

SHREE CEMENT LIMITED

(UNIT-SHREE RAIPUR CEMENT PLANT)

Village: Khaparadih, Tehsil: Simga, Distt. Baloda Bazar-Bhatapara (C.G) Pin: 493332,
Ph.:07727-203101, CIN No. : L26943RJ1979PLC001935



SRCP/ENV/2022-23/87

Date: 12/09/2022

To,
The Member Secretary,
Chhattisgarh Environment Conservation Board,
Paryavas Bhavan, North Block, Sector-19
Naya Raipur (C.G)

Sub: - Submission of Environment Statement for the year 2021-22 by Shree Raipur Cement Plant (A unit of Shree Cement Ltd.) located at Village Khapradih, Tehsil: Simga, Dist.: Balodabazar-Bhatapara, (C.G.).

Ref: 1. Consent to Operate (Air & Water) letter No.- 9505 /TS/CECB/ 2021, dated 02/02/2021.
2. CTO amendment for expansion letter No: 9497/TS/CECB/2022, dated 24/03/2022.

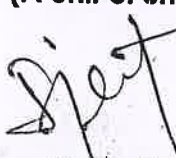
Dear Sir,

With reference to the above subject matter, we are submitting herewith the **Environmental Statement in Form-V** for the year **2021-2022** for our Shree Raipur Cement Plant (A Unit of Shree Cement Limited) located at Village Khapradih, Tehsil: Simga, Dist.: Balodabazar-Bhatapara, (C.G.).

Submitted for your kind information and record please.

Thanking you,

Yours faithfully,
For Shree Raipur Cement Plant
(A unit of Shree Cement Ltd.)


I V Mahesh
Ass. Vice President

Enclosed: - As above.



CC to: - Regional Officer, Chhattisgarh Environment Conservation Board, Commercial Complex, Chhattisgarh Housing Board Colony Kabir Nagar, Raipur (C.G.) - 492099

ENVIRONMENTAL STATEMENT
FORM – V
Shree Raipur Cement Plant
(A Unit of Shree Cement Limited)
Period from: April 2021 to March 2022

PART – A

1.	Name and address of the Owner / Occupier of the Industry operation or process	M/s Shree Raipur Cement Plant (A Unit of Shree Cement Ltd) Village – Khapradih, Tahsil – Simga, Distt – Baloda Bazar (Bhatapara) Chhattisgarh – 493332
2.	Industry Category Primary (S.T.C. Code) Secondary (S.T.C. Code)	Red Category
3.	Production Capacity	3.0 Million TPA Cement 12.5 Million TPA Clinker 60 MW Waste Heat Recovery Power Generation 25 MW Captive Power 1000 KVA DG sets
4.	Year of Establishment	2015
5.	Date of the last Environmental Statement Submitted	31/08/2021

PART – B

WATER AND RAW MATERIAL CONSUMPTION

(I) WATER CONSUMPTION:

Process	:	179.15 KLD (WHRB & CPP)
Cooling and dust Suppression	:	239.96 KLD (Cement plant)
Domestic	:	563.23 KLD (Cement & Captive Power plant)

Name of Product	Process Water Consumption per Unit of Product Output	
	During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)
Cement	0.010 KL/MT of Cement	0.009 KL/MT of Cement
Clinker	0.013 KL/MT of Clinker	0.018 KL/MT of Clinker
WHRB Power	0.224 KL/MW of WHRB power generation	0.234 KL/MW of WHRB power generation
CPP Power	0.201 KL/MW of CPP power generation	0.253 KL/MW of CPP power generation

(II) RAW MATERIAL CONSUMPTION:

Name of Raw Material	Name of Product	Consumption of Raw Material Per Unit of Output Cement, Clinker & Power	
		During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)
Gypsum	Cement	0.1013	0.1101
Fly Ash		0.3257	0.3489
GBFS Slag		Nil	0.00001
Clinker		0.5586	0.5409
Limestone	Clinker	1.4992	1.4930
Fuel (Pet Coke/Coal)		0.0887	0.1132
Additives (Iron Ore, Red Mud)		Nil	Nil
AFR		0.0056	0.0235
Fuel Coal (Indigenous & Imported)	Power Generation	0.0009 per Kwh	0.0010 per Kwh
Limestone		0.00001 per Kwh	0.00003 Per Kwh

