight% yield being 0.8) respectively and (c) the 1st cl Cu-Pb Tail was subjected to scavenging for Zn float. Composite of Zn rougher float and Zn scavenger float was subjected to three cleaning stages. The3rd Zn cleaner float yield a zinc concentrate assaying 0.46% Cu, 0.17% Pb, 44.14% Zn with 73.0% Zn recovery (Weight% yield being 1.6).

Beneficiation Route II: The Zn rougher float was subjected to two cleaning stages. The 2nd Zn cleaner float yield a zinc concentrate assaying 50.22%Zn, 3.25%Pb, 3.03%Cu and 81.9% Zinc recovery (Weight% yield being 1.8).

The best result was obtained employing route II with higher grade and maximum recovery ofZn. The sample is amenable to beneficiation and the zinc concentrate produced is suitable for industrial applications.

5.5.1.8 LOW GRADE MANGANESE ORE:

Bench scale beneficiation studies of a low grade Manganese ore sample from Pani Manganese Project, ChotaUdepur District, Gujarat for Mineral Exploration Corporation Limited (IBM/NGP/R.I. No. 2237).

A low grade manganese ore bulk sample of Pani Manganese Project, ChotaUdepur dist., Gujarat, sent by Mineral Exploration Corporation Limited was received at the Modern Mineral Processing Laboratory and Pilot Plant, Indian Bureau of Mines, Nagpur for conducting bench scale beneficiation studies. The objective of the investigation was to recover a marketable grade manganese concentrate with satisfactory recovery .

The as received sample assayed 19.51% Mn(T), 4.89% Fe (T), 37.41% SiO_2, 2.49% Al_2O_3, 8.58% CaO, 0.61% MgO,0.52% P_2O5(0.05% P), 0.87% BaO, 0.67% $TiO_2$and 0.10% S.

The sample consist major amounts of quartz with subordinate amounts of carbonates (calcite, kutnohorite, rhodochrosite), braunite, and cryptomelane, manganomelane. Minor to very minor amounts of rhodonite/tephroite, pyrolusite, psilomelane, manganite, feldspar (orthoclase), pyroxene (diopside), pyroxmangite, jacobsite, amphibole, hematite, hausmannite, pyrite, mica (muscovite, biotite, manganophyllite), garnet, hollandite, and goethite/limonite and traces of apatite and epidote are noticed in the sample.

The bench scale beneficiation studies were carried out by two routes. However, the best results were obtained by the following route.

Size reduction of the ore to -10 mm size by crushing, followed by desliming the whole product. Subjecting the sand fraction to wet screening on 6 mesh and 30 mesh sieves respectively. Subjecting the -10 mm+ 6 mesh and -6 mesh+ 30 mesh fractions to jigging separately. Subjecting the -30 mesh fraction to tabling. Subjecting the composite slimes to fine particle recovery by magnetic separation.

i) By the above process route, **without grinding** a **Composite Concentrate-I** assaying 34.89% Mn(T) , 6.81% Fe(T), 13.88% SiO_2 and, 1.80% Al_2O_3 with a Mn(T) distribution of 54.3% (wt.% yield: 30.1) could be obtained.

ii) Further,to enhance the recovery an attempt was made by stage grinding the composite product consisting of Jig bed (-10mm+6mesh)+Jig Conc.II (-6+30mesh) + Cleaner Table tails (-30mesh) obtained by the above route and grinding them to all -70 mesh followed by desliming and tabling of the ground product. Results obtained by the said route yielded a **Composite Concentrate-II** assaying 36.29% Mn(T), 7.77% Fe(T), 11.53% SiO_2 and, 1.89% Al_2O_3 with a Mn(T) distribution of 7.3% (wt.% yield :3.9) could be obtained.

iii) A final Concentrate consisting of **Composite Concentrate-I+II** would assay 35.06% Mn(T), 6.54% Fe(T), 13.61% SiO_2 and, 1.81% Al_2O_3 with a Mn(T) distribution of 61.6 % (wt.% yield :34.0).

The sample is amenable to beneficiation. The flow sheet developed employing the route described is simple, effective with only partial use of a grinding mill and marketable grade manganese concentrate with satisfactory manganese recovery could be produced.

5.5.1.9 RARE EARTH ELEMENTS (REE) AND RARE METAL (RM) BEARING CARBONATITE:

Bench scale beneficiation studies on Rare Earth Elements (REE) and Rare Metal (RM) bearing Carbonatite Sample, G-2 Exploration Block, Ambadungar, Gujarat for Geological Survey of India, Nagpur (IBM/NGP/RI No.2245).

A Carbonatite containing REE and RM ore sample from Ambadungar G-2 exploration block, Gujarat was received at Modern Mineral Processing Laboratory and Pilot Plant, Indian Bureau of Mines, Nagpur, through Geological Survey of India, Nagpur for the beneficiation studies of REE and RM minerals. The objective of the study is to assess the amenability of the sample to beneficiation and to upgrade the REE and RM minerals/values with maximum possible recovery.

The as received sample assayed 28.84% CaO, 22.18% SiO2, 7.69% Fe2O3, 3.64% MgO, 1.73% Al2O3, 3.11% K2O, 1.76% P2O5, 0.2% CaF2, 0.78% BaO, 1.66% SO3 and 26.97% LOI, with rare earth elements viz. 1085ppm La, 1861ppm Ce, 195ppm Pr, 657ppm Nd, 78ppm Sm, 17.5ppm Eu, 63ppm Gd, 5.8ppm Tb, 23.5ppm Dy, 3.6ppm Ho, 9.5ppm Er, 1.1ppm Tm, 5.7ppm Yb, 0.8ppm Lu.

Total REE in the sample is 4006 ppm and Rare Metal such as Nb is 1074 ppm and Sr is 3172 ppm.

Mineralogical studies indicate that sample consists predominantly of carbonates (calcite, dolomite, strontianite) with subordinate amounts quartz and feldspar (orthoclase, microcline). Mica (muscovite, biotite, phlogopite), apatite, pyrite, hematite, goethite/limonite, pyroxene, pyrochlore, zircon, barite, topaz, rutile and monazite and other REE minerals are noticed in very minor to traces.

Mineralogical study revealed that there are two varieties of REE minerals present in the sample. About 60% of the REE grains are carbonate bearing (Synchesite/Parasite) and 40% are phosphorous bearing (monazite) minerals.

Detailed beneficiation studies were carried out employing different techniques by varying various parameters to upgrade the REE and RM values, the different beneficiation process route evolved are as follows :

Process route – 1A- Froth flotation followed by gravity separation process involving Mozley separation on Rougher tails. The composite of 1st cleaner float and mozley concentrate assayed 6033ppm total REE, 875ppm Nb and 3224ppm Sr with recovery of 40.5% total REE, 25.2% Nb and 31.6% Sr with weight percent yield of 28.8% .

Process route – 1B - Froth Flotation process followed by Wet High Intensity Magnetic Separation (WHIMS). Froth flotation with oleic acid as a collector, 1st cleaner float assayed 6351 ppm total REE and 4221 ppm Sr with recovery of 53.4% total REE and 58.4% Sr, with weight percent yield of 35.6%.

Process route – II- Gravity separation employing Mozley followed by flotation on mozley tails and WHIMS on mozleymiddlings and Rougher float separately. The composite of mozley concentrate and magnetic fraction of mozley middling assayed 6477 ppm total REE, 1817 ppm Nb and 6503ppm Sr with recovery of 23.4% total REE, 27.8% Nb and 32.5% Sr with weight percent yield of 14.7%.

Process route – III - Leaching on the as received sample with Hydrochloric acid and Acetic acid
(i) The ground -100# size sample was treated with Hydrochloric acid having concentration of 15% for 72 hrs of duration. The leach residue assayed 8205 ppm total REE and 2357 ppm Nb with the recovery of 85.9% total REE and 91.9% Nb with 43.2% weight percent yield. (ii) The ground -100# size sample was treated with Acetic acid having concentration of 40% for 72 hrs of duration. The leach residue assayed 8738 ppm total REE and 2445 ppm Nb with the recovery of 93.1% total REE and 97.1% Nb with 44% weight percent yield.

Owing to the characteristics of REE mineral in the sample, acid leaching process are found to be more effective in enriching rare earth elements in residual phase than physical beneficiation routes.

5.5.1.10 SILICEOUS LIMESTONE:

Beneficiation studies on a siliceous Limestone sample from Varagupadi Limestone mine of M/s. Ultratech Cement Limited, Ariyalur Dist., Tamil Nadu for M/s. Ultratech Cement Limited, Ariyalur Dt., Tamil Nadu (IBM/BNG/ R.I.No. 925).

A siliceous limestone sample from Varagupadi Limestone Mines of M/s. Ultratech Cement Limited, Ariyalur Dist., Tamil Nadu was received at Regional Mineral Processing Laboratory, IBM, Bangalore for characterization anddetailed bench scale beneficiation studies with an objective to reduce SiO_2 10-12%, Al_2O_3 2-3% and Fe_2O_3 2-3% and enhance CaO>42% in the limestone concentrate so as to increase the Lime Saturation Factor of limestone for cement manufacturing.

The as received sample assayed 27.20% CaO, 28.00% SiO_2, 1.86% MgO, 62.20% Total Carbonates (TC), 35.60% Acid Insoluble, 3.35% Fe (T), 7.90% Al_2O_3, and 29.00% LOI.

The as received sample crushed to minus 50 mm followed by wet screening over 6.25mm yielded, the plus 6.25mm produced a concentrate assaying 43.11% CaO, 11.07% SiO_2, 3.54% Al_2O_3, 3.47% Fe_2O_3, 35.65% LOI with a CaO recovery of 20.4% (Wt.% yield: 12.8). The minus 6.25 mm (60% passing minus 150 mesh size) fraction was directly subjected to flotation yielded a first cleaner float concentrate assaying 43.42% CaO, 11.89% SiO_2, 3.62% Al_2O_3, 3.11% Fe_2O_3, 35.18% LOI with a CaO recovery of 64.1% (Wt.% yield: 39.9). The composite concentrate obtained by combining, the plus 6.25 mm concentrate and minus 6.25

mm 1st Cleaner float concentrate assayed 43.34% CaO, 11.69% SiO_2, 3.60 % Al_2O_3, 3.20% Fe_2O_3, 35.54% LOI with a CaO recovery of 84.5% (Wt.% yield: 52.7). The feed was prepared only by crushing and without involving any grinding operation, energy consumption in this process will be very less.

Alternatively, direct grinding of the minus 10 mesh (original) sample to all passing 65 mesh size followed by flotation yielded a concentrate assaying 45.09% CaO, 10.77% SiO_2, 2.88% Al_2O_3, 2.18% Fe_2O_3, 37.52% LOI with CaO recovery of 89.2% (Wt.% yield: 54.5).The process involves grinding the minus 10 mesh (original) sample to minus 65mesh size, however a better grade and recovery would be achieved.

The sample is amenable to beneficiation and the concentrates thus obtained by employing these two methods meet the desired specification of the cement industry.

5.5.1.11 GRAPHITE :

Bench scale beneficiation studies on a low grade Graphite drill core sample, G2 Level Exploration from Karabia area, Hindol, Dhenkanal dist., Odisha for Directorate of Geology, Odisha (IBM/NGP/RI No. 2238).

A low grade graphite ore, drill core sample, G2 level exploration from Karabira area, Hindol, Dhenkanal district received from Directorate of Geology, Odisha at Modern Mineral Processing Laboratory &Pilot Plant and Laboratory, Indian Bureau of Mines, Nagpur for carrying out bench scale beneficiation studies. The object of the investigation was to assess the amenability of the sample to beneficiation and to obtain a marketable graphite concentrate with maximum possible recovery.

The as received sample assayed 5.82% Fixed Carbon, 92.00% Ash, 1.99% Volatile Matter, 0.19% Moisture, 67.29% SiO2,7.86% Fe2O3, 7.50% Al2O3, 2.45% CaO, 1.55% MgO, 0.95% TiO2, 1.21% S, and, 7.81% LOI.

The sample consists major amounts of quartz and mica (muscovite, biotite) with subordinate to minor amounts of graphite, feldspar (plagioclase, orthoclase) and garnet. Minor to very minor amounts of pyrite, amphibole, clay (kaolinite), epidote, ilmenite and very minor to traces of hematite, magnetite, pyrrhotite, goethite/limonite, apatite, carbonate (calcite), monazite, galena, molybdenite and zircon grains are noticed in the sample.

The process route evolved consisted of crushing, grinding and froth flotation on the sample. All the tests were carried out at natural pH. The best process flowsheet evolved consisted of grinding the as received sample sample to all minus 50 mesh size, subjecting the ground pulp to rougher flotation at natural pH using Diesel Oil as a collector, MIBC as a frother and sodium silicate as a depressant for gangue minerals. The rougher float was given five cleaning with successive regrinding of each float. The Vth cleaner concentrate assayed 68.05% FC, 30.01% Ash, 1.90% VM and, 0.05% Moisture with a FC recovery of 85.1% (Wt% yield 7.2).

The ore is amenable to beneficiation and the low grade sample could be upgraded upto a marketable concentrate with high recovery.

5.5.1.12 ROCK PHOSPHATE:

Bench scale beneficiation studies on a low grade Rock Phosphate sample from Sonrai Project, Lalitpur area, Uttar Pradesh for Mineral Exploration Corporation Ltd. (IBM/NGP/RI No. 2239).

A low grade Rock Phosphate sample from the Project Manager, Sonrai project, Lalitpur area, Uttar Pradesh, was received at Modern Mineral Processing Laboratory & Pilot Plant, Indian Bureau of Mines, Nagpur for carrying out bench scale beneficiation studies. The object of the investigation was to obtain a marketable phosphorite concentrate with maximum possible recovery from a low grade ore.

The as received sample assayed 10.98% P_2O_5, 67.44% SiO_2, 3.26% Fe_2O_3, 2.17% Al_2O_3, 11.61% CaO, 0.48% K_2O, 0.16% Na_2O, 0.38% Cl , 0.20% Organic C and 1.47% LOI. The sample consists predominantly of quartz with subordinate amount of apatite, minor to very minor amount of mica (muscovite, biotite),hematite, goethite/limonite and carbonates (dolomite, calcite), and very minor to traces of pyrite and clay.

The process route evolved consisted of crushing, grinding and froth flotation on the sample. The reagents used for flotation were sodium silicate and, sodium oleate. All the tests were carried out at natural pH. The best process flowsheet evolved consisted of grinding the as received sample to minus 200 mesh size. Subjecting the ground pulp to rougher flotation at natural pH. Sodium silicate was used as a depressant/dispersant for gangue minerals and, sodium oleate was used as a collector for phosphorite. The rougher float was given three cleanings using

sodium silicate. The IIIrd cleaner concentrate assayed 33.70% P_2O_5 and 16.21% SiO_2 with a P_2O_5 recovery of 52.8% (Wt% yield:17.1). Another 3rd cleaner concentrate using higher dosages of sodium oleate in the roughing stage assayed 30.78% P_2O_5 and 22.52% SiO_2 with a SiO_2 recovery of 66.1% (Wt% yield:23.4)

The ore is amenable to beneficiation. The grade and recovery of the concentrate is satisfactory.

5.5.2 Beneficiation studies of Mineral deposits set for auction

As per the amended Act, all exploration reports need to be made UNFC (2009) compliant before auctioning of mineral blocks, for which mineral beneficiation study is an important aspect. The exploration indicates only the geological aspect. Beneficiation study indicates the viability of the block for commercial operations in view of feasibility and economics. Thus, beneficiation study has paramount and crucial role for the development of mineral deposits in India.

Since the year 2016, IBM has been carrying out laboratory scale beneficiation studies on all G2 Level of exploration samples of GSI and MECL.

5.6 National Mineral Inventory (NMI)

The NMI is based on UNFC system which is being used for making various decisions in the mining and exploration sectors by the domestic/foreign investors. Such a system has wide ramifications of use in different kinds of decision making and policy formulation concerning not only minerals but allied fields as well. NMI provides valuable database that enables planning, development and judicious management of the country's mineral resources. IBM in consonance with the contemporary demands in the Mineral & Mining Sector and in accordance with its mandate and functioning role as National Mineral Information Repository elicits cooperation & support from all Agencies engaged in different stages of exploration, i.e., reconnaissance, prospecting and mining, in collecting/collating data which after due process of analysis & vetting are woven into NMI database.

5.6.1 National Conference on National Mineral Inventory (NMI) (As on 01.04.2020)

IBM organised a National Conference on NMI (As on 01.04.2020) at its Headquarters in Nagpur on 23.01.2020 as a consultative process with all Stakeholders involved in the updation process and with the guided principle to assimilate all information/opinions/views/nuances that which could be integrated to enhance the comprehensiveness of the title ''National Mineral Inventory (As on 01.04.2020)''.

During the year, data collection by literature survey such as referring of GSI reports, Annual reports of Exploration Agencies etc. through internet/e-office was in progress. Processing, scrutiny, verification and finalization of 5745 deposit-wise inventories completed.Data entry, verification for computerization of inventories carried out for 5981 deposits. Synthesis of 890 inventories of leasehold private with freehold and leasehold public sector data completed. Activity for processing, generation of output and preparation of comparative statement of mineral was completed for 16 minerals.

5.7 Statistical Publications

IBM disseminates statistical information on mines, minerals, metals and mineral-based industries through various publications. Information on mineral production, stocks, dispatches, employment, inputs in mining, mining machinery and related matters received from the mine owners on statutory basis under the MCDR, 1988 and ancillary statistics on metals production, mineral trade and market prices of minerals, revenue from the mining sector, rent, royalty and cess on minerals, etc from other agencies is compiled regularly by IBM.

5.7.1 Monthly Statistics of Mineral Production (MSMP)

This monthly publication contains information on Index of Mineral Production, state-wise mineral production and value, average sale price of minerals by grades etc.

5.7.2 Statistical Profiles of Minerals (Annual)

This publication gives a bird's eye view of most of the vital aspects of major minerals (except fuels and atomic minerals) produced in India. It contains information on production, value and stocks of minerals, labour employment and number of reporting mines for the current year. Besides, data on reserves, mining leases, life index of mineral resources, export and import of minerals are incorporated for the latest available year.

5.7.3 Indian Mineral Industry at a Glance (Annual)

This publication provides time series data on production of minerals, metals and mineral based products, consumption of minerals, labour employment and external trade. In addition, information on mining machinery, consumption of explosives, mining leases and afforestation in metalliferous mines are also presented for the latest year.

The statistical publications released during the year 2021-22 include Statistical profiles of minerals 2019-20, Monthly Statistics of Mineral Production (MSMP) up to April, 2021,Average Sale Price statement of Minerals up to the months of December 2021 & Average Sale Price statement of Metals up to the month of February 2022.

5.8Consultancy Service

IBM provides technical consultancy services on prescribed charges for geological appraisals, survey of the areas, preparation of feasibility study reports, environment impact assessment and environment management plan, selection of suitable mining equipment etc.However, due to severe manpower constraints in the division no fresh consultancy assignment was taken up in the F.Y.2021-22.

5.9Technical Publications

IBM brings out technical publications relating to mines and minerals, mineral-based industries, trade, beneficiation, R&D activities, etc.

5.9.1 Indian Mineral Yearbook (IMYB)

Indian Mineral Yearbook (IMYB) is available at IBM website https://ibm.gov.in/index.php?c=pages&m=index&id=107&mid=18654. IMYB is a flagship publication of IBM and bring out in three (3) volumes. It consists of Part I having as many as 11 General Chapters, Part II consists of 18 Reviews on metals and alloys and Part III consists of 30 mineral reviews. This publication covers information on minerals and mineral-based commodities, their development, production, resources/reserves, consumption, trade and policy. It also includes world scenario. IMYB provides a status report of Mining and Mineral Industry in India on an annual basis. This publication has wide readership-both National and International.

The IMYB, 2020 (data 2019-20), consistingof total 60 general/metals & alloys/mineral reviews is being prepared, edited, finalized and IMYB, 2020(Advance Release) is being uploaded on IBM, website.

For IMYB, 2021 (data 2020-21), letters/questionnaires/e-mails were issued for capturing of data. Nearly 2662 (including Form O, N and questionnaires) receipts from various mineral-based industries, Central/State Government departments, Central/State Undertakings, National Laboratories etc. were received during the period under review. Preparation of IMYB 2021 was taken up for three separate volumes, viz. Volume-I for General Reviews, Volume-II for Metals &Alloys and Volume-III for Mineral Reviews. Preparation of reviews is under progress.

5.9.2 BULLETIN OF MINERAL INFORMATION (BMI)

Bulletin of Mineral Information (BMI) is a half yearly Bulletin, published by IBM, a sole publication in the country of its nature, which provides information to mine owners and mining industry on – court decision concerning mineral legislation, trade policy on minerals & metals; trends in mining lease and prospecting licenses along with R/P granted for mineral based industries in the country; the month wise production of various mineral based products and also high lights status of mineral and mining industries both in domestic & foreign sector.

In a nutshell, this publication provides concise & synthesized knowledge and information on mining of various metallic / industrial minerals of the country,

explored through its respective mines. Bulletin on Mineral Information Oct.20 to Mar.21& April 2021 to September, 2021 issues released during the year.

