CK BIRLA GROUP | ORIENT CEMENT

Through Courier / By Hand

Ref:OCL/ENV/Sr.VP-(WORKS)/22-23/ 583 **Date: 22/09/2022**

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

Dear Sir,

Sub: -**Environment Statement Report (Form-V) of Plant & Mines for the financial year 2021-2022: -Reg**

Ref-1: - 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

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With reference to the above cited subject and vide reference- 1, **M/s Orient cement Ltd,** Chittapur, is here by submitting the **Environmental Statement/Audit Report-Form V** of **Captive Limestone Mines & Cement Plant** for the financial period **1st April 2021 to 31st March 2022.**
Kindly find the enclosed statement report for your perusals & acknowledge the receipt of the same.

Thanking You,
Yours Faithfully,
For Orient Cement Ltd

22nd Sep 2022

Satyabrata Sharma
Sr. Vice President – Works & Unit Head

Copy to:

1. Additional Principal Chief Conservator of Forests (C),
   Ministry of Environment & Forest, Govt. of India
   Regional office (Southern zone)
   Kendriya Sedan, IV th Floor, E & F Wings,
   17th Main Road, II Block, Koramangala, Bangalore-560034
2. Environmental officer,
   Karnataka State Pollution Control Board,
   Plot no 12/2,SY. No.19/P Mansafdar layout
   MG Road ,Santraswadi , Kalaburagi- 585 101.

26/9/2022

O/c - Environment dept.

ENVIRONMENTAL STATEMENT REPORT

FOR

CEMENT PLANT
(FORM-V)

[YEAR 2021 - 2022]

REPORT BY

(Orient Cement Ltd.)

Captive Limestone, Clinkerisation,

Cement Unit & Captive Power Plant

Itga (V), Chittapur (Tq)
Kalaburagi (Gulbarga) - 585292

CK BIRLA GROUP

ENVIRONMENTAL STATEMENT REPORT

(Form-V)

[Year 2021 - 2022]

REPORT BY

ORIENT CEMENT

(Orient Cement Ltd.)
Captive Limestone, Clinkerisation,
Cement Unit & Captive Power Plant
Itga (V), Chittapur (Tq)
Kalaburagi (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 behavior 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-2021 to March-2022**.

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 Management System (ISO 9001:2015), Environment Management System (ISO 14001:2015) and Occupational health and Safety Management System (ISO 45001:2018), Facility management System(ISO 41001:2018), Energy Management System (ISO 50001:2018) certification from BSI and Information Security Management System standard: ISO/IEC 27001:2013.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 SOx and NOx. The Sulphur content of Coal would vary from source to source. However, the alkaline nature of Raw materials leads to direct absorption of SOx.

The dust emitted from various machines is controlled by providing hi-tech air pollution control equipments such as Electrostatic 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 2021-2022 ended 31st March 2022 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.

CK BIRLA GROUP

ORIENT CEMENT

ORIENT CEMENT LIMITED

CORPORATE ENVIRONMENT, HEALTH & SAFETY POLICY

Our Commitment - At Orient Cement Limited, our priority towards Environmental Protection, ensuring Health & Safety of Employees, Stakeholders, Contractors, Visitors, Associates, and community by way of:

- ✓ Ensuring Compliances to all applicable Legal & Statutory, Social, and other requirements.
- ✓ Improvement in Environmental performance and resource efficiency.
- ✓ Reviewing of Objectives, Targets for continual improvements towards Environment, Workplace, Health and Safety.
- ✓ Providing Safe workplace and technology for efficient use of natural resources, energy consumptions, promoting waste to energy and recycling wastes for circular economy.
- ✓ Engaging & Training Human capital to enhance their skills and augment resources for effective EHS performance.
- ✓ Continual measures for prevention of occupational injuries and Health Hazards.
- ✓ Pollution control measures for protecting clean and green environment.

Pandey

S K PANDEY

PRESIDENT MANUFACTURING

1st Apr'21

CK BIRLA GROUP

ORIENT CEMENT

ORIENT CEMENT LIMITED

CORPORATE POLICY ON CARBON FOOTPRINT REDUCTION

Orient Cement Limited committed towards climate change, explore, adoption of technologies and input processing materials which reduce carbon footprint,

- ✓ Identify and implement Low carbon technology and processes across all the Plants.
- ✓ Measure and Monitor Carbon footprint numbers and new plans identify, plan and to reduce future Carbon footprint numbers.
- ✓ Adopt aggressive abatement actions to reduce life cycle footprint and drive growth through best practices and innovation.
- ✓ Identify and implement on continuous sustainability projects.
- ✓ Awareness, knowledge sharing of best practices towards reduction of impact of climate change and adherence to Global warming temperature below 2^{0}C.

Pandey

S K PANDEY

PRESIDENT MANUFACTURING

1st Apr'21

CK BIRLA GROUP

ORIENT CEMENT

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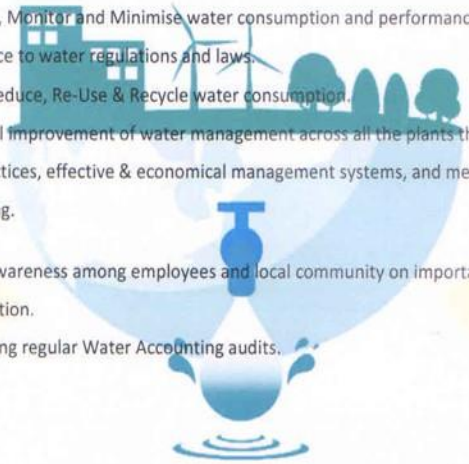
CORPORATE WATER MANAGEMENT POLICY

Orient Cement Limited believes that water is the root of every life on earth and so providing good quality water on sustainable basis for improvement of the Health & safety of employees, stakeholders and ecosystem is our ethical responsibility.

We committed to:

- Measure, Monitor and Minimise water consumption and performance of operations.
- Adherence to water regulations and laws.
- Follow Reduce, Re-Use & Recycle water consumption.
- Continual improvement of water management across all the plants through adoption of best practices, effective & economical management systems, and methods of Rain harvesting.
- Create awareness among employees and local community on importance of water conservation.
- Conducting regular Water Accounting audits.



S K PANDEY

PRESIDENT MANUFACTURING

1st Apr'21

CK BIRLA GROUP

ORIENT CEMENT

ORIENT CEMENT LIMITED

CORPORATE GREEN PROCUREMENT POLICY

Orient Cement Limited ensures & practices potential environment and associated impacts while purchasing Products & Services in the supply chain.

We committed to:

- Continuous creation of awareness on Environment and its impacts.
- Measures towards reduction of foot print by Energy efficiency appliances and water conserving equipment.
- Procurement and sourcing of Raw materials from nearby sources to reduce vehicle movement/diesel consumption and encourage local stake holders.
- Measures towards increase the Rail mode for incoming and out going material transportation.
- Create awareness among the suppliers to use of biodegradable material for packing.
- Explore and Increase the procurement of AFR/Hazardous waste materials for cement manufacturing process.
- Green supply chain with increase in bulk transportation.
- Purchase & replacement of equipment that have higher energy efficiency.

SANDEEP KOTHARI

1st Apr'21

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 & Unit Head** **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: **19/08/2021 for the year (2020-2021)**

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 - 585292** **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 wastewater 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 the year **2021-2022** 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 2020-2021 (m^3/day)	During Current Financial Year (2021-2022) (m^3/day)
	Water consumption in m^3 / d or KLD	2011.830	2601.850
1.	a) Process/Cooling	1765.845	2295.413
	b) Domestic/Gardening	245.993	306.438

Note: OCL is permitted to withdraw water from river Kagina at the rate of 5.56 MLD, the agreement had in between M/s Orient cement ltd. and KNNL, the validity is 18.03.2023

Name of products	Process water consumption per unit of products output	
	During the Previous financial year (2020-2021)	During the current financial year (2021-2022)
Cement	0.030(KL/Ton)	0.037(KL/Ton)
Power	0.27 (KL/MWH)	0.33(KL/MWH)

(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 Previous financial year (2020-2021)	During the current financial year (2021-2022)
Lime Stone	Clinker	1.422	1.400
Laterite		0.051	0.061
Bauxite		0.058	0.062
Coal		0.050	0.062
Red mud		0.023	0.012

Name of raw materials	Name of products	Consumption of raw material per unit of (Cement) output	
		During the Previous financial year (2020-2021)	During the current financial year (2021-2022)
Lime Stone	Cement (OPC & PPC)	1.176	1.114
Laterite Iron & Silica		0.042	0.049
Bauxite		0.048	0.049
Coal		0.041	0.049
Petcoke		0.044	0.028
Clinker		0.821	0.795
Fly Ash		0.161	0.166
Gypsum		0.031	0.034

Name of raw materials	Name of products	Consumption of raw material per unit of (Power) output	
		During the Previous financial year (2020-2021)	During the current financial year (2021-2022)
Coal	Power	0.97 MT/MWh	0.98 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).

	Pollutants	Quantity of pollutants discharged (Mass/day))	Concentration of pollutants in discharge (Mass/Volume)	Percentage of variation from prescribed standards with reasons
a) WATER: -				
	Outlet effluent of sewage treatment plant	92.43 KL/day	----	----
1.	pH		8.1 mg/L	Within Standard
2.	BOD 3 days at 27°C		7.9 mg/L	Within Standard
3.	COD		14.5 mg/L	Within Standard
4.	Ammonical Nitrogen		0.3 mg/L	Within Standard
5.	Total Nitrogen		4.6 mg/L	Within Standard
6.	Phosphate		0.2 mg/L	Within Standard
7.	Fecal Coliforms		5.6 mg/L	Within Standard
b) AMBIENT AIR:-				
1.	Near Main Gate	PM10	62.33 µg/Nm^3	Within Standard
		PM2.5	24.83 µg/Nm^3	Within Standard
		SO2	11.79 µg/Nm^3	Within Standard
		NOx	11.75 µg/Nm^3	Within Standard
		CO	0.53 mg/Nm^3	Within Standard
2.	Near Coal Yard	PM10	61.48 µg/Nm^3	Within Standard
		PM2.5	24.68 µg/Nm^3	Within Standard
		SO2	11.58 µg/Nm^3	Within Standard
		NOx	11.32 µg/Nm^3	Within Standard
		CO	0.57 mg/Nm^3	Within Standard
3.	Near Dispatch Gate	PM10	62.88 µg/Nm^3	Within Standard
		PM2.5	24.18 µg/Nm^3	Within Standard
		SO2	12.34 µg/Nm^3	Within Standard
		NOx	11.94 µg/Nm^3	Within Standard
		CO	0.55 mg/Nm^3	Within Standard

