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SUPREME COURT

The Supreme Court had stopped sand mining till scientific sand replenishment report is prepared and evaluated in State of Rajasthan in 78 mining leases. Further direction is still awaited. Now as per the media report, next date of hearing is fixed for July, 18. Court has asked for report from Expert Appraisal Committee.

HIGH COURT

Raj High Court has stayed any new auction for sand with the direction that unless general clearance is recd. from Supreme Court, no auction is conducted Also, court has stopped sand excavation all over the State in all kind of Khatedari land in all mineral concessions areas till general directions are recd. from Supreme Court (Source: Dainik Bhaskar dt. 24.3.18 & 17.5.18)

MINISTRY OF MINES

1. G2-LEVEL EXPLORATION MADE MANDATORY FOR 288 MINES EXPIRING IN YEAR 2020

The exploration for any mineral deposit involves four stages: reconnaissance survey (G4), preliminary exploration (G3), general exploration (G2) and detailed exploration (G1). G2-level exploration's objective is to establish the main geological features of a deposit and provide an initial estimate of size, shape, structure and grade of the mineral in the mine.

To ensure that enough mineral data is there in time to encourage bidders for these mines, whenever they come up for auction, the Centre on March 27 made it mandatory for such ML owners to carry out G2-level exploration before April 1, 2019. The merchant mining sector is staring at a major disruption as mining leases (MLs) of approximately 288 non-coal mines - assigned for non-captive purposes - are going to expire at one go on March 31, 2020. To ensure that enough mineral data is there in time to encourage bidders for these mines, whenever they come up for auction, the Centre on March 27 made it mandatory for such ML owners to carry out G2-level exploration before April 1, 2019. On April 11, 2018, Shri Niranjana K Singh, Joint Secretary, Ministry of Mines, wrote a letter to 11 mineral rich states, requesting them to ensure that deadlines should be adhered to.

2. The GOI has amended MCDR, 2017 vide notification dt. 27th March, 2018 No. G.S.R. 289(E) to give effect to the directions issued to such ML owners to carry out G2-level exploration before April 1, 2019 whose lease period is expiring in the year 2020 (Details given at para 1 above)

3. BUILDING INDIA: CARTELISATION, HIGHER PRICES, GREEN CHALLENGES CLUTCH SAND MINING SECTOR

Mines ministry launched sand mining framework in March, 18, to assist state govts in addressing sectorial woes. With significant demand-supply gap in the sector, Ministry of Mines believes that states should analyse alternate options for river sand. Indian sand mining sector has been suffering from illegal mining for many years and the state governments have been finding it difficult to combat it effectively. At the end of March, 18, after receiving some input on illegal sand mining operations, when a deputy superintendent of police (DSP) was patrolling near a state highway in Dholpur district of Rajasthan, two rounds were fired at his vehicle. According to a recent analysis of Ministry of Mines, the sand mining sector is ailing from the following challenges:

Cartelisation, among mining companies during auction, non-availability of sand in many cities leading to higher prices, mixing of low quality sand with usable sand leading to construction of weak buildings, and significant environmental damage due to illegal sand mining.

"Issues of illegal mining, environmental damage, high sand prices and quality of sand that are interlinked with each other are prevalent across many states," mentioned the Ministry of Mines in its 'sand mining framework', which enumerated the aforementioned challenges. The ministry launched the framework to assist the state governments in formulating "appropriate" policy and administrative systems to address the issues of the sector. "Non-availability of sand and sky-rocketing price of sand are two sides of the same coin. Due to the population growth and the resultant construction activity, there is a huge demand for sand in the country. In some of the cities, where there are no nearby sand reaches, it creates a huge demand-supply mismatch," the framework stated.

"This mismatch coupled with cartel formation among the miners and transporters and in absence of robust monitoring mechanism or regulation by the Government has led to sky-rocketing prices of sand in these cities, such as the prices of sand in Bengaluru and Mumbai are in the range of Rs 70,000 to Rs1,00,000 for a single truck of 30 tonnes. High sand prices, has led to mixing of low quality sand with the usable sand that is delivered to consumers who are generally not aware about the quality of sand. The low quality sand is not suitable for construction purpose and poses a risk to human lives using the structures made by it," it added. On cartel formation, the framework stated: "Although state governments have started allocating the blocks on auction basis to bidders in the states, but to manipulate the supply and to control the prices, bidders may form cartels to keep their margins high. In absence of any robust mechanism, its tough to control cartelisation unless the sale rights are with the state governments." (Source: Indian Express dt. 4.4.18)



4. UTILISE FUNDS WITH DISTRICT MINERAL FOUNDATIONS PROPERLY, CENTRE TELLS STATES

Currently, states - flush with DMF funds - are allocating and releasing money to thousands of schemes/projects. The Central government has advised states that the money collected by DMFs, the district-level bodies established under the new mining law - MMDRA Act, 2015 - to benefit local people affected by mining operations, should be used in just two or three schemes so that there is proper utilisation of funds. Currently, states - flush with DMF funds - are allocating and releasing money to thousands of schemes/projects. For example, till November 30 last year, Chhattisgarh and Jharkhand collected Rs 2,331 crore and Rs 2,314 crore, respectively, for their DMFs. Chhattisgarh has started 43,484 schemes or projects while Jharkhand has begun 2,07,173 schemes/projects. "As the state governments have started allocating amounts to so many

From Editor's Desk

Ban on river sand mining by SC continues in Rajasthan. Further to this, the High Court stopped mining in Khatadari land also in mining lease areas which were granted in Palaeo Channel. Bldg activity is badly suffering in Rajasthan and also workers are jobless. News on Sterlite copper smelter at Tuticorin where 13 persons have been killed in agitation. The villagers are protesting against expansion of plant and latest news is, the State Govt. has cut of electricity & water to the plant.



This newsletter has covered these topics and other news on the National Workshop & Exhibition organized on "Problems of River sand mining and its alternatives" at Udaipur on 21-22 April, 2018 by MEAI Rajasthan Chapter, Udaipur. The news coverage on this is in 3 parts. First the report (Page 4), second the recommendations (Page 6) and third the summary of papers presented by various presenters (Page 8).

I hope the reader would find it interesting.

Y C Gupta

schemes or projects, we think that the funds will either remain unutilised or get pilfered by junior officials. So, we have advised the state governments to focus on just two or three schemes properly. It will help in proper utilisation of funds," said a senior Central government official.

Chhattisgarh's 43,484 schemes are spread across sectors such as drinking water supply, environment preservation, pollution control, health and education, among others. Out of around 2 lakh projects of Jharkhand, 761 are related to drinking water and sanitation and 52 are for the health sector. About 99 per cent of Jharkhand's are for open-defecation free villages.

