

**APPLICATION
OF
BALESAR SANDSTONE MINING PROJECT (Q.L. No. 382)**

Village	Balesar (Kalor Purana)
Tehsil	Balesar
District	Jodhpur
State	Rajasthan
Capacity	1800 TPA
Lease Area	0.18 Ha
Category of Project	'B2'
Project Cost	Rs. 10 Lakh

Name of Project Proponent: Shri Bhikharam

Address: V.P.O- Utambar, Tehsil- Shergarh, Dist- Jodhpur, Rajasthan

Prepared by

Shri Ganpat Ram

Registration No: RQP/JAB/162/2015/A

Address: R/o Behind Hotel Aakriti, Chopra Colony,
NH-7 Katni Road, Maihar, Dist Satna, MP

**PRE FEASIBILITY REPORT
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1.0 Executive Summary

Balaser Sandstone Mining Project (Q.L. No- 382) is situated near village Balaser, Tehsil Balaser & District Jodhpur, State Rajasthan over an area of 0.18 ha. Shri Bhikharam is the applicant of this project and the applicant intends to mine Sandstone from the proposed site. The lease was granted in favor of Shri Bhikharam, R/o V.P.O- Utambar, Tehsil- Shergarh, Dist- Jodhpur, Rajasthan by office of Assistant Mining Engineer, Balaser.

The proposed average rate of production is 1800 TPA. The estimated project cost is Rs. 10 lakhs. The life of mine may change depending upon the prospecting results, rate of production and the extent of mechanization done by the lessee in future.

This mining project falls under Category “B2” Project or activity 1(a) as per EIA Notifications 2006, 2009, 2011, 2013, 2014, 2015 and 2016.

1.1 Salient features of the project

Project Name	Balaser Sandstone Mining Project (Q.L. No- 382)
Location of Mine Site	Near Village - Balaser Tehsil - Balaser District - Jodhpur State - Rajasthan
Topo-sheet number	45B/7
Minerals of mine	Sandstone
Total Mineable reserves	59220 Tonnes
Average Proposed production	1800 TPA
Method of mining	Opencast Semi-Mechanized Method
No of working days	300 days
Water demand	Total water requirement is about 1.0 KLD = 0.25 KLD (Drinking & Domestic Uses) + 0.25 (Plantation) KLD + 0.5 KLD (Dust Suppression).
Sources of water	The Drinking water will be Available from the nearby by tractor tank manually for laborers working at the site.
Man power	12
Nearest railway station	Tinwari Railway Station is about 46 km in NE direction.
Nearest State Highway/ National highway	NH-114
Nearest airport	Jodhpur Airport is about 75 km in SE direction.

1.2 Proposed Planning

Mining method	-	Opencast Semi-Mechanized Mining
Estimated Project Cost	-	Rs. 10 Lakhs
Production	-	Sandstone 1800 TPA (Max)

1.3 Conclusion

The production of mineral will be benefited to the State in the form of Royalty. Apart from this,

the project will generate direct and indirect employment opportunities to the tune of about 12 persons from the nearby villages. Also, the mine management will conduct medical camps at regular interval in the nearby villages and will help the nearby villages by providing infrastructure like school furniture, water tankers, etc.

2. INTRODUCTION OF THE PROJECT/BACKGROUND INFORMATION

2.1 Identification of Project and Project Proponent

Balaser Sandstone Mining Project (Q.L. No- 382) is situated near village Balaser, Tehsil Balaser & District Jodhpur, State Rajasthan over an area of 0.18 ha. Shri Bhikharam is the applicant of this project and the applicant intends to mine Sandstone from the proposed site. The lease was granted in favor of Shri Bhikharam, R/o V.P.O- Utambar, Tehsil- Shergarh, Dist- Jodhpur, Rajasthan by office of Assistant Mining Engineer, Balaser.

The proposed average rate of production is 1800 TPA. The estimated project cost is Rs. 10 lakhs. The life of mine may change depending upon the prospecting results, rate of production and the extent of mechanization done by the lessee in future.

This mining project falls under Category “B2” Project or activity 1(a) as per EIA Notifications 2006, 2009, 2011, 2013, 2014, 2015 & 2016.

