CK BIRLA GROUP | ORIENT CEMENT

Through Courier

Ref:OCL/ENV/Sr.GM-(PRO)/18-19/ 39 **Date: 13/09/2018**

To,
Member Secretary,
Karnataka State Pollution Control Board
#49, 4th & 5th floor
Parisara Bhavan, Church Street
BENGALURU-560001

Dear Sir,

Sub: - **Environment Statement Report of Plant & Mines for the financial year 2017-2018:-Reg**

Ref: - GOI Notification No. G.S.R. 329(E) Dt.13.03.1992 & G.S.R.386 (E) Dt.28.04.93 of MOEF, New Delhi

*****

With reference to the above subject, Please find enclosed here with the Environmental Statement/Audit report of **Orient Cement Limited (Captive Limestone Mines & Cement Plant)** for the financial period 1st April 2017 to 31st March 2018.

This is for your perusal please.

Kindly acknowledge the receipt.

Thanking You,

Yours Faithfully,
For Orient Cement Ltd

Santosh Kumar Sharma
Sr.GM - Production

Copy to:

1. Additional Principal Chief Conservator of Forests (C),
   Ministry of Environment & Forest, Govt. of India
   Regional office (Southern zone)
   Kendriya Sedan, IVth Floor, E & F Wings,
   17th Main Road, II Block, Koramangala,
   Bangalore-560 034.

2. Environmental Officer,
   Karnataka State Pollution Control Board,
   #101, F-Block, Green Park, KHB,
   Near Chor Gumbaz, Ring road, Kalaburagi- 585 105.

O/c - 7 Env

CK BIRLA GROUP

ORIENT CEMENT

ENVIRONMENTAL STATEMENT REPORT

FOR

PLANT
(FORM-V)

[YEAR 2017 - 2018]

REPORT BY

ORIENT CEMENT

(Orient Cement Ltd.)

Captive Limestone, Clinkerisation,

Cement Unit & Captive Power Plant

Itga (V), Chittapur (Tq)

INTRODUCTION

Man is a part of nature, and not separate or independent; at the same time, man is unique in the influence he has over nature. Man derives all his food, clothing, shelter, and other amenities from nature. In that process, if he does not take care to protect and cherish nature, but decrease or destroys, he will find that his own life and that of his children is in jeopardy.

The environment, a word as it stands today is not simple; it is not a fashionable word, but has got established definitions incorporates limitless complexities, bear definite power to put everybody under a flood of worries and pushes us to plan for betterment with minimum problems. The environment is now catching for all, the industry, the government, the people. Hence, it is joint responsibility to protect, preserve the environment and avoid perishing the natural treasures. At this critical junction of time and efforts, the Indian industry has fulfilled its commitment in maintaining the environmental integrity.

Orient Cement Limited considers itself responsible for Environment and Society. We are committed to emission reduction, climate protection, effective energy management, responsible use of resources and its conservation keeping in mind that **"Today's Need – Future of Our Children"**.

The next few pages of this Environment Statement Report (ESR) of Orient Cement Limited is based on actual data and verified record, will present a picture of more optimism for environmental care than ever before.

Orient Cement Ltd: is situated at Itga Village, Chittapur Taluk, Gulbarga District: which is about 50 Km from Gulbarga. It started its commercial operation in the year 2015. Presently factory is operating with one Kiln of capacity 6000 TPD & 50MW Power Plant. The Company is manufacturing Ordinary Portland Cement (OPC) & Pozzolana Portland Cement (PPC).

M/s Orient Cement Ltd is operating lime stone mine at Itga (V), Chittapur Taluk and Gulbarga District as captive mines for their Cement manufacturing at factory, which is about 02 Km from Mines. This mine is being operated using mechanized open cast method with heavy equipment like hydraulic excavators, dozers and dumpers.

OCL Chittapur is certified with Quality (ISO 9001), Environment 14001 and operational health and safety (OHSAS 18001) certification from BSI . The new integrated cement manufacturing unit at Chittapur is equipped with new state of the art technology and latest energy- efficient equipment.

Cement manufacturing contributes significantly to the Air pollution level only in the vicinity of the works as large quantity of pulverized materials is handled at each stage of manufacturing that is from crushing of Raw material to final packing of cement resulting emission of dust leading to Air pollution. This is due to very nature of cement manufacturing.

Apart from dust, combustion product and coal used in the kiln to burn Raw materials give rise to formation of SO_x and NO_x. The Sulphur content of Coal would vary from source to source. However the alkaline nature of Raw materials leads to direct absorption of SO_x.

The dust emitted from various machines is controlled by providing hi-tech air pollution control equipments such as Electro static precipitators and bag house. The emission sources in the cement plant are mainly process dust emission and fugitive dust emissions.

Water Pollution is virtually absent in the cement plant as no liquid effluents are seriously involved & CPP liquid effluents is treated used in dust suppression. The water is used for cooling the machines/parts of the machines. A WTP – Cooling Water Tower is being maintained for the circulation of water for the entire plant. The major area of domestic water consumption inside the plant is for drinking, toilet, for canteen use & Colony.

The policy for the abatement of pollution by the government of India provides for submission of environment statement by all the industries. Environmental Statement is therefore an output of Environmental Audit.

So an effort has been made in this report to explain Environmental Statement for the financial year 2017-2018 ended 31st March 2018 as per Government of India notification GSR 329 (E), dated 13th March 1992 and amendment to Environmental (Protection) Rules 1986 and subsequent amendment there on.