(III) POWER CONSUMPTION (KWH/T OF PRODUCT):

Product Name	During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)
Cement	61.65	61.91
Clinker	61.72	61.99

(IV) TOTAL PRODUCTION (MT):

Product Name	During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)
Cement	19,07,491	17,99,207
Clinker	38,40,402	35,55,220
WHRB Power	19,75,19,133 Kwh	15,30,05,604 Kwh
CPP Power	11,49,72,169 Kwh	9,21,97,532 Kwh

PART – C

DISCHARGED TO ENVIRONMENTAL / UNIT OF OUTPUT

Pollutants		Quantity of Pollutants Discharged (Mass/Day) Ton/day	Concentration of Pollutants in Discharge (Mass/Volume)	Percentage of variation from prescribed standard with reasons
(a) Water		<p>No waste water is being discharged outside the plant premises. As the plant is being operated on dry process technology, therefore no process liquid effluent is generated from cement plant. Only domestic waste water generated from the office toilet and canteen same is being treated in STP installed at site and treated water is being used for irrigation of greenery developed in the plant premises. We have installed 02 nos. of STP having capacity 80 KL (40 KL each). We are maintaining parameters within the prescribed limit. Analysis Report of STP treated water is attached herewith as Annexure-4 for your record and ready reference.</p>		
(b) Air Pollutants (PM, SO₂ & NO_x)		Quantity of Pollutants Discharged (Ton/day)	Concentration of Pollutants in Discharge (Mass/Volume)	Percentage of variation from prescribed standard with reasons
Unit- 1	Raw mill & Kiln (PM)	0.0833	9.11	We have installed appropriate air pollution control equipment's (viz. ESP, Bag House & Bag Filters). Installed low NO _x burner and De-NO _x system to control NO _x emissions.
	Raw mill & Kiln (SO ₂)	0.0068	0.74	
	Raw mill & Kiln (NO _x)	3.2382	354.28	
	Coal mill (PM)	0.0122	14.73	
	Cooler stack (PM)	0.0583	10.91	
	Cement mill (PM)	0.0314	12.09	
Unit- 2	Raw mill & Kiln (PM)	0.1131	14.25	
	Raw mill & Kiln (SO ₂)	0.0210	2.64	
	Raw mill & Kiln (NO _x)	2.7127	341.84	
	Coal mill (PM)	0.0111	12.64	
	Cooler stack (PM)	0.0414	7.48	
Unit-3	Raw mill & Kiln (PM)	0.1922	12.47	
	Raw mill & Kiln (SO ₂)	0.0077	0.50	
	Raw mill & Kiln (NO _x)	4.3241	280.60	
	Coal mill (PM)	0.0260	14.56	
	Cooler stack (PM)	0.0993	13.60	
CPP	CPP Boiler stack (PM)	0.1197	30.00	
	CPP Boiler stack (SO ₂)	0.8597	215.49	
	CPP Boiler stack (NO _x)	0.4626	115.94	

Stack emission, AAQ & Noise monitoring report are attached as Annexure- 1, 2 & 3 respectively.

PART – D

HAZARDOUS WASTE

(As specified under Hazardous & other wastes (Management and Transboundary Movement) Rule, 2016.

