EXECUTIVE SUMMARY

This EIA report is prepared by considering Cumulative load of all proposed & existing quarries of Mohada Stone Quarry Cluster. Quarries consisting of 13 Proposed and 25 Existing Quarries with total extent of total area 99.99 ha (Cluster Area 67.58 ha as per moefcc notification S.O. 2269 (E) dated 01.07.2016) in Mohada Village, Wani Taluka, Yavatmal District , Maharashtra State.

This EIA Report is prepared in compliance with ToR obtained –

SR. No	Name of Project Proponent	ToR Reference for CLuster	ToR Date for Cluster	Area in Ha	S. No.
1	Mr. Tejnarayan Biharilal Chaudhari	SIA/MH/MIN/46059/2019	24.02.2020	3.45	98
2	Mr. Bhaskar Keshavrao Masular	SIA/MH/MIN/43966/2019	07.02.2020	1.09	41/2अ
3	M/s Balaji Associates Through Mr. Ramesh Badrinarayan Mundada	SIA/MH/MIN/44090/2019	07.02.2020	3.64	292/2/1, 292/2
4	Mr. Pankaj Indrasenji Agrawal	SIA/MH/MIN/43989/2019	07.02.2020	3.24	45/3,45/4
5	Mr. Kamaruddin Badruddin Khan	SIA/MH/MIN/44050/2019	07.02.2020	3.24	45/1,45/2
6	M/s Trimurti Metals Through Manorama Indersen Singh	SIA/MH/MIN/44063/2019	07.02.2019	3.86	159
7	Mrs. Pushpa Bhaurao Kawde	SIA/MH/MIN/46061/2019	24.02.2020	2.69	39,41/2ब
8	Sudha Stone Crusher thru Mrs. Sudha D. Parashar	SIA/MH/MIN/46060/2019	07.02.2020	2.74	154,155/2

And the Baseline Monitoring study has been carried out during the period of March 2021-May 2021

LIST OF RUNNING ,ABANDONED,PROPOSED,PROVISIONED STONE QUARRIES INCORPORATED IN REGIONAL MINING PLAN FOR STONE QUARRY CLUSTER AT VILLAGE MOHADA TALUKA WANI DIST. YAVATMAL,MAHARASHTRA

Running Quarry

Sr. No.	Name of Project Proponent	Gut No.	Area in Ha	Approval of Mining Plan	Reference of Prior EC	Proposed Production Per Year in Brass
1	Mr. Pankaj I. Agrawal	45/5,45 /6	3.21	Approved	1st DEIAA 30.08.2016	9932
2	Mr. Dharamprakash Bhawanishankar Parashar (Tejonarayn Chaudhary)	99 Part	2.02	Approved	DEIAA/2018/Yavatmal/EC/6 98 dt 01/11/2018	24154
3	M/s Gajanan Construction Company	275/2, 275/2A	3.13	Approved	DEIAA/2018/Yavatmal/EC/6 98 dt 01/11/2018	31144
4	Mr. Nasim Saruddin Khan	26 part	1.67	Approved	1st DEIAA 30.08.2016	9557
5	Mr. Pankaj Indrasen Agrawal	25 part	1.62	Approved	SEAC/2013/CR-145/TC-3 26.06.2013	5114
6	Mr. Ramesh Mahadevrao Rajurkar	95,96	2.92	Approved	DEIAA/2018/Yavatmal/EC/ dt 17/09/2018	17032
7	Mr. Tejnarayan Biharilal Chaudhari	90/2	2.40	Approved	DEIAA/2018/Yavatmal/EC/ dt 17/09/2018	13267

