

REGISTERED POST

ORCEM/DVP/ENV/ 303

19th September 2023

To,
Member Secretary,
Telangana State Pollution Control Board,
Paryavaran Bhavan, A-3, Industrial Estate, Sanathnagar,
Hyderabad – 500018, Telangana.

Sub: Submission of FORM-V (Environmental Statement) under Rule No. 14 of Environment (Protection) Rules, 1986 and amendments thereof for the period of FY2022-23 for our Cement Plant & Captive Power Plant - Reg.

Ref: CFO & HWA Order: 220823604135, dated 13.06.2022.

Dear Sir,

We are herewith submitting FORM-V (Environmental Statement) under Rule No. 14 of Environment (Protection) Rules, 1986 and amendments thereof for the period of FY2022-23 for our Cement Plant & Captive Power Plant located at Devapur (V), Kasipet (M), Mancherial District, Telangana.

This is for your kind information and record please.

Thanking you,

Yours faithfully
For Orient Cement Limited



MP Joshi
Sr Vice President (Works) & Unit Head

Encl: A/a



CC: Environmental Engineer,
Telangana State Pollution Control Board,
Regional Office,
H. No. 6-2-166/A, 1st Floor, Subhash Nagar,
Nizamabad - 503002, Telangana.

Orient Cement Limited

Devapur Plant : PO Devapur Cement Works, Adilabad (District), Telangana 504218, India.

+91 8736 240709 Fax : +91 8736 240522

Registered Office : Unit VIII, Plot No.7, Bhoingar, Bhubaneshwar, Odisha 751012, India www.orientcement.com

CIN No : L26940OR2011PLC013933

FORM-V
(Environmental Statement)



Orient Cement Limited

Devapur (V), Kasipet (M),
Mancherial (Dist.), Telangana – 504218

FY2022-23

FORM-V

See Rule-14

Environmental Statement for the financial year ending with 31st March 2023

PART – A

- | | | | |
|----|---|---|---|
| 1. | Name and address of the owner/
occupier of the industry operation or
process. | : | Mr MP Joshi
Sr Vice President (Works) & Unit Head
Orient Cement Limited
Devapur Village, Kasipet Mandal, Mancherla
District, Telangana – 504218 |
| 2. | Industry category | : | Primary STC Code: NA
Secondary STC Code: NA |
| 3. | Production capacity | : | 1. Clinker – 3.5 MTPA
2. Cement – 3.07 MTPA
3. Electricity – 2X25 MW Captive Power Plant |
| 4. | Year of establishment | : | 1982 |
| 5. | Date of the last environmental
statement submitted | : | 18 th July, 2022 |

PART – B

WATER AND RAW MATERIAL CONSUMPTION

1. Water Consumption (m³/day)

- | | | | |
|------|---|---|------|
| i. | Process & Washings | : | 1372 |
| ii. | Boiler Feed/ Boiler (Makeup)/ Cooling (Makeup)/
Humidification/ Water Spraying | : | 217 |
| iii. | Domestic | : | 373 |

Name of Products	Process Water Consumption per unit of product output	
	During the previous financial Year 2021-22	During the current financial Year 2022-23
i. Clinker	0.172 m ³ /MT	0.200 m ³ /MT
ii. Cement	0.196 m ³ /MT	0.228 m ³ /MT
iii. Electricity (2 X 25 CPP)	0.521 m ³ /MW	0.367 m ³ /MW

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2. Raw Material Consumption - MT/MT of Product				
*Name of raw materials	Name of products	Consumption of raw material per unit of output		
		During the previous financial Year 2021-22	During the current financial Year 2022-23	
i.	Limestone	Clinker	1.409	1.414
ii.	Laterite	Clinker	0.082	0.083
iii.	Coal	Clinker	0.109	0.111
iv.	Petcoke	Clinker	0.019	0.020
v.	Gypsum	Cement	0.027	0.025
vi.	Flyash	Cement	0.219	0.213
vii.	Coal	Electricity	0.865 MT/MW	0.862 MT/MW

**Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.*

PART - C
POLLUTION DISCHARGED TO ENVIRONMENT/UNIT OF PRODUCT
(Parameters as specified in the consent issued)

