ENVIRONMENT STATEMENT

(Form-V)

JSW LIMESTONE MINE

(JSW CEMENT LTD.)

YEAR 2018-2019

JSW LIMESTONE MINE

Village-Bilakalagudur, Mandal- Gadivemula

Dist. Kurnool (A.P)

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1. Introduction

M/s. JSW Cement Limited has set up 7.0 MTPA limestone mine at village Bilakalagudur and Bujanur, Gadivemula Mandal, District Kurnool (A.P). The mine is operational since 2011.

2. Objective of the study

The objective of the present study is to review the performance of overall Environment management system established by JSW Cement so as to identify opportunities for improvements which could be beneficial to both environment and its components. And also inserted by **rule 2 of the Environment (Protection) second Amendment & Rules, 1992 vide G.S.R. 329 (E), dated:13-3-1992, "**Every person carrying on an Industry, operation or process requiring consent under section 25 of the water (prevention and control of pollution) Act 1974 (6 of 1974) or under section 21 of the Air (Prevention and Control of Pollution), Act 1981 (14 of 1981) or both or authorization under the Hazardous wastes (Management and Handling) Rules, 1989 issued under the Environmental (Protection)Act 1986 (29 of 1986) shall submit an environmental audit report for the financial year ending 31st March in Form – V to the concerned state pollution control board on or before the 30th day of September every year beginning 1993."

3. Benefits of Environmental Audit

Environmental audit helps the organization understand environmental interactions of products, services and activities and manage environmental risks. The key benefits of audits are:

a) It helps in reduction of raw material consumption by way of waste minimization and adoption of recovery of waste and recycle the same.

b) Determine performance of the process systems and helps to improve those systems.

c) Determine efficiency of pollution control systems.

d) Acquired data and information can be utilized for further improving the environmental performance of the facility.

e) It helps to identify the sources of pollution and also the measures for controlling pollution at the source.

f) It helps organisation understand how to meet its legal and other requirements.

g) It helps to meeting specific statutory reporting requirements.

h) It helps organisation understand how they can improve environmental/ energy performance and save money.

i) It helps the organization to determine the impact of its activities on the surrounding environment and identify suitable preventive measures.

j) Acquired data on fuel/ energy consumption can be used to implement energy/ fuel saving measures.

With this view, an in-depth study was conducted to review the process efficiency, quality & quantity of emissions/effluents generated, performance of air pollution control systems, mode of solid waste generation, collection & disposal and other associated activities having potential to impact the environment.

4. Location

M/s JSW Limestone Mine is located at Bilakalagudur and Bujanur (V), Gadivemula (M), Kurnool (Dist) of A.P. The site is 28 km from nearest State Highway which is connecting to Hyderabad to Chennai via Kurnool-Kadapa. The total water requirement is drawn from bore well and used for Mines utilities. The location map is shown in **Fig.1**. The land is flat terrain sloping towards Southeast. No major hills or mountains are there in the area.

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5. Raw Material and products

Raw materials used and products produced in the financial year **2018-2019** are as follows:

5.1 Raw Materials

ROM Lime Stone	-	9, 82,770 MT

5.2 Product Lime stone - 15, 04,999 MT

6. Water Requirement

The total water consumption and its break up are given below:

Water consumption in m^3/day (2018-19)

Process	: Nil	
Cooling	: 36.0	(Water used for dust suppression on haul roads)
Domestic	: 4.0	
Total	**: 40.0**	

Water used for dust suppression is evaporated and hence no waste water is generated during the mining operations. The domestic requirement includes drinking and sanitation. Domestic waste water is disposed into septic tanks followed with soak pits.

Water requirement is met by pumping ground water through 1 bore well. Bore well water analysis data are shown in **table 6.1** which indicate that due to mining operations, there is no significant change in groundwater quality that can cause damage to the existing biotic system.

Table –6.1

BORE WELL WATER ANALYSIS DATA (mg/L)

S. No.	Parameters	Values
1.	pH	7.66
2.	Turbidity (NTU)	<1
3.	Dissolved solids	754
4.	Total Hardness as $CaCO_3$	260
5.	Alkalinity as $CaCO_3$	301
6.	Calcium as Ca	69
7.	Magnesium as Mg	27
8.	Chlorides as Cl	109
9.	Sulphates as SO_4	80
10.	Nitrates as NO_3	16
11.	Flouride as F	0.76
12.	Iron as Fe	0.08

7. Pollution Control in mines

Industry has installed 3 nos of continuous ambient air quality monitoring stations for estimation of emissions levels in plant and mining area.