8	Mr. Upendra Dilipkumar Gupta	292/1B, 292/1K Part	1.64	Approved	DEAC 18.08.2017	10157
9	M/s Vidarbha Projects Pvt. Ltd.	283	2.85	Approved	DEIAA/2018/Yavatmal/EC/ dt 17/09/2018	17751
10	M/s Sudha Stone Crusher Through Mrs. Sudha Dharamprakash Parashar	156/2	2.12	Approved	DEIAA/2018/Yavatmal/EC/698 dt 01/11/2018	12594
11	Mr. Ramesh Badrinarayan Mundada	289 Part	2.00	Approved	SEAC/2013/CR-127/TC-3 18.05.2013, DEIAA/2018/Yavatmal/EC/ dt 17/09/2018	14842
12	Mr. Rajesh Nandlal Biyani	87	3.27	Approved	SEAC/2013/CR-127/TC-3 18.05.2013	14377
13	Mr. Rajesh Nandlal Biyani	70	2.02	Approved	3rd DEAC 03.12.206	15982
14	Mr. Kamaruddin Badruddin Khan	42/2	2.02	Approved	SEAC/2013/CR-127/TC-3 18.05.2013, DEIAA/2018/Yavatmal/EC/ dt 17/09/2018	7488
15	Mr. Pankaj I. Agrawal	44/3	1.46	Approved	1st DEIAA 30.08.2016	4780
16	Reva Minerals Partner Vitthal Yenurkar	43/2 P	2.19	Approved	SEAC/2014/CR-342/TC-2 12.05.2015	1361
17	Mr. Subhash Tanaji Vairagade	44/4	2.92	Approved	DEIAA/2018/Yavatmal/EC/698 dt 01/11/2018	1500
18	Mr. Rajesh Nandlal Biyani	160	4.21	Approved	19-05-2024	30299
19	Mr. Gunwant Keshavrao Masulkar	101/2	2.27	Approved	SEAC/2013/CR-127/TC-3 18.05.2013	4369
20	Mr. Rajesh Nandlal Biyani	156/1	1.62	Approved	DEAC 10.01.2018	14520
21	Mr. Bhaskar Keshavrao Masular	101/1	2	Approved	SEAC/2013/CR-127/TC-3 18.05.2013 ,DEIAA/2018/Yavatmal/EC/698 dt 01/11/2018	4993
22	Ramnesh Mahadevrao Rajurkar	92,93,94,97	4.98	Approved	SEAC/2014/CR-342/TC-2 12.05.2015	9800
23	Pravin Madhukar Umbarkar	290	1.74	Approved	SEAC/2013/CR-145/TC-3 26.06.2013	1356
24	Sudha stone Cr./Sudha Parashar	72	2.02	Approved	SEAC/2013/CR-145/TC-3 26.06.2013	7800
25	Mr. Rajesh Nandlal Biyani	88/1,88/2	4.00	Approved	SEAC/2013/CR-145/TC-3 26.06.2013	7488
	Total		62.3			194099

Abandoned Quarry

Sr. No.	Name of Project Proponent	Gut No.	Area in Ha	Reference of Prior EC
1	Shaminkhan Sadruddin Khan	27	1.21	Closed Since 2011
2	Quarries on Government Land (17 Nos.)	75	33.94	Closed as per GR dated 12.01.2018
3	Quarries on Government Land (3 N0s.)	69	7.47	Closed as per GR dated 12.01.2018
4	Mr. Tejonarayan Chaudhary	90/1	1.73	SEAC/2013/CR-127/TC-3 18.05.2013, Closed Since March 2019
	Total		44.35	

Proposed Quarry

Sr. No.	Name of Project Proponent	Gut No.	Area in Ha	Approval of Mining Plan reference	Proposed Production Per Year in Brass
1	Mr. Tejnarayan Biharilal Chaudhari	98	3.45	Approved	25292
2	Mr. Bhaskar Keshavrao Masular	41/2अ	1.09	Approved	22152

3	M/s Balaji Associates Through Mr. Ramesh Badrinarayan Mundada	292/2/1, 292/2	3.64	Approved	25262
4	Mr. Rajesh Nandlalji Biyani	275/1	3.12	Approved	25836
5	Mr. Rajesh Nandlalji Biyani	155	3.22	Approved	22201
6	Mr. Pankaj Indrasenji Agrawal	45/3,45/4	3.24	Approved	26811
7	Mr. Kamaruddin Badruddin Khan	45/1,45/2	3.24	Approved	27371
8	Mr. Gunwant Keshavrao Masulkar	41/1	2.81	Approved	7921
9	M/S Vidarbha Project Ltd.	282	2.25	Approved	18381
10	M/s Trimurti Metals Through Manorama Indersen Singh	159	3.86	Approved	19740
11	Mrs. Pushpa Bhaurao Kawde	39,41/2ब	2.69	Approved	21486
12	M/s Trimurti Metals Through Manorama Indersen Singh	281	2.25	Approved	15780
13	Sudha Stone Crusher thru Mrs. Sudha D. Parashar	154,155/2	2.74	Approved	16780
	Total		37.6		275013

