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1.0 EXECUTIVE SUMMARY

The lease area of Limestone Mine (Survey No. 489) is situated near village - Sedam, Tehsil – Sedam and District- Gulbarga, Karnataka for an area of 119.64 hectares.
Order for grant of mining lease over an area of 119.64 ha in Sedam village for Limestone to Cement Corporation of India Ltd. was issued by Government of Karnataka vide letter No. CI 69 EMI 1965 dated 04/12/1965.

The Sedam Limestone mining lease was executed covering an area of 119.64 hectares. The mining lease was granted for a period of 20 years having validity upto 27.06.1996. Vide order no. CI 133 CMC 2017 dated: 27/12/2017 The Govt of Karnataka has extended the lease period of mines upto 31/03/2020.

The mining plan for the mining lease area (ML No 2015) was earlier approved by Controller of Mines, Indian Bureau of Mines-Bangalore Regional Office vide letter no. KNT/GLB/Lst./88-52 dated 13.01.1993. The approval was granted for a period of five years ending on 31.03.96. The mining lease area expired on 27.06.96. Applications for renewal of mining lease were submitted on 28.06.1995 and vide order no. CI 133 CMC 2017 dated: 27/12/2017 The Govt of Karnataka has extended the lease period of mines upto 31/03/2020.

The mining will be carried out by open-cast mechanized method as per the approved Mining Scheme only. The lease area is classified as Govt. & Pvt. Wasteland with no forest land involved. The proposed rate of production is 1.0MTPA of ROM. The estimated project cost is Rs 360 lacs approx.

1.1 INTRODUCTION

Table 1.1: Salient Features of the Mine Site

S.No.	Particulars	Details	
A.	**Nature of the Project**	Limestone Mining	
B.	**Size of the Project**		
1.	Lease area	119.64 hect.	
2.	Proposed Production capacity	1.0 MTPA of ROM	
C.	**Location Details**		
1.	Village	Sedam	
2.	Tehsil	Sedam	
3.	District	Gubarga	
4.	State	Karnataka	
5.	Latitude & Longitude	**Latitude (N)**	**Longitude (E)**
		17^0 08′ 39.00″ to 17^0 09′ 15.00″	77^0 19′ 54.00″ to 77^0 21′ 00″

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6.	Toposheet No.	56 G/8
D.	**Environmental Setting of the Area**	
1.	Ecological Sensitive Areas	Nil
2.	Nearest River/Water body	Kagna River, 10.0 Km, N Kamalavati River, 3.0 Km, SN
3.	Nearest Town/City	Sedam , 6.0 Km, WN Gulbarga, 58.0 Km, WN
4.	Nearest Railway Station	Kurgunta R.S, 6.0 Km, N
5.	Nearest Airport	Rajiv Gandhi International Airport, Hyderabad, 117.0 Km, NE
6.	State Boundary	The proposed project lies within the interstate boundary of Telangana and Karnataka, which is about 3.6 Km towards NE from the mine site.
7.	Seismic Zone	Zone – II
E.	**Cost Details**	
1.	Total Estimated Project Cost	Rs. 360 Lacs approx.
F.	**Requirements of the project**	
1.	Proposed Water Requirement	10.0 KLD
2.	Power Requirement	--
3.	Man Power Requirement	44 (Skilled and Unskilled person)

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.

Limestone Mine of M/s Cement Corporation of India Limited (Survey No. 489) is situated near Village – Sedam, Tehsil – Sedam, District – Gulbarga, Karnataka for an area of 119.64 ha.

The working will be carried out by opencast semi-mechanized method as per the approved Mining Scheme and Progressive Mine Closure Plan. The lease area is classified as Govt. Waste land. The estimated project cost will be Rs. 360 lacs appox.

Name and address of the Applicant	Shri S.K Sahu Additional General Manager M/s Cement Corporation of India Limited Core –V, Scope Complex, 7 Lodhi Road, New Delhi – 110003 Telephone No. – 011-24365358; Email: miningccitandur@gmail.com

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2.2 BRIEF DESCRIPTION OF NATURE OF THE PROJECT

This is a mining project. As per EIA Notification dated 14th Sep, 2006 and as amended till date, the project falls under, Category "A".

The brief of the project is as under:

Table 2.2 Brief of projects

S. No.	Particulars	Details
1	Lease Area	119.64 Hectares
2	Mineable Reserves	84680000 tons
3	Capacity	1.0 MTPA of ROM
4	Life of Mine	85 years approx
5.	Water requirement	10.0 KLD

It is a limestone mine. The mineral will be used for cement industry. Water requirement of 10.0 KLD for the project will be met by tanker water supply.

