2018

PRE-FEASIBILITY REPORT

(FOR TOR)

OF

SITAPURAM LIMESTONE ORE MINES (M.L-1 & M.L-2),
AT: DONDAPADDU, MELLACHERUVUMANDAL, DIST: NALGONDA

FOR

PRODUCTION OF 3.0 MTPA OF LIMESTONE ORE OVER AN AREA OF 770.23 HA & 558.94 HA.

OF

M/S ZUARI CEMENT LTD.

At: Krishna Nagar,
Yerrlaguntla,
Dist- Cuddapah, Telengana-516311

EXECUTIVE SUMMARY

1.0 INTRODUCTION

ZUARI CEMENT LIMITED proposes to execute limestone ore from an approved Mining Lease (Sitapuram Limestone Mine) over an area of 770.23 ha of M.L-1 & 558.94 ha of M.L-2 (Non-Forest Land) which is located in Survey No1/p & 3/p at Dondapadu, Ramapuram and Revoor villages, District of Nalgonda, Telangana State. The proposed capacity during the current mining scheme period of both the leases is 3.0 MTPA. The subject area is covered with existing pits and waste dumps in the northern portion are a plain terrain.

The proposed mining project falls under Category 'A' as per EIA notification 2006 of Ministry of Environment and Forests, New Delhi.

1.2 SALIENT FEATURES OF THE PROJECT

The mine lease area falls under the Toposheet No. 57 P/13& 65D/1 bearing following Toposheet details:

Toposheet No. : 57 P/13 65D/1
Latitude : N16°48'31.6"-16°50'42.0" & 16^0 48' 00''-16^0 48' 30''
Longitude : E 70°59'16.2" - 80°02'28.7" & 79^0 59' 30''-80^0 00' 30''

The nearest railway station is at Bonakallu which is about 50 km from the mine lease area. The nearest airport is Vijaywada Airport at 90 km south from the mining site.

Details about Project Site

Nature of the project	**Sitapuram Limestone Ore Mines**
Mineable reserves	202026000 T of M.L-1 & 30690300 T of M.L-2
Capacity	3.0 MTPA
Location of the project	
District & State	Nalgonda, Telangana State.
Mandal	Mellacheruvu
Village	Dondapadu & Revooru
Land Availability	770.23 Ha of M.L-1 & 558.94 ha of M.L-2
Latitude	N16°48'31.6"-16°50'42.0" & 16^0 48' 00''-16^0 48' 30''
Longitude	E 70°59'16.2" - 80°02'28.7" & 79^0 59' 30''-80^0 00''
General climatic conditions	
Maximum Temperature	45^0C
Minimum Temperature	15^0C
Annual average rain fall	710 mm
Predominant wind direction	SE

General location details	
Nearest Village	Dondapaddu at 3.0 km from the mining site
Nearest city	Jaggyapeta at 25 km from the mining site.
District headquarters	Nalgonda at 28 km from the mining site.
Nearest railway station	Bonakallu section of the South Central Railway station at 50 km from the mining site.
Nearest Airport	Vijayawada Airport situated at 83.0 KM distance from the mine site.
Archaeological/Historically important site	Not present within 10 km radius
Sanctuaries/National parks	None within 10 km radius
Nearest Reserved Forest	Nil

2.0 INTRODUCTION OF THE PROJECT/BACKGROUND INFORMATION

2.1 Identification of project and project proponent. In case of mining project, a copy of mining lease / letter of intent should be given.

ZUARI CEMENT LIMITED,(Mine Owner) is a resident of Cuddapah district in the state of Telengana.