Hazardous Waste	Total Quantity (kilo Ltrs.)	
	During previous Financial Year (2020-21)	During Current Financial Year (2021-22)
(a) From Process	Used Oil (Cat. 5.1): 10.42 KL (Common for Cement plant & Mines)	Used Oil (Cat. 5.1): 23.6 KL (Only for Cement plant)
(b) From Pollution Control Facilities	Nil	Nil

PART – E
SOLID WASTE

		Total Quantity	
		During Previous Financial Year (2020-21) (MT/Year)	During Current Financial Year (2021-22) (MT/Year)
(a)	From Process	No solid waste is generated from the Cement manufacturing process.	No solid waste is generated from the cement manufacturing process.
(b)	From Pollution Control Facility	Dust collected in the ESPs, Bag House and Bag Filters are recycled to the system.	Dust collected in the ESPs, Bag House and Bag Filters are recycled to the system.
(c)	1. Quantity rejected or re-utilized within the unit	All the collected swept waste is 100% reused in the process.	All the collected swept waste is 100% reused in the process.
	2. Sold (Metal / nonmetal / plastic scrap /Burst Bags, filter & PP bags etc.) (Common for Cement plant & Mines)	1483.34 MT	1431.52 MT
	3. Disposed	Nil	Nil

Note: - Scraps sold to scrap dealers/recyclers

PART – F

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

Hazardous Wastes

Cement manufacturing is based on "Dry Process". No Hazardous waste is generated from the process except used oil which is drained from Machineries / Equipment's. The store department stores all collected hazardous waste at specified location as per Hazardous and Other Wastes (Management and

Transboundary Movement) Rules, 2016 from where the hazardous waste is being sold out to SPCB authorized recyclers.

Battery Wastes:

April, 2021 to March, 2022	Total Quantity (MT) (Common for Cement plant & Mines)	
	During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)
	Nil	9.36

Note- Battery Waste sold to authorized recycler.

E-WASTE

E- waste generated during current financial year April, 2021 to March, 2022 under the E-Waste (Management) Rules, 2016, are as follows.

April, 2021 to March, 2022	Total Quantity (MT) (Common for Cement plant & Mines)	
	During Previous Financial Year (2020-21)	During Current Financial Year (2021-22)
	9.340	Nil

Note- E-Waste sold to authorized recycler.

Bio-Medical Wastes:

Bio-medical waste generated during current financial year April, 2021 to March, 2022 under the Bio-Medical Waste Management Rules, 2016, are as follows.

April, 2021 to March, 2022	Bio-Medical Waste Quantity (Kg) (Common for Cement plant & Mines)			
	(Cat. -Yellow)	(Cat. - Red)	(Cat. -White)	(Cat.-Blue)
	17.73	11.47	14.14	16.95

Note- Above mentioned waste has been sent to M/s SMS Watergrace Enviroprotect Pvt. Ltd., CBWTF Bio Medical Treatment Facility, Raipur (C.G.) for disposal.

PART – G

IMPACT OF THE POLLUTION CONTROL MEASURES ON CONSERVATION OF NATURAL RESOURCES AND CONSEQUENTLY ON THE COST OF PRODUCTION

M/s Shree Raipur Cement Plant (A Unit of Shree Cement Ltd.) is being operated on dry process technology, which is cost effective and environmentally clean technology. The advantage of dry process is also in fuel economic. The stack emissions from the plant are controlled by equipment like ESPs, Reverse Air Bag House (RABH) and Bag Filters installed at various material transfer points to clean the process and arrest the fugitive emissions. The particulate matter collected in the pollution control equipment is recycled in process and neutralizing the cost of operation of pollution control equipment's and hence no cost impact on the production cost.

Waste Heat Recovery System (WHRS) is installed at Pre- heater and cooler section for trapping gasses of high temperatures and are being used for generation of Green Power which has resulted in conservation of fuel, reduction of GHG emissions and water conservation. Company has separate AFR cell looking

after the utilization of alternative fuels and raw materials. Unit is utilizing ETP sludge, Organic residue, Distillation residue, spent carbon, spent solvent, spent catalyst, spent resin, waste containing oil etc.

