ENVIRONMENT CLEARANCE COMPLIANCE STATUS REPORT

PERIOD: 1st April 2023 to 30th September 2023

M/s JSW Cement Limited, Jajpur
(Kalinga Nagar Industrial Complex, Vill- Jakhapura, Tehsil- Danagadi Dist- Jajpur, Odisha- 755026)

List of Annexures

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1	Monthly Environment Monitoring Report (April 2023- September 2023)	I
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Compliance Report of Environment Clearance Conditions

Name of the Project: 1.20 MTPA Portland Slag Cement (PSC), Portland Pozzolana Cement (PPC), And Ground Granulated Blast Furnace Slag (GGBS) Cement Grinding Unit, JSW Cement Ltd. located at Kalinga Nagar Industrial Complex, Danagadi, Dist- Jajpur, Odisha
SEIAA Environment Clearance Letter – F.No 19604/4-IND/06-2017 Ref No. 3693/SEIAA dated 17th October 2017
Project Code: Not yet allotted
Period :Apr 2023 to Sep 2023.

<table>
<tr><th>S.No.</th><th>Conditions</th><th>Compliance</th></tr>
<tr><td>A</td><td>Specific Conditions</td><td></td></tr>
<tr><td>1</td><td>Environmental Clearance is granted as recommended by SEAC considering that they are standalone grinding units.</td><td>Noted and agreed.</td></tr>
<tr><td>2</td><td>The Environmental Clearance is granted for cement grinding unit of following production capacity.

<table><tr><td>Product</td><td>Capacity</td></tr><tr><td>Portland Slag Cement (PSC)</td><td rowspan="4">1.2 MTPA</td></tr><tr><td>Portland Pozzolana Cement (PPC)</td></tr><tr><td>Ground Granulated Blast Furnace Slag (GGBS)</td></tr><tr><td>Portland Composite Cement (PCC)</td></tr></table></td><td>Production of cement (PSC/PPC/GGBS/ Composite Cement) has not exceeded the maximum permissible quantity, i.e. 1.2 MTPA. During the year 2020-21 2021-22, 2022-23 & 2023-24(till Sept) the production remained 0.62 MTPA 0.51 MTPA, 0.55 MTPA & 0.31 MTPA (till Sept) which is less than the permissible quantity of EC and CTO.

Production data from April 2023 to September 2023 are given below:<table><tr><th>Month & year</th><th>Production in Tonnes</th></tr><tr><td>April 2023</td><td>59590</td></tr><tr><td>May 2023</td><td>63244</td></tr><tr><td>June 2023</td><td>51047</td></tr><tr><td>July 2023</td><td>48192</td></tr><tr><td>Aug 2023</td><td>44911</td></tr><tr><td>Sept 2023</td><td>43231</td></tr><tr><td>Total</td><td>310,215</td></tr></table></td></tr>
<tr><td>3</td><td>The project proponent should install 24X7 air monitoring devices to monitor air emissions, as provided by the CPCB and submit report to the SEIAA, Odisha and Regional Office MoEF & CC, Bhubaneswar.</td><td>The unit has installed OCEMS for both the major stacks i.e. cement mill & coal mill and 1 No. of CAAQMS for continuous monitoring of ambient air. Data from the OCEMS & CAAQMS is being continuously transmitted to the CPCB/SPCB server. In addition, the monitoring is conducted by third party and analysis report for the same is being submitted to concerned statutory bodies on regular basis.
(Reports enclosed as Annexure - I)</td></tr>
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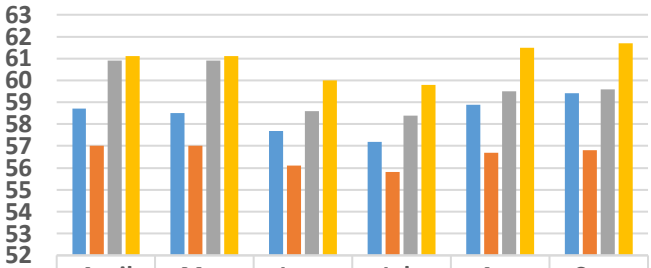
	 **CEMS installed for Coal Mill**	 **CEMS installed for Cement Mill**
4	**The Standards issued by the MoEF&CC, Govt. of India vide G.S.R. No. 612 (E) dated 25th August 2014 and subsequent amendment dated 9th May 2016 and 10th May 2016 regarding cement plants with respect to particulate matter, SO2 & NOx shall be followed.**	Since, it is a cement grinding unit, monitoring of SO2 and NOx are not applicable for this unit; only particulate matter emission standards are applicable to us and we are complying to the same. Reports of environmental monitoring carried by NABL accredited laboratory are submitted to concerned statutory bodies on regular basis. **(Reports enclosed as Annexure - I)**
5	**Continuous stack monitoring facilities to monitor gaseous emissions from the process stacks shall be provided. Limit of PM shall be controlled to meet prescribed standards by installing adequate air pollution control.**	OCEMS have been installed for both the major stacks (Cement Mill & Coal Mill). As this is a cement grinding unit, only particulate matter emission standards are applicable to us. We have taken various measures for reducing PM levels by installing bag house, bag filters at all the material transfer points as well as stacks. The bag filters are designed for outlet dust emissions <30 mg/Nm3.
6	**The National Ambient Air Quality Standards issued by the MoEF&CC, Govt. of India vide G.S.R. No. 826(E) dated 16th November 2009 shall be followed.**	The National Ambient Air Quality Standards are duly followed. The unit has engaged an NABL and MoEF & CC recognized laboratory for carrying out Ambient Air Quality Monthly. The results of Ambient Air Quality Monitoring carried out for the period April 2023 to September 2023 are mentioned below:

Ambient Air Quality Monitoring reports FY-2023-24 (April to September)							
Ambient Air (PM10) (µg/m3)							
Area	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Average**
Near weigh bridge	58.7	58.5	57.7	57.2	58.9	59.4	58.4
Near CCR building	57	57	56.1	55.8	56.7	56.8	56.6
Near raw material yard	60.9	60.9	58.6	58.4	59.5	59.6	59.7
Near Hopper Building	61.1	61.1	60	59.8	61.5	61.7	60.9
Ambient Air (PM2.5)(µg/m3)							
Area	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Average**
Near weigh bridge	35.4	35	34.62	33.15	35.3	35.4	34.8
Near CCR building	34.1	34.17	33.63	32.37	33.5	36.5	34.0
Near raw material yard	36.2	36.56	35.17	33.89	34.4	35.7	35.3
Near Hopper Building	36.21	36.65	36	34.69	34.9	37	35.9
Ambient Air SO2(µg/m3)							
Area	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Average**
Near weigh bridge	8.6	8.7	8.7	8.4	8.8	9	8.7
Near CCR building	7.5	7.6	7.6	7.4	7.6	7.5	7.5
Near raw material yard	8.7	8.7	8.7	8.6	8.9	8.7	8.7
Near Hopper Building	7.6	7.5	7.5	7.3	7.9	7.8	7.6
Ambient Air NOx(µg/m3)							
Area	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Average**

Near weigh bridge	14.6	14.6	14.6	14.5	15.2	15.3	14.8
Near CCR building	17.6	17.7	17.7	17.4	17.7	17.6	17.6
Near raw material yard	16.5	16.7	16.7	16.5	17.8	17.6	17.0
Near Hopper Building	15.7	15.7	15.7	15.5	16.7	16.6	16.0

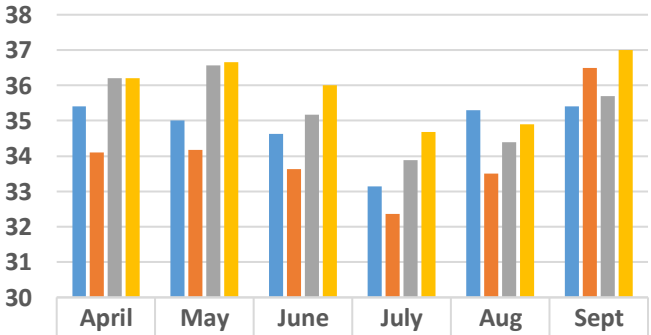
Ambient Air CO(mg/m3)							
Area	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Average**
Near weigh bridge	0.67	0.68	0.68	0.64	0.65	0.66	0.66
Near CCR building	0.59	0.57	57	0.57	0.58	0.58	9.98
Near raw material yard	0.54	0.56	0.56	0.56	0.59	0.58	0.57
Near Hopper Building	0.59	0.57	0.57	0.57	0.6	0.59	0.58

Ambient Air (PM10) (µg/m3)



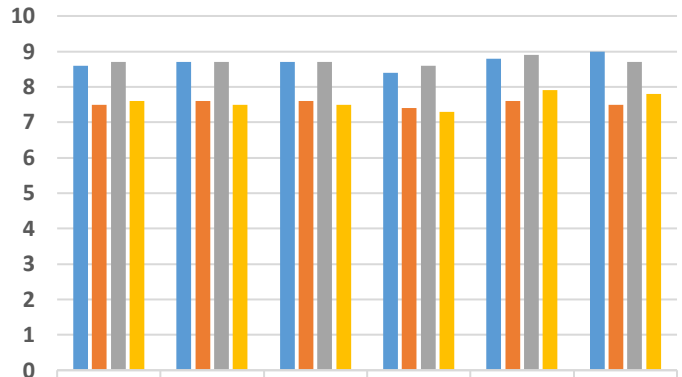
	April	May	June	July	Aug	Sept
Near weigh bridge	58.7	58.5	57.7	57.2	58.9	59.4
Near CCR building	57	57	56.1	55.8	56.7	56.8
Near raw material yard	60.9	60.9	58.6	58.4	59.5	59.6
Near Hopper Building	61.1	61.1	60	59.8	61.5	61.7