4.	Near CPP plant	PM10	64.50 µg/Nm^3	Within Standard
		PM2.5	24.66 µg/Nm^3	Within Standard
		SO2	11.73 µg/Nm^3	Within Standard
		NOx	11.54 µg/Nm^3	Within Standard
		CO	0.53 mg/Nm^3	Within Standard

*** The value represents arithmetic average of 12 months for the financial year 2021-2022.**

Stack Gas Quality for Particulate Matter

CEMENT PLANT & CPP:

S.No	POLLUTANTS	QUANTITY OF POLLUTANTS DISCHARGED (m3/H)-Flow	CONCENTRATIONS OF POLLUTANTS IN DISCHARGE (Mass/Vol.) (mg/Nm3)	PERCENTAGE OF VARIATION FROM PRESCRIBED STANDARDS WITH REASONS
1.	Crusher	26951.78	5.72	Within Standards
2.	Kiln/Raw mill	394024.72	21.63	
3.	Coal mill	90395.96	16.75	
4.	Cement mill	131213.75	20.27	
5.	Packing plant	21205.51	16.16	
6.	Clinker cooler	253825.46	20.37	
7.	CPP	138026.69	35.40	

*** The value represents arithmetic average of 12 months for the financial year 2021-22**

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 Previous Financial Year 2020-2021	**During Current Financial Year 2021-2022**
Waste oil / used oil	7.96MT (Reutilized for internal machineries)	8.84MT (Reutilized for internal machineries)
Used Batteries	For the period Apr-2020 to Sep-2020 – 117 No.s For the period Oct – 2020 to March 2021 – 158 Nos.	For the period Apr-2021 to Sep-2021 – 66 No.s For the period Oct – 21 to March 2022 – 283 Nos.

Name & Category of the waste	**Qty received & Co-processed in MT**
Hazardous waste(A)	
(20.3) Distillation Residue	970.840
(28.1) Organic/Process residue	1646.350
(28.2) Spent Catalyst	1973.869
(28.6) Spent Solvent	540.515
(36.1) Any Process or distillation Residue	853.817
Subtotal (A)	**5985.391**
Non-Hazardous/Other waste	
Rice Husk	12076.18
Soya Husk	278.078
Tur Husk	657.262
Coffee Husk	31.506
Plastic waste	940.652
Carbon Black / waste pneumatic and other tyres	889.418
RDF/Municipal Waste	1160.238
Subtotal (B)	**16033.340**
Grand Total A+B	**22018.730**

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 reprocesses/recyclers KM Oils Pvt Ltd, Kalaburagi if generated in huge quantity. The waste oil generated is also reutilized in our plant machineries for lubrication purpose if the quantity is less. The details specifying the same is submitted via Form-IV to KSPCB vide our letter no **Ref: OCL/ENV/Sr-VP (Works)/2022-23/F-513 dated 12/04/2022.**

New Batteries purchased from the dealers/agency during the period April-2021 to March-2022 has been submitted in Form VIII to Board on half yearly basis vide our letter no **OCL/ENV/Asst. VP(Operation)/2021-22/444 Dated: 20.10.2021 & OCL/ENV/Asst. VP(Operation)/2022-23/520 Dated: 26.04.2022 respectively.**

PART-E

Solid Wastes

Sl.No	Solid Waste	Total Quantity	
		During the Previous financial year 2020-2021	**During the current financial year 2021-2022**
1. (a)	From process (Fly ash from captive Thermal Power Plant)	Nil from Cement plant. #50302 MT from Power Plants	Nil from Cement plant. #49427 MT from Power Plants
(b)	Fly Ash from RTPS / NTPC/Kudgi/Raichur/Ramgondam/STPP	# 267151 MT	#292304 MT
2.	From pollution control facility	291.738 MT/Year Recycled in to the main process in cement plant	231.730 MT/Year Recycled in to the main process in cement plant
3.	Quantity recycled or reutilized Within the unit	**291.738 MT/Year** (In process, material recycled from Pollution control equipment like ESPs /Bag House /Bag filter).	**231.730 MT/Year** (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 , Raichur , Ramagondam & STPP.

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, 2016. These stored hazardous wastes **are being sold to authorized recycler within the stipulated time / utilised for the machineries.**

Solid waste:

- There is no solid waste generated during the process of cement manufacturing process.
- 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 rain water harvesting 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, Gardening etc.

- Installed an STP of capacity 500 KLD in order to recycle or reuse the treated water for plantation purpose/Gardening Purpose etc.,
- Rainwater harvesting reservoir with a capacity 5,60,000m3 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 & Colony area to abate the pollution.

Modifications for the year 2021-22 for energy conservation and better Environment

Process:

- Compressor's discharge pressure reduced from 6.0 to 4.0 bar at Raw mill bag house
- Idle running reduced for coal unloading circuit by reducing the wagon unloading time
- All bag filter fans stopping in material handling circuit in rainy season
- Changed HPSV lamps to LED lamps in Raw mill section
- Cooler exit duct coating avoided by water spray line modification
- Dispersion plate installed in fly ash entry in both Cement mill
- Bag filter fan interlock with packer operation
- PA fan, Coal mill fan and both Cement mill fans damper removed
- VFD installed for crusher bag filter fan 111 FN303
- Heat resistant paint applied in Kiln shell

Usage of alternative fuels in Kiln

- LAFR
- Rice Husk
- Pharma Waste
- Using Super Poly Diesel in place of HSD for Kiln Firing.

Electrical & Instrumentation:

- Replacement of HPSV Lamps with LED Lamps

Instrumentation: -

- Installation and commissioning of VFD for LS Crusher bag filter fan
- Provision of indications for RM additive reclaimer position in piles and interlocking with respective hopper's feeding system.
- Fine-tuning and optimization of closed control loop controller of PC firing temperature parameter through digitization technologies to reduce the PC temperature fluctuations.
- Implementation of additional Bluetooth communication system for coal stacker

- Implementation of Cold Fog Dust Suppression system at Wagon Tippler to control fugitive dust emission. Facility has been provided at CCR to operate and monitor this system remotely.
- Reduction in Idle Run Hour of Clinker Transport Belt
- “Implementation of Mobile App solution for real time data monitoring of plant parameters and plant status as well which includes alarms generation on Telegram App."
- "Plant optimization by Artificial Intelligence (AI) and Machine Learning (ML) based digital technologies."
- Installation of belt joint monitors in some more critical belt conveyors to remotely monitor the belt joints/damages.

Power Plant:

- Optimized ESP purge air blower heater run hours based on temperature control and achieved Energy saving of 400kWH/day
- Replaced Conventional lighting with LED Light fittings. And achieved 50kWH/day.

Mechanical:-

Following Modifications were done towards betterment of Environment & reducing power consumption.

- Bag filters bags cleaning/replacement work at TT3 building.
- Silo top bag filters bags replacement work.
- De-dusting line modification at TT3 building for conveyors 482BC250 & 482BC300 venting lines while using wagon loading circuit.
- Sheeting has been provided in FLYASH silo to protect the blowers from dusty environment.
- Spiral chute modification at Wagon Loading Machines have been done there by reducing the stoppage due to jam on spiral chute thereby increased the running time and have reduced the specific power consumption and also the Wagon completion time have been reduced from 9hrs to 5.5hrs.
- Repalcement of bags from the main bagfilter of Packer 1,2 & 5.
- Replacement of all the packer bin airslide cloth has helped to reduced the Sp Power consumption as there is continuous flow of material from bin to packer.
- Provided Pipeline from Packer floor to the Ground Floor in the belt conveyor for the removal of loose cement from the Belt conveyor area.
- Provision for recirculation of loose cement is given in Bucket Elevator for fast removal.
-
- Installed Intelligent Flow Controller for Energy Saving of Compressed Air Flow Control System at Post Clinkerisation area
- Replaced existing cooling tower pumps by two small pump in cement mill area

- Installation of Spillage chute on coal transport belt conveyor 211BC070,
- Installation of Additional water spray at Limestone transfer tower for effective dust suppression.
- Wagon tippler grounder hopper grizzle modification work for spillage reduction.
- Installation of dust suppression system at wagon tippler hopper
- Installation of shed with curtain at Raw mill Reject area

Packing Plant:

- Bulker loading point 2 connected to 20k bag filter, to avoide the dust while loading
- Bulker loading point one to relate to, packer no. 2 20k bag filter, to avoide dust

PART-H

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

- Continuous efforts are always being made to maintain the environment clean and green by developing a Green Belt.
- Installation of WHRB to utilize Hot gases from Cooler & Preheater and produce Electricity of 14MW.
- Regularly we are monitoring ambient air quality, Noise level and stack along with water quality analysis.
- Constructing of internal good 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) , Ozone day (16th Sep) & Earth day (22nd April)
- Actions are taken to utilize Hazardous wastes like Paint sludge, ETP Sludge & other alternate fuels like Carbon powder, tyre chips, plastic waste, agro waste ,MSW waste ,RDF waste etc. in Kiln.
- Green belt development and tree plantation is our on-going & continuous 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 **174696 plants in 107Ha areas have been** planted surrounding Boundary Zone, of the total plant & Mines area.

Proposed modifications for the year 2022-23 for Energy Conservation and Better Environment:

Process: -

- Optimization of Kiln Coal transportation phase density
- Improve Cooler Recuperation Efficiency from 61.7 % to 65.2 %
- Cement Mill 1 Fan Efficiency improvement from 76.3 % to 85.4 %
- Cement Mill 2 Fan Efficiency improvement from 75.6 % to 85.4 %

Power plant: -

- To reduce the power consumption by replacing Conventional lighting with LED Light fittings.

Mechanical: -

- Sheeting to be done at cement mills reject conveying circuit to minimise the dust emission while reject discharging work.
- New vent line modification to be done in 531BF290 &532BF290 bag filters to ensure dust free from mill reject circuit.
- 531BC030,532BC030 belt conveyors inlet chute extension to be done to accommodate the extra material discharge from the 531BF020, 532BF020 bag filter.
- Bulk spout vent line connection to main bagfilters , there by stopping the emmission during the loading of bulkers.
- Replacing the reject screw conveyors from the circuit with airslides, there by removing (**3Nosx 5.5KWH**) motor and placing one airslide fan of 5.5 KWH. There fore there will direct saving of 11 KWH from one Packer circuit.
- Replacement of bag from the bagfilter of Packer 3 & 4 will be done in this year.
- Installation of Intelligent Flow Controller for Energy Saving of Compressed Air Flow Control System at Pre Clinkerisation area
- Replace existing two cooling tower pumps by single pump in Pre Clinkerization area
- Replacing high pressure compressors with low pressure ones for Fly ash unloading, thus reducing energy consumption.
- Installation of Spillage chute on coal transport belt conveyor 211BC070,
- Installation of Additional water spray at Limestone transfer tower for effective dust suppression.
- Wagon tippler grounder hopper grizzle modification work for spillage reduction.
- Installation of dust suppression system at wagon tippler hopper

Electrical & Instrumentation:

Electrical: -

Replacement of Coal shed lighting for 400W HPSV lamp to 200W LED lamps

Instrumentation: -

- Feed mix optimization
- Installation of belt joint monitors in other critical belt conveyors to remotely monitor the belt joints/damages.