TABLE 1.1 Description of Project Proponent

Address of the Lessee	M/S Zuari Cement Ltd,(Mine Owner) KrishnaNagar, Yerrlaguntla, Dist.- Cuddapah , Telengana-516311 Phone No.8683235107
Address of Mine	Sitapuram Limestone Ore Mines Village : Dondapaddu Mandal: Mellacheruvu District: Nalgonda, Telengana Ref: Toposheet No: 65 N/11

2.2 Brief Description of nature of the project

The Sitapuram Limestone Mine (ML-1) was granted in favour of M/s Rasi Cement Ltd. For limestone comprising the Sy. No.18, 46 to 62,674 to 690, 790 to 796, 815, 816, 849 & 850, 37 to 48, 82 to 129 spread across the Dondapadu, Ramapuram and Revoor villages having total extent of Ac. 2019.17, in the District of Nalgonda, Telangana State.
The copy of the said G.O. vide Memo No. 141 Ind & Comm (M-I), Dt. 07.03. 1984 of State of Andhra Pradesh

The above lease was transferred to the extent of Ac. 1919.17 Gts. excluding Ac. 100.00 from the total extent of Ac. 2019.17 Gts., In favour of M/s Vishnu Cement Ltd. Vide G.O. Memo No. 186, Dt. 10.04.1985. The copy of the said G.O of Andhra Pradesh, Dt. 10.04.1985

The extent of ML was reduced from Ac. 1919.17 Gts to Ac. 1903.10 Gts (770.23ha). by deleting A. 16.67 Gts that was categorized as assigned land vide GO Ms. 347 dated 21.08.2002

The 1stRenewal ML was granted for the extent of Ac. 1903.10 Gts (770.23). vide the G.O Ms. No. 361, Dt. 19.12.2003 by the Govt.of Andhra Pradesh, wherein the Sy. No. 849 & 850 was not figured due to typographical error, omission by oversight. The copy of the said GO, Dt.19.12.2003

That, on 29.06.2007, M/s Vishnu Cement Ltd. was merged into M/s Zuari Cement Ltd. and subsequently the Mining Lease was transferred on 09.07.2010 vide GO Ms No. 68 and accordingly the lease deed was executed overran extent of 770.23 ha. The copy of the said transferred GO Dt. 09.07.2010 and the execution Proceeding Dt. 02.09.2010 of Andhra Pradesh

The mining plan was approved vide letter No. MP/ANP/NLG/Lst-78-SZ dated 12.11.2003. The PMCP was approved vide letter No. MP/AP/NLG/ Lst-78-SZ dated 21.03.2005. The Modification of approved mining plan was approved vide letter MP/AP/NLG/Lst-78-SZ dated 26.10.2006. Subsequently the scheme of mining was approved vide letter No. MS/AP/NLG/ L.ST-199-SZ. Dated 06.05.2009 valid up to 31.03.2014.

2.3 Need for the project and its importance to the country and or region

In the present scenario, the limestone has good market in the country apart for export purpose and it is the most heavily consumed ore for the production of cement. Due to the use of limestone in cement production, the lessee wants to exploit the ore considering the market demand and sufficient availability of Limestone within the area, it is very much essential to have mining project to earn more export and provide employment opportunities.

2.4 Demand and Supply Gap

There is a huge demand of limestone for cement industry and is ever growing with the growth of industrial sector in the country. The requirement of the cement is always found high in adjoining area. Hence, there will always be a good demand for limestone in the cement industry.

2.5 Imports V/s Indigenous production

Limestone mined from the proposed project will neither be exported nor imported. It is an indigenous production and will be supplied within the country.

2.6 Export Possibility

There will not be any export of limestone ore.

2.7 Domestic / Export Markets

The limestone ore produced from the lease area will be exported to the domestic users, of Nalgonda Dist, according to their requirement of grade and specified size. The total ore extracted in the mine is economical.

2.8 Employment generation (Direct and indirect due to the project)

The proposed project will generate direct employment to 82 people of the local people for both the leases and number of indirect beneficiaries will be of the order of 1000.