Ambient Air (PM2.5) (µg/m3)



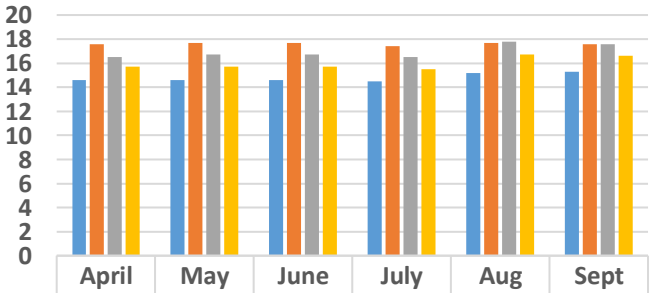
	April	May	June	July	Aug	Sept
Near weigh bridge	35.4	35	34.62	33.15	35.3	35.4
Near CCR building	34.1	34.17	33.63	32.37	33.5	36.5
Near raw material yard	36.2	36.56	35.17	33.89	34.4	35.7
Near Hopper Building	36.21	36.65	36	34.69	34.9	37

Ambient Air SOx (µg/m3)

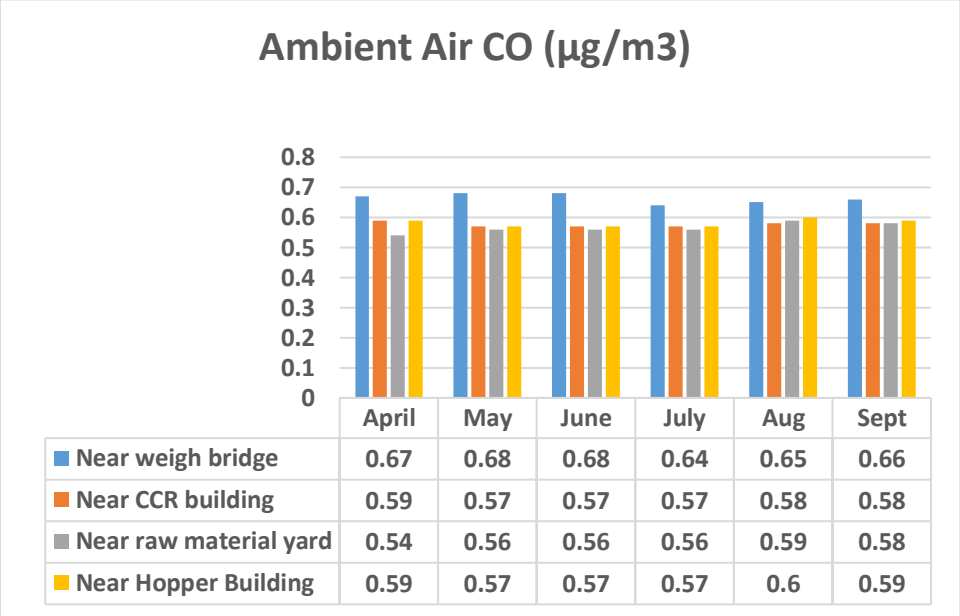


	April	May	June	July	Aug	Sept
Near weigh bridge	8.6	8.7	8.7	8.4	8.8	9
Near CCR building	7.5	7.6	7.6	7.4	7.6	7.5
Near raw material yard	8.7	8.7	8.7	8.6	8.9	8.7
Near Hopper Building	7.6	7.5	7.5	7.3	7.9	7.8

Ambient Air NOx (µg/m3)



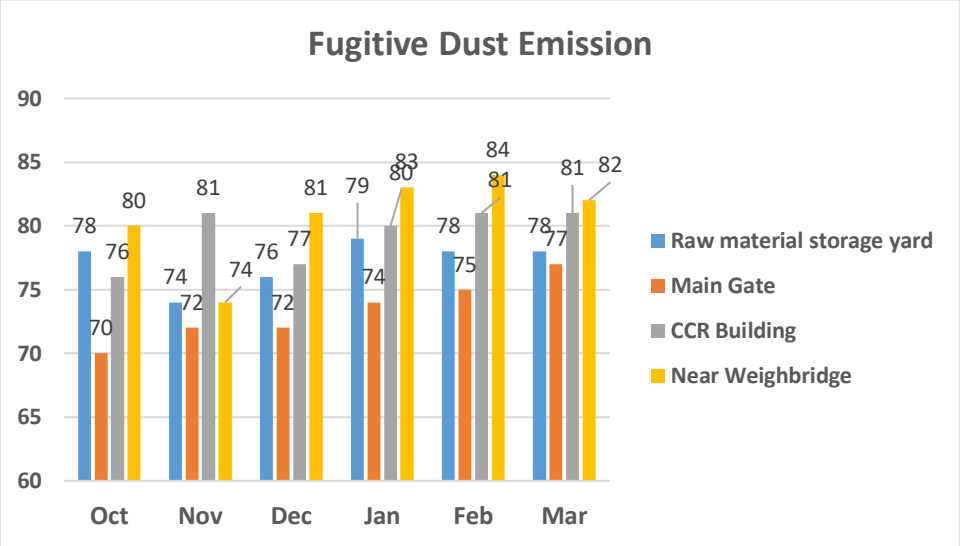
	April	May	June	July	Aug	Sept
Near weigh bridge	14.6	14.6	14.6	14.5	15.2	15.3
Near CCR building	17.6	17.7	17.7	17.4	17.7	17.6
Near raw material yard	16.5	16.7	16.7	16.5	17.8	17.6
Near Hopper Building	15.7	15.7	15.7	15.5	16.7	16.6



7	**Secondary fugitive emissions shall be controlled and shall be within the prescribed limits and regularly monitored. Guidelines/Code of Practice issued by the CPCB in this regard shall be followed.**	Fugitive emission from secondary sources are controlled, monitored and maintained within the prescribed standards. Unit is following the CPCB guidelines for control of fugitive emission. Fugitive emissions are monitored once in a month at regular intervals at Raw Material Storage Yard, Main Gate, CCR Building & Near Weigh Bridge by an NABL and MOEF recognized laboratory. Fugitive Emission Monitoring Data for the Period of April 2023 to September 2023 are mentioned below:

Fugitive Dust Emission FY 23-24 (April to September)

	April	May	June	July	Aug	Sept
Raw material storage yard	77	74	75	74	76	75
Main Gate	78	76	70	73	71	72
CCR Building	82	83	82	81	83	82
Near Weighbridge	83	81	83	80	81	84



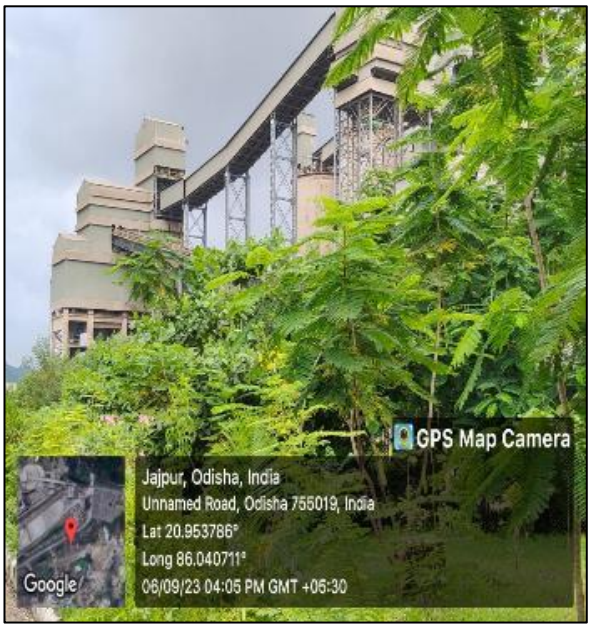
8	**All the raw materials shall be stored under covered shed (as proposed) to control fugitive emission.**	Covered sheds with impervious platform have been provided for storage of gypsum and coal. Clinker & fly ash are stored in covered silo.