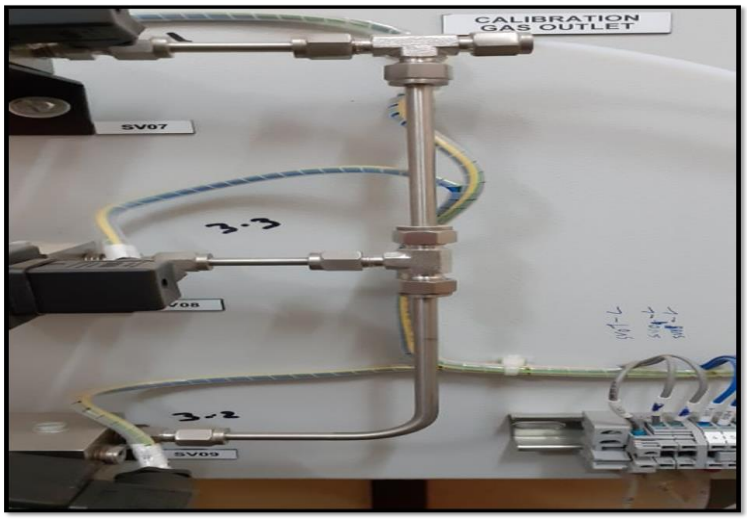
Packing Plant:

- Packer five spillage screw Conyers to be removed, and air slide with HP fan to be fixed
- TAT to be maintained below 04 Hrs

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, Ozone Day & Earth 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 Remote calibration facility for Gaseous parameter SO2 & NOx for stacks of CPP & Kiln.

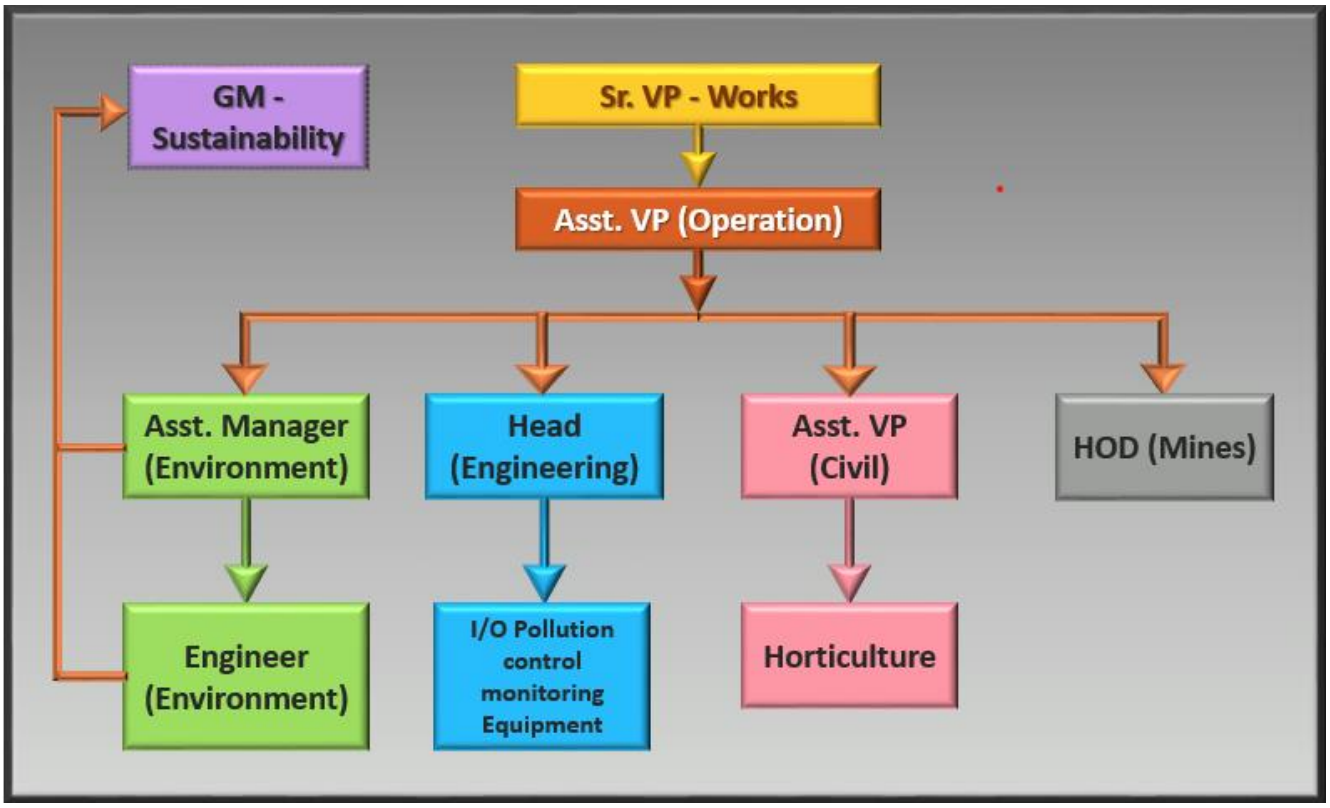


Remote calibration Setup

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 -2021

World Environment Day 2021 was celebrated at M/s Orient Cement Ltd, Chittapur, on 5th June 2021 @ 10:30 AM .This year theme for World Environment day was: **"ECOSYSTEM RESTORATION"** with a Slogan **"LET'S UNITE TO SAVE ENVIRONMENT"** for which Environment Department along with staff of Orient Cement Ltd commenced an opening program chaired by Shri. Satyabrata Sharma-Unit Head, Shri. Santosh Kumar Sharma-Asst. VP-Operation & other delegates at Truck parking area with mass plantation of around 100 saplings and later individual department planted with mass plantation in selected area in plant premises and planted around 400 saplings. From 5th June to 10th June-2021, OCL Chittapur has conducted an awareness program through online portal as per the Covid-19 guidelines, such as Quiz completion, Essay Competitions, drawing competitions by involving school children's, Technical staff , workmen's & labors. The Welcome Note along with World Environment Day Speech was addressed by Mr. Ramesh Bashetty from Environment Department & then the Speech was addressed by our Unit Head Shri. Satyabrata Sharma in a thought-provoking manner, which set a perfect platform for our colleagues who have gathered for WED celebration. The chairperson suggested few visions to be included to make remarkable changes in the environment and addressed the people to change their thoughts to change a good environment. Also prize distribution program was carried out rewarding the winners, who have participated in the World Environment Day Events (Essay, Blogging & drawing / painting)

Glimpses of World Environment Day-2021 celebrations at Orient Cement Ltd, Karnataka.

Plantation by Our Unit Head Mr. Satyabrata Sharma at Truck Parking Area

Group photo by Orient staff on WED-2021

Mass Plantation by Civil & logistic team near truck parking area

Mass Plantation by Mines & contractor staff team in mines area

Plantation by Admin staff near OHC Centre

Plantation by OHC staff near OHC area

Plantation done by workmen & labors in labor colony

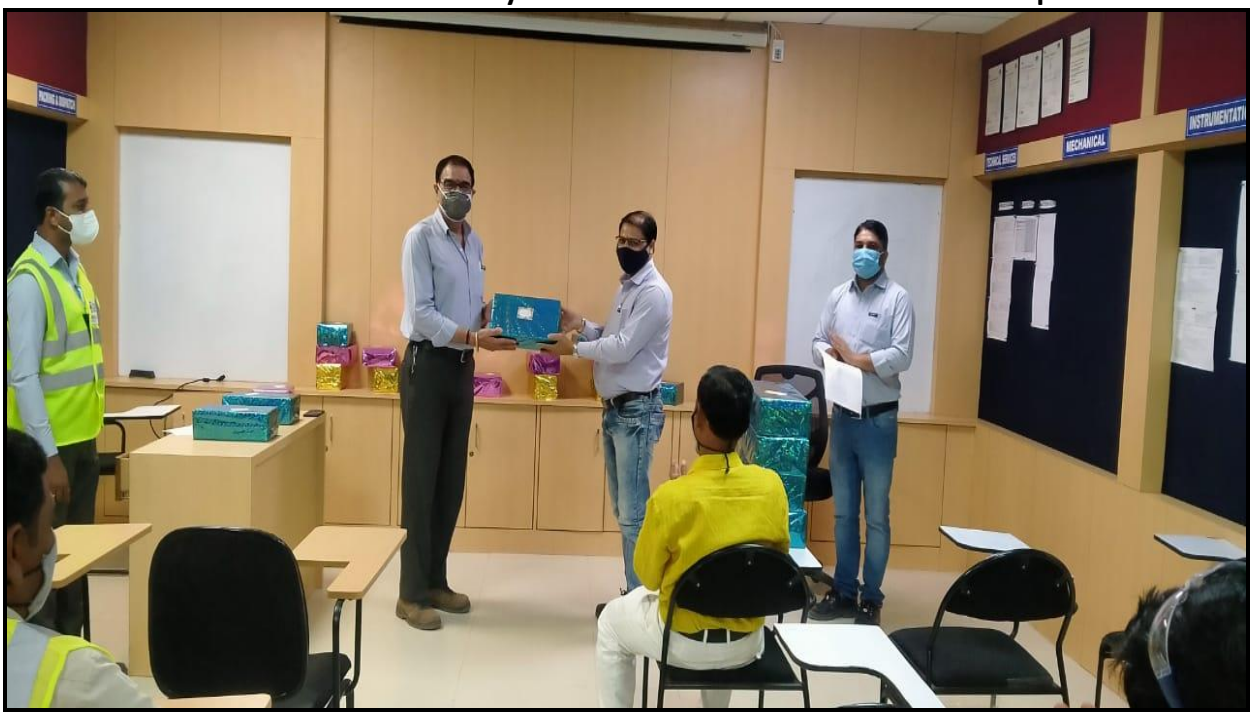
Glimpses of Workmen & staff celebrating the world environment day

Prize distribution to winners by Mr. Satyabrata Sharma – Sr. VP-Works

Prize distribution to winners by Mr. Satyabrata Sharma – Sr. VP-Works

Prize distribution to winners by Mr. Santosh kumar Sharma Asst. VP-Operation.

