

**PREFEASIBILITY STUDY**

**FOR**

**PROPOSED BASALT QUARRY**

**OF**

**SHRI KISAN SHRIPATI GALAVE**

## **Executive summary**

Shri Kisan Shripati Galave was granted a Stone quarry lease over an area of 1.00 Hectare in Survey no 48/1 Part of Village- Gokul Tarf Patan, Taluka-Patan, District-Satara, Maharashtra State, to the Additional Collector, Satara. The said land is a private land.

Now as a statutory requirement mining plan including mine closure plan showing the systematic development of the mine for the next five years and to address the mining related issues till conceptual stage, required to be prepared and submitted to Dy. Director, Directorate of Geology and mining, Kolhapur for approval. Hence a mining plan is prepared for the period of five years.

### **The major highlights of the project are:**

- The project comes under non agriculture land.
- No National park or wildlife sanctuary lies within the buffer zone or nearby this region.
- No displacements of settlement are required.
- No sensitive places of notified archaeological, historical or tourist importance within or nearby the buffer zone.

### **Project Description**

#### **Location:**

The site is located at Gut No. 48/1Part, Gokul Tarf Patan Village, Patan Taluka, District Satara, and Maharashtra. The site is accessible from National Highway no 4.

**Land:**

The land provided comes under mining area approved by the government of Maharashtra. Therefore no need of human displacement is needed in the project area. The land provided for stone mining is 1.00 hectare to the project proponent.

**Co-ordinate:**

The coordinates of the plant site are latitude 17°17'03.41"N and longitude 73° 50'3 7.09"E

**Water:**

Water requirement of the project will be met through the water tanker and Open well which is existing in the human settlement area. Company does not exploit any other water resources or ground water; therefore no adverse impact is anticipated on water environment.

**Project Cost:** The total cost of the project including all facilities is estimated to be INR 65,75,500 Lacks.

**Topography:**

The lease area is present in slightly undulating area which has slope in the North West Direction .The Highest Contour located in the area is 918 meter where as lowest contour value is 886 meter. The rain water precipitated during monsoon is initially flowing towards North West Part of the lease area.

**Soil Quality:**

The soil pattern in the district differs widely due to marked variations in the topography of the region. The soil in the hill slopes especially in the western part of the district is of low type, reddish in colour. The soil in the parts surrounding rivers especially of Krishna and Koyana in central part of the district is black. The land is very fertile. Kas and nearby area, western part of satara taluka has been declared as World Heritage Site. Here excellent flora and fauna is seen after 4 September. The soil type also varies from block to block. It ranges from light laterite type in hilly tracts of Mahabaleshwar, Jaoli, Patan to fertile black cotton soils in some parts of the district i.e. Phaltan & Khandala

**Meteorology:** The area is located to the east of the western ghat ranges, on the western margin of the rain shadow region, and hence enjoys a semi-acid, subtropical climate. The maximum and minimum temperatures recorded at Satara are 430 and 80 c respectively. The average annual rainfall for Satara area is of the order of 1000 m.

**Water:** Water needed for operation requirement shall be drawn from water tankers and open well which is present in the human settlement area and not in the lease area.

**Ecology:** No extra land will be acquired during the operation of the project there will be no adverse impact on some of the environmental aspect. In the area of the project proponent clustered green belt is found in the vicinity, hence there will not be any kind of deforestation. No rare or endangered species of flora and fauna are present in the immediate vicinity as well as the study area. Thus, there will not be any adverse impact on flora and fauna.

**Socio-economic:** The project will provide positive impact on the economic development of the region in terms of employment opportunities. Moreover the above unit will be operating in an authorized mining land declared by the Govt. of India. Therefore no population will be displaced.

### **Risk assessment plan**

Risks likely to pose threat to man, environment or property associated with various activities are addressed in this report. Such activities include transport, storage; handling and usage of fuels.

Surrounding population shall be made aware of safety precautions to be taken in case of any mishap in project site.

## **Conclusion**

The minor mineral project of stone crushing will not have any adverse impact on the environment. Altogether the project will have a positive impact on social environment by providing employment opportunity for the skilled and unskilled labors living in the surrounding villages. Also the infrastructure around the site will be improved due to the project.