Pollutants	Quantity of Pollutants Discharged (Kg/day)	Concentrations of Pollutants in Discharges (mg/L)	Percentage of variation from prescribed standards with reasons	
A. Water				
Effluent Water: There is no effluent generation from Cement Manufacturing Process				
Domestic Sewage Treated Water: Details are mentioned as under				
i.	pH	-NA-	7.7	Within the Limits
ii.	Total Suspended Solids (TSS)	6.4	44.1	-55.9.6 %
iii.	Total Dissolved Solids (TDS)	137.7	945.2	-55.0 %
iv.	Oil & Grease	0.03	0.2	-98.2 %
v.	Biochemical Oxygen Demand (BOD)	1.2	8.3	-72.5 %
vi.	Chemical Oxygen Demand (COD)	10.9	74.9	-70.0 %

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Pollutants		Quantity of Pollutants Discharged (Kg/day)	Concentrations of Pollutants in Discharges (mg/Nm ³)	Percentage of variation from prescribed standards with reasons
B. Air				
i.	Kiln-1 PM	152.2	20.0	-33.3
ii.	Kiln-2 PM	146.5	22.6	-24.7
iii.	Kiln-3 PM	177.3	17.5	-41.7
iv.	Cooler-1 PM	51.0	17.8	-40.7
v.	Cooler-2 PM	91.2	17.0	-43.3
vi.	Cooler-3 PM	57.7	17.6	-41.3
vii.	Coal Mill-1 PM	7.1	15.2	-49.3
viii.	Coal Mill-1 VRM PM	8.8	15.1	-49.7
ix.	Coal Mill-2 PM	12.8	17.8	-40.7
x.	Coal Mill-3 PM	31.9	16.3	-45.7
xi.	Cement Mill-1 PM	10.1	17.1	-43.0
xii.	Cement Mill-2 PM	28.3	20.1	-33.0
xiii.	Kiln-1 SO ₂	27.4	3.6	-96.4
xiv.	Kiln-2 SO ₂	40.2	6.2	-93.8
xv.	Kiln-3 SO ₂	20.3	2.0	-98.0
xvi.	Kiln-1 NO _x	2507.1	329.5	-67.1
xvii.	Kiln-2 NO _x	2332.1	359.7	-55.0
xviii.	Kiln-3 NO _x	3025.6	298.6	-62.7
xix.	CPP PM	293.4	35.3	-29.4
xx.	CPP SO ₂	2177.3	262.0	-56.3
xxi.	CPP NO _x	733.0	88.2	-70.6

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Environmental Statement for the financial year ending with 31st March 2023

**PART - D
HAZARDOUS WASTE**

As specified under
Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

Hazardous Waste	Total Quantity, MT	
	During the previous financial Year 2021-22	During the current financial Year 2022-23
A. From Process		
i. Used Oil (5.1)	25.64	15.53
ii. Waste Oil / Furnace Oil Sludge (5.2)	14.54	13.43
iii. Oil-Soaked Cotton (5.2)	4.14	2.99
B. From Pollution Control Facilities	Nil	Nil

**PART - E
SOLID WASTES**

Solid Waste	Total Quantity, MT	
	During the previous financial Year 2021-22	During the current financial Year 2022-23
A. From Process	Nil	Nil
B. From Pollution Control Facilities		
i. PCEs Dust	100% Recycled into process	100% Recycled into process
ii. Flyash (CPP)	89571	81230
C.		
i. Quantity recycled or re-utilized within the unit	NA	NA
ii. Sold	NA	NA
iii. Disposed	NA	NA