2.3 NEED FOR THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY AND OR REGION

India is one of the largest producers of cement and cement machinery. Nowadays production of cement has increased substantially. Cement production is internationally competitive and the industry is expected to record spectacular growth in production as well as export. In the southern zone, in India, Andhra Pradesh and Karnataka are the leading producers of cement. Limestone is of much economic importance. Crushed limestone is used as concrete aggregate, as road metal and, if pulverized as an agricultural dressing. When calcified, it forms lime, which is a major constituent in the manufacture of Portland cement. It is used as a flux in the reduction of iron ores and is utilized as paper filler. Another use of limestone is that it is used as storage reservoirs for both petroleum and groundwater.

2.4 DEMAND - SUPPLY GAP

There is a good demand for limestone mineral from the above mentioned industries.

2.5 IMPORTS VS. INDIGENOUS PRODUCTION

The Limestone produced from the subject mine will be used for consumption in the nearby cement plants.

2.6 EXPORT POSSIBILITY

No export of Limestone is proposed.

2.7 DOMESTIC/ EXPORT MARKETS

Limestone is supplied to local cement Industry.

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

The proposed project generates employment for local people. Priority for employment will be given to local persons. About 44 people will get direct employment and equal number will get indirect employment.

3.0 PROJECT DESCRIPTION

3.1 TYPE OF PROJECT INCLUDING INTERLINKED AND INTERDEPENDENT PROJECTS, IF ANY.

This is a semi mechanized Open cast limestone mining project. The proposed Limestone mine is of 119.64 Hectares. No interlinked projects were associated with this project. This will be an independent project. The mineral excavated from the mine will be utilized in cement industry.

3.2 LOCATION (MAP SHOWING GENERAL LOCATION, SPECIFIC LOCATION, AND PROJECT BOUNDARY AND PROJECT SITE LAYOUT) WITH COORDINATES

The proposed Limestone Mine is situated at Survey No. 489 is situated near Village – Sedam, Tehsil – Sedam, District – Gulbarga, Karnataka. The project site falls in Survey of India Topo-sheet No. 56G/8.

The geographical location with respect to boundary pillars of the proposed project are:-

Table 3.2 Geographical Position of the Boundary Pillars

Ref points	Latitude (N)	Longitude (E)
A	N17°09'04.0"	E77°19'57.1"
B	N17°08'47.6"	E77°20'07.3"
G	N17°08'22.5"	E77°20'37.3"
D	N17°08'26.2"	E77°20'20.9"

