

o/c - Env. Ras

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# SHREE CEMENT LTD.

An ISO 9001, 14001, 45001 & 50001 Certified Company

Regd. Office

BANGUR NAGAR, POST BOX NO.-33, BEAWAR 305901, RAJASTHAN, INDIA

SCL/Ras/Unit-III/Env. Statement/2022-23/ 5361

Date : 10.09.2022

To,  
The Member Secretary,  
Rajasthan Pollution Control Board,  
4, Institutional Area, Jhalana Doongri,  
JAIPUR-302004 (Rajasthan)

File No. C-057

Sub:- Environmental Statement for the period from 1<sup>st</sup> April 2021 to 31<sup>st</sup> March 2022 for Cement Plant-Unit-III of Shree Cement Limited situated at Village - Ras, Tehsil - Jaitaran, Dist. - Pali (Raj).

Ref:- (1) CTO No. F(Tech)/Pali(Jaitaran)/51(1)/2017-2018/6306-6308 dated 04.02.2022

Respected Sir,

We are submitting herewith Environmental Statement in Form V for the period from **1<sup>st</sup> April 2021 to 31<sup>st</sup> March 2022** for **Cement Plant Unit-III** of Shree Cement Limited situated at Village- Ras, Tehsil- Jaitaran, Dist- Pali (Raj).

This is for your kind information please.

Thanking you,  
Yours faithfully,

For Shree Cement Ltd;

(Satish Chander)  
Vice President & Unit Head

Encl: a/a  
Copy to:-

1. Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Jaipur , A-209&218, Aranya Bhawan, Mahatma Gandhi Road, Jhalana Institutional Area, Jaipur – 304002, Rajasthan
2. The Regional Officer, Rajasthan State Pollution Control Board, SA-6, Mandia Road, Industrial Area, Near Pali Urban Co-Operative Bank, Pali- 306401 (Raj.)

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**ENVIRONMENTAL STATEMENT**

**FORM - V**

**Shree Cement Limited: Unit - III**  
**Period from: April 2021 to: March 2022**

**PART - A**

1.	Name and address of the Owner / Occupier of the Industry operation or process	Shree Cement Ltd. Unit-III Cement Plant Village : Ras, Tehsil : Jaitaran, Dist: Pali-306107 (Rajasthan)
2.	Industry Category Primary (S.T.C. Code) Secondary (S.I.C. Code)	Red Category
3.	Production Capacity	1.55 Million TPA Clinker 2.2 Million TPA Cement
4.	Year of Establishment	2005
5.	Date of the last Environmental Statement submitted	10.09.2021

**PART - B**

**WATER AND RAW MATERIAL CONSUMPTION**

**(I) WATER CONSUMPTION:**

Process	:	N.A. (As plant is based on dry Process technology)
Cooling and dust Suppression	:	46245 KL
Domestic	:	66982 KL (Common for cement plant, power plant, synthetic gypsum plant & mines)

Name of Product	Process Water Consumption per Unit of Clinker & Cement Output	
	During Current Financial Year (2020-2021)	During Current Financial Year (2021-2022)
Clinker	0.04313 KL/ MT of Clinker	0.04008 KL/ MT of Clinker
Cement	0.04081 KL/ MT of Cement	0.04408 KL/ MT of Cement

**(II) RAW MATERIAL CONSUMPTION: (CEMENT/CLINKER)**

Name of Raw Material	Name of Product	Consumption of Raw Material Per Unit of Output (Cement)	
		During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
1. Limestone	Cement/ Clinker	1.447	1.553
2. Laterite /Iron Ore		0.016	0.018
3. Gypsum		0.068	0.059
4. Coal & Pet Coke		0.096	0.116
5. Fly Ash		0.014	0.0

**(III) POWER CONSUMPTION (KWH/T OF CLINKER & CEMENT):**

Product	During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
Cement	79.67	78.10
Clinker	49.85	46.90

**(IV) TOTAL CLINKER & CEMENT PRODUCTION (MT):**

Product	During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
Clinker	1027300	1153862
Cement	1085742	1049232

**PART - C**
**DISCHARGED TO ENVIRONMENTAL / UNIT OF OUTPUT**

Pollutants	Quantity of Pollutants Discharged (Mass/Day)	Concentration of Pollutants in Discharge (Mass/Value)	Percentage of variation from prescribed standard with reasons
Water	No waste water is being generated & discharged outside the plant premises.	As the plant is being operated on dry process technology, no liquid effluent is generated from the cement plant. The waste water generated from the office toilet and canteen is being treated in STP and treated water & sludge generated is being used in plantation & horticulture activities. Analysis Report of STP treated water is attached as <b>Annexure-3</b>	



(c)	1. Quantity rejected or re-utilized within the unit	100%	100%
	2. Sold	Nil	Nil
	3. Disposed	Nil	Nil

### 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

A. No Hazardous waste is generated from the process except used oil which is basically petroleum-based or synthetic oil, black in color & flammable in nature, generated from machineries / equipment. Used oil is being Co-processed in cement kiln as authorization obtained from RSPCB.