While 12 mineral-rich states have collected Rs 13,398 crore for their DMFs, they spent only 17 per cent of the amount till the end of 2017. As on November 30, 2017, Madhya Pradesh, Rajasthan, Maharashtra and Andhra Pradesh spent just 10.83 per cent, 20 per cent, 9.03 per cent and 13.97 per cent of the funds, respectively.

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
MOEFCC has issued notification dt. 6th April, 2018 No. 1530(E) to clarify the validity of EC issued in the past. It in compliance to the SC judgment dated 2.8.17.

MINISTRY OF COAL

GOVT RELAXES RULES FOR COAL INDIA TO EASE COAL-BED METHANE EXTRACTION

Till now, Coal India had to apply to oil ministry for a licence to extract CBM from its coal blocks. Now Govt relaxed rules for state-owned Coal India Ltd for extraction of natural gas lying below coal seams in its blocks in a bid to quickly boost production. The Cabinet Committee on Economic Affairs chaired by Prime Minister Narendra Modi approved an

amendment to the November 2015 regulations issued by the Ministry of Petroleum & Natural Gas under Section 12 of the Oil Fields (Regulation and Development) Act, 1948 (ORD Act, 1948). "Due to this amendment relaxation is granted under the Petroleum & Natural Gas Rules 1959 (PNG Rules, 1959), to Coal India Ltd (CIL) and its subsidiaries for not applying for grant of licence/lease under the PNG Rules, 1959 for extraction of CBM under their Coal Bearing Areas," (Source: Indian Express dt. 12.4.18)

DIRECTORATE GENERAL OF MINES SAFETY

DGMS is now deeply concerned with silicosis among mine workers. DGMS Udaipur has now started organizing awareness camps where cluster of mines exists. In this series, they held such camp at Dungarpur on dt. 17.5.18 which was attended by 30 mines owners/representatives. DGMS is more concern in respect of mines of minerals like Quartz/ Feldspar, sandstone, granite etc where in free silica particles are air borne during mining operations.

DEPTT OF MINES & GEOLOGY, RAJASTHAN

1. The Deptt auctioned minor mineral blocks for various minerals in large number during last few months. In all 327 blocks have been auctioned which fetched bids amounting to Rs. 64 crores against the reserve price of Rs. 3.91 crores.
2. In respect of Limestone blocks, 5 areas were auctioned. Out of which now 2 bidders have already obtained EC from MOEFCC. The indicative revenue of these 2 blocks is Rs. 11791 crores.
3. In respect of remaining 3 blocks, Letter of Intent has been issued and EC is awaited (one case is in High Court) The indicative revenue of each block is more than Rs. 5000 crores.

MINING ENGINEERS' ASSOCIATION OF INDIA, RAJASTHAN CHAPTER, UDAIPUR

The chapter in its 10th Executive Committee meeting held on 8th May 2018 took following decisions:

1. The following names have been proposed for the New Executive Committee of the Chapter for the session 2018-20:

Chairman	Dr. S.S. Rathore
Vice-Chairman	Shri L.S. Shekhawat
Secretary	Shri M.S. Paliwal
Joint Secretary	Dr. S.C. Jain
Treasurer	Shri H.K. Vyas

Executive members proposed are: Sarveshri S.K. Vashisth, A.K. Porwal, O.P. Soni, M.K. Mehta and Aseef Mohd. Ansari

2. Shri N.C. Bansal has been nominated as Returning Officer for conducting election.
3. It has been decided to hold Annual General Body Meeting on 15th July 2018 (Sunday) at Udaipur.
4. As proposed by Shri A.K. Porwal, Director of Mines Safety, Udaipur Zonal office, it has been decided to hold technical talk on silicosis which will be arranged sometime in June 2018, jointly with Directorate of Mines Safety and Mining Engineers' Association. Shri A.K. Porwal will circulate this decision among mine owners. He will also deliver talk on the subject.
5. It has been proposed to hold one day technical talk on Explosives, prior to holding National Seminar on this topic.

NEWS IN BRIEF

1. New uniform to Govt. Geologists in Gujarat
2. The Hong Kong-based South China Morning Post reported that China has begun large-scale mining operations in Lhunze county under its control adjacent to the border with Arunachal Pradesh where a huge trove of gold, silver and other precious minerals valued at about \$60 billion has been found. The report also claimed that China is rapidly building infrastructure to turn the area into another South China Sea-like scenario (Source: Indian Express dt. 21.5.18)



3. COIR LOGS TO CLEAN DRAINS FLOWING INTO GANGA

Bioremediation is a technique that uses bacteria, fungi or other biological agents that work towards reducing toxins in the environment, in this case a polluted water body. The National Mission for Clean Ganga (NMCG) has approved eight projects that will use bioremediation techniques to clean specific drains in Patna, Hardwar, Allahabad, Bulandshahr and Varanasi. Logs wound with coir, mud balls, dyes, and certain plant species may soon be used as tools to clean sections of heavily polluted drains that flow into the river Ganga. The total flow across all these drains adds up to 377 million litres per day (MLD). The total cost for the projects is Rs 23.77 crore. "The project proponents have been given a month to show if their methods are working before funds are released," said NMCG Director General Rajiv Ranjan Mishra. "After assessing the pollution load of a particular drain, a consortium of bacteria is designed that eats away a lot of the pollutants in the drain," Mishra said. "Due to this, the water from the drain that eventually reaches the river has much lower pollution levels. But this technique has to be applied over and over, say every 15 days." (Source: Indian Express dt. 22.5.18) When there was no STP in Udaipur city, the NGO who is working to protect Udaipur lakes used similar technique to clean Ayad river which was receiving all sewage of the city. Their work was visited by one of the member of erstwhile Planning commission. Still they have barricades in the river (The Editor of this newsletter is a witness to it) but for some years there is no news in the media now. **EDITOR: The large mines can also adopt this technique to clean their waste water. They can contact the NGO who is working to protect Udaipur lakes.**

Haryana CM suggests Sunday to be no criticism day. On the other hand, one should think what they can contribute?

CALENDAR OF EVENTS

30th June 2018 (Saturday) at 01:15 P.M- Mining Engineers' Association of India, Hyderabad-45th Annual General Meeting of National body. VENUE: Mining Welfare Centre, Jaipur.

15th July 2018 (Sunday) - Annual General Body Meeting of Mining Engineers' Association of India Rajasthan Chapter, Udaipur.