The location map is shown in **Figure – 1**

Google Image of Mine lease area is shown in **Figure - 2**

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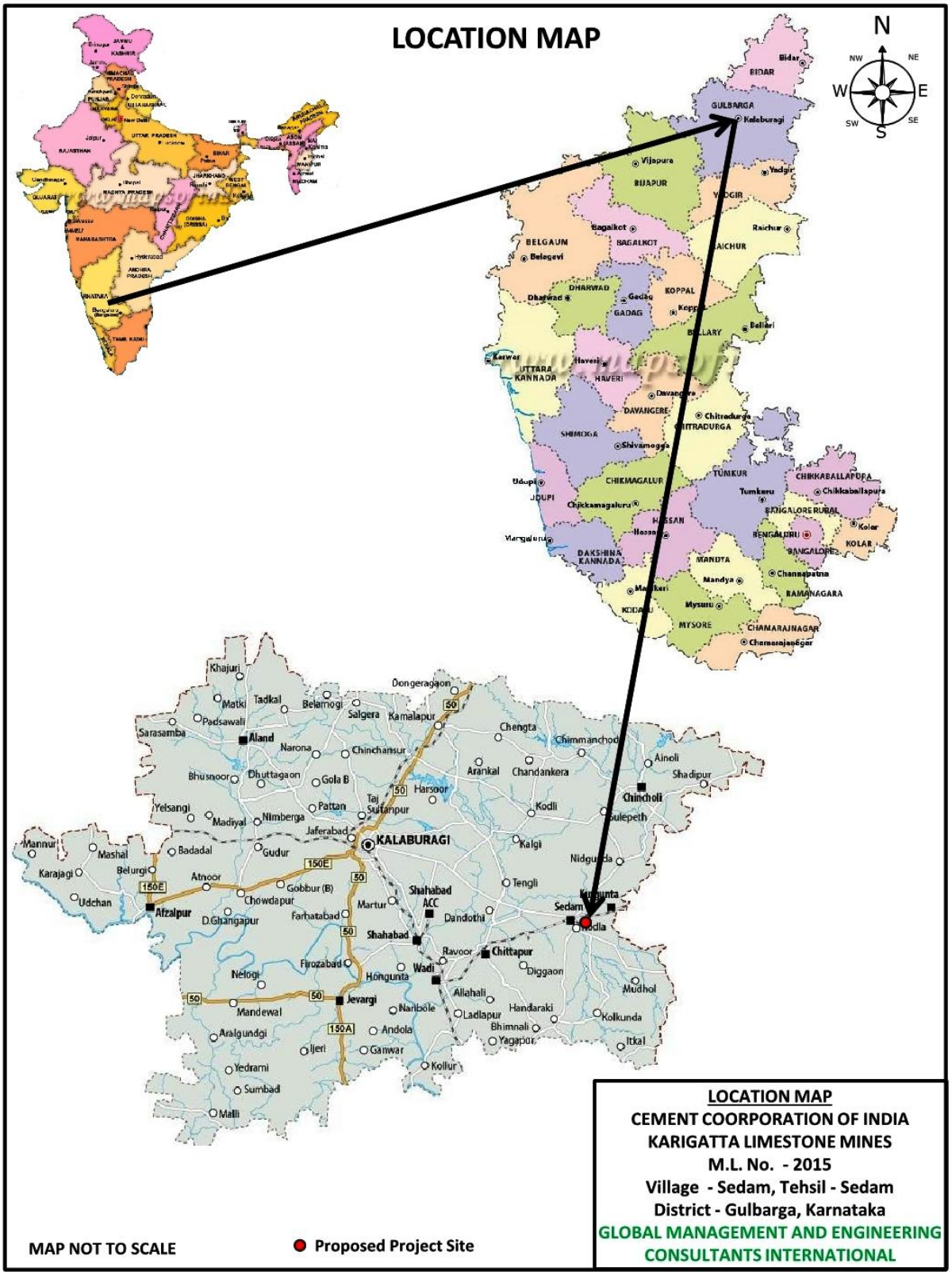

Figure 1: Location Map

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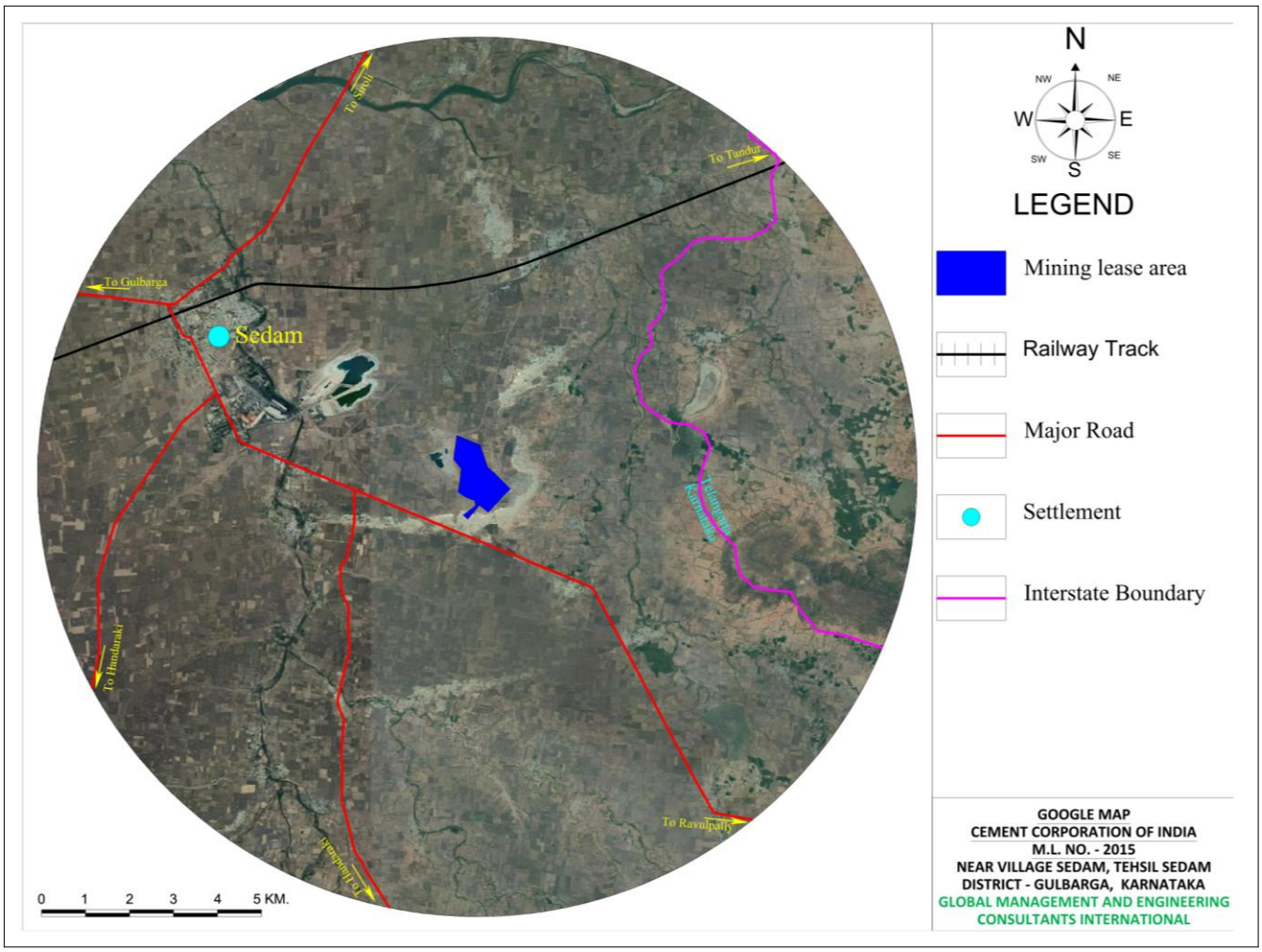