Details of Stone Quarry Cluster

	Parameters	***Details***	***Observation***
1	**TAILS OF STONE QUARRY CLUSTER**		
a.	Name of Stone quarry Cluster	Mohada Stone Quarry Cluster	
b.	Name of the Mineral bearing area	Mohada Stone Quarry Cluster bearing Mineral “Basalt”	
c.	Particulars of adjacent blocks: North, South, East, West	rth Side of quarry cluster Village Welabai / ıth Side of quarry cluster Nimbala Kh.	
d.	Topo sheet No with latitude and longitude	**(Bounding Co-ordinates)**	
	Topo sheet No	56 I / 13	
	Latitudes (N):	$19^0$52’24.44”N to $19^0$53’49.84” N	
	Longitude (E):	$78^0$56’58.49”E to $78^0$58’13.45” E	
e.	Location of the CLuster District / State	Mohada Taluka Wani, District – Yavatmal, State - Maharashtra	
f.	Type of the Project (Operating / under Implementation)	Quarries running 25 Nos. , area 62.3ha. Quarries abandoned 22 Nos., area 44.35 ha. Quarries proposed 13 Nos., area 37.6ha. Total Cluster Area 99.9 Ha	
2	**DETAILS OF THE PRESENT PROPOSAL**		
a.	**BASE DATE OF MINING PLAN**	February, 2021.	
b.	**Scope of the mining plan**	As per S.O. 2296 dated 01.07.2016 and ToR Sprcific condition no 11, Regional Mining Plan including list of existing operational quarries with their areas and production potential along with status of EC, list of existing quarries operational under temporary permit, list of old/abandoned/closed mines along with status of mine closure as per approved mining plan or guidelines, list of proposed quarries included in the District Survey Report along with their area and mining potential etc. required to prepare.	
3	**ALLOTTEE COMPANY DETAILS**		
a.	Name the Authority preparing Regional Mining Plan	Mohada Stone Quarry Association through its president/secretary and members	

<table>
<tr><th></th><th colspan="2">Parameters</th><th>Details</th><th>Observation</th></tr>
<tr><td>b.</td><td colspan="2">Status of the Applicant</td><td>Association of quarry owners</td><td></td></tr>
<tr><td>c.</td><td colspan="2">Details of Terms of Reference</td><td>SEAC meeting 169 dated 10.10.2019,173 dated 3/12/2019
SEIAA meeting 183 dated 12.12.2019,184 dated 31/12/2019
ToR Letter SIA/MH/MIN/46059/20 19 dated 24.12.2020</td><td></td></tr>
<tr><td>d.</td><td colspan="2">Name and address of the applicant</td><td>Mohada Stone Quarry Association through its president/secretary and members
At Mohada Taluka Wani Dist. Yavatamal.</td><td></td></tr>
<tr><td>e.</td><td colspan="2">Relationship between the applicant and Association</td><td>Applicants are members of Association and registered as quarries with District Mining Office, Yavatmal</td><td></td></tr>
<tr><td>f.</td><td colspan="2">Name and address of RQP with registration No</td><td>Shri A.P. Saraf ,RQP, Nagpur
Registration no. RQP/NGP/467/2013A</td><td></td></tr>
<tr><td>4</td><td colspan="3">Details of the Previous Approval of Mining plan</td><td></td></tr>
<tr><td>a.</td><td></td><td>Date of Approval</td><td>Not Applicable</td><td></td></tr>
<tr><td>b.</td><td></td><td>Conditions if any</td><td><u>Condition</u>
i) SEIAA, Maharashtra vide ToR SIA/MH/MIN/46059/ 20 19 dated 24.02.2020 asked to prepare Regional Mining Plan for Mohada Stone Quarry Cluster as per MoEFCC notification SO 2296 dated 01.07.2016, Specific Condition No.11
<u>Compliance</u> –
Being prepared covering all activities proposed in cluster area with limiting production from the Mohada Stone Quarry Cluster.</td><td></td></tr>
<tr><td>c.</td><td></td><td>Scheduled year of start of production</td><td>2021 and in continuation of activities granted lease and prior environmental clearance.</td><td></td></tr>
<tr><td>d.</td><td></td><td>Proposed year of achieving the targeted production</td><td>2021</td><td></td></tr>
<tr><td>e.</td><td></td><td>Date of actual commencement of mining operations, if operations already started</td><td>2021 and in continuation of activities granted lease and prior environmental clearance.</td><td></td></tr>
<tr><td>f.</td><td></td><td>Likely date of mining operations, if operations not yet started & reasons for non-commencement of operations</td><td>Not applicable</td><td></td></tr>
<tr><td>g.</td><td></td><td>Planned production and actual levels achieved in last 3 years</td><td>Calendar Year
<table><tr><th></th><th></th><th>Stone in Brass</th></tr><tr><td>Y-1</td><td>2017-18</td><td>150000</td></tr><tr><td>Y-2</td><td>2118-19</td><td>170000</td></tr><tr><td>Y-3</td><td>2019-20</td><td>190000</td></tr></table></td><td></td></tr>
<tr><td>h.</td><td></td><td>Reasons for differ-ence between the planned and actual production levels</td><td>Not Applicable being preparation of Regional Mining Plan for first time for cluster</td><td></td></tr>
</table>