B. Used and old lead acid batteries are sold to CPCB/RPCB authorized recyclers.

Sr. No.	Particulars	Total Quantity	
		During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
1	Used oil (Co processed in Cement Kilns)	65250 Ltrs.	100985 Ltrs.
2	Used/old lead acid batteries waste (Sell to authorized recycler)	11.170 MT	11.282 MT

B. Hazardous wastes were received and co-processed as specified under Hazardous Wastes (Management, Handling & Trans boundary Movement Rule, 2016) during the Current Financial Year: 2021-2022 (During the Period of April -2021 to March-2022)

S. No.	Type of hazardous waste	Category	Quantity (MT)
1	Spent catalyst and molecular sieves	1.6	52.730
2	Drill cutting (oil and Gas exploring industries)	2.1	15285.731
3	Oil emulsion sludge	4.1	1759.460
4	Spent catalyst	4.2	494.460
5	Organic Residue from process	4.4	70.417
6	Spent Clay containing oil	4.5	91.493
7	Used Oil/ Spent Oil (Co-processing)	5.1	16.770
8	Grinding/Oily/waste or residues containing oil	5.2	7535.863
9	Phosphate sludge	12.5	386.081
10	Sludge from acid recovery unit	13.2	583.500
11	Carbon residue	18.2	25.270
12	"Contaminated aromatic, aliphatic or naphthenic solvents may or may not be fit for reuse"	20.1	14.935

13	Spent solvent	20.2	11559.555
14	Distillation residues	20.3	2657.330
15	Process waste residues and sludges	21.1	3763.565
16	Waste/ Residues Not made with vegetable or animal material	23.1	2963.025
17	Process waste sludge/ residues containing acid or other toxic metals or organic complexes	26.1	1460.799
18	Dust from air filtration system	26.2	6.345
19	"Spent acid (sulphuric acid) sch-I (26.3) and sch-II B-15"	26.3	100222.247 Utilizes as a RAW material for Synthetic Gypsum.
20	Process Residues and wastes	28.1	5869.375
21	Spent catalyst/spent carbon	28.2	7.775
22	Spent carbon	28.3	753.590
23	Off specification products	28.4	628.250
24	Date Expired Products (Pharma Industries)	28.5	123.615
25	Spent Solvent (Pharma Industries)	28.6	2385.02
26	Process waste/ residues	29.1	6272.270
27	Sludge Containing Residual Pesticides	29.2	18.105
28	Spent solvents	29.4	63.190
29	Contaminated cotton rags or other cleaning materials	33.2	61.640
30	Exhaust Air or Gas cleaning residue	35.1	10.070
31	Spent Ion exchange resin containing toxic metals	35.2	125.815
32	Chemical Sludge from Waste treatment	35.3	29355.414
33	Any process or distillation residue	36.1	3063.301
34	Incineration ash	37.2	41.775
35	Waste Mix Liquid	Sch-1	2408.233
<b>Total Quantity</b>			<b>200137.014</b>

Total 200137.014 MT hazardous waste has been co-processed/utilized at Ras complex during FY 2021-2022.

### **Bio-Medical Wastes:**

Bio-medical waste generated is common for cement plant, power plant and mines. During current financial year April-2021 to March-2022 under the Bio-Medical Waste (Management & Handling) Rules 2016, are as follows.

Period	Bio-Medical Waste Quantity (Kg) as per Color Coding			
	Red	Blue	Yellow	White
<b>April 2020 to March 2021</b>	58.6	53.5	20.2	28.3
<b>April 2021 to March 2022</b>	54.7	50.0	22.2	26.8

Above mentioned waste has been sent to Sales Promoter, CBWTF Bio Medical Treatment Facility, Jaipur Bye Pass Road, Ajmer (Raj.) for further disposal.

### **E- Wastes:**

Particulars	Total Quantity (Kg)	
	During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
From Process	Nil	Nil
From Pollution Control Facility	Nil	Nil

Total 10680 KG e waste generated from different categories i.e. electrical, instrumentation & information technology etc. is common for cement plant, power plant and mines. We have sold out generated e-waste of to RPCB authorized/registered recycler only.

