BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL PRINCIPAL BENCH, NEW DELHI

Original Application No.284 of 2024

Abhishek Shukla S/O Sri Keshav Prasad Shukla, R/O Village Jarar, PS-Girwan, Tahsil Naraini, District-Banda.

.....Applicant

Versus

Mumtaj Ali, S/o Late Farzand Ali, aged 66 years, Resident of Khuti Chauraha, Aliganj Banda (UP) **.....Respondent**

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Dated : July, 2024

(SYED MOHD. FAZAL)
Advocate
(Enrollment No.U.P.03881/08)
Office cum residence C-207
GTB Nagar, Kareli,
Allahabad/Prayagraj UP 211016,
Mobile no.9889010500

NOTARIAL NOTARIAL

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REPLY AFFIDAVIT ON BEHALF OF RESPONDENT in compliance to the order dated 20 May, 2024 passed by this Hon'ble Tribunal.

I, Mumtaj Ali, S/o Late Farzand Ali, aged 67 years, Resident of Khuti Chauraha, Aliganj Banda (UP), the deponent do hereby solemnly affirm and State on oath as under :-

1. That it is relevant to submit herein that vide order dated 26.04.2024 cost was imposed on the applicant for delay in filing of reply before this Hon'ble Tribunal and the matter was again posted on 20.05.2024 for further consideration.

2. That it is worthwhile the mention herein that on 26.04.2024 in five of the connected matter i.e. Original Application No.285/2024 (Abhishek Shukla Vs. M/s Ureca Mines and Mineral LLP and others), Original Application no.290/2024 (Abhishek Shukla Vs. Sulabh Saxena), Original Application No.295/2024 (Abhishek Shukla Vs. Kunwar Vinod Ram), Original Application No.297/2024 (Abhishek Shukla Vs. Maa Vindwasini Stone Works) and Original Application No.299/2024 (Abhishek Shukla Vs. M/s A.H.V.S. Ifra LLP and others) arising out of the lead consolidated matter i.e. Original Application no.422/2023 (Abhishek Shukla Vs. Safdar Ali and others) were finally disposed of with directions mentioned in the judgment and orders dated 26.04.2024.

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It is worthwhile to mention herein that the matter of the applicant is identical to the above mentioned five cases and the applicant seeks parity of the order of the order dated 26.04.2024 passed in all the above five cases before this Hon'ble Court and the applicant prays that the present matter may also be disposed of in terms of the order mentioned therein. A true copy of the one of the

order dated 26.04.2024 passed in one of the Original Application No.295/2024 (Abhishek Shukla Vs. Kunwar Vinod Ram) is being filed herewith and marked as **Annexure No.1** to this affidavit.

3. That in compliance of the order dated 20.05.2024; the applicant is bringing on record a copy of the Environment Impact Assessment Report (EIA) on record. A true copy of the final EIA Report is being filed herewith and marked as **Annexure No.2** to this affidavit.

4. That certain relevant facts regarding the mining operations of minor mineral by the answering respondent wherein the mining operations are being conducted by way of cutting of hills, certain necessary facts which are necessary for the queries regarding mining operations made by this Hon'ble Tribunal, is being brought before this Hon'ble Court as mentioned below:-

I. The mining activities of minor minerals in the leased area of the answering respondents are allowed in pursuant to the district survey report prepared by the mining department after getting joint inspection of Forest Department, Irrigation and other departments and only after district survey report is conducted then only, the present leased area was put to auction by way of advertisement.

II. The mining plan was prepared by the project proponent for scientific mining activities for conducting mining operations in a scientific manner which is subject to approval from Director General Mines and Safety Lucknow and after such approval is accorded to the applicant then only the lease deed was registered.

III. The leased area of the answering respondent is a pure waste land having undulating surface surrounded by barren land which has less vegetation of low economic value as such there is no loss to vegetation by the mining operations of the applicant.

IV. There is no eco sensitive zone and eco sensitive area within the 10 Kms of the leased area so there is no ecological loss from the mining operations of the answering respondent.

V. The Environmental Impact Assessment has been done in case of the answering respondent in which all adverse impact and there mitigation measures have been studied.

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VI. The reclamation of mined out land will be given due importance as a step for sound land resource management in the form of reclaimed land and water body. This activity will act as the natural rain water collection pond which will help to reduce the water crisis of the nearby area.

VII. Mining activity will help in the Nation building and developmental activities.

VIII. Stone mined out from the mine is being and continued to be used as boulders of different sizes for River Anti erosion, Dam construction, embankment works etc.

IX. After crushing into different sizes of aggregates from 6mm to 63mm, the product can be used in construction and road projects, infrastructure etc.

X. It is a major source of State Revue generation.

XI. Local people get employment from it.

5. That it is also relevant to submit herein that environmental clearance to the applicant was considered finally on 01.09.2020 in the 397th meeting of the State Level Environmental Impact Assessment Authority in pursuant to the recommendations by SEAC to grant the environmental clearance vide meeting dated 07.08.2020 of its 483rd CEAC meeting. A true copy of the minutes 397th meeting dated 01.09.2020 alongwith 483rd meeting of CEAC dated 07.08.2020 are collectively being filed herewith and marked as **Annexure No.3** to this affidavit.

VERIFICATION:

I, the above named deponent do verify that the content of my above affidavit are true to the best of knowledge and belief and there is nothing concealed therefrom.

Verified at Banda on this 18 day of July, 2024.

NOTARY U.P. INDIA GOVT. OF U.P. INDIA

Deponent

2075 164 18/7/24

18/7/24

Mohd. Mahtab Khan
NOTARY/ADVOCATE
BANDA (U.P.)

Annexure No.1

Item No. 17 (Court No. 2)

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(Through Physical Hearing with Hybrid VC Option)

Original Application No. 295/2024

1. Abhishek Shukla,
S/o Keshav Prasad Shukla,
Resident of Village Jarar,
Police Station Girwas,
Tehsil Nareni, District Banda,
Uttar Pradesh. ...Applicant

Versus

1. M/S Kunwar Vinod Ram, Gata No. 332,
Khand No -01, Village Badokhar Khurd,
Tehsil Nareni, District Banda,
Uttar Pradesh.

2. State of Uttar Pradesh,
Through Chief Secretary, Government of Uttar Pradesh,
Secretariat, 5th Floor, Lucknow-226001,
Email: cs-up@nic.in.

3. Principal Secretary, Environment, Forest and Climate Change Department,
State of Uttar Pradesh,
17, Rana Pratap Marg, Lucknow, (U.P.), 226001,
Email: pccf-up@nic.in.

4. Director, Directorate of Geology and Mining, Uttar Pradesh,
Khanij Bhawan 27/8, Raja Ram Mohan Rai Marg,
Lucknow-226001 Phone No. - 0522-2205904,
Email: dgmupexp@gmail.com.

5. Director General of Mines Safety,
Ministry of Labour and Employment, Dhanbad, Jharkhand,
Hirapur, Dhanbad, Jharkhand, 826001,
Email- dir.soma@dgms.gov.in.

6. Uttar Pradesh Pollution Control Board,
Through Member Secretary,
Vibhuti Khand, Gomti Nagar, Uttar Pradesh-221301,
Email: ms@uppcb.com.

7. District Magistrate, Banda
District Magistrate Office, Collectorate, Banda-210001 (UP),

NOTARY M.R. KHAN Advocate H.Q. BANDA Reg. No. 5[illegible]/2006 EXP. DT. 22-05-2026 GOVT. OF U.P. INDIA

Email : dmban@nic.in.

...Respondents

Date of hearing: 26.04.2024

CORAM: HON'BLE MR. JUSTICE ARUN KUMAR TYAGI, JUDICIAL MEMBER.
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER.

Applicant:	None for the applicant.
Respondents:	Mr. Manoj Kumar, Advocate for respondent no.1-Project Proponent-M/s. Kunwar Vinod Ram. Mr. Gi. Gi. C. George and Ms. Barkha Singh, Advocates for Respondents No.2, 3, 5 and 7. Mr. Mukesh Verma, Advocate for Respondent No. 4. Mr. Pradeep Mishra, Advocate for Respondent No.6.

Application is registered based on a letter petition received by Post

ORDER

1. Abhishek Shukla s/o Keshav Prasad Shukla resident of Village Jarar, Police Station Girwas, Tehsil Nareni, District Banda, Uttar Pradesh has sent the present letter petition which was treated and registered as Original Application No. 422/2023.

2. In the letter petition the applicant submitted that six mining leases have been allotted in two hills situated in the area of village Jarar. Five crushers have been established in Village Jarar and Chhaneha Purwa. Mining is being done by resorting to illegal blasting which has resulted in damage to the houses of villagers. The crushers are being operated day and night. The crushers do not have any boundary wall. There is no sprinkling of water during operation thereof. The crushers are causing dust and noise pollution due to which the residents are suffering from Asthma and other diseases. Illegal blasting has also affected old temples located on the hills. Illegal mining and blasting are also adversely affecting the wildlife in the area. The roads to the above said villages have been damaged by the overloaded vehicles used for

transportation of excavated minor minerals.

3. The relevant part of the letter petition enumerating grievances of the applicant is reproduced as under:-

> "विषय: पहाड़ो में अवैध ब्लास्टिंग, मानक विपरीत चल रही क्रेसर से बरबाद हो रही फसलें, नष्ट हो रहा पर्यावरण, संकट में जनजीवन और जिम्मेदारों की अनदेखी के सम्बन्ध में।
>
> महोदय,
>
> बिन्दु-1 थाना गिरवां ग्राम जरर में स्थित दो पहाड़ों में लगभग 6 पट्टे स्वीकृत हैं जिनमें 6 इंच का होल करके ब्लास्टिंग की जाती है। जिससे पूरा गांव हिल जाता है, ब्लास्टिंग का कोई समय भी निर्धारित नहीं है गांव के कई घरों में दरारें भी आ गयी हैं। ब्लास्टिंग के दौरान पत्थर के टुकड़े लोगों के घरो और खेतो में गिरते हैं जिससे हर समय जान का खतरा बना रहता है। छोटे से पहाड़ में 5 पट्टों का स्वीकृत किया जाना एक घनघोर लापरवाही है। पहाड़ समाप्त होने से पर्यावरण को व जीव जन्तुओं को भारी नुकसान हो रहा है।
>
> बिन्दु-2 ग्राम जरर स्थित पहाड़ में पौराणिक शिव मंदिर है जिसमें प्रतिवर्ष बंसत पंचमी में मेला लगता है यहां बहुतायक संख्या में राष्ट्रीय पक्षी मोर विचरण करते हैं, हजारों लोगों की आस्था जुड़ी हुई है पर जब से अवैध ब्लास्टिंग आरंभ हुई है तब से सभी मोर गायब हैं और पहाड में रहने वाले बंदर, सांप व पक्षी भी नहीं बचे हैं। ब्लास्टिंग की वजह से पहाड़ में रहने वाले बंदर लोगों के घरो में घुस रहे हैं और नुकसान पहुंचा रहे हैं।
>
> बिन्दु-3 ग्राम जरर व उसके मजरा छनिहापुरवा में 5 क्रेसर लगी हुई है किसी भी क्रेसर में बाउण्ड्रीवाल नही है, पानी नही छिड़का जाता है रात और दिन बरावर डस्ट उड़ती है, पत्थर की डस्ट से हजारों बीघा उपजाऊ जमीन स्थायी रूप से नष्ट होने की कगार पर है। वहीं ग्रामीण लोग सिलकोसिस और अस्थमा जैसी बीमारियों का शिकार हो रहे हैं। बगल में ही प्राइमरी विद्यालय है जहां बच्चों के स्वास्थ्य पर असर पड़ रहा है।
>
> बिन्दु-4 ग्राम जरर मजरा छनिहा पुरवा, रघवापुरवा में उपजाऊ जमीन के बीच सभी क्रेसर लगी हुई हैं प्रशासन व संबधित विभागों द्वारा आंख मूंदकर व आफिस में बैठकर सर्वे करके अनुमति दी गयी है। किसान अपनी आखों के सामने फसलों को बरबाद होते देख रहा है रात दिन चलने वाली क्रेसरों से ध्वनि प्रदूषण हो रहा है ग्रामीण रात में सो नही पाते हैं।
>
> बिन्दु-5 ग्राम जरर मजरा छनिहापुरवा, रघवापुरवा के सभी रास्ते पूरी तरह से जर्जर हो चुके हैं ओवर लोड परिवहन से सड़के ध्वस्त हो चुकी हैं यहां से निकलने वाले ओवरलोड ट्रक धूल उड़ाते है जो खेतो में और लोगों के फेफड़ो में जमा होती है।
>
> बिन्दु-6 ऐसी ही स्थिति गिरवां के पहाड़ो व क्रेसरो में भी है गिरवां स्थित गौशाला में गाये मर रही हैं और गिरवां स्थित पौराणिक मंदिर भूतेश्वर बाबा खतरे में है। गिरवां के ग्रामीण ब्लास्टिंग की वजह से मौत के साये में जी रहे हैं।
>
> बिन्दु-7 थाना गिरवां ग्राम पतरहा के पहाड़ में स्थित शिव मंदिर किशंगुर बाबा का प्रांगण दरक रहा है और यह पौराणिक मंदिर खतरे में है। पतरहा गांव में होने वाले अवैध ब्लास्ट से लोगों के घरों की छत दरक गयी है और लोग अपने घरो के आंगन व छतों में नहीं जा पाते हैं।
>
> श्रीमान जी यदि गिरवां, पतरहा व जरर में अवैध ब्लास्टिंग मानक विहीन क्रेसर संचालन, ओवर लोड परिवहन नहीं रोका गया तो हजारों की संख्या में लोग

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पलायन कर जायेगें, मौते होगीं और भयानक पर्यावरण असंतुलन पैदा होगा जिससे दैवीय आपदायें आयेगी इसलिए जल्द ही कार्यवाही सुनिश्चित करें। उपरोक्त लिखे गये पत्र के संबंध में सभी साक्ष्य संलग्न हैं।"

4. This Tribunal took cognizance and vide order dated 01.08.2023 constituted a joint committee to verify the factual position and take appropriate remedial action in accordance with law and submit factual and action taken report. The relevant part of the order reads as under:-

"...3. Prima facie, the averments made in the application raise questions relating to environment arising out of the implementation of the enactments specified in Schedule I to the National Green Tribunal Act, 2010.

4. In view of the averments made in the application, we consider it appropriate that a Joint Committee be constituted to verify the factual position and take appropriate remedial action. Accordingly, we constitute a Joint Committee comprising of representative of Director, Geology and Mining, Uttar Pradesh, State PCB and District Magistrate, Banda and direct the same to meet within one week, undertake visits to the site, look into the grievances of the applicant, associate the applicant and representative of the concerned project proponents, verify the factual position and take appropriate remedial action by following due course of law and giving opportunity of being heard to the project proponents. The Committee shall also give factual status on compliance by the Project Proponents with EC and CTE/CTO conditions and shall also report about damage caused to the houses of villagers and environment due to illegal blasting and suggest remedial measures. The State PCB will be the nodal agency for coordination and compliance.

5. Factual and Action taken Report may be submitted within one month by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Supported PDF and not in the form of Image PDF..."

5. In compliance of order dated 01.08.2023, report of the Joint Committee has been filed vide email dated 08.09.2023. The relevant part of the report is reproduced below:-

"Hon'ble National Green Tribunal, Principal Bench, New Delhi passed order on dated 01.08.2023 in the matter of

O.A. No- 422/2023, Abhishek Shukla versus State of Uttar Pradesh and others. The operative part of the order is as follows: -

X X X X

2. In compliance of direction issued by Hon'ble National Green Tribunal following members have been nominated for the said Joint Committee by the concern departments regarding compliance of above Hon'ble National Green Tribunal order: -

Sr. No	*Name*	*Designation*	*Member nominated by*
1	*Shri Umakant Tripathi*	*ADM(F/R), District - Banda*	*District Magistrate, Banda*
2	*Shri B. P. Yadav*	*Senior Mine Officer*	*Geology and Mining, Uttar Pradesh*
4	*Shri Rajendra Prasad*	*Regional Officer, U.P. Pollution Control Board,*	*UPPCB*

3. Hon'ble NGT vide order dated 01.08.2023, the Joint Committee is directed to undertake visits the site and look into the grievances of the applicant, associate the applicant and representative of the concerned project proponents, verify the factual position and take appropriate remedial action by following due course of law and giving opportunity of being heard to the project proponents. It is also directed to Committee to give factual status on compliance by the Project Proponents with EC and CTE/CTO conditions and report about damage caused to the houses of villagers and environment due to illegal blasting and suggest remedial measures.

4. The nominated Joint Committee Members has carried out the field survey on 17.08.2023 and 18.08.2023. During the field visit/ survey, the committee members interacted with the applicant, Mr. Abhishek Shukla and representative of the concerned project proponents of mining lessee and stone crusher.

5. As per information provided by Mining Officer, Banda, the following lease mining are allotted at hill of village- Jarar, Girawa and Pataraha, Tehsil- Naraini, District- Banda on identified place by applicant. Annexure-1. The issued date of Environmental Clearance (EC), Registered Lease Agreement (MM6), DGMS permission and Consent to Operate (CTO) to lease mining are given as below -

Sr N 0_	Location of mining lease	Sanctions lease area and capacity	Date of EC issued by SEIAA	Lease Agreeme nt date	Date of DGMS Permission	Date of CTO issued by UPPCB
1	2	3	4	5	6	7
1	Safdar Ali S/o Late Shri Farzand Ali, Gata No.-2450, Khanda No.-03, at Village-Jarar	Lease Area- 2.0 Hac. Capacity-20000 Cub. Mtr/ Year	05.10.2020	09.11.2020	27.04.2023	20.04.2023
2	Mumtaj Ali S/o Late Farzand Ali, Gala No.-2450, Khanda No.- 05, Village-Jarar_	Lease Area- 2.0 Hac. Capacity-20000 Cub. Mtr/ Year	05.10.2020	09.11.2020	01.06.2023	31.05.2023
3	EUREKA MINES AND MINERALS LLP, GATA No. 2451, KHAND No. 01; Village-Jarar	Lease Area- 2.5 Hac. Capacity-25000 Cub. Mtr/ Year	30.12.2021	05.01.2022	29.07.2022	06.11.2022
4	Athary Construction company (Shri Shravan Kumar Singh S/o Shri Vishnupal Singh), Gata No.-2451. Khand No.-02, at Village-Jarar	lease Area- 1.21 Hac. Capacity-12100 Cub. Mtr/ Year	06.05.2022	22.07.2022	-	05.08.2023
5	SHIVARPAN TRADING COMPANY, Gata No. 2450, Khand No. 06, Vill. Jarar	Lease Area- 2.0 1 Hac. Capacity-20000 Cub. Mtr/ Year	05.06.2023	17.04.2023	-	15.07.2023
6	Jasmit Kaur Malhotra. Gala No - 1876, Khand no- 5, Village-Girwan	Lease Area- 1.21 Hac. Capacity-12100 Cub. Mtr/ Year	23.06.2020	22.10.2020	11.04.2023	9.06.2022
7	SANGRAM SINGH. GATA No. 1876, KHAND No.-01, Village-Girwan	Lease Area- 2.02 Hac. Capacity-20200 Cub. Mtr/ Year	11.08.2022	09.11.2020	11.04.2022	16.12.2022

8	Sulabh Saxena Gata No.- 1876 (Khanda No.- 02), Village- Girwan	Lease Area- 0.8 Hac. Capacity- 8000 Cub. Mtr/ Year	08.11.2020	18.12.2020	11.06.2023	09.06.2022
9	Bajrang Road Lines (Shri Suresh Pratap Singh), Gata No.- 1876, Khand No.- 03, Village-	Lease Area- 1.41 Hac. Capacity- 14100 Cub. Mtr/ Year	14.12.2021	03.01.2022	-	03.06.2023
10	Bajrang Road Lines (Shri Suresh Pratap Singh), Gata No.- 1876, Khand No.- 04, Village- Girawan	Lease Area- 1.21 Hac. Capacity- 12100 Cub. Mtr/ Year	14122021.	03.01.2022	30.092022	03.06.2023
	BUNDELKHAND ROCKS, Gata No- 1876, (Khand No.09), Village- Girwan	Lease Area-05 Hac. Capacity-5000 Cub. Mtr/Year	07.05.2022	08.07.2022	-	26.02.2023

X X X X

6. As per information provided by Mining Officer, Banda, mining lease mention in serial number — 1, 2, 3, 6, 7, 8 and 10 have obtained DGMS permission for blasting and rest lease mining have applied for DGMS permission.

As per information provided by Mining Officer, Banda based on MM11, out of 05 mining lease on hill of village- Jarar, 04 mining lease are operational and 01 mining lease (Shivarpan Trading Company, Gata No. 2450, Khand No. 06, Vill. Jarar) is not operational. Out of 07 mining lease on hill of village- Girwan, 06 mining lease are operational and 01 mining lease (Bundelkhand Rocks, Gata No-1876, Khand No- 07), Village- Girwan) is not operational. Out of 04 mining lease on hill of village-Badokhar Khurd (Pataraha), all mining lease are operational. The production reported based on the eMM11 is given on the basis of detail provided by Mining Officer, Banda at Annexure I.

7. During the committee visit, applicant raised his allegation that blasting is carried out any time with 4 inches holes, cracks made in home due to blasting, stone pieces fall in village and farmer field, damage village road and damage the wild animal and environment, damage the temple situated on hills of village — Jarar, Girwan and Badokhar Khurd (Pataraha). It is also informed by applicant that due to generating dust during operation of stone crusher in village- Jarar (Chhaneha Purwa, Raghwapurwa), the crops are damaged and dust suppression system is not operated.

The committee interacted with the applicant & villagers and also visited the point of concerns raised in the application. It was observed by the committee during the site visit, details are given as below: -

7.1) The main habitation of village- Jarar is situated 135 meters away from the nearest allotted lease mining on hill of village- Jarar, but some houses are made near the allotted lease M/s Safdar Ali S/o Late Shri Farzand Ali, Gata No -2450, Khanda No.- 03, at Village-Jarar. Temple is situated 235 meters away from the allotted lease mining on other part of hill of village- Jarar.

7.2) The main habitation of village- Girwan is situated 175 meters away from the allotted lease (Bundelkhand Rocks, Gata No-1876, (Khand No.09, Village- Girwan), 36 meters away from the allotted lease (Sangram Singh, Gata no- 1876, Khand no. 01, Vill. Girwan), 139 meters-away from the allotted lease (Bajrang Road Lines, Gata No.- 1876, Khand No.- 03, Village- Girwan) and 90 meters away from the allotted lease (Bajrang Road Lines, Gata No.- 1876, Khand No.- 04, Village- Girwan) on hill of village- Girwan but some houses are made near the allotted lease M/s Sangram Singh, Gata no- 1876, Khand no. 01, Vill. Girwan, Bajrang Road Lines, Gata No.- 1876, Khand No.- 03, Village- Girwan.

Temple is situated 70 meters away from the allotted lease (Bundelkhand Rocks, Gata No-1876, Khand No.09, Village- Girwan). Temple is situated 53 meters away from the allotted lease mining (M/s Sangram Sigh, Gata No. 1876, Khand No. 01, Vill-Girwan) on other part of hill of village- Girwan. It is reported by Mine Officer, Banda that mining lease of M/s Sangram Sigh, Gata No. 1876, Khand No. 01, Girwan, Gata is allotted on same

hill part where temple is made but mining is not in operation.

7.3) Gaushala is situated 100 meters away from the allotted lease mining area on hill of village- Girwan.

7.4) The main habitation of village- Badokhar Khurd (Pataraha) is situated 75 meters away from the nearest allotted lease mining on hill of village- Badokhar Khurd (Pataraha), Temple is situated 100 meters away from allotted lease mining Kuwar Vinod Raja, Gata No. 332, Khand No -01, Vill. Badokhar Khurd on hill of village-Badokhar Khurd.

7.5) It was informed by the villagers to committee member during the visit that blasting work in lease area is done in any time with 4 inches holes by lessee and stone pieces are falling on his home and effected the animal and human being. But it was informed by lease holders that blasting is done in allowed time duration between 2.0 PM to 3.0 PM with one-inch holes and proper safety.

7.6) Crack in home could not been shown by applicant to committee members.

7.7) During the committee visit, stone pieces were not found in agriculture field and habitant area. The possibility of vibrations due the blasting at nearby houses of villagers and falling the stone pieces in nearby agriculture field and habitant area during blasting cannot be ruled out.

7.8) During the committee visit, Village Road was not found in

good condition due to movement of heavy vehicles

7.9) Wild animal was not appeared on hill/ lease area during committee visit.

7.10) The agricultural lands are surrounded by most of these mining lease areas and the mining activities in such close vicinity can affect the crop yield in these areas. Similarly, the boulder stones can be thrown into these crops during the blasting operations for mining.

7.11) 05 stone crushers were identified in village- Jarar (Chhaneha Purwa, Raghwapurwa), out of 5 stone crushers 4 stone crushers were found in operation and one stone crusher was found under construction.

8. From the details given at the annexure-2, it reveals that Residential area is located 17 meters from M/s Sangram Singh, Gata no- 1876, Khand no. 01, Vill. Girwan and 11 meters from M/s Bajrang Road Lines, Gata No.- 1876, Khand No.- 03, Village- Girwan, remaining all the lease areas are located within 500 m from the nearest residential area. As per the lease is allotted beyond 50 m from habitant area.

9. The public road is passing through the said mining lease area.

10. One Pond/ Lake is located in adjacent the hill of Girwan.

11. During the committee visit, excavated deep pit was found on each mining lease area. It was informed by Mining Officer, Banda and Mining Lessee to committee members that mining has been done by previous mine lease holders before re-allotment to present lessee on same place.

12. In compliance of direction issued by Hon'ble National Green Tribunal, observation of non-compliance of Environmental Clearance and CTE/CTO are given as below: -

12.1) The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to the MoEF, GoI, Lucknow, and State. Pollution Control Board

None of the mine have provided the details about the funds earmarked for environmental protection measures to UPPCB. It was informed by mining lessee that expenditure allotted in EMP head is being utilized in same purpose.

12.2) Sprinkling of water on haul roads to control dust will be ensured by the project proponent

During the visit, it is reported by lessee that arrangement for sprinkling of water through tanker on haul roads to control dust is done. Tanker was found on lease mining place.

12.3) Green belt development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO / Agriculture Department. Herbs and shrubs shall also form a part of afforestation program besides tree plantation. The company shall involve local people for plantation program. Details of year wise afforestation program including rehabilitation of mined out area shall be submitted to the Regional Office, MoEF&CC. GoI, Lucknow every year.

The proposal for tree plantation and green belt development has

been mentioned in the Environmental Management plans submitted by these mines. However, to date, no related activity has been initiated on the ground by any of the mines.

12.4) Appropriate arrangement for shelter and drinking water for the mining workers must he ensured at the mining site.

Arrangement for shelter and drinking water has been provided by lease mine.

12.5) Maintenance of village roads used for transportation of minerals are to be done by the company regularly at its own expenses. The roads shall be black topped.

None of the village road near these mining sites have been maintained and black topped by the proponents.

12.6) Ground and surface water, if any in and near the core zone (within 5.0 km of the lease) shall be regularly monitored for contamination and depletion due to mining activity and records maintained The monitoring data shall be submitted to the Regional Office, MoEF, GoI, Lucknow and U P Pollution Control Board regularly. Further, monitoring points shall be located between the mine and drainage in the direction of flow of ground water shall be set up and records maintained.

Committee found one pond/lake is located within 5 KM from these mines. The monitoring of this pond/lake has not carried out by any of the mine.

12.7) Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and records submitted to the Regional Office, MoEF&CC, GoI, Lucknow and U.P. Pollution Control Board regularly Monitoring report have not been submitted regularly to UPPCB. Some lessees have submitted compliance report and monitoring report presently.

12.8) Corporate Environmental Responsibility (CER) shall be by the project proponent and the details of the various heads of expenditure to be submitted as per the guidelines provided in the recent CER notification No. 22- 65/2017-1A.111 dated 01/05/2018. Work to be executed with installation of five hand pumps of drinking water, solar light in villages of streets, construction of two numbers of toilets at the primary school with name displayed and address and details of beneficiary and gram Pradhan along with phone number, photographs should be submitted to Directorate as well as to the district magistrate / Chief Development officers.

The details of the activities carried out by these mining projects under CSR/CER activities are found at ground during the visit. It was informed by the Mine Office, Banda that CSR/CER activities is being initiated with district administration and mining lessee.

12.9) Transportation of minerals shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of mineral/dust takes place.

During any visit of the committee, transportation was not found at the site. Hence, the status could not be verified However, in general, it has been observed covering is not being used by most of vehicle during transportation.

12.10)Hydro geological study of the area shall be reviewed by the project proponent annually. In case adverse effect on ground water quality and quantity is observed mining shall be stopped and resumed only after mitigating steps to contain any adverse impact on ground water is implemented.
No such study has been carried out by these mines.
1 2.11)The following conditions are mentioned about blasting: -
12.11.1)Controlled blasting techniques with sequential blasting shall be adopted. The blasting shall be carried out in the day time only.
12.11.2)Blast vibrations study shall be conducted and an observation report submitted to the regional office, MoE&CC, GoI, Lucknow and UPPCB within six months. The report shall also include measures for prevention of blasting associated impact on nearby houses and agricultural fields.
12.11.3) The blasting will be done only after getting the permission, from the Mining Department.
The blast vibration study reports have not been submitted by any of the mine to UPPCB. And as informed by the mining department, some mines are not obtaining approval for blasting from them.
12.12) The condition of progressive mine with 6m bench has been mentioned in the Environment Clearance and mining lease document. However, on ground no such bench/progressive mining operations were found in any of the mining project lease area.
12.13) The lease allotment was done only based on environmental clearance. Although proponent had not obtained consent under the Water (Prevention & Control of Pollution), Act 1974 and Air (Prevention and Control of Pollution), Act 1981 before the start of mining operations however the all-project proponent have obtained the consent to Operate (CTO) in present.

X X X X

21. Finding and recommendations:

21.1) The mining department can be asked to restrict the mining activities in those mines wherein the required minimum distance criteria are not meeting. If mining is allowed on allotted near vicinity of habitant, habitant will be relocated to other specific place with consultation of nearby villagers/ civil society.
21.2) The mining department can be asked to restrict the mining activities in part of hill where temple is located. If mining is permitted at this place, the temple and habitant will be relocated to other specific place with consultation of nearby villagers/ civil society/priest of temple.
21.3) The mining department can be asked to restrict the mining activities through blasting in those mines who have not taken permission by DGMS for use the blasting and mechanical instrument/machine.
21.4) The mining department can be asked to provision made for construction the main village road by DMF fund.

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21.5) UPPCB can be asked to take necessary action against the stone crusher who have not operated the dust suppression system during the operation of stone crusher.
21.6) The project proponent can be asked to maintain the village road near these mining sites.
21.7) The project proponent can be asked for blasting will be done in allowed time duration with one-inch holes and proper safety arrangement after obtaining the valid permission of the DGMS and Department of Mines.
21.8) The project proponent of mining lease and stone crusher can be asked to strictly comply with the conditions prescribed in the Environmental Clearance/ consent/ mining lease allotment letter and submit the status to the concerned authorities regularly."

6. Vide order dated 03.10.2023 this Tribunal impleaded State of Uttar Pradesh through Chief Secretary, Government of Uttar Pradesh; Principal Secretary, Environment, Forest and Climate Change Department, State of Uttar Pradesh; Director, Directorate of Geology and Mining, Uttar Pradesh; Director General of Mines Safety, Directorate General of Mines Safety, Ministry of Labour and Employment, Dhanbad, Jharkhand; Uttar Pradesh State Pollution Control Board; District Magistrate, Banda and all the 21 (twenty one) project proponents and ordered issuance of notices to them with further directions that notices be served on respondents no. 6 to 27 through the District Magistrate, Banda.

7. Vide order dated 08.02.2024 cases against each of the Project Proponents were ordered to be separated and to be separately registered as original applications so that separate proceedings are conducted for considering the question of environmental violations, verifying compliance and taking remedial measures against each of the Project Proponents separately.

8. In order to avoid duplicacy of names in the cause titles of the cases so separated, it was directed that in cases so separated name of the Project Proponent be kept at serial no.1 while preparing the memo of parties and names of other respondents be mentioned at serial no. 2 onwards. The

Registry was directed to prepare and attach memo of parties accordingly.

9. Accordingly, the cases have been separated and separate O.A. No. 295/2024 has been registered against Project Proponent- M/s Kunwar Vinod Ram.

10. Vide order dated 03.10.2023 the Director General, Mines Safety, Dhanbad, Jharkhand, Director, Geology and Mining, Uttar Pradesh and the District Magistrate, Banda were directed to look into the recommendations made by the Joint Committee in its report and take appropriate remedial steps and file action taken reports in this regard within one month.

11. Reports/responses have been filed by the Director General, Mines Safety (DGMS), Dhanbad vide email dated 01.11.2023; by District Magistrate, (DM), Banda vide email dated 21.11.2023 and by Uttar Pradesh Pollution Control Board (UPPCB) vide email dated 23.11.2023.

12. The relevant part of the report filed by DGMS, Dhanbad vide email dated 01.11.2023 is reproduced below:-

> ***"Action Taken Report in compliance of Hon'ble National Green Tribunal order dated 03.10.2023 in the matter of Original Application No. 422/2023 Abhishek Shukla Vs State of Uttar Pradesh and Others***
>
> *X X X X*
>
> *III. Action Taken by the Directorate General of Mines Safety (DGMS)*
>
> *1. The Directorate General of Mines Safety (DGMS) oversees the enforcement of the Mines Act, 1952 and the rules and regulations made therein in mines.*
> *2. The mines/leases listed under Annexure-1 of the Joint Committee's Report are covered under the Mines Act, 1952; however, the stone crushers listed under Annexure-2 are not covered under it. Hence, the Action Taken Report by DGMS is restricted to Annexure-1 of the Joint Committee's Report. Further, as per para No. 4 of the Order passed on 03.10.2023 by the Hon'ble NGT read with the para no. 21.3 and 21.7 of the Joint Committee's Report, DGMS has been directed to take necessary*

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actions and file action taken report.

3. The status of Action Taken by DGMS in respect of the mines/leases listed under Annexure-1 of the Joint Committee's Report is summarised in the table below:

Sl. No.	Name of Mine, Owner & its Location/Area	Date of Submission of Notice of opening	Status of Appointment/ Authorisation of Manager	Status of permissions granted		Remarks
				Use of HEMM without deep hole blasting	Use of HEMM with deep hole blasting	
13	Kunwar Vinod Gata No. 332, No. 01, Village Badokhar Khurd, Lease Area-1.61 Hec.	Submitted, but incomplete (surface plan of the mine not submitted and other deficiencies).	Foreman's appointment notice submitted, but without appointing mining mate.	Not Applied	Not Applied	Letter sent on 31.10.2023 to lessee, DM & DMO for stoppage of mine until compliance of the provisions mentioned.

4. The leaseholder of the mining leases mentioned at serial no. 4, 5, 11, 12, 13 and 15 of the above table had neither submitted the "Notice of Opening" of the mine, as required under Section 16 of the Mines Act, 1952 and Regulation 3 of the MMR 1961, nor appointed manager of the mine, as required under Section 17 of the Mines Act, 1952 and Regulation 34(1) of the MMR 1961. Letters were sent on 23 & 25.10.2023 to the District Magistrate and District Mining Officer of Banda district and the concerned lease holders for stoppage of all mining operations until compliance of the above provisions. However, subsequently the leaseholder at serial no. 5 has submitted Notice of Opening of the mine on 26.10.2023 with intended date of opening as 26.11.2023, enclosing therewith notice of appointment of foreman/manager, but online application for manager's authorisation is still pending. Letter has been sent to the lessee on 31.10.2023 directing him for online registration of mine (LIN & Mine Code generation) and submitting online application for manager's authorisation. Similarly, the leaseholder at serial no. 13 has submitted Notice of Opening of the mine on 25.10.2023 without surface plan and appointment of mining mate. Letter has been sent to the lessee (endorsing copy thereof to the District Magistrate and District Mining Officer of Banda district) on 31.10.2023 directing him to submit all relevant documents/details and thereafter to do online registration of mine and submit online application for manager's authorisation. He has also been directed to stop all mining operations until compliance of the above provisions.

5. The leaseholder of the mining lease mentioned at serial no. 2 of the above table has not appointed manager after resignation submitted by his previous manager on 19.06.2023. Letter has been sent to the concerned leaseholder endorsing copy thereof to the District Magistrate and District Mining Officer of Banda district

for stoppage of all mining operation until compliance of the above provision.

6. The online application submitted by the mine owner at serial no. 10 in the above table for grant of Manager's Authorisation has been rejected on 23.10.2023 as the Mate's certificate which was submitted with the application was not valid. Letter has been sent to the mine owner endorsing copy thereof to the District Magistrate and District Mining Officer of Banda district for stoppage of mining operation until compliance of the above provision.

7. Based on the online applications made by the respective mine owners, the mining leases mentioned at serial no. 1, 6 and 7 of the above table have been granted permission under Regulation 106(2)(b) of the MMR 1961 for use of Heavy Earth Moving Machinery (HEMM) without deep hole blasting in their mines.

8. Online application was made by the owner of the mining lease mentioned at serial no. 3 of the table for granting permission under Regulation 106(2)(b) of the MMR 1961 for use of HEMM with deep hole blasting by using holes of diameter 100 mm; however, he has been granted permission for use of HEMM without deep hole blasting by using shot holes of depth not exceeding 3m and diameter not exceeding 100 mm.

9. Permission for deep hole blasting under Regulation 106(2)(b) and permission for use of SME/SMS/ANFO explosives under Regulation 155(1) & 162(5) of MMR, 1961 has not been granted in any of the mining leases mentioned at serial no. 1 to 16 of the above table.

10. Permission under Regulation 164(1B) of MMR, 1961 for blasting within danger zone of 300 m from any permanent building or structure of permanent nature, not belonging to the owner of the mine, by using more than 2 kg of aggregate maximum explosive charge in all holes fired at one time or more than 2 kg of maximum explosive charge in each hole where blasting is done with delay detonators or other means and that there is a delay of at least half a second between successive shots fired, has not been granted in any of the mining leases mentioned at serial no. 1 to 16 of the above table.

11. In the authorisations/letters for manager appointment issued to the owners of mining leases mentioned at serial no. 8, 9, 14 and 16 of the above table, the conditions for prohibiting use of HEMM & deep hole blasting, SME/SMS/ANFO explosives and explosives in excess of quantity mentioned under para 10 unless separate permission under Regulations 106(2)(b), 155(1) & 162(5) and 164(1B) respectively of MMR, 1961 is obtained have been clearly stipulated.

12. The above status of action taken is updated upto 31.10.2023."

13. The relevant part of the report filed by DM, Banda vide email dated 21.11.2023 is reproduced below:-

"माननीय राष्ट्रीय हरित अधिकरण नई दिल्ली द्वारा दिनांक 03.10.2023 को पारित

आदेश के अनुपालन में की गयी कार्यवाही का विवरण निम्नवत् हैः-

1. माननीय एन०जी०टी० के आदेश के बिन्दु संख्या-3 के अनुपालन में कमांक 01 से 04 एवं 06 से 27 पर अंकित खनन पट्टा धारक/स्टोन क्रशर इकाई धारक को माननीय राष्ट्रीय हरित अधिकरण नई दिल्ली द्वारा दिनांक 03.10.2023 को पारित आदेश के अनुपालन में निर्धारित समयावधि में अपना पक्ष प्रस्तुत किये जाने हेतु पत्र कार्यालय जिलाधिकारी, बॉदा (खनिज अनुभाग) के पत्रांक 691/ खनिज-30, बाँदा दिनांक 19.10.2023 द्वारा प्रेषित किया गया है। पत्र की छायाप्रति संलग्न है।

2. माननीय राष्ट्रीय हरित अधिकरण नई दिल्ली द्वारा दिनांक 03.10.2023 को पारित आदेश के बिन्दु संख्या-4 के अनुपालन में संयुक्त जॉच कमेटी की निरीक्षण आख्या में दिये गये रिकमन्डेशन पर कार्यवाही किये जाने हेतु कार्यालय जिलाधिकारी, बॉदा (खनिज अनुभाग) के पत्रांक 690 / खनिज-30, बाँदा दिनांक 19.10.2023 द्वारा निम्नलिखित सदस्यों की कमेटी का गठन किया गयाः-

1. उपजिलाधिकारी नरैनी।
2. क्षेत्रीय अधिकारी, उ०प्र० प्रदूषण नियन्त्रण बोर्ड, बॉदा।
3. अधिशाषी अभियन्ता, लोक निर्माण विभाग, प्रान्तीय खण्ड- 2, बॉदा।
4. खान अधिकारी / खान निरीक्षक, बॉदा।

3- माननीय राष्ट्रीय हरित अधिकरण नई दिल्ली द्वारा दिनांक 03.10.2023 को पारित आदेश अनुपालनार्थ माननीय राष्ट्रीय हरित अधिकरण नई दिल्ली द्वारा दिनांक 01.08.2023 को पारित आदेश के अनुपालन में माननीय एन०जी०टी० में दाखिल संयुक्त जॉच कमेटी की निरीक्षण आख्या में दिये गये रिकमन्डेशन के कम में कार्यालय जिलाधिकारी, बॉदा (खनिज अनुभाग) के पत्रांक 690/खनिज-30, बाँदा दिनांक 19.10.2023 द्वारा गठित कमेटी द्वारा खनन स्थल का निरीक्षण दिनांक 17.11.2023 को किया गया।

4- माननीय एन०जी०टी० में दाखिल संयुक्त जॉच कमेटी की निरीक्षण आख्या में दिये गये रिकमन्डेशन के कम में बिन्दुवार कृत कार्यवाही का विवरण निम्नवत् हैः-

क्रम सं०	संयुक्त जॉच कमेटी की निरीक्षण आख्या में दिये गये रिकमन्डेशन	अनुपालनार्थ कार्यवाही का विवरण
21.1	*The mining department can be asked to restrict the mining activities in those mines wherein the required minimum distance criteria are not meeting. If mining is allowed on allotted near vicinity of habitant, habitant will be relocated to other specific place with consultation of villagers/*	1. ग्राम-जरर, तहसील-नरैनी, जनपद-बॉदा स्थित पहाड़ी पर कुल 5 खनन पट्टो को खनन विभाग द्वारा माइनिंग लीस आवंटित की गयी है, जिसमें ग्राम-जरर की मुख्य आबादी मैसर्स सफदर अली पुत्र स्व० श्री फरजन्द अली, गाटा नं0-2450, खण्ड नं0-03 ग्राम-जरर, जनपद-बॉदा से 135 मी० की दूरी पर स्थित है परन्तु खनन पट्टे के समीप 05 कच्चे मकान निर्मित पाये गये, जिसे नियमानुसार विस्थापित किये जाने की कार्यवाही प्रचलित है। शेष अन्य 4 खनन पट्टों से मुख्य आबादी

	civil society.	50 मी० से अधिक दूरी पर स्थित है। 2. ग्राम—गिरवा, तहसील-नरैनी, जनपद-बाँदा स्थित पहाड़ी पर कुल 7 खनन पट्टो को खनन विभाग द्वारा माइनिंग लीस आवंटित की गयी है, जिसमें ग्राम--गिरवा की आबादी मैसर्स संग्राम सिंह, गाटा नं0-1876, खण्ड नं0-01 ग्राम-गिरवा, जनपद- बाँदा से 36 मी० की दूरी पर स्थित है। मैसर्स बजरंग रोड लाइन (सुरेन्द्र प्रताप सिंह), गाटा नं0- 1876, खण्ड नं0- 03 ग्राम- गिरवा, जनपद- बाँदा से 15 मी0 की दूरी पर स्थित है। वर्तमान में आबादी अधिक होने के दृष्टिगत आबादी को विस्थापित कराये जाने की कार्यवाही किया जाना उचित नहीं है। ऐसी स्थिति में शासन / निदेशालय से दिशा-निर्देश प्राप्त कर खनिज नियमावली में अनुमन्य आबादी की दूरी तक खनन पट्टे का क्षेत्रफल कम किये जाने की कार्यवाही किया जाना नियमानुसार उचित प्रतीत होता है। शेष अन्य 5 खनन पट्टों से मुख्य आबादी 50 मी0 से अधिक दूरी पर स्थित है। 3. ग्राम- बडोखर खुर्द, तहसील-नरैनी, जनपद- बाँदा स्थित पहाड़ी पर कुल 4 खनन पट्टो को खनन विभाग द्वारा माइनिंग लीस आवंटित की गयी है। सभी खनन पट्टे खनिज नियमावली में अनुमन्य आबादी की दूरी से अधिक दूरी पर स्थित है।
21.2	*The mining department can be asked to restrict the mining activities in part of hill where temple is located. If mining is permitted at this place, the temple and habitant will be relocated to other specific place with consultation of nearby villagers/ civil society/priest of temple.*	1. ग्राम- जरर, तहसील- नरैनी, जनपद- बाँदा स्थित पहाड़ी पर कुल 5 खनन पट्टो को खनन विभाग द्वारा माइनिंग लीस आवंटित की गयी है। ग्राम- जरर की पहाड़ी पर स्थित मंदिर से निकटतम खनन पट्टा मैसर्स सफदर अली पुत्र स्व० श्री फरजन्द अली, गाटा नं0- 2450, खण्ड नं0- 03 ग्राम- जरर, जनपद- बाँदा से 235 मी० की दूरी पर स्थित है। शेष अन्य 4 खनन पट्टे मंदिर से 340 मी० से अधिक की दूरी पर स्थित है। उपरोक्त सभी पट्टे मानक के अनुसार है परन्तु ग्रामीण आस्था को देखते हुये मंदिर परिसर के आस-पास कोई नया खनन पट्टा दिया जाना उचित नही है।

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		2. ग्राम गिरवां, तहसील- नरैनी, जनपद- बाँदा स्थित पहाड़ी पर कुल 7 खनन पट्टो को खनन विभाग द्वारा माइनिंग लीस आवंटित की गयी है। ग्राम- गिरवां की पहाड़ी पर स्थित मंदिर से निकटतम खनन पट्टा मैसर्स संग्राम सिंह, गाटा नं0- 1876, खण्ड नं0- 01 ग्राम- गिरवा, जनपद- बाँदा से 85 मी० की दूरी पर स्थित है। शेष अन्य 6 खनन पट्टे मंदिर से 100 मी0 से अधिक की दूरी पर स्थित है। उपरोक्त सभी पट्टे मानक के अनुसार है परन्तु ग्रामीण आस्था को देखते हुये मंदिर परिसर के आस-पास कोई नया खनन पट्टा दिया जाना उचित नही है। 3. ग्राम- बडोखर खुर्द, तहसील नरैनी, जनपद- बाँदा स्थित पहाड़ी पर कुल 4 खनन पट्टो को खनन विभाग द्वारा माइनिंग लीस आवंटित की गयी है। ग्राम- बडोखर खुर्द की पहाड़ी पर स्थित मंदिर से निकटतम खनन पट्टा मैसर्स कुँवर विनोद राजा, गाटा नं0- 332, खण्ड नं0-01 ग्राम बडोखर खुर्द, जनपद- बाँदा से 100 मी० की दूरी पर स्थित है। शेष अन्य 6 खनन पट्टे भी मंदिर से 100 मी० से अधिक की दूरी पर स्थित है। उपरोक्त सभी पट्टे मानक के अनुसार है परन्तु ग्रामीण आस्था को देखते हुये मंदिर परिसर के आस-पास कोई नया खनन पट्टा दिया जाना उचित नहीं है।
21.3	*The mining department can be asked to restrict the mining activities through blasting in those mines who have not taken permission by DGMS for use the blasting and mechanical instrument / machine.*	डारेक्टर जनरल माइन्स ऑफ सेफ्टी, डारेक्ट्रेट जनरल ऑफ माइन्स सेफ्टी, मिनिट्री ऑफ लेवर एण्ड इमप्लायमेंट, धनवाद, झारखण्ड से ब्लास्टिंग सम्बन्धी लाइसेन्स प्राप्त कर ब्लास्टिंग द्वारा खनन कार्य किये जाने हेतु नोटिस खनन विभाग बाँदा के पत्रांक-820 दिनांक 02.11.2023 समस्त पट्टा धारक को प्रेषित किया गया है।

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21.4	*The mining department can be asked to provision made for construction the main village road by DMF fund.*	ग्राम- जरर स्थित लिंक रोड का निर्माण डी०एम०एफ० फण्ड से कराये जाने हेतु मार्ग का सर्वेक्षण जांच की तिथि को समिति द्वारा किया गया एवं उसे बनाने हेतु प्रस्ताव तैयार किये जाने की कार्यवाही अधिशाषी अभियन्ता, लोक निर्माण विभाग, प्रान्तीय खण्ड- 2, बाँदा द्वारा किया जाना प्रक्रियाधीन है।
X	X	X X
21.6	*The project proponent can be asked to maintain the village road near these mining sites.*	खनन स्थल के समीप के रोड को मैनटेन किये जाने हेतु खनन विभाग बाँदा के पत्रांक-834 दिनांक 03.11.2023 द्वारा पत्र समस्त पट्टा धारक को प्रेषित किया गया है।
21.7	*The project proponent can be asked for blasting will be done in allowed time duration with one-inch holes and proper safety arrangement after obtaining the valid permission of the DGMS and Department of Mines.*	डारेक्टर जनरल माइन्स ऑफ सेफ्टी, डारेक्ट्रेट जनरल ऑफ माइन्स सेफ्टी, मिनिट्री ऑफ लेवर एण्ड इमप्लायमेंट, धनवाद, झारखण्ड द्वारा जारी परमीशन के अनुसार खनन हेतु ब्लास्टिंग का कार्य किये जाने तथा ब्लास्टिंग का कार्य निर्धारित समयावधि में किये जाने हेतु खनन विभाग बाँदा के पत्रांक-820 दिनांक 02.11.2023 द्वारा पत्र समस्त पट्टा धारक को प्रेषित किया गया है।
21.8	*The project proponent of mining lease and stone crusher can be asked to strictly comply with the conditions prescribed in the Environmental Clearance consent/ mining lease allotment letter and submit the status to the concerned authorities regularly.*	X X X X राज्य स्तरीय पर्यावरणीय संघात निर्धारण प्राधिकरण, उ०प्र०, द्वारा जारी पर्यावरणीय स्वीकृति तथा उ०प्र० प्रदूषण नियंत्रण बोर्ड द्वारा जारी सहमति (जल एवं वायु) आदेश में अंकित शर्तों का अनुपालन किये जाने हेतु, उ०प्र० प्रदूषण नियन्त्रण बोर्ड, बाँदा के पत्र दिनांक 14.11.2023 द्वारा ग्राम- जरर, गिरवा एवं बडोखर खुर्द स्थित समस्त खनन पट्टा धारक को नोटिस प्रेषित किया गया है।

14. The relevant part of the report filed by UPSPCB vide email dated 23.11.2023 is reproduced below:-

"Uttar Pradesh Pollution Control Board response in compliance of order dated 03.10.2023 passed by Hon'ble

National Green Tribunal, New Delhi in the matter of O.A. No-422/2023Abhishek Shukla Vs State of Uttar Pradesh and Others

X X X X

4. That it is submitted that as per the Joint Committee report, 16 mining lease of Village- Jarar, Girwan and Badokhar Khurd, Tehsil- Naraini, District- Banda, were awarded after issuance of environmental clearance. During joint survey, these mining lease holders had not obtained consent to operate (CTO) under the Water (Prevention & Control of Pollution), Act 1974 and Air (Prevention and Control of Pollution), Act 1981 before the start of mining operation. But before submitting the Joint Committee Inspection report, all 16-mining lease holder had obtained the Consent to Operate (CTO). Notices are also issued to each Lease Holder to comply the conditions of Environmental Clearance and Consent to Operate (CTO) vide letter dated 14.11.2023. The copy of Notices dated 14.11.2023 are enclosed herewith and marked as Annexure- 3."

15. Vide order dated 24.11.2023 the Mining Department and the District Magistrate Banda were granted time to file reply and the mining lease holders were directed to cease and desist from carrying out any mining by way of blasting without obtaining requisite permission from DGMS, Dhanbad and in violation of environmental norms prescribing siting criteria.

16. Reports have been filed by DM, Banda vide email dated 04.12.2023 and by Mining Department, U.P. vide email dated 05.12.2023.

