Dalmia cement

cement! sugar! refractories! power!

DCBL/ENV-ES/23-24/ **Date: 24.09.2024**

To,

The Member Secretary,
Jharkhand State Pollution Control Board,
T.A Division Building (Ground Floor)
HEC Campus, Dhurwa, Ranchi- 834004

Subject: Submission of Environment Statement Report (Form-V) of Dalmia Cement Bharat Limited for the financial year ending the 31st March'2024.

Dear Sir,

We are submitting here with Environment Statement Report (Form-V) of Dalmia Cement (Bharat) Limited, Bokaro, Jharkhand for the period of financial year April' 2023 – March'2024 for your kind perusal and record please.

Thanking you.

Yours faithfully
For Dalmia Cement (Bharat) Limited

Priya Ranjan
Authorized Signatory

Encl: Environment Statement Report (Form-V)

CC: 1. Environmental Officer
Regional Office, JSPCB, Dhanbad
H.I.G-1, Sardar Patel Nagar, Hirapur,
Dhanbad-826001, Jharkhand

Dalmia Cement (Bharat) Limited
Plot No. IV/A-7(P)4, Bokaro Industrial Area, Balidih, Bokaro Steel City, Bokaro - 827014, Jharkhand, India
CIN: U65191TN1996PLC035963
Registered Office: Dalmiapuram, District Tiruchirapalli, Tamil Nadu - 621651, India.
A Dalmia Bharat Group company, www.dalmiabharat.com

ENVIRONMENT STATEMENT
(FORM-V)
Financial Year 2023-2024

DALMIA CEMENT (BHARAT) LIMITED

(Formerly known as Bokaro Jaypee Cement Limited)

Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih,

Bokaro Steel City (827014), Jharkhand, India

INTRODUCTION

Founded by Mr Jaidayal Dalmia in 1939, Dalmia Cement is one of India's pioneering homegrown cement companies. Headquartered in New Delhi, the company operates as Dalmia Cement (Bharat) Ltd, which is a 100% subsidiary of Dalmia Bharat Ltd and is listed on the National Stock Exchange and the Bombay Stock Exchange.

The company operates a manufacturing capacity of 46.6 MnT per annum (MTPA), across 15 cement plants and grinding units which are spread across 10 states. With over 38,000 dealers and sub-dealers, the company presently services more than 22 states and is among the leading players in every region where it is present in. To scale the business as well as venture into new geographies, both, acquisitions and greenfield expansions have been key for the company. Dalmia Cement is the only company with at least one plant in each of the four key eastern states of West Bengal, Bihar, Jharkhand and Odisha.

The company offers a range of cement variants through its brand portfolio of three marquee brands: Dalmia Cement, Dalmia DSP and Konark Cement. These brands are available as Portland Pozzolana Cement, Portland Slag Cement, Composite Cement and Ordinary Portland Cement in select markets. Dalmia Cement is India's largest manufacturer of slag cement and is a category leader in super-speciality cement used for oil wells, railway sleepers, and airstrips. Dalmia Cement works with engineers and technocrats around the country to develop a wide variety of customised cement which is manufactured for specific engineering and construction needs.

For nearly eight decades, Dalmia Cement has delivered value-added products and reliable post-sale services. It has played a catalytic role in India's infrastructural growth.

As a prominent Indian cement manufacturer and thought leader, Dalmia Cement continues to aspire to enhance value in a sustainable way for all its stakeholders. Dalmia Cement is 14 times water positive and will be 20 times water positive by 2025. The company's commitment towards environmental protection reflects in its achievements. The company has the lowest carbon footprint in the cement world globally. It has also been ranked No. 1 in the global cement manufacturing sector by the Carbon Disclosure Project (CDP) for business readiness of lowest carbon transition.

Dalmia Cement Bharat Limited (DCBL), situated in Bokaro Industrial Area, Balidih, Bokaro, Jharkhand. The unit has obtained Environment Clearance, CTE & CTO for manufacturing of 4.5 MTPA for the manufacturing of PSC/PCC/PPC cement. The unit is spread over an area of 26.71 Hectare (66 Acre) land under Bokaro Industrial Area Development Authority (BIADA).

"FORM – V"

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING WITH 31st MARCH 2024

PART – A

(I)	Name & Address of the Owner / Occupier of the Industry operation or Process	Priya Ranjan Unit Head Dalmia Cement (Bharat) Limited (Formerly known as Bokaro Jaypee Cement Limited) Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih, Bokaro Steel City (827014), Jharkhand, India.
(II)	Industry Category Primary (STC CODE) Secondary (SIC CODE)	Cement Grinding Unit, Red Category
(III)	Production Capacity	4.5 Million Tons Per Annum Cement (PSC/CC/PPC)
(IV)	Year of Establishment	2011
(V)	Date of last Environmental Statement Submitted	18.09.2023

PART – B

Water & Raw Material Consumption

A. Water

(i) Water Consumption (M^3/day):

Process & Cooling - 56

Domestic - 120

(ii) Consumption per unit of production

Name of the Product	Cooling Water Consumption per unit of Product Output	
	During the Previous Financial Year (2022-23)	During the Current Financial Year (2023-24)
Cement	0.0049 m^3/MT Cement	0.0054 $m^{3/}$MT Cement