Prize distribution to winners by Mr. Santosh kumar Sharma Asst. VP-Operation



Brief Presentation on World environment day -2021 by Mr. Ramesh Bashetty Environment Dept.

Prize distribution to winners by Mr. Santosh kumar Sharma Asst. VP-Operation.

Prize distribution to winners by Mr. Panduranga K – Principal DAV school

Prize distribution to winners by Mr. K. Panduranga – Principal DAV School


REDMI NOTE 8 PRO
AI QUAD CAMERA


REDMI NOTE 8 PRO
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AMBIENT NOISE LEVEL (PLANT) [Leq Value in dB(A)] FY-2021-22

Particulars	Tolerance Limit dB(A) in day time	Actual Avg Values Max dB(A) Day Time
Near Power Plant	75	63.91
Near Coal Yard	75	63.97
Near Water Reservoir	75	62.71
Near Main Gate	75	66.31

Particular	Tolerance Limit dB(A) in Night time	Actual Avg Values Max dB(A) Night Time
Near Power Plant	70	62.85
Near Coal Yard	70	62.62
Near Water Reservoir	70	62.80
Near Main Gate	70	64.10

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-2021 to Mar-2022

MONTH	POWER CONSUMPTION (KWh) KPTCL/CPP/ Renewable energy
Apr-21	83,24,937
May-21	96,61,377
June-21	94,32,743
July -21	1,13,03,902
Aug-21	1,34,14,865
Sept-21	82,46,305
Oct-21	78,00,090
Nov-21	79,20,207
Dec-21	92,29,605
Jan-22	1,14,01,999
Feb-22	1,09,89,466
Mar-22	1,56,58,175
TOTAL	**12,33,83,670**

Statement Showing Power Consumption Mines for the Year April-2021 to Mar-2022

MONTH	POWER CONSUMPTION ((KWh)) KPTCL/CPP/Renewable energy
Apr-21	1,75,597
May-21	2,45,716
June-21	2,22,206
July -21	2,85,918
Aug-21	4,09,041
Sept-21	1,94,060
Oct-21	1,78,339
Nov-21	2,46,163
Dec-21	2,22,854
Jan-22	2,94,415
Feb-22	2,72,558
Mar-22	4,24,710
TOTAL	**31,71,578**

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 2021-2022 and Percentage of Survival

Year	Factory	Mines	Surrounding Plant Area(Labours colony, Staff Colony, Colony Road Side, School, Main Gate Front Area)	Total	Survival % Age	Survivals
2013-2014	25000	-	-	25000	50%	12500
2014-2015	25000	-	-	25000	50%	12500
2015-2016	30000	1220	-	31220	70%	21854
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2018-2019	13631	3963	15233	32827	80%	26261
2019-2020	10799	4279	24446	39524	80%	31620
2020-2021	4862	6726	13280	24868	72%	17905
2021-2022	3258	3871	6875	14004	48%	6722
Total:	182816	27988	59834	270648	66%	178628

Total plant area: 266 Ha.
Total GBD to be developed: 33%of plant area = 87.78 Ha. (To be developed in five years)
Total area of Green Belt Development in factory & Colony: 157 Ha till March 2022
Total Area of Green Belt Developed in FY 2021-2022: 17.16 Ha.
Total area planned during current FY-2022-23: 20Ha.

Types of Species planted:

Pongemia, Badam, Thaspesia, Sisha Piniya, Acacia, Neem, Tamarind, Honge trees, Eucalyptus, Ashok, Peeple tree, Hercules fermc, Gilmore tree, Subabul tree, Hatti tree, Conocarpus (Dubai Tree) Feltoform, Bamboo, matti, alstonia, keshiaseema, keshiya-java, mango, kaala jamun, alma, guava, caesalpinia, and Others.

Green Belt Development inside the plant premise

DETAILS OF EPM EXPENDITURE up to FY 2021-22

ASSET DESCRIPTION	Amount	Amount in Lakhs
DUST SUPRESSION SYSTEM	43,58,474	43.58
BAG FILTER & ESP FOR STACKS	33,54,39,089	3,354.39
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WATER RESERVOIR	25,87,57,199	2,587.57
WATER TREATMENT PLANT	12,85,41,299	1,285.41
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ROAD & DRAIN	50,14,63,605	5,014.64
GREEN BELT DEVELOPMENT	53,48,720	53.49
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AMMONIA SLIP SENSOR STACK APPLICATION	17,80,000	17.80
MEDIA CONVERT - LIQUID AFR SYSTEM	2,54,471	2.54
NEUTRON SURVEY METER	4,25,000	4.25
UT PUMP	13,03,410	13.03
WASTE SEGREGATION YARD	4,55,406	4.55
SHREDDER FOR AGRO WASTE AFR	3,47,913	3.48
BUCKET ELEV,FEEDING ARRG & SHED FOR AGRO	18,89,931	18.90
RAIN WATER HARVESTING	12,03,438	12.03
COLONY LADIES TOILETS	2,12,400	2.12
TRUCK PARKING YARD	5,60,08,531	560.09
SUBMERSIBLE PUMP 100HP/750KW	17,52,250	17.52
HERO ECO FRIENDLY ELECTRIC BIKE	89,890	0.90
CHEMICAL STORAGE ROOM - CPP	8,94,521.40	8.95
LADIES TOILETS STORES	2,49,034	2.49
LADIES TOILETS CPP	2,49,035	2.49
BUND OF 5MTR HIGHT MINES BOUNDRY	6,66,580	6.67
ELECTRIC BIKE-KA32 HB1976 (IT DEPT)	83,190	0.83
Total	**1,77,78,06,795**	**17,799**

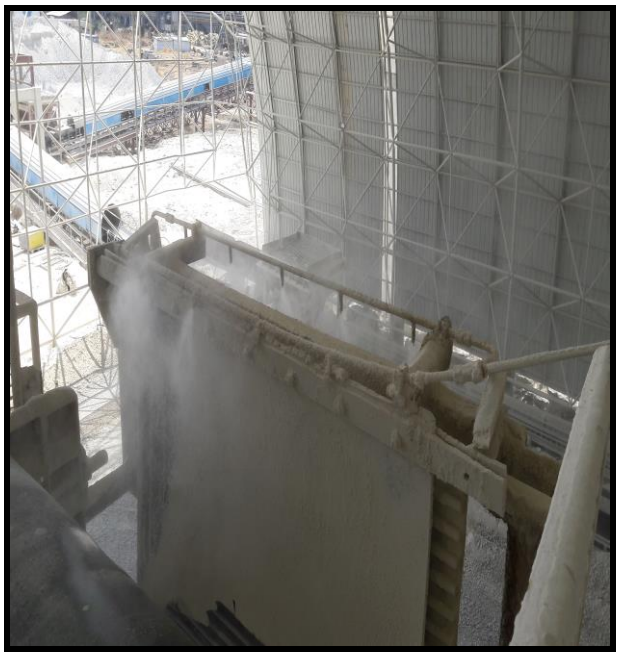
CSR-R&R Activities carried out FY 2021-22

S. no.	Nature of expenses	Amount (Rs. In Lakh)
1	CONTRIBUTION TO INDIAN RED CROSS SOCIETY AT KALABURAGI	32,46,000
2	Nala Training/Pitching at Itaga Village	22,66,059
3	Water Tanker Supply to Itaga village	2,19,794
4	Dispensary Expenses - Salary Apr & Jun'21	9,27,690
5	Dispensary Expenses - Ambulance & Medicine Exp	17,44,988
6	School - NOC for CBSE Approval	35,000
7	Vehicle Expenses for R&R Jobs Apr & May'21	1,35,973
8	Water Tanker Supply to Itaga village	2,35,461
9	TRAINING FOR 41 FARMERS	5,18,902
10	FIRE NOC PAID FOR DAV SCHOOL	20,000
11	Hiring of Machineries for Nala Traing job	5,66,688
12	Nala Training/Pitching at Itaga Village	11,57,457
13	Construction of CC Road-Lodging cross	56,90,669
14	RO WATER PLANT CAPACITY 500 LPH	3,90,000
15	Dispensary Expenses - Salary July'21	12,58,739
16	Dispensary Expenses - Ambulance & Medicine Exp	7,00,380
17	LIASIONING VEHICLE HIRE CHARGES June & Aug-21	2,41,570
18	Construction of Toilet Block, Rest Room	61,07,468
19	Chittapur OHC Pediatric Ward Equipment's VENTILATOR (PEDIATRIC) WITH COMPRESSOR VENTILATOR (NEO NATAL) WITH COMPRESSOR, Split AC, Revolving Chairs, Tables, Desktop, Printers	53,31,278
20	Construction Of CC Road-Lodging Cross	34,72,511
21	Borewell Pumps & Accessories, RO Water Plant Repair & Maintenance, Distribution of Spectacles, Eye Camp	7,76,968
22	Nala Training/Pitching at Itaga Village	14,30,431
23	Chittapur OHC - Oxygen Concentrator (Medical Equipment), Resuscitation Kit Child, Neonatal Resuscitation Kit, X Ray Film Box, Bp Monitor, Hfnc (Paed) Compatible Disposable, Oxygen Cylinder	5,30,530
24	Chittapur OHC - Paediatric Normal Bed, Fowler Hospital Bed, Mattress, Paediatric Full Icu Bed	6,82,975
25	Projector - 2 Nos. For Kendriya Vidyalaya & Deaf & Dumb School	50,440
26	Dispensary & R&R Staff - Salary	63,63,633
27	Dispensary Expenses - Ambulance & Medicine Exp	5,27,875
28	Liasioning Vehicle Hire Charges	2,61,396
29	Chittapur Station Tanda Temple Renovation Work	7,11,450
30	Construction of CC Road-Lodging cross	13,11,224
31	Dispensary & Staff - Salary Jan to Mar'22	40,65,896
32	Dispensary Expenses - Ambulance & Medicine Exp	10,44,928
33	Kendriya Vidyalaya Blind School - CHAIR, REVOLVING 18 Nos	56,701
34	CSR/R & R vehicle Hire charges Dec & Mar-22	3,12,184
35	SCHOOL Expense for FY 21-22	45,40,498
	Total	**5,69,33,754**

Initiatives on Environment

Rubber Curtains & Water sprinkling @ Limestone Hopper

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

Water Sprinkling for Dust Suppression on Roads

WTP & STP

ENVIRONMENTAL STATEMENT REPORT

FOR

ITAGI MINES
(FORM-V)

[YEAR 2021 - 2022]

REPORT BY

(Orient Cement Ltd.)