Figure 2: Google Image of Mining Lease Area

3.3 DETAILS OF ALTERNATE SITES CONSIDERED AND THE BASIS OF SELECTING THE PROPOSED SITE, PARTICULARLY THE ENVIRONMENTAL CONSIDERATIONS GIVEN INTO SHOULD BE HIGHLIGHTED.

No alternate site was considered as mining project is a mineral specific and site specific.

3.4 SIZE OR MAGNITUDE OF OPERATION

The size and magnitude of the lease area is as given below:-

Table 3.4: Size or Magnitude

S. No.	Particulars	Details
1.	Lease Area	119.64 hectares
2.	Mineable Reserves	84680000 tons
3.	Mineral Production	1.0 MTPA of ROM
4.	Mine Waste (Plan period)	--
5.	Life of Mine	85 years approx
6.	Total Man Power (Nos.)	44

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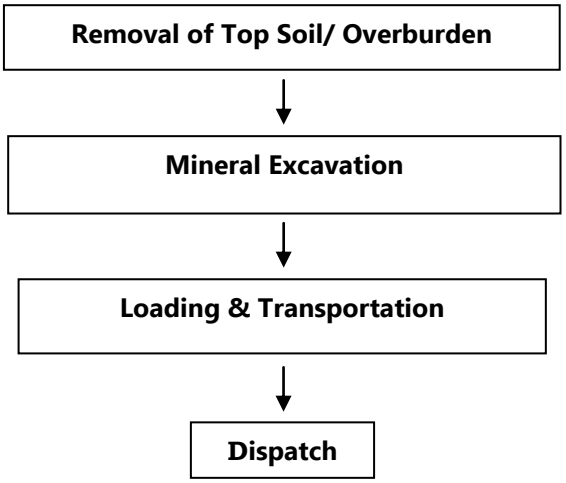
3.5 PROJECT DESCRIPTION WITH PROCESS DETAILS (A SCHEMATIC DIAGRAM/ FLOW CHART SHOWING THE PROJECT LAYOUT, COMPONENTS OF THE PROJECT ETC. SHOULD BE GIVEN).

It is proposed to produce Limestone for a period of 5 years with a production of 1.0 MTPA of ROM as per the Mining plan. The details of year wise production for the first five years period are given below:-

Table 3.5: Year Wise Production of limestone for the Five Years Period

Year	Limestone (in TPA of ROM)	O.B/ Waste (in TPA)
I	1000000	50000
II	1000000	50000
III	1000000	50000
IV	1000000	50000
V	1000000	50000
Total	**5000000**	**250000**

The mining operations will be carried out by open cast mechanized method, which includes drilling, blasting, loading, transport and dispatch. The process flow diagram is given as under:



PROPOSED METHOD OF MINING

Mine will be developed by mechanized opencast mining.