FORM-V

See Rule-14

Environmental Statement for the financial year ending with 31st March 2023

PART – F

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

Sl. No	Type of Wastes Generated / Handling	Nature of Waste	Disposal Pathway
1	Used Oil (5.1 of Schedule-I)	Hazardous	Authorized Re-processors / Recyclers / Internal consumption for lubrication purpose.
2	Waste Oil / Furnace Oil Sludge (5.2 of Schedule-I)	Hazardous	Authorized Re-processors / Recyclers / Internal consumption for lubrication purpose.
3	Oil-Soaked Cotton (5.2 of Schedule-I)	Hazardous	Co-Processing in the Cement Kiln
4	Lead Acid Batteries	Batteries	Authorized recycler & Buyback to vendors
5	E-Waste	E-Waste	Disposed to Authorized Recycler
6	ESP & Bag House Dust	Solid	Recycle back in to the process
7	Flyash from CPP	Solid	Using in manufacturing of PPC cement
8	Bio Medical Waste from OHC	Bio-Medical	Authorized Incinerators/ CBWTF
9	Liquid Waste - Effluent	Effluent	Treating & using for ash quenching/ dust suppression
10	Liquid Waste - Sewage	Sewage	Treating in STP & using for greenbelt
11	Alternative Fuels	Hazardous	Co-Processing in Cement Kilns
12	Bursting PP/HDPE Bags	Plastic	Co-Processing in Cement Kilns

Sl. No	Type of Wastes Generated / Handling	Nature of Waste	Disposed Quantity, FY2022-23
1	Used Oil (5.1 of Schedule-I)	Hazardous	15.53 MT
2	Waste Oil / Furnace Oil Sludge (5.2 of Schedule-I)	Hazardous	13.43 MT
3	Oil-Soaked Cotton (5.2 of Schedule-I)	Hazardous	2.99 MT
4	Lead Acid Batteries	Batteries	9.64 MT
5	E-Waste	E-Waste	0.00 MT
6	ESP & Bag House Dust	Solid	100% Recycled
7	Flyash from CPP	Solid	81230 MT
8	Bio Medical Waste from OHC	Bio-Medical	25.51 Kgs
9	Liquid Waste – Effluent (CPP)	Effluent	11483 KL
10	Liquid Waste - Sewage	Sewage	53179 KL
11	Alternative Fuels	Hazardous	5304.12 MT
12	Bursting PP/HDPE Bags	Plastic	3.89 MT

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PART – G

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

- At Orient Cement, efficient resource consumption is a priority, and the Company ensures optimal utilization of raw materials. To ensure conservation of natural resources, consistently consumed 27% sub-grade limestone (9.3 Lac MT) through an optimization of Raw mix & Fuel mix process. While ensuring that the quality of clinker and cement produced meets the highest quality standards.
- We have been treating effluent from CPP & Domestic sewage from residential colony to confirm the prescribing standards and then using for greenbelt development, dust suppression and ash quenching. Thus, the same amount of fresh is being conserved.
- Air Pollution Control Equipment such as Baghouse, RABH, ESPs and Jet Pulse Filters are designed to control the particulate matter emissions below 30 mg/Nm³ from any of the stationery sources from Cement Plant & CPP. All these APCEs are very effective in arresting and putting back the recovered material (Dust) into the production line thus preventing the raw material, fuel, intermediate & finished products from getting lost in the atmosphere.
- We have been undertaken various energy efficiency improvement measures & process optimization which helped to significantly reduce the overall energy consumption to reduce carbon footprints. About 377.7 KW of electricity saved during FY23. Thus, the pollution abatement & other energy conservation practices adopted by us save precious raw material/ fresh water and help in conserving natural resources.
- Further, we are using hazardous & nonhazardous Alternative Fuels & Raw Materials (AFR) from various other industries/ industrial sectors in cement manufacturing process to conserve the naturally sources coal and other raw materials. We have achieved 11.68% of thermal substitution rate (TSR) by using the following AFR for FY23.

Sl. No	Description of AFR	Quantity in MT, FY2022-23
1	Agro Waste (Rice Husk, Corn cob, etc.)	22304.6
2	Carbon Black	14272.0
3	Hazardous Waste (Liquid & Other)	5304.12
4	Municipal Waste (RDF)	1840.1
5	Plastic Waste (Incl. Internal)	797.2
6	Other Non-Hazardous Wastes	149.7
	Total	44667.8

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See Rule-14

Environmental Statement for the financial year ending with 31st March 2023

PART – H

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

- Greenbelt development is being carried out in a phased manner with local and native plant species. As of date, 57% of the total area developed with green cover.
- Fugitive dust emission control measures are in place such as deployment of road sweeping machines, closed material conveying system, raw material and finished products are stored in closed sheds and silos, all the material transfer points & silo tops are provided with bag filter, pneumatic handling of flyash and water spraying on the material yards and roads.
- Adequate funds are earmarked for environmental management activities. Capital and recurring expenditure incurred for the same for the period FY2022-23 is tabulated as under.