5	**Details of Mining Plans approved and proposed to approve**				
			Previous Mining Plan	**Current Mining Plan**	
a.		Lease area "Ha"	62.3	99.9	
b.		Project Area "Ha"	62.3	99.9	
c.		Life of the Project "Yrs"	18 Yrs	18 Yrs	
d.		Minimum and Maximum Depth of working "m"	Minimum Proposed Depth 18 m	Maximum Proposed Depth 18m	
e.		Geological Contageous area for Basalt in "Ha"	62.3	99.9	
f.		Production Target "Brass"	469112		
g.		Seams not considered for Mining with Reasons	No such seam		
h.		Geological Reserve "Million cum"	11.214	17.99	
i.		Blocked /Excavated Reserve "Million cum"	2.2428	3.6	
j.		Minable Reserve "Million cum"	8.9712	14.39	
k.		Extractable Reserves "Million cum""	8.9712	14.39	
l.		% of Extraction/recovery	**80%**	80%	
m.		Reserve Depleted (till the base date Mar. 2021) "Million cum"	Not applicable		
o.		Balance Extractable reserve "Million cum"	Not applicable		
p.		Grade	Building Grade	Building Grade	
q.		OB in MM^3	Not Applicable being Minor Mineral	Not Applicable being Minor Mineral	
r.		Stripping Ratio in %	90%		
s.		Mining Technology	Opencast with drilling followed & Blasting		
t.		Any Beneficiation envisaged	Not Required, However sizing by crushing is proposed		
u.		Handling of Rejects(OB)	Not applicable		
v.		Land use pattern '' Ha''	**Regional Mining Plan for Cluster**		
1		Excavation Area	99.99		
2		Top soil dump	Nil Being Minor Mineral as Stone is outcropped		
4		External Dump	Not Applicable		
5		Safety Zone	7.5 meter peripheral area per quarry		
6		Other uses	Not Applicable		
7		Infrastructure	Offices and amenities proposed per quarry, No Magazine is proposed		
8		Green Belt	Total Green Belt over 10 Ha around safety area of each quarry, 2.5 Ha area covering roads and village boundaries are proposed		
9		Roads	Haul Roads are already developed by mine association. No new road is proposed.		
10		Undisturbed Area	10 Ha Safety area		

6	**END USE OF STONE METAL**			
a.	End Use of Stone metal	Saleable to builders, road makers and other infrastructural requirement		
c.	Percentage of end use requirement to be met from this cluster		100%	
e.	Proposed Use of Rejects		100% Saleable	
d.	Mode of Transport		By Road	
7	**EXPLORATION AND GEOLOGY**			
a.	Geological Cluster Area "Ha"		99.9 Ha	

