EXECUTIVE SUMMARY OF DRAFT EIA REPORT

FOR

Environmental Clearance for Existing M/s. Ruhi Stone Crusher Partner- Subham Agrawal (Dhamanghutkuri and Milarabad Ordinary Stone Mining Project)

(Minor mineral)

Total Mine area is 8.08 Hect.

At

Village - Dhamanghutkuri and Milarabad, Tehsil- Basna, District- Mahasamund, State - Chhattisgarh

APPLICANTS

S. N.	Name of Project Proponent	Number and date of Terms of reference	Land Khasra	Area of applied lease (Ha)	Annual Production Capacity (TPY)	Address of Applied land	Cluster Area (Ha.)
1	M/s. Ruhi Stone Crusher Partner Shubham Agrawal	TO24B0108CG5933964N, Dated 28/09/2024	343 (Part)	1.20	*37,744*	*Village – Dhamanghutkuri Tehsil- Basna, District- Mahasamund, Chhattisgarh*	*8.08*
2	M/s. Ruhi Stone Crusher Partner Shubham Agrawal	TO24B0108CG5169854N, Dated 28/09/2024	343 (Part)	1.44	*16,517*		
3	M/s. Ruhi Stone Crusher Partner Shubham Agrawal	TO24B0108CG5974272N, Dated 11/09/2024	389 (Part)	2.58	70,883	*Village – Milarabad Tehsil- Basna, District- Mahasamund, Chhattisgarh*	
4	M/s. Ruhi Stone Crusher Partner Shubham Agrawal	TO24B0108CG5243903N, Dated 11/09/2024	389 (Part)	2.86	75,636		

ENVIRONMENTAL CONSULTANT

ULTRA-TECH
Environmental Consultancy & Laboratory
(Lab. Gazetted by MoEF-Govt. of India)

M/s. ULTRA-TECH

ENVIRONMENTAL LABORATORY AND CONSULTANCY

NABET Accredited EIA Consulting Organization

NABET Accreditation Number: NABET/EIA/2023/RA 0194

Valid Upto - Jan 03, 2025

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1.1 Introduction

The proposed project is a ordinary stone mining project (total lease area in the cluster, including 04 applied mines, is 8.08 Ha. (Mineral ordinary stone) at villages – Dhamanghutkuri & Milarabad, tehsil – Basna, district- Mahasamud, state - Chhattisgarh. Details of the entire lease are discussed in the further chapters. The lease holders of the cluster their respectively TOR issued in favour of the project proponent are as follows –

Details of TOR		
S.no.	**Name of Applicant**	**TOR letter no.**
1.	M/s. Ruhi Stone Crusher (Area- 1.2 Ha.)	TO24B0108CG5933964N, Dated. 28/09/2024.
2.	M/s. Ruhi Stone Crusher (Area- 1.44 Ha.)	TO24B0108CG5933964N, Dated 28/09/2024
3.	M/s. Ruhi Stone Crusher (Area- 2.58 Ha.)	TO24B0108CG5974272N, Dated 11/09/2024.
4.	M/s. Ruhi Stone Crusher (Area- 2.86 Ha.)	TO24B0108CG5243903N, Dated 11/09/2024.

This mining project comes under Category 'B1' (Cluster situation) Project or activity 1(a) as per EIA Notifications 2006, and its subsequent amendments and will be appraisal at SEAC, Chhattisgarh. The lease is falling in the cluster as per 15th January 2016 EIA Notification of MoEF&CC and NGT order dated 13th September 2018.

1.1.1 Project Location -

The proposed project of M/s. Ruhi Stone Crusher (Ordinary Stone) mine having an area of 1.2 ha., 1.44 Ha., 2.58 ha., & 2.86 ha. Situated at Village – Dhamnghutkuri & Milarabad, Tehsil – Basna, District - Mahasamund, State - Chhattishgarh under khasra no. 343 (Part), 343 (Part), 389 (Part), 389 (Part) of Partner- Subham Agrawal respectively as lease holder of the mine lease area. Mine featured in the Survey of Indian Toposheet No. 64K/15, K/11.