METHOD OF MINING

The proposed mining operations will be carried out by open cast mechanized method. The salient features of proposed mining method are:-

- The maximum bench height has been taken 6 meters; considering the quality of limestone,

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floor level of cement grade limestone, and type of equipments particularly loading machines deployed.

- The minimum bench width should be three times width of dumper and three meters from the edge of the stockpile and one meter from valley side.
- Face slope will be maintained 85°.
- Ultimate pit slope is proposed 45°
- Drilling will be done by Jack Hammer using 1.5m with effective drill roads with 32mm diameter bits.

EXTENT OF MECHANIZATION

The details of equipments to be used in mining operation are listed below:-

Table 3.5: List of Machineries

S.No.	Machine	Nos.
1.	Shovel	1
2.	Compressor	2
3.	Dumper	6
4.	Drill 4" Dia	2
5.	Mechanical Crane	1
6.	Dozer	1
7.	Excavator	2

The drilling will be done for six days in a week and blasting twice a week depending upon requirement.

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 for production of the mineral. The final product will be sent to Tandur cement plant. The mode of transportation of material will be by road. Tippers/ trucks will be used for transportation to the end users.

3.7 RESOURCE OPTIMIZATION/ RECYCLING AND REUSE ENVISAGED IN THE PROJECT, IF ANY, SHOULD BE BRIEFLY OUTLINED

No recycling and reuse of material is envisaged as entire mineral will be used in nearby cement industries.

3.8 AVAILABILITY OF WATER ITS SOURCE, ENERGY / POWER REQUIREMENT AND SOURCE SHOULD BE GIVEN

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The detailed breakup of the same is given below:-

Table 3.8 Water Demand

S No	Particulars	Details	
1.	Domestic	3.0 KLD	Tanker water supply from nearby region
2.	Dust Suppression	7.0 KLD	
3.	Plantation		
Total		**10.0**	

3.9 QUANTITY OF WASTES TO BE GENERATED (LIQUID AND SOLID) AND SCHEME FOR THEIR MANAGEMENT/ DISPOSAL.

The details as tabulated below:-

Table 3.9 - Waste Generation (Liquid and Solid)

Waste		Quantity	Treatment / Disposal
Mine Waste	overburden / waste tons (plan period)	--	--
Liquid	Wastewater Generation (KLD)	<2.5	Septic tank followed by soak pit

3.10 SCHEMATIC REPRESENTATIONS OF THE FEASIBILITY DRAWING WHICH GIVEN INFORMATION OF EIA PURPOSE

The purpose of this Environmental Impact Assessment (EIA) study is to provide information on the nature and extent of environmental impacts arising from the operation of the project and related activities taking place concurrently. The study also focuses on the sensitive issues. For the purpose of the EIA study, the impact zone for the implementation shall confine within a radius of about 10 km from the center of the project site.

In terms of the EIA Notification of the MoEF dated 14th September, 2006, the generic structure of EIA documents shall be as under:

- Introduction
- Project description
- Analysis of Alternatives (Technology & Site)
- Description of the Environment
- Anticipated Environmental Impact & Mitigation Measures
- Environmental Monitoring Program
- Additional Studies
- Project Benefits
- Environmental Cost Benefits Analysis
- EMP
- Summary & Conclusion

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- Disclosure of Consultant Engaged

4.0 SITE ANALYSIS

4.1 CONNECTIVITY

Table 4.1: Basic Amenities

S. No.	Nearest	Name	Distance & Direction (From plot Boundary)
1.	Railway Station	Kurgunta R.S	6.0 km, N
2.	Airport	Rajiv Gandhi International Airport, Hyderabad 116 km , NE	
3.	Highway	N.H-10 N.H- 15	3.64 km, ES 7.8 Km, SWS

4.2 LAND FORM, LAND USE AND LAND OWNERSHIP

The applied M.L area hold is an undulated with a Northerly gentle gradient. Within the mining lease areas, the limestone deposits lies in the form of dome shaped hill having slopes all around. The surface levels in the mining lease area vary from 493 m to 438 m and the floor of cement grade limestone vary from 461 m to 423 m. The total mining lease area is 119.64 hectares is Govt & Pvt land.