5.9.3 BULLETIN OF MINING LEASES AND PROSPECTING LICENCES.

The Bulletin of Mining Leases and Prospecting Licenses contains information on mining leases, prospecting Licenses as well as reconnaissance permits. The bulletin provides the distribution pattern of mining leases spread over in as many as 23 states with its break-ups into state-wise, district-wise, mineral-wise and sector-wise (Public & private) information demarcating high, medium and low mineral potential bearing districts. Exhaustive information on mining leases abridged concisely for easy assimilation will suit the convenience of readers/entrepreneurs or policy makers.Bulletin on Mining Lease and Prospecting Licenses 2020 was released during the year.

5.10 Activities carried out by GM&MM Cell, IBM, Nagpur during the year 2021-22

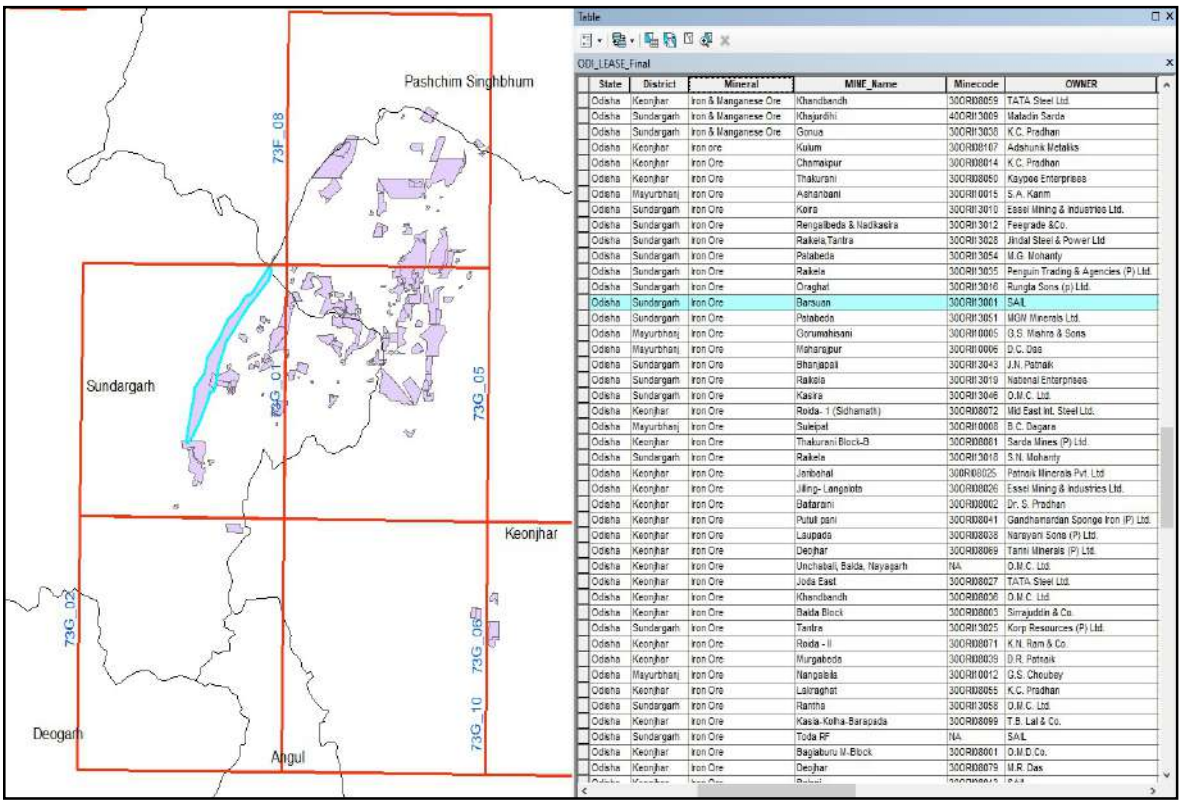
5.10.1 Preparation of Multi Mineral Leasehold Maps on GIS platform:

The GIS and Remote sensing centre of IBM is operational since December 2018. The digitization of all the leasehold Maps is being carried out on GIS platform.

During the year 2021-22, georeferencing & projection of 11 toposheets, Vectorisation of 61 toposheets, plotting of 273 mining leases and attachment of Assam, Meghalaya, Manipur, Kerala, Haryana, Himachal Pradesh, West Bengal states and Jammu & Kashmir (UT) were completed.

Up to March 2022, georeferencing, projection and vectorization of all the 561 identified toposheets having major mineral lease holds were completed. Creation of geodatabase in respect of 21 States and one UT viz. Goa, Andhra Pradesh, Kerala, Rajasthan, Madhya Pradesh, Gujarat, Chattisgarh, Telangana, Tamil Nadu, Odisha, Jharkhand, Maharashtra, Karnataka, Bihar, Haryana, Himachal Pradesh, Assam, Meghalaya, Manipur, Uttaranchal & West Bengal states and Jammu & Kashmir (UT) were completed. The geological layer for all the 21 statesand one UT has been imported from the GSI Bhukosh and is now available for use.

Plotting of boundaries of 3890 major mineral mining leases is completed and is available on a geospatial platform. Attachment of mine data in respect of the leases has also been accomplished.



State	District	Mineral	MINE_Name	Minecode	OWNER
Odisha	Keonjhar	Iron & Manganese Ore	Khandbandh	30OR08059	TATA Steel Ltd.
Odisha	Sundargarh	Iron & Manganese Ore	Khajuridhi	40OR13009	Maladin Sarda
Odisha	Sundargarh	Iron & Manganese Ore	Gonua	30OR13038	K.C. Pradhan
Odisha	Keonjhar	Iron ore	Kulum	30OR08107	Adshunik Metalks
Odisha	Keonjhar	Iron Ore	Chamaipur	30OR08014	K.C. Pradhan
Odisha	Keonjhar	Iron Ore	Thakurani	30OR08050	Kaypee Enterprises
Odisha	Mayurbhanj	Iron Ore	Ashanboni	30OR10015	S.A. Karim
Odisha	Sundargarh	Iron Ore	Kora	30OR13010	Essel Mining & Industries Ltd.
Odisha	Sundargarh	Iron Ore	Rengalbeda & Nadkasira	30OR13012	Feegrade &Co.
Odisha	Sundargarh	Iron Ore	Rakela,Tantra	30OR13028	Jindal Steel & Power Ltd
Odisha	Sundargarh	Iron Ore	Palabeda	30OR13054	M.G. Mohanty
Odisha	Sundargarh	Iron Ore	Rakela	30OR13055	Penguin Trading & Agencies (P) Ltd.
Odisha	Sundargarh	Iron Ore	Oraghat	30OR13016	Rungta Sons (p) Ltd.
Odisha	Sundargarh	Iron Ore	Barsuan	30OR13001	SAIL
Odisha	Sundargarh	Iron Ore	Palabeda	30OR13051	MGM Minerals Ltd.
Odisha	Mayurbhanj	Iron Ore	Gorumahisani	30OR10005	G.S. Mishra & Sons
Odisha	Mayurbhanj	Iron Ore	Maharajpur	30OR10006	D.C. Das
Odisha	Sundargarh	Iron Ore	Bhanjabali	30OR13043	J.N. Patnaik
Odisha	Sundargarh	Iron Ore	Rakela	30OR13019	National Enterprises
Odisha	Sundargarh	Iron Ore	Kasira	30OR13046	O.M.C. Ltd.
Odisha	Keonjhar	Iron Ore	Roida- 1 (Sidhamath)	30OR08072	Mid East Int. Steel Ltd.
Odisha	Mayurbhanj	Iron Ore	Suleipat	30OR10008	B.C. Dagara
Odisha	Keonjhar	Iron Ore	Thakurani Block-B	30OR08081	Sarda Mines (P) Ltd.
Odisha	Sundargarh	Iron Ore	Rakela	30OR13018	S.N. Mohanty
Odisha	Keonjhar	Iron Ore	Janbahal	30OR08025	Patnaik Minerals Pvt. Ltd
Odisha	Keonjhar	Iron Ore	Jiling- Langaloto	30OR08026	Essel Mining & Industries Ltd.
Odisha	Keonjhar	Iron Ore	Batarani	30OR08002	Dr. S. Pradhan
Odisha	Keonjhar	Iron Ore	Putuli pani	30OR08041	Gandhamardan Sponge Iron (P) Ltd.
Odisha	Keonjhar	Iron Ore	Laupada	30OR08038	Narayani Sons (P) Ltd.
Odisha	Keonjhar	Iron Ore	Deojhar	30OR08069	Tanni Minerals (P) Ltd.
Odisha	Keonjhar	Iron Ore	Unchabali, Balda, Nayagarh	NA	O.M.C. Ltd.
Odisha	Keonjhar	Iron Ore	Joda East	30OR08027	TATA Steel Ltd.
Odisha	Keonjhar	Iron Ore	Khandbandh	30OR08036	O.M.C. Ltd.
Odisha	Keonjhar	Iron Ore	Balda Block	30OR08003	Sirajuddin & Co.
Odisha	Sundargarh	Iron Ore	Tantra	30OR13025	Korp Resources (P) Ltd.
Odisha	Keonjhar	Iron Ore	Roida - II	30OR08071	K.N. Ram & Co.
Odisha	Keonjhar	Iron Ore	Murgaboda	30OR08039	D.R. Patnaik
Odisha	Mayurbhanj	Iron Ore	Nangalala	30OR10012	G.S. Choubey
Odisha	Keonjhar	Iron Ore	Lalraghat	30OR08065	K.C. Pradhan
Odisha	Sundargarh	Iron Ore	Rantha	30OR13058	O.M.C. Ltd.
Odisha	Keonjhar	Iron Ore	Kasia-Kolha-Barapada	30OR08099	T.B. Lal & Co.
Odisha	Sundargarh	Iron Ore	Toda RF	NA	SAIL
Odisha	Keonjhar	Iron Ore	Bagaburu M-Block	30OR08001	O.M.D.Co.
Odisha	Keonjhar	Iron Ore	Deojhar	30OR08079	M.R. Das

Geospatial database of Mining Leases of Odisha State

5.10.2 Plotting of RP and PL areas on ARCGIS platform:

An activity of plotting of RP & PL areas from the available documents has been undertaken by GM & MM Cell since 2020-21. The activities involve plotting of RP/PL areas on GIS Platform based on available data submitted to IBM in the RP/PL reports/documents. Creation of shape file by plotting of RP/PL boundary area on GIS Platform and Attachment of RP/PL attribute data to shape file.

During the year 2021-22, plotting of 223 PL areas on GIS platform was taken up.

Up to March 2022, Generation of data from the RP/PL reports/documents is done for 302 RPs & 402 PLs, Creation of shape file by plotting of RP/PL boundary area on GIS Platform is done for 302 RPs & 402 PLs and Attachment of

RP/PL attribute data to shape file is done for 302 RPs & 402 PLs. The activity of plotting of RP & PL areas on GIS platform has been fully accomplished and is available on geospatial format.

5.10.3 Scanning of toposheets for Digital Library of toposheets:

There are about 14000 toposheets available in IBM HQ. An activity of scanning of all these toposheets in .tiff format and keeping all the soft files in the server was undertaken by the cell from January 2019. Up to March 2022, scanning of 12864 nos. of toposheet has been completed and the toposheets are now available in a digital format for use by the cell.

5.10.4 CGPB, SGPB, Ministry References, PQ's and Other Micellaneous technical work:

This office dealt with the Ministry References received under Section 17A of the MMDR Act, 1957, correspondence on the meetings of CGPB and SGPB, Parliament Questions and maintained data of RP, PL and PL-cum-ML, besides in service training on GIS & Remote sensing.

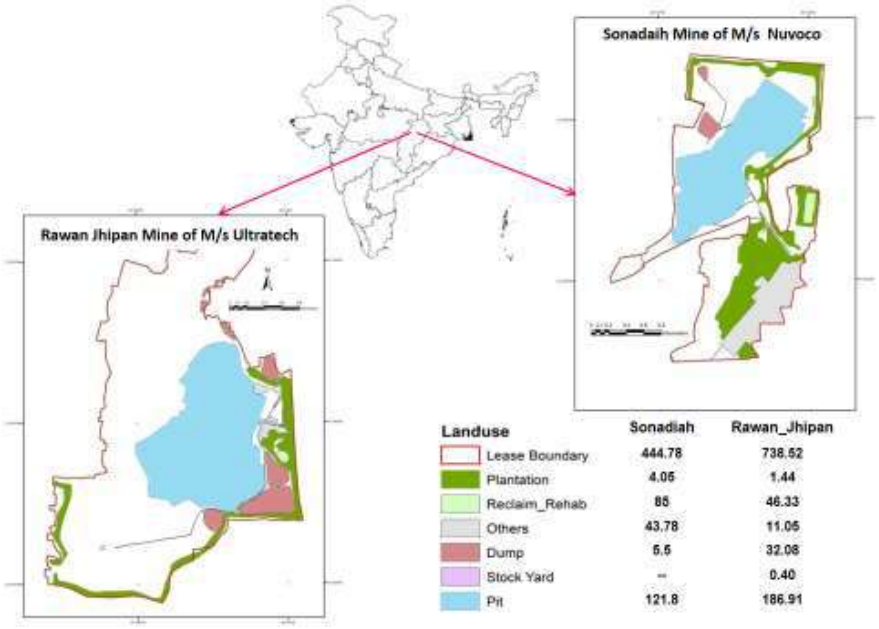
5.10.5 Generation of Land use classification map of mining leases on GIS platform:

An activity to generate land-use classification map of mining leases on GIS platform has been started since September 2020. The information of land-use area has been sought from the lessee through regional offices of IBM in .shp/.kml format. The activities involved plotting of land-use classification map on GIS platform checking & correcting KML or SHP file, conversion of KML file to SHP file, calculation of area of each land-use feature in attribute table and attachment of mine data to land-use attribute table.

Up to March 2022, the land-use data has been received for 1200 mining leases out of which processing of data on GIS platform for 1097 mining leases is carried out.

The geospatial database of land-use was created from the lease-wise details of land put to use for mining activity. This database can be used to

generate customized maps & reports viz. state-wise, district-wise, mineral-wise, feature-wise, etc. for land-use classification by query analysis on GIS platform.



Geospatial map showing land use of different mines

5.10.6 Generation of Auctioned Blocks database of mining leases on GIS platform:

An activity of plotting of Auctioned block areas of mining leases has been carried out during the year 2021-22. The activities involved in plotting of Auctioned block areas of mining leases on GIS Platform, preparation of excel files of the boundary coordinates, creation of shape file from excel files for auctioned blocks and Attachment of attribute data to shape file on GIS Platform.

During the year 2021-22 i.e.upto March 2022, plotting of 80 auctioned blocks areas on GIS platform is carried out.

5.11 Training

The Training Centre of IBM is headed by the Officer In-charge (Training) / Regional Controller of Mines. It is under the overall supervision of Controller of Mines (Planning & Co-ordination). It conducts in-house training programmes for its employees, state govt officers people from North-Eastern States and persons engaged in mining industry including overseas with the objective to provide them adequate orientation and updation in their fields of work. During the year 2021-22, 12 training programmes have been organized by IBMin which a total of 201 IBM and 522 Industry personnel participated and revenue of Rs.10,44,000/- was generated.

5.11.1 e-Training Programme on "Best Practices in Underground Metalliferous Mines, Stoping Methods, Mine Recoveries & Cleaner Production"

The Skill Development Centre, IBM, Udaipur, under the aegis of Training Centre, IBM, Nagpur, organized an Online Training programme on "Best Practices in Underground Metalliferous Mines, Stoping Methods, Mine Recoveries & Cleaner Production" at Udaipur **from 14th to 15th July, 2021** for Industry Persons. This training programme was conducted through Google Meet in the backdrop of COVID pandemic. A total of 41 personnel from Mining Industry participated in this training programme. A fee of Rs 2,000/- was charged per participant and a revenue of Rs 82,000/- was generated.

The training programme had 6 sessions including inaugural and feedback session for discussion and covered various topics, such as, underground mine Method of Stoping operations; Statutory Provision with respect to underground mining &stoping; Designing of underground Stopes. The details of the sessions of the Training Programme are as follows:

a) Registration/Introduction session: Inauguration of the training programme and introduction of participants

b) Overview of underground mine Method of Stoping operations, Exploration, Geo-Technical studies, Stoping practices/design, for optimum recovery and minimum dilution of ore body by Shri Pushpendra Gaur, RCOM, Gandhinagar

c) Statutory Provision with respect to underground mining &stoping in MMDR Act and Rules – Interpretation /inter-dependency and applicability in mines by Shri B.L. Kotriwala, RCOM, Ajmer

d) Challenges in Designing of underground Stopes & latest tools for optimum recovery with minimum dilution and making stoping operations safe – Case studies of HZL Mines by Shri Ram Murari, GM Mines, M/s HZL

e) Virtual Tour, Mine operations, mechanization, technological innovations in mine operation at M/s HZL in Underground Mines by Shri Kishore Kumar, SBU, Director, Zawar Mines, M/s HZL

f) Feedback Session: Discussion and Conclusion session.

The participants were provided the softcopy of the course material and participation certificates were issued. Dr M.G. Omkesha Murthy, Regional Mining Geologist, Udaipur was the Course Director for the programme while Shri Manish Gupta, Assistant Mining Engineer, worked as Course Co-ordinator.

Training Programme on "Best Practices in Underground Metalliferous Mines, Stoping Methods, Mine Recoveries & Cleaner Production"

5.11.2 e-Training Programme on "E-procurement/Inventory Management/Physical Verification of Stores

The Training Centre, IBM, as per annual course calendar for the year 2021-22, organised an e-Training Programme on "E-procurement through GeM; Inventory Management; and Physical Verification of Stores" from **11th to 12th August 2021** for officials of IBM dealing with store procurement.

This training programme was conducted through Video Conferencing in the backdrop of COVID pandemic. It was the 624th training programme of the

Training Centre and 2nd of this year. A total of 23 officials from all RO/ZO/RMPL /Headquarters participated in this training programme.

The training was conducted in four sessions covering four presentations which are as follows:

1. Introduction and Guidelines of stores procedures for e-procurement of Goods and Services on Govt. e-Marketplace (GeM) by Shri S.K. Chourey, Asstt. Stores Officer, IBM.
2. Key features of Dashboard Management with Order Processing for e-procurement through Govt. e-Marketplace (GeM) by Shri S.K. Chourey, Asstt. Stores Officer, IBM.
3. Guidelines on Physical verification of Stores and Inventory Management by Shri D. Kumara Swamy, Chief Admn. Officer, IBM
4. Overview of Online Interface for Procurement of Goods and Services through Government e-Marketplace (GeM) by Shri S.K. Chourey, Asstt. Stores Officer, IBM.

The training session concluded with an Interactive Session on 1.08.2021 coordinated by Shri S.K. Chourey, ASO and Course Director, the other faculty member Shri D. Kumara Swamy, Chief Admn. Officer, IBM was also present and various aspects/issues pertaining to E-procurement of Goods through GeM, e-tendering, reverse auction, direct purchase, processing of bills, inventory management and physical verification of stores were discussed. In the Valedictory Session, Shri R.R. Dongre, RCOM and In-charge Training Centre, emphasized the need for inventory management and physical verification of stores vis-a-vis keeping oneself updated since the GeM portal being a dynamic one is under constant upgradation. The programme concluded with a vote of thanks proposed by Shri D.M. Patil, AMG and Course Co-ordinator.

e-Training Prog. on "E-procurement/Inventory Management/ Physical Verification of Stores

5.11.3 e-Training Programme on "Sustainable Mining Practices: Opencast Mining, Beneficiation, Reclamation & Rehabilitation, Socio-Economic Aspects and Star Rating"

IBM organized an e-Training Programme on "Sustainable Mining Practices: Opencast Mining, Beneficiation, Reclamation & Rehabilitation, Socio-Economic Aspects and Star Rating" at Skill Development Centre, IBM, Kolkata from 15th to 16th September, 2021 for Industry Persons, through Google Meet in the backdrop of COVID pandemic. A total of 52 personnel from Mining Industry participated in this training programme. A fee of Rs 2,000/- was charged per participant and a revenue of Rs 104,000/- was generated.

5.11.4 E-Training Programme on Administration, Establishment and Financial Matters

The Training Centre, IBM, Nagpur, organized a e-Training Programme through Video Conferencing on "Administration, Establishment and Financial Matters" from **29th to 30th Sept, 2021**. A total of 49 IBM Officials from all offices of IBM participated in this training programme. Shri R.R. Dongre, Regional Controller of Mines & In-charge, Training Centre inaugurated the training programme and urged all the participants to take full advantage of the knowledge of the esteemed faculty members.

The training was conducted in 4 sessions in two days covering various topics. The details of the sessions were as below –

1. C.C.S. (Conduct) Rules, 1964 & C.C.S. (Leave) Rules, 1972 by by D. Kumara Swamy, Chief Administrative Officer,
2. Record Management, Maintenance of Service Books, Pay Fixation, MACP, etc. by Shri P.M. Sundareshwar, Administrative Officer,
3. TA & LTC Rules & various Financial Rules including Departmental Delegations by Shri Dinesh Kumar, Senior Administrative Officer and
4. PFMS, New Pension Scheme &Bhavishya by Shri Arle Hari Kumar, Pay and Accounts Officer.