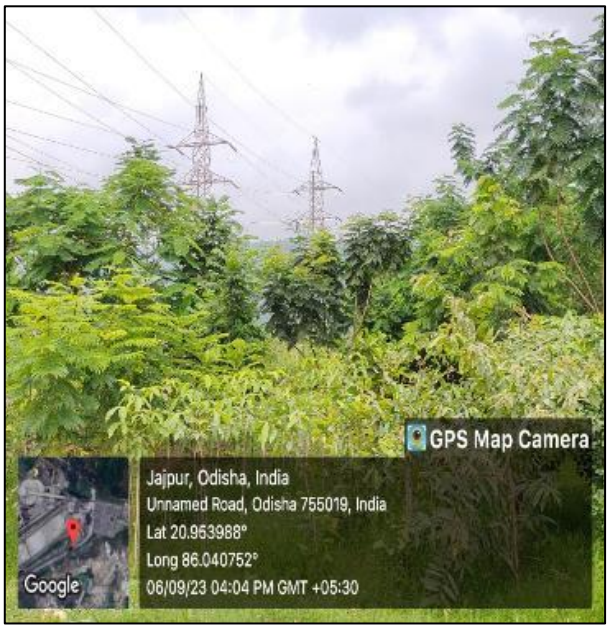
Covered Shed for Raw Material Storage

9	**Efforts shall be made to reduce impact of the transport of the raw materials and end products on the surrounding environment including agricultural land by the use of conveyors/rail mode of transport wherever feasible. The company shall have separate truck parking area. Vehicular emissions shall be regularly monitored.**	Closed conveyor belts have been installed in order to control the fugitive emission caused by transport of raw materials. Wherever feasible, transportation of raw materials will be done through conveyors/rail/road network. We have provided a separate truck parking area and vehicular emissions will be monitored regularly.
10	**All the treated wastewater shall be recycled and reused in the process and/or for dust suppression and green belt development and other plant related activities etc. No wastewater shall be discharged outside the factory premises and 'zero' discharge shall be adopted.**	No waste water is being generated from the manufacturing process. Domestic waste water is being treated in Sewage Treatment Plant and Treated waste water is used for dust suppression/plantation/ gardening purpose. Zero liquid discharge status is maintained.

20 KLD Sewage Treatment Plant installed for treatment of domestic water

11	**Efforts shall be made to make use of harvested rain water.**	Being Complied Unit has constructed Roof Top Rain Water Harvesting System having the catchment area of 2584 sq. mtr.
12	**All the bag filter dust, raw mill dust, coal dust, clinker dust and cement dust from pollution control devices shall be recycled and reused in the process and used for cement manufacturing. Spent oil and batteries shall be sold to authorized recyclers/ re-processors only.**	All the dust collected from air pollution control devices are being recycled & reused in cement manufacturing process. Used/Spent oil, burst Plastic bags & lead acid batteries are sold to authorized third party recyclers/ re-processors only.
13	**Green belt over 33% (5.61 acres as proposed) of the total project area shall be developed within plant premises with at least 10-meter-wide green belt on all sides along the periphery of the project area and along road sides etc. by planting native and broad leaved species in consultation with local DFO, local community and as per the CPCB guidelines.**	Green belt development is being carried out in phased manner in 33% of project area by planting native/local species in consultation with local DFO, local community and as per CPCB guidelines. We have planted total 5998 numbers of trees on 6.16 acres of land by the end of September 2023 which is more than 40% of greenbelt of total land area.





14	**The project proponent shall provide solar light system for all common areas, street lights, villages, parking around project area and maintain the same regularly. The**	Being complied. Solar lighting system has been provided in common areas, street lights of plant premises.

proponent shall use Solar/ Renewable energy of 5 % of the expected actual power requirement.

We got certificate from IEX for procurement of renewable energy to reduce the actual power requirement of 5% for FY 2022-23. The details are given as under:

Sl. No	Month	Units (KWH)
1	Apr-22	1548720
2	May-22	1861440
3	Jun-22	1494840
4	Jul-22	1443480
5	Aug-22	1153320
6	Sep-22	1401840
7	Oct-22	1105800
8	Nov-22	1565160
9	Dec-22	2244480
10	Jan-23	1954920
11	Feb-23	1535760
12	Mar-23	2266680
Total Power used from Grid		19576440
Green Energy/ Renewable Energy from IEX		**978822**
Total Percentage for using Renewable Energy		**5**

Solar Panel installed at different location of plant to reduce electricity consumption

Certificate of Purchase of Renewable Energy Certificate

IEX INDIAN ENERGY EXCHANGE
INNOVATION TECHNOLOGY FUTURE

INDIAN ENERGY EXCHANGE LTD.

Certificate of Purchase of REC(s)

Certificate Number : C-IEX_REC001486 **Issued On: 26-Apr-2023**

JSW Cement Limited

Number of Certificates: 979

Source of Origin: SOLAR :543 (SL : 174, SP : 369)
NON-SOLAR :436 (BM : 5, NC : 1, NS : 278, SH : 62, WD : 90)

This certifies that JSW Cement Limited is the holder of 979 non transferable Renewable energy certificate(s) bought on 26-Apr-2023 , through Indian Energy Exchange Limited.

This certificate represented hereby is issued and shall be held subject to all the provisions of the regulations of Honorable CERC as amended from time to time and the Bye-laws, Rules and Business Rules of Indian Energy Exchange Limited.

Code	Source of Origin	Code	Source of Origin
SP	Solar PV	GP	Geothermal
ST	Solar Thermal	BM	Biomass
WD	Wind Commissioned before 01.04.2022	NC	Bio-fuel congeneration
WN	Wind Commissioned on and after 01.04.2022	UW	Urban or Municipal Waste
SH	Small Hydor commissioned before 08.03.2019	OT	Others
LH	Large Hydro commissioned before 08.03.2019	NS	OA Consumer and Discom Non-Solar
HO	Small Hydro, Large Hydro, PSP Commissioned on or after 08.03.2019	SL	OA Consumer and Discom Solar
BG	Biogas		

This is a computer-generated statement hence doesn't require signature.

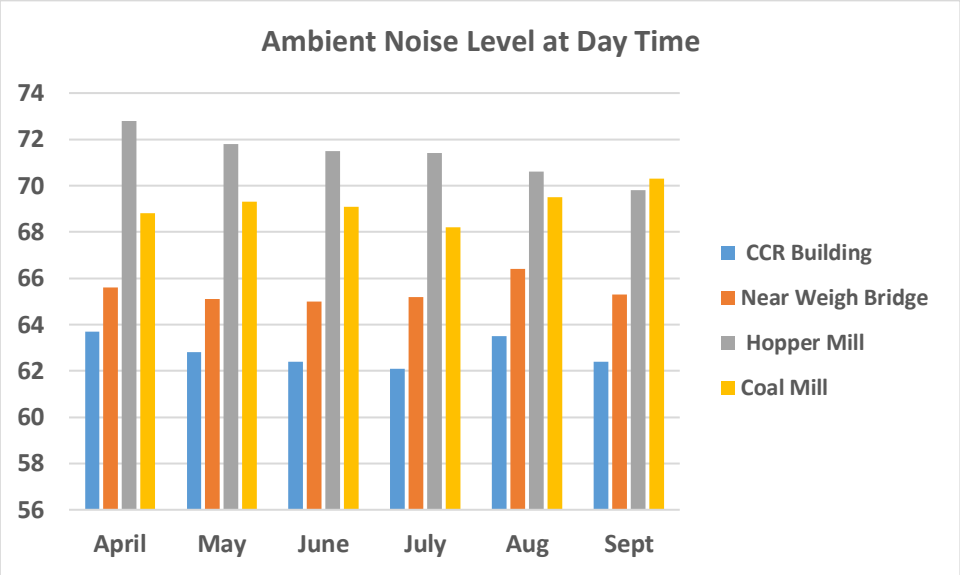
Certificate of Purchase of Renewable Energy

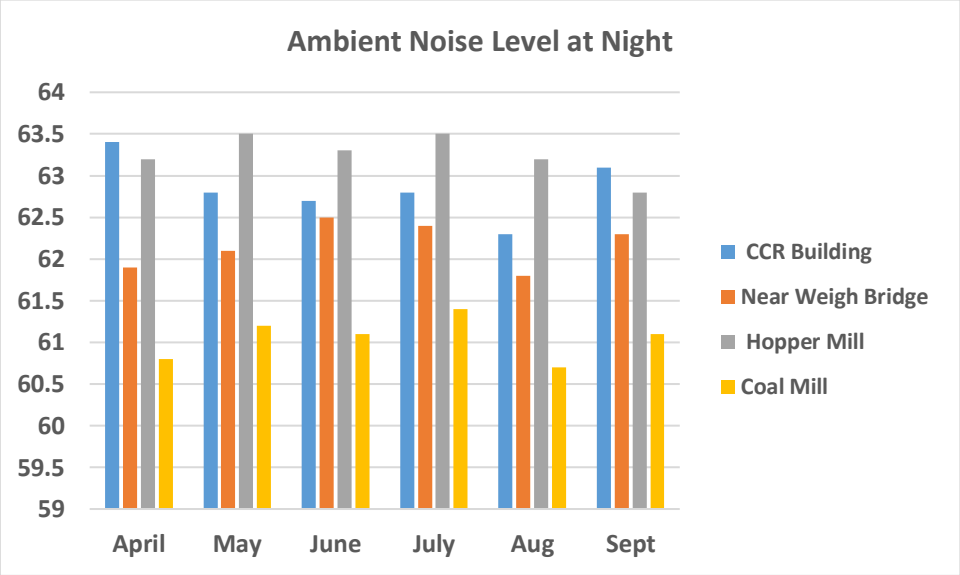
15	**The project proponent shall provide LED lights in their offices and residential areas.**	LED lights are provided in offices. Residential colony does not exist.
16	**All the commitments made during the Public Hearing / Public Consultation meeting held on 03rd May, 2017 shall be satisfactorily implemented and adequate budget provision should be made accordingly.**	We have earmarked INR 8 Crore towards ESC/CER and the same shall be spent towards meeting PH commitments. Current Status of Public Hearing Commitment given as **Annexure- II**
17	**All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Cement plants shall be implemented.**	Unit is ensuring CREP compliance applicable to cement plant and all the recommendations have been implemented. **Annexure-III.**
18	**At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment (ESC) based on Public Hearing issues, locals need and item-wise details along with time bound action plan shall be prepared and submitted to the SEIAA, Odisha and Regional Office MoEF&CC Bhubaneswar. Implementation of such program shall be ensured by constituting a Committee comprising of the proponent, representatives of village Panchayat and District Administration. Action taken report in this regard shall be submitted to the SEIAA, Odisha as well as to the Regional Office MoEF & CC Bhubaneswar.**	INR 8 Crores has been earmarked for Enterprise Social Commitment (ESC) and action plan has already been submitted. Expenditure incurred towards Social Commitment (ESC) based on Public Hearing issues till September 2023 is 5.6 Crore.
19	**In addition to the above provision of ESC, the proponent shall prepare a detailed CSR Plan for the next 5 years including annual physical and financial targets for the project, which includes village-wise, sector-wise (Health, Education, Sanitation, Skill Development and infrastructure etc.) activities in consultation with the local communities and administration. The plan so prepared shall be based on SMART (Specific, Measurable, Achievable, Relevant and Time bound) concept. The expenditure should be aimed at sustainable development and direct free distribution and temporary relief should not be**	Detailed CSR Expenditure for the FY 2023-24 is enclosed as **Annexure-IV.** The details of CSR plan has been uploaded on website https://www.jswcement.in/csr