30th June to 1st July, 2018-- National Workshop on ease of doing business- A challenge for Mining Sector - Organized by Mining Engineers' Association of India, Rajasthan Chapter, Jaipur VENUE: Mining Welfare Centre, Jaipur

MINING ENGINEERING ASSOCIATION OF INDIA (MEAI), RAJASTHAN CHAPTER, UDAIPUR

National Workshop & Exhibition on "**PROBLEMS OF RIVER SAND MINING & ITS ALTERNATE**" ORGANIZED on dt. 21-22 April, 2018

REPORT

Looking to the scarcity of river sand and its crisis countrywide in general and Rajasthan in particular the executive committee of MEAI Rajasthan Chapter, Udaipur decided to hold the two days National Workshop on "Problems of River Sand Mining & Its Alternate" in association of department of Mines and Geology, Government of Rajasthan and Mining Engineering Department, College of Technology and Engineering, MPUAT, Udaipur on 21st & 22nd April, 2018 in the Placement Cell and also to organize an exhibition on manufacturing of M-Sand (i.e. manufactured sand) through machinery /equipment. Dr. S.S. Rathore, Dean, CTAE, Udaipur and Chairman MEAI Udaipur Chapter welcomed all the guests on dias and the participants and gave introduction about the need of this national workshop on this current burning issue. Guest of honour Sh. Sunil Duggal, CEO, HZL, Udaipur expressed that the word sand mining should be sand mining and aggregate. He emphasised that some big players in the construction industry like as L&T etc. must have been called and interacted with such seminar/workshops. He informed that HZL is having 200 MT of waste material as overburden/slag and some of which may be converted to the sand for usefulness.

Director Mines & Geology, Sh. D.S. Maru elaborated about the history of the sand mining in the State of Rajasthan and told that in 2011 in the mineral policy of Rajasthan Government "Zero waste mining" was advocated. Sh. Vikram Singh Gaur, Joint Secretary, NITI Ayog, in his speech told that there was a time when mining engineers were considering forest conservation act as their enemy. He informed that in the country the contributions of mining industry is only 1.3%. Whereas in China it is 7%, Australia it is 11.0% and in Canada it is 19%. He emphasised on the holistic approach about the problem so that raw material is available on reasonable prices, jobs are created and country's development should not hamper. He also compared the cost of production of per tonne of sand in various states of the country.

Sh. A.K. Kothari deliberated on the role of MEAI in the country and enlightened upon the issues of the national workshop and advocated to promote M-Sand as alternate to the river sand.

Prof. U.S. Sharma, Vice-Chancellor, MPUAT, Udaipur expressed his views and told that the search of alternate of river sand is the challenging issue of the day and for the mining engineers in particular. The Chief Guest, Hon'ble MP Sh. Arjun Lal Meena in his inaugural speech told that it is surprising that Rs. 250 crore of revenue is generated in Rajasthan from sand mining whereas Rs. 2000 crore is going in the pockets of mining mafia. He suggested that sand can be made available free of cost or the sand mining authority can be given to Panchayats also. He expressed that if the ultimate user of the sand gets the 'sand' at cheaper rates whether river sand or M-sand, then the success of the national workshop will be recognized. The souvenir and CD of technical papers were released. The vote of thanks was delivered by Dr. S.C. Jain, Organizing Secretary of the National Workshop.



Sh. Arun Kumar Kothari, National President, MEAI delivering his address



Vote of thanks by, Dr. S.C. Jain, Org. Secretary



View of the audience

PARTICIPANTS IN THE EXHIBITION:

(i) Puzzolana Hyderabad (ii) Ralljack Asia Ltd. Udaipur (iii) Weir Minerals India Ltd., Jaipur (iv) Mewar Hitech Engineers Ltd. (v) Propel Industries (vi) Udaipur Masonary Stone Mines Owners and Crusher Association.

In total 4 technical sessions were organized in which around 25 technical papers were presented on the variety of topics of sand mining and its alternate. Also on the policy frame work of sand mining etc. In a technical session Sh.C. Narsimulu, Additional Director, Department of Mines & Geology, Government of Telangana expressed that in their state in respect of sand mining, there is a total control of government on revenue and no sand mafia is allowed to developed. We are making available sand to the customer's door in our state.

Around 400 participants attended the national workshop with great enthusiasm and will to promote and advocate M-sand, since the river sand is ultimately going to be exhausted one fine morning, so millions of tonnes of over burden available at mines which is suitable for the M-Sand may be converted to M-Sand.

Valedictory function was held on 22nd April, 2018. In the beginning of the programme Sh. L.S. Shekhawat, Vice-Chairman, MEAI welcomed the dignitaries on dias and the participants. Dr. S.S. Rathore Chairman, MEAI, Udaipur gave the details of the 2 days workshop happenings, paper presentations etc.

Guest of honour Sh. G.S. Tank, gave details of the specifications required for manufactured sand for construction and allied industries including need for soundness test. He mentioned that M-Sand should be inert and should not react with magnesium sulphate and sodium sulphate. Mica should not be present in the M-Sand and for the time being we may use a mixture of 50% M-sand + 50% of river sand.

Joint Organizing Secretary Sh. M.S. Paliwal presented recommendations based on the papers presented during 2 days national workshop (on next page). Sh. Prithul Kumar, Director, Ministry of Mines, GOI, NewDelhi told that we have prepared the frame work of sand Mining in association with executives of Indian Bureau of Mines. He told that in Rajasthan every year 56 MT sand is required but natural sources are not sufficient. Dr. U.S. Sharma, VC, MPUAT, Udaipur expressed that mining industry is contributing only 1.3% of our GDP which is required to be enhanced. Sh. Arun Kumar Kothari, National President, MEAI told that to promote the M-Sand manufacturing we have organized beautiful exhibition.

On this occasion, the best contributions to serve the MEAI and rendering excellent services National President MEAI award were conferred to Dr. S.S. Rathore, Dean CTAE & Chairman MEAI Udaipur Chapter & Er. D.S. Maru, Director, Mines&Geology, GOR. They were honored.

ER. D. S. MARU

Shri D.S. Maru is presently working as Director, Department of Mines and Geology, Govt of Rajasthan. He is B.E. in Mining Engineering from MBM Engineering College, Jodhpur. After Engineering he joined as Assistant Mining Engineer in Deptt of Mines and Geology and reached to highest post of Director in 2013. He has a vast experience of more than 30 years as mineral administrator and has ably executed the regulatory roles entrusted with him for mineral governance in Rajasthan. With accommodating smile and receptive attitude, Shri Maru has dealt with public office with ease and oversaw many changes in the mining policy with practical approach. He had long served MEAI with excellence. He was the Chairman of Rajasthan Chapter Udaipur, and is presently contributing as a national council member of MEAI.