The course material of the Training Sessions was provided to participants through email. Shri D. Kumara Swamy, Chief Administrative Officer was the Course

Director for the programme while Shri Madan Kalwit, Assistant Mining Engineer Training Centre worked as Course Co-ordinator. Shri Yogesh Mathare of NIC provided the technical support for the Video Conferencing.

Training Programme on Administration, Establishment and Financial Matters

5.11.5 e-Training Programme on "Induction Training on Preventive Vigilance for New Entrants in IBM"

IBM organized an e-Training Programme on "Induction Training on Preventive Vigilance for New Entrants in IBM" at IBM HQ Nagpur from 13th to 14th October, 2021 for IBM Officials Industry Persons. A total of 46 personnel from IBM participated in this training programme.

5.11.6 e-Training Programme on "Online filing of Monthly and Annual Returns of Mineral Production & Consumption under Rule 45 of MCDR 2017"

IBM organized an e-Training Programme on "Online filing of Monthly and Annual Returns of Mineral Production & Consumption under Rule 45 of MCDR 2017" at IBM Kolkata from **17th to 18th November, 2021** for Industry Persons. A total of 75 personnel from Industry participated in this training programme and revenue of Rs.1,50,000/- generated.

5.11.7 Online Training Programme on New Mining Plan Format

The Skill Development Centre, IBM, Udaipur, under the aegis of Training Centre, IBM, Nagpur organised an Online Training Programme on "New Mining Plan Format" at North Zonal office, Udaipur, on **1st & 2nd December, 2021** for Industry Persons. This training programme was conducted through Google Meet in the backdrop of COVID pandemic. A total of 60 personnel from Mining Industry

participated in the Ttraining Programme that was held in 6 sessions. The details of the two-day Training Programme and the topics covered during the sessions are as under:

1. Registration/Introduction session: Inauguration of the Training Programme and introduction of participants
2. Minerals (Evidence of Mineral Contents) Rule 2015, emphasis on Reporting of Mineral Resources and Contents of Prefeasibility Report. Reserve Estimation with respect to MP/RMP/PMCP/FMCP—presented by Shri S.K. Adhikari, Chief Mining Geologist, IBM, Nagpur
3. Mineral Concession Rules-2016 and The Mineral Conservation and Development Rules, 2017 and its subsequent amendments with respect to MP/RMP/PMCP/FMCP —presented by Shri B.L.Gurjar, RCOM, IBM, Raipur.
4. Preparation of MP/PMCP & FMCP Implementation thereof – Role and Responsibility in Implementation—presented by Shri Rajneesh Purohit, COM, NZ, IBM, Udaipur / Shri Pushpendra Gaur RCOM, IBM, Gandhinagar.
5. Statutory and Technical Requirements of Mining Plan and Online Mining Plan Format as per CCOM Circular No 1/21—presented by Shri B.L. Kotriwala, RCOM, IBM, Ajmer
6. Feedback Session: Discussion and Conclusion session.

The participants were provided the softcopy of the course material and participation certificates were issued. Dr M.G. Omkesha Murthy, Regional Mining Geologist, Udaipur, was the Course Director for the programme while Shri Manish Gupta, Assistant Mining Engineer, worked as Course Co-ordinator.

Online Training Programme on New Mining Plan Format

5.11.8 E-Training on NPS, PFMS and Bhavishya

The Training Centre, IBM, Nagpur, organised an e-Training on NPS, PFMS and Bhavishya for officials from IBM-Administration on **21-22 December,**

2021(through Video Conferencing supported by NIC) . A total of 49 officials from all offices of IBM participated in this training programme. The training was conducted in 4 sessions in two days covering various topics that included –

1. "Retirement / Terminal Benefits" by D. Kumara Swamy, Chief Administrative Officer, IBM, Nagpur
2. "Bhavishya" by Shri S.K. Bhagdikar, Assistant Administrative Officer, IBM, Nagpur
3. "New Pension Scheme" by Shri Ajay Kumar Karn, Assistant Accounts Officer,O/o Pay and Accounts Officer, Department of Statistics, Nagpur
4. "Public Finance Management System—PFMS" by Shri Ajay Kumar Karn, Assistant Accounts Officer),O/o Pay and Accounts Officer, Department of Statistics, Nagpur

The course material of the Training Programme was provided to the participants through email. The Training Programme, organised under the superintendence and guidance of Shri B.B.K. Sahu, Deputy Controller of Mines & In-charge Training Centre, IBM, had Shri D. Kumara Swamy, Chief Administrative Officer, as Course Director and Shri Madan Kalwit, Assistant Mining Engineer, Training Centre, as Course Co-ordinator. Shri Yogesh Mathare of NIC provided the technical support for the Video Conferencing.

Training on NPS, PFMS and Bhavishya

5.11.9 e-Training Programme on "Processing of Mining Plans , PMCP/FMCP, IBM Manual for Inspection of Mines, Implementation of MCDR and Report Writing"

IBM organized an e-Training Programme on "Processing of Mining Plans , PMCP/FMCP, IBM Manual for Inspection of Mines, Implementation of MCDR and

Report Writing" at IBM Nagpur from **12th to 13th January**, 2022 for IBM officials in which 40 officers/officials participated.

5.11.10 A Training Programme on 'Mineral Processing and Mineralogy for Industry personnel'

A Training Programme on 'Mineral Processing and Mineralogy for Industry personnel' was held through On-line mode on **19 and 20 January, 2022**. It was conducted from the Modern Mineral Processing Laboratory and Pilot Plant, MIDC, Hingna, Nagpur.

This was for the first time that a Training Programme was held by online mode at the MPD. There was overwhelming response for the Training Programme, total 99 participants mostly Executives, Managers, Sr. Managers, Asstt. Gen. Managerstook part in the training programme, which is again a record number for the training programme. The participants included executives from HZL, Cement Industry, SAIL, Tata Steel, Ferro Alloys, Hindalco, OMC, Karnataka State Mineral Corporation, Hutti Gold Mines Co. Ltd, Rungta Iron and Bauxite mines, Jindal – JSW Steel Ltd, JayaswalNeco Industries Ltd., and also form private mine owners. The training programme was inaugurated on 19 Jan, 2022 by Dr. D.R. Kanungo, Suptdg. Officer (OD) followed by inaugural address and presentations.

The training programme was conducted using the online conferencing platform Cisco Webex meeting. The online lectures comprising of various topics which included,

1. An overview of Mineral Processing- Indian prospective by Dr. D. R. Kanungo, Suptdg. Officer (OD).
2. Mineral Characterization and its significance in view of Beneficiation by Shri L. B. Toal, Ore Dressing Officer .
3. (i) Beneficiation Practices for Industrial Minerals with some case studies, (ii) Beneficiation practices for Base Metal ores with some case studiesby Shri M. G. Raut, Ore Dressing Officer.
4. Processing of Ferrous Ores, i.e. Iron Ores, Manganese Ores, Chromite Ores etc. by Shri V.A. Sontakkey, Ore Dressing Officer.
5. Processing of Non-Ferrous Ores (Copper, Lead, Zinc ores) by Shri HomPrakash, Dy. Ore Dressing Officer.

A number of questions/ doubts were put up by the participants, all were satisfactorily answered by the faculties. A group discussion was conducted and some of the participants expressed their views on this occasion and appreciated the training programme. About the technical content and course module the opinion of the participants ranged from very good to excellent and some of the participants mentioned that the course module was according to the todays requirement of the industry. The participants were of the view that the technical content and presentations were informative and were very valuable. Most of the participants expressed that the training course will be very useful for them and will help them in their present projects and future assignments.

Shri L. B. Toal Ore Dressing Officer was the Course Director and Shri Santosh Pani, Dy. Ore Dressing Officer was the Course Coordinator for this training programme.

5.11.11 e-Training Programme on "Mining Plan Format"

IBM organized an e-Training Programme on "Mining Plan Format" at IBM Kolkata from**2nd to 3rdFebruary, 2022** for Industry personnel in which 68 personnel from Industry participated and revenue of Rs.1,36,000/- generated. Cumulatively, till February, 2022, 11 training programmes have been organized in which 201 IBM and 389 Industry personnel participated and revenue of Rs.7,78,000/- was generated. In addition, two capacity building programmes for State Govt. officers were organized at Nagpur and Udaipur under the aegis of Central & North Zone respectively in which 53 officers of various State Govts have participated.

5.11.12 e-Training Programme on "online filing of monthly and annual returns of mineral production and consumption under rule 45 of MCDR, 2017"

IBMorganizedane-Training Programme on "online filing of monthly and annual returns of mineral production and consumption under rule 45 of MCDR, 2017" at IBM Udaipurfrom **9thto10thMarch, 2022** for Industry personnel in which 133 personnel from Industry participated and revenue of Rs.2,66,000/- generated.

During the year 12 training programmes have been organized in which 201 IBM and 522 Industry personnel participated and revenue of Rs.10,44,000/- was generated.

In addition, one Interactive meet and two capacity building programmes for State Govt. officers were organized at Nagpur and Udaipur under the aegis of Central & North Zone respectively in which 53 officers of various State Govts have participated.

5.11.13 "Interactive meet with Industry Personnel and machinery & equipment manufactures w.r.t. National Mineral Policy 2019" held on 22/10/2021 at IBM office, Bengaluru

As per the direction of the Secretary (Mines), IBM, under the guidance of Controller General in charge IBM, organized the "Interactive meet with Industry Personnel and machinery & equipment manufactures" on 22/10/2021 at IBM, Bengaluru. The objective of the meet was to exchange of ideas on "Deployment of modern automated equipment to improve the efficiency, productivity and economics of mining operations and mineral beneficiation processes" as enshrined in National Mineral Policy 2019. Total 30 representatives from major mining industry predominantly Iron ore & limestone mines and machinery & equipment manufactures operating in Karnataka state attended the Interactive Meet and shared their ideas through presentations and interaction during the meet.

5.11.14 Capacity Building programmes organized for State Govt. officers.

As a part of implementation of NMP 2019 provisions, two online capacity building programmes organized for State Govt. officers.In order to acquaint the State Govts with the latest rules and regulations in the mining sector, IBM has organized two "Online Training Programme on Latest Amendments in MMDR Act and Rules made there under for Capacity Building of State Govt. Officials" through its zonal offices for the benefit of State Govts under the jurisdiction of respective zones at Udaipur, Nagpur in the month of Oct.21. The major themes covered in course module are National Mineral Policy, 2019, Exploration norms as per MEMC Rules, Process of Auction of Mineral Blocks along with provisions under MCR 2016 and Mineral Auction Rules 2015, Role and Responsibility of State Govts as per MCDR 2017, Statutory and Technical

Requirements of Mining Plan and Online Mining Plan Format and Preparation of PMCP & FMCP, Implementation thereof. Representatives of various State Governments have enthusiastically participated in group discussion with senior faculty members of IBM during the concluding session.

Central zone IBM Nagpur organized the programme during 28.10.2021 to 27.10.2021. Total 45 officers from State Governments viz Maharashtra (15), Chattishgarh (10), Madhya Pradesh (10) and Uttar Pradesh (10) have participated in the programme.

North Zone, IBM Udaipur organized the programme during 26.10.2021 to 29.10.2021. Total 8 officers from State Governments viz Gujarat, Rajasthan, Himachal Pradesh and Uttarakhand have participated in the programme.

5.12 Measures for Abatement of Pollution and Environmental Protection

The IBM undertakes inspections/ studies for the enforcement of provisions of MCDR, 2017 which include provision on protection of mine environment to ensure that due care is being taken by the mine operators. During inspection it ensures that mine operators are taking due care for preservation and utilization of top soil, storage of overburden / waste rocks, reclamation and rehabilitation of land, precaution against ground vibration, control of ground subsidence, abatement measures against air, water- and noise pollution, restoration of flora, etc. in addition to other conservation and developmental measures. Necessary guidance to mine managements/ operators are also given for systematic and scientific development of mine including protection of environment. Whileapproving the mining plans, Review of mining plans of mining and mine closure plans, IBM ensures that environment impact assessment studies have been carried out and to that effect environmental management plan has been incorporated for its effective implementation, besides reclamation and rehabilitation of mined-out areas.

5.13 Revenue Generation

IBM generates revenue through consultancy, training, statutory processing and sale of publications &data etc. Revenue generated during 2021-22isRs. 505.50 lakhs comprising Rs. 81.75 lakhs from mineral processing assignments; Rs.

412.53lakhs from processing of mining plans/review of mining plans, Rs. 10.44 lakhs from Training Fee and balance Rs. 0.78 lakhsfrom sale of publications, mineral inventory data etc.

5.14 Computerization

The Regional (Except Raipur & Gandhinagar RO) /Zonal officesand Headquarters of IBM have been linked through a sophisticated system based on client server architecture established with the help of BRGM, France. Proposal for connecting Raipur & Gandhinagar RO with said system along with VC facility is under process. IBM has well established LAN facility, besides WAN system to communicate and exchange data with Regional, Zonal offices and Headquarter offices. In all RO/ZO offices, except Raipur & Gandhinagar, VC facility is operational.

The Web Portal of IBM i.e. www.ibm.gov.in provides information on IBM's history, functions, organization, divisions of IBM and its activities, jurisdiction of regional & zonal offices, services offered by IBM. The new domain https://mitra.ibm.gov.in/ Pages/returns.aspxalso functional for facilitating the stakeholders to submit the Monthly & Annual Return online and also scrutiny of the same by IBM. Further, the Bilingual Website of IBM is being updated as and when required.

5.14.1 Submission of Returns:

After introduction of online submission of returns system consequent upon amendment to Rule 45 of MCDR, 1988 vide notification No. 75(E), dated 9thFebruary, 2011, the mine owners have commenced submission of monthly and annual returns online. IBM is monitoring and guiding/ encouraging the mine owners and their representatives for online submission of returns. The month-wise monthly returns submitted online are given in **Table –5.14 A**

Table 5.14 A

Month-wise Returns Submitted online

Sl No.	Month	No. of monthly returns received online
1	April, 2021	1449
2	May, 2021	1377
3	June, 2021	1508
4	July, 2021	1638
5	August, 2021	1651
6	September, 2021	1605
7	October, 2021	1662
8	November, 2021	1653
9	December, 2021	1751
10	January, 2021	1813
11	February, 2021	1834
12	March 2022	1848

5.14.2 Registration under Rule 45

The status of registration under Rule 45 of MCDR 1988 and **Online Registration of Mines / Leases as on 31.3.2022 is as follows:**

Online Registration of Miners, End Users, Traders, Stockiest and Exporters (Including 31 minor minerals)

Serial Number	Particulars	Status at the end of March, 2022
1	No. of Miners	6401
2	No. of End Users	3714
3	No. of Traders	6566
4	No. of Stockiest	1989
5	No. of Exporters	1127
	TOTAL	**19797**

Online Registration of Mines / Leases (Excluding 31 Minerals)

Serial Number	Particulars	Status at the end of March, 2022
1	**No. of leases**	
	(a) Working	1103
	(b) Non-working	2340
	Total	**3443**
2	**No. of leases registered**	
	(a) Working	1102
	(b) Non-working	2059
	Total	**3161**
3	No. of mines / leases where show cause / VL issued (fornon registration)	0
4	No. of mines / leases suspended	134
5	No. of mines / leases recommended to the state Government for termination	104
6	No action taken for being new mines (recently granted leases & yet to open)	36
7	Lapse cases	8
Note: Terminated cases excluded from above details also as per list of leases supplied by respective governments.		

5.15 Mining Tenement System (MTS)

The objective of the PTS Project is to develop an online National Mineral Information System for investors by linking Central and State organizations engaged in administration of mineral resources in the country. The mining tenement system would have graphical information database (GIS) as well as information in textual form. These two databases, i.e., non-spatial database and spatial database would be seamlessly integrated so as to retrieve graphical information as well as relevant textual information. The system will be thus web

enabled and access to the system will be given online to prospective investors, government organizations, private and public organizations through Internet as per policy of the Government.

As approved by Core committee on MTS, the successful bidder M/s WIPRO signed the contract with IBM on 10.11.2016 in the august presence of Secretary (Mines) at Nagpur. M/s NISG, Hyderabad signed agreement as Project Management Unit(PMU) on 04.05.2017. Core Committee approved the Project Plan, SRS Document of Phase-I and COTs Software along with release of linked payments as per RFP. Pradhan Mantri KhanijKshetra Kalyan Yojna (PMKKKY), a part of MTS and as a change request was approved by Core Committee on 26.10.2017. For procurement of Cloud Services, the Co-ordination Committee has approved the name of M/s ESDS and accordingly, an agreement with M/s ESDS was signed on 23.11.2017 at Nagpur. The SRS Document of Pradhan Mantri KhanijKshetra Kalyan Yojna (PMKKKY) along with System Design Document (SDD) for Phase-1 was approved on 30.01.2018 by Core Committee.

The project was to be completed by WIPRO within a period of one and halfyears in two phases.However, frequent changes in Wipro management team and resources allocated to the project at Hyderabad coupled with inadequate strength, resource allocated at different locations other than IBM, Nagpur and lack of domain knowledge affected the progress of MTS project.

In the year 2020-21, Wipro's expressed its unwillingness to continue with the project in the Coordination Committee Meeting dated 18.12.2020. Coordination Committee recommended to accept the termination of contract with Wipro. The termination of contract with Wipro and NISG was accepted in the Core Committee meeting held under the chairmanship of Secretary (Mines) on 18.02.2021.

Future Course of Action:

As a result of refusal by WIPRO to continue the development of MTS and inprinciple decision to terminate the contract following alternative future courseof action is as follows:

1. To upgrade / modify the two old portals https://ibmreg.nic.in forRegistration; https://ibmreturns.gov.in for Returns to include the forms of Monthly & Annual Returns as prescribed under MCDR-2017 and architecture through NIC
2. To develop face-less system of Mining Plan Approval through NIC
3. Above two actions have already been taken and NIC is in the process of starting the work on it.

Some of the modules, such as Registration and Returns module have already been developed and are operational, whereas some modules, which include Mining Plan, Star Rating also, are under development stage. Amongst these Mining Plan module is likely to be online by July, 2022.

The system will digitize most of the activities in a transparent manner with facility of quick retrieval of data. Thus MTS would facilitate "**Digitisation of Workflows".**

5.16 Sustainable DevelopmentFramework (SDF)

Star Rating System: A good governance initiative is designed as a tool for evaluation of the performance of lease operators on the various parameters encompassed by the Principals of the Sustainable Development Framework (SDF) approved by Ministry of Mines in 2011 in line with the National Mineral Policy 2008. Thus it can be viewed asa mapping of mining footprints from the view point of Sustainability.

The system has been developed primarily on the basis of self-assessment followed by validation by Indian Bureau of Mines along-with provisions for third party auditing as may be considered fit by Ministry of Mines.The Star rating has been mandated by rule 35 of newly notified MCDR 2017.All the mine operators are mandated to achieve four or five star ratings within a stipulated time period of two years from the date of commencement of mining operations or the date of notification of the rules (i.e. March 2017) whichever is later in accordance with rule 35 of MCDR 2017. Failing which Mining operations are liable to be suspended.A system of third party auditing of theaward of rating system and the processimplementation is also proposed.

Following are the anticipated outcomes of the Star rating system:

- Reduced environmental and social conflicts in areas awarded for mining.

- Greater clarity for all concerned stakeholders, on risk levels of mining lease areas.
- Potentially reduced delays in obtaining clearancesenvironmental, forest) for mines.
- Improved protection of high risk areas in terms of environment and social considerations.
- A Regional Mineral Development Plan for selected mining areas and addressing key regional and cumulative impacts of mining through coordinated and collective action.
- Opportunity for clustering of small operators to become more competitive, and compliant.
- A robust E&S Management framework in mining companies.
- A disclosure process that provides stakeholders with relevant and timely information, and allows issues to be raised in engagement forums.
- Enhanced control on illegal mining activities through intensive stakeholder scrutiny by publishing details on mining activity in public domain.
- Intensive use of geo-spatial and geo-scientific information at mine level for assessment, planning, management and monitoring of the mining sector.
- Stronger monitoring and assurance systems and processes and
- SDF reporting on governance and ethical practices.
- The critical analysis of the Star rating templates will result into -
- Identification of the thrust areas for policy formulation
- The resource base creation for investment opportunity in the field of exploration, mining, mining as a hub for green energy development, mine water management, skill development requirements and efforts, the use and scope of space and digital technology
- Dissemination of best practices in the field of mining and allied activities.
- Critical analysis of mining activities in our country vis a vis global mining practice.
- Issues related to Raw material Security in country.

Based on evaluation of the performance of lease operators on the various parameters encompassed by the Principals of the Sustainable Development Framework (SDF) approved by Ministry of Mines, validation of self-assessed templates was carried out by IBM and accordingly rating was given as 0 to 5. The year wise 5 Star Rated mines are given below.

Year	5 Star Rating
2014-15	10
2015-16	32
2016-17	57
2017-18	57
2018-19	52
2019-20	40
2020-21	40*

* For the performance year 2020-21, so far 1034 lessees have filed self assessment templates out of which 40 mines are recommended for 5-star award.

The mine operators are felicitated for achieving 5 star rating at National Conclave on Mines and Minerals.

