

NBH/PC/ESR/21

763

Date: 22.09.2023

To,

The Member Secretary,

Rajasthan State Pollution Control Board,

4, Industrial Area, Jhalana Dungri

JAIPUR - 302004 (Raj)

Subject: Environmental Statement Report for the FY 2022-2023 of Waste Heat Recovery Power Plant (13.2 MW) of M/s J. K. Cement Works, Nimbahera, Tehsil: Nimbahera, Distt: Chittorgarh (Rajasthan).

Ref.: F(CPM)/Chittorgarh/Nimbahera/4002(1)/2020-2021/5680-5682, Order no. 2022-2023/CPM/8694, Dated 16/01/2023.

F (Tech) /CHITTORGARH (NIMBAHERA) /5(1) / 2010-2011 / 4732 - 4734, Order no. 2018-2019 / CPM / 5349, Dated 29/10/2018.

Dear Sir,

Kindly refer to above subject matter, please find enclosed herewith Environment Statement Report of Waste Heat Recovery Power Plant (13.2 MW) of M/s J. K. Cement Works, Nimbahera for the FY 2022-2023 for your kind reference and record. We believe you will find the same in order.

Thanking You.

Yours Faithfully

For J.K. Cement Works, Nimbahera

R. B. M. Tripathi
President (Operations)

Encl: as above.

Copy:

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

Corporate Office

- Padam Tower, 19 DDA Community Centre Okhla, Phase - 1, New Delhi - 110020, India
- +011-49220000
- admin.padamtower@jkcement.com
- www.jkcement.com

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ENVIRONMENTAL STATEMENT

FORM - V

Environmental Statement for the financial year 2022-23, ending the 31st March 2023

PART-A

i. Name an address of the owner/occupier of the industry operation or process	J. K. Cement Works, Nimbahera (13.2 MW Waste Heat Recovery System) Kailash Nagar, Tehsil: Nimbahera, Chittorgarh (Rajasthan) PIN- 312617
ii. Industry category Primary - (STC Code) Secondary - (STC Code)	Primary
iii. Production capacity	13.2 MW
iv. Year of establishment-	2007
v. Date of last environmental statement submitted	19 th September 2022

PART-B

WATER AND RAW MATERIAL CONSUMPTION

i. **WATER CONSUMPTION** in m3/day

Process : - Nil

Cooling : - 1750 m3/day

Domestic : - 05 m3/day

Name of products	Process water consumption per unit of products	
	During the previous financial year (2021-22) (KL/MWh)	During the current financial year (2022-23) (KL/MWh)
1. Power (Electricity)	7.00	5.69

ii. **RAW MATERIAL CONSUMPTION**

Name of raw material	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)
Waste hot gases from Kiln & Cooler	Power (Electricity)	Waste heat recovered from Kiln-1, Kiln-2, Kiln-3, Cooler (Waste hot gases depends up on availability)	

PART-C

POLLUTION DISCHARGE TO ENVIRONMENT / UNIT OF OUTPUT

Pollutants	Quantity of pollutants discharged (Ton/Day)	Concentration of pollutants in discharge (mg/Nm3)	Percentage of variation from prescribed standards with reasons		
(a) Water	Effluent waste water generated from blow down of cooling tower and DM plant waste water treated in neutralization pit as prescribed by Rajasthan State Pollution Control Board and treated water is being utilized in cement plant in cooling purpose, hence maintaining Zero Liquid Discharge unit.				
(b) Air	Waste heat recovery power plant has no any stack , hence it is not applicable				
Ambient Air Emission (yearly average)					
Location	Parameters				
	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NOx (µg/m3)	CO (mg/m3)
Main security gate	56.55	26.97	13.0	23.1	657.4
Near thermal power plant	57.93	29.53	14.2	25.3	694.2
Near new J.K. factory gate	56.08	29.46	12.0	22.1	732.0
Near Mines gate	57.86	26.05	13.5	23.1	714.8

STP yearly average Analysis report

S.No.	PARAMETER	Standards	Average
1	pH	Between 5.5 to 9.0	7.59
2	Total Suspended solids	Not to exceed 100 mg/l	30.12
3	Chemical Oxygen Demand	Not to exceed 250 mg/l	105.70
4	Biological Oxygen Demand (3 days at 27 Degree C)	Not to exceed 30 mg/l	15.52
5	Oil & Grease	Not to exceed 10 mg/l	2.38
6	Ammonical Nitrogen (as N)	Not to exceed 50 mg/l	4.49
7	Sulphide (as S)	Not to exceed 2.0 mg/l	7.59
8	Total Kjeldahl Nitrogen (as N)	Not to exceed 100 mg/l	30.12
9	Residual Chlorine	Not to exceed 1.0 mg/l	105.70