Er. D. S. Maru

DR. S. S. RATHORE

He is committed towards Excellence. He is presently working as Dean, CTAE, MPUAT Udaipur. He is a career academic; his education includes a B.E. and M.E. Degree in Mining Engineering from MBM Engineering College, Jodhpur. He completed his doctorate at JNVU, Jodhpur in the year 2002 on the subject of Blasting. He has an extensive academic and administrative experience, working as Professor and Head of Department of Mining Engineering at CTAE for 26 years. He has served as chairman of multiple state level committees. His noteworthy achievement is Chairman of State Level Expert Appraisal Committee (SEAC), Rajasthan on Environment. He has served on the editorial Boards of number of Scientific Journals. He has made immense contributions to several professional organizations. He contributed numerous scientific articles published in National and International journals. He is recipient of National Mineral Award -2008 in the field of Sustainable Mineral development by Ministry of Mines, Govt. of India.

The best student award was given to Mr. Ansari of Final Year Mining, Department of Mining Engineering, CTAE, Udaipur.



Dr. S.S. Rathore

The representatives of all the sponsors of this national workshop were also honoured as under:

PLATINUM SPONSORS: Wonder Cement Ltd. & Hindustan Zinc Limited

GOLD SPONSORS: (i) Puzzolana (ii) UMDS Pvt. Ltd. (Golcha Group) (iii) ASD Co. Pvt. Ltd.

SILVER SPONSORS: (i) Khetan Business Corporation (ii) Nirmax Cement (iii) Indian Cement Ltd. (iv) Aditya Cement Ltd. (v) Propel Industries (vi) Rojack Asia Ltd. (vii) Jyoti Marbles Pvt. Ltd. & (viii) Surya Associates.

The Chief Guest Sh. Gulab Chand Kataria, Hon'ble Home Minister of Rajasthan expressed that the topic chosen for the National Workshop is quite relevant for the present situation of sand mining in the country. He told that we have excavated sand from river bed very badly so that nearby water table of the wells has gone down and environmental damage started and therefore the Hon'ble Supreme Court of India has to intervene and directed to stop sand mining. He also emphasised to come forward with the alternate of river sand material. Largest sufferer from shortage of sand is, labour as construction activities have stopped. He goes back home to his village in the evening in utter disappointment without carrying any ration for his family. Sh. R.D. Saxena, the Secretary MEAI, Udaipur presented vote of thanks to all the dignitaries and guests.



Dignitaries on dias during valedictory function



Dignitaries on dias during inauguration function

RECOMMENDATIONS

Based on the technical papers presented in the National Workshop, the Organizing Committee makes following recommendations:

- 1. State of Rajasthan should have separate and specific rules for Sand:** The states like Andhra Pradesh, Chhattisgarh, Karnataka, Madhya Pradesh, Telangana and Utrkhand have separate policies and separate rules for natural Sand & Crushed sand (M Sand). The Mines Ministry also in Sand Mining framework 2018 has recommended for it. Therefore Rajasthan should also have simple and practical rules. Also, as priority was given to marble/ gang saw cutters in allotment of mining leases, similar priority is given to M sand manufacturers in grant of mining leases. Also common overburden dumps are demarcated and information available on the portal of Mines & Geology Deptt. The M sand manufactures be allowed to carry away the allotted overburden by generating on line rawanna.
- 2. The rivers & rivulets are classified in the state as per their extension and size:** The rivers & rivulets be classified as per their extension and size. Excavation of sand by machinery from small rivers should not be allowed and the sand from such rivers be consumed locally. The authority for excavation of sand from such small rivers & rivulets can be given to gram panchayats.
- 3. Excavation of sand from large rivers & rivulets can be given to State undertaking " RSMM "** so that they can obtain early EC and commence excavation to provide relief to common man at the earliest. Small rivers & rivulets can be allotted as small mining lease areas so that they fall within the limit of DEIAA & SEIAA.
- 4. The mining leases for sand in Palaeo Channel in Bikaner distt hardly produces 1.5 million tonnes per annum but it has inherent capacity to increase production many fold. Need is for the State Deptt to take initiative to locate more areas. Present indication is that Palaeo Channel sand is available in 1400 Sq Km area. Presently it is being supplied to Bikaner, Hanumangarh, Sriganganagar, Sikar, Jaiselmer, Nagaur and Jodhpur distt.**
- 5. After identification of areas, M Sand manufacturers are allotted mining leases for sand:** a. Sand is included in the mining leases for silica sand so that after dispatch of Silica sand to glass factories, the lessees can dispatch remaining material as bldg. sand which is not suitable for silica sand. b. The surrendered / cancelled mining lease areas of silica sand, granite & quartzite are identified and later on attempts made to lease them out for M Sand. c. The M Sand plants are allowed mines overburden material at concessional rate of royalty
- 6. Huge quantity of overburden at Jhamarkotra Rock Phosphate mines, Distt Udaipur:** Huge quantity of overburden is lying at Jhamarkotra Rock Phosphate mines, Distt Udaipur which is also occupying large tract of land. The overburden material which is suitable for M Sand manufacturing can be utilized for the purpose. It can be a boon to the Udaipur and nearby distts to meet the requirement of sand.
- 7. EC is not insisted for removal of overburden from mines:** Presently EC is required for removal of overburden from mines. MOEFCC is of the view that it is actually dump mining hence it attracts EC rules. The State Govt and the Mines Ministry should strongly recommend MOEFCC to issue appropriate directions in this regard. If at all it is required, Distt Level committee is authorized to allow such dump removal. As per Wikipedia Mining is defined as "the extraction of valuable minerals or other geological materials from the earth, usually from an orebody, lode, vein, seam, reef or placer deposit. These deposits form a mineralized package that is of economic interest to the miner." The word mining cannot be used for removal of dump material. Word mining applies to only removal of mineral from mother earth and not from other place. MOEFCC interpretation is arbitrary and is not legally tenable.
- 8. M sand manufacturing units be given status of industry:** States like Andhra Pradesh, Karnataka, and Telangana have given industry status to M sand manufacturing units and giving concessions as MSME units. It is recommended that in Rajasthan also similar treatment is given to these units. Also these units are separated from stone crusher category and treated as mineral processing units.
- 9. Govt Deptts should accept M sand as alternate to natural sand:** The Govt Deptts like PWD, UDH and other Govt deptt should accept M sand as alternate to natural sand and include it in BSR.
- 10. EC is cleared in time bound manner:** There is much delay in grant of EC. Looking to the acute problem being faced by general public, EC is granted in time bound manner. The State Govt may request the MOEFCC for the following:
 - a. The area limit is increased as; For clearance by DEIAA----0-50 hect For clearance by SEIAA----50-200 hect For clearance by MOEFCC---area more than 200 hect
 - b. For expeditious clearance, SEIAA branches are opened at Udaipur & Jodhpur
- 11. The present limit of 1500 metres for establishment of M sand crusher from notified village habitation is reduced to 500 metres. Also this zone of 500 metres is declared as no habitation zone.**
- 12. When the cluster size of 5 hect mining leases remain up to 25 hec, EC can be granted by DEIAA but when it exceeds 25 hec it is classified as B I category mines. Then the matter goes to SEIAA. This limit of 25 hec and 500 m boundary limit is abolished when the size of mines do not exceed 5 hect.**