- The 5 star rated mines for the years 2014-15 were felicitated at Mining Conclave held at Raipur on 4-5 July, 2016.
- The 5 star rated mines for the years 2015-16 were felicitated at Mining Conclave held at New Delhi on 15thFebruary, 2017.
- The 5 star rated mines for the years 2016-17 were felicitated at Mining Conclave held at New Delhi on 20thMarch, 2018.
- The 5 star rated mines for the years 2017-18, 2018-19 and 2019-20 were felicitated by Shri Pralhad Joshi, Hon'ble Minister of Mines in Mining Conclave held at hotel The Ashok, New Delhi on 11 November, 2021.

5.17 Mining Surveillance System (MSS)

Mining Surveillance System (MSS) is a satellite-based monitoring system which aims to establish a regime of responsive mineral administration by curbing instances of illegal mining activity through automatic remote sensing detection technology.

- Ministry of Mines & Indian Bureau of Mines (IBM) have developed the MSS, with assistance from Bhaskaracharya Institute for space applications and Geo-informatics (BISAG), Gandhinagar and Ministry of Electronics and Information Technology (MEITY).

- The system works on the basic premise that most minerals occur in the continuity and their occurrence is not limited to the lease area but is likely to extend in the vicinity. The MSS checks a region of 500 meters around the existing mining lease boundary to search for any unusual activity which is likely to be illegal mining. Any discrepancy is found is flagged-off as a trigger.

- The MSS is a transparent & bias-free system, having a quicker response time and capability of effective follow-up. The deterrence effect of 'Eyes watching from the Sky' would be extremely fruitful in curbing instances of illegal mining.

- A user friendly mobile app for MSS has been created and launched on 24th January, 2017 at Gandhinagar for enabling public participation in assisting the governments endeavor to curb illegal mining, which was being used by the inspecting officials to submit compliance reports of their inspections.

- In the initial phase, a total of 296 triggers across the country covering a total area of 3994.87 hectares wherein, 47 unauthorized mining have been confirmed after inspection of the triggers by the state government officials.

- The training of all the States for its adoption of the MSS for minor minerals has also been done.

- In the second phase, 52 major mineral triggers, have been detected from the 3280 plotted leases (Working Mines 1689 plotted out of 1694 and Non-Working Mines 1596 plotted out of 2129) across the country, out of which 45 have been verified by the State Governments and in 5 cases unauthorized mining activities have been identified.

- Similarly, in respect of minor minerals, so far, 130 triggers have been generated, out of which104 have been verified and in 9 cases unauthorized mining activities have been identified.

In the third phase in 2021-22, 177 preliminary triggers are generated for major mineralsand uploaded on the portal for further transmission to the state governments of which 79 triggers have been verified by State Governments so far.

Summary of Phase wise triggers generated is given below:

	Triggers Generated	Triggers Verified	Unauthorized Mining confirmed
Phase-I (Major) (2016-17)	296	286	47
Phase-II (Major) (2018-19)	52	45	5
Phase-II (Minor) (2018-19)	130	104	9
Phase-III (Major) (2021-22)	177	79	0

5.18 Remote Sensing Centre becomes operational

The setting up of Remote Sensing Project under IBM- National Remote Sensing Centre (NRSC) Memorandum of Understanding has been completed and the laboratories in IBM HQs in Nagpur and Hyderabad Regional office are fully functional as on December 2018.

The IBM signed an MoU with NRSC, Hyderabad for "Capacity Building and Technical Support for lab establishment for monitoring the activities/changes within the mining lease area and within the 2 km buffer of mining lease boundaries using time series satelite imagery". With the guidance and hand-holding of NRSC, Hyderabad, IBM has set up two state-of-the-art remote sensing and GIS facilities at Nagpur and Hyderabad. The laboratories are equipped with latest software like Erdas Imagine Professional with Photogrammetry and ArcGIS Desktop Desktop Advance and its extension with machine hardwares.

Under Capacity building activity, the officers and staff of IBM were given a training in organisations like GSI and NRSC to handle the softwares. IBM officers attended two refresher courses in Advanced Geographic Information System and Remote Sensing and Digital Image Processing at GSI Training Institute in Hyderabad in the month of April and July, 2018. While, select officers and staff of GM & MM Cell underwent training Basics of GIS using Open Source Software at GSI Regional Training Institute, Nagpur in June, 2018.

A Training was conducted to officials of IBM at NRSC, Hyderabad from 5th to 9th August 2019 under IBM - NRSC Remote Sensing Project. On this training, 22

officials of IBM have participated. Coinciding to the concluding day of the training programme, NRSC –IBM schedule a review meeting also on 09/08/2019.

MoU has been signed between IBM and MOIL on "Assessing the impact of mining activities around the leases and prospecting licenses of MOIL Ltd. through application of GIS and Remote Sensing techniques as a model pilot project'. Break line drawing in the cartosat-1 images the year 2010 and 2014 and 2018 for extraction of DEM is completed. The exploration data and other information required from M/s MOIL for DongriBuzurg Mine for implementation of the project was collected.The data has been geo-referenced and digitized.Change detection and volumetric estimation of pits and dumps has been carried out and draft report is prepared.

5.19 Capacity Building of State Governments

As per the charter of Function, IBM to act as a National Technical Regulator in respect of the mining sector, and lay down regulations, procedures and systems to guide the State Governments (first tier of regulation) as well as build up capacity in the system, both for regulatory as well as the developmental work, at the central level as well as at the level of the States.

5.20 SwachataPakhawada

SwachataPakhawada has been organised from 16thNovember, 2021 to 30th November, 2021 at Head Quarter as well as at regional offices under Swachhata Action Plan 2021-22. A consolidated report has also been sent to Ministry. More details are included in the chapter on Celebrations by IBM.

5.21 COVID 19

As per the directives from competent authority, IBM followed guidelines and initiated various steps towards containment of spread of COVID 19. Earlier in 2020-21, Employees of IBM have given consent for contribution of one day salary to PMNRF. Accordingly, IBM's contribution is Rs.17.11 lakh.

Preventive measures to contain the spread of Novel corona virus (covlD-19)

In terms of the Order of GOVERNMENT OF MAHARASHTRA through Department of Revenue and Forest, Disaster Management, Relief and Rehabilitation, vide No: DMU/2020/CR. 92/DisM-1, dated 4th April, 2021, IBM HQ and all offices of IBM situated at Nagpur (Central Zonal/Nagpur Regional/Pilot Plant at MIDC Hingna) strictly adhered to the instructions enumerated in the said ORDER.

In terms of the Order of Government of India, through Ministry of Personnel and Public Grievances and Pensions, Department of Personnel & Training, vide No: F.No. 11013/9/2014 Estt A dated 14/6/2021, IBM HQ and all offices of IBM situated at Nagpur (Central Zonal/Nagpur Regional/Pilot Plant at MIDC Hingna) strictly adhered to the instructions enumerated in the said ORDER.

IBM HQ and all Zonal /Divisional/Regional/ore Dressing Labs/Sectional offices complied with the directions as per DOPT O.M. F.No. 11013/9/2014- Estt. A.lll dated 03.01.2022, 31.1.2022 & 6.2.2022 regarding Attendance of Central Government officials and suspension of biometric attendance and ensured Covid appropriate behaviour.

With reference to the Ministry of Mines email dated 20 June 2021 and 21 June 2021, the message **"Free Vaccination for All"** has been disseminated at all offices of IBM situated across the Country. IBM (H.Q), Nagpur has undertaken measures to widely publicize the Government of India drive of "Vaccination for All" for COVID-19 for all age groups. Posters and banners were placed at all different strategic locations at IBM HeadquartersFree Vaccination Drive

Indian Bureau of Mines on the directives of the Ministry of Mines has initiated action to spread the awareness of the importance of Vaccination to prevent and arrest the spread of Covid-19 pandemic. The Govt of India has initiated a massive special campaign of FREE VACCINE for all Age Groups. The special drive by the Govt of India of "Free Vaccine for ALL" needs maximum penetration among people and the message must get to every doorstep.

As part of the campaign, Posters and Banners conveying the Message have been put up at prominent locations in the Headquarter premises.

Posters and Banners conveying the Covid awareness Message at IBM HQ

DEPUTED FOR COVID-19 DUTIES:

Dr. Sathish Kumar, Asstt. Chemist, and Mr.Purnachandra Rao Mendu JTA (OD) were fully deputed for Covid-19 duties along with BBMP officials, Bangalore.

6.0 IBM Budget 2021-22

During the Annual Plan 2021-22, Ministry had allocated `110 crores including ` 95.31 crores for Establishmentand Rs. 14.69 crores for IBM Activities, which is further reduced to Rs.103.14 crores at RE stage including Rs.92.11 crores for Establishment and Rs. 11.03 crores for IBM Activities.

(Rupees in crore)

Head	B. E.	R.E	Expenditure (Up to March 2022)
Establishment	14.69	11.03	8.47
IBM Activities	95.31	92.11	87.03
Total	**110.00**	**103.14**	**95.5**

6.1 SCHEME-WISE FINANCIAL PERFORMANCE OF IBM DURING 2021-22

(Rs. In crores)

Head	BE	Exp. Upto March, 2021	%
Establishment	95.31	87.03	91.31
Sch.1	1.07	1.01	94.39
Sch.2	0.57	0.52	91.22
Sch.3	0.59	0.53	89.83
Sch.4	0.38	0.29	76.31
Sch.5	6.00	2.62	43.66
Other Heads (SAP, Trg. OAE, TSP)	2.60	0.60	23.07
Capital Outlay (MV, M&E, MWB)	2.01	1.88	93.53
NER (Revenue)	1.05	1.02	97.14
NER (Capital)	0.42	0.00	0.00
Total	**110.00**	**95.5**	**86.81**

6.2Audit paras: Local Audit inspection paras: No audit para is pending as on 31.03.2022.

Internal Inspection paras: up to 31st March 2022, 63 paras were pending and compliance report in respect of 63 paras is awaited from MMPL& regional offices of IBM.

6.3 CAG Audit Para

As on March 2022, no CAG audit para is pending in respect to IBM.

7.0 Human Resources in IBM

The Bureau has a total sanctioned strength of 1477 consisting of various disciplines as mining engineers, geologists, ore dressing, chemical, metallurgical engineers, mineral economists, statisticians, administrative officers and supporting staff.

7.1 Ministry vide orders as recorded below accorded sanctions for entrusting additional charge of top most level posts in IBM:

7.1.1 Additional charge of CG:

Ministry of Mines vide letter No.26l3l2020-M.IIIdated.16.03. 2021 conveyed the ex-post facto approval accorded by the Appointment Committee of the Cabinet (ACC) towards the entrustment of additional charge of the post of Controller General, Indian Bureau of Mines, (IBM) to Shri Sanjay Lohiya, IAS Joint Secretary Ministry of Mines for a period of nine months w.e.f.15.11.2020,ortill appointment of a regular incumbent to the post, or until further order, whichever is the earliest.

Ministry of Mines vide letter No.26l3l2020-M.III dated.24.08.2021 conveyed the approval of the Appointment Committee of the Cabinet (ACC) for extension of the additional charge of the post of the Controller General, Indian Bureau of Mines to Shri Sanjay Lohiya, IAS Joint Secretary Ministry of Mines w.e.f 15.08.2021 or till appointment of a regular incumbent to the post, or until further order, whichever is the earliest.

7.1.2 Additional charge of CCOM (MDR) Post

Ministry of Mines vide letter No.26/7/2019 M.III dated 16.6.2021 conveyed the approval of the Appointment Committee of the Cabinet (ACC) for extension of the additional charge of the post of the Chief Controller of Mines (MDR), Indian Bureau of Mines to Shri P.N. Sharma, COM, IBM for a further period of one yearw.e.f 01.11.2020,or till the appointment of a regular incumbent to the post, or until further order, whichever is the earliest.

7.1.3 Additional charge of CCOM (ME&S) Post

Ministry vide letter No.26/7/2019-M.III 16.6.2021 conveyed approval of the Appointment Committee of the Cabinet (ACC) to assign the additional charge

for the post of the Chief Controller of Mines (MES), Indian Bureau of Mines to Shri Pankaj Kulshreshtha, COM, IBM for a period of six months with effect from 23.03.2021 or till the appointment of a regular incumbent to the post, or until further order, whichever is the earliest.

Ministry vide letter No.16/2/2018-M.III 27.09.2021 conveyed approval of the Appointment Committee of the Cabinet (ACC) for extension of the additional charge for the post of the Chief Controller of Mines (MES), Indian Bureau of Mines to Shri Pankaj Kulshreshtha, COM, IBM for a period of six months with effect from 23.09.2021 or till the appointment of a regular incumbent to the post, or until further order, whichever is the earliest.

Ministry vide letter No.26/2/2018-M.III dated 07.04.2022 conveyed for the approval of ACC for extension of the additional charge for the post of the Chief Controller of Mines (MES), Indian Bureau of Mines to Shri Pankaj Kulshreshtha, COM, IBM for a further period of 1 year w.e.f23.3.2022or till the appointment of a regular incumbent to the post, or until further order, whichever is the earliest.

7.1.4 Additional charge of Director (MPD) Post

Ministry vide letter No.26/4/2020-M.III 19.4.2021 conveyed approval of the Appointment Committee of the Cabinet (ACC) to assign the additional chargefor the post of the Director (Ore Dressing), Indian Bureau of Mines to Dr. (Smt.) S.M.Lal, CODO, IBM for a period of nine months w.e.f. 1.12.2020 or till appointment of a regular incumbent to the post, or until further order, whichever is the earliest.

Ministry vide letter No.26/4/2020-M.III dated 17.08.2021 conveyed for extension of additional charge of the post of the Director (OD), IBM to Dr. (Smt.) S.M.Lal, CODO, IBMw.e.f 01.09.2021 till the further order.

Ministry vide letter No.26/4/2020-M.III dated 08.02.2022 conveyed Ex-post facto approval of ACC for extension of additional charge of the post of the Director (OD), IBM to Dr. (Smt.) S.M.Lal, CODO, IBM for a period of 01.09.2021 to 30.09.2021.

Ministry vide letter No.26/4/2020-M.III dated 08.02.2022 conveyed approval of ACC for the assignment of additional charge of the post of the Director (OD), IBM to Dr.Dilip Ranjan Kanungo, Suptdg. Officer (Ore Dressing), IBM for a

period of one year with immediate effect or till appointment of a regular incumbent to the post, or until further order, whichever is the earliest.

7.2 Committee for Review and Restructuring of the Functions and Role of IBM

Ministry of Mines had constituted a Committee vide its Resolution No. 16(27)/2009-M.VI dated 23-07-2009 for the Review and Re-structuring of the Functions and Roles of Indian Bureau of Mines (IBM) in terms of the policy directions given in the National Mineral Policy and the Mines and Minerals (Development and Regulation) Act and Rules framed there under.

2. The Committee submitted its Report to the Government of India on 4.5.2012 suggesting for overall restructuring of the IBM. It recommended the creation of 933 posts in addition to the existing strength of 1477. Ministry of Mines reviewed the recommendations of the Committee in the wake of significant changes in the legislative framework by the Government. Ministry optimized the proposal without considering increase in sanctioned strength. The proposal was examined in consultation with the Department of Expenditure, Ministry of Finance. The proposal was finalized with the creation, abolition and up-gradation of posts under various disciplines of IBM keeping the expenditure revenue neutral by way of matching saving through surrender of 180 Group 'A' (level 10) posts of Geological Survey of India, an Attached Office of Ministry of Mines.

3. The Department of Expenditure accorded approval to the proposal and suggested that the posts to be surrendered will be done gradually as and when the incumbents retire on superannuation or otherwise or are promoted.

4. The Cabinet approval was also accorded in consonance with the Department of Expenditure instructions vide OMNo. 7(I)/E.Coord-I/2017 dated 12.04.2017 for creation/ upgradation/ abolition of posts of the level of Joint Secretary and above.

After the Cabinet approval, detailed discipline-wise, revised sanctioned strength of IBM, is notified vide Gazette Notification No. 31/72/2009-M.III.Vol.I (part–I) dated 15th May, 2018, published on 17.5.2018.
Consequent to gazette notification following actions have been initiated:

1. Office Orders issued regarding re-designation pertaining to the post merged, merged & upgraded etc in accordance with the notification.

2. Internal Committee has been constituted in IBM under the chairmanship of CCOM in charge for implementation of restructuring for deciding re-deployment of man power and amending codified duties in respect of employees of IBM.

3. 138 posts have newly been created under the different cadres of IBM. For initiation of recruitment process as per Restructuring of IBM, new set of recruitment rules in respect of over 80 posts/designations in 17 disciplines had been uploaded in the IBM's Website for inviting stakeholders' comments & then finalized after incorporating comments and after due approval of concerned authorities like DoPT, UPSC and DoLA, recruitment rules of 70 posts have been revised and notified by the Ministry from 2019 till date.

4. As per the provisions contained in RRs, direct recruitment requisitions have been submitted to UPSC for 108 posts and to SSC for 228 posts. UPSC has already given advertisement for the vacancies of 63 posts in the employment news.

5. During 2021-22, proposals for DPC to 89 posts as per the existing RRs and revised RRs has been sent to Ministry for holding DPCs at UPSC/Ministry in respect of Gazetted posts.

6. Meanwhile some of the posts went under "deemed abolished" as per guidelines of Ministry of Finance. Hence, the revival proposal had to be taken up with the Ministry of Finance through Ministry of Mines. Accordingly, 335 posts, 242 posts and 108 posts were revived in April, 2021, August 2021 and February, 2022 respectively.

7. In respect of the 74 posts of Group B and C, where the authorities of IBM are competent to make appointment, the DPCs have been conducted during 2021-22.

Consequent to gazette Notification, the Bureau has a total sanctioned strength of 1477 consisting of704 Gazetted (Group A – 459& B – 245) and 773 Non-Gazetted (Group B – 257, Group C -516) posts. Sanctioned and filled up strength as on 31.3.2020 is given in the below table.

Employment of Personnel in IBM as on 1.3.2022

Group	Sanctioned strength	Total No. of employees in position	Number of Personnel					
			SC	ST	OBC	Minorities	Women	Physically Handicapped
A	459	143	18	05	34	07	04	00
B	502	251	28	15	41	09	47	07
C	516	274	56	17	56	12	39	06
Total	**1,477**	**668**	**102**	**37**	**131**	**28**	**90**	**13**

7.3 Redressal of Public Grievances

At the beginning of the year 03 grievance cases were pending at various stages. During the year 2021-22,43 new grievance petitions were received. So far 38cases have been disposed off including grievance cases pending at the beginning of the year. Online facility for Registration of Public Grievances has already been provided by linking IBM website with the Grievance Portal of DoPT" PROGRAMS".

7.4 Vigilance cases

During the year 2021-22, 33complaints were received of which all the 30were brought to their logical conclusion and appropriate action initiated as deemed fit after investigation. 03 complaintare under investigation as on 01.04.2022.

The Vigilance Awareness Week was observed during the period from 28.10.2021 to02.11.2021 in IBM HQ at Nagpur and in all zonal/regional offices of Indian Bureau of Mines as per directive of CVC.

7.5 Gender Equality

Women employees constitute about 13.50 percent of filled up strength of IBM. Training is imparted to women employees in the field of technical as well as administrative matters.A Committee has been constituted in IBM to redress the complaints made by the victims of sexual harassment at work place in a time bound manner.

7.6 RTI Applications

Indian Bureau of Mines (IBM) has appointed Central Public Information Officers and Appellate Authorities. During the year 2021-2022 (1st April 2021 to

31stMarch 2022), the Bureau received 394 applications under the RTI Act, which were timely responded. 27Appeals received against the decisions of the CPIOs were disposed of by the concerned Appellate Authorities within the stipulated time frame.

Status of disposal of RTI Applications/1st Appeal/2nd Appeal is given in following tables:

Table 7.5.1

RTI Application/Request Status (w. e. f. 1stApril, 2021 to 31st March, 2022)

Organization	No. of Cases					Pendency			
	Previous Pendency	No. of RTI Application/ Request during the period	Disposal	Balance	Information denied u/s 8(1), 9, 11, 24 & others of RTI Act	0-3 months	4-6 months	7-9 months	10-12 months
IBM	0	394	385	09			-	-	-

Source: Information received from designated CPIO/AA of IBM.

Table 7.5.2

RTI Ist Appeal Request Status (w. e. f. 1stApril, 2021 to 31st March, 2022)

Organization	No. of Cases					Pendency			
	Previous Pendency	No. of Ist Appeal received during the period	Disposal	Balance	No. Appeal rejected/Inf. denied u/s	0-3 months	4-6 months	7-9 months	10-12 months
IBM	Nil	27	27	Nil	Nil	Nil	-	-	-

Source: Information received from designated CPIO/AA of IBM.

Table 7.5.3

CIC 2nd Appeal Status (w. e. f. 1stApril, 2021 to 31st March, 2022)

Organization	No. of Cases				
	Previous Pendency	No. of 2nd Appeals filed in CIC	Decided		Balance
			In favour of Appellant	In favour of Organization	
IBM	Nil	05	Nil	05	Nil

Source: Information received from designated CPIO/FAA of IBM.

7.7 Reservation of Vacancies for persons with Disabilities

IBM is strictly following the various instructions of the Government issued from time to time regarding reservation of vacancies for PWD,s in respect of Group 'A' and 'B' Gazetted posts. As on 31st March 2022, 13 physically handicapped persons were under employment in IBM.