Captive Limestone, Clinkerisation,

Cement Unit & Captive Power Plant

Itga (V), Chittapur (Tq)
Kalaburagi (Gulbarga) - 585292

ENVIRONMENTAL STATEMENT REPORT

(Form-V)

[Year 2021 - 2022]

REPORT BY

(Orient Cement Ltd.)
Itagi mines
Itga (V), Chittapur (Tq)
Kalaburagi (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 behavior 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-2021 to March-2022**.

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 limestone 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 17^0 6' 34.87'' - 17^0 8' 13.86'' N and 77^0 7' 35.65'' - 77^0 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 2021-2022 ended 31st March 2022** 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 are 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 grade/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 topsoil of black cotton at designated places at stable ground so called BC soil dump. The reason for stacking is to preserve the topsoil for plantation and land fertilization for natural condition. BC soil dump is maintained in specified gradient manner. Some of the topsoil removed is used for plantation purpose in mines area and in our plant area.

AERIAL VIEW OF TOP SOIL DUMP

TOE WALL ALONG WITH GARLAND DRAIN AT BELOW THE TOPSOIL DUMP

GARLAND DRAIN ALONG THE TOPSOIL DUMP TOE WALL WITH RANDOM RUBBLE BARRIERS

CATCHMENT/GARLAND DRAINS IN MINES AREA

CATCHMENT/GARLAND DRAINS WITH RR DRY STONE BARRIERS

DESILTING WORK

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 suppression 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 for dust suppression.

Monitoring Locations of Ground water Level:

Sl.No	Location Name	Water Level in (m-BGL)
1	Itga Village	9.60
2	Moghla Village	12.80
3	Diggaon Village	8.68
4	Chittapur Village	6.78

AFFORESTATION:

FY 2021-22 trees planted are 6972. Types of species are Gulmohar, Filta pam, Acacia, Neem, tamarind, Ashok, People tree, Dubai Conocurpus (dubai Tree), Honge trees, Bougain villa, Badam, Thespesia populmea, Sankeswar, Peltoform, Neem, Nelli, Shubham trees, Alstonia scholaris, Pongamia pinnata.

Areas of trees planted are as follows

a) Nalla safety zone.
b) Main haulage road.
c) Near weight bridge.
d) Office front and backside.
e) Main road near soil dump gap filling
f) Near viewpoint.
g) Near road 7.5 m safety zone.
h) Near mine crusher road and weigh bridge road.
i) Near village safety zone.

The Details of Tree Plantation in Orient Cement Factory and Mines area from 2013-14 to 2021-2022 and Percentage of Survival

Year	Factory	Mines	Surrounding Plant Area (Labors colony, Staff Colony, Colony Roadside, School, Main Gate Front Area)	Total	Survival % Age	Survival
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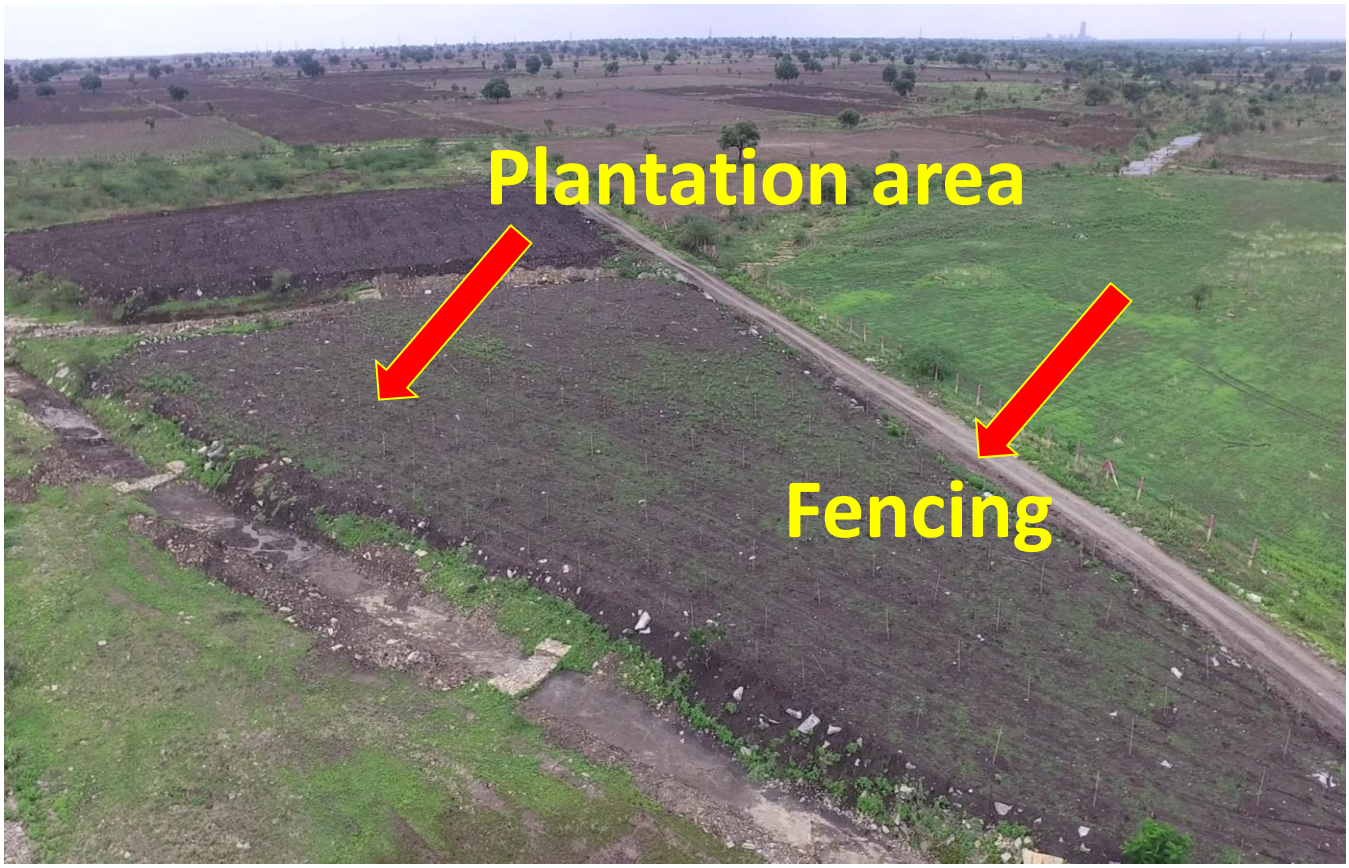
WASTE SEGREGATION YARD	4,55,406	4.55
SHREDDER FOR AGRO WASTE AFR	3,47,913	3.48
BUCKET ELEV,FEEDING ARRG & SHED FOR AGRO	18,89,931	18.90
RAIN WATER HARVESTING	12,03,438	12.03
COLONY LADIES TOILETS	2,12,400	2.12
TRUCK PARKING YARD	5,60,08,531	560.09
SUBMERSIBLE PUMP 100HP/750KW	17,52,250	17.52
HERO ECO FRIENDLY ELECTRIC BIKE	89,890	0.90
CHEMICAL STORAGE ROOM - CPP	8,94,521.40	8.95
LADIES TOILETS STORES	2,49,034	2.49
LADIES TOILETS CPP	2,49,035	2.49
BUND OF 5MTR HIGHT MINES BOUNDRY	6,66,580	6.67
ELECTRIC BIKE-KA32 HB1976 (IT DEPT)	83,190	0.83
Total	**1,77,78,06,795**	**17,799**

CSR - R&R Activities carried out FY 2021-22

S. no.	Nature of expenses	Amount (Rs. In Lakh)
1	CONTRIBUTION TO INDIAN RED CROSS SOCIETY AT KALABURAGI	32,46,000
2	Nala Training/Pitching at Itaga Village	22,66,059
3	Water Tanker Supply to Itaga village	2,19,794
4	Dispensary Expenses - Salary Apr & Jun'21	9,27,690
5	Dispensary Expenses - Ambulance & Medicine Exp	17,44,988
6	School - NOC for CBSE Approval	35,000
7	Vehicle Expenses for R&R Jobs Apr & May'21	1,35,973
8	Water Tanker Supply to Itaga village	2,35,461
9	TRAINING FOR 41 FARMERS	5,18,902
10	FIRE NOC PAID FOR DAV SCHOOL	20,000
11	Hiring of Machineries for Nala Traing job	5,66,688
12	Nala Training/Pitching at Itaga Village	11,57,457

13	Construction of CC Road-Lodging cross	56,90,669
14	RO WATER PLANT CAPACITY 500 LPH	3,90,000
15	Dispensary Expenses - Salary July'21	12,58,739
16	Dispensary Expenses - Ambulance & Medicine Exp	7,00,380
17	LIASIONING VEHICLE HIRE CHARGES June & Aug-21	2,41,570
18	Construction of Toilet Block, Rest Room	61,07,468
19	Chittapur OHC Pediatric Ward Equipment's VENTILATOR (PEDIATRIC) WITH COMPRESSOR VENTILATOR (NEO NATAL) WITH COMPRESSOR, Split AC, Revolving Chairs, Tables, Desktop, Printers	53,31,278
20	Construction Of CC Road-Lodging Cross	34,72,511
21	Borewell Pumps & Accessories, RO Water Plant Repair & Maintenance, Distribution of Spectacles, Eye Camp	7,76,968
22	Nala Training/Pitching at Itaga Village	14,30,431
23	Chittapur OHC - Oxygen Concentrator (Medical Equipment), Resuscitation Kit Child, Neonatal Resuscitation Kit, X Ray Film Box, Bp Monitor, Hfnc (Paed) Compatible Disposable, Oxygen Cylinder	5,30,530
24	Chittapur OHC - Paediatric Normal Bed, Fowler Hospital Bed, Mattress, Paediatric Full Icu Bed	6,82,975
25	Projector - 2 Nos. For Kendriya Vidyalaya & Deaf & Dumb School	50,440
26	Dispensary & R&R Staff - Salary	63,63,633
27	Dispensary Expenses - Ambulance & Medicine Exp	5,27,875
28	Liasioning Vehicle Hire Charges	2,61,396
29	Chittapur Station Tanda Temple Renovation Work	7,11,450
30	Construction of CC Road-Lodging cross	13,11,224
31	Dispensary & Staff - Salary Jan to Mar'22	40,65,896
32	Dispensary Expenses - Ambulance & Medicine Exp	10,44,928
33	Kendriya Vidyalaya Blind School - CHAIR, REVOLVING 18 Nos	56,701
34	CSR/R & R vehicle Hire charges Dec & Mar-22	3,12,184
35	SCHOOL Expense for FY 21-22	45,40,498
	Total	**5,69,33,754**