17. The relevant part of report filed by the DM, Banda vide email dated 04.12.023 reads as under:

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विषय: मा० राष्ट्रीय हरित अधिकरण, नई दिल्ली में योजित ओ०ए० नं0-422/2023 अभिषेक शुक्ला बनाम उ०प्र० राज्य व अन्य में पारित आदेश दिनांक *24.11.2023* के अनुपालन के सम्बन्ध में।

X X X X X

उक्त के सम्बन्ध में अनुपालन आख्या निम्नवत है :-

(1). 11 खनन पट्टाधारको, जिनके द्वारा खान सुरक्षा महानिदेशालय परिक्षेत्र वाराणसी से ब्लास्टिंग की अनुमति प्राप्त नही की गयी है, जिन्हे **कार्यालय आदेश सं0-1046/खनिज-30, बांदा दिनांक *30.11.2023* (संलग्नक-05)** द्वारा निर्देशित किया गया है कि खान सुरक्षा महानिदेशालय परिक्षेत्र वाराणसी से परमीशन प्राप्त किये बिना ब्लास्टिंग द्वारा खनन कार्य न

किया जाय तथा मा० अधिकरण के आदेशो का अक्षरशः अनुपालन किया जाना सुनिश्चित किया जाय, जिनका विवरण निम्नवत है :-

क्रम सं0	पट्टाधारक का नाम व पता	तहसील	खनन क्षेत्र	गाटा संख्या	रकबा (हे० में)	पट्टा अवधि
1	2	3	4	5	6	7
1.	श्री मुमताज अली पुत्र स्व० श्री फरजन्द अली निवासी नु०-खूंटी चौराहा, अलीगंज, शहर व जिला बांदा	नरैनी	जरर	2450 (खण्ड सं०-5)	2.00	09.11.2020 से. 08.11.2030 तक
2.	मेसर्स अथर्व कांस्ट्रक्शन कम्पनी प्रो० श्री श्रवण कुमार सिंह पुत्र श्री विष्णुपाल सिंह निवासी प्लाट नं0-03, आशुतोष हाउसिंग सोशायटी रामपुरम फेस-1, दहेली सुजानपुर, जिला कानपुर नगर पिनकोड-208013	नरैनी	जरर	2451 (खण्ड सं०-2)	1.21	22.07.2022 से 21.07.2032 तक
3.	मेसर्स शिर्वापन ट्रेडिंग कम्पनी प्रो० श्री लवलेश सिंह पुत्र श्री 3. लोचन सिंह निवासी मु०-कालूकुआं, बबेरू रोड, तहसील व जिला बांदा	नरैनी	जरर	2450 (खण्ड सं०-06)	2.00	14.07.2023 से 13.07.2033 तक
4.	मे० सुलभ सक्सेना पहाड़ी पट्टेदार प्रो० श्री सुलभ सक्सेना पुत्र श्री सूरजसहाय सक्सेना निवासी मो० गांधीनगर महोबा, तहसील व जिला महोबा	नरैनी	गिरवां	1876 (खण्ड सं०-02)	0.80	18.12.2020 से 17.12.2030 तक
5.	श्री बजरंग रोड लाइन्त पार्टनर श्री सुरेश प्रताप सिंह पुत्र श्री तेज प्रताप सिंह निवासी ग्राम व पोस्ट-मऊ, 584, कटरा लालगंज, तहसील गौरीगंज, जिला अमेठी	नरैनी	गिरवां	1876 (खण्ड सं०-04)	1.21	03.01.2022 से 02.01.2032 तक
6.	मेसर्स बुन्देलखण्ड रॉक्स प्रो० श्रीमती दीपाली सिंह पत्नी श्री के०पी० सिंह निवासी-आर्शीवाद पैलेस, नयापुरा नैकाना, तहसील गिरवां व जिला महोबा	नरैनी	गिरवां	876 ((खण्ड सं०-09)	0.50	08.07.2022 से 07.07.2032 तक
7.	मेसर्स बुन्देलखण्ड रॉक्स प्रो० श्रीमती दीपाली सिंह पत्नी श्री के०पी० सिंह निवासी-आर्शीवाद पैलेस, नयापुरा नैकाना, तहसील व जिला महोबा	नरैनी	गिरवां	1876 (खण्ड सं0-07)	0.80	12.05.2023 से 11.05.2033 तक
8.	श्री कुँवर विनोद राजा पुत्र स्व० श्री रामकृपाल सिंह निवासी-एम०आई०जी०बी०, 74 बी०एस०एन०एल० टॉवर के	नरैनी	बड़ोखर खुर्द	332 (खण्ड सं0-01)	1.61	01.03.2021 से 28.02.2031 तक

	पास, इंदिरा नगर, बांदा					
9.	मे० दिशा इन्टर प्राइजेज प्रो० श्रीमती सुधा सिंह पत्नी श्री सुनील सिंह निवासी-नोनिया मुहाल छाबी तालाब, शहर व जिला-बांदा।	नरैनी	बड़ोखर खुर्द	332 (खण्ड सं०-2)	1.61	05.11.2020 से 04.11.2030 तक
10.	मे० मां विंध्यवासिनी स्टोन वर्क्स प्रो० श्री समीर सिंह पुत्र श्री फूल 10. सिंह निवासी मु०- सिविल लाइन डी०एम० कालोनी, थाना कोतवाली नगर, जिला बांदा	नरैनी	बड़ोखर खुर्द	332 (खण्ड सं०-5)	0.40	04.01.2020 से 03.01.2030 तक
11.	श्री दीपक सिंह पुत्र श्री रामपाल सिंह निवासी अकबरपुर बांदा रोड, भरतकूप, तहसील कर्वी, जिला चित्रकूट	नरैनी	बड़ोखर खुर्द	332 (खण्ड सं०-03)	0.56	25.11.2020 से 24.11.2030 तक

(2). 02 खनन पट्टाधारकों, जिनके द्वारा खान सुरक्षा महानिदेशालय परिक्षेत्र वाराणसी ब्लास्टिंग की अनुमति प्राप्त है, जिन्हे कार्यालय आदेश सं0-1048/खनिज-30, बांदा दिनांक 30.11.2023 (संलग्नक-06) द्वारा निर्देशित किया गया है कि प्राप्त परमीशन के अनुसार ब्लास्टिंग द्वारा खनन कार्य किया जाय तथा मा० अधिकरण के आदेशो का अक्षरशः अनुपालन किया जाना सुनिश्चित किया जाय, जिनका विवरण निम्नवत है :-

क्रम सं0	पट्टाधारक का नाम व पता	तहसील	खनन क्षेत्र	गाटा संख्या	रकबा (हे० में)	पट्टा अवधि
1	2	3	4	5	6	7
1	श्रीमती जसमीत कौर मल्होत्रा पत्नी श्री रसमीत सिंह मल्होत्रानिवासी-नेहरू वार्ड, अलका टाकीज के पास, तह० पिपरिया, जिला होशंगाबाद (म०प्र०)।	नरैनी	गिरवां	1876 (खण्ड सं0-5)	1.21	22.10.2020 से 21.10.2030 तक
2	मे० यूरेका माइन्स एण्ड मिनरल्स एल०एल०पी० पार्टनर श्री चन्द्रशेखर चौरसिया पुत्र श्री दीनदयाल चौरसिया निवासी-28, ब्रम्हपुरी कालोनी नियर जुगती क्रासिंग, फैजाबाद रोड, जिला नरैनी लखनऊ तथा श्री हिमांशु मीणा पुत्र श्री रामजीलाल मीणा निवासी नीदड, हर्माडा, जयपुर (राजस्थान)	नरैनी	जरर	2451 (खण्ड सं0-01)	2.50	05.01.2022 से 04.01.2032 तक

(3). 03 खनन पट्टाधारकों के सम्बन्ध में कमेटी द्वारा प्रस्तुत आख्या दिनांक 17.11.2023 द्वारा उपरोक्त खनन पट्टा क्षेत्र को नजदीक स्थित आबादी के निकट पाया है। ऐसी स्थिति में

कार्यालय आदेश सं0-1047/खनिज-30, बांदा दिनांक 30.11.2023 (संलग्नक-07) द्वारा उक्त खनन पट्टा क्षेत्र से खनन/परिवहन का कार्य मा० राष्ट्रीय अधिकरण, नई दिल्ली द्वारा पारित उपरोक्त आदेश दिनांक 24.11.2023 के अनुपालन में अग्रिम आदेशो तक प्रतिबन्धित किया गया है तथा निर्देशित किया जाता है कि अपने खनन क्षेत्र में खनन संक्रियायें प्रत्यक्ष अथवा अप्रत्यक्ष रूप से किसी भी दशा में न किया जाय एवं मा० अधिकरण के आदेशो का अक्षरशः अनुपालन किया जाना सुनिश्चित किया जाय, जिनका विवरण निम्नवत है :-

क्रम सं0	पट्टाधारक का नाम व पता	तहसील	खनन क्षेत्र	गाटा संख्या	रकबा (है० में)	पट्टा अवधि
1	2	3	4	5	6	7
1	श्री सफदर अली पुत्र स्व० श्री फरजन्द अली निवासी मु०-खूंटी चौराहा, अतीगंज, शहर व जिला बांदा	नरैनी	जरर	2450 (खण्ड सं०-3)	2.00	09.11.2020 से 08.11.2030 तक
2	श्री बजरंग रोड लाइन्स पार्टनर श्री सुरेश प्रताप सिंह पुत्र श्री तेज प्रताप सिंह निवासी ग्राम व पोस्ट-मऊ, 584, कटरा लालगंज, तहसील गौरीगंज, जिला अमेठी	नरैनी	गिरवा	1876 (खण्ड सं0-3)	1.41	03.01.2022 से 02.01.2032 तक
3	श्री संग्राम सिंह पुत्र श्री जयवन्त सिंह निवासी ग्राम-पहरा तहसील व जिला महोबा।	नरैनी	गिरवा	1876 (खण्ड सं0-1)	2.02	09.11.2020 से 08.11.2030 तक

अतः उपरोक्तानुसार अनुपालन आख्या प्रेषित है।"

18. In the report filed by Uttar Pradesh Mining Department vide email dated 05.12.2023 reference has been made to letter dated 04.12.2023 relevant part of which is reproduced below:-

"विषयः-ओ०ए० संख्या-*422* वर्ष *2023* अभिषेक शुक्ला बनाम उत्तर प्रदेश राज्य व अन्य में मा० राष्ट्रीय हरित अधिकरण, नई दिल्ली द्वारा पारित आदेश दिनांक *03.10.2023* के सम्बन्ध में।

महोदय,

उपरोक्त विषयक रजिस्ट्रार, मा० राष्ट्रीय हरित अधिकरण, नई दिल्ली को सम्बोधित तथा शासन व निदेशालय को पृष्ठांकित अपने पत्र संख्या-*970/* खनिज-*30* बांदा दिनांक *21.11.2023* का सन्दर्भ ग्रहण करें जिसके साथ ओ०ए० संख्या-*422* वर्ष *2023* अभिषेक शुक्ल शुक्ला बनाम उत्तर प्रदेश राज्य व अन्य में मा० राष्ट्रीय हरित

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अधिकरण, नई दिल्ली द्वारा पारित आदेश दिनांक *03.10.2023* के बिन्दु संख्या-*4* के अनुपालन में आपके द्वारा गठित जनपद स्तरीय समिति द्वारा प्रस्तुत अनुपालन आख्या / कृत कार्रवाई रिपोर्ट (*Action Taken Report)* दिनांक *17.11.2023* प्रेषित किया गया है।

मा० राष्ट्रीय हरित अधिकरण के आदेश दिनांक *01.08.2023* द्वारा गठित संयुक्त समिति द्वारा प्रस्तुत आख्या में *Finding and Recommendations* से सम्बन्धित बिन्दु संख्या-*21.1* के क्रम में जनपद स्तरीय समिति द्वारा प्रस्तुत उक्त अनुपालन आख्या/कृत कार्रवाई रिपोर्ट (*Action Taken Report)* दिनांक *17.11.2023* के बिन्दु संख्या-*2* में उल्लेख किया गया है कि:-

"ग्राम-गिरवॉ, तहसील-नरैनी, जनपद-बांदा स्थित पहाड़ी पर कुल *7* खनन पट्टो को खनन विभाग द्वारा माइनिंग लीज आवंटित की गयी है, जिसमें ग्राम गिरवॉ की आबादी मैसर्स संग्राम सिंह, गाटा नं*0-1876,* खण्ड नं*0-01* ग्राम- गिरवॉ, जनपद-बॉदा से *36* मी० की दूरी पर स्थित है। मैसर्स बजरंग रोड लाइन (सुरेन्द्र प्रताप सिंह), गाटा नं*0-1876,* खण्ड नं*0- 03* ग्राम गिरवॉ, जनपद- बॉदा से *15* मी० की दूरी पर स्थित है। वर्तमान में आबादी अधिक होने के दृष्टिगत आबादी को विस्थापित कराये जाने की कार्यवाही किया जाना उचित नहीं है। ऐसी स्थिति में शासन/निदेशालय से दिशा-निर्देश प्राप्त कर खनिज नियमावली में अनुमन्य आबादी की दूरी तक खनन पट्टे का क्षेत्रफल कम किये जाने की कार्यवाही किया जाना नियमानुसार उचित प्रतीत होता है। शेष अन्य *5* खनन पट्टों से मुख्य आबादी *50* मी*0* से अधिक दूरी पर स्थित है।"

इस सम्बन्ध में अवगत कराना है कि उ०प्र० उपखनिज (परिहार) नियमावली-*2021* के *Rule-42(e)* में उल्लिखित प्राविधान निम्नवत् हैं:-

"No mining operation shall be carried out on at or to any point within a distance 50 meters from any railway line except with the previous written permission of the Railway Administration concern, or from any reservoir, canal or other public works, such as public roads and buildings or inhabited site except with the previous written permission of the District Officer or any other officer authorised by the State Government in this behalf and otherwise than in accordance with such instructions and conditions either general or special, which may be attached to such permission. The said distance of 50 metres shall be measured in case of railway, reservoir, canal or road horizontally from the outer toe of the bank or the other edge of the cutting, as the case may be, and in case of a building horizontally from plinth thereof.
Provided that the distance in the case of a village road shall be 10 metres from the outer edge of the cutting. "

अतः उपरोक्त प्रकरण में नियमावली-*2021* के उक्त *Rule-42(e)* में उल्लिखित प्राविधानों के अन्तर्गत आवश्यक कार्यवाही करने का कष्ट करें।"

19. Vide order dated 08.02.2024 DGMS was directed to file a complete up-to

date status report regarding compliance by all the 16 mining leases within one month and the Director, Mining and Geology, Uttar Pradesh was directed to take appropriate steps for implementation of the recommendations made by the Joint Committee and cancellation of the leases granted in violation of the siting criteria prescribed in the rules and file action taken report within one month. The Director, Mining and Geology, Uttar Pradesh was also directed to ensure that mining leases violative of siting norms and also mining leases not having requisite permissions for blasting be closed and the concerned mining lessees be not allowed to carry out any mining in the same till further orders.

20. The relevant part of the report filed by DM, Banda vide email dated 13.03.2024 is reproduced below:-

"विषय : मा० राष्ट्रीय हरित अधिकरण, नई दिल्ली में योजित ओ०ए० नं0-422/2023 अभिषेक शुक्ला बनाम उ०प्र० राज्य व अन्य में पारित आदेश दिनांक 08.02.2024 के अनुपालन के सम्बन्ध में।

महोदय,

कृपया उपर्युक्त विषयक मा० राष्ट्रीय हरित अधिकरण, नई दिल्ली में योजित ओ०ए० नं0-422 / 2023 अभिषेक शुक्ला बनाम उ०प्र० राज्य व अन्य में पारित आदेश दिनांक 08.02.2024 का मुख्य अंश निम्नवत है :-

मा० राष्ट्रीय हरित अधिकरण, नई दिल्ली द्वारा पारित उपरोक्त आदेश दिनांक 08.02.2024 के क्रम में अनुपालन आख्या बिन्दुवार निम्नवत है :-

1. उपरोक्त वाद में मा० न्यायाधिकरण द्वारा पारित आदेश दिनांक 24.11.2023 के क्रम में 03 खनन पट्टाधारको के सम्बन्ध में गठित कमेटी द्वारा प्रस्तुत आख्या दिनांक 17.11.2023 के दृष्टिगत उपरोक्त खनन पट्टा क्षेत्र को नजदीक स्थित आबादी के निकट पाये जाने के कारण **कार्यालय आदेश सं0-1047 / खनिज-30, बाँदा दिनांक 30.11.2023 (संलग्नक-01)** द्वारा उक्त खनन पट्टा क्षेत्रो से खनन / परिवहन का कार्य अग्रिम आदेशों तक प्रतिबन्धित किया गया।

2. उपरोक्त वाद में मा० न्यायाधिकरण द्वारा पारित आदेश दिनांक 03.10.2023 के क्रम में निदेशक, भूतत्व एवं खनिकर्म निदेशालय, उ०प्र०, लखनऊ के पत्र सं0-1461/एम०-एन०जी०टी० वाद/2023 दिनांक 04.12.2023 **(संलग्नक-02)** द्वारा प्रश्नगत प्रकरण में उ०प्र० उपखनिज (परिहार) नियमावली-2021 के नियम-42 *(e)* में उल्लिखित प्रावधानों के अन्तर्गत कार्यवाही किये जाने के निर्देश दिये गये, जिसके क्रम में कार्यालय आदेश सं0-245/ खनिज-30, बाँदा दिनांक 30.01.2024 द्वारा

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कमेटी का गठन करते हुये प्रकरण की संयुक्त जांच कर आख्या उपलब्ध कराने हेतु निर्देशित किया गया। उक्त के क्रम में गठित कमेटी द्वारा उपरोक्त खनन पट्टा क्षेत्रो की जांच दिनांक 20.02.2024 को की गयी तथा संयुक्त जांच आख्या सं0-572/ खनिज-30, बाँदा दिनांक 23.02.2024 प्रस्तुत किया गया, जिसमें प्रश्नगत खनन पट्टा क्षेत्रो हेतु आबादी से निकट 50 मीटर क्षेत्र में आ रहे रकबा को छोड़कर शेष रकबा भूक्षेत्र पर खनन / परिवहन किये जाने हेतु आख्या प्रस्तुत की गयी।

3. उपरोक्त समस्त तथ्यो को दृष्टिगत रखते हुये कार्यालय आदेश सं0-1047/खनिज-30 बाँदा दिनांक 30.11.2023 द्वारा उक्त 03 खनन पट्टा क्षेत्रो पर खनन / परिवहन हेतु लगे प्रतिबन्ध को हटाते हुये कार्यालय आदेश सं0-768/ खनिज-30 बाँदा दिनांक 11.03.2024 **(संलग्नक-03).** कार्यालय आदेश सं0-769/ खनिज-30 बाँदा दिनांक 11.03.2024 **(संलग्नक-04)** व कार्यालय आदेश सं0-770/खनिज-30 बाँदा दिनांक 11.03.2024 **(संलग्नक-05)** द्वारा प्रश्नगत खनन क्षेत्रो हेतु आबादी से निकट 50 मीटर क्षेत्र में आ रहे रकबा को छोड़कर / प्रतिबन्धित करते हुये शेष रकबा भूक्षेत्र पर संशोधित जियोकोआर्डिनेट्स के अनुसार खनन / परिवहन कार्य करने की अनुमति प्रदान की गयी।
अतः उपरोक्तानुसार अनुपालन आख्या प्रेषित है।"

21. The relevant part of the report filed by DGMS, Dhanbad vide email dated 14.03.2024 is reproduced below:-

"Updated Action Taken Report on behalf of Director General of Mines Safety, in compliance of order dated 03.10.2023, 15.01.2024 and 08.02.2024 passed by the Hon'ble National Green Tribunal, Principal Bench, New Delhi in Original Application No. 422/2023 Abhishek Shukla Vs State of Uttar Pradesh and Others

X X X X X

III. Action Taken by the Directorate General of Mines Safety (DGMS)

1. The Directorate General of Mines Safety (DGMS) oversees the enforcement of the Mines Act, 1952 and the rules and regulations made therein in mines.

2. As per para No. 4 of the Order passed on 03.10.2023 by the Hon'ble NGT read with the para no. 21.3 and 21.7 of the Joint Committee's Report, DGMS has been directed to take necessary actions and file action taken report. The mines/leases listed under ***Annexure-1*** *of the Joint Committee's Report are covered under the Mines Act, 1952; however, the stone crushers listed under* ***Annexure-2*** *are not covered under it. Hence, this Action Taken Report by DGMS is restricted to the mines/leases listed under* ***Annexure-1*** *of the Joint Committee's Report.*

3. The status of Action Taken by DGMS in respect of the mines/leases listed under Annexure-1 of the Joint Committee's Report is summarised in ***Annexure-A*** *enclosed herewith.*

4. No permission for deep hole blasting under Regulation 106(2)(b); or for use of SME/SMS/ANFO explosives under Regulation 155(1) & 162(5); or for blasting within danger zone from permanent surface structures (as mentioned in para 4(iii) of

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section II above) under Regulation 164(1B) of MMR, 1961 have been granted to any of the mines mentioned at serial no. 1 to 16 of the table in ***Annexure-A***.

5. The above status of action taken is updated upto 11.03.2024.

Annexure – A

Summary of the Status of Action Taken by DGMS in Respect of the Mines/Leases Listed under Annexure-1 of the Joint Committee's Report:

Sl. No.	Name of Mine, Owner & its Location/Area	Date of Submission of Notice of opening	Status of Appointment/ Authorisation of Manager	Use of HEMM* without deep hole blasting	Use of HEMM* with deep hole blasting	Remarks	Action Taken Report (ATR)
13	Kunwar Vinod Raja, Gata No. 332, Khand No. 01, Village - Badokhark hurd, Lease Area-1.61 Hec.	25.10.2023	Appointed, Authorisation issued on 18.12.2023	Granted on 06.02.2024	Not applied by the management for permission	N- 115m Hutments and House E- 75m Hutments and House S- 100m Temple W- 140m 11KV HT Line NE- 100m Hutments and House and 250m Temple SW- 180m Hutments and House NW- 210m Hutments and House	Notice issued under Section 22A(1) of Mines Act, 1952 vide this Directorate letter No. संसु पा॰ 29013/ सीएमईएफ(उ०क्षे)/धन. 38/2024/बीटी/557, दिनांक 07.03.2024. (Annexure-27) Reg. 106(2)(a)&(3) of MMR, 1961:The side of the opencast on west side was not properly benched, sloped and secured by the previous lease holder to prevent dangers due to fall of sides. The height of bench on west side was found about 35m, which is more than the stipulated bench height of 6m. Violation letter issued under MMR, 1961, Mines Rules, 1955 & Mines Vocational Training Rules, 1966 vide this Directorate letter No. संसु पा॰ 29013/ सीएमईएफ(उ०क्षे)/धन. 38/2024/बीटी/555, दिनांक 07.03.2024 (Annexure-28) a) Reg.106(3)(b) of MMR, 1961: Impressions were observed that the mine was being worked with use of Heavy Earth Moving Machineries (excavators and tippers) without obtaining permission from this Directorate. No HEMM shall be used in the mine without obtaining permission from this Directorate. b) Reg.111(2) of MMR, 1961: Excavation was found extended within 7.5m of the lease boundary of the mine on north and south of the mine. All such excavations shall be immediately stopped. c) Reg.115(5)(a) of MMR, 1961: The

							approaches to the toe of the west side high bench was not adequately fenced to prevent inadvertent entry of any person or machinery to avoid dangers due to fall of sides. *d) Reg. 164 (18) of MMR, 1961:Hutments and houses not belonging to the owner of the mine were found existed at about 130m, 100m, 280m and 240m away from the north, east, south and north-west boundaries of the mine respectively within the blasting danger zone of 300m. A temple was found existed at about 170m away from the south boundary of the mine. A 11 KV HT power transmission line was existed at about 185m away from the west boundary of the mine. No blasting shall be conducted in the mine within danger zone of 300 m from any permanent surface structures not belonging to the owner without obtaining permission under Regulation 164(18)(e), except with the limited aggregate maximum charge in all holes fired at one time not in excess of 2 kg or if the blasting is done with delay detonators or other means and that there is a delay of at least half a second between successive shots fired, maximum charge of two kilograms can be used in each hole. Provided that irrespective of the amount of explosives used, no blasting shall be done at any place in the mine which is within 50 m any such permanent surface structures.* *e) Rule 29B of the Mines Rules, 1955: Persons employed in the mine were not undergone initial or periodical medical examination.* *f) Rule 6 of MVTR, 1966: Persons employed in the mine were not imparted vocational training.*

22. Respondent no. 1 has filed replies vide emails dated 29.11.2023 and 16.04.2024. The relevant part of the reply filed vide email dated 16.04.2024 is reproduced below:-

"REPLY AFFIDAVIT ON BEHALF OF PROJECT PROPONENT

X X X X

2. That the Project Proponent had obtained the approval on the mining plan from the Director, Geology & Mining U.P. Lucknow and thereafter obtained the environmental clearance from State Level Environment Impact Assessment Authority, Uttar Pradesh Lucknow "(hereinafter called as `SEIAA) and thereafter the mining lease deed was executed on 01-03-2021 by the District Officer, Banda in favour of the Project Proponent and deed was registered on 15-03-2021 in the office of the Sub Registrar Naraini Distt. Banda.

The copy of the said EC dated 15-01-2021 and copy of CTO dated 28-02-2023 are being annexed herewith as Annexure No.1 and Annexure No.2 respectively.

3. That by way of present letter petition the applicant complaining about illegal mining blasting and crushing in violation of environmental norms in villages Jarar, Chhaneha Purwa, Raghwa Purwa, Girwan. Patraha Tehsil Naraini, District Banda.

4. That the applicant vide complaint dated 12-03-2023 has also submitted that six mining leases have been allotted in two hills in the area situate of village Jarar and five crushers have been established in Village Jarar and Chhaneha Purwa and mining is being done by resorting to illegal blasting which has resulted in damage to the houses of villagers, the applicant further alleged that the crushers are being operated day and night and the crushers do not have any boundary wall. There is no sprinkling of water during operation thereof. The crushers are causing dust and noise pollution due to which the residents are suffering from `Asthma' and other diseases. Illegal blasting has also affected old temples located on the hills. Illegal mining and blasting are also adversely affecting the wildlife in the area. The roads to the above said villages have been damaged by the over loaded vehicles used for transportation of excavated minor minerals.

5. That on the application dated 12-03-2023, submitted by the applicant, this Hon'ble Tribunal vide order dated 01-08-2023 constitued a joint committee comprising of representative of Director, Geology & Mining U.P. Pollutaion Control Board, Lucknow. District Magistrate, Banda to verify the factual position and take appropriate remedial action and factual and JCV action taken report may be submitted within one month by e-mail before this Hon'ble Tribunal.

6. That in compliance of order dated 01-08-2023 the joint committee visited the site from 17-08-2023 to 18-08-2023 and vide his joint inspection report 30-08-2023 following recommendation have been made

"21.1) The mining department can be asked to restrict the mining activities in those mines wherein the required minimum distance criteria are not meeting. If mining is allowed on allotted near vicinity of habitant, habitant will be relocated to other specific place with consultation of nearby villagers/ civil society.

21.2) The mining department can be asked to restrict the mining activities in part of hill where temple is located. If mining is permitted at this place, the temple and habitant will be relocated to other specific place with consultation of nearby villagers/ civil

society/priest of temple.

21.3) The mining department can be asked to restrict the mining activities through blasting in those mines who have not taken permission by DGMS for use blasting and mechanical instrument/machine.

21.4) The mining department can be asked to restrict the provision made for construction the main village road by DMF fund.

21.5) UPPCB can be asked to take necessary action against the stone crusher who have not operated the dust suppression system during the operation of stone crusher.

21.6) The Project proponent can be asked to maintain the village road near these mining sites.

21.7) The Project proponent can be asked for blasting will be done in allowed time duration with one-inch holes and proper safety arrangement after obtaining the valid permission of the DGMS and Department of Mines.

21.8) The Project proponent of mining lease and stone crusher can be asked to strictly comply with the conditions prescribed in the Environmental Clearance/ consent/mining lease allotment letter and submit the status to the concerned authorities regularly."

7. That in the case of Special Leave Petition (c) No.-19628-19629 of 2009, Deepak Kumar etc Vs. State of Haryana and other etc the Hon'ble Supreme Court vide order dated 27-02-2012 was pleased to pass following direction :-

"19. We in the meanwhile, order that leases of minor mineral including their renewal for an area of less than five hectors be granted by the States/Union Territories only getting environmental clearance from MOEF."

In compliance of the aforesaid direction dated 27-02-2012 given by the Hon'ble Supreme Court, the Project Proponent after getting approval of the Director, Geology 85 Mining U.P. Lucknow on the mining plan, applied for environmental clearance before SEIAA, and EC was granted by the SEIAA after conducting Public hearing vide letter No.-631/Parya/SEIAA/ 6033-5062/2020 dated 15-01-2021 in favaour of the Project Proponent.

8. That after execution of lease deed the Project Proponent also obtained consolidated consent to operate the mines under section-25 of the water (Prevention 85 Control of Pollution) Act 1974 and section-21 of the Air (Prevention & Control of Pollution) Act 1981 vide letter dated 28-02-2023 from Uttar Pradesh Pollution Control Board Lucknow which already annexed herewith as ANNEXURE No.2 to this reply affidavit.

9. That the Project Proponent is conducted mining operation under the super vision of Mines Foreman shri Vikash Singh, appointed by the DGMS Regional Office, Varansi vide order dated 18-12-2023.

The copy of the said order dated 18-12-2023, issued by DGMS is being annexed herewith as ANNEXURE No.3 to this reply.

10. That the Director, DGMS Regional Office, Varansi submitted its report dated 01-02-2024 with mentioning therein that permissions for conducting blasting in mines are required to be obtained from DGMS under the MMR 1961 in the following special circumstances

(i) Permission for conducting deep hole blasting (blasting

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with holes more that 3 m in depth), as required under Regulation 106(2)(b) of the MMR 1961.

(ii) Permission for using explosives in non-cartridge form or for using more than one type of explosives (other than fuse or detonator) in the same hole (for example use of ANFO, SMS, SME along with cast booster), as required under Regulation 155(1) and 162(5) of the MMR 1961; and

(iii) Permission for blasting within danger zone of 300 m from permanent building or structure of permanent nature, not belonging to the owner of the mine, by using more than 2 kg of aggregate maximum explosive charge in all holes fired at one time or more than 2 kg of maximum explosive charge in each hole where blasting is done with delay detonators or other means and that there is a delay of at least half a second between successive shots fired, as required under Regulation 164(1B). However, if the shortest distance from the place of firing to any part of such building or structure is less than 50 meters, prior permission for blasting is required to be obtained under Regulation 164(1B) of the MMR 1961 irrespective of the amount of the charge used.

For blasting in mine under circumstances other than the above, no permission is required to be obtained from DGMS under the MMR 1961 and the blasting may be carried out in the mine by observing the precautions as prescribed under the provisions of Regulations 153-170 and other provisions of the MMR 1961.

In view of above it is evident that there are no requirement for obtaining permission for blasting from DGMS if blasting is done less than 3 m depth hole which is doing by the Project Proponent.

11. That DGMS Regional Office Varansi vide order dated 06-02-2024 also granted permission for deployment of Heavy Earth Moving Machineries (HEMM) to the project proponent.

The copy of said order dated 06-02-2024 is being Annexed as Annexure No.4 to this reply.

12. That DGMS Regional office Varansi vide notice dated 07-03-2024 informed the project proponent that:-

(1) The side of the opencast on west side was not properly benched, sloped and secured by the previous lease holder to prevent danger due to fall of sides. The height of top bench on west side was found about 38m, which is more than the stipulated bench height of 6 m Hereby give you Notice to rectify the aforesaid contravention within 3 months from the date of issue of this letter i.e. on or before 06-06-2024.

Work of removal of dangers shall be subject to the following conditions being strictly complied with -

a) Benches of height not more than 6 m and breath thereof not less than the height shall be formed by working from top downward only.

b) No person shall be engaged at the quarry floor or at the bottom of the high wall, or on ledges made in the high walls.

c) Work of removing the dangers, shall be done in the mine under personal supervision of a duly qualified manager and the same shall be kept suspended whenever the manager is absent for any reason whatsoever.

d) All approaches to the bottom of high wall sides and also the top edges of such highwalls shall be kept securely and effectively

fenced so as to prevent any inadvertent entry of persons.

13. That the project proponent is excavating the mineral in accordance with the terms and condition of the E.0 and consolidated consent issued under Section-25 of the water (Prevention & Control of Pollution) Act 1974 and Section-21 of the Air (Prevention & central of Pollution) Act 1981 and DGMS itself mentioned that sloped and secured by the previous lease holder and the project proponent is obeying the directions of DGMS. It is further submitted that the project proponent has already file reply/compliance report dated 09-04-2024.

The reply/compliance report dated 09-04-2024 is being annexed as ANNEXURE No.5 to this reply affidavit.

14. That the committee interacted with the applicant & villagers and also visited the point of concerns raised in the application. It was observed by the committee during the site visist, details are given as below

"7.1) The main habitation of village-Jarar is situated 135 meters away from the nearest allotted lease mining on hill of village-Jarar, but some houses are made near the allotted lease M/s Safdar Ali S/o Late Shri Farzand Ali, Gata No.-2450, Khanda No.-03, at Village-Jarar. Temple is situated 235 meters away from the allotted lease mining on other part of hill of village-Jarar.

7.2) The main habitation of village-Girwan is situated 175 meters away from the allotted lease Bundelkhand Rocks, Gata No.-1876, (Khand No.09, Village-girwan), 36 meters away from the allotted lease (Sangram Singh, Gata No.1876, Khand No. 01, Vill-Girwan), 139 meters away from the allotted lease (Bajrang Road Lines, Gata No.-1876, Khand No,-03, Village-Girwan) and 90 meters away from the allotted lease (Bajrang Road Lines, Gata No.-1876, Khand No.-04, Village-girwan) on hill of village-Girwan but some houses are made near the allotted lease M/s Sangram Singh, Gata No.-1876, Khand Mo.-01, Vill. Girwan, Bajrang Road Lines, Gata No.-1876, Khand No.-03, Village-Girwan. Temple is situated 70 meters away from the allotted lease (Bundelkhand Rocksa, Gata No.-1876, Khand No.-09, Village-Girwan). Temple is situated 53 meters away from the allotted lease mining (M/s Sangram Singh, Gata No.-1876, Khand No.-01, Village-Girwan) on other part of hill of village-Girwan. It is reported by Mine Officer, Banda that mining lease of M/s Sangram Singh, Gata No.-1876, Khand No.-01, Vill-Girwan, Gata is allotted on same hill part where temple is made but mining is not in operation.

7.3) Gaushala is situated 100 meters away from the allotted lease mining area on hill of village-Girwan.

7.4) The main habitation of village-Badokhar Khurd (Pataraha) is situated 75 meters away from the nearest allotted lease mining on hill of village-Badokhar Khurd (Pataraha), Temple is situated 100 meters away from allotted lease mining Kuwar Vinod Raja, Gata No.-332, Khand No.-01, Vill. Badokhar Khurd on hill of village Badokhar Khurd.

7.5) It was informed by the villagers to committee member during the visit that blasting work in lease area is done in any time with 4 inches holes by lessee and stone pieces are falling on his home and effected the animal and human being. But it was informed by lease holders that blasting is done in allowed time duration

between 2.0 PM to 3.0 PM with one-inch holes and proper safety.
7.6) Crack in home could not been shown by applicant to committee members.
7.7) During the committee visit, stone pieces were not found in agriculture field and habitant area. The possibility of vibrations due the blasting at nearby houses of villagers and falling the stone pieces in nearby agriculture field and habitant area during blasting cannot be ruled out.
7.8) During the committee visit, village Road was not found in good condition due to movement of heavy vehicles.
7.9) Wild animal was not appeared on hill/lease area during committee visit.
7.10) The Agricultural lands are surrounded by most of these mining lease areas and the mining activities in such close vicinity can affect the crop yield in these areas. Similarly, the boulder stones can be thrown into these crop during the blasting operations for mining.
7.11) 05 stone crushers were identified in village-Jarar (Chhaneha Purwa, Raghwapurwa), out of 5 stone crushers 4 stone crushers were found in operation and one stone crusher was found under construction"
15. That from the perusal of the recommendations of the joint committee it is undisputed fact that 75 meter is far from habitation of village Badokhar Khurd (Pataraha) and Temple is situated 100 meter away from allotted lease area of the deponent. It is also pertain to mention here that the provision of rule 42(e) of the Uttar Pradesh Minor Minerals (Concession) Rules 2021 is permitted to the lessee to do the mining operation out of distance of 50 meters from any public pleasure ground and the lease of the deponent is situate to much far distance from habitation of Village Badokhar Khurd (Pataraha) and all norms are being followed by the deponent and there are no complaint regarding working of the project proponent and deponent also submitted compliance report to the Uttar Pradesh Pollution Control Board Lucknow on 25-08-2023.
16. That in view of aforesaid averment there is no violation which require interference of this Hon'ble Tribunal against the deponent as per reports submitted before this Hon'ble Tribunal by the joint committee."

23. None has appeared for the applicant in the course of hearing of the Original Application.

24. We have heard learned counsels for the respondents and also gone through the material on record carefully.

25. Banda District in Uttar Pradesh is part of Vindhyan Plateau having irregular uplands with outcrops of rocks intermingling with low lands. The

Baghein River traverse the District from South-West to North-East, Ken in the east and Yamuna to the North. The District is poor in ground water and also does not possess major lakes. The District is rich in Minerals and the leased areas of villages Badokhar Khurd form moderate to high slopes, stony topography, isolated small hills which is waste/barren land. The area is dominated by boulders and in situ outcrops of Bundelkhand Granite. The Barren hills and undulated terrains are devoid of soil cover and represent only morrum on the top of the deposit with no vegetation. The agricultural land is limited due to topography of the area and about 50% is unirrigated. The industries and other avenues of employments /livelihoods are lacking in the area. The Ministry of Panchayati Raj, Government of India has named District Banda as one of the 250 most Backward Districts out of 640 Districts of the country and District Banda is covered under Backward Regions Grants Fund Programme (BRGF). It is, therefore, of utmost importance that scientific mining continues in the leased areas in accordance with environmental norms.

26. Respondent No.1 the Project Proponent was granted environmental clearance by State Environment Impact Assessment Authority, Uttar Pradesh, Lucknow (SEIAA) vide letter dated 15.01.2021. Mining lease deed in favour of the Respondent No.1 the Project Proponent was executed by the District Officer, Banda on 01.03.2021. Respondent no. 1-Project Proponent obtained consolidated consent from UPSPCB under the provisions of Section-25 of the water (Prevention and Control of Pollution) Act, 1974 and Section-21 of the Air (Prevention and central of Pollution) Act, 1981 vide letter dated 28.02.2023.

27. Operation of mine, other than a coal or an oil mine (from opening to closure) is regulated by the Metalliferous Mines Regulations (MMR), 1961 made under the Mines Act, 1952. Before commencement of mining operations in any allotted mining lease the owner, agent or manager of the mine is required to

submit "Notice of Opening" of the mine at least 30 days to DGMS, as required under Section 16 of the Mines Act, 1952 and Regulation 3 of the MMR 1961 and the owner or agent of the mine has to appoint a person possessing the prescribed qualifications as "Manager" of the mine as required under Section 17 of the Mines Act, 1952 and Regulation 34(1) of the MMR 1961.

28. Permissions for conducting blasting in mines are required to be obtained from DGMS under the MMR 1961 in the following special circumstances:

(i) Permission for conducting deep hole blasting (blasting with holes more than 3 m in depth), as required under Regulation 106(2)(b) of the MMR 1961;

(ii) Permission for using explosives in non-cartridge form or for using more than one type of explosives (other than fuse or detonator) in the same hole (for example use of ANFO, SMS, SME along with cast booster), as required under Regulation 155(1) and 162(5) of the MMR 1961; and

(iii) Permission for blasting within danger zone of 300 m from any permanent building or structure of permanent nature, not belonging to the owner of the mine, by using more than 2 kg of aggregate maximum explosive charge in all holes fired at one time or more than 2 kg of maximum explosive charge in each hole where blasting is done with delay detonators or other means and that there is a delay of at least half a second between successive shots fired, as required under Regulation 164(1B) of the MMR 1961.

29. For blasting in mine under circumstances other than the above, no permission is required to be obtained from DGMS under the MMR 1961 and the blasting may be carried out in the mine by observing the precautions as prescribed under the provisions of Regulations 153-170 and other provisions of the MMR 1961.

30. Permission for using Heavy Earth Moving Machinery (HEMM) in the mine

is required to be obtained from DGMS under Regulation 106(2)(b) of the MMR 1961.

31. In his reply respondent no. 1-Project Proponent has submitted that DGMS Regional Office, Varanasi vide order dated 06.02.2024 granted permission for use of HEMM without deep hole blasting.

32. As per DGMS report filed vide email dated 14.03.2024 respondent no.1 Project Proponent appointed Mines Foreman and authorization was issued on 18.12.2023.

33. Respondent no.1 Project Proponent is conducting mining operation under the supervision of Sri Vikash Singh, Mines Foreman appointed by the DGMS Regional Office, Varanasi vide order dated 18.12.2023. It is not disputed by DGMS that there is no requirement for obtaining permission for blasting from DGMS as blasting is being done by less than 3 m depth hole by the Project Proponent.

34. The lease of respondent no.1-Project Proponent is at the distance of more than 75 meters from habitation of Village Badokar Khurd (Pataraha) and 100 meters from Temple and does not violate the siting criteria.

35. No objections have been filed by the applicant or respondent no. 1-Project Proponent against the reports filed by the Joint Committee and by DGMS. We accept the reports filed by the Joint Committee and DGMS and direct that the findings and recommendations contained in these reports be duly complied with by the Project Proponent, Department of Mines and Geology and UPSPCB in time bound manner.

36. In the present case the violations noticed and recommendations made by

the Joint Committee in its report and compliance report filed regarding the remedial measures taken/to be taken by respondent no.1 Project Proponent are required to be examined/considered for issuance of appropriate directions.

CER Activities

37. Condition was imposed that Corporate Environmental Responsibility (CER) shall be by the project proponent and the details of the various heads of expenditure to be submitted as per the guidelines provided in the recent CER notification No. 22- 65/2017-1A.111 dated 01/05/2018. Work to be executed with installation of five hand pumps of drinking water, solar light in villages of streets, construction of two numbers of toilets at the primary school with name displayed and address and details of beneficiary and gram Pradhan along with phone number, photographs should be submitted to Directorate as well as to the District Magistrate/ Chief Development Officers.

38. In its report the Joint Committee has submitted that the details of the activities carried out by these mining projects under CSR/CER activities are found at ground during the visit and that it was informed by the Mine Office, Banda that CSR/CER activities are being initiated with district administration and mining lessees but the details of the activities and expenses incurred were not given in the report. In its report the Joint Committee has mentioned that Respondent No.1 did not provide the details about the funds earmarked for environmental protection measures and expenses incurred by it to UPSPCB.

39. We are of considered view that the CSR/CER activities implemented/being implemented by respondents no. 1 should be oriented to social and environmental management goals and CER activities should be carried in the vicinity of the project and surrounding areas with active participation of the Gram Panchayats of the affected/neighbouring villages and

the District Environment Committee and the budget earmarked for CER activities should be meaningfully utilized for restoration/protection and improvement of environment.

40. The Project Proponent should comply with the Corporate Social Responsibility (CSR) and Environmental Management Programme (EMP) stipulated by UP SEIAA while granting EC to the Project Proponent in letter and spirit. The CSR/EMP cost estimated/allocated in the EC of SEIAA should be invested/incurred for Environmental Management, Nature Conservation and Community Development activities in Banda District in the area where Mining activities are taking place and such activities related to Environmental Management, Nature Conservation and Community Development required to be undertaken/implemented in the field may include afforestation programme with native tree species to be undertaken and Soil and Water Conservation works to be implemented in the area.

41. Compliance report with details regarding afforestation and rehabilitation of mined out area shall be submitted to the Regional Office, MoEF & CC, GoI, Lucknow and UPSPCB within three months and periodically thereafter as mandated by EC/CTO conditions.

Green Belt

42. Condition was imposed that Green belt development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO/Agriculture Department. Herbs and shrubs shall also form a part of afforestation program besides tree plantation. Respondent no.1 shall involve local people for plantation program. Details of year wise afforestation program including rehabilitation of mined out area shall be submitted to the Regional Office, MoEF&CC, GoI, Lucknow every year.

43. The proposal for tree plantation and green belt development is stated to have been mentioned in the Environmental Management plans submitted by the mining lease holders.

44. In its report the Joint Committee observed that to date, no related activity has been initiated on the ground by respondent No. 1.

45. Respondent no.1 is directed to carry-out development of green belt during forth coming monsoon season as per EC/consent conditions considering CPCB guidelines including the guidelines regarding selection of plant species in consultation with local DFO/Agriculture Department and also by involving local people in the plantation program. Compliance report with details regarding afforestation and rehabilitation of mined out area shall be submitted to the Regional Office, MoEF & CC, GoI, Lucknow and UPSPCB within three months and every year thereafter.

Maintenance of roads

46. Condition was imposed that maintenance of village roads used for transportation of minerals is to be done by the project proponents regularly at their own expenses and the roads shall be black topped.

47. In its report the Joint Committee has mentioned that none of the village road near these mining sites has been maintained and black topped by the proponents. In its report the Joint Committee has recommended that the Mining Department be asked to make provision for construction of the main village road from District Mineral Fund (DMF).

48. The main village road can be ordered to be constructed by meeting the expenses from DMF but the haul roads and roads to the mining leases have to

be maintained and blacktop by the mining lease holders including respondent no. 1.

49. In his report filed vide email dated 21.11.2023 District Magistrate, Banda has mentioned that Executive Engineer, PWD, Provincial Division-II, Banda was in the process of preparing the detailed project report and that letter no. 834 dated 03.11.2023 has been written to the mining lease holders to maintain the haul roads to the mining sites.

50. The respondents no. 2 to 4 and 7 are directed to take requisite measures for construction of main village road from DMF within six months.

51. The respondent no. 1 is directed to blacktop and maintain road to its mining lease site at its own expenses and to blacktop and maintain haul road shared by other mining lease holders by sharing the expenses with them. Respondent no.1 is directed to ensure that the road to lease and haul road is blacktopped within four months.

52. Compliance report be submitted by respondent No.1 in this regard to the Regional Office, MoEF & CC, GoI, Lucknow and UPSPCB within six months.

Monitoring of ground and surface water and Hydro geological study of the area

53. Condition was imposed that Ground and surface water, if any in and near the core zone (within 5.0 km of the lease) shall be regularly monitored for contamination and depletion due to mining activity and records maintained. The monitoring data shall be submitted to the Regional Office, MoEF, GoI, Lucknow and U.P Pollution Control Board regularly. Further, monitoring points shall be located between the mine and drainage in the direction of flow of ground water shall be set up and records maintained. Hydro geological study of

the area shall be reviewed by the project proponent annually. In case adverse effect on ground water quality and quantity is observed mining shall be stopped and resumed only after mitigating steps to contain any adverse impact on ground water is implemented.

54. The Joint Committee found that one pond/lake is located within 5 KM from the mines. In its report the Joint Committee has mentioned that monitoring of the pond/lake has not been carried out by respondent no.1 and other mining lease holders and that no Hydro geological study of the area has been carried out by these mines.

55. Respondent no. 1 is directed to comply with EC condition regarding Monitoring of ground and surface water and Hydro geological study of the area.

56. Compliance report be submitted by respondent No.1 in this regard to the Regional Office, MoEF & CC, GoI, Lucknow and UPSPCB within six months.

57. The lease areas form moderate to high slopes, stony topography and isolated small hills known as Wasteland/Barren land. The water table in the hillocks are deep and does not include seasonal perennial drainage. Inspite of this, mining drainage need to be implemented to ensure that it does not carry particulate materials generated from mining to natural streams /waterbody or agricultural land. According to the report of Ground Water Department dated 19.10.2022, the Peizometer for measuring ground water level has been installed only in the plain area of Jarar village. The hillocks located at high altitude, where mining will be undertaken have ground water in deep aquifer in view of altitude, topography and geo-hydrology of the hills. Though the water table is deep on the hillocks where mining is undertaken, monitoring of ground water on regular internals as precautionary measure needs to be ensured also by Ground Water Department of U.P. Government so that, there should not be

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any adverse impact/ interception of ground water during mining operation.

Control of dust pollution

58. Condition was imposed that fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and records submitted to the Regional Office, MoEF&CC, GoI, Lucknow and UPSPCB regularly.

59. In its report the Joint Committee has mentioned that monitoring reports have not been submitted regularly by mining lease holders to UPSPCB. Some mining lessees are stated to have submitted compliance report and monitoring report 'presently' but copies of the same have not been attached with the report of the Joint Committee. Ambient Air Quality Monitoring was not done by the Joint Committee by drawing samples and getting the same analyzed.

60. Respondent no. 1 is directed to ensure that effective safeguard measures for prevention of dust generation and suppression are carried out in areas prone to air pollution such as haul road, loading and unloading point and ensure that the Fugitive dust emissions from all sources are regularly controlled by installation of required equipment/machineries and preventive maintenance and that air pollution level conform to the standards prescribed by the MoEF & CC/Central Pollution Control Board.

61. Compliance report be submitted by respondent No.1 in this regard to the Regional Office, MoEF & CC, GoI, Lucknow and UPSPCB within three months and periodically thereafter as mandated by EC/CTO conditions.

Transportation through covered vehicles.

62. Condition was imposed that transportation of minerals shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of mineral/dust takes place.

63. During its visit the Joint Committee could not verify compliance with the condition but has made general observation that covering is not being used by most of the vehicles during transportation.

64. Respondent no. 1 is directed to ensure that transportation of minerals shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of mineral/dust takes place.

65. Compliance status be mentioned by respondent No.1 in this regard in report to be submitted to the Regional Office, MoEF & CC, GoI, Lucknow and UPSPCB within three months and periodically thereafter as mandated by EC/CTO conditions.

Blasting operations

66. In its report the Joint Committee has observed that the blast vibration study reports have not been submitted by any of the mine lease holders to UPSPCB. The condition of progressive mine with 6m bench has been mentioned in the Environment Clearance and mining lease document. However, on ground no such bench/progressive mining operations were found in any of the mining project lease area.

67. DGMS, Regional Office, Varanasi had issued violation letter dated 07.03.2024 to respondent no. 1 as mentioned in report filed vide email dated 14.03.2024.

68. Respondent no. 1 had sent reply dated 09.04.2024 undertaking to construct a strong berm to restrict entry to the area ensuring that no work is conducted without proper safety precautions and working on proper benching, sloping and securing the benches of the mine to prevent any potential dangers from falling sides. Respondent no. 1 also mentioned excavations pointed out to be old working. Respondent no. 1 further stated that it has engaged services of the professional surveyor who is assisted in accurately demarcating the danger zone from any structure not belonging to the mining owner. Respondent no. 1 has also stated in its reply that it has prepared a list of workmen who require the initial/periodical medical examination and finding a qualified doctor to complete the medical examination and sought 45 days time for this purpose. In its reply respondent no. 1 also mentioned that it is in the process of arranging vocational training for its workmen.

69. Respondent no. 1 is directed to get its workmen medically examined and provide requisite vocational training to them as undertaken.

70. Blasting in the mine be undertaken only by suitable/permissible explosives with due permission/approval of Chief Controller of Explosive and after following all necessary rules, regulations and procedure required for the purpose. All the precautions suggested in MMR 1961must be strictly adhered to.

71. Respondent no. 1 is directed to ensure that blasting is carried out by giving advance intimation to residents of the locality and blowing siren and the requisite precautionary measures are also undertaken to prevent any untoward incident in the Mining Leases and surrounding areas close to the habitation.

72. Compliance report be submitted by respondent No.1 in this regard to the Regional Office, MoEF & CC, Gol, Lucknow, UPSPCB and DGMS periodically

thereafter as mandated by EC/CTO/Blasting Permission conditions.

73. Keeping in view the ground realities and to ensure Sustainable Mining Operations, livelihoods and ecologically Sustainable Development in the area, we also direct the concerned Departments/Instrumentalities of the State to ensure that the Mining operations are carried out strictly in the sanctioned leased areas demarcated/earmarked with boundary pillars by Revenue & Mining Department as per geo coordinates mentioned at the time of sanctioning of lease by using GPS and to strengthen, Mechanism for monitoring/securing compliance with EC/CTO/Blasting permission conditions. The Director, Geology and Mining Uttar Pradesh is also directed to ensure installation of weighment bridge by the mining lease holders and compliance with guidelines issued by MOEF&CC and CPCB.

74. The present original application is disposed of with the directions as mentioned above leaving the parties to bear their own costs.

75. A copy of this order be forwarded by email to the Member Secretary, Uttar Pradesh State Pollution Control Board, Directorate, Mining and Geology, Uttar Pradesh, Director Mines and Safety, Varanasi Division and respondent no.1-Project Proponent for requisite compliance.

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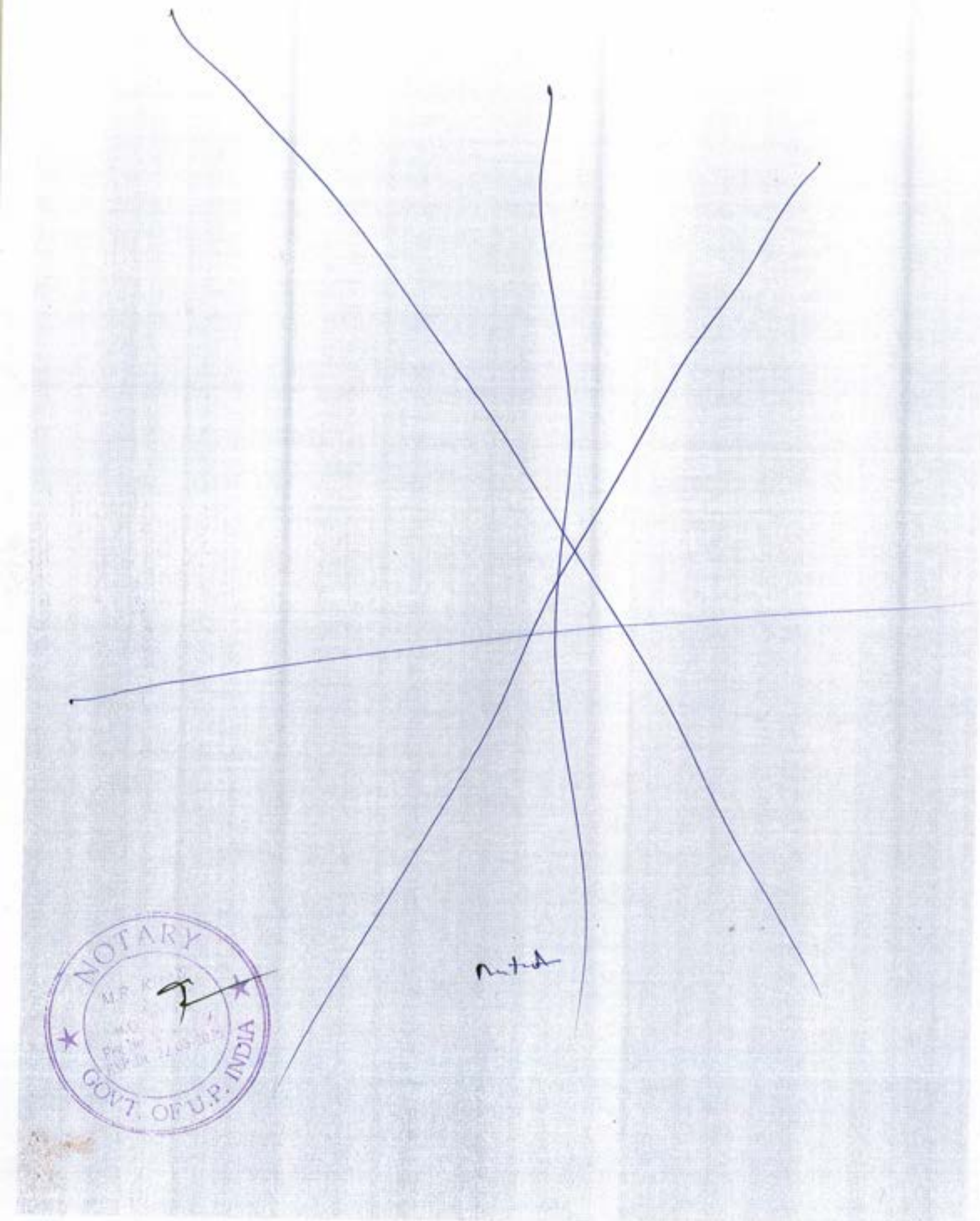
Arun Kumar Tyagi, JM

Dr. Afroz Ahmad, EM

April, 26th, 2024
Ag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Environmental Impact Assessment

&

Environmental Management Plan

(FINAL EIA REPORT)

Building Stone, Khandas & Gitti, Boulder Mining Project

At

Gata No. 2450 Khand No.-05

(Area 2.0 Ha.)

Village Jarar

Tehsil Naraini & District- Banda, Uttar Pradesh

Production Capacity 20000 m^3 per year

Project Proponent:- Shri Mumtaj Ali S/O-Late Shri Farzand Ali

R/O-Muhalla-Khunti Chauraha,

Aliganj, City & District-Banda (U.P.)

Prepared By:-

Environmental Research and Analysis, Lucknow(U.P.)

An ISO 9001:2015 Certified Organization
QCI-NABET Accredited Organization,
Certificate No. NABET/ EIA/ 1619/IA 0019
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SUMMARY OF THE PROJECT

INTRODUCTION			
Project	Building Stone, Khandas & Gitti, Boulder Mining		
Proponent	Shri Mumtaj Ali, S/O-Late Shri Farzand Ali		
Address	R/O-Muhalla-Khunti Chauraha, Aliganj, City & District-Banda (U.P.)		
Project Site Location	Gata No. 2450 Khand No.-05 (Area 2.0 Ha.) in Village Jarar, Tehsil Naraini & District- Banda, Uttar Pradesh		
Lease Period	20 years		
Lease Area	2.0 Hectares		
Letter of Intent	LOI No.825/ khanij-30 , Banda Date- 08/6/2019		
Date of LOI Issued	08/6/2019		
Date of TOR* Issued	421/Parya/SEAC/5001/2019 date 27/11/2019		
EIA study period	Soon after the SEAC granted TOR		
TECHNICAL ASPECTS			
Project Site	Gata No. 2450 Khand No.-05 (Area 2.0 Ha.) in Village Jarar, Tehsil Naraini & District- Banda, Uttar Pradesh		
GPS Coordinates	Points. No.	Latitude	Longitude
	A	25° 18' 55.26"N	80° 21' 39.03"E
	B	25° 18' 53.48" N	80° 21' 42.24" E
	C	25° 18' 55.85" N	80° 21' 48.05" E
	D	25° 18' 58.84" N	80° 21' 46.32" E
Elevations	The highest and lowest point in the leasehold is 190.95mRL towards NE direction and 163.90mRL towards SW direction.		
Mode of Mining	Mechanized		
Proposed Quantity	20000 m^3 per annum		
Geological Reserve	397655 m^3		
Mineable Reserve	20000 m^3/year		
Mining Plan	Directorate of Geology and Mines, Lucknow vide Letter No. 764/ मि0 प्लान / 2016 on dated 13/08/2019		
Workers Required	27 Approximately		
Total tippers required /day	Approximately 5 – 6 movements per day.(Vehicles such as Truck dumper/tipper, Tractor Trolleys, etc. will be in use)		
Ease of Mining			
Connecting Highway	MDR 11B about 3.01 km towards East direction from the project site.		
Nearest Densely Populated Area	Banda at 18.80 Km towards East direction.		

Population	Approximately 2000
Water Requirement	8.35 KLD
Drinking water	0.35KLD
Water Availability	From nearest village through local vendors
Primary Health Centre	Naraini is 18.0 km from the project site towards South-East direction.

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QUESTIONNAIRE FOR ENVIRONMENTAL APPRAISAL OF MINING PROJECTS

(MINING SECTOR PROJECTS)

Note 1:	All information to be given in the form of Annex/s should be properly numbered and form part of reply to this performa.
Note 2:	Please enter √ in appropriate box where answer is Yes / No
Note 3:	No abbreviation to be used - **Not available** or **Not applicable** should be clearly mentioned.
Note 4:	**Core zone** is the mining lease area. **Buffer zone** in case of ML area up to 2.0 ha is to be considered as **5 km** all around the periphery of the core zone and for ML area above 2.0 ha an area **10 km** all around the periphery of the core zone.
Note 5:	Adopt **Scoping process** in carrying out EIA study.
Note 6 :	Please indicate source of data.