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Corporate Environment, Health and Safety (EHS) Policy

We, at Orient Cement Limited are committed towards environmental protection and providing healthy & safe work environment by way of:

- Compliance with all applicable legal, social and other requirements
- Improvement in environmental performance and resource efficiency
- Reviewing objectives and targets for continual improvement in environment, work place, health & safety
- Engaging and training human capital to enhance their skills and augment resources for effective EHS performance.
- Controlling pollution
- Prevention of occupational injuries and health hazards

Rahul Deshmukh

Chief Operating Officer

Date: 01.07.2016

Orient Cement Limited
#5-9-22/57/D, 2nd & 3rd Floor G P Birla Centre, Adarsh Nagar, Hyderabad - 500063. Telangana.
Ph: 040-2368 8700, Fax: 040-2368 8654 E-mail: info@orientcement.com
Registered Office: Unit VIII, Plot No.7, Bhoinagar, Bhubaneshwar, Odisha 751012. India www.orientcement.com
CIN No: L26940OR1979PLC010571

ENVIRONMENTAL STATEMENT REPORT

[FORM-V]
(See rule 14)

PART-A

Name and address of the owner/ Occupier of the industry	:	Satyabrata Sharma Sr. Vice President - Works Itga (V), Chittapur (Tq) Gulbarga - 585211
Operation process	:	Production of Cement
i. Industry category: Primary-(STC code) Secondary-(STC code)	:	Red category
ii. Production category-units		
Cement plant	:	2.0 MTPA of Clinker
	:	3.0 MTPA of Cement
Captive Power Plant	:	50 MW
iii. Year of establishment		
Cement plant	:	Sept 2015
Captive Power Plant	:	Feb 2016
iv. Date of last environmental statement submitted	:	28/09/2017 for the year (2016-2017)

Postal Address

1) Registered Office	:	Orient Cement Ltd. 5-9-22/57/D G.P Birla Center 2nd &3rd floor Adrash Nagar, Telangana Hyderabad - 500063
2) Factory	:	Orient Cement Ltd. Itga (V), Chittapur (Tq) Gulbarga - 585211 Phone: 08474-236716 Fax: 08474-236716

PART-B

Water Reservoir at Plant (Water from Kagina River & Natural water due to mining operations) is the major source of water for this factory. Due to moderate rainfall in this region there is always drastic variation in the yield of water from these sources and almost this area is suffering from water shortage. In this view company is also operating a Sewage Treatment Plant & Effluent Treatment Plant to treat the entire waste water of the factory and colony, so that it can be recycled and reused for cooling the machines, gardening and for abatement of pollution in the area.

The water consumption for 2017-2018 is shown in the table given below and the consumption of water is measured with the help of water meters which are installed at different points of sources. Water consumption readings are being sent to the State Pollution Control Board in the monthly return.

(i) **Water Consumption (m^3/day):**

Being a complete dry process cement manufacturing plant does not require any process water. Water consumption in the plant for cooling, boiler feed, gardening etc is as follows.

Sl.No	Description	During Previous Financial Year 2016-17 in (m^3/day)	During Current Financial Year (2017-2018) (m^3/day)
	Water consumption in m3 / d or KLD	425.14	620.66
1.	a) Process/Cooling	401.10	493.50
	b)Domestic/Gardening	24.04	127.16

Note: OCL is permitted to draw water for rainy season (Feb-July) in a year from river Kagina at the rate of 5.56 MLD, The application for renewal of permission is also filed @ WRD office.

Name of products	Process water consumption per unit of products output	
	During the current financial year (2016-2017)	During the current financial year (2017-2018)
Cement	0.0027 (KL/Ton)	0.059 (KL/Ton)
Power	0.74 (KL/MW)	0.48 (KL/MW)

(ii) Raw material consumption per ton of product

Name of raw materials	Name of products	Consumption of raw material per unit of (Clinker) output	
		During the current financial year (2016-	During the current financial year (2017-2018)
Lime Stone	Clinker	1.41	1.438
Laterite		0.03	0.005
Bauxite		0.08	0.075
Coal		0.09	0.037

Name of raw materials	Name of products	Consumption of raw material per unit of (Cement) output	
		During the current financial year (2016-	During the current financial year (2017-2018)
Lime Stone	Cement (OPC & PPC)	1.19	1.19
Laterite Iron & Silica		0.02	0.04
Bauxite		0.07	0.06
Coal		0.08	0.03
Petcoke		-	0.06
Clinker		0.84	0.81
Fly Ash		0.11	0.14
Gypsum		0.04	0.04

Name of raw materials	Name of products	Consumption of raw material per unit of (Power) output	
		During the current financial year (2016-2017)	During the current financial year (2017-2018)
Coal	Power	1.05 MT/MWh	0.96 MT/MWh

PART-C

The impact of the cement plant pollution on the environment is limited to its immediate surrounding areas. In reality dust pollution is the only environmental problem in & around the plant. Although the dust produced while manufacturing of cement is nontoxic, nonflammable and non-corrosive. It does constitute a nuisance to a little extent. So the company has adopted several technological measures to completely avoid the dust emission at the source itself.

Water pollution is virtually absent as no liquid effluent are seriously involved. The water here is used for cooling the machines/parts of the machine. A WTP – Cooling Tower is being maintained for the circulation of water for the entire plant. The major area of domestic water consumption inside the plant is for domestic (Drinking, Toilet, Colony and for Canteen use).

The company is monitoring the dust level concentration at all the emission sources by batch sampling technique. The quantity of pollutants discharged is calculated at an average emission level taken from monthly stack monitoring reports.

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

S.NO	Pollutants	Quantity of pollutants discharged (Mass/day))	Concentration of pollutants in discharge (Mass/Volume)	Percentage of variation from prescribed standards with reasons
a) WATER: -				
a.	Outlet effluent of sewage treatment plant	127.16 KL/day	----	----
1.	pH		7.4 mg/L	Within Standard
2.	BOD 3 days at 27°C		4.0 mg/L	Within Standard
3.	COD		38.1 mg/L	Within Standard
4.	Ammonical Nitrogen		7.7 mg/L	Within Standard
5.	Total Nitrogen		3.7 mg/L	Within Standard
6.	Phosphate		8.8 mg/L	Within Standard
7.	Fecal Coliforms		1.7 mg/L	Within Standard
b) AMBIENT AIR:-				
1.	Near Main Gate	PM10 & PM 2.5 Concentration in µg/Nm³	72.7	Within Standard
			27.9	Within Standard
2.	Near Coal Yard		78.2	Within Standard
			35.0	Within Standard
3.	Near Dispatch Gate		70.6	Within Standard
			29.8	Within Standard
4.	Near CPP plant		75.4	Within Standard
			32.5	Within Standard

* The value represents arithmetic average of 12 months for the financial year 2017-2018.