# **Prefeasibility Report**

## **INTRODUCTION OF THE PROJECT**

### **Identification of the project proponent**

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The crusher will be installed outside of the site.

## **Description of Nature of the Project**

Over the last 10 years, the Construction sector has been registering strong growth rates in the range of 7-8%. Housing and construction is one of the major drivers of growth in more Than 40 allied industries including STONE CRUSHING. In addition, for the building of roads, flyovers and bypasses, there is a mass and consistent need of crushed stone across the country. Several projects are in progress and are being commenced shortly which will have high demand of Crushed stone all over the country. In order to make up the backlog and meet the projected requirements for the next 20 years, overall housing construction has to raise 500,000 housing units per annum. This process leads to construction of roads, bridges, new houses; markets, etc resultantly gear up construction activities and more use of crushed stones. The aforementioned facts and statistics provide enough evidences, assuring a steep and continuous growth via a via investment opportunity in the STONE CRUSHING business.

## **Need of the Project**

The project proponent has existing Stone Crushing activity in the mining lease as explorations have shown that these deposits occur in the subject lease area. The mining production is covered under the Ministry of Environment & Forests Notification 2006. This report of Prefeasibility & Environmental Management Plan is given here as a part of the information to be furnished to the SEAC, Govt. of Maharashtra for obtaining Environmental Clearance as per office Memorandum No. L-11000/47/2011/IA-II(M) dated 18.05.2012 .To meet the ever-increasing local demand for Crushed stone by the building industry and construction company the project proponent intends to produce the following

quantities of crushed stones by Manual method of quarry activity. The year wise production and development details for the five years plan period are summarized in the table below.

**Table No. 1**

**Production Plan for Five  
years**

<b>Year</b>	<b>Crushed Stone</b>
I Year	38,205 Brass
II Year	38,205 Brass
III Year	38,205 Brass
IV Year	38,205 Brass
V Year	38,205 Brass
<b>Total</b>	<b>1,91,025 Brass</b>

### **Demand Supply Gap**

Crushed stone has a very minor share among the exports of non-metallic mineral products of India. It is observed that total export volume of the crushed stone has been very low, whereas, Marble has the highest share and remained at the top. The market scope for crushed stone is found to be encouraging in local market with the increased demand from building industry & construction fields. There is also a sufficient demand from Govt. Contractors for lying of roads and construction of industries etc. The entry in the target market is easy and there is a narrow gap in the supply and demand, which is expected to grow in the coming years. The business opportunity to fill the demand and supply gap would be quite profitable.

## Employment Generation

The establishment of this project will improve the socio-economic status of the surrounding area by way of direct & indirect employment. The Employment opportunity will be created for skilled and mainly unskilled people.

## PROJECT DESCRIPTION

### Location:

The project is located on a plot of land measuring 1.00 Hectare at Village Gokul Tarf Patan, Taluka Patan, District Satara, Maharashtra. Project involve stone quarry of the capacity 5000 brass/year.

**Table No.2 SALIENT FEATURES OF LOCATION**

Project Site	Proposal for Quarrying of Minor Minerals, Stone. Survey no 48/1 Part of Village- Gokul Tarf Patan, Taluka Patan, District Satara, Maharashtra
Co-ordinates	73°50'33.80"E to 73°50'39.03"E 17°17'01.83"N to 17°17'07.00"N
Nearest Highway	Pune-Bangalore Highway (NH-4)
Nearest City	Patan
Nearest Railway station	Karad Railway Station
Water bodies	-
Average rainfall	1000-3550 mm
Average temperature	10°C to 26°C in winter and 20°C to 40°C in summer
Average humidity	61 to 86%
Archaeological monument	Not present in the 10 km radius of the site.
Human settlement	No human settlement is observed in 2 km around the lease area.
Shed Provided	Shed will be provided for the workers
Crusher Location	Crusher location will be 200 meter away from quarry area.



**Fig 1:** Project Location - latitude 17°17'03.41.09"N and longitude 73° 50'37.09"E (Google Earth Image of the project site)

### Land Distribution around Site

The project site will be having quarry area, crushing area, office area and shelter provided for the workers.