1. **General Information-**

1	General information	
a	Name of the project	Building Stone, Khandas & Gitti, Boulder Mining Project
i	Name of the proponent	*Proponent:- Shri Mumtaj Ali S/O-Late Shri Farzand Ali*
ii	Mailing Address	*R/O-Muhalla-Khunti Chauraha, Aliganj, City & District-Banda (U.P.)*
	E-mail	-
	Telephone	-
	Fax No.	-
b	Objective of the project	Building Stone, Khandas & Gitti, Boulder Mining Project
c	Location of mine	
	Village Village	*Jarar*
	Tehsil	Naraini
	District	Banda
	State	Uttar Pradesh

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d	**Does the proposal relate to**	Yes
i	New mine	✓
ii	Expansion	-
iii	Increase in ML area	-
iv	Increase in annual production	✓
v	Renewal of ML	-
vi	Modernization	-

e	Site Information	
f	Geographical Location	
	Project Coordinates	

Point	Latitude	Longitude
A	25° 18' 55.26"N	80° 21' 39.03"E
B	25° 18' 53.48" N	80° 21' 42.24" E
C	25° 18' 55.85" N	80° 21' 48.05" E
D	25° 18' 58.84" N	80° 21' 46.32" E

g	Survey of India Topo sheet number	63C/7

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	Elevation above Mean Sea Level	*The highest and lowest point in the leasehold is 190.95mRL towards NE direction and 163.90mRL towards SW direction.*	
	Total mining lease area (in ha.)	2.0 Ha.	
ii	**Dominant nature of terrain**	**Yes**	**No**
	Flat	-	✓
	Undulated	✓	-
	Hilly	-	✓

2.	**Land usage of the mining lease area (in ha.)**		
a	Agricultural	-	
b	Forest	-	
c	Waste land	2.0 Ha. .	
d	Grazing	-	
e	Surface water bodies	-	
f	Others (River Bed)	2.0 Ha.	
	Total	2.0 Ha.	
3.	**Indicate the seismic zone in which ML area falls. In case of zone IV & V, details of earth quakes in last 10 years.**	Seismic Zone – II	
a	Severity (Richter Scale)		
b	Impact i.e. Damage to	**Yes**	**No**
	Life	-	✓
	Property	-	
	Existing mine	-	

4.

Break-up of mining lease area (in ha.) as per approved conceptual plan:

Purpose	Mining Lease Area				Total	Area acquired			
	Government		Private			Government		Private	
	Forest	Others	Agri.	Others		Forest	Others	Agri.	Others
1. Area to be excavated	-	2.0 Ha.	-	-	2.0 Ha.	-	-	-	-
2. Storage for top soil	-	-	-	-	-	-	-	-	-
3. Overburden / Dumps	-	-	-	-	-	-	-	-	-
4. Mineral storage	-	-	-	-	-	-	-	-	-
5. Infrastructure (Workshop, Administrative Building)	-	-	-	-	-	-	-	-	-
6. Roads	-	-	-	-	-	-	-	-	-
7. Railways	-	-	-	-	-	-	-	-	-
8. Green Belt	-	-	-	-	-	-	-	-	-
9.Tailings pond	-	-	-	-	-	-	-	-	-
10.Effluent treatment plant	-	-	-	-	NA	-	-	-	-
11.Coal handling plant / mineral separation plant	-	-	-	-	NA	-	-	-	-

1.2.Township area	-	-	-	-	Nil	-	-	-	-
1.3.Other (Safety zone including road)	-	-	-	-	-	-	-	-	-
TOTAL		2.0 Ha.	-	-	2.0 Ha.	-	-	-	-

5	**Township (outside mining lease)**	**Not Applicable**
a	Total area (in ha)	-
b	No. of dwelling units	-
c	Distance from mine site	-

6	**Distance of water bodies (in km)**		
	Distance	**River Bank ***	**Other Water bodies * Sea / creek / lake / nalla etc. (specify)**
	Mining lease boundary	None	-
	Ancillary facilities	None	-

[* From highest flood line / high tide line]

7	**For projects falling within the Coastal Regulation Zone (CRZ)**				
	Whether the mineral to be mined is of rare nature and not available outside CRZ?	**Yes**	-	**No**	✓

If yes, annex a scaled location map showing low tide line (LTL), high tide line (HTL) duly demarcated by one of the authorized agencies* [*Director, Space Application Centre, Ahmadabad: Centre for Earth Sciences Studies, Thiruvananthapuram: Institute of Remote Sensing, Anna University, Chennai: Institute of Wetland Management & Ecological Designs, Kolkata: Naval Hydrographers's Office, Dehradun: National Institute of Oceanography, Panjim, Goa: and National Institute of Ocean Technology, Chennai], boundary of mining lease area, distance of ML area from LTL and HTL CRZ boundary and CRZ classification of the project area as per the approved Coastal Zone Management Plan, and settlements, sand dunes, mangroves, forest land/patches, turtles breeding and nesting sites etc., if any, in the project area.

8	**Indicate aerial distance from the periphery of core zone / area from the periphery of the buffer zone to the boundary of following (up to 10 km):**			
S. No.	**Area**	**Name**	**Aerial distance from (in km.)**	
			Core Zone	**Buffer Zone**
1.	National Park / Sanctuary	Nil	-	-
2.	Biosphere Reserve / Tiger Reserve / Elephant Reserve / any other Reserve	Nil	-	-
3.	Forest (RF / PF / unclassified)	Nil		-
4.	Habitat for migratory birds	Nil	-	
5.	Corridor for animals of schedule I & II of the Wildlife (Protection) Act, 1972	Nil	-	-
6.	Archaeological sites * Notified * Others	Nil	-	-
7.	Defense Installation	Nil	-	-
8.	Industries / Thermal Power Plants	Nil	-	-

9.	Other Mines	Nil	-	-
10.	Airport	Chakeri, Kanpur	121.0 Km towards North direction.	
11.	Railway Lines	Banda railway station	18.0 Km North direction from applied area	
12.	National / State Highways	MDR 11B	about 3.01 km towards East direction from the project site	
[* Buffer zone in case of ML area up to 2.0 ha. is to be considered as **5 km** all around the periphery of the core zone and for ML area above 2.0 ha. an area **10 km** all around the periphery of the core zone].				

9. Description of flora & fauna separately in the core and buffer zones.*

[* Consult the Wildlife (Protection) Act, 1972 as amended subsequently and list species with (1) Common name (2) Scientific name and (3) under which schedule of the Wildlife (Protection) Act the identified species fall. Get the list authenticated by an Expert in the field / credible scientific institute / University / Chief Wildlife Warden Office. **Information to be based on field survey**
List of Flora & Fauna is given in Section III of Final EIA report.

10	**Details of mineral reserves (as per approved Mining Plan)**	Quantity	
a	Proved	*234124*	
b	Feasibility	*57460*	
c	Mineable reserves	*300360*	
11	**Major geological formation / disturbances in the mining lease area**	**Yes**	**No**
a	Geological maps submitted	✓	-
b	Geological sections submitted	-	✓
c	Contour map submitted	-	✓
d	Whether the presence, if any, noted of		
I	Faults	-	✓
Ii	Dykes	-	✓
Iii	Shear Zone	-	✓
Iv	Folds	-	✓
V	Other weak zones	-	✓
e	Source of data (Indicate)	-	
12	**Production of mineral(s) and life of mine**		
a	Rated capacity of mine mineral wise (Tonnes / annum)	20000 m^3/year	
b	Life of mine at proposed capacity (Years)	-	
c	Lease period (Years)	20 years	
d	Date of expiry of lease (D /M /Y)	-	
e	Indicate in case of existing mines	NA	
i	Date of opening of mine	-	
ii	Production in the last 5 years 1st year 5th year from year..... to year ..... in million tonnes.	-	
iii	Projected production for the next 5 years 6th to 10th year from year ..... to year	-	

	.....in million tonnes.				
iv	Whether mining was suspended after opening of the mine?		-		
v	If yes, details thereof including last production figure and reason for the same.		-		
f	Whether plans & sections provided?		-		
13	**Type and method of mining operations**				
TYPE			**METHOD**		
Opencast		✓	Manual		✓
Underground		-	-		-
Both		-	-		-
14	**Details of ancillary operations for mineral processing**				
a	Existing		Not applicable		
b	Additional		Not applicable		
15	**Mine details**				
a	**Opencast mine**				
i	Stripping ratio (mineral in tonnes to over burden in m^3)		-		
ii	Ultimate working depth (in m bgl)		6.0 m		
iii	Indicate present working depth in case of existing mine (in m bgl)		-		
iv	Thickness of top soil (in m.)		-		
a	Minimum		-		
b	Maximum		-		
c	Average		-		
v	Thickness of overburden (in m.)		**0m**		
a	Minimum		-		
b	Maximum		-		
c	Average		-		
vi	Mining Plan		**Approved by DGM LKO**		
a	Height and width of the bench in overburden / waste.				
b	Height & width of the bench in ore body / coal seam.		-		
c	Proposed inclination / slope of the sides of the opencast mine (separately for overburden, coal / ore and overall slope of the pit sides) both while operating the mine as well as at the time of Closure of the mine.		-		
d	Whether transverse sections across the open cast mine at the end of fifth year and at the end of the life of the mine have been submitted?		-		
vii	Type of blasting, if any, to be adopted		-		
b	Underground mine-		**Not Applicable**		
i	Seam / Ore body				
	Min. Depth (m)		-		
	Max. Depth (m)		-		
	Avg. thickness (m)		-		
	Rate of dip		-		
	Direction of dip in degree		-		
ii	Mode of entry into the mine				
	Shaft		-		
	Adit		-		
	Incline		-		

iii	Details of machinery		
	On surface	-	
	At Face	-	
	For transportation	-	
	Others	-	
iv	Method of stopping (metalliferrous mines)		
	Open	-	
	Filled	-	
	Shrinkage	-	
	Caving	-	
	Combination of above	-	
	Others (Specify)	-	
v	Extraction method		
	Caving	-	
	Stowing	-	
	Partial extraction	-	
vi	Subsidence		
	Predicted max. subsidence (in m)	-	
	Max. value of tensile strain (in mm/m)	-	
	Max. slope change (in mm/m)	-	
	Whether identified possible subsidence area(s) superimposed on Surface Plan has been submitted?	-	
	Major impacts on surface features like natural drainage pattern, houses, buildings, water bodies, roads, forest, etc.	-	
	Salient features of subsidence management (monitoring and control).	-	
16	**Surface drainage pattern at mine site**	**Yes**	**No**
a	Whether the pre-mining surface drainage plan submitted?	-	✓
b	Do you propose any modification / diversion in the existing natural drainage pattern at any stage? If yes, when. Provide location map indicating contours, dimensions of water body to be diverted, direction of flow of water and proposed route / changes, if any i.e. realignment of river / nallah / any other water body falling within core zone and its impact	-	✓
17	**Embankment and / or weir construction**		
a	Do you propose, at any stage, construction of		
i	Embankment for protection against flood?	No	
ii	Weir for water storage for the mine?	No	
b	If so, provide details thereof.	-	
c	Impact of embankment on HFL and settlement around.	-	
d	Impact of weir on downstream users of water	-	
18	**Vehicular traffic density (outside the ML area)**		
		Type of vehicles	No. of vehicles (in PUC per hour)
a	Existing	Car, Jeep, Truck	30/Hr **(approximate**

			erstimation)	
b	**After the proposed activity**	Car, Jeep, Truck	60/Hr (approximate erstimation)	
c	Whether the existing road network is adequate?		Yes	
	If no, provide details of alternative proposal?		-	
19	Loading, transportation and unloading of mineral and waste rocks on surface		**Yes**	**No**
a	Manual		✓	-
b	Tubs, mine cars, etc.		-	✓
c	Scraper, shovels, dumpers / trucks		✓	-
d	Conveyors (belt, chain, etc.)		-	✓
e	Others (specify)		-	✓

20	**Mineral(s) transportation outside the ML area**			
		Qty. (in Cum/day)	**Percentage (%)**	**Length (in km)**
a	**Road**	66.67	100	-
b	**Rail**	-	-	-
c	**Conveyors**	-	-	-
d	**Rope way**	-	-	-
e	**Water ways**	-	-	-
f	**Pipeline**	-	-	-
g	**Others (Specify)**	-	-	-
	Total	66.67	100	

21. Baseline Meteorological and Air Quality data

(a) Micro-meteorological data

[Continuous monitoring through autographic instrument for one full season other than monsoon]

(i) Wind rose pattern for one full season (16 points of compass i.e. N, NNE, NE, ---) based on 24-hourly data. For coastal area also furnish day-time and night time data.

- Day time
- Night time
- 24 – hours period

(b) Ambient air quality data* (RPM, SPM, SO_2, and NOx)

[*Monitoring should be carried out covering one full season except monsoon – same season as in 21 (a) (i)]

[*Frequency of sampling: Sampling to be done twice a week for the entire season 24 hourly for SPM & RPM. For gaseous pollutants 24- hourly data is given irrespective of the sampling period.]

No. of samples collected at each monitoring station: **3 × 8 hourly a day (alternatively)**

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				(in µg/m³)
1.	SPM	--	--	--
2**.	SO_2	--	--	--
3**.	NO_X	--	--	--

[* Question Number 22, 23 & 24 need not be filled-in for mines having ML area of 2.0 **ha. or less.**]
[**Information on item no. 2 & 3 to be provided in cases with captive power generation of 500 KVA and above]

25. **Water requirement (m^3/day)**

Purpose	Avg. Demand	Peak Demand
A. Mine site		
1. Mine operation	-	-
2. Land reclamation	-	-
3. Dust suppression	7.20 KLD	7.20 KLD
4. Drinking	0.38 KLD	0.38 KLD
5. Green Belt	-	-
6. Beneficiation	-	-
7. Washeries	-	-
8. Fire Service	-	-
9. Others (Plantation)	*0.80 KLD*	*0.80 KLD*
B. Township		
1. Green Belt	-	-
2. Domestic	-	-
C. Other (specify)	-	-
Total	8.38 KLD	8.38 KLD

26. Source of water supply*

S. No.	Source	m^3/day
1	River (name)	-
2	Water tanks from local vendors(For Drinking Purposes)	*0.38 KLD*
3	Mine water (sump / pit)	-
4	Other fort dust suppression from local vendors	7.20 KLD
5.	Plantation from local vendors	0.80 KLD

[*Annex a copy of sanction letter / permission from the concerned authority (Central Ground Water Authority in case of ground water abstraction is from notified area / State Ground Water Board in case of non-notified area / State Irrigation Department for surface water pumping) for drawing water.]

27. **Water quality***

(a) Annex physico -chemical analysis of water at intake point ** **(Reports are Annexed)**

Details are given in Section III

(b) In case of existing mine, annex report on quality of water discharge i.e. complete physico - chemical analysis**

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[*For non-discharging mines at least four ground water samples to be taken preferably from downstream direction of the mine in pre-monsoon and post-monsoon periods and analyzed. For discharging mines six samples are to be analyzed]

**All parameters as per BIS 10500. Indicate name of Methodology, Equipment used for analysis, and Detection Level (DL) for each parameter.

*** Wherever any analytical parameter is below detection level, "BDL" (Below Detection Level) should be written instead of 'NIL'.

28.	**Impact on ground water regime / stream / lake / springs due to mine dewatering ***	
a	Radius of influence (in m) [To be estimated based on analysis of pumping test data and application of empirical formula]	-
b	Whether saline water ingress will take place? (applicable to coastal areas)	-
c	Impact on stream / lake / springs	-

[* **Provide a comprehensive hydro-geological assessment report** if the average mine dewatering is more than 100 m^3/day and or going below water table in non-monsoon period. The report should be based on preferably latest one year pre-monsoon and post-monsoon baseline data covering information on ground water situation, aquifer characteristics, water level conditions (April – May and November), estimate of ground water resources, predicted impact of the project on ground water regime and detailed remedial / conservation measures such as artificial recharge of ground water etc. The report should be based on actual field inventory out of existing wells, at least 30 observation wells in the buffer zone with supplementary information from secondary sources (mention name). For estimation** of ground water resource (refer question no. 28 above) be designated study area of the buffer zone may be sub-divided into command and non-command areas, watershed-wise (in case of hard rock / consolidated formations) / block-wise / mandal-wise in case of alluvial / unconsolidated formations)]

[**For estimating ground water resources in the area follow the Ground Water Estimation Committee recommendations of 1997]

29.	**Waste Water Management**	**Not Applicable**
a	Daily average discharge (m^3/day) from different sources	
i	Mine water discharge during	
	Lean period	
	Monsoon period	
ii	Workshop	
iii	Domestic (mine site)	
iv	Beneficiation / Washeries	
v	Coal Handling Plant	
vi	Tailings pond	
vii	Others (Specify)	
	Total	
b	Waste water treatment plant; flow sheet for treatment process attached.	
c	Quantity of water recycled / reused / to be recycled in	
i	Percentage	
ii	m3 /day	
d	Point of final discharge	
	Final Point	Quantity discharged (in m^3/day)
1	Surface	

i	Agricultural land		
ii	Waste land		
iii	Forest land		
iv	Green belt		
2	River / nallah		
3	Lake		
4	Sea		
5	Others (specify)		
	Total		
e	Users of discharge water	**Yes**	**No**
i	Human		
ii	Livestock		
iii	Irrigation		
iv	Industry		
v	Others (specify)		
F	Details of the river / nalla, if final effluent is / will be discharged (cumecs)		
i	Average flow rate		
ii	Lean season flow rate		
iii	Aquatic life		
iv	Analysis of river water 100 meters upstream and 100 meters downstream of discharge point submitted.		
g	Township		
a	Waste water generation from township (m3/day)		
b	Are you planning to provide sewage treatment plant?		
c	Usage of treated water		

30. **Attach water balance statement in the form of a flow diagram indicating source (s), consumption (Section-wise) and output.**

Purpose	**Demand(KLD)**
Dust Suppression	*7.20 KLD*
Plantation	*0.80 KLD*
Domestic (drinking)	*0.38 KLD*
Total Water Required	*8.38 KLD*

31	**Ambient noise level leq dB(A)**	**Details given in Section III**
32	**Solid Waste**	**Not Applicable**
a	Top soil and Solid waste quantity and quality	

Name (Lump/fines/slurry/ Sludge/others)	Composition	Quantity (m^3/month)	Method of disposal
Mining activity*			
a. Top Soil			
b. Over burden			
c. Others (specify)			
Effluent Treatment Plant (sludge)			
Total			

[* Annex layout plan indicating the dump sites.]					
b (i)	Does waste (s) contain any hazardous/toxic substance/radioactive materials or heavy metals?				
(ii)	If yes, whether details and precautionary measures provided?				
c	Recovery and recycling possibilities.				
d	Possible user(s) of the solid waste.				
e (i)	Is the solid waste suitable for backfilling?				
(ii)	If yes, when do you propose to start backfilling?				
Solid waste (s)	Already accumulated (A)	To be generated (B)	% of A & B to be backfilled		
			A	B	
Over burden					
Others (specify)					
	Land reclamation Plan		**Not Applicable**		
f	In case waste is to be dumped on the ground, indicate				
i	Associated environmental problems				
ii	Number & type of waste dumps				
	No. of external dumps				
	Max. projected height of dumps (in m)				
	No. of terraces and height of each stage				
	Overall slope of the dump (degree)				
	Proposed reclamation measures				
iii	Section of the waste dump in relation to the adjacent ground profile attached				
33	**Fuel / Energy requirements*** [*To be furnished for mines having ML area more than 25 ha. or captive power generation of 500KVA and above]		**Not Applicable**		
a	Total power requirement		(in MW)		
S. No.		Mine Site	Township	Others (specify)	Total
1	Present				
2	Proposed / additional				
Total					
b	Source of power		(in MW)		
S. No.		SEB/Grid*	Captive power plant	DG Sets	
1	Present				
2	Proposed / additional				
Total					
[* Annex a copy of the sanction letter from the concerned authority]					
c	Details of fuels				
S.No.	Fuel	Daily Consumption (TPD)		Calorific value (Kcals/kg)	% Ash	% Sulphur
		Existing	Proposed			
1	HSD					
2	LSHS					
3	Other (specify)					

34	Storage of inflammable / explosive materials-			Not Applicable
S. No.	Name	Number of Storages	Consumption (in TPD)	Maximum Quantity at any point of time
1	Fuels			
2	Explosives			

35	Human Settlement		
		Core Zone	Buffer Zone
Population*		-	Details given in Section VI
No. of villages		-	
Number of households village-wise		-	
[* As per 2001 census record or actual survey]			

36.	Rehabilitation & Resettlement (R&R) Plan* [*Provide a comprehensive rehabilitation plan, if more than 1000 people are likely to be displaced, other-wise a summary plan]	Not Applicable
a	Villages falling within the study area	

	Villages	
	Number	Name
Core zone		
500 m from the blasting site (s)		
Buffer zone		
Township site		

b	Details of village(s) in the core zone			
S. No.	Village name	Population*		Average Annual Income
		Tribal	Others	
1				
[*As per 2001 census / actual survey]				

c	Population to be displaced and / or Land Oustees	

Name of village(s) falling within	Number of oustees		
	Land (only)	Homestead (only)	Land and Homestead (both)
Mining Lease 1.			
Township Site 1.			

d	Whether R&R package has been finalised? If yes, salient features of R&R plan for oustees.	Not Applicable
i	Site details where the people are proposed to be resettled & facilities existing / to be created.	
ii	Funds earmarked for compensation package	
iii	Agency /Authority responsible for their resettlement.	
iv	Time of commencement of resettlement of Project Affected People (PAP).	
v	Period by which resettlement of PAP will be	

	over.					
37	**Lease -wise plantation details**				**Not Applicable**	
a	Lease area (in ha.)				Existing	Proposed
	i. Area broken up				-	-
	ii. To be broken up				-	-
	iii. Area not to be broken-up				-	-
b	Township area (in ha.)				-	
c	Area afforested and proposed (in ha.)				-	
		Peripheral	Dumps	Roads	Township	Others
i	Existing					
ii	Proposed					
d	No. and type of trees planted and proposed					
i	Existing					
	When plantation was started?				Month / Year	
	No. of plant species planted				Number saplings (per ha.)	
	-				-	
	Survival rate %				Avg. height	
ii	Proposed					
	No. of plant species to be planted				Number of saplings (per ha.)	
	-				-	
38	**Environmental health and safety**					
a	What major health and safety hazards are anticipated?				None	
	What provisions have been made/proposed to be made to conform to health and safety requirements?				As per Mines Act/ Rules	
b	In case of an existing mine					
i	Comprehensive report on health status of the workers as under the Mines Act annexed				As per Mines Act/ Rules	
ii	Mineralogical composition of RPM (dust)					
	• Free silica				Not applicable	
	• Chromium* (Total as well as Hexavalent)				Not applicable	
	• Lead** [* Only for Chromite mines] [**Only for Base Metal mines]				Not applicable	
	Information on radiation protection measures, if applicable				Not applicable	

39. **Environmental Management Plan**

Salient features of environmental protection measures

S. No.	Environmental issues*	Already practiced, if applicable	Proposed

1	Air pollution	-	• Regular water sprinkling • Plantation activities along the roads to reduce the impact of dust in the nearby villages
2	Water pollution	-	• Mining will be done not beyond the ground water depth, to avoid Ground water pollution.
3.	Water conservation	-	Not Applicable
4.	Noise pollution	-	• Well maintained vehicles will be used for transportation in order to reduce noise during movement of vehicles • Proper maintenance of machines will be done to reduce the noise levels.
5.	Solid waste / Tailings	-	Not Applicable
6.	Land degradation	-	Not Applicable
7.	Erosion & Sediment	-	Not Applicable
8.	Top soil	-	Not Applicable
9.	Ground vibration	-	Not Applicable
10.	Wildlife conservation	-	Not Applicable
11.	Forest protection	-	Not Applicable
12.	Others (specify)	-	Not Applicable

[* As applicable]

40	**Compliance with environmental safeguards** (For existing units)	**Yes**	**No**
	Status of the compliance of conditions of Environmental clearance issued by MoEF, if any, enclosed.	-	✓
	Status of the compliance of 'Consent to Operate' issued by SPCB, if any, enclosed.	-	✓
	Latest 'environmental statement' enclosed.	-	✓
41	**Scoping of EIA**		
	Whether environmental impact assessment of the project has been carried out by following scoping process?	Yes	
	If yes, a copy of scoping of EIA annexed.	Details given in Section I	
42	**Mine closure**		
a	Have you planned mine closure?	No	
b	Submitted a conceptual mine closure plan.	No	
c	If yes, indicate estimated amount for implementing the same (in Rs. lakhs)	*166400 (4% of the total Project cost)*	
43	**Capital cost of the project (in Rs.) (Based on latest estimate)**	*4160000*	

44. Cost of environmental protection measures

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Sr. No.	Environment Management Plan (EMP)	Cost Estimation	Total Cost (Rs.)
a.	Plantation		
i)	No of plants (@95 Rs. / sapling)	100 saplings × @95 Rs. / sapling)	9500
ii)	Tree Guard (@1500/- per unit)		2,10,000
b.	Water Demand for plantation (@100saplings ×4 litres of water× twice per day = 800 ltrs.)	(800ltrs. Per day x 300 (working days) x (1.1Rs. /L)	264000
c.	Measure for prevention & control of soil erosion and management of silt shall be undertaken. Protection of dump against erosion, if any, shall be carried out with geo-textile matting or other material.	-	20000
d.	Sprinkling on haulage route for dust suppression (600 m length × 6 m width × 1 litres of water per m^2 /2 times a day=7.2KLD (Rs. 1100 for per KLD of water/day)	Rs. 1100×7.2 KLD of water/day x 300 (working days)	2376000
e.	Cost of monitoring of air quality(PM_{10},$PM_{2.5}$,NO_X,SO_2), water quality(ground water and surface water),soil quality and ambient noise level	-	2,50,000
f.	Cost for environmental cell	• Environmental Engineer:1 • Gardener :3	400000
g.	Fund for COVID-19		50000
Total			**2849700**

45	**Amount earmarked for socio-economic Welfare measures for the nearby villages other than R&R plans.**		
46	**Public Hearing**	To be followed	
47	**Whether the following approvals* (wherever applicable) have been obtained?**	**YES**	**NO**
a	Site clearance from MoEF	-	✓
b	Consent for Establishment' from the State Pollution Control Board	-	✓
c	NOC from Atomic Mineral Division	-	✓
d	Mining plan approval from IBM / Ministry of Coal	-	✓
e	In case of existing mines, mining scheme approval from IBM	-	✓
f	Forestry clearance under FCA, 1980	-	✓
g	NOC from Chief Controller of Explosives	-	✓
h	Commitment regarding availability / pumping of water from the concerned Authorities	-	✓
i	In case of ML area falling in notified areas of the Central Ground Water Authority, NOC from them.	-	✓

[* Annex copies of approvals and number them]		
48	Was / is there any court case relating to the project or related activities? If so, provide details present status.	No

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ABBREVIATIONS

EIA	Environmental impact assessment
EMP	Environment management plan
MOEF & CC	Ministry of environment, forest & climate change
TOR	Term of reference
EAC	Expert appraisal committee
SEAC	State expert appraisal committee
SPCB	State pollution control board
CPCB	Central pollution control board
NOC	No objection certificate
BGL	Below ground level
GLC	Ground level concentration
NH	National highway
SH	State highway
DB	Decibel
LEQ	Equivalent noise level
HA	Hectare
UNFC	United nations framework classification
HFL	High flood level
LFL	Low flood level
KLD	Kilo litre per day
T/CUM	Tons per cubic meter
KM	Kilo meter
RL	River level
EPA	The environment protection act
HAM	Hectare meter
BOD	Biochemical oxygen demand
DO	Dissolved oxygen
COD	Chemical oxygen demand
TKN	Total kjeldahl nitrogen
PM	Particulate matter
AAQ	Ambient air quality
TPA	Tonnes per annum
R & R	Rehabilitation & resettlement

CER	Corporate environment responsibility
VWG	Village working group
EMC	Environmental management cell
DIC	Department of industries and commerce
RBM	River bed material
NGO	Non-governmental organization
PCU	Passenger car unit
LOS	Level of service
PUC	Pollution under control
NABET	National accreditation board for education and training
QCI	Quality council of india
OSHA	Occupational safety and health administration

CHAPTER-1
INTRODUCTION

1.0 PURPOSE OF THE REPORT

Environmental Impact Assessment (EIA) is a decision making tool to the authorities, which brings forth the factual position about a project that enables them in arriving at an appropriate conclusion for the proposed projects, to retain them if environmentally sound, and reject if found having deleterious overall impact. EIA identifies the extent of the environmental, social and economic impacts of a project prior to decision-making. EIA systematically examines both beneficial and adverse impacts of the proposed project over and above the prevailing conditions of environmental parameters and ensure that these impacts are taken into account during the project designing stage itself and the values of the combined impacts are never allowed to exceed and remain within the statutory norms.

Environmental Impact Assessment report is prepared to comply with the Terms of Reference (TOR) received from SEAC vide **Letter no. - 421/parya/SEAC/5001/2019 on dated 27-11-2019** under EIA notification of the MoEF (Feb, 2010) and also the EIA Guidance Manual for Mining of Minerals of MoEF, Govt. of India, for seeking environmental clearance for Building Stone (Khanda, Gitty, Boulder) Mining Project which applied mining lease area is 2.0 hectares falling under category "B1". The lease area lies near Village Jarar, Tehsil Naraini & District- Banda.

1.1 IDENTIFICATION OF PROJECT PROPONENT

The project is being proposed by Shri Mumtaj Ali S/O-Late Shri Farzand Ali, The EIA/EMP report is prepared as per the TOR granted under the EIA Notification. In order to assess the impact on environment due to proposed mine, it is necessary to ascertain present status of environment prevailing at the project site and identification and assessment of impacts on the environment of the proposed operations.

1.2 BRIEF DESCRIPTION OF PROJECT

The proposed project is Building Stone, Khandas & Gitti, Boulder Mining Project and the estimated project cost is Rs 4160000. The proponent has applied for mining lease for Building Stone, Khandas & Gitti, Boulder Mining over an area of 2.0 Hectare at Village: Jarar ,Tehsil: Naraini ,District Banda, Uttar Pradesh.

PROJECT NATURE, SIZE & LOCATION-

Nature

The proposed project is Building Stone (Khanda, Gitty, Boulder) Mining Project.

Size

It has been proposed to prepare 20000 m^3/Year of Building Stone annually over an area 2.0 Hectare.

Location

The mining area is located in Gata No. 2450 Khand No.-05 in Village Jarar, Tehsil Naraini & District-Banda, Uttar Pradesh. The mining lease / proposed project area falls in Survey of India Toposheet No. 63C/7. The mine lease area is located between as follows:

Project Site co-ordinates	**Points. No.**	**Latitude**	**Longitude**
	A	25° 18' 55.26"N	80° 21' 39.03"E
	B	25° 18' 53.48" N	80° 21' 42.24" E
	C	25° 18' 55.85" N	80° 21' 48.05" E
	D	25° 18' 58.84" N	80° 21' 46.32" E
Minerals of mine	Building Stone, Khandas & Gitti, Boulder Mining Project Mining Project		
Nearest Railway Station	Banda about 18.0 Km North direction		
Nearest Airport	Chakeri, Kanpur about 121.0 km in North direction.		
Nearest Highway/State Highway	NH 76 about 13.0 km towards East direction from the project site.		

Project's importance to the country and the region

Building Stone (Khanda, Gitty, Boulder) Mining Project being used for construction material and other various constructional projects. There is large demand of Gitti- Boulder for roads, railway tracks, building construction etc. As per requirement of Gitti-Boulder resource is available under permissible limits. Such mining projects boost up the local as well as the economy of state because of rapid and cost effective infrastructural development.

This project operation will generate employment to the people residing in vicinity for about 300 days annually and approximately 24 peoples employed will be benefited directly and indirectly from the project.

1.3 REGULATORY COMPLIANCES & APPLICABLE LAWS/REGULATIONS

a) There is no legal case against the project and project proponent.

b) There is no any national park / Sanctuary within 10 kms radius from the project site.

1.4 SCOPE OF THE STUDY

The Expert Appraisal Committee (EAC) for mining projects considered the project during its meeting. Based on the information contained in the documents submitted and the presentation made, the SEAC-Uttar Pradesh prescribed the Terms of Reference (TOR) vide Letter no.: 421/parya/SEAC/5001/2019 dated 27-11-2019.

1.5 POINT WISE COMPLIANCE OF TOR

The points have been raised by the SEAC-Uttar Pradesh in the TOR and its compliance given as under:-

S.No.	TOR	Compliance
1.	**All pages of technical documents/ EIA/ EMP etc. should be signed by the consultant and project proponent both.**	Complied
2.	**Copy of all the analysis reports signed by analyst approved by NABL or MOEF&CC shall be annexed with then EIA report and original analysis report should be presented at the time of presentation.**	Complied (Shall be available at the time of presentation.)
3.	**MOU signed between the project Proponent and the consultant should be submitted.**	Complied (Record available)
4.	**Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification, 1994 came into force w.r.t the highest production achieved prior to 1994.**	The project proposal submitted in 2019 for 20000 m^3/ year as per LOI. It is newly proposed project only LOI has been issued and production will be commenced after getting EC.
5.	**The lab conducting the analysis should be authenticated and registered.**	Monitoring has been done by the M/s Ultra Testing & Research Laboratory, Noida, Uttar Pradesh which is certified by NABL and MOEF & CC. The NABL accreditation No. TC-8189. The validity of accreditation upto 15/11/2020
6.	**A copy of document in support of fact that the proponent is the rightful lessee of the mine should be given.**	The copy of letter of intent (LOI) of mining lease issued by the District Magistrate, Banda, U.P. vide **letter no. 825/khanij-30, Banda,dated 08-06-2019 in favour of Shri Mumtaj Ali S/O-Late Shri Farzand Ali** for mining of Building Stone, Khandas & Gitti, Boulder. LOI (Copy) is attached as **Annexure I.**
7.	**All documents including approved mine plan prepared by RQP (authorized by Indian Bureau of Mines and Directorate of Geology and Mines, Lucknow), EIA and public hearing should be compatible with one and other in terms of the mine lease area,**	Mining Plan and Progressive Mine Closure Plan of proposed mining lease area has been approved by Director General of Mines and Geology Department, Lucknow (U.P.). **Vide Letter No. 764/MINING PLAN/2016 on dated 13/08/2019. Approved Mining Plan (Copy) is attached as Annexure II.**

	production level, waste generation and its management and mining technology and should be in the name of lessee. The mine plan should take into account the conditions of the mine lease, if any, in terms of distance to be left un-worked from the river flowing nearby.	
8.	**All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).**	All corners of the coordinates of ML area are superimposed on toposheet of survey of India Toposheet No. **63C/7.** Coordinates of the mine lease area as given below. **Point / Latitude / Longitude** A / 25° 18' 55.26"N / 80° 21' 39.03"E B / 25° 18' 53.48" N / 80° 21' 42.24" E C / 25° 18' 55.85" N / 80° 21' 48.05" E D / 25° 18' 58.84" N / 80° 21' 46.32" E Imagery of the proposed area clearly shows the land use and other ecological features of the study area (core and buffer zone) for Land use and High resolution Imagery FCC maps are prepared with use a RS–GIS technique.
9.	**Information should be provided in survey of India toposheet 1:50,000 scale indicating geological map of the area, geomorphology of landform of the area, existing minerals and history of the area, important water bodies, streams and rivers and soil characteristics.**	Key plan is enclosed as plate no. I Geomorphology of landform of the area is given in Chapter no 2 of EIA/EMP report as per 1:50,000 scale.
10.	**Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the state; land diversion for mining should have approval from state land use board or the concerned authority.**	Yes mining will be done as per the guideline of central / state govt. Policy.
11.	**It should be clearly stated whether the proponent company has a well laid down Environment policy approved by its Board of directors? If so, it may be spelt out in the EIA report with description of the prescribed operating process/procedures to bring into focus**	Yes, lessee has a well laid down Environment Policy. Follow-up environmental awareness among the employees and encourage them to work in an environmentally Responsible Manner. Trained, educate and inform our employees about environmental management issues that

	any infringement/deviation/violation of the environmental of forest norms/conditions? The hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non compliances/ violations of environmental norms to the board of Directors of the company and/or shareholders or stakeholders at large may also be indicated in the EIA report.	may not affect their work and Health. Where required by legislation or where significant health, safety or environmental hazards exist, develop and maintain appropriate emergency and spill response programmes. The Company shall be aware about environmental issued and insuring compliances and conditions which applicable for the project.
12.	**Issues relating to mine safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.**	Mining is being done by open cast mining so no subsidence study is required. All the safe guards measures shall be provided whose details are given in Chapter No-4.
13.	**The study area will comprise of 10 km zone around the mine lease from the lease periphery and data contained in the EIA such as waste generation etc. should be for the life of mine / lease period.**	Study area comprises of 10 Kms radius around the mine lease boundary. Topographic Map showing 10 Km radius around the ML area has been furnished in the EIA report. All the data contained in the EIA/EMP Report are for lease period of mine Study area selected for monitoring encompasses the area/location around 10 kms (aerial) radius.
		Jarar — 0.28kms towards East Jahangirabad — 1.06 kms towards South Girwan — 2.34 kms towards East Barokhar khurd — 1.69 kms towards North-East Barokhar buzurg — 4.67 kms towards North Map showing all the monitoring location is attached as **Annexure III.**
14.	**Land use of the study area delineating forest area, agricultural land, grazing land, wild life sanctuary and national park, migratory route of fauna, water bodies, human settlements and other ecological features should be indicated.**	The Lease area falling under stony area and used for Building Stone purpose. Toposheet Map, and other relevant imageries along with the document support has been Chapter **no 2.**

15.	**A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.**	The Mining Lease area does not involve any forest land. The land of the Mining lease area is Government land **(Stony area).**
16.	**Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.**	The land of the Mining lease area is Government land on the Stony area and this area is free from any reservation of Forest Department Uttar Pradesh Government.
17.	**Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.**	There is no involvement of forest land in the project area Hence it is not applicable.
18.	**The vegetation in the RF/ PF areas in the study area, with necessary details, should be given.**	Project area not falling under Reserve forest/Protected Forest in the core zone area.
19.	**A study shall be got done to as certain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly detailed mitigative measures required, should be worked out with cost implications and submitted.**	The study areas have No any Wildlife sanctuary with in 10 Kms Radius. Therefore, Not Applicable.
20.	**Location of national parks, sanctuaries,**	There is no National Parks, Sanctuaries,

	biosphere reserves, wild life corridors, tiger/elephant reserves (existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated supported by a location map duly authenticated by chief wild life warden necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above should be obtained from the state wild life department/Chief Wild Life Warden under the Wild Life (Protection) Act, 1972 and copy furnished.	Biosphere Reserves, wildlife Corridors, Tiger/Elephant, Reserves within 10 kms within the proposed mine lease area.
21.	**A detailed biological study for the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out covering both terrestrial and aquatic flora and fauna. Details of flora and fauna, duly authenticated, separately for core and buffer zone should be furnished based on field survey clearly indicating the schedule of the fauna present.**	A detailed biological study (of 10 Kms radius study area) was conducted by Ecology and Biodiversity Expert and the details are incorporated in the EIA/EMP Report. There is a KEN River flowing towards west direction from the project site which is approx. 5 kms, A canal originate from Ken river flowing near to the project site. The East distance of Canal is 2.50 kms from the project site and used for Land Irrigation. The water quality of Canal Water and other villages of monitoring station given in surface water quality. The detailed biological study in the 10 kms periphery has been described in **Chapter 4.**
22.	**Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.**	The project site is neither falling in proximity area declared as Critically Polluted nor falling in Aravali Range. The valid and lawful LOI of this project site has been granted to the lease holder by the Mining Department of UP Government is enclosed as **Annexure-I.**
23.	**Impact of change of land use should be given.**	There shall be No alternation in the land use as the project is of Building Stone, Khandas &

		Gitti, Boulder. Approved Mining plan along with the LOI is attached as **Annexure II and I** respectively.
24.	**Impact of Mining on the hydrology of the area including water flow in the river adjoining the mine lease. It should also take into account the inundation of mined out area due to flow of water from the river.**	The water body ken river approx. 5 kms away from the lease area and mining is open cast and there is no water flow from the mine area towards river. There is no any impact on river.
25.	**R & R plan/compensation details for the project affected people (PAP) should be furnished. While preparing the R & R plan, the National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sector al programmes of line departments of the State Government.**	There will be no significant Project Affected Person (PAP) by the proposed mining activities. Hence, there is no need of R&R Plan. If any case found on the basis of assessment may be compensate the affected people.
26.	**One season (Non Monsoon) primary baseline data on ambient air quality (PM2.5, PM10, SOX and NOX), water quality, noise level, soil and flora and fauna shall be collected and the AAQ data so collected presented data-wise in the EIA and EMP report. Site –specific meteorological data should also be collected. The location of the monitoring stations should be justified. There should be at least one monitoring station within 500 m of the mine lease in the predominant downwind direction.**	One season (Non Monsoon) primary baseline data on ambient air quality ($PM_{2.5}$, PM_{10}, SO_X and NO_X), water quality, noise level, soil and flora and fauna monitoring was carried in the monitoring sites of 10 kms periphery whereas monitoring site near lease area was also considered as site within 500 m radius. The monitoring was done from 1st Oct, 2019 to 31st December, 2019 by Ultra Testing Research Laboratory (MoEF & CC approved Laboratory). The details have been given in the report where required and the test reports are attached as **Annexure V**.
27.	**Air quality modeling should be carried out for prediction of impact of project on the air quality of the area. It should also take into account the impact of movement of vehicle for transportation of mineral. The details of the dispersion**	Air quality modeling was carried out impact of Air quality has been incorporated in **Section 3** of EIA/EMP report. Wind Rose Diagram shown in **Section 3.**

	model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind rose showing pre-dominant wind direction may also be indicated on the map.	
28.	**The water requirement for the project, its availability and source to be furnished. Fresh water requirement for the project should be indicated.**	The Total Water requirement in this project site is approx. 8.38 KLD which consumed for various purpose as follows- Dust Suppression = 7.20 KLD, Plantation= 0.80 KLD, Domestic Purpose= 0.38 KLD The water requirement for the project is given in **Chapter 2.**
29.	**Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.**	Not Applicable Water will be taken from near villages through tankers.
30.	**Details of water conservation measures proposed to be adopted in the projected should be given.**	The project do not consume any process water except for drinking, dust suppression and plantation.
31.	**Details of rainwater harvesting proposed, if any, in the project should be provided.**	Not Applicable
32.	**Impact of the project on the water quality both surface and groundwater should be assessed and necessary safeguard measures, if any required should be provided.**	• **Surface Water** There is no significant adverse impact on surface water due to project activity. There is no water requirement in project activity. • **Ground Water** The ground water quality will not be affected due to mining activity. Impact of the project on the water quality and its mitigation measures has been incorporated in the EIA/EMP report.
33.	**Based on the actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed hydro geological study should be undertaken and report furnished.**	The maximum working depth of mining will be bench wise width 6 m, height 6m in Stone. So mining depth will not intersect the ground water table. Hence permission is not required from CGWA. Water requirement will be met by tanker supply therefore permission from Central Ground Water Authority for pumping of Ground water is not

	Necessary permission from Central Ground Water Authority for working below ground water and for pumping of groundwater should also be obtained and copy furnished.	required. The approved mining plan is attached as **Annexure II.**
34.	**Details of any stream, seasonal or otherwise, passing through the lease area and modification /diversion proposed, if any, and the impact of the same on the hydrology**	The canal water flowing 2.50 kms in the East direction which is away from the project site and there is no diversion modification required to canal stream.
35.	**A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the project.**	There is no field available for plantation in the lease area due to stony surface in liu of land the plantation shall be made by consultation with forest department or Gram Panchayat. The number of trees shall be planted on the basis of the survival in the area.
36.	**Impact on local transport infrastructure due to project should be indicated. Projected increase in truck traffic as a result of the project in the present road network (including those outside the project area) should be worked out, indicating whether it is capable of handling the increased load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as state government) should covered.**	Impact on local transport infrastructure due to the project has been assessed. There will not so much impact on local transport.
37.	**Details of the infrastructure facilities to be provided for the mine workers should be included in the EIA report.**	Temporary shelter along with temporary toilet connected to the soak pit at certain distance and drinking water from the mining lease area will be provided to the mine workers.
38.	**Conceptual post mining land use and Reclamation and Rehabilitation of mined out area (with plans and with adequate number of sections) should be given in the EIA report**	Conceptual post mining land use is incorporated in **Chapter 8** of the EIA/EMP Report. The soil is also generated from joints cracks due to mining will be stacked in a temporary stack yard will be used for Land Filling purpose.

39.	**Occupational health impact of project should be anticipated and preventive measures initiated details in this regard should be provided. Details of pre-placement medical examination and periodical medical examination scheduled should be incorporated in the EMP. Special attention should be in view of stone crusher nearby.**	All Relevant Personal Protective measures provided to the all workers. Pre-medical examination and periodical medical examination schedules have been furnished in the management plan of EIA/EMP Report.
40.	**Measures of social-economic significance and influence to the local community proposed to be provided by project proponent should be indicated. As far as possible, quantitative dimensions may be given with time frame for implementation**	Socio economic measures for the local people have been proposed under the component of the Corporate Environmental Responsibility along with the budgetary allocation have been incorporated in the EIA/EMP Report. Proposed project will provide the employment opportunity to the local community hence project will have positive impact on the surrounding local community. An amount of Rs. 166400 will be allocated for CER activities and policy. Detailed break up is incorporated in the EIA/EMP Report.
41.	**Public hearing points raised and commitment of the project proponent on the same along with the time bound action plan to implement the same should be provided.**	The Public hearing points are raised and commitments are point wise attached in the **Annexure I.**
42.	**Details of litigation pending against the project, if any, with direction / order passed by any court of law against the project should be given.**	There is no court case or litigation pending against this project in any court of law.
43.	**The cost of project (capital cost and recurring cost) as well as the cost towards implementation of EMP should clearly be spelt out.**	The cost of projects (capital cost and recurring cost) as well as the cost towards implementation of EMP) has been described in **Chapter 8.**
44.	**Details of Transportation of mined out materials as per the Indian Road Congress for both the ways (loaded as well unloaded trucks) load and its impact on Environment.**	The mine material shall be transported as per central/state government. Rules regulation for transportation of Building Stones.
45.	**02 km kachcha haul road to be made motorable. Submit Plan**	A motorable haul road will be constructed to connect the mine site to the nearest road/Highway and the plan for the same is

	detailed in Chapter 4.	
46.	**Besides the above, the below mentioned general points are also**	
i)	All documents to be properly referenced with index and continuous page numbering.	Complied
ii)	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	Indicated
iii)	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All original analysis/testing reports should be available during appraisal of the project.	Enclosed
iv)	Where the documents provided are in language other than English, an English translation should be provided.	Provided
v)	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall be filled and submitted.	Enclosed
vi)	While preparing the EIA report, the instructions for the proponents and instructions for the Consultants issued by MOEF & CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.	Followed
vii)	Changes, if any made in the basic scope and project parameters (as submitted in Form-1 and the PFR for securing TOR) should be brought to the attention of MoEF&CC with reasons for such changes and the permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the Final EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.	No Modifications done
viii)	The EIA report also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.	Included

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CHAPTER- 2

PROJECT DESCRIPTION

2.0 GENERAL

The Environmental Impact Assessment report has been prepared in terms of EIA notification of the MoEF dated 14th Sept 2006, as amended on 1st Dec 2009 & 4th April 2011 and the EIA Guidance Manual for Mining of Minerals (Feb, 2010) of MoEF, Govt. of India, for seeking environmental clearance for mining in the existing area of Village: Jarar, Tehsil Naraini & District- Banda, Uttar Pradesh of Building Stone, Khandas & Gitti, Boulder Mining Project mining lease measuring 2.0 hectares with the total cluster area 15.97 Ha. falling under category "B1".

2.1 DESCRIPTION OF THE PROJECT

The proposed project is Building Stone, Khandas & Gitti, Boulder Mining Project and the estimated project cost is Rs 4160000. The proponent has applied for mining lease for Building Stone, Khandas & Gitti, Boulder Mining over an area of 2.0 Hectare at Village: Jarar, Tehsil Naraini & District- Banda, Uttar Pradesh.

2.2 NEED FOR THE PROJECT

Building Stone, Khandas & Gitti, Boulder Mining Project is used for construction material and in other various infrastructural projects. There is large demand of Gitti- Boulder for road, railway track, building construction etc. Abundant Gitti- Boulder resource is available under permissible limits. Such mining projects boost up the local as well as the economy of state because of rapid and cost effective infrastructural development.

Letter of Intent: The Letter Of Intent (LOI) has been issued by the District Magistrate, Banda, U.P. vide letter no. 825/khanij-30, Banda,dated 08-06-2019 in favour of Shri Mumtaj Ali S/O-Late Shri Farzand Ali for mining of Building Stone, Khandas & Gitti, Boulder (Copy of LOI has been enclosed as **Annexure-I**).

Lease Period: 20 Years

Mine Plan and Progressive Mine Closure Plan:

Mining Plan and Progressive Mine Closure Plan of proposed mining lease area has been approved by Director General of Mines and Geology Department, Lucknow U.P. Vide Letter No. 764/MINING PLAN/2016 on dated 13/08/2019 enclosed as **Annexure-II.**

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2.3 LOCATION DETAILS

The mining area is located in Gata No. 2450 Khand No.-05 in Village Jarar, Tehsil Naraini & District-Banda, Uttar Pradesh. The mining lease / proposed project area falls in Survey of India Toposheet No. 63C/7. The mine lease area is located between as follows:

Project Site co-ordinates	**Points. No.**	**Latitude**	**Longitude**
	A	25° 18' 55.26"N	80° 21' 39.03"E
	B	25° 18' 53.48" N	80° 21' 42.24" E
	C	25° 18' 55.85" N	80° 21' 48.05" E
	D	25° 18' 58.84" N	80° 21' 46.32" E
Minerals of mine	Building Stone, Khandas & Gitti, Boulder Mining Project Mining Project		
Nearest Railway Station	Banda about 18.0 Km North direction		
Nearest Airport	Chakeri, Kanpur about 121.0 km in North direction.		
Nearest Highway/State Highway	NH 76 about 13.0 km towards East direction from the project site.		

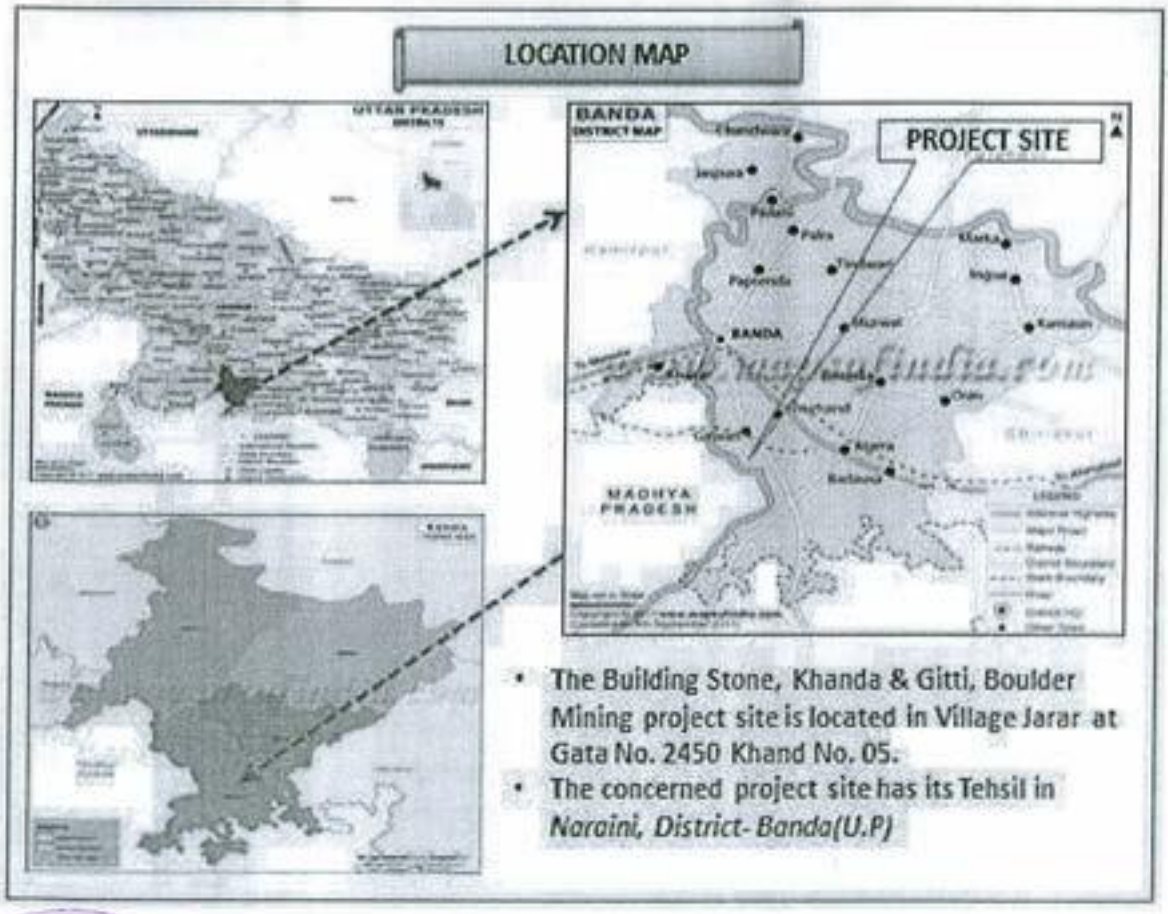

Figure 2.1 Location Map of Project

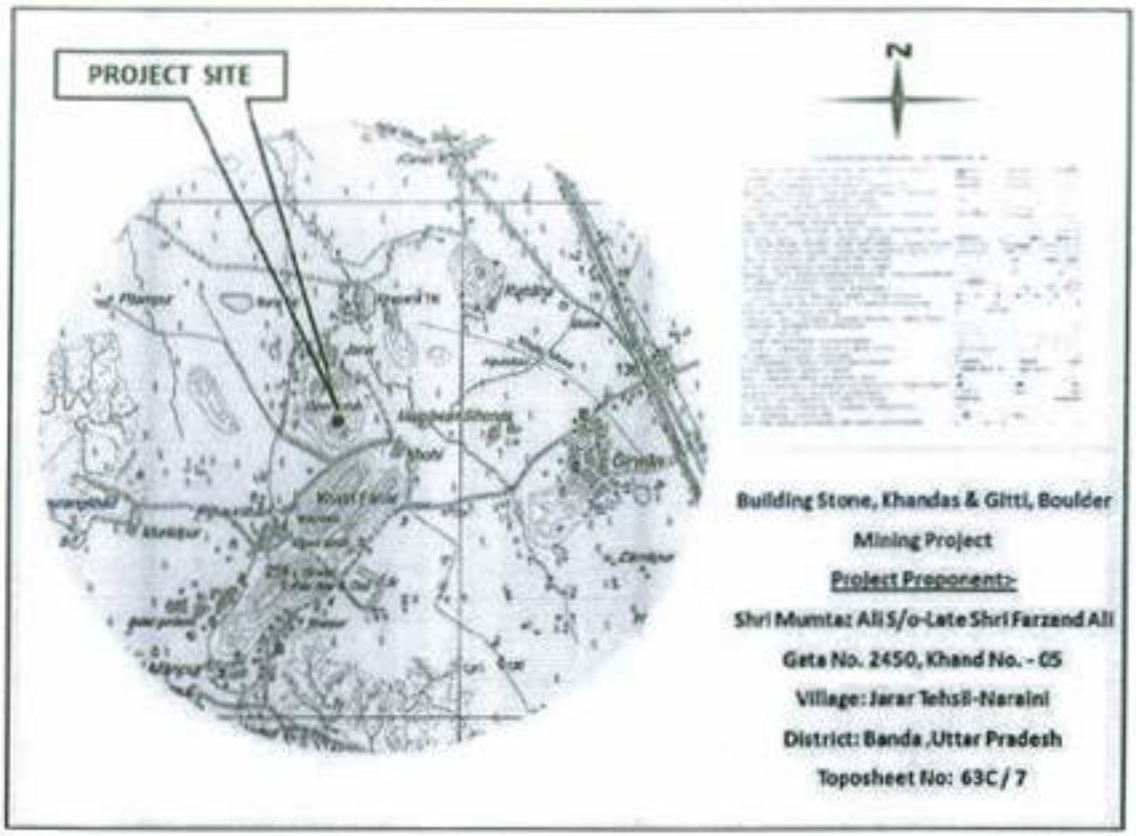

Figure 2.2 Toposheet Map of Project Site

2.4 LEASE HOLD AREA

The entire lease hold area of 1.21 ha lies in the rock of Building Stone, Khandas & Gitti, Boulder Mining Project. The breakup of the land use for ancillary feature around the mining area is given below:

-

Sr. No.	Land use	Agriculture land (ha)	Forest Land (ha)	Waste land (ha)	Grazing Land (ha)
1	Mining pits Quarry	-	-	0.124	-
2	Approach Road	-	-	0.001	-
3	Dumps	-	-	-	-
4	Office, Resht Shelter etc.	-	-	-	-
5	Balance undisturbed land	-	-	1.875	-
	Total	-	-	**2.0**	-

2.5 TOPOGRAPHY

The district largely consists of irregular uplands with outcrops of rocks intermingling mostly with lowlands, frequently under water during rainy season. The Baghein River traverses the district from south-west to north-east. The tract lying to the right of the river is intersected by numerous smaller river and rivulets, but to its left is a flat expanse, most part of which is made up of Mar and Kabar soils, eroded and converted into ravines along the banks of the rivers Ken and the Yamuna.