b.	Status of Exploration of the Cluster area for Basalt		Not applicable being Basalt. Calculated depth based on existing pits	
c.	Area covered by 'detailed' exploration within the block (sq.km)		Not applicable	
d.	Whether entire lease area has been covered by ' detailed ' exploration		Not applicable	
e.	No of boreholes drilled within the Basalt cluster		Not applicable	
f.	Whether any further exploration /study is required or suggested and time frame in which it is to be completed		Not applicable being Basalt s minor mineral	
g.	Overall borehole density within the block (no./ sq km) approx		Not applicable	
h.	No of Seams available as per GR		Not applicable)	
i.	Seams not considered for Mining with Reasons		Not applicable	
m.	Gross Geological Reserve of the Cluster 'Million cum"		17.99	
n.	Net Geological Reserve of the Cluster 'Million cum"		14.39	
o.	Minable Reserve of the Cluster 'Million cum"		14.39	
p.	Blocked Reserved "Million cum"		3.6	
q.	Corresponding extractable reserve of the Cluster "Million cum"		14.39	
r.	Percentage of extraction		80%	
t.	Balance Reserve in "Million cum"(As on Base date)		14.39	
8	**MINING**			
a.	Existing method of mining if the mine is under operation	There are 25Nos Quarries covering 62.3 Ha area are under operations 13 Nos. quarries covering 37.6 Ha area are proposed 22 Nos covering 44.35 Ha area are abandoned 62.07 Ha : future area to be incorporated As of base date of preparation of Regional Mining Plan March 2021		
b.	Proposed method of mining with justification on suitability of method of mining	Proposed methods of mining are also same i.e. Opencast method by drilling followed by Blasting		
c.	Cluster Basalt production capacity proposed "Mtpa	469112 Brass/Year		
e.	Calendar year from which the production will start	25Nos Quarries covering 62.3 Ha area are under operations 13 Nos. quarries covering 37.6 Ha area are proposed 22 Nos covering 44.35 Ha area are abandoned 62.07 Ha : future area to be incorporated As of base date of preparation of Regional Mining Plan March 2021 Proposed quarries will start operation since September 2021		
f.	Year of Achieving rated production	Immediate After September 2021		
i.	**Peak / Rated Capacity**			
	- By opencast:		469112 Brass/Year	-
	- Overall		469112 Brass/Year	
j.	**Life of the mine :**			
	- By opencast:		18Years	
	- Overall		18Years	
k.	Whether the proposed external OB dump site is Basalt bearing		No	
m.	Whether the mining operations to be carried out through quarry owners or outsourcing or thru association		Solely by individual quarry owners only	
n.	Operations that are proposed to be outsourced		Blasting and Drilling	

o.	Proposed configuration of HEMM for OC (Basalt) & Major Equipment for UG.	**For OB Removal** : Excavators **For Basalt : Excavators, Drills** **For common use**: Excavators ,tippers, trollies	
q.	Results of any investigation carried out for scientific mining, conservation of minerals and protection of environment; future proposals.	Environment Monitoring will be done as per approved EIA / EMP	
9	**IMPORTANT SAFETY ASPECTS** – Major Risks and uncertainties to the project viz. Proximity to river, adjacent working, geo-mining disturbances, slope stability and remedial measures suggested. It should also include proposed overall slope of the quarry and OB dump, dump height, strata control, fire and spontaneous heating, gas monitoring , disaster management, danger from in rush of water etc.	There are no major river, Nala, village or forest, ESA/ESZ nearby within safety limit of 200m as per MMMEDR 2013. No Dumps are proposed. Mineral Storage will be temporary in nature and sold on daily basis.	
10	**STATUS OF LEASE**		
a.	Status of Lease	Not Applicable for Regional Mining Plan.	
b.	Existing Lease Area "Ha"	62.3 Ha	
c.	Period for which Mining Lease has been granted / is to be renewed / is to be applied for.	As per provisions of MMMEDR 2013. No provision of mining lease for cluster. However individual leases will be executed as per provisions of MMMEDR 2013.	
d.	Date of expiry of earlier Mining Lease, if any	Not applicable being Regional Mining Plan	
f.	Lease Area (applied / required) as per the Mining Plan under consideration (Ha)	25Nos Quarries covering 62.3 Ha area are under operations 13 Nos. quarries covering 37.6 Ha area are proposed 22 Nos covering 44.35 Ha area are abandoned 62.07 Ha : future area to be incorporated As of base date of preparation of Regional Mining Plan March 2021 Proposed quarries will start operation since September 2021	
g.	Whether the applied lease area falls within the allotted Cluster	This is the Regional Mining Plan for Cluster of Minor Mineral Leases	
j.	**Details of outside area:**		
	Whether forms part of any other Mineral block	No, No Outside area is required	
	Whether it contains any other mineral content	No, No Outside area is required	
k.	**Whether some part(s) of the Cluster has not been applied for mining lease.**	Yes	
	- Total area in Ha of such part(s).	62.07 Ha area is proposed for future provision as per abandonment cycle to maintain peak cluster production.	
	- Total reserves in such part(s). (Mt)	11.17 Million Tonnes	
	- Brief reasoning for leaving such part(s)	Future Probable Leases for Minor Mineral	

Compliances to EIA notification 2006 amendment vide S.O. 2296 dated 1st July 2016 for preparation of Regional Mining Plan for cluster of minor mineral quarries exceeding area 25 ha in cluster.