B. Raw Material Consumption

Name of the Raw Material	Name of Product	Consumption of Raw Material per Unit Product Output (MT/MT CEMENT)				
		During the Previous Financial Year (2022-23)		During the Current Financial Year (2023-24)		
	-	PSC	PCC	PSC	PCC	PPC
Solid Fuel (coal)	Cement PSC/PCC/ PPC	0.02	0.02	0.02	0.02	0.02
Clinker		0.37	0.45	0.37	0.42	0.62
Gypsum		0.02	0.02	0.02	0.02	0.02
Slag		0.61	0.31	0.61	0.31	0.00
Fly Ash		0.00	0.22	0.00	0.23	0.35

C. Total Production

Production	During the Previous Financial Year (MT) (2022-23)	During the Current Financial Year (MT) (2023-24)	Remarks
Cement (PSC/CC/PPC)	PSC-1290748 PCC-2018443	PSC - 751905 MT PCC – 1479361 MT PPC – 533026 MT	Total Cement Production: (2023-24) 2764292 MT

PART - C

Pollutant Discharged To Environment / Unit of Output

(Parameters as specified in the consent issued)

S. No.	Pollutants	Quantity of Pollutants Discharged (Mass / day)	Concentrations of Pollutants in discharged (Mass / Volume)	Percentage of variation from prescribed standard with reasons
(a)	Water			
(i)	Domestic	Zero Discharge	-	-
(ii)	Industrial	Zero Discharge	-	-
(b)	Air			
	Stack Emission	Tone /Day	mg/Nm^3	%
	Cement Mill (Bag House Outlet)	0.19	16.8	-44

PART-D

(As specified under Hazardous waste / Management and Handling rules, 1989 as Amended -2008)

Hazardous Waste		Total Quantity (KL)	
		During the Previous Financial Year (2022-23)	During the Current Financial Year (2023-24)
(a)	From Process (Used Oil-5.1 category)	2.5	16.3
(b)	From Pollution Control Facilities	Nil	Nil

PART – E

Solid Wastes

Solid Waste		Total Quantity	
		During the Previous Financial Year (2022-23)	During the Current Financial Year (2023-24)
(a)	From Process	No solid waste is generated from the cement grinding process.	No solid waste is generated from the cement grinding process.
(b)	From Pollution Control Equipment's	1. Dust collected in Bag filters is recycled back into the system. 2. Dust collected in Main Bag House of Cement Mill is the product (cement) only and being transported to Cement Silo through closed circuit consisting of Air slides and Bucket elevator.	1. Dust collected in Bag filters is recycled back into the system. 2. Dust collected in Main Bag House of Cement Mill is the product (cement) only and being transported to Cement Silo through closed circuit consisting of Air slides and Bucket elevator.

PART-F

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

Hazardous Waste: Dalmia Cement (Bharat) Limited is based on Dry Process Cement Manufacturing process. No Hazardous wastes are generated during process except used

Lubricating and Hydraulic Oil. This Used oil is collected in empty barrels/drums and kept in Hazardous waste store room for its further disposal to the authorized recycler as per Hazardous Waste (Management, Handling & Transboundary Movement) Rule, 2008.

Solid Waste:

There is no solid waste generated in our cement manufacturing process.

PART-G

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

Dalmia Cement Bharat Limited is a Cement Grinding Unit based on cost effective and environmentally clean technology.

- We are conserving natural resources by utilizing solid wastes from other industries in our cement making process. For cement manufacturing, we are utilizing slag as one of the raw materials which is one of the solid wastes generate from steel plant by Bokaro Steel Limited (BSL). We have consumed 980545 MT of slag, fly ash consumed 608439 MT which is waste material of power plant & 11289 MT chemical gypsum consumed which is waste material of fertilizer industry in our cement making process in the year of 2023-2024.
- Rain water harvesting system implemented in our plant and colony area to conserve rain water. We have also renovated wells near surrounding village area for the water conservation.
- 100 KLD STP constructed and maintained for the treatment of domestic waste water. treated water is being used in dust suppression and greenbelt development.
- We have the highly efficient Air Pollution Control Devices to bring down the point source emission as per the prescribed standard below 30 mg/Nm3 . All our APCS devices are designed to restrict particulate matter emission level within CPCB norms. They have been installed at circuit of the production line and various material transfer points to clean the process and arrest the fugitive emissions. The particulate matter collected in the pollution control equipment's is recycled in process, reducing the cost of operation of pollution control equipment's.

