

Executive Summary
of
EIA report

by

M/s. Jk Lakshmi Cement Ltd.

Block No. 47 to 51,
Post: Dastan,
Tehsil: Palsana, District: Surat,
Gujarat.

Prepared by

San Envirotech Pvt. Ltd.

424, Medicine Market
Opp. Shefali Centre
Paldi, Ahmedabad

Email: mahendra.sepl@gmail.com

EXECUTIVE SUMMARY

E-1 BACKGROUND

Since India is a developing country and industries have always played major role in the economic development of the country. Gujarat is a one of the well developed industrialized State, has a significant contribution in industrial as well as economic development of the country.

M/s. **JK Lakshmi Cement Ltd.** has proposed to set up a new unit at Block No. 47 to 51, Post: Dastan, Tehsil: Palsana, District: Surat, Gujarat. JKLCL proposes to install Cement grinding unit, coal/pet-coke based CPP of 10 MW and AAC Blocks (Fly ash based) manufacturing to utilize generated ash from power plant at above location.

The total area of the premises is 105599 sqm.

E-2 PROJECT DESCRIPTION

Location of Project

Location details are shown in the table below:

Location detail

Sr. No.	Particulars	Details
1.	Block no.	47 to 51, Kadodara-Bardoli State Highway
2.	Post	Dastan
3.	Taluka	Palsana
4.	District	Surat
5.	State	Gujarat
6.	Toposheet no.	F43-N4, F46-G4
7.	Coordinates	
	Latitude	21 ⁰ 08'31.97" N
	Longitude	73 ⁰ 01'21.42" E

Site selection

The land in and around the plant site is plain. The proposed unit, apart from generating direct and indirect employment and various business opportunities, will bring an overall up-liftment of the area and will ultimately result in its complete socio-economic and infrastructure development.

The other supporting site specific criteria are briefly summarized here under,

- Availability of raw materials of proper quality and in adequate quantity;
- Availability of suitable and adequate land;
- Environmental considerations such as statutory distances from major roads and safe distances from nearby villagers, wind direction and speed etc.;
- Good communication and transportation facilities.
- Availability of infrastructure facilities such as water supply, power, roads, social infrastructure and man power;
- Proximity of market;
- The nearest town Dastan and city Surat are 2.5 km and 20 km away from the project site, which is very well connected with other parts of the country by road & rail;
- No R & R will be required;
- No national park or wildlife habitat falls within 10 km radial distance from proposed project site.
- Easy availability of manpower.

Alternative Locations

The project location was determined by proximity to consumers and suppliers; suitability of transportation facilities; and availability of basic facilities such as power, roads, telecommunications and water. Before finalizing the location, management has studied alternative locations in Gujarat and concluded that the selected area is most advantageous

because of its ready consumer access, availability of the infrastructure and utilization of fly ash from nearby power plants.

E-3 PROPOSED PRODUCTION CAPACITIES OF PLANT

JKLCL proposed to set up cement grinding unit and coal/pet-coke based CPP of 10 MW along with AAC Blocks plant.

The details of products along with its production capacity is summarized hereunder,

Sr. No.	Name of products	Quantity
1.	Cement Grinding	1.5 MTPA (2 x 0.75 MTPA)
2.	Coal/Pet-coke based Captive Power plant	10 MW
3.	Autoclaved Aerated Concrete Block (AAC Blocks)/ Fly ash based bricks	1000 m ³ /day

Investment of the project

The estimated cost of the project is around Rs. 340 crore. Out of this around Rs. 50 crore will be invest for environment pollution control measures.

E-4 DESCRIPTION OF ENVIRONMENT

To predict the impact of the proposed activities on the surrounding environment the current baseline environmental status was studied by collecting the data and carrying out monitoring for the period of **October-12 to December-12.**

The environmental quality has been analyzed with respect to ambient air quality, water quality, noise levels, soil characteristics, flora & fauna and parameters concerning human interest. Based on the data, the relevant impacts on various environmental components were also predicted by using appropriate mathematical models as well as impact assessment techniques. An appropriate environmental management plan was also delineated to minimize the adverse impacts.

E-5 AIR ENVIRONMENT

The ambient air quality monitoring was carried out at six locations, with a frequency of twice a week to assess the existing sub-regional air quality status during the month of October-12 to December-12. Respirable Dust Sampler, Fine Particulate sampler along with the analytical methods prescribed by CPCB was used for carrying out air quality monitoring. At all these sampling locations; PM₁₀, PM_{2.5}, SO₂ and NO_x were monitored on 24-hourly basis to enable the comparison with ambient air quality standards prescribed by the Central Pollution Control Board.

