PRE-FEASIBILITY REPORT

FOR

SANDSTONE MINES

NEAR VILLAGE – RAWARDA, TEHSIL: BEGUN,

DISTRICT: CHITTORGARH, RAJASTHAN

CATEGORY – 'A'

MINING LEASE AREA :4.0671 HA.

PURPOSE PRODUCTION CAPACITY : 38432.6 MTPA (SANDSTONE)

M.L No. – 55/2012

PROPONENT

M/s JOGNIYA STONE

C/o - SH. SUGAN LAL, S/o- MANGILAL DHAKAD

N/V – KALYANPURA, TEHSIL- BIJOLIYA

DIST- BHILWARA (RAJASTHAN)

EIA CONSULTANT

OVERSEAS MIN-TECH CONSULTANTS

ISO 9001:2008 Certified & NABET Accredited EIA Consultants
501, 5th Floor, Apex Tower, Tonk Road, Jaipur-302015
Telefax: +91-141-2744509, Mobile: +91-9460221084
E-mail: arun.omtc@gmail.com, Website: www.overseasmintech.com

INDEX

LIST OF TABLES

LIST OF FIGURES

1 EXECUTIVE SUMMARY

The Proposed Rawarda Sandstone (Minor Mineral) Mine Project is situated near village - Rawarda, Tehsil - Begun, District - Chittorgarh, Rajasthan over an area of 4.0671 ha in Khasra No. – 1213/1041 Rajasthan over an area of 4.0671 ha. The LOI was granted in favor of M/S Jogniya Stone C/o Shri Sugan Lal with letter no. S.No/ME/Chittor/CC-Begun/55/2012/389 on dated 24.12.2013.

The Mining Plan with Progressive Mine Closure Plan has been approved by Superintending Mining Engineer, Bhilwara, Department of Mines and Geology, Rajasthan, vide letter No. SME/BHLCircle/CC-II/Chittor/F-/Q.L.55/12/209 dated 20.02.2014.

The mining will be carried out by open-cast semi-mechanized method as per the approved Mining Scheme only. The entire mining area is Govt. Waste Land with no forest land involved. As per MCR 1960 & MCDR 1988, the proposed production is 38432.6MTPA. The estimated cost of project will be Rs. 1.45 crore.

Sandstone is one of the most sought-out building materials for the construction purposes. Since Sandstone has hard texture and durability. It is used for construction of walls, decorative stone, pavements of roads foundation building etc. It is widely used now days because of its hardness and durability. It is also used as decorative stone. This will also generate plenty of employment opportunity for local people. Socio - economic level of the area will also improve and there will be the opportunity for education, health & sanitation, transport and other development. The living standards of the area will also be up-liftmen to the positive side.

Table 1-1: Salient Features of the project site

S.No.	Particulars	Details
A.	**Nature of the Project**	Proposed Sandstone Mining Project, ML No. 55/2012
B.	**Size of the Project**	
1.	Mine Area	4.0671Ha
2.	Proposed Production capacity	38432.6MTPA
C	**Location Details**	
1.	Village	Rawarda
2.	Tehsil	Begun
3.	District	Chittorgarh
4.	State	Rajasthan

<table>
<tr><td>5.</td><td>Latitude & Longitude</td><td>
<table>
<tr><th>Pillar</th><th>Latitude (N)</th><th>Longitude (E)</th></tr>
<tr><td>A</td><td>25⁰02'55.37" N</td><td>75⁰11'08.90" E</td></tr>
<tr><td>B</td><td>25⁰03'02.87" N</td><td>75⁰11'05.88" E</td></tr>
<tr><td>C</td><td>25⁰03'02.98" N</td><td>75⁰11'01.20" E</td></tr>
<tr><td>D</td><td>25⁰03'09.47" N</td><td>75⁰11'01.20" E</td></tr>
<tr><td>E</td><td>25⁰03'09.39" N</td><td>75⁰11'04.63" E</td></tr>
<tr><td>F</td><td>25⁰03'02.98" N</td><td>75⁰11'06.51" E</td></tr>
<tr><td>G</td><td>25⁰02'57.83" N</td><td>75⁰11'11.44" E</td></tr>
<tr><td>H</td><td>25⁰02'55.31" N</td><td>75⁰11'12.58" E</td></tr>
</table>
</td></tr>
<tr><td>6.</td><td>Toposheet No.</td><td>45 O/4, 45 O/8, 45 P/1 & 45 P/5</td></tr>
<tr><td>D</td><td colspan="2">Environmental Settings of the Area</td></tr>
<tr><td>1.</td><td>Ecological Sensitive Areas</td><td>Eight protected forest/Reserved are present within the 15 Km of the mining lease.
<table>
<tr><th>S.N</th><th>Name (R.F P.F)</th><th>Distance</th><th>Directions</th></tr>
<tr><td>1.</td><td>Karondia PF</td><td>14.46 Km</td><td>South West</td></tr>
<tr><td>2.</td><td>Umar North PF</td><td>11.8 Km</td><td>South West</td></tr>
<tr><td>3.</td><td>Atuwa North PF</td><td>12.0 Km</td><td>South East</td></tr>
<tr><td>4.</td><td>PF</td><td>13 Km</td><td>North</td></tr>
<tr><td>5.</td><td>RF</td><td>12.5 Km</td><td>North East</td></tr>
<tr><td>6.</td><td>RF</td><td>1.1 Km</td><td>South</td></tr>
<tr><td>7.</td><td>PF</td><td>3.8 Km</td><td>South West</td></tr>
<tr><td>8.</td><td>RF</td><td>10.2 Km</td><td>North West</td></tr>
</table>
</td></tr>
<tr><td>2.</td><td>River / water body</td><td>Available water bodies and rivers falls within 15 Km radius Buffer zone as follows:
<table>
<tr><th>S.N</th><th>Name</th><th>Distance</th><th>Directions</th></tr>
<tr><td>1.</td><td>Bamni Nadi</td><td>8 Km</td><td>South</td></tr>
<tr><td>2.</td><td>Rojri Nadi</td><td>14 Km</td><td>South East</td></tr>
<tr><td>3.</td><td>Brahmani Nadi</td><td>13 Km</td><td>South East</td></tr>
<tr><td>4.</td><td>Menali Nadi</td><td>14 Km</td><td>North West</td></tr>
<tr><td>5.</td><td>Bharak Nadi</td><td>13 Km</td><td>North West</td></tr>
</table>
</td></tr>
<tr><td>3.</td><td>Nearest Town / City</td><td>Begun– 20Km,SW</td></tr>
<tr><td>4.</td><td>Nearest Railway Station</td><td>The nearest railway station is Mandalgarh which is about 25Km,NW from mine site.</td></tr>
<tr><td>5.</td><td>Nearest Airport</td><td>Maharana Pratap Airport, Udaipur at a distance of around 182 km. in SW</td></tr>
</table>

		direction from Mining Lease area.
6.	State Boundary	No state boundary passes through the project site
7.	Seismic Zone	Zone – II [as per IS 1893 (Part-I): 2002]
D	**Cost Details**	
1.	Total Project Cost	The proposed project cost will be 1.45 crore Capital Cost: Rs. 1 Crore Recurring Cost: Rs. 9 Lac/Annum
E	**Requirements of The Project**	
1.	Proposed Water Requirement	6KLD
2.	Fuel requirement	130 LPD
3.	Man Power Requirement	48(skilled, semi-skilled, unskilled & technical persons)