7.8 Welfare activities for SC/ST, women, Minorities and PWD,s:

For Women: A committee under sexual harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 has been constituted in IBM to redress the complaints made by the victim of sexual harassment at work place in a time bound manner.

8.0 Indian Bureau of Mines: Celebration of events

8.1 Azadi Ka Amrit Mahotsav

8.1.1 Display of Logo of Azadi Ka Amrit Mahotsav

The Advisory received from the Ministry has specified that the official logo of Azadi Ka Amrit Mahotsav (AKAM) be an accompaniment feature in all official correspondences/stationeries /Advertisements/commercials etc. put out/released by every Government Department. The AKAM logo is now available on the link: https://amritmahotsav.nic.in/logo.htm. The logo must appear prominently on all letter/e-mail correspondences.

8.1.2 Fit India Freedom Run 2.0

Fit India Freedom Run 2.0 to commemorate Azadi Ka Amrit Mahotsav was organised by Indian Bureau of Mines on 13August 2021. The event was organised as per the prescribed guidelines issued by Government of India and as part of "Jan Bagidari Se Jan Andolan" theme observed from 13 August 2021 to 02 October 2021 to encourage public participation. The programme was launched on 13 Aug. 2021 by Shri P.N. Sharma, Chief Controller of Mines (I/c)—MDR in the presence of Shri Pankaj Kulshrestha, Chief Controller of Mines (I/c) —MES, the Head of Office, Dr Y.G. Kale and the Technical Secretary, Shri Abhay Agarwal. The event organised included a one-kilometre walk with hand-held banners. Several participants, officers & staff, from the Bureau willing took part in the event with vigour and enthusiasm.

Fit India Freedom Run glimpses at IBM HQ

8.1.3 उदयपुर में वृक्षारोपण कार्यक्रम का आयोजन

भारत सरकार एवं भारतीय खान ब्यूरो मुख्यालय के निर्देशानुसार खान नियंत्रक (उत्तरजोन) कार्यालय, भारतीय खान ब्यूरो, उदयपुर में आजादी का अमृत महोत्सव के तहत 21 सितम्बर 2021 को वृक्षारोपण कार्यक्रम का आयोजन किया गया.

अमृत महोत्सव के तहत वर्ष भर कार्यक्रम आयोजित किया जाएगा तथा इसी क्रम में स्वच्छता अभियान भी चलाया गया तथा परिसर की साफ-सफाई की गई. पश्चात वृक्षारोपण कार्यक्रम आयोजन किया गया. परिसर में अमृत महोत्सव से संबंधित बैनर भी लगाए गए है.

यह सभी कार्यक्रम श्री रजनीष पुरोहित, क्षेत्रीय खान नियंत्रक एवं प्रभारी खान नियंत्रक के मार्गदर्शन में आयोजित किए गए. इस अवसर पर डॉ .ओमकेश मूर्ति, क्षेत्रीय खनन भूविज्ञानी, श्री मनीष गुप्ता, सहायक खनन अभियंता, श्रीमती नीता कोठारी, वरिष्ठ सांख्यकी अधिकारी, श्री दिलीप पंवार, आशुलिपिक, श्री कंवरपाल मीना, उच्च श्रेणी लिपिक, श्री रामसिंह, उच्च श्रेणी लिपिक, श्री कुन्दन कुमार, एमटीएस, श्री किशोर कुमार, एमटीएस तथा श्री सुरेशचन्द भावसार, एमटीएस उपस्थित थे.

उदयपुर में वृक्षारोपण कार्यक्रम

8.2 International Yoga day,2021

In compliance to DO letter no. M16011/2/2021-YN dated 20th June 2021 from Secretary, Ayurveda, Yoga and Naturopathy, International Yoga day was celebrated on 21/6/2021 by All Zonal/Divisional/Regional/MP Labs/Sectional Heads of IBM. Yoga Day was celebrated virtually keeping in mind the prevailing Covid Pandemic with theme **"YOGA FOR WELLNESS"**. Overall 760 members of IBM employees participated in International Yoga day Celebrations.

8.3 75th Independence Day Celebrations at IBM

Indian Bureau of Mines, on 15 August 2021, celebrated India's 75th Independence Day with fervour by evoking the National spirit with energetic participation of all its serving employees in the premises of its Headquarters in Nagpur. Shri P.N. Sharma, Chief Controller of Mines (I/c)—MDR, hoisted the National Flag which was followed by singing of the National Anthem. Addressing the august assembly of senior officers, staff members, guests & children, Shri Sharma narrated the glorious pathways adopted by the country in marking this remarkable feat of celebrating India's 75th Independence Day. The events of the day despite the restrictions followed on account of Covid protocols in place, was organised with spirited enthusiasm. Shri Nilesh Mahatme, eloquently conducted the day's activities. The entire Headquarters was tidied and decked up with brightly lit sparkling illuminations as part of the celebratory activities.

75th Independence Day Celebrations at IBM HQ

8.3.1 रांची कार्यालय में ध्वजारोहण कार्यक्रम का आयोजन

भारतीय स्वतंत्रता की 75वीं वर्षगांठ के अवसर पर भारतीय खान ब्यूरो के रांची क्षेत्रीय कार्यालय में ध्वजारोहण कार्यक्रम का आयोजन किया गया. इस अवसर पर कार्यालय के अधिकारी एवं कर्मचारी उपस्थित थे.

रांची कार्यालय में ध्वजारोहण कार्यक्रम

8.3.2 रायपुर कार्यालय ने मनाया स्वतंत्रता दिवस

स्वतंत्रता दिवस की 75वीं वर्षगांठ के उपलक्ष्य में भारतीय खान ब्यूरो के रायपुर क्षेत्रीय कार्यालय में विशेष कार्यक्रम का आयोजन किया गया .क्षेत्रीय खान नियंत्रक श्री बाबुलाल गुर्जर ने सभी कर्मचारियों की उपस्थिती में ध्वजारहोण किया तथा सभी ने राष्ट्रगान गाकर मानवंदना दी.

रायपुर कार्यालय स्वतंत्रता दिवस

8.4 IBM Observes Vigilance Awareness Week 2021

In compliance with the directives received from the Central Vigilance Commission, New Delhi, the Vigilance Section of IBM has initiated the proceedings for observance of Vigilance Awareness Week from 26 October 2021 to 01 November 2021 at IBM. In wake of Covid-19 norms in place, this year, the observance of Vigilance Awareness Week would take place via virtual mode.

The Vigilance Awareness Week commenced with administering of online integrity pledge by Shri P.N. Sharma, Chief Controller of Mines (I/c) – MDR in Hindi & English. Shri Pankaj Kulshrestha, Chief Controller of Mines (I/c) – MES along with Shri V.D. Godghate, Chief Vigilance Officer, Dr Y.G. Kale, Head of Office and Shri Abhay Agrawal, Technical Secretary, participated in the virtual inauguration of the Vigilance Awareness Week 2021 at the Headquarters. Messages of Hon'ble President of India and Minister of Mines, Govt of India, were read during the programme. The online Inaugural Function was attended by all Divisional/Zonal/Regional Heads of IBM.

Vigilance Awareness Week 2021

8.5 IBM Observes Constitution Day

In commemoration of this momentous day, i.e., 26 November, the day in 1949 when the Constitution of India was adopted by the Constituent Assembly, IBM observed this occasion by organising a programme to celebrate the event. For the first time, in tandem with the proceedings of the Parliament House where

the Hon'ble President of India, Vice-President, Speaker of Lok Sabha and the Prime Minister were in attendance and that which was transmitted live, the Constitution Day programme at IBM Headquarters was also coincided. The assembled gathering of Officers and staff at IBM witnessed the proceedings at the Central Hall of the parliament and at the end repeated the Preamble of the Constitution after the Hon'ble President of India.

The Constitution Day Programme at IBM Headquarters continued post the conclusion of the proceedings at Parliament House with an eloquent speech on the Constitution of India by the Guest Invitee Dr Varsha Deshpande, Associate Professor, Dr. Ambedkar Law College, Nagpur. Dr Deshpande spoke at length on the various features that are ingrained in our Constitution and averred that the Preamble of the Constitution captures the essence of this holy book to the fullest. Speaking on the Fundamental rights and the Directive Principles of State Policy, Dr Deshpande elaborately explained the purpose of their inclusion in the Constitution and elucidated that these are the Sections of the Constitution of India that prescribe the fundamental obligations of the State to its citizens and the duties and the rights of the citizens to the State . Quoting Dr B.R Ambedkar, the chief architect of the Constitution, liberally, Dr Deshpande concluded that the Constitution is the Supreme Law of the land that imparts Constitution Supremacy and was adopted by its people with a declaration in its Preamble.

Shri P.N. Sharma, Chief Controller of Mines I/c —MDR and Dr Y.G. Kale, Head of Office adorned the dais along with the Special Invitee Dr Varsha Deshpande. Shri P.N. Sharma also addressed the gathering during the occasion. Earlier, the programme of the day commenced with the garlanding of the portrait of Dr B.R. Ambedkar and paying floral offerings by Shri P.N. Sharma, CCOM (I/c)—MDR and the Special Invitee, Dr Deshpande.

Constitution Day at IBM HQ

8.6 Awareness Programme on Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act

To commemorate the 8th anniversary of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, Internal Complaint Committee under Sexual Harassment of Women at Work Place (Prevention, Prohibition and Redressal) Act, 2013, a virtual awareness programme was conducted at IBM on 9th December 2021 at 11:30 am.

A host of participants congregated online to attend the proceedings of the Awareness programme. Dr (Smt.) Jyoti Shrivastava, Senior Chemist (OD) and President (Internal Complaint Committee), presided over the programme and in her brief introduction emphasized the history and background in the enactment of the Act on Sexual Harassment of Women at Workplace in 2013. Dr Shrivastava also shared about the Vishakha guidelines and the importance of the Internal Complaint Committee in every Government Organisation and Public Sector.

The occasion was graced by Smt. MrunalMunishwar, District Co-ordinator, Yuva Rural Association, Bhandara, as Chief Guest. SmtMunishwar in her address stressed the importance of such an Act in place and its role in preventing harassment at workplace. She quoted instances where women were subjected to extreme torment and humiliation and emphasised that all women must be aware of the provisions in the Act that have been carefully incorporated for their protection.

The programme of the day was co-ordinated by Dr.IpsitaMohanram, Assistant Ore Dressing Officer, Mineral Processing Division and Member Secretary (Internal Complaint Committee). The programme was compered by Smt. Pradnya Deo, TA (Publication) and the Vote of Thanks was proposed by Smt. Preeti Mishra, JTA (Chemical).

Awareness Programme on Sexual Harassment of Women at Workplace

8.7 IBM Celebrates 73rd Republic Day

The 73rd Republic Day was celebrated at IBM in its Headquarters and all its Regional Offices on 26 January 2022 in a grand scale that befits the occasion. At Headquarters, the National Flag was unfurled by Shri P.N. Sharma, Chief Controller of Mines (MDR), amidst an august gathering of senior officers & staff and other guests. The unfurling of the Tricolor, singing of National Anthem, address of Shri P.N. Sharma and planting of saplings by senior officers of the Bureau marked the occasion. Shri Pankaj Kulshrestha, CCOM (MES), Dr Y.G. Kale, COM, Shri Abhay Agrawal, COM (CZ), Shri S.K. Adhikari, CMG, Shri Parag Tadlimbekar, HoO, Dr Kanungo, Suptdg Officer (OD), were among the many distinguished officers present during the occasion. Glimpses of the event as captured are as under:

73rd Republic Day at IBM HQ

8.8 IBM Observes Foundation Day as KhanijDiwas

Indian Bureau of Mines celebrated its 75th Foundation Day on 1st March 2022 as KhanijDiwas. The commemorative function was conducted via virtual mode wherein the Bureau's officers and staff members along with retired senior colleagues congregated on the digital platform to participate in this memorable gathering. The occasion was marked with inspiring speeches and technical presentations.

The day's function commenced with a detailed Intoductory talk on the past and present activities along with all technical developments and innovation

pursued by IBM by the Director (I/c), Mineral Processing Division & Convener of the Programme, Dr Dillip R. Kanungo. The programme then moved to an elaborative Technical Presentation on the topic "National Mineral Exploration—Way Forward" by the distinguished Guest of Honour, Hemraj Suryavanshi, Addl. Director (I/c) &HoD, GSI, CR and Head, National Mission-II, GSI. Shri Suryavanshi with aid of visual presentation highlighted the journey of GSI in the field of Mineral explorations and the successes achieved in the discoveries of minerals and stressed on IBM's crucial role in effective management of the Mineral resources of the country.

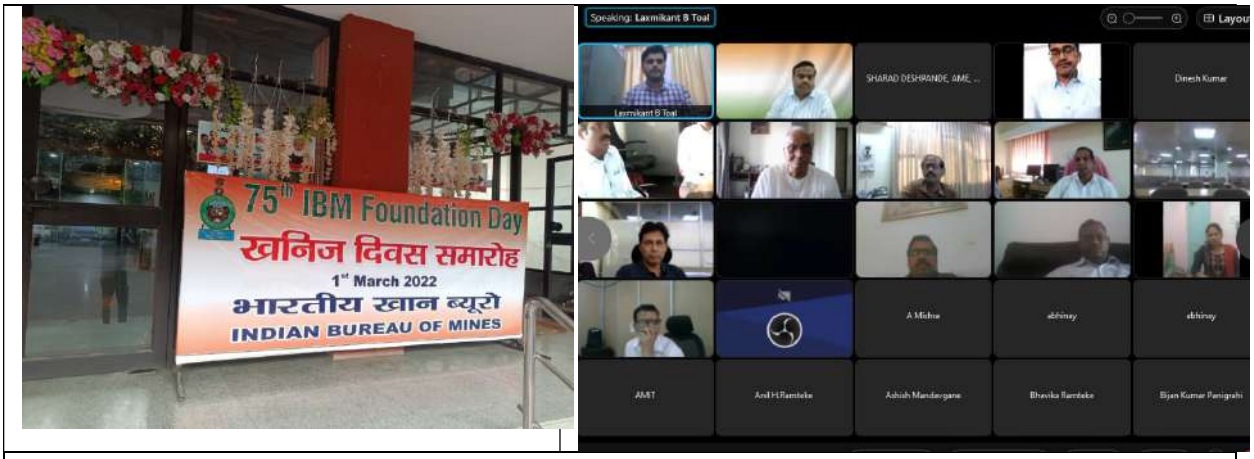
Addressing the audience, the Chief Guest & Honourable Commissioner, Nagpur Municipal Corporation, Shri Radhakrishnan B., IAS, offered an inspiring account of the various probabilities in developing the Mineral Sector of the country and expressed the need to remove all misconceptions about Mining that are prevalent in the minds of people. Shri Radhakrishnan said that to realize the Hon'ble Prime Minister's vision of Atmanirbar Bharat, it is the Mining Sector that should actually take the lead as many of the predominant Sectors be it Manufacturing, Infrastructure, Steel, Automobile etc. depend on mining products as the basic raw material. Further elaborating on the Mining Sector's potentiality to improve its contribution to GDP, he underscored the need for investing in Human Capital and the Employment opportunities that it has the capacity to generate. Congratulating IBM on its 75th Foundation Day, Shri Radhakrishnan recounted that IBM has been a torch-bearer in creating an Eco-friendly environment and listed out that IBM could face many of its challenges successfully if it invested on promoting Research & Development by tying up with reputed Educational Institutions so that entrepreneurial capabilities are developed through which the vast human resource potential could be oriented towards nation's development.

Delivering the Presidential address, Shri P.N. Sharma, Chief Controller of Mines (I/c), IBM, while outlining the stages of transition of Indian Bureau of Mines from the days of its inception deified the contributions made by the former Heads of the Department and all senior & retired colleagues who steadily and dedicatedly build the organization to such an extent that it had withstood many challenges posed by time to become country's foremost organisation of excellence. Extolling IBM's achievements in the diverse fields of Mining, Geology, Mineral Economics & Mineral Statistics, Shri Sharma highlighted the forays made by IBM in the Mineral Administration & Surveillance System and the endeavours made to efficiently govern the mining & mineral development activities in the country. Earlier, Shri Sharma extended greeting on behalf of

IBM to all the assembled dignitaries, ex-colleagues and serving members of IBM family.

Earlier, the programme commenced with lighting of traditional lamp and singing of Saraswativandana. The programme also included introducing of the Chief Guest, Guest of Honour and that of the President of the Function to the assembled audience on virtual mode.

The programme,was compered by Ms Preeti Mishra, Assistant Chemist, drew to a close with the vote of thanks proposed by Shri L.B. Toal, Ore Dressing Officer, IBM.



Khanij Divas at IBM HQ

8.8.1 Khanij Divas Celebrated at IBM's Bangalore Regional Office

IBM's Foundation Day was celebrated as "Khanij Divas" on 1 st March 2022, at Indian Bureau of Mines, Bangalore. The details of the event conducted are as follows:

The programme commenced with the Welcome address presented by Dr L.N. Padhi, DODO, RMPL, Bangalore. Dr Nitin Nayak and Dr Pooja Prakash Prabhu graced the occasion as Chief Guest. The inauguration of the programme began with the lighting of lamp which was followed by Foundation day address by Dr V.A.J.Aruna, Superintending Officer (OD). Dr Aruna briefed the gathering about the role of IBM and its transitions over the period of time and highlighted the achievements of Mineral Processing Division. In his address, Shri Suresh Prasad, DCOM & HOO & Regional Office In-charge outlined the role of IBM in the development of the nation and briefed on the various services that IBM renders through its 13 Regional Offices, 4 Zonal Offices and 3 Mineral

Processing Laboratories. Shri Prasant Hegde, RMG, and Shri Sandeep Singh, ACOM, also spoke on the occasion.

Dr. Nitin Nayak, Chief Guest, in his speech enlightened the gathering on the topic of Covid -19— the world post Covid pandemic. Dr Nayak elaborately spoke on the importance of vaccination and how to deal with emergence of subsequent waves. He discussed on assorted topics relating to the pandemic— effect of Covid in children; lockdown influences on children and their families; importance of immunisation in kids; do's and dont's; responsibilities of parents of the kids who are going to school etc. In her address, Dr Pooja Prakash Prabhu, Chief Guest, talked extensively on matters relating kidney and the ailments that people generally suffer. Dr Pooja elaborately discussed on treatments of kidney diseases, preventions of kidney failures, kidney stone formation, and importance of diet and also covered the topic on organ donations and its importance.

The programme drew to a close with the vote of thanks proposed by Shri Prasanna Kumar S Rao, DODO, RMPL, Bangalore.

Khanij Divas at IBM Bengaluru

8.8.2 Khanij Divas Observed at IBM's Ranchi Regional Office

IBM's 75th Foundation Day was celebrated at its Regional Office, Ranchi, on 01/03/2022 as Khanij Divas. Attended by dignitaries from prominent organisations viz. M/s Steel Authority of India, Tata Steel Ltd, Hindustan Copper Ltd, Hindalco etc., who also made insightful presentations during the course of the programme highlighting the specific works initiated and carried out in the region for scientific development of the mineral deposits,

conservation of minerals, protection of environment, SDF as per the guidelines of MCDR 2017.

Earlier the day's programme commenced with the welcome address presented by Shri S.S. Kujur, DCOM & I/c RO, Ranchi. Shri O.P. Gopal, RMG, also spoke on the occasion.

The celebratory function enthusiastically participated by the entire officers and staff of Ranchi Regional office drew to a close with the vote of thanks proposed by Shri B.P. Kerketta, DCOM.

Khanij Divas at IBM Ranchi

8.8.3 Khanij Divas Observed at IBM's Guwahati Regional Office

IBM foundation day was observed as "KHANIJ DIWAS" at IBM, RO-Guwahati on the theme "Sharing technical Knowledge andawareness over various amended regulatory affairs related to regulation of mineral".The program started by 3:00pm by lighting of lamp followed with Saraswati Vandana. A brief oration on the role of IBM and itshistory was given by Shri Vikas Kumar, ACOM. He briefly outlined the overall objective vested through this program. In the inaugural speech he shared updates on the changing mining regulations and its upcoming effect in the mining and allied Industry.Further, he also emphasized on improving the time bound disposal of various statutory works.

Power point presentation on "Best-Practices-Mining and Mineral Conservation, Environmental Protection etc." was promptly shown by different Stakeholders.Stakeholders were very enthusiastic to share different initiatives being taken by their management and the vested role of bringing down carbon footprints.An open end discussion session was also held with an intention to clarify the doubts related to submission of returns, Mining

Plans, Drone Surveying, Optimization of Blasting technique, Use& Stacking of Sub-Grade Mineral etc. Refreshment of stakeholderswas nicely arranged in the office premise.The function was concluded with vote of thanks by Shri SK Muduli, SMG.

8.9 IBM Celebrates International Women's Day

Indian Bureau of Mines celebrated International Women's Day on 8th March 2022 with great zeal and enthusiasm. The program was inaugurated with lighting of lamp and garlanding the portrait of Smt. Savitribai Phule by the Chief Controller of Mines (I/c)—MES, Shri Pankaj Kulshreshtha who presided over the function. The program conducted through virtual mode commenced with Saraswati Vandana followed by the welcome address and talk by eminent speakers on current UN Theme, "BreakTheBias"

.