**Solid Wastes:** - Other Municipal solid waste generated from all units (Cement Plant, Power Plant, Synthetic Gypsum plant and Nimbeti Limestone Mines) of the entire campus is being collected, manage and disposed as per MSW Rules, 2016.

### **Battery Wastes:**

As specified under Batteries (Management and Handling) Amendment Rules, 2010, we have sold out used/ scrap batteries of different categories is common for cement plant, power plant and mines to CPCB authorized recycler. The details are as follows:

Number of used batteries of categories mentioned in Sl. No 3 and Tonnage of scrap sent manufacturer /dealer / importer/registered recycler/or any other agency to whom the used batteries scrap was sent	Previous Year Financial Year (1 <sup>st</sup> Apr 2020 to 31 <sup>st</sup> Mar 2021)		Current Year Financial Year (1 <sup>st</sup> Apr 2021 to 31 <sup>st</sup> Mar 2022)	
	(i) No. of Batteries	(ii) Approximate Weight (In Metric Tonnes)	(i) No. of Batteries	(ii) Approximate Weight (In Metric Tonnes)
<b>(i) Automotive</b>				
a) Four wheeler	275	10.914	219	7.25
b) Two wheeler	Nil	Nil	Nil	Nil
<b>(ii) Industrial</b>				
a) UPS	32	0.256	504	4.032
b) Motive Power	Nil	Nil	Nil	Nil
c) Stand -by	Nil	Nil	Nil	Nil
<b>(iii) Others</b>	Nil	Nil	Nil	Nil
<b>Total</b>	<b>307 Nos.</b>	<b>11.170 MT</b>	<b>723 Nos.</b>	<b>11.282 MT</b>

## PART – G

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

Shree Cement Limited, Ras unit 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 air pollution control equipment like ESPs & Bag Houses. 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 back in process and neutralizing the cost of operation of pollution control equipment and hence no cost impact on the production cost.

Synthetic Gypsum is being used in place of natural gypsum thus directly conserves the mineral gypsum. Waste Heat Recovery System (WHRS) is installed at all kilns, pre-heaters and cooler sections for trapping gasses of high temperatures 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 various types of waste such as ETP sludge, Paint sludge, oily rags, waste mix solids, phosphate sludge, etc. for co-processing in cement kilns.

## PART – H

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

Green belt development and tree plantation is our ongoing process within our plant area and also outside the plant boundary. Every year we are doing new tree plantation to increase the density and bio-diversity of the area. Plantation has been carried out in an area of around 63.8 hectare with (Total land: 187.56 ha.) 165511 trees, which is ~34 % of the total land of plant area.

We have been incurred total Rs. 14.90 Crore in environment management in following activities:

1. Plantation and greenbelt development and their maintenance.
2. General and periodically maintenance of all pollution control measures i.e. Bag houses, ESPs, dust collectors.
3. Flooring, paved roads and continuous housekeeping by vacuum sweeping machines machine and maintenance of vacuum sweeping machines.
4. Effective waste managements in plant, mine and colony premises.
5. General and periodically maintenance of CEMS and CAAQMS instruments.
6. Operation and reoccurring of STP installed in plant and colony premises.
7. Celebration of important days for spreading awareness for protection of environment and conservation of natural resources.

The amount in same activities will be incurred in next year also.



**PART – I****ANY OTHER PARTICULATES FOR IMPROVING THE QUALITY OF ENVIRONMENT.**

1. We have full-fledged Environment Department with three separate cells, for monitoring, maintenance of pollution control equipment and Green Belt development.
2. Monitoring of stack emission, ambient air, noise & water quality is being done regularly basis.
3. Maintenance department is doing regular checking and scheduled maintenance of all the pollution control devices.
4. Civil dept. taking care of housekeeping.
5. Truck parking area and vehicle movement areas are paved and concreted to avoid any fugitive emissions.
6. Horticulture Department in coordination with environment department, is taking care of tree plantation and green belt development. Every year during monsoon season, we are doing new tree plantation. During 2021-2022 total 8692.56 tonnes of CO<sub>2</sub> has been sequestered by plantation done in cement plant, power plant & mine area.
7. Effective operation and maintenance of Bag House at Raw Mill & Kiln, Coal Mill, Cement mill and Cooler ESP.
8. Effective operation of cooler ESP transformer and control panel in first field to further reduce PM emission levels.
9. Constructed concreted roads at all Stacker and Re-claimer area for further reduction of fugitive emissions.
10. Installed new bag filters at various application like DBC, transfer points etc.
11. Modification of Coal Mill Bag House for further reduction of Particulate emissions.
12. Installed NO<sub>x</sub> mitigation systems in all cement kilns (Unit-3 to 10) as pollution control measure to achieve prescribed standards.
13. Covered shed and silos have been constructed for raw material storage.
14. Domestic waste water generated from office toilets and canteen is being treated at Sewage Treatment Plant (STP) and treated water is being utilized in plantation & gardening.
15. We are committed and maintaining Zero Liquid Discharge (ZLD) from our premises.