2.2 Brief Information about the Project

The project has been proposed for mining of 1800 TPA of Sandstone by opencast semi-mechanized method. The mine lease area is 0.18 ha. Total water requirement is about 1.0 KLD = 0.25 KLD (Drinking & Domestic Uses) + 0.25 (Plantation) KLD + 0.5 KLD (Dust Suppression).

2.3 Need for the Project and Its Importance to the Country or Region

Rajasthan being the largest producer is an important sandstone producing state of India. It is an excellent building stone. This can be chiseled and dressed to a smooth surface in various attractive shapes. The sandstone has a verity of uses such as roofing, flooring, paving, paneling, beams, pillars, arches, doors and window sills, wall facing, fence posts, mile stones etc. It is especially useful for exterior cladding in sea shore buildings due to acid & thermal resistant properties. As such the effect of saline winds is negligible on sandstone. It is also suitable for use in chemical industries as flooring, wall fixing & lining due to its acid and alkali resistant properties. It is also suitable for carving and making windows and jallis. The sandstone is being quarried and used from centuries and a number of historical buildings and monuments such as Budhist Stupas of Sarnath, Red Fort, Sansad Bhawan, Rashtrapati Bhawan, and National Museum , Delhi; Chhitar Palace, Jodhpur etc. are made of sandstone.

Rajasthan Sandstone because of its regular bedding, uniform grain size, suitable nature and durability, has been used extensively not only in Rajasthan but also in Northern India and even exported to Canada, Japan, and Middle East countries.

Recently some entrepreneurs have tried for cutting and polishing of sandstone. Due to the straight/curved lines of bedding/current bedding & attractive figures developed due to iron solutions, the cut sandstone after polishing looks very attractive. It has resulted in its use in place of granite/marble.

2.4 Demands-Supply Gap

Sandstone demand has been on an upsurge in the region due to the high rise demand in the building and construction industries resulting in regional growth. The mining industry has witnessed continuous modernization and adoption of new technologies in recent years for the excavation of mineral. The proposed project is encountering huge market demand presently.

2.5 Imports vs. Indigenous Production

Development needs will be met only through indigenous produced sandstone against the high cost of imported material.

2.6 Export Possibility

There is no proposal to export the sandstone. However, sandstone produced from the mine will fulfill the needs of the region and surplus if any, will be considered for export

2.7 Domestic/ Export Markets

The mineral is utilized in manufacturing of cement, sculptures and building stones, particularly flooring and roofing.

2.8 Employment Generation

About 12 persons will be employed along with Mine Manager, Mining Mate, Store Keeper Chowkidar, labors & labors for plantation works.

3. PROJECT DESCRIPTION

3.1 Type of Project Including Interlinked and Interdependent Projects, If Any.

The mine is over an area of 0.18 hectares. The Average proposed production is 1800 TPA. This is an independent mining project and there are no interlinked projects involved. **The project falls under Category “B2” Project or activity 1(a) as per EIA Notifications 2006, 2009, 2011, 2013, 2014, 2015 and 2016.**

3.2 Location

Q.L. No. 382 is approx 3.5 km from Balesar village. District headquarter Jodhpur is connected to the village via Jodhpur Jaisalmer road i.e. NH-114. The nearest railway station is Tinwari at approx 48 km in NE direction from the mine lease and nearest airport is Jodhpur Airport at approx 75 km. The mining lease area falls in Toposheet number 45B/7.

3.3 Details of Alternate Sites

Mining is site specific so no alternative site is proposed.

3.4.1 Size or magnitude of operation

The mining lease has been granted over an area of 0.18 ha. Production of sandstone will be approximately 1800 TPA. The average number of working days in the year would be 300.

3.5 Physiography

The Granted area under Q.L. is having mostly flat topography. There is no public well within the applied Q.L. area. There is no nalla flowing in the area. The rainwater spread out in the area & nearby areas. There is no public road passing through the area. The Land status is Govt. land.

