

NBH/PC/ESR/

Date: 24.09.2024

To,

The Member Secretary,

Rajasthan State Pollution Control Board,

4, Industrial Area, Jhalana Dungri

JAIPUR – 302004 (Raj)

Subject: Environmental Statement Report for the year FY 2023-2024 of Cement Plant of M/s J.K. Cement Works, Nimbahera, Tehsil: Nimbahera, Dist.: Chittorgarh (Rajasthan).

Ref.: F (HSW) / Chittorgarh (Nimbahera)/ 20 (I)/2020-21/2022-2023/2567-2569 Order No. 2022 – 2023 / CPM / 8620 dated 22.09.2022.

Dear Sir,

Kindly refer to above subject matter, please find enclosed herewith Environment Statement Report of Cement Plant of J. K. Cement Works, Nimbahera for the FY 2023-24 for your reference and record. We trust you will find the same in order.

Thanking You.

Yours Faithfully

For J.K. Cement Works, Nimbahera



Manish Toshniwal
President (Operations)

Encl: as above.

Copy:

The Regional Officer, Rajasthan State Pollution Control Board, Near FCI Godown, Chanderiya-312021, Distt. - CHITTORGARH (RAJ)

Corporate Office

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ENVIRONMENTAL STATEMENT FORM - V

Environmental Statement for the financial year 2023-24, ending the 31st March 2024

PART-A

| | |
|--|--|
| i. Name an address of the owner/occupier of the industry operation or process | J.K. Cement Works, Nimbahera (Cement Plant) Kailash Nagar, Tehsil: Nimbahera, Chittorgarh (Rajasthan) PIN- 312617 |
| ii. Industry category Primary - (STC Code) Secondary - (STC Code) | Primary |
| iii. Production capacity | Clinker – 3.20 MMTPA Cement-4.90MMTPA |
| iv. Year of establishment- (UNIT WISE) | |
| Unit-1 | 1974 |
| Unit-2 | 1978 |
| Unit-3 | 1982,1988,1998-99,2021 |
| Unit-4(HRP) | 2019 |
| v. Date of last environmental statement submitted | 22.09.2023 |

PART-B

WATER AND RAW MATERIAL CONSUMPTION

i. WATER CONSUMPTION in m3/day

Process &Cooling : 1020.31 m3/day (GW-327.8 +SW-692.44)

Domestic : 17 m3/day

| Name of products | Process water consumption per unit of products | |
|------------------|--|---|
| | During the previous financial year (2022-23) (KL/MT) | During the current financial year (2023-24) (KL/MT) |
| 1. CEMENT | 0.074 | 0.113 |

* Total water consumption including utilization of WHR waste water in Cement plant.

ii. RAW MATERIAL CONSUMPTION

| Name of raw material | Name of products | Consumption of raw material per unit of output | |
|---|------------------|--|---|
| | | During the previous financial year (2022-23) | During the current financial year (2023-24) |
| Limestone | Clinker | 1.395 | 1.40 |
| Laterite / Redocher | | 0.086 | 0.097 |
| Coal | | 0.035 | 0.029 |
| Petcoke | | 0.072 | 0.066 |
| Alternative Fuel resources and Alternative Raw material | | 0.0434 | 0.046 |
| Gypsum | Cement | 0.100 | 0.046 |
| Flyash% of PPC in Cement | | 0.322 | 0.182 |
| Alternative Raw Material and Performance improver | | 0.015 | 0.072 |