Sr. No.	Observation/Legal/Statutory Requirement	Compliance
1.	Requirement of Regional Mining Plan	As per MoEFCC S.O. 2296 dated 1st July 2016 page no.2 point no. b(ii) {C}
2.	Statutory agency demanded Regional Mining Plan	SEIAA/SEAC, Maharashtra
3.	Approval Authority	Director, Directorate of Geology and Mining, Govt. of Maharashtra, Nagpur.
4.	Name of Environmental Consultant	M/s Enviro Techno Consult Private Limited, Nagpur
5.	Name of RQP/TQP	Mr. A. P. Saraf
6.	Regd. No of RQP	RQP/NGP/467/2013A valid till 2023
7.	Name of the Mining Plan	Mohada Stone Quarry Cluster, Taluka Wani Dist. Yavatmal.
8.	Name of Project Proponent responsible for implementation of Regional Mining Plan	Stone Quarry Association of Mohada thru its President/Secretary and Members
9.	Jurisdiction of Stone Quarry Cluster	District Collector, Yavatmal Thru District Mining Officer, Yavatmal.

EIA monitoring:

- Monitoring was conducted as per standard terms of reference for the mining industry and those mentioned in the TOR issued by SEIAA within area within 10 km radius from the lease was examined. Baseline ambient air quality, information on hydrogeology and water quality, land use etc. was collected as per MOEF&CC criteria.
- Probable impacting activities during proposed mining activity have been identified. Particulate matter emissions were predicted by emission factor approach for drilling, blasting, transportation activities etc.
- Impacts on water quality quantity impacts were considered. Impact on land use, socio economic status during project activities have been considered.

Base line environmental quality:

- Air : There are no industrial gaseous -emission sources. Predominant wind directions in the order are NE (17%),ENE, S, & SSW (12 %). Average wind speed is 0.9 m/sec. Calm conditions are 10.4 per cent.
- Atmospheric stability class at Mohada is "moderately unstable to slightly unstable" during the day. Area has rural setting.
- Concentrations of criteria pollutants were found to be well below National air quality criteria viz. PM_{10} ,$PM_{2.5}$, SO_2 and NOx which are respectively 100,60,80 and 80 $\mu g/m^3$.
- Predominant emissions during open cast mining project would be generate particulate matter likely during drilling, blasting, loading/unloading and transportation activities .
- Noise: Ld, Ln &Ldn values were typical of rural background

Sampling points								
Station	N1	N2	N3	N4	N5	N6	N7	N8
Villlage Name	Mohada village	Vedawai village	Dorli village	Krishnpur village	Tundra village	Purad village	Pimpri village	Saiddbad village
Range	36-54	33-57	32-55	30-52	31-48	30-58	33-52	28-53
Ld	50.7	52	49	47.3	45	51	46.7	46.3
Ln	41.1	40.3	36.6	33.9	34.1	34.2	38.8	34.8
Ldn	50.8	51.5	48.3	46.3	44.7	49.5	47.6	45.8

Sources of noise would be during drilling and blasting. Three holes will be drilled in a day and there would be three blasts per week.

Water: There are no surface sources viz. rivers/ lake in the lease except abandoned pits occupying 55,205.05 m^2. Ground water from basalt deposit areas is known to contain higher fluoride. Ground water in such areas is alkaline. There is isomorphic replacement of fluoride ions in geology by hydroxyl ions. Fluoride was more in the tube well/hand pump water samples. Fluoride has to be removed from water if this water is to be used for drinking. Alum can be used for removing fluoride.

Surface runoffs during monsoon from lease will enter abandoned pits. Some water will evaporate and some can slowly percolate down.

Abandoned mine pit water quality meets the criteria A-II for surface water source viz. public water supply with approved treatment equivalent to coagulation, sedimentation & disinfection (Govt. of Maharashtra resolution no 2000/326/P.K .22/3 dated 15-07-2000). It would need disinfection if it is to be used for consumption. Suspended solids, if any will settle down during long detention in the pits.

Ground water potential : Wani region:

Net G.W. availability	10470 ha. m
Draft for irrigation	1151.7 ha. m
Domestic	210.5 ha. m
Gross draft	940.5 ha. m
Provision for 2025	1926 ha. m
Water availability for irrigation	4755 ha. m
G.W. development	(1926/10470)x 100= 18.40%
Category	safe

Ground water recharge rate by pit- water was calculated using relation area x annual rainfall x coefficient 0.3 for rock. It is likely to be 26997.3 m^3 /year considering total area of 99.99 ha and rainfall of 901mm. Water table is at 25 m below ground level near the lease. Ground water table will not be intercepted.