2 INTRODUCTION OF THE OBJECT/ BACKGROUND INFORMATION

The Proposed Rawarda Sandstone (Minor Mineral) Mine Project is situated near village - Rawarda, Tehsil - Begun, District - Chittorgarh, Rajasthan over an area of 4.0671 ha in Khasra No. – 1213/1041 Rajasthan for an area of 4.0671 ha. The LOI was granted in favor of M/S Jogniya Stone C/o Shri Sugan Lal with letter no. S.No/ME/Chittor/CC-Begun/55/2012/389 on dated 24.12.2013 .

2.1 BRIEF DESCRIPTION OF THE NATURE OF PROJECT

This is a proposed Sandstone mining project. As per EIA Notification dated 14th Sep, 2006 and as amended till date, the project falls under, Category "A". It has been proposed to excavate approximately 38432.6MTPA of Sandstone from M.L. No. 55/2012, by open - cast, semi - mechanized method. The lease area is 4.0671ha. Total mineable reserves are 178444.05MT. The expected life of mine is 5 years. The top soil of 74,250.5m^3 be stacked in the statutory barrier and simultaneously will be used for plantation purposes while mineral reject of 2, 57,232.5 m^3 will be stacked inside the quarry area which will be further used for backfilling. Total waste (top soil & mineral reject) proposed will be 3, 31,483 m^3. The mineral Sandstone will be transported by hired trucks.

At the end of life of mine, the total excavated area will cover 3.1390 ha area out of total 4.0671 ha area. The worked out pit will be partly backfilled (2.7624 ha) & reclaimed. The unfilled part (0.377 ha) of the excavated area will be developed as water reservoir will ultimately help in recharging the ground water level of the surrounding area

The daily water demand will be 6KLD which will be met from the nearby village pond .Only water for drinking purposes i.e. 0.25 KLD will be brought from nearby dug well/PHED. However, rain water stored in the pit during the rainy season will be used for plantation and dust suppression. The depth of water table is 40 m (Pre-Monsoon) to 45 m (Post-Monsoon) below the general ground level. Thus ground water table will not be encountered during working in the mine.

2.2 NEED FOR THE PROJECT & ITS IMPORTANCE TO THE COUNTRY/ REGION

Sandstone is one of the most sought-out building materials for the construction purposes. Since Sandstone has hard texture and durability. It is used for construction of walls, decorative stone, pavements of roads foundation building etc.

About 48 local people will be employed for the proposed mining activity which will create

ample opportunities for employment to local population. By mineral production, the applicant will pay revenue in the form of royalty, dead rent, direct and indirect taxes which will contribute and generate additional revenue to the region, besides this, the project will prove beneficial in terms of socio - economic development.

2.3 DEMAND – SUPPLY GAP

Sandstone is one of the most sought-out building materials for the construction purposes. Since Sandstone has hard texture and durability. It is used for construction of walls, decorative stone, pavements of roads foundation building etc..

2.4 IMPORTS VS. INDIGENOUS PRODUCTION

In the current Sandstone business scenario, import of Sandstone is not envisaged, it is for indigenous use only.

2.5 EXPORT POSSIBILITY

Not applicable as proposed mine is for domestic use.

2.6 DOMESTIC/EXPORT MARKETS

Domestic demand is one of the main reasons for the rapid growth of Sandstone business in India. Thus, domestic market for Sandstone as building material is well established. Sandstone produced from the proposed Sandstone mine will be used to fulfill the domestic demand. No export is proposed at this stage.

2.7 EMPLOYMENT GENERATION (DIRECT AND INDIRECT) DUE TO THE PROJECT

The total number of manpower is required for the mining activity is 51 people. Priority for employment will be given to local workers. Following staff & workers are proposed to be employed:-

Table 2-1: Manpower requirement

S. No.	Particulars	Number(s)
1.	Mines Manager	1
2.	Forman & Mining Mate	1
3.	Watchman	1
4.	Skilled labours	18
5.	Unskilled labours	27
	Total	**48**

3 PROJECT DESCRIPTION

3.1 TYPE OF PROJECT INCLUDING INTERLINKED AND INDEPENDENT PROJECTS

The mining of Sandstone will be carried out by open-cast semi-mechanized method. This will be an independent project. No interlinked project is proposed.

3.2 LOCATION MAP WITH COORDINATES;

The Proposed Sandstone Mining Project, M.L. No. 55/2012 of M/s Jognia Stone is situated Near Village–Rawarda, Tehsil – Begun, District – Chittorgarh (Rajasthan) over an area of 4.0671 ha. in Khasra No. –1213/1041. The project site falls in Survey of India Toposheet No. 45 O/4, 45 O/8, 45 P/1 & 45 P/5.The geographical location with respect to boundary pillars of the proposed mine lease are:-

Table 3-1: Coordinates of Mining Lease

Pillar	Latitude (N)	Longitude (E)
A	$25^0 02' 55.37''$ N	$75^0 11' 08.90''$ E
B	$25^0 03' 02.87''$ N	$75^0 11' 05.88''$ E
C	$25^0 03' 02.98''$ N	$75^0 11' 01.20''$ E
D	$25^0 03' 09.47''$ N	$75^0 11' 01.20''$ E
E	$25^0 03' 09.39''$ N	$75^0 11' 04.63''$ E
F	$25^0 03' 02.98''$ N	$75^0 11' 06.51''$ E
G	$25^0 02' 57.83''$ N	$75^0 11' 11.44''$ E
H	$25^0 02' 55.31''$ N	$75^0 11' 12.58''$ E

The location map is given below:

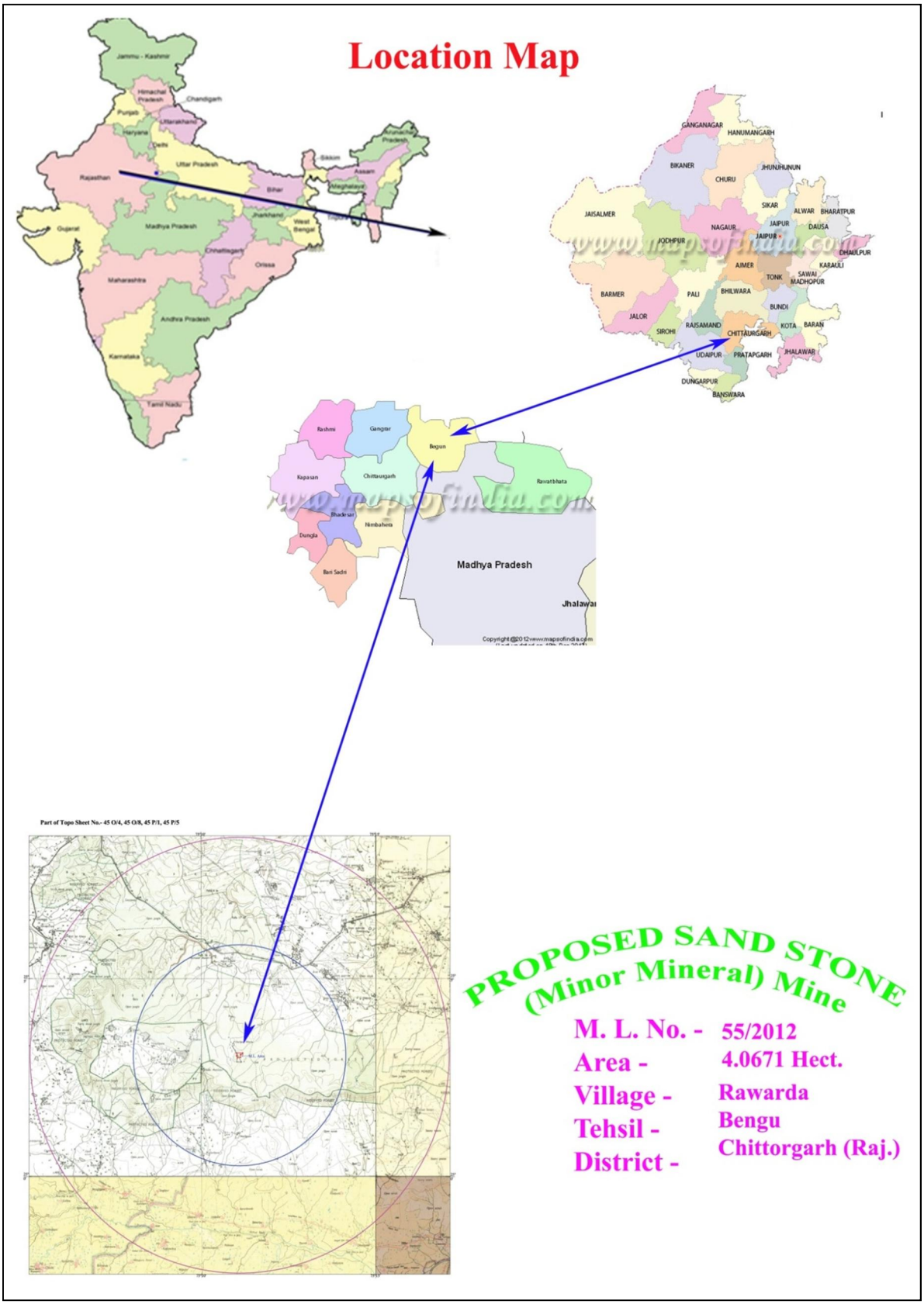


Figure 3-1: Location Map

3.3 DETAILS OF ALTERNATE SITES CONSIDERED

Mining activity is site specific hence no alternative sites examined.

3.4 SIZE OR MAGNITUDE OF OPERATION

Mine area for the proposed Sandstone mine is 4.0671ha and proposed production capacity is 38432.6TPA.

3.4.1 REGIONAL GEOLOGY

The regional Geological settings of Chittorgarh District show a wide variety of rock type belonging to the Bhilwara Supergroup, Vindhyan Supergroup and Deccan Traps. The rock formations of Bhander Group, Kaimur Group, and Ranthambhor group outcropping in different parts of the District are mainly shale's, sandstone, slates, quartzite, conglomerate etc. The regional Geological Sequence of the region as described by Geological Survey of India, Miscellaneous Publication No.30, Part 12, 2nd revised edition is as:

Age	Super group	Group	Lithology
Upper Cretaceous to Palaeocene	-	-	-
Upper Proterozoic	Vindhyan Super group	Bhander Group i) Upper ii) Lower Kaimur Group Khorip Group Lasarawan Group Sand Group	Shales, Sandstone, Conglomerate Porceltanite
Satola Group Great Boundary			
Bhilwara Geological Cycle(>250 m.y.)	Bhilwara Super group	Ranthambhor Quartzite Group	Quartzite, Shale and slates
Upper Cretaceous to Palaeocene	-	-	-
Upper Proterozoic	Vindhyan Super group	Bhander Group i) Upper ii) Lower Kaimur Group Khorip Group Lasarawan Group Sand Group	Shales, Sandstone, Conglomerate Porceltanite

3.4.2 LOCAL GEOLOGY:-

The applied are is covered with soil. Geologically, the rocks of the quarry area belong to Bhander Group of Vindhyan Supergroup. The Sandstone is the major litho unit of the area. The stratigraphic sequence of the litho unit present in the area is as follows:-

Recent &sub recent	-		Alluvium & blown sand
Vindhyan Super Group		Bhander Group	Sandstone, Shale's

3.4.3 MINERAL RESERVES

Table 3-2: MINERAL RESERVES

Reserve	UNFC	Quantity in Tonnes
Proved	111	1,64,717.5 MT
Probable	121	27,453 MT
Possible	122	27,453 MT
Total		**2,19,623.5 MT**

Life of Mine	Mineable reserve/ Average annual production
	1,78,444.05 /38,432.6
	5 Years

3.5 PROJECT DESCRIPTION WITH PROCESS DETAILS

3.5.1 YEARWISE PRODUCTION DETAILS

It is proposed to produce Sandstone for a period of 5 years with a production of 38432.6MTPA as per the Mining Scheme. The details of year wise production for the first five years period are given below:-

Table 3-3: Year wise Production of Sandstone for the five years period

Year	Sandstone (in MT)	Mineral reject (in MT)	Overburden (in MT)	Stripping Ratio
I	30,066	1,43,235	2,11,720.5	1:7.042
II	32,875.5	92,918	1,19,884	1:3.647
III	36,032	1,33,354	1,77,094	1:4.915
IV	40,332.5	1,46,421.5	1,81,008.5	1:4.915
V	52,857	1,78,598	2,05,296	1:3.884

Year	Sandstone (in MT)	Mineral reject (in MT)	Overburden (in MT)	Stripping Ratio
Total	**1,92,163**	**6,94,526.5**	**8,95,003**	

3.5.2 PROPOSED METHOD OF MINING:

The proposed Sandstone Mine shall be developed by semi - mechanized open –cast mining which includes drilling, blasting, loading, transport and dispatch of mineral to end users.

3.5.2.1 OPEN CAST MINING

The mining will be done by open cast semi-mechanized method. In mineral the bench height will be maintained 1m-3 m and the width will be maintained more 3 m. The ultimate depth of the mine workings is estimated to reach up to 11m from the surface level.