	included. The CSR plan will include the amount of 2% retain annual profits as provided for in Clause 135 of the Companies Act, 2013 which provides for 2% of the average net profits of previous 3 years towards CSR activities for life of the project. A separate budget head shall be created and the annual capital and revenue expenditure on various activities of the plan shall be submitted as part of the Compliance report to the SEIAA, Odisha and Regional Office, MoEF&CC, Bhubaneswar. The details of the CSR Plan shall also be uploaded on the company website and shall also be provided in the Annual Report of the company.	
20	**A risk assessment study and Disaster Preparedness and Management Plan along with the mitigation measures shall be prepared with a focus of Disaster Prevention and a copy submitted to SEIAA Odisha, Regional Office MoEF&CC Bhubaneswar, SPCB and CPCB within 3 months of issue of environment clearance letter.**	Risk assessment study & Disaster Management Plan along with mitigation measures is enclosed herewith as **Annexure -V.**
21	**To educate the workers, all the work places where dust may cause a hazard shall be clearly indicated as a dust exposure area through use of display signs which identifies the hazard and the associated health effects.**	Noted and complied.
22	**Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.**	The condition duly complied with during the implementation phase.

B.	General Conditions	Compliance
1	**The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board, Odisha.**	We are strictly adhering to the stipulations made by Odisha State Pollution Control Board.
2	**No further expansion or modifications in the plant shall be carried out without prior approval of the SEIAA, Odisha.**	Noted and agreed
3	**At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM10, PM2.5, SO2 and NOx are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to the SEIAA, Odisha, Regional Office, MoEF&CC, Bhubaneswar and the SPCB/CPCB once in six months.**	Four ambient air stations (04 AAQ & 1 CAAQMS) have been established in downwind direction in consultation with the SPCB. Also, monitoring of the ambient air quality is being carried out through NABL accredited laboratory at the four locations in the downwind directions. Reports of the same are being submitted to the concerned statutory bodies on regular basis.
4	**The overall noise levels in and around the plant area shall be kept well within the standards (85 dB A) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz, 75 dBA (day time) and 70 dBA (night time)**	We have installed acoustic barriers around high noise generations equipment's, silencers and regular preventive maintenance of the equipment's to minimize the noise generation. Ambient noise level is being maintained within the prescribed norms. Noise Monitoring data for the period April 2023 to September 2023 are as mentioned below:

	April	May	June	July	Aug	Sept
CCR Building	63.7	62.8	62.4	62.1	63.5	62.4
Near Weigh Bridge	65.6	65.1	65	65.2	66.4	65.3
Hopper Mill	72.8	71.8	71.5	71.4	70.6	69.8
Coal Mill	68.8	69.3	69.1	68.2	69.5	70.3
	Night Time					
	April	**May**	**June**	**July**	**Aug**	**Sept**
CCR Building	63.4	62.8	62.7	62.8	62.3	63.1
Near Weigh Bridge	61.9	62.1	62.5	62.4	61.8	62.3
Hopper Mill	63.2	63.5	63.3	63.5	63.2	62.8
Coal Mill	60.8	61.2	61.1	61.4	60.7	61.1





Noise Level Monitoring at Plant Premises

5	**Occupational health surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.**	Occupational health Surveillance of the workers & Employees are being carried on regular basis as per Factory act requirement and records are maintained.
6	**The company should develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.**	Noted and being complied.
7	**The project proponent should also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes,**	Unit has complied all the Environment Protection Measures recommended in EIA / EMP. We will continuously implement various CSR programs as per the CSR plan.

	educational programmes, drinking water supply and health care etc.	
8	**Requisite funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the SEIAA, Odisha as well as the State Pollution Control Board, Odisha. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office, MoEF&CC, Bhubaneswar. The funds so provided shall not be diverted for any other purpose.**	Unit has earmarked INR 16.5 Crore towards capital cost of implementation of EMP and pollution control measures. Actual total capital cost incurred is INR 21.016 Crore & INR 0.40 crore incurred towards recurring Cost from Apr - 23 to September 23 for environment protection and pollution control measures. Item wise breakup of EMP has been given in **Annexure-VI** These funds shall not be diverted for any other purpose.
9	**A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.**	Unit has sent the copy of our Environment Clearance to concerned panchayat, zila parishad/municipal corporation. Copy of the Environment clearance letter has been uploaded on our company website and can be viewed at the below link: http://www.jswcement.in/wp-content/uploads/EC-Order-1.2-MTPA-Jajpur-17-10-2017.pdf
10	**The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically on the MoEF&CC website. It shall simultaneously be sent to the Regional Office of the MoEF&CC at Bhubaneswar, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM10 S02, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.**	Unit is uploading and regularly updating the compliance report on the company website. The Pollutants parameters (Ambient level) related to grinding units are being monitored & displayed at Main gate of Company in Public Domain. Unit is submitting compliance report along with monitoring data to MoEF & CC, CPCB, & SPCB on six monthly basis, Last six monthly report for the period of October 2022 to March 2023 was submitted on 31/05/2023.
11	**The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional, Office of MoEF&CC, Bhubaneswar, the**	Six monthly compliance reports are submitted to all the concerned regulatory authorities on regular basis as stipulated.

	respective Zonal Office of CPCB and the SPCB. The Regional Office of MoEF&CC at Bhubaneswar / CPCB / SPCB shall monitor the stipulated conditions.	
12	**The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MoEF&CC at Bhubaneswar by e-mail.**	Noted and being complied. The Environmental Statement for the FY 2022-23 in form of FORM-V has been submitted on 29th Sep 2023 attached as **Annexure-VII**
13	**The Project Proponent shall inform the public that the project has been accorded environmental clearance by the SEIAA, Odisha and copy of the clearance letter is available with the SPCB and may also be available in the Website of the SEIAA, Odisha and the Odisha State Pollution Control Board (OSPCB). This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office, MoEF&CC, Bhubaneswar as well as State Pollution Control Board, Odisha.**	We have advertised about grant of Environment Clearance in 2 local newspapers i.e New Indian Express & Pramay which are widely circulated in the region and copy of the same was submitted to Regional office, MoEF&CC. Newspaper advertisement is attached as an **Annexure-VIII**.
14	**Project authorities shall inform the SEIAA, Odisha, as well as Regional Office, MoEF&CC, Bhubaneswar, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.**	Date of financial closure: December 2015 Date of final approval: Final approval from IPICOL on 02-12-2015. Date of commencement of land development work: 16-11-2017.
15	**The SEIAA, Odisha may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.**	Noted and agreed.
16	**The SEIAA, Odisha reserves the right to stipulate additional conditions if**	Noted and agreed.

	found necessary. The Company in a time bound manner shall implement these conditions.	
17	**The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of the project as and when required.**	Noted and agreed.
18	**The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules.**	Noted and agreed.

Visiontek Consultancy Services Pvt. Ltd.

