

**Dec'  
2017**

# **EXECUTIVE SUMMARY**

**OF**

**M/S. SAINT GOBAIN GLASS INDIA LTD**  
**(Mining of silica sand)**  
**Sri SN. Eisenhower, Director,**  
**Plot 98, APIIC, Near Integrated Check Post,**  
**Karur Village, Tada – 524401, Nellore District**  
**Site Address**

**Extent: 32.67 Ha**

**Sy.No. 107, Karlapudi (V)**  
**Kota (M)**

**S.P.S.R Nellore District, A.P**

**Production capacity**

**Mining of silica sand – 2, 03,550 TPA**

**Baseline data collected: Jan' 2017 to March'2017**

**Sector: 01 – Mining of minerals, Cat –B**

**Approved ToR Lr. No: SEIAA/AP/NLR-169/2015 Dt: 08.12.2016**

**PREPARED BY**

**SV ENVIRO LABS & CONSULTANTS**

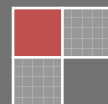
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**1.0 INTRODUCTION**

M/s. Saint Gobain Glass India Limited has proposed to mine silica sand over an extent of 32.67 Ha of mining lease area in Sy. No.107 of Karlapudi Village, Kota Mandal, S.P.S.R Nellore district, Andhra Pradesh. The envisaged production for current mining plan is 2, 03,550 TPA (Max) of silica sand.

M/s. Saint Gobain Glass India Limited had filed mining lease application for silica sand over an extent of 32.67 Ha of mining lease area in Sy. No: 107 of Karlapudi Village, Kota Mandal, S.P.S.R Nellore district, Andhra Pradesh on 06.09.2003. The Asst. Director of Mines and geology has recommended for grant of mining lease over an extent of 32.67 Ha in the above mentioned area and M/s Saint Gobain Glass India Limited has been requested to submit the approved mining plan vide memo No. 923/M.I(2)2006-1 dated 01.11.2006.

As such mining plan got approved by the ZDM&G O/o DM&G Hyd, vide letter No. 4647/MP-I/07, dated 10.07.2009.

In the requirement for obtaining EC, the mining plan should be approved as per latest norms of the honorable NGT order, Vide Notice No. 2634/NGT/2015 dated 02-07-2015 issued by the sub-committee of SEAC for silica sand mines of SPSR Nellore district.

In this connection modification to the approved mining plan incorporating the latest norms is necessitated as required under rule 10(1) of MCDR, 1988.

Hence the modified Mining plan is prepared under Rule 10(1) of M.C.D Rules 1988 under 'B' category opencast method of mining and PMCP under Rule 23(B) of MCDR 1988, and submitted DDMG, Kakinada and got approval vide Letter No. 87/SS/MMP/NLR/2016 dated 02.02.2016.

In order to fulfill the further necessary requirements for obtaining the Environmental Clearance for this mining activity, the proponent has initiated steps to carryout required Environmental Impact Assessment (EIA) study in and around the proposed mine lease area.

This assessment is performed to identify the likely Environmental Impacts and based on the findings; an effective Environmental Management Plan is in place as per the EIA Notification 2006 general guidelines and the revised Model TOR outlined for Mining projects.

The standards set by the Central Pollution Control Board (CPCB) and the State Pollution Control Board (SPCB) will be met and adhered to.

This study covers an area surrounding the project site with a radial distance of 10 km from the proposed mining lease area. The baseline monitoring was carried out during the Period of Jan '17 to March '17.

**1.1 SALIENT FEATURES OF THE PROJECT SITE**

The mine lease area falls under the Topo sheet No. 66B/4 bearing following details:

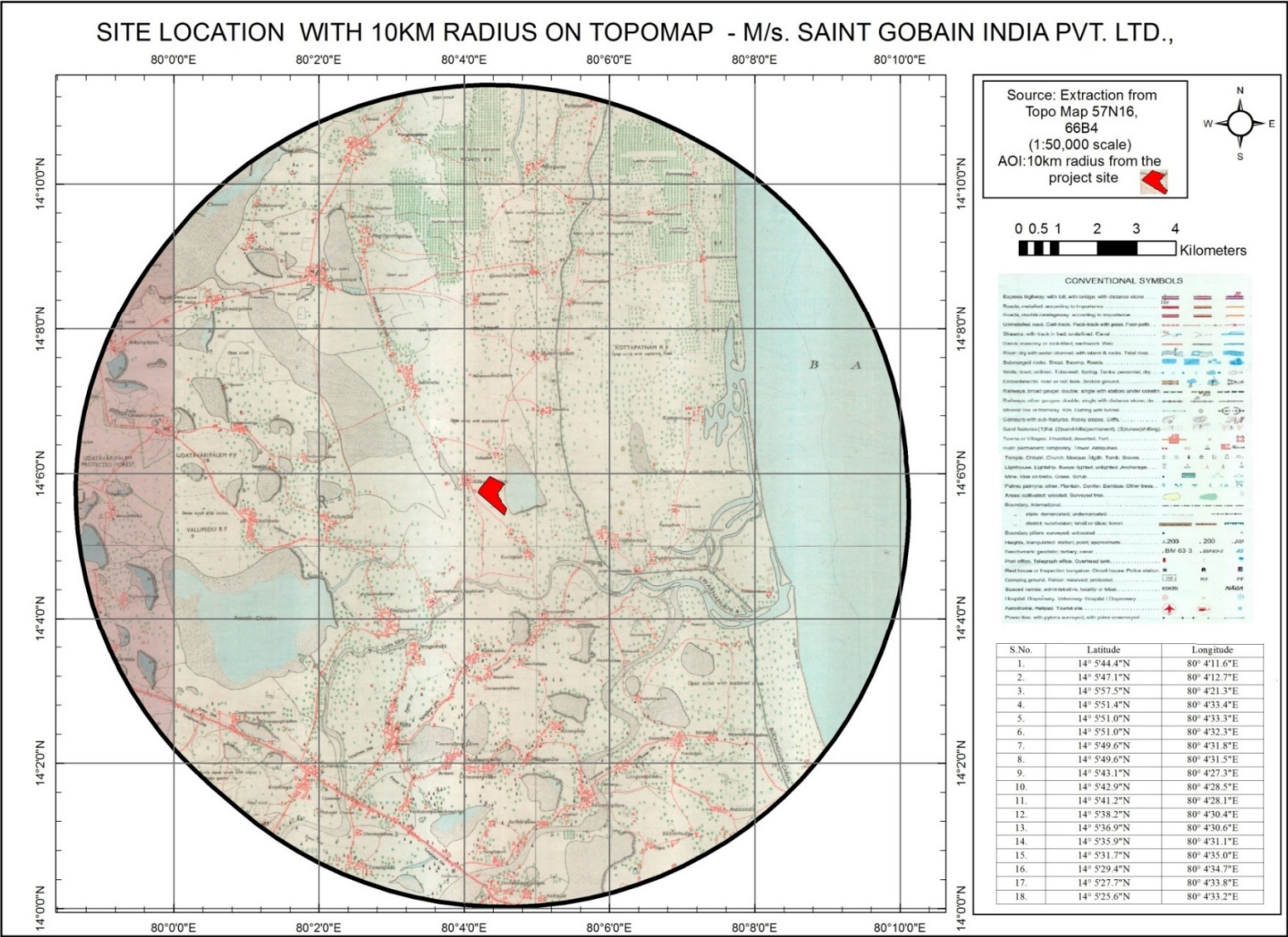
Topo sheet No. : 66B/4  
 Latitude : 14° 5'47.58"N  
 Longitude : 80° 4'22.02"E

**Details about Project site**

Nature of the project	M/s. Saint Gobain Glass India Limited
Extent	32.67 Ha
Capacity	2,03,550 TPA
<b>Location of the project</b>	
District & State	S.P.S.R Nellore District, A.P.
Mandal	Kota
Village	Karlapudi
Latitude	14° 5'57.50"N to 14° 5'25.60"N.

Longitude	80° 4'21.30"E to 80° 4'33.20"E.
<b>General climatic conditions</b>	
Maximum Temperature	46.7 <sup>0</sup> C
Minimum Temperature	14.0 <sup>0</sup> C
Annual average rain fall	1042 mm
Relative Humidity	64-79%
<b>General location details</b>	
Nearest Village	Karlapudi within km from the mining site
Nearest city	Nellore at 41 km from the mining site.
District headquarters	Nellore at 41 km from the mining site.
Nearest railway station	Gudur Railway station at 30 Km from the mining site.
Nearest Airport	Tirupathi Airport at 74.58 km from the mine site.
Archaeological/Historically important site	None within 10 km radius
Infrastructure Facilities	Hospitals and schools are present in Gudur.
Sanctuaries/National parks	None within 10 km radius
Nearest RF/PF	Kothapatnam RF – 6.0 Km Momidi RF – 11.0 Km
Nearest River	Swarnamukhi River at 2.12 Km in South Direction.