3.5.2.2 SALIENT FEATURES OF MINING METHOD

The salient features of proposed mining method are:-

- The height of the bench will be maintained at 1m-3 m.
- The width of the bench will be maintained at more than height.
- The mining will be done from top to bottom.
- Considering the stability of rocks the final slope or say ultimate pit slope is proposed 45° from vertical.
- Haul road will be developed up to point of loading and will not have gradient at 1:16.
- Transportation of the mineral from mine to end users will be done by hired trucks.

3.5.3 EXTENT OF MECHANIZATION

The mining machineries to be used in proposed mining operation are as below:-

Table 3-4: List of Machineries

S. No.	Type	No. of machine	Make	HP/Capacity
1.	Dumper	8	Tata	119HP
2.	Diesel Pump	1	Local	--
3.	Compressor	2	Local	--
4.	Jack Hammer	4	Local	--
5.	Excavator	2	Local	--

3.5.4 CONCEPTUAL MINING PLAN

The Sandstone is occurring throughout the area. The mineable reserves are estimated to be 78,444.95MT. The annual production is proposed to be 38432.6MTPA and the life of the mine is 5 years.

3.5.4.1 LAND USE PATTERN

The land use for mining and allied purposes is given below:-

Table 3-5: LAND: STAGE WISE LAND USE AND RECLAMATION AREA (Ha.)

S. No.	Particulates	Present Land - Use	After 5 th year land- Use	At the end of life of mine land- Use
1.	Top soil	--		--
2.	Excavated area	--	3.1390	3.1390 [Out of total excavated area, 2.7624 ha will be backfilled and remaining 0.377 ha will be converted into water reservoir]
3.	Dumps	--	--	--
4	Minerals Stack Yard	--		--
5.	Sub Grade Stock Yard	--		--
6.	Infrastructure & Road/ kacha way	--	0.008	0.008
7.	Plantation	--	0.9201*	0.9201*
8.	Undisturbed area	4.0671		--
	Total	**4.0671**	**4.0671**	**4.0671**

*Out of total plantation of 1.3421 ha, 0.9201 ha. will be planted in statutory barrier while rest 0.422 ha. plantation will be done on backfilled area.

**Waste dump will removed after the first year once the mining commences further and will be used for backfilling purposes.

Table 3-6: POST MINING LAND USE OF CORE ZONE WITH ENVIRONMENT MANAGEMENT

S. No.	Description	Land Use (In Ha.)				
		Plantation	Water Body	Public Use	Undisturbed	Total
1	Top Soil Dump	--	--	--	--	--
2	External Waste Dump	--	--	--	--	--
3	(a)Excavation (Voids)	--	0.377	--	--	0.377
	(b)Excavation	0.422	--	2.3404	--	2.7624

S. No.	Description	Land Use (In Ha.)				
		Plantation	Water Body	Public Use	Undisturbed	Total
	(backfilled)					
4	Road	--	--	--	--	--
5	Built Up Area	--	--	0.008	--	0.008
6	Township Area	--	--	--	--	--
7	Afforestation	0.9201*	--	--	--	0.9201*
8	Mineral Storage	--	--	--	--	--
9	Undisturbed Area	--	--	--	--	--
Total		1.3421	0.377	--	--	4.0671
*Out of total plantation of 1.3421 ha, 0.9201 ha. will be planted in statutory barrier while rest 0.422 ha. plantation will be done on backfilled area.						

3.5.5 DRILLING

Drilling will be done prior to blasting.

3.5.6 BLASTING

Small blasting with low charge of holes just to loosen the rocks is proposed in upper layers to remove the hard overburden. The blasting shall be done by the authorized contractors on contractual basis. These contractors have their own safety explosive container as well as Explosive License.

Table 3-7 : The Broad blasting parameters will be as under: -

S.NO	Blasting Parameters		
1.	Spacing	:	1m
2.	Burden	:	0.8 m
3.	Length of shot holes	:	1.6 m
4.	Diameter of shot holes	:	32 mm
5.	Stemming	:	30%
6.	Charge per hole ANFO	:	0.64 Kg
7.	Powder Factor	:	4 Tonne/Kg of explosive

TYPE OF EXPLOSIVE TO BE USED

1. Special Gelatin.
2. Ordinary Plain Detonator.
3. Safety Fuse

STORAGE OF EXPLOSIVE

The mining Operation will be for mining of Sandstone so drilling and blasting will be on a limited scale. Therefore, requirement of explosive will be very less and no explosive will be stored at the mine site. Explosive required for blasting will be transported from nearby magazine in an approved explosive van. There is no infrastructure within 50 m radius of lease area. Blasting operation will be done by blaster / mines manager appointed by the lessee.

The controlled blasting will be adopted with all the safety measures as per "MMR 1961" and permission of DGMS.

3.6 RAW MATERIAL REQUIREMENT

No raw material will be required. The final product will be sent to consuming industries based on their demand. The mode of transportation of blocks of Sandstone will be by road. Hired trucks will be used for transportation of Sandstone blocks.

3.7 RESOURCES OPTIMIZATION/ RECYCLING AND REUSE

The Sandstone will be mined in the form of blocks so there will be no recycling and reuse envisaged.

3.8 AVAILABILITY OF WATER& ITS SOURCE, ENERGY /POWER REQUIREMENT AND SOURCE OF WATER:

The daily water demand for the proposed project is 6KLD. It will be procured from the PHED supply source of Village- Rawarda. The detailed breakup of the water requirement is given below.

Table 3-8: Water Demand

S. No.	Particulars	Quantity (KLD)
1.	Domestic Purpose	1.5
2.	Dust Suppression / Water Sprinkling	2.5
3.	Green belt / Plantation	2.0
Total		**6**

Power Supply: There is no electric line passing through the mine area. But the proposed mining and mineralized area is about 1Km away from village Rawardawhere electric line/pole are available.

3.9 QUANTITY OF WASTE TO BE GENERATED

About 74,250.5 cumof overburden and 2, 57,232.5 cum reject will be generated at the end of five years period. This will be in initially dumped in the Q. L. area and later on filled back in the excavated pit. At the conceptual phase no dump will be left and all waste material will be utilized for backfilling.

Table 3-9: QUANTITY OF WASTE TO BE GENERATED

PARTICULARS	MANAGEMENT
Topsoil	There is top soil (74,250.5 cu. m.) available in the Q. L. area which will be stacked separately and simultaneously used for plantation within the Q. L. area.
Overburden	The OB (top soil) and mineral reject generated will be around 74,250.5m^3 and 2, 57,232.5 m^3 respectively which will be stacked in the statutory barrier of the lease area. The total wastes generated will 3, 31,483 m^3. At the end, mineral reject will be utilized to backfill the part of the pit and the top soil will be used for plantation.

4 SITE ANALYSIS

4.1 CONNECTIVITY (Mine Site)

Table 4-1: Connectivity

PARTICULARS	DISTANCE & DIRECTION
Nearest Railway Station	The nearest railway station is Mandalgarh which is about 25 Km, NW from mine site.
Nearest Airport	Maharana Pratap Airport, Udaipur at a distance of around 182 km. in SW direction from Mining Lease area.
Nearest Highway	NH-76 (5.5 km NE). SH- 9A (10 km S).