3.0 PROJECT DESCRIPTION

3.1 Type of project including interlinked and interdependent projects, if any

Mining activities will be carried out by opencast fully-mechanized mining (OTFM-A category) involving use of Air Compressor and Hand Breaker for separation of ROM. Hydraulic excavator with a bucket capacity of 0.9 cu.m rear dump truck of 14 tonne capacity, loader /JCB will also be in use. Handling of ROM ore will be by manual operations. The benches shall be of 9 m height with two slices of 6 m height each and full ultimate width will be developed for facilitating development and production. The benches shall be sloped at 84^0 to the horizontal. Since, the formation is very hard and near horizontal, there will not be risk of any slope failures.

3.2 Location

The Mining area is located in Dondapaddu village of Mellacheruvu Mandal at Nalgonda district, Telengana. The mine lease area falls under the Toposheet No. 65N/11.

Toposheet No. : 57 P/11, 65 D/1

Latitude : N16°48’31.6”-16°50’42.0” & 16^0 48’ 00’’-16^0 48’ 30’’
Longitude : E 70°59’16.2” - 80°02’28.7” & 79^0 59’ 30’’-80^0 00’ 30’’

LOCATION MAP is enclosed herewith as Annexure-1.

3.3 Details of alternate sites considered

The mineral is site specific, hence there are no alternative sites considered. Mining activities are carried out based on local geology and availability of minerals.

3.4 Size of magnitude of operation

The proposed mine has lease over an area of 770.23 Ha of M.L-1 & 558.94 Ha of M.L-2. The total extractable material would be approx. 3.0 MTPA.

3.5 Project description with process details

The mining will be opencast fully-Mechanised Mining (OTFM-A Category. The mining plan is specially designed with 9 meters bench height for proper recovery of ore, the adjacent waste rock is highly weathered black soil, which can be excavated with excavator without drilling and blasting. The hauling roads with proper gradients and benches are properly designed along the strike direction by adopting best safety concepts. The efficient trained manpower is engaged for the best recovery of ore and segregation of ore as per grade.

Working Depth (Below ground level)

The benches shall be of 9 m height with two slices of 6 m height each and full ultimate width will be developed for facilitating development and production. The benches shall be sloped at 84^0 to the horizontal. Since, the formation is very hard and near horizontal, there will not be risk of any slope failures.

3.6 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 in the proposed project. Processing of mineral involves only dressing of ROM material manually to get rid-off adherent clay and non-ore material. The main processing operation for Limestone is manual segregation. The manual segregation includes separation of ore from ROM and stacking into stocks as per grade. This can be done only with manpower. No mechanized method is substitute for this manual segregation.

3.7 Resource optimization / recycling and reuse

Minerals are depleting asset once mined, they cannot be replenished like agriculture, vegetation thus a scientific approach will be taken up in exploitation of mineral with systematic method. Mining work will be carried out by Fully-mechanized Open Cast method. Sub grade ore will be kept separately and would be blended with high grade to make it saleable. Overburden will be disposed of in proposed dumps and reclamation and rehabilitation of the dump by way of afforestation will be taken up once the dump becomes stabilized.

3.8 Availability of water its source, energy / power requirement and source

3.8.1 Water Requirement

Around 55 m^3/day of water will be required for the project activity for both the leases. Water requirement will be met through bore well.

Water is required in the mine for spraying on the haul roads and working faces to suppress the dust and also for use in the garage and for green belt development. Also a small quantity of drinking water is required.

3.9 Quantity of wastes to be generated (liquid and solid) and scheme for their management / disposal.

3.9.1 Solid waste generation & its disposal

The waste likely to be generated is calsic in nature, bearing white color.

Disposal and Location:

The dumping work is proposed to be done by the dumpers. The dumpers and other machineries will do waste dumping in the proposed location. There is one proposed dump located at the mine site.)

3.9.2 Liquid effluent

No liquid effluent will be generated at the mining site. Domestic waste water generated will be treated in septic tank followed by soak pit.

4. SITE ANALYSIS

4.1 Connectivity

The area is connected by fair weather road. Jaggyapeta is the Nearest Town to Sitapuram. Jaggyapeta is 15 km from sitapuram. Road connectivity is there from Jaggaypeta to sitapuram.