LIST OF MAJOR AIR POLLUTION CONTROL DEVICES

Dalmia Cement (Bharat) Limited, Bokaro					
Sl. No.	**Location**	**Equipment No.**	**Capacity in m^3/hr**	**No. of Bags**	**Standard**
1	Cement Silo Top	591 BF1	7500	64	**30 mg/Nm^3 (New CPCB norms for Stack emission)**
2	Cement Silo Top	591 BF2	7500	64	
3	Cement Silo Top	591 BF3	7500	64	
4	C.S.Bin Dedusting	611BF1	3664	25	
5	C.S.Bin Dedusting	611BF2	3664	25	
6	C.S.Bin Dedusting	611BF3	3664	25	
7	Nuisance Dedusting	611BF4	18000	144	
8	Packing Plant	641BF1	34000	256	
9	Packing Plant	641BF2	16000	121	
10	Packing Plant	642BF1	34000	256	
11	Packing Plant	642BF2	16000	121	
12	Reclaiming Tunnel For Slag & Gypsum Conv.	K91 BF1	12500	100	
13	Clinker Silo Bottom	511BF2	9000	72	
14	Clinker Silo Bottom	511 BF1	9000	72	
15	Cement Mill Hopper	K91 BF2	12500	100	
16	Coal Crusher	L31 BF1	5000	60	
17	FBC	L32 BF1	5000	60	
18	Bag House-1	521BF7	16000	121	
19	Bag House-2	522 BF7	3664	25	
20	Bag House - 1	521 BF6	714240	5632	
21	Bag House - 2	522 BF6	714240	5632	
22	C. Mill Hopper Top	511 BF3	9000	72	
23	C. Mill Hopper Bottom	521 BF1	14880	100	
24	C. Mill Hopper Bottom	521 BF2	13680	100	
25	Cement Mill - 1	521 BF4	15540	121	
26	Reject Building	521 BF5	7500	64	
27	Cement Mill - 2	522 BF4	15540	121	
28	Reject Building	522 BF5	7500	64	
29	Transfer Point Dedusting In Hopper Building	522 BF1	14880	100	
30	Transfer Point Dedusting In Hopper Building	522 BF2	13680	100	
31	Transfer Tower-1	491 BF1	9000	72	
32	Clinker Silo Top	491 BF2	9000	72	
33	Packing Plant	643 BF-1	40000	308	
34	Packing Plant	643 BF-2	20000	154	
35	Outside Cement Silo	643 BF-3	7500	57	

PART-H

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

1. Extensive plantation in and around the plant

We have accrued total 69.19 Acre lands. In which, we have been developed 33 % of green belt area of total land i.e. 22.83 Acres. Tree plantation is an integral part to the environment management plan at DCBL. The plantation drive is being carried out throughout the year. We planted 24889 no. of trees till now, at the survival rate of around 90%. The plantation details are as under-

Total greenbelt development area is 23.25 acres (more than 33 %) of total land 69.19 Acres to improve the aesthetic value and to arrest dust and also to mitigate noise pollution.

YEAR WISE TREE PLANTATION DETAILS GIVEN AS FOLLOWS

SL. No	Year	Number of plants	Area (in Acres)
1	1st (2011-2012)	5000	5
2	2nd (2012-2013)	2030	4
3	3rd (2013-2014)	2820	3
4	4th (2014-2015)	7620	5
5	5th (2015-2016)	5100	4
6	6th (2016-2017)	1500	1
7	7th (2017-2018)	500	0.55
8	8th (2018-2019)	69	0.3
9	9th (2019-2020)	100	0.4
10	10th (2020-2021)	150	Plantation done in the place of dead trees and vacant places in plant.
11	11th (2021-2022)	500	
12	12th (2022-2023)	350	
13	13th (2023-2024)	400	
	Total	**26139**	**23.25**

S.N	Year	Name of Species tree planted
1	2011-2012	Gulmohar,Amaltash,Neem,Mihigini,shisham,Ashoka,Teak, Mango,Amala, Shiv Babool,Chatni
2	2012-2013	Gulmohar,Amaltash,Neem,Mihigini,shisham,Ashoka,Teak,Mango, Amala
3	2013-2014	Ashoka,Chatni,Gulmohar,Amaltash,Neem,Mihigini, Shisham
4	2014-2015	Ashoka,Chatni,Gulmohar,Amaltash,Neem,Mihigini, Shisham
5	2015-2016	Chatni,Gulmohar,Neem,Mehegani,Shisham,Pipal,Teak,
6	2016-2017	Gulmohar,Chatni,Neem,Guava,Shiv Baboo,Mango,Jamun
7	2017-2018	Chatni,Gulmoha,Amaltash,Neem,shisham,Guava,Pipal
8	2018-2019	Chatni,Gulmohar,Neem,Mihigini,Guava,Mango,Amala,Neem
9	2019-2020	Chatni,Mihigini,Botal Pam,Mango,Amala,Lemon,Jamu
10	2020-2021	Chatni,Mihigini,,Mango,Kaaju.
11	2021-2022	Chatni,Mihigini,,Mango,Kaaju.
12	2022-2023	Chatni, Mihigini,Mango, Neem ,Gulmohar
13	2023-2024	Chatni,Gulmohar,Neem,Mihigini,Guava,Mango,Amala,Neem

2. Control of Fugitive dust emission

Following measures have been taken for the control fugitive dust emission of Dalmia Cement (Bharat) Limited: -

a. Raw material storage

Clinker: Clinker is being stored in a closed RCC silo for which closed transportation system to take clinker into the silo has been made.

Gypsum: Stored in covered shed

Coal: Stored in covered shed

Slag: The slag being received for the plant has around 15% moisture. Therefore, it does not get carried away with winds when stocked in open yard.