4.2 LAND FORM, LAND USE AND LAND OWNERSHIP

LAND FORM

The Mining area is almost flat.

LAND USE

The present land use pattern is as below:-

Table 4-2: Land Use Pattern

S. No.	Particulars	Present Land-use (ha.)
1.	Excavation Pit (Voids Only)	--
2.	Waste Dump (External)	--
3.	Infrastructure including office Road	--
4.	Afforestation	--
5.	Undisturbed Area	4.0671
6.	Green Belt Development	--
Total		**4.0671**

LAND OWNERSHIP

The land as per revenue records is Govt. Waste Land of 4.0671 hectare.

4.3 TOPOGRAPHY

Topographically, the Mining area is almost plain having highest elevation of 560 mRL and lowest elevation of 557mRL.

4.4 EXISTING LAND USE PATTERN

Table 4-3: Existing Land Use Pattern (In Ha.)

S. No.	Particulars	Forest Land	Govt. Grazing Land	Govt./ Private waste land	Private land		Total
					Ag.	Non Ag.	
1.	Excavation Pit (Voids Only)	--	--	--	--	--	--
2.	Waste Dump (External)	--	--	--	--	--	--
3.	Infrastructure including office Road	--	--	--	--	--	--
4.	Afforestation	--	--	--	--	--	--
5.	Undisturbed Area	--	--	4.0671	--	--	4.0671
Total		--	--	**4.0671**	--	--	**4.0671**

Table 4-4: Environmental Settings

S. No.	Particulars	Details
1.	National Park, Wild Life Sanctuary, Biosphere Reserve, Tiger Reserve, Wildlife Corridor, Reserved Forest	Following Protected & Reserved Forests falls within 15 km radius of Buffer zone, are as follows: Two protected forest are present within the 15 Km of the mining lease. **S.N** / **Name(R.F/ P.F)** / **Distance** / **Directions** 1. Karondia PF / 14.46 Km / South West 2. Umar North PF / 11.8 Km / South West 3. Atuwa North PF / 12.0 Km / South East 4. PF / 13 Km / North 5. RF / 12.5 Km / North East 6. RF / 1.1 Km / South 7. PF / 3.8 Km / South West 8. RF / 10.2 Km / North West 9. Karondia PF / 14.46 Km / South West
2.	River / water body	Available water bodies and rivers falls within 15 Km radius Buffer zone as follows: - **S.N** / **Name** / **Distance** / **Directions** 1. Bamni Nadi / 8 Km / South 2. Rojri Nadi / 14 Km / South East 3. Brahmani Nadi / 13 Km / South East 4. Menali Nadi / 14 Km / North West 5. Bharak Nadi / 13 Km / North West