Sl. No	Nature of Revenue/ Recurring Expenditure	Amount incurred in Lakh Rs.
1	Operation & Maintenance of PCEs	68.1
2	Electrical Power Cost of PCEs	768.8
3	Environmental Monitoring Charges	11.1
4	Operation & Maintenance of STP	8.0
5	Operation & Maintenance of CAAQM & CEMS	14.1
6	Operation Cost of Road Sweeping Machines	34.7
7	Bio Medical Waste Disposal Charges	0.7
8	Environmental Awareness & Trainings	0.5
	Total	906.0

Sl. No	Nature of Capex/ Capital Expenditure	Amount incurred in Lakh Rs.
1	Rice husk (AFR) feeding system at Line-3	81.1
2	Rice husk (AFR) feeding system at Line-2	11.9
3	Additional Bag Filter at all sections	81.4
4	ESP Internal rapping & Alignment	27.8
5	Air Pollution Control Device for packing plant	3.1
	Total	205.4

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See Rule-14

Environmental Statement for the financial year ending with 31st March 2023

Additional Measures Proposed for Environmental Protection

- Increase in usage of Alternative Fuels and Raw Material (AFR).
- Increase in manufacturing of PPC grade cement.
- Plastic Waste EPR compliance.
- Consistent usage of low-grade limestone in cement manufacturing process.
- Conducting various awareness campaigns on Environmental & Sustainability aspects.

PART – I

Any other particulars for improving the quality of the environment.

- We have full-fledged Environmental Section to deal with monitoring & measurement of environmental parameters, compliance tracking , Green Belt development, operation and maintenance of CAAQMS & CEMS and STP Operations.
- We are having NABL accredited laboratory for quality parameters analysis.
- All the Air Pollution Control Equipment (APCE) is effectively operated and maintained for controlling the emissions below the prescribed standards.
- Installation of new APCEs wherever required for controlling dust emissions.
- Covered sheds and silos have been constructed for raw material & finished products storage handling to control fugitive emissions.
- Practicing Zero Liquid Discharge (ZLD) from our premises.
- Adopted Integrated Management System, which includes ISO 14001:2015 Environment Management Systems, ISO 9001:2015 Quality Management System and ISO 45001:2018 Occupational Health and Safety Management System & ISO 50001:2018 for Energy Management System.
- Strengthening of existing greenbelt by increase in density and plantation of saplings under Telangana Ku Haritha Haram program which is a State Govt. initiative.
- Organizing various environmental awareness activities to sensitize the employees and nearby communities.

FORM-V
See Rule-14
Environmental Statement for the financial year ending with 31st March 2023
[Annexure-1](#)
Production Details

1. Products Manufactured		
Description of Product	Consented Capacity, MT	Production Quantity in MT
Clinker	35,00,000	23,38,083
Cement (OPC +PPC)	30,70,000	20,47,055
Electricity Generation from CPP	2 X 25 MW	195188 MW
Synthetic Gypsum	31,000	Nil

[Annexure-2](#)
Ambient Air Quality Monitoring Data
April 2022 to March 2023

Parameters	Limits	Near Time office	Near Mines office	NORTH, Stores	SOUTH, Guesthouse
PM10	100	14.82	24.02	14.82	12.6
PM2.5	60	14.22	24.18	14.22	11.3
SO ₂	80	14.82	23.35	14.82	12.6
NO ₂	80	10.41	19.01	10.41	8.5
Lead (Pb)	1.0	12.81	21.51	12.81	10.4
Carbon Monoxide mg/m ³	02	BDL	BDL	BDL	BDL
Ammonia (NH ₃)	400	BDL	BDL	BDL	BDL
Ozone (O ₃)	100	12.21	21.51	12.21	9.5
Benzene (C ₆ H ₆)	05	<0.02	<0.02	<0.02	<0.02
Arsenic (As) ng/m ³	06	ND	ND	ND	ND
Nickle (Ni) ng/m ³	20	ND	ND	ND	ND
Benzo Pyrene (Bap) ng/m ³	01	ND	ND	ND	ND

All the values are expressed in µg/m³ except mentioned.