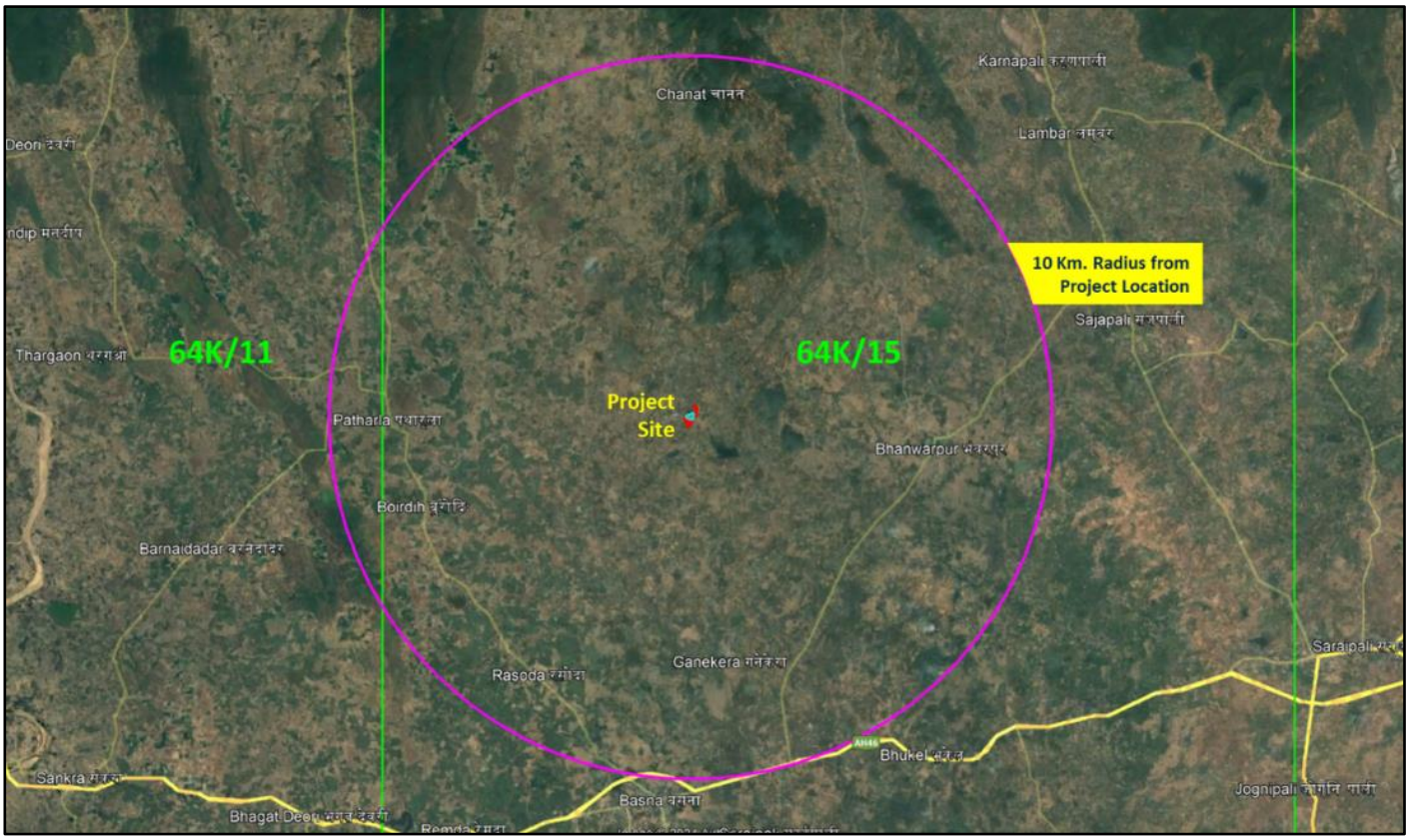

Figure 1.1: Location Map of Proposed Project Site

Table 1.1A Environmental Setting of Proposed M/s. Ruhi Stone Crusher (Ordinary Stone Mine)

S. N.	Applicant / Leasee Name	Area	Address of party	Mine Village	Khasra No.	Toposheet no.	Type of Land
1.	M/s. Ruhi Stone Crusher Partner Subham Agrawal	1.20	City-X-154,A-3, Swarnabhoomi,Vidhansabha Road, Tehsil & District-Raipur(C.G.) Pin Code - 492001	Dhamanghutkuri	343 (Part)	64 K/11 64K/15	Govt. Land
2.	M/s. Ruhi Stone Crusher Partner Subham Agrawal	1.44		Dhamanghutkuri	343 (Part)		Govt. Land
3.	M/s. Ruhi Stone Crusher Partner Subham Agrawal	2.58		Milarabad	389 (Part)		Govt. Land
4.	M/s. Ruhi Stone Crusher Partner Subham Agrawal	2.86		Milarabad	389 (Part)		Govt. Land

Table 1.1B: Details of the Project Proponent and Project Coordinates

S.N.	Co-Ordinates	M/s. Ruhi Stone Crusher (Area- 1.2 Ha.)	M/s. Ruhi Stone Crusher (Area- 1.44 Ha.)	M/s. Ruhi Stone Crusher (Area- 2.85 Ha.)	M/s. Ruhi Stone Crusher (Area- 2.86 Ha.)
1	**BL 1**	21°22'44.98"N/ 82°50'11.02"E	21°22'45.91"N / 82°50'6.82"E	21°22'36.12"N / 82°49'58.02"E	21°22'40.19"N / 82°50'6.40"E
2	**BL 2**	21°22'43.77"N/ 82°50'12.86"E	21°22'47.60"N / 82°50'7.59"E	21°22'33.14"N / 82°50'5.52"E	21°22'38.58"N / 82°50'7.84"E
3	**BL 3**	21°22'41.15"N/ 82°50'13.57"E	21°22'45.41"N 82°50'10.29"E	21°22'30.91"N / 82°50'4.17"E	21°22'37.00"N / 82°50'6.26"E
4	**BL 4**	21°22'37.81"N/ 82°50'11.91"E	21°22'40.76"N / 82°50'10.17"E	21°22'28.26"N / 82°50'3.24"E	21°22'33.66"N / 82°50'5.59"E
5	**BL 5**	21°22'37.88"N/ 82°50'11.37"E	21°22'38.62"N / 82°50'9.71"E	21°22'28.51"N / 82°50'0.84"E	21°22'36.27"N / 82°49'58.65"E
6	**BL 6**	21°22'37.19"N/ 82°50'10.87"E	21°22'37.55"N / 82°50'10.39"E	21°22'30.18"N / 82°49'59.96"E	21°22'37.92"N / 82°49'59.82"E
7	**BL 7**	21°22'40.24"N/ 82°50'10.54"E	21°22'37.01"N / 82°50'9.68"E	21°22'33.46"N / 82°50'0.21"E	-
8	**BL 8**	-	21°22'39.50"N / 82°50'7.41"E	21°22'34.07"N / 82°49'58.10"E	-
9	**BL 9**	-	21°22'40.86"N/ 82°50'8.12"E	-	-
10	**BL10**	-	21°22'41.26"N/ 82°50'9.45"E	-	-
11	**BL11**	-	21°22'41.81"N/ 82°50'9.51"E	-	-
12	**BL12**	-	21°22'42.21"N/ 82°50'8.68"E	-	-
13	**BL13**	-	21°22'45.90"N/ 82°50'9.09"E	-	-