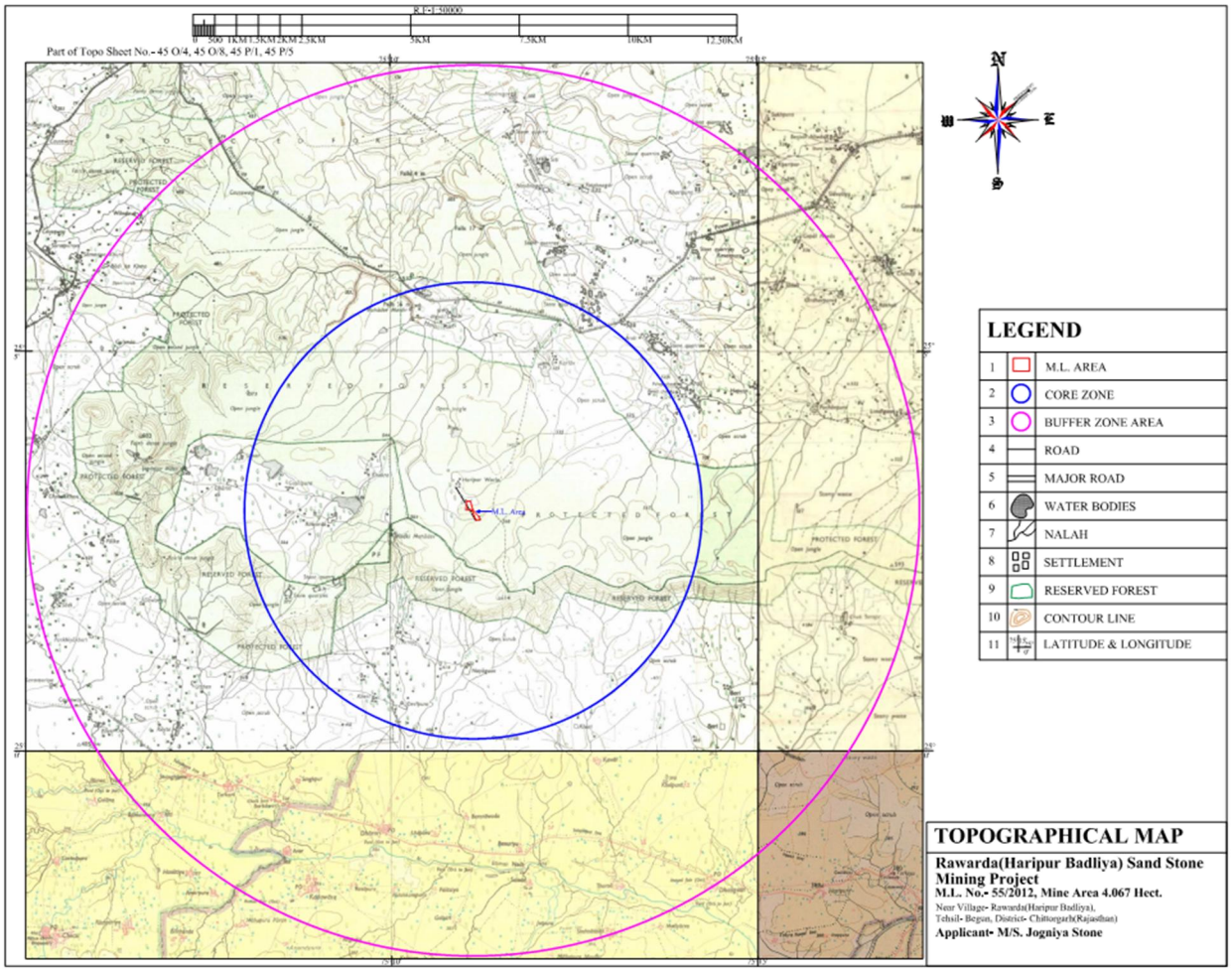


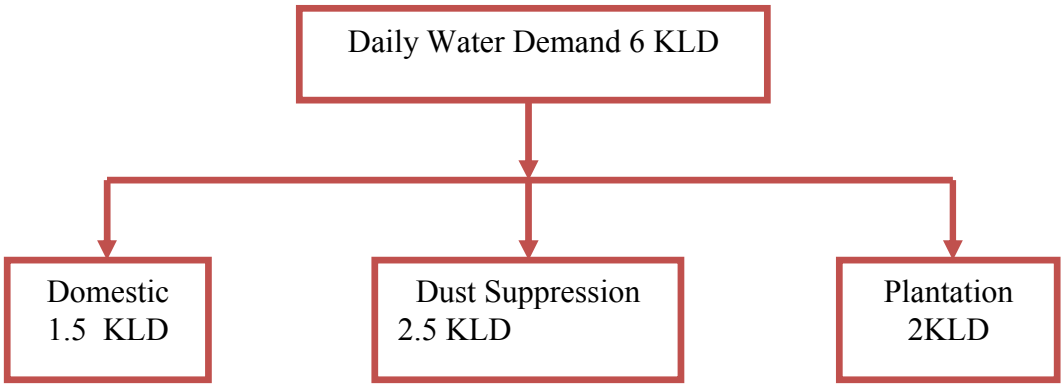
Figure 4-1: Key Plan

4.5 EXISTING INFRASTRUCTURE

Refer the para no. 4.1 of section 4.0

4.5.1 WATER

The total water demand will be as follows:



4.5.2 BASIC AMENITIES

a) School:-The Middle school facility is available at village Rawarda, which is about 1km from mine site.

b) Hospital: - Nearest dispensary is located at Rawarda1 Km of lease area while hospital is available at Begun (20Km).

4.6 SOIL CLASSIFICATION

Soils of the district are classified as:

- Black Soils
- Yellowish Soils
- Grayish Brown alluvial Soils

4.7 CLIMATE

The climate in the region shows broadly four seasonal variations, namely:

Winter: December - February

Summer: March – Mid June

Monsoon: Mid June - September

Post-monsoon: October – November

Information presented in subsequent paragraphs is from the Indian Meteorological Department (IMD), Long Term Climatological Tables, nearest IMD station from the lease area is Chittorgarh. These tables

give useful information about a region's weather, since they are collected over a 30-year period. Hence Long Term Climatological Tables of Chittorgarh (1973 – 2000) is used to provide information about the long term meteorology of the area.

4.7.1 Temperature

Mean daily maximum temperature is recorded in the month of May i.e. 40.7°C.

Mean daily minimum temperature is recorded in the month of January i.e.6.6°C.

During the post-monsoon months of October and November mean daily maximum – mean daily minimum temperatures remain between 33.9-11.4ºC. In winters, i.e. December, January and February, mean daily maximum – mean daily minimum temperatures remain between 27.2 ºC-6.6 ºC.

4.7.2 Wind

Long- term wind direction data is presented in **Table 4.5** and indicates that the predominant wind direction throughout the year is calm at daytime and second predominant wind direction is observed to be S/NE & third predominant wind direction is N.

Table 4-5: Wind Direction

Predominant Wind Direction	**First Predominant Wind Direction**		**Second Predominant wind Direction**		**Third Predominant wind Direction**	
Month	**Morning**	**Evening**	**Morning**	**Evening**	**Morning**	**Evening**
January	Calm	Calm	NE	NE	N	N
Fairbury	Calm	NE	NE	N/NW	N	SW
March	Calm	NW/SW	S/NE	W	SW	N/NE/Calm
April	Calm	SW	S	W	SW	NW
May	SW	SW	S	W	Calm	NW
June	SW	SW	S	S/W	W	NW
July	SW	SW	S	S	Calm	W
August	SW	SW	Calm	S	S	Calm
September	Calm	SW	SW	NW/Calm	S	NE
October	Calm	Calm	S	NE	SW	SW
November	Calm	Calm	NE	NE	N	N
December	Calm	Calm	NE	NE	N	N

4.7.3 Humidity:

Most humid conditions are found in the monsoons, followed by post-monsoon , winter and summer in that order.

4.7.4 Rainfall:

The total rainfall in a year is observed to be 867.9 mm. Distribution of rainfall by season is 13.3 mm in winter (December, January, February), 20mm in summer (March, April, May), 801.7mm in monsoons (June, July, August, September) and 33mm in post-monsoons (October – November)

4.8 SOCIAL INFRASTRUCTURE AVAILABLE

The social infrastructure available in the study area is given in Table below.

Table 4-6: SOCIAL INFRASTRUCTURE

Particulars	Name	Distance (Km) (From Mine Area)	Direction (From Mine Area)
Nearest Habitation	Rawarda	1 Km	W
Nearest Town	Begun	20 Km	SW
Nearest Airport	Udaipur	182 Km	SW
Nearest Highway	NH - 76	5.5 Km	NE
	SH-9A	10 Km	S
Nearest Railway Station	Mandalgarh	25Km	NW
Nearest Dispensary	Rawarda	1 Km	W
Educational Facility	Rawarda	1 Km	W

5 PLANNING BRIEF

5.1 PLANNING CONCEPT

Type of Industry: Mining of Sandstone

Facilities: Drinking water, first aid, mine office, rest shelter

Transportation: Transportation of the mineral from mine to end users will be done by hired trucks.

Town and Country Planning Development Authority Classification: not applicable, since this is a mining

5.2 PROJECTPOPULATION PROJECTION

In the Buffer zone, total household is 2253. Total population is 11314 out of which, 5742 are males and 5572 are females. The total literate person in the surrounding area is 5340 and total worker's population is 6611. The detailed demographic profile of villages located in the study area is given below:-

Table 5-1: Demographic Profile

S.N	Name	No_Hh	Tot_P	Tot_M	Tot_F	P_Lit	P_Ill	Tot_Work_P	Non_Work_P
1.	Gopalpura	192	892	452	440	411	481	471	421
2.	Fatehpura	42	226	113	113	46	180	115	111
3.	Kheri	113	536	270	266	240	296	340	196
4.	Naya Gaon Chauhan on Ka	2	11	6	5	0	11	8	3
5.	Samariya Khurd	132	625	306	319	230	395	370	255
6.	Bari Ka Khera	55	234	124	110	49	185	153	81
7.	Chanda Kheri	121	591	282	309	390	201	352	239
8.	Shadi	146	755	379	376	424	331	537	218
9.	Rawarda	358	1633	870	763	624	1009	959	674
10.	Rayta	218	1190	593	597	776	414	744	446
11.	Deoriya	22	83	42	41	33	50	41	42
12.	Rayti	144	854	419	435	454	400	478	376
13.	Ladpura	20	112	57	55	41	71	58	54
14.	Dorai	308	1552	806	746	748	804	845	707
15.	Bamanhera	95	503	259	244	283	220	338	165
16.	Jaisinghpura	36	162	86	76	81	81	78	84
17.	Turkari	109	606	303	303	287	319	322	284
18.	Singhpur	31	169	81	88	21	148	85	84
19.	Bor Baori	57	282	140	142	88	194	164	118
20.	Naya Gaon	52	298	154	144	114	184	153	145
	TOTAL	**2253**	**11314**	**5742**	**5572**	**5340**	**5974**	**6611**	**4703**

(***Source: Census Data, 2011)***

5.3 LAND USE PLANNING (BREAKUP ALONG WITH GREEN BELT ETC.)

The sapling for plantation will be selected on less water according to climatic condition and hence it is proposed to plant 88 saplings per year. The plantation will be done at the lease boundary and backfilled area.