13. Suitability of mines overburden including Copper and iron slag aggregate for M sand be investigated by: The National Institute for Building Material & Cement, Ballabgarh, the Central Agency is requested by the State Govt to investigate the suitability of limestone mines overburden including Copper and iron slag aggregates produced in the state in M sand manufacture and its suitability in civil construction.

14. All over the country huge quantity of construction & demolition (C & D) waste is generated. Only in Delhi some quantity is being used in construction activities. Ministry of Housing has issued directions to CPWD to use such material and IS has also been amended. It is suggested that on similar lines, the State Govt may also direct PWD to use construction & demolition (C & D) waste.



Chief Guest Sh. Gulab Chand Kataria, Home Minister of Raj. going around the Exhibition



Machines on display in the Exhibition



Shri M.S. Paliwal, Joint Organizing Secretary reading out recommendations

INDIAN BUREAU OF MINES

1. IBM arranged training programme for their officers from 14th to 16th May at Udaipur on " Stopping practices and examination /scrutiny of stopping notices". There were 22 participants.
2. GOI has done restructuring of IBM by which additional posts of Mining Engineers & Geologists have been created. This would allow more regular mine inspections per year. Govt did this by abolishing some non-core posts. Govt also created one more post of Chief Controller of Mines and 3 posts of Controller of Mines.
3. Mining surveillance system (MSS) is in operation which is supervised by IBM. Triggers are generated and passed on to States for field verification for unauthorized working. Here is report card as on dt. 15.5.18:

State	No. of MSS triggers found	No. of Triggers Verified	unauthorised work found	Minor mineral leases	Major mineral leases	No excavation found	Triggers relating to other than mining activity
Jharkhand	1	1	0	0	0	0	1
Himachal Pradesh	11	11	0	0	0	1	10
Odisha	20	20	0	4	11	0	4
Karnataka	35	35	1	3	20	2	9
Andhra Pradesh	29	29	4	3	0	15	4
Telangana	6	6	0	0	0	6	0
Maharashtra	8	7	1	2	2	1	1
Rajasthan	23	23	2	7	1	10	3
Goa	42	42	12	2	5	15	8
Madhya Pradesh	46	46	5	7	26	6	2
Tamil Nadu	29	29	10	2	8	9	0
Gujrat	32	32	12	20	0	0	0
Meghalaya	8	1	0	0	0	0	1
Chhattisgarh	6	6	1	4	1	0	0
Total	296	288	48	54	74	65	43

ANTI-STERLITE PROTEST, OPPOSES COPPER PLANT'S EXPANSION IN TAMIL NADU.

Vedanta's has copper making unit near Tuticorin, Tamilnadu. Residents of the village have been demanding that the plant be shut down immediately alleging that they faced serious health issues due to pollution from the unit. The firm has since placed advertisements in dailies claiming that it has not violated any norms against the background of continuing protests. Several men painted their faces showing 'blood' oozing out from their eyes to symbolically represent the alleged sufferings of the Tuticorin people due to pollution from the copper unit. (Source: PTI dt. 1.4.18) After this news was written, some 15000 people marched to DM office and became violent. In the process and in police firing, 13 persons have died (Source: Indian Express dt. 23.5.18 & news of subsequent days) Further news is that Madras High court has stayed further expansion of plant. Next news is that the State Govt. has cut of electricity & water to the plant. Further, Dainik Bhaskar on dt. 25.5.18 reported that SC in the past had imposed a fine of Rs. 125 crores in the year 2013 for violation of Environmental laws by the factory.

The Conclusion/ Summary/ Recommendations of The Papers Presented By Various Authors – Mining Engineering Association of India (meai), Rajasthan Chapter, Udaipur – National Workshop & Exhibition On "problems of River Sand Mining & Its Alternate"