PART – H

ADDITIONAL MEASURES / INVESTMENTS PROPOSAL FOR ENVIRONMENT PROTECTION INCLUDING ABATEMENT OF POLLUTION

1. Green belt development and tree plantation is our ongoing process. Out of Total plant area of 159.256 hectare, Green belt has been developed on 55.75 Hectare (35%) area with 1,21,976 Nos. of saplings along with entire periphery of the plant.
2. Additionally, Under Hariyar Chhattisgarh project we have planted 15,000 saplings near school of Bharuwadih, Semradih, Khapradih, Chandi, Karahi & Parkidih villages. Road side plantation of about 10 KM on both side of road from Bharuwadih to Chandi village has been done. And we have also planted 15,050 saplings at Bhatapara. Apart from that 2,000 sapling has been planted near the Logistic building. Apart from that 6,000 sapling has been planted near the Diesel Pump area. Local native species viz. Neem, Karanj, Platofarm, Cassia Siamea, Shisham etc. are planted to increase the survival rate.
3. The funds earmarked for Environmental Protection measures are being utilized. Total expenditure incurred during the period April-2021 to March-2022 are as under-

Sl. No.	Description	Amount in Rs.
1	Sewage Treatment Plant	1,92,870
2	Technical Consultancy & Monitoring	43,99,731
3	Plantation	1,26,52,231
4	Housekeeping & Vacuum Sweeping	5,38,58,697
5	Energy Consumption in Pollution Control Devices	19,43,01,705
6	Rates & Taxes	33,35,036
Total		26,87,40,270

Note- Environment expenditure incurred for SRCP Cement Plant & Lime Stone Mines.

PART – I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF ENVIRONMENT.

1. Installed 4 numbers of online Ambient Air Quality Monitoring Stations and Installed Continuous Emission Monitoring System at raw mill & kiln stack, Cooler stack, Coal mill stack, Cement mill stack and CPP stack.
2. Real time online data for AAQMS & CEMS stacks, are transmitting to State Pollution Control Board or Pollution Control Committees and Central Pollution Control Board on continuous basis.
3. Monitoring of stack emission and ambient air and water quality is being done regularly.
4. Effective operation of cooler ESP transformer and control panel in first field to further reduce PM emission levels.
5. Installed NOx mitigation systems at Cement Kiln-I & II as pollution control measure to achieve prescribed standards.
6. We have full-fledged Environment Department with three separate cells for monitoring, maintenance of pollution control equipment and Green Belt development.

7. Installed Bag filters at various material transfer points in unit-1, unit-2 & CPP respectively for control of fugitive emission.
8. Cement being manufacturing in dry process and there is no any effluent generated from the process hence maintaining Zero Effluent Discharge Plant.
9. Provided waste heat recovery system of capacity 55 MW for power generation from the waste heat gases of kiln & cooler.
10. All internal roads are made concrete for further reduction of fugitive emission.
11. Civil department taking care of House keeping with the help of four Numbers of heavy duty sweeping machines for regular sweeping of all plants roads, shop floors on regular basis.
12. Fly ash is being transported in the closed containers and bulkers.
13. Constructed three Clinker silo with fully covered with tin shed to avoid dust emission.
14. Installed bag filter at all material transfer points to avoid fugitive dust emission along with fully enclosed tin sheet.
15. All Storage Silo installed with Bag filter for controlling dust emission.
16. Maintenance department is doing regular checking and scheduled maintenance of all the pollution control devices.
17. Dust collected from pollution control devices and vacuum cleaning devices is being totally recycled & reused in the process of cement manufacturing.
18. Domestic waste water generated by unit being treated in Movable Bed Bio reactor (MBBR) based sewage treatment plant (STP). Treated STP water being used for plantation/ greenbelt development.
19. Horticulture Department is taking care of tree plantation and green belt development.
20. Applicable best available control measures have been adopted to minimize the fugitive dust emission from each fugitive dust source within active operation.
21. Constructed Covered storage shed for stockpiles of Limestone, Coal & Gypsum.
22. Developed Rain water harvesting Pond for recharging ground water through recharge pit.

On support of above, we are enclosing herewith following: -

Annexure-1: - Stack Emission monitoring report.

Annexure-2: - Ambient Air Quality Monitoring Station Report.

Annexure-3: - Ambient Noise Monitoring report

Annexure-4: - STP water Analysis report.

