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Ref: PJJ/ENV/F15/2024/861

Date: 27.09.2024

To,  
The Member Secretary,  
M.P. Pollution Control Board  
Paryavaran Parisar  
Sector E-5, Arera Colony  
Bhopal (M.P.) - 462016

Sub: Submission of Environment Statement Reports (Form-V) for the FY23-24.

Dear Sir,

With reference to the above mentioned subject, we are herewith submitting the Environment Statement Reports of our Cement Plant Unit-I, Unit-II and Waste Heat Recovery System for the FY23-24.

This is for your kind information please.  
Thanking You,

Yours faithfully,  
For Prism Johnson Limited

  
Manoj Kumar Kashyap  
Vice President

Encl: As Above

CC: The Regional Director - MoEF&CC, Bhopal (M.P.)  
The Regional Officer – MPPCB, Satna (M.P.)

**PRISM JOHNSON LIMITED**  
(Cement Division)



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CIN: L26942TG1992PLC014033

## FORM-V

(See Rule – 14)

### Environment Statement for the financial year ending the 31<sup>st</sup> March 2024

#### PART – A

- i) Name & Address of the owner /occupier : **MANISH SINGH**  
of the industry, operation or process **President & Plant Head**  
**PRISM JOHNSON LIMITED**  
(Cement Division) Village - Mankahari,  
Post – Bathia, Dist. – Satna (M.P.)
- ii) Industry category Primary (STC) Code : CEMENT PLANT (Large Scale) &  
Secondary (SIC) Code DG 4 X 6 MW
- iii) Production Capacity (Units) : 3.5 Million Tons/ Year Cement  
2.5 Million Tons/ Year Clinker  
Generation of Electricity (4\*6 M.W.) 24 MW
- iv) Year of Establishment : Plant 1997 & DG 2000
- v) Date of the last Environment Statement : 08.09.2023  
Submitted

#### PART – B

#### Water and Raw Material Consumption

##### (I) Water Consumption m<sup>3</sup>/d

- Process : NIL
- Cooling : 1000 m<sup>3</sup>/d (As per CTO)
- Domestic : 280 m<sup>3</sup>/d (As per CTO) \*

Name of Product	Process water consumption per unit of product output	
	During FY (01.04.22 – 31.03.23)	During FY (01.04.23 – 31.03.24)
1. Cement	NIL	NIL
2. Electricity	0.002023 m3/Kwh	0.00219 m3/Kwh

\*Domestic water mentioned above is inclusive of domestic water consumption of Cement Plant Unit – I & DG Sets.

**(I) Raw Material Consumption**

Name of Raw Material	Name of Product	Consumption of raw material per unit of output	
		During FY (01.04.22 - 31.03.23)	During FY (01.04.23 – 31.03.24)
Crushed Limestone	Clinker	1.3984 MT/MT of Clinker	1.4234 MT/MT of Clinker
Iron Ore & Bauxite High alumina or sweetner	Clinker	0.0206 MT/MT of Clinker	0.0755 MT/MT of Clinker
Coal	Clinker	0.0519 MT/MT of Clinker	0.0576 MT/MT of Clinker
Pet Coke	Clinker	0.0644 MT/MT of Clinker	0.0062 MT/MT of Clinker
<b>DG set (4 X 6 MW)*</b>			
Lube Oil	Electricity	0.3818 Lit/kWh	0.08479 Lit/kWh
Furnace oil	Electricity	0.4909 Lit/kWh	0.30289 Lit/kWh

\*DG set running hour is 40.2 hour in fiscal year.

Name of Raw Materials	Name of Products	Consumption of raw material per unit of output	
		During FY (01.04.22 – 31.03.23)	During FY (01.04.23 – 31.03.24)
Clinker	Cement	0.7030 MT/MT of cement	0.7037 MT/MT of cement
Gypsum	Cement	0.3516 MT/MT of cement	0.0497 MT/MT of cement
Fly Ash	Cement	0.2570 MT/MT of cement	0.2466 MT/MT of cement

**Remark:** Consumption of raw material based on gross cement (OPC + PPC).

**PART – C****Pollution discharged to environment/ unit of output**

**(Parameter as specified in consent issued)**

Pollutants	Quantity of Pollutants discharged (mass/day)	Concentration of pollutants in discharges (mass / volume)	Percentage of variation from prescribes standards with reason
(a) Water #	Please refer Annexure – I		
(b) Air *	Please refer Annexure – II		

# No waste water discharged to the environment as Cement plant based on dry process based technology. Domestic effluent treated in sewage treatment plant and treated water reuse in horticulture. Treated water parameters are within prescribed limit. Details enclosed as Annexure – I.