Covered Hood on Belt conveyor system

The Belt conveyor system has been arranged for transportation of Slag (Raw material) directly from Bokaro Steel Plant to our Plant. It is covered throughout the length with GI hood. Similarly, all the belt conveyors within the plant are also covered with local hoods.

b. Regular Water sprinkling

Regular sprinkling of water is being carried out at all places where raw materials are handled inside the plant with the help of water tankers. water spray tanker sprinklers are installed in vacant non-concreted areas.

c. Wagon Tippler

Large size of bag filter with capacity 200000 m^3/hr. Installed at wagon tippler for minimizes fugitive dust generation from unloading the Clinker/Gypsum from wagon.

***d.* Scheduled maintenance and monitoring of Pollution Control Devices**

All Pollution Control Devices are being maintained as per scheduled maintenance by dedicated environmental management team which comprises of mechanical, electrical and environment engineers. Monitoring of all these devices are done regularly as per JSPCB Norms.

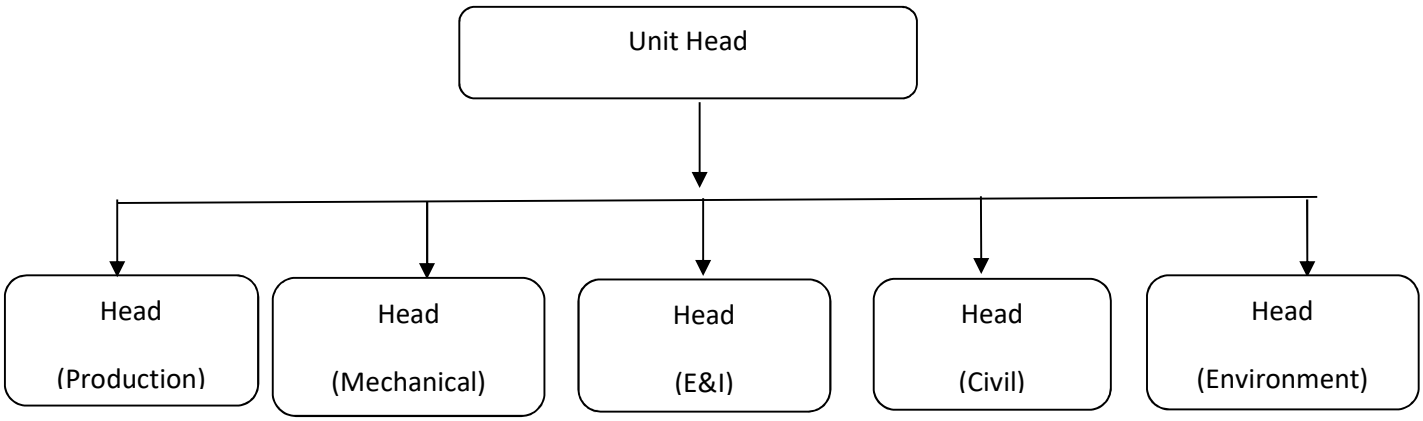
Note: We have the system available for manufacturing PPC. For that we shall use fly-ash. Fly-ash is another type of solid waste generated by thermal power plants. The participation of Fly-ash will be up to 35% of the total raw materials required for manufacturing of cement. We have already obtained our Environment Clearance from MoEF, New Delhi for production of PPC on need basis.

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF ENVIRONMENT

Dalmia Cement (Bharat) Limited, Bokaro having Environmental Management Cell which is controlled by Unit Head by adequate team of technically qualified personnel apart from the operative staff of skilled, semi-skilled, unskilled and other categories for fulfil the following objectives:

ENVIRONMENT MANAGMENT CELL ORGANIZATION CHART



1. Preparation & submission of fresh consent application, Hazardous waste authorization application, and renewal of all consent.
2. Timely submission of Statutory reports (Monthly, half-yearly and annually to JSPCB, CPCB, MoEF.
3. Ambient air quality monitoring (PM_{10}, $PM_{2.5}$, and fugitive emission in Cement Plant.
4. Measurement of both work place & ambient noise level in various locations in plant.
5. Assessments of water consumption Industrial and Domestic.
6. Keeping Plant clean through Housekeeping initiatives.
7. Performance evaluation of air pollution control system.

The Environment management cell is responsible for pollution monitoring activities in DCBL Bokaro. Ambient air quality monitoring, Stack monitoring, water and effluent quality checking, and checking of noise level in plant, following pollution monitoring equipment are available in Environment cell.

DCBL Environment Monitoring Equipment's Details

S. N.	Name of Equipment's	No. of Equipments
A.	**Ambient Air Quality Monitoring**	
1.	Respirable Dust Sampler (RDS) PM-10	04
2.	Respirable Dust Sampler PM10-2.5	04
3..	Portable DG Sets	01
4.	Continuous Ambient Air Monitoring System (CAAQMS)	02
B.	**Stack Monitoring**	
5.	Stack Monitoring Kit	01
6	Continuous Stack Emission System (CEMS)	01
C.	**Workplace Monitoring**	

8.	Sound Level Meter	01
9.	Personal Sampler APM 800	01
D.	**Water Quality Monitoring**	
10.	Spectrophotometer-Model DR/2700 (Hach-USA)	01
11.	Turbidity Meter	01
E.	**Others**	
12.	Hot Air Oven	01

In case the monitoring result of environment pollution found to exceed the allowable limits, the Environmental cell will suggest remedial action and get these suggestions implemented through the concerned authorities.