Stack Gas Quality for Particulate Matter

CEMENT PLANT & CPP:

S.No	POLLUTANTS	QUANTITY OF POLLUTANTS DISCHARGED (m3/H)	CONCENTRATIONS OF POLLUTANTS IN DISCHARGE (Mass/Vol.) (mg/Nm3)	PERCENTAGE OF VARIATION FROM PRESCRIBED STANDARDS WITH REASONS
1.	Crusher	33,912.39	28	Within Standards
2.	Kiln/Raw mill	6,49,934	23	
3.	Coal mill	1,78,352	19	
4.	Cement mill	1,77,359	21	
5.	Packing plant	21,355	22	
6.	Clinker cooler	5,49,271	22	
7.	CPP	2,36,553	17	

* The value represents arithmetic average of 12 months for the financial year 2017-18

PART-D

Hazardous Wastes

[As specified under Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, **2008 as Amended]**

Hazardous waste Generation	Total Quantity MT/KL/No's	
	During Current Financial Year 2016-2017	**During Current Financial Year 2017-2018**
Waste oil / used oil	Nil	17.74 MT
Used Batteries	**12 No's**(Battery ,Qunta,12V 26AH-8No,Phoenix Mini Battery-01No & 12V,150 AH, Tubular Invertor Battery-02No)	**138 No's**(Automotive-4 No's, Lead Acid-13 No;UPS-87 Nos,Lethium battreries-34 No)) with a overall approximate weight of 1.03 MT

The Waste oil generated at different sections in the plant is collected in the hazardous waste oil platform especially made for the purpose. Waste oil so collected in the leak proof container (M.S.Barrels) is being sold to the authorized reprocessors/recyclers KM Oil Pvt Ltd, Kalaburagi. The details specifying the same is submitted via Form-IV to KSPCB vide our letter no Ref: OCL/ENV/VP(OPR)/18-19/ dated 26/04/2018.

New Batteries purchased from the dealers/agency during the period April-2017 to March-2018 has been submitted in Form VIII to Board on half yearly basis.

PART-E

Solid Wastes

Sl.No	Solid Waste	Total Quantity	
		During the current financial year 2016-2017	**During the current financial year 2017-2018**
1. (a)	From process (Fly ash from captive Thermal Power Plant)	Nil from Cement plant. # 51,249 MT from Power Plants.	Nil from Cement plant. # 44,587 MT from Power Plants.
(b)	Fly Ash from RTPS / NTPC/Kudgi	# 1,39,313 MT	# 2,03,4473 MT
2.	From pollution control facility	467 MT Recycled in to the main process in cement plant.	409 MT Recycled in to the main process in cement plant.
3.	Quantity recycled or reutilized Within the unit	467 MT (In process, material recycled from Pollution control equipment like ESPs /Bag House /Bag filter).	409 MT (In process, material recycled from Pollution control equipment like ESPs /Bag House /Bag filter).
i	Sold	-	-------
ii	Disposed	-	-------

Fly ash utilization is improving continuously; this is observed from the consumption values of total Fly ash generated at our Power plant, RTPS, NTPC & Kudgi.

PART-F

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

Hazardous waste:

- All used Oil generated from the different sections of plant is being collected in closed drums barrels and then stored at Hazardous waste storage platform that has been made as per Hazardous Waste (Management, Handling & Trans boundary Movement) Rule, 2008. These stored hazardous wastes **are being sold to authorized recycler within the stipulated time.**

Solid waste:

- There is no solid waste generated during the process of cement manufacturing.
- In process, materials are recycled from pollution control equipment like ESP and Bag filters.
- The total generated fly ash & bottom ash are utilized for the manufacturing of cement.
- Refractory bricks and Mild steel scrap generated is disposed to party for further use/ recycling.

PART-G

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

- Cement Production is being operated on dry process technology, which is cost effective and environmentally clean technology. The advantage of dry process is also in fuel economy. The stack emissions from the plant are controlled by equipment like Bag Houses, ESP's & Bag Filters installed at various material transfer points to arrest the fugitive emissions. The particulate matter collected in the pollution control equipment is recycled in process.
- All the raw materials are being stored in covered yard **by which reduction in fugitive emission is achieved.**
- The conveyor belts are fully covered **due to which fugitive emission is controlled.**

- Clinker and cement is being stored in silos due to which fugitive emission **is controlled**.
- Fogging system has been installed at Raw material handling area and conveyor belts for further reduction of fugitive emission.
- Water sprinkling for dust suppression on the road and other dust generation points in and around the plant is being done to control the fugitive emissions.
- Utilization of fly ash for the manufacturing of cement is being done to avoid landfilling of waste.
- Huge water pit of capacity 5.6 lakh cubic meter is developed in the plant for storing water during rainy season and utilization of the same is being done for plant, mines dust suppression etc.
- Installed an STP of capacity 500 KLD in order to recycle or reuse the treated water for plantation purpose etc.,
- Rainwater harvesting Tank has been constructed at the plant area, for recharging ground and thereby reducing the consumption of surface water.
- Development of extensive green belt in and around the plant to abate the pollution.

Modifications for the year 2017-18 for energy conservation and better Environment

Process

- In order to reduce the NOx emissions as Primary Mitigation, and reduce the coating tendency in the kiln riser duct we have diverted the material from cyclone V to KILN Inlet Riser Duct. This will reduce the coating profile tendency and this will also reduce the NOx emissions in calciner (fuel NOx). The material from cyclone IV is diverted to calciner top which reduces the NOx emissions.
- Installed VVFD drive for Primary Air fan which has reduced the power consumption in the primary air fan.
- Cement Mill Bag house Differential Pressure Optimised by optimising the purging sequence and the compressed air pressure.

Electrical & Instrumentation:

- Auto control of pyrometer and stack dust monitor blowers instead of manual control. This is for power conservation.
- Auto speed reduction of Raw mill fans whenever mills trip. Speed reference of 20% will go for Raw Mill fans whenever mills trip due to any reason. This is for power optimization.

- Installation and commissioning of variable frequency drive for primary air fan to optimize the power.
- Reduction in packing plant power consumption by making auto idle run trip logic to packer feed & recirculation groups.
- Installed VFD panel for PA fan in kiln section to reduce Power Consumption.

Power Plant:

- Installed VFD panel for CEP Pump and saved 910Kwh/day
- Flow meter installed at outlet of N-pit to record the quantity of water treated

PART-H

Additional measures/investment proposal for energy conservation and better environment.