Table 0.1C: Details of Distance of Sensitive Structure from Project location

S.n.	Name of the Applicant	Nearest Highway	Nearest Railway station	Nearest Airport	Nearest town/City/ Nearest Densely populated or built-up area	Nearest Water Body	Major water bodies within 10 km radius
1.	M/s. Ruhi Stone Crusher (Area- 1.2 Ha.)	NH 53 at 10.20 km towards south (Raipur-Arang -Saraipali road)	Komakhan Station at 58.95 km towards south-west.	Raipur 101 km	Basna at 10.60 km towards South	At 340 m Pond towards south	At 1.30km (Nalla toward west)
2.	M/s. Ruhi Stone Crusher (Area- 1.44 Ha.)	NH 53 at 10.25 km towards south (Raipur - Arang -Saraipali road)	Bagbahara Station at 59.50 km towards south-west.	Raipur 115 km	Basna at 10.60 km towards South	At 550 m Pond towards south - west	At 1.30 km (Nalla toward west)
3.	M/s. Ruhi Stone Crusher (Area- 2.58 Ha.)	NH 53 at 9.80 km towards south (Raipur - Arang -Saraipali road)	Bagbahara Station at 59.15 km towards south-west.	Raipur 100 km	Basna at 10.50 km towards South	At 720 m Pond towards south	At 1.10 km (Pond toward west)
4.	M/s. Ruhi Stone Crusher (Area- 2.86 Ha.)	NH 53 at 10.00 km towards south (Raipur - Arang -Saraipali road)	Bagbahara Station at 59.15 km towards south-west.	Raipur 101 km	Basna at 10.30 km towards South	At 290 m (Pond towards south-east	At 1.00 km (nalla towards south-east)

Table 1.1D: Details of Distance of Sensitive Structure from Project location

Particulars	Descriptions
Seismicity	Since project site comes under Seismic zone II, which is least active zone for earthquakes as per IS: 1893 (Part 1: 2002).
Reserved / Protected Forests	None within 10 km radius from all of the applied mines
Wildlife Sanctuary	None within 10 km radius from all of the applied mines
National Park	None within 10 km radius from all of the applied mines
Protected areas as per Wildlife Protection Act (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	1. Rupapali P.F – 1.70Km 2. Tarekela P.F. – 2.00Km 3. Purshottampur P.F. – 2.20Km 4. Padakipali P.F. – 2.50Km 5. Karidongar P.F. – 3.00 6. Jadamuda P.F. – 6.80Km 7. Bagmal P.F. – 8.00Km 8. Jamnidih P.F. – 8.30Km 9. Jamdraha P.F. – 9.50Km 10. Raipani R.F. – 6.00Km
Archaeologically important places	None within 10 km radius from all of the applied mines
Defense Installations	None within 10 km radius from all of the applied mines
Biosphere reserves	None within 10 km radius from all of the applied mines
Important migration routes of birds	None within 10 km radius from all of the applied mines
Ramsar sites (Wetlands of International Importance	None within 10 km radius from all of the applied mines
Unique or threatened ecosystems	None within 10 km radius from all of the applied mines
Important topographical features, including ridges, river valleys, shorelines, and riparian areas	None within 10 km radius from all of the applied mines
Mangrooves	None within 10 km radius from all of the applied mines
Physical Sensitive Receptors	None within 10 km radius from all of the applied mines
Notified Ground Water Zone by CGWA	None within 10 km radius from all of the applied mines
Critically Environmental polluted Area	None within 10 km radius from all of the applied mines
Pollution Sources	None within 10 km radius from all of the applied mines

1.2 Project Description

The proposed project of M/s Ruhi Stone Crusher Mine of Total Area 8.08 Ha is situated at Village - Dhamnghutkuri & Milarabad, Tehsil- Basna, District: Mahasamund, State: Chattishgarh. The life span of proposed mine block is 30 years. The proposed method of mining is open cast semi mechanized mining.