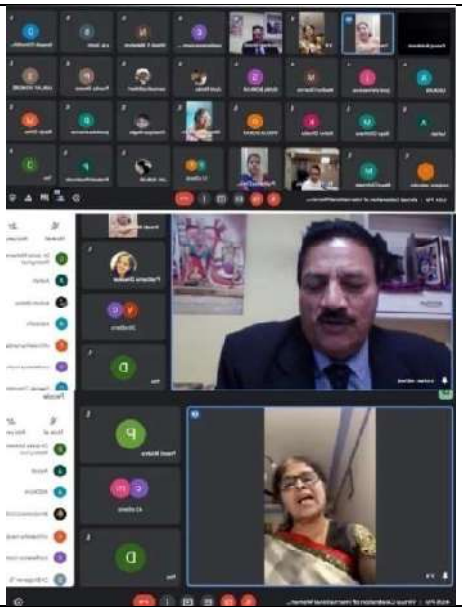
Shri. Mohan Rathod, IPS (Retd), former Special Inspector General of Police, Maharashtra Cadre, Mumbai, graced the occasion as the Chief Guest of the function. He enlightened the audience with his experiences about the intricacy of women in society. He also stressed on the behaviour of male colleagues and the need to give respect to every women.

Dr (Smt.) Vandana Khushalani, Principal (Retd.), Dayanand Arya Kanya Mahavidyalaya, Nagpur, graced the function as Guest of Honour. She emphasized on the struggle of women from ancient times of Mahabharata to present day. In her speech, she highlighted the inner strength that each woman possessed and how many ordeals were overcome by sheer grit and courage.

Shri. Pankaj Kulshreshtha, Chief Controller of Mines (I/c), MES & P&C, IBM, Nagpur in his presidential address, congratulated all Women of IBM and expressed his gratitude to the Chief Guest and the Guest of Honour. In his speech Shri Kulshreshtha stressed on equality of women and leadership adorned by them in various disciplines. He also stated the contribution of women in various industrial sectors including the areas usually dominated by men and particularly said that even in underground mining women these days are involved.

Dr. (Smt.) Jyoti Shrivastava, Senior Chemist & President Women's Committee gave an insightful account about imparting the education of gender equality starting from home and in schools. She also briefed about the global gender index report and the position of India among 156 countries. She made the audience aware about the contribution of Indian women delegates in amendment of UN declaration with reference to gender equality.

The virtual celebration was led by Dr IpsitaMohanram, Deputy Ore Dressing Officer, MPD & Vice President Women's Committee. Smt. Preeti Mishra, Assistant Chemist, gracefully compered the programme and the vote of thanks was proposed by Smt. Pratibha Sharma, SKT (T). Rangoli, poems, posters, slogans based on current UN theme and women empowerment was also a part in the celebration of the event.



International Women's Day celebration at IBM HQ

8.10 Ongoing Swachhata Abhiyan (Progress under Special Campaign)

As per Cabinet Secretariat D.O. letter No. 1/50/3/2021-Cab dated 09.09.2021 and Department of Administrative Reforms & Public Grievance O.M dated 13.09.2021, Ministry of Mines advised to organize a special campaign to dispose of pending references. Accordingly, desired targets in respect of (i) pending references (PMO/ VIP ref. etc/ public grievances/ RTI matters), (ii) cleanliness drive and (iii) record management have been identified and communicated to ministry on 30.09.2021. All divisions in HQ and other field offices have been communicated to ensure successful completion of said special campaignin respect of (i) disposal of pending references and grievances (ii) record management (weeding out of files) (iii) disposal of scrap/ obsolete items and (iv)cleanliness drive in office premises is being continued in regular manner.

Regular cleanliness activities are carried out at IBM HQ and regional offices. As a part of record management 1245 files have been reviewed and 1208 files have been weeded out. Disposal of Scraps, News papers, cartridge boxes and weeding out of old files, old reports and draft reports was carried out at TS Section, IBM Nagpur, and created space for files.Identification and disposal of scrap is also in progress at various offices.Special steps have been taken by constituting a committee and also assigning this task exclusively to store officer for identification and disposal process of un-serviceable/obsolete items at IBM Nagpur HQ. Cumulatively 200 Sq. Ft space is created by weeding out the old files.

	
Before	after

Space created after weeding out files and old draft reports at TS Section	
	
Before	after
Space created after cleanliness drive and weeding out old files in Bangalore regional officeIBM	

8.11 Swachhata Pakhwada-2021

As per the directions received from the Ministry of Mines, SwachhataPakhwada was observed from 16thNov to 30thNov 2021. Various activities were conducted in the mines during SwachhtaPakhwada which are listed below.

8.11.1 Plan for Swachhata Pakhwada-2021

Clean & Swachh mines:

a. Implementation of Clean/Green Energy Initiatives at Mines
b. Targeting adjoining villages/ towns/ areas to make plastic free village
c. Launching of pilot schemes of zero waste mines
d. Swachhta message dissemination through banners, posters etc.
e. Hygiene kits for the labours/workers.
f. Massive tree plantation and Shramdaan

The details of daily activities were uploaded on Swachh Samiksha portal. A brief of activities carried out in mines under the aegis of various regional offices is enclosed at **Annexure 2.**

8.12 Communal Harmony Campaign Week 2021

In compliance of the Ministry of Mines D.O. letter to Controller General, Indian Bureau of Mines dated 17/11/2021 along with IBM's Circular no. F-13012/2/2017-Gen. dated 18.11.2021; the Communal Harmony Campaign

Week was observed from 19th to 25th Nov; 2021 to foster Communal Harmony, National Integration and Fraternity. Communal Harmony Campaign Week is an initiative of National Foundation for Communal Harmony (NFCH). It aims to provide financial assistance to children rendered orphan or destitute in communal, caste, ethnic or terrorist violence for their education and rehabilitation under Project Assist' and takes up several social, cultural and educational activities in collaboration with various partners for promotion of unity and harmony in the country.

The Mining fraternity in Jabalpur region has actively participated in the Communal Harmony Campaign Week and a total donation of Rs. 47171/- has been credited. Brief details are enclosed at **Annexure 2.**

8.13 Important Meetings

8.13.1 Core Committee of Mining Tenement System (MTS)

Eighth Meeting of the Core Committee of Mining Tenement System (MTS) was held on 12th July 2021 at 3:00 PM through video conferencing under the Chairmanship of Shri Alok Tandon, Secretary (Mines) to discuss the agenda items namely:

- Closure of the cloud service from M/s ESDS.
- Status on the Progress of the work allotted to NIC for the registration/return/Mining plan.
- Development of the Remaining Module and seeking its approval from the Ministry

Action as per the decisions taken in the meeting is being taken.

Subsequently, a meeting through video conferencing was held on 16.07.2021 under the chairmanship of Secretary Mines with NIC to discuss 'the way forward for development of additional application/modules' for Mining Tenement System of IBM.

8.13.2 Evaluation of on-going schemes for continuation in 15th Finance Commission

8.13.2.1 A meeting under the chairpersonship of JS&FA, Ministry of Mines was held on 27.07.2021 through VC to discuss the matter regarding continuation of ongoing schemes in 15 th Finance Commission period. IBM gave a presentation

on SFC proposals of all the 5 schemesfor continuation in the 15th Finance Commission. Brief notes on adoption of new technologies in IBM and work done so far regarding filling up of vacant posts through DR / DPC in respect of all Group A, B and C posts have been sent to JS&FA vide email dated 2.8.2021.

8.13.2.2 Secretary (Mines) chaired a meeting on 23.08.2021, organized through VC for the appraisal of IBM ongoing schemes from fourteenth finance commission period to fifteenth finance commission period. AS & CG I/c IBM and other divisional heads from IBM HQ have participated in the meeting. CCOM I/c (MDR) gave a presentation on IBM schemes along with justification for their continuation and budget requirement during the fifteenth finance commission period. Secretary (Mines) suggested identifying action plan for contribution towards technological upgradation and innovations in line with recommendations given in NMP 2019. Later on vide letter No.37/11/2017-M.III dated 31.8.2021, Ministry conveyed the approval for continuation of IBM's ongoing schemes in the period of 15th Finance Commission.

8.13.3 Meeting chaired by Secretary Mines on 30.11.2021

Referring to the comments of IBM on (i) FIMI's request for revision of the threshold values of limestone at par with the limiting values suggested by National Council for Cement and Building Materials (NCCBM) and (ii) representation by Odisha Mine ownerson proposal to include lower grades of magnetite ore in monthly and annual returns, as directed, presentations were made by IBM on 30.11.2021 before Secretary (Mines) in virtual mode.

8.14 Important Committees

8.14.1 Ministry of Mines vide O.M.No.16/86/2021 M.VI dated 16.7.2021 have constituted a Committee for examining the issues of misclassification of different grades of Iron Ore and other minerals under the chairmanship of JS(Mines) with CCOM IBM as member and Technical Secretary, IBM as its Member Secretary.

8.14.2 Committee for examining the issue of utilisation of low and lean grade Iron ore resources

IBM vide its letter no. A-285(52)/CMG/2021 dated 17/08/2021 has constituted a 4 membercommittee for examining the issue of utilisation of low and lean grade Iron ore resourcesin the Country, under the chairmanship of CCOM I/c MDR Division with Technical Secretary, IBM as Member Secretary. The

Committee, inter alia would examine the issues of estimation of the resources and grade of the low and lean grade Iron ores including old dumps, mine rejects, tailings and fines available for beneficiation and would recommend 1) suitable regulatory framework for Mandatory adoption of beneficiation for utilization of low grade lumpy iron ores, low grade iron ore fines, BHQ/BHJ/BMQ ores to move towards zero waste mining in the country, and 2) suitable draft of policy for providing fiscal incentives for undertaking beneficiation of low grade ores by the miners and agglomeration industries, etc.The Committee has visited the beneficiation plant of M/s SAIL Ltd. at Bhilai (Chhattisgarh) on 30th September, 2021.Committee submitted its Report to CG, I/c IBM on 29.11.2021.

8.14.3 Committee to examine issue relating to relaxation of area limit under section 6 (1) (a) and (b) of the MMDR Act, 1957

Ministry of Mines vide Order No. 16/105/2021-M.VI dated 31.8.2021 has set up a committee under the chairmanship of DG GSI with CCOM & CMG IBM as members and Technical Secretary, IBM as its member Secretary, to examine issue relating to relaxation of area limit under section 6 (1) (a) and (b) of the MMDR Act, 1957. As per its TOR, the Committee would examine i) the issue raised under the various representation of industry association / federation regarding the area limits which have been extended beyond the prescribed limit as mentioned under section 6 of the MMDR Act, 1957; ii. the cases where Central Government has already conveyed its approval for relaxation of the area limit under the MMDR Act, 1957; iii. the issue of monopoly of resources, non-availability of ore to MSME, manipulation in prices, reduce competitions etc. and to re-look into these issues to ensure fair competitions and also equitable distribution of mineral resources in the country.The Committee has submitted its final recommendations to the Ministry of mines on 22.09.2021.

8.14.4 Committee for examining the issues of misclassification of different grades of Iron Ore and other minerals

Ministry of Mines vide O.M.No.16/86/2021 M.VI dated 16.7.2021 had constituted a Committee for examining the issues of misclassification of different grades of Iron Ore and other minerals under the chairmanship of JS(Mines) with CCOM IBM as member and Technical Secretary, IBM as its Member Secretary. The committee arranged its first meeting on 07.09.2021where in State Govt. of Karnataka, Jharkhand, Odisha &Chattishgarh participated through Video Conferencing.The Committee vide

Notice No.16/86/2021 M.VI dated 9.9.2021 sought comments of stakeholders on the issues of misclassification of grades & measures to prevent it.Work is under progress.

8.14.5 Committee for finding enabling mechanism to formulate G 4 level blocks:

A committee was constituted vide Ministry of Mines order F No. 16/97/2020 – M VI dated 01.12.2020 to examine the possibility of allowing mining lease at G3 level for limestone & other like surface bedded deposit minerals. This was a 5 member committee with CMD MECL as its chairman & 3 members from IBM i.e. Shri P.N. Sharma, CCOM I/c and Shri S.K. Adhikari CMG as members and Shri Abhay Agrawal, RCOM & TS as member secretary. The final report of this committee was submitted in January 2021. Ministry of Mines vide its letter No. 16/97/2020 – M VI dated 31.08.2021 further directed this committee to explore the possibility of formation of G 4 level or equivalent level blocks based on the available data of GSI & other agencies, so as to facilitate notifying these blocks for auction by the State Govt. The report was to be submitted in three weeks time. The committee submitted its report on 22.09.2021 to the ministry of mines.

8.14.6 Constitution of committee for recommendation for revision of rates of royalty, where royalty of minerals is computed on per tonne basis.

Ministry of Mines, vide Order No.16/107/2021-M.VI dated 27.10.2021 constituted a committee for revision of rates of royalty, where royalty of minerals is computed on per tonne basis under the chairmanship of Additional Secretary (Mines) wherein Chief Controller of Mines, IBM is one of the member.

8.14.7 Committee to examine exploration data of freehold areas to ascertain their suitability for providing auctionable blocks

Controller General in charge IBM has approved Constitution of Committee to examine exploration data of freehold areas available in National Mineral Inventory (NMI) to ascertain their suitability for providing auctionable blocks. As its terms of reference the committee would examine the data of NMI sheets of freehold areas to ascertain the status/level of exploration done by GSI, MECL and State DGMs and identify blocks suitable for auction which will then be handed over to GSI to take up further action in respect of the identified blocks for auction.

8.14.8 Committees for formulation of SOPs/Guidelines as per the Mineral Conservation and Development (Amendment) Rules 2021

Controller General in charge IBM has approved constitution of three Committees for formulation of SOPs/Guidelines for i) Rule 45(7A); ii) & iii) for imposition and realization of fine for the Rules punishable with fine only as per Schedule III (Pertaining to Review of Mining Plan as per the provision of Rule 11(4)/ Except as per provisions of Rule 11(4)}; of as per the Mineral Conservation and Development (Amendment) Rules 2021.

9.0 Work related to Hindi

हिंदी का प्रगामी प्रयोग

भारतीय खान ब्यूरो अपने मुख्यालय तथा सभी अधीनस्थर कार्यालयों में भारत सरकार की राजभाषा नीति को प्रभावी ढंग से कार्यान्वित कर रहा है । भारतीय खान ब्यूरो का मुख्यालय नागपुर, महाराष्ट्र में है जो 'ख' क्षेत्र में स्थित है। 06 अधीनस्थ कार्यालय 'क' क्षेत्र में, 01 अधीनस्थ कार्यालय 'ख' क्षेत्र में तथा शेष 08 अधीनस्थ कार्यालय 'ग' क्षेत्र में स्थित है । भारतीय खान ब्यूरो के सभी अधीनस्थ कार्यालयों ने राजभाषा विभाग के वार्षिक कार्यक्रम उल्लिखित लक्ष्यों को प्राप्त कर लिया है । वर्ष 2021-22 के दौरान हिंदी कार्यान्वयन से संबंधित प्रगति का विवरण निम्न प्रकार है :-

9.1.1 संसदीय राजभाषा समिति की तीसरी उप समिति द्वारा क्षेत्रीय कार्यालय, गाँधीनगर का राजभाषा निरीक्षण

संसदीय राजभाषा समिति की तीसरी उप समिति द्वारा क्षेत्रीय कार्यालय, गाँधीनगर का दिनांक 21.09.2021 को राजभाषा निरीक्षण किया गया। इस राजभाषा निरीक्षण में भारतीय खान ब्यूरो (मुख्यालय), नागपुर से श्री पंकज कुलश्रेष्ठ, मुख्य खान नियंत्रक (प्रभारी), एवं श्री अभय अग्रवाल, क्षेत्रीय खान नियंत्रक एवं राजभाषा अधिकारी ने भाग लिया । संसदीय राजभाषा समिति की तीसरी उप समिति द्वारा कार्मिकों के राजभाषा प्रशिक्षण कंप्युटर पर हिंदी में कार्य करने हेतु प्रेरित करना, कार्यालय में रिक्त पड़े हिंदी पदों को भरा जाना, हिंदी पुस्ततकों के लिए अलग बजट निर्धारित किया जाना, विभागीय राजभाषा कार्यान्वेयन समिति की नियमित बैठकें आयोजित करना, नियमित रूप से हिंदी कार्यशाला आयोजित करना, मुख्यालय द्वारा अधीनस्थ कार्यालयों के साथ निर्धारित लक्ष्यासनुसार हिंदी पत्राचार करना आदि महत्वुपूर्ण विषयों पर सुझाव दिया गया।

9.1.2 संसदीय राजभाषा समिति की तीसरी उप समिति द्वारा क्षेत्रीय कार्यालय, चेन्नई का राजभाषा निरीक्षण :- संसदीय राजभाषा समिति की तीसरी उप समिति द्वारा क्षेत्रीय कार्यालय, चेन्नई का दिनांक 22/02/2022 को राजभाषा निरीक्षण किया गया। इस हेतु निरीक्षण प्रश्नावली के मुख्यालय से संबंधित जानकारी के 03 पृष्ठ तैयार किए गए एवं उक्त निरीक्षण से संबंधित अन्य आवश्यक कार्य किए गए। भारतीय खान ब्यूरो (मुख्यालय), नागपुर से उक्त निरीक्षण के दौरान डॉ. वाय. जी. काले, खान नियंत्रक (टी.एम.पी.) एवं राजभाषा अधिकारी उपस्थित थे। चेन्नई, क्षेत्रीय कार्यालय की ओर से श्री जी. सी. सेठी, क्षेत्रीय खान नियंत्रक एवं अन्य अधिकारी उपस्थित थे।

9.2 ऑनलाइन हिंदी कार्यशाला का आयोजन

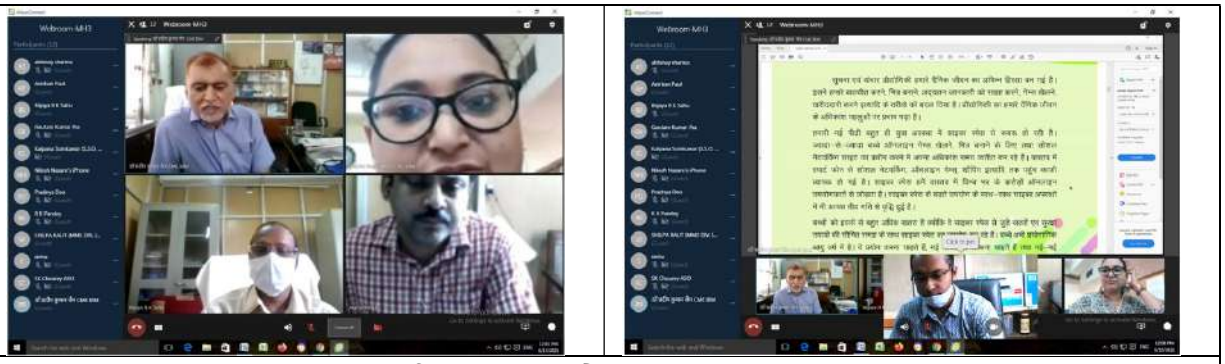
9.2.1 भारतीय खान ब्यूरो, मुख्यालय, नागपुर

भारत सरकार की राजभाषा नीति एवं हिंदी के प्रचार- प्रसार व प्रगति के उद्देश्य को ध्यान में रखते हुए भारतीय खान ब्यूरो, मुख्यालय, नागपुर में दिनांक 15 जून, 2021 को अधिकारियों एवं कर्मचारियों हेतु ऑनलाइन हिंदी कार्यशाला का आयोजन किया गया। इस हिंदी कार्यशाला में कुल 17 अधिकारियों एवं कर्मचारियों ने उत्साहपूर्वक भाग लिया।

हिंदी कार्यशाला में भारतीय खान ब्यूरो कार्यालय के डॉ. पी. के. जैन, राजभाषा अधिकारी ने 'सायबर अपराध' तथा श्री असीम कुमार, कनिष्ठ अनुवाद अधिकारी 'राजभाषा नीति' विषय पर अपने व्याख्यान दिये। अपने व्याख्यान में डॉ. पी. के. जैन, मुख्य खनिज अर्थशास्त्री एवं राजभाषा अधिकारी ने 'सायबर अपराध' के विषय में विस्तृत जानकारी दी जिसमें उन्होंने कहा कि आज हमारे दैनिक जीवन की महत्वपूर्ण जानकारियां इंटरनेट पर उपलब्ध है और उनकी सुरक्षा बहुत आवश्यक है। इससे बचाव व सावधानी के बारे में बताते हुए कहा कि इनका उपोग करते समय हमें अपने जीवन के गतिविधियों संबंधी वैयक्तिक जानकारी कभी भी सोशल मीडिया पर साझा नहीं करनी चाहिए

श्री असीम कुमार, कनिष्ठ अनुवाद अधिकारी ने अपने व्याख्यान में 'राजभाषा नीति' के लिए हमारे संविधान में क्या-क्या प्रावधान है इसकी जानकारी देते हुए, हिंदी कब लागू हुई व किन - किन नियमों के तहत लागू हुई इसकी जानकारी दी।

कार्यशाला के पश्चात प्रतिभागियों से कार्यशाला के विषय में उनकी प्रतिक्रियाएं भी प्राप्त की गई। सभी प्रतिभागियों ने सकारात्मक प्रतिक्रियाएं व्यक्त की। अपनी प्रतिक्रियाओं में प्रतिभागियों ने कहा कि तकनीकी माध्यम से आयोजित की गई यह ऑनलाईन कार्यशाला सराहनीय है। कार्यशाला के सफलता हेतु डॉ. पी. के. जैन, मुख्य खनिज अर्थशास्त्री एवं राजभाषा अधिकारी, श्री अभिनय कुमार शर्मा, सहायक संपादक एवं हिंदी अनुभाग की प्रशंसा करते हुए धन्यावाद दिया।



भारतीय खान ब्यूरो, मुख्यालय, नागपुर

9.2.2 उदयपुर कार्यालय में हिंदी कार्यशाला का आयोजन

उदयपुर क्षेत्रीय कार्यालय में 12 अगस्त 2021 को हिंदी कार्यशाला का आयोजन किया गया.क्षेत्रीय खान नियंत्रक एवं प्रभारी खान नियंत्रक (उत्तर) श्री रजनीष पुरोहित के हस्ते दीप प्रज्ज्वलित कर कार्यशाला का उद्घाटन किया गया. इस अवसर पर पूर्व सहायक खनन अभियंता श्री पंकज कुलश्रेष्ठ उपस्थित थे.समारोह का संचालन आशुलिपिक श्री दिलीप पंवार ने तथा आभार डॉ. ओमकेश मूर्ति, क्षेत्रीय खनन भूवैज्ञानी ने व्यक्त किया ।कार्यशाला में 'खनिज संरक्षण व विकास नियमावली तथा खान व खनिज (विकास व विनियमन) अधिनियम में प्रदत्त कानून', 'प्रशासनिक स्थापन पीएफएमएस तथा 'भंडार एवं जेम' से संबंधित व्याख्यान रखे गए थे.
जिसमें बड़ी संख्या में अधिकारियों एवं कर्मचारियों ने भाग लिया.