The Environmental Management cell will also co-ordinate all the related activities such as checking of performance of pollution control equipment installed in plant, Sewage treatment plant, and green belt development in DCBL Bokaro.

Significant energy saving & other measures implemented

(i) 2.nos Electric vehicle purchased for plant internal transportation work.
(ii) Installed solar light and LED Lamps in street light replacing with CFL lamps
(iii) Replacement of conventional lights with LED to save energy.
(iv) 2 no's road swapping machine provided for cleaning of roads and other concreated area.
(v) Top soils conservation during excavation and utilized the soil for nursery development and tree plantation.
(vi) Regular maintenance of vehicles to control of vehicles emission & noise.
(vii) Acoustic enclosures are provided at noise generating area to control of noise pollution
(viii) Use of personal protective Equipment**:** All employees are provided with personal protective Equipment's (PPEs), as per the requirement, such as workers working in plant area are provided with dust masks and in noise pollution areas with Ear plugs/Ear muff, safety boots gloves welding goggles, Goggles and safety helmet are also being provided as per the requirement.

ENVIRONMENT MONITORING REPORTS FOR THE YEAR 2023-2024
AMBIENT AIR QUALITY MONITORING REPORT

DALMIA CEMENT (BHARAT) LIMITED, BOKARO												
Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih, Bokaro Steel City (827014), Jharkhand, India												
Ambient Air quality monitoring report (2023-24) : Near Time Office												
	SO_2 µg/m^3			NOx µg/m^3			PM-10 µg/m^3			PM-2.5 µg/m^3		
	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
Apr-2023	7.9	13.7	10.8	16.4	23	19.7	52.0	58.1	55.1	26.8	29.5	28.2
May-2023	6.8	12.1	9.5	11.3	19.8	15.6	51.4	53.3	52.4	18.4	34.2	26.3
June-2023	6.9	10.4	8.7	17.5	23.1	20.3	50.2	56.9	53.6	26.8	33.1	29.9
July-2023	8.7	14.3	11.5	14.5	24.8	19.7	46.1	55.6	50.9	18.9	24.2	21.6
Aug-2023	7.1	11.8	9.5	13.2	21.4	17.3	38.2	54.9	46.6	14.3	23.5	18.9
Sep-2023	5.5	8.9	7.2	11.7	23.8	17.8	46.9	53.4	53.4	17.8	25.9	21.8
Oct-2023	6.7	13.1	9.9	15.4	24.2	19.8	50.7	55.9	53.3	23.1	31.6	27.5
Nov-2023	5.1	12.4	8.8	12.3	19.7	16.0	48.5	56.2	52.4	22.7	32.4	27.6
Dec-2023	6.2	10.7	8.5	18.1	22.8	20.5	41.6	53.2	47.4	25.6	36.8	31.2
Jan-2024	5.7	12.8	9.3	16.8	23.3	20.1	48.8	56.7	52.8	23.4	33.7	28.5
Feb-2024	4.8	11.1	8.0	13.7	19.8	16.8	44.4	55.8	50.1	17.6	31.8	24.7
Mar-2024	5.2	12.7	9.0	15.8	23.2	19.5	45.9	52.2	49.1	19.4	30.2	24.8
	9.2			**18.5**			**52.4**			**25.9**		
JSPCB Norms	**S02 :80 µg/m^3**			**N02 :80 µg/m^3**			**PM-10 :100 µg/m^3**			**PM-2.5 :60 µg/m^3**		

DALMIA CEMENT (BHARAT) LIMITED, BOKARO												
Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih, Bokaro Steel City (827014), Jharkhand, India												
Ambient Air quality monitoring report (2023-24) : Near FH-3 Building												
	SO_2µg/m3			NOx µg/m3			PM-10 µg/m3			PM-2.5 µg/m3		
	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
Apr-2023	6.8	11.6	9.2	10.3	19.8	15.1	49.1	56.0	52.5	22.3	31.5	26.9
May-2023	7.5	12.4	9.9	13.5	16.2	14.9	48.7	55.1	51.9	23.7	29.4	25.1
June-2023	6.7	13.1	9.9	12.9	21.1	17.0	47.4	52.9	50.1	22.9	30.7	26.8
July-2023	4.8	9.2	7.0	13.6	17.8	15.7	42.9	50.1	46.5	15.7	21.6	18.7
Aug-2023	7.3	9.8	8.5	14.4	20.1	17.3	38.5	51.1	44.8	14.1	22.2	18.1
Sep-2023	4.8	8.3	6.5	12.8	18.3	15.6	40.2	52.4	46.3	15.6	19.9	17.8
Oct-2023	6.4	10.4	8.4	11.5	17.8	14.7	49.1	56.7	52.9	24.1	34.5	29.3
Nov-2023	5.9	11.6	8.7	14.3	21.9	18.1	46.5	53.4	50.0	19.7	28.4	24.1
Dec-2023	7.6	10.1	9.8	15.7	17.3	16.5	41.6	54.2	47.9	22.4	31.2	26.8
Jan-2024	5.2	11.7	8.4	13.8	19.4	15.6	46.5	53.1	49.8	19.4	29.8	24.6
Feb-2024	4.9	12.5	8.7	10.7	16.4	13.7	43.2	52.6	48.1	18.5	25.3	21.9
Mar-2024	3.6	9.4	6.5	11.2	20.9	16.1	44.8	51.2	47.7	21.8	28.4	25.1
	8.4			**16.2**			**48.8**			**24.0**		
JSPCB Norms	**$S0_2$:80 µg/m^3**			**$N0_2$:80 µg/m^3**			**PM-10 :100 µg/m^3**			**PM-2.5 :60 µg/m^3**		