3.5.1 Local geology of the area:

Geologically the Jodhpur Masonry Stone belongs to Sonia and Girbhakar formations of Jodhpur Group. Masonry Stones of Jodhpur Group form the basal part of the Marwar Supergroup and the upper boundary of these volcanics is considerably eroded. The two formations called the Sonia Formation (Masonry Stones) and the Girbhakar Formation (Masonry Stones) occur unconformably over the eroded surface of Malani Volcanic rocks at the top, which comprise the Pokhran Boulder Bed (developed locally around Pokhran) with the Jodhpur Group as the basal part. The Masonry Stones are creamy (reddish maroon upwards), and widely used as building stones. The Masonry Stone belongs to Lr. Palaeozoic age. The basal Masonry Stone units are creamy pink to pink colour. The creamy pink variety of Masonry Stone is considered as the best quality of building stone, locally called as Chittar. Nature of bedding is plane and most of the rock is blockable. The detailed study of area was done to assess the mineral quantum in the Q.L. area. The studies include Geological Mapping, Topographical Survey and Geological Traversing.

3.6 Project description with process details

3.6.1 Method of Mining

The mining will be carried with semi mechanized method. one small capacity JCB (on hire basis) will be used for handling of overburden and quarry. Transport from Quarry head to destination will be done with tractor trolleys & trucks. The Bench height shall be 3.0 mtr to 5.0 mtr & bench width shall be more than the height.

Drilling

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

Blasting:-

The hole will be blasted by using the "Bindai" Method

Loading and Transportation

Transport from Quarry head to destination will be done with tractor trolleys & trucks.

Extent of Mechanization:

Initially Excavator & Dumpers will also arrange on hire basis. Details of Proposed Mining Machinery

Machine	Nos.
Jack Hammers	1
Compressor	1
Chain Pully Block	1
Tractor & Trolley	As per requirement

Production details**Proposed Production & Waste Generation in first five years**

Year	Sandstone Mineral (MT)	Waste (cum)
I	1600	75
II	1500	70
III	1600	75
IV	1800	85
V	1400	65
Total	7900	370

3.7 Raw Material Required Along With Estimated Quantity, Likely Source, Marketing Area of Final Product/S, Mode of Transport of Raw Material and Finished Product

No raw material will be required for production of the mineral. The final product will be sent to consumer based on their demand. The mode of transportation of material will be by road. Tippers/ trucks will be used for transportation to the end users.

3.8 Resource Optimization/ Recycling and Reuse

Only water will be used as resource optimization /recycling at mine site.

3.9 Availability of Water Its Source, Energy/ Power Requirement and Source**3.9.1 Water Requirement**

Water for domestic, dust suppression and plantation is required to be 1.0 KLD. A Tractor-Mounted Tanker is proposed for supply of water to mining worker for drinking and domestic purpose. Water can be met from the water supply system maintained by nearby well. The quality of water is portable.

3.9.2 Power

The operation will be done only in day time hence there is no power requirement for the project at site. The electricity facility is not available at mining lease area. Only diesel equipment will be used.

3.10 Quantity of wastes to be generated (Liquid and solid) and Scheme for their Management/Disposal**3.10.1 Nature of Waste**

The waste is the unusable pieces of sandstone which will be generated during Sandstone extraction.

Production of waste during five year

Year	Waste (cum)
1 st	75
2 nd	70
3 rd	75
4 th	85
5 th	65
Total	370

Dumping Site

The waste rock and soil/alumina will be stacked separately inside the lease area and boundary barrier in the non mining zone or barrier zone.

3.10.2 Liquid Effluent

Not applicable

4. SITE ANALYSIS

4.1 Connectivity

Q.L. No. 382 is approx 3.5 km from Balaser village. District headquarter Jodhpur is connected to the village via Jodhpur Jaisalmer road i.e. NH-114. The nearest Railway station is Tinwari at approx 46 km in NE direction from the mine lease and nearest airport is Jodhpur Airport at approx 75 km.

4.2 Landform, Land use and Land ownership

4.2.1 Landform

There is no seasonal nalla flowing in the area. The rainwater flows down the slope of the area and Natural drainage in the area follows the hill slopes and generally flowing towards low lying agricultural fields outside the lease area. There is no natural water course. There is no public roads is passing through the area.