Author/ Organization	Paper title	What the Paper Presenter concluded/summarized/ recommended?
Shri C Narsimulu, Addl Director, Govt of Telangana	Regulatory aspect of sand mining in State of Telangana including its sale and monitoring	In his talk he gave vivid details how their Govt is making sand available to consumers at reasonable price by door to door supply. The supply is supervised by GPS system and a call center has been set up to obtain feedback from the consumer. Telangana have separate policy and separate rules for natural Sand & Crushed sand (M Sand). Also, priority is given to M sand manufacturers in grant of mining leases. The rivers & rivulets have been classified as per their extension and size. Excavation of sand by machinery from small rivers has not been allowed and the sand from such rivers is consumed locally. The authority for excavation of sand from such small rivers & rivulets have been given to gram panchayats. They have given industry status to M sand manufacturing units and giving concessions as MSME units.
Shri Abhay Agarwal, RCOM & TS, IBM, Nagpur	Manufacture Sand : An Alternate Option For River Sand	There is an urgent need to promote the alternative of river sand by means of undergoing some policy initiatives in terms of granting Industry Status to M-Sand Units and by giving preferences for grant of stone quarries to M-sand units as a backward linkage.
Dr R Choudhuri* and N.K. Khabiya *Dr R Choudhuri- Former GGM RSMM **Mr N K Khabiya –Former Supdt Geologist, DMG, GOR	The Current Impasse On River Bed Sand Mining And The Constraints Faced By The Construction Industry In And Around Udaipur	Possible consideration of sponsoring a full- fledged techno-commercial feasibility of production of M Sand out of Jhamarkotra Dump Material as an alternate to river bed sand by RSMML Management may be examined.
Mrs Sangeeta Choudhary1, Prem Choudhary2 1.Techno India NJR Institute of Technology, Udaipur, India 2. Telecom and Broadcasting Systems, BEL, Bangalore, India	Mathematical Modeling Of Sand Erosion And Yield Of Kosana Sand Mining Site On Mithri River To Determine Safe Allowable Limit Of Withdrawal Of Sand Per Year	ArcGIS interfaced with SWAT tool has been used for prediction and simulation of factors which are a concern for the environment. Prediction of sediment yield of the sand mining site at Mithri River, a tributary of Luni River has been explored in this study. The site area is located between village Kosana and Malawas in Pipar tehsil in Jodhpur district. Further work on other watersheds of Rajasthan is required to check the applicability of finding for calculation of sediment yield and erosion for given surface runoff of the area.
Shri H.K. Vyas DGM (Mining), Jhamarkotra Mines, RSMML	Prospect To Use Overburden Of Jhamarkotra Mines for M-Sand	In light of above it can be said that there is more than sufficient quantity of required type of overburden/rock suitable for manufacturing of sand is available at Jhamarkotra Mines. Therefore all-out effort may be carried out by all stake holders for necessary regulatory clearances and early policy framing in this direction for installation of new industrial units for manufacturing of sand from Rocks by mechanical means.
Shri Mrinmoy Chakraborty Geologist, Nuvoco Vistas Corp Ltd (formerly Lafarge India Ltd) Chittorgarh	Utilization Of Mining Waste As Construction Aggregates – An Overview	Based on the above mentioned studies it can be concluded that the waste from Cement Grade Limestone mines is definitely an alternative of river sand and can be widely used in construction industry. Further to this various RMC plants are currently using manufactured sand in commercial scale for construction of various infrastructure facilities within our country.
Shri Mahendra Kumar Bokadia* Nagendra Singh Rathore *AVP-Mines & **Asstt. Manager- Mines, Wonder Cement Ltd	M-Sand An Alternate Options For Natural Sand	1.The tests carried out indicate that the manufactured sand is found to have good gradation as per IS: 383. 2.The sand passes all the tests such as Soundness, Deleterious material, Alkali aggregate silica reaction, compressive strength etc. as per the Indian Standard IS: 383-1970. This shows the suitability of the sand for use in construction. 3. Compressive strength obtained for standard mortar cubes and concrete indicates that the strength properties of the Manufactured Sand are adequate. 4. The near ultimate strength (28 days) of the mortar and concrete made using the manufactured sand is quite comparable with the natural river sand. 5. The manufactured sand is suitable for making RMC. 6. The experiments carried in the present study reveal that the mine rejects of Limestone waste may be used for construction industry as an alternative to river sand. 7. The work carried is useful for the Cement, Mines and Construction industries.
Shri Hitanshu	Ready to Use	1. The waste management and utilization of the waste silica sand from Banesti distt

<p>Kaushal* and Ketaki Moondra B.Tech (Mining) and M.Tech (Environment) and **Associate Professor, Faculty of Engineering, Pacific University</p>	<p>Cement Plaster-Environment Friendly & Zero Waste Mining</p>	<p>Chittorgarh for the production of ready to use cement plaster has been studied and it was found that in normal cement plaster river sand is used and it is mixed with cement and water manually in ratio of 1:5 or 1:6 according to the usage and we have to sieve river sand so that wastage shall be removed and this results into 30% wastage which is a total loss.</p> <p>2. Silica sand ready to use cement plaster can replace river sand and manual mixing of plaster</p> <p>3. Silica sand based plaster is much beneficial compare to our traditional cement plaster in the coverage as well as the strength.</p> <p>4. The silica sand can replace river sand and used in construction of residential apartments and flats, which is economical with compare to normal sand.</p>								
<p>Shri Chand Chandna- Mining Engineer</p>	<p>Present Need, Substitute Of River Sand</p>	<p>The manufactured sand is the only alternative to river sand. Mining of river bed to get river sand will lead to environmental disaster. The natural beauty of the river destroyed, Ground water level lowered, create water scarcity and put threat to the safety of bridges and dams.</p>								
<p>Dr. S. S. Rathore Professor & Dean CTAE, MPUAT Udaipur</p>	<p>Sand Mining And Environmental Issues</p>	<p>Sand is a scarcity material and mining be carried out equal to the replenishment in the river. Proper monitoring of mining and transportation shall be carried out using the latest Information and Communication Technology (ICT). Environmental safeguards should be taken due care for protection of environment.</p>								
<p>Shri Sudheer Bhatnagar Superintending Geologist(Remote Sensing), Department Of Mines And Geology, Govt. Of Rajasthan.</p>	<p>Impact Of Sand Mining On Environment, A Case Study Of Jaisamand Lake Catchment Area, District Udaipur, Rajasthan</p>	<p>A. Impact of Sand Mining on the Ground Water Level in the Jaisamand Catchment Area. The catchment of Jaisamand is well known source for Sand Mining, and it was alleged due to the prolonged mining practices, the sub-terrain flow of water is disrupted in the streams feeding the Jaisamand. These channels recharges the wells in the catchment area which are vital for the agricultural practices. On the basis of the study of key wells of Ground Water department, the average of pre-monsoon ground water level was 20.19 meter bgl in year 2000, which was increase to 11.44 meter bgl thus positive rise in pre-monsoon ground water table. Similarly the post monsoon ground water level in year 2000 was 12.41 meter bgl which increase to 10.10 meter bgl, thus there is an increase rise in ground water level in both pre and post monsoon ground water table.</p> <p>B. Impact of Sand Mining on the Agriculture in the Jaisamand Catchment Area with the help of satellite imageries. This clearly reveals that there is an increase in agriculture that is 64.14 sq km with a decrease in cultivable waste that have been changed to cultivation.</p> <p>C Impact of Sand Mining on Forest vegetation in the Jaisamand Catchment Area with the help of satellite imageries. From the forest maps of the two year i.e. 2000 and 2009 a change detection map is also prepared, which clearly shows increase/decrease or no change in forest density. It clearly shows there is an overall increase in forest density:</p> <table border="1" data-bbox="586 1369 1520 1440"> <tr> <td>Change Forest</td> <td>Area in sq km</td> <td>Increase</td> <td>71.7480</td> </tr> <tr> <td>Decrease</td> <td>46.9614</td> <td>No change</td> <td>178.7846</td> </tr> </table> <p>Reason is obvious. It is due to withdrawal of extra sediments from catchment & lake area which increased its water storage capacity.</p>	Change Forest	Area in sq km	Increase	71.7480	Decrease	46.9614	No change	178.7846
Change Forest	Area in sq km	Increase	71.7480							
Decrease	46.9614	No change	178.7846							
<p>Shri Akhil Avchar Assistant Professor Mining Engineering Department, College of Technology & Engineering (MPUAT) Udaipur, Rajasthan</p>	<p>A REVIEW ON MANUFACTURED SAND</p>	<p>1.The results of the tests on mortars and masonry using river sand and M-sand as fine aggregate are summarized as follows: Grading limits of M-sand falls within the grading Zone-II sand, grading limits specified By IS 383 code.</p> <p>2. Shapes of the M-sand particles resemble the shape of river sand particles.</p> <p>3.Bulk density and specific gravity of M-sand are comparable to those of river sand.</p> <p>4. Mortars with M-sand show better workability and require lower water-cement ratio to achieve a specific flow value when compared to mortars with river sand.</p> <p>5. Water retentively values for 1:6 cement mortar using river sand and M-sand are 27.3% and 28.5% respectively. For 1:4 cement mortar it is 25.6% and 35.6% for river sand and M-sand respectively. Thus, water retentively of mortars improves with the use of M-sand. Better water retentively results in better strength and bond development.</p> <p>6.Compressive strength of mortar with M-sand is higher than that of the mortar with river sand for mortar flow in the range of 85 – 100% as Flexure bond strength of masonry prisms using local burnt clay bricks and the 1:6 cement mortar with M-</p>								