We are enclosing herewith following documents: -

Annexure-1: Stack Emission monitoring report (PM, SO<sub>2</sub> & NO<sub>x</sub>)

Annexure-2: Ambient Air Quality (PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>2</sub>) & Ambient Noise Level monitoring report

Annexure-3: STP treated water test report

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Shree Cement Ltd, Ras

Unit-III

Stack Emission Monitoring Report (PM, SO<sub>2</sub> & NO<sub>x</sub>)

Year: 2021-2022

S. No.	Month	Raw Mill & Kiln Stack			Coal Mill Stack	Cooler Stack	Cement Mill Stack
		PM	NO <sub>x</sub>	SO <sub>2</sub>	PM	PM	PM
	UoM	mg/Nm <sup>3</sup>					
1	Apr-2021	11.5	484.2	8.6	14.2	12.5	21.7
2	May-2021	22.1	424.6	10.0	13.5	10.4	15.7
3	Jun-2021	20.0	588.8	9.94	13.0	7.0	15.0
4	Jul-2021	18.8	482.4	19.3	12.5	10.4	14.2
5	Aug-2021	14.2	512.44	7.18	22.6	8.7	20.4
6	Sep-2021	9.0	497.5	11.6	19.1	11.9	17.8
7	Oct-2021	14.2	384.9	3.1	7.9	9.4	15.6
8	Nov-2021	9.2	340.4	8.7	17.8	7.6	21.5
9	Dec-2021	13.6	604.5	6.3	15.4	5.4	19.3
10	Jan-2022	15.2	586.3	6.1	18.0	6.1	21.2
11	Feb-2022	9.7	675.0	3.0	14.9	6.8	17.2
12	Mar-2022	12.2	483.6	0.0	15.8	5.1	19.7
<b>Average</b>		<b>14.1</b>	<b>505.4</b>	<b>7.8</b>	<b>15.4</b>	<b>8.4</b>	<b>18.3</b>

**Annexure: 2**
Shree Cement Ltd, Ras
**Ambient Air Quality ( $\mu\text{g}/\text{m}^3$ ) Monitoring Report For The Period Of April 2021 To March 2022**
Common for Cement plant & Power plant

Location →	Plant Boundary Near Main Gate				Plant Boundary Near Mess				Plant Boundary towards Stacker & Reclaimer				Plant boundary towards village Khera & Jawangarh			
	AAQ in $\mu\text{g}/\text{m}^3$				AAQ in $\mu\text{g}/\text{m}^3$				AAQ in $\mu\text{g}/\text{m}^3$				AAQ in $\mu\text{g}/\text{m}^3$			
Parameter →	PM 2.5	PM 10	SO <sub>2</sub>	NO <sub>2</sub>	PM 2.5	PM 10	SO <sub>2</sub>	NO <sub>2</sub>	PM 2.5	PM 10	SO <sub>2</sub>	NO <sub>2</sub>	PM 2.5	PM 10	SO <sub>2</sub>	NO <sub>2</sub>
Apr-2021	29.5	38.4	8.1	8.5	26.8	41.8	7.8	8.2	26.5	42.3	7.6	8.1	24.9	39.5	7.3	7.7
May-2021	31.1	37.3	7.8	8.4	29.6	41.3	7.7	8.5	27.9	42.1	7.5	7.9	25.6	36.8	7.2	7.8
Jun-2021	31.6	40.6	7.9	8.9	30.5	45.4	7.5	8.5	32.1	41.8	7.6	8.3	27.8	39.5	7.2	8.1
Jul-2021	33.1	44.8	8.7	11.5	32.2	47.3	8.2	9.9	36.1	45.8	8	9.6	25.9	33.6	7.6	9.0
Aug-2021	30.5	41.9	8.2	12.3	28.8	38.4	7.7	9.4	34.9	48.2	7.6	9.1	22.8	30.3	7.2	8.6
Sep-2021	28.1	34.8	7.6	8.9	31.0	39.5	8.3	8.7	31.4	40.8	7.7	8.4	20.6	28.6	7.2	8.2
Oct-2021	27.4	35.5	8.5	10.8	26.5	39.5	8.7	11.8	28.1	37.8	8.4	10.4	25.6	34.4	7.9	10.0
Nov-2021	29.4	41.7	8.2	11.4	26.9	42.6	8.5	12.8	28.9	43.6	8.2	9.6	24.6	37.6	7.7	9.7
Dec-2021	32.9	43.8	8.6	12.6	27.7	35.4	8.6	14.6	25.6	37.1	8.4	10.1	27.4	37.9	8.0	10.4
Jan-2022	31.5	54.5	8.9	12.9	29.5	50.4	8.6	15.8	25.6	42.8	8.5	11.3	24.1	36.6	8.2	11.7
Feb-2022	24.1	47.0	9.3	12.8	23.3	50.8	9.9	14.3	24.3	43.0	9.4	11.9	24.0	37.9	9.0	11.6
Mar-2022	28.2	60.5	9.0	11.9	29.3	63.4	9.4	13.4	30.0	53.5	8.7	11.5	27.0	52.6	8.3	11.3
<b>Average</b>	<b>29.8</b>	<b>43.4</b>	<b>8.4</b>	<b>10.9</b>	<b>28.5</b>	<b>44.7</b>	<b>8.4</b>	<b>11.3</b>	<b>29.3</b>	<b>43.2</b>	<b>8.1</b>	<b>9.7</b>	<b>25.0</b>	<b>37.1</b>	<b>7.7</b>	<b>9.5</b>