Table 1.2A: Salient Features of the Proposed Mining Project

S.N	Name of the Applicant	Status of Operation (New Project or Existing Project)	Name of the Mineral to be mined	Type of land	Method of Mining	No. of working days
1.	M/s. Ruhi Stone Crusher, Partner Subham Agrawal	Existing Project	Ordinary Stone	Govt.	Open-cast semi mechanized method	240
2.		Existing Project	Ordinary Stone	Govt.	Open-cast semi mechanized method	240
3.		Existing Project	Ordinary Stone	Govt.	Open-cast semi mechanized method	240
4.		Existing Project	Ordinary Stone	Govt.	Open-cast semi mechanized method	240

Table 1.2B: Salient Feature of the Project

SN	Name of the Applicant	Mine Area (Ha.)	Ultimate depth of mining	Ground Water Table	Mineable Reserves (MT)	Applied Annual Production Capacity(TPY)	Balance lease period in year
1.	M/s. Ruhi Stone Crusher, Partner Subham Agrawal	1.20	18 m	40 m	1,93,733.80	37,744.00	7
2.		1.44	15 m	40 m	84,435.00	16,517.00	7
3.		2.58	48 m	50 m	9,17,476.30	70,883.00	9
4.		2.86	42 m	50 m	13,50,782.5	75,636.00	10

1.2.1 Water Requirement

The total water requirement shall be 25.00 KLD for M/s. Ruhi Stone Crusher, Partner Subham Agrawal respectively for domestic, green belt and sprinkling purpose, which will be sourced from Water Tankers from nearby village. Detail of water requirement is given below:

Table 1.3 A: Water Requirement for Plantation

S.N	Name of the Applicant	Lease Area in Hect.	Number of saplings	Water required per day per Saplings	Total water need for Sprinkling on plantation (KLD)
1.	M/s. Ruhi Stone Crusher, Partner Subham Agrawal	1.20	762	2.5	2.00
2.		1.44	1257	2.5	3.00
3.		2.58	1092	2.5	3.00
4.		2.86	1038	2.5	3.00

Table 1.3 B : Water Requirement for Dust Suppression

S.N	Name of the Applicant	Lease Area in Hect.	Length of Remp & Haul Road	Width Of Road/ Remp	Requirement per Square Meter	Number Of Rounds Per Day	Total Water Need for Dust Suppression
1.	M/s. Ruhi Stone Crusher, Partner Subham Agrawal	1.20	500	4	0.5	2	2.00
2.		1.44	500	4	0.5	2	2.00
3.		2.58	750	4	0.5	2	3.00
4.		2.86	750	4	0.5	2	3.00

Table 1.3 C: Detailed Water Requirment for Each Mine

S.N	Name of the Applicant	Lease Area in hect	For Greenbelt Development	For Dust Suppression	For Domestic Purpose	Total in KLD
1.	M/s. Ruhi Stone Crusher, Partner Subham Agrawal	1.20	2.00	2.00	1.00	5.00
2.		1.44	3.00	2.00	1.00	6.00
3.		2.58	3.00	3.00	1.00	7.00
4.		2.86	3.00	3.00	1.00	7.00
	Total:	**8.08**	**11.00**	**10.00**	**4.00**	**25.00**

1.2.2 Power Requirement

No power is required for mining purpose only for labour, admin building and for crusher plant. State electricity board will supply the electricity. Electric power is available in the lease area.

1.2.3 Manpower Requirement

The mining project will generate direct & indirect employment. Local people will get direct employment, and some persons will also be affected indirectly and employed with allied and related industries, such as transportation, maintenance, etc. Following staff & workers are proposed to be employed:-

Table 1.4 : Manpower Details of M/s Ruhi Stone Crusher (Ordinary Stone Mine)

S.No.	Employment	M/s Ruhi Stone Crusher (Area -1.2 Ha.)	M/s Ruhi Stone Crusher (Area -1.44 Ha.)	M/s Ruhi Stone Crusher (Area -2.58 Ha.)	M/s Ruhi Stone Crusher (Area -2.86 Ha.)
1	Supervisor	1	1	1	1
2	Mining Mate	1	1	1	1
3	Skilled Labours	4	2	6	7
4	Machine Operator	6	3	7	8
Total		**12**	**7**	**15**	**17**

1.3 Description of Environment

The area around the proposed mining site has been surveyed for physical features and existing environmental scenario. The field survey and baseline monitoring has been done from the period of **the period of 1st March 2024 to 31st May 2024 (Summer Season).** The observations for Summer season - (**March** 2024 – **May** 2024) are summarized below:

1.3.1 Meteorology

The secondary meteorological data of the study period collected from www. imdpune.gov.in/. The month wise meteorological data is given in ***Table 1.5***. The wind rose during the study period.

Table 1.5 Meteorological Data of the study area (NASA Power)

	Wind speed (m/s)			Temp (^{0}C)			Relative Humidity (%)			Rainfall (mm)			Solar radiation (W/m^2)		
Period	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**
Mar 24	7.59	0.21	2.53	39.8	14.61	26.56	95.25	14.81	44.4	6.3	0	0.04	948.98	0	241.8
Apr 24	7.42	0.09	2.95	43.8	21.08	32.8	70.5	11.31	30.97	1.22	0	0.01	891.06	0	211.4
May 24	7.81	0.23	3.13	47.33	23.85	35.7	77.25	6.69	28.52	1.22	0	0.01	0	0	0

1.3.2 Air Environment

The ambient air quality is carried out at 8 locations in and around the project site and studies are carried out as per CPCB standards. It is observed that, all the values are within the prescribed limits as per National Ambient Air Quality Standards (NAAQS), 2009.

Particulate Matter (PM_{10}):

A maximum value of PM_{10} is 68µg/m^3 was observed at the AAQM-1 and minimum value of 45µg/m^3 was observed at AAQM-4,7,8.

Respirable Particulate Matter ($PM_{2.5}$):

A minimum value of $PM_{2.5}$ is 16µg/m^3 was observed at AAQM-8 and maximum value of 30µg/m^3 was observed at AAQM 2.