- Continuous efforts are always being made to maintain the environment clean and dust free and we have installed upgraded pollution control system and also adequate quantity of Pollution Control Equipment i.e. ESP, Bag House, Water Sprinkler, STP, Green Belt Development.
- Regularly we are monitoring ambient air quality, Noise level and stack monitoring & water analysis.
- Constructing of internal road inside the plant to reduce fugitive dust emission in Phase manner
- Scheduled maintenance and monitoring of all Air Pollution Control Device's (APCD'S) like Bag Filters and Bag House are being regularly undertaken to ensure their efficient operations in order to keep emissions level within the prescribed limit.
- Awareness programs like plantation activities, Slogan competition, drawing competition & Essay competition was organized for Employees & Families of Employees for awareness on environment protection on 5th June (World Environment Day)
- Actions for utilization of Hazardous wastes like Paint sludge, ETP Sludge & other alternate fuels like Carbon powder, tyre chips, plastic waste, agro waste etc. in Kiln.
- Green belt development and tree plantation is our on-going process. We are doing new plantation to increase the bio-diversity of the area.
- Total plant area is 266 Ha out of which plantation will be done in 33% area which is 88 Ha. Presently **150266 plants in 98 Ha areas have been** planted surrounding Boundary Zone, of the total plant & Mines area.

Proposed modifications for the year 2017-18 for Energy Conservation and better Environment:

Process

a) Installing one more VVFD for the PA fan in order to reduce the power consumption.
b) Water injection system in the cooler to be optimised by reducing the water nozzle size.
c) Optimizing the coal mill operation by reducing the dam ring height.
d) Optimizing the raw mills by static gap adjustment.

Electrical & Instrumentation:

Speed reference of raw mills will be reduced to 20% whenever mills trip due to any reason. This is for power optimization.

PART- I

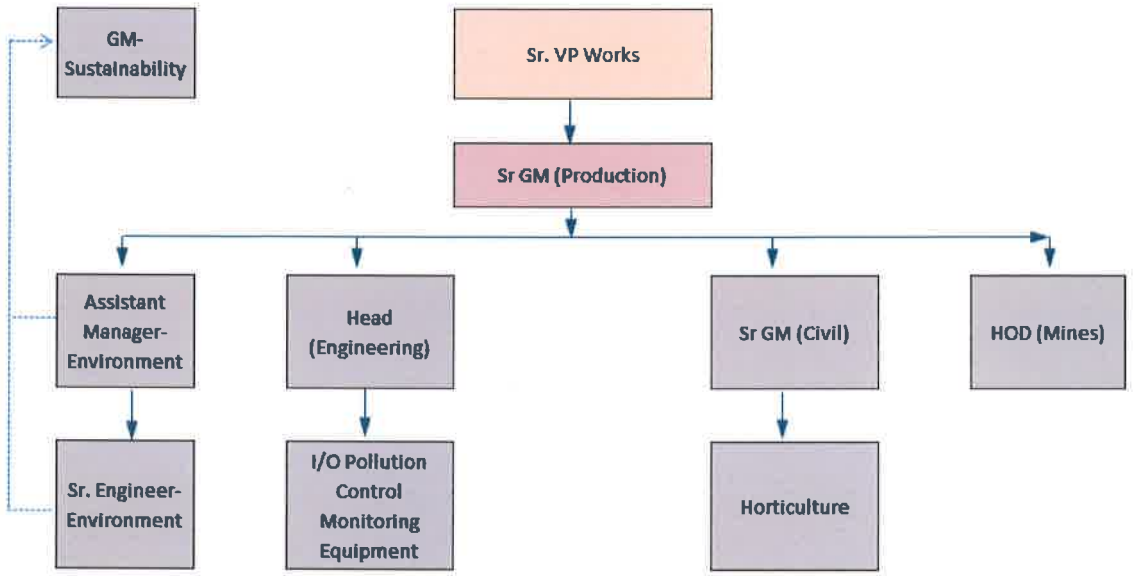
Any other particular in respect of environmental protection and abatement of pollution

- Implementation of EMS including compliance of environmental laws through periodic Management Review & Internal/ external audits.
- Awareness promotion through various environmental competitions, workshops, presentations etc. on world environment day.
- Improvement in Ambient Air Quality through effective control on fugitive dust emission
- Extensive green belt surrounding the boundary & inside plant premises is being developed in a phase wise manner.
- Installation of CAAQMS & CEMS

Continuous Ambient Air Quality Monitoring stations (04 No's Locations)

Installation of Continuous Stack emission monitoring stations for main stacks

Details of Environmental Cell



Miscellaneous

World Environment Day Celebrations -2018

Environmental Awareness:

World Environment Day 2018 was celebrated at M/s Orient Cement Ltd, Chittapur, on 5th June 2018 @ 10:00 AM .This year theme for World Environment day was: "Beat Plastic Pollution," with a Slogan "if you can't reuse it Refuse it" for which Environment Department along with staff of Orient Cement Ltd organized a program in front of OCL Factory main gate.

The Chief Guests for the program were from Institution of Engineer India, local Center Kalaburagi Dr.S.R Mise-Honorary Secretary, Shri.Basavaraj.Patil-Retd Chief Engineer-Gescom, Shri.B.S More- Member & Shri.S.B Kulkarni- Member. The programme was chaired by Shri. P.K Singhania-Unit Head, Shri.Venugopal Reddy.S-VP-Operation & other delegates.

The Welcome Note along with the World Environment Day Speech was addressed by Mr.Mallikarjun.S.D from Environment Department & then the Speech was addressed by Shri. P.K Singhania-Unit Head & Shri.S.B Kulkarni- Member IEI in a thought provoking manner, which set a perfect platform for our colleagues who have gathered for WED celebration. The chair persons suggested few visions to be included to make remarkable changes in the environment to combat the Plastic pollution and also addressed the people to change their thoughts to change an environment.

Later all the staff of OCL ,delegates from Institution of Engineers along with Workers carried out a plantation programme at factory main gate area, where 110 No's of neem,pongemia,peepal,etc Saplings were planted.

Finally the program was concluded with a presentation on Plastic Pollution along with vote of thanks by Dr.Sr.Mise @ our CCR Conference hall.