2.6 GEOLOGY OF THE AREA:

The general slope of lease area is from South-West to North-East direction. No seasonal & perennial drainage exists within the lease area. Due to past mining the lease is degraded by mining pit & depth of pit varies 3m to 5m. The highest and lowest point in the leasehold is 149.80 mRL towards South-West direction and 145.10mRL towards North-East direction. Banda district lies between latitude 25° 00'00" and 25°59'00" north and longitude 80°06'00" and 81°00'00" east. Total geographical area of the district is 4460 sq. km. District headquarter is at Banda having 04 tehsils and 8 blocks. As per the 2001 census the district has population of 1501610 of which 807320 males and 694290 females. Scheduled caste population is 311660. Literacy rate of the district is 54.2%.

Geologically the area comprises Precambrian Bundelkhand granites unconfirmably overlain by Vindhyan are quaternary alluvium. The main and major drainage of the district are Yamuna, Ken and Baghain which are part of Yamuna river system.

Physiographically the area can be divided into three physiographic units–

(1) Alluvial Plain

(2) Marginal Alluvial

(3) High Land (Hard rock) area.

Agriculture is the main source of economy of the district. Both surface and ground water are used for irrigation. The net irrigated area is 153804 Ha and the net area sown is 336000 Ha, which shows that 45.77% area is irrigated by ground water and the surface water while the rest depends on rainfall. Length of canal network in the district is 1193 Km. and the number of government tubewells is 460.

Banda district is drained by Yamuna, Ken and Baghain rivers. River Yamuna bifurcates the district Banda from Fatehpur in north and flows from west to east in the entire district. River Ken meets Yamuna at Chilla. River Baghain also bifurcates Banda from Chitrakoot in southeast.

2.7 GEOMORPHOLOGY & SOIL

a) **Geomorphology:**

The district is characterised by alluvial, hard rock as well as marginal alluvium. The district can be broadly classified into three physiographic units. (i) The alluvial Plain, (ii) Marginal Alluvial, (iii) High Land Area.

b) **Soil:**

In Banda district loose sediments as well as black cotton soil is found. Black cotton soil is prominent in the central part. Four major type of soil a) Rakar, b) Mar, c) Kabar and d) Padua are dominant in the district.

2.8 HYDROGEOLOGY:

On the basis of hydrogeological information ground water occurs in unconfined conditions in shallow depths and confined conditions in deeper depth in alluvium. The thickness of alluvium varies from

45.00 to 200.00 mbgl in the district. Granites (Bundelkhand) has also good potential and yield at economical discharge. Ground water occurs in fractures and joints in the hard rock. The potential fractures are encountered from around 28.00 to 96.00 meters in some places.

Depth To Water Level:

As per the depth to water level data of 27 permanent ground water monitoring stations in the year 2009, pre monsoon water level ranges from 2.75 mbgl (Khurand) to 26.95 mbgl (Bhitar Kerdera). In the post monsoon period, depth to water level varies from 0.95 mbgl (Girwan) to 22.50 mbgl (Pailani). Water level fluctuation varies from 0.0 in Rolyhdyajue to 8.02 m at Naraini. It is observed that the hilly and rocky area the fluctuation is higher than the plain. Fluctuation is more where less order streams are found

Long Term Water Level Trend:

Long term water level trend records in the area from 27 National hydrographic stations (2000-2009) in ten years show that (except Mataudh) all other wells are showing declining trend. The falling trend ranges from 0.0979 m/yr (Girwan) to 1.5087 m/yr at Paprenda.

Rainfall & Climate:

The average annual rainfall is 902.00 mm. The climate is typical subtropical penetrated by long and intense summers. About 80% of the annual rainfall is received from south-west monsoon. May is the hottest month with mercury shooting upto 47.0°C. With the advance of monsoon by mid-June, temperature starts decreasing. January is usually the coldest month with temperature going upto 5.8°C. The relative humidity is highest in August about 85% and lowest in April.

2.9 MINING:

The procedure of Building Stone (Khanda, Gitty, Boulder) Mining Project process are:

Proposed Mining Method: The proposed mining method will include the following steps:

It shall be opencast & mechanized mine. To meet required production wagon drilling with deep hole blasting shall be carried out. The blasted material will be handelled with excavator & loaded into dumpers. The height & width of bench shall be kept 6m with face slopes 70°. Secondary blasting with jackhammer drilling shall be carried out if required.

Indicate quantum of development & tonnage & grade of production expected pit wide as in table below:

Year	Overburden (cum)	ROM Gitty, Khanda, Boulder (cum)	Saleable Gitty, Khanda, Boulder (cum)	Sub grade mineral	Mineral reject	Ore to overburden ratio
1st	Nil	20000	20000	Nil	Nil	Nil
2nd	Nil	20000	20000	Nil	Nil	Nil
3rd	Nil	20000	20000	Nil	Nil	Nil
4th	Nil	20000	20000	Nil	Nil	Nil
5th	Nil	20000	20000	Nil	Nil	Nil
Total		100000	0			

Drilling:

The drilling will be done with the help of compressor and jackhammer. In this mine the diameter of hole will be 32-34 mm and depth of hole will be kept from 0.8m to 3.3m in a single hole.

Blasting:

The hole will be blasted by using ANFO.

{"Ammonium Nitrate Fuel Oil Explosive (ANFO)"means an explosive mixture of ammonium nitrate and fuel oil which is not cap sensitive, but does not include emulsion or slurry explosive or site mixed explosive (SME)}

Loading and Transportation:

Loading of stone block will be done with help of the winch and crane at both face and on truck. Small stone block (patis) is loaded in truck with the help of Excavator. The trucks will be used for transportation of stone block and Khandas from mine site to destination.

{Note:-Blasting shall be carried out after the permission of District Magistrate, Banda (U.P.) and Directorate General of Mines Safety, Gwalior (U.P)}

Blasting shall be done under the supervision of blaster and necessary preventive measures shall be taken as per the guidelines of Directorate General of Mines Safety, Gwalior (U.P)}

No. of Trucks Required (maximum):

Total capacity of mine	:	20000 m^3 per year
Total no. of working days	:	300 days
Building Stone, Khandas & Gitti, Boulder extracted in a day	:	66.67 cum
Building Stone, Khandas & Gitti, Boulder extracted in one truck	:	12-13 cum (approx.)
No. of truck required per day	:	Approximately 5-6 Truck/tippers

Restriction of mining:

The target testing and advanced stages of exploration require larger field camps and the use of heavy equipment at the worksite. Only trained workers or authorized visitors shall be permitted onto worksites where heavy equipment is operating.

Only properly licensed and trained personnel shall operate heavy equipment. Workers shall be constantly vigilant and never approach heavy equipment unless they are certain the operator knows where they are, what they intend to do and where they intend to go.

Crews shall be fully trained for the job. They shall be provided with appropriate personal protective equipment (e.g., hard hats, steel-toed boots, hearing protection, gloves, goggles and dust masks) Drill rigs shall comply with all safety requirements (e.g., guards that cover all moving parts of machinery, high pressure air hoses secured with clamps and safety chains)

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2.10 GENERAL FEATURES:

It is a Building Stone, Khandas & Gitti, Boulder mining project over an area of 2.0 ha. at Village: Nahari, District Banda, Uttar Pradesh. It has been proposed to collect 20000 m^3 per year of Building Stone, Khandas & Gitti, Boulder annually as per LOI.

Vehicular Traffic Density:

The roads connect from the mine site to NH-76 which is 13.0 km further East. So, a pass way at every 100 m distance will be provided to facilitate easy and smooth movement of heavy duty trucks.

The State Highway has traffic density less than 3-4 trucks per day. On these Highway trucks/trolleys ply regularly and these will easily accommodate additional trucks/tippers per day.

Township:

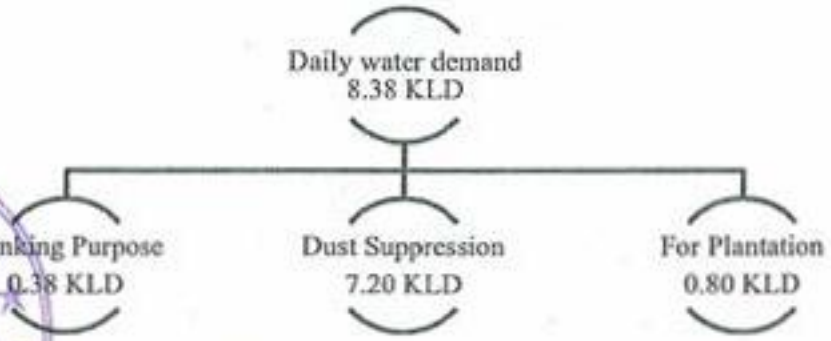
Since this mining is intermittent and laborer employed would be mostly from adjoining areas, no permanent establishment of a colony is proposed.

Power, Water Supply and Other Infrastructure Requirement Power:

All the activities will be carried out manually i.e. extraction of the Building Stone, Khandas & Gitti, Boulder and loading by the working people, only during the day time. Hence there is no power requirement for the project. However solar power panels will be provided for lighting in the shelter at the mining bench for the guards in night time.

Water Supply:

In the Building Stone, Khandas & Gitti, Boulder projects there is as such no need of water to carry out operations. Water will be required for drinking purpose and dust suppression. The number of working people is 28 so the water required for drinking purpose for the workers will be around 0.38 KLD, for Plantation will be 0.80 KLD & for the dust suppression will be 7.20 KLD, making the total water requirement will be around 8.38 KLD. This water will be supplied from the nearby area.



Infrastructure /Site Services:

The workers are mostly locals living in the close proximity of area and will work in shifts during day time only thus there is no requirement of major infrastructural facilities at the site. The following infrastructure facilities will be made available for the workers.

The site services like temporary shelter, first aid box, drinking water and portable toilets facilities will be provided to workers at the mine site.

a) **Manager's Office:** The activities shall be supervised by one competent person as overall manager. In addition one mining mate cum blaster is proposed to supervise the drilling and blasting operation. Main administrative office is proposed to be set up in nearby locality on rental accommodation. However, at site one office of Manager is proposed of about 5 x 3 mtrs Size which shall also provide accommodation for key supervisory staff as well.

b) **Canteen -cum-rest shelter**: In order to provide the rest shelter for the personnel working in the mine and also to provide tea/refreshment etc. as per the Mines Act, 1952. The arrangement shall be made to install a rest shelter-cum-canteen as shown in plate no.4 and shall be utilized by the workers. The rest shelter will be for having rest during the lunch hours by the operators/ labor. The size of rest shelter shall be about 15 x 3 meter to accommodate the working labors.

c) **First Aid Room:** To provide the first aid for any sort of injuries encountered during the mining operation, one small first aid room will be provided at mine site. First aid kit and sufficient stock of material/medicines needed for first aid will be provided as per requirement. As the Mining Engineer/Manager and Mining Mates are qualified first aides, they can provide first aid to the labor on the spot.

d) **Crèche**: At present provision of crèche is not provided, however in future if women workers are employed, arrangement for a small crèche shall be made as per the requirement.

e) **Water Supply:** The water supply for drinking purpose proposed will be made available by hired tanker. The water will be taken from the village Public water supply which is just 0.5 Km. away from the mine site and is controlled by the public health department of the state Government. The water form supply tube well is used for the entire village Banda. Therefore the same arrangement shall continue for the mines as well.

f) **Store**: Since the mining operation will involve heavy earth moving machinery, a small storeroom will be provided for day to day operations. No provisions for a separate workshop are being made as the heavy repairs will be carried out elsewhere.

Manpower Requirement:

NOTARY M.R. KHAN GOVT. OF U.P.

The manpower requirement for the proposed project will be around 28. Apart from these the local manpower may also be required for excavation, transportation and loading/unloading of Building Stone, Khandas & Gitti, Boulder in dumpers/trucks/trolleys.

S. No.	Category	Numbers
1.	Mining Engineer(Full time)	01
2.	Geologist(Full time)	01
3.	Mines mate / Blaster	01
4.	Drivers	03
5.	Supervisor	02
6.	Time Keeper	01
7.	Office Assistant/Dispatch Supervisor	01
8.	Compressor operator	01
9.	Wagon Drill operator	01
10.	Piece rated workers	16
TOTAL		28

****

NOTARY M.S. KHAN GOVT. OF U.P. INDIA

CHAPTER-3

DESCRIPTION OF ENVIRONMENT

3.0 INTRODUCTION

This section contains the description of baseline studies of the area within 10 Km radius surrounding the Nahari, "Building Stone, Khandas & Gitti, Boulder Mine", Tehsil- Naraini, District- Banda, Uttar Pradesh. The study was undertaken for prevailing environment in respect of land, air, water (both ground and surface), soil, noise, biological (both flora and fauna). The data collected has been used to understand the existing environment scenario around the proposed mining project against which the potential impacts of the proposed project can be assessed.

3.1 STUDY AREA AND PERIOD

Studies of various environmental parameters have been done within 10 km radius area of the proposed project site. The impact identification always commences with the collection of baseline data such as Ambient Air Quality, Meteorology, Ground and Surface Water Quality, Noise levels, Soil Quality, Land use pattern, Biological Environment and Socio-economic aspects, within the study zone of 10 km. radius.

3.2 LAND ENVIRONMENT

LAND USE PATTERN

The land use pattern will mainly deal with the land use and land cover study within project site and surrounding buffer area. Land use refers to Man's activity and various uses which are carried out on land. Land cover refers to natural physical characteristics of earth surface like natural vegetation, water bodies, rock/soil, artificial cover and others result to land transformation.

Land use and land cover are interchangeable process due to man's activities interference.

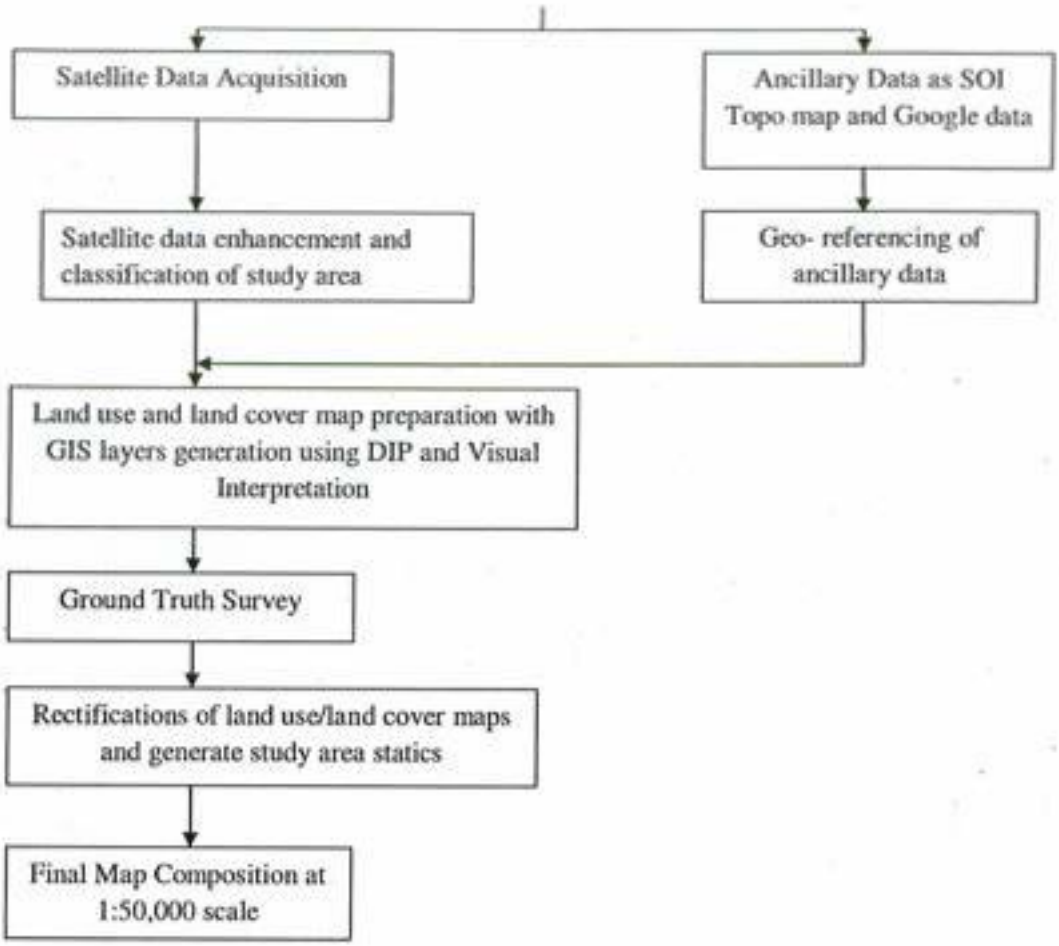
10 km radius study buffer area has taken for preparation and analysis of land use pattern.

Adopted Methodology

Data Used

- Satellite Image- Resourcesat-1
- Sensor- LISS III
- Band Combination- 2,3,4
- Ancillary SOI Toposheets and other reference map

Salient features of the adopted methodology for land use maps preparation of study area are given below:



Mine Lease Area: - 1.21 Hec.

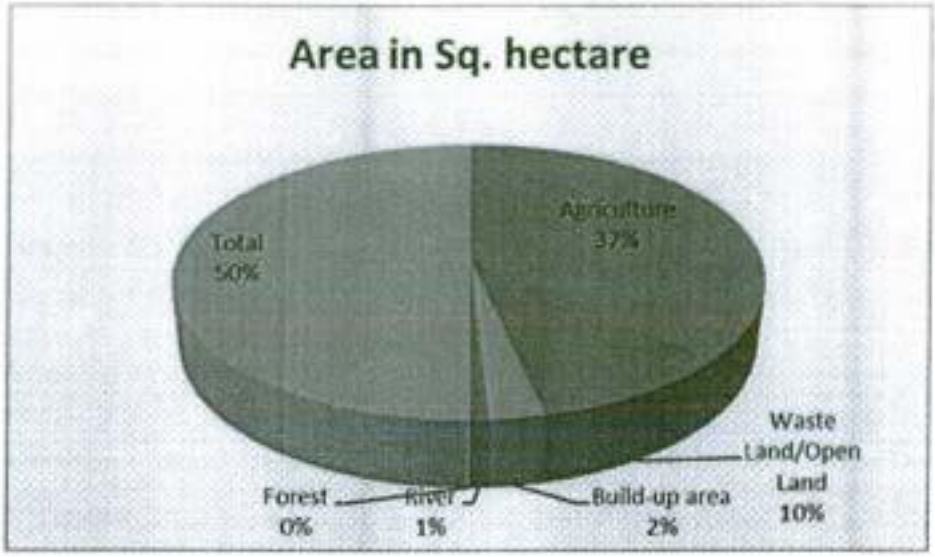
ANALYSIS OF LAND USE PATTERN

Table 3.1 Land Use/Land Cover Area Statics of Buffer Zone

S.No.	LU/LC Class	Area in Sq. hectare	%Area
1	Agriculture	23210.45	73.85
2	Waste Land/Open Land	6015.62	19.14
3	Build-up area	1587.54	50.5
4	River	491.21	1.56
5	Forest	123.75	0.40
	Total	**31428.57**	**100.00**

Source: Satellite Image Based

Pie Chart of LULC 10 km Radius Buffer Study Area



3.3 AIR ENVIRONMENT

Selection of Air Quality Monitoring Stations

Ambient air quality monitoring stations were selected primarily on the basis of surface influence, demographic influence and meteorological influence. From the meteorological data already available at the near-most site the frequency and duration of wind is preliminary determined, from which the likely wind rose diagram is first drawn. Out of four, two monitoring stations were selected in the direction of the most predominant wind direction (Up wind); one in the downwind side, one closer to the project site.

24 hourly monitoring was carried out for SO_2, NO_2, $PM_{2.5}$ & PM_{10} twice a week at each station for a study period of 3 months

3.3.1 Wind Speed

Wind speed and wind direction data recorded during the study period is useful in identifying the influence of meteorology on the air quality of the area. Based on the collected meteorological data, relative percentage frequencies of different wind directions are calculated and plotted as wind roses of Sixteen directions viz., N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW, WSW, W, WNW, NW and NNW for eight hourly and twenty four hour duration respectively. The observed wind pattern during the study period is described below and is plotted for the study period. The predominant over all wind patterns for the study period is from West to East direction.

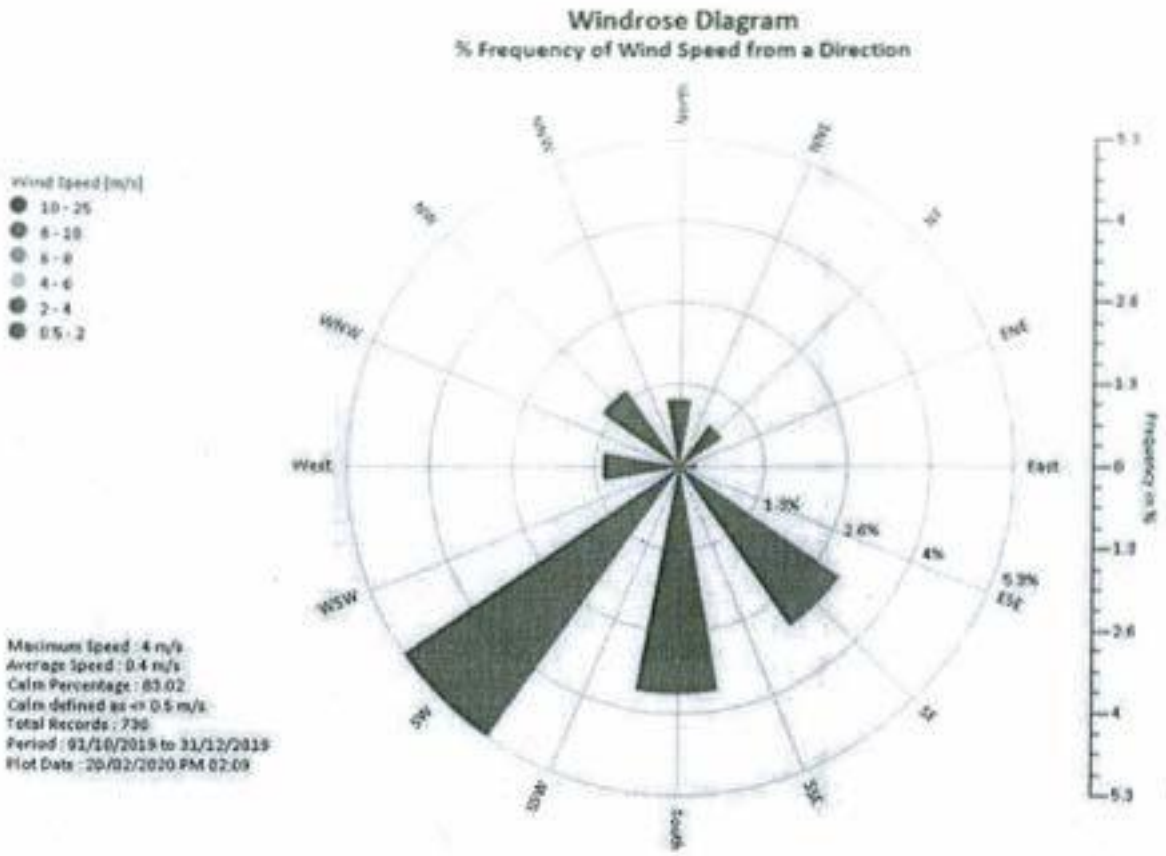


Figure 3.1 Wind rose Diagram

Methods for monitoring

The Central Pollution Control Board (CPCB) has published comprehensive document on emission testing regulations ("Emission Regulations Part-3, 1985"). Those procedures relevant to the particulate monitoring are summarized in Table 3.2(i):

Table 3.2(i): Methods adopted for $PM_{2.5}$, PM_{10}, SO_2 and NO_X (as NO_2)

Parameters	Technique	Technical Protocol	Minimum Detectable Limit
$PM_{2.5}$	Gravimetric method	US EPA Method	5 ($\mu g/m^3$)
PM_{10}	Gravimetric method	IS 5182 (Part-XXIII)	5 ($\mu g/m^3$)
Sulphur Dioxide	West and Gaeke	IS-5182 (Part-II)	4 ($\mu g/m^3$)
Nitrogen Oxide	Jacob & Hochheiser	IS-5182 (Part-VI)	7 ($\mu g/m^3$)

i. Particulate Matter (PM):-

The CPCB method and IS 5182 (Part-XXIII) adopt a very similar approach to particulate sampling. There are some differences in the expressions used, but they are generally of no practical significance. It is recommended that CPCB method is adapted.

ii. Equipment calibration:

For accurate testing of emission sources, the components of the sampling train is calibrated by outsource and supplier (Master Calibrator) standards and solutions are used, calibrated under certified reference material.

The ambient air quality primary data were collected to find the existing emissions / conditions. The data is given in Table No. 3.2 (ii) and the ambient air quality Secondary data is used. The data is given in Table No. 3.2 (iii)

Table 3.2 (ii)- Ambient air quality Primary data monitoring stations

Station Code	Name of the station	Distance from the project site	Zone/Study Area /Project Area
AQ1	Jarar	0.28kms towards East	Project Area
AQ2	Jahangirabad	1.06 kms towards South	Study Area
AQ3	Girwan	2.34 kms towards East	Study Area
AQ4	Barokhar khurd	1.69 kms towards North-East	Study Area
AQ5	Barokhar buzurg	4.67 kms towards North	Study Area

Table 3.2(iii) Ambient Air Quality Status

Sr. No.	Pollutant	Location	No. of observation	Maximum	Minimum	Average of total no. of observation	CPCB Standards
1.	SO_2 ($\mu g/m^3$)	AQ1	24	11.98	9.36	10.80	80.0
		AQ2		14.65	9.12	11.44	
		AQ3		11.35	9.12	10.13	
		AQ4		11.46	8.12	10.33	
		AQ5		11.53	8.36	9.62	
2.	NO_2 ($\mu g/m^3$)	AQ1	24	27.14	21.45	24.64	80.0
		AQ2		26.78	21.55	23.82	
		AQ3		27.54	22.46	25.21	
		AQ4		26.78	20.49	24.34	
		AQ5		26.34	20.78	24.03	
3.	PM10 ($\mu g/m^3$)	AQ1	24	68.24	61.48	64.84	100.0
		AQ2		79.65	63.79	70.24	
		AQ3		74.61	61.45	67.26	
		AQ4		75.52	65.45	70.89	
		AQ5		67.13	62.35	64.28	
4.	PM2.5 ($\mu g/m^3$)	AQ1	24	38.51	31.47	33.82	60.0
		AQ2		41.28	34.76	38.10	
		AQ3		38.39	31.15	34.71	
		AQ4		39.51	33.74	37.26	
		AQ5		38.39	32.69	35.21	
5	CO ($\mu g/m^3$)	AQ1	24	0.67	0.53	0.60	4
		AQ2		0.69	0.53	0.64	
		AQ3		0.69	0.53	0.62	

		AQ4		0.79	0.66	0.73
		AQ5		0.50	0.68	0.63

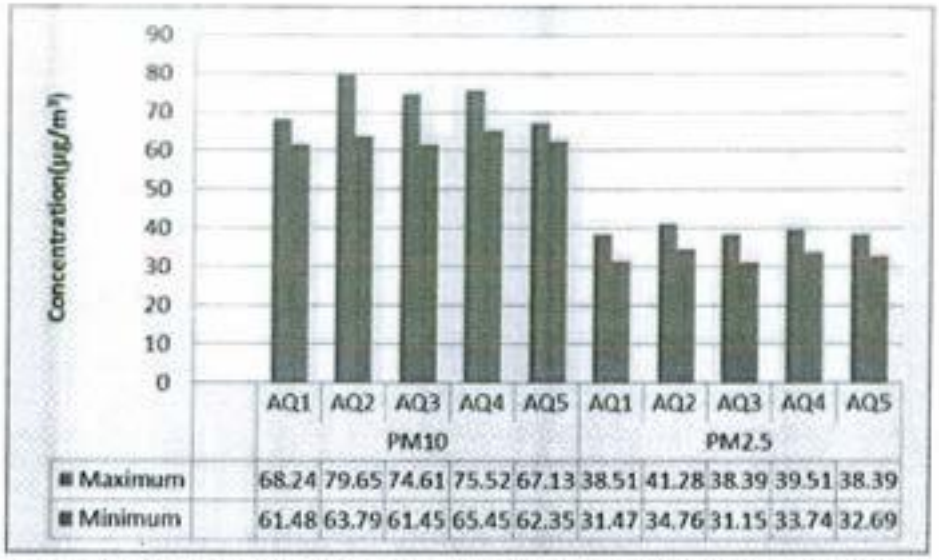


Figure 3.2 Graphical representations of Particulate Pollutants (PM_{10} and $PM_{2.5}$)

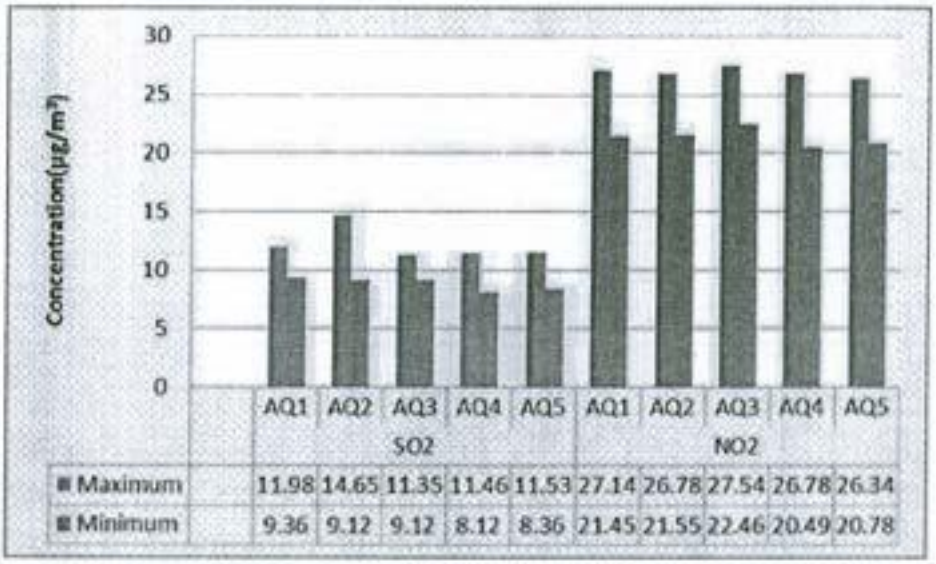


Figure 3.3 Graphical representation of gaseous SO_2 and NO_x pollutant

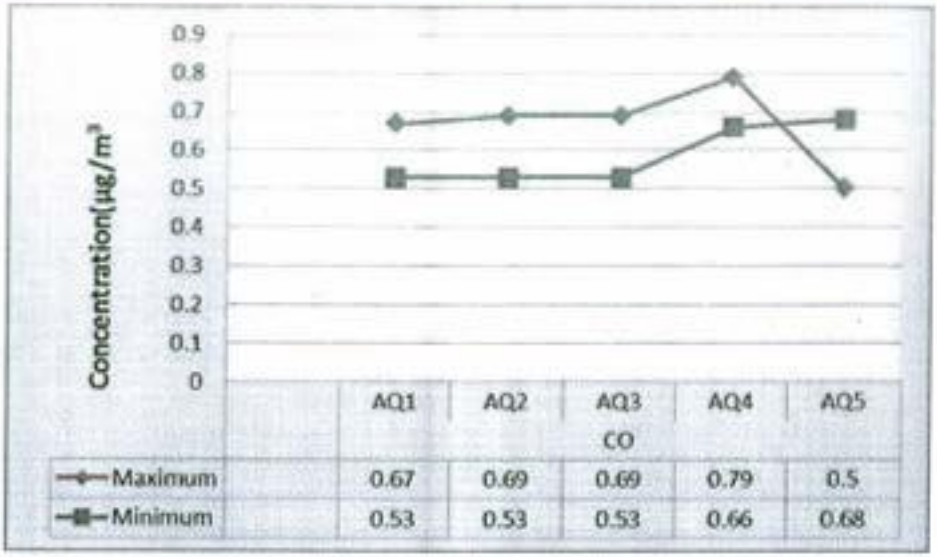


Figure 3.4 Graphical representation of gaseous CO pollutant

Observations:

Ambient Air Quality Monitoring reveals that the maximum & minimum concentrations of PM10 for all the AQ5 monitoring stations were found to be ranging between 79.65 µg/m³ and 61.45 µg/m³ and the maximum & minimum concentrations of PM 2.5 for all the AQ5 monitoring stations were found to be ranging between 41.28 µg/m³ and 31.47 µg/m³.

As far as the gaseous pollutants SO2 and NO2 are concerned, the prescribed CPCB limit of 80 µg/m³ for residential and rural area has never surpassed at any station. The maximum concentration of SO2 was found at AQ2 with a value 14.65 µg/m³ and minimum at AQ4 with a value 8.12 µg/m³. The maximum concentrations of NO2 were found at AQ3 with a value 27.54 µg/m³ and minimum at AQ5 with a value 20.78 µg/m³

Free SiO_2:

-Table 3.2 (iv) Silica Contents in dust of air samples collected

SiO_2 (µg/m³)	AQ1	AQ2	AQ3	AQ4	AQ5
Minimum	3.69	4.02	1.95	2.02	3.78
Maximum	4.08	4.78	4.48	4.25	4.17

Observations:

The concentrations of SiO_2 were found to be in range of 1.95 to 4.78 µ g/m³.

3.4 WATER ENVIRONMENT

3.4.1 GROUND WATER

Three water samples were collected from the study area. The location of sampling points is shown in Table 3.4.1 (i) and the physico-chemical analysis of the water samples is given in the Table 3.4.1 (ii).

Table 3.4.1 (i) Ground water sampling locations

Station No.	Location	Distance (km)
GW1	Jarar(Handpump)	0.28kms towards East
GW2	Jahangirabad(Handpump)	1.06 kms towards South
GW3	Girwan(Handpump)	2.34 kms towards East
GW4	Barokhar buzurg(Handpump)	4.67 kms towards North

Table 3.3.1 (ii) Physico-chemical properties of ground water Study Area

Sampling October 2019 (GW1)

S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.35	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS-3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS-3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	340.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	56.00	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	48.60	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	143.97	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.15	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	0.81	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	893	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0
15	Sulphate (as SO_4)	IS:3025(Part-24)	26.79	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	3.07	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS-3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminium (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	388	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E.Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coli form	IS:1622	Absent	MPN/100 ml	Absent	Absent

Sampling November 2019 (GW1)

S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.47	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS-3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS-3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	356.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	60.80	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	49.57	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	152.08	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.12	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	0.84	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	916	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0
15	Sulphate (as SO_4)	IS:3025(Part-24)	27.37	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	3.18	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS-3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminium (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	404	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coli form	IS:1622	Absent	MPN/100 ml	Absent	Absent

Sampling December 2019 (GW1)

S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.45	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS-3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS-3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	332.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	52.80	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	48.60	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	133.83	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.13	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	0.82	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	885	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0

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15	Sulphate (as SO_4)	IS:3025(Part-24)	26.40	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	3.16	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS-3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminiums (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	372	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E.Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coli form	IS:1622	Absent	MPN/100 ml	Absent	Absent

Sampling October 2019 (GW2)

S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.59	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS-3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS-3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	244.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	59.20	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	23.33	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	117.61	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.12	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	0.78	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	872	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0
15	Sulphate (as SO_4)	IS:3025(Part-24)	25.04	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	3.41	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS-3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminium (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	348	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E.Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coli form	IS:1622	Absent	MPN/100 ml	Absent	Absent

Sampling November 2019 (GW2)

S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.72	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS-3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS-3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	212.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	54.40	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	18.47	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	113.55	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.11	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	0.73	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	827	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0
15	Sulphate (as SO_4)	IS:3025(Part-24)	22.32	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	3.30	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS-3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminium (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	328	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E.Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coli form	IS:1622	Absent	MPN/100 ml	Absent	Absent

Sampling December 2019 (GW2)

RESULTS						
S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.85	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS-3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS-3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	236.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	51.20	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	26.24	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	109.50	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.09	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	0.69	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	840	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0
15	Sulphate (as SO_4)	IS:3025(Part-24)	21.16	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	3.23	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS-3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminium (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated Biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	316	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E.Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coli form	IS:1622	Absent	MPN/100 ml	Absent	Absent

Sampling October 2019 (GW3)

S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.61	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS-3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS-3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	304.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	64.00	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	34.99	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	40.55	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.27	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	1.39	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	706	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0
		Contd. to report W-0410/2019-03 (Page 2 of 2)				
15	Sulphate (as SO_4)	IS:3025(Part-24)	20.38	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	1.81	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS-3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminium (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	364	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E.Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coliforms	IS:1622	Absent	MPN/100 ml	Absent	Absent

Sampling November 2019 (GW3)

S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.43	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS-3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS-3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	300.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	67.20	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	32.08	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	46.64	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.30	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	1.39	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	723	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0
15	Sulphate (as SO_4)	IS:3025(Part-24)	20.38	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	1.86	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS-3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminium (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated Biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	372	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E.Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coli form	IS:1622	Absent	MPN/100 ml	Absent	Absent

Sampling December 2019 (GW3)

S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.51	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS-3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS-3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	292.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	64.00	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	32.08	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	42.58	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.29	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	1.30	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	695	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0
15	Sulphate (as SO_4)	IS:3025(Part-24)	20.96	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	1.89	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS-3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminium (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	356	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E.Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coli form	IS:1622	Absent	MPN/100 ml	Absent	Absent

Sampling October 2019 (GW4)

S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.41	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS-3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS-3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	280.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	62.40	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	30.13	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	54.75	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.11	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	0.74	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	664	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0

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15	Sulphate (as SO_4)	IS:3025(Part-24)	16.50	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	1.68	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS-3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminium (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	296	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E.Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coli form	IS:1622	Absent	MPN/100 ml	Absent	Absent

Sampling November 2019 (GW4)

S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.53	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS-3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS-3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	272.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	59.20	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	30.13	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	56.78	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.11	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	0.72	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	679	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0
15	Sulphate (as SO_4)	IS:3025(Part-24)	16.11	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	1.63	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS-3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminium (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated Biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	288	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E.Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coli form	IS:1622	Absent	MPN/100 ml	Absent	Absent

Sampling December 2019 (GW4)

S.No	Parameter	Test Method	Results	Units	Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1	pH	IS:3025(Part-11)	7.61	-	6.5-8.5	-
2	Colour	IS:3025(Part-4)	<5.0	Hazen	5	15
3	Odour	IS:3025(Part-05)	Agreeable	-	Agreeable	Agreeable
4	Taste	IS:3025(Part-7)	Agreeable	-	Agreeable	Agreeable
5	Turbidity	IS:3025(Part-10)	<1.0	NTU	1	5
6	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	284.00	mg/l	200	600
7	Calcium(as Ca)	IS:3025(Part-40)	60.80	mg/l	75	200
8	Magnesium(as Mg)	IS:3025(Part-46)	32.08	mg/l	30	100
9	Chloride(as Cl)	IS:3025(Part-32)	58.80	mg/l	250	1000
10	Iron(as Fe)	IS:3025(Part-53)	0.10	mg/l	0.3	No Relaxation
11	Fluoride(as F)	APHA-4500 F	0.70	mg/l	1	1.5
12	Total Dissolved Solid	IS:3025(Part-16)	674	mg/l	500	2000
13	Phenolic Compound (as C_6H_5OH)	IS: 3025 (Part-43)	<0.001	mg/l	0.001max	0.002 Max
14	Anionic Detergents (as MBAS)	Annex K of IS 13428	<0.1	mg/l	0.2	1.0
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15	Sulphate (as SO_4)	IS:3025(Part-24)	16.89	mg/l	200	400
16	Nitrate (as NO_3)	IS: 3025 (Part-34)	1.64	mg/l	45	No Relaxation
17	Cadmium (as Cd)	IS:3025(Part-41)	<0.001	mg/l	0.003	No Relaxation
18	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.01	No Relaxation
19	Total Chromium (as Cr)	Annex J of IS-13428	<0.01	mg/l	0.05	No Relaxation
20	Copper (as Cu)	IS:3025(Part-42)	<0.01	mg/l	0.05	1.5
21	Total Ammonia	IS: 3025 (Part-34)	<0.1	mg/l	0.5	No Relaxation
22	Chloramines (as Cl_2)	IS:3025(Part-26)	<1.0	mg/l	4	No Relaxation
23	Free Residual Chlorine	IS:3025(Part-26)	<0.1	mg/l	0.2	1
24	Aluminium (as Al)	IS:3025(Part-55)	<0.01	mg/l	0.03	0.2
25	Zinc	IS:3025(Part-49)	<1.0	mg/l	5	15
26	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.1	0.3
27	Boron (as B)	IS:3025(Part-57)	<0.1	mg/l	0.5	1
28	Selenium (Se)	IS:3025(Part-56)	<0.01	mg/l	0.01	No Relaxation
29	Silver (As Ag)	Annex J of IS 13428	<0.1	mg/l	0.1	No Relaxation
30	Mercury (as Hg)	IS:3025(Part-48)	<0.001	mg/l	0.001	No Relaxation
31	Molybdenum (Mo)	IS:3025(Part-2)	<0.01	mg/l	0.07	No Relaxation
32	Nickel (as Ni)	IS:3025(Part-54)	<0.01	mg/l	0.02	No Relaxation
33	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.01	0.05
34	Poly Nuclear Aromatic Hydro Carbons	APHA6440	<0.0001	mg/l	0.0001	No Relaxation
35	Poly Chlorinated Biphenyl	APHA6630	<0.0001	mg/l	0.0005	No Relaxation
36	Alkalinity	IS:3025(Part-23)	296	mg/l	200	600
37	Sulphide (as H_2S)	IS:3025(Part-29)	<0.01	mg/l	0.05	No Relaxation
38	Cyanide (as CN)	IS:3025(Part-27)	<0.01	mg/l	0.05	No Relaxation
39	E.Coli	IS:1622	Absent	E.Coli/100ml	Absent	Absent
40	Coli form	IS:1622	Absent	MPN/100 ml	Absent	Absent

Observation:

Analysis of results of ground water reveals the following: -

- pH varies from 7.35 to 7.85 of Study area.
- Total hardness varies from 212 mg/l to 356 mg/l of Study area
- Total dissolved solids(TDS) vary from 664 mg/l to 916 mg/l of Study area
- Chloride from 40.55 mg/l to 152.08 mg/l of Study area
- Fluoride from 0.61 mg/l to 1.39 mg/l of Study area

The ground water from all sources remains suitable for drinking purposes as all the constituents are within the limits prescribed by drinking water standards promulgated by Indian Standards IS: 10500.

3.4.2 SURFACE WATER

Three surface water samples were collected from the study area. The location of surface water samples is given in Table 3.4.2 (iii). The physico-chemical analysis of the these samples are given in the Table 3.4.2 (iv)

Table 3.4.2 (iii) Surface water sampling locations

Station No.	Location	Direction and Distance (km)
SW1	Jarar(Pond)	0.28kms towards East
SW2	Girwan(Pond)	2.34 kms towards East
SW3	Barokhar khurd(canal upstream)	2.22 kms towards North-East
SW4	Barokhar khurd (canal downstream)	1.69 kms towards North-East
SW5	Barokhar buzurg(Pond)	4.67 kms towards North

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Table 3.3 (iv) Physico-chemical properties of surface water

Sampling October 2019 (SW1)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.32	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	22.4	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	5.9	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	632.2	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	45	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	168	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.6	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	7.8	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	35.20	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	14.58	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	41.09	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.098	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.22	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	395	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	148.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4),Max	IS:3025(Part-24)	8.74	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	15.9	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr)	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	8.9	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.74	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	16.00	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	5.69	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	15	MPN/100ml	50	500	5000	-	-

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Sampling November 2019 (SW1)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.61	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	20.4	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	5.7	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	647.5	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	48	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	176	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.9	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	7.7	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	36.80	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	13.61	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	45.01	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.088	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.19	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	402	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	148.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4)Max	IS:3025(Part-24)	8.93	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	16.4	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	8.2	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.77	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	19.20	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	6.04	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	10	MPN/100ml	50	500	5000	-	-

NOTARY GOVT. OF U.P. INDIA

Sampling December 2019 (SW1)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.19	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	19.8	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	5.9	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	606.3	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	46	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	196	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	3	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	7.5	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	35.20	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	12.64	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	39.14	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.088	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.23	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	382	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	140.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4),Max	IS:3025(Part-24)	8.54	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	16.0	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	8.0	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.78	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS:3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	17.60	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	5.94	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	13	MPN/100ml	50	500	5000	-	-

NOTARY M.S. KHAN GOVT. OF U.P. INDIA

Sampling October 2019 (SW2)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.10	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	21.7	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	5.1	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	714.8	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	54	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	208	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.8	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.6	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	41.60	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	24.30	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	62.62	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.083	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.23	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	436	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	204.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4)Max	IS:3025(Part-24)	7.96	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	17.5	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	8.2	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.83	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	22.40	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	6.09	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	13	MPN/100ml	50	500	5000	-	-

NOTARY M.R. KHAN GOVT. OF U.P. INDIA

Sampling November 2019 (SW2)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.54	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	20.9	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	4.9	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	658.6	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	39	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	212	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	3.2	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.5	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	33.60	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	26.24	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	58.71	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.093	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.22	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	423	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	192.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4)Max	IS:3025(Part-24)	8.54	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	17.3	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	8.3	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.89	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	20.80	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	5.99	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	9	MPN/100ml	50	500	5000	-	-

NOTARY M.P. KHAN GOVT. OF U.P. INDIA

Sampling December 2019 (SW2)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.29	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	19.6	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	5	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	668.1	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	41	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	212	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	3.1	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.3	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	32.00	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	28.19	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	58.71	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.093	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.22	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	431	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	196.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4)Max	IS:3025(Part-24)	7.96	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	17.1	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	8.6	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	1.05	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	17.60	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	6.24	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	13	MPN/100ml	50	500	5000	-	-

NOTARY A.H. KHAN GOVT. OF U.P. INDIA

Sampling October 2019 (SW3)

RESULTS									
S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.22	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	22.5	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	3.7	NTU	-	-	-	-	-
4	Condoctivity @25°C	IS:3025(Part-14)	437.4	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	36	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	228	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.9	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.5	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	33.60	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	15.55	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	54.79	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.088	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.23	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	308	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	148.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4)Max	IS:3025(Part-24)	6.79	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	16.5	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr)	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	7.8	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.88	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	17.60	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	5.74	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	15	MPN/100ml	50	500	5000	-	-

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Sampling November 2019 (SW3)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.51	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	21.7	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	2.8	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	503.4	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	32	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	220	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.7	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.5	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	35.20	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	12.64	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	52.83	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.079	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.23	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	331	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	140.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4),Max	IS:3025(Part-24)	6.41	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	15.8	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	6.9	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.87	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	14.40	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	5.00	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	11	MPN/100ml	50	500	5000	-	-

NOTARY GOVT. OF U.P. INDIA

Sampling December 2019 (SW3)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.66	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	20.7	^{O}C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	2.6	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	493.2	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	29	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	212	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.5	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.3	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	32.00	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	11.66	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	46.96	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.069	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.20	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	315	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	128.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4)Max	IS:3025(Part-24)	5.63	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	16.2	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr)	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	6.9	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.82	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	17.60	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	5.45	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	16	MPN/100ml	50	500	5000	-	-

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Sampling October 2019 (SW4)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.51	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	22.8	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	4.2	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	602.7	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	41	mg/l	-	-	-	-	-
6	Total Alkalinity ($As\ CaCO_3$)	IS:3025(Part-23)	224	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.9	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.4	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	35.20	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	16.52	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	58.71	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.093	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.23	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	374	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	156.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4),Max	IS:3025(Part-24)	6.79	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	16.5	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr)	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	8.1	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.88	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS:3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	20.80	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	6.29	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	13	MPN/100ml	50	500	5000	-	-

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Sampling November 2019 (SW4)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.63	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	21.3	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	4.5	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	591.3	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	43	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	224	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.7	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.2	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	33.60	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	15.55	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	54.79	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.093	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.23	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	362	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	148.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4)Max	IS:3025(Part-24)	6.02	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	16.0	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr)	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	8.6	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.86	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	19.20	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	5.99	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	10	MPN/100ml	50	500	5000	-	-

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Sampling December 2019 (SW4)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.55	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	20.8	^{0}C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	4.8	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	609.7	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	47	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	232	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.8	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.3	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	36.80	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	15.55	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	56.75	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.088	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.21	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	381	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	156.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4)Max	IS:3025(Part-24)	6.99	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	16.0	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	9.0	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.84	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	19.20	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	5.99	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	14	MPN/100ml	50	500	5000	-	-

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Sampling October 2019 (SW5)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.82	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	22.5	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	3.7	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	437.4	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	36	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	228	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.6	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.5	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	33.60	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	15.55	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	41.09	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.074	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.17	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	266	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	148.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4)Max	IS:3025(Part-24)	6.02	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	16.5	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	7.8	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.79	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	17.60	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	4.95	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	11	MPN/100ml	50	500	5000	-	-

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Sampling November 2019 (SW5)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.66	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	21.7	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	3.9	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	452.9	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	33	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	220	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.7	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.4	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	35.20	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	15.55	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	39.14	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.069	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.17	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	273	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	152.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4)Max	IS:3025(Part-24)	6.41	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	15.4	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	8.2	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.87	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	17.60	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	5.84	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	16	MPN/100ml	50	500	5000	-	-

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Sampling December 2019 (SW5)

S.No	Parameter	Test Method	Results	Units	Tolerance Limit as per IS:2296				
					Class A	Class B	Class C	Class D	Class E
1	pH	IS:3025(Part-11)	7.59	-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
2	Temperature	IS:3025(Part-09)	19.7	°C	-	-	-	-	-
3	Turbidity	IS:3025(Part-10)	4	NTU	-	-	-	-	-
4	Conductivity @25°C	IS:3025(Part-14)	451.6	µs/cm.	-	-	-	1000	2250
5	Total Suspended Solid	IS:3025(Part-17)	37	mg/l	-	-	-	-	-
6	Total Alkalinity (As $CaCO_3$)	IS:3025(Part-23)	224	mg/l	-	-	-	-	-
7	Biological Oxygen Demand (Max.) (at 27°C for 3 days)	IS:3025(Part-44)	2.7	mg/l	2	3	3	-	-
8	Dissolved Oxygen (as O_2) Min.	IS:3025(Part-38)	8.4	mg/l	6	5	4	4	-
9	Calcium(as Ca)	IS:3025(Part-40)	35.20	mg/l	80	-	-	-	-
10	Magnesium(as Mg)	IS:3025(Part-46)	16.52	mg/l	24	-	-	-	-
11	Chloride(as Cl),Max	IS:3025(Part-32)	43.05	mg/l	250	-	-	-	600
12	Iron(as Fe),Max	IS:3025(Part-53)	0.083	mg/l	0.3	-	50	-	-
13	Fluoride(as F),Max	APHA-4500 F	0.17	mg/l	1.5	1.5	1.5	-	-
14	Total Dissolved Solid	IS:3025(Part-16)	290	mg/l	500	-	1500	-	2100
15	Total Hardness (as $CaCO_3$)	IS:3025(Part-21)	156.00	mg/l	300	-	-	-	-
16	Sulphate (as SO_4)Max	IS:3025(Part-24)	6.79	mg/l	400	-	400	-	1000
17	Phosphate (as P)	IS:3025(Part-31)	<0.2	mg/l	-	-	-	-	-
18	Sodium (as Na)	IS:3025(Part-45)	15.9	mg/l	-	-	-	-	-
19	Manganese (as Mn)	IS:3025(Part-59)	<0.1	mg/l	0.5	-	-	-	-
20	Total Chromium (as Cr	IS:3025(Part-52)	<0.01	mg/l	0.05	0.05	0.05	-	-
21	Zinc (as Zn)	IS:3025(Part-49)	<1.0	mg/l	15	-	15	-	-
22	Potassium (as K)	IS:3025(Part-45)	8.8	mg/l	-	-	-	-	-
23	Nitrate (as NO_3),Max	IS: 3025 (Part-34)	0.84	mg/l	20	-	50	-	-
24	Cadmium (as Cd)	IS-3025(Part-41)	<0.01	mg/l	0.01	-	0.01	-	-
25	Lead (as Pb)	IS:3025(Part-47)	<0.01	mg/l	0.1	-	0.1	-	
26	Copper (as Cu)	IS:3025(Part-42)	<0.1	mg/l	1.5	-	1.5	-	-
27	Chemical Oxygen Demand (asO_2)	IS-3025(Part-58)	16.00	mg/l	-	-	-	-	-
28	Silica	IS:3025(Part-35)	6.09	mg/l	-	-	-	-	-
29	Arsenic (as As)	IS:3025(Part-37)	<0.01	mg/l	0.05	0.2	0.2	-	
30	Total Coli Form	IS:1622	12	MPN/100ml	50	500	5000	-	-

Observation:

The analysis results indicate that the pH ranges between 7.10 and 7.66. Dissolved Oxygen (DO) was observed in the range of 7.8 to 8.9 mg/l. COD values were observed to be in the range of 14.40 to 22.40 mg/l and BOD values were observed to be in the range of 2.6 to 3.2 mg/l. The Iron and Nitrate were found to be in the range of 0.088 to 0.098 mg/l and 0.74 to 1.05 mg/l respectively. Bacteriological examination of surface water samples revealed the presence of total coliform in range of 9 MPN/100 ml to 16 MPN/100 ml. Based on the results it is evident that most of the parameters of the samples comply with Category 'C' standards of CPCB indicating their suitability for drinking water source after conventional treatment and disinfection.

Conclusion:

The surface water quality of the study area found agreeable range. The water quality parameter like DO, BOD and other parameters are within the range of permissible limit for irrigation, aquatic life survival and other purpose

Surface water quality criteria for different uses (specified by CPCB, 1979 and the Bureau of Indian Standards, 1982)

S. No	Water quality parameter	Characteristic of water body				
		A *	B *	C *	D *	E *
1	Dissolved Oxygen (DO) mg/l (minimum)	6	5	4	4	3
2	Biochemical Oxygen Demand (BOD), mg/l (max)	2	3	3	-	-
3	Total Coliform organisms ** MPN/100ml (max)	50 **	500	500	-	-
4	Total Dissolved Solids (TDS) mg/l (max)	500	-	1500	-	2100
5	Chlorides (as Cl^-) mg/l (max)	250	-	600	-	600
6	Colour, Hazen units (max)	-	10	300	300	-
7	Sodium Absorption Ratio (max)	-	-	-	-	20
8	Boron (as B), mg/l (max)	-	-	-	-	-
9	Sulphates (as SO_4^{-2}), mg/l (max)	400	-	400	-	1000
10	Nitrates (as NO_3^-) mg/l (max)	20	-	50	-	-
11	Free Ammonia (as NH_3) mg/l (max)	-	-	-	1.2	-
12	Conductivity at 25°C micro mhos/cm (max)	-	-	-	1000	2500
13	pH value	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.0-8.5
14	Arsenic (as As), mg/l (max)	0.05	0.2	0.2	-	-
15	Iron (as Fe), mg/l (max)	0.3	-	-	0.5	-
16	Fluoride (as F), mg/l (max)	1.5	1.5	1.5	-	-
17	Lead (as Pb), mg/l (max)	0.1	-	0.1	-	-

Note: * Classes of water use:

A Drinking water source without conventional treatment but after disinfection
B Out door bathing (organised)
C Drinking water source with conventional treatment followed by disinfection.
D Propagation of wild life, fisheries.
E Irrigation, Industrial cooling, controlled waste disposal.