\* Air emission parameters are well within prescribed norms. Details enclosed as Annexure – II.

**PART – D**  
**Hazardous Wastes**

(As specified under Hazardous Wastes (Management & Handling) Rules, 2016)

Hazardous wastes	Total Quantity (MT)	
	During FY (01.04.22 – 31.03.23)	During FY (01.04.23 – 31.03.24)
(a) From Process	40.349 MT	29.925 MT
(b) From Pollution Control Facilities	NIL	NIL

**PART – E**  
**Solid Wastes**

Solid waste	Total Quantity (KG)	
	During FY (01.04.22 – 31.03.23)	During FY (01.04.23 – 31.03.24)
(a) From Process	NIL	NIL
(b) From Pollution Control Facilities	7185.12 Kg *(Sewage Sludge)	5285.91 Kg *(Sewage Sludge)
(c) 1) Quantity Recycles or Re utilized within the unit	7185.12 Kg (Sewage Sludge)	5285.91 Kg (Sewage Sludge)
2) Sold	NIL	NIL
3) Disposed	NIL	NIL

\*Common STP for treatment of domestic waste water generated from the domestic effluent. Treated water utilized for horticulture and sludge is being used as manure.

**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 these categories of wastes.**

- Total used/spent oil sold (disposed) was 29.925 MT during the financial year 01.04.23 to 31.03.24. Dust trapped in air pollution control equipment i.e. Baghouse/ESP is being recycled in processing for cement manufacturing.
- Sludge (5285.91 kg) generated from sewage treatment plant was utilized as manure for gardening and horticulture purpose inside the factory premises.
- In DG set Furnace oil sludge from underneath of separators is collected in 18 KL Mild steel storage tank by means of pump and closed pipe line. From where it is filled in the tanker & sell to the authorized recycler under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. Lube oil waste is collected in barrels of 210 Litre capacity and sold to the authorized recycler under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. Since electricity is taken from MP state electricity board and from renewable energy sources installed in plant such as WHRS & solar and DG sets are in stand by unit, due to which the used oil and FO sludge generation was also less during the year.

- For hazardous waste reduction, we co-process hazardous waste & non-hazardous waste in calciner as AFR. Liquid waste is fed directly to the calciner while for solid waste we have installed pre – processing system comprising shredder, magnetic separator, screening, weigh feeder, conveyor etc. and fully mechanized feeding system. In the line of same, we have co-processed 7089.45 MT of liquid waste in unit-1 in FY2023-24.

## **PART – G**

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

- The main pollutant generated from cement plant is Particulate matter. To maintain emission norms within prescribed limit following pollution control equipment's have been installed right from commissioning of plant.

<b>S. No.</b>	<b>Particular</b>	<b>Pollution Control Equipment</b>
1.	Raw Mill / Kiln	Reverse air bag house
2.	Cooler	ESP
3.	Coal Mill	Bag Filter
4.	Cement Mills	Bag Filter

- Currently more than 78 bag filters have been installed in unit-1 plant at different transfer points for control of fugitive emission and as per requirements 2 new bag filters are added at cement mill & packing plant.
- All the above mentioned pollution control equipment were promptly maintained and operated to meet the norms given by Pollution Control Board. It also helped us for maximum utilization of all raw materials in cement production since lime and other dust is retained by pollution control equipment and same is utilized for making cement.
- To maintain the housekeeping there are truck mounted machine, vacuum cleaner, road sweeping machine provided. Collected dust is being charged in raw material yard for cement manufacturing. All the major APCEs are interlocked with its respective units to follow the concept of cleaner technology & conservation of natural resources. To reduce NOx emission Low NOx burner and Selective non-catalytic reactor (SNCR) have been installed in the plant.
- Online Monitoring Systems of Ambient Air Quality as well as stack emission monitoring stations CEMS installed in 5 stacks were also operative during the year.
- In FY23-24 we have used 5,43,062 MT of fly ash in the unit-1 cement production.
- Industry have Sewage Treatment Plant of 600 KLD capacity. This treatment plant was properly operated & maintained during last financial year. In FY 2023-24 total 1,39,063 KL water treated. Treated waste water from STP was utilized in gardening for horticulture purpose. It helps in reducing ground water demand and subsequently helping for water conservation.
- Plastic waste, which is a threat to the environment, is also being burnt in our cement kiln. Around 21518.24 MT (Both Units) of plastic waste was burned under Plastic Waste Management Rule 2016 during the FY 2023-24.
- Increased thermal substitution rate (TSR) 4% by the co-processing of hazardous & non-hazardous waste as AFR & minimizing the waste as well.