TOPO SHEET (10 KM RADIUS)



**1.2 DETAILS OF PRODUCTION****YEAR WISE PRODUCTION FOR ENSUING FIVE YEARS PERIOD**

In this period it is proposed to rise about 10, 07,114 tons of sand. An average production @ 2, 03,550 Tons/year by advancing the east face of the working pits towards west.

**YEAR WISE & SECTIONAL WISE PRODUCTION OF SAND:**

Cross Section	Sectional Area in M <sup>2</sup>	Average strike Length	Volume in M <sup>3</sup>	Tonnage in MT
<b>1<sup>st</sup> Year</b>				
A-A'	256	55	14080	35200
B-B'	462	90	41580	103950
C-C'	445	55	24475	61187
<b>TOTAL</b>				<b>200337</b>
<b>2<sup>nd</sup> Year</b>				
D-D'	501	81	40581	101452
E-E'	445	90	40050	100125
<b>TOTAL</b>				<b>201577</b>
<b>3<sup>rd</sup> Year</b>				
F-F'	545	148	80660	201650
<b>TOTAL</b>				<b>201650</b>
<b>4<sup>th</sup> Year</b>				
G-G'	402	110	44220	110550
A-A'	600	62	37200	93000
<b>TOTAL</b>				<b>203550</b>
<b>5<sup>th</sup> Year</b>				
B-B'	640	125	80000	20000
<b>TOTAL</b>				<b>20000</b>

**Reserves:**

Total Mineable reserves	--	21, 96,050 T
The average production per year	--	2, 03,422 T
Anticipated life of the mine	--	10.79 say 10 years

**1.3 ANTICIPATED LIFE OF THE MINE**

Based on the mineral resources of 21, 96,050T, the life of the mine is estimated to be about 10 years at production rate of 2, 03,550 TPA (Max).

### 1.3 MINING PROCESS

The sand is available in entire mining lease area. However, it is proposed to work in the lease area from West to East side of the lease boundary by evacuating two benches (i.e., 1.5 m & 1 m). The area has been examined in the light of the Norms/ Guidelines given by Environmental, Ground water table department. The water table has been encountered at a depth 3.5 m. Hence the proposed mining is confined up to depth of the proposed mining is 2.5 m only. The bench height will be maintained 1.5m & 1 m and bench width will be maintained more than bench height. In this plan period it is proposed to rise about 10, 07,114 tons of sand by advancing the West face of the working pits towards East

### 1.4 EXTENT OF MECHANIZATION

Though the lessee intends to do mining by manual means, occasionally it is proposed to engage small capacity excavator to meet proved as and when required.

### 1.5 PROPOSED MANPOWER

By this project many people will be benefited for their livelihood and get employment in this remote area.

#### Employment Details

S.No	Description	Quantity (nos)
1	Mine Manager	1
2	Mine Supervisor	2
3	Mining watchman	2
4	Mining labor (On contract basis)	10
	<b>Total</b>	<b>20</b>

### 1.6 WATER SUPPLY

A total of approximately 20 KLD of fresh water is required for the proposed project activity which will be met through water tankers. Out of the total quantity, 3 KLD will be utilized for domestic purpose and 3 KLD for Green belt development. Remaining 14 KLD of water is required for dust suppression.

## 1.7 BASELINE DATA

The study area covers an area of 10km radius around the proposed mining site. The study includes detailed characterization of various Environmental components such as Air, Water, noise, Land and Socio-Economic within the study area.

### OBJECTIVES OF STUDY AREA

- To assess the existing base line data of Air, Water, Noise, Land and Socio-economic environment.
- To evaluate the beneficial and adverse impacts of the proposed activity.
- To prepare an Environmental Management Plan (EMP) detailing control technologies and measures to be adopted for minimizing the impacts and improving the Environmental Quality.
- To predict the incremental levels of pollutants in the study area due to the proposed mining activity.
- To prepare post mining programme for monitoring and regulating Environmental parameters.

#### 1.7.1 ENVIRONMENTAL SETTINGS:

##### **Air Environment:**

To know the existing ambient air quality, Eight sampling stations with in Core and buffer zone were identified and monitored for pollutants like, Particulate Matter – 10 (PM<sub>10</sub>), Particulate Matter – 2.5 (PM<sub>2.5</sub>), SO<sub>2</sub>, NO<sub>x</sub> and Free Silica. For this sampling calibrated through samplers of PM<sub>2.5</sub> & PM<sub>10</sub> dust samplers.

The Ambient air quality measured at mine site and surrounding stations with in the study zone showed the following maximum and minimum concentrations of the pollutants-

It may be seen that all the parameters i.e., PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> are well within the range of 24 hr average of National Ambient Air Quality Standards. Silica was also monitored at all locations during the study period and was found to be Below Detectable limit.