** If the coliform is found to be more than the prescribed tolerance limits, the criteria for coliforms shall be satisfied if not more than 20 percent of samples show more than the tolerance limits specified and not more than 5 percent of samples show values more than 4 times the tolerance limits. There should be no visible discharge of domestic and industrial waste into class "A" waters. In case of classes "B" and "C" the discharge shall be so regulated / treated as to ensure maintenance of the stream standards.

3.5 SOIL ENVIRONMENT

Soil may be defined as a thin layer of earth's crust, medium for the growth of plants. The soil

characteristics include both physical and chemical properties. The soil survey and soil samples were carried out / collected to assess the soil characteristics of the study area. Soil samples were collected from 5 locations (project site, one upstream & one downstream side) as shown in Table 3.4(i) and analyzed as per CPCB norms.

The physico-chemical characteristics of these soil samples are given in Table No. 3.4(ii).

Table No. 3.5 (i) Description of soil sampling locations

Station No.	Location	Distance (km)
SQ1	Jarar	0.28kms towards East
SQ 2	Jahangirabad	1.06 kms towards South
SQ 3	Girwan	2.34 kms towards East
SQ4	Barokhar buzurg	4.67 kms towards North

Table 3.5 (ii) Physico-chemical properties of soil

Sampling October 2019 (SQ1)

S.No	Parameter	Units	Result	Test Method
1	Texture	-	Sandy Clay Loam	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	52.45	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	33.12	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	14.43	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.28	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	286.5	IS: 14767
4	Potassium	mg/kg	200.79	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	132.58	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	4159.70	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	706.21	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.50	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	%	27.80	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	mg/kg	670.18	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	56.12	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.28	IS: 2720 (part-28)
13	Organic Carbon	%	0.79	IS: 2720 (part-22)
14	Organic Matter	%	1.41	IS: 2720 (part-22)
15	Porosity	%	42.47	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	3.53	IS: 2720 (part-17)

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Sampling November 2019 (SQ1)

S.No	Parameter	Units	Result	Test Method
1	Texture	-	Sandy Clay Loam	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	49.00	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	34.82	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	16.18	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.41	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	298.3	IS: 14767
4	Potassium	mg/kg	200.02	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	130.27	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	4321.31	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	686.32	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.49	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	%	28.00	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	mg/kg	752.00	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	54.12	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.27	IS: 2720 (part-28)
13	Organic Carbon	%	0.85	IS: 2720 (part-22)
14	Organic Matter	%	1.52	IS: 2720 (part-22)
15	Porosity	%	44.97	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	3.39	IS: 2720 (part-17)

Sampling December 2019 (SQ1)

S.No	Parameter	Units	Result	Test Method
1	Texture	-	Sandy Clay Loam	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	51.51	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	33.78	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	14.71	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.66	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	269.5	IS: 14767
4	Potassium	mg/kg	193.57	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	130.17	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	4159.70	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	615.09	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.50	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	%	27.60	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	mg/kg	920.57	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	56.83	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.24	IS: 2720 (part-28)
13	Organic Carbon	%	0.88	IS: 2720 (part-22)
14	Organic Matter	%	1.58	IS: 2720 (part-22)
15	Porosity	%	48.75	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	3.48	IS: 2720 (part-17)

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Sampling October 2019 (SQ2)

S.No	Parameter	Units	Result	Test Method
1	Texture	-	Sandy Clay	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	45.62	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	40.34	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	14.04	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.78	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	260.8	IS: 14767
4	Potassium	mg/kg	245.40	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	168.03	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	5084.11	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	570.58	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.60	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	%	34.63	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	mg/kg	909.46	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	79.57	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.28	IS: 2720 (part-28)
13	Organic Carbon	%	0.87	IS: 2720 (part-22)
14	Organic Matter	%	1.56	IS: 2720 (part-22)
15	Porosity	%	39.42	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	3.76	IS: 2720 (part-17)

Sampling November 2019 (SQ2)

S.No	Parameter	Units	Result	Test Method
1	Texture	-	Sandy Clay	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	48.78	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	38.00	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	13.22	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.57	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	304.8	IS: 14767
4	Potassium	mg/kg	213.75	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	140.25	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	4757.40	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	467.18	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.52	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	%	31.13	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	mg/kg	726.71	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	75.94	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.20	IS: 2720 (part-28)
13	Organic Carbon	%	0.79	IS: 2720 (part-22)
14	Organic Matter	%	1.41	IS: 2720 (part-22)
15	Porosity	%	35.73	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	3.85	IS: 2720 (part-17)

Sampling December 2019 (SQ2)

S.No	Parameter	Units	Result	Test Method
1	Texture	-	Sandy Clay	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	47.06	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	39.27	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	13.67	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.87	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	336.4	IS: 14767
4	Potassium	mg/kg	210.47	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	136.78	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	4868.22	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	419.62	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.50	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	%	39.86	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	mg/kg	750.62	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	71.93	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.17	IS: 2720 (part-28)
13	Organic Carbon	%	0.80	IS: 2720 (part-22)
14	Organic Matter	%	1.42	IS: 2720 (part-22)
15	Porosity	%	35.61	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	3.79	IS: 2720 (part-17)

Sampling October 2019 (SQ3)

S.No	Parameter	Units	Result	Test Method
1	Texture	-	Sandy Clay	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	47.19	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	35.53	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	17.28	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.65	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	311.8	IS: 14767
4	Potassium	mg/kg	245.22	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	111.64	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	4870.37	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	894.60	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.39	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	%	34.81	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	mg/kg	882.00	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	82.63	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.29	IS: 2720 (part-28)
13	Organic Carbon	%	0.88	IS: 2720 (part-22)
14	Organic Matter	%	1.57	IS: 2720 (part-22)
15	Porosity	%	43.91	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	3.44	IS: 2720 (part-17)

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Sampling November 2019 (SQ3)

S.No	Parameter	Units	Result	Test Method
1	Texture	-	Sandy Clay	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	47.84	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	36.32	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	15.84	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.49	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	326.7	IS: 14767
4	Potassium	mg/kg	255.55	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	111.52	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	5083.16	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	949.09	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.38	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	%	33.44	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	mg/kg	762.60	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	79.97	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.27	IS: 2720 (part-28)
13	Organic Carbon	%	0.86	IS: 2720 (part-22)
14	Organic Matter	%	1.54	IS: 2720 (part-22)
15	Porsority	%	44.48	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	3.28	IS: 2720 (part-17)

Note:-

Sampling December 2019 (SQ3)

S.No	Parameter	Units	Result	Test Method
1	Texture	-	Sandy Clay	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	48.09	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	36.14	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	15.77	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.41	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	330.4	IS: 14767
4	Potassium	mg/kg	256.68	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	114.18	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	5145.67	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	843.02	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.39	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	%	32.31	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	mg/kg	905.87	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	81.95	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.22	IS: 2720 (part-28)
13	Organic Carbon	%	0.80	IS: 2720 (part-22)
14	Organic Matter	%	1.42	IS: 2720 (part-22)
15	Porsority	%	43.80	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	3.46	IS: 2720 (part-17)

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Sampling October 2019 (SQ4)

S.No	Parameter	Units	Result	Test Method
1	Texture		Clay Loam	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	45.84	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	32.16	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	22.00	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.33	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	302.7	IS: 14767
4	Potassium	mg/kg	355.39	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	110.58	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	5270.22	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	311.48	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.40	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	%	41.67	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	mg/kg	830.11	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	69.87	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.22	IS: 2720 (part-28)
13	Organic Carbon	%	0.90	IS: 2720 (part-22)
14	Organic Matter	%	1.60	IS: 2720 (part-22)
15	Porosity	%	49.18	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	1.59	IS: 2720 (part-17)

Sampling November 2019 (SQ4)

S.No	Parameter	Units	Result	Test Method
1	Texture	-	Clay Loam	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	44.51	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	33.27	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	22.22	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.34	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	309.8	IS: 14767
4	Potassium	mg/kg	350.63	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	100.68	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	5111.60	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	372.01	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.37	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	mg/kg	32.44	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	%	111.77	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	73.25	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.24	IS: 2720 (part-28)
13	Organic Carbon	%	0.79	IS: 2720 (part-22)
14	Organic Matter	%	1.41	IS: 2720 (part-22)
15	Porosity	%	41.18	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	1.48	IS: 2720 (part-17)

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Sampling December 2019 (SQ4)

S.No	Parameter	Units	Result	Test Method
1	Texture	-	Clay Loam	IS: 2720 (part-4), 1985 Reaff:2006
	Sand	%	44.81	IS: 2720 (part-4), 1985 Reaff:2006
	Clay	%	33.89	IS: 2720 (part-4), 1985 Reaff:2006
	Silt	%	21.30	IS: 2720 (part-4), 1985 Reaff:2006
2	pH(1:5 Suspension)	-	7.67	IS: 2720 (part-26),1987
3	Electrical Conductivity	µmhos/cm	329.6	IS: 14767
4	Potassium	mg/kg	368.66	UTRL/LAB/SOIL/SOP/01
5	Sodium	mg/kg	107.84	UTRL/LAB/SOIL/SOP/01
6	Calcium	mg/kg	5290.47	UTRL/LAB/SOIL/SOP/01
7	Magnesium	mg/kg	478.99	UTRL/LAB/SOIL/SOP/01
8	Sodium Absorption Ratio	-	0.38	UTRL/LAB/SOIL/SOP/01
9	Water Holding Capacity	mg/kg	35.71	UTRL/LAB/SOIL/SOP/01
10	Total Kjeldahl Nitrogen	%	104.95	UTRL/LAB/SOIL/SOP/01
11	Phosphorous	mg/kg	70.74	UTRL/LAB/SOIL/SOP/01
12	Bulk Density	gm/cc	1.24	IS: 2720 (part-28)
13	Organic Carbon	%	0.86	IS: 2720 (part-22)
14	Organic Matter	%	1.54	IS: 2720 (part-22)
15	Porosity	%	43.89	UTRL/LAB/SOIL/SOP/01
16	Permeability	cm/hr	1.54	IS: 2720 (part-17)

Observations:

The analysis results show that soil is basic in nature as pH value ranges from 7.28 to 7.87, Phosphorus (54.12 to 82.63 Kg/ha.) ,Potassium (193.57 mg/Kg to 355.39 mg/Kg) and Electric conductivity (260.8 mg/Kg to 330.4 mg/Kg) has been found to be in good amount in the soil samples.

Conclusion :

The analytical data of soil characteristic of the study area during Oct. to Dec. 2019 were observed the texture of the soil was sandy clay and sandy clay loam. The PH, water holding capacity ,organic matter and micro nutrients are within the normal level for cropping pattern.

3.6 NOISE ENVIRONNENT

The noise levels within the study area were recorded using Sound Level Meter and noise monitoring results were compared with the Ambient Noise Quality Standard notified under Environment Protection Act, 1986. The noise level monitoring locations are shown in Table 3.6 (i) and the levels recorded are as stated in Table 3.6 (ii).

Table 3.6 (i) Noise quality monitoring stations

Station Code	Name of the station	Distance from the project site	Zone/Study Area /Project Area
NQ1	Jarar	0.28kms towards East	Project Area
NQ2	Jahangirabad	1.06 kms towards South	Study Area
NQ3	Girwan	2.34 kms towards East	Study Area
NQ4	Barokhar khurd	1.69 kms towards North-East	Study Area

NQ5	Barokhar buzurg	4.67 kms towards North	Study Area

Table No. 3.6 (ii) Noise level status

Sampling October 2019

S.No	Location	Observed Value Leq dB (A)						Limit as per CPCB Guidelines Leq. dB(A)		Zone
		Day			Night					
		L_{eq}	L_{max}	L_{min}	L_{eq}	L_{max}	L_{min}	Day*	Night*	
1	Barokhar Khurd (1.69 kms North-East)	53.5	58.4	48.7	40.5	45.2	33.4	55.0	45.0	Residential
2	Barokhar Bujrug (4.67 kms North)	52.2	57.4	35.1	42.3	49.4	33.8	55.0	45.0	Residential
3	Jalvangirabad (1.06 kms South)	52.8	61.5	45.2	38.6	43.7	33.7	55.0	45.0	Residential
4	Jarar (0.28kms East)	50.7	56.7	38.7	37.5	39.7	34.8	55.0	45.0	Residential
5	Girwan (2.34 kms East)	49.0	53.8	42.6	36.2	39.6	33.6	55.0	45.0	Residential
*Day Time		Leq(6.00AM TO 10.00 PM)								
*Night Time		Leq(10.00PM TO 6.00 AM)								

Sampling November 2019

S.No	Location	Observed Value Leq dB (A)						Limit as per CPCB Guidelines Leq. dB(A)		Zone
		Day			Night					
		L_{eq}	L_{max}	L_{min}	L_{eq}	L_{max}	L_{min}	Day*	Night*	
1	Barokhar Khurd (1.69 kms North-East)	53.3	58.6	46.8	40.6	47.3	33.2	55.0	45.0	Residential
2	Barokhar Bujrug (4.67 kms North)	53.9	58.6	40.2	41.3	48.7	32.6	55.0	45.0	Residential
3	Jalvangirabad (1.06 kms South)	53.4	62.4	44.7	40.4	46.7	33.4	55.0	45.0	Residential
4	Jarar (0.28kms East)	50.1	55.7	40.5	37.1	42.8	33.5	55.0	45.0	Residential
5	Girwan (2.34 kms East)	49.2	53.8	42.1	34.7	36.8	33.2	55.0	45.0	Residential
*Day Time		Leq(6.00AM TO 10.00 PM)								
*Night Time		Leq(10.00PM TO 6.00 AM)								

NOTARY

Sampling December 2019

S.No	Location	Observed Value Leq dB(A)						Limit as per CPCB Guidelines Leq dB(A)		Zone
		Day			Night					
		L_{eq}	L_{max}	L_{min}	L_{eq}	L_{max}	L_{min}	Day*	Night*	
1	Barokhar Khurd (1.69 kms North-East)	53.4	58.2	47.4	39.7	43.6	34.7	55.0	45.0	Residential
2	Barokhar Bujrug (4.67 kms North)	49.5	54.1	36.8	37.9	40.4	35.1	55.0	45.0	Residential
3	Jahangirabad (1.06 kms South)	49.1	53.8	42.6	40.8	45.7	33.5	55.0	45.0	Residential
4	Jarar (0.28kms East)	48.3	51.8	38.3	37.6	39.2	35.5	55.0	45.0	Residential
5	Girwan (2.34 kms East)	49.8	54.9	38.5	38.4	40.4	35.8	55.0	45.0	Residential
*Day Time		Leq(6.00AM TO 10.00 PM)								
*Night Time		Leq(10.00PM TO 6.00 AM)								

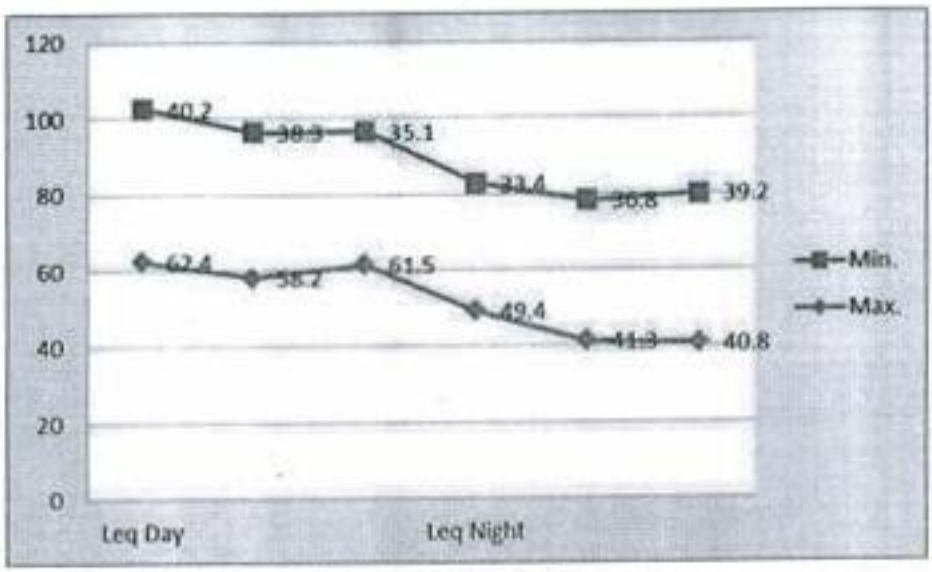

Figure 3.5 Noise level status

Results

Noise monitoring reveals that the maximum & minimum noise levels at day time were recorded as 53.9 dB(A) & 35.1 dB(A) respectively. The maximum & minimum noise levels at night time were found to be 42.63 dB(A). The minimum noise levels at night time were found to be 32.60 dB(A).

The noise levels recorded at all locations were within the NAAQS limits.

However, with suitable control measures and EMP, the noise levels will be reduced and the impacts will be minimized

There are several other sources in the 10 km radius of study area, which contributes to the local noise level of the area. Traffic activities as well as activities in nearby villages and agricultural fields add to the ambient noise level of the area.

Table 3.6 (iii): Ambient Noise Quality Standards in respect of Noise

Area Code	Category of Area	Noise dB (A) Leq	
		Daytime*	Night time*
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Note: Daytime from 6.00am to 10.00 pm and Night time from 10.0 0pm to 6.0

Silence zone is defined as area up to 100 meters around premises of hospitals, educational institutions and courts. Use of vehicle hours, loud speakers and bursting of crackers are banned in these zones.

3.6 THE TRAFFIC STUDY

The lease area is connected to NH 76 about 13.0 km towards East direction from the project site. These roads are wide enough to facilitate easy and smooth movement of heavy duty trucks.

The Detailed traffic study has been discussed under Chapter-4.

During mine operation

Proposed Production of mine	20000 m^3/year
No. of working days	300 days
Per day Production of mine	66.67 m^3/day
Per Truck capacity	12-13 trucks (Approximately)
No. of trucks deployed	Approx 5-6 trucks
Working hours per day	08 hours(During daytime only)
No. of trucks deployed/hr	Approximately 5-6 Truck/tippers
Increase in PUC/hr	5 trucks (Approximately)

At present the traffic load at highway is less than5 trucks per hour, in particular. Due to the proposed project there will be addition in the existing trucks having the capacity of 12-13 cum load that is 5-6 trucks/hr, hence the changes will be at small level and will not affect the existing environment.

3.7 BIOLOGICAL ENVIRONMENT

General vegetation of the study area: The proposed project is to mine Building Stone, Khandas & Gitti, Boulder at Banda district of U.P. which lies between the Indo-Gangetic plain to the north and the south. Bundhelkhand region is a gently sloping upland distinguished by barren hilly terrain with sparse

vegetation. Other rivers lying in the district are Ken River. The river water being used for Irrigation through Canal which is passing near by the project site at then distance of 2.50kms towards East. The district cover by river alluvial soil in the north and the remaining part of the district are covered by deep black and sandy red soil.

The proposed project site i.e. core area is the water channel, which has few aquatic plants only. However, the nearby areas i.e. buffer area is having different types of plants (herbs, shrubs and trees). The Banda district covered mixed variety of vegetation mainly bushes. The tress like Shishum, Neem, Mango tree and Jamun tree, Eucalyptus and Babool are also found in sufficient numbers.

Commonly found flora in the district:-

Dhak (Butea monosperma), Teak (Tectona grandis), Mahua (Madhuca indica), Babool (Acacia nilotica) and Tendu (Diospyros melanoxylon), Siris (Albizia lebbeck),Aam (Mangifera indica), Jamun (Syzygium cumini), Bail (Aegle marmelos), Tut (Morus alba), Bargad (Ficus bengalensis), Neem (Azadirachta indica), Peepal (Ficus religiosa), Safeda (Eucalyptus umbelatus), Sisam (Dalbergia sissoo), etc.

Commonly found fauna in the district:-

Many domestic mammal species were reported from buffer zone during the field survey. Common domestic animals like Buffalo, cow, goat etc. can be noticed in open grass fields while grazing. Small mammals like Indian palm squirrel (Funambulus palmarum) and field mouse (Apodemus sylvaticus) are noticed in vicinity of the village. Inquiry from village people regarding wild animals reveals that Monkey (Macaca mulata), Indian hare (Lepus nigricollis), Mongoose (Herpestes edwardsii), Jackal (Canis aureus), etc. are often seen in the area.

The bird population that were commonly noticed during field survey are Common teal (Anas crecca), Red wattled lapwing etc.House crow (Corvus splendens), House sparrow (Passer domesticus), Common Myna (Gracula religiosa) are of common occurrence.

The reptilians species commonly reported are Garden lizard (Calotes versicolor) and Eutropis macularia along shady places in agricultural field or where growth of bushes is noticed. Among non-poisonous snakes rat snakes (Ptyas mucosus) are commonly noticed in field, followed by poisonous snakes like Cobra (Najanaja) and Banded krait (Bungarus multicinctus) are occasionally encounter by the farmers.

Commonly grown Agricultural Crops in the district:-

Traditionally rain fed and irrigated agriculture is common. The main crops grown are rice, maize, pigeon pea, sorghum, pearl millet, moong beans during kharif and wheat, Bengal gram, green peas, rapeseed and mustard and lentil during rabi season. Sugarcane is the main cash crop. Rice–wheat cropping system is more predominant. Amongst the fruit crops, mango and guava, and amongst the vegetable crops potato, onion, brinjal, tomato, cauliflower and cabbage are important.

Fishes & Amphibians:-

The fish species which are commonly found in the water bodies of district are Labeo bata (Bhangan or Bata), Gudusia chapara (Chappera or Palla), Labeo rohita (Rohu),Catla catla (Theila), etc.

Amphibians are commonly found at the places along the margin of aquatic and terrestrial systems. Some of the commonly reported species are Bufo melanostictus (common Indian toad), Euphlyctis cyanophlyctis (Indian skipper frog), Hoplobatrachus tigerinus (Indian bull frog), etc.

Anticipated Impacts and Evaluation

The mining activity will have insignificant affect on the existing flora and fauna. Data have been collected from various Government Departments such as forests, agriculture, fisheries, animal husbandry and various offices to establish the pre-project biological environmental conditions. There are no endangered species, wildlife sanctuary, wildlife corridors or ecosensitive area near the core zone. The purpose of the project itself is to save the flora around the project area from excessive erosion and floods. It was found that the Building Stone, Khanda, Gitti & Boulder mining activity will not have any significant impact on the biological environment of the region.

- **Mitigation Measures**

Since, there is no migratory route of birds or grazing route of domesticated animal is reported, hence there will be no impact anticipated. Mining activity will be confined upto a required depth from ground level/ water level whichever is less.

IMPACT ON ECOLOGY OF THE AREA

For thousands of years, Building Stone, Khanda, Gitti & Boulder has been used for domestic construction and house wares since prehistoric times, and continues to be used. Today demand for Building Stone, Khanda, Gitti & Boulder continues to increase due to increasing infrastructure. Mining operators, in conjunction with cognizant resource agencies, must work to ensure that Building Stone, Khanda, Gitti & Boulder mining is conducted in a responsible manner because excessive and unscientific mining causes the degradation of land. Building Stone, Khanda, Gitti & Boulder mining generates extra vehicle traffic, which negatively impairs the environment. Where access roads cross ecologically important areas, the local

environment may be impacted.

Mitigation measures

As the present mining will be done in a scientific manner as mentioned before, significant adverse impacts are not predicted; however the following mitigation measure will be taken to further minimize it.

- No mining will be done near to important structure like bridges, dam and others as per mining law.

- No mining will be carried out during the rainy season.
- The mining activity will employ many heavy vehicles to transport the Building Stone, Khanda, Gitti & Boulder outside the mine to desired destination. Safe site/routes having less impact will be selected for transportation, all the vehicles will be employed for transportation purpose will be PUC certified.

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CHAPTER- 4

ANTICIPATED ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

4.0 GENERAL

All development projects whether new, under modernization or renovation, do have an impact on the natural set up of the environment. This impact may be beneficial or adverse, depending on the improvement or the deterioration it brings about change in the status of air, water, land, ecology, natural systems, socio-cultural life styles and economics of the population. Depending on the nature of activities and baseline environment status, the impacts are assessed for their importance. On the basis of the impact analysis, the mitigating action and future monitoring requirement are focused in the Environmental Management Plan for countering or minimizing the impacts.

Keeping in mind, the environmental baseline scenario as detailed in Chapter 3 and the proposed mining activity described in Chapter 2, it is attempted to assess the likely impact and its extent on various environmental parameters and likely mitigation measures to be adopted.

4.1 LAND ENVIRONMENT

The Mining and allied activities involved in Building Stone (Khanda, Gitti and Boulder) Mining Project from the rocky stones on the Gata No. 2450 Khand No.-05. The clearance of overburden such as weeds and other accumulated matter like wood end crops, animal bones and those intentionally thrown garbage, other than soil, gravel and pebbles are cause of pollution and result in environmental degradation. Time takes care of it and once again gets turned to a changed ecology of the region. As the time passes it turns into a place of shelter, food and of reproduction of many life forms. The disturbance to the new form of biota and to the riparian habitat by man originated mining activities lead once again to the environmental degradation.

Impact on Soil

There is generation of gritty soil is negligible as the area is not covered by top soil cover hence few rejects will be developed which is used for lease boundary barrier plantation and haul road dressing.

Impact on Land Use

The area is having undulating surface surrounded by barren land. The area is partially covered by alluvial soil. The proposed area and surround areas are mostly private land owned by individual. Presently the existing quarry lies in 2.0 ha area. The potential adverse impact of opencast stone mining will be in the form of change in land use pattern. So reclamation of mined out land will be given due importance as a step for sound land resource management in the form of reclaimed land and water body.

No adverse impact is anticipated on land use of buffer zone associated due to the existing stone mine project, as all the activities will be confined within the project site only. Stone mined out from the mine is being and continued to be used as boulders of different sizes for River Anti-erosion, Dam construction, embankment works etc. After crushing into different sizes of aggregates from 6mm to 63mm, the product can be used in construction and road projects.

4.2 WATER ENVIRONMENT

4.2.1 Impact on Surface Water

At present scenario there is no any seasonal or perennial source of water is passing through the lease area. During the rainy season, there may be accumulation of surface water, which is proposed to be pumped out to keep the working area dry and it is being utilized for dust suppression.

The stone mineral found in the area is non-toxic in nature. There will be no outside discharge of liquid effluent from the mine site. It is, therefore, apparent that there will be negligible impact of mining on the surface water regime.

The surface water quality of the canal water passing 2.50 kms towads East direction from the proposed unit. The baseline data of the water quality parameters of Canal water originates from Ken River. The other source of the surface water 2 number of the ponds approx. 1km. The quality of the water is discuss in the **Chapter-3**

4.2.2 Impact on Ground Water

Ground water pollution can take place only if the mining rejects contain toxic substances, which get leached by the precipitation water and percolate to the ground water table thus polluting it. Any nearby wells or other sources of water can be rendered unfit for drinking and even for industrial use.

This is not the case with this deposit as the mineral or topsoil does not contain any harmful ingredients. Moreover, stone constitutes of fairly inert and chemically non-reactive ingredients.

It is noticed from nearby dug wells and bore wells that the ground water table is available below 30 meters of the normal surface level. As the mining operation has been proposed to be carried out much above the ground water table there would not be any adverse effect on the ground water.

The ground water available in the nearby Handpump, well, borewell is analysed and it is found within the prescribed standard of CPCB and it is also being and will be continued to be adopted the remedial measures to keep the water quality within the prescribed standard.

4.2.3 Mitigation Measures for Water Environment

- Adequate control measures are being and will be continued to be adopted to check not only the wash-off from soil erosion but also uncontrolled flow of mine water. The measures to be adopted are-
- Garland drain will be provided at the toe of the dumps, to channelize the runoff water from dumps into the water reservoir (i.e. mined out pits) & around the active pits to restrict rainy water from entering in to the working pit.
- Retaining walls having water holes will be provided along the toe of the dumps to avoid the soil wash out & around the active pit to prevent fall of human/animal in to the working pit.
- Dumps slopes are being stabilized followed by plantation to avoid soil erosion.
- No waste water is being discharged from the mining activities.

4.3 AIR ENVIRONMENT

Anticipated impacts and evaluation

Information on air quality was studied and various modeling techniques predicted that the mining activity is not likely to affect the air quality in a significant manner. However, loading of Building Stone (Khanda, Gitti and Boulder), its transportation and unloading operations may cause some deterioration in air quality due to handling dry materials. In the present case, only wet materials will be handled, thus eliminating problems of fugitive dust. Also, the collection and lifting of minerals will be done manually without any blasting. Therefore the dust generated is likely to be insignificant as compared to mining processes involving drilling, blasting, mechanized loading etc.

Air Modeling

In general, mining operations generate substantial quantities of airborne respirable dust, which may lead to the development of impairment of respiratory system of mine workers. The increasing trend of mining leads to release of huge amount of dust. These air borne dust particles, generally below 100 micron in size, are nuisance particulates and cause health hazards as an ill effect of mining activities. Extraction activities like drilling, blasting, material handling and transport are a potential source of air pollution. Therefore, a detailed study on emission sources and quantification of pollutant concentration by means of dispersion modeling is required to access the environmental impact of a mine. On the basis of the predicted increments to air pollutant concentrations, an effective mitigation and environmental plan can be devised for sensitive areas. In case of Building Stone (Khanda, Gitti and Boulder) mining, blasting and drilling is involved activities, the impacts may also be caused by material handling and transportation activities of mostly wet Building Stone (Khanda, Gitti and Boulder) and the same are minimal.

FUGITIVE DUST- MODELING

Air quality modeling was done using line source model as published by USEPA "Workbook of Dispersion Modeling" by Turner, for transportation though roads and the empirical emission factor equations from USEPA. Emission factors to be used in Line source Dispersion equation is adopted from formula as given below:

$E = k * (1.7) * (s/12) * (S/48) * (W/2.7)^{0.7} * (w/4)^{0.5} * (365-p/365)$ kg/VKT---------- (1)

Where

E = Emission Rate (kg/VKT)

k= Particle size multiplier = (0.36)

s = Silt Content of the Road surface material (%) = 10%

S = Mean Vehicle Speed (km/hr) = 20 km/hr

W=Mean Vehicle Weight (tonnes) = 10 tonnes

w= Mean number of wheels = 8

p= Number of days with at least 0.254 mm of precipitation per year = 60

f = frequency of Vehicle movement in no per hour = 2 vehicles / hour

Thus using equation (1)

E = 0.61766 kg/VKT

E = 0.0003 g/sec/m

Concentration of the fugitive dust was calculated using the empirical equations for unpaved roads published by USEPA- AP42. The Concentration of the fugitive Dust is given below:

$$C = (2/\pi)^{1/2} \ (E / \sigma z \ \upsilon) \ Exp-[(h^2) / (2 \sigma z^2)] \times 10^6 \text{ ---------- (2)}$$

Where

C = Hourly Concentration in microgram/ m^3

E = Emission Rate = 0.0003 g/sec/m

υ = Wind Speed =4 m/s

h = 0 m

Modeling was done for an infinite line source assuming unpaved road. For conservative calculation wind was assumed to blow at a velocity of 4 m/s perpendicular to the road. The results for 24 hourly concentration values are given in the Fig. 4.1:

Mitigation measures

The only air pollution sources are the road transport network of the trucks/dumpers. The dust suppression measures like the following will be resorted:

- Water sprinkling will be done on the roads regularly. This will reduce dust emission further by 75%.
- Care will be taken to prevent spillage by covering the carrying vehicles with tarpaulin and sprinkling of water, if dry.
- Fortnightly scraping of road in order to keep the roads almost leveled. This will ensure smooth flow of vehicles and also prevent spillage.
- Overloading will be kept under check by giving prior awareness.
- Proper Tuning of vehicles to keep the gas emissions under check.
- Plantation of trees along the road sides helps to reduce the impact of dust in the nearby villages.

4.4 NOISE ENVIRONMENT

Day and night sound pressure levels Leq is often used to describe the community noise exposure, which includes 10 dB (A) night time penalty.

The monitored noise level during the base line period within the core zone and buffer zone has been found to be within the prescribed CPCB standards which will also be confined within the limit by undertaking more plantations within the mining area especially in the direction of habitation to act as a sound barrier.

4.4.1 Impact due to Ground Vibrations

Ground vibration, fly rock, air blast, noise, dust and fumes are the deleterious effects of blasting on environment. The explosive energy sets up a seismic wave in the ground, which can cause significant damage to structures and disturbance to human occupants. It causes major damages to the pit configuration too.

When an explosive charge is fired inside the blast hole, it is instantly converted into hot gases, which exert intense pressure on the blast hole walls. High intensity shock waves propagate radically in all directions and cause the rock particles to oscillate. This oscillation is felt as ground vibration. The proposed mining operations using deep hole drilling and blasting using delay detonators are bound to produce ground vibrations.

Ground vibration from mine blasting is expressed by amplitude, frequency and duration of blast. The variables, which influence ground vibrations, are controllable and non-controllable. The non-controllable variables include general surface terrain, type and depth of overburden and wind. Similarly, the controllable variables include type of explosives, charge per delay, delay interval, direction of blast progression, burden, spacing and specific charge and coupling ratio.

The oscillation of rock particles is called Particle Velocity and its maximum value is called Peak Particle Velocity (PPV), which is measured in millimeter per second.

As the distance increases, the PPV value is likely to reduce. The ground vibrations generated by blasting during the mining operations will be well within the standards prescribed by DGMS by controlled blasting. Ground vibrations are not likely to affect the structures in the vicinity of mine lease area.

By adopting controlled blasting, the problems will be greatly minimized at mines. The impacts are also minimized by choosing proper detonating system, optimizing total charge and charge/delay.

4.4.2 Measures for Minimizing Adverse Impacts

- **Noise Control Measures**

- The following control measures are being and will be continued to be adopted to keep the ambient noise levels well below the limits:
- Drilling is being carried out with the help of sharp drill bits which will help in reducing noise.
- Secondary blasting is being totally avoided and Hydraulic rock breaker is being used for breaking boulders.
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay is being maintained.
- The blasting is being carried out during favorable atmospheric condition and less human activity timings;
- Minimum quantity of detonating fuse is being consumed by using alternatively Excel non-electrical initiation system;
- Proper maintenance, oiling and greasing of machines at regular intervals is being done to reduce generation of noise.
- The prime movers/diesel engines are properly maintained;
- Provision of sound insulated chambers for the workers deployed on machines (HEMM) producing higher levels of noise;
- Proper designing of plant & machinery by providing inbuilt mechanism like silencers, mufflers and enclosures for noise generating parts and shock absorbing pads at the foundation of vibrating equipment.
- Green Belt/Plantation is being developed around the mining activity area and along haul roads. The plantation minimizes propagation of noise.
- Personal Protective Equipment (PPE) like ear muffs/ear plugs is being provided to the operators of HEMM(Heavy Earth Moving Machinery) and persons working near HEMM; and
- Reducing the exposure time of workers to the higher noise levels.
- Periodical monitoring of noise will be done.

➢ **Measures to Control Ground Vibration**

The blasting operations in the mine is carried out by deep hole drilling and blasting using delay detonators, which reduce the ground vibrations. The measures that are generally followed and currently proposed for abatement of ground vibration, air blast and fly rocks are detailed below:

- Proper quantity of explosive, suitable stemming materials and appropriate delay system are being adopted to avoid overcharging and for safe blasting.
- Adequate safe distance from blasting is being maintained.

- Blasting operations is carried out only during day time.
- The charge per delay is minimized and preferably more number of delays is used per blasts;
- During blasting, other activities in the immediate vicinity is temporarily stopped;
- Drilling parameters like overburden, depth, diameter and spacing is properly designed to give proper blast.

4.5 BIOLOGICAL ENVIRONMENT

Ecological Impacts

Mining which leads to the removal of channel substrate, re-suspension of streambed sediment and stockpiling on the streambed, will have ecological impacts. These impacts may have an effect on the direct loss of stream reserve habitat, disturbances of species attached to streambed deposits, reduced light penetration, reduced primary production, and reduced feeding opportunities.

Table 4.1 Impact Prediction & Mitigation Measures – Biological Environment

Environmental Parameter	Aspects	Potential Impact	Mitigation Measures
Biological Environment	Dust emission due to mining activity	Dust deposition on vegetation & Agriculture crop around periphery of ML area may retard the photosynthetic activities of plants subsequently may reduce the crop productivity specifically within 500m from mine lease area.	Truck will be covered. Sprinkler will be installed at crusher loading & unloading point; regular water sprinkling within the mining area and also on haulage road will be carried out. Extensive plantation will be carried out around safety zone. The waste material/OB will be stacked on the opposite of the sloping face of the designated location.

Plantation along the Safety Zone

Plantation along the periphery of the existing (nonoperational) mine developed in 0.20 Ha. By Shri Mujibuddin Siddiqui Quarry are as follows:

Sr. No.	Scientific Name	Local Name	Quantity
1.	Mangifera indica	Aam	25
2.	Tectonagrandis	Sagon	30
3.	Psidium guajava	Amrood	20
4.	Syzizium cumini	Jamun	25
Total			**100**

At the end on life of mine further plantation shall be carried out in same area (0.20 Ha) and also be haul road as per mine plan. Around 100 saplings within the safety zone (7.5 m) will be planted to the end of life of mine.

Selection of plant species with special reference

Sr. No.	Plant species	Purpose of plantation of species
	Aegle marmelos	Pollution Tolerant Plants
	Albizzia lebbeck	
	Butea frondosa	
	Alstonia scholaris	Best dust filtering capacity Plants
	Ailanthus excelsa	
	Ficus benghalensis	
	Azadirachta indica	Automobile Exhaust pollution Control Plants
	Cassia fistula	
	Delonixregia	
	Phyllanthus emblica	Medicinal value Plants
	Terminalia arjuna	
	Azadiracta indica	
	Tectona grandis	Economic value Plants
	Pongamia pinnata	
	Shorea robusta	
	Cymbopagon martini	Soil Conservation Plants
	Ziziphus jujube	Fruit bearing Plants
	Psidigium guava	
	Syzygium cumini	
	Mangifera indica	
	Dalbergia sisso	Nitrogen Assimilation Plants
	Cassia siamea	
	Cassia fistula	Aesthetic beautification Plants
	Polyalthia longifolia	
	Delonix regia	

It is to be noted that preference will be given to indigenous plant species. Mixed plantations will be done keeping optimum spacing between the saplings.

Impact on Local Transport Infrastructure

After getting the EC, when the mine will be in operation stage, the excavated stone will be transported to adjacent crusher outside the lease area (50 mtr distance) where as a distance of 950 mtr (approx.) will be covered by the tippers within the mining lease area over the haul roads.

The distance covered outside the mining lease area is since only 50 mtr. Approx. and the road will be the dedicated one for exclusive use, the existing transportation infrastructure will not at all be used.

The movement of excavated and sized stone from the crusher will be through unnamed Road approach road covering a distance of 0.35 km. along with other traffic. The incremental traffic is expected to be 4 nos. Per hour which is also expected not cause any significant impact either on existing roads or in the pollution load.

Impact on Socio - Economic Aspects

The existing project would create certain impacts with beneficial as well as adverse effects on the socio economic environment. The likely impacts due to mining are described below:

Impact on employment pattern Employment is main aspect for enhance the quality of life in any region. Employment opportunity is being and continued to be given to only local people in the form of skilled and unskilled labor. Mining activity will generate some indirect jobs and business opportunities as hotel, small shops kiosk etc. It will help to reduced poverty and improved living standard in the study area. It will help to improve economic condition of the study area.

Impacts on socio-economic environment and mitigation measures

Impact	Mitigation Measure
Due to mining and transportation of stone will generate the small shops, dhabas, garage, restaurant, vegetable shops etc. along the road and generate direct employment.	Positive Impact
Mining activity will generate direct employment by recruiting 121 people which will be employed locally and preference will be given to local people.	Positive Impact
Such shops along the roads will generate solid waste and waste water which will have adverse impact on human health.	4 nos. of Garbage bins will be provided for proper disposal of solid waste. The municipal wastewater will be disposed off into septic tanks and soak pit.
Extraction of stone resultant generation of fugitive dust cause workers of the mine to suffer from occupational hazards like skin allergies, eye and respiratory problems etc	Dust mask will be provided to the workers engaged at dust generation points like excavation and loading points. Regular water sprinkling on unpaved roads to avoid dust generation. The mined out area will be convert into water reservoir and barricade with wire fencing.
This creates serious threat to	The mining is planned in non-monsoon seasons only.

residents in the area who depend on river water for their domestic purposes.	
Major source of socio-health impacts of transportation will generate from truck, dust etc. Increase in accidents as a result of rash driving of dumpers carrying mineral through the roads may be possible.	It is proposed to plant 200 No. of local species per year with consultation of Forest department with some fruit bearing and medicinal trees, along the haul roads, outer periphery within the mining area to control the dust. Planning transportation routes of mined material so as to reach the nearest paved roads by shortest route. (Minimize transportation over unpaved road). Alternatively, gravelled road may be constructed between mine lease area and nearest paved road connectivity; The speed of trucks plying on the haul road should limited to avoid generation of dust; and Covering of material during transportation on trucks to prevent spillage of stone from the trucks. The trucks will be covered by tarpaulin. Overloading will be avoided. Regular water sprinkling on unpaved roads to avoid dust generation during transportation.

Impact on population growth:

The existing mining project will cause migration of outside people also in search of their food, shelter and livelihood due to which there will be positive impact on population growth of the study area.

Impact on lifestyle:

The study area is mainly tribal dominant. Increased economic activities in the project area can bring addictions. In the tribal areas the ethnic people may also get affected by additional addictions.

Impact on quality of life:

Due to mining activity study area would progress in terms of develop housing, education, medical, health, sanitation, power supply, electrification and transport in the area, which may improve the quality of life in the region. Existing project is expected to contribute improvement of quality of life in the region it may help to improve human index of the study area.

Impact on human settlement:

The villages and their inhabitants in the buffer zone will not be disturbed from their settlements due to the mining operations. There is no inhabitation within the lease area. Therefore neither

villages nor any part of village or any hamlet will be disturbed during the entire life of the mine. As the mining operations will not disturb or relocate any village or settlement, no adverse impact is anticipated on any human settlement.

Impact after mining:

Mine pit of mining area after excavation will converted into a water pond and used as a natural water harvesting system for collection of rain water. In addition fishing activity can be performed through fisherman in water pond, it will generate employment opportunity.

Mitigation Measures:

In order to mitigate the adverse impact likely to arise in social, cultural and economic aspects in the surrounding region certain line of action is being and continued to be adopted related to:

Ensure that roads are properly signed, vehicles are well maintained and drivers are well trained and safety conscious.

Cohesive relation should be maintained with the concerned community so that in future any mishap may not disturb the harmony of the region.

Enhancement of community development through implementation of development programme, which will ensure the provision of basic facilities that are lacking and improvement of existing ones.

Occupational Health (Impacts and Mitigation Measures)

EISQ (Enzymatic Indicators Of Salt Quality) has concern and takes full responsibility for the protection of the workers against sickness, disease and injury arising out of their employment and have adopted certain principles with regard to occupational health services, like establishing and maintaining a safe and healthy working environment which will facilitate optimal physical and mental health in relation to work.

Impacts on occupational health and safety

Impact	Mitigation Measure
The mining of stone (minor mineral) can cause the lung disease and respiratory disorder due to dust exposure.	Dust masks will be provided as additional personal protection equipment (helmet and safety shoes) to the workers working in the dust prone area. Regular water sprinkling will be done and dust masks will be provided to the workers.
Due to noise exposure, hearing disorder may be resulted.	Ear-muffs will be provided to the workers and good maintenance of vehicles will be provided
The accident at the site due to mining operation may be anticipated.	Workers are informed, kept aware and trained about possible accidents during the mining operation and persona protective equipment's will be provided *viz.* gloves, safety shoes, dust mask, safety jackets, helmet etc. In addition to, the awareness about the

	occupational health hazards due to mining activities to avoid any incident will be provided to the workers Pre- placement health check-up will be made mandatory and periodic heath check-up will be done quarterly

The following occupational health measures shall also be adopted:-

Identification and assessment of the risks from health hazards in the workplace;

Surveillance of the factors in the working environment and working practices which may affect workers' health, including sanitary installations, canteens and housing; and Advice on planning and organization of work, including the design of workplaces, on the choice, maintenance and condition of machinery and other equipment and on substances used in work.

Identification of Work Related Health Hazards

Details of the principle environmental and occupational risks that are likely to be created are given in Table 4.2.

TABLE 4.2 WORK RELATED HEALTH HAZARDS

Sr. No.	Hazardous Activities	Type of Hazards	Severity of Injury
1	Drilling	Exposed to high level of Noise	Hearing impairment
		Exposed to dusty environment	Dust related diseases
2	Blasting	Struck by fly rock	Serious Physical injury
		Exposed to dusty environment	Dust related diseases
		Exposed to high level noise	Hearing impairment
		Exposed to excessive vibration	
3	Loading	Struck by rolling big boulders	Serious injury, and equipment damage
		Struck by fall of objects	Serious Physical injury
4	Transportation	Accidental runaway of vehicle	Serious injury, and equipment damage
		Fall of vehicle from height while reversing	
		Exposed to high level noise	Hearing impairment
		Fire in engine due to over heating	Serious Physical injury
5	Storage of oil, lubricant	Leaks and spills	Fire & vigorous chemical reaction
6	Battery maintenance handling	Acid spillage	Acid burns
7	Use/repair of hydraulic jacks & pumps	High pressure operation	Physical injury
		Oil spillage	
		Rupture of hydraulic hoses	

4.6 IMPACTS ON HYDROLOGY

Impact	Mitigation Measure
The mining in the mine site area	The water table will not be intersected during mining as depth of

may cause the ground water contamination due to intersection of the water table.	pit. Proper analysis/Monitoring will be done to check the ground and surface water quality..
Change the topography will divert the water flow.	There is no proposal of any stream modification/diversion due to this mining activity hence there will be no any impact on flow of water.

4.7 IMPACTS ON GEOLOGY AND MITIGATION

Impact	Mitigation Measure
Degradation of land	Adopting methods that are less wasteful, use of technologies that are user and environmentally friendly.
Degradation of stone reserves Geomorphic impacts and/ or visual intrusion.	Rehabilitation of quarries after use. Minimizing geomorphic disturbance by maximizing stone reserves through deep quarrying and avoidance of establishing small and haphazardly located quarries that contribute to environmental degradation.

4.8 TRAFFIC ANALYSIS

Traffic analysis is carried out by understanding the existing carrying capacity of the roads near to the project site and the connecting main roads in the area. Then depending on the capacity of the mine, the number of trucks that will be added to the present scenario will be compared to the carrying capacity.

Table 4.3 (i): Existing Traffic Scenario & LOS

Road	V (Volume in PCU/hr)	C (Capacity in PCU/hr)	Existing V/C Ratio	LOS
NH-76	75	500	0.14	B

V= Volume in PUC's/hr & C= Capacity in PUC's/ hr

The existing Level of Service (LOS) at Near Village and at highway is "A" i.e. excellent, as per classification.

V/C	LOS	Performance
0.0 - 0.2	A	Excellent
0.2 - 0.4	B	Very Good

0.4 - 0.6	C	Good / Average / Fair
0.6 - 0.8	D	Poor
0.8 - 1.0	E	Very Poor

Note: Capacity as per IRC: 106-1990

No. of Trucks Required (maximum):

Total capacity of mine	:	20000 m^3 per year
Total no. of working days	:	300 days
Building Stone, Khandas & Gitti, Boulder extracted in a day	:	66.67 cum
Building Stone, Khandas & Gitti, Boulder extracted in one truck	:	12-13 cum (approx.)
No. of truck required per day	:	Approximately 5-6 Truck/tippers

Table 4.3 (ii): Modified Traffic Scenario & LOS

Road	Volume(V)	Capacity©	Modified V/C Ratio	LOS
NH-76	96	900	0.21	B

Results

From the above analysis it can be seen that the V/C ratio is likely to change to 0.21 with LOS both being "B" which means 'Very Good' as per classification. So the additional load on the carrying capacity of the concerned roads is not likely to have any significant adverse effect.

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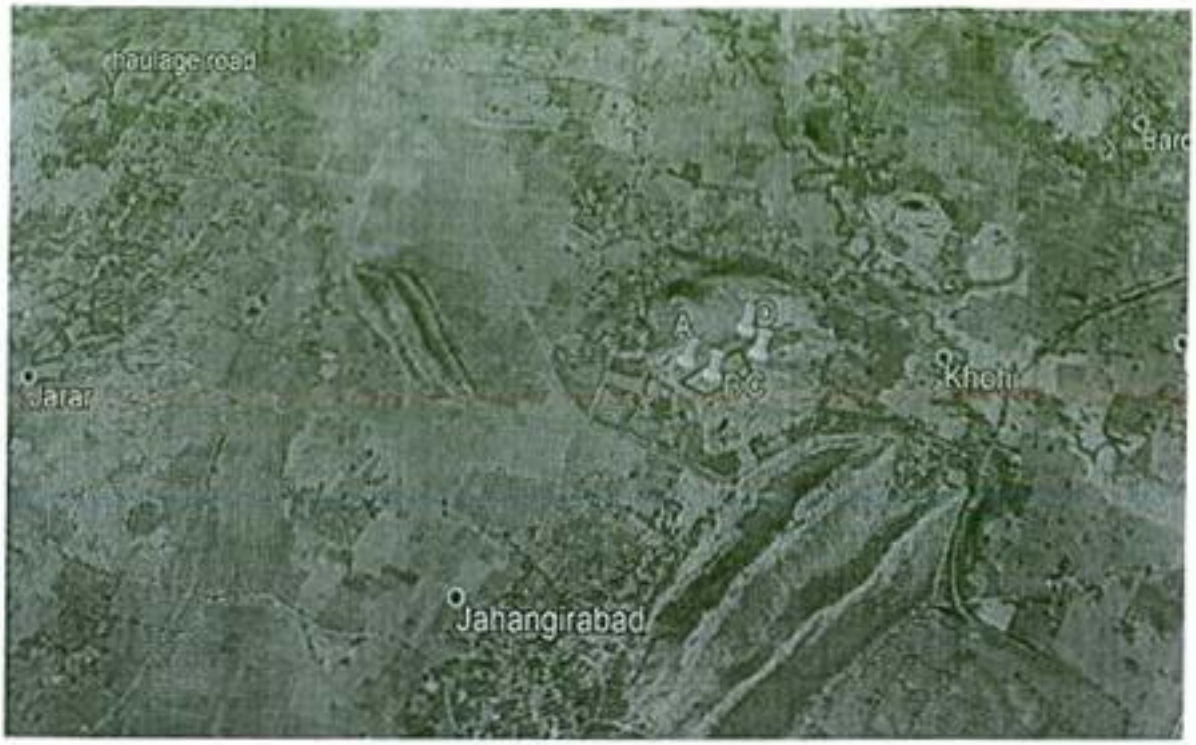

Fig. 4.1: Map Showing Transportation Route Map

4.8. STATUTORY REQUIREMENTS

It is accepted that effective resource management cannot be done in isolation. The Department therefore vigorously pursues approaches towards coordination and integration where possible, so as to lead to coordinated regulatory systems.

A regulatory system consists of both statutory and non-statutory components. In the Sectorial-specific strategy for prospecting and mining, the Department participates within an integrated environmental management system which is administered in terms of the Acts and Rules. Other Acts dealing with matters relating to the conservation and protection of the environment and which a holder of a mining authorization must also take cognizance of, include inter alia, the following:

- The Mines Act, 1952
- The Mines and Mineral (Development and Regulation) Act, 1957
- Mines Rules, 1955
- Mineral Concession Rules, 1960
- Mineral Conservation and Development Rules, 1988
- State Minor Mineral Concession Rules, U.P., 1963
- The Water (Prevention and Control of Pollution) Act, 1974
- The Air (Prevention and Control of Pollution) Act, 1981

- The Environment (Protection) Act, 1986
- The Forest (Conservation) Act, 1980
- The Wildlife (Protection) Act, 1972

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CHAPTER- 5
ENVIRONMENTAL MONITORING PROGRAMME

5.0 INTRODUCTION

Success of any post-project environmental monitoring programme depends upon the efficiency of the organizational set up responsible for the implementation of the programme. Regular monitoring of the various environmental parameters is also necessary to evaluate the effectiveness of the management programme so that the necessary corrective measures can be taken in case there are some drawbacks in the proposed programme. Since environmental quality parameters at work zone and surrounding areas are important for maintaining sound operating practices of the project in line with conformity with environmental regulations, the post project monitoring work, therefore, forms a part of EMP.

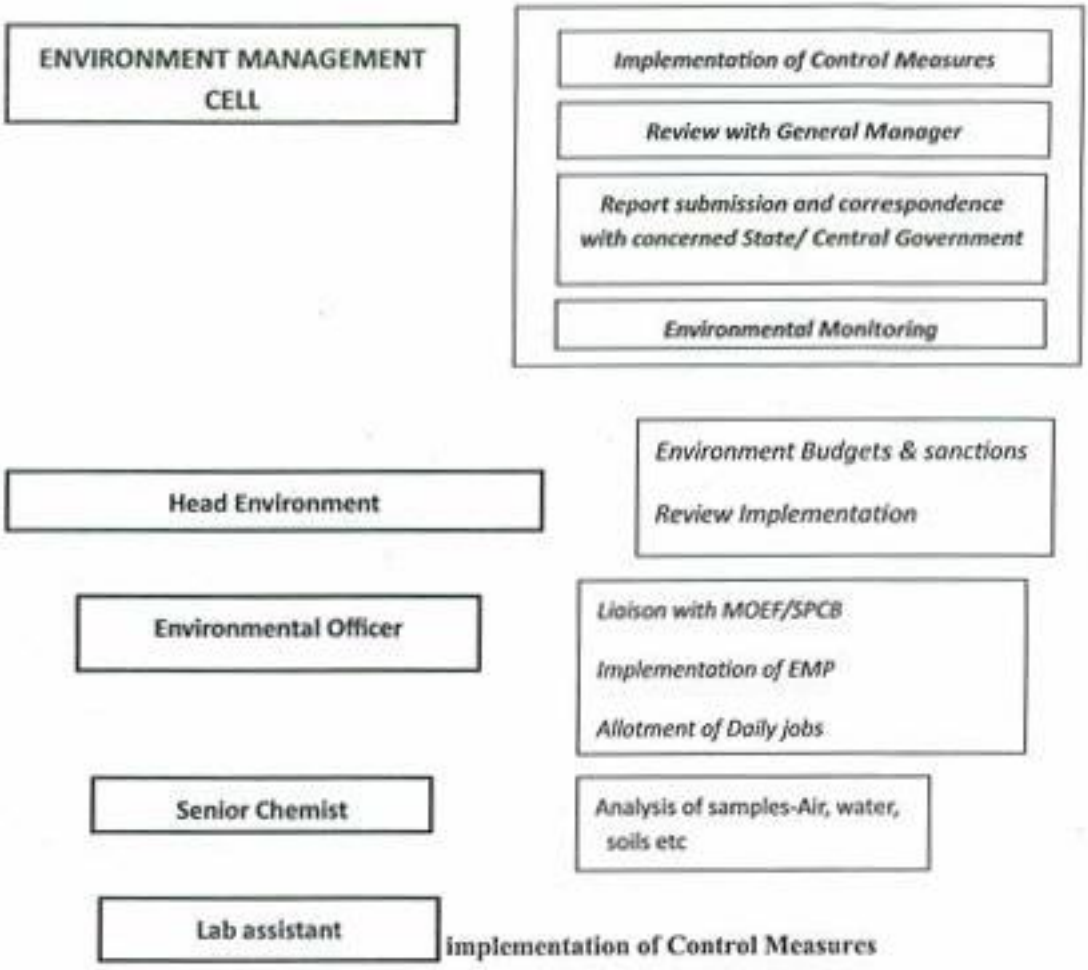
5.1 PROPOSED SET UP

Keeping the utility of monitoring results in the implementation of the environmental management program in view, an organizational chart has been proposed, headed by General Manager as shown in Fig. 5.1.