- 34.2% of our total energy consumption is sourced from WHRS and other renewable sources (Solar). Promoting renewable energy, we are currently producing 22.45 MWh using WHRS. In addition, we have installed solar power plant in our colony and mines area of 30 MW. Working in the field of green energy our industry has proposed expansion of solar by allotting 7.5 acres of area for the solar panel installation which will contribute 8 MW of energy.
- The DG Sets installed in Prism Cement is of state of art technology. Mainly furnace oil, diesel & cooling water are used in DG Sets for generation of electricity. After processing of cooling water, its temperature increases which is re-circulated to cooling tower, after cooling of water it is again utilized. Thus it helps in reducing water demand. Strict measures are taken to avoid any type of spillage. Utmost thrust is given to produce electricity by using lesser amount of furnace oil.
- Auxiliary power consumption in DG sets has been reduced by optimizing the preheated water temperature and heating of only three engines at a time instead of all the engines.

## **PART – H**

### **Additional Measures/ investment proposal for environment protection including abatement of pollution, prevention of pollution.**

- Extensive work for rainwater harvesting has been done. In this financial year 2 numbers of ground water recharge structure have been constructed. In total we are having, 11 Roof Top & 12 ground water recharge soak pits in our plant. Storm drains of colony area have been diverted to ground water recharge pits. Total Ground water recharge in FY 2023-24 is 1,83,000 m3. Additionally, Prism was 3.4 times water positive in FY23-24.
- For better housekeeping and to reduce fugitive emission we have 1 truck mounted road sweeping machine and 2 Ride & road sweeping machine and 6 fog cannon machine located in plant area. Sufficient numbers of truck tankers were deployed for dust suppression on haul roads and approach roads. Along with that, water sprinkling for dust suppression is practiced daily in plant.
- We have recently installed IKN cooler in line-1 which will have less thermal consumption which ultimately reduce coal consumption. As per analysis, IKN cooler will have 17 Kcal less coal consumption.
- Prism marked World Environment Day on June 5th with great enthusiasm, hosting a range of activities aimed at raising awareness about pollution prevention. The celebration featured various competitions, including Slogan Writing, Poster Making, and a Quiz, along with initiatives like the "No Single-Use Plastic" awareness campaign, an Online Summit, Water Conservation awareness program, and a "No Vehicle Day." In line with this year's theme, "Land Restoration, Desertification, and Drought Resilience," we organized a "Run for the Environment" within the plant premises, encouraging active participation and awareness about the land restoration. Additionally, in-house training sessions on housekeeping and onsite awareness programs were conducted across different plant locations to ensure widespread engagement and impact.
- Our industry has been recognized with several prestigious awards for its excellence in multiple domain.
  - National CII Award for Excellence in Water Management 2023.
  - 11<sup>th</sup> Global Safety Summit Environment Award 2023.
  - 23rd Green Tech Environment Award 2023.



## **PART – I**

### **Any other particulars for improving the quality of environment**

- For improving quality of environment, plantation work in large scale is always in our first priority. To compensate CO2 emission, in the financial year ending 31st March 2024, approximately 35,621 plants were planted in side plant, colony & mines area & 58,994 saplings distributed under CSR. Up to this financial year total 12,28,003 saplings were planted & distributed by industry.
- In our ongoing commitment to sustainable practices, our industry has undertaken initiative by cultivating Beema bamboo across 150 acres and aiming to expand it up to 1000 Acres area.
- The Beema bamboo plant, known for its rapid growth, serves as an eco-friendly solution for our energy needs. Upon combustion, it yields a high calorific value, making it an ideal substitute for traditional coal in our kiln.
- This strategic shift not only contributes to the reduction of carbon emissions but also aligns with our goal of utilizing green energy sources. We are planning to use Beema Bamboo as Solid AFR. We have developed patches in nearby villages like Medhi, Sijahata, Hinauti, Baghai etc. In the FY 2023-24 we have planted 67,052 saplings of Beema Bamboo.