PLANTATION OVER DUMP AREA



PLANTATION ALONG THE SERVICE ROAD &HAUL ROADS

Plantation on Virgin Area after Spread the B.C Soil

PLANTATION ALONG THE SERVICE ROAD &HAUL ROADS

PLANTATION INFRONT OF MINES-OFFICE

FENCING OF AFFORESTATION AREA & AGRO FORESTORY

STONE PITCHING ALONG THE NALA BANKS

STONE PITCHING BELOW THE TOPSOIL DUMP

DISPLAY OF COMMITY MEMBERS

PLANTATION ALONG THE SERVICE ROAD &HAUL ROADS

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, Conocarpus (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, Conocarpus (dubai Tree), Honge trees.
3	2017-18	Safety zones, Behind office & Garage and near view point	2.13	3159	2527	80%	Acacia, Conocarpus, Bougain villa, Badam, Honge, Tapsi, Sankeswar, Peltoform, Neem, Nelli, Shubham trees

4	2018-19	Avenue plantation(near nala), 7.5 m safety zone, Behind ANFO mixing shed & Near New rest shelter (WLA)	4.3	3963	3646	92%	Acacia, Conocarpus, Bougain villa, Badam, Honge, Tapsi, Sankeswar, Peltoform, Neem, Nelli, Shubham trees
5	2019-20	Nala & Buffer Safety zone and office surround area	3.33	4279	3829	89%	Conocarpus, Badam, Honge
6	2020-21	7.5m Safety zone, Village safety zone and Gap plantation	1.8	6726	6480	96%	Accasia, Conacorpous, Bougain villa, Badam, Honge, Tapsi, Sankeswar, Peltoform, Neem, Nelli, Shubham trees
7	2021-22	Limestone Crusher Area, Green belt, Gap plantation at Back side of HSD pump house and itaga village 500m safety zone.	1.55	3871	3290	85%	Mahagani, Terminia Catappa(Badam), Cassia Simma, Azadirachta Indica(Neem), Ficus religiosa(Peepal tree), Conacorpous, bougainvillea, and Delonix regia(Gulmohar).
Total			**16.76**	**27998**	**21673**	**77%**	

Total area: 519 Ha
Active Mining Area: 31.40 Ha

Environmental Monitoring details as under:

Monitoring is carried out by M/S Cosmo Conscious Research laboratory, Bellary in all four seasons. 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 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)	Avg. Quantity of Flow discharged (Nm3/H)	Avg. CONCENTRATIONS OF POLLUTANTS IN DISCHARGE (Mass/Vol.) (mg/Nm3)	Tolerance Limit (mg/Nm3)
01	New Crusher stack	26951.78	5.72	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 Drilling Equipment.
- Noise mapping is done regularly in all mining operation area.

AMBIENT NOISE LEVEL (MINES) [Leq Value in dB(A)] FY-2021-22

Particular	Tolerance Limit dB(A) in day time	Average Actual Values in dB(A)
Crushing & Screening	**75**	**67.88**
Mining Area	**75**	**62.73**
Haulage / Office	**75**	**58.96**
Surge bin hopper	**75**	**52.93**

Particular	Tolerance Limit dB(A) in Night time	Average Actual Values in dB(A)
Crushing & Screening	**70**	**60.91**
Mining Area	**70**	**53.72**
Haulage / Office	**70**	**52.95**
Surge bin hopper	**70**	**45.68**

c) Measures taken for Ground Vibration Control:

- Seismograph is used to get details of vibration, Noise & fly rock pre blasting. Blasting pattern is modified if parameters are high.
- Down the Hole initiation is performed by shock tubes NONEL to reduce the noise and ground vibration.
- Optimum Charge per delay is maintained as per the recommendation given by DGMS.
- Blasting operation is carried out under supervision of qualified and experienced team.

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	: 19/08/2021 (FY 2020-21)

Postal Address

1) Registered Office	: Orient Cement Ltd. 5-9-22/57/D G.P Birla Center, 2nd & 3rd floor, Adarsh Nagar, Hyderabad- 500063 Telangana
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 (2020-2021)	During Current Financial Year (2021-2022)
	(m^3/day)	(m^3/day)
Process/Dust suppression	43.10	43.88
Domestic/Gardening/Dust Suppression	3.35	3.64

Name of products	Process water consumption per unit of products output	
	During the previous financial year (2020-2021)	During the current financial year (2021-2022)
	(m^3/MT of Limestone)	(m^3/MT of Limestone)
Limestone	0.00673	0.00684

(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 (2020-2021)	During the current financial year (2021-2022)
Limestone	Limestone	1.43	1.41

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	57 µg/m^3	Within Standards
			17 µg/m^3	
b.	Haulage		56 µg/m^3	Within Standards
			17 µg/m^3	
c.	Crushing & Screening		59 µg/m^3	Within Standards
			19 µg/m^3	
d.	Surge bin hopper		58 µg/m^3	Within Standards
			18 µg/m^3	

*** The value represents arithmetic average of 12 months for the financial year 2021-22**

Ambient Air Quality Report in µg/m^3 Mines FY 2021-22

Mining Area		Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Average
	PM 10	69	53	67	64	56	57	58	59	50	56	47	51	57
	PM 2.5	21	17	15	16	20	16	17	21	16	16	16	15	17
	SO2	16	-	15	15	21	17	16	13	14	16	15	16	16
	Nox	21	-	21	17	19	17	16	16	12	16	15	14	17
	CO	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Haulage														
	PM 10	59	58	57	61	61	52	57	59	50	53	48	58	56
	PM 2.5	19	17	19	18	22	15	14	19	16	16	15	16	17
	SO2	16	-	15	15	21	16	15	13	15	16	15	15	16
	Nox	21	-	18	17	19	17	16	14	13	16	16	15	17
	CO	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Crushing & Screening														
	PM 10	64	75	58	65	63	59	60	60	49	56	49	53	59
	PM 2.5	22	29	16	18	24	16	16	19	15	16	15	16	19
	SO2	16	-	14	16	22	17	15	14	15	16	14	15	16
	Nox	21	-	18	17	20	17	16	15	14	16	15	14	17
	CO	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Colony/Near Surgebin														
	PM 10	66	72	62	62	48	53	65	57	51	51	47	58	58
	PM 2.5	18	28	20	20	18	17	16	19	13	18	13	14	18
	SO2	17	-	14	15	22	16	15	16	14	16	15	15	16
	Nox	21	-	18	17	20	17	17	17	13	16	15	14	17
	CO	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Mines Pit Water Quality Monitoring Data FY 2021-22

Parametrs	Unit	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Avg
Colour	Hazen units	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
conductivity	ms/cms	1115	-	840	691	584	563	480	537	646	535	643	848	680.18
Total dissolved Solids	mg/l	777	-	584	459	408	396	336	375	452	373	448	452	460.00
pH	-	8.05	-	8.01	8.04	8.19	8.14	8.11	8.01	8.04	8.06	7.8	8.09	8.05
Turbidity	NTU	1	-	3.2	0.3	1.6	0.5	1.7	2	2.2	1.8	2.6	0.6	1.59
Total Suspended Solids	mg/l	1	-	4	3	3	2	10	15	15	1	2	7	5.73
Calcium as Ca	mg/l	53.71	-	74.55	46.49	47.29	53.71	38.48	54.51	55.31	60.92	63.33	57.72	55.09
Magnesium as Mg	mg/l	25.23	-	23.76	27.66	22.81	36.88	16.49	17.46	23.29	20.86	24.74	16.97	23.29
Total Hardness as CaCo3	mg/l	238	-	284	230	212	286	164	208	234	238	260	214	233.45
Chlorides as Cl	mg/l	79.68	-	49.98	52.46	19.3	54.4	18.81	47.01	49.98	47.49	59.98	77.48	50.60
Sulphates as SO4	mg/l	85	-	52	40.5	45	30	23.5	22.5	31.5	35.00	39.00	36.00	40.00
Flourides as F	mg/l	1.14	-	1.19	2.01	0.76	0.31	1.12	1.96	1.14	0.87	1.08	1.93	1.23
Nitrate Nitrogen As No3	mg/l	0.64	-	8.3	6.8	8.6	6.8	3.4	7.8	9	9.5	1.8	10.25	6.63
Total Alkalinity as CaCo3	mg/l	305	-	290	205	165	205	130	205	200	235	235	210	216.82
Total Iron as Fe	mg/l	BDL	-	BDL	0.01	0.06	0.468	0.06	0.192	0.029	0.029	BDL	BDL	0.12
Total Coliform Count	MPN/100ml	Absent	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Escherichia Coli Count	MPN/100ml	Absent	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent

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 (2020-2021)	During the Current Financial year (2021-2022)
(a) From Process	(a) Spent/ Used Oil (Category 5.1) (Including CPP)	7.96 MT	8.84 MT
(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) in tones	
	During the previous financial year (2020-21)	During the current financial year (2021-2022)
(a) From process	87789 (Over burden)	88478 (Over burden)
(b) From pollution control facility	2.99 MT (from LS Crusher Bag filter)	2.01 MT (from LS Crusher Bag filter)
(c) Quantity recycled or re-utilized	2.99 MT	2.01 MT

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.
- Limestone Crusher Gear box oil will be stored and disposed for authorized person.

Solid waste:

- Generated and disposed during 2021-22: 88478MT of over burden is used for making bunds and 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 27998 saplings have been planted in 16.76ha area till March 2022 along the statutory barrier, along the road, nalla safety zone and mines safety zone.
- Constructed Embankment and garland drain around the pit about 285m to avoid surface water into mines.
- Around 9700 sqm of Stone pitching has been made along the slopes of nala stream both sides.
- Automatic water sprinkler has been installed on main haul road to reduce dust Emission.
- Crushed limestones are being conveyed to plant by fully covered belt conveyor to avoid spillage and air borne dust.
- Water sprinkling system is provided at crushing operations and transfer points of belt conveyer for controlling fugitive emissions.