The said team will be responsible for:

a. Collecting water and air samples from surrounding area and work zone monitoring for pollutants.
b. Analyzing the water and air samples.
c. Implementing the control and protective measures.
d. Co-coordinating the environment related activities within the project as well as with outside agencies.
e. Collecting statistics of health of workers and population of surrounding villages.
f. Monitoring the progress of implementation of environmental management program. Greenbelt development, etc.

The laboratory will be suitably equipped for sampling/testing for various environmental pollutants.



implementation of Control Measures

5.2 MONITORING SCHEDULE AND PARAMETERS

Air Quality Monitoring

Air Quality monitoring is essential for evaluation of the effectiveness of abatement programmes and to develop appropriate control measures. The project proponent will monitor ambient air quality in and around the proposed Building Stone (Sand Stone) Mining Project at a frequency mentioned in the monitoring schedule for various parameters and take appropriate air pollution control measures in order to ensure that the concentration of $PM_{2.5}$, PM_{10}, SO_2 and NO_2 are within limits.

Water Quality monitoring

Water quality monitoring involves periodical assessment of quality of surface water and the ground water near the mining project. Surface water samples will be analyzed for all the parameters as per EPA, 1986 and ground water samples will be analyzed for all the parameters as per IS-10500.

Noise Level Monitoring

Noise level monitoring will be done for achieving the following objectives:

a) To compare sound levels with the values specified in noise regulations
b) To determine the need and extent of noise control measures of various noise generating sources

Noise level monitoring will be done at the work zone to assess the occupational noise exposure levels. Noise levels will also be monitored at the noise generating sources like mineral handling arrangements, vehicle movements and also nearby villages for studying the impact due to higher noise levels for taking necessary control measures at the source.

Table 5.1 Monitoring Schedule and Parameters

S No	Description of Parameters	Schedule and Duration of Monitoring/Execution
1	Air Quality: a) In the vicinity of the mine b) In the vicinity of the transportation Network c) Dust suppression on roads d) Scraping/ bulldozing of road to shift accumulated dust to the sides	24 hourly samples twice a week for one month in each season except monsoon season Regularly in non- monsoon months and whenever occurrence of fugitive dust takes place Fortnightly
2	Water Quality near or around the site: a) Surface water quality b) Ground water quality	Once in a season for 4 seasons in a year
3	Ambient Noise Level	Twice a year for two years & then once a year
4	Soil Quality	Once in two years on project monitoring area
5	Inventory of Flora(tree plantation, survival etc) & Fauna	Once in two years on project monitoring area
6	Socio-economic condition of local, population, physical survey	Once in 3 years

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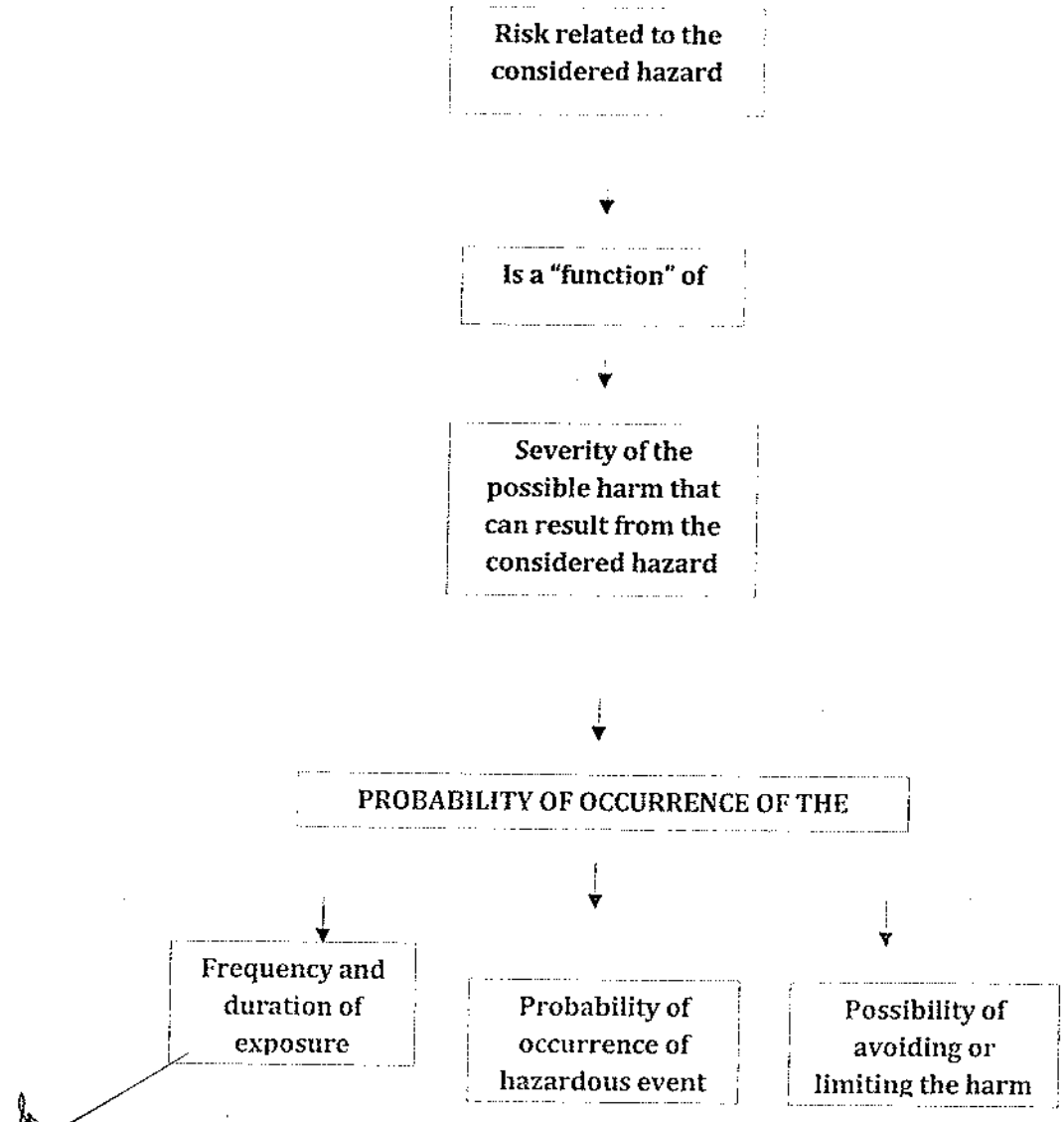
CHAPTER-6

ADDITIONAL STUDIES

6.1 HAZARD IDENTIFICATION AND RISK ASSESSMENT METHODOLOGY

A) RISK

Risk concerns the deviation of one or more results of one or more future events from their expected value.



Tolerable risk: Risk which is accepted in a given context based on the current values of society

Protective measure: The combination of risk reduction strategies taken to achieve at least the tolerable risk. Protective measures include risk reduction by inherent safety, protective devices, and personal

protective equipment, information for use and installation and training.

Severity: Severity is used for the degree of something undesirable.

Risk Analysis: A systematic use of available information to determine how often specified events may occur and the magnitude of their likely consequences.

The different steps of risk assessment procedure are as given below:

Step I: Hazard Identification

The purpose of hazard identification is to identify and develop a list of hazards for each job in the organization that are reasonably likely to expose people to injury, illness or disease if not effectively controlled. Workers can then be informed of these hazards and controls put in place to protect workers prior to them being exposed to the actual hazard.

Step II: Risk Assessment

Risk assessment is the process used to determine the likelihood that people exposed to injury, illness or disease in the workplace arising from any situation identified during the hazard identification process prior to consideration or implementation of control measures.

Risk occurs when a person is exposed to a hazard. Risk is the likelihood that exposure to a hazard will lead to injury or health issues. It is a measure of probability and potential severity of harm or loss.

Step III: Risk Control

Risk control is the process used to identify, develop, implement and continually review all practicable measures for eliminating or reducing the likelihood of an injury, illness or diseases in the workplace.

Step IV: Implementation of risk controls

All hazards that have been assessed should be dealt in order of priority in one or more of the following hierarchy of controls

The most effective methods of control are:

i. Elimination of hazards

ii. Substitute something safer

iii. Use engineering/design controls

iv. Use administrative controls such as safe work procedures

v. Protect the workers i.e. By ensuring competence through supervision and training, etc.

Each measure must have a designated person and date assigned for the implementation of controls. This ensures that all required safety measures will be completed.

Step V: Monitor and Review

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Hazard identification, risk assessment and control are an on-going process. Therefore regularly review the effectiveness of your hazard assessment and control measures. Make sure that you undertake a hazard and risk assessment when there is change to the workplace including when work systems, tools, machinery or equipment changes. Provide additional supervision when the new employees with reduced skill levels or knowledge are introduced to the workplace.

B) RISK ANALYSIS

The risk assessment portion of the process involves three levels of site evaluation:

a) Initial Site Evaluation,

b) Detailed Site Evaluation,

c) Priority Site Investigations and Recommendations.

The risk assessment criteria used for all levels of site evaluation take into account two basic factors:

- The existing site conditions
- The level of the travelling public's exposure to those conditions.

The Initial Site Evaluation and Detailed Site Evaluation both apply weighted criteria to the existing information and information obtained from one site visit. The Initial Site Evaluation subdivides the initial inventory listing of sites into 5 risk assessment site groups. The Detailed Site Evaluation risk assessment is then performed on each of the three highest risk site groups in order of the group priority level of risk. The result of the Detailed Site Evaluation process is a prioritized listing of the sites within each of the three highest risk site groups.

Risk analysis is done for:

- Forecasting any unwanted situation
- Estimating damage potential of such situation
- Decision making to control such situation
- Evaluating effectiveness of control measures

C) ACCEPTABLE RISK

Risk that is acceptable to regulatory agency and also to the public is called acceptable risk. There are no formally recognized regulatory criteria for risk to personnel in the mining industry. Individual organizations have developed criteria for employee risk and the concepts originally arising from chemical process industries and oil and gas industries. Because of the uncertainties linked with probabilistic risk analysis used for quantification of the risk levels the general guiding principle is that

the risk be reduced to a level considered **As Low as Reasonably Practicable (ALARP).** It can be seen that there are three tiers:

a. A tolerable region where risk has been shown to be negligible and comparable with everyday risks such as travel to work.

b. A middle level where it is shown the risk has been reduced to As Low As Reasonably Practicable level and that further risk reduction is either impracticable or the cost is grossly disproportionate to the improvement gained. This is referred as the ALARP region.

c. An intolerable region where risk cannot be justified on any grounds. The ALARP region is kept sufficiently extensive to allow for flexibility in decision making and allow for the positive management initiatives which may not be quantifiable in terms of risk reduction.

-The risk acceptability criteria are given in following table:

1	Risk un acceptance and must be reduced. The actions may include equipment and people or procedural measures. If risk cannot be reduced to ALARP level, operating philosophy must be fundamentally reviewed by the management.	**Intolerable Region**
2	Efforts must be made to reduce risk further and to as low as reasonably practicable, without expenditure that is grossly disproportionate to the benefit gained	**ALARP Region (As Low as Reasonably Practicable)**
3	Risk level is so low as to not require actions to reduce its magnitude further.	**Tolerable Region**

TABLE – 6.1 Risk Likelihood Table for Guidance

Step 1: Assess the Likelihood				**Step 2: Assess the Consequences**		
L1	Happens every time we operate	Almost Certain	Common or repeating occurrence	C1	Fatality	Catastrophic
L2	Happens regularly (often)	Likely	Known to have occurred "has happened"	C2	Permanent disability	Major
L3	Has happened (occasionally)	Possible	Could occur or "heard of it happening"	C3	Medical/ hospital or lost time	Moderate
L4	Happens irregularly (almost never)	Unlikely	Not likely to occur	C4	First aid or no lost time	Minor
L5	Improbable (never)	Rare	Practically impossible	C5	No injury	Insignificant

A logical systematic process is usually followed during a qualitative risk assessment to identify the key risk events and to assess the consequences of the events occurring and the likelihood of their occurrence (TABLE-6.2)

Risk Rank Likelihood x Consequence	L1 Almost certain	L2 Likely	L3 Possible	L4 Unlikely	L5 Rare
C1 Catastrophic	1	2	4	7	11
C2 Major	3	5	8	12	16
C3 Moderate	6	9	13	17	20
C4 Minor	10	14	18	21	23
C5 Insignificant	15	19	22	24	25

RISK RATING:

- **HIGH RISK 1-6**
- **MEDIUM RISK 7-15**
- **LOW RISK 16-25**

6.2 POTENTIAL HAZARDS & 'ALARP' CONDITION

Mining and allied activities are associated with several potential hazards and risk to both the employees and the public at large. A worker in a mine should be able to work under "**ALARP**" conditions(as stated above), which are adequately safe and healthy. At the same time the environmental conditions should be such as not to be impair his working efficiency. This is possible only when there is adequate safety in mines.

6.3 RISK PRIORITISATION BASED ON HAZARDS

There are various factors, which can create unsafe working conditions/hazards in mining of minor minerals from Building Stone, Khandas & Gitti, Boulder mining

The key risk (hazard x probability) event rating associated with Building Stone, Khandas & Gitti, Boulder mining and to assess its consequences of such events occurring and the likelihood based on above Table-2 are as:-

The Risk rating of such hazards is as follows:

- Inundation / Flooding (C1 xL3=4)
- Quick Building Stone, Khandas & Gitti, Boulder Condition (C2 x L3=8)
- Drowning (C5 xL5=25)

- Accident due to vehicular movement.(C3 xL3=13)
- Accident during blasting, loading, transporting and dumping, etc.

6.4 ADDITIONAL STUDIES

6.4.1 Occupational Health And Safety

For any industry, where multifarious activities are involved during construction, erection, testing, commissioning, operation and maintenance; the men, materials and machines are the basic inputs. Along with the boons, industrialization generally brings several problems like occupational health and safety. Mining Industry is not an exception and above also holds good.

Therefore, proper plan and steps are required to be taken to minimize the impact of mining and for ensuring appropriate occupational health and safety during the constructional and operational phases.

6.4.2 Occupational Health

Occupational health needs attention during construction, operation and mine decommissioning phases. However, the problem varies both in magnitude and variety in the above phases.

- **Construction**

The occupational health problems envisaged at this stage can mainly be due to constructional accident and noise. To overcome these hazards, in addition to arrangements to reduce it within Threshold Limit Values (TLV's), necessary protective equipment will have to be supplied to workers.

In the instant case the mine is existing but non-operative and hence this phase as such is not applicable.

- **Operational**

The problem of occupational health, in the operation phase is primarily due to dust and noise which could affect breathing and hearing. The necessary personnel protective equipment will have to be given to all the workers working the dusty and noise areas. The working personnel will be given the following appropriate equipment.

- Industrial safety helmet;
- Face shield with replacement acrylic vision;
- Zero power goggles with cut type filters on both sides and blue color glasses;
- Ear muffs;
- Safety belt/line man's safety belt;
- Leather hand gloves;
- Industrial safety shoes with steel toe.
- Personal Dust Masks.

All working personnel will be medically examined as per provisions of the Mines Act. This will be in addition to the pre-employment medical examination.

6.4.3 Safety Plan

It is envisaged that all safety precautions during the mining operations, posting of sufficient number of statutory officials and persons, disaster management, etc shall be undertaken, for which sufficient funds shall be provided to deal with all safety provisions. An effective organization of the mine shall be prepared and implemented as per DGM Guidelines/ Circulars.

Mining is a hazardous industry and hence, necessary measures shall be taken to prevent accident due to following anticipated hazardous/risk prone activities.

- Slope failure;
- Handling of explosives;
- Fly-rocks during blasting;
- Movement of HEMM;
- Inundation due to surface water;
- Dust hazards;
- Hazards associated with use of electricity/ Diesel Generator Sets; and
- Flooding of lower benches

6.4.4 Statutory Rules

Deployment of HEMM in any mine for excavation of stone / OB needs planning of various activities in confirmation with the prevailing statutory provisions as per Mines Act 1952, Metaliferous Mines Regulation 1957, various DGMS circulars & bye-laws.

All applicable statutory rules, regulations, bye-laws etc and statutory requirement related to Govt. licenses, workers compensation, insurance, etc, including minimum wage act for workers employed by the outside agency shall have to be adhered. Any other rule imposed by local/state/central authorities shall also be complied by user of HEMM equipment and then shall have to supply various protective equipment viz. helmets, shoes, safety gear for welding, working at height, electrical apparatus handling, etc. to the workmen at their cost.

6.4.5 Safety Aspects for HEMM/Equipment and Workers

Special precaution shall be taken in case of outsourcing the HEMM and workers in the mine. Some of the major safety aspects before outsourcing of workers & HEMM to the mine are enumerated as follows:

(A) For Workers

- No worker shall be deployed unless he is skilled enough to take up the designated assignment and trained at VTC;
- Records in Form- B and Form- D shall be maintained;

- Records of vocational training certificate and driving license of operators shall be kept by HEMM outsourcing agency and shall be made readily available for inspection by management;
- No persons shall be employed unless person holds VTC certificate and management is informed. A record of it shall be maintained;
- Adequate supervision shall be maintained by qualified competent persons;
- Outside agency shall follow safety guidelines and safety instruction from project authorities;
- All drivers shall obey traffics rules prepared by the management; and
- Before deploying workers, they must be trained and briefed about safety aspects in opencast mine. However, during course of execution of the work, if any accident occurs, whether major or minor, the matter shall have to be immediately informed to the mine management so that notices of accidents in a accordance of (Reg.9 of MMR 1957) and Section-23 of Mines Act, 1952 may be given and other necessary steps may be taken in accordance with the Mines Act, 1952.

(B) For Machineries as Recommended by DGMS Circular (Tech.) 1 of 1999

- All machineries to be deployed in mines shall be checked before deployment by competent authority;
- Regular checking of machines deployed shall be done. No unfit machine shall be deployed before the defect is rectified;
- A proper record of repair and maintenance along with inspection done by management and defect pointed out shall be maintained and signed by authorized person;
- The HEMM shall be provided with audio visual alarms, proper light for use at night and period when natural light is not sufficient. Also audio-visual alarms for reversing of HEMM shall be provided;
- RTO certificate photo copies of all vehicles shall be submitted to manager;
- Regular inspection of HEMM shall be done by the agency's mechanic as directed by the management;
- Machine manufacturers shall be asked to give risk analysis details in respect machines deployed by outside agencies;
- Suitable fire extinguishers shall be provided in every machine;
- Transport system will be deployed in such a way so as to minimize pollution in the mine and keep the environmental status as recommended under the approved EMP

6.4.6 Stability of Benches, Quarry High Walls and Spoil Dumps

During quarry operations, it is necessary to adopt suggested mining parameters for the stability of benches, high-walls and spoil dumps. It is also mandatory to examine systematically the fencing of mine working, landslides and cracks between benches. It is required to maintain well graded and wide roads on benches keeping the width of working areas sufficient for spreading of blasted rock and movement of the mining and transport equipment.

During actual mining operation, systematic observations and regular monitoring of the condition of benches, high-wall slopes and spoil dumps shall be carried out and the dimensions shall be modified if necessary, to suit the local conditions.

6.4.6 Precautions against Danger of Inundation from Surface Water

- A careful assessment shall be made against the danger from surface water before the onset of rainy season. The necessary precautions shall be clearly laid down and implemented. A garland drain will be provided to drain away the surface rain water from coming into the mine. Garland drain shall be provided around working mines to course the rain water to main streams;
- Inspections for any accumulation of rain water, obstruction in normal drainage;
- Standing order for withdrawal of working persons in case of apprehended danger;
- During heavy rain, inspection of vulnerable points is essential. In case of any danger, persons are to be withdrawn to safer places;

6.4.7 Prevention of Flooding of Equipment Deployed at Bottom Horizons

During the heavy monsoon period, the mining operation in the lower-most benches shall be stopped. Adequate pumping capacity on the basis of historical data of maximum rainfall and distribution of rainfall has to be designed. But in case of unprecedented rainfall, machineries shall be withdrawn from lower benches temporarily and redeployed after dewatering in the lower benches again.

6.4.8 Dust Suppression & Dilution of Exhaust Fumes

The following measures shall be adopted for dust suppression at all quarry working places, dump, haul roads, and near other auxiliary mining operations:

- Water sprinklers shall be deployed in haul road. .
- Spraying with water on all working faces.
- While drilling holes, drills with necessary dust extraction arrangement shall be used.
- Leveling of spoil dump surface.

- Maintaining the engine and exhaust conditioners properly, so as to keep emission gases within limits and regular checking of exhaust and recording the same.

6.4.9 Fire Fighting and Fire Prevention

In addition to statutory provisions, the measures for firefighting and prevention of fires will be as follows:

- Provision of fire extinguishers and fire tenders.
- Emergency organization shall be formed to deal with emergency during fire. The organization shall have names of responsible person along with their telephone numbers. Their duties shall be clearly specified and the persons shall be properly trained. Mock – rehearsals shall be held.

6.4.10 Measures during Drilling and Blasting

Following measures shall be taken while drilling and blasting operations in the quarry:

1. Drilling and blasting in quarry shall be done in accordance with the provisions of Mines Act, rules and regulations;
2. Adequate safety measures will be taken during blasting operations in the quarry so that men/machines are not affected;
3. Ground vibration due to blasting will be controlled by following:
   - Reducing the explosive charge per delay.
   - Spacing and burden are to be optimized by the blasting engineer.
   - Reducing the amount of explosive charged per blast.
   - Proper controlled rock movement during blast by using suitable initiating sequence and delay.

6.5 RISK ASSESSMENT AND DISASTER MANAGEMENT PLAN

Hazard analysis involves the identification and quantification of various hazards (unsafe conditions) that exist in the mines. On the other hand, risk analysis deals with the identification and quantification of risks, mining equipment and personnel are exposed to, due to accidents resulting from the hazards present in the mine.

Risk analysis follows an extensive hazard analysis. It involves the identification and assessment of risks the neighboring populations are exposed to as a result of hazards present.

In the sections below, the identification of various hazards, probable risks, maximum credible accident analysis, and consequence analysis are addressed which gives a broad identification of risks involved. Based on the risk estimation disaster management plan has to be prepared.

The complete mining will be carried out under the management control and direction of a qualified Mine Manager holding a first class manager's certificate of competency. The DGMS have been regularly issuing standing orders, model standing orders and circulars to be followed by the mine management in case of disaster, if any. Moreover, mining staff will be sent to refresher courses from time to time to keep them alert. However, following natural/industrial hazards may occur during normal operation:

- Accident due to explosives;
- Accident due to heavy mining equipment; and
- Sabotage in case of magazine.

In order to take care of above hazard/disasters, the following control measures will be adopted:

- All safety precautions and provisions of the Mine Act, 1955, and the Mines Rules, 1955 will be strictly followed during all mining operations;
- Entry of unauthorized persons will be prohibited;
- Firefighting and first-aid provisions in the mines office complex and mining area;
- Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use;
- Training and refresher courses for all the employees working in hazardous premises; Under mines rules all employees of mines shall have to undergo the training at a regular interval;
- Working of mine, as per approved plans and regularly updating the mine plans;
- Handling of explosives, charging and blasting will be carried out by competent persons only;
- Provision of magazine at a safe place with fencing and necessary security arrangement;
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines;
- Suppression of dust on the haulage roads;
- Adequate safety equipment will be provided at explosive magazine; and
- Increasing the awareness of safety and disaster through competitions, posters and other similar drives.

6.5.1 Storage of explosives

An explosive Magazine is established in an area that has provided for clear safety as per the norms of explosive department. The magazine has storing capacity about 95 kg of conventional explosives, about 750 m of detonating fuse, 7,500 m of Safety fuse and about 5000 detonators (ordinary detonators). The capacity of the magazine will be as follows.

Class 2	Nitrate Mixture	-	95 kgs.
Class 6	Division 1 Safety fuses	-	7500 meters.
Class 6	Division 3 Detonator	-	5000 nos.
Class 6	Div 2 Detonating Fuse	-	750 m.

The magazine is as per the design laid down in Indian Explosives Rules and safety distances are maintained as per the above rules.

Precautionary measures during blasting

(a) Although the mine is far away from any population, precaution will be taken to minimize nuisance caused by blasting. All necessary safety precaution is being taken in accordance with the explosive act. Precaution are also taken as per permission given under MMR 1961 106(2) (b) by Director of Mines Safety for deep hole drilling & Blasting and usage of heavy earth moving machinery.

(b) Drilling and blasting operations will be carried on strictly as per the provision of MMR, 1961 under the strict supervision of qualified persons. For storage and issue of explosives, the relevant provisions of Indian Explosives Rules, 1983 will be followed. Blasting time is generally fixed at lunch interval or after the working shift-taking. All required precautions, like marking the danger zone with red flags, use of warning signals and providing blasting shelters etc.

Measures to Prevent Accidents due to Trucks and Dumpers

- All transportation within the main working area would be carried out under the direct supervision and control of the management;
- The vehicles will be maintained in good repairs and checked thoroughly at least once a week by a competent person authorized for this purpose by the management;
- Broad signs would be provided at each and every turning point specially for the guidance of the drivers ;
- To avoid dangers while reversing the vehicles, all areas as far as possible, will be made man free. and
- A statutory provision of the fence, constant education, training etc. will go a long way in reducing the incidence of such accidents.

6.5.2 Objectives of Disaster Management Plan

The disaster management plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this order of priorities. For effective

implementation of the disaster management plan, it would be widely circulated and personnel training through rehearsals/drills.

The objective of the disaster management plan is to make use of the resources of the mine and the outside services to achieve the following:

1. Effect the rescue and medical treatment of casualties;
2. Safeguard other people;
3. Minimize damage to property and the environment;
4. Initially contain and ultimately bring the incident under control;
5. Identify any dead;
6. Provide for the needs of relatives;
7. Provide authoritative information to the news media;
8. Secure the safe rehabilitation of affected area; and
9. Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

In effect, it is to optimize operational efficiency to rescue rehabilitation and render medical help and to restore normalcy.

➢ **Emergency Organization (EO)**

It is recommended to setup an emergency organization. The Mine Manager who has control over the affairs of the mine would be heading the emergency organization. He would be designated as Site Controller and Incident Controller.

Incident Controller shall organize a team responsible for controlling the incidence. Shift In-charge would be the reporting officer, who would bring the incidence to the notice of the Incidence Controller and Site Controller.

Emergency coordinators would be appointed who would undertake the responsibilities like firefighting, rescue, rehabilitation, transport and provide essential and support services. For this purposes, Security in-charge, personnel department, essential services personnel would be engaged. All these personnel would be designated as key personnel.

6.6 SOCIAL IMPACT ASSESSMENT

The impacts of the mining project on socio-economic conditions of the people of surrounding villages are assessed based on interactions with EISQ or its representatives and local population. It is anticipated

that the existing project after start of operation will further bring following benefits to the people of the surrounding villages:

- Generation of employment and improved standard of living;
- Increased revenue to the State by way of royalty, taxes and duties;
- Superior communication and transport facilities etc.

In addition to above, due to increase in purchasing power of local habitants, there will be significant change in the socio-economic scenario of the area.

The existing project will enhance the prospects of employment. Recruitment for the unskilled and semiskilled workers for the given project will be from the nearby villages. The strengthening /development of the basic amenities viz. improvement of roads, transportation, electricity, drinking water, proper sanitation, educational institutions, medical facilities, entertainment, etc. will be carried out as far as possible and requirement through the Gram panchayat. Overall the project after start of operation will change living standards of the people and improve the socio-economic conditions of the area.

6.7 REHABILITATION & RESETTLEMENT ASPECTS

There is no R&R activity will be required to be undertaken since it is an existing but non operative mine without any additional land.

6.8 SOCIAL IMPACT ASSESSMENT, REHABILITATION & RESETTLEMENT (R&R) ACTION PLAN

There will be no resettlement or rehabilitation involved in the project being on meandering course of the river. However, a detailed Socio Economic Assessment has been performed, which is given below:

INTRODUCTION

In this section of the report an attempt has been made to measure Socio-economic impact of the proposed Building stone, khanda, gitti & boluder mining project at village Bari, Tehsil Mahoba, District Mahoba, Uttar Pradesh. The various attributes that have been taken into account are population composition, employment generation, occupational shift, household income, consumption pattern, ethnic issue and law & order problem. The key objective of the study is to assess possible impact of the project on socio-economic life of the people in the neighborhood known as study area.

The objectives of the socio-economic impact assessment are as follows:

a) To collect baseline data of the study area.

b) To know the socio-economic status of the people living in the study area of the proposed Building stone, khanda, gitti & boluder mining project.
c) To assess the possible impact of the project on socio-economic aspects in the study area.
d) To measure the impact of the project on Quality of life of the people in the study area.

APPROACH & METHODOLOGY

a) A mixture of both quantitative and qualitative approach has been adopted in the current socio-economic study.
b) The study has been conducted based on primary and secondary data. While primary data has been collected through a sample survey of selected households in the study area, the secondary data has been collected from the administrative records of the Government of Uttar Pradesh, Census 2011, district hand books and from the Uttar Pradesh Government portal.
c) The details regarding population composition, number of literates, workers, etc have been collected from secondary sources and analyzed. Also village/city/town wise details regarding amenities available in the study area have been collected from secondary sources like Census 2011, and analyzed.
d) Two stage sampling design has been adopted to select the sampling units. The first stage units are census villages in the rural areas and towns/cities in urban areas. The ultimate stage units are households in the selected villages and towns/cities. Probability sampling has been adopted to select the sampling units.
e) Estimation of various parameters has been made based on sample data and bottom top approach has been adopted.
f) On the basis of a preliminary reconnaissance survey, two questionnaires were developed to make it suitable to fulfill the objectives of the study. The questionnaires contained both open ended and close ended questions
g) The data collected during the above survey was analyzed to evaluate the prevailing socio-economic profile of the area.
h) Based on the above data, impacts due to mining operation on the community have been assessed and recommendations for improvement have been made.

CONCEPT & DEFINITION OF TERMS USED

a) **Study Area:** The study area, also known as impact area has been defined as the sum total of core area and buffer area with a radius of 10 Kilometers from the periphery of the project site. The study area includes all the land marks both natural and manmade, falling therein.

b) **QoL**: The Quality of Life (QoL) refers to degree to which a person enjoys the important possibilities of his/her life. The 'Possibilities' result from the opportunities and limitations, each person has in his/her life and reflect the interaction of personal and environmental factors. Enjoyment has two components: the experience of satisfaction and the possession or achievement of some characteristic.

c) **Household**: A group of persons who normally live together and take their meals from a common kitchen are called a household. Persons living in a household may be related or unrelated or a mix of both. However, if a group of related or unrelated persons live in a house but do not take their meals from the common kitchen, then they are not part of a common household. Each such person is treated as a separate household. There may be one member households, two member households or multi-member households.

d) **Sex Ratio:** Sex ratio is the ratio of females to males in a given population. It is expressed as 'number of females per 1000 males'.

e) **Literates:** All persons aged 7 years and above who can both read and write with understanding in any language are taken as literate. It is not necessary for a person to have received any formal education or passed any minimum educational standard for being treated as literate. People who are blind but can read in Braille are also treated as literates.

f) **Literacy Rate:** Literacy rate of population is defined as the percentage of literates to the total population aged 7 years and above.

g) **Labour Force:** The labour force is the number of people employed and unemployed in a geographical entity. The size of the labour force is the sum total of persons employed and unemployed. An unemployed person is defined as a person not employed but actively seeking work. Normally, the labour force of a country consists of everyone of working age (commencing from 14 to 16 years) and below retirement (around 65 years) that are participating workers, that is people actively employed or seeking employment. People not counted under labour force are students, retired persons, stay-at home people, people in prisons, permanently disabled persons and discouraged workers.

h) **Work:** Work is defined as participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. The work may be part time or full time or unpaid work in a farm, family enterprise or in any other economic activity.

i) **Worker:** All persons engaged in 'work' are defined as workers. Persons who are engaged in cultivation of land or milk production even solely for domestic consumption are also treated as workers.

j) **Main Workers**: Those workers who had worked for the major part of the reference period (i.e. 6 months or more in the case of a year) are termed as Main Workers.

k) **Marginal Workers:** Those workers who did not work for the major part of the reference period (i.e. less than 6 months) are termed as Marginal Workers.

l) **Work participation rate**: The work participation rate is the ratio between the labour force and the overall size of their cohort (national population of the same age range). In the present study the work participation rate is defined as the percentage of total workers (main and marginal) to total population.

FINDINGS OF THE STUDY

The field investigation has revealed that the entire study area of the proposed mining project is located in Banda district, Uttar Pradesh. The Sub-district (Tehsil) falling in the study area is Nahari. The study area comprises of 15 identified villages and there is no urban area.

BASELINE DATA OF THE IMPACT AREA

Table 6.2 Demographic Particulars

S.No.	Description	Number	Percentage to respective totals
1	**Total Population** (District)	**74861**	**100**
	Male	40501	54.10
	Female	34360	45.90
2	**Sex ratio (No. of females per 1000 males)**	**848**	
3	**Total Literates**	**41514**	**100**
	Male	26171	63.04
	Female	15343	36.96
4	**Over all Literacy Rate**		**66.37**
	Male		76.88
	Female		53.81
5	**Gender gap in literacy rate**		**23.06**
6	**Total Workers**	24050	100
	Male	18377	76.41
	Female	5673	23.59
7	**Total Main Workers**	**16706**	**100**
	Male	14968	89.60
	Female	1738	10.40
8	**Total Marginal Workers**	**7344**	**100**

	Male	3409	46.42
	Female	3935	53.58
9	**Total Agricultural Workers**	**12639**	**100**
	Cultivators	5624	44.50
	Agricultural Labours	7015	55.50
	Male workers in total agricultural workers	8724	69.02
	Female workers in total agricultural workers	3915	30.98
10	**Total Household Industrial Workers**	**583**	**100**
	Male	489	83.88
	Female	94	16.12
11	**Total Other Workers**	**10828**	**100**
	Male	9164	84.63
	Female	1664	15.37

Source: Census 2011

Table 6.3Amenities:

S.no	Amenities	Types	Units
1	Education Facilities		
		Primary Schools	28
		Middle schools	18
		Secondary Schools	2
		Senior Secondary Schools	1
2	Hospitals		
		Allopathic Hospital	3
		Ayurvedic Hospital	2
		Homeopathic Hospital	1
		Allopathic Dispensary	1
		Ayurvedic Dispensary	1
		Homeopathic Dispensary	1
		PHC	2
		PHSC	1
3	Drinking Water Facilities		
	Variety of purposes	Tap	2
		Well	19
		Tank	3
		Tubewell	19
		Hand pump	
4	Communication Facilities		
		Post Office	7
		Tele Phone	29
5	Transportation Facilities		
		Bus Service	6
		Railway Station	1
6	Banking facilities		

		Commercial banks	4
		Cooperative banks	2
7	Power #		21

No. of villages provided with the facilities **Source: Census 2011**

DEMOGRAPHIC COMPOSITION

Population

According to Census 2011, the total population of the study area1,74861. As there is no urban area the entire population belongs to rural area. The overall sex ratio has been worked out to 848 females per 1000 males, which is higher than the national average of 933 females per 1000 males. Furthermore, around 17 percent of the total population belongs to Schedule Caste community and the Schedule Tribe population in the study area is very negligible as per Census 2011.

Number of households and household size

The entire population of the study area has been grouped into 12497 households and the average household size is 6. The household size varies between 6 and 10.

Literacy and Literacy rate

The total number of literates in the study area has been worked out to 12497, which is around 55.45 percent of the total population. The literacy rate of male has been worked out to 63.04 percent as against 36.96 percent for female, creating a gender gap of 23.06 percent.

Workers and work participation rate

The total number of working persons in the study area is 24050, which is 32.1 percent of the total population. Among the total workers 69.5 percent are main workers and the remaining 30.5 percent are marginal workers. The percentage of male in the main workers is 89.6 percent, while it is only 46.4 percent in the case of marginal workers. On the other hand, the percentage share of female in the main workers is only 10.4 percent; it is 53.6 percent in the case of marginal workers. This indicates that male dominates the main workers and female dominates the marginal workers.

The Table and the figure below indicate the categorization of workers based on occupation:

Table 6.4: Categorization of workers on the basis of occupation

S. No.	Worker category	Number of workers	% to total workers
(1)	(2)	(3)	(4)
1	Agricultural Workers	12639	52.55
a)	Cultivators	5624	23.38
b)	Agricultural labour	7015	29.17

2	Household Industrial Workers	583	2.42
3	Other workers	10828	45.02
Total		**24050**	**100.0**

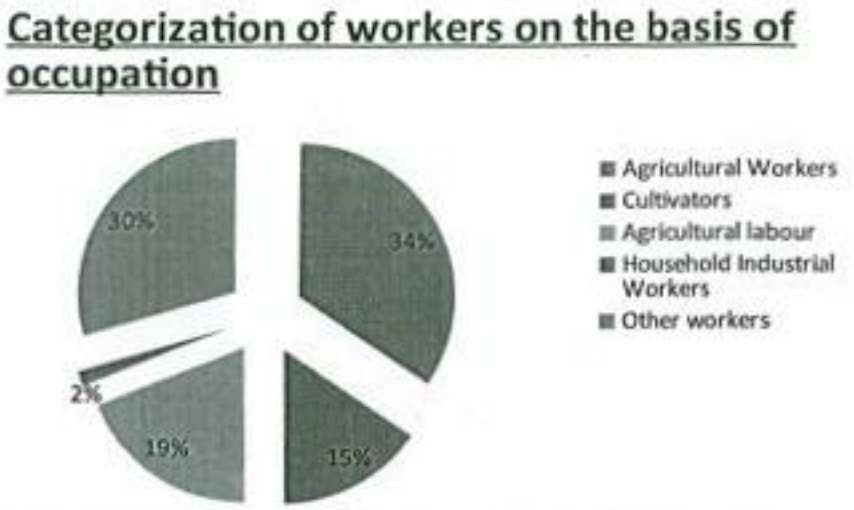

Figure 6.4: Categorization of workers on the basis of occupation

The classification of workers based on occupation reveals that 52.6percent of the total workers are Agricultural workers. The share of cultivators in the total workers is 23.4 percent and that of Agricultural labours is 29.2 percent. Barely 4 percent of total workers are Household Industrial Workers and 45 percent are 'Other workers' which includes white collar workers, professional workers, shopkeepers, traders and businessmen.

POSSIBLE IMPACT ASSESSMENT

Impact on population composition

The impact of the proposed mining project on population composition will be marginal as only few skilled and managerial staff will be recruited from outside and the rest will be recruited locally. The impact will be significant if a large number of people from outside get employed in the proposed project. In that case not only the population of the study area will go up but also the skewed sex ratio may make permanent social effects like rise in exploitation of women, higher crime rate, increase in sexual diseases and depression among youth.

Impact on employment generation

The proposed Building Stone, Khandas & Gitti, Boulder mining project is expected to provide employment opportunities to 29 persons of which three will be skilled workers and the remaining 9 will be unskilled

workers. It is understood that all the persons to be deployed for various mining activities will be recruited locally and there is very little scope for migration of people from outside the study area. The employment potentiality of the project is expected to ameliorate the economic condition of the families of those persons who will get employed in the proposed mining project. However, the mining project will provide seasonal employment. Further, the project will provide indirect employment to about 100 people who will be involved in segregation of extracted mining materials, crushing of boulders, petty business and service oriented industries.

Impact on Health

Extraction of Building Stone, Khandas & Gitti, Boulder may cause serious health risks due to dust generated. The effects will vary depending upon the nature of the dust particles, silica content in it and the size of the particles. Pneumoconiosis is an occupational lung disease often caused to miners, due to the inhalation of dust. Silica content in the Building Stone, Khandas & Gitti, Boulder may also lead to Silicosis, which is again an occupational lung disease. Miners may also suffer with occupational respiratory ailments, skin allergies etc, but the same are preventable if exposure is minimized. Further, regular health check-up of the miners is required to prevent any negative impact on their health. In the present mining project, no adverse impact on health is expected if minimum precautions are taken by the miners.

Impact on income

In India poverty is widespread. According to an estimate made by World Bank during 2005, 26 percent of the total Indian population falls below the International poverty Line of US$ 1.25 a day (PPP, in nominal terms ₹ 21.6 a day in urban areas and ₹ 14.3 in rural areas). Uttar Pradesh is one of the worst poverty ridden states in India, with per capita income of Rs. 26,051. The proposed mining project at Bari is expected to provide casual employment to 42 unskilled workers and 3 skilled workers for a period of 250 days in a year. According to Department of labour, Government of Uttar Pradesh each unskilled worker is eligible to get a minimum basic wage of Rs. 150 per day. In addition they will get V.D.A amounting to Rs. 65.50 per day. Thus, the total amount an unskilled worker is expected to get is Rs215.50 per day. Further, a semi-skilled worker will get a basic wage of Rs 164 and V.D.A amounting to Rs.74.69 making the total amount of Rs. 238.69 per day. Lastly, a skilled worker can expect to get a minimum wage of Rs. 176.54 and V.D.A amounting to Rs. 82.92 making the total amount of Rs. 259.46 per day. The impact of the proposed mining activity on household income in the study area is thus positive since it will provide employment to local people, which will result to an increase in household income of those workers who will be recruited for mining operation. However, this impact will be effective for a limited period of 250 days in a year.

Impact on consumption pattern

The field survey has revealed that people in the study are poverty ridden. Increased household income may slightly change the consumption pattern of few but majority of the people will continue to be burdened with poverty.

Impact on road development

Movement of trucks and other vehicles to and fro the quarry is expected to increase substantially, when mining will start. The existing roads connecting the quarry with the national and state highways are mostly narrow mud roads. There will be mud slide and traffic bottle neck if these roads are not widened and their conditions are not improved by making them paved roads. Hence, there is ample scope for road development in and around the mining areas.

Impact on law & Order

As local people will be employed to run the quarry, no law & order problem is envisaged. It is expected that the workers will attend to their duties from their residence and return to their homes after the day's work is over. There would have been law & order problem if the workers were migrants and lived in shanties closed to the mining area. However, to meet any untoward incident one police post may be set up closed to the project area.

6.9 SUGGESTIONS

Provision of First Aid at mining site

Extraction of Building Stone, Khandas & Gitti, Boulder poses serious health risks due to dust. The effects vary depending on the nature of the dust particles, silica content in it and the size of the particle. To meet any emergency during extraction of the minerals from the Building Stone, Khandas & Gitti, Boulder mining and subsequent loading in the transport vehicles, provision for First Aid should be made by the project proponent. Before the affected person is reached to a doctor or health institution for necessary medical aid, the miner should be provided with First Aid.

Tie up with the nearest PHC for medical help

To meet the medical needs of the mine workers it is suggested that tie-ups with nearest hospital or Primary Health Center (PHC) may be made. Few beds may be exclusively reserved for the mine workers in the above health institutions. This will ensure timely medical aid to the affected persons.

Supply of Mask, Gloves

The mine workers are subject to respiratory diseases, muscular-skeletal and gastro-intestinal disorders and skin diseases. For protection from dust it may be made compulsory for all mine workers to wear masks and gloves while working in the mines.

Regular health checkups

The miners may be encouraged to undergo health checkups at regular intervals in order to protect themselves from various diseases. The health Department of UP Government must Organize Health Camps at regular intervals preferably in every quarter. Further, free medical facilities may be made available to the workers and their family members.

Administration of Anti-venom injections

Provision of Anti-venom therapy must be made available at the near health institution. Anti-venom injections may be administrated to the mine workers in case of snake, spider and insect bites, while working in the mines.

Special telephone number

A special telephone number may be made available to the mine workers. In case of emergency the miners can dial the above number for medical assistance. Vehicle may be provided to the patients in short duration for shifting to the health institution.

Special Group Insurance Scheme

All the mine workers may be covered under a Group Insurance Scheme of LIC or any other Insurance company, if not so far.

Distribution of Blankets and Quilts

During winter season the mine workers may be distributed blankets and quilts free of cost.

6.10 CONCLUSIONS

The Building Stone, Khandas & Gitti, Boulder is one of most significant mineral contributing to the sustainable development that is "The extraction or recovery of the mineral without limiting the needs and lives of the surrounding flora, fauna and the local villagers/ people residing there as well."

This Building Stone, Khandas & Gitti, Boulder Mining Project is being proposed by Shri Mumtaj Ali S/ O-Late Shri Farzand Ali, R/O-Muhalla-Khunti Chauraha Aliganj, City & District-Banda (U.P.) for Building Stone, Khandas & Gitti, Boulder mine at Gata No. 2450 Khand No.-05 in Village Jarar, Tehsil Naraini & District- Banda, Uttar Pradesh within total lease Area 2.0 Ha. The proponent has applied for mining lease in the name Mumtaj Ali. It has been proposed to collect approximately 20000 m^3/year material (Building Stone, Khandas & Gitti, Boulder) annually.

As per the MoEF, New Delhi Gazette dated 14th September 2006 amended in December 2009 April 2011, 16 January, 2016 and 14 August, 2018, the proposed mining project is categorized as category "B1".

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This Building Stone, Khandas & Gitti, Boulder mining project has numerous benefits not only on individual level but on a social level too i.e. this project will not only benefit the owners but directly and indirectly will also benefit the people of that region.

This will give employment to thousands of people who are the residents of the principal place of business. Since, manpower is required in every activity and processing from installation of the project to the final product and marketing. The equitable distribution of work according to the skills and potential will be done. Work given will be categorized into skilled, semi-skilled and unskilled employees. Employment preference will be given to the local villagers. The labors will be registered in the district Labor Office as per the U.P. Government Law. Also, according to the Central government policy of labors, medical insurance will be done of all the labors employed. Minimum wage, guaranteed monetary benefits under law will be ensured to the workmen. Safe, healthy, and productive work environment and welfare will be provided to the worker. Abolition of child labor and bonded labor, and rehabilitation of those will be ensured.

Zero accident, safe and productive work places will be encouraged and promoted. Temporary rest shelter, first-aid facilities along with anti-venoms, safe drinking water for the workers/miners and Arrangements for safe and healthy working conditions and facilities of community toilets shall be made available for the workers, medical camps for workers and nearby villagers shall be conducted at regular interval. Workers will be instructed with safety measures and safety equipment's will also be provided.

This will provide the employment and aid in managing and surviving their livelihood, reduce the poverty of that region and will provide them a better atmosphere and a better life.

This project will also contribute in rising the economy of the state and ultimately of the nation through the taxes collected through this. This is obvious that taxes collected are used in welfare of the nation and its citizen. A sum of 4% i.e. 166400 of the total project (4160000) is also contributed as Corporate Environment Responsibility for difference welfare activities such as roads, plantation, education, sanitation, awareness campaigns, etc.

Last but not the least, this project has also its social impact on the lifestyle, life standards, thinking, personality, etc. of that place. The project will ignite the locals to use their potential and work for improving their economic condition and better life. This project can be a small step in betterment of the local people of that area.

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CHAPTER- 7
PROJECT BENEFITS

7.0 GENERAL

The project is being proposed by Shri Mumtaj Ali S/O-Late Shri Farzand Ali, R/O-Muhalla-Khunti Chauraha Aliganj, City & District-Banda (U.P.) for Building Stone (Khanda, Gitti and Boulder) Mining Project located in Jarar. The estimated project cost is Rs. 4160000/-. The proponent has applied for mining lease in the name of Building Stone (khanda, Gitty, Boulder) Mining Project, over an area of 2.0 ha. at Gata No. 2450 Khand No.-05 in Village Jarar, Tehsil Naraini & District- Banda, Uttar Pradesh. It has been proposed to collect 20000 m^3 per year of Building Stone (Khanda, Gitti and Boulder) Mining Project annually as per LOI. As per the MOEF, New Delhi Gazette dated 14th September 2006 amended in December 2009 and April 2011, the proposed mining project is categorized as category "B1".

7.1 BENEFITS OF MINING

The required quantity of stone aggregated (a mined out product of stone mining) has a very vital role in the infrastructure development of the nation along with other construction materials. Stone mining is minor mineral mining & is usually operated for small leased out area & for small leased period has therefore lot of importance & need to be carried out. There is constant demand of stone aggregate not only for making highways & roads but also in the construction industry as an ingredient of cement concrete. The existence of stone deposits is site specific & mining is to be carried at that location itself along with the crushing unit to meet the demand. Most of the stone quarries are of small magnitude & are operated for the lease period granted by the State Govt. The crushing unit is required to size the stone for different applications.

7.2 EMPLOYMENT

The socio-economic conditions of the surrounding villages indicate that employment generation is seasonal. The occupational activities are agriculture, cattle rearing and employment in mines but on daily wages. The mining activity will provide employment to local people which will increase socio-economic status of the area.

7.3 IMPROVEMENTS IN PHYSICAL AND SOCIAL INFRASTRUCTURE

The opening of the proposed project will enhance the socio-economic activities in the adjoining areas. This will result in following benefits:-

a. Improvements in physical infrastructure.
b. Improvements in Social Infrastructure.
c. Increase in Employment Potential

d. Contribution to the Exchequer.
e. Prevention of illegal mining.
f. During and Post-mining enhancement of green cover.

7.3(a) IMPROVEMENTS IN PHYSICAL INFRASTRUCTURE

The opening of the proposed project will improve the physical infrastructure of the adjoining areas. This will include the following:-

- Improved road communication due to opening of the proposed project.
- Strengthening of existing community facilities through the Community Development Programme.
- Creation of community assets (infrastructure) like provision for drinking water, construction of school buildings, village roads/ linked roads, dispensary & health centre, community centre, market place etc.
- Awareness program and community activities, like health camps, medical aids, family welfare programs, immunization camp sports & cultural activities, plantation etc.

7.3(b) IMPROVEMENTS IN SOCIAL INFRASTRUCTURE

There will be some obvious changes in various environmental parameters due to mining activity. There will be positive impact in socio-economic area due to increased economic activities, creation of new employment opportunities, infrastructural development and better educational and health facilities. Lessee will also undertake awareness program and community activities like health, camps, medical aids, family welfare camps, AIDS awareness program etc.

7.3(c) INCREASE IN EMPLOYMENT POTENTIAL: - There is a possibility of creation of direct and indirect employment opportunities due to working of this mine.

7.3(d) PREVENTION OF ILLEGAL MINING & CONTRIBUTION TO THE EXCHEQUER: - Since the quarries will be leased out to successful allottees, mining operation in the state will get legalized and it will fetch income to the state exchequer.

7.3(e) ENHANCEMENT OF GREEN COVERS

Plantation/afforestation will be done as per program i.e. along the road sides and near civic amenities, which will be allotted by Government bodies as it is not feasible to plant trees near the mine lease area. Post plantation, the area will be regularly monitored in every season for evaluation of success rate. For selection of plant species local people will also be involved. The management will provide free saplings of fruit and other trees, etc. to local during rain for plantation.

7.4 HEALTH

Periodic medical checkups as per Mines Act/ Rules and other social development and promotional activities will be undertaken. All this will lift the general health status of the residents of the area around mines.

7.5 CORPORATE ENVIRONMENT RESPONSIBILITY

Banda district is one of the districts of Uttar Pradesh state of India and Banda town is the district headquarters. The district occupies an area of 2884 km². It has a population of 6,64,064 (2011 census). As of 2011 it is the least populous district of Uttar Pradesh.

One of the greatest problems faced by people is lack of efficient use of resources. Once abundant with forests and vast agricultural lands, now have very little vegetation ,because of lack water conservation schemes. Infertile terrain is also one of the major cause. Only 45% of the crop area has any access to irrigation—that too with ground water as the primary source.

Since most of the farmers are already poor and grow crops by taking loans, their inability of payback, forces them to take drastic actions. Local politicians takes advantage of illiteracy of farmers in elections. Votes are never casted on the basis of development but caste, creed or religion. Farmers are dying of debts, lands getting barren of over exploitation, uneven rainfalls, increasing poverty and literacy, Zero industrial growth, Ignorance by government, corruption has created such a deep web that could not be resolved easily.

The only way to revive this district to its glory is by proper planning at ground level, increase industry increase industrial development and providing water conservation methods on massive scale.

The nearby village does not come under township or urban areas. Since the region is rich in minerals and mainly only undulated land is found, this causes problems for farmers to grow crops and earn their livelihood. The village lives in poverty and nearly 60% of the total population is uneducated. The facility of electricity is minimal, lacks in street lights, if there is no electricity, the whole village sleeps in dark.

Lacks in educational accessory and infrastructure, poor sanitation and shortage of toilets that cause lot of problems for females and males too. There is no shelter for stray animals that destroys agricultural land of farmers.

The part of Corporate Environment Responsibility is one of the major benefits of the project as the 5% of the total cost of the project which is Rs. 4160000 (4% of the total Project cost) considerably a decent amount that will purely go in the welfare of the nearby villages of the project site. This amount will aid in different sectors

Developmental activities	Cost in Rs.
Sanitation (2 Male and 2 female toilet will be made in the village)	60000

Installation of 4 hand pump in the village	60000
5 solar Powered lights will be installed on the connecting road of the lease. (5 solar lights @ 3100/- per light)	15,500
8 Ceiling fan will be given to the primary school of the village (15 Ceiling fan @ 2060/- each)	30,900
CER (4 % of the total project cost)	1,66,400
Total	41,60,000

CHAPTER - 8

ENVIRONMENTAL MANAGEMENT PLAN

8.0 INTRODUCTION

To mitigate the adverse impacts which are likely to be caused due to the mining operation and overall scientific development of local habitat, environmental management plan (EMP) has been formulated and integrated with the mine planning. The details of the anticipated impacts and mitigative measures have been discussed in **Chapter 4** of this report, based on the results of present environmental conditions and environmental impact assessment. The EMP has been made considering implementation and monitoring of environmental protection measures during and after mining operations. The mitigation measures which reduce the impact have already been identified earlier in **Chapter 4**. To minimize the adverse impact, certain additional EMP is enumerated below for implementation.

8.1 ENVIRONMENTAL MANAGEMENT PLAN (EMP)

Proper environmental management plan is proposed for "Building Stone (Khanda, Gitti and Boulder) Mining Project to mitigate the impact during the mining operations.

a. Building Stone (Khanda, Gitti and Boulder) Mining will be restricted up to the approved depth level by the Department of Geology and Mines Lucknow, Uttar Pradesh.

b. No activities allowed which caused to increase pollution level during Mining operation like cooking, or burning of woods or open toilet practice will be allowed in the adjoining area.

c. Prior to mining, short termed awareness program will be conducted for labours to make them aware to way of working.

d. If some injury to the Person occurs, it will be informed to PMS department and First Aid treatment will be given to person at the project Site.

e. No tree cutting, chopping, lumbering, uprooting of shrubs and herbs will be allowed.

f. Maintenance of roads will be done from time to time.

g. Care will be taken that noise produced during vehicles movements for carrying a. Building Stone (Khanda, Gitti and Boulder) Mining Project are within the permissible noise level.

8.2 ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION

Environmental Management Plan serves no purpose if it is not implemented with true spirit. Some loopholes in the EMP can also be detected afterwards when it is implemented and monitored. The implementation of periodically monitoring programme prepared and implemented and review the results.

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The major attributes of environment are not confined to the mining site alone. Implementation of proposed control measures and monitoring programme has an implication on the surrounding area as well as for the region. Therefore, mine management should strengthen the existing control measures as elaborated earlier in this report and monitor the efficacy of the control measures implemented within the mining area relating to the following specific areas for eco-friendly mining plan:

a. Collection of air and water samples at strategic locations with frequency suggested and by analyzing thereof. If the parameters exceed the permissible tolerance limits, corrective regulation measure will be taken.
b. Collection of soil samples at strategic locations once in every season and analysis thereof with regard to deleterious constituents, if any.
c. Measurement of water level fluctuations in the nearby ponds dug wells and bore wells.
d. Measurement of noise levels at mine site, stationary and mobile sources, and adjacent villages will be done quarterly in a year.
e. Plantation will be done with consultation of Forest department and gram panchayat which possible and plantation made in the gram panchayat land as specified area (because the mining side no place available for plantation due to stony area. The post plantation, the area will be regularly monitored for survival of the new plantation every six months. Ensure the plantation survival rate if less then actual then replacement of the plant by new.
f. Mine management will be in regular touch with local surrounding villages to update the various developmental schemes made by them. They will also consider any immediate requirement, which could be taken care of in near future.

The Environmental Management of Building Stone of Shri Mujibuddin Siddhiquui hired Environmental Management from outsourcing the Environmental cell of the hired Environmental Lab as the Cell is envisaged which will be responsible for monitoring EMP and its implementation. EMC members should meet periodically to assess the progress and analyze the data collected during the month. The EMC will function as per **Fig. 5.1 (Chapter 5)** and results or environmental monitoring shared with head of the Buliding Stone, Crusher Unit.