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-22	66.2	52.2	67.5	51.4	64.9	54.3	68.8	52.1
May-22	68.5	54.2	63.6	54.1	64.2	55.3	70.2	52.1
Jun-22	62.2	55.6	69.2	52.1	63.6	58.4	64.8	54.8
Jul-22	66.3	54.2	65.4	55.2	67.8	56.3	66.2	52.2
Aug-22	64.5	52.9	66.8	54.6	70.2	59.4	64.8	55.9
Sep-22	67.8	56.8	64.1	52.3	68.1	54.1	70.1	51.8
Oct-22	65.4	55.6	64.3	50.5	62.3	54.3	67.5	52.1
Nov-22	68.6	54.3	62.4	52.1	69.4	58.6	65.4	54.8
Dec-22	62.1	54.2	60.4	51.4	66.7	56.2	68.4	63.7
Jan-23	69.4	54.3	60.6	54.9	65.4	55.2	63.2	56.4
Feb-23	70.8	56.3	60.1	51.6	68.6	54.7	62.1	55.2
Mar-23	68.2	54.3	62.4	54.6	70.1	55.9	65.6	52.3
YTD Avg	66.7	54.6	63.9	52.9	66.8	56.1	66.4	54.5

Neutralization pit treated waste water yearly average Analysis report

S.No.	PARAMETERS	RPCB Limits	AVERAGE
1	pH	Between 6.5 to 8.5	7.64
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	33.18
3	Oil & Grease	Not to exceed 20 mg/l	2.50
4	Bio-Chemical Oxygen Demand (BOD) (3 Days at 270C)	Not to exceed 30 mg/l	11.98
5	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	68.75
6	Phosphate	Not to exceed 5 mg/l	132.73
7	Iron (as Fe)	Not to exceed 1.0 mg/l	80.99
8	Total Chromium (as Cr)	Not to exceed 0.2 mg/l	0.10
9	Free Available chlorine	Not to exceed 0.5 mg/l	0.01
10	Copper as (Cu)	Not to exceed 1.0 mg/l	0.02
11	Zinc (Zn)	Not to exceed 1.0 mg/l	0.10
12	Temperature	Not more than 5 °C higher than the intake water temperature	4° C Higher than the intake water

PART-D

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

Hazardous waste	Total Quantity	
	During previous financial year (2021-22) (KL)	During current financial year (2022-23) (KL)
(a) From process	Used oil (5.1)- 8.60* Waste oil (5.2)-11.0	Used oil (5.1)- 40.4* Waste oil (5.2)-19.0
(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 authorized by CPCB.

PART-E
SOLID WASTE

		Total Quantity	
		During previous financial year (2021-22) (MT/Year)	During current financial year (2022-23) (MT/Year)
(a)	From process	Not applicable	Not applicable
(b)	From pollution control facility	Not applicable	Not applicable
(c)	Quantity reutilized with in the unit	Not applicable	Not applicable

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 and sold to authorized recycler approved by Central Pollution Control Board.
- 2) Waste hot gas release from Kiln & Cooler section totally use for power generation by WHRS.
- 3) Effluent waste water generated from blow down of cooling tower and DM plant waste water treated in neutralization pit as prescribed by Rajasthan State Pollution Control Board and treated water is being utilized in cement plant in cooling purpose, hence maintaining Zero Liquid Discharge unit.

PART-G

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

Industry have installed neutralization pit for proper treatment of trade effluent to control the norms under the prescribed limit as specified by Rajasthan State Pollution Control Board. Treated water is utilized in process and machinery cooling purposes in cement plant.

PART-H

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

Not Applicable

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF ENVIRONMENT

- 1) Ambient air and water quality is being monitored on 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 and real time data provided to RSPCB & CPCB.
- 3) To utilization of waste heat, Waste heat recovery system has been installed to generate green power.
- 4) Proper Housekeeping and cleaning is being done with the help of three road sweeping machines.
- 5) Domestic waste water generated is being treated in sewage treatment plant (STP). Treated water is utilized for plantation / horticulture development.
- 6) Effluent waste water generated from WHRS is being totally treated in neutralization pit and reused in cement plant.
- 7) Cemented road constructed to avoid fugitive dust generation during the movement of vehicle.
- 8) Telemetry system installed for online ground water level monitoring.
- 9) 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%.
- 10) Total plantation 90481 nos. till 31st March 2022 on 32.36 Ha. Area., Apart from this 3237 tree sapling planted in 2022-2023 to increase the plant density.