4.1.1 Nearest Railway Station

The nearest railhead is at Bonakallu at a distance of 50 Km from the lease area.

4.1.2 Nearest Airport

The nearest airport facility is available at Vijaywada at about 90 km from the mine site.

4.1.3 Nearest Highway

The Vijaywada- Hyderabad National Highway passes at about 15 KM North of the village project site.

4.2 Land form, land use and land ownership

With the envisaged rate of annual production of about 3.0 MTPA, when the mine is fully developed, the estimated total mineable reserves of about 202026000 T of M.L-1 & 30960300 T M.L-2 will sustain the mining during the 5 year plan period. So there is no subsequent life of the mine after the 5 year Mining Plan period.

During this scheme period the mining operations will be fully developed. At the end of the life of the mine the quarry will be backfilled during conceptual period.

4.3 Topography

The ML area topography is a plain lane with a gentle slope towards the west and the contour varies from 164 mRL at the eastern side and sloping towards the western side up to 160 mRL above M.S.L.

4.4 Existing land use pattern

The total land degradation at the end of the life of the mine shall be 167.9 ha as detailed below:

Present and Conceptual land use pattern of the M.L-1 area

Type of land use	At present in Ha.	At the end of the Plan period in Ha	Total area at the Conceptual period in Ha.
Mining	78.39	86.27	110.16
Overburden Dump	---	---	---
Mineral storage	0.66	0.66	0.66
Sub-Grade stack	Nil	Nil	Nil
Top soil	Nil	Nil	Nil
Infrastructure	12.98	12.98	12.98
Roads	13.18	13.18	13.18
Specify plantation	30.8	34.62	38.5
Screening plant/ Washing plant	Nil	Nil	Nil
Nala pond	9.8	9.8	9.8
Total land degradatio	**127.05**	**136.5**	**75.36**
Area which will remain untouched	1201.93	1178.73	1212.73
Total	**1329.17**	**1329.17**	**1329.17**

4.5 Existing infrastructure

The mine has complete developed roads connecting to nearby town Jaggyapeta. It is well connected to Vijaywada port and Airport at 91 kms away from the mine. There is no major construction near to the mines.

The office building, rest house for labour, boreholes for drinking water and toilets are proposed to be developed in the mines.

4.6 Soil classification

Top Soil of 0.5m to 1.5 m in thickness, average being 1 m. occurs as overburden. The ore zone extends over a strike length of about 300 m with width varying from 25 m. thus, exhibiting pinching and swelling characteristics along the strike direction

4.7 Climate data from secondary sources

CLIMATE AND RAINFALL

Day temperatures in summer (March to May) touch 45^0C to 50^0C, the average temperature during summer is around 45^0C. Mercury dips to 15^0C to 20^0C during winter days (November to January). The area receives rainfall mainly from the SW monsoon during June to September with the monthly rainfall ranging between 710mm and 750 mm. The area is also visited by NE monsoon in October and November along with cyclonic storms. The annual fall is around 1050 mm.

4.7 Social infrastructure available

Other statutory and social infrastructures facilities like hospitals, schools, colleges etc are available nearby villages, Dondapaddu and other facilities like rest shed, blasting shed, first- aid-centre, ambulance service, drinking water facilities, Canteen, Time Office etc., has been proposed to be provided.

5. PLANNING BRIEF

5.1 Planning concept (Type of industries, facilities, transportation etc) town and country planning / development authority classification

With the envisaged rate of annual production of about 3.0MTPA, when the mine is fully developed, the estimated total mineable reserves of about 202026000 T of M.L-1 & 30690300 M.L-2 say

will sustain the mining during the 5 year plan period. So, there is no subsequent life of the mine after the 5 year Mining Plan period.

Bench height and width will be maintained at 9m and 9m each respectively both in ore and waste. The mining is proposed to be carried out by Fully- Mechanized means, deploying drifter drill and 10tonne tippers, etc.