4.3 TOPOGRAPHY (ALONG WITH MAP)

The Topography of the Study Area (10 km radius) is slightly undulating with a Northerly gentle gradient. The maximum RL in the lease area is 493.29 m above MSL at the top of the karighatta hill and the minimum RL is 438.00 m in the North-western part. The drainage is generally radial in nature in the mining lease area due to the topographic control. Minor streams existing in the mining lease area are seasonal with surface flow restricted to the rainy season only. The important river in the area is kagna which is a perennial stream flowing about 8-10 kms north of the lease area. Another small river called Kamalavati flows from south to north about 3 kms from the ML area. No PWD road passes through the lease area. The area is practically devoid of any vegetation with occasional shrubs and bushes occurring here and there. There is no Wild Life Sanctuary/National Park within the study area of 10 km radius. The site is located in Zone II (moderate damage risk zone) as per the seismic map and prone to moderate intensity earthquake with MSK VI zone.

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4.4 EXISTING LAND USE PATTERN (AGRICULTURE, NON-AGRICULTURE, FOREST, WATER BODIES (INCLUDING AREA UNDER CRZ)), SHORTEST DISTANCES FROM THE PERIPHERY OF THE PROJECT TO PERIPHERY OF THE FORESTS, NATIONAL PARK, WILD LIFE SANCTUARY, ECO SENSITIVE AREAS, WATER BODIES (DISTANCE FROM THE HFL OF THE RIVER), CRZ. IN CASE OF NOTIFIED INDUSTRIAL AREA, A COPY OF THE GAZETTE NOTIFICATION SHOULD BE GIVEN.

S. No.	Particulars	Name	Distance (Km)	Direction
1.	National Park	None within 10 km radius		
2.	Wildlife Sanctuary	None within 10 km radius		
3.	Eco-Sensitive Areas	None within 10 km radius		
4.	Reserved Forest	None within 10 km radius		
5.	Water Bodies	None within 10 km radius		

The project is not located in whole or in part within 10 km from the boundary of:

(i) Protected Areas notified under the Wild Life (Protection) Act, 1972,

(ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time,

(iii) Notified Eco-sensitive areas,

4.5 EXISTING INFRASTRUCTURE

All infrastructural facilities are available in the area. The nearest railway station is Kurgunta i.e. 6.0 km towards N from the project site. Nearest airport is Hyderabad airport which is 116.0 km towards NE from the mine site. NH-15 AND NH -10 are passing from the area. Power of State Electricity Board is available. Water is available from nearby village.

4.6 SOIL CLASSIFICATION

The area is generally covered by three types of soils Viz. Red sandy soil, Red earth & black cotton soils. Red sandy soils and red earth are permeable and well drained.

REGIONAL GEOLOGY

The lithological units in the region are grouped under Bhima Series of Pre-Cambrian Age. The Lower Bhima Series are intruded by Traps. The area around Kankurthy is occupied by the rocks of Bhima Series. Bhima's are considered equivalent to Kurnools or to Lower Vindhyans. The following table gives Stratigraphic position of Limestone Deposit:

Starigraphy of Limestone Deposit

		Cuddapah	Bhima Valley
Vindhyan System	Upper	-	-
	Lower	Kurnool System	Bhima Series

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---------- Eparchial Unconformity ----------			
Dharwar System			

Mahadevan (1946) has classified the Bhima Series as follows:-

Upper	(550 ft.)	Black blue and purple shales with local sandstones at the bottom & flaggy limestone at the top.
Middle	(550 ft.)	Creamy, grey, bluish and buff limestone and flaggy limestone.
Lower	(350 ft.)	Sand stone and green and purple shales. The bottom beds are conglomerates.

LOCAL GEOLOGY

The area within the mining lease area falls in the middle Bhima series. The rock sequence based on geological investigation has been established as follows

Middle Bhima Series	Upper Band	Pink limestone with fawn patches and a chert horizon
	Middle Band	Light grey to fawn limestone
	Lower Band	Grey Limestone
Lower Bhima Series	Inter bedded limestone and purple shale	

4.7 CLIMATIC DATA FROM SECONDARY SOURCES

The area is characterized by semi arid with an average annual rainfall of about 608.8mm, which is mainly received during monsoon season of June to September. In winter the minimum temperature goes to 25.0°C and maximum 41°C. Relative humidity in the area is above 80% during the monsoon months but is below 20% during the months of March-May.

4.8 SOCIAL INFRASTRUCTURE AVAILABLE

Social infrastructure like hospitals, educational facilities, temple, community centre, roads, bridges, telecommunication and others similar are available within 10 km radius.

5.0 PLANNING BRIEF

5.1 PLANNING CONCEPT (TYPE OF INDUSTRIES, FACILITIES, TRANSPORTATION ETC.) TOWN AND COUNTRY PLANNING / DEVELOPMENT AUTHORITY CLASSIFICATION.