Dewatering of pits during mining will not be required. Sanitary wastewater will be generated. Toilet facility will be provided with septic tank and soak pit.

Soil:

Soil cover over the lease is scanty. Soils of area beyond lease are part of Wani series of soils. Ground water table is more than 25 m. Soils are moderately well drained and have slow permeability. Parent material is basalt /weathered basalt. Common use is for cotton and vegetation is neem, palas, mahua etc. Yield of cotton as per present farming practice by most land owners is one to two quintals per ha.

Biological :

Nearest sanctuary Tipeshwar is at 38 km to E and Tadoba is to NE at 36 km West of the lease. Mohada Stone Quarry Cluster is not a part of any forest. There is no tree cover over the lease. There is no wild life within 10 km. Seasonal shrubs occur over the lease during monsoon and dry out by month. Only thin soil cover is seen. Further, extraction of stone will be from a pit. Only domesticated animals are seen.

Waste :

During mining no waste will be generated from mining operations. Beneficiation is not planned.

Rejects are saleable being minor mineral. Soil will not be generated.

Blasting details:

Permission for blasting from DGMS has to be sought from DGMS before active mining has commenced. Mining cannot start and blasting cannot be carried without permission from DGMS.

There would be three blasts per week. Blasting will be in the pits below ground level.

Peak particle velocity (PPV) will be calculated by U.S. Bureau of Mines formula for PPV

$V= k\{(D/Q)^{1/3}\}^{-\beta}$, where Q is charge/delay(kg) , D is distance at which vibration is measured, V is PPV in m/sec, k is coefficient depending on rock mass, β is slope of the best line of fit of V vs. $(D/Q)^{1/3}$. It is estimated that PPV will be 33.11 m/sec at 20 m for charge of 13.75 kg proposed in the mining plan. Therefore, any structure like blaster's shed within lease will be unaffected. Also village Mohada at 0.6 km will not be affected.

Impacts

Land: There is no soil cover or agriculture. There are pits and dumps covering 32.84 and nil respectively. There is no mining or agriculture over the land. Hence there would not be any adverse impact on topography/drainage or on land use or agriculture. Appearance will continue to be as it is. Geological records on these basalt deposits state that considerable stone/basalt quantity would be present in the pit as per approved mining plan and district resource plan. Proved mineable reserves would not have been mined till the conceptual period of mine. Hence backfilling or reclamation of the mined out area is not proposed. Thus, mined out pit will be a "rainwater" storage structure till mining starts again. It is likely that recharge ground water aquifer takes place. Also reservoir water can be used for miscellaneous purposes like plantation, fish culture etc.

Already some stone quarries are working and some are permanently closed down.

They have not caused any adverse impact on prevailing mine lease environment. A garland drain will be provided to collect runoff during monsoon.

Land use in lease at the end of mining plan period

Area	Proposed Land Use after 5 Years in Ha .
Area under pits	55.7
Area under dumps	00
Undisturbed land	25.12
Area under Roads	4.1
Area under Plantation	14.98
Area under Storage	00
Area under Office, etc.	00

Air :

Ground level concentrations as per ISCST3 model for dispersion of air pollutants for lease area source show that there would not be any adverse impact on ambient air quality .

Water :

There would not be any impact on aquatic environment including hydrology, drainage or quality because a) there is no drain in the lease, b) ground water table will not be intercepted, c) dewatering of pits will not be required and d) Basalt pit water is suitable for irrigation. Regular monitoring for fluoride content is required.

Noise:

Sources during mine operation would be drilling and blasting. Drillers would be exposed to about 75-80 dB(A). Blasting noise will be short lived. Levels are about 110 -120 dB(A) near the blast. In this case blasting would be below ground level during day time. Pit-walls would absorb the noise waves. Hence, there would not be any adverse impact. Blasters would be given personal protection equipment. There are no structures over the lease

Biological:

There is no sensitive fauna and flora or endangered species in 10 km radius of the lease. Lease is not a part of any forest area. This area is not known for its biodiversity. Project proponent will carry out plantation in scientific way. It will choose local species in consultation with local forest department. Secondly State Fisheries department will be requested to carry out fish culture in abandoned mine pits.