The following measures have been adopted for air pollution control in mines:

1. Use of controlled blasting technique to ensure low vibration, less fly rocks, low noise and low dust emission
2. Using latest drilling machines equipped with built in dust extraction system with dust filters.
3. Regular water sprinkling on haul roads through tankers and roadside water sprinklers
4. Roadside Water sprinkler installed at crusher dump hopper,
5. Regular monitoring of ambient air quality and vibration levels
6. Regular preventive maintenance of HEMM to ensure that Sox and NOx levels remain well below the prescribed limits.

7. Thick greenbelt being developed around the lease area. This will act as a natural wind as well as sound barrier and will prevent propagation of dust and noise waves from spreading into external environment.

7.1 Ambient Air Quality

Ambient air quality monitoring is carried out on continuous basis through 3 nos. of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) located as under:

1. Near Project office
2. Near MRSS Building
3. Near Workmen Colony

Ambient air quality is monitored continuously for the estimation of Particulate matter -PM_{10} and Particulate matter- $PM_{2.5}$. Average values for the parameters monitored are represented in Table 7.1. The analyzed values for PM_{10}, $PM_{2.5}$, SO_2 and NO_2 are within the limits prescribed by the APPCB.

Table 7.1
Average values of Ambient air quality data (µg/m³)

Location	Mine View Point	Gadivemula Village	Mines Office	Bilakalagudur Village
Particulate Matter- PM 10	52.00	44.36	48.64	41.27
Particulate Matter –PM 2.5	28.18	19.73	25.18	20.45
Sulfur dioxide (So_2)	11.24	8.15	10.88	8.32
Nitrogen Dioxide (NOx)	12.80	9.04	12.12	9.24

The present air quality data for PM_{10}, $PM_{2.5}$, SO_2 and NO_2 are observed to be well within permissible limits prescribed by Andhra Pradesh Pollution Control Board (APPCB)/ CPCB / MoEF.

7.2 Ambient Noise Levels

Ambient Noise levels are measured at 4 locations in the factory on monthly basis. In addition, work zone noise levels are also monitored periodically recognizing the fact that high noise levels may have adverse impact on the worker's health and also on the surrounding environment. Noise levels are measured using sound level meter. The results of ambient noise levels are presented in table 7.2 which shows that the observed values are well within the permissible limits.

Table 7.2
Average values of Ambient Noise Levels

S. No.	Location	Noise Levels in dB(A) Day time	Noise Levels in dB(A) Night time
1.	Near Mine View Point	68.6	56.2
2.	Mine Office	63.6	57.2
3.	Bilakalagudur Village	56.1	53.0
4.	Gadivemula Village	56.9	53.5

Note: Day time is reckoned in between 6 am and 10 pm – Limit 75 dB (A)
Night time is reckoned in between 10 pm to 6 am – Limit 70 dB (A)

8. Greenbelt Development

Greenbelt development brings the following benefits.

a) Mitigation of fugitive emissions including odour
b) Noise pollution control
c) Partial sequestration of GHG
d) Prevention of soil erosion
e) Improving the landscape of the area
f) Aesthetics

Extensive green belt is being developed in the mining area with plantation of approx. **60796 Nos.** of tree saplings and around 21215 Nos. of shrubs and herbs covering an area of **29.7 %** of the total lease area.

9. House Keeping

Proper cleaning of different sections is required to maintain healthy environment and also to avoid unnecessary production loss. JSW Cement, being an ISO 14001 & OHSAS 180001 certified company, maintains high standards of housekeeping. There are section level teams to oversee housekeeping in their respective areas. In addition, all the areas are periodically audited by Internal as well as external auditors for compliance to the prescribed standards.