Year- wise programme of green belt development for five years, about saplings 440 will be planted in an area of 1.097 ha. Upto the conceptual phase 630 saplings will be planted. Green belt development will improve the eco-system and aesthetic beauty of the area. Post plantation cares including provision for watering, soil mulching manure supply to plants will be done. The list of the species to be planted in the green is provided below:-

Table 5-2: Green belt Programme

Year	Area(ha.)	No. of Saplings	Species	Place of Plantation
I	0.2194	88	Babool, Salar, Neem & Khejari.	Boundary barrier of the lease&backfilled area.
II	0.2194	88		
III	0.2194	88		
IV	0.2194	88		
V	0.2194	88		
After Vth Year	1.097	440		
At the end of Lease period	**1.5728**	**630**		

5.4 ASSESSMENT OF INFRASTRUCTURE DEMAND (PHYSICAL AND SOCIAL)

The mine area is easily accessible from the state highway by SH-9A is 10 km in S direction from the mine site &, NH-76 is 5.5 km in NE direction from the mine site will be helpful to approach workers to the mine site as well as transportation of mineral to the nearby areas and end user. Mandalgarh Railway station is 25 Km far towards SW from the mine site. The infrastructure demand in the villages will be evaluate on the basis of necessity and priority. Job opportunities are inadequate and new possibility for income generation is required.

5.5 AMENITIES/FACILITIES

- **Mine Office:** It is proposed to have a temporary mine office with First Aid Facility.
- **Rest Shelter:** Temporary Rest Shelter will be made available.
- **Drinking Water Facility:** The drinking water will be made available from the nearby open well as well as from the PHED supply of Rawardavillage by water tankers. It will be stored in earthen pots and tanks at the site. The quality of water is reportedly potable.
- **Toilets:** The toilet facility is proposed for the better sanitary condition of the workers employed in Mining area.

- Other facilities will be developed as per recumbent of the local people of the local of the nearby area under corporate social responsibilities programs.

6 PROPOSED INFRASTRUCTURE

6.1 INDUSTRIAL AREA (PROCESSING AREA)

The area is well connected by road network to the mines, District headquarter etc. The area is self-sufficient to supply the needs of the project. Hence no, infrastructure is proposed.

6.2 RESIDENTIAL AREA (NON PROCESSING AREA)

The local people will be employed, hence no residential area/ housing is proposed.

6.3 GREEN BELT

Refer point no. 5.3.

6.4 SOCIAL INFRASTRUCTURE

The proposed project is situated at Village –Rawarda, Tehsil - Begun, District – Chittorgarh(Rajasthan). As local people will be employed for excavation activities, no permanent infrastructure is required. The workers will come to the site by company's vehicle. By this project, indirect means of earnings in the area will be developed, which will bring a positive impact on the adjacent habitation.

6.5 CONNECTIVITY (TRAFFIC AND TRANSPORTATION ROAD / RAIL / METRO /WATER WAYS ETC.)

Given in Para No. 4.0.

6.6 DRINKING WATER MANAGEMENT (SOURCE & SUPPLY OF WATER)

The total water requirement for the proposed activity is 6 KLD will be met from the nearby village pond (desolation and impoundment will be carried out by P.P.). Only water for drinking purposes i.e. 0.25 KLD will be brought from nearby dug well/PHED. However, rain water stored in the pit during the rainy season will be used for plantation and dust suppression. The proposed indigenous water source created by the project proponent will fulfill the water demand of local habitants.

6.7 SEWAGE SYSTEM

Not applicable.

6.8 INDUSTRIAL WASTE MANAGEMENT

No industrial waste will be generated.

6.9 SOLID WASTE MANAGEMENT

Given in point no. 3.9

6.10 POWER REQUIREMENT & SUPPLY/SOURCE

For the proposed mining activity no power is required. If electricity will be required it will be provided by the JVVNL.

7 REHABILITATION AND RESETTLEMENT (R & R PLAN)

7.1 POLICY TO BE ADOPTED

No rehabilitation and resettlement is either required or proposed for the project as mining will be carried out entirely on Government Waste Land.

8 PROJECT SCHEDULE AND COST ESTIMATES

8.1 LIKELY DATE OF START OF CONSTRUCTION AND LIKELY DATE OF COMPLETION

The mine lease is working site of the company and will start mining at proposed rate only after obtaining necessary clearance from Central and State Government.

8.2 ESTIMATED PROJECT COST

Project cost

The proposed project cost will be Rs.1.45 Crore

Capital Cost: Rs. 1 Crore

Recurring Cost: Rs. 9.0 Lac /Annum

9 ANALYSIS OF PROPOSAL

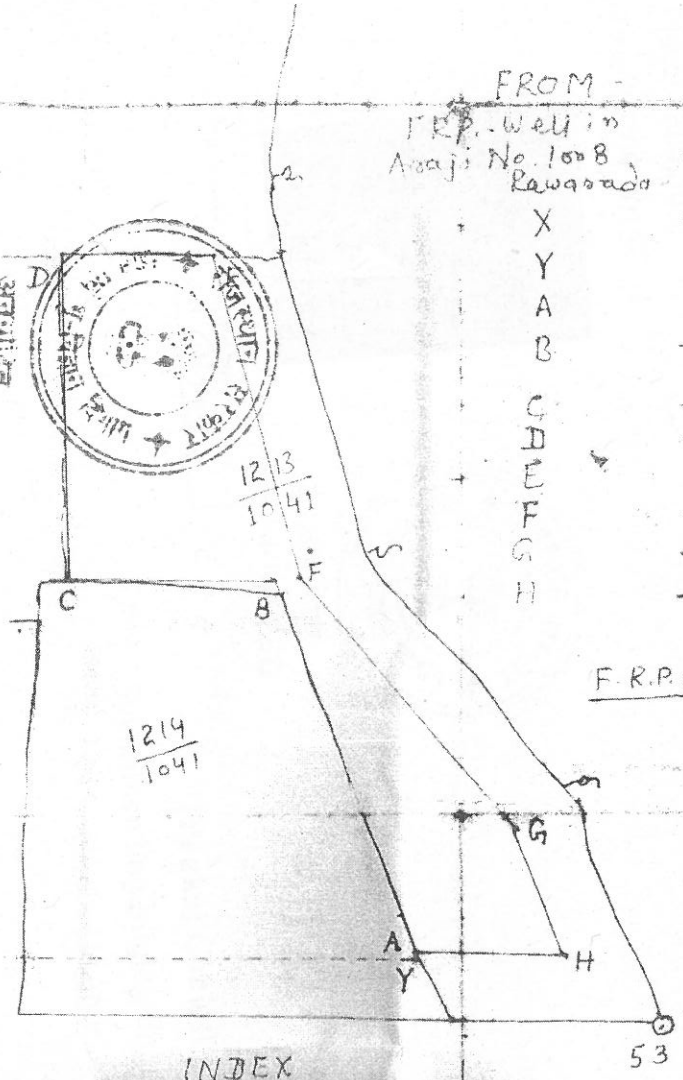
Proposed Sandstone mine project will result in growth of the surrounding areas. Direct and indirect employment will be created in nearby villages. Special emphasis on Financial and Social benefits will be given to the local People. No major adverse effect on environment is envisaged as the required mitigation measures are inbuilt in the project.

