

**EXECUTIVE SUMMARY  
(ENGLISH)**

*For*

**INCREASE OF CEMENT PRODUCTION  
FROM 0.080 TO 1.00 MTPA**

*Of*

**M/s. SOUTH INDIA CEMENTS LIMITED  
Malkhed Village, Sedam Taluk, Gulbarga District,  
Karnataka**

## **EXECUTIVE SUMMARY**

### **1.1 INTRODUCTION**

**M/s. SOUTH INDIA CEMENTS LIMITED (SICL)**, has commissioned a Cement Plant in the year 1985-86 with a clinker production capacity of 200 tonnes per day (tpd) (0.066 Million Tonnes Per Annum (MTPA)) near Malkhed Village, Sedam Taluk, Gulbarga District, Karnataka.

The cement plant was intermittently in operation up to 2005. The plant became sick during August 1993 due to financial constraints and accordingly registered with BIFR, New Delhi.

**SICL** proposes to increase Clinker production from 0.066 to 0.66 MTPA and cement production from 0.080 to 1.00 MTPA by upgrading the existing kiln and cooler and installation of new crusher, raw mill, coal mill, cement mill and packers.

### **1.2 LOCATION OF THE PLANT**

The plant site is located near Malkhed village, Sedam Taluk, Gulbarga District, Karnataka.

Nearest railway line connecting Wadi Jn - Sedam of South Central Railway line is at a distance of 1.2 km to NNW direction from the Plant Site.

The National Highway (NH-218) connecting Gulbarga - Bijapur is at 40.3 km in W, The nearest railway station is Malkhed RS located at 1.8km in NNE direction.

Kagina River is located at 6.3 km in NNW direction.

Nearest Settlements from the plant site are

- Itgi - 2.9 km - WSW
- Malkhed - 6.7 km - NNW
- Mogla- 3.5km - WNW

No Reserved Forests within the 10 km radius from the plant site.

Rajashree Cement plant along with limestone mine is the only plant located in 10 km radius.

There are no wild life sanctuaries, national parks, elephant/tiger reserves within 10km radius of the study area.

### **1.3 REQUIREMENTS OF THE PROJECT**

The major raw material for manufacture of cement is Limestone. Limestone will be sourced from the Captive Limestone Mine.

The cement plant is located in an area of 5.67 ha of Patta Land owned by SICL. No additional area is required for expansion.

The water requirement of the cement plant after expansion is estimated to be about 215 m<sup>3</sup>/day. This requirement will be met from mine pit.

Power requirement for the plant after expansion has been estimated as 10MVA. The power requirement will be met by 110 KV grid substation of GESCOM at Malkhed Village which is at a distance of 4 km from plant site.

Present manpower of all categories for the cement plant is 140. Additionally 100 people (Direct or Indirect) will be employed in cement plant under expansion.

SICL under expansion will build residential quarter with 50 houses within plant site in upwind direction

### **1.4 PROJECT DESCRIPTION**

The cement plant is based on dry process and pre-calciner technology with annual clinker output of 0.66 MTPA and cement of 1.00 MTPA.

### **1.5 DESCRIPTION OF ENVIRONMENT**

As part of Environmental Impact Assessment study, baseline environmental monitoring was carried out for Post Monsoon Season 2013 covering the months of October '13 – December '13.

#### **METEOROLOGY**

The predominant wind directions during these hours were from the NNE-NE-ENE-E-ESE-SE-SSE sector accounting to about 52.28 % of the time with calm winds of less than 1.0 kmph for about 27.44 % of the time. Wind speed during this period was varying from 1 to 15 kmph.

## AIR ENVIRONMENT

Ambient air quality of the study area has been assessed through a network of eight ambient air quality locations.

The Ambient Air Quality monitored in the study area was found to be well within the limits of NAAQ standards prescribed for Residential, Rural & Other Areas.