FORM – V
(See rule 14)

Environmental statement for the financial year ending the 31st March 2019

PART – A

1.	Name and address of the Owner / Occupier of the Industry, operation of the process.	**Mr.** Nilesh Narwekar**,** Director & CEO JSW Cement Limestone Mine (M / s. JSW Cement Ltd.) Bilakalagudur (V), Gadivemula (M), Kurnool (Dist), A.P -518 508
2.	Industry category	NIC Code: 14107 NIC Code description: Mining / quarrying of limestone, lime shell, 'kankar' and other calcareous minerals including calcite, chalk and shale
3.	Production Capacity	7.0 million TPA
4	Year of establishment	2011
5	Date of the last environmental statement submitted	24.09.2018

PART – B

Water and Raw Material Consumption

(I) Water consumption in m^3/day.

Process : Nil

Cooling : 36.0 (sprinkling on haul roads)

Domestic : 4.0

Name of products	Process (cooling) Water consumption per unit of product output	
	During the previous financial year (2017-18)	During the current financial year (2018-19)
	(1)	(2)
Limestone	0.0064 M^3 / MT of Limestone	0.0058 M^3 / MT of Limestone

Note: Water used for greenbelt development is accounted in plant cooling water consumption

(II) Raw Material consumption

S. No.	Name of raw material	Name of products	Consumption of raw material per unit output (Per Tonne)	
			During the previous financial year	During the current financial year
1.	ROM Limestone	Limestone	1.0743 MT / MT of Limestone	1.2208 MT / MT of Limestone

PART – C

Pollution discharged to environment/unit of output generated (Parameter as specified in the consent issued)

S. No.	Pollutants	Concentration of Pollutants in discharge		
a.	**Water**	Not applicable since no waste water is generated from the process		
b.	**Air**	**Quantity of pollutants discharged (mass/day) (kg/day)**	**Concentrations of pollutants in discharges (mass/volume) (mg/Nm3)**	**Percentage of variation from prescribed standards with reason**
		No source emission from the mines. Details of ambient air quality monitored in mining area is as under: **The ambient air quality in & around the lease hold area is falling within the standards without any deviation.**		

Parameters	Core Zone (µgm/M3)	Buffer Zone (µgm/M3)	Standards (µgm/M3)	Variation (%)
PM-10	51.45	43.1542	100	Nil
PM-2.5	27.00	21.25	60	Nil
SO2	10.12	6.95	80	Nil
NOx	11.15	7.32	80	Nil

PART - D

Hazardous Wastes

(As specified under Hazardous Wastes (Management and Handling) Rules, 2003) & amended as Hazardous and Other Waste (Management, Handling & Transboundary Movement) Rules, 2016

S. No.	Hazardous Waste	Total quantity	
		During the previous financial year	During the current financial year
a.	From Process	Nil	Nil
b.	From pollution control facility	Nil	Nil

PART – E

Solid Waste

Sl. No.	Solid Waste	Total quantity (Kg.)	
		During the previous financial year	During the current financial year
a.	From Process	---	---
b.	From pollution control facility	Nil	Nil
c.	(1) Quantity recycled or reutilized within the unit	---	---
	(2) Sold	Nil	Nil
	(3) Disposed	---	----

PART – F

Please specify the characterization (in terms of composition & quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

(i) Hazardous waste: No hazardous waste generated from the mining activities.

(ii) Solid waste generated and disposed during 2018-19: 3,32, 251 MT of sub-grade material stacked at the earmarked location in mines.

PART – G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

Significant resource conservation measures undertaken as follows.

1. Systematic & Scientific Mining Operations and use of HEMMs.
2. Extensive & Intensive geological exploration conducted
3. Controlled blasting techniques adopted
4. Entire plant feed material is analysed using online Cross belt Gamma Analyzer to know the real time chemical composing of the feed.
5. Proportionate Blending of different grades of ore for meeting plant requirements
6. Systematic stacking of sub-grade limestone for future utilization

The above practices contribute to save precious raw material/ product and help in conserving valuable natural resources.

PART – H

Additional measurers/ investment proposal for environmental protection including abatement of pollution / prevention of pollution.

Activities planned for 2018-19:

1. Further greenery development in and around the Mines by planting tree saplings.

PART – I

Any other particulars for improving the quality of the environment

Details of steps taken for improvement of environment during **2018-19**

(i) Environment Management System improvement

1. Periodical review of EMS including compliance of environmental laws through periodic Management Review & Internal / external audits
2. Awareness promotion through various environmental competitions, workshops, presentations etc. on world environment day, Earth Day, Bio-diversity Day, Ozone Day etc.