Glimpses of World Environment Day Celebrations – 2018

Speech by our Unit Head-Shri P.K Singhania about Plastic pollution

Plantation by Unit Head-Shri P.K Singhania along with other delegates

Plantation by VP-Operation-Shri Venugopal Reddy.s along with other delegates

Participation of OCL staff & Workers for WED-2018 event

Presentation by Chief Guest Dr.S.R Mise @ our CCR conference room

AMBIENT NOISE LEVEL (PLANT) [Leq Value in dB(A)] FY-2017-18

Particular	Tolerance Limit dB(A) in day time	Actual Avg Values Max dB(A) Day Time
Near Power Plant	75	**70.0**
Near Coal Yard	75	**70.0**
Near Water Reservoir	75	**68.8**
Near Main Gate	75	**69.2**

Particular	Tolerance Limit dB(A) in Night time	Actual Avg Values Max dB(A) Day Time
Near Power Plant	70	**64.0**
Near Coal Yard	70	**64.0**
Near Water Reservoir	70	**61.6**
Near Main Gate	70	**62.3**

Details of Pollution Control Measures installed at various location

S. No.	Location of PCM	PCM
1	Lime stone crusher	Water Sprinkling at Hopper & Bag Filter
2	Additives crusher	Bag Filter
3	Coal crusher	Bag Filter
4	Raw Mill	Bag House
5	KILN	
6	Cooler	ESP
7	Coal Mill	Bag Filter
8	Cement Mill-1	Bag Filter
9	Cement Mill-2	
10	Captive Power Plant	ESP
11	Stacker	Water Sprinkling and Covered
12	Clinker Silo	Bag Filter
13	Fine Coal bin Silo	Bag Filter
14	Raw Meal Silo	Bag Filter
15	Cement Silo (4 no's)	Bag Filter
16	Fly ash Silo	Bag Filter
17	Packing House (5 no's of Packers)	Bag Filter
18	All transferring points of raw material handling and product.	Bag Filter
19	Sewage treatment plant for domestic sewage	Sewage treatment plant (500 KLD)
20	Green belt development in the premises	Green belt development

Statement Showing Power Consumption Plant for the Year April-2017 to Mar-2018

MONTH	POWER CONSUMPTION (KWh)
	KPTCL/CPP
Apr-17	10106892.00
May-17	12497889.00
June-17	11282121.00
July -17	12922266.84
Aug-17	9838112.78
Sept-17	10167549.66
Oct-17	8777497.87
Nov-17	11530142.73
Dec-17	11195966.77
Jan-18	10119517.11
Feb-18	13779323.21
Mar-18	16846956.98
TOTAL	139064236

Statement Showing Power Consumption Mines for the Year April-2017 to Mar-2018

MONTH	POWER CONSUMPTION ((KWh))
	KPTCL/CPP
Apr-17	244433.00
May-17	241524.00
June-17	245233.00
July -17	315522.16
Aug-17	224017.22
Sept-17	245442.34
Oct-17	177502.13
Nov-17	313027.27
Dec-17	243670.23
Jan-18	207854.89
Feb-18	344867.79
Mar-18	408412.0
TOTAL	3211506.05

Year wise plantation details carried at Orient Cement Ltd

The Details of Tree Plantation in Orient Cement Factory and Mines area from 2013-14 to 2017-2018 and Percentage of Survival

Year	Factory	Mines	Total	Survival % Age	Survivals
2013-2014	25000	-	25000	50%	12500
2014-2015	25000	-	25000	50%	12500
2015-2016	30000	1220	31220	70%	21854
2016-2017	49000	4780	53780	66%	35700
2017-18	21266	3159	24425	75%	2527(Mines 80%) Plant Assumed to be 75%)
Total:	150266	9159	159425	62%	82554

Total plant area: 266 Ha.
Total GBD to be developed: 33%of plant are=87.78 Ha.(to be developed in five years)
Total area of Green Belt Development: 98 Ha. (Until March 2018)
Total Area of Green Belt Developed in FY 2017-2018: 30 Ha.
Total area planned during current FY-2018-19: 18Ha.

Types of Species planted:
Acacia, Neem, Tamarind, Honge trees, Eucalyptus, Ashok, Peeple tree, Hercules fermc, Gilmore tree, Subabul tree, Hatti tree, Concorpus(Dubai Tree) Feltoform, Bamboo, matti, badam, alstonia, keshiaseema, keshiya-java, mango, kaaljamun, alma, gauva, cesalpinnia and Others.

Green Belt Development inside the plant premise

DETAILS OF EPM EXPENDITURE

ASSET DESCRIPTION	Amount	Amount in Lakhs
DUST SUPRESSION SYSTEM	43,58,474	43.58
BAG FILTER & ESP FOR STACKS	34,54,39,089	3,454.39
CPP - RCC CHIMEY	2,87,14,293	287.14
WATER RESERVOIR	25,87,57,199	2,587.57
WATER TREATMENT PLANT	12,85,41,299	1,285.41
SEWAGE TREATMENT PLANT	7,28,00,825	728.01
ROAD & DRAIN	50,14,63,605	5,014.64
GREEN BELT DEVELOPMENT	53,48,720	53.49
FLY ASH SILO & HANDLING SYSTEM	12,89,16,613	1,289.17
EFFLUENT TREATMENT PLANT & DM PLANT IN CPP	3,60,66,506	360.67
CPP - ELECTROSTATIC PRECIPITATOR	10,77,18,110	1,077.18
CPP ASH HANDLING SYSTEM	3,98,25,799	398.26
COMPLETE BURNER ASSEMBLY	1,17,15,390	117.15
AMBIENT AIR QUALITY MONITORING	2,20,13,783	220.14
Total	**1,69,16,79,705**	**16,917**

Initiatives on Environment

Fogging System on Belt Conveyors

Water Sprinkling (Fogging system) in Limestone Hopper

Concrete road inside the plant to avoid fugitive dust

Belt Conveyors are fully covered

Clinker Silo is fully covered

Covered Shed for Raw Material storage

Raw materials Storage Yard are covered

Bag House for Kiln & Raw Mill

ESP for Cooler and CPP

Bag Filters at all transfer points

Water Storage Reservoir & Rainwater Harvesting

WTP & STP

CK BIRLA GROUP

ORIENT CEMENT

ENVIRONMENTAL STATEMENT REPORT

FOR

MINES
(FORM-V)

[YEAR 2017 - 2018]

REPORT BY

ORIENT CEMENT

(Orient Cement Ltd.)

Captive Limestone, Clinkerisation,

Cement Unit & Captive Power Plant

Itga (V), Chittapur (Tq)
Gulbarga - 585211

CONTENTS

Prologue

Orient Cement is a Green Field project by CK Birla Group and EHS policy reflects each & every section in the organization. Our main vision is to conserve the Environment through new technologies, new initiatives.