उदयपुर कार्यालय में हिंदी कार्यशाला का आयोजन

9.2.3 मुख्यालय ऑनलाइन हिंदी कार्यशाला का आयोजन

भारत सरकार की राजभाषा नीति एवं हिंदी के प्रचार - प्रसार व प्रगति के उद्देश्य को ध्यान में रखते हुए भारतीय खान ब्यूरो, मुख्यालय, नागपुर में 27 सितंबर 2021 को अधिकारियों एवं कर्मचारियों हेतु ऑनलाइन हिंदी कार्यशाला का आयोजन किया गया। इस हिंदी कार्यशाला में कुल 17 अधिकारियों एवं कर्मचारियों ने उत्साहपूर्वक भाग लिया। हिंदी कार्यशाला में सचिव, न.रा.का.स., वेस्टर्न कोलफील्ड लिमिटेड, नागपुर के श्री मनोज कुमार ने 'हिन्दी भाषा और उसके प्रयोग' विषय पर अपने व्याख्यान दिये।

अपने व्याख्यान में श्री मनोज कुमार, सचिव, न.रा.का.स., ने हिन्दी भाषा की विस्तृत जानकारी देते हुए, कहा कि हिन्दी का प्रयोग रोजमर्रा के कामकाज में करना चाहिए तभी आप सहजता से हिन्दी का प्रयोग कर पाएंगे। साथ ही कहा कि हिंदी भाषा को प्रयोग करने के लिए प्रतिबद्धता दिखानी होगी। अपने व्याख्यान में उन्होंने राजभाषा से संबंधित लीला एप के बारे में भी विस्तार से बताते हुए कहा कि देश की वास्तविक प्रगति निज भाषा से ही

संभव हैं। इस दौरान प्रतिभागियों ने उनसे कुछ सवाल जवाब करते हुए अपनी समस्याओं का समाधान भी किया।

कार्यशाला के पश्चात प्रतिभागियों से कार्यशाला के विषय में उनकी प्रतिक्रियाएं भी प्राप्त की गई। सभी प्रतिभागियों ने सकारात्मक प्रतिक्रियाएं व्यक्त की। अपनी प्रतिक्रियाओं में प्रतिभागियों ने कहा कि तकनीकी माध्यम से आयोजित की गई यह ऑन लाईन कार्यशाला सराहनीय है। कार्यशाला में श्री मनोज कुमार, सचिव, न.रा.का.स., द्वारा दिए गए व्याख्यान की प्रतिभागियों ने प्रशंसा करते हुए कहा कि 'हिन्दी भाषा और उसके प्रयोग' की यह जानकारी निश्चित ही लाभदायक साबित होगी तथा दैनंदिनकाम - काज में इसका बहुत योगदान होगा।

साथ ही प्रतिभागियों ने तकनीकी माध्यम से वेविनार के रूप में आयोजित की गई इस कार्यशाला के सफलता हेतु श्री अभय अग्रवाल, क्षेत्रीय खान नियंत्रक एवं राजभाषा अधिकारी, श्री अभिनय कुमार शर्मा, सहायक संपादक एवं हिंदी अनुभाग की प्रशंसा करते हुए धन्यवाद दिया।

मुख्यालय ऑनलाइन हिंदी कार्यशाला का आयोजन

9.2.4 खनिज प्रसंस्करण प्रभागमें कार्यशाला का आयोजन

भारतीय खान ब्यूरो के खनिज प्रसंस्करण प्रभाग, एम.आई.डी.सी में 24 सितंबर को एक दिवसीय हिंदी कार्यशाला का आयोजन वेबिनार के माध्यम से किया गया. कार्यशाला का उद्घाटन डा.(श्रीमती) संध्या लाल, मुख्य अयस्क प्रसाधन अधिकारी एवं निदेशक (अप्र) प्रभारी ने किया.

कार्यशाला के प्रथम सत्र में डा.संध्या लाल ने कार्यलयीन हिंदी का स्वरूप तथा डा. डी.आर.कानुनगो, अधीक्षण अधिकारी (अप्र) एवं कार्यालय अध्यक्ष ने मिनरल प्रोसेसिंग में प्रोसेस मिनरलॉजी की भूमिका पर व्याख्यान दिया. दूसरे सत्र में श्री पी.नागराजन, वरिष्ठ

प्रशासनिक अधिकारी ने कार्यालय में अनुशासनिक नियम विषय पर व्याख्यान दिए तथा श्री अंचित गोयल, सहायक अयस्क प्रसाधन अधिकारी एवं हिंदी संपर्क अधिकारी ने कार्यलयों में राजभाषा नियमों का अनुपालन विषय पर व्याख्यान दिए.

इस अवसर पर प्रतिभागियों के पूछे गए प्रश्नों का व्याख्याताओं ने निराकरन किया.कार्यशाला का संचालन तथा धन्यवाद ज्ञापन श्री अंचित गोयल, सहायक अयस्क प्रसाधन अधिकारी एवं हिंदी संपर्क अधिकारी ने किया. श्री संजय डोंगरे, कनिष्ठ अनुवाद अधिकारी ने कार्यशाला को सफलता पूर्वक कराने में विशेष योगदान दिया.

खनिज प्रसंस्करण प्रभाग में कार्यशाला का आयोजन

9.2.5 देहरादून क्षेत्रीय कार्यालय में कार्यशाला का आयोजन

भारतीय खान ब्यूरो के देहरादून क्षेत्रीय कार्यालय में 284 सितंबर को एक दिवसीय एक दिवसीय कार्यशाला का आयोजन किया गया.कार्यशाला में राजभाषा नीति, अधिनियम एवं नियमों की जानकारी, सरकारी पत्रों के प्रकार एवं हिंदी में पत्राचार आदि विषयों पर व्याख्यान हुए. कार्यशाला का शुभारंभ श्री दामोदर प्रसाद शर्मा, सहायक खान नियंत्रक द्वारा किया गया. तत्पश्चात श्री शैलेंद्र सकलानी, सहायक खनन भूविज्ञानी एवं राजभाषा हिंदी संपर्क अधिकारी ने कार्यशाला के दौरान दिए जाने वाले व्याख्यान की जानकारी दी. कार्यशाला में 12 अधिकारियों एवं कर्मचारियों ने भाग लिया.आखिर में अपने विचार व्यक्त करते हुए श्री मुकेश कुमार शर्मा, सहायक खनन अभियंता ने कार्यशाला को काफी उपयोगी बताया तथा कार्यशाला में सम्मिलित सभी का आभार व्यक्त किया.

देहरादून क्षेत्रीय कार्यालय में कार्यशाला का आयोजन

9.2.6 भारतीय खान ब्यूरो, मुख्यालय, नागपुर में हिंदी कार्यशाला आयोजित

भारत सरकार की राजभाषा नीति एवं हिंदी के प्रचार – प्रसार व प्रगति के उद्देश्य को ध्यान में रखते हुए भारतीय खान ब्यूरो, मुख्यालय, नागपुर में 21 दिसंबर, 2021 को अधिकारियों एवं कर्मचारियों हेतु हिंदी कार्यशाला का आयोजन किया गया। इस हिंदी कार्यशाला में कुल 17 अधिकारियों एवं कर्मचारियों नेभाग लिया।हिंदी कार्यशाला में भारतीय खान ब्यूरो कार्यालय के श्री सुनील कुमार शर्मा, उप खनिज अर्थशास्त्रीने 'हिंदी के प्रयोग में व्याकरण की महत्ता' तथा श्री असीम कुमार, कनिष्ठ अनुवाद अधिकारी 'पारिभाषिक शब्दावली' विषय पर अपने व्याख्यान दिये।

कार्यशाला के पश्चा◌ात प्रतिभागियों से कार्यशाला के विषय में उनकी प्रतिक्रियाएं भी प्राप्त की गई। सभी प्रतिभागियों ने सकारात्मक प्रतिक्रियाएं व्यक्त की। अपनी प्रतिक्रियाओं में प्रतिभागियों ने कहा कि कार्यशाला की अवधि को बढ़ाया जाना चाहिए तथा कार्यशाला का नियमित अंतराल पर आयोजन किया जाना चाहिए एवं कार्यशाला में अधिक से अधिक विषयों को शामिल किया जाना चाहिए आदि। इस प्रकार हिंदी कार्यशाला सफलतापूर्वक संपन्नहुई।

श्री अभिनय कुमार शर्मा, सहायक संपादक के धन्यवाद ज्ञापन के साथ कार्यशाला का समापन हुआ.

भारतीय खान ब्यूरो, मुख्यालय, नागपुर में हिंदी कार्यशाला आयोजित

9.2.7 भारतीय खान ब्यूरो, मुख्यालय में हिंदी कार्यशाला का आयोजन

भारत सरकार की राजभाषा नीति एवं हिंदी के प्रचार - प्रसार व प्रगति के उद्देश्य को ध्यान में रखते हुए भारतीय खान ब्यूरो, मुख्यालय, नागपुर में 11 मार्च, 2022 को अधिकारियों एवं कर्मचारियों हेतु हिंदी कार्यशाला का आयोजन किया गया। इस हिंदी कार्यशाला में कुल 20 अधिकारियों एवं कर्मचारियों ने उत्साहपूर्वक भाग लिया।हिंदी कार्यशाला में भारतीय खान ब्यूरो, मुख्यालय कार्यालय के डॉ. वाय. जी. काले, खान नियंत्रक एवं राजभाषा अधिकारी ने 'हिन्दी के प्रगामी उपयोग में गोवा कार्यालय के अनुभव' तथा श्री डी. के. स्वामी, मुख्य प्रशासनिक अधिकारी ने 'सेवापंजी में विभिन्न स्थितियों का इंदराज' विषय पर अपने व्याख्यान दिये।

अपने व्याख्यान में डॉ. वाय. जी. काले, खान नियंत्रक एवं राजभाषा अधिकारी ने कार्यशाला के आयोजन के उद्धेश्य एवं महत्ता बताते हुए अपने कार्यकाल के दौरान गोवा क्षेत्रीय कार्यालय में किए गए हिन्दी के उल्लेखनीय कार्यों से उपस्थितों को अवगत कराया साथ ही राजभाषा के नियमों, अधिनियमों एवं अनुच्छेदों की विस्तृत जानकारी देते हुए डॉ. मृदुला सिन्हा की 'हिन्दी भारत माता की बिंदी' कविता भी सुनायी।

श्री डी. के. स्वामी, मुख्य प्रशासनिक अधिकारी ने अपने व्याख्यान में सेवापंजी की महत्ता एवं सरकारी कार्मिकों हेतु इसकी उपयोगिता बतायी साथ ही सेवापंजी में की जाने वाली विभिन्न प्रकार की प्रविष्टियों तथा इसमें रखे जाने वाले दस्तावेजों के संबंध में विस्तार से बताया।

कार्यशाला के पश्चात प्रतिभागियों से कार्यशाला के विषय में उनकी प्रतिक्रियाएं भी प्राप्त की गई। सभी प्रतिभागियों ने सकारात्मक प्रतिक्रियाएं व्यक्त की। इस प्रकार हिंदी कार्यशाला सफलतापूर्वक संपन्न हुई।
अंत में श्री अभिनय कुमार शर्मा, संपादक ने सभी उपस्थितों का धन्यावाद दिया।

भारतीय खान ब्यूरो, मुख्यालय, नागपुर में हिंदी कार्यशाला आयोजित

9.2.8 खनिज प्रसंस्करण प्रभागमें कार्यशाला का आयोजन

भारतीय खान ब्यूरो के खनिज प्रसंस्करण प्रभाग, एम सी में.डी.आई.23 मार्च, 2022 को एक दिवसीय हिंदी कार्यशाला का आयोजन वेबिनार के माध्यम से किया गयासभी प्रतिभागियों . ने सकारात्मक प्रतिक्रियाएं व्यक्तकी। इस प्रकार हिंदी कार्यशाला सफलतापूर्वक संपन्न हुई।

The Report and glimpses of the Workshop are as under:

हिन्दी कार्यशाला रिपोर्ट

भारतीय खान ब्यूरो के खनिज प्रसंस्करण प्रभाग में कार्यकारी महानियंत्रक महोदय के मार्गदर्शन में खनिज प्रसंस्करण प्रभाग, एम.आय.डी.सी., हिंगणा, नागपुर में दिनांक 23/03/2022 को एक दिवसीय हिन्दी कार्यशाला का वेबीनार में माध्यम से आयोजन किया गया । इस अवसर पर कार्यशाला के उद्घाटन डॉ. दिलिप कानूनगो, अधीक्षण अधिकारी एवं प्रभारी निदेशक (अ.प्र.) ने की। अध्यक्ष महोदय ने कार्यालय में हिन्दी में किए गए कार्य की सराहना की और सभी प्रतिभागियों का मनोबल बढ़ाया।

कार्यशाला में खनिज प्रसंस्करण प्रभाग के व्याख्याताओं ने विभिन्न प्रशासनिक एवं तकनिकी विषयों पर व्याख्यान दिए। उक्त कार्यशाला में कुल 20 कार्मिकों ने भाग लिया।

कार्यशाला के प्रथम सत्र में ख. प्र. प्रभाग के श्री मुकुन्द राउत, अयस्क प्रसाधन अधिकारी ने औद्योगिक खनिज सज्जीकरण विषय पर, श्री विजय सोनटक्के, अयस्क प्रसाधन अधिकारी एवं कार्यालय अध्यक्ष (ख.प्र.) ने रणनितिक रूप से महत्वपूर्ण दुर्लभ खनिजों के प्रसंस्करण तकनीक विषय पर व्याख्यान दिए तथा दूसरे सत्र में श्री अभिन्त गोयल उप अयस्क प्रसाधन अधिकारी ने 'कार्यालय में राजभाषा नियम के अनुपालना' विषय पर व्याख्यान दिए।

इस कार्यशाला में विभिन्न प्रतिभागियों ने अपने पुछे गए प्रश्नों का व्याख्याताओं से समाधान प्राप्त किया तथा इसी प्रकार की कार्यशाला को पुनः आयोजित करने की इच्छा जताई। दिनांक 23/03/2022 को शाम 5 : 00 बजे कार्यशाला का समापन हुआ । कार्यशाला का कुशल संचालन तथा धन्यवाद प्रस्ताव श्री अभिन्त गोयल, उप अयस्क प्रसाधन अधिकारी एवं हिन्दी संपर्क अधिकारी ने किया । श्री संजय ढोगरे, कनिष्ठ अनुवाद अधिकारी एवं श्री सूर्य भूषण प्रसाद, उच्च श्रेणी लिपिक का कार्यशाला के सफलतापूर्वक आयोजन में विशेष सहयोग रहा है।

खनिज प्रसंस्करण प्रभागमें कार्यशाला का आयोजन

9.3 विभागीय राजभाषा कार्यान्वयन समितिकी बैठक का आयोजन

विभागीय राजभाषा कार्यान्वयन समिति, भारतीय खान ब्यूरो (मुख्यालय), नागपुर की 118 वीं बैठक श्री पंकज कुलश्रेष्ठ, मुख्य खान नियंत्रक (प्रभारी) की अध्यक्षता में 25 जून 2021 को महानियंत्रक महोदय के सभाकक्ष मेंआयोजित की गई । अध्यक्ष महोदय एवं अन्य सदस्यों के स्वागत के पश्चात अध्यक्ष महोदय की अनुमति से डॉ. पी. के. जैन, मुख्य खनिज अर्थशास्त्री एवं राजभाषा अधिकारी द्वारा बैठक की कार्यवाही प्रारंभ कीगई । कार्य सूची अनुसार बैठक में पिछली बैठक (117वीं) के कार्यवृत्त पर की गई अनुवर्ती कार्रवाई एवं कार्यवृत्त की पुष्टि की

गई । इसके पश्चात जनवरी - मार्च, 2021 अवधि की मुख्यालय एवं अधिनस्थ कार्यालयों की तिमाही रिपोर्ट की समीक्षा की गई ।

हिंदी ई-गृह - पत्रिका 'खान भारती' के लेखकों को मानदेय देने एवं हिंदी तिमाही रिपोर्ट हिंदी अनुभाग को समय पर भेजे जाने के संबंध में आदि महत्वपूर्ण विषयों पर विस्तृत चर्चा कीगई ।अंत में अध्यक्ष महोदय एवं सभी सदस्यों का आभार श्री अभिनय कुमार शर्मा, सहायक संपादक द्वारा व्यक्त किया गया

विभागीय राजभाषा कार्यान्वयन समितिकी बैठक का आयोजन

9.3 हिंदी पखवाड़ा उद्घाटित

9.4.1 भारतीय खान ब्यूरो (मुख्यालय), नागपुर

महानियंत्रक (प्रभारी) भारतीय खान ब्यूरो के निर्देशानुसार श्री पी. एन. शर्मा, मुख्य खान नियंत्रक (प्रभारी) भारतीय खान ब्यूरो की अध्यक्षता में भारतीय खान ब्यूरो (मुख्यालय), नागपुर में 14 सितंबर 2021 को हिंदी पखवाड़ा द्द 2021 का ऑनलाइन उद्घाटन किया गया.इस अवसर पर भारतीय खान ब्यूरो के शीर्ष अधिकारीगण वेब-लिंक के माध्यम से जुड़े एवं कार्यक्रम में भाग लिया। इनमें श्री पंकज कुलश्रेष्ठ, मुख्य खान नियंत्रक (प्रभारी, एम.ई.एस.), डॉ. (श्रीमती) संध्या लाल, निदेशक (प्रभारी अयस्क प्रसाधन), श्री एस. के. अधिकारी, मुख्य खनन भूविज्ञानी एवं श्री अभय अग्रवाल, क्षेत्रीय खान नियंत्रक, तकनीकी सचिव एवं राजभाषा अधिकारी और भारतीय खान ब्यूरो, मुख्यालय के उनके अधीनस्थ अधिकारियों एवं कर्मचारियों ने प्रमुख रूप से भागीदारी की।

कार्यक्रम के आरंभ में श्री पी. एन. शर्मा, मुख्य खान नियंत्रक (प्रभारी) द्वारा राजभाषा की शपथ दिलाई गई। तत्पश्चात् श्री पंकज कुलश्रेष्ठ, मुख्य खान नियंत्रक (प्रभारी, एम.ई.एस.) द्वारा माननीय गृह और सहकारिता मंत्री, भारत सरकार, श्री अमित शाह जी का संदेश वाचन किया गया। इसके बाद श्री अभय अग्रवाल, क्षेत्रीय खान नियंत्रक, तकनीकी सचिव एवं

राजभाषा अधिकारी द्वारा माननीय संसदीय कार्य, कोयला तथा खान मंत्री, भारत सरकार श्री प्रल्हाद जोशी जी का संदेश वाचन किया गया।

तत्पश्चात् राजभाषा अधिकारी श्री अभय अग्रवाल द्वारा भारतीय खान ब्यूरो (मुख्यालय), नागपुर कार्यालय की गत वर्ष की हिंदी प्रगति रिपोर्ट प्रस्तुत की गई जिसके अंतर्गत वर्षभर में राजभाषा से संबंधित किए गए कार्य का लेखा-जोखा प्रस्तुत किया गया। इसके बाद श्री अभिनय कुमार शर्मा, सहायक संपादक द्वारा हिंदी पखवाड़ा के दौरान आयोजित होने वाली विभिन्न प्रतियोगिताओं की जानकारी दी गई ।

हिंदी पखवाड़े के दौरान हिंदी निबंध, टिप्पण आलेखन, हिंदी अनुवाद, राजभाषा हिंदी प्रश्नोत्तरी एवं हिंदी शुद्धलेखन प्रतियोगिताओं का आयोजन ऑनलाइन ध् ऑफलाइन रूप से कोविड दिशा द्द निर्देशों के अनुरूप किया जाएगा ।

हिंदी पखवाड़ा के उद्घाटन समारोह का संचालन एवं धन्यवाद ज्ञापन श्री अभिनय कुमार शर्मा, सहायक संपादक द्वारा दिया गया। उद्घाटन समारोह की सफलता हेतुहिंदी अनुभाग के श्रीमती मिताली चटर्जी वरिष्ठ अनुवाद अधिकारी, श्री असीम कुमार, कनिष्ठ हिंदी अनुवाद अधिकारी, श्री किशोर डी. पारधी, कनिष्ठ अनुवाद अधिकारी, श्री प्रदीप कुमार सिन्हा, अवर श्रेणी लिपिक तथा श्री एन. एम. मोरे, प्रेसमैन ने अपना पूर्ण योगदान दिया।

भारतीय खान ब्यूरो (मुख्यालय), नागपुर हिंदी पखवाड़ा

9.4.2 खनिज प्रसंस्करण प्रभाग मे हिंदी पखवाड़े का शुभारंभ

भारतीय खान ब्यूरो के हिंगणा स्थित खनिज प्रसंस्करण प्रभाग में 14 सितंबर 2021 को हिंदी पखवाड़े का शुभारंभ किया गया. कार्यक्रम की अध्यक्षता डा. श्रीमती संध्या लाल, प्रभारी निदेशक (अयस्क प्रसाधन) ने की. आनलाइन आयोजित इस कार्यक्रम में माननीय गृह मंत्री श्री अमित शाह द्वारा प्रेषित संदेश का पठन किया गया तथा सभी को राजा भाषा प्रतिज्ञा की शपथ दिलाई गई.