10 ENVIRONMENT MANAGEMENT PLAN

Table No: 10.1 ENVIRONMENT MANAGEMENT PLAN

PARTICULARS		MANAGEMENT
Air Quality	Excavation, Loading and Transportation	➢ Dust generated due to drilling, blasting and vehicular movements will be suppressed by water spraying on haul road. ➢ To avoid the dust generation from the drilling operations wet drilling method will be practiced. ➢ Drill machines will be fitted with dust collectors. ➢ Use of appropriate explosives for blasting. ➢ Controlled blasting techniques will be practiced. ➢ Dust mask will be provided to the workers. ➢ Proper maintenance of vehicles & machineries will be done. ➢ Water sprinkling on the haul road and other road at regular intervals will be done. ➢ Speed of the vehicles will be kept within the prescribed limits. ➢ Dumpers will not be over loaded.
Water Quality		➢ Sewage will be generated by employing 50 workers in the mine which will be diverted into a septic tank followed by soak pit. ➢ Garland drains will be made around the mining area to channelize surface run off into natural drainage pit so that it can be utilized for dust suppression. ➢ Mining operations will be at higher levels; therefore there will be no effect on ground water condition due to mining.
Noise Quality	Drilling, Blasting, Loading and unloading of Mineral and movement of Trucks.	➢ Adequate silencers in all the diesel operated vehicles will be used. ➢ Personnel protective equipment will be provided to the workers/employed persons. ➢ Proper maintenance of machines at regular intervals will be done.

	➢ Green belt development and plantation.
Solid Waste	➢ Waste generated during mining operation will be stacked separately in the boundary barrier and will be stabilized by plantation. ➢ Small amount of domestic waste will be generated for which dustbin will be kept at proper place and it will be disposed properly and regularly.
Land Reclamation	At the conceptual stage of mining, the excavated pit will cover 3.1390 ha area out of total 4.0671 ha area. The worked out pit will be partly backfilled (2.7624 ha) & reclaimed. The unfilled part (0.377 ha) of the excavated area will be developed as water reservoir.



FROM	TO	BEARING	DIST.(mts)
F.R.P. Well in Araji No. 1008 Rawarada	X	- 149°-00'	- 876 mts
X	- Y	- 91°-30'	- 519 mts
Y	- A	- 340°-00'	- 7.855 mts
A	B	- 340°-00'	- 245.7946 mts
B	- C	- 271°-30'	- 131.0371 mts
C	- D	- 360°-00'	- 198.0600 mts
D	- E	- 91°-30'	- 96.3378 mts
E	- F	- 165°-30'	- 203.2886 mts
F	- G	- 139°-00'	- 210.00 mts
G	- H	- 158°-00'	- 83.355 mts
H	- A	- 271°-30'	- 101.1779 mts

Area - 4.0671 Hects.

F.R.P.(Well) - Well of Shri Kundan Singh s/o Jaidev singh Gandhinagar (Araji No. 1008)

LAT/LONG OF FRP-WELL of Kundan Singh s/o Jaidev Singh (Araji No. 1008)

N 25°03' 19.5"

E 75°10' 52.7"

INDEX

APPLIED C.L.

KHATEDARI LAND

GOVERNMENT OF RAJASTHAN

Office of the Superintending Mining Engineer

Department of Mines & Geology, Bhilwara Circle Bhilwara (Raj.)

No.SME/BHL Circle/CC-II/ Chittor./F-/ Q.L.55/12/ 209 Dated:20-02-2014

To,

M/s. Jogniya Stone,
Pro. Sh. Sugan Lal S/o Sh. Mangi Lal Dhakar
R/o. Kalyanpura Tehsil Bijoliya District Bhilwara (Raj.)

Sub: Approval of Mining Plan with Progressive Mine Closure Plan in respect of your SandStone Mine (Q.L. 55/2012) Area 4.0671 Hect.) For mineral SandStone Near Village Haripur Badliya Tehsil Begun District Chittorgarh Submitted under Rules 37 B (1) & 37 E (vi) of R.M.M.C.R. 1986 (Amended 2012).

Ref: Your R.Q.P.'s Letter dated – 11/02/2014

Dear Sir,

In reference of Mines (Gr-II) Department's Notification No.F 14(1) Mines/ Gr.II/ 2011 Jaipur Dated 19/06/2012 and Notification No. F.14(1) Mines/ Gr.II/ 2011 Jaipur Dated 24/07/2012 of Mines (Gr.2) Department, Rajasthan, Jaipur and Directorate letter No. DMG/ F-2/O.A./ Rules/ 2012/ 864-879 dated 01/08/2012. I hereby APPROVE the above said Mining Plan with Progressive Mine Closure Plan. This approval is Subject to the following conditions:-

1. The Mining Plan with Progressive Mine Closure Plan is approved without prejudice to any other laws applicable to the mine/ area from time to time whether made by the Central Government, State Government or any other authority.
2. It is clarified that the approval of your aforesaid Mining Plan with Progressive Mine Closure Plan does not in any way imply the approval of the Government in terms of any other provisions of the R.M.M.C.R.1986 rules framed there under and any other laws.
3. It is further clarified that approval of the Mining Plan with Progressive Mine Closure Plan is subject to the provisions of Forest (Conservation) Act,1980 Forest (Conservation) rules, 1981 and other relevant statues, orders and guidelines as may be applicable to the lease from time to time.
4. The Lessee Shall be submit financial assurance to be Mining Engineer/ Assistant Mining Engineer as per Rules 37(J)(3) of R.M.M.C.R. (Amended 2012).
5. If anything found concealed as required by the mines act. It the contents of the Mining Plan with Progressive Mine Closure Plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
6. The Mining Plan with Progressive Mine Closure Plan is approved without prejudice to any order or direction from any court of competent jurisdiction.
7. The Lessee Shall ensure the provision of Govt. of India Notification Dated 09-09-2013 regarding Environment Clearance.

Enclosure : One Copy of Approved Mining Plan with Progressive Mine Closure Plan.

Your Faithfully

(P.R.Ameta)
Superintending Mining Engineer
Bhilwara-Circle, Bhilwara