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- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-01953 **Date: 06.05.2023**

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	AAQ1:Near Weigh Bridge	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	05.04.2023, 08.04.2023, 12.04.2023, 15.04.2023, 19.04.2023, 22.04.2023, 26.04.2023, 29.04.2023
Sample Condition	ICE Preservation		
Sampling Date	04.04.2023, 07.04.2023, 11.04.2023, 14.04.2023, 18.04.2023, 21.04.2023, 25.04.2023, 28.04.2023	Test Completed	02.05.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.04.2023	57.7	35.31	8.4	14.4	0.68
2	07.04.2023	58.8	33.62	8.8	14.5	0.69
3	11.04.2023	58.6	37.42	8.6	14.7	0.66
4	14.04.2023	58.4	36.56	8.4	14.6	0.67
5	18.04.2023	59.8	35.48	8.5	14.7	0.66
6	21.04.2023	58.4	36.72	8.7	15.1	0.68
7	25.04.2023	59.2	35.81	8.6	14.8	0.68
8	28.04.2023	58.8	32.85	8.7	14.3	0.67
Monthly Average		58.7	35.47	8.6	14.6	0.67
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination:				Nil

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Remarks:

TERMS AND CONDITION:-

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Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed By

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved By

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- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR- 01954 **Date: 06.05.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Ltd, Jajpur, Odisha

SAMPLE DETAILS

Sample Location & Code	AAQ2:Near Hopper Building	Sampled By	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	05.04.2023, 08.04.2023, 12.04.2023, 15.04.2023, 19.04.2023, 22.04.2023, 26.04.2023, 29.04.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Sampling Date	04.04.2023, 07.04.2023, 11.04.2023, 14.04.2023, 18.04.2023, 21.04.2023, 25.04.2023, 28.04.2023	Test Completed on	02.05.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.04.2023	61.1	36.31	7.3	15.5	0.58
2	07.04.2023	60.8	36.4	7.5	15.8	0.59
3	11.04.2023	61.3	35.8	7.4	15.9	0.58
4	14.04.2023	60.4	35.9	7.9	15.7	0.57
5	18.04.2023	61.4	36.7	8.1	15.6	0.6
6	21.04.2023	61.5	36.5	7.8	15.8	0.59
7	25.04.2023	60.9	36.4	7.7	15.7	0.58
8	28.04.2023	61.3	35.7	7.4	15.9	0.62
Monthly Average		61.1	36.21	7.6	15.7	0.59
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10,PM-2.5, SO2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Remarks:

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Ph: +91-674-3511721E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at:www.vcspl.org

Ref: Envlab/23-24/TR-01955 **Date: 06.05.2023**

TEST REPORT

Customer Name & Addres : **M/s JSW Cement Ltd, Jajpur, Odisha**

Sample Location & Code	AAQ3: Near CCR Building	Sampled by	VCSPL Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	05.04.2023, 08.04.2023, 12.04.2023, 15.04.2023, 19.04.2023, 22.04.2023, 26.04.2023, 29.04.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Sampling Date	04.04.2023, 07.04.2023, 11.04.2023, 14.04.2023, 18.04.2023, 21.04.2023, 25.04.2023, 28.04.2023	Test Completed on	02.05.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.04.2023	56.8	33.62	7.5	17.6	0.59
2	07.04.2023	57.1	33.64	7.4	17.5	0.57
3	11.04.2023	56.9	33.63	7.7	17.8	0.58
4	14.04.2023	56.8	34.12	7.6	17.4	0.57
5	18.04.2023	57.2	33.51	7.4	17.3	0.61
6	21.04.2023	56.8	34.21	7.8	17.8	0.62
7	25.04.2023	56.8	35.21	7.6	17.8	0.6
8	28.04.2023	57.2	34.87	7.3	17.4	0.59
Monthly Average		57.0	34.10	7.5	17.6	0.59
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		**Gravimetric IS 5182: Part 23**	**Gravimetric EPA CFR-40 (pt 50) Appendix-1**	**Improved West & Geake Method IS 5182 (Part-2) RA2006**	**Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006**	**Non Dispersive Infrared Method IS 5182 (Part-10):1999**
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10, PM-2.5, SO2, NOx & CO presented in row no 1-8 are Time Weighted Average.)

Remarks:

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- Waste Management Services

Laboratory Services
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Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR- 01956 Date: 06.05.2023

TEST REPORT

Customer Name & Address : M/s JSW Cement Ltd, Jajpur, Odisha

Sample Location & Cod	AAQ4:Raw Material Storage Yard	Sampled by	VCSPL Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	05.04.2023, 08.04.2023, 12.04.2023, 15.04.2023, 19.04.2023, 22.04.2023, 26.04.2023, 29.04.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Analysis Date	04.04.2023, 07.04.2023, 11.04.2023, 14.04.2023, 18.04.2023, 21.04.2023, 25.04.2023, 28.04.2023	Test Completed on	02.05.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.04.2023	60.1	36.25	8.9	16.8	0.56
2	07.04.2023	60.5	36.13	8.7	16.5	0.58
3	11.04.2023	60.8	36.41	8.6	16.7	0.51
4	14.04.2023	60.9	35.94	8.7	16.3	0.52
5	18.04.2023	61.2	36.27	8.5	16.9	0.54
6	21.04.2023	61.3	36.34	8.7	16.5	0.53
7	25.04.2023	61.4	35.82	8.9	16.3	0.55
8	28.04.2023	61.2	36.45	8.5	16.2	0.52
Monthly Average		60.9	36.20	8.7	16.5	0.54
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Remarks:

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Ref: Envlab/23-24/TR-01957 **Date: 06.05.2023**

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	**M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	:	ST1: Coal Mill	Sampling Procedure	IS 11255
Date of Sampling	:	06.04.2023	Material Construction of stack	MS Plate
Time of Sampling	:	12.00Hrs-12.40 Hrs	Shape of Stack	Circular
Date of Analysis	:	07.04.2023 to 10.04.2023	Height of Stack from Ground Level	40.0 meter
Stack Connected To	:	Coal Mill	Diameter of Stack	0.8 meter
Emission Due To	:	Burning of Coal	Height of Sampling Point from Ground Level	26.0 meter

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^0K	328
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	14.99
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	--	Nm^3/hr	13438.28
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.66
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	14.88

Remarks:
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5. The laboratory's responsibility under this report is limited to; proven willful negligence.

Visiontek Consultancy Services PVT. Ltd.

Reviewed By

Visiontek Consultancy Services PVT. Ltd.

Approved By

Ref: Envlab/23-24/TR-01958 **Date: 06.05.2023**

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	**M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	:	ST2: Roller Press	Sampling Procedure	IS 11255
Date of Sampling	:	06.04.2023	Material Construction of stack	MS Plate
Time of Sampling	:	13.00 Hrs-13.30 Hrs	Shape of Stack	Circular
Date of Analysis	:	06.04.2023 to 10.04.2023	Height of Stack from Ground Level	58.0 meter
Stack Connected To	:	Roller Press Chimney	Diameter of Stack	3.0 meter
Emission Due To	:	Cement Grinding	Height of Sampling Point from Ground Level	33.0 meter

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^0K	355
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	6.01
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	--	Nm^3/hr	205834.64
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.56
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	19.18

Remarks:
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Ref: Envlab/23-24/TR- 01959 **Date: 06.05.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	N1-N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IEC 61672-1(2002-05) Class-I.
Sample Source	Noise Level (Core Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	CCR Building	06.04.2023	63.4	63.4
02	Near Weigh Bridge	06.04.2023	65.6	61.9
03	Hopper Mill	06.04.2023	72.8	63.2
04	Coal Mill	06.04.2023	68.8	60.8
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			Nil	

Remarks:

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Visiontek Consultancy Services Pvt. Ltd.

Reviewed By

Visiontek Consultancy Services Pvt. Ltd.

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Ref: Envlab/23-24/TR-01960 **Date: 06.05.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	N1-N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IEC 61672-1(2002-05) Class-I.
Sample Source	Noise Level (Buffer Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Nuagaon	06.04.2023	60.1	46.2
02	Chandia	06.04.2023	53.8	45.2
03	Mangalpur	06.04.2023	56.3	48.8
04	Dhuligarh	06.04.2023	55.4	47.7
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			Nil	

Remarks:

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Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed By

Visiontek Consultancy Services Pvt. Ltd. BBSR

Aproved By

Ref: Envlab/23-24/TR-01961 **Date: 06.05.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Location & Code	F1-F4	Sampled by	VCSPL'S Representative
Sample Name	Fugitive Emission(AAQ)	Sampling Procedure	IS 5182
Sample Source	M/s JSW Cement Ltd	Sample Received on	06.04.2023
Sample Condition	N.A		
Analysis Date	07.04.2023	Test Completed on	10.04.2023

SL. No	Sampling Locations	Date of Sampling	Parameters	Observed Value ($\mu g/m^3$)	Test Method
1	RAW MATERIAL STORAGE YARD	06.04.2023	Suspended Particulate Matter	77	IS 5182 (Part-23)
2	NEAR JSW OFFICE MAIN GATE	06.04.2023		78	
3	CCR BUILDING	06.04.2023		82	
4	NEAR WEIGH BRIDGE	06.04.2023		83	
Standard For Crusher /Industrial Area				1200	

Remarks:

TERMS AND CONDITION:-

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Reviewed By

Visiontek Consultancy Services Pvt. Ltd. BBSR

Aproved By

Ref: Envlab/23-24/TR-01962 **Date: 06.05.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Location & Code	STW:1 (STP Inlet) STW:2 (STP Outlet)	Sampled by	VCSPL'S Representative
Sample Name	Sewage Water	Sampling Procedure	IS 1060
Sample Source	M/s JSW Cement Ltd	Sample Received on	07.04.2023
Sample Condition	Sealed Plastic & Sterilized Bottle		
Sampling Date	06.04.2023	Test Completed on	10.04.2023

SL No.	Parameters	Unit	MoEF & CC Notification Dt 13.10.2017	Test methods	STW-1	STW-2
1	Total Suspended Solids	mg/l, max	<100	APHA 2540 D	44	7.4
2	pH at 25^{0}C	-	6.5-9.0	APHA 4500H$^+$B	7.73	7.96
3	Oil & grease	mg/l, max	10	APHA 5520-B	<1.0	<1.0
4	Biochemical Oxygen Demand (as BOD) , 3 Days at 27^{0}C	mg/l, max	30	IS 3025(P-44): 1993 RA 1999	6.2	<2.0
5	Chemical Oxygen Demand (as COD)	mg/l, max	250	APHA 5220-B	28	<4.0

Remarks:

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Visiontek Consultancy Services Pvt. Ltd.