PART-C

POLLUTION DISCHARGE TO ENVIRONMENT / UNIT OF OUTPUT

| Pollutants | Quantity of pollutants discharged (kg/ ton of Clinker) | Concentration of pollutants in discharge (mg/Nm3) | Percentage of variation from prescribed standards with reasons | | |
|--|--|---|--|-------------|------------|
| (a) Water | Cement plant is being operated on dry process technology, hence no liquid effluent is generated. Domestic waste water generated from the office toilet and canteen is being treated in STP and treated water used in plantation & horticulture purpose within the premises. | | | | |
| (b) Air | Stack Emission (yearly average) | | | | |
| PM | 0.023 | 11.7 | -67.16 % | | |
| SO2 | 0.021 | 8.97 | -86.54% | | |
| NOx | 1.058 | 258.61 | -51.51% | | |
| Note:- Cumulative Stack Emissions for L-1,2 and L-3 | | | | | |
| Ambient Air Quality Monitoring Results (yearly average) | | | | | |
| Location | Parameters | | | | |
| | PM10 (µg/m3) | PM2.5 (µg/m3) | SO2 (µg/m3) | NOx (µg/m3) | CO (mg/m3) |
| Main security gate | 67.1 | 29.3 | 7.2 | 20.7 | 557 |
| Near thermal power plant | 71.3 | 29.4 | 21.3 | 22.7 | 585 |
| Near new J.K. factory gate | 65.4 | 32.5 | 11.6 | 21.2 | 626 |

| | | | | | |
|-----------------|------|------|------|------|-----|
| Near Mines gate | 70.0 | 28.6 | 11.1 | 24.5 | 611 |
|-----------------|------|------|------|------|-----|

STP yearly average Analysis report

| S.No. | PARAMETER | Standards | Yearly Average |
|-------|--|------------------------|----------------|
| 1 | pH | Between 5.5 to 9.0 | 7.65 |
| 2 | Total Suspended solids | Not to exceed 100 mg/l | 33.2 |
| 3 | Chemical Oxygen Demand | Not to exceed 250 mg/l | 121.1 |
| 4 | Biological Oxygen Demand (3 days at 27 Degree C) | Not to exceed 30 mg/l | 18.08 |
| 5 | Oil & Grease | Not to exceed 10 mg/l | 2.7 |
| 6 | Ammonical Nitrogen (as N) | Not to exceed 50 mg/l | 3.73 |

Noise level monitoring data

| Month | Main Security Gate | | Thermal Power Plant | | New JK Factory Gate | | Mines Office | |
|----------------|--------------------|-------|---------------------|-------|---------------------|-------|--------------|-------|
| | Day | Night | Day | Night | Day | Night | Day | Night |
| Apr-23 | 64.6 | 52.1 | 60.3 | 50.2 | 69.7 | 55.5 | 68.4 | 54.1 |
| May-23 | 66.2 | 54.8 | 66.7 | 50.1 | 65.7 | 52.1 | 68.3 | 59.4 |
| Jun-23 | 69.7 | 53.4 | 65.8 | 49.5 | 68.2 | 55.8 | 70.3 | 52.1 |
| Jul-23 | 68.5 | 55.9 | 64.6 | 52.3 | 66.4 | 54.8 | 69.4 | 56.5 |
| Aug-23 | 68.4 | 54.2 | 62.1 | 52.2 | 66.7 | 53.5 | 65.4 | 50.1 |
| Sep-23 | 70.1 | 53.4 | 68.9 | 54.3 | 68.4 | 54.6 | 63.7 | 52.2 |
| Oct-23 | 70.1 | 53.4 | 68.9 | 54.3 | 66.1 | 43.1 | 63.7 | 52.2 |
| Nov-23 | 67.5 | 54.3 | 60.1 | 50.2 | 61.2 | 49.4 | 66.2 | 55.3 |
| Dec-23 | 68.1 | 54.7 | 62.1 | 54.1 | 59.3 | 48.1 | 69.2 | 54.1 |
| Jan-24 | 66.2 | 52.1 | 60.1 | 50.8 | 52.2 | 45.1 | 69.6 | 52.1 |
| Feb-24 | 68.2 | 54.2 | 62.5 | 52.1 | 61.9 | 49.1 | 64.2 | 51.8 |
| Mar-24 | 64.2 | 52.1 | 64.1 | 51.4 | 53.2 | 45.4 | 63.1 | 50.3 |
| Average | 67.92 | 53.71 | 63.85 | 51.79 | 64.16 | 50.54 | 66.79 | 53.35 |

PART-D

(As specified under Hazardous & Other Waste Management Rules-2016)

| | |
|-----------------|----------------|
| Hazardous waste | Total Quantity |
|-----------------|----------------|

| | Total Quantity | |
|--|--|---|
| | During previous financial year (2022-23) (KL) | During current financial year (2023-24) (KL) |
| (a) From process | Used oil (5.1)- 40.4* Waste oil (5.2)- 19.0* | Used oil (5.1)- 19.61 Waste oil (5.2)- Nil |
| (b) From pollution Control facilities | Not applicable | Not applicable |

*including Cement Plant, CPP, WHRS, Mines & Colony. Hazardous waste generated are being sold to authorized recycler by CPCB.