Socioeconomic & health: There will not be any displacement on account of this project because land is in possession of existing and proposed quarry owners. It is proposed to a) prefer employment to deserving local persons in mining related trades like loading/unloading of ore, its gradation, drilling etc. , b) train residents of Mohada for harvesting rain water, and sanitation practices etc., c) training in fish culture also is one activity which will be useful to local population.

Summary of measures to control of emissions :

DTH Drill Hole Dia.	32 mm.
Depth of Hole	1.5 m.
Spacing of Hole	1 m.
Burden	1.2 m.
Drill Pattern	Linear
Size of Cartridge	200 mm.
Weight of Cartridge	120 gm.
Quantity of Explosive Hole	240 gm.
Powder Factor	6.00
Type of Explosive	Slurry class 2, Nitrate Mixture, Class-6, div-2
Fuse	Electric detonators –class -6 div.3
No. of Holes to be Blasted per Day	200 -250 holes

Activity	Mitigation measures
Hole drilling	Wet drilling; Ø-32mm,Depth-1.5m in Basalt, 2.5 in burden at 1m spacing
Blasting -Small Ø holes in weathered LS	as per D.G.M.S norms Powder factor-6
O.B. generation no top soil	Nil being minor mineral and very scanty soil will be utilized for peripheral plantation.
Transportation	Will be in covered -tipper trucks (75 nos.) over macadamized roads.
Plantation	7500 in cluster for next 5 years and in 7.5m safety zone @ 1500trees /ha of safety area
Dewatering of pits	Ground water table will not be intercepted thus dewatering of pits will not be required. Rain water in pits will be used for dust control.

Monitoring schedule :

Env. segment	Parameter	Frequency
Water quality	IS 10500	Monthly
G.W. table	Fluctuation in monsoon & post monsoon period	May & October
AAQ	Particulate matter PM_{10} & $PM_{2.5}$	Monthly
Noise	Equi. noise levels	During drilling & blasting
Vibration	before starting mining	During blasting each month
Health	Pulmonary function, eye sight, audiometry,B.P., etc.	Annual record
Plantation	Survival	Annual survival rate
Data analyses	Efficiency of mitigation measures	Monthly

Plantation :

Saplings will be planted in 7.5-10 m wide safety zone and along the transport roads. One cubic metre pits will be made along the border and will be filled with local soils from lease. Refuse or garbage will be added as per availability. Growth in the first year will be observed. Species will be chosen from the following and depending on availability.

SI.No	Name of the plant (Botanical)	Habit
1	Neem	tree
2	Peepal	tree
3	Vad	tree

Safety measures:

Blasting : Shots will be muffled to avoid flying fragments beyond 10 m. Adequate warning by siren to reach 500 m. Protective shelters for workers. Use of PPE will be compulsory.

Corporate Social Responsibility:
A few are mentioned below:

- Supply of fluoride –free drinking water-

Fluoride removal plants based on electrochemical method will be installed on fluoride infested hand pumps in nearby villages within 5 km radius. Approximate cost is Rs.50,000/- per unit.

- Mohada cluster will organize awareness camp amongst villagers to educate people on i) health -impact of excessive fluoride in water, ii) need for sound sanitation practice particularly with regard to water quality and sullage/gray water management,

CSR - funds

Activity	Anticipated funds/year Rs
Supply of fluoride free water	Treatment plant -Rs 50,000-75,000/-/unit for Mohada village
Awareness camps	Rs. 50,000/-
Training for fish culture in pit water	Rs. 25,000/-

N.B. Costs are indicative

Individual CER is as per policy defined in DSR of Yavatmal district.

Economics of project

Stone at Mohada is of good quality and approved by various agencies. It is the nearest and single source to cater stone requirement for Chandrapur and Gadchiroli district along witn three tahsils of Yavatmal district. Land is barren. Therefore mining will be in the interest of State revenue and of the people around. Direct and indirect employment to locals is assured.

Lease is an unused land with no tree cover. There are abandoned pits. Water in pits is used. Therefore there would not any damage to environmental quality.

Initiation of mining by Mohada cluster will improve revenue to the state without deterioration in environmental quality. On the contrary population in nearby villages will become aware of importance of potable water quality and sanitation.

Openings for indirect employment to locals in plantation, fish culture are possible. Additional water supply source in form of pit-water, recharge of aquifer is likely.