At National Level, great emphasis is being laid on maintaining environmental quality, particularly in the regions where large-scale developmental programs are being undertaken. Orient Cement has adopted corporate policy along with EHS policy, for conserving the Sustainable environment and its development.

Company aspires to exceed market expectations across all sustainability issues and go beyond legal compliance to proactively reduce our environmental impacts. Our goals are to reduce our overall carbon footprint by embedding Environmental controls and practices into the daily management of the firm and thereby encouraging positive behaviour from our staff to achieve a greener culture.

In order to comply with Environmental Protection Act and Environmental Preservation and Sustainable Development, Orient Cement has prepared the Environmental Statement Report; this report is furnished in Form-V & along with the data for Environmental components like Air, Water, & Noise for the period of April-2017 to March-2018.

1.1 INTRODUCTION

Man is a part of nature, and not separate or independent; at the same time, man is unique in the influence he has over nature. Man derives all his food, clothing, shelter, and other amenities from nature. In that process, if he does not take care to protect and cherish nature, but decrease or destroys, he will find that his own life and that of his children is in jeopardy.

The environment, a word as it stands today is not simple; it is not a fashionable word, but has got established definitions incorporates limitless complexities, bear definite power to put everybody under a flood of worries and pushes us to plan for betterment with minimum problems. The environment is now catching for all, the industry, the government, the people. Hence, it is joint responsibility to protect, preserve the environment and avoid perishing the natural treasures. At this critical junction of time and efforts, the Indian industry has fulfilled its commitment in maintaining the environmental integrity.

Orient Cement Limited considers itself responsible for Environment and Society. We are committed to emission reduction, climate protection, effective energy management, responsible use of resources and its conservation keeping in mind that "**Today's Need – Future of Our Children**".

The next few pages of this Environment Statement Report (ESR) of Orient Cement Limited is based on actual data and verified record, will present a picture of more optimism for environmental care than ever before.

Orient Cement Ltd: is situated at Itga Village, Chittapur Taluk, Gulbarga District: which is about 50 Km from Gulbarga. It started its commercial operation in the year 2015. Presently factory is operating with one Kiln of capacity 6000 TPD & 50MW Power Plant. The Company is manufacturing Ordinary Portland Cement (OPC) & Pozzolana Portland Cement (PPC).

M/s Orient Cement Ltd is operating lime stone mine at Itga (V), Chittapur Taluk and Gulbarga District as captive mines with limestone production of 3.0 Million tonnes per Annum for their Cement manufacturing at factory , which is about 02 Km from Mines. The project site is located between latitude and longitude of the mine lease area 17⁰ 6′ 34.87″ - 17⁰ 8′ 13.86″ N and 77⁰ 7′ 35.65″ - 77⁰ 9′ 35.41″ E. This mine is being operated using mechanized open cast method with heavy equipment like hydraulic excavators, dozers and dumpers.

The policy for the abatement of pollution by the government of India provides for submission of environment statement by all the industries. Environmental Statement is therefore an output of Environmental Audit.

So an effort has been made in this report to explain Environmental Statement for the financial year 2017-2018 ended 31st March 2018 as per Government of India notification GSR 329 (E), dated 13th March 1992 and amendment to Environmental (Protection) Rules 1986 and subsequent amendment there on.

1.2 METHOD OF MINING:

We are operating mines in eco-friendly way for sustainable development of environment. The mines is operated by open-cast mechanized method of working where deep hole drilling and blasting and deployment of HEMM are used.

Separate Benches are made in overburden & Limestone to avoid contamination. In limestone further five benches formed based on grad/Quality of limestone. ROM quality is maintained with the help of online X-belt Gamma rays analyzer. All the stone mined is being utilized for cement manufacturing.

1.3 ENVIRONMENT MANAGEMENT:

Top soil management:

We are stacking top soil of black cotton at designated places at stable ground so called BC soil dump .the reason for stacking is to preserve the top soil for plantation and land fertilization for natural condition. BC soil dump is maintained in specified gradient manner. Some of the top soil removed is used for plantation purpose in mines area and also in our plant area.

AIR QUALITY MANAGEMENT:

- Wet drilling arrangement and dust extractor system provided in drilling machine.
- Bag filter is provided at crusher to collect dust.
- Conveyor belts are totally covered with metal hood.
- Water spray is being done in hopper & on conveyor belts.

WATER QUALITY MANAGEMENT:

We are using mines pit water for dust separation and drilling operation along the mines working area and haulage roads involved in transportation of limestone to crusher. We also use the pit water for planation purpose. We engaged a water tanker for plantation and also for dust separation.

Monitoring Locations of Ground water Level.

Sl.No	Location Name	Water Level in (mbgl)
1	Itga Village	6.77
2	Moghla Village	11.55
3	Diggaon Village	3.37
4	Chittapur Village	7.69

AFFORESTATION:

FY 2017-18 trees planted are 3159. Types of species are Acacia, Neem, tamarind, Ashok, People tree, Concorpus (dubai Tree), Honge trees, and others.

Areas of trees planted are as follows

a) Along the Nalla bund
b) Behind the mines office
c) Along the mine haulage road
d) Near the mine office avenue plantation
e) Near the view point
f) Along the Ml lease boundary near the view point

Drip Irrigation System

Conacarpous Trees

1. Dubai Plants and Drip irrigation are planted in Mines for better Survival rate.
2. Ever green & will not shed the leaves in any season
3. Alternate leaf arrangement with short petioles
4. Having dense foliage & leathery leaves
5. Fast growing & will reach 6 feet in a year

Year wise plantation at Mines

SL No	Financial Year	Location	Area in Ha.	Number of trees Planted	No. of plants survived	Survival (%)	Types of Species
1	2015-16	Reclaimed Black cotton dump area and Behind Mines Office	1.3	1220	610	50%	Acacia, Neem, tamarind, Ashok, People tree, Concorpus (dubai Tree), Honge trees.
2	2016-17	Safety zones, Magazine Roads, Mineral stock area and Along the nala banks	2.35	4780	2390	50%	Acacia, Neem, tamarind, Ashok, People tree, Concorpus (dubai Tree), Honge trees.

3	2017-18	Safety zones, Behind office & Garage and near view point	2.13	3159	2527	80%	Accasia, Conacorpous, Bougain villa, Badam, Honge, Tapsi, Sankeswar, Peltoform, Neem, Nelli, Shubham trees
Total			**5.78**	**9159**	**5527**		

Total area: 519 Ha.
Active Mining Area: 19.43 Ha

Green Belt Development Pictures

Environmental Monitoring details as under.