**Shree Cement Ltd, Ras**
**Ambient Noise Level dB(A) Monitoring Report For The Period Of April 2021 To March 2022**
**Common for Cement plant & Power plant**

Location →	Plant Boundary Near Main Gate		Plant Boundary Near Mess		Plant Boundary towards Stacker & Reclaimer		Plant boundary towards village Khera & Jawangarh	
	Noise Level in dB(A)		Noise Level in dB(A)		Noise Level in dB(A)		Noise Level in dB(A)	
Parameter → Month ↓	Day time	Night time	Day time	Night time	Day time	Night time	Day time	Night time
Apr-2021	73.1	63.7	61.5	58.4	72.6	62.3	65.2	57.5
May-2021	72.1	63.2	66.9	58.4	73.8	63.1	65.5	56.8
Jun-2021	70.3	64.1	64.1	57.2	73.1	63.8	65.5	59.4
Jul-2021	71.1	63.6	63.4	57.7	72.2	63.4	64.6	60.2
Aug-2021	70.5	61.2	66.1	56.3	71	61.8	63.1	59.4
Sep-2021	68.6	62.3	63.1	58.1	73.6	65.4	62.8	58.3
Oct-2021	72.3	66.2	68.2	62.4	74.1	67.1	66.9	62.5
Nov-2021	70.4	63.9	67.5	61.8	71.8	68.5	63.1	61.7
Dec-2021	72.3	66.2	68.2	62.4	74.1	67.1	66.9	62.5
Jan-2022	71.4	68.3	70.2	66.7	73.2	64.2	65.3	60.7
Feb-2022	71.7	66.1	69.5	63.6	71.4	62.1	65.3	61.2
Mar-2022	71.7	66.1	69.5	63.6	71.4	62.1	65.3	61.2
<b>Average</b>	<b>71.3</b>	<b>64.6</b>	<b>66.5</b>	<b>60.6</b>	<b>72.7</b>	<b>64.2</b>	<b>65.0</b>	<b>60.1</b>

**Shree Cement Ltd, Ras**

**(STP Treated Water Quality Report for the period of April' 2021 to March' 2022)**

S. No.	Parameter ↓	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.
1	pH	7.3	7.61	7.29	7.25	7.56	7.88	7.22	7.6	7.29	6.94	7.88	7.1	<b>7.39</b>
2	Total Suspended Solids (mg/L)	44	73	42.3	48	57	61	68	49	42.3	49	72	48	<b>60</b>
3	Oil and Grease (mg/L)	3.1	1.37	2.21	3.2	3.1	1.14	2.4	1.7	2.21	2.17	2.44	1.4	<b>2.4</b>
4	BOD 3days 27°C (mg/L)	17.6	14	25	14	9	21	26	22	25	20	14	12	<b>16.3</b>
5	COD (mg/L)	98	114	74.2	90.7	78	49.2	87	106	74.2	101	97	122	<b>103</b>