### Air Quality in the study area (All the values are in $\mu\text{g}/\text{m}^3$ )

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S. No	Pollutant	Range of values (98 <sup>th</sup> percentile)	NAAQ Standards for Residential areas
<b>Core Zone</b>			
1	PM <sub>10</sub>	57.3	100
2	PM <sub>2.5</sub>	32.3	60
3	SO <sub>2</sub>	12.5	80
4	NO <sub>x</sub>	13.9	80
<b>Buffer Zone</b>			
1	PM <sub>10</sub>	50.9 - 58.0	100
2	PM <sub>2.5</sub>	22.9 - 35.0	60
3	SO <sub>2</sub>	11.7 - 12.9	80
4	NO <sub>x</sub>	13.4 - 14.3	80

**Note:** CO values are observed less than 1 ppm during study period.

## NOISE ENVIRONMENT

Eight monitoring locations were selected to assess the noise levels in the study area. Noise levels recorded were found to be in the range of 46.0 - 65.0 dB (A) during daytime and in the range of 40.0 - 60.0 dB (A) during night time.

## WATER ENVIRONMENT

Sixteen water samples were collected from in and around the study area. The parameters thus analysed were compared with IS -10500. All the samples were found to be well within the limits.

## SOIL ENVIRONMENT

Eight soil samples were collected within 10 km radial distance of the study area and were analyzed to study the soil quality.

## **BIOLOGICAL ENVIRONMENT**

From the study it has been observed that there are no endangered, endemic or threatened species.

## **SOCIO ECONOMIC ENVIRONMENT**

The study area consists of 316608 populations. The average literacy rate in the study area is found to be moderate i.e., 46.0%. Male literate population of study area is relatively high than the female population.

Occupational status in the study area is in agriculture & Industrial side and less in commercial side.

### **1.6 ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES**

The cement plant is at present not in operation. After upgradation of the cement plant process units, the plant will be operated for clinker production of 0.66 MTPA and cement of 1.00 MTPA. Hence all impacts in this chapter are addressed for the expanded capacity

#### **1.6.1 AIR ENVIRONMENT**

**SICL** has proposed for enhancement of production capacity to 1.00 MTPA cement. Therefore for the prediction of impacts, the plant capacities considered are 0.66 MTPA clinker and 1.00 MTPA cement.

Major pollutant emitted from the cement plant is Particulate matter.

The other pollutants generated from the cement plant are SO<sub>2</sub> and NO<sub>x</sub> emissions from Kiln due to burning of coal. SO<sub>2</sub> emissions have been computed based on the sulfur content of the coal and quantity fired in the kiln.

The plant will be supported by captive mine with limestone production of 1.45 MTPA. The plant is located within the mining lease area. Hence for estimation of impacts, cumulative impact of cement plant and mine have been considered.

## CUMULATIVE IMPACT DUE TO CEMENT PLANT AND LIMESTONE MINE

Predicted maximum ground level concentrations obtained for 24-hour mean meteorological data of Post monsoon season '13 are superimposed on the following existing baseline concentrations to project the overall post expansion scenario in the study area.

The Overall Scenario with predicted concentrations over the baseline is shown below.

### PREDICTED GROUND LEVEL CONCENTRATIONS AND OVERALL SCENARIO, $\mu\text{g}/\text{m}^3$

24-Hourly Concentrations	Particulate Matter - 10 (PM <sub>10</sub> )	Particulate Matter - 2.5 (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Oxides Of Nitrogen (NO <sub>x</sub> )
Baseline concentration, max	58	35	12.9	14.3
Predicted Groundlevel Concentration (Max)	5.32	<1.00	<1.00	8.68
Overall Scenario	63.32 {100}	36.0 {60}	13.9 {80}	22.98 {80}

**NOTE: Values in parenthesis are National Ambient Air Quality (NAAQ) standard limits specified for Industrial, Residential, Rural and other areas.**

### AIR POLLUTION CONTROL MEASURES

The cement plant at expanded capacity will have the following pollution control equipment:

- Bag house system for cleaning of raw mill/kiln flue gas.
- Bag house each for coal mill, bag filter systems for Cement Mills and one ESP for each cooler for control of dust.
- Bag filter systems along with ventilation systems to control the fugitive dust generated from the material handling areas.

All the flue gas outlets will be provided with state of art air pollution control equipment to maintain the particulate emission level below 50 mg/Nm<sup>3</sup>.

The cement dust collected in the pollution control devices will be recycled back to the cement manufacturing process.

## **HAZARDOUS MATERIAL FIRING IN THE KILN**

SICL make provision for firing of high calorific value Hazardous wastes.