EMC will be in regular touch with consulting to Unit Head Shri Mujibuddin Siddhiquui and Environmental Management Cell coordinate with State Pollution Control Board, Indian Bureau of Mines and send them any Statutory report if required periodically. Any new regulations considered by State/Central Pollution Control Board for the industry will be taken care of by it.

8.3 PROPOSED SET UP

In view of monitoring results in the implementation of the environmental management program with consultation and approval by unit head Shri Mumtaj Ali. The said team will be responsible for:

a. Collecting water and air samples from surrounding area and work zone monitoring for pollutants.

b. Analyzing the water and air samples.
c. Implementing the control and protective measures.
d. Co-coordinating the environment related activities within the project as well as with outside agencies.
e. Collecting statistics of health of workers and population of surrounding villages.
f. Monitoring the progress of implementation of environmental management program.
g. The laboratory will be suitably equipped for sampling/testing for various environmental pollutants.

8.4 BUDGET ALLOCATION FOR EMP IMPLEMENTATION

Annual budget for EMP is very essential for successful implementation of EMP. As there are no pollution control systems, no capital cost of Pollution Control systems are envisaged. Costs will be annual operating costs as given below. The fund allocated will not be diverted for any other purposes and the top management will be responsible for this. The budget will take into consideration the following expenses:

a. Field cost for monitoring of parameters.
b. Cost of any defined outsourcing
c. Cost of chemicals, consumables and transport for data generation
d. Man power cost for environmental cell
e. Any other cost as per EC condition.

Table 8.1 Cost of EMP

Sr. No.	Environment Management Plan (EMP)	Cost Estimation	Total Cost (Rs.)
a.	Plantation		
i)	No of plants @95 Rs. / sapling)	100 saplings × @95 Rs. / sapling)	9500
ii)	Tree Guard (@1500/- per unit)		2,10,000
b.	Water Demand for plantation (@100saplings ×4 litres of water× twice per day = 800 ltrs.)	(800ltrs. Per day x 300 (working days) x (1.1Rs. /L)	264000
c.	Measure for prevention & control of soil erosion and management of silt shall be undertaken. Protection of dump against erosion, if any, shall be carried out with geo-textile matting or other material.	-	20000
d.	Sprinkling on haulage route for dust suppression (600 m length × 6 m width × 1 litres of water per m^2 /2 times a day=7.2KLD (Rs. 1100 for per KLD of water/day)	Rs. 1100×7.2 KLD of water/ day x 300 (working days)	2376000
e.	Cost of monitoring of air	-	2,50,000

	quality(PM_{10},$PM_{2.5}$,NO_X,SO_2), water quality(ground water and surface water),soil quality and ambient noise level		
f.	Cost for environmental cell	• Environmental Engineer:1 • Gardener :3	400000
g.	Fund for COVID-19		50000
Total			**2849700**

8.5 MONITORING SCHEDULE AND ACTIVITIES

To evaluate the effectiveness of environmental management program regular monitoring of the important environmental activities to be monitored are shown in Table. **5.1. (Chapter 5).**

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CHAPTER - 9

EXECUTIVE SUMMARY

9.1 INTRODUCTION OF PROJECT &PROPONENT

The project is being proposed by Shri Mumtaj Ali S/O-Late Shri Farzand Ali, R/O-Muhalla-Khunti Chauraha Aliganj, City & District-Banda (U.P.) for Building Stone (Khanda, Gitti and Boulder) Mining Project located in Jarar. The estimated project cost is Rs. 4160000/-. The proponent has applied for mining lease in the name of Building Stone (khanda, Gitty, Boulder) Mining Project, over an area of 2.0 ha. at Gata No. 2450 Khand No.-05 in Village Jarar, Tehsil Naraini & District- Banda, Uttar Pradesh. It has been proposed to collect 20000 m^3 per year of Building Stone (Khanda, Gitti and Boulder) Mining Project annually as per LOI. As per the MOEF, New Delhi Gazette dated 14th September 2006 amended in December 2009 and April 2011, the proposed mining project is categorized as category "B1".

9.2 LOCATION

The mining area is located in Gata No. 2450 Khand No.-05 in Village Jarar, Tehsil Naraini & District-Banda, Uttar Pradesh. The mining lease / proposed project area falls in Survey of India Toposheet No. 63C/7. The mine lease area is located between as follows:

Project Site co-ordinates	**Points. No.**	**Latitude**	**Longitude**
	A	25° 18' 55.26"N	80° 21' 39.03"E
	B	25° 18' 53.48" N	80° 21' 42.24" E
	C	25° 18' 55.85" N	80° 21' 48.05" E
	D	25° 18' 58.84" N	80° 21' 46.32" E
Minerals of mine	Building Stone, Khandas & Gitti, Boulder Mining Project Mining Project		
Nearest Railway Station	Banda about 18.0 Km North direction		
Nearest Airport	Chakeri, Kanpur about 121.0 km in North direction.		
Nearest Highway/State Highway	NH 76 about 13.0 km towards East direction from the project site.		

9.3 MINING PROCESS

The procedure of Building Stone (Khanda, Gitty, Boulder) Mining Project process are:

Proposed Mining Method: The proposed mining method will include the following steps:

It shall be opencast semi-mechanized mine. To meet required production wagon drilling with deep hole blasting shall be carried out. The blasted material will be handelled with excavator & loaded into dumpers. The height & width of bench shall be kept 6m with face slopes 70°. Secondary blasting with jackhammer drilling shall be carried out if required.

Indicate quantum of development & tonnage & grade of production expected pit wide as in table below:

Year	Overburden (cum)	ROM Gitty, Khanda, Boulder (cum)	Saleable Gitty, Khanda, Boulder (cum)	Sub grade mineral	Mineral reject	Ore to overburden ratio
1st	Nil	20000	20000	Nil	Nil	Nil
2nd	Nil	20000	20000	Nil	Nil	Nil
3rd	Nil	20000	20000	Nil	Nil	Nil
4th	Nil	20000	20000	Nil	Nil	Nil
5th	Nil	20000	20000	Nil	Nil	Nil
Total		0	100000			

Drilling:

The drilling will be done with the help of compressor and jackhammer. In this mine the diameter of hole will be 32-34 mm and depth of hole will be kept from 0.8m to 3.3m in a single hole.

Blasting:

The hole will be blasted by using ANFO.

{"Ammonium Nitrate Fuel Oil Explosive (ANFO)"means an explosive mixture of ammonium nitrate and fuel oil which is not cap sensitive, but does not include emulsion or slurry explosive or site mixed explosive (SME)}

Loading and Transportation:

Loading of stone block will be done with help of the winch and crane at both face and on truck. Small stone block (patis) is loaded in truck with the help of Excavator. The trucks will be used for transportation of stone block and Khandas from mine site to destination.

{Note:-Blasting shall be carried out after the permission of District Magistrate, Banda (U.P.) and Directorate General of Mines Safety, Gwalior (U.P)}

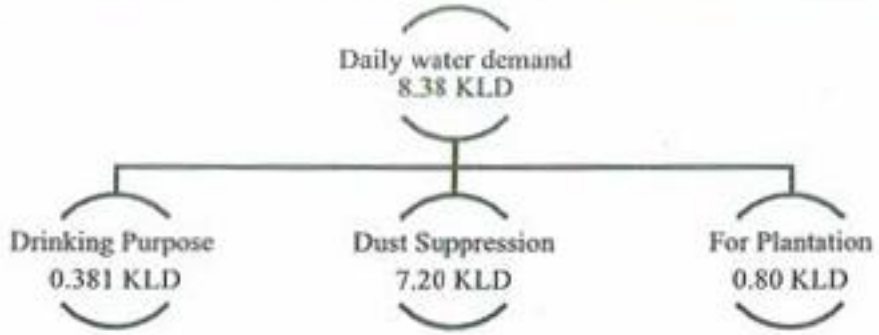
Blasting shall be done under the supervision of blaster and necessary preventive measures shall be taken as per the guidelines of Directorate General of Mines Safety, Gwalior (U.P)}

No. of Trucks Required (maximum):

Total capacity of mine	:	20000 m^3 per year
Total no. of working days	:	300 days
Building Stone, Khandas & Gitti, Boulder extracted in a day	:	66.67 cum
Building Stone, Khandas & Gitti, Boulder extracted in one truck	:	12-13 cum (approx.)
No. of truck required per day	:	Approximately 5-6 Truck/tippers

9.4 WATER SUPPLY

In the Building Stone, Khandas & Gitti, Boulder projects there is as such no need of water to carry out operations. Water will be required for drinking purpose and dust suppression. The number of working people is 28 so the water required for drinking purpose for the workers will be around 0.38 KLD, for Plantation will be 0.80 KLD & for the dust suppression will be 7.20 KLD, making the total water requirement will be around 8.38 KLD. This water will be supplied from the nearby area.



9.5 BASE LINE DATA

This section contains the description of baseline studies of the 10 km radius of the area surrounding "Building Stone, Khandas & Gitti, Boulder Mining Project" at Gata No. 2450 Khand No.-05 in Village Jarar , Tehsil Naraini & District- Banda, Uttar Pradesh. The site analysis for Air, Water, Noise, Soil, Ecology and Biodiversity and Socio-Economy is already under process and the description given below is the secondary data such that public hearing could be conducted as soon as possible to avert the delay of the project. The intimation of EIA study as required in B1 Category of Building Stone, Khandas & Gitti, Boulder Mining Project is already been done at the Director& Secretary(SEAC), Directorate of Environment, govt. of U.P, the Regional Officer, Regional Pollution Control Board, District Banda, Uttar Pradesh and District Magistrate District Banda, Uttar Pradesh The data collected has been used to understand the existing environment scenario around the proposed mining project against which the potential impacts of the project can be assessed.

Environmental data has been collected in relation to proposed mining for. :-

(a) Air
(b) Noise
(c) Water
(d) Soil
(e) Ecology and Biodiversity
(f) Socio-economy

Table 9.1: BASELINE ENVIRONMENTAL STATUS

Attribute	Baseline status
Ambient Air Quality	Ambient Air Quality Monitoring reveals that the maximum & minimum concentrations of PM10 for all the AQ5 monitoring stations were found to be ranging between 79.65 µg/m3 and 61.45 µg/m3 and the maximum & minimum concentrations of PM 2.5 for all the AQ5 monitoring stations were found to be ranging between

	41.28 µg/m3 and 31.47 µg/m3. As far as the gaseous pollutants SO2 and NO2 are concerned, the prescribed CPCB limit of 80 µg/m3 for residential and rural area has never surpassed at any station. The maximum concentration of SO2 was found at AQ2 with a value 14.65 µg/m3 and minimum at AQ4 with a value 8.12 µg/m3. The maximum concentrations of NO2 were found at AQ3 with a value 27.54 µg/m3 and minimum at AQ5 with a value 20.78 µg/m3
Noise Levels	Noise monitoring reveals that the maximum & minimum noise levels at day time were recorded as 53.9B(A) & 35.1 dB(A) respectively. The maximum & minimum noise levels at night time were found to be 42.63 dB(A). The minimum noise levels at night time were found to be 32.60 dB(A). The noise levels recorded at all locations were within the NAAQS limits. However, with suitable control measures and EMP, the noise levels will be reduced and the impacts will be minimized There are several other sources in the 10 km radius of study area, which contributes to the local noise level of the area. Traffic activities as well as activities in nearby villages and agricultural fields add to the ambient noise level of the area.
Water Quality	Analysis of results of **ground water** reveals the following: - • pH varies from 7.35 to 7.85 of Study area. • Total hardness varies from 212 mg/l to 356 mg/l of Study area • Total dissolved solids(TDS) vary from 664 mg/l to 916 mg/l of Study area • Chloride from 40.55 mg/l to 152.08 mg/l of Study area • Fluoride from 0.61 mg/l to 1.39 mg/l of Study area The ground water from all sources remains suitable for drinking purposes as all the constituents are within the limits prescribed by drinking water standards promulgated by Indian Standards IS: 1050. **Surface water-** The analysis results indicate that the pH ranges between 7.10 and

	7.66. Dissolved Oxygen (DO) was observed in the range of 7.8 to 8.9 mg/l. COD values were observed to be in the range of 14.40 to 22.40 mg/l and BOD values were observed to be in the range of 2.6 to 3.2 mg/l. The Iron and Nitrate were found to be in the range of 0.088 to 0.098 mg/l and 0.74 to 1.05 mg/l respectively. Bacteriological examination of surface water samples revealed the presence of total coliform in range of 9 MPN/100 ml to 16 MPN/100 ml. Based on the results it is evident that most of the parameters of the samples comply with Category 'C' standards of CPCB indicating their suitability for drinking water source after conventional treatment and disinfection.
Soil Quality	The analysis results show that soil is basic in nature as pH value ranges from 7.28 to 7.87, Phosphorus (54.12 to 82.63 Kg/ha.) ,Potassium (193.57 mg/Kg to 355.39 mg/Kg) and Electric conductivity (260.8 mg/Kg to 330.4 mg/Kg) has been found to be in good amount in the soil samples.
Ecology and Bio-diversity	There are no Ecologically Sensitive Areas present in the study area.
Socio-economy	Building Stone (Khanda, Gitty Boulder) Mining Project at Gata No. 2450 Khand No.-05 in Village Jarar , Tehsil Naraini & District-Banda, Uttar Pradesh. Will throw opportunities to local people for both direct and indirect employment. The study area is still lacking in education, health, housing, water, electricity etc. It is expected that same will improve to a great extent due to proposed mining project and associated industrial and business activities.

9.6 BIOLOGICAL ENVIRONMENT

The proposed project is to mine Building Stone (Khanda, Gitty Boulder) Mining Project at Banda district of U.P. Biological diversity comprises the variability of genus, species and ecosystems and is very crucial for maintaining the basic processes on which the life depends. Broadly it can be divided in two types i.e. the floral biodiversity and faunal biodiversity. It is a key to the sustainable development as it not only provides the food, fodder, medicine products of commercial and noncommercial use but also provides essential environmental services (Air, water quality, soil fertility, pest & disease control etc). Biological components are one of the most important constituent of our environment. They are the integral part of our life as they provide raw materials for livelihoods, trade, medicines and industrial development. Their conservation and sustainable use is very much essential in today's developmental

process. Developmental processes are today's demand and cannot be stopped as such. It has been observed in past that most of our developmental process cost our environment. In order to keep them unaffected or minimum affected while our developmental activity, it is always necessary to know the background of the area from biological point of view. After getting such information we can estimate the impact on the environment by the proposed activities and mitigate them. Similar approach has been adopted for conducting the Biological Environment study for the proposed Project.

General vegetation of the study area: The proposed project is to mine Building Stone, Khandas & Gitti, Boulder at Banda district of U.P. which lies between the Indo-Gangetic plain to the north and the south. Bundhelkhand region is a gently sloping upland distinguished by barren hilly terrain with sparse vegetation. Other rivers lying in the district are Ken River. The river water being used for Irrigation through Canal which is passing near by the project site at then distance of 2.50 kms towards East. The district cover by river alluvial soil in the north and the remaining part of the district are covered by deep black and sandy red soil.

The proposed project site i.e. core area is the water channel, which has few aquatic plants only. However, the nearby areas i.e. buffer area is having different types of plants (herbs, shrubs and trees). The Banda district covered mixed variety of vegetation mainly bushes. The tress like Shishum, Neem, Mango tree and Jamun tree, Eucalyptus and Babool are also found in sufficient numbers.

Commonly found flora in the district:- Dhak (Butea monosperma), Teak (Tectona grandis), Mahua (Madhuca indica), Babool (Acacia nilotica) and Tendu (Diospyros melanoxylon), Siris (Albizia lebbeck),Aam (Mangifera indica), Jamun (Syzygium cumini), Bail (Aegle marmelos), Tut (Morus alba), Bargad (Ficus bengalensis), Neem (Azadirachta indica), Peepal (Ficus religiosa), Safeda (Eucalyptus umbelatus), Sisam (Dalbergia sissoo), etc.

Commonly found fauna in the district:- Many domestic mammal species were reported from buffer zone during the field survey. Common domestic animals like Buffalo, cow, goat etc. can be noticed in open grass fields while grazing. Small mammals like Indian palm squirrel (Funambulus palmarum) and field mouse (Apodemus sylvaticus) are noticed in vicinity of the village. Inquiry from village people regarding wild animals reveals that Monkey (Macaca mulata), Indian hare (Lepus nigricollis), Mongoose (Herpestes edwardsii), Jackal (Canis aureus), etc. are often seen in the area.

Table 9.2 Anticipated impact and mitigation measures for biological environment

Impact predicted	Suggestive measures
Disturbance to free movement / living of wild fauna viz. Birds, Reptiles etc.	• If birds are noticed crossing the core zone, they will not be disturbed at all; • Labourers will not be allowed to discards food, plastic etc., which can attract animals/birds near the core site; • Only low polluting vehicles having PUC will be allowed

	for carrying mining materials. • Noise level will be maintained within permissible limit (silent zone 50 dB(A) during day time or residential zone 55 dB(A)) as per noise pollution (regulation and control), rules, 2000, of CPCB norms
Disturbance of riparian ecosystem/ wetlands	• The riparian ecosystem or the wetlands will not be destroyed by the mine owners
Monitoring of upstream and downstream water quality	• Water quality will be monitored from upstream and downstream area to assess the impact on water quality and plankton. The mining activity will be controlled to maintain the clean water conditions.

Table 9.3 ANTICIPATED ENVIRONMENTAL IMPACTS AND ACTION PLAN PROPOSED FOR MITIGATION

Environmental Component	Project Activities	Impacts	Action Plan Proposed
Air Quality	Drilling and Blasting	Dust (SPM) and gases (NOx) are produced during drilling and blasting operations	Use of dust aprons on drilling equipment and adopting wet drilling methods. Limited blasting during adverse weather conditions. Optimized confinement of blasting charges. Development of greenbelt.
	Overburden removal, extraction of stone, Loading / unloading of overburden and stone, disposal of overburden at dump site within ML area	Increase in SPM levels in ambient air due to dust generation and NOx concentration levels in ambient air due to vehicular emissions.	Exposed area will be limited to the minimum required for mining operations. Installation of spray systems for dust suppression at dumping yards and stockpiles. Minimization of drop distance for all materials-handling process through appropriate design of operations.
	Transportation of overburden and stone within ML area	Increase in SPM level due to dust generation and NOx concentration levels in ambient air due to vehicular emissions.	Regular watering of haul and access roads using dedicated water trucks. Maintenance of vehicle. Haul roads will be clearly defined using marker posts so that vehicle traffic are controlled in the area. Roads no longer required will be re-vegetated as soon as possible. Haul roads to be maintained by surface grading to minimize excessive road surface wearing.

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	General equipment operations	Elevated SPM and NOx concentrations in ambient air.	Regular maintenance of all equipment to minimize particulate matter emissions from diesel engines.
	All activities	Excessive occupational exposures to airborne particulate matter.	Occupational exposures to air pollutants will be assessed at regular intervals. Where exposures exceed the permissible limits, appropriate engineered controls, management measures or, as a last resort, the provision of personal protective equipment will be implemented.
Noise Levels and Ground Vibrations	Blasting	High impulsive noise levels, overpressure and ground vibrations impacts and noise related community annoyance	Prior to commencement of normal blasting operations (if required), a series of trial blasts will be undertaken to facilitate accurate prediction of impacts from normal blasting. This will require monitoring of overpressure and ground vibration in at least two locations surrounding the mine. The monitoring will continue throughout the duration of the blasting program. Where monitoring determines a significant impact, blast designs may need to be modified and scheduled to occur during non-enhancing weather conditions.
	General activities including machine operations and transportation of overburden and stone within the ML area.	Increase in noise levels occupational hazard due to noise exposures and increase in ambient noise levels.	An analysis of measured noise levels, meteorological parameters, and site operations will be undertaken to determine the risk of excessive noise impacts during operations. A detailed review of noise emissions and impacts from project activities will be carried out at regular intervals during the project life. Occupational noise exposures will be assessed. Where LAeq (8 hour) noise exposures have the potential to exceed 85 dB(A), mitigation through engineered noise controls, management measures or, as a last resort, through the provision of personal protective equipment will be implemented. Regular noise monitoring will be carried-out. Procedures to document and act upon community complaints will be implemented.
Water Resources and Quality	—	Changes to hydraulic regime.	Mining will not intersect water table. Garland drains will be constructed to divert the surface water so as not to enter the mine. Diverted water will be joined

			to the nearest water course so that there is hardly any change to hydraulic regime.
		Deterioration in surface/ground water quality of receiving body.	Mine water will be collected in the mine sump which will act as settling tank and then discharged to the surface.
	Water required for mine (dust suppression systems, workshop, domestic facilities and greenbelt development) and domestic consumption at colony	Depletion of natural resource. Reduction in groundwater availability for domestic and for irrigation purposes. Changes to hydraulic regime.	Mine sump water will be utilized for industrial purpose in the mine as far as possible. Water conservation methods will be practiced. Rainwater collection and reuse system will be implemented. The volumes of water supplied to the site through extraction from dug bore wells will be monitored to ensure drawdown do not affect adjacent water users.
Hydrogeology and Drainage pattern	Mining activities	May change regional hydrology and drainage pattern of the area.	Garland drains will be constructed all around the mine to lead the surface water to the nearest water course so that there is hardly any change to Hydrogeology and drainage pattern.
Land use and Soil Characteristics	Commencement of Mining operations.	Existing landuse of the core zone will alter. Impact due to clearing of existing plantations in the mining area. Impact due to settling of air borne dust. Land degradation due to disposal of solid wastes. Exposure of top soils to wind and water erosion.	Prior to each phase of mining, update and implement the relevant EMP to include phase-specific control and mitigation measures. Vegetation clearance to occur immediately prior to soil and overburden stripping. Install diversion drains and sediment fences prior to starting earthworks Minimize the area and time of ground disturbance by progressively rehabilitating disturbed areas Dust suppression on exposed areas using water trucks and automatic sprinkling systems Contour overburden dumps to minimize erosion
Flora and Fauna	Mine development and operations	Displacement or loss of existing fauna. Loss of	Disturbed areas will be stabilized as soon as possible. Locally native species will be used in landscaping works for non-hardstand areas. Compact fencing around mine area will

		vegetation	be provided to obstruct unusual entry of animals
Environmental Pollution, Health, Safety	Overall Mining operation	Annoyance, sleep disturbance, and health impacts from noise emissions that exceed the safe limits. Community annoyance from dust deposition. Potential for risk of harm to personnel and the local community. Contamination of land and water through inappropriate disposal of waste products, including sewage and hazardous wastes. This may result in adverse impacts on surface water users.	Implementation of noise and fugitive dust emission controls and management measures. Implementation of water quality management, conservation and control measures. Development of an emergency response plan that includes installation of emergency response equipment to combat events such as fire. All personnel required to handle hazardous materials will be provided with personal protective equipment suitable for the hazardous material being handled. On-site first aid facilities will be provided and employees will be extended to the local community in emergencies.
Socio-economic Aspects	Mining operations	Increase in employment opportunities both direct and indirect thereby increasing economic status of people of the region.	Increase of direct employment will be progressive during operational phase of project whereas there will also be financial improvement to the local population who are engaged and would engaged himself in the services to the transport sectors because of increased transportation vehicle and meeting the allied facilities such as eatries and vehicle repairing outlets.

9.7 LAND ENVIRONMENT

This section includes the study of natural features like topography, climate etc. Land use/ Land cover map.

Topography

The district largely consists of irregular uplands with outcrops of rocks intermingling mostly with lowlands, frequently under water during rainy season. The Baghein River traverses the district from

south-west to north-east. The tract lying to the right of the river is intersected by numerous smaller river and rivulets, but to its left is a flat expanse, most part of which is made up of Mar and Kabar soils, eroded and converted into ravines along the banks of the rivers Ken and the Yamuna.

Rainfall & Climate:

The average annual rainfall is 902.00 mm. The climate is typical subtropical penetrated by long and intense summers. About 80% of the annual rainfall is received from south-west monsoon. May is the hottest month with mercury shooting upto 47.0°C. With the advance of monsoon by mid-June, temperature starts decreasing. January is usually the coldest month with temperature going upto 5.8°C. The relative humidity is highest in August about 85% and lowest in April.

Impact on Land Use

The area is having undulating surface surrounded by agricultural and barren land. The area is partially covered by alluvial soil. An old working pit is present in NW of the area. The proposed area and surround areas are mostly private land owned by individual. Presently the existing quarry lies in 1.21 ha area.

The potential adverse impact of opencast stone mining will be in the form of change in land use pattern. So reclamation of mined out land will be given due importance as a step for sound land resource management in the form of reclaimed land and water body.

No adverse impact is anticipated on land use of buffer zone associated due to the existing stone mine project, as all the activities will be confined within the project site only. Stone mined out from the mine is being and continued to be used as boulders of different sizes for Dam construction, embankment works etc. After crushing into different sizes of aggregates from 6mm to 63mm, the product can be used in construction and road projects.

9.8 WATER ENVIRONMENT

9.8.1 Impact on Surface Water

At present scenario there is no any seasonal or perennial source of water is passing through the lease area. During the rainy season, there may be accumulation of surface water, which is proposed to be pumped out to keep the working area dry and it is being utilized for dust suppression.

The stone mineral found in the area is non-toxic in nature. There will be no outside discharge of liquid effluent from the mine site. It is, therefore, apparent that there will be negligible impact of mining on the surface water regime.

9.8.2 Impact on Ground Water

Ground water pollution can take place only if the mining rejects contain toxic substances, which get leached by the precipitation water and percolate to the ground water table thus polluting it. Any nearby wells or other sources of water can be rendered unfit for drinking and even for industrial use.

This is not the case with this deposit as the mineral or topsoil does not contain any harmful ingredients. Moreover, stone constitutes of fairly inert and chemically non-reactive ingredients.

It is noticed from nearby dug wells and bore wells that the ground water table is available below 30 meters of the normal surface level. As the mining operation has been proposed to be carried out much above the ground water table there would not be any adverse effect on the ground water.

The ground water available in the nearby well, borewell is analysed and it is found within the prescribed standard of CPCB and it is also being and will be continued to be adopted the remedial measures to keep the water quality within the prescribed standard.

9.8.3 Mitigation Measures for Water Environment

- Adequate control measures are being and will be continued to be adopted to check not
- only the wash-off from soil erosion but also uncontrolled flow of mine water. The measures to be adopted are Garland drain will be provided at the toe of the dumps, to channelize the runoff water from dumps into the water reservoir (i.e. mined out pits) & around the active pits to restrict rainy water from entering in to the working pit.
- Retaining walls having water holes will be provided along the toe of the dumps to avoid the soil wash out & around the active pit to prevent fall of human/animal in to the working pit.
- Dumps slopes are being stabilized followed by plantation to avoid soil erosion.
- No waste water is being discharged from the mining activities.

9.9 AIR ENVIRONMENT

Anticipated impacts and evaluation

Information on air quality was studied and various modeling techniques predicted that the mining activity is not likely to affect the air quality in a significant manner. However, loading of Building Stone, Khandas & Gitti, Boulder, its transportation and unloading operations may cause some deterioration in air quality due to handling dry materials. In the present case, only wet materials will be handled, thus eliminating problems of fugitive dust. Also, the collection and lifting of minerals will be done manually without any blasting. Therefore the dust generated is likely to be insignificant as compared to mining processes involving drilling, blasting, mechanized loading etc.

Air Modeling

In general, mining operations generate substantial quantities of airborne respirable dust, which may lead to the development of respirable diseases in mine workers. The increasing trend of mining leads to release of huge amount of dust. These air borne dust particles, generally below 100 micron in size, are nuisance particulates and cause health hazards as an ill effect of mining activities. Extraction activities like drilling, blasting, material handling and transport are a potential source of air pollution. Therefore, a

detailed study on emission sources and quantification of pollutant concentration by means of dispersion modeling is required to access the environmental impact of a mine. On the basis of the predicted increments to air pollutant concentrations, an effective mitigation and environmental plan can be devised for sensitive areas. In case of Building Stone, Khandas & Gitti, Boulder mining, as there is no blasting and drilling activities, the impacts may only be caused by material handling and transportation activities of mostly wet Building Stone, Khandas & Gitti, Boulder and the same are minimal.

FUGITIVE DUST- MODELING

Air quality modeling was done using line source model as published by USEPA "Workbook of Dispersion Modeling" by Turner, for transportation though roads and the empirical emission factor equations from USEPA. Emission factors to be used in Line source Dispersion equation is adopted from formula as given below:

$E = k * (1.7) * (s/12) * (S/48) * (W/2.7)^{0.7} * (w/4)^{0.5} * (365-p/365)$ kg/VKT---------- (1)

Where

E = Emission Rate (kg/VKT)

k= Particle size multiplier = (0.36)

s = Silt Content of the Road surface material (%) = 10%

S = Mean Vehicle Speed (km/hr) = 20 km/hr

W=Mean Vehicle Weight (tonnes) = 10 tonnes

w= Mean number of wheels = 8

p= Number of days with at least 0.254 mm of precipitation per year = 60

f = frequency of Vehicle movement in no per hour = 2 vehicles / hour

Thus using equation (1)

E = 0.61766 kg/VKT

E = 0.0003 g/sec/m

Concentration of the fugitive dust was calculated using the empirical equations for unpaved roads published by USEPA- AP42. The Concentration of the fugitive Dust is given below:

$C = (2/\pi)^{0.5} (E / \sigma z\, v)\, Exp-[(h^2) / (2\, \sigma z^2)] \times 10^6$ ---------- (2)

Where

C = Hourly Concentration in microgram/ m^3

E = Emission Rate = 0.0003 g/sec/m

υ = Wind Speed =4 m/s

h = 0 m

Modeling was done for an infinite line source assuming unpaved road. For conservative calculation wind was assumed to blow at a velocity of 4 m/s perpendicular to the road. The results for 24 hourly concentration values are given in the Fig. 4.1:

Mitigation measures

The only air pollution sources are the road transport network of the trucks/dumpers. The dust suppression measures like the following will be resorted:

- Water sprinkling will be done on the roads regularly. This will reduce dust emission further by 75%.
- Care will be taken to prevent spillage by covering the carrying vehicles with tarpaulin and sprinkling of water, if dry.
- Fortnightly scraping of road in order to keep the roads almost leveled. This will ensure smooth flow of vehicles and also prevent spillage.
- Overloading will be kept under check by giving prior awareness.
- Proper Tuning of vehicles to keep the gas emissions under check.
- Plantation of trees along the road sides helps to reduce the impact of dust in the nearby villages.

9.10 NOISE ENVIRONMENT

Day and night sound pressure levels Ldn is often used to describe the community noise exposure, which includes 10 dB (A) night time penalty.

The monitored noise level during the base line period within the core zone and buffer zone has been found to be within the prescribed CPCB standards which will also be confined within the limit by undertaking more plantations within the mining area especially in the direction of habitation to act as a sound barrier.

9.10.1 Impact due to Ground Vibrations

Ground vibration, fly rock, air blast, noise, dust and fumes are the deleterious effects of blasting on environment. The explosive energy sets up a seismic wave in the ground, which can cause significant damage to structures and disturbance to human occupants. It causes major damages to the pit configuration too.

When an explosive charge is fired inside the blast hole, it is instantly converted into hot gases, which exert intense pressure on the blast hole walls. High intensity shock waves propagate radically in all directions and cause the rock particles to oscillate. This oscillation is felt as ground vibration. The proposed mining operations using deep hole drilling and blasting using delay detonators are bound to produce ground vibrations.

Ground vibration from mine blasting is expressed by amplitude, frequency and duration of blast. The variables, which influence ground vibrations, are controllable and non-controllable. The non-controllable variables include general surface terrain, type and depth of overburden and wind. Similarly, the controllable variables include type of explosives, charge per delay, delay interval, direction of blast progression, burden, spacing and specific charge and coupling ratio.

The oscillation of rock particles is called Particle Velocity and its maximum value is called Peak Particle Velocity (PPV), which is measured in millimeter per second.

As the distance increases, the PPV value is likely to reduce. The ground vibrations generated by blasting during the mining operations will be well within the standards prescribed by DGMS by controlled blasting. Ground vibrations are not likely to affect the structures in the vicinity of mine lease area.

By adopting controlled blasting, the problems will be greatly minimized at mines. The impacts are also minimized by choosing proper detonating system, optimizing total charge and charge/delay.

9.10.2 Measures for Minimizing Adverse Impacts

➢ **Noise Control Measures**

- The following control measures are being and will be continued to be adopted to keep the ambient noise levels well below the limits:
- Drilling is being carried out with the help of sharp drill bits which will help in reducing noise.
- Secondary blasting is being totally avoided and Hydraulic rock breaker is being used for breaking boulders.
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay is being maintained.
- The blasting is being carried out during favorable atmospheric condition and less human activity timings;
- Minimum quantity of detonating fuse is being consumed by using alternatively Excel non-electrical initiation system;
- Proper maintenance, oiling and greasing of machines at regular intervals is being done to reduce generation of noise.
- The prime movers/diesel engines are properly maintained;
- Provision of sound insulated chambers for the workers deployed on machines (HEMM) producing higher levels of noise;
- Proper designing of plant & machinery by providing inbuilt mechanism like silencers, mufflers and enclosures for noise generating parts and shock absorbing pads at the foundation of vibrating equipment.

- Green Belt/Plantation is being developed around the mining activity area and along haul roads. The plantation minimizes propagation of noise.
- Personal Protective Equipment (PPE) like ear muffs/ear plugs is being provided to the operators of HEMM and persons working near HEMM; and
- Reducing the exposure time of workers to the higher noise levels.
- Periodical monitoring of noise will be done.

➢ **Measures to Control Ground Vibration**

The blasting operations in the mine is carried out by deep hole drilling and blasting using delay detonators, which reduce the ground vibrations. The measures that are generally followed and currently proposed for abatement of ground vibration, airblast and fly rocks are detailed below:

- Proper quantity of explosive, suitable stemming materials and appropriate delay system are being adopted to avoid overcharging and for safe blasting.
- Adequate safe distance from blasting is being maintained.
- Blasting operations is carried out only during day time.
- The charge per delay is minimized and preferably more number of delays is used per blasts;
- During blasting, other activities in the immediate vicinity is temporarily stopped;
- Drilling parameters like overburden, depth, diameter and spacing is properly designed to give proper blast.

9.11 TRAFFIC ANALYSIS

The lease area is connected to State Highway No. 49 about 1.0 km towards west direction from the project site. These roads are wide enough to facilitate easy and smooth movement of heavy duty trucks. The Detailed traffic study has been discussed under **Chapter 4**.

9.12 SOCIO-ECONOMIC ENVIRONMENT

The implementation of the Building Stone (Khanda, Gitty, Boulder) Mining Project will generate both direct and indirect employment. Besides, it will provide a check on existing system of mining operation. Since the quarries will be allotted on lease basis, mining operation will be legally valid and it will bring income to the state exchequer. The project will also provide impetus to industrialization of the area. Where transfer of boulders into bajri is necessary crushing units will come up. It is expected that intending entrepreneurs will venture to set up micro and small scale units in the near future making the area a mixed society, dependent on industry, trade and business. At present agriculture is the main occupation of the people as more than half of the population depends on it. With the implementation of the proposed mining project the occupational pattern of the people in the area will change making more people engaged in industrial and business activities rather in agriculture. Thus there will be a gradual

shifting of population from agriculture to mining and industry. Further, the mining and industrial activities in the area may lead to rapid increase in population and thereby urbanization. Due to urbanization of the area, employment opportunities will further increase.

9.13 ENVIRONMENTAL MANAGEMENT PLAN (EMP)

Proper environmental management plan are proposed for "Building Stone, Khandas & Gitti, Boulder Mining Project" to mitigate the impact during the mining operation.

a. Proper blasting pattern will be followed by the blasters for effective rock fragmentation and generation of minimal fine dust to open atmosphere.
b. Regular water sprinkling at dust emanating sources viz., drilling, blasting and transportation through haulage roads, etc. will be carried out.
c. Periodic maintenance of transport vehicles and equipment will be carried out to check emission levels.
d. Greenbelt will be developed that will act as a pollution sink.
e. Overloading of trucks will be avoided and carrying the rocks in covered trucks will be taken up to minimize pollution level.

9.14 ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION

Environmental Management Plan serves no purpose if it is not implemented with true spirit. Some loopholes in the EMP can also be detected afterwards when it is implanted and monitored. Thus, an implementation and monitoring programme has to be prepared.

The major attributes of environment are not confined to the mining site alone. Implementation of proposed control measures and monitoring programme has an implication on the surrounding area as well as for the region. Therefore, mine management will strengthen the existing control measures as elaborated earlier in this report and monitor the efficacy of the control measures implemented within the mining area relating to the following specific areas for eco-friendly mining:

a. Collection of air and water samples at strategic locations with frequency suggested and by analyzing thereof. If the parameters exceed the permissible tolerance limits, corrective regulation measure will be taken.
b. Collection of soil samples at strategic locations once in every two years and analysis thereof with regard to deleterious constituents, if any.
c. Measurement of water level fluctuations in the nearby ponds dug wells and bore wells.
d. Measurement of noise levels at mine site, stationary and mobile sources, and adjacent villages will be done in every six months for first two years, thereafter once a year.

e. Plantation/afforestation will be done as per program i.e. road sides and near civic amenities, which will be allotted by Government bodies. Post plantation, the area will be regularly monitored in every two years for evaluation of success rate. For selection of plant species local people will also be involved.

9.15 BUDGET ALLOCATION FOR EMP IMPLEMENTATION

Table 9.4 COST OF EMP

Sr. No.	Environment Management Plan (EMP)	Cost Estimation	Total Cost (Rs.)
a.	Plantation		
i)	No of plants @95 Rs. / sapling)	100 saplings × @95 Rs. / sapling)	9500
ii)	Tree Guard (@1500/- per unit)		2,10,000
b.	Water Demand for plantation (@100saplings ×4 litres of water× twice per day = 800 ltrs.)	(800ltrs. Per day x 300 (working days) x (1.1Rs. /L)	264000
c.	Measure for prevention & control of soil erosion and management of silt shall be undertaken. Protection of dump against erosion, if any, shall be carried out with geo-textile matting or other material.	-	20000
d.	Sprinkling on haulage route for dust suppression (600 m length × 6 m width × 1 litres of water per m^2 /2 times a day=7.2KLD (Rs. 1100 for per KLD of water/day)	Rs. 1100×7.2 KLD of water/day x 300 (working days)	2376000
e.	Cost of monitoring of air quality(PM_{10},$PM_{2.5}$,NO_x,SO_2), water quality(ground water and surface water),soil quality and ambient noise level	-	2,50,000
f.	Cost for environmental cell	• Environmental Engineer:1 • Gardener :3	400000
g.	Fund for COVID-19		50000
Total			2849700

9.16 MONITORING SCHEDULE AND PARAMETERS:

Table 9.5 Monitoring Schedule and Parameters

S No	Description of Parameters	Schedule and Duration of

		Monitoring/Execution
1	Air Quality: a) In the vicinity of the mine b) In the vicinity of the transportation Network c) Dust suppression on roads d) Scraping/ bulldozing of road to shift accumulated dust to the sides	24 hourly samples twice a week for one month in each season except monsoon season Regularly in non- monsoon months and whenever occurrence of fugitive dust takes place Fortnightly
2	Water Quality near or around the site: a) Surface water quality b) Ground water quality	Once in a season for 4 seasons in a year
3	Ambient Noise Level	Twice a year for two years & then once a year
4	Soil Quality	Once in two years on project monitoring area
5	Inventory of Flora(tree plantation, survival etc) & Fauna	Once in two years on project monitoring area
6	Socio-economic condition of local, population, physical survey	Once in 3 years

9.17 BENEFITS OF MINING

i. Generating useful economic resource for construction.
ii. Generating employment.
iii. Improvement in socio economic conditions of the people of the study area.
iv. Improvements in physical infrastructure.
v. Improvements in Social Infrastructure.
vi. Increase in Employment Potential.
vii. Contribution to the Exchequer.
viii. Prevention of illegal mining.
ix. During and Post-mining enhancement of green cover.

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CHAPTER- 10

DISCLOSURE OF ENVIRONMENTAL CONSULTANTS

Environmental Consultant	**ENVIRONMENTAL RESEARCH AND ANALYSIS, LUCKNOW**
Name of Environment Consultant	Dr. Jatin Kumar Srivastava (EIA Coordinator) QCI NABET Accredited Environmental Coordinator Certificate No- NABET/EIA/1619/ IA 0019
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Environmental Consultant	**ENVIRONMENTAL RESEARCH AND ANALYSIS, LUCKNOW**

Functional area experts:

S. No.	Functional areas	Name of the expert/s	Signature and date
1	AP*	Dr. Gautam K. Banerjee	
2	WP*	Dr. Jatin K Srivastava	
3	SHW*	Mr. Vikas Pandey	
4	SE*	Dr. Vandana Singh	
5	EB*	Dr. Jatin K Srivastava	
6	HG*	Mr. Manas N. Mukhopadhyay	
7	GEO*	Mr. Manas N. Mukhopadhyay	
8	SC*	Dr. Jatin K Srivastava	
9	AQ*	Dr. Gautam K. Banerjee	

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10	NV*	Dr. Jatin K Srivastava	
11	LU*	Rajveer Singh	
12	RH*	Dr. Gautam K. Banerjee	

Declaration

I declare that above mentioned experts coordinated the preparation of EIA/EMP under the supervision of Dr. Jatin Kumar Srivastava. For any details one may contact me as a Director of Environmental Research and Analysis Lucknow.

A. K. Tripathi

(Director)

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National Accreditation Board
for Education and Training
(Member - International Accreditation Forum & Pacific Accreditation Cooperation)

QCI/NABET/ENV/ACO/20/1335 June 03, 2020

To

Environmental Research and Analysis, Lucknow
Flat No- 203, Second floor, Yash Silver Height,
Opposite site Badshah Nagar Railway station,
Mahanagar, Lucknow (U.P.) -226006

Sub.: Extension of Validity of Accreditation till 02 September, 2020 - regarding

Dear Sir/Madam

In view of the outbreak of Corona Virus (COVID-19) and subsequent lockdown declared for its control vide order dated 24th March 2020, issued by Ministry of Home Affairs, Govt. of India, NABET hereby extends the Validity of your Accreditation till 02 September, 2020.

As soon as, NABET office opens/resumes its operation necessary action regarding issuance of certificate/extension of validity letters / other may be initiated, therefore, ACO to ensure their complete application with NABET, if applicable.

Meanwhile, you may enclose this with your EIA reports along with the certificate/validity letter. The EAC/SEIAA/SEAC/Other are hereby requested to consider the same as a valid document for the preparation of EIA/EMP report.

With best regards.

Sd/-
(A K Jha)
Sr. Director, NABET

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CHAPTER-11

CONCLUSION OF THE PROJECT

1.0 INTRODUCTION

The Building Stone, Gitty, Khanda, Boluder Mining is one of most significant mineral contributing to the sustainable development that is "The extraction or recovery of the mineral without limiting the needs and lives of the surrounding flora, fauna and the local villagers/ people residing there as well."

Shri Mumtaj Ali S/O-Late Shri Farzand Ali,R/O-Muhalla-Khunti Chauraha, Aliganj, City & District-Banda (U.P.) for Building Stone, Gitty, Khanda, Boluder mine at Gata No. 2450 Khand No.-05, Village Jarar, Tehsil Naraini & District- Banda, Uttar Pradesh. within total lease Area 2.0 Ha. The proponent has applied for mining lease in the name Mumtaj Ali It has been proposed to collect approximately 12100 m^3/year material Building Stone, Gitty, Khanda, Boluder Mine annually.

As per the MoEF, New Delhi Gazette dated 14th September 2006 amended in December 2009 April 2011, 16 January, 2016 and 14 August, 2018, the proposed mining project is categorized as category "B1".

This Building Stone, Gitty, Khanda, Boluder Mining Project has numerous benefits not only on individual level but on a social level too i.e. this project will not only benefit the owners but directly and indirectly will also benefit the people of that region.

This will give employment to thousands of people who are the residents of the principal place of business. Since, manpower is required in every activity and processing from installation of the project to the final product and marketing. The equitable distribution of work according to the skills and potential will be done. Work given will be categorized into skilled, semi-skilled and unskilled employees. Employment preference will be given to the local villagers. The labors will be registered in the district Labor Office as per the U.P. Government Law. Also, according to the Central government policy of labors, medical insurance will be done of all the labors employed. Minimum wage, guaranteed monetary benefits under law will be ensured to the workmen. Safe, healthy, and productive work environment and welfare will be provided to the worker. Abolition of child labor and bonded labor, and rehabilitation of those will be ensured.

Zero accident, safe and productive work places will be encouraged and promoted. Temporary rest shelter, first-aid facilities along with anti-venoms, safe drinking water for the workers/miners and

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Arrangements for safe and healthy working conditions and facilities of community toilets shall be made available for the workers, medical camps for workers and nearby villagers shall be conducted at regular interval. Workers will be instructed with safety measures and safety equipment's will also be provided.

This will provide the employment and aid in managing and surviving their livelihood, reduce the poverty of that region and will provide them a better atmosphere and a better life.

This project will also contribute in rising the economy of the state and ultimately of the nation through the taxes collected through this. This is obvious that taxes collected are used in welfare of the nation and its citizen. A sum of Rs. 166400 (4% of the total Project cost 4160000/-) is also contributed as Corporate Environment Responsibility for difference welfare activities such as roads, plantation, education, sanitation, awareness campaigns, etc.

Last but not the least, this project has also its social impact on the lifestyle, life standards, thinking, personality, etc. of that place. The project will ignite the locals to use their potential and work for improving their economic condition and better life. This project can be a small step in betterment of the local people of that area.

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Minutes of 483rd SEAC Meeting Dated 07/08/2020

The 483rd meeting of SEAC was held through video/tele-conferencing/ email in view of the Corona Virus Disease (Covid-19) on 07/08/2020. Following members were participate in the online meeting:

1.	Dr. (Prof.) S.N. Singh,	Chairman
2.	Dr. Sarita Sinha,	Member
3.	Dr. Virendra Misra,	Member
4.	Dr. Pramod Kumar Mishra,	Member
5.	Dr. Ranjeet Kumar Dalela,	Member
6.	Dr. Ajoy Kumar Mandal,	Member
7.	Prof. S.K. Upadhyay,	Member
8.	Shri Meraj Uddin,	Member
9.	Shri Rajive Kumar,	Member

The Chairman welcomed the members to the 483rd SEAC meeting which was conducted online. The SEAC unanimously took following decisions on the agenda points discussed:

1. **Formaldehyde Manufacturing Unit-19800 MT/ Annum (60.0 MT/day) at Plot No.-12, Rajapur Industrial Area, Lakhimpur Kheri.,M/s Power Bridge Chemicals. File No. 5731/Proposal No. SIA/UP/IND2/54695/2020**

RESOLUTION AGAINST AGENDA NO-01

SEAC went through the file and documents and observed that standard TOR dated 15/07/2020 has already been issued in this case through online portal. The committee discussed the matter and decided to add following additional TOR point for the preparation of EIA report regarding the project:

1. Emergency plan for air pollution and accidental leakage should be provided at the time of EIA presentation.

2. **Expansion & Modification of existing distillery from 80 KLD to 100 KLD along with 5.0 MW Co-gen Power plant at Shamli, U.P., M/s Shamli Distillery & Chemical Works Ltd. File No. 5356/Proposal No. SIA/UP/IND2/133979/2020**

A presentation was made by the project proponent along with their consultant M/s Environmental and Technical Research Centre. The proponent, through the documents submitted and the presentation made informed the committee that:-

1. The environmental clearance is sought for Expansion & Modification of existing distillery from 80 KLD to 100 KLD along with 5.0 MW Co-gen Power plant at Shamli, U.P., M/s Shamli Distillery & Chemical Works Ltd.
2. Environment Clearance for the earlier proposed was issued by MoEF&CC, Govt. of India vide letter no. J-11011/06/2010-IA-II(I), dated 26 Sep 2012.

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3. The proposal has submitted under the provision of para 7(ii) of the EIA Notification, 2006 (as amended), therefore the committee deliberated the compliance status of Earlier EC submitted by PP and found in order.
4. Salient features of the project:

S. N.	Particulars	Details	
1.	Name of the project	Expansion & Modification of existing molasses based distillery capacity from 80 KLD to 100 KLD.	
2.	Location Details		
	Village	Shamli	
	Tehsil&District	Shamli	
	State	Uttar Pradesh	
3.	Project Area	No additional land will be required for the proposed expansion. Existing Land : 81.5448 Acre (33 hectare)	
4.	Co Gen Power generation	5.0 MW	
5.	Total project cost	Rs9023lakhs (Estimated for proposed expansion)	
6.	No. of working days	365 Days	
7.	Raw material	Molasses	
8.	Quantity of Raw Material	Existing Details	Proposed Expansion
		480 T/Day Molasses	All Grades of Molasses (B & C heavy molasses) Molasses: 512 T/Day
9.	Fuel requirement	Existing Details	Proposed Expansion
		Bagasse-180 TPD	Slop-295 KLD and Bagasse- 137 TPD
10.	Fresh Water requirement	Existing Details	Proposed Expansion
		965 KLD Domestic: 20 KLD	700 KLD Domestic : 20 KLD
11.	Source of water	Tube well	
12.	Waste Water Generation	Existing Effluent Generation	Proposed Expansion
		560.0 KLD	720.0 KLD
13.	Waste Water Treatment Strategy	Existing Details	Proposed Expansion
		Spent wash first bio-methanated, then bio- methanated spent wash is being concentrated in MEE and concentrated from MEE is being utilised in bio-composting.	Generated spent wash will be concentrated in Seven Stage MEE. Then concentrated spent wash will be used as fuel along with Bagasse in Slop fired boiler capacity: 40 TPH
14.	Boiler	Existing Details	Proposed Expansion
		15 TPH Bagasse Fired Boiler	Slop fired incineration boiler- 40 TPH. Existing Bagasse fired boiler will be dismantle after expansion.
15.	No of Stack	01 new stack of height 72 m will be attached to the proposed Electrostatic Precipitator (ESP).	
16.	Green belt development	Approx. 33 % of total area (10.89 Ha)	
17.	Cost of Pollution Control Equipment	4364 Lakhs	
18.	Recurring Expenses on Environmental protection	405 Lakhs/ Annum	
19.	Category of Project	Category : B and Schedule : 5 (g)	
20.	Corporate Environmental Responsibility (CER)	Rs 94 lakhs (1% of expansion project cost)	
21.	Employment generation	Existing Details	Proposed Expansion
		80 Nos	100 s

5. The project proposal falls under category–5(g) of EIA Notification, 2006 (as amended).

RESOLUTION AGAINST AGENDA NO-02

The committee discussed the matter and recommended grant of environmental clearance as per para 7(ii) of EIA notification, 2006 (as amended) along with following conditions:

I. Statutory compliance:

1. 45 days monitoring report of the area for air quality, water quality, Noise level. Besides flora & fauna should be examined twice a week and be submitted within 60 days for a record.
2. Due to unavoidable circumstance and covid-19 pandemic, the authority are unable to visit the site therefore, it is not possible to make available the latest certified compliance report. In view of this the committee decided that the certified compliance report should be submitted within 03 months.
3. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
4. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
5. The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six - monthly compliance report. (in case of the presence of schedule-I species in the study area).
6. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
7. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.
8. The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules , 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989

II. Air quality monitoring and preservation:

1. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.
2. The project proponent shall install system carryout to Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.s in reference to PM emission , and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind direct ions. (case to case basis small plants: Manual; Large plants: Continuous).
3. The project proponent shall submit monthly summary report of continuous stack emission

and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugit ive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six- monthly monitoring report.

4. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.
5. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.
6. Sulphur content should not exceed 0.5% in the coal for use in coal fired boilers to control particulate emissions within permissible limits (as applicable). The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.
7. The DG sets shall be equipped with suitable pollution control devices and the adequate stack height so that the emissions are in conformity with the extant regulations and the guidelines in this regard.
8. Storage of raw materials, coal etc shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions.

III. **Water quality monitoring and preservation:**

1. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises (applicable in case of the projects achieving ZLD) and connected to SPCB and CPCB online servers.
2. Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises (applicable in case of the projects achieving the ZLD).
3. Process effluent /any wastewater shall not be allowed to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.
4. The effluent discharge shall conform to the standards prescribed under the Environment (Protection) Rules, 1986, or as specified by the State Pollution Control Board while granting Consent under the Air/Water Act, whichever is more stringent.
5. Total fresh water requirement shall not exceed the proposed quantity or as specified by the Committee. Prior permission shall be obtained from the concerned regulatory authority/CGWA in this regard.
6. Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP and then passed through RO system.
7. The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.

IV. **Noise monitoring and prevention:**

1. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
2. The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.
3. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

V. **Energy Conservation measures:**

1. The energy sources for lighting purposes shall preferably be LED based.

VI. **Waste management:**

1. Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.
2. Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.
3. The company shall undertake waste minimization measures as below :-
   i. Metering and control of quantities of active ingredients to minimize waste .
   ii. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
   iii. Use of automated filling to minimize spillage.
   iv. Use of Close Feed system into batch reactors.
   v. Venting equipment through vapour recovery system.
   vi. Use of high pressure hoses for equipment clearing to reduce wastewater generation

VII. **Green Belt:**

1. Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant.

VIII. **Safety, Public hearing and Human health issues:**

1. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
2. The PP shall provide Personal Protection Equipment (PPE) as per the norms of Factory Act.
3. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
4. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
5. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
6. There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished produc ts, and no parking to be allowed outside on public places

IX. **Corporate Environment Responsibility:**

1. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
2. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements /deviation/violation of the environmental / forest /wildli fe norms / conditions. The company shall have defined system of reporting infringements / deviation/ violation of the environmental/ forest / wildlife norms I conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
3. A separate Environmental Cell both at the project and company head quarter lev el, with qualified personnel shall be set up under the control of senior Executive , who will directly to

the head of the organization.

4. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
5. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

X. **Miscellaneous:**

1. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
2. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
3. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
4. The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
5. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
6. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
7. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
8. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
9. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
10. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
11. Concealing factual data or submission of false /fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
12. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
13. The Ministry reserves the right to stipulate additional conditions if found necessary.
14. The Company in a time bound manner shall implement these conditions.

15. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
16. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
17. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

3. Manufacturing of Bulk Drug, Active Pharmaceutical Ingredient (API's) and Intermediates Products (84 TPA) at Plot No.-M-3, Kosi Kotwan Extension-I, UPSIDC Industrial Area, Village-Nabipur, Tehsil-Chhata, District- Mathura, U.P., M/s Yas Fateh Bio Science Pvt. Ltd. File No. 5734/Proposal No. SIA/UP/IND2/163799/2020

A presentation was made by the project proponent along with their consultant M/s Grass Roots Research & Creation India (P) Ltd. The proponent, through the documents submitted and the presentation made informed the committee that:-

1. The environmental clearance is sought for Manufacturing of Bulk Drug, Active Pharmaceutical Ingredient (API's) and Intermediates Products (84 TPA) at Plot No.-M-3, Kosi Kotwan Extension-I, UPSIDC Industrial Area, Village-Nabipur, Tehsil-Chhata, District- Mathura, U.P., M/s Yas Fateh Bio Science Pvt. Ltd.
2. The proposed activity comes under Category 'B-2' of Project activity 5 (f) Synthetic Organic Chemical industry [bulk drugs and intermediates] (As per the Notification S.O. 1223 (E) Dated 27th March, 2020).
3. Salient features of the project:

FEATURES	DESCRIPTION
Name of the Company	M/s Yas Fateh Bio Science Private Limited
Project & Location	Manufacturing of Bulk Drugs, Active Pharmaceutical ingredient (APIs) and Intermediates Products At Plot No. M - 3, 4 Kosi Kotwan Extension-I UPSIDC Industrial Area, Village – Nabipur, District – Mathura, UP
Schedule & Category	Schedule - 5 (f), Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug Formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates) Category – B2 as per (As per the Notification S.O. 1223(E) Dated 27th March., 2020).
Water Requirement	8 KLD (Source - CGWB)
Wastewater (ETP)	3.5 KLD
Electricity load	95 KW
Power Back-up	125 kVA
Source of Power	Uttar Pradesh Power Corporation Ltd. (UPPCL)
Green Area	396 Sq.m
Total Project Cost	294 Lakh.