		<p>sand and river sand was determined.</p> <p>7. Six prisms were tested in each category to get the mean value of flexure bond strength. The flexure bond strength of masonry using 1:6 cement mortar (with 85% flow) was 0.06 MPa and 0.15 MPa for river sand and M-sand mortars respectively. The flexure bond strength of masonry prism has improved by 150% when M-sand was used instead of river sand in the 1:6 cement mortar.</p> <p>8. Compressive strength of masonry was examined by testing five brick high stack bonded masonry prisms. Compressive strength of the masonry prisms was 3.35 MPa and 4.38 MPa for mortar with river sand and M-sand respectively. These are the mean values of six prisms. Nearly 30% increase in masonry strength due to the use of mortar with M-sand was observed.</p>								
<p>Shri Abdul Latif Sheikh Addl Director Mines , DMG Rajasthan</p>	<p>Problems in grant of EC and replacement study in Rajasthan</p>	<p>Out of 82 leases who were given letter of intent by Govt of Rajasthan, 11 lessees have been able to obtain EC so far. CMPDI carried out scientific study of sand replenishment in respect of 19 areas pursuant to directions of SC. Their finding on whether annual replenishment matches the annual planned production?</p> <table border="1"> <thead> <tr> <th>Category</th> <th>No. of areas</th> </tr> </thead> <tbody> <tr> <td>Replenishment less than annual planned production</td> <td>10</td> </tr> <tr> <td>Replenishment more than annual planned production</td> <td>8</td> </tr> <tr> <td>Variable production capacity</td> <td>1</td> </tr> </tbody> </table> <p>CMPDI further says that concept of annual replenishment does not apply to Rajasthan rivers as flow of water is not uniform. Committee of MOEFCC who studied these reports have recommended that the lessees can be allowed only 25% excavation of what they have planned in their Mine Plan</p>	Category	No. of areas	Replenishment less than annual planned production	10	Replenishment more than annual planned production	8	Variable production capacity	1
Category	No. of areas									
Replenishment less than annual planned production	10									
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<p>Y.C. Gupta Editor, Newsletter and Ex-Chairman, MEAI Rajasthan Chapter, Udaipur</p>	<p>Whether Consumer In Rajasthan Be Able To Get Natural Sand/M Sand At Reasonable Price In Near Future? What Steps State Should Take?</p>	<p>The Mines Ministry has come out with Sand Mining Framework on dt.20.3.18. The document says that at a macro level, there is shortage of sand. The quantity of natural generation of sand is static (Page 17) Therefore it is an open and shut case that there is shortage of natural sand. All over the the Country, the State machinery should get convinced that there is shortage and natural sand is short in supply and would remain so.</p> <p>The State of Rajasthan is facing problem, when nature has given us plenty of deposits which can be exploited. To some extent the State is already taking benefit of these deposits but more can be done even when SC has banned extraction of natural sand from rivers. My knowledge of the State, gives me full optimism that this can be done provided we utilize the services of officers of the Mines & Geology Deptt in this direction. He recommended that</p> <ol style="list-style-type: none"> 1. All Silica sand lessees whether working or not, are encouraged to get bajri included in their lease. 2. Terminated or surrendered Silica sand areas are identified and put to auction for M Sand/ Bajri 3. Areas of weathered granite and quartzite rocks are identified and put to auction for M sand. 4. The Deptt of Mines & Geology has almost 48 field offices of Mining Engineers and Asstt Mining Engineers. All of them should work as nodal officers for promotion of M Sand in following manner: <ol style="list-style-type: none"> a. Keep the samples of M Sand obtained from manufacturers in their office to display b. Promote M Sand by giving media publicity c. To help miners, keep catalogue of machine manufacturers and introduce suitable machines to them 5. M sand production would certainly be costly compared to natural sand but where natural sand is not found locally, M sand can compete with saving in transportation cost. State can also help the miners of M sand, by paying compensatory afforestation charges if these deposits lie in forest land, by paying land acquisition charges if these deposits lie in private land and by increasing rate of royalty of natural sand and keeping nominal rate of royalty on M Sand. 6. To encourage the use of Palaeo Sand mined in Bikaner distt, say 25 dealers of sand are contacted in Jaipur. They can book one railway wagon each. A rack of 25 wagons loaded with sand can come from Bikaner. Attempt is made to ease pressure on natural sand. 7. It does not appeal that Palaeo Channel deposit exists only in Bikaner distt. Help of Ground Water Deptt Geologist is taken to find out if anywhere else in the near 								