BC Soil Dump with Protection Wall

Garland Drain along the Dump Toe Wall with Random Rubble Barriers

Garland drain with RR barrier

Stone Pitching along Nala Banks

Haul Road Dust Suppression

Water sprinkler along the Haulage road

Closed Belt Conveyor

Rubber curtains & Water sprinkler system provided at Limestone dump hopper to Control dust at Lime stone Crusher

Wet drilling

Water sprinkling on drill hole face before blasting and water sprinkling for dust suppression on blasted muck pile

Desilting Work

Modifications for the year 2021-22 for energy conservation and better Environment:

Energy Conservation:

- Use of artificial intelligence and digital technologies to improve the performance of the crusher by auto control of limestone feed based on secondary crusher load. This helps in maintain stable load at optimum power eliminating equipment damages due to overload.

Better Environment:

ECO-FRIENDLY GEO TEXTILE COIR MATT FOR SLOPE PROTECTION

RAINWATER HARVESTING PIT cum SETTLING TANK

- Total green energy purchased FY 2021-22 is 12,69,87,948 kwh for plant & mines utilization.
- Existing plantation maintenance cost Rs. 5,63,875/-
- Replacement of PVC sprinkler pipeline to MS pipeline to avoid frequent damage and water leakages.
- Desilting of garland drain, nala, ponds cost Rs.2,21,000/-
- Expenses made for operation & maintenance of permanent water sprinkler in Haul Road, viewpoint and 3no's floating arrangement for pumps in mine pit is Rs. 4,60,000/-.
- Blast induced vibration study from IIT, Kharagpur.
- To avoid the Run – Off of topsoil from the dump, Toe wall is constructed along with garland drain for a length of about 370 mts below the topsoil dump.
- Constructed Embankment and garland drain around the pit to avoid surface water into mines area.
- 26 No's of Random rubble check barriers in garland drain within the ML area.

Catchment Drains with RR Dry Stone Barriers

- Pressurized water sprinkler is fitted on water tanker for spraying on blasted material to avoid dust during loading.
- 4 No's of Permanent tower lights installed in mines for illumination of working area.
- Existing plantation maintenance cost Rs. 8,50,000/-
- Total 2.5KV solar panel has been installed in various location as alternative power.
- Sources for lighting and other applications.
- Desilting of garland drain, nala, ponds cost Rs.1,15,000/-
- Constructed of Rainwater Harvesting Pit.
- Total green energy purchased FY 2020-21 is 16620000 kwh for plant & mines utilization.
- Air receiver tank with sensor is fitted at hopper to rectify air pressure drop issue and Variable Frequency Drive in 111AF060 Apron feeder for low energy consumption
- Bin Level Measurement System in crusher surge hopper to control idle running of crusher and Level switches & Solenoid valves in Water Tanks for water spray system at crusher hopper to control water pump power consumption

Air receiver tank with sensor at hopper to rectify air pressure drop issue

Variable Frequency Drive in 111AF060 Apron feeder

PART-H

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

1. Total 27998 no's saplings have been planted in 16.76 ha area as on March 2022 along the statutory barrier, along the road, nalla safety zone, In front of Mines office and mines safety zone .
2. Total 370 m of Toe wall at below the top soil dump has been construction and garland drain along the dump toe wall with 36 no's of random rubble type barriers is made to arrest the silt.
3. Catchment/garland drains for a length 2800m for appropriate size with suitable gradient is made around the mine pit and at haul roads to prevent run off water and desilted at regular intervals.
4. Pressurized water sprinkler is fitted on water tanker for spraying on blasted material to avoid dust during loading.
5. Rainwater harvesting pit with size 50m X 40m with depth 2m has been constructed near south side of the mine lease boundary for ground water recharge.
6. Pumping of Mine water to plant reservoir has been installed.
7. Existing plantation maintenance cost Rs. 8, 50,000/-
8. Total 2.5KV solar panel has been installed in various locations as alternative power sources for lighting and other applications.
9. Desilting of garland drain, nala, ponds.
10. 2322 m of fencing made around the working pit and along the mining lease boundary to avoid unauthorized entry.
11. 5m height earthen bund for a length of about 250 m has been formed along the village and Mining lease boundary.
12. Personal dust monitoring will be done to workmen in every quarterly.
13. Around 9700sq.m of area stone pitching has been done at both sides of nala bank to avoid soil erosion.
14. Total green energy purchased FY 2021-22 is 12,69,87,948 kwh for plant & mines utilization.

- **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	33,54,39,089	3,354.39
CPP - RCC CHIMNEY	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
SNCR FOR NOX REDUCTION	3,03,21,259	303.21
AMMONIA SLIP SENSOR STACK APPLICATION	17,80,000	17.80
MEDIA CONVERT - LIQUID AFR SYSTEM	2,54,471	2.54
NEUTRON SURVEY METER	4,25,000	4.25
UT PUMP	13,03,410	13.03
WASTE SEGREGATION YARD	4,55,406	4.55
SHREDDER FOR AGRO WASTE AFR	3,47,913	3.48
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Total	**1,77,78,06,795**	**17,799**

Details of Expenses (in Rs) made towards Environment Protection in Mines for the year 2021-22

Sl no.	Particulars	2021-22
1	Expenses for B C Soil Handling & Use for Afforestation	40,43,435.00
2	Expenses for Afforestation	5,63,875.00
3	Laying of Geotextile coir matt at green belt	64,850.00
4	Expenses for Repair & Construction of Random Rubble check	1,88,100.00
5	Expenses for construction of earthen garland drain along the magazine diversion road outside mining lease area and within mining lease area	80,520.00
6	Expenses for Desilting of Check Dam, Nala & Rainwater Harvesting pit	2,21,430.00
7	Expenses for Dust Suppression operation & maint., cost of Water Tanker	15,00,000.00
8	Expenses for operation & maint., cost of permanent water sprinkler in Haul road, view Point and 3no's floating arrangement for pumps in mine pit	4,60,000.00
9	Expenses for Use of NONEL, Electronic Detonators, Wooden Spacers and Stem Plugs.	1,03,285.00
10	Expenses for Environmental Monitoring Expenses + Airborne dust survey for workmen	11,00,000.00
11	Expenses for Ear Plugs & Ear Muffs	50,000.00
12	Expenses for Blast induced vibration study	5,60,000.00
13	Expenses for Oil Separation Tank Maintenance	-
14	Expenses for Handling of Waste Oil, Scrap Batteries, Used Cotton Waste, Filters	-
	Total	**89,35,495.00**
	Rs in Lakhs	**89.35**

Proposed modifications for the year 2022-23 for Energy Conservation and Better Environment:

- Green Belt Development with 7500 no's saplings covering an area 2.98 ha.
- Catchment/Garland drains for a length of 500m of appropriate size and gradient proposed around the mine pit and along the haul roads to prevent run off water and desilted at regular intervals
- Construction of Embankment and garland drain around the pit to avoid surface water into mines area.

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.

Arrangement of Solar light Panels in required areas

MISCELLANEOUS

World Environment Day 2021 Celebrations

World Environment Day 2021 was celebrated at M/s Orient Cement Ltd, Chittapur, on 5th June 2021 @ 10:30 AM .This year theme for World Environment day was: **"ECOSYSTEM RESTORATION"** with a Slogan **"LET'S UNITE TO SAVE ENVIRONMENT"** for which Environment Department along with staff of Orient Cement Ltd commenced an opening program chaired by Shri. Satyabrata Sharma-Unit Head, Shri. Santosh Kumar Sharma-Asst. VP-Operation & other delegates at Truck parking area with mass plantation of around 100 saplings and later individual department planted with mass plantation in selected area in plant premises and planted around 400 saplings. From 5th June to 10th June-2021, OCL Chittapur has conducted an awareness program through online portal as per the Covid-19 guidelines, such as Quiz completion, Essay Competitions, drawing competitions by involving school children's, Technical staff , workmen's & labors. The Welcome Note along with World Environment Day Speech was addressed by Mr. Ramesh Bashetty from Environment Department & then the Speech was addressed by our Unit Head Shri. Satyabrata Sharma in a thought-provoking manner, which set a perfect platform for our colleagues who have gathered for WED celebration. The chairperson suggested few visions to be included to make remarkable changes in the environment and addressed the people to change their thoughts to change a good environment. Also prize distribution program was carried out rewarding the winners, who have participated in the World Environment Day Events (Essay, Blogging & drawing / painting)

Glimpses of World Environment Day-2021 celebrations at Orient Cement Ltd, Karnataka.

Plantation by Our Unit Head Mr. Satyabrata Sharma at Truck Parking Area

Group photo by Orient staff on WED-2021

Mass Plantation by Civil & logistic team near truck parking area

Mass Plantation by Mines & contractor staff team in mines area

Plantation by Admin staff near OHC Centre

Plantation by OHC staff near OHC area

Plantation done by workmen & labors in labor colony

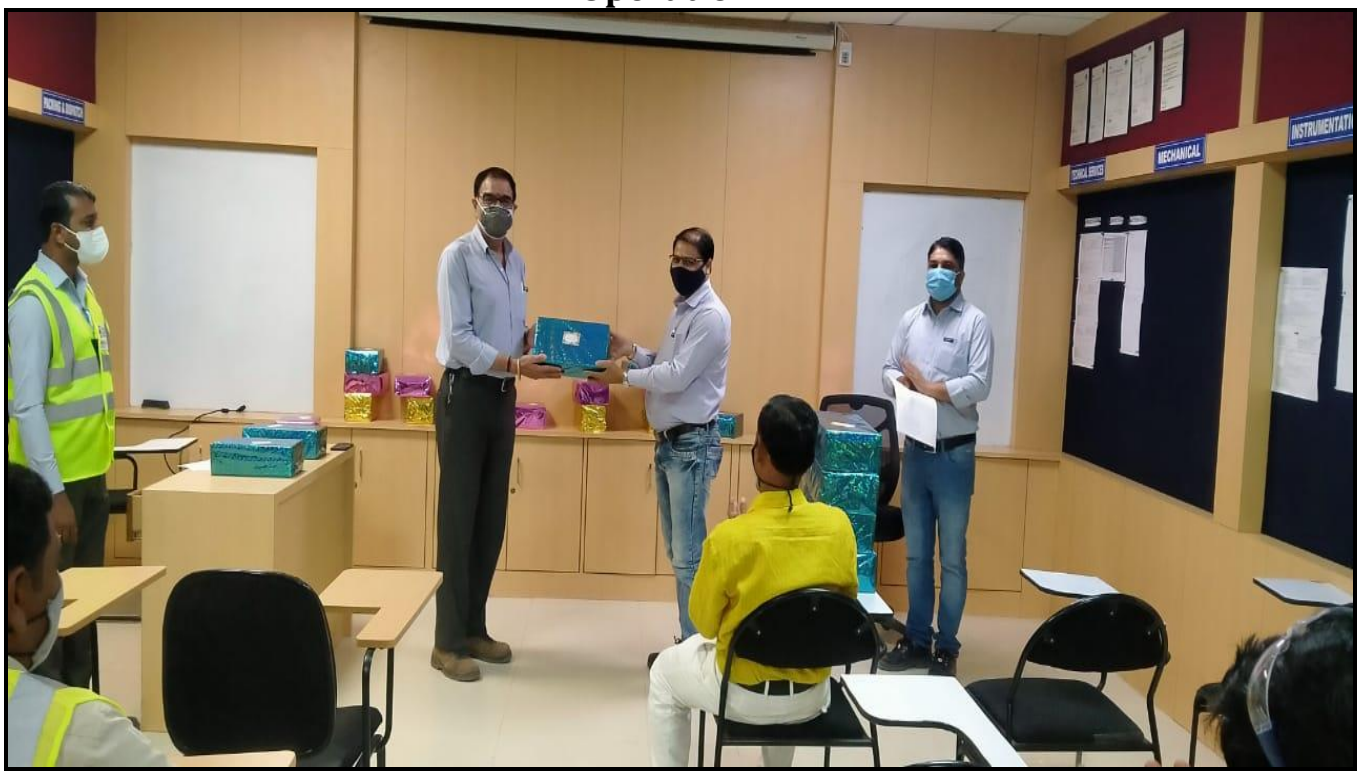
Glimpses of Workmen & staff celebrating the world environment day