**Summary of Analysis of Ambient Air Quality in the Study Area**

Parameter	PM10( $\mu\text{g}/\text{m}^3$ )			PM2.5( $\mu\text{g}/\text{m}^3$ )			SO2( $\mu\text{g}/\text{m}^3$ )			NOx( $\mu\text{g}/\text{m}^3$ )		
	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average
A1	68.4	59.1	60.5	32.8	24.3	28.5	13.5	10.3	11.9	15.7	11.5	13.6
A2	60.5	50.7	55.6	26.5	22.7	24.6	14.6	10.5	12.5	13.4	10.6	12.0
A3	58.4	49.7	54.0	25.6	20.5	23.0	13.1	10.6	11.8	12.9	10.5	11.7
A4	58.7	49.8	54.2	26.5	19.2	22.8	13.6	10.1	11.8	12.4	10.1	11.2
A5	55.1	48.5	51.8	24.5	20.6	22.5	12.9	9.5	9.4	11.9	9.1	10.5
A6	57.9	50.6	54.2	25.9	21.4	23.6	14.1	10.6	9.7	12.8	10.1	11.4
A7	53.7	48.2	50.9	23.6	19.8	21.7	11.9	10.1	11.0	11.4	9.5	10.4
A8	56.5	50.3	53.4	25.8	20.5	23.1	14.3	10.4	12.3	13.6	10.1	11.8
<b>NAAQS</b>	<b>100(<math>\mu\text{g}/\text{m}^3</math>)</b>			<b>60(<math>\mu\text{g}/\text{m}^3</math>)</b>			<b>80(<math>\mu\text{g}/\text{m}^3</math>)</b>			<b>80(<math>\mu\text{g}/\text{m}^3</math>)</b>		

Note: Silica was also monitored at all locations during the study period and was found to be Below Detectable limit

**1.7.2 Noise Pollution:**

The Ambient noise levels monitored within the study zone show levels varied from 66.79 to 50.14 Leq dB(A) during day time and 39.61 to 56.88 Leq dB(A) during night time.

**1.7.3 Water Environment:**

Ground water samples are collected from eight locations and surface water from two locations. All these samples are free from colour and pollutants.

**Summary of Ground water:**

- During the study period, the pH of the groundwater was found varying between 6.88 and 7.58. The pH values for all the samples collected in the study area during study period were found to be within the acceptable limits.
- The TDS of all the samples were below the permissible limit of 2000 mg/l.
- The Chloride levels in the groundwater samples collected in the study area were ranging from 340 – 474 mg/l
- In the groundwater samples collected from the study area, the hardness was found to be varying from 271 mg/l to 456 mg/l.
- In the groundwater samples of study area the fluoride values were found to be within a range of 0.08 mg/l to 0.4 mg/l.

All the heavy metals in all samples were found to be below the permissible limits.

**Summary of surface water:**

- pH of the surface water collected was neutral with pH ranging from 7.41 -7.88
- TDS was found to be 259 mg/l to 310 mg/l. The tolerance limit of 1,500 mg/l as per IS:2296
- Total hardness was found to be 136 mg/l to 182mg/l
- Presence of Nitrate was recorded as 1.6 mg/l to 2.3mg/l
- DO was observed as 4.8 mg/l to 5.2mg/l
- Total coliform in water was 1200 MPN/100ml to 1400MPN/100ml The likely source of bacteriological contamination was due to the proximity to residential area
- All the heavy metals were found to be within below detectable limits.

**1.7.4 Land Environment:**

Soil survey was carried out at 5 locations to assess the soil characteristics which include both physical and chemical details.

**Land Use Pattern:**

In the study area predominantly three crops are under cultivation i.e., Cashew, Mango & Paddy. The region is predominantly rural and suburban. Total population in this study zone is less than one lakh.

**1.7.5 FLORA & FAUNA:**

No endangered species are found in the study area. No schedule – I species are found within 10km radius from the proposed project site.

**1.7.6 SOCIO-ECONOMIC ENVIRONMENT:**

The operation of the proposed mining activity could result in elevation of living standards of the people in nearby villages as it will generate work for the unemployed and further will result in the upliftment of their socio-economic status. The Management of Saint Gobain Glass India Ltd has proposed to give preference to local people for recruitment of personal for mining operation. Therefore the impact on socio-economic Environment could be beneficial.