		<p>vicinity of Ghaghar river ,whether such extractable Palaeo Channel deposit exists in Rajasthan. They must have done good amount of boring for ground water. The core logs are seen. May be sand deposit at other places has OB of more than 3 m but it should be explored.</p> <p>8. If these steps are taken, no doubt in one year time, the consumer would be able to get sand at reasonable price.</p>
<p>Mr.Kishor Botadra Shreeji Crushers & Magnets. B/10, Siddhapura Industrial Estate, Behind Rcity Mall, Amrut Nagar, Ghatkoapr West, Mumbai,- 400086.</p>	<p>Problems Of River Sand Mining & It's Alternatives</p>	<p>In all advance countries like USA, UK, JAPAN digging of sand from rivers or Canals or Mines are banned since last 50 years. But, in India due to easy availability and cheaper source of building materials we are using river sand for construction activities. The river sand has many <u>limitations</u>. To overcome this limitation, and get good strength of construction, Crush Sand has been introduced for construction activities, and it is widely accepted and proven best result over river sand. Now a days, all Govt./Semi Govt. Dept, Municipality, PWD works contractors ask and insist for artificial Sand, M Sand for all projects. Simply designed crusher, which work on the principle of centrifugal force, a vertical shaft attached with Rotor which rotate at high speed around 1400/ 1500 rpm and allows stone to crush in required sizes is suitable. In this machine, main shaft is in vertical position, hence it is called Vertical Shaft Impactor (VSI). 90% rocks/pebbles feed to VSI get crushed in small/desired size.</p>
<p>Dr.M.L. Jhanwar Director (Retd.) GSI, Jaipur</p>	<p>Challenges of Ban On River Sand Mining</p>	<p>The government should come out with a policy for sand mining and use of alternatives. Changed specifications by Bureau of Indian Standards (BIS) (to ensure substitutes of sand) can be consulted by builders across the country. Alternatives to sand like M-Sand (manufactured sand), copper slag, powdered glass and recycled construction waste etc which are increasingly being used in many EU nations, Singapore and the US should be encouraged in India. Environmentalists across the globe are in favour of such locally viable alternatives. Research should be encouraged on durability of concrete with different alternatives.</p>
<p>Er. D.P. Gaur, SME, DMG</p>	<p>River Sand (Bajri), present status and its alternative</p>	<p>Rajasthan does not have perennial rivers, so the natural sand is not being replaced in sufficient quantity to meet our demand. Roughly Rajasthan need about 36 million tonnes sand annually which is not possible to take out from rivers in future hence all stake holders should try to find alternative to natural sand.</p>
<p>Shri Akshaydeep Mathur Secretary General, FOMAR, Jaipur- 302015</p>	<p>Leasing Policy for Sand Mining</p>	<p>Comprehensive Resource Assessment of River Sand and Alternate Material at tehsil Level. Single Window System for Lease, Permits, OB Removal, Forest and Environmental Clearances</p> <ul style="list-style-type: none"> • Converging and Consolidating Responsibility • Quarterly Monitoring- Through Chartered Engineers. • Mineral allocation process • One Time Forest Clearance • Uniform rate of Royalty for Use of Mineral as Bajri • Stop Illegal Mining • Free transfer of PL / ML / Permit • Open market Financing for Mining • Quick /Simple Addition of OB / Associate Mineral in Lease Deed
<p>Shri M K Bakodia, Wonder Cement Er Nagendra Singh Rathore** *AVP and **Asstt. Manager, WCL</p>	<p>M-Sand An Alternate Options For Natural Sand</p>	<ol style="list-style-type: none"> 1. The tests carried out on limestone waste indicate that the manufactured sand is found to have good gradation as per IS: 383. 2. This sand passes all the tests such as Soundness, Deleterious material, Alkali aggregate silica reaction, compressive strength etc. as per the Indian Standard IS: 383-1970. This shows the suitability of the sand for use in construction. 3. Compressive strength obtained for standard mortar cubes and concrete indicates that the strength properties of the Manufactured Sand are adequate. 4. The near ultimate strength (28 days) of the mortar and concrete made using the manufactured sand is quite comparable with the natural river sand. 5. The manufactured sand is suitable for making RMC. 6. The experiments carried in the present study reveal that the mine rejects of Limestone waste may be used for construction industry as an alternative to river sand. 7. The work carried is useful for the Cement, Mines and Construction industries.
<p>Shri Govardhan Ram Mining Engineer, DMG, Rajasthan</p>	<p>Sand Mining in Paleo Channel & its future prospects</p>	<p>Paleochannel Sand (Bajri) deposit in Bikaner District has been the main source of supply of Bajri to the districts of Bikaner, Hanumangarh, Shri Ganganagar , Sikar , Jaisalmer, Nagaur ,Jodhpur and Churu. This deposit is being worked for last many decades since the time of erstwhile State of Bikaner. The importance of Bikaner Bajri can also be adjudged by the fact that in the past, this Bajri was transported by</p>

		railways and was used in the construction work of Bhakhara Nangal Dam.
Shri M S Paliwal SME, DMG, GoR	Sand Mining Framework and OB as Alternate to River Sands	In his paper, he gave summary of Sand Mining Framework issued by Govt. of India in March, 18. He stated that this framework provides specific suggestions to act upon in order to control illegal mining, carry out mining in sustainable and environment friendly manner. He analyzed alternate aspects of river sand and concluded that it is high time to promote use of M Sand
Shri Asif M Ansari, Nitin Chhajerh ME, DMG, GOR	M-Sand Future Prospect and relevancy with Rajasthan	In his paper, he gave test results of overburden from various mines about their suitability to obtain M Sand from them. He intimated that overburden from Babarmal marble mines and overburden from soapstone mines are not suitable for M Sand but rest of the material is suitable. He gave details of various court orders also in respect of natural sand. He concluded that keeping demand in mind and the technical specifications, we need to use M sand in all construction works. Many manufacturers are producing quality M Sand using latest technologies ensuring the quality as per BIS specifications at affordable cost compared to river sand.
Shri Lalit Paneri CEO, Rahul Engineers Lab. Udaipur	"Sand" Terminology and Specification for Construction Use	He gave details of IS specification for sand for use in construction. Also the details of tests need be conducted to judge their suitability. He outlined desired and undesired properties which need be kept in mind in natural sand/ M sand.
Sri G.V.Devikumar, N.Radhakrishna, N.Srinivasarao, The Singareni Collieries Co Ltd.	Sand from Overburden of Open cast Mines- An Alternative To River Sand	In Singaneri collieries sand is recovered from overburden which is used for stowing underground. In his talk he concluded that technology is proven and plants are running successfully and proved as a 100 % substitutes for river sand. The process is economical with no pollution and eco-friendly. 75-80% water is recycled. The quality of final product viz, sand, clay & pebbles are good on their purified content and have got wide application in construction activity and also is used in ceramic industries.
Prof Ravi K. Sharma, Prof. Deptt of Civil Engineering, CTAE, MPUAT, Udaipur	Potential Utilization Of Granite Slurry Dust As Partial Replacement Of River Sand In Concrete	The objective of this research investigation was to evaluate the mechanical properties of concrete produced by partial replacement of granite slurry dust with river sand. Based on experimental investigation, Granite slurry dust can be utilized as river sand up to 70% replacement level by granite slurry dust without affecting strength properties. The utilization of granite slurry dust at varied replacement level of river sand will create a reliable quality source for river sands and will reduce the excessive mining of river sand. Granite slurry dust is waste material and therefore it is easily accessible at low cost which in turn will reduce the cost of concrete.
Shri Pradeep Sharma, Director, BSES(India) Pvt Ltd, Puzzolana Machine	Alternative of Bajri can be crushed sand (M- Sand)	General public is badly suffering from non-availability of natural sand. M Sand is better substitute for it. All efforts be made to encourage production of M sand in Rajasthan.

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