The data on concentrations of various pollutants were processed for different statistical parameters like arithmetic mean, standard deviation, minimum and maximum concentration and various percentile values.

Particulate Matter (PM₁₀)

An average and 98th percentile value of 24-hourly PM₁₀ values at all -the locations ranged between 60.0-66.6 µg/m³ and 61.8-69.0 µg/m³, which are well within the stipulated standard of CPCB i.e. 100 µg/m³

Particulate Matter (PM_{2.5})

An average and 98th percentile value of 24-hourly PM_{2.5} values at all -the locations ranged between 23.3-29.8 µg/m³ and 25.3-40.9 µg/m³, which are well within the stipulated standard of CPCB i.e. 60 µg/m³.

Sulphur Dioxide (SO₂)

An average and 98th percentile value of 24-hourly SO₂ value of arithmetic mean at all the locations ranged between 12.1-14.0 µg/m³ and 13.5-14.7 µg/m³ respectively, which are well within the stipulated standards of 80 µg/m³.

Oxides of Nitrogen (NO_x)

An average and 98th percentile value of 24 hourly NO_x value of arithmetic mean at all the locations ranged between 15.0-17.1 µg/m³ and 16.0-18.1 µg/m³ respectively, which are much lower than the standards i.e. 80 µg/m³, stipulated by CPCB.

E-6 WATER ENVIRONMENT

Ground water quality

Color: All the samples were found color less meeting desirable norms.

pH: All the samples meet the desirable standards (pH ranges from 7.68 to 7.85).

Total Dissolved Solids (TDS): TDS in samples ranges from 596 mg/L (Tundi) to 792 mg/L (Haldharu). All the samples meet the permissible limit of 2000 mg/L, (If alternate sources of potable water are not available).

Calcium: Calcium contents in the water ranges from 34 mg/L (Haldharu & Tundi) to 43 mg/L (Dhamdod), all the samples meet the permissible limit of 200 mg/L, (If alternate sources of potable water is not available).

Magnesium: Magnesium content in the water ranges from 28 mg/L (Haldharu) to 37 mg/L (Dhamdod). All the samples meet even the permissible limit of 100 mg/L (if alternate source of potable water is not available).

Sulfate: Sulfate content in the water ranges from 89 mg/L (Tundi) to 95 mg/L (Dhamdod). All the samples meet the permissible limit of 400 mg/L for drinking water (if alternate source of potable water is not available).

Total Alkalinity: Total alkalinity in the water samples ranges from 243 mg/L (Haldharu) to 281 mg/L (Project site). All the samples are within the permissible limit of drinking water (600 mg/L) (if alternate source of portable water is not available).

Other Parameters: Potassium (ranges from 56 mg/L to 59 mg/L), Sodium (ranges from 162 mg/L to 270 mg/L) and Chloride (ranges from 234 mg/L to 298 mg/L).

Heavy metals like copper, lead, chromium and zinc are well below to limit in all samples.

Conclusions: Ground water samples from villages meet the permissible set by the authority (BIS).

E-7 NOISE ENVIRONMENT

The L_{eq} values of noise levels during daytime (L_d) varied between 50.2 to 61.3 dB (A). Highest L_d value was recorded near project site (61.3 dB (A)), while the L_{eq} values of noise levels during night time (L_n) varied between 40.3 to 55.6 dB (A). Highest L_n value was recorded near project site (55.6 dB (A)).

E-8 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Air Environment

SOURCE OF AIR POLLUTION

The main source of gaseous emission will be due to combustion of fuel. There will be installation of 2 Nos. of flue gas stacks which will be attached to Boiler of CPP and Boiler of AAC block. Coal/Pet coke will be used as a fuel. Adequate stack height of 105 m and 30 m will be provided for Boiler of CPP and Boiler of AAC block respectively, for proper dispersion of emission. Probable emitted pollutants will be SPM, SO_x and NO_x. There will be one process stack of cement mill from which probable emission will be of SPM only.

ESP and bag filters will be provided in order to maintain the stack emission within prescribed limits by CPCB.

The fugitive pollutant such as dust is likely to emit from process area.

Unit has proposed to install D.G. sets to fulfill power requirement in case of emergency. The probable pollutant likely to be emitted from D.G. stack will be SPM, SO₂ and NO_x.