(ii) AIR

Improvement in Ambient Air Quality through effective control on fugitive dust emission

(iii) **Green Belt development**

Extensive green belt is being developed in the mining area continuously.

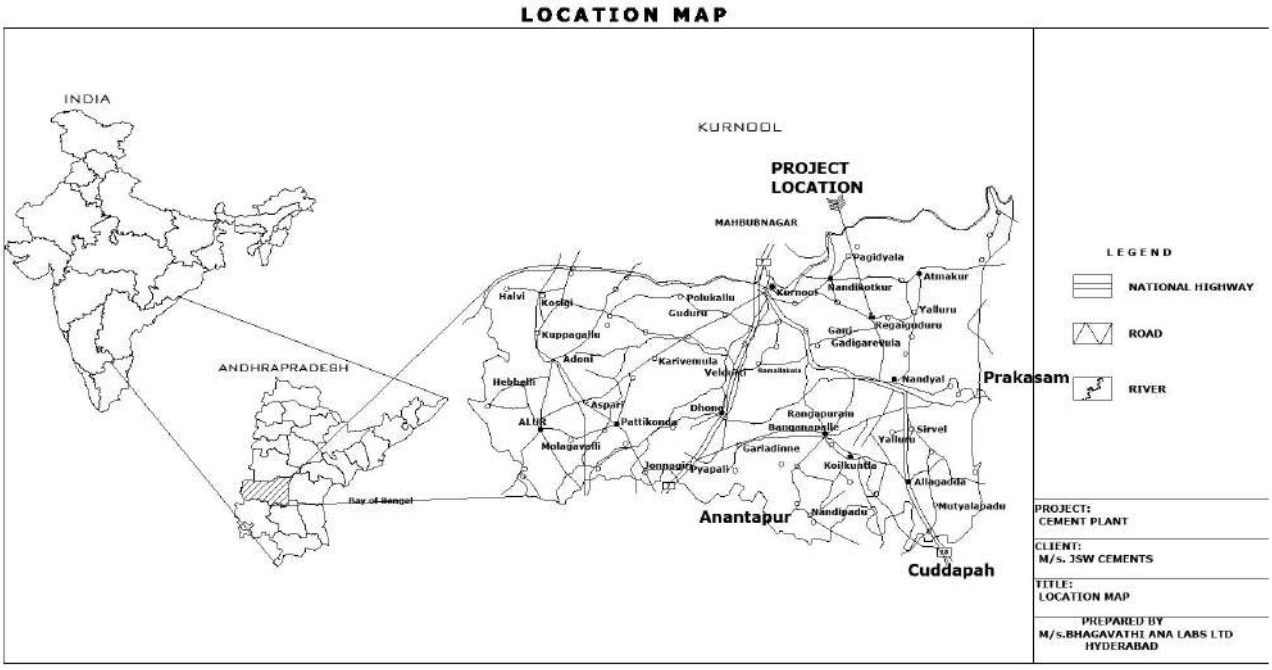
LOCATION MAP
INDIA
KURNOOL
PROJECT LOCATION
MAHBUBNAGAR
ANDHRAPRADESH
Prakasam
Anantapur
Cuddapah
Bay of Bengal
Pagidyala
Atmakur
Nandikotkur
Kurnool
Yalluru
Halvi
Kodigi
Polukallu
Guduru
Kuppagallu
Adoni
Karivemula
Velgod
Nandyal
Hebbelli
Aspari
Dhone
ALUR
Pattikonda
Rangapuram
Banganapalle
Sirvel
Yallutu
Molagavalli
Garladinne
Jonnagiri
Pyapali
Koilkuntla
Allagadda
Nandipadu
Mutyalapadu
LEGEND
NATIONAL HIGHWAY
ROAD
RIVER
PROJECT:
CEMENT PLANT
CLIENT:
M/s. JSW CEMENTS
TITLE:
LOCATION MAP
PREPARED BY
M/s.BHAGAVATHI ANA LABS LTD
HYDERABAD

Figure-1