Prize distribution to winners by Mr. Satyabrata Sharma – Sr. VP-Works

Prize distribution to winners by Mr. Satyabrata Sharma – Sr. VP-Works

Prize distribution to winners by Mr. Santosh kumar Sharma Asst. VP-Operation.

Prize distribution to winners by Mr. Santosh kumar Sharma Asst. VP-Operation



Brief Presentation on World environment day -2021 by Mr. Ramesh Bashetty Environment Dept.

Prize distribution to winners by Mr. Santosh kumar Sharma Asst. VP-Operation.

Prize distribution to winners by Mr. Panduranga K – Principal DAV school

Prize distribution to winners by Mr. K. Panduranga – Principal DAV School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Glimpses of Social Activities organised by Orient Cement Ltd, Karnataka

AGRICULTURAL ORGANIC TRAINING TO FARMERS

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Orient Cement Ltd., Chittapur has taken initiative for Training and demonstration for 60 farmers pertaining to Agricultural Activities for Organic farming for the villagers of Mogal- Mogala Tanda & Itaga farmers under our R & R activities

Agricultural activities for Organic farming training program were successfully accomplished on 2nd April 2021. The villagers are very happy about the training.

During the Agricultural activities for Organic farming training program, the farmers learnt Organic farming, waste decomposer demo, seed treatment, seed germination test, information about progressive farmers achievements, all agricultural & allied government schemes were explained to farmers. Further Red gram verities, merits and demerits use of bio-fertilizers in red gram, seed treatment and overdose application. Soil sampling importance and demo, vermi culture pit construction demo etc.,

Agricultural activities for Organic farming training program conducted by Akruti Trust through Sri. Ravinda Patil – Retd. Prof. Agriculture University and Mr. Mahesh Bidarkar – Cow expert & agriculture Officer from Chittapur. The farmers are expressed their gratitude towards Orient Cement Ltd., for conducting such agricultural activities for Organic farming & training program

EYE CAMP TO VILLAGERS OF MOGALA PANCHAYTH

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Orient Cement Ltd., Chittapur has taken initiative for Eye camp for 200 patients at Mogala Village for the patients came from Mogala Village, Mogala Tanda & Itaga under our R & R.

Eye camp for 200 patient at Mogala Village for the patients came from Mogala Village, Mogala Tanda & Itaga. The Eye camp was successfully accomplished on 8th April 2021. The Villagers are very happy about the Eye camp.

During the Eye camp, the vehicle was arranged for brining the patients from Mogala Tanda & Itaga villages.

The Eye camp is being conducted by Akruti Trust through renowned Eye Hospital Sidrameshwar Eye Hospital. The patients, Villagers & Panchayth members are expressed their gratitude towards Orient Cement for conducting such Eye Camp.

REPAIRS –MAINTENANCE –SERVICE – REPLACEMENT OF THREE RO PLANTS

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Orient Cement has taken initiative for Repairs & maintenance – Service and replacement of Three RO plants at Village Diggaon – Itaga & Mogala under our Rehabilitation & Resettlement (in short R & R) Activities.

The President – Vice President & members of respective Gram Panchayath are expressed their gratitude towards Orient Cement for facilitating them for safe & clean drinking water to the villagers.

CONDUCTED EYE CAMP AT STATION TANDA

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Orient Cement has taken initiative for conducting Eye Camp at Station Tanda , Eye screening test for 122 patients and medicines were provided to 122 patients at Station Tand under our Rehabilitation & Resettlement (in short R & R) Activities.

The Patients, Villagers & local body members are expressed their gratitude towards Orient Cement for conducting such Eye camps to facilitate the poor & needy people.

LITRATURE PROGRAM CONDUCTED AT VILLAGE MOGALA FOR ILLITRATE WOMEN'S

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Orient Cement has taken initiative for Literature Learning program to Women's at village Mogala Village under our Rehabilitation & Resettlement (in short R & R) Activities
The program was inaugurated by Block Education Officer, Chittapur & General Manager – Liaison
The illiterate Women's , Block Education Officer, Suptd. Of BEO Office, Villagers, Panchayth President – Vice President and Panchayath members are expressed their gratitude towards Orient Cement for conducting such a unique program of learning to the illiterate women's of Mogala Villagers.

TAILORING TRAINING CLASSES FOR MOGALA VILLAGE WOMEN'S & GIRLS

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Orient Cement has taken initiative for Tailoring Training Classes for Mogala Village Women's & Girls under our Rehabilitation & Resettlement (in short R & R) Activities.
The Women & Girls of the Village , Villagers & panchayath members are expressed their gratitude towards Orient Cement for conducting High Class Training of Tailoring Classes.

ENGLISH LANGUAGE LEARING SKILLS TO DROP-OUT STUDENTS OF DIGGAON VILLAGE

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Orient Cement has taken initiative for conducting English language speaking skill for the drop-out students & youths of Diggaon Village under our Rehabilitation & Resettlement (in short R & R) Activities.

The Drop-out Students, Villagers & panchayath members are expressed their gratitude towards Orient Cement for conducting English Learning Skill program

DRIVING LEARING SKILLS TO YOUTHS OF STATION TANDA

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Orient Cement has taken initiative for conducting Light Motor Vehicle Learning Courses to the young youths under our Rehabilitation & Resettlement (in short R & R) Activities.

The Yong Youths, Villagers & panchayath members are expressed their gratitude towards Orient Cement for conducting LMV Driving & License.

NALA TRAINING/PITCHING AT ITAGA VILLAGE UNDER R&R ACTIVITIES

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CONSTRUCTION OF THE RCC ROAD ALONG WITH BOTH SIDE DRAINAGE FROM LODGING CROSS TO FLYOVER TAKE OFF AT CHITTAPUR TOWN UNDER R&R ACTIVITIES

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ELECTRICAL CABLE –SWITCHES –FAN-TUBE LIGHTS FITTINGS AT NINE (9) GOVERNEMT SCHOOLS AT NEAR BY VILLAGES UNDER R&R ACTIVITIES

Orient Cement has taken initiation towards fiittings of electricial cable-Switch boards-Fans –Tubelights at nine (9) Government Schools of Diggaon-Station Tanda-Itaga-Mogala- villages of Chittapur Taluka. As therewere no proper electrical wiring-fans-tuble lights, and the students and teachers are not comfortable and got suffocated themselves during their academic activities due to lack of light – air while teaching & other curriculum activities. Orient Cement has identified their problems during the time of need assessment survey of villages, accordingly Orient Cement has completed all the electrical fittigs and accessories enabling the teachers & students for their acedamic comforts. The Students – Teachers-Panchayath body-TMC members are very Happy and expressed their gratitude towards Orietnt Cement for taking up the work of electrical fittings and accessories.

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ELECTRICAL CABLE –SWITCHES –FAN-TUBE LIGHTS FITTINGS AT NINE (9) GOVERNEMT SCHOOLS AT NEAR BY VILLAGES UNDER R&R ACTIVITIES

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DISTRIBUTION OF DUST-BIN IN TWO CLOURS AT DIGGAON VILLAGE UNDER R&R ACTIVITIES

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Orient Cement has taken initiation towards Swachh-Bharat abhiyan through distributing dustbin – in two colors – for putting wet wastage & Dry wastage separately to maintain the village clean & green under our R&R program .The Womens in the village -Villagers –Panchayath members are very Happy and expressed their gratitude towards Orient Cement for taking up the Swachh-Bharat Abhiyan through distributing the dust-bin and by educating the villagers to segregate the wet westage & dry westage separately to keep the village and as well environment clearn and green.

DISTRIBUTION OF DUST-BIN IN TWO CLOURS AT DIGGAON VILLAGE UNDER R&R ACTIVITIES

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ABACUS TRAINING CLASSES FOR MOGALA & ITAGA VILLAGE GOVT. SCHOOL STUDENTS

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Orient Cement has taken initiative for Abacus Training Classes for Mogala & Itaga Village Government School Students under our Rehabilitation & Resettlement (in short R & R) Activities.

Training classes. Its Immesne pleasure in sharing the knowledge the students of Government Schools, who have learned the Abacus classes very sportively and the its very surprise to say that, they can easly say tables of 38, 47,49 and 44 so on The Students, Villagers & panchayath members are expressed their gratitude towards Orient Cement for conducting Abacus

ABACUS TRAINING CLASSES FOR MOGALA & ITAGA VILLAGE GOVT. SCHOOL STUDENTS

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COMPUTER TRAINING CLASSES FOR DIGGAON GOVT. SCHOOL CHILDREN

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Orient Cement has taken initiative for Computer Training Classes for Diggaon Village Government School Students under our Rehabilitation & Resettlement (in short R & R) Activities. Orient Cement has successfully conducted Computer Training to the students of Diggaon Government School and issued Certificates to respective students, who are successfully completed their Computer training program.

The Students, Villagers & panchayath President, Vice President PDO and members are expressed their gratitude towards Orient Cement for conducting Computer Training classes.

COMPUTER TRAINING CLASSES FOR DIGGAON GOVT. SCHOOL CHILDREN

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