It is a cement industry, open cast mechanized method will be adopted. The proposed mine will produce Limestone with the capacity of 1.0 MTPA of ROM. It will be used as an raw material for cement production at Kurkunta Cement plant.

5.2 POPULATION PROJECTION

Total employment potential in the mine is 44 covering the Mines Manager, Mining Engineer, Geologist, Skilled, Semiskilled and unskilled etc

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

Year wise afforestation programme, plantation is given as under. The main aim of the green belt development is to improve the ecosystem to a maximum possible extent by designing the green cover with the same native species. The year wise plantation programme in first five years is given below at point no. 6.3.

5.4 ASSESSMENT OF INFRASTRUCTURE DEMAND (PHYSICAL AND SOCIAL)

Mining operations are being carried in the area since long time therefore basic infrastructure required for the mining operation is sufficient. Job opportunities from the project are limited, as described above.

Apart from the jobs, the company will provide medical and educational facilities to the employees which can also be availed by the people the plant. Adequate recreational facilities for the staff of the company will be provided.

5.5 AMENITIES/ FACILITIES

Following facilities are provided for mine worker:-

- **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 nearby village by water tankers. It will be stored in earthen pots and tanks at the site.
- **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.

6.0 PROPOSED INFRASTRUCTURE

6.1 INDUSTRIAL AREA (PROCESSING AREA)

No processing is involved.

The mine operation will be by opencast semi-mechanized method of the mining. Limestone produced from this mine will be transported to cement plant through roads.

6.2 RESIDENTIAL AREA (NON PROCESSING AREA)

As the local person will be given employment, no resident area/housing is proposed.

6.3 GREEN BELT

7.5 m of mine periphery will be under plantation in an area of 39.48 hectares Approx.

Native species like Sisoo, Ganuga, Neredu, Neem, Mango, Chinta and Amla etc., are proposed.

6.4 SOCIAL INFRASTRUCTURE

Local population will be employed by the project proponent in the Mine. Further, indirect means of earnings have been created in the area of contractual jobs, vehicle driving, shops,

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construction etc. Apart from these, the company promotes health and education awareness in the area time to time in the area time to time by organizing health and education camps.

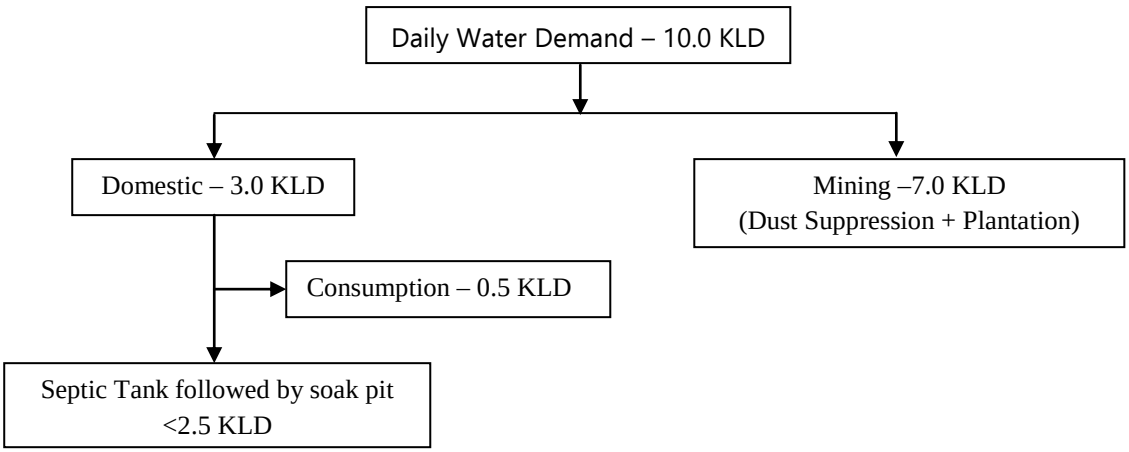
6.5 CONNECTIVITY (TRAFFIC AND TRANSPORTATION ROAD / RAIL / METRO / WATER WAYS ETC)

Details as given in Form I Part I & Part III

6.6 DRINKING WATER MANAGEMENT (SOURCE AND SUPPLY OF WATER)

The drinking and other water demand will be sourced by the tanker supply.

The water demand is given below:-



6.7 SEWERAGE SYSTEM

No sewage is system at project site area, however for mining operation toilet facilities will be provided to mine workers. The generated sewage will be channelized to septic tank along with soak pit.

6.8 INDUSTRIAL WASTE MANAGEMENT

Not applicable

6.9 SOLID WASTE MANAGEMENT

The same has been given in point no. 3.9.