Sulphur Dioxide (SO_2):

Minimum concentration of SO_2 is observed to be 5µg/m^3 at all the stations except AAQM-1,2,3,6,7,8 and maximum value of 10µg/m^3 observed at 1, 6, & 8.

Oxides of Nitrogen (NO_X):

Maximum concentration of NO_x is observed to be 17µg/m^3 at AAQM-6 and minimum value of 8 µg/m^3 observed at AAQM – 2, 3, 4 & 5.

Carbon Monoxide (CO):

Maximum concentrations in the region are observed to be 0.9 mg/m^3 at all the locations AAQM 1,2,3,6, & 7 and minimum value of 0.2 mg/m^3 observed at AAQM -4, 8.

The overall air quality around the proposed mine lease is within the limits of NAAQ standards.

Silica

Silica in the ambient air of the 10 Km radius of the study area of the project site has been analysed from the PM10 filter paper of the Ambient Air quality monitoring stations. The result indicates that silica concentration in the surrounding of project site was found to be in the range of 0.02 μg/m3 to 0.07μg/m3.

The results are compared with the standards prescribed by Central Pollution Control Board (CPCB).The overall ambient air quality around the proposed mine lease is within the limits of ambient air quality standards prescribed by CPCB.

1. 3.3 Noise Environment

Noise levels were monitored in eight locations including project within the study area. The noise levels ranged between 51.6 to 58.7 dB (A) during day time and noise levels ranged between 42.6 to 49.7 dB (A) during night time.

1.3.4 Water Environment

In order to establish the baseline water quality, 4 ground water and 5 surface water samples were collected and analyzed in the study area. The quality of surface water samples was compared with surface water specification IS 2296:1982 and the surface water quality comes under Class D (Propagation of wildlife and fisheries). The ground water samples were compared with drinking water specification IS 10500:2012 standards.

1. 3.5 Soil Quality

A total of 8 samples in and around the project site are collected and analysed. It has been observed that the pH of the soil quality ranged from 7.1 (S5) to 8.1 (S4) indicating that the soil is slightly alkaline in nature.

Particular	Number of Locations	Description
Background Ambient Air Quality Monitoring	Sampling was done at 8 Locations	PM_{10} :-45 to 68 μg/m^3 $PM_{2.5}$:-16 to 30 μg/ m^3 SO_2 :- 5 ug/m3 to 10 μg/ m^3 NOx:- 8 to 17 μg/ m^3 CO:-0.2 to 0.9 mg/ m^3
Noise Level Monitoring	Monitored at 8 Locations	Noise Level During Day Time :– 51.6 to 58.7 dB (A) Noise Level During Night Time:– 42.6 to 49.7 dB (A)

Water Sampling	Ground water sampling was done at 4 Locations	pH :- 7.2 to 7.5 TDS :- 402 to 561 mg/l Total Hardness :- 196 to 332 mg/l. SO_4 :- 54 to 70 mg/l Chloride :- 55 to 80 mg/l Zn & Fe:- Below detectable limit.
	Sampling:- 5 at Surface water	pH :- 7.1 to 7.5 ; TDS :- 205 to 585 mg/l; Dissolve oxygen: - 5.1 to 6.1 mg/l. Chloride :- 35 to 100 mg/l; Calcium :- 26 mg/l to 62 mg/l; Magnesium :- 13 mg/l to 36 mg/l; Total Hardness :- 116 to 302 mg/l ;
Soil Sampling	Sampling was done at 8 Locations	pH :- 7.2 to 8.1 Nitrogen:- 211to 249 kg/ha Phosphorus:– 52 to 83 kg/ha Potassium :–318 to 420 kg/ha Electric Conductivity:- 385 to 502 ms/cm

1.3.6 Land Use/Land Cover of the Study Area

Dhamanghutkuri & Milarabad are villages in the Basna tehsil of the Mahasamund district in Chhattisgarh state, India. ***Figure 1.2*** depicts the village area as covered by Survey of India toposheets 64K/11, 64K/15, (SOI). ***Figure 1.2*** shows a pie diagram of the 10-kilometer research region's land use and land cover maps. The LULC map, shown in ***Figure 1.2***, shows that the analysis is separated into nine areal classes: Water body, Canal, Crop Land, Settlement, Vegetation, Fallow Land, and Mining area