BDL – Below Detectable Limits

ND – Non-Detectable

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See Rule-14
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[Annexure-3](#)
Stack Emission Monitoring Data

Stack Attached to	Limits	PM Emissions April 2022 to March 23
Kiln – I & Raw mill – I	30	20.0
Kiln-II & Raw mill – II	30	22.6
Kiln – III & Raw mill – III	30	17.5
Cooler –I	30	17.8
Cooler-II	30	17.0
Cooler – III	30	17.6
Coal Mill-I	30	15.2
Coal mill -1 VRM	30	15.1
Coal Mill-II	30	17.8
Coal Mill – III	30	16.3
Cement Mill-I	30	17.1
Cement Mill-II	30	20.1
CPP	50	35.3
Packer-1	30	19.9
Packer-2	30	19.6
Packer-3	30	20.7
Packer-4	30	19.5
Packer-5	30	20.7
Packer-6	30	18.6

Stack Attached to	Limits	NOx Emissions April 2022 to March 23
Kiln – I	1000	329.5
Kiln – II	800	359.7
Kiln – III	800	298.6
CPP	300	88.2

Stack Attached to	Limits	SO2 Emissions April 2022 to March 23
Kiln – I	100	3.6
Kiln – II	100	6.2
Kiln – III	100	2.0
CPP	600	262.0

All the values are expressed in mg/Nm³.

FORM-V
See Rule-14

Environmental Statement for the financial year ending with 31st March 2023

Annexure-4
Effluent & Sewage Quality Monitoring

Treated Effluent Parameters (CPP)	UoM	Limits	Average Measured Concentration
PH	--	6.5-8.5	7.6
Total dissolved solids	mg/l	2100	1635.8
Total Suspended solids	mg/l	100	61.8
Chemical oxygen demand	mg/l	250	121.8
Biochemical oxygen demand (3 Days at 27°C)	mg/l	100	13.6
Oil & Grease	mg/l	10	<1.0

Treated Sewage Parameter	UoM	Limits	Average Measured Concentration
PH	--	6.5-9.0	7.7
Total dissolved solids	mg/l	2100	945.2
Total Suspended solids	mg/l	100	44.1
Chemical oxygen demand	mg/l	250	74.9
Biochemical oxygen demand	mg/l	30	8.3
Oil & Grease	mg/l	10	0.2
Fecal coliform per 100 ml	--	Absent	Absent

FORM-V
See Rule-14

Environmental Statement for the financial year ending with 31st March 2023

[Annexure-5](#)