Reviewed By

Visiontek Consultancy Services Pvt. Ltd.

Aproved By

Ref: Envlab/23-24/TR-02728 **Date: 05.06.2023**

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	AAQ1:Near Weigh Bridge	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	04.05.2023, 07.05.2023, 11.05.2023, 14.05.2023, 18.05.2023, 21.05.2023, 25.05.2023, 28.05.2023
Sample Condition	ICE Preservation		
Sampling Date	02.05.2023, 05.05.2023, 09.05.2023, 12.05.2023, 16.05.2023, 19.05.2023, 23.05.2023, 26.05.2023	Test Completed on	01.06.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.04.2023	57.9	34.74	8.5	14.3	0.66
2	07.04.2023	58.2	34.92	8.5	14.5	0.69
3	11.04.2023	58.4	35.04	8.4	14.8	0.68
4	14.04.2023	58.5	35.1	8.6	14.7	0.68
5	18.04.2023	58.6	35.16	8.8	14.9	0.67
6	21.04.2023	58.5	35.1	8.9	14.6	0.65
7	25.04.2023	58.9	35.34	8.7	14.7	0.69
8	28.04.2023	58.8	35.28	8.9	14.5	0.68
Monthly Average		58.5	35.09	8.7	14.6	0.68
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		**Gravimetric IS 5182: Part 23**	**Gravimetric EPA CFR-40 (pt 50) Appendix-1**	**Improved West & Geake Method IS 5182 (Part-2) RA2006**	**Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006**	**Non Dispersive Infrared Method IS 5182 (Part-10):1999**
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination:				Nil

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Remarks:

TERMS AND CONDITION:-

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Reviewed By **Approved By**

Ref: Envlab/23-24/TR-02729

Date: 05.06.2023

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	AAQ2:Near Hopper Building	Sampled By	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	04.05.2023, 07.05.2023, 11.05.2023, 14.05.2023, 18.05.2023, 21.05.2023, 25.05.2023, 28.05.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Sampling Date	02.05.2023, 05.05.2023, 09.05.2023, 12.05.2023, 16.05.2023, 19.05.2023, 23.05.2023, 26.05.2023	Test Completed on	01.06.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.04.2023	61.1	36.66	7.4	15.6	0.59
2	07.04.2023	60.8	36.48	7.5	15.8	0.58
3	11.04.2023	61.3	36.78	7.6	15.9	0.56
4	14.04.2023	60.4	36.24	7.4	15.7	0.61
5	18.04.2023	61.4	36.84	7.5	15.5	0.57
6	21.04.2023	61.5	36.9	7.4	15.8	0.54
7	25.04.2023	60.9	36.54	7.7	15.9	0.58
8	28.04.2023	61.3	36.78	7.5	15.7	0.56
Monthly Average		61.1	36.65	7.5	15.7	0.57
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		**Gravimetric IS 5182: Part 23**	**Gravimetric EPA CFR-40 (pt 50) Appendix-1**	**Improved West & Geake Method IS 5182 (Part-2) RA2006**	**Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006**	**Non Dispersive Infrared Method IS 5182 (Part-10):1999**
			Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$			
			Any unusual feature during determination:		**Nil**	

Remarks: (All the values of PM-10,PM-2.5, SO2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Remarks:

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5. The laboratory's responsibility under this report is limited to; proven willful negligence.

Visiontek Consultancy Services Pvt. Ltd. BBSR ODISHA

Reviewed By

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved By

Ref: Envlab/23-24/TR-02730 **Date: 05.06.2023**

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

Sample Location & Code	AAQ3: Near CCR Building	Sampled by	VCSPL Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	04.05.2023, 07.05.2023, 11.05.2023, 14.05.2023, 18.05.2023, 21.05.2023, 25.05.2023, 28.05.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Sampling Date	02.05.2023, 05.05.2023, 09.05.2023, 12.05.2023, 16.05.2023, 19.05.2023, 23.05.2023, 26.05.2023	Test Completed on	01.06.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.04.2023	56.8	34.08	7.4	17.6	0.58
2	07.04.2023	57.1	34.26	7.6	17.8	0.59
3	11.04.2023	56.9	34.14	7.7	17.5	0.57
4	14.04.2023	56.8	34.08	7.5	17.9	0.55
5	18.04.2023	57.2	34.32	7.9	17.8	0.56
6	21.04.2023	56.8	34.08	7.3	18.1	0.58
7	25.04.2023	56.8	34.08	7.5	17.5	0.59
8	28.04.2023	57.2	34.32	7.6	17.6	0.57
Monthly Average		57.0	34.17	7.6	17.7	0.57
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10, PM-2.5, SO2, NOx & CO presented in row no 1-8 are Time Weighted Average.)

Remarks:

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5. The laboratory's responsibility under this report is limited to; proven willful negligence.

Reviewed By

Approved By

Ref: Envlab/23-24/TR-02731 **Date: 05.06.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Ltd, Jajpur, Odisha

Sample Location & Cod	AAQ4:Raw Material Storage Yard	Sampled by	VCSPL Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	04.05.2023, 07.05.2023, 11.05.2023, 14.05.2023, 18.05.2023, 21.05.2023, 25.05.2023, 28.05.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Analysis Date	02.05.2023, 05.05.2023, 09.05.2023, 12.05.2023, 16.05.2023, 19.05.2023, 23.05.2023, 26.05.2023	Test Completed on	01.06.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.04.2023	60.1	36.06	8.7	16.9	0.54
2	07.04.2023	60.5	36.3	8.6	16.8	0.58
3	11.04.2023	60.8	36.48	8.9	16.7	0.59
4	14.04.2023	60.9	36.54	8.7	16.6	0.56
5	18.04.2023	61.2	36.72	9	16.8	0.57
6	21.04.2023	61.3	36.78	8.4	16.9	0.55
7	25.04.2023	61.4	36.84	8.7	16.7	0.58
8	28.04.2023	61.2	36.72	8.8	16.5	0.54
Monthly Average		60.9	36.56	8.7	16.7	0.56
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination:			Nil	

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Remarks:

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Reviewed By

Approved By

Ref: Envlab/23-24/TR-02732

Date: 05.06.2023

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	M/s JSW Cement Ltd, Jajpur, Odisha

SAMPLE DETAILS

Sample Location & Code	:	ST1: Coal Mill	Sampling Procedure	IS 11255
Date of Sampling	:	26.05.2023	Material Construction of stack	MS Plate
Time of Sampling	:	12.00Hrs-12.40 Hrs	Shape of Stack	Circular
Date of Analysis	:	27.05.2023 to 30.05.2023	Height of Stack from Ground Level	40.0 meter
Stack Connected To	:	Coal Mill	Diameter of Stack	0.8 meter
Emission Due To	:	Burning of Coal	Height of Sampling Point from Ground Level	26.0 meter

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^0K	329
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	15.24
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	--	Nm^3/hr	13548.64
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.64
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	13.58

Remarks:

TERMS AND CONDITION:-

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Reviewed By

Approved By

Ref: Envlab/23-24/TR-02733 **Date: 05.06.2023**

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	**M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	:	ST2: Roller Press	Sampling Procedure	IS 11255
Date of Sampling	:	26.05.2023	Material Construction of stack	MS Plate
Time of Sampling	:	13.00 Hrs-13.30 Hrs	Shape of Stack	Circular
Date of Analysis	:	27.05.2023 to 01.06.2023	Height of Stack from Ground Level	58.0 meter
Stack Connected To	:	Roller Press Chimney	Diameter of Stack	3.0 meter
Emission Due To	:	Cement Grinding	Height of Sampling Point from Ground Level	33.0 meter

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^{0}K	356
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	6.07
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	--	Nm^3/hr	206128.26
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.57
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	19.12

Remarks:
TERMS AND CONDITION:-
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5. The laboratory's responsibility under this report is limited to; proven willful negligence.

Reviewed By

Approved By

Ref: Envlab/23-24/TR-02734 **Date: 05.06.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	N1-N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IEC 61672-1(2002-05) Class-I.
Sample Source	Noise Level (Core Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	CCR Building	26.05.2023	62.8	62.8
02	Near Weigh Bridge	26.05.2023	65.1	62.1
03	Hopper Mill	26.05.2023	71.8	63.5
04	Coal Mill	26.05.2023	69.3	61.2
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			Nil	

Remarks:

TERMS AND CONDITION:-

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5. The laboratory's responsibility under this report is limited to; proven willful negligence.