Air Quality Modelling and Predictions

It is predicted that highest 24-hourly incremental GLC value for SPM, SO₂ & NO_x are 4.441 µg/m³, 2.370 µg/m³ and 1.308 µg/m³ respectively. The point of maximum concentration by unit would be 1.0 km from centre of industry in S direction for SPM and 2.0 km from centre of industry in S direction for SO₂ and NO_x. With this marginal contribution due to the proposal of the project, the levels of SPM, SO₂ and NO_x will be below residential area limit prescribed by CPCB.

Water Environment

Water demand during operational phase will be around 1380 KLD, which will be met through bore wells. Water shall be required during operation of the plant for process, utilities, domestic use and greenbelt.

The main source of the industrial wastewater generation is from utilities i.e. Boiler blow down and DM reject. The generated waste water is 50 m³/d, which will be collected in collection cum equalization tank and reused for AAC block manufacturing process.

Generated domestic wastewater will be around 31 KLD, which will be collected and treated in STP and finally utilize for greenbelt development.

A concept of 100% recycling/reuse of wastewater is adopted by the unit as a step towards cleaner technology, therefore zero discharge from the plant. Thus, there will not be any major impact on the water environment due to proposed project.

Hazardous/Solid Waste Management

Entire quantity of hazardous waste will be handled and disposed as per Hazardous Waste (Management, Handling and Trans boundary movement) Rules'2008, amended time to time.

The main source of hazardous waste generation will be used oil, which will be disposed off by selling to registered re-processors. Generated fly ash from captive power plant will be 100% utilized in cement manufacturing and AAC Blocks.

Dust collected from air pollution control equipment is being totally recycled in process. Sludge from Sewage Treatment Plant (STP) will be used as manure for greenbelt development.

The unit will be provided isolated area for the storage of waste. Thus, after taking adequate steps for the hazardous waste storage, there will be inadequate impact on the environment due to proposed project activities.

Green Belt Development

Unit proposes to provide around 34850 m² area for the greenbelt development, which will be of 33% of total plant area.

E-9 ENVIRONMENT MONITORING PROGRAM

The details of monitoring are as below:

Nature of Analysis	Frequency of Analysis	Number of Sample	Parameters
Stack Monitoring of each stack	Monthly	At all stacks	PM, SO ₂ , NO _x
Waste water analysis	Monthly by external agency	1 Sample	pH, TDS, SS, Oil & Grease, etc.
Ambient Air Quality Monitoring	Monthly for 24 hours or as per the statutory conditions	3 Locations	PM, SO ₂ , NO _x
Work area monitoring including dust	As per the statutory guideline	2 to 3 Locations	Dust
Noise Pollution	Monthly for 24 hours or as per the statutory conditions	6 to 8 Locations	Near main gate, near boiler, process area, cement mill etc.
Heath check up of workers	As per the statutory guideline	All the workers	--

E-10 ENVIRONMENTAL MANAGEMENT PLAN

Overall objective of EMP

Prevention: Measures aimed to impede the occurrence of negative environmental impacts and/or preventing such an occurrence having harmful environmental impacts.

Preservation: Preventing any future actions that might adversely affect an environmental resource or attribute.

Minimization: Limiting or reducing the degree, extent, magnitude, or duration of adverse impacts.

EMP for JK Lakshmi Cement Ltd. for proposed project covers following aspects:

- Description of mitigation measures
- Description of monitoring program
- Institutional arrangements
- Implementation schedule

E-11 QUALITATIVE RISK ANALYSIS

Risk analysis and study have been carried out for identification of hazards, selection of credible scenarios, Risk Mitigation measures etc. Qualitative risk analysis study will be followed to minimize accidents and for safe operations. All the hazardous materials will be stored and handled as per MSDS guidelines.

E-12 CONCLUSION

Based on the study

- There will be no major impact on water environment since there is no wastewater generation from process. Wastewater generated only from utilities and will be collected and utilize for AAC block process. Domestic effluent will be generated which will be treated in STP and utilize for sprinkling on roads and greenbelt.
- ESP and bag filters will be provided to control air pollution emitted into the atmosphere.
- To prevent fugitive emission, various steps will be taken like regular sprinkling of water and making of concrete roads.
- Adequate arrangement for handling and disposal of Hazardous/solid waste will be made.
- Fire protection and safety measures will be provided to take care of fire and explosion hazard.
- Suggestions of qualitative risk analysis study will be followed to minimize accidents and for safe operations.
- Recommendations suggested in Environmental Management Plan will be followed to minimize the impact of proposed project.

Overall, direct and indirect employment opportunities, improvement in basic infrastructures by development of industry etc. will be observed with negligible impact on environment.

It can be concluded that on positive implementation of mitigation measures and environmental management plan during the construction and operational phase, there will be negligible impact on the environment.