DALMIA CEMENT (BHARAT) LIMITED,BOKARO												
Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih,Bokaro Steel City (827014), Jharkhand, India												
Ambient air quality monitoring report (2023-24) : Wagon Tippler												
	SO2 µg/m3			Nox µg/m3			PM-10 µg/m3			PM-2.5 µg/m3		
	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
Apr-2023	5.2	12.5	8.9	14.6	20.8	17.7	48.3	55.7	52.0	26.6	32.9	29.8
May-2023	7.9	13.7	10.8	15.4	22.9	19.7	51.5	57.3	54.4	27.9	33.5	30.7
June-2023	8.8	16.3	12.6	13.8	24.2	19.0	50.1	53.9	52.0	24.3	35.2	29.8
July-2023	4.6	10.1	7.4	12.9	20.7	16.8	45.4	55.4	50.4	20.9	25.1	23.0
Aug-2023	6.7	11.6	9.2	20.7	19.4	20.1	49.9	54.1	52.0	21.7	26.4	24.1
Sep-2023	7.8	13.9	10.9	19.2	24.0	21.6	46.5	52.4	49.5	18.8	24.1	21.5
Oct-2023	9.1	16.1	12.6	17.5	23.1	20.3	51.4	58.1	55.8	22.6	37.5	30.1
Nov-2023	8.9	14.6	11.8	19.7	25.6	22.7	50.9	58.6	54.8	26.8	36.3	31.6
Dec-2023	9.6	18.6	14.1	16.8	21.8	19.3	49.2	59.0	55.0	25.9	37.9	32.1
Jan-2024	11.4	15.3	13.4	17.2	26.7	22.0	50.8	56.1	53.5	28.1	38.8	33.5
Feb-2024	9.4	19.2	14.3	14.5	22.3	18.4	48.4	57.7	54.1	20.6	34.7	27.7
Mar-2024	10.9	14.8	12.9	15.9	25.8	20.9	47.5	58.9	53.2	22.9	35.3	29.1
	11.5			**19.8**			**53.1**			**27.9**		
JSPCB Norms	S02 :80 µg/m3			N02 :80 µg/m3			PM-10 :100 µg/m3			PM-2.5 :60 µg/m3		

DALMIA CEMENT (BHARAT) LIMITED,BOKARO												
Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih,Bokaro Steel City (827014), Jharkhand, India												
Ambient air quality monitoring report (2023-24) : Near Fabrication Yard												
	SO2 µg/m3			NOx µg/m3			PM-10 µg/m3			PM-2.5 µg/m3		
	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
Apr-2023	5.2	13.9	9.55	19.2	26.3	22.7	51.4	57.3	54.3	25.2	35.4	30.3
May-2023	7.8	12.3	10.0	18.9	24.7	21.8	52.9	58.1	55.5	27.5	32.8	29.8
June-2023	8.4	15.9	12.1	15.8	25.6	20.7	50.7	56.8	53.7	28.3	34.5	31.4
July-2023	6.7	11.2	8.95	17.4	22.1	19.7	52.6	57.4	55.0	19.7	24.1	21.9
Aug-2023	9.6	14.7	12.1	19.3	28.4	23.8	46.1	57.5	51.8	25.4	35	30.2
Sep-2023	5.1	12.9	9.0	22.6	27.3	24.9	47.5	56.9	52.2	20.1	26.4	23.2
Oct-2023	8.0	10.8	9.4	18.2	24.5	21.3	53.7	59.8	56.7	30.7	37.2	34.1
Nov-2023	10.8	12.7	11.7	16.9	27.6	22.2	49.2	58.4	53.8	27.8	38.4	33.1
Dec-2023	6.9	13.2	10.1	19.6	32.7	26.1	51.1	60.6	54.4	29.2	33.6	31.4
Jan-2024	9.3	15.6	12.5	20.1	33.4	25.7	52.8	58.8	56.8	25.4	39.7	32.5
Feb-2024	7.5	13.7	10.6	16.2	24.6	20.4	53.4	57.3	55.3	21.5	28.1	24.8
Mar-2024	6.4	16.8	11.6	17.5	26.8	22.1	51.3	55.1	53.2	20.6	31.5	26.0
	10.6			**22.7**			**54.4**			**29.1**		
JSPCB Norms	S02 :80 µg/m3			N02 :80 µg/m3			PM-10 :100 µg/m3			PM-2.5 :60 µg/m3		