Reviewed By

Approved By

Ref: Envlab/23-24/TR-02735 **Date: 05.06.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	**N1-N4**	**Sampled By**	**VCSPL'S Representative**
Sample Name	**Noise**	**Sampling Procedure**	**IEC 61672-1(2002-05) Class-I.**
Sample Source	**Noise Level (Buffer Zone)**	**Sample Received On**	**NA**
Sample Condition	**NA**	**Test Completed On**	**NA**

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Nuagaon	26.05.2023	59.7	46.1
02	Chandia	26.05.2023	53.4	46.3
03	Mangalpur	26.05.2023	55.9	48.5
04	Dhuligarh	26.05.2023	56.1	47.9
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			**Nil**	

Remarks:

TERMS AND CONDITION:-

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5. The laboratory's responsibility under this report is limited to; proven willful negligence.

Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed By

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved By

Ref: Envlab/23-24/TR-02736 **Date: 05.06.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Location & Code	F1-F4	Sampled by	VCSPL'S Representative
Sample Name	Fugitive Emission(AAQ)	Sampling Procedure	IS 5182
Sample Source	M/s JSW Cement Ltd	Sample Received on	27.05.2023
Sample Condition	N.A		
Analysis Date	27.05.2023	Test Completed on	30.05.2023

SL. No	Sampling Locations	Date of Sampling	Parameters	Observed Value ($\mu g/m^3$)	Test Method
1	RAW MATERIAL STORAGE YARD	26.05.2023	Suspended Particulate Matter	74	IS 5182 (Part-23)
2	NEAR JSW OFFICE MAIN GATE	26.05.2023		76	
3	CCR BUILDING	26.05.2023		83	
4	NEAR WEIGH BRIDGE	26.05.2023		81	
Standard For Crusher /Industrial Area				1200	

Remarks:

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5. The laboratory's responsibility under this report is limited to; proven willful negligence.

Visiontek Consultancy Services Pvt. Ltd BBSR

Reviewed By

Visiontek Consultancy Services Pvt. Ltd BBSR

Approved By

Ref: Envlab/23-24/TR-02737 **Date: 05.06.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Location & Code	STW:1 (STP Inlet) STW:2 (STP Outlet)	Sampled by	VCSPL'S Representative
Sample Name	Sewage Water	Sampling Procedure	IS 1060
Sample Source	M/s JSW Cement Ltd	Sample Received on	27.05.2023
Sample Condition	Sealed Plastic & Sterilized Bottle		
Sampling Date	26.05.2023	Test Completed on	01.06.2023

SL No.	Parameters	Unit	MoEF & CC Notification Dt 13.10.2017	Test methods	STW-1	STW-2
1	Total Suspended Solids	mg/l, max	<100	APHA 2540 D	42	7.2
2	pH at 25^{0}C	-	6.5-9.0	APHA 4500H$^+$B	7.75	7.94
3	Oil & grease	mg/l, max	10	APHA 5520-B	<1.0	<1.0
4	Biochemical Oxygen Demand (as BOD) , 3 Days at 27°C	mg/l, max	30	IS 3025(P-44): 1993 RA 1999	5.8	<2.0
5	Chemical Oxygen Demand (as COD)	mg/l, max	250	APHA 5220-B	26	<4.0

Remarks:

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Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-02738

Date: 05.06.2023

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Orissa.

Sample Location & Code	DW1: CCR Office Canteen Building RO	Sampled by	VCSPL'S Representative
Sample Description	Drinking Water	Sampling Procedure	APHA 1060
Sample Source	JSW Cement	Sample Received on	27.05.2023
Sample Condition	Ice Preserved (Sealed plastic & Sterilized bottle)		
Sampling Date :	26.05.2023	Test Completed on	01.06.2023

Sl. No	Parameters	Unit	Standard as per IS 10500: 2012 Amnd 2015 & 2018 (Acceptable Limit)	Test methods	Results
1	Color	Hazen	5	APHA 2120 B,C	<5
2	Odour	--	Agreeable	APHA 2120 B	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.3
4	Turbidity	NTU, max	1.0	APHA 2130 B	1.4
5	Total Dissolved Solids	mg/l	500	APHA 2540 C	302
6	Temperature	^{0}C	-	-	29
7	Conductivity	µS/cm	-	APHA 2510 C	655
8	Calcium (as Ca)	mg/l ,max	75	APHA 3500Ca B	52
9	Chloride (as Cl)	mg/l ,max	250	APHA 4500Cl$^-$B	40.4
10	Copper (as Cu)	mg/l ,max	0.05	APHA 3111B,C	<0.05
11	Fluoride (as F)	mg/l ,max	1.0	APHA 4500F$^-$C	0.05
12	Free Residual Chlorine	mg/l ,min	0.2	APHA 4500Cl B	ND
13	Iron (as Fe)	mg/l ,max	1	APHA 3500Fe B	0.07
14	Magnesium (as Mg)	mg/l ,max	30	APHA 3500Mg,B	23.6
15	Manganese (as Mn)	mg/l ,max	0.1	APHA 3500Mn B	<0.05
16	Mineral oil	mg/l ,max	0.5	APHA 5220 B	<0.02
17	Phenolic compounds	mg/l ,max	0.001	APHA 5530 B,C	<0.001
18	Selenium(as Se)	mg/l ,max	0.01	APHA 3114B	<0.001
19	Sulphate (as SO_4)	mg/l ,max	200	APHA 4500SO_4^{2-}B	36
20	Nitrate (as NO_3)	mg/l ,max	45	APHA 4500 NO3- B	11.8
21	Total Alkalinity	mg/l ,max	200	APHA 2320 B	208
22	Total Hardness	mg/l ,max	200	APHA 2340 C	192
23	Zinc(as Zn)	mg/l ,max	5.0	APHA 3111B,C	0.24
24	Cadmium (as Cd)	mg/l ,max	0.003	APHA 3111B,C	<0.003
25	Cyanide (as CN)	mg/l ,max	0.05	APHA 4500CN$^-$C,D	<0.01
26	Lead (as Pb)	mg/l ,max	0.01	APHA 3111B,C	<0.005
27	Mercury (as Hg)	mg/l ,max	0.001	APHA 3500 Hg	<0.0005
28	Total arsenic (as As)	mg/l ,max	0.01	APHA 3114B	<0.001
29	Pesticide	mg/l ,max	0.0005	APHA 6630 B	<0.0001
30	Total Coli forms	MPN/100ml	Shall not be detected in any 100 ml sample	APHA 9221 B	<1.8
31	Fecal Coli Form	MPN/100ml	---	APHA 9221 E	<1.8
32	E. coli	MPN/100ml	Shall not be detected in any 100 ml sample	APHA 9221 F	Absent

*** End Report ***

Remarks:

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Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-04121

Date: 05.07.2023

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	AAQ1:Near Weigh Bridge	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	03.06.2023, 07.06.2023, 10.06.2023, 14.06.2023, 17.06.2023, 21.06.2023, 24.06.2023, 28.06.2023
Sample Condition	ICE Preservation		
Sampling Date	02.06.2023, 06.06.2023, 09.06.2023, 13.06.2023, 16.06.2023, 20.06.2023, 23.06.2023, 27.06.2023	Test Completed on	30.06.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	02.06.2023	58.7	35.22	8.5	14.3	0.66
2	06.06.2023	58.3	34.98	8.5	14.5	0.69
3	09.06.2023	58.1	34.86	8.4	14.8	0.68
4	13.06.2023	57.6	34.56	8.6	14.7	0.68
5	16.06.2023	57.2	34.32	8.8	14.9	0.67
6	20.06.2023	57.4	34.44	8.9	14.6	0.65
7	23.06.2023	57.2	34.32	8.7	14.7	0.69
8	27.06.2023	57.1	34.26	8.9	14.5	0.68
Monthly Average		57.7	34.62	8.7	14.6	0.68
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		**Gravimetric IS 5182: Part 23**	**Gravimetric EPA CFR-40 (pt 50) Appendix-1**	**Improved West & Geake Method IS 5182 (Part-2) RA2006**	**Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006**	**Non Dispersive Infrared Method IS 5182 (Part-10):1999**
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination:				Nil

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Remarks:

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Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-04122

Date: 05.07.2023

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	AAQ2:Near Hopper Building	Sampled By	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	03.06.2023, 07.06.2023, 10.06.2023, 14.06.2023, 17.06.2023, 21.06.2023, 24.06.2023, 28.06.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Sampling Date	02.06.2023, 06.06.2023, 09.06.2023, 13.06.2023, 16.06.2023, 20.06.2023, 23.06.2023, 27.06.2023	Test Completed on	30.06.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	02.06.2023	61.1	36.66	7.4	15.6	0.59
2	06.06.2023	60.7	36.42	7.5	15.8	0.58
3	09.06.2023	60.5	36.3	7.6	15.9	0.56
4	13.06.2023	60.3	36.18	7.4	15.7	0.61
5	16.06.2023	60.1	36.06	7.5	15.5	0.57
6	20.06.2023	59.4	35.64	7.4	15.8	0.54
7	23.06.2023	59.3	35.58	7.7	15.9	0.58
8	27.06.2023	58.4	35.04	7.5	15.7	0.56
Monthly Average		60.0	35.99	7.5	15.7	0.57
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10,PM-2.5, SO2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

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Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-04123

Date: 05.07.2023

TEST REPORT

Customer Name & Address : M/s JSW Cement Ltd, Jajpur, Odisha

Sample Location & Code	AAQ3: Near CCR Building	Sampled by	VCSPL Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	03.06.2023, 07.06.2023, 10.06.2023, 14.06.2023, 17.06.2023, 21.06.2023, 24.06.2023, 28.06.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Sampling Date	02.06.2023, 06.06.2023, 09.06.2023, 13.06.2023, 16.06.2023, 20.06.2023, 23.06.2023, 27.06.2023	Test Completed on	30.06.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	02.06.2023	57.2	34.32	7.4	17.6	0.58
2	06.06.2023	56.8	34.08	7.6	17.8	0.59
3	09.06.2023	56.5	33.9	7.7	17.5	0.57
4	13.06.2023	56.4	33.84	7.5	17.9	0.55
5	16.06.2023	55.9	33.54	7.9	17.8	0.56
6	20.06.2023	55.7	33.42	7.3	18.1	0.58
7	23.06.2023	55.2	33.12	7.5	17.5	0.59
8	27.06.2023	54.7	32.82	7.6	17.6	0.57
Monthly Average		56.1	33.63	7.6	17.7	0.57
CPCB, New Delhi AAQ Standard		100	60	80	80	4
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10, PM-2.5, SO2, NOx & CO presented in row no 1-8 are Time Weighted Average.)