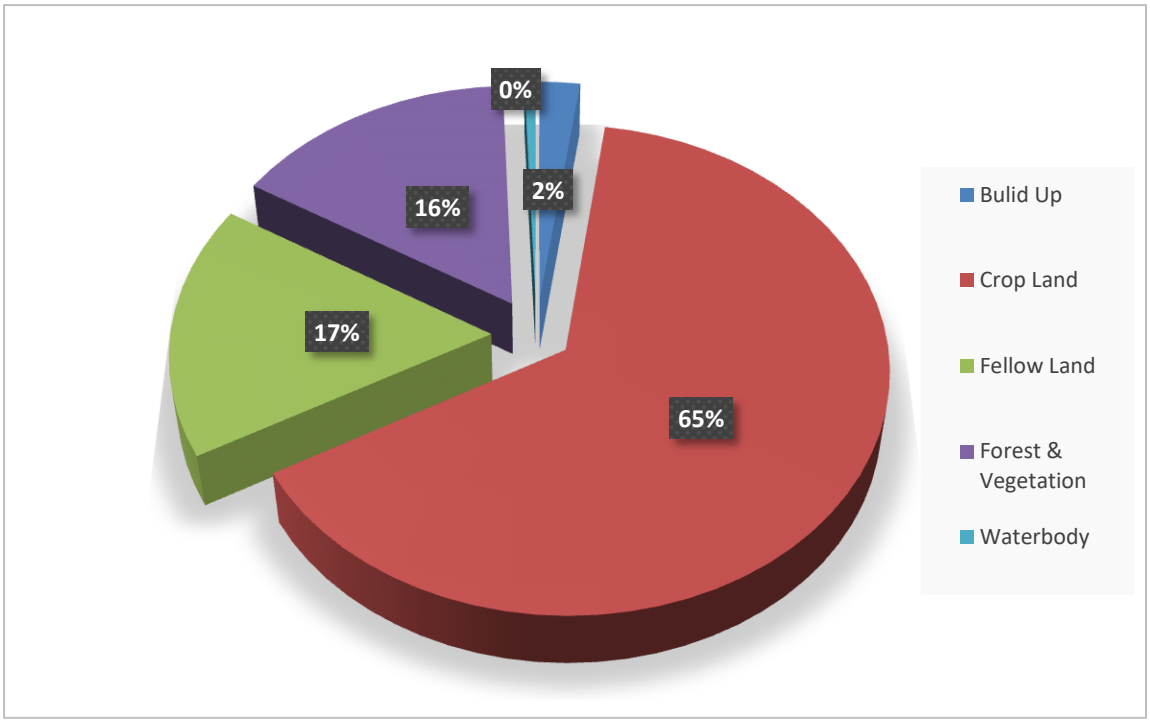

Figure 1.2: LULC Classification (10 km radius Proposed Project Area)

1.3.7 Biological Environment

Study of biological environment is one of the most important aspects for Environmental Impact Assessment. In view of the need for conservation of environmental quality and biodiversity study, biological environment is one of the most important aspects for Environmental Impact Assessment. Ecological systems show complex inter-relationships between biotic and abiotic components including dependence, competition and mutualism. Biotic components comprise of both plant and animal communities, which interact not only within and between them but also with the abiotic components viz. physical and chemical components of the environment. Generally, biological communities are the indicators of climatic and edaphic factors. The biological environment includes mainly terrestrial ecosystem and aquatic ecosystem. The mining activities are one such external influence, which might affect the ecology of an area, if proper management measures are not taken.

1.3.8 Socio-economic Environment

Socio-economic has been recognized as, a component of environment. It focuses primarily on the social and economic effects that are likely to occur as a result of the construction and operation of the proposed development. It includes various factors, viz. demographic structure, availability of basic amenities such as housing, education, health and medical services, occupation, water supply, sanitation, communication and power supply, prevailing diseases in the region as well as features such as places of tourist attraction and monuments of archaeological importance. The study of these parameters helps in identifying predicting and evaluating the likely impacts due to project activity in the surrounding region. Any developmental activity exerts direct, indirect, positive and negative impacts on the socio-economic environment of the region.