Monitoring is carried out by M/S Cosmo Concsious Research laboratory, Bellary in all four season. The details are as under.

S.No	Environmental parameters	Parameters
1	Ambient Air Quality	Ambient air quality is being monitored continuously season wise as per IBM circular 3/92 & NAAQ notification 2009.
2	Noise	Season wise noise measurement study is carried out within the mining lease area .Personal protective devices were provided to workers to reduce the impact of noise.

3	Ground vibration	Ground vibration study is carried out by the company and each and every blast is monitored by "Seismograph". It is observed that all the readings are less than acceptable level.
4	Water	Water quality within the mine pit is monitored on regular basis. IS – 10500-2012 Drinking water standards, GSR 422 (E) General Standards for discharge of Effluent.

a) Stack monitoring report is as below.

S.NO.	POLLUTANTS (Particulate matter)	QUANTITY OF POLLUTANTS DISCHARGED (m3/H)	CONCENTRATIONS OF POLLUTANTS IN DISCHARGE (Mass/Vol.) (mg/Nm3)	Tolerance Limit (mg/Nm3)
01	New Crusher stack	33912	28	30

b) Measures Taken to Control Noise:-

- Seismograph is used to get details of vibration and Noise pre blasting.
- Control blasting technique adopted by using NONEL,
- Schedule and Preventive maintenance of HEMM.
- Centralized lubrication system in all HEMM
- Noise mapping is done regularly in all mining operation area.

AMBIENT NOISE LEVEL (MINES) [Leq Value in dB(A)] FY-2017-18

Particular	Tolerance Limit dB(A) in day time	Actual Values Min dB(A)	Actual Values Max dB(A)
Crushing & Screening	75	51	63
Mining Area	75	47	64
CCR Office	55	48	54
Labor Colony	55	45	53

Particular	Tolerance Limit dB(A) in Night time	Actual Values Min dB(A)	Actual Values Max dB(A)
Crushing & Screening	75	48	61
Mining Area	75	43	61
CCR Office	45	39	44
Labor Colony	45	38	43

c) Measures taken for Ground Vibration Control:

- Seismograph is used to get details of vibration, Noise & fly rock pre blasting. Blasting pattern can be modified if parameters are high.
- Use of NONEL shock tubes and keeping charge weight and delay per hole is as per the recommendation given DGMS.
- Use of Wooden Spacer, Stem Plug in blasting operation to reduce Charge/delay.
- Regular monitoring of vibration & Noise by seismograph.
- Blasting operation is carried out under supervision of first Class Mines Manager.

ENVIRONMENTAL STATEMENT REPORT

[FORM-V]
(See rule 14)

PART-A

Name and address of the owner/ Occupier of the industry	:	Satyabrata Sharma Sr. Vice President – Works Itga (V), Chittapur (Tq) Gulbarga - 585211
Operation process	:	Production of Cement
i. Industry category: Primary-(STC code) Secondary-(STC code)	:	Red category
ii. Production category-units	:	2 MTPA (for Clinker Production) 3 MTPA (for Cement Production)
a. Installed Capacity	:	3.6 MTPA (Lime Stone)
b. Consented Capacity	:	3 MTPA (Lime Stone)
iii. Year of establishment	:	2015 (ML-2681)
iv. Date of last environmental statement submitted	:	28/09/2017 FY 2016-17

Postal Address

1) Registered Office	:	Orient Cement Ltd. 5-9-22/57/D G.P Birla Center 2nd & 3rd floor, Adrash Nagar, Telangana Hyderabad - 500063
2) Factory	:	Orient Cement Ltd. Itga (V), Chittapur (Tq) Gulbarga - 585211 Phone: 08474-236716 Fax: 08474-23671

PART-B

Water and Raw Material Consumption

Particulars	During Previous Financial Year (2016-2017)	During Current Financial Year (2017-2018)
	(m^3/day)	(m^3/day)
Process/Dust suppression	35.46	44.16
Domestic/Gardening	0.11	0.16

Name of products	Process water consumption per unit of products output	
	During the previous financial year (2016-2017)	During the current financial year (2017-2018)
	(m^3/day)	(m^3/day)
Lime Stone	0.00020 m^3/MT of Limestone	0.0074 m^3/MT of Limestone

(ii) Raw material consumption

Name of raw materials	Name of products	Consumption of raw material per unit of (Clinker) output	
		During the previous financial year (2016-2017)	During the current financial year (2017-2018)
Lime Stone	Lime stone	1.42	1.43

PART-C

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

S.NO	Pollutants	Quantity of pollutants discharged (Mass/day))	Concentration of pollutants in discharge (Mass/Volume)	Percentage of variation from prescribed standards with reasons
a) WATER: -				
a.	Effluent treatment plant	Nil	----	No wastewater generation in Mines
b) AMBIENT AIR:-				
a.	Mining Area	PM10 & PM2.5	64.8µg/m3 17.24 µg/m3	Within Standards
b.	Haulage		63.16 µg/m3 16.61 µg/m3	Within Standards
c.	Crushing & Screening		64.70 µg/m3 16.93µg/m3	Within Standards
d.	Labor Colony		60.76µg/m3 16.05 µg/m3	Within Standards

* The value represents arithmetic average of 12 months for the financial year 2017-18