### Size and Magnitude of Operation

The estimated cost of the project is going to be INR 65,75,500 Lacks, The project capacity is 5000 Brass/Annum.

### Proposed Crushing Unit Process Details

Open cast quarrying method shall be adopted for extraction of basalt. It is proposed to work with 6 meter bench. Drilling and blasting will be done to produce the required size of crude rock. This rock will be fed to the crusher. This mining plan will consists of the following operation.

I) Removal of Murrum soil, weathered basalt, wherever available and stack at dumping site.

II) Mining of Basalt.

III) Stacking. Removal of mined ROM to surface yard for paper sizing, sorting.

**Opencast Working:**

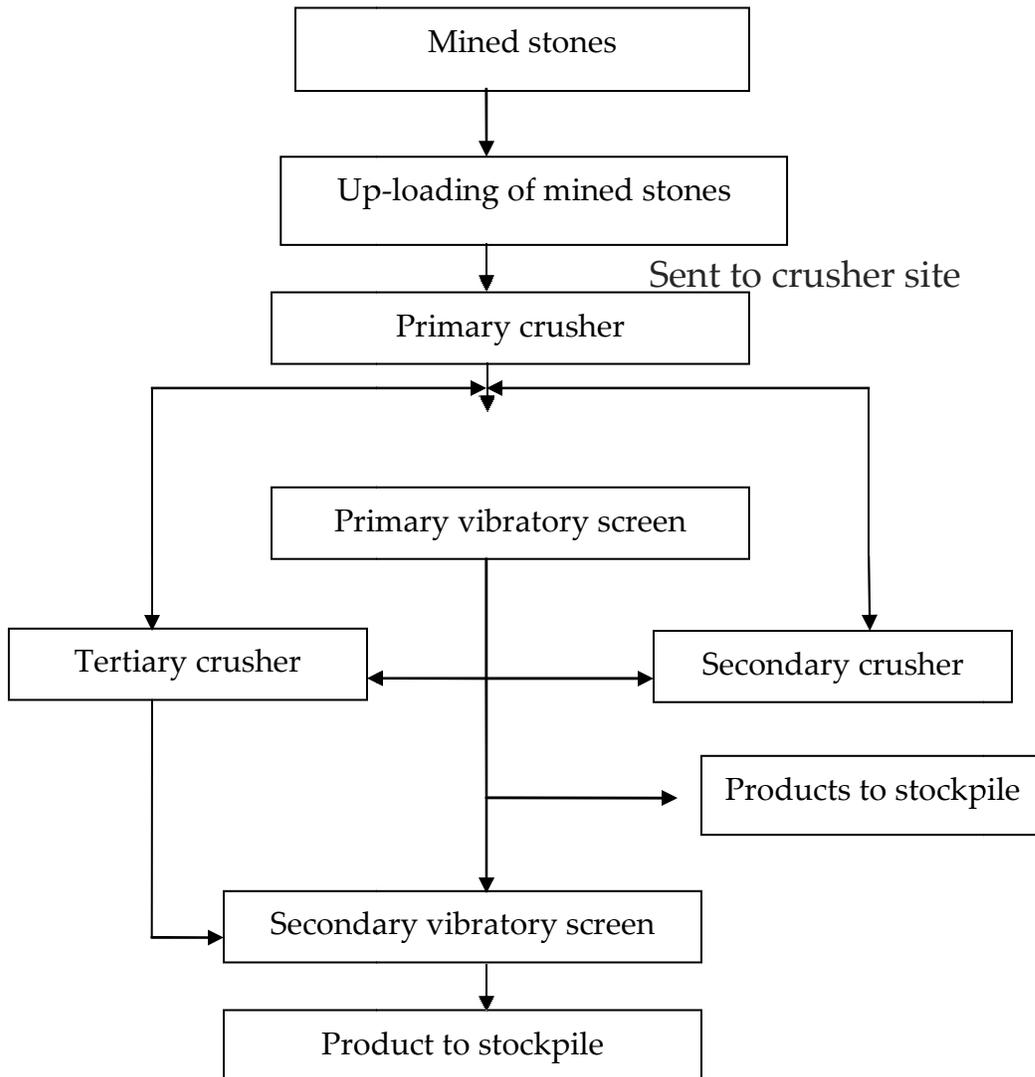
Each cycle of preparation shall consist of removal of Murrum soil, weathered basalt wherever present, followed by extraction of exposed basalt subject to following condition being strictly complied with:

1. Quarrying operation shall be conducted from top to bottom level.
2. No person shall be engaged on work or allowed to travel close to high sides/benches, from more than 1.8m. Height vertical, down, unless he is provided with and used a safety belt or rope.
3. A garland of 7.5m of barrier will be maintained.
4. At surface all along the lease boundary vegetation growth will be generated to isolate mining operation from rest of the area.

The excavated basalt will be used for:

1. In the stock yards of railway plots.
2. Road Works.
3. In Construction line for filling and flooring.
4. In irrigation department for lining and for Bandhara.
5. Other Sectors.

## Process Flow Diagram of Typical Stone Crusher Unit



### Mining technology

Four technologies namely bucket wheel system, Dragline system, shovel dumper system and surface mine with pay loader system are well known for quarrying plan. Due to multi seam, abrasive sandstone, hard carb shale and many faults bucket wheel system has not been considered. Dragline system has also not been considered due to many faults. Shovel dumper system is very flexible and offer convenient mining. The project proponent is using Shovel dumper system and manual method for the quarrying of stones. Surface miner system can be considered when overburden generated can be backfilled. Surface miner system is costly, this can be the reason for its less use.

## **Power Sources**

There is no power requirement of the project

## **Waste Generated**

The possible waste generated by the mining process will be some rejection which can be used for leveling of the land. No solid or liquid waste will be generated from the mining process.

## **Explosive Storage**

Project proponent conducts explosion at site to the help of licensed practitioner. Hence there is no storage of explosives on the quarry site.

## **Manpower**

Since this is a new Project the total manpower will be required is 08 people at the project site. Both the skilled and the unskilled labors are included.

**Table 7  
Organization  
Table**

<b>Sr. No</b>	<b>Category</b>	<b>Operative Phase</b>
1	Administrative	-
2	Supervisory	-
3	Skilled Worker	4
4	Unskilled Worker	3
5	Security	1

## **Conclusion**

Based on the foregoing study as summarized above, it is observed that there will be marginal increase in the dust pollution, which will be controlled by sprinkling of water and transportation of stone metal in closed/tarpaulin covered trucks. There will be no major impact on the ambient environment & ecology due to the mining activities moreover the mining operation will lead to direct and indirect employment generation in the area. Khatav, Satara District will have a positive impact on the **Socio Economics** of the area and lead to sustainable development of the region. The applicant will ensure the implementation of the environmental protective measures within the mine area & surroundings and will comply with the terms & conditions to be laid down by the Ministry of Environment & Forests as required under the Environmental Protection Act-1986 and its amendments.

### **Rehabilitation and Resettlement (R&R) Plan**

**(i) Policy to be adopted (Central/ State) in respect of the project affected persons including home ousters, land ousters and landless laborers (a brief outline to be given).**

There are no houses in the mineral bearing area. There will not be any home ousters.

All the rock bearing land has been either purchased by the applicant or will have acquired the surface rights before work could be started. The compensation paid while purchasing the land or while acquiring the land will be as per the market rate and has been mutually agreed upon. There is no specific income from the land to land owners. By acquiring the land by applicant, the concerned land owners will be getting regular income. A systematic reclamation plan will be prepared and executed. This will be under the guidance of competent authority. In such case land is going to be productive after mining is over and is likely to fetch regular income to the land owner.

### **Analysis of proposal (Final Recommendations)**

Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area.

Following shall be the benefits of the project: (i) A small industrial project in the rural area of the Patan Taluka. (ii) Production of Stone will help sustain and construction industry.

(iii) Employment opportunities will be generated in the rural area. (iv) There may be development in the infrastructural facilities in the area due to this and group of mines. (v) Govt will get funds in the form of Royalty, sales tax, income tax, road tax etc. (VI) there will be improvement in the living standard of the people due to increased income. (vii) Contribution for CSR may improve the living style of people and development of natural resources.