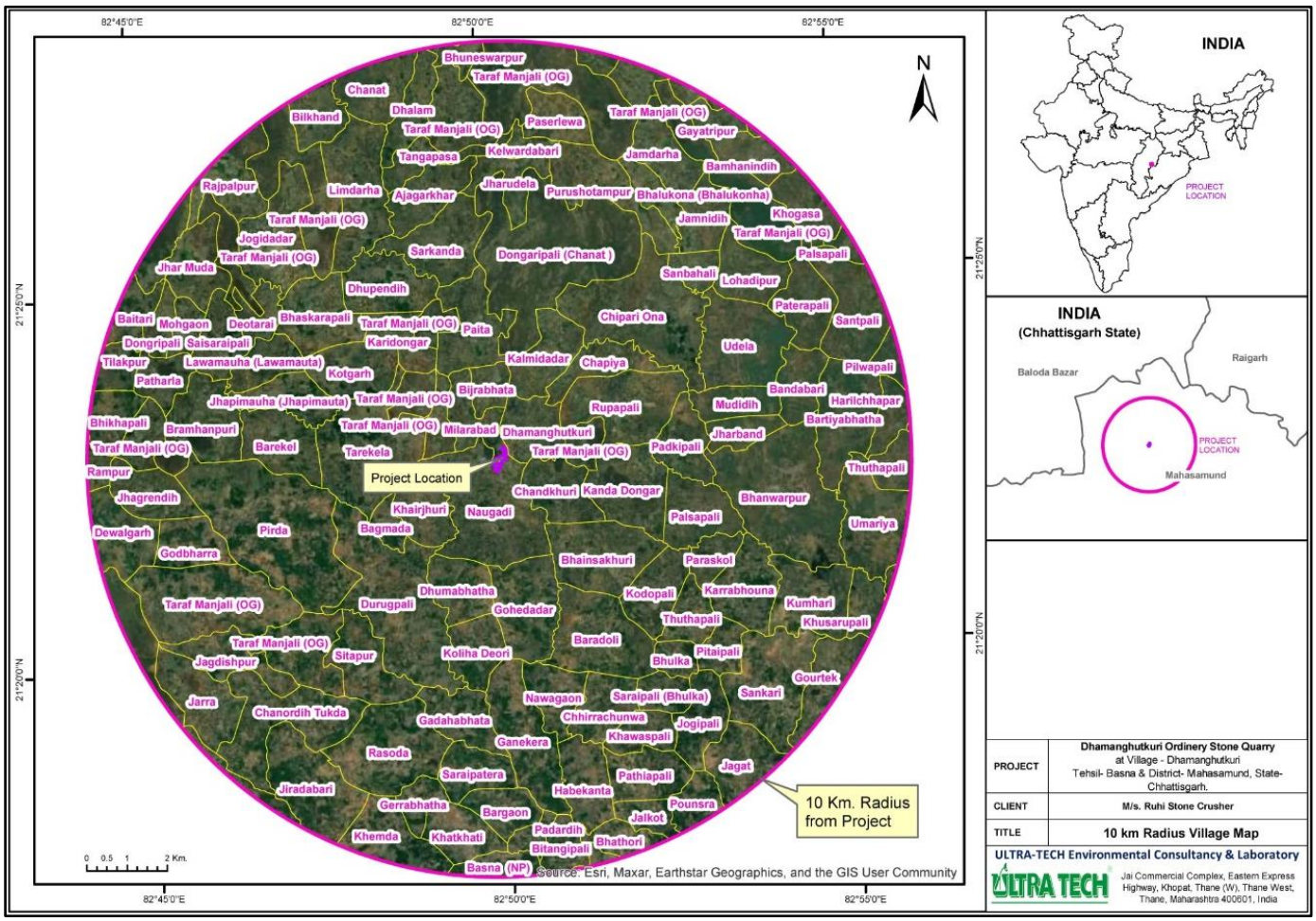

Figure 1.3: Villages within 10 Km. Radius Area from Project Site.

1.4 Anticipated Environment Impacts and Environment Management Plan

Land/Soil Environment Impact Mitigation

The mitigation measure of the land environment includes:

- Before the mining activity the top soil will be scrapped and stored in the lease area and will be utilized for plantation purpose. Balance top soil if any preserved separately will be used to spread over partially reclaimed land.
- The Ordinary Stone excavated from the lease area will be completely selleable resulting no dump within the lease area
- At the end of conceptual period the excavated quarry will converted into water reservoir to supply water for local use like irrigation and pisciculture.
- Due to manual mining operation emission from the Ordinary Stone mines are very less, there will be no impact on the surrounding soil quality and cropping pattern of the area.
- The propose project falls under the seismic zone –II (Low Hazard Risk Zone). Since this project will not have physical infrastructure to be constructed, no impact of seismicity is envisaged in this project. Further, this project will not change/alter the seismic behaviour of the area.

Air Impact Mitigation

The mitigation measures undertaken in the mine for control of air pollution are:

- Checking of vehicles and machinery to ensure compliance to Indian Emission Standards Transportation vehicles and machinery to be properly and timely maintained and serviced regularly to control the emission of air pollutants in order to maintain the emissions of NO_x and SO_x within the limits established by CPCB.
- Total 4 KLD water required for two mines towards dust suppression purpose for which 2 no. of water tanker with 2000 litre capacity will be hired and used for water sprinkling twice in a day in haul roads, dumping site, loading and unloading site of each lease within the cluster and this will be regularly monitored by the cluster management. Water sprinkling on transport road side, stock yard (if any) etc. will be done by tractor mounted water sprinkler.
- Regular compaction and grading of haul roads will be done to clear the accumulation of loose material

- All the mines workers will be provided with the dust masks.
- Trees can act as efficient biological filters. As this is a small lease, the area available for plantation is very less. However a well planned plantation programme has been proposed for the mining area to arrest the dust pollution within the lease boundary. There is the proposal for continuous plantation along the cluster boundary and both side of the road connecting the cluster.
- Vehicles with valid PUC shall be used for transporting the minerals to avoid the exhaust emission.
- A greenbelt development plan is prepared with local species. The greenbelt on the periphery will reduce the dust level sits
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce generation of dust.
- Fugitive emission by stone crusher plant will be supressed by adopting following measures as per norms:-
    - ✓ Construction of tin walls around the crusher plant and equipment.
    - ✓ Regular cleaning and wetting of the ground within the premises.
    - ✓ Better maintenance of crusher plant and equipment will help to reduce such emissions.
    - ✓ water spray at dust generating points on crusher plant.
- Regular monitoring of the air quality as per the monitoring plan detailed in Chapter 6 of this EIA report, shall be adopted during the operation phase, to ensure that, the air quality is within the desired limits prescribed by CPCB.

Noise Impact Mitigation

- No noise polluting work shall be carried out in the night hours.
- Provision of PPE's for the workers.
- Vehicles to be serviced regularly and maintained properly to avoid any unwanted generation of noise or vibration from them.
- Green belt plantation and garden trees will help in reducing the noise, traffic related pollution and heat island effects.

- Proper lubrication, muffling and modernization of equipment shall be used to reduce the noise during operation phase.
- Vibration and noise due to blasting will be reduced by adopting controlled blasting technique.
- Blasting will be avoided under unfavourable conditions.
- Rock breakers is being/ will be used instead of secondary blasting.
- Regular monitoring of the noise levels as per the monitoring plan detailed in Chapter 6 of this EIA report, shall be adopted during the operation phase, to ensure that, the noise levels are within the limits prescribed by CPCB.