Ambient & Workplace Noise Monitoring Data

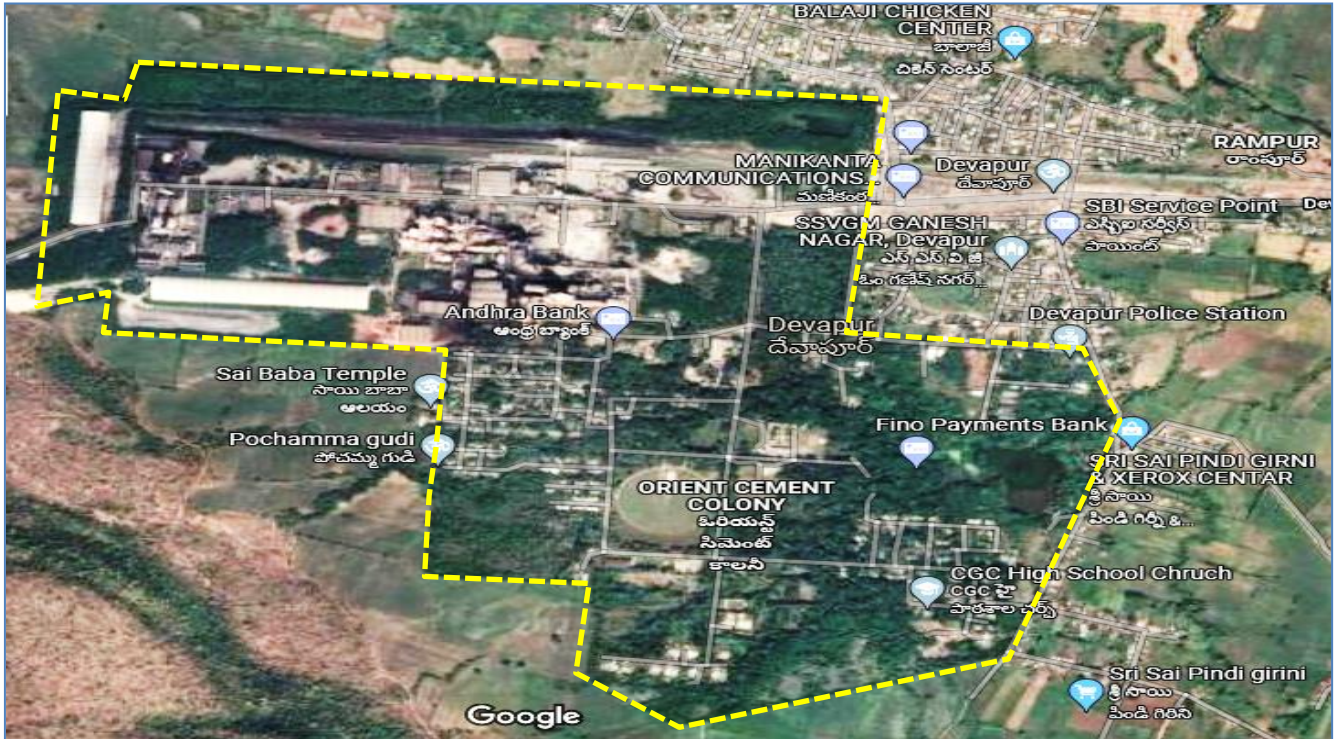
Ambient Monitored Location	Noise Levels in Leq dB(A)			
	Day Time		Nighttime	
	Monitored Value	Limits	Monitored Value	Limits
East Side Boundary	63.6	75	58.5	70
West Side Boundary	64.8	75	59.6	70
North Side Boundary	62.1	75	56.8	70
South Side Boundary	62.4	75	57.3	70

Work zone Location	Limits	Noise Levels in Leq dB(A)
		April 2022 to March 2023
Kiln- 1 & 2	85	79.1
Raw Mill-1 & 2	85	80.6
Compressors	85	82.6
Cement Mill-1 & 2	85	77.3
Crusher	85	80.3
Kiln-3	85	81.3
CPP	85	83.1
Raw Mill-3	85	75.9
Packing Plant	85	74.0

FORM-V
See Rule-14

Environmental Statement for the financial year ending with 31st March 2023

Annexure-6
Greenbelt Development



FORM-V
See Rule-14

Environmental Statement for the financial year ending with 31st March 2023



FORM-V
See Rule-14

Environmental Statement for the financial year ending with 31st March 2023



Photographs showing plantation under Telangana Ku Haritha Haram (A state Govt. Initiative)

FORM-V
See Rule-14
Environmental Statement for the financial year ending with 31st March 2023

Annexure-7
Fugitive Emission Control Measures



Dedicated Water Spraying Tanker



Mechanical Water Sprinklers



Internal CC Roads & Floorings



Water Spraying on internal roads



Road Sweeping Machine



Pneumatic handling of Flyash

FORM-V

See Rule-14

Environmental Statement for the financial year ending with 31st March 2023



Coal Storage Shed



Limestone Storage Shed



Laterite Storage Shed



Gypsum Storage Shed



Clinker Silo



Flyash Silo

FORM-V
See Rule-14

Environmental Statement for the financial year ending with 31st March 2023



Closed Conveying System



Closed Conveying System



Bag filters at various material transfer points & silo top

FORM-V
See Rule-14

Environmental Statement for the financial year ending with 31st March 2023

Annexure-8
Corporate Social Responsibility

Area of CSR Expenditure	Amount Incurred in Lakh Rs.
School Running Expenses at Devapur	522.69
Medical Expenses at Dispensary	36.90
Vanavasi Kalyani Parishad	1.44
Maintenance charges of Sulabh Complex	2.63
Distribution Mass meals arranged for adivasi community	1.12
Wall & Statue Painting work at Devapur village	7.23
Repair & Painting work at Dhyankendra - Devapur	0.72
Hiring Charges of Ambulance for Villagers	6.51
Maintenance Work Nearby Villages	0.21
Total	579.45