4.2.2 Land use

The applied lease area is a Govt. Land. The area does not fall in forest land. There is no village or human settlement in the lease area. There is no public road passing through the area.

4.2.3 Land Ownership

The proposed lease area is Govt. land.

4.4 Existing land Use Pattern

The applied lease area is having Govt. land. There is no village or human settlement in the lease area.

4.5 Existing Infrastructure

There is no existing infrastructure facility is available in the area but in the first five years as per the approved mining scheme for effective and proper working of the mine, it has been proposed to

construct and provide site services like office, first aid, rest shelter; urinals etc. as per the statutory requirements.

4.6 Soil Classification

The rock of the Malani Igneous Suite Forms the basement as revealed by the dug wells and few outcrops over which the Sonia formation (Jodhpur Groups) of the Marwar Supergroup was deposited. The rock of Malani Igneous Suite are represented by Magniphyritic, Rhyolite, Porphyrific Quartz trachyte, Magniphyritic banded Rhyolitic and unclassified Rhyolite.

The Sonia formation unconformably overlies the Malani Igneous Suite and comprises mainly of a sequence of Sandstone, shale and cherty dolomitic lime stone with bands of shale. The fine grained sandstone exposed around Sadon Ki Dhani, North of Bagan, SE & SW of Chopasani and 3 KM SE of Narwa represent the oldest member. Sand stone is exposed east of Arna at Barli, Keru, Biyola Bera, Kall Bha-kri, Digadi Dhani. Flow gradients and joints of Rhyolites are inclined to vertical. Beds of Sonia formations are horizontal to inclined.

4.7 Climate Data from Secondary Sources

Climate & Rainfall:

The area is characterized by semi-arid with an average annual rainfall of about 600 mm, which is mainly received during monsoon season of July to September. There is a large variation of temperature in the area. In winter the minimum temperature goes to 1°C and maximum 10°C, while in summer it is 05°C and 50°C respectively. Relative humidity in the area is more than 70% during the monsoon season but is below 20% during the months of March-May. Wind velocity in the area is medium (5-20 m/min).

4.8 Social Infrastructure available:

- The nearest railway station is Tinwari.
- The landline telephone facility is available at the village Balesar and mobile network of different operators are available at mine site.
- Dispensary, Post office, School area available in village Balesar.

5 PLANNING BRIEF

5.1 Planning Concept

The proposed method of mining will be Semi mechanized open cast mining. For the systematic working of open cast mines, the main development work will be the forming of systematic benching. The height of bench will not be kept more than 3.0m at a time and the width of the benches will be always kept safe according to provisions. The Mining will be done with the help of tools such as drills, jack-hammer, compressors, hand shovel, picks, excavator etc. The targeted annual production of Sandstone is about 1800 MT (max) in the first to fifth year.

The method of mining will include the following operation:

- Removal of overburden/waste rock
- Development of lease.
- Toppling of bench.
- Sizing of Sandstone.
- Loading of Sandstone.

5.2 Land use Planning

At the end of the life of mine some area will be backfilled and remaining area will be used as water reservoir.

5.3 Assessment of Infrastructure demand (Physical & Social)

On the basis of the preliminary site visit, the infrastructure demand in the village was assessed on the basis of need and priority.

Physical Infrastructure

The road facility is already available which shall be used and maintained. Other infrastructure facilities required such as transport etc. for mine labors is available by way of jeep, two wheelers etc.

Social Infrastructure

An occupational health unit will be organized and the proposed measures will be adopted:

1. Periodical Medical Checkup program for all the workers and first-aid box with necessary equipment will be provided.
2. Training for workers regarding occupational hazards and
3. Safety equipment i.e. dusts mask, safety shoes, gloves etc.

5.4 Amenities/Facilities

In the next five years as per the approved mining plan, it has been proposed to construct and provide Site services like office, first aid, rest shelter, urinals and maintenance workshops etc. as per the statutory requirements.

Budget allocated for facilities provided to labours at site

S. No	Description	Annual Cost in Rs
1.	Drinking water facility	10,000/-
2.	Shelter	
3.	Health facility	
4.	Fuel for cooking	
5.	Sanitation facility	

6. PROPOSED INFRASTRUCTURE

6.1 Industrial Area (Processing Area)

No infrastructure is proposed.