Annexure-1

Online CEMS Stack Monitoring Report (Monthly Average Values) (mg/Nm ³)														
Name of Stacks	Parameter	Norms	Monitoring Period FY 2021-22											
			Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
Cement Mill	PM	30	11.97	11.64	12.91	10.83	10.11	9.67	14.43	11.78	11.05	12.78	12.62	15.25
	PM	30	14.72	14.58	15	13.85	Not in operation	13.71	14.51	13.94	15.37	14.59	15.20	16.56
Cooler Stack-1	PM	30	11.46	11.19	10.96	10.83	operation	10.98	10.77	11.29	11.36	10.57	10.38	10.22
Coal Mill Stack-2	PM	30	12.60	11.57	10.67	11.63	11.07	7.20	12.10	12.11	14.95	14.82	17.00	16.00
	PM	30	8.25	8.53	8.48	8.63	9.03	5.23	8.63	8.03	7.51	7.41	5.13	4.89
Ramm Mill & Kiln Stack-1	PM	30	9.86	9.89	9.8	9.2	Not in operation	8.89	8.85	8.88	8.85	7.94	8.85	9.18
	SO ₂	100	0.01	0.0	4.29	0.0		0.7	0.13	0.34	0.47	0.20	1.94	0.04
	NOx	600	452.29	345.50	282.37	364.03		383	399.57	380.37	305.59	341.54	352.79	290.02
Ramm Mill & Kiln Stack-2	PM	30	14.61	17.16	15.69	16.21	14.04	10.30	12.98	14.39	15.15	14.32	16.35	9.78
	SO ₂	100	0.0	0.0	0.91	4.21	3.78	0.57	21.06	0.01	1.15	0.00	0.00	0.00
	NOx	600	283.04	338.99	342.11	336.59	358.97	374.97	345.63	293.20	383.22	354.23	379.58	311.58
Power Plant Stack	PM	50	32.14	36.09	35.44	32.30	30.07	31.78	22.45	27.23	25.74	25.65	28.67	32.38
	SO ₂	600	307.04	232.9	338.51	251.92	158.45	197.79	224.07	208.51	245.71	137.33	137.48	146.16
	NOx	450	70.76	89.26	98.41	118.12	176.83	142.98	130.25	119.61	88.52	115.12	126.01	115.42

Shree Raipur Cement Plant
(A Unit of Shree Cement Ltd)

Online Ambient Air Quality Monitoring Report (All value in µg/m³)
Period from April 2021 to March 2022

Location	Parameters	Norms (µg/m ³)	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.
AAQMS 1 (Mines boundary towards village Bharuwadh)	PM ₁₀	100	µg/m ³	34.18	37.88	34.94	27.05	36.17	26.36	48.08	54.94	42.87	46.67	44.62	70.45	42.02
	PM _{2.5}	60		22.14	22.57	17.39	14.42	19.32	14.09	27.77	31.33	22.94	21.82	25.34	36.33	22.96
	SO ₂	80		13.31	16.24	4.91	4.28	4.23	4.21	4.19	4.01	3.96	3.93	3.89	12.96	6.68
AAQMS 2 (Mines boundary towards village Semradh)	NO ₂	80		0.89	2.63	3.63	3.71	3.62	3.55	3.61	4.08	4.41	4.43	4.41	4.47	3.62
	PM ₁₀	100		54.98	34.38	38.46	34.46	42.93	31.50	51.73	57.74	52.90	43.86	55.57	73.43	47.66
	PM _{2.5}	60		25.46	15.37	17.69	15.23	15.97	14.46	26.05	32.91	28.60	21.57	29.31	35.89	23.21
AAQMS 3 (Plant Boundary towards South Diction)	SO ₂	80		10.73	10.01	10.15	10.28	11.48	12.59	12.95	11.61	8.70	8.30	7.88	10.32	10.42
	NO ₂	80		7.16	6.68	6.77	6.86	7.65	8.39	8.63	9.71	9.75	9.48	9.00	4.59	7.89
	PM ₁₀	100		46.15	41.34	34.82	28.76	39.27	30.04	49.68	57.53	52.90	52.02	51.70	70.37	46.21
AAQMS 4 (Plant Boundary towards village Khapradh)	PM _{2.5}	60		26.85	23.64	18.79	12.27	17.82	15.03	28.26	27.01	24.83	18.79	25.74	37.67	23.06
	SO ₂	80		6.31	6.99	6.50	6.34	6.92	7.02	6.86	7.29	6.98	8.85	7.29	6.33	6.97
	NO ₂	80		7.89	8.73	8.13	7.93	8.65	8.77	8.57	9.11	8.72	11.06	9.92	3.53	8.42
AAQMS 4 (Plant Boundary towards village Khapradh)	PM ₁₀	100		54.37	38.39	39.75	33.99	47.30	33.71	54.98	57.95	49.40	48.57	51.01	56.13	47.13
	PM _{2.5}	60		32.66	15.37	19.84	14.80	20.71	15.35	28.38	31.16	28.78	21.58	17.28	23.63	22.46
	SO ₂	80		5.39	5.69	5.73	5.84	6.72	7.55	6.29	5.13	3.46	3.49	3.44	6.16	5.41
	NO ₂	80	12.57	12.57	9.63	9.19	9.16	8.70	9.12	9.30	9.21	9.27	9.18	5.25	9.43	