तत्पश्चात डा. डी.आर.कानूनगो, अधीक्षण अधिकारी (अयस्क प्रसाधन) एवं कार्यालय अध्यक्ष (ख.प्र.) ने माननीय श्री प्रल्हाद जोशी, संसदीय कार्य, कोयला तथा खान मंत्री भारत सरकार का

संदेश पढ़ा. पश्चात श्री अंचित गोयल, सहायक अयस्क प्रसाधन अधिकारी एवं हिंदी संपर्क अधिकारी ने राजभाषा नियमों के अनुपालन संबंधी जानकारी एवं प्रभाग में हंदी कार्यान्वयन संबंधी प्रगती के समीक्षा प्रस्तुत की गई.पखवाड़े के दौरान विभिन्न प्रतियोगिताओं का आयोजन किया जा रहा है. कार्यक्रम के सफल आयोजन में प्रभाग के श्री संजय डोंगरे, हिंदी अनुवादक का विशेष योगदान रहा.

भारतीय खान ब्यूरो के मुख्य अयस्क प्रसाधन प्रयोगशाला, एम.आई.डी.सी. हिंगणा में आयोजित हिंदी पखवाड़े का सफल समापन 28 सितंबर को हुआ. अपने उद्‌बोधन में डा. (श्रीमती) संध्या लाल, मुख्य अयस्क प्रसाधन अधिकारी एवं निदेशक (अप्र) प्रभारी ने एवं डा. दिलीप आर. कानूनगो, अधीक्षण अधिकारी (अप्र) एवं कार्यालय अध्यक्ष ने पखवाड़े के दौरान आयोजित प्रतियोगिताओं के विजेताओं को पुरुस्कृत किया.

श्री अंचित गोयल, सहा. अयस्क प्रसाधन अधिकारी एवं हिंदी संपर्क अधिकारी द्‌वारा धन्यवाद प्रस्ताव दिया गया. हिंदी पखवाड़े के सफल आयोजन में प्रभाग के श्री संजय डोंगरे, कनिष्ठ अनुवाद अधिकारी, श्री नंदकिशोर कनौजिया, सहायक, श्री सूर्यभूषण प्रसाद, उच्च श्रेणी लिपिक का विशेष योगदान रहा.

खनिज प्रसंस्करण प्रभाग मेहिंदी पखवाड़I

9.4.3 बैंगलूर में हिंदी पखवाड़ा का आयोजन

भारतीय खान ब्यूरो, बैंगलूर में 1 सितंबर से 15 सितंबर 2021 के दौरान हिंदी पखवाड़ा आयोजित किया गया. पखवाड़े का उद्घाटन श्राजभाषा प्रतिज्ञाष् के साथ हुआ. उद्घाटन के दौरान अपने संबोधन में क्षेत्रीय खान नियंत्रकएवं खान नियंत्रक (द) प्रभारी श्री वी.जयाकृष्ण बाबू ने कहा कि हिंदी लोकतंत्र की भाषा है एवं भाषा का समुचित ज्ञान मानव संवाद के लिए अति आवश्यक है. इस अवसर पर अधीक्षण अधिकारी (अ.प्र.) डा वी.ए.जे.अरूणा ने भी अपने विचार व्यक्त किए.

पखवाड़े के दौरान विभिन्न प्रतियोगिताओं का आयोजन किया गया. जिसमें सभी ने बढ़-चढ़कर हिस्सा लिया. 15 सितंबर 2021 को पखवड़ा समापन समारोह आयोजित किया गया. जिसमें पखवाड़े के दौरान आयोजित विभिन्न प्रतियोगिता के विजेताओं को पुरुस्कृत किया गया. हिंदी पखवाड़े का समापन हिंदी अनुवादक श्री आशीष घोषाल के धन्यवाद प्रस्ताव से हुआ. हिंदी पखवाड़े के सफल आयोजन में सहायक प्रशासन अधिकारी श्रीमती एस.एस.रागिणी, आशुलिपिक श्री कृष्ण कुमार एवं उच्च श्रेणी लिपिक श्री विद्यानंद कुमार ने पूर्ण सहयोग प्रदान किया.

9.4.4 उदयपुर में हिंदी पखवाड़ा का आयोजन

भारत सरकार के गृह मंत्रालय, राजभाषा विभाग द्वारा जारी निर्देश एवं हिन्दी अनुभाग, भारतीय खान ब्यूरो,नागपुर द्वारा जारी परिपत्र के अनुपालना में खान नियंत्रक (उत्तर जोन) कार्यालय, भारतीय खान ब्यूरो, उदयपुर में 7 सितम्बर 2021 से 21 सितम्बर 2021 के दौरान हिंदी पखवाड़ा का आयोजन किया गया.

हिन्दी पखवाड़ा का उद्घाटन कार्यालय के सभागार में श्री रजनीष पुरोहित, क्षेत्रीय खान नियंत्रक एवं प्रभारी खान नियंत्रक (उत्तर जोन) की अध्यक्षता में आयोजित किया गया. सर्वप्रथम श्री पुरोहित ने द्वीप प्रज्ज्वलन कर कार्यक्रम का उद्घाटन किया. इस अवसर पर उन्होंने बताया कि हिन्दी ऐसी समृद्ध भाषा है जिसमें जो बोला जाता है वही लिखा जाता है तथा इसमें सभी भाषाओं के शब्द अंगीकार करने की भाषा है.

इससे पूर्व उपस्थित सभी अधिकारियों व कर्मचारियों का स्वागत करते हुए वरिष्ठ सांख्यकी अधिकारी श्रीमती नीता कोठारी ने हिन्दी पखवाड़े के दौरान आयोजित किए जाने वाले विभिन्न कार्यक्रमों की जानकारी दी एवं सभी से अधिकाधिक प्रयोगिताओं में

भाग लेने का अनुरोध किया.क्षेत्रीय खनन भूविज्ञानी डॉ. ओमकेश मूर्ति ने धन्यवाद ज्ञापित किया एवं कार्यक्रम का संचालन श्री दिलीप पंवार, आशुलिपिक ने किया।

पखवाड़े के दौरान विभिन्न प्रतियोगिताओं का आयोजन किया गया जिसमें सभी ने बढ़-चढ़कर हिस्सा लिया. 21 सितम्बर 2021 को कार्यालय में पुरस्कार वितरण व समापन समारोह का आयोजन श्री रजनीष पुरोहित, क्षेत्रीय खान नियंत्रक एवं प्रभारी खान नियंत्रक की अध्यक्षता में किया गया. इस अवसर पर प्रतियोगिता के विजेताओं को पुरुस्कृत किया गया. कार्यक्रम के सफल समापन में सभी का सहयोग रहा.

उदयपुर में हिंदी पखवाड़ा का आयोजन

9.4.5 देहरादून में मनाया गया हिंदी पखवाड़ा

भारतीय खान ब्यूरो के क्षेत्रीय कार्यालय देहरादून में 13 सितंबर से 27 सितंबर 2021 के दौरान हिंदी पखवाड़ा का आयोजन किया गया. पखवाड़े का उद्घाटन श्री दामोदर प्रसाद शर्मा, सहायक खान नियंत्रकके हस्ते हुआ.

इस अवसर पर श्री शर्मा ने माननीय गृह मंत्री श्री अमित शाह महोदय तथा माननीय संसदीय कार्य, कोयला एवं खान मंत्री श्री प्रल्हाद जोशी जी का संदेश पढ़कर सुनाया. श्री शैलेन्द्र सकलानी, सहायक खनन भूविज्ञानी एवं राजभाषा संपर्क अधिकारी ने राजभाषा की प्रतिज्ञा दिलाई.

पखवाड़े के दौरान विभिन्न प्रतियोगिताओं का आयोजन किया गया. जिसमें सभी ने बढ़-चढ़कर हिस्सा लिया.. पखवाड़े के समापन समारोह में श्री शर्मा के हस्ते प्रतियोगिता के विजेताओं को पुरूस्कृत किया गया.तथा पखवाड़े के सफल आयोजन के लिए सभी की सरहाना की.

देहरादून में हिंदी पखवाड़ा

Annexure I

SWACHHTA PAKHWADA CELEBRATION Report at IBM Offices

16th -30st November 2021

Hyderabad Region

M/S JSW has successfully executed swachhta programme at Bujanuru Village of Gadivemula Mandal near vicinity of JSW Limestone Mine, where they have cleaned the roadsides and removed some tree bushes as well as interacted with community to keep village clean and good hygienic conditions.

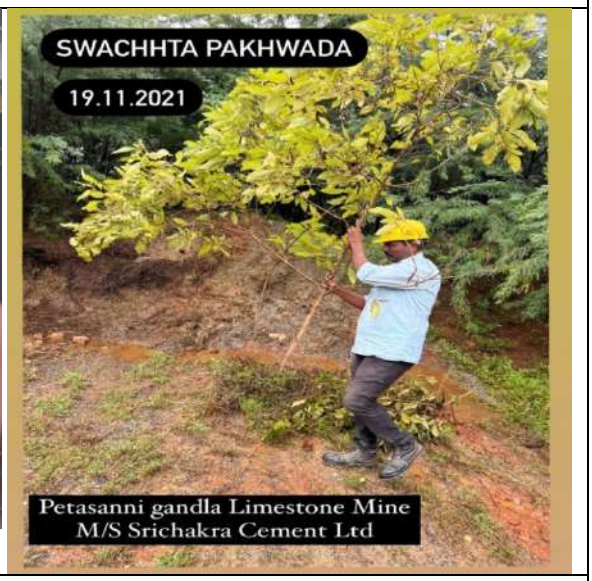
M/s JSW has taken the initiative to create awareness on the usage of toilets & sanitation at JSW Cement Plant surrounding villages. JSW employees have participated as volunteers & interacted with villagers as well as distributed pamphlets door to door.

In Kurnool district, Andhra Pradesh, M/s JSW Cements has carried out a Livelyhood Enterprise development programme on Value addition of Millets & Pickles training programme at Bilakalaguduru, Bujunuru&Gadivemula villages. Total 90 members participated in this camp.

M/s JSW Cements Ltd. distributed Note books and stationery items for school children at Bilakalaguduru, Bujunuru&Gadivemula villages. Total 600 beneficiaries have served in this camp.

PetasannigandlaLst Mine of M/s Sri Chakra Cements Ltd.in Guntur District of Andhra Pradesh has been organized swachhata awareness programme by conducting the cleanliness drive.

Road side cleaning and removal of bushes

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Road side cleaning</td><td>Posters for awareness</td></tr>
<tr><td>  </td><td> 
</td></tr>
<tr><td>Door to door awareness</td><td>Mine site cleaning</td></tr>
<tr><td> 
</td><td>  </td></tr>
<tr><td>Mine office premises cleaning</td><td>Lecture for awareness</td></tr>
</table>

Livelihood Training Programme

Distribution of notebooks

Distribution of notebooks

Distribution of Stationary

**Cleanliness drive at Hyderabad Regional Office **

Cleanliness drive at Hyderabad Regional Office

Goa Region

The directives of SwachhataPakhwadawas sent to the all Mining lease holders under the jurisdiction of Goa Regional Office with request to propagate with utmost sensitization of the PakhwadaIntitivaies. Swachhata Initiatives Conducted at Mine Levels:-

1. **Halki &Muddapur Limestone Mine of M/s. J K Cement Ltd**.: - Halki &Muddapur mine has initiated the program of "SwachhataPakhwada. The program inaugurated with an "Swachhta Oath" by all mine employees. A brief message on Swach Bharat Mission and SwachhtaPakhwada was delivered by the Mines Manager to the officials and mine workers to bring out awareness.

The following initiatives were Conducted by M/s J K Cement Ltd.
i. Inauguration of SwachhtaPakhwara followed by plantation.
ii. Swachchta Program continued with Mine Office housekeeping
iii. Weed Cleaning in Fruit Garden and 50 Nos. of saplings Plantation in Pit No.2 outside Lease boundary
iv. Promotion of Hygiene and Free Health Check-up as a measure for disease prevention at Halki Village.
v. Plantation by Top Management of J K Cement Works at Halki Mine
vi. Concreting of Security Shed by Security Guards
vii. Plantation of 250 Nos. Kaner Saplings outside lease boundary in Pit No.2

2. Girgaon Bauxite Mines, M/s Bhartesh Construction Company:-Girgaon Mines has initiated the program of "SwachhataPakhwada. The program inaugurated with an "Swachhta Oath" by all mine employees.The following initiatives were Conducted by Girgaon Bauxite Mines, M/s Bhartesh Construction Company:-

i. INAUGRAL MEETING
ii. CLEANING NEAR OFFICE PREMESIS
iii. PLANTATION AFTER CARE AND CLEANING THE BUSHES
IN PLNATAION AREA WERE CARRIED OUT

M/s. JK CEMENT WORKS,MUDDAPUR,HALKI LIMESTONE MINE
ML NO:2344(A), Mine Code -38KAR26059

Inauguration of SwachhtaPakhwara followed by plantation, mine house keeping

Weed Cleaning in Fruit Garden and 50 Nos. of saplings Plantation in Pit No.2 outside Lease boundary

Promotion of Hygiene and Free Health Check-up as a measure for disease prevention at Halki Village

GIRGAON BAUXITE MINES, M/s BHARTESH CONSTRUCTION COMPANY

Cleaning and Plantation around Mine Office Premises

Cleaning and Plantation around Mine Office Premises

Nagpur Regional Office

Under the jurisdiction of Nagpur regional office following activities have been carried out by the Mines under SwachhtaPakhwada (16 th Nov to 30th Nov 2021):-

1) Manegaon Iron ore mines of M/s JayaswalNecoIndutries Ltd :
Cleaning of Mangaon Village.

2) Dhobitola Iron ore mine of M/s JayaswalNecoIndutries Ltd
Whitewashing of shelter, toilet , pump house has been done on

3) Maratha limestone of M/s Ambuja Cement Ltd
organized swachhta awareness campaign & cleaning work near rest shelter

4) Gumgaon Manganese ore Mine of M/s MOIL Ltd:-
M/s MOIL Ltd has distributed cotton Bag to nearby villagers

5) Sindola Limestone Mine of M/s ACC Ltd:-
Mine has organized swachhta campaign at residential colony

6) Manikgarh Limestone Mine of M/s Ultra Tech Cement Ltd:-
Cleaning work near crusher area and assembly point was carried out at Manikgarh Mine

7) Mukutban Limestone Mine of M/s RCCPL Ltd:-
Cleaning work near Mine office & weigh bridge

8) Kachurwahi-wadegaon Manganese Mine of M/s Veet Rag exploration & minerals pvt ltd:-

Mine has organized cleaning and plantation near mine office and drawing competition in village school

9) Hiwardara limestone of Shri. Surendra Bhartia
Cleaning work near mine office & village road

1) Manegaon Iron ore mines of M/s JayaswalNecoIndutriesLtd :
Cleaning of Mangaon Village.

Cleaning ofMmanegaon Village

2) Dhobitola Iron ore mine of M/s JayaswalNecoIndutries Ltd

Whitewashing of shelter and Pumphouse

Cleaning of Trench	Plantation

3) Maratha limestone of M/s Ambuja Cement Ltd

Swachhta awareness campaign & cleaning work near rest shelter

Swachhta awareness campaign & cleaning work near Workshop

4) Manikgarh Limestone Mine of M/s Ultra Tech Cement Ltd

Taking oath and cleaning around crusher area

5) Mukutban Limestone Mine of M/s RCCPL Ltd

Cleaning work at Mine Office.

Cleaning work at Weigh Bridge.

6) Chanda Cement Works of M/s ACC Ltd:-

Residential Colony cleaning

7) Gumgaon Manganese ore Mine of M/s MOIL Ltd

Distribution of cotton Bags to nearby villagers

8) Kachurwahi-wadegaon Manganese Mine of M/s Veet Rag exploration & minerals pvt ltd

	
Drawing competition in village school	**Road cleaning**
Chennai RO	
	
Cleaning of office premises	
MIG residential quarters of IBM, Bangalore	
	
Before	**After**

	
Before	**After**
Parthipura Limestone Mines (**Mine Code-38RAJ03007)** of The India Cements Ltd.	
	
Taking Pledge	**Cleaning at mIne office site**
	
Cleaning near office	**Display Banner**
	

<table>
<tr><td colspan="2">Housekeeping at Mine work shop was conducted through shramdan by all staff and workers.</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>All officers & workers took oath on single use plastic</td><td>Cleaning of Garland drain & strengthening of Bunds along the waste dump</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Dump Levelling</td><td>Poster & Slogan Competition was arranged in Mine VT centre for awareness about Cleanliness</td></tr>
<tr><td> 
</td><td>  </td></tr>
<tr><td>Hygiene Kit</td><td>Distribution of Hygiene Kit</td></tr>
</table>

Annexure 2

Report on Observance of Communal Harmony Campaign Week 2021 Activities

In compliance of the Ministry of Mines D.O. letter to Controller General, Indian Bureau of Mines dated 17/11/2021 along with IBM's Circular no. F-13012/2/2017-Gen. dated 18.11.2021; the Communal Harmony Campaign Week was observed from 19th to 25th Nov; 2021 to foster Communal Harmony, National Integration and Fraternity. Communal Harmony Campaign Week is an initiative of National Foundation for Communal Harmony (NFCH). It aims to provide financial assistance to children rendered orphan or destitute in communal, caste, ethnic or terrorist violence for their education and rehabilitation under Project Assist' and takes up several social, cultural and educational activities in collaboration with various partners for promotion of unity and harmony in the country.

The Mining fraternity in Jabalpur region has actively participated in the Communal Harmony Campaign Week and a total donation of Rs. 47171/- has been credited and the receipts of the same have been enclosed for reference.

A.P. Trivedi Sons Ramrama Manganese Mine:

SR FERRO ALLOYS:

M/s HIRALAL RAMESHWAR PRASAD NAUGAWAN MINES:

A Fund-Raising Campaign was organized during the Communal Harmony Campaign Week (19.11.2021 To 25.11.2021)where a donation box was installed at the firm's office. Voluntary Donations were made by various people to helpchildren & youth who have been affected by Communal Violence. The total amount collected i.e. Rs. 1450/- wasdepositedonlinetoNational FoundationforCommunalHarmony(NFCH)

Flag Day which is organised on the last day i.e. 25th November 2021 of The




Communal Harmony Campaign Week(19.11.2021 to 25.11.2021) was celebrated enthusiastically by M/s Hiralal Rameshwar Prasad at it'sNaugawanMines 13.440 Hectares with the workers, villagers & residents of nearby areas. Flags of NFCH were sported by theMine owners & workers as well as other people who visited our office to show solidarity to people who have beenaffectedbycommunalviolencespeciallychildren&youth&giveoutamessageinfavourofCommunalHarmony.

NMDC LTD. MAJHGAWAN PANNA

The events/activities organized at Diamond Mining Project, NMDC Ltd. Majhgawan Panna during the period 19.11.2021- 25.11.2021 are as follows: -

1. Event Organized for spreading awareness regarding the role of constitution in women's empowerment.
2. Fundraising event during the Communal Harmony Week.
3. Organization of athletic event for the students of Secondary and higher secondary school of Hinouta.

ORGANIZATION OF SPORTS EVENT FOR THE STUDENTS OF SECONDARY AND HIGHER SECONDARY SCHOOL OF HINOUTA:

UltraTech Cement Ltd; Bela:

Palaspani Manganese ore Mine of M/s KRISHNAPING ALLOYS LIMITED

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