6.2 Residential Area (Non Processing Area)

As local workers from nearby areas will be engaged for the mining activity, no residential area/ housing are proposed.

6.3 Green Belt

25 plants per year shall be planted nearby the lease area. Place of proposed plantation: - The plantation shall be done at the following places:-

1. Nearby area of the School
2. At the Dump
3. At the pvt. Waste land
4. At Own Govt. Land
5. Nearby State Highway road

Species for Plantation

Babul, Neem, Shisham, Rohira, Kalsi Dhangood, Akara etc, more species will be introduced for plantation after consultation with the local authority.

Note: Project proponent may consult to the **Gram-Panchayat** for the rest of the area required and after taking permission from the Gram Panchayat will fulfill his commitment.

6.4 Social Infrastructure

The applicant shall spend a part of the profit for the development of the area i.e. in the treatment of poor, schools, temples and other social work.

- **Budget for ESR will be about 0.2 Lakhs per Annum**

6.5 Drinking Water Management

Total water requirement is about 1.0 KLD = 0.25 KLD (Drinking & Domestic Uses) + 0.25 (Plantation) KLD + 0.5 KLD (Dust Suppression).

The drinking water will be available from the nearby by tractor tank manually for laborers working at the site.

6.6 Sewerage System

Domestic waste water will be treated into septic tank followed by soak pit.

6.7 Industrial Waste Management:

Not applicable

6.8 Solid Waste management

Nature in this mine nature of waste rock will be weathered low grade mineral which is exposed part with top soil/alumina.

The waste rock and soil/alumina will be stacked separately inside the lease area and boundary barrier in the non mining zone or barrier zone.

6.10 Power Requirement & Supply/Source

The operation will be done only from sun rise to sun set hence there is no power requirement for the project at site. The electricity line passes out side near the QL area. The electricity facility is not available at mining lease area.

6.11 Environment Management Plan

Budget allocated for EMP

S. No	Measures	Annual Cost (in Rs.)
1	Pollution Control i) Dust Suppression ii) Garland drain & ground dump	30,000/-
2	Pollution Monitoring	
3	Green Belt	
4	Reclamation of mined out area	

7. REHABILITATION AND RESETTLEMENT (R&R) PLAN

As no personnel are expected to be migrated due to mining in the lease area and the adjoining region is also having a good mineral potential, the rehabilitation of the employees is not going to be a problem. The workers and other staff can get job in the neighboring areas after the end of life of mine.

8 PROJECT SCHEDULE & COST ESTIMATES

8.1 Likely Date of Start of Construction and Likely Date of Completion

No construction activities are proposed. The mining activity will commence only after receiving environmental clearance and other statutory clearance.

8.2 Estimated Project Cost Along With Analysis In Terms of Economic Viability of the Project

Estimated project cost is Rs. 10 Lakhs. The lessee has all the mining equipments required for the scientific mining. The mine will be Eco-Friendly. Economically the ore is mineable as compared to overburden thickness.

9.0 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

- Project will create direct & indirect employment opportunities within the surrounding region. Unit will use good faith efforts to employ local people from the nearby villages depending upon the availability of skilled & un- skilled man-power surrounding the project site.

- In operation phase, the proposed project would require significant workforce of non-technical and technical persons. Migration of highly education and skilled experience will result in increase of literacy in the surrounding villages.
- In addition, the proposed expansion of project shall enhance the prospects of employment.
- Assessment of the potential socioeconomic benefits during mining focused primarily on work force requirements, acquisition of supplies, and the temporary increased demand for services related to the mining project like food, housing, communications, law enforcement, medical care, local transportation etc. Due to these, additional revenue to local suppliers for required products and services related to the construction and operation phases of the project will generate.
- Thus, mining activities will provide numerous new, although temporary, work opportunities for both skilled and unskilled labor, as well as contribute significantly to the local economy.
- Additional government revenue expected from royalty, taxes, duties and other fees.
- An added benefit to the proposed project will result in considerable growth of stimulating the industrial and commercial activities in the state. Small and medium scale industries may be further developed as a consequence.