PART-E
SOLID WASTE

| | | Total Quantity | |
|-----|---|---|---|
| | | During previous financial year (2022-23) (MT/Year) | During current financial year (2023-24) (MT/Year) |
| (a) | From process | NONE | NONE |
| (b) | From pollution control facility | Dust collected in ESP, bag house and bag filters are recycled into the system | Dust collected in ESP, bag house and bag filters are recycled into the system |
| (c) | Quantity rejected or reutilized with in the unit | 100% | 100% |

PART-F

PLEASE SPECIFY THE CHARACTERISATIONS (IN TERMS OF COMPOSITION AND QUANTUM) OF HAZARDOUS AS WELL AS WASTES AND INDICATE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES.

- 1) Hazardous waste generated in the form of used oil / spent oil, waste / residue containing oil, which is stored in barrels at safe & dedicated area in covered shed and sold to Authorized recycler approved by Central Pollution Control Board.
- 2) Dust collected from pollution control equipment's (i.e. from ESP, Bag house and Bag filter) is totally recycled in the process.

PART-G

IMPACT OF THE POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION.

Cement manufacturing is a dry process technology, hence no effluent generated from process. 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 ESPs and Bag filters installed at various material transfer points to arrest the fugitive emissions. The particulate matter collected from the pollution control equipment is recycled in process and optimizing the cost of operation of pollution control equipment, conserving natural raw material and hence no impact on the environment.

PART-H

ADDITIONAL MEASURES / INVESTMENT PROPOSALS FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT POLLUTION, PREVENTION OF POLLUTION.

- 1) Conducted 3rd party stack emission monitoring during co-processing of AFR in Cement Kiln.
- 2) Covered shed constructed for limestone, Jarosite, Red Mud storage.
- 3) Reed Bed STP installed with capacity of 55 KLD and 35 KLD to treat the additional Sewage.
- 4) WHRS water cooled to Air Cooled system.

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF ENVIRONMENT

- 1) Monitoring of stack emission and ambient air and water quality is being done regularly as mentioned in consent to operate.
- 2) 4 nos. of Continuous Ambient Air Quality Monitoring Systems (CAAQMS) has been installed at periphery of the plant.
- 3) Continuous Emission Monitoring Systems (CEMS) for PM, SO₂ & NO_x have been installed at stack of Kiln section and for monitoring of PM emission CEMS has installed at stack coal mill, cooler & cement mill and real time data transfer to RSPCB & CPCB (13 nos. CEMS).
- 4) Bag filters have been installed at various material transfer points to control fugitive emission.
- 5) Cement being manufacturing in dry process and there is no any effluent generated from the process hence maintaining Zero Effluent Discharge unit.
- 6) Apart from this fly ash purchased from nearby thermal power plant and use for cement production.
- 7) Raw materials are storage in covered shed, product in closed silo with high efficient bag filters for fugitive dust emission control.
- 8) To utilization of waste heat, Waste heat recovery system has been installed to generate green power.
- 9) Proper Housekeeping and cleaning is being done with the help of three road sweeping machines.
- 10) Emphasis the more transportation of Raw Material and finish product are being transported through rail.

- 11) Domestic waste water generated is being treated in sewage treatment plant (STP). Treated water is utilized for plantation / horticulture development.
- 12) Cover shed Constructed to store the raw material, to avoid fugitive emission. Finish product stored in closed silo.
- 13) All Belt Conveyor belt are fully covered & also installed Bag filter at all material transfer points 14) Cemented road constructed to avoid fugitive dust generation during the movement of vehicle. 15) Telemetry system installed for online ground water level monitoring.
- 14) Industry has constructed 15 nos. of rain water harvesting structures in plant and colony area and 02 Nos. Check bund on seasonal nallah and 01 water pond at Nimbahera plant to recharge ground water more than 200%.
- 15) Total plantation 3237 nos. till 31st March 2022 on 32.36 Ha. Area., Apart from this 12238 tree sapling planted in 2023 -2024 to increase the plant density.