The above efforts would certainly help in improving the quality of environment.

**For Prism Johnson Ltd.**

  
 **Manoj Kumar Kashyap**  
**Vice President**

**PRISM CEMENT LIMITED**

Mankahari, Satna (M.P.)

**DETAILS OF TREATED WASTE WATER POLLUTANTS DISCHARGED****YEAR- APRIL 2023 TO MARCH 2024**

S.No.	Effluent characteristics	*Quantity of pollutants discharged (mass/day)	*Concentration of pollutants in discharges (mass/ volume)	Percentage of variation from prescribed standards with reason
1	2	3	4	5
1	BOD	2.94 Kg/ Day	15.58 Mg/Lit	- 48.07 %
2	COD	7.40 Kg/ Day	38.90 Mg/Lit	- 84.44 %
3	SS	8.06 Kg/ Day	42.81 Mg/Lit	- 57.19 %

**\*Values mentioned in the column 3 & 4 in the table are yearly average values.**



**Annexure - II****PRISM CEMENT LIMITED****Mankahari, Satna (M.P.)****DETAILS OF AIR POLLUTANTS DISCHARGED****YEAR- APRIL 2023 TO MARCH 2024**

<b>S.No.</b>	<b>Pollutant</b>	<b>Source of emission</b>	<b>*Quantity of pollutants discharged (mass/day)</b>	<b>*Concentration of pollutants in discharges (mass/ volume)</b>	<b>Percentage of Variation from prescribed standards with reason</b>
1	2	3	4	5	6
1	PM SO <sub>2</sub> NO <sub>x</sub>	Raw Mills + Kiln Bag House Stack	0.255 T/Day 2.079 T/Day 5.348 T/Day	20.14 mg/Nm <sup>3</sup> 150.48 mg/Nm <sup>3</sup> 387.02 mg/Nm <sup>3</sup>	- 32.86 % - 78.50 % - 61.3 %
2	PM	Cooler ESP Stack	0.193 T/day	22.804 mg/Nm <sup>3</sup>	- 23.98 %
3	PM	Coal Mill Bag Filter Stack	0.063 T/day	18.973 mg/Nm <sup>3</sup>	- 36.75 %
4	PM	Cement Mill-1 ESP Stack	0.00575 T/day	15.725 mg/Nm <sup>3</sup>	- 47.58 %
5	PM	Cement Mill-2 ESP Stack	0.00578 T/Day	16.101 mg/Nm <sup>3</sup>	- 46.33 %

**\*Values mentioned in the column 4 & 5 in the table are yearly average values.**

### Annexure III

## PRISM JOHNSON LIMITED

Mankahari, Satna (M.P.)

### DETAILS OF AIR POLLUTANTS DISCHARGED FROM DG SETS

YEAR- APRIL 2023 TO MARCH 2024

S.No.	Pollutant	Source of emission	Quantity of pollutants discharged (mass/day)	Concentration of pollutants in discharges (mass/ volume)	Percentage of Variation from prescribed standards with reason
1	PM	DG – 1 Stack	0.0415 T/Day	54.92 mg/Nm <sup>3</sup>	- 45.08%
2	PM	DG – 2 Stack	0.0523 T/Day	61.44 mg/Nm <sup>3</sup>	- 38.56 %
3	PM	DG – 3 Stack	0.0531 T/Day	58.47 mg/Nm <sup>3</sup>	- 41.53 %
4	PM	DG – 4 Stack	0.0478 T/Day	60.51 mg/Nm <sup>3</sup>	- 39.49 %

\*DG sets remain in standby mode. Above are representative values in case of DG Sets are operated

### **Expenditure for Environmental Management during the Financial Year 2023-24**

<b>Particulars</b>	<b>Cost (in Cr.)</b>
Maintenance cost for operating air pollution controlling equipment's	2.35
APCE power consumption Cost	16.81
STP Operation & maintenance	0.30
House Keeping	0.29
Plantations, Maintenance & survival	0.10
Environmental Study/Audit	0.39
Environmental monitoring & Compliance	0.34
License/Permission	1.38
Others (RWH structure maintenance, Poster /Slogan etc.)	0.25
CEMS/ AAQMS Maintenance Cost	0.31
Expenditure from mines dept.	1.28
<b>Total</b>	<b>23.78</b>

**Remark:** Expenditure mentioned in the table is for combine plant considering unit-1 & 2 both.