6.10 POWER REQUIREMENT AND SUPPLY / SOURCE

For the proposed mining activity no power is required. If electricity will be required it will be provided by the Electricity Board, Karnataka.

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7.0 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 LABOUR (A BRIEF OUTLINE TO BE GIVEN)

The mine area does not cover any habitation. Hence the mining activities don't involve any displacement of human settlement. No public building, places, monuments etc., exist within the lease area or in the vicinity. The mining operations will not disturb/ relocate any village.

8.0 PROJECT SCHEDULE AND COST ESTIMATES

8.1 LIKELY DATE OF START OF CONSTRUCTION AND LIKELY DATE OF COMPLETION (TIME SCHEDULE FOR THE PROJECT WILL BE GIVEN).

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 ALONG WITH ANALYSIS IN TERMS OF ECONOMIC VIABILITY OF THE PROJECT

The project cost is given as under.

Table 8.2 Estimated Project Cost and Economic Viability

S. No.	Particulars	Details
1.	Estimated Project Cost (appox. cost)	360 Lacs (including operational cost)

9.0 ANALYSIS OF PROPOSAL

9.1 FINANCIAL AND SOCIAL BENEFITS WITH SPECIAL EMPHASIS ON THE BENEFITS TO THE LOCAL PEOPLE INCLUDING TRIBAL POPULATION, IF ANY, IN THE AREA

Proposed Limestone 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.

10.0 ENVIRONMENTAL MANAGEMENT PLAN

Table 10.0 ENVIRONMENTAL MANAGEMENT PLAN

Anticipated Potential Impacts identified	Environmental Management Plan / Mitigation Measures /
ON LAND ENVIRONMENT	
Land cover change / Vegetation loss	Mining activity may alter the land use pattern in the lease area. In order to minimize the adverse affects, the following measures / suggestions will be made. ➢ Green belt development along the boundary of the lease area / dump area/ undisturbed area will be carried out. ➢ Proper barricading and monitoring of the water stored in mine area

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	will be taken up to prevent accidents. ➢ Reclamation will reduce the impact of land cover loss.
SOIL ENVIRONMENT	
Top soil loss	Top soil is a valuable resource, if available at mine site; the same will be stored and used in green belt development.
WATER ENVIRONMENT	
Sewerage water into land / water body / Leachate water / Storm water run-off	**Domestic wastewater** The sewage generated will be channelized to the septic tank followed by soak pit. ➢ Garland drains all around the working pit and dump area will be constructed to prevent water flow outside. ➢ The pit area will be used as rain water storage pit and will be utilized for dust suppression and plantation. ➢ Rain / storm water will be collected in pits pond for various uses within the mine lease area.
AIR ENVIRONMENT	
Dust generation, gaseous emissions, noise generation,	Mining activities will generate dust during drilling, blasting, loading and unloading, transportation operations. The following measures will be taken to mitigate the fugitive dust from different operations. ➢ Laying of haul road as per the standards to reduce air born dust. ➢ To avoid the dust generation from the drilling operations, wet drilling methods will be adopted. ➢ Drill machines will be equipped with dust collectors. ➢ Use of appropriate explosives for blasting and avoiding overcharging of blast holes. ➢ Controlled blasting techniques will be adopted. ➢ Watering of haul roads and other roads at regular intervals. ➢ Provision of dust filters / mask to workers working in dust prone and affected areas. ➢ Provision of green belt all along the periphery of the lease area. ➢ Periodical monitoring of ambient air quality in and around the lease area. ➢ In case of long transportation the trucks after loading will be covered with tarpaulin sheets. ➢ Speed of the vehicles will be maintained within the prescribed limits. ➢ Trucks will not be over loaded and will be maintained to the body level.
NOISE ENVIRONMENT	

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High noise	➢ Proper maintenance of machinery, equipments and improvement on design of machines. ➢ Use of personal protective devices i.e., earmuffs and earplugs by workers, working in high noise areas. ➢ Development of wide green belts of dense foliage trees at mine periphery. ➢ Conducting periodical medical checkup of all workers for any noise related health problems ➢ Proper training to personnel to create awareness about adverse noise level effects.
BIOLOGICAL ENVIRONMENT	
Loss of vegetation & top soil	➢ Suitable protection by way of fencing and tree guards. ➢ Plantation at the rate on 1000 trees / ha. ➢ Timely watering to plants special care during summer. ➢ Timely Manure. ➢ Protection from pest by spraying insecticide, prefer organic nature.

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