Water Impact Mitigation

- Provision of temporary toilets for laborers.
- Domestic waste water will be treated into septic tank followed by soak pit outside of the proposed cluster project with a safe distance and no wastewater will be allowed to be get discharged into the water body
- All stacking and loading areas should be provided with proper garland drains
- Check dams should be provided to prevent solids from wash off.
- Construction of garland drains around freshly excavated and dumped areas so that flow of water with loose material is prevented.
- The mine water should be passed through specially constructed catch pits to arrest any loose material being carried away with water.
- Any areas with loose debris within the leasehold should be planted.
- Garland drains should be constructed surrounding the waste dumps and should be connected to the surface water reservoir to avoid the run-off mixing directly to natural water channels before settling.
- Ground water table will not be intersected during the mining activity

Biological Impact Mitigation

- Green belt will be developed along the core zone boundary which will act as a pollution barrier for the biological environment.
- The drilling and transportation will be carried out during the day time only minimizing the impact on the wild fauna movement.
- Fencing around the entire mine lease area is recommended in order to restrict the entry of stray animals into the mining area.

Socio-Economic Environment Impact Mitigation

In order to mitigate the adverse impacts likely to arise in the surrounding area due to proposed project activity, it is necessary to formulate an effective mitigation plan. The suggestions are as follows:

Before Commencing and During Initial Phase:

- Communication with the local community should be institutionalized and done on a regular basis. The forum could provide opportunities to discuss local critical issues and prepare programmers of mutual benefits.
- Information regarding the proposed development plan, community programmes etc. should be communicated to the local community.

1.5 Environmental Monitoring Program

Environmental monitoring shall be carried out at the locations to assess the environmental health in the post period. A post study monitoring programme is important as it provides useful information on the following aspects.

- It helps to verify the predictions on environmental impacts presented in this study.
- It helps to indicate warnings of the development of any alarming environmental situations, and thus, provides opportunities for adopting appropriate control measures in advance.

Detailed EMP plan during the operation phase is given chapter 6 of EIA report.

1.6 Risk Assessment

The hazards and its risk assessed during the operation phase of the proposed Ordinary Stone mining project are low, medium & high. The project proponents are proposed to implement all the mitigation measures to prevent the impact or consequences of the risk expected to be happened in both the project sites. The level of impact after implementing the mitigation measures will be low/medium in all the hazards identified.

1.7 Emergency Response and Disaster Management Plan

Impact of disaster can be significantly reduced through attempts at preparedness, mitigation, and post-event rehabilitation work. Based on hazard identification in the proposed project, an emergency plan has been prepared and the same plan will be implemented by the project implementing agency with the coordination of District Authorities to minimize the damage. The risk assessment and disaster management plan is detailed in Chapter 7 of the EIA report.

1.8 Project Benefits

Mining is back bone of infra-structure development of country. Proposed project has following benefits as given below:

- Employment for local people.
- Revenue for the State Government in form of excise duties, GST, taxes, levies etc.
- Generate business opportunity for the people.
- Need based funds will be used for welfare of people in villages.
- EMP funds will improve environmental quality.
- The operation of the Ordinary Stone mining would help to improve socio-economic condition of people in villages through separate fund allocated for Need Based Activity.

1.9 *Budget for Social Development*

The total estimated cost of the project is 111.32 lacs. Rs 1,20,000/- lac will be allocated for Need based activity for causes of village for drinking water, sanitation, education, health.

1.10 Environment Management Plan (EMP)

The detailed Environment Management Plan has been prepared based on the mining activities and the impacts imparting on land/soil, air, noise, water by the activities. The EMP and the cost for the environment protection measures are detailed in Chapter 10 of EIA report.

Expenditure Proposed for Environmental Protection Activities:

S. No.	Particulars	M/s. Ruhi Stone Crusher (Area- 1.20 Ha.)		M/s. Ruhi Stone Crusher (Area- 1.44 Ha.)		M/s. Ruhi Stone Crusher (Area- 2.85 Ha.)		M/s. Ruhi Stone Crusher (Area- 2.86 Ha.)	
		Capital Cost in Rs	Recurring Cost in Rs	Capital Cost	Recurring Cost in Rs	Capital Cost in Rs	Recurring Cost in Rs	Capital Cost in Rs	Recurring Cost in Rs
1	Air Pollution Control	-	1,44,000		1,44,000	-	1,44,000	-	1,44,000
2	Green Belt Development	2,64,700	1,94,750	3,95,300	2,36,875	3,27,700	2,22,800	3,06,255	2,18,250
3	Maintenance of Road	-	40,000	-	40,000	-	40,000	-	40,000
4	Facilities for Mine workers	50,000	54,000	50,000	31,500	50,000	67,500	50,000	76,500
	Total ::	**3,14,700**	**4,32,750**	**4,45,300**	**4,52,375**	**3,77,700**	**4,74,300**	**3,56,255**	**4,78,750**
Total Capital Cost in Rs		**14,93,955**							
Total Recurring Cost in Rs		**18,38,175**							
Total Cost of EMP in Rs		**33,32,130**							

1.11 Conclusion

As discussed, it is safe to say that the collection of minor minerals from the proposed lease area is not likely to cause any significant impact on the ecology of the area as the mineral is and waste generated is non-toxic and does not harm the surrounding environment.

Adequate measures will be taken to control the fugitive emissions to be generating during mining operation. Socio-economic condition of the surrounding villages will improve in long run due to involvement of local population and improvement of infrastructure facilities. Green belt development in the statutory boundary, approach roads, schools are proposed with the participation of local people. This proposed plantation in the area will improve the aesthetic look along with betterment of ecology and environment of the locality.