## **FUGITIVE DUST CONTROL IN THE CEMENT PLANT**

The following measures for control of Fugitive dust as per the CPCB standards will be implemented

1. Dust suppression system for both lime stone and clinker stock yards
2. Water spray while unloading coal in yard and dump hopper
3. Curtains around the coal dump hopper
4. All belt conveyors transfer points hoods sealing with belt curtains and metal sheets
5. Laying of Concrete roads for vehicle movement
6. Dust collectors for hopper venting
7. Fly ash transportation by closed tankers
8. Fly ash transportation by pneumatically
9. Regular sweeping of roads.

Unloading of material will be carried out with great care by avoiding dropping of material from height, wetting the material by sprinkling water while unloading.

All raw material storage areas will be covered.

### **1.6.2 NOISE ENVIRONMENT**

Noise levels generated in the cement plant will be confined within the SICL complex and is further reduced due to attenuation of greenbelt. Noise level at the plant boundary, calculated from the above equation, is expected to be less than 65 dB(A) without considering any attenuation factors. SICL will develop greenbelt in an area of 2.0 ha within the cement plant.

### **1.6.3 WATER ENVIRONMENT**

Water requirement for cement plant including mine will be 215 m<sup>3</sup>/day. This requirement will be met from Mine Pit.

No wastewater will be released from the cement plant from process area.

Of the total consumption of 215 m<sup>3</sup>/day, about 24 m<sup>3</sup>/day will be generated as wastewater.

The domestic wastewater is treated in septic tank followed by soak pit.

#### **1.6.4 LAND ENVIRONMENT**

No solid waste will be generated from the cement plant. The dust collected in the air pollution control equipment in the cement plant will be recycled back to the process.

Refractory bricks are one of the solid waste generated from the kiln section. Due to wear and tear, SICL will replace the refractory bricks once in a year. These bricks due to high recycling value will be disposed to outside agencies.

#### **HAZARDOUS WASTE MANAGEMENT RULES**

SICL will store the hazardous waste in a designated area. This area will be isolated from the other utility areas.

Spent Oil from the gear boxes and automobile batteries will be disposed to the authorized vendors as per the Hazardous Wastes (Management and Handling) Amendment Rules, 2008.

#### **ENERGY CONSERVATION MEASURES**

SICL as part of expansion will convert 4 stage preheater to 5 stage pre heater to utilize the thermal energy of the flue gases of Kiln and cooler. This will result in energy conservation of about 15 %.

#### **GREEN BELT DEVELOPMENT**

An area of 0.5 Ha is under greenbelt development in the plant. SICL will develop 33 % of the area which is about 2.0 Ha under greenbelt in next five years.

#### **1.6.5 SOCIO ECONOMIC ENVIRONMENT**

The cement plant was commissioned in the year 1985-86 and was in operation upto 2005. The plant became sick in August 1993 due to financial constraints and accordingly registered with BIFR, New Delhi. New resourceful management has associated with the promoters and taken up revival of the existing plant operations. To make the project viable, it is proposed to enhance the production capacity of the plant. The operation of the project will result in providing employment to about 240 persons (Direct or indirect).



The plant site is acquired land of SICL and no additional land acquisition is involved under the expansion. Hence no R & R is involved.

### **1. 7 BUDGET FOR IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT PLAN**

The project cost of proposed expansion will involve a total capital investment of Rs. 85 Crores.

**SICL** has budgeted an amount of Rs. 5.12 Crores towards implementation of Environmental Management Plan

### **1.8 PROJECT BENEFITS**

The cement plant was commissioned in the year 1985-86 and was in operation upto 2005. The plant became sick in August 1993 due to financial constraints and accordingly registered with BIFR, New Delhi. New resourceful management has associated with the promoters and taken up revival of the existing plant operations. To make the project viable, it is proposed to enhance the production capacity of the plant.

SICL will take up following social welfare measures for the following villages falling in proximity to the plant site

- a. Malkhed
- b. Itgi
- c. Diggaon

- Employment will be provided to the eligible persons during operational phase
- Conducting Health camps for surrounding villages.
- Repair of roads in nearby villages.
- Providing infrastructure to schools including toilets, uniforms, black board, course material, text books etc
- Sponsoring rural sports and adult education.
- Publicity awareness camps for HIV, Pregnant women
- Repair/construction of public conveniences like Bus Shelters etc

SICL will incur an amount of Rs 100 lakhs for implementing the above listed social welfare measures