STACK EMISSION MONITORING REPORT

DALMIA CEMENT (BHARAT) LIMITED,BOKARO				
Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih,Bokaro Steel City (827014), Jharkhand, India				
Stack Emission report (2023-24) (Manual)				
Month	**Min.**	**Max.**	**Avg.**	**JSPCB Norms**
	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3
Apr-23	19.7	22.7	21.2	
May-23	16.9	21.3	19.1	30 mg/Nm^3
Jun-23	14.7	22.8	18.2	
Jul-23	12.8	20.4	17.6	
Aug-23	13.5	19.2	16.5	
Sep-23	14.6	20.9	17.8	
Oct-23	15.2	25.3	20.3	
Nov-23	16.5	22.3	19.4	
Dec-23	11.3	21.1	16.2	
Jan-24	12.4	18.6	15.5	
Feb-24	7.2	14.2	11.0	
Mar-24	8.80	12.3	10.6	
	7.2	**25.3**	**16.8**	

DALMIA CEMENT (BHARAT) LIMITED,BOKARO				
Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih, Bokaro Steel City (827014), Jharkhand, India				
Online CEMS Stack emission report (2023-24)				
Month	**Min.**	**Max.**	**Avg.**	**JSPCB Norms**
	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3
Apr-23	13.4	21.5	19.8	
May-23	8.8	24.0	15.3	30 mg/Nm^3
Jun-23	13.7	23.0	17.5	
Jul-23	11.2	24.1	18.0	
Aug-23	14.7	23.8	20.2	
Sep-23	8.4	24.5	16.5	
Oct-23	15.6	22.2	18.9	
Nov-23	13.0	23.1	19.0	
Dec-23	9.3	24.0	16.0	
Jan-24	12.4	23.2	17.8	
Feb-24	9.6	21.8	15.7	
Mar-24	12.4	22.7	14.5	
	8.4	**24.5**	**17.4**	

NOISE LEVEL REPORT 2023-24

DALMIA CEMENT (BHARAT)LIMITED,BOKARO						
Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih,Bokaro Steel City (827014), Jharkhand, India						
Noise Level report for the year 2023-24						
	Near Time Office					
	Day Time dB(A)			Night Time dB(A)		
Month	Min.	Max.	Avg.	Min.	Max.	Avg.
Apr-23	61.5	65.7	63.6	57.5	62.9	60.2
May-23	62.3	64.6	64.0	55.8	60.3	58.1
Jun-23	61.5	65.7	63.6	54.7	59.2	57.0
Jul-23	60.1	64.2	62.2	57.9	62.9	60.2
Aug-23	62.7	66.9	64.8	53.8	63.9	58.9
Sep-23	61.5	64.2	62.9	58.4	61.5	60.0
Oct-23	62.8	66.5	64.7	53.7	64.6	59.2
Nov-23	61.4	65.3	63.7	57.0	62.9	60.2
Dec-23	63.1	66.6	64.8	59.2	66.9	63.1
Jan-24	60.7	63.3	62.0	57.6	62.8	60.2
Feb-24	62.8	65.7	64.3	58.2	64.5	61.4
Mar-24	61.6	64.9	63.3	54.9	62.7	58.8
Avg.	63.6			59.7		
JSPCB NORMS	DAY TIME dB(A)		75	NIGHT TIME dB(A)		70

DALMIA CEMENT (BHARAT)LIMITED,BOKARO						
Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih,Bokaro Steel City (827014), Jharkhand, India						
Noise Level report for the year 2023-24						
Near FH-3 Building						
	Day Time dB(A)			Night Time dB(A)		
Month	Min.	Max.	Avg.	Min.	Max.	Avg.
Apr-23	41.6	44.9	43.3	39.8	42.9	41.4
May-23	42.9	44.5	43.7	41.6	43.3	42.5
Jun-23	48.6	53.1	50.9	41.7	46.2	44.0
Jul-23	41.1	44.3	42.7	37.9	41.7	39.8
Aug-23	42.8	43.7	43.3	40.6	42.5	41.6
Sep-23	41.3	44.0	42.7	39.2	44.3	42.1
Oct-23	43.8	46.5	45.2	39.9	42.7	41.3
Nov-23	43.5	46.7	45.1	38.8	41.4	40.1
Dec-23	44.6	47.3	46.0	39.7	45.7	42.7
Jan-24	42.2	49.8	46.0	42.1	44.9	43.5
Feb-24	42.8	46.5	44.7	41.2	43.7	42.5
Mar-24	41.1	44.1	42.6	38.1	46.2	42.2
Avg.	44.7			42.0		
JSPCB NORMS	DAY TIME dB(A)		55	NIGHT TIME dB(A)		45