Ambient Air Quality Report in μg/m³ Mines FY 17-18

Mining Area		Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Average
	PM 10	81	59	58	68	56	56	64	81	60	55	69	71	**64.28**
	PM 2.5	21	13	16	12	18	24	19	19	15	14	19	19	**17.24**
	SO2	11	14	14	11	10	10	13	14	14	14	15	14	**12.73**
	Nox	15	17	17	18	13	20	15	16	14	17	13	13	**15.89**
	CO	0.738	0.123	0.492	0.738	0.246	0.123	ND	ND	ND	ND	ND	ND	**0.41**
Haulage		Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Average
	PM 10	74	49	43	68	50	79	61	67	61	71	2	67	**63.16**
	PM 2.5	23	14	12	14	16	19	18	20	16	14	17	22	**16.61**
	SO2	13	10	8	17	12	13	14	15	16	14	14	14	**13.27**
	Nox	17	20	10	8	13	21	15	16	14	17	14	14	**14.92**
	CO	0.861	0.123	0.369	0.492	0.246	0.123	ND	ND	ND	ND	ND	ND	**0.37**
Crushing & Screening		Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Average
	PM 10	83	62	68	61	67	53	64	62	67	57	68	69	**64.70**
	PM 2.5	22	12	15	16	19	16	19	19	16	13	19	22	**16.93**
	SO2	17	10	9	10	9	12	14	16	15	14	14	14	**12.76**
	Nox	19	16	18	11	18	14	14	15	14	20	14	13	**15.72**
	CO	0.738	0.123	0.123	0.615	0.123	0	ND	ND	ND	ND	ND	ND	**0.29**
Labor Colony		Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Average
	PM 10	77	43	54	62	79	60	62	55	57	64	56	64	**60.76**
	PM 2.5	23	14	17	10	11	20	19	16	15	13	17	18	**16.05**
	SO2	14	17	9	12	8	12	13	16	14	16	14	15	**13.17**
	Nox	19	18	20	8	18	19	14	15	14	15	13	14	**15.71**
	CO	0.246	0.246	0.369	0.738	0	ND	ND	ND	ND	ND	ND	ND	**0.32**

Mines Pit Water Quality Monitoring Data FY 17-18

Parametrs	Unit	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Avg
Total Dissolved Solids	mg/l	508	473	344	380	534	310	370	300	410	340	410	380	396
pH	-	7.81	7.91	8.1	8.1	7.9	8.1	8.1	8	7.9	8.1	8.16	8	8.01
Total Suspended Solids	mg/l	6	10	15	2	2	10	8	2	5	1	5	1	5.58
Total Hardness	mg/l	284	306	270	274	294	248	330	254	302	292	302	308	288
Chloride as Cl	mg/l	42.56	45.03	45.03	56.83	45.03	31.84	63.69	34.78	34.78	44.58	39.19	46.54	44.1
Sulphate as SO_4	mg/l	47	44	102.75	52.5	59	75.5	43	47	49	48	50.5	55	56.1
Floride Fl	mg/l	0.43	1.41	1.45	1.32	1.39	1.36	0.84	1.41	1.37	1.5	0.75	0.67	1.15
Iron as Fe	mg/l	3	0.081	BDL	0.297	BDL	0.117	0.12	0.228	0.5	0.831	0.066	BDL	0.58
Total Coliform count	MPN /100 ml	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
E-coli count	MPN /100 ml	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

PART-D

Hazardous Wastes

[As specified under Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008]

Hazardous Wastes		Total Quantity	
		During the Previous Financial year (2016-2017)	During the Current Financial year (2017-2018)
(a) From Process	(a) Spent/ Used Oil (Category 5.1) (Including CPP)	0	Nil
(b) From Pollution control Facilities	N.A.	N.A.	N.A.

However this waste is being generated from industrial related activity i.e. hydraulic movement of machines, oiling/ greasing etc. which will be sold to registered to recycler once authorization for Hazardous waste is received from the board.

PART-E

Solid Wastes

	Total Quantity (Overburden)	
	During the previous financial year (2016-17)	During the current financial (2017-2018)
(a) From process	312410 MT (Over burden)	96259 MT (Over burden)
(b) From pollution control facility	544.041 MT (from LS Crusher Bag filter)	306.2 MT (from LS Crusher Bag filter)
(c) Quantity recycled or re-utilized	544.041 MT	306.2MT

PART-F

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

Hazardous waste:

- No hazardous waste generated from the mining activities.
- Lime Stone Crusher Gear box oil will be stored and disposed for authorized person

Solid waste:

- Generated and disposed during 2017-18: 96259MT of Over burden is used making bunds for green belt development.

PART-G

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

- 0.71 ha of Overburden soil dump area has been reclaimed and rehabilitated by plantation.
- Total 3159 saplings have been planted in 2.13 ha area till April 2018 along the statutory barrier, along the road, nalla safety zone and mines safety zone .

- Constructed Embankment and garland drain around the pit to avoid surface water into mines
- Stone pitching has been made along the slopes of nala stream both side
- Automatic water sprinkler has been installed on main haul road to reduce dust Emission.

PART-H

Additional measures/investment proposal for environmental protection including abatement of pollution, prevention of pollution

1. Proposed to plant 3750 saplings covering an area of 1.50 ha within ML area for the year 2018-19 as a measure of green belt development.
2. To protect top soil a Toe wall at top soil dump will be constructed along with the garland drain of approx. 350 M.
3. Random rubble check barriers in garland drains will be constructed within and outside ML area.
4. Pit fencing will be provided for protection of pit

- **EXPENDITURE ON ENVIRONMENT MANAGEMENT**

DETAILS OF EPM EXPENDITURE

ASSET DESCRIPTION	Amount	Amount in Lakhs
DUST SUPRESSION SYSTEM	43,58,474	43.58
BAG FILTER & ESP FOR STACKS	34,54,39,089	3,454.39
CPP - RCC CHIMEY	2,87,14,293	287.14
WATER RESERVOIR	25,87,57,199	2,587.57
WATER TREATMENT PLANT	12,85,41,299	1,285.41
SEWAGE TREATMENT PLANT	7,28,00,825	728.01
ROAD & DRAIN	50,14,63,605	5,014.64
GREEN BELT DEVELOPMENT	53,48,720	53.49
FLY ASH SILO & HANDLING SYSTEM	12,89,16,613	1,289.17
EFFLUENT TREATMENT PLANT & DM PLANT IN CPP	3,60,66,506	360.67
CPP - ELECTROSTATIC PRECIPITATOR	10,77,18,110	1,077.18
CPP ASH HANDLING SYSTEM	3,98,25,799	398.26
COMPLETE BURNER ASSEMBLY	1,17,15,390	117.15
AMBIENT AIR QUALITY MONITORING	2,20,13,783	220.14
Total	**1,69,16,79,705**	**16,917**

PART- I

Any other particular in respect of environmental protection and abatement of pollution

- Promoting Eco Friendly zero waste mining
- Implementation of EMS including compliance of environmental laws through periodic Management Review & Internal/ external audits.
- Awareness promotion through various environmental competitions, workshops, presentations etc. on world environment day.
- Improvement in Ambient Air Quality through effective control on fugitive dust emission.
- Extensive green belt is being developed in the mining area with plantation of tree saplings surrounding mining lease area.