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Shree Raipur Cement Plant
Noise Monitoring Report
Prescribed Limit - Day Time - 75 dB(A), Night Time - 70 dB(A)

S No.	Location	AAQMS-1 (Near Bharuadih)		AAQMS-2 (Near Semradih)		AAQMS-3 (Near RMS)		AAQMS-4 (Near Khapradih)	
	Month	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time
1	Apr-21	57	43	58	44	56	41	59	40
2	May-21	59	44	57	42	61	44	58	42
3	Jun-21	63	46	60	40	59	42	61	45
4	Jul-21	61	45	53	37	60	46	57	43
5	Aug-21	59	40	55	40	57	43	63	40
6	Sep-21	57	42	60	41	62	48	63	47
7	Oct-21	47	40	44	38	42	35	45	39
8	Nov-21	55	45	59	49	62	55	60	45
9	Dec-21	62	42	69	43	60	45	58	40
10	Jan-22	56	47	59	45	60	52	55	40
11	Feb-22	52	40	55	42	59	46	57	43
12	Mar-22	63	45	65	42	58	44	55	40

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Annexure-4

Shree Raipur Cement Plant
STP water Analysis report (mg/l)

Sr. No.	Location	Parameters	Prescribed Limit (mg/l)	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
				Not monitored due to COVID-19											
1	STP-1	pH	5.5-9.0			8.50	8.30	8.10	8.40	8.0	8.10	7.56	7.78	7.92	7.56
	STP-2					8.30	8.10	-	8.50	7.9	8.20	7.9	7.85	7.78	7.80
2	STP-1	TSS	100			30.00	42.00	45.00	47.00	38.0	40.0	46.0	32.0	25.0	26.0
	STP-2					17.00	36.00	-	43.00	40.0	41.0	36.0	22.0	30.0	18.0
3	STP-1	COD	250			50.00	96.00	68.00	76.00	70.0	70.0	47.80	40.64	42.8	46.80
	STP-2					60.00	102.00	-	82.00	60.0	80.0	45.7	32.24	36.4	28.64
4	STP-1	BOD (3 day 27°)	30			7.00	16.00	10.00	12.00	10.0	12.0	14.52	12.68	13.5	16.28
	STP-2					10.00	20.00	-	16.00	12.0	11.0	12.4	8.80	10.2	10.8
5	STP-1	Oil & Grease	10			<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	STP-2					3.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
6	STP-1	Fecal Coliform (MPN/100 ml)	1000			79.00	84.00	46	70	<100	<100	<100	<100	<100	<100
	STP-2					70.00	63.00	-	63	<100	<100	<100	<100	<100	<100

Mudat