**1.8 YEAR WISE PRODUCTION FOR THE NEXT FIVE YEARS****Open cast production for 5 years**

<b>Year</b>	<b>Production in tons</b>
I	2,00,337
II	2,01,577
III	2,01,650
IV	2,03,550
V	2,00,000
<b>TOTAL</b>	<b>10,07,114</b>

**Source: Approved Mining Plan**

**1.9 RECLAMATION & REHABILITATION**

The area from which the silica sand is partially refilled by wind borne migrating sand dunes and replenishes the reserves. The mined out area can be used for casuarinas plantation or development of fish ponds. As the mining operations are advanced the whole area is used for plantation or fish ponds.

**1.10 PROJECT SCHEDULE AND COST ESTIMATES**

The Capital Cost is 1.0crore and the EMP budget is 10.0Lakhs/5 years.

**1.11 ENVIRONMENT MANAGEMENT PLAN**

The Environment Management Plan envisaged for this mining activity is described hereunder with a strong commitment to follow best environmental practices to reduce the negative implication to make this project a sustainable development endeavor.

Environment Management Plan (EMP) is required to ensure sustainable development in the study area of the proposed Mine Lease Area.

**Air Environment:**

Mitigation measures proposed to maintain the air quality are as follows:

- ❖ Regular water sprinkling to suppress the dust on haul roads, service roads and mining face by truck mounted water tankers.
- ❖ Grading of haul roads, service roads time to time, to remove the accumulated dusty material will be done.
- ❖ Development of Green belt all around Plant and along mining area boundary.
- ❖ Periodical monitoring of air quality to take steps to control the pollutants.

**Noise Environment**

There will be intermittent noise levels due to vehicular movement and trucks loading. However the impact of noise on the surrounding area is likely to be minimal and appropriate mitigation measures will be adopted accordingly.

**Control Measures**

The Management Plan for controlling noise pollution is envisaged as follows.

- Selection of suitable machinery and equipment,
- Proper mounting of equipment,

- Providing noise insulation/padding wherever practicable and
- Machinery will be fitted with properly designed noise acoustic silencers.
- Proper maintenance and periodic lubrication of noise generating parts of the machines.
- Provision of thick plantation in and around the mine is planned in order to reduce the noise and prevent it from reaching to surrounding habitation area.

### **Water Environment**

There will not be any waste water generation except domestic waste water, therefore no post waste water monitoring required.

### **Water Pollution Management**

- In anticipation of seasonal streams and run-off in the core zone, channels and bunds would be constructed and maintained to avoid any erosion and contamination.
- The mine pit water collected due to rains will be utilized for water spraying on the haul roads and for watering plantation.

This water will be harvested for utilization in plantation watering, spraying on the haulage roads and mineral and waste dumps.

## **1.12 SOCIO-ECONOMIC ENVIRONMENT AND SAFETY**

The company management shall give preference to local people through both direct and indirect employment.

- It will provide ample opportunity to the locals to up-lift their living standards by organizing events that propagate mutual benefits to all, such as health camps, awareness campaigns, donations to poorer sections of society and downtrodden.
- Educational needs of the region will be improved by encouraging the workers to allow their children to attend schools.
- Sufficient funds shall be allocated for these and other emergency needs.
- Adequate supply of potable water to the workers will be made during the working hrs.
- The mines department will supervise the safe working of the contractor and their employees. The working personnel will be provided with face masks, ear plugs, safety helmets and goggles in order to reduce health hazards.

The proponent will provide all necessary provisions stipulated under the Mines Act. In addition a Safety committee will be formed and manned by equal participants from Management and Workers.

- Personnel Protection Equipment (PPE) will be issued to each worker. Other safety equipments shall be used according to the nature of job involved.

### **1.13 ENVIRONMENTAL MONITORING**

Regular monitoring of various Environmental parameters shall be carried out to ascertain the following points,

- Status of air, noise, water, land pollution within the mining activity and in its vicinity;
- Generate data for predictive or corrective purpose in respect of environmental; and
- To assess and monitor Environmental impacts periodically.

### **1.14 SAFETY AND ENVIRONMENT**

- The management firmly believes in the concept of safety and environmentally sustainable growth. The authorities and staff are very much concern in Environmental issues.
- The management is going to develop scientifically designed green belt around the premises to mitigate air and noise pollution impacts on the surroundings.
- The management proposed to monitor ambient air as per APPCB guidelines.
- All the employees will be provided with personnel protective equipment
- The management will provide safety training to all employees periodically and regularly.

### **1.15 CONCLUSION**

- The management of Saint Gobain Glass India Ltd is committed to meet all stringent norms and to safe guard environment.