DALMIA CEMENT (BHARAT)LIMITED,BOKARO						
Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih, Bokaro Steel City (827014), Jharkhand, India						
Noise Level report for the year 2023-24						
	Near Wagon Tippler					
	Day Time dB(A)			Night Time dB(A)		
Month	Min.	Max.	Avg.	Min.	Max.	Avg.
Apr-23	62.3	67.9	65.1	61.0	65.8	63.4
May-23	65.8	69.6	67.7	60.4	64.2	62.3
Jun-23	64.9	67.5	66.2	60.6	62.7	61.7
Jul-23	62.3	65.8	64.1	62.0	64.2	63.1
Aug-23	63.5	68.1	65.8	61.9	66.5	64.2
Sep-23	62.4	67.8	65.1	60.8	63.9	62.4
Oct-23	62.7	65.3	64.0	61.0	65.8	63.4
Nov-23	63.8	67.2	65.5	59.9	62.4	61.2
Dec-23	62.6	69.7	66.2	60.7	64.1	62.4
Jan-24	61.7	64.5	63.1	59.9	63.8	61.9
Feb-24	62.7	67.1	64.9	59.5	64.5	62.0
Mar-24	64.3	69.7	67.0	56.8	62.7	59.8
Avg.	65.4			62.3		
JSPCB NORMS	DAY TIME dB(A)		75	NIGHT TIME dB (A)		70

DALMIA CEMENT (BHARAT)LIMITED,BOKARO						
Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih,Bokaro Steel City (827014), Jharkhand, India						
Noise Level report for the year 2023-24						
Near Fabrication Yard						
	Day Time			Night Time		
Month	Min.	Max.	Avg.	Min.	Max.	Avg.
Apr-23	65.3	69.1	67.2	63.3	67.6	65.5
May-23	64.2	65.3	64.8	59.4	61.6	60.5
Jun-23	65.7	68.2	67.0	58.6	62.9	60.8
Jul-23	64.3	69.1	66.7	61.9	65.3	63.6
Aug-23	65.7	69.4	67.6	62.6	64.1	63.4
Sep-23	64.9	68.7	66.8	59.3	62.5	60.9
Oct-23	65.1	69.4	67.3	61.7	65.6	63.7
Nov-23	61.6	68.4	65.0	60.0	63.9	62.0
Dec-23	63.4	66.2	64.8	59.7	63.5	61.6
Jan-24	62.9	67.5	65.2	57.3	64.5	60.9
Feb-24	60.8	63.7	62.3	53.9	63.8	58.9
Mar-24	61.7	65.9	63.8	52.1	58.6	55.4
Avg.	65.7			61.4		
JSPCB NORMS	DAY TIME dB(A)		75	NIGHT TIME dB(A)		70

FUGITIVE DUST EMISSION MONITORING REPORT 2023-24

DALMIA CEMENT (BHARAT) LIMITED				
Plot No. IV/A-7(P) Bokaro Industrial Area, Balidih,Bokaro Steel City (827014), Jharkhand, India				
FUGITIVE DUST EMISSION MONITORING REPORT				
YEAR 2023-2024				
Location	**Near Mill Area**	**Near Packing Loading Area**	**Near Truck Parking Area**	**Near Clinker Silo Raw material yard**
Date	**µg/m3**	**µg/m3**	**µg/m3**	**µg/m3**
23.06.2023	1454.1	1245.7	1582.6	1390.72
27.09.2023	1058.4	997.9	1167.3	1005.6
28.12.2023	1020.9	971.6	968.1	649.6
18.03.2024	1103.6	998.4	1247.3	981.3
Min.	**1020.9**	**971.9**	**968.1**	**649.6**
Max.	**1454.2**	**1245.7**	**1582.7**	**1390.7**
Avg.	**1159.3**	**1053.4**	**1241.3**	**1006.8**

STP Treated water analysis report for the year 2023-24

DALMIA CEMENT (BHARAT) LIMITED, BOKARO														
STP Treated water analysis report for the year 2023-24														
Sr.no	Parameter	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Yarly	JSPCB Norms
1	PH	7.6	7.5	7.1	7.6	7.5	7.2	7.5	7.1	7.2	7.1	7.2	7.50	7.34	5.5-9.0
2	Total Suspended solid (mg/lit.)	13	15.0	18	21	22	18	24	20	22	33	36	38.00	23.33	100 mg/L
3	COD (mg/lit.)	40	45.0	48	44	40	32	44	24	20	84	80	76.00	48.08	250 mg/L
4	BOD (mg/lit.)	8.5	7.2	8.6	6	5.1	BDL	6	BDL	BDL	12	11	12.00	8.49	30 mg/L
5	Oil &Grease (mg/lit)	4.3	6.1	6	4.8	4.4	7.2	3.2	BDL	7.1	3.6	1.5	2.90	4.65	10 mg/L

Ground Water level report for the year 2023-24

DALMIA CEMENT BHARAT LIMITED, BOKARO Ground Water level monitoring report for the year 2023-24													
Sr.no	**Village Location**	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**	**Mar-24**
	Unit		**Depth of ground water level in feet**										
1	Pakhriatand (Near Anganwadi)	23'8''	24'5''	24'9''	26'3''	23'4''	11'5''	13'9''	14'5''	19'8''	21'7''	21'4''	20'1''
2	Tupkadih (Near Electric pole)	19'9''	20'7''	21'0''	22'6''	20'9''	11'7''	12'0''	12'7''	16'9''	19'6''	17'2''	15'7''
3	Godawali (Near Temple)	10'5''	11'2''	11'9''	12'4''	9'7''	3'7''	3'6''	3'9''	6'3''	8'3''	7'8''	6'5''
4	Bhutkuru (Near Primary school)	20'1''	20'7''	20'8''	20'3''	19'8''	11'5''	13'1''	14'3''	17'1''	18'1''	19'5''	17'8''