4. List of Products & Quantity:

Sl. No	Product Name	Capacity TPA
Bulk Drugs/API's		

1	Betamethasone Dipropionate	2
2	Betamethasone Sodium Phosphate	2
3	Betamethasone Valerate	2
4	Beclomethasone Dipropionate	2
5	Clobetasol propionate	2
6	Dexamethasone Disodium Phosphate	2
7	Deflazacort	2
8	Hydrocortisone Acetate	2
9	Methylprednisolone Acetate	2
10	Prednisolone Acetate	2
11	Mometasone Furoate	2
12	Vitamin- Methylcobalamin	2
13	Triamcinolone Acetonide	10
14	Glimepiride	10
15	Saxagliptin	10
16	Aripiprazole	10
17	Fluocinolone Acetonide	10
18	Benfotiamine	10
Total Capacity		84 TPA

5. Water requirement details:

S. No	Category	Water Consumption (L/Day)	Wastewater Generation L/Day	Remark
1.	Domestic	2,000	1,500	To soak pit through septic tank
2.	Other Uses (Gardening) (Recycled water)	500	Nil	From ETP Outlet
3.	Industrial			
	Process	2,000	1,900	To treatment plant for treatment
	Equipment & Reactor	1,000	1,000	
	Laboratory	400	400	
	Cooling Tower	1,000	Nil	
	Boiler	1,000	100	
	Scruber	100	100	
Total Industrial		5,500	3,500	
Total Industrial + Domestic		8,000	5,000	

6. The project proposal falls under category–5(f) of EIA Notification, 2006 (as amended).

RESOLUTION AGAINST AGENDA NO-03

The committee discussed the matter and recommended grant of environmental clearance on the proposal as above alongwith following conditions:

1. Emergency plan for accidental leakage of gases and waste water should be ensured.
2. Characterization of treated waste water quality should be ensured as per guidelines.
3. Good manufacture practises should be followed during whole operation.
4. Statutory compliance:
   i. The project proponent should obtain necessary permission from Drug Controller, Govt. of India, within time frame.
   ii. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
   iii. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
   iv. The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation

with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of schedule species in the study area).

v. The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.

vi. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.

vii. The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.

5. Air quality monitoring and preservation:

i. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognised under Environment (Protection) Act, 1986.

iii. The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM_{10} and $PM_{2.5}$ in reference to PM emission, and SO_2 and NOx in reference to SO_2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions.

iv. To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and /or the NAAQS. Sulphur content should not exceed 0.5% in the coal for use in coal fired boilers to control particulate emissions within permissible limits (as applicable). The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.

v. Storage of raw materials, coal etc, shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions.

vi. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608(E) dated 21st July, 2010 and amended from time to time shall be followed.

vii. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied.

6. Water quality monitoring and preservation:

i. The project proponent shall provide online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises (applicable in case of the projects achieving ZLD)

ii. As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises (applicable in case of the projects achieving the ZLD).

iii. The effluent discharge shall conform to the standards prescribed under the Environment (Protection) Rules, 1986, or as specified by the State Pollution Control Board while granting Consent under the Air/Water Act, whichever, is more stringent.

iv. Total fresh water requirement shall not exceed the proposed quantity or as specified by the Committee. Prior permission shall be obtained from the concerned regulatory authority/CGWA in this regard.

v. Process effluent/any wastewater shall not be allowed to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.
vi. The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.
vii. The DG sets shall be equipped with suitable pollution control devices and the adequate stack height so that the emissions are in conformity with the extant regulations and the guidelines in this regard.

7. Noise monitoring and prevention:
   i. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
   ii. The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.
   iii. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

8. Energy Conservation measures:
   i. The energy sources for lighting purposes shall preferably be LED based.

9. Waste management:
   i. Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.
   ii. Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.
   iii. The company shall undertake waste minimization measures as below:-
      a. Metering and control of quantities of active ingredients to minimize waste.
      b. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
      c. Use of automated filling to minimize spillage.
      d. Use of Close Feed system into batch reactors.
      e. Venting equipment through vapour recovery system.
      f. Use of high pressure hoses for equipment clearing to reduce wastewater generation

10. Green Belt:
   i. The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.

11. Safety, Public hearing and Human health issues:
   i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
   ii. The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.
   iii. The PP shall provide Personal Protection Equipment (PPE) as per the norms of Factory Act.
   iv. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
   v. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed

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after the completion of the project.

vi. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

vii. There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products, and no parking to be allowed outside on public places.

12. Corporate Environment Responsibility:

i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.

ii. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements /deviation /violation of the environmental / forest /wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation/ violation of the environmental/ forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.

iii. A separate Environmental Cell both at the project and company head quarter level , with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry /Regional Office along with the Six Monthly Compliance Report.

v. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

13. Miscellaneous:

i. Environment Clearance subjected to condition of necessary permission from Drug Controller and Department of Industry.

ii. Monitoring of dioxin and furon from biomass fueled boiler should be done.

iii. Agreement with TSDF vendors shall be submitted.

iv. 100% waste water is to be treated in ETP conforming to prescribed standards of receiving body for designated use.

v. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.

vi. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

vii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

viii. The project proponent shall monitor the criteria pollutants level namely; PM_{10}, SO_2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

ix. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

x. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

xi. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.

xii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

xiii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.

xiv. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).

xv. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

xvi. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

xvii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

xviii. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

xix. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

xx. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

4. Revision and Expansion of Group Housing Project "Devika Gold Homz" at Plot No.- GH-06C, Sector-01, Greater Noida (West), District-Gautam Budha Nagar, U.P., M/s Devika Gold Homz Pvt. Ltd. File No. 5617/Proposal No. SIA/UP/MIS/ 52465/2019

RESOLUTION AGAINST AGENDA NO-04

The project proponent did not present at the time of presentation. Hence, the committee directed to defer the matter. The matter will be discussed only after submission of online request on prescribed portal.

5. Revision & Expansion of Commercial Project "Spectrum@metro-II" at Plot No.-A & B, Eco City, Sector-75, Noida, District- Gautam Budh Nagar, U.P., M/s Aims Max Gardenia Developers Pvt. Ltd. File No. 5737/Proposal No. SIA/UP/MIN/54927/2020

A presentation was made by the project proponent along with their consultant M/s Ambiental Global Pvt. Ltd. The proponent, through the documents submitted and the presentation made informed the committee that:-

1. The environmental clearance is sought for Revision & Expansion of Commercial Project "Spectrum@metro-II" at Plot No.-A & B, Eco City, Sector-75, Noida, District- Gautam Budh Nagar, U.P., M/s Aims Max Gardenia Developers Pvt. Ltd.
2. Environment clearance for the earlier proposal was issued by SEIAA, U.P. vide letter no. 535/Parya/SEAC/4544/2018 dated November 29, 2018 for the built-up area 1,40,360.19 m^2 and plot area 30,934 m^2 respectively.
3. The terms of reference in the matter were issued by SEIAA, U.P. vide letter no. 176/Parya/SEAC/4874/2018 dated 30/06/2020. EIA report submitted by the project proponent on 21/07/2020.
4. Salient features of the project:

Description	Proposed
Plot Area	34,531.00 m^2
Built-up Area	1,53,380.492 m^2
Green Area	10,784.825 m^2 @ 31.23 % of Total Plot Area
Total Water Requirement	915 KLD
Fresh Water Requirement	194 KLD
Wastewater Generation	608 KLD
Capacity of STP	750 KLD
Solid Waste Generation	3,922 kg/day
Parking Required & Provided	2,071 ECS & 2,135 ECS
Power Demand & Source	8,493kVA (Noida Power Company Limited)
Back up	13,010 kVA (6 x 2000 kVA + 1 x 1010 kVA)
RWH Pits	10 pits
Project Cost	400 Crores
Expected Date of Completion of project	7 years from the date of grant of EC as per the office memorandum 12.04.2016

5. Comparative area details:

S. No.	Particulars	Area (m2)	
		As per Earlier EC	Post Revision & Expansion
1.	Total Plot Area	30,934.00	34,531.00
2.	Permissible Ground Coverage	12,373.60 (@ 40% of Total Plot Area)	13,812.400 (@ 40% of Total Plot Area)
3.	Proposed Ground Coverage	10,188.00 (@ 32.93% of Plot Area)	13,164.785 (@ 38.12% of Plot Area)
4.	Total Permissible F.A.R. Permissible Commercial F.A.R.	92,802.00 (@ 3.00 of the Plot Area)	1,03,593.000 (@ 3.00 of the Plot Area)
5.	Total Proposed F.A.R. Proposed Commercial F.A.R. Meter Room	76,074.59 76,074.59 Nil	1,03,532.268 1,03,520.268 12.00
6.	Non F.A.R. Area Basement 1 Basement 2 Basement 3 Service Floor	49,725.16 9063.82 20330.67 20330.67 Not Included In Non FAR *1	40,898.987 19221.989 20380.763 Nil 1296.235 (Included In Non FAR *2)
7.	Proposed Area in 15% Facility Area	11,348.57	8,949.237

	(Fire Stair Case + Lift Lobby + Mumty + Machine Room + Lift Shafts + Service Shafts+ Guard Room +Visitor Toilets)		
8.	Service Floor Area	3,211.87	(Included In Non FAR *2)
9.	Total Built-Up Area (5+6+7+8)	1,40,360.19 (5+6+7+8)	1,53,380.492 (5+6+7+8)
10.	Open Area	20,746.00 (@ 67.06% of Total Plot Area)	21,366.215 (@ 61.88% of Total Plot Area)
11.	Landscape Area	10,550.00 (@ 34.10% of Total Plot Area)	10,784.825 (@ 31.23% of Total Plot Area)
12.	Height of the Highest Building	85.45 m	84.90 m

6. Water requirement details:

S. No.	Description	Occupancy	Rate of water demand (lpcd)	Total Water Requirement (KLD)
A.	DOMESTIC WATER			
(a) (b) (c) (d)	Staff – (Including Shops, Food Courts, Restaurants, Auditorium, Banquet/Club, Entertainment Zones & Service Apartments) Visitor – (Including Shops, Auditorium, Banquet/Club, Entertainment Zones & Service Apartments) Visitor– (Food Court & Restaurants) Guest – (Services Apartments)	2,115 16,182 3,237 960	@ 45 @ 15 @ 70 @ 86	95.17 242.73 226.59 82.56
TOTAL DOMESTIC WATER DEMAND				647.05 say 647 KLD
B.	HORTICULTURE	10,784.825 m^2	3 lt/sqm/day	33
C.	HVAC COOLING (12 Hours)	2800 TR	7 lt/Tr/hr	235
GRAND TOTAL (A+B+C)				915 KLD

7. Solid waste details:

S. No.	Category	kg per capita per day	Waste generated (kg/day)
1.	Domestic Waste		
(a)	Staffs	2,115 @ 0.25 kg/day	528.75
(b)	Visitors	19,419 @ 0.15 kg/day	2,912.85
(c)	Service Apartment Guests	960 @ 0.50 kg/day	480
2.	Landscape waste (2.66 acres)	@ 0.2 kg/acre/day	0.6
	TOTAL SOLID WASTE GENERATED		3,922.2 kg/day say 3,922 kg/day

8. The project proposal falls under category–8(b) of EIA Notification, 2006 (as amended).

RESOLUTION AGAINST AGENDA NO-05

The committee discussed the matter and recommended to grant the environmental clearance for the above project proposal along with general conditions as earlier prescribed by authority for construction project and following specific conditions:

1. Due to unavoidable circumstance and covid-19 pandemic, the authority are unable to visit the site therefore, it is not possible to make available the latest certified compliance report. In view of this the committee decided that the certified compliance report should be submitted within 03 months.
2. Solar energy to be used alternatively on the road and common places for illumination to save conventional energy as per ECBC Code.
3. The project proponent shall submit within the next 3 month the data of ground water quality including fluoride parameter to the limit of minimum deduction level for all six monitoring stations.
4. 15% area of the total plot area shall be compulsorily made available for the green area development including the peripheral green area. Plantation of trees should be of indigenous species and may be as per the consultation of local district Forest Officer.
5. The waste water generated should be treated properly in scientific manner i.e. domestic waste water to be treated in STP and effluent such as RO rejects with high TDS and other chemical bearing effluent shall be treated separately.
6. Permission from local authority should be taken regarding discharge of excess water into the sewer line.
7. The height, Construction built up area of proposed construction shall be in accordance with the existing FAR norms of the competent authority & it should ensure the same along with survey number before approving layout plan & before according commencement certificate to proposed work. Plan approving authority should also ensure the zoning permissibility for the proposed project as per the approved development plan of the area.
8. "Consent for Establishment" shall be obtained from UP Pollution Control Board.
9. All required sanitary and hygienic measures should be in place before starting construction activities and to be maintained throughout the construction phase.
10. Project proponent shall ensure completion of STP, MSW disposal facility, green area development prior to occupation of the buildings.
11. Municipal solid waste shall be disposed/managed as per Municipal Solid Waste (Management and Handling) Rules, 2016.
12. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
13. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
14. The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of schedule-I species in the study area).
15. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
16. The project proponent shall obtain the necessary permission from the Central Ground Water Authority, in case of drawl of ground water / from the competent authority concerned in case of drawl of surface water required for the project.
17. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.
18. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as cylinder for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche and First Aid Room etc.
19. Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.
20. The solid waste generated should be properly collected and segregated. Dry/inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable material.
21. Corporate Environmental Responsibility (CER) shall be prepared by the project proponent and the details of the various heads of expenditure to be submitted as per the guidelines provided in the recent

CER notification No. 22-65/2017-IA.III dated 01/05/2018. A copy of resolution of board of directors shall be submitted to the authority. A list of beneficiaries with their mobile nos./address should be submitted along with six monthly compliance reports.

22. No parking shall be allowed outside the project boundary.
23. Digging of basement shall be undertaken in view of structural safety of adjacent buildings under information/consultation with District Administration/Mining Department. All the topsoil excavated during construction activities should be stored for use in horticulture /landscape development within the project site. Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.
24. Surface rain water has to be collected in kacchha pond for ground water recharging and irrigation of horticulture and peripheral plantation.
25. The approval of competent authority shall be obtained for structural safety of the buildings due to any possible earthquake, adequacy of fire fighting equipments etc. as per National Building Code including measures from lighting.
26. Disposal of muck during construction phase should not create any adverse effect on the neighboring communities and be disposed off taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
27. The diesel generator sets to be used during construction phase should be low sulphur diesel type and should conform to Environments (Protection) Rules prescribed for air and noise emission standards.
28. Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/UPPCB.
29. The green area design along the periphery of the plot shall achieve attenuation factor conforming to the day and night noise standards prescribed for residential area and pollution also reduced. The open spaces inside the plot should be landscaped and covered with grass and shrubs. Green area Development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO/ Agriculture Dept.
30. The building should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.
31. Pavements shall be so constructed as to allow infiltration of surface run-off of rain water. Construction of pavements around trees should be able to facilitate suitable watering, aeration and nutrition to the tree.
32. Roof top water in rainy season is to be discharged into RWH pits for ground water recharging. Arrangement shall be made that waste water and storm water do not get mixed.
33. All the internal drains are to be covered till the disposal point.
34. This environmental clearance is issued subject to land use verification. Local authority / planning authority should ensure this with respect to Rules, Regulations, Notifications, Government Resolutions, Circulars, etc. issued if any.
35. Reflecting paint should be used on the roof top and side walls of the building tower for cooling effect.

6. **New Molasses/Cane Juice based distillery capacity - 80 KLD and Grain based distillery having Capacity 80 KLD (Maximum Capacity of Distillery-160 KLD) along with 5.0 MW Co-Generation Power Plant at Khasra No: 103,46,53,37,39,59,23,41,49 Mi, 56, 60, 61, 65, 70, 37, 39, 59, 36 Mi, 38, 46 Mi, 49, 50, 51, 52, 54, 55, 57, 63, 64, 71, 72, 73, 74, 76, 80, Village-ShalpurNavadiya, Tehsil-Tilhar, District-Shahjahanpur., M/s Rajshree Fine Chemical Industries India Pvt. Ltd. File No. 5739/Proposal No. SIA/UP/IND2/55135/2019**

A presentation was made by the project proponent along with their consultant M/s Environmental and Technical Research Centre. The proponent, through the documents submitted and the presentation made informed the committee that:-

1. The environmental clearance is sought for New Molasses/Cane Juice based distillery capacity - 80 KLD and Grain based distillery having Capacity 80 KLD (Maximum Capacity of Distillery-160 KLD) along with 5.0 MW Co-Generation Power Plant at Khasra No: 103,46,53,37,39,59,23,41,49 Mi, 56, 60, 61, 65, 70, 37, 39, 59, 36 Mi, 38, 46 Mi, 49, 50, 51, 52, 54, 55, 57, 63, 64, 71, 72, 73, 74, 76, 80 Village-ShalpurNavadiya, Tehsil-Tilhar, District-Shahjahanpur., M/s Rajshree Fine Chemical Industries India Pvt. Ltd.
2. Terms of reference in the matter were issued by SEAC, UP, vide Ref no 546/Parya/SEAC/5107/2018, dated 20 Jan 2020.
3. Public hearing was organized on 20/07/2020. Final EIA report submitted by the project proponent on 26/07/2020.
4. Salient features of the project:

S. No.	Particulars	Details	
1.	Name of the project	New Molasses/Cane Juice based distillery capacity - 80 KLD and Grain based distillery having Capacity 80 KLD (Maximum Capacity of Distillery-160 KLD) along with 5.0 MW Co-Generation Power Plant	
2.	Location Details		
	Khasra No	Khasra No: 103,46,53,37,39,59,23,41,49 Mi, 56, 60, 61, 65, 70, 37, 39, 59, 36 Mi, 38, 46 Mi, 49, 50, 51, 52, 54, 55, 57, 63, 64, 71, 72, 73, 74, 76, 80.	
	Village	Shalpur Navadiya	
	Block	Khudagnj Katra	
	Tehsil	Tilhar	
	District	Shahjahanpur	
	State	Uttar Pradesh	
	Latitude	28°03'15.31" N	
	Longitude	79°38'57.47" E	
	Toposheet No.	53P/12, 53P/16, 54M/9 and 54M/13	
3.	Project Area	24.354706 Acre (9.856 hectare) (Land is already acquired by the unit)	
4.	Total project cost	14659 lakhs	
5.	No. of working days	365 Days	
6.	Process Involve	Fermentation & Distillation (Molasses Based), Liquefaction, Fermentation, Distillation, Evaporation & Dryer (Grain Based)	
7.	Category of Project	Category : B and Schedule : 5 (g)	
8.	Green belt development	3.26 Hectare (33 % of Total Project area)	
9.	Cost towards Environmental protection measures (Capital cost)	Rs. 3445 Lakh or 34.45 crores.	
10.	Recurring cost towards Environmental control Measures.	Rs. 350.0 Lakh per year	
11.	Corporate Environmental Responsibility (CER)	270 Lakhs (@ 1.5 % of Total Project cost),	
11.1	Cost towards Corporate Social Responsibility (CSR)	2% of total annual Profit as per the CSR Act (By Ministry of corporate affairs)Notification GSR 129 (E).	
12.	Raw Material Requirement	Plant I: During Molasses/ Cane Juice based	Plant II: During Grain based
		Molasses: 355 MT/DAY	Grain: 176 MT/DAY
13.	Boiler	40 TPH slop / Bagasse/ Multi-fuel fired boiler	
14.	Fuel Requirement	• Bagasse/ Other Biomass/ Multi – fuel: 192 TPD • Slop Requirement: 240 KLD Bagasse/ Other Biomass: Procured from nearby sugar mills/ Open Market through road transport.	
15.	Air Pollution Control	ESP will be provided with Stack of height 72 meters in order to control	

	System	dust emissions from 40 TPH Boiler.	
16.	Steam Requirement	Plant I : During Molasses/ Cane Juice based	Plant II : During Grain based
		18.34 TPH	15.8 TPH
		Total Steam requirement 34.14 TPH	
17.	Power Requirement	5.0 MW	
18.	Fresh Water Requirement	Plant I : During Molasses/ Cane Juice based	Plant II : During Grain based
		480 KLD (@ 6.0 KL/KL of Products)	464.0 KLD (@ 5.8 KL/KL of products)
		Domestic Water Requirement : 20 KLD	
19.	Source of water	Tube well	
20.	Waste Water Generation	Plant I : During Molasses/ Cane Juice based	Plant II : During Grain based
		Spent Wash 624 KLPD @ 7.8 KL/KL of Product	Spent wash : 480 KLD (@ 6.0 KL/KL of Product)
21.	Waste Water Treatment Scheme	Zero liquid discharge, 100% recycling and reuse will be done.	
22.	Waste Water Treatment Strategy	Plant I : During Molasses/ Cane Juice based	Plant II : During Grain based
		Spent wash will be concentrated in Multi effect evaporation and then concentrate from MEE will be used as fuel in incineration boiler of capacity 40 TPH along with bagasse/ other biomass/ Multi fuel. Secondary effluent like MEE condensate and Blow down, less will be treated in Secondary ETP and reutilised in process and other use.	Spent Wash (Slops) generation from Distillation, will be sent through separation of suspended solids in Decanter Centrifuge, part Thin Slops are concentrated in Multi-effect evaporators to form a Thick (Protein) Syrup, which is mixed with the Wet Cake DWG separated earlier from Decanters. This interim product called DWGS has 30-32% w/w Solids is subject to drying in a rotating steam tube bundle dryer to deliver a value added by- product- DDGS- Distillers Dried Grains will soluble and which has min 90% Solids and max. 10% moisture. This DDGS sells as Cattle Feed/ Poultry Feed/ Fish Feed based on its Protein Content.
23.	Solid Waste Generation and its management	• Total Ash 46 MT/ Day: Due to high potash content will be used as manure. • Yeast Sludge: 16 MT/Day will be sold to farmers. • Condensate Polishing Unit Sludge: 5 KLD will be sold to the farmers. • Cattle Feed DDGS: 27 TPD will be supplied to the farmer as having good nutrient value. • Bagasse: 475 TPD will be used as supporting fuel in Slop fired boiler.	
24.	Employment generation	148 (Source: Unskilled/ Semi-Skilled- Local area; Skilled- Local & Outside)	

5. The project proposal falls under category–5(g) of EIA Notification, 2006 (as amended).

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RESOLUTION AGAINST AGENDA NO-06

The committee discussed the matter and recommended grant of environmental clearance for the project proposal along with following general and specific conditions:

I. Statutory compliance:

1. 45 days monitoring report of the area for air quality, water quality, Noise level. Besides flora & fauna should be examined twice a week and be submitted within 60 days for a record.
2. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
3. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
4. The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six - monthly compliance report. (in case of the presence of schedule-I species in the study area).
5. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
6. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.
7. The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules , 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989

II. Air quality monitoring and preservation:

1. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.
2. The project proponent shall install system carryout to Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.s in reference to PM emission , and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind direct ions. (case to case basis small plants: Manual; Large plants: Continuous).
3. The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugit ive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six- monthly monitoring report.
4. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.

5. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.
6. Sulphur content should not exceed 0.5% in the coal for use in coal fired boilers to control particulate emissions within permissible limits (as applicable). The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.
7. The DG sets shall be equipped with suitable pollution control devices and the adequate stack height so that the emissions are in conformity with the extant regulations and the guidelines in this regard.
8. Storage of raw materials, coal etc shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions.

III. Water quality monitoring and preservation:

1. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises (applicable in case of the projects achieving ZLD) and connected to SPCB and CPCB online servers.
2. Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises (applicable in case of the projects achieving the ZLD).
3. Process effluent /any wastewater shall not be allowed to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.
4. The effluent discharge shall conform to the standards prescribed under the Environment (Protection) Rules, 1986, or as specified by the State Pollution Control Board while granting Consent under the Air/Water Act, whichever is more stringent.
5. Total fresh water requirement shall not exceed the proposed quantity or as specified by the Committee. Prior permission shall be obtained from the concerned regulatory authority/CGWA in this regard.
6. Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP and then passed through RO system.
7. The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.

IV. Noise monitoring and prevention:

1. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
2. The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.
3. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

V. Energy Conservation measures:

1. The energy sources for lighting purposes shall preferably be LED based.

VI. Waste management:

1. Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.
2. Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.

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3. The company shall undertake waste minimization measures as below :-
   vii. Metering and control of quantities of active ingredients to minimize waste .
   viii. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
   ix. Use of automated filling to minimize spillage.
   x. Use of Close Feed system into batch reactors.
   xi. Venting equipment through vapour recovery system.
   xii. Use of high pressure hoses for equipment clearing to reduce wastewater generation

VII. Green Belt:

1. Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant.

VIII. Safety, Public hearing and Human health issues:

1. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
2. The PP shall provide Personal Protection Equipment (PPE) as per the norms of Factory Act.
3. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
4. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
5. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
6. There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished produc ts, and no parking to be allowed outside on public places

IX. Corporate Environment Responsibility:

1. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
2. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements /deviation/violation of the environmental / forest /wildli fe norms / conditions. The company shall have defined system of reporting infringements / deviation/ violation of the environmental/ forest / wildlife norms I conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
3. A separate Environmental Cell both at the project and company head quarter lev el, with qualified personnel shall be set up under the control of senior Executive , who will directly to the head of the organization.
4. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly

Compliance Report.

5. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

x. **Miscellaneous:**

1. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
2. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
3. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
4. The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
5. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
6. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
7. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
8. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
9. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
10. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
11. Concealing factual data or submission of false /fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
12. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
13. The Ministry reserves the right to stipulate additional conditions if found necessary.
14. The Company in a time bound manner shall implement these conditions.
15. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
16. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and

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Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

17. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

7. Stone (Khandas, Gitti & Boulder)Mining at Gata No.-332, Khanda No.- 02, at Village-Barokhar Khurd, Tehsil-Naraini, District-Banda., Smt. Sudha Singh., Area-1.61 ha. File No. 4983/Proposal No. SIA/UP/MIN/40641/2019

A presentation was made by the project proponent along with their consultant M/s Environmental Research and Analysis. The proponent, through the documents submitted and the presentation made informed the committee that:-

1. The environmental clearance is sought for Stone (Khandas, Gitti & Boulder) Mining at Gata No.-332, Khanda No.- 02 ,Village-Barokhar Khurd, Tehsil-Naraini, District-Banda., (Leased Area-1.61 ha.).
2. The terms of reference in the matter were issued by SEIAA, U.P. vide letter no. 431/Parya/SEAC/4983/2019 dated 27/11/2019.
3. The public hearing was organized on 28/02/2020. Final EIA report submitted by the project proponent on 17/06/2020.
4. Salient features of the project as submitted by the project proponent:

1. On-line proposal No.	SIA/UP/MIN/40641/2019
2. File No. allotted by SEIAA, UP	4983
3. Name of Proponent	M/S Disha Enterprises Proponent- Smt. Sudha Singh W/o-Shri Sunil Singh
4. Full correspondence address of proponent and mobile no.	R/O- Village-Nonia Muhal Chhabi Talab, District- Banda (U.P), Pin Code-210001
5. Name of Project	Building Stone, Khanda Gitti & Boulder Mining Project
6. Project location (Plot/Khasra/Gata No.)	Gata No. 332(Khand No.-02)
7. Name of River	NA
8. Name of Village	Barokhar Khurd
9. Tehsil	Naraini
10. District	Banda (U.P)
11. Name of Minor Mineral	Building Stone, Khanda, Gitti & Boulder Mining Project
12. Sanctioned Lease Area (in Ha.)	1.61 ha.
13. Mineable Area (in Ha.)	1.61 ha.
14. Zero level mRL	NA
15. Max. & Min mrl within lease area	Maximum mRL 190.728 mRL Minimum mRL 157.10 mRL
16. Pillar Coordinates (Verified by DMO)	Pillar / Latitude / Longitude A / 25°19'44.22"N / 80°22'34.14"E B / 25°19'43.17"N / 80°22'36.52"E C / 25°19'39.14"N / 80°22'33.88"E D / 25°19'38.85"N / 80°22'34.17"E E / 25°19'36.74"N / 80°22'33.02"E F / 25°19'38.41"N / 80°22'30.95"E G / 25°19'40.02"N / 80°22'32.06"E H / 25°19'40.67"N / 80°22'31.37"E
17. Total Geological Reserves	568332 m^3
18. Total Mineable Reserves in LOI	16100 m^3 per year
19. Total Proposed Production (in five year)	80500 m^3
20. Proposed Production/year	16100 m^3 per year

21. Sanctioned Period of Mine lease	20 Year	
22. Production of mine/day	53.67 m^3/day	
23. Method of Mining	Open cast, Manual, Semi-mechanized	
24. No. of working days	300	
25. Working hours/day	8 hours/day	
26. No. Of workers	27	
27. No. Of vehicles movement/day	4-5 Vehicles movement/day	
28. Type of Land	Highly Undulated Stony Scrub.	
29. Ultimate Depth of Mining	6 m	
30. Nearest metalled road from site	MRD-11B 1.23km towards East Direction	
31. Water Requirement	PURPOSE	REQUIREMENT (KLD)
	Drinking water	0.37 KLD
	Suppression of dust	7.20 KLD
	Plantation	0.10 KLD
	Others (if any)	-
	Total	7.73 KLD (Approx. 8.0 KLD)
32. Name of QCI Accredited Consultant with QCI No And period of validity.	Environmental Research and Analysis, Lucknow (U.P.) Certificate No. NABET/EIA/1619/IA0019 and valid up to 2/09/2020	
33. Any litigation pending against the project or land in any court	No	
34. Details of 500 m Cluster Map & certificate issued by Mining Officer	Letter No.1009/ Khanij -30 dated 15/06/2019	
35. Details of Lease Area in approved DSR	शुद्धि पत्र पत्रांक- 1374/Khanij-30, बाँदा दिनांक: 13/ 08/2019, Page No.1, Sr. No.- 6	
36. Proposed CER cost	1,56,000 (2.6 % of the total Project cost)	
37. Proposed EMP cost/ Total Project cost	Total Project cost -60,00,000	
38. Length and breadth of Haul Road	600 m length and 6 m width	
39. No. of Trees to be Planted	160	

5. The mining would be restricted to unsaturated zone only above the phreatic water table and will not intersect the ground water table at any point of time.
6. This project does not attract any of the general conditions applicable on mining projects specified in EIA Notification 14/09/2006.
7. The mining operation will not be carried out in safety zone of any bridge or embankment or in eco-fragile zone such as habitat of any wild fauna.
8. There is no litigation pending in any court regarding this project.
9. The project proposal falls under category–1(a) of EIA Notification, 2006 (as amended).

RESOLUTION AGAINST AGENDA NO-07

The committee discussed the matter and recommended grant of environmental clearance for the project proposal along with general and specific conditions as annexed at annexure-1 to these minutes.

8. Stone (Khandas, Gitti & Boulder) Mining at Gata No.-2450, Khanda No.- 03, Village-Jarar, Tehsil-Naraini, District-Banda, U.P., (Leased Area -2.0 ha.). Shri Safdar Ali, File No. 5000/Proposal No. SIA/UP/MIN/41426/2019

A presentation was made by the project proponent along with their consultant M/s Environmental Research and Analysis. The proponent, through the documents submitted and the presentation made informed the committee that:-

1. The environmental clearance is sought for Stone (Khandas, Gitti & Boulder) Mining at Gata No.-2450, Khanda No.- 03, Village-Jarar, Tehsil-Naraini, District-Banda, U.P., (Leased Area -2.0 ha.).

2. The terms of reference in the matter were issued by SEIAA, U.P. vide letter no. 429/Parya/SEAC/5000/2019 dated 27/11/2019.
3. The public hearing was organized on 28/02/2020. Final EIA report submitted by the project proponent on 23/06/2020.
4. Salient features of the project as submitted by the project proponent:

1. On-line proposal No.	SIA/UP/MIN/41426/2019	
2. File No. allotted by SEIAA, UP	5000	
3. Name of Proponent	Shri Safdar Ali S/O-Late Shri Farzand Ali	
4. Full correspondence address of proponent and mobile no.	R/O-Muhalla-Khunti Chauraha, Aliganj, City & District-Banda (U.P.)	
5. Name of Project	Building Stone, Khanda, Gitti &Boulder Mining Project	
6. Project location (Plot/Khasra/Gata No.)	Gata No. 2450(Khand No.-03)	
7. Name of River	NA	
8. Name of Village	Jarar	
9. Tehsil	Naraini	
10. District	Banda (U.P)	
11. Name of Minor Mineral	Building Stone, Khanda, Gitti &Boulder Mining Project	
12. Sanctioned Lease Area (in Ha.)	2.0 ha.	
13. Mineable Area (in Ha.)	2.0 ha.	
14. Zero level mRL	NA	
15. Max. & Min mrl within lease area	Maximum mRL 192.90 mRL Minimum mRL 163.10 mRL	
16. Pillar Coordinates (Verified by DMO)	Pillar / Latitude / Longitude	
	A / 25° 18' 56.05"N / 80° 21' 37.59"E	
	B / 25° 18' 55.32" N / 80° 21' 38.98" E	
	C / 25° 18' 58.86" N / 80° 21' 46.28" E	
	D / 25° 19' 1.48" N / 80° 21' 44.13" E	
	E / 25° 18' 58.58" N / 80° 21' 38.69" E	
	F / 25° 18' 57.21" N / 80° 21' 39.20" E	
17. Total Geological Reserves	453668 m^3	
18. Total Mineable Reserves in LOI	20000 m^3 per year	
19. Total Proposed Production (in five year)	100000 m^3	
20. Proposed Production/year	20000 m^3 per year	
21. Sanctioned Period of Mine lease	20 Year	
22. Production of mine/day	66.67 m^3/day	
23. Method of Mining	Open cast, Manual, semi mechanized	
24. No. of working days	300	
25. Working hours/day	8 hours/day	
26. No. Of workers	28	
27. No. Of vehicles movement/day	5-6 Vehicles movement/day	
28. Type of Land	Highly Undulated Stony Scrub.	
29. Ultimate Depth of Mining	6 m	
30. Nearest metalled road from site	MDR 11B about 3.01 km towards East direction from the project site	
31. Water Requirement	PURPOSE / REQUIREMENT (KLD)	
	Drinking water / 0.38 KLD	
	Suppression of dust / 7.20 KLD	
	Plantation / 0.80 KLD	
	Others (if any) / -	
	Total / 8.38 KLD (Approx. 8.5 KLD)	
32. Name of QCI Accredited Consultant with QCI No And period of validity.	Environmental Research and Analysis, Lucknow (U.P.) Certificate No. NABET/EIA/1619/IA0019 and valid up to 2/09/2020	
33. Any litigation pending against the project or land in	No	

any court	
34. Details of 500 m Cluster Map & certificate issued by Mining Officer	Letter No. 1019/ Khanij -30 dated 15/06/2019
35. Details of Lease Area in approved DSR	शुद्धि पत्र पत्रांक- 1374/Khanij-30, बाँदा दिनांक: 13/ 08/2019, Page No.1, Sr. No.- 12
36. Proposed CER cost	1,83,600 (3% of the total Project cost)
37. Proposed EMP cost/ Total Project cost	Total Project cost -61,20,000
38. Length and breadth of Haul Road	600 m length and 6 m width
39. No. of Trees to be Planted	100

5. The mining would be restricted to unsaturated zone only above the phreatic water table and will not intersect the ground water table at any point of time.
6. This project does not attract any of the general conditions applicable on mining projects specified in EIA Notification 14/09/2006.
7. The mining operation will not be carried out in safety zone of any bridge or embankment or in eco-fragile zone such as habitat of any wild fauna.
8. There is no litigation pending in any court regarding this project.
9. The project proposal falls under category–1(a) of EIA Notification, 2006 (as amended).

RESOLUTION AGAINST AGENDA NO-08

The committee discussed the matter and recommended grant of environmental clearance for the project proposal along with general and specific conditions as annexed at annexure-1 to these minutes.

9. Stone (Khandas, Gitti & Boulder) Mining at Gata No.-2450, Khanda No.- 05, Village-Jarar, Tehsil-Naraini, District-Banda, U.P., (Leased Area -2.0 ha.), Shri Mumtaj Ali, File No. 5001/Proposal No. SIA/UP/MIN/41427/2019

A presentation was made by the project proponent along with their consultant M/s Environmental Research and Analysis. The proponent, through the documents submitted and the presentation made informed the committee that:-

1. The environmental clearance is sought for Stone (Khandas, Gitti & Boulder) Mining at Gata No.-2450, Khanda No.- 05, Village-Jarar, Tehsil-Naraini, District-Banda, U.P., (Leased Area -2.0 ha.).
2. The terms of reference in the matter were issued by SEIAA, U.P. vide letter no. 421/Parya/SEAC/5001/2019 dated 27/11/2019.
3. The public hearing was organized on 28/02/2020. Final EIA report submitted by the project proponent on 23/06/2020.
4. Salient features of the project as submitted by the project proponent:

1. On-line proposal No.	SIA/UP/MIN/41427/2019
2. File No. allotted by SEIAA, UP	5001
3. Name of Proponent	Shri Mumtaj Ali S/O-Late Shri Farzand Ali
4. Full correspondence address of proponent and mobile no.	R/O-Muhalla-Khunti Chauraha, Aliganj, City & District-Banda (U.P.)
5. Name of Project	Building Stone, Khanda, Gitti & Boulder Mining Project
6. Project location (Plot/Khasra/Gata No.)	Gata No. 2450 (Khand No.-05)
7. Name of River	NA
8. Name of Village	Jarar
9. Tehsil	Naraini
10. District	Banda (U.P)
11. Name of Minor Mineral	Building Stone, Khanda, Gitti & Boulder Mining Project
12. Sanctioned Lease Area (in Ha.)	2.0 ha.
13. Mineable Area (in Ha.)	2.0 ha.
14. Zero level mRL	NA

15. Max. & Min mrl within lease area	Maximum mRL 190.95 mRL Minimum mRL 163.90 mRL
16. Pillar Coordinates (Verified by DMO)	Pillar A: Latitude 25° 18' 55.26"N, Longitude 80° 21' 39.03"E Pillar B: Latitude 25° 18' 53.48" N, Longitude 80° 21' 42.24" E Pillar C: Latitude 25° 18' 55.85" N, Longitude 80° 21' 48.05" E Pillar D: Latitude 25° 18' 58.84" N, Longitude 80° 21' 46.32" E
17. Total Geological Reserves	397655 m^3
18. Total Mineable Reserves in LOI	20000 m^3 per year
19. Total Proposed Production (in five year)	100000 m^3
20. Proposed Production/year	20000 m^3 per year
21. Sanctioned Period of Mine lease	20 Year
22. Production of mine/day	66.67 m^3/day
23. Method of Mining	Open cast, Manual, Semi- mechanized
24. No. of working days	300
25. Working hours/day	8 hours/day
26. No. Of workers	28
27. No. Of vehicles movement/day	5-6 Vehicles movement/day
28. Type of Land	Highly Undulated Stony Scrub.
29. Ultimate Depth of Mining	6 m
30. Nearest metalled road from site	MDR 11B about 3.01 km towards East direction from the project site
31. Water Requirement	PURPOSE: REQUIREMENT (KLD) Drinking water: 0.38 KLD Suppression of dust: 7.20 KLD Plantation: 0.80 KLD Others (if any): - Total: 8.38 KLD (Approx. 8.5 KLD)
32. Name of QCI Accredited Consultant with QCI No. and period of validity.	Environmental Research and Analysis, Lucknow (U.P.) Certificate No. NABET/EIA/1619/IA0019 and valid up to 2/09/2020
33. Any litigation pending against the project or land in any court	No
34. Details of 500 m Cluster Map & certificate issued by Mining Officer	Letter No.1020/ Khanij -30 dated 15/06/2019
35. Details of Lease Area in approved DSR	शुद्धि पत्र पत्रांक- 1374/Khanij-30, बाँदा दिनांक: 13/ 08/2019 , Page No.1, Sr. No.- 14
36. Proposed CER cost	1,66,500 (2.5 % of the total Project cost)
37. Proposed EMP cost/ Total Project cost	Total Project cost -66,60,000
38. Length and breadth of Haul Road	600 m length and 6 m width
39. No. of Trees to be Planted	100

5. The mining would be restricted to unsaturated zone only above the phreatic water table and will not intersect the ground water table at any point of time.
6. This project does not attract any of the general conditions applicable on mining projects specified in EIA Notification 14/09/2006.
7. The mining operation will not be carried out in safety zone of any bridge or embankment or in eco-fragile zone such as habitat of any wild fauna.
8. There is no litigation pending in any court regarding this project.
9. The project proposal falls under category–1(a) of EIA Notification, 2006 (as amended).

RESOLUTION AGAINST AGENDA NO-09

The committee discussed the matter and recommended grant of environmental clearance for the project proposal along with general and specific conditions as annexed at annexure-1 to these minutes.

10. Stone(Khanda, Gitti & Boulder) mining at Gata No.-2451, Khand No.- 05, at Village-Jarar, Tehsil-Naraini, Banda., M/s Maa Gaytri Traders, Area -2.75 ha. File No. 5048/Proposal No. SIA/UP/MIN/42885/2019

RESOLUTION AGAINST AGENDA NO-10

The project proponent did not appear. The committee discussed and deliberated that project file should be closed and be opened only after request from the project proponent. The file shall not be treated as pending at SEAC. The matter will be discussed only after submission of online request on prescribed online portal.

11. Brick Earth Mining at Gata No.-1547, 1585, 1414, 4866, 1557, 1584, 1586, 1802, 1649, 1587, 1679, 1007mi, 1008, 1589, 1591, 1592, 1588, 1593, 1664, 1437, 1380mi, 1447, Village- Rampur Maghila, Tehsil-Tirwa, District-Kannauj, U.P., M/s Jai Balaji Brick Field , Area: 4.8430 Ha File No. 5738/Proposal No. SIA/UP/MIN/164781/2020

RESOLUTION AGAINST AGENDA NO-11

The project proponent did not appear. The committee discussed and deliberated that project file should be closed and be opened only after request from the project proponent. The file shall not be treated as pending at SEAC. The matter will be discussed only after submission of online request on prescribed online portal.

12. Building Stone (Khanda, Gitti & Boulder) Mining Project" at Gata No./Araji No./ Plot No.-643, Khanda No.-17, at Village- Goramachhiya, Tehsil & District- Jhansi, U.P., Shri Sanjay Kumar Gupta. Area -2.306 ha, File No. 4892/Proposal No. SIA/UP/MIN/36975/2019

The committee noted that the terms of reference (TOR) for the above proposal was issued by SEIAA, U.P. vide letter no. 552/parya/SEAC/4892/2019 dated 20/01/2020. The project proponent through letter dated 04/08/2020 informed that due to some typographical error in the TOR letter dated 20/01/2020, the salient features of the project under point no. 2 mentioned in file no. 5111 instead of file no 4892. The project proponent requested to make the correction in terms of reference (TOR) letter dated 20/01/2020 and issue the corrected/amended TOR letter.

The committee went through the file and found that the project details mentioned in TOR dated 20/01/2020 was wrongly but inadvertently put in the same. The committee discussed the matter and directed to replace the contents mentioned in point no. 2 of the TOR letter dated 20/01/2020 is as follows:

2. Salient features of the project as submitted by the project proponent:

1. On-line proposal No.	SIA/UP/MIN/36975/2019
2. File No. allotted by SEIAA, UP	4892
3. Name of Proponent	Shri Sanjay Kumar Gupta
4. Full correspondence address of proponent and mobile no.	Prop. Shri Sanjay Kumar Gupta S/o Shri Govind Prasad Gupta R/o 1/1, Virangana Nagar, Kanpur Road , Tehsil & District- Jhansi, UP
5. Name of Project	Terms of Reference for Building Stone (Khanda, Gitti, Boulder) Mining, at Gata No./Araji No. /Plot no. – 643, khand No. 17, Area 2.306 ha. (5.698 Acres) at Village – Goramachhiya, Tehsil & District- Jhansi, Uttar Pradesh Shri Sanjay Kumar Gupta
6. Project location (Plot/Khasra/Gata No.)	643 khand No. 17
7. Name of Village	Goramachhiya
8. Tehsil	Jhansi
9. District	Jhansi
10. Name of Minor Mineral	Khand, Gitty/Boulders (Building stone)"
11. Sanctioned Lease Area (in ha.)	2.306 ha.
12. Max. & Min mRL within lease area	The highest level is 239.20 mRL the lowest level is 228.10 mRL
13. Pillar Coordinates (Verified by DMO)	Pillar No / N / E A / 25° 27. 878' / 78° 40.345' B / 25° 27.946' / 78° 40.406'

		C	25° 27.937'	78° 40.479'
		D	25° 27.914'	78° 40.505'
		E	25° 27.885'	78° 40.507'
14. Total Geological Reserves	9,28,355 m^3			
15. Total Mineable Reserves	3,01194 m^3			
16. Total Proposed Production	115,300 m^3 (5 Year)			
17. Proposed Production/year	23060 m^3			
18. Sanctioned Period of Mine lease	20 years			
19. Production of mine/day	77 m^3			
20. Method of Mining	Opencast semi- mechanized			
21. No. of working days	300			
22. Working hours/day	8 hrs			
23. No. of workers	20			
24. No. of vehicles movement/day	10			
25. Type of Land	Govt./Non Forest Land			
26. Depth of Mining	12 m			
27. Nearest metalled road from site	0.540 Km			
28. Water Requirement	PURPOSE	REQUIREMENT (KLD)		
	Drinking	0.20KLD @ 10 lpcd		
	Suppression of dust	6.5KLD @1.0 L for 1 sqm (2 time a day)		
	Plantation	0.241 KLD @ 5 lit/plant (241)		
	Total	6.941 KLD		
29. Name of QCI Accredited Consultant with QCI No, period of validity.	Paramarsh (Servicing Environment and Development) 118, 01 May 2021			
30. Any litigation pending against the project or land in any court	No			
31. Details of 500 m Cluster Map & certificate verified by Mining Officer	Letter No-287/30-MMC/(2018-19) dated 21.05.2019			
32. Details of Lease Area in approved DSR	Page No- 3 Table No- 27			
33. Proposed CER cost	Project cost -62.5 lacs/annum CER – 1.25 lacs (2% of Total Cost)			
34. Proposed EMP cost	Capital Cost- 2,41,000 Recurring cost- 5,76,00			
35. Length and breadth of Haul Road	0.540 km and 6m			
36. No. of trees to be planted	241			

Rest all the other contents mentioned in terms of reference (TOR) letter no. 552/parya/SEAC/4892/2019 dated 20/01/2020 shall remain unchanged.

(Dr. Virendra Misra) **Member**	**(Dr. Pramod Kumar Mishra)** **Member**	**(Dr. Ranjeet Kumar Dalela)** **Member**
(Shri Meraj Uddin) **Member**	**(Dr. Ajoy Mandal)** **Member**	**(Shri Rajiv kumar)** **Member**
(Dr. Sarita Sinha) **Member**	**(Prof. S.K. Upadhyay,)** **Member**	**(Dr. (Prof.) S. N. Singh)** **Chairman**

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Annexure-I

General and Specific Conditions for Gitti, Patthar & Boulder Mining Projects:-

A. General Conditions:

1. This environmental clearance is subject to allotment of mining lease in favour of project proponent by District Administration/Mining Department.
2. Forest clearance shall be taken by the proponent as necessary under law.
3. Any addition of the mining area, change of Khasra numbers, enhancement of capacity, change in mining technology, modernization and scope of working shall again required prior environmental clearance as per EIA notification, 2006.
4. No change in the calendar plan including excavation, quantum of mineral and waste shall be made.
5. Mining will be carried out as per the approved mining plan. In case of any violation of mining plan, the Environmental Clearance given by SEIAA will stand cancelled.
6. Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for RSPM, SPM, SO_2, NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. The monitored data for criteria pollutants shall be regularly up loaded on the company's website and also displayed at website.
7. Data on ambient air quality (RPM, SPM, SO_2, NO_x) should be regularly submitted to the Regional office, MoEF, GoI, Lucknow and the State Pollution Control Board / Central Pollution Control Board once in six months.
8. Ambient air quality at the boundary of the mine premises shall confirm to the norms prescribed in MoEF notification no. GSR/826(E) dt. 16.11.09.
9. Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.
10. Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. shall be provided with ear plugs / muffs and health records of the workers shall be maintained.
11. Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.
12. Personnel working in areas shall be provided with protective respiratory devices like mask and they shall also be imparted adequate training and information on safety and health aspects.
13. Special measures shall be adopted to prevent the nearby settlements from the impacts of mining activities.
14. The transportation of the materials shall be limited to day hours time only.
15. Provision shall be made for the housing the labourers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
16. A separate Environmental Management Cell with suitable qualified personnel shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.

17. The Project Proponent shall inform to the Regional Office, MoEF, GoI, Lucknow and State Pollution Control Board regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
18. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to the MoEF, GoI, Lucknow and State Pollution Control Board
19. The Regional Office, MoEF, GoI, Lucknow and State Pollution Control Board shall monitor compliance of the stipulated conditions. A complete set a documents including Environment Impact Assessment Report, Environmental Management Plan, Public hearing and other documents information should be given to Regional Office of the MoEF, GoI, Lucknow and State Pollution Control Board
20. A copy of the environmental clearance shall be submitted by the Project Proponent to the Heads of the Local Bodies, Panchayat and Municipal Bodies as applicable in the matter.
21. The Project Proponent shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Level Environment Impact Assessment Authority (SEIAA).
22. The Project Proponent has to submit half yearly compliance report of the stipulated prior environmental clearance terms and conditions in hard and soft copy to the SEIAA,U.P. on 1st June and 1st December of each calendar year.
23. The SEIAA may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
24. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

B. Specific Conditions:

1. At the time of operation, project proponent will comply with all the guidelines issued by Government of India/State Govt./District Administration related to Covid-19.
2. This environmental clearance does not create or verify any claim of applicant on the proposed site/activity.
3. This environmental clearance shall be subject to valid lease in favour of project proponent for the proposed mining proposals. In case, the project proponent does not have a valid lease, this environmental clearance shall automatically become null and void.
4. The Environmental clearance will be co-terminus with the mining lease period.
5. Explosive cannot be stored on the site.
6. A comprehensive EIA including mining areas within 15 K.M. to assess impact of the mining activity on the surrounding area shall be undertaken and report submitted to this Authority within one year.
7. No two pits shall be simultaneously worked i.e. before the first is exhausted and reclamation work completed, no mineral bearing area shall be worked.
8. After exhausting the first mine pit and before starting mining operations in the next pit, reclamation and plantation works in the exhausted pit shall be completed so as to ensure that reclamation, forest cover and vegetation are visible during the first year of mining operations in the next pit. This process will follow till the last pit is exhausted. Adequate rehabilitation of mined pit shall be completed before any new ore bearing area is worked for expansion.
9. Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.
10. Sprinkling of water on haul roads to control dust will be ensured by the project proponent.
11. Green belt development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO / Agriculture Department. Herbs and shrubs shall also

form a part of afforestation programme besides tree plantation. The company shall involve local people for plantation programme. Details of year wise afforestation programme including rehabilitation of mined out area shall be submitted to the Regional Office, MoEF&CC, GoI, Lucknow every year.

12. Blast vibrations study shall be conducted and a observation report submitted to the Regional office, MoE&CC, GoI, Lucknow and UPPCB within six months. The report shall also include measures for prevention of blasting associated impact on nearby houses and agricultural fields.
13. Controlled blasting techniques with sequential blasting shall be adopted. The blasting shall be carried out in the day time only.
14. Appropriate arrangement for shelter and drinking water for the mining workers has to be ensured at the mining site.
15. Maintenance of village roads used for transportation of minerals are to be done by the company regularly at its own expenses. The roads shall be black topped.
16. Rain water harvesting shall be undertaken to recharge the ground water source.
17. Status of implementation shall be submitted to the Regional Office, MoEF&CC, GoI, Lucknow and UP Pollution Control Board within six months and thereafter every year from the next consequent year.
18. Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.
19. Trenches / garland drains shall be constructed at foot of dumps and coco filters installed at regular intervals to arrest silt from being carried to water bodies. Adequate number of Check Dams and Gully Plugs shall be constructed across seasonal/perennial nallahs, if any flowing through the ML area and silts arrested. De- silting at regular intervals shall be carried out.
20. Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and for waste dump and sump capacity shall be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and de- silted at regular intervals.
21. Ground and surface water, if any in and near the core zone (within 5.0 km of the lease) shall be regularly monitored for contamination and depletion due to mining activity and records maintained. The monitoring data shall be submitted to the Regional Office, MoEF, GoI, Lucknow and U.P. Pollution Control Board regularly. Further, monitoring points shall be located between the mine and drainage in the direction of flow of ground water shall be set up and records maintained.
22. Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and records submitted to the Regional Office, MoEF&CC, GoI, Lucknow and U.P. Pollution Control Board regularly.
23. Baseline data for ambient air quality shall be generated and maintained and RSPM level in ambient air in the nearby human habitation (villages) shall also be monitored along with other parameters.
24. Corporate Environmental Responsibility (CER) shall be by the project proponent and the details of the various heads of expenditure to be submitted as per the guidelines provided in the recent CER notification No. 22-65/2017-IA.III dated 01/05/2018. Work to be executed with installation of five hand pumps for drinking water, solar light in villages of streets, construction of two numbers of toilets at the primary school with name displayed and address and details of beneficiary and gram pradhan along with phone number, photographs should be submitted to Directorate as well as to the District magistrate / Chief Development officers.
25. Transportation of minerals shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of mineral/dust takes place.
26. Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria eradication, HIV, and health effects on exposure to mineral dust etc. shall be carried out. Periodic monitoring for exposure to respirable mineral dust on the workers shall be

conducted and records maintained including health records of the workers. Awareness programme for workers on impact of mining on their health and precautionary measures like use of personal equipments etc. shall be carried out periodically. Review of impact of various health measures shall be conducted followed by follow up action wherever required.

27. The project proponent will ensure for providing employment to local people as per requirement, necessary protection measures around the mine pit and waste dump and garland drain around the mine pit and waste dump.
28. Top soil / solid waste shall be stacked properly with proper slope and adequate safeguards and shall be utilized for backfilling (wherever applicable) for reclamation and rehabilitation of mined out area. Top soil shall be separately stacked for utilization later for reclamation and shall not be stacked along with over burden.
29. Over burden (OB) shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 20 m, each stage shall preferably be of maximum 10 m and overall slope of the dump shall not exceed 35°. The OB dump shall be backfilled. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off.
30. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self sustaining. Compliance status shall be submitted to the Regional Office, Ministry of Environment & Forests, GoI, Lucknow and U.P. Pollution Control Board on six monthly basis.
31. Slope of the mining bench and ultimate pit limit shall be as per the mining scheme approved by Indian Bureau of Mines.
32. Permission for abstraction of ground water shall be taken from Central Ground Water Board. Regular monitoring of ground and surface water sources for level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year i.e. pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected shall be regularly sent to MoEF&CC, Central Ground Water Authority and Regional Director, Central Ground Water Board.
33. The waste water from the mine shall be treated to conform to the prescribed standards before discharging in to the natural stream. The discharged water from the Tailing Dam, if any shall be regularly monitored and report submitted to the Regional Office, Ministry of Environment & Forests, GoI, Lucknow, Central Pollution Control Board and the State Pollution Control Board.
34. Hydro geological study of the area shall be reviewed by the project proponent annually. In case adverse effect on ground water quality and quantity is observed mining shall be stopped and resumed only after mitigating steps to contain any adverse impact on ground water is implemented.
35. Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of minerals and others shall have valid permissions as prescribed under Central Motor Vehicle Rules, 1989 and its amendments. The vehicles transporting minerals shall be covered with a tarpaulin or other suitable enclosures so that no dust particles / fine matters escape during the course of transportation. No overloading of minerals for transportation shall be committed. The trucks transporting minerals shall not pass through wild life sanctuary, if any in the study area.
36. Prior permission from the Competent Authority shall be obtained for extraction of ground water, if any.
37. A final mine closure plan, along with details of Corpus Fund, shall be submitted to the Regional office, Ministry of Environment & Forests, GoI, Lucknow and U.P. Pollution Control Board 5 years in advance of final mine closure for approval.
38. Project Proponent shall explore the possibility of using solar energy where ever possible.
39. Commitment towards CER has to be followed strictly.
40. Regular health check-up record of the mine workers has to be maintained at site in a proper register. It should be made available for inspection whenever asked.
41. Project Proponent has to strictly follow the direction/guidelines issued by MoEF&CC, CPCB and other Govt. Agencies from time to time.
42. The blasting will be done only after getting the permission from the Mining Department.

NOTARY GOVT. OF U.P. INDIA