5.2 Population projection

This mining project will provide opportunities for employment of nearly 20 people from the nearby villages. The social set up and life style of the nearby area will also be improved further with progress of mining activities in the way of availability of Education, Medical facilities, Communicational facilities, drinking water facility, cultural and recreational activities, and proper sanitation system.

5.3 Land Use Planning

Land use planning has been clearly explained under Existing Land Use Pattern.

5.4 Assessment of Infrastructure Demand (Physical & Social)

With the generation of direct and indirect employment opportunities for the local people, the Mining Project will provide safety equipments, small rest shelter and first aid facilities for the workers in the mine lease area.

5.5 Amenities / facilities

The management of the mine will extend facilities like

a) Direct and indirect employment opportunities

b) Provision of drinking water

c) Education and Medical facilities

d) Arrangement of safety and healthy working conditions

e) Conducting medical camps for workers and nearby villagers at regular intervals

6. PROPOSED INFRASTRUCTURE

6.1 Industrial area (Processing area)

The main processing operation for Limestone will be manual segregation. The manual segregation includes separation of ore from ROM and stacking into stocks as per grade. This can be done only with manpower. No mechanized method is substitute for this manual segregation.

6.2 Residential Area (Non processing area)

As the workers will be hired from the nearby villages, no residential areas are required.

6.3 Green Belt

The plantation is developed in the buffer zone and same practice is proposed for future course of mining. During plan period, it has been proposed by the the lessee to plant 5000 nos. of

saplings, covering 14.9 Ha. area, along the entire lease boundary.

Year	No. of sapling	Area in Ha.	Type of sampling
2014-15	1000	14.9	Chakunda, Acasia Guava, Neem, Jamun
2015-16	1000	14.9	
2016-17	1000	14.9	
2017-18	1000	14.9	
2018-19	1000	14.9	
Total	**5000**	**33.88**	

Year	No. of sapling	Area in Ha.	Type of sampling
2017-18	928	0.464	Chakunda Acasia Guava Neem Jamun
2018-19	928	0.464	
2019-20	928	0.464	
2020-21	928	0.464	
2021-22	928	0.464	
Total	**4640**	**2.32**	
During the conceptual period (2022-2023 to11-11-2042)	**9240**	**4.62**	

6.4 Connectivity

The area is connected by fair weather road. Jaggyapeta is the Nearest Town to Sitapuram. Jaggyapeta is 15 km from Sitapuram. Road connectivity is there from Jaggyapeta to Sitapuram.

6.5 Drinking Water Management

The drinking water will be made available from bore wells. The quality of the surface water as well as ground water has been reported normal.

6.6 Sewerage System

NA

6.7 Industrial Waste Management

Not applicable

6.8 Solid Waste Management

Not Available

6.9 Power requirement & Supply / sources

No electric power is available in the applied area. However, the village has got Electricity Facilities. Power lines are passing within 1.5 K.M. from the area. One Diesel generator, capacity of 200 KVA will be used in the mine when no electricity is available.

7. REHABILITATION AND RESETTLEMENT (R&R) PLAN

7.1 Policy to be adopted (Central / State) in respect of the project affected persons including home oustees, land oustees and landless labourers (a brief outline to be given)

No human settlements are existing in the ML area and no humans will be displaced from the area, so the proposed project does not involve any rehabilitation and resettlement

8. PROJECT SCHEDULE & COST ESTIMATES

8.1 Likely date of start of construction and likely date of completion (Time schedule for the project to be given)

The project will commence once the Environmental Clearance and other necessary statutory clearance certificates are obtained from the respective departments / authorities.

8.2 Estimated project cost

The total cost of project would be around Rs. 1112 Lakh.

9. ANALYSIS OF PROPOSAL (Final recommendation)

The project will bring economical benefits to the State by the ways of royalty of mineral. The mining operations shall be providing employment to approximately 20 people of the local area and benefiting more than 30 people indirectly.

Socio-economic condition of area will improve as mining activity will create additional employment for the local people raising their living standard and socio economic status. Significant contribution will be made towards education, medical facilities and cultural aspects.