Remarks:

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&
Microbiology Lab

Ref: Envlab/23-24/TR-04124

Date: 05.07.2023

TEST REPORT

Customer Name & Address : M/s JSW Cement Ltd, Jajpur, Odisha

Sample Location & Cod	AAQ4:Raw Material Storage Yard	Sampled by	VCSPL Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	03.06.2023, 07.06.2023, 10.06.2023, 14.06.2023, 17.06.2023, 21.06.2023, 24.06.2023, 28.06.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Analysis Date	02.06.2023, 06.06.2023, 09.06.2023, 13.06.2023, 16.06.2023, 20.06.2023, 23.06.2023, 27.06.2023	Test Completed on	30.06.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	02.06.2023	60.2	36.12	8.7	16.9	0.54
2	06.06.2023	58.9	35.34	8.6	16.8	0.58
3	09.06.2023	59.4	35.64	8.9	16.7	0.59
4	13.06.2023	58.7	35.22	8.7	16.6	0.56
5	16.06.2023	58.6	35.16	9	16.8	0.57
6	20.06.2023	57.9	34.74	8.4	16.9	0.55
7	23.06.2023	57.7	34.62	8.7	16.7	0.58
8	27.06.2023	57.5	34.5	8.8	16.5	0.54
Monthly Average		58.6	35.17	8.7	16.7	0.56
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

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Ref: Envlab/23-24/TR-04125 **Date: 05.07.2023**

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	**M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	:	ST1: Coal Mill	Sampling Procedure	IS 11255
Date of Sampling	:	09.06.2023	Material Construction of stack	MS Plate
Time of Sampling	:	12.00Hrs-12.40 Hrs	Shape of Stack	Circular
Date of Analysis	:	10.06.2023 to 16.06.2023	Height of Stack from Ground Level	40.0 meter
Stack Connected To	:	Coal Mill	Diameter of Stack	0.8 meter
Emission Due To	:	Burning of Coal	Height of Sampling Point from Ground Level	26.0 meter

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^0K	330
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	15.88
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	--	Nm^3/hr	12929.28
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.62
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	13.47

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- Mineral/Sub-Soil Exploration
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Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-04126

Date: 05.07.2023

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	M/s JSW Cement Ltd, Jajpur, Odisha

SAMPLE DETAILS

Sample Location & Code	:	ST2: Roller Press	Sampling Procedure	IS 11255
Date of Sampling	:	09.06.2023	Material Construction of stack	MS Plate
Time of Sampling	:	13.00 Hrs-13.30 Hrs	Shape of Stack	Circular
Date of Analysis	:	10.06.2023 to 16.06.2023	Height of Stack from Ground Level	58.0 meter
Stack Connected To	:	Roller Press Chimney	Diameter of Stack	3.0 meter
Emission Due To	:	Cement Grinding	Height of Sampling Point from Ground Level	33.0 meter

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^{0}K	357
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	6.05
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	--	Nm^3/hr	215954.64
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.58
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	19.33

Remarks:

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Ref: Envlab/23-24/TR- 04127 **Date: 05.07.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	N1-N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IEC 61672-1(2002-05) Class-I.
Sample Source	Noise Level (Core Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	CCR Building	09.06.2023	62.4	62.7
02	Near Weigh Bridge	09.06.2023	65.0	62.5
03	Hopper Mill	09.06.2023	71.5	63.3
04	Coal Mill	09.06.2023	69.1	61.1
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			Nil	

Remarks:

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Reviewed By

Approved By

Ref: Envlab/23-24/TR-04128

Date: 05.07.2023

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	N1-N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IEC 61672-1(2002-05) Class-I.
Sample Source	Noise Level (Buffer Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Nuagaon	09.06.2023	58.2	46.5
02	Chandia	09.06.2023	53.2	46.2
03	Mangalpur	09.06.2023	56.2	48.4
04	Dhuligarh	09.06.2023	56.3	48.2
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			Nil	

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Approved By

Ref: Envlab/23-24/TR-04129

Date: 05.07.2023

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Location & Code	F1-F4	Sampled by	VCSPL'S Representative
Sample Name	Fugitive Emission(AAQ)	Sampling Procedure	IS 5182
Sample Source	M/s JSW Cement Ltd	Sample Received on	27.05.2023
Sample Condition	N.A		
Analysis Date	27.05.2023	Test Completed on	30.05.2023

SL. No	Sampling Locations	Date of Sampling	Parameters	Observed Value ($\mu g/m^3$)	Test Method
1	RAW MATERIAL STORAGE YARD	09.06.2023	Suspended Particulate Matter	75	IS 5182 (Part-23)
2	NEAR JSW OFFICE MAIN GATE	09.06.2023		70	
3	CCR BUILDING	09.06.2023		82	
4	NEAR WEIGH BRIDGE	09.06.2023		83	
Standard For Crusher /Industrial Area				1200	

Remarks:

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Ref: Envlab/23-24/TR- 04130

Date: 05.07.2023

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Location & Code	STW:1 (STP Inlet) STW:2 (STP Outlet)	Sampled by	VCSPL'S Representative
Sample Name	Sewage Water	Sampling Procedure	IS 1060
Sample Source	M/s JSW Cement Ltd	Sample Received on	10.06.2023
Sample Condition	Sealed Plastic & Sterilized Bottle		
Sampling Date	09.06.2023	Test Completed on	16.06.2023

SL No.	Parameters	Unit	MoEF & CC Notification Dt 13.10.2017	Test methods	STW-1	STW-2
1	Total Suspended Solids	mg/l, max	<100	APHA 2540 D	43	7.3
2	pH at 25^{0}C	-	6.5-9.0	APHA 4500H$^+$B	7.67	7.88
3	Oil & grease	mg/l, max	10	APHA 5520-B	<1.0	<1.0
4	Biochemical Oxygen Demand (as BOD) , 3 Days at 27°C	mg/l, max	30	IS 3025(P-44): 1993 RA 1999	5.1	<2.0
5	Chemical Oxygen Demand (as COD)	mg/l, max	250	APHA 5220-B	25	<4.0

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Ref: Envlab/23-24/TR-04870 **Date: 05.08.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Ltd, Jajpur, Odisha

SAMPLE DETAILS

Sample Location & Code	**AAQ1:Near Weigh Bridge**	**Sampled by**	**VCSPL'S Representative**
Sample Description	**Ambient Air**	**Sampling Procedure**	**IS 5182**
Sample Source	**JSW Cement**	**Sample Received on**	**05.07.2023, 08.07.2023, 12.07.2023, 19.07.2023, 19.07.2023, 22.07.2023, 24.07.2023, 29.07.2023**
Sample Condition	**ICE Preservation**		
Sampling Date	**04.07.2023, 07.07.2023, 11.07.2023, 18.07.2023, 18.07.2023, 21.07.2023, 23.07.2023, 28.07.2023**	**Test Completed on**	**02.08.2023**

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.07.2023	58.1	33.70	8.4	14.5	0.65
2	07.07.2023	57.8	33.52	8.6	14.3	0.62
3	11.07.2023	57.6	33.41	8.2	14.8	0.65
4	14.07.2023	56.9	33.00	8.5	14.7	0.63
5	18.07.2023	57.2	33.18	8.6	14.4	0.65
6	21.07.2023	56.4	32.71	8.4	14.5	0.64
7	23.07.2023	56.8	32.94	8.2	14.2	0.66
8	28.07.2023	56.5	32.77	8.6	14.6	0.64
Monthly Average		57.2	33.15	8.4	14.5	0.64
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		**Gravimetric IS 5182: Part 23**	**Gravimetric EPA CFR-40 (pt 50) Appendix-1**	**Improved West & Geake Method IS 5182 (Part-2) RA2006**	**Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006**	**Non Dispersive Infrared Method IS 5182 (Part-10):1999**
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$				
		Any unusual feature during determination:			**Nil**	

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

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Ref: Envlab/23-24/TR-04871 **Date: 05.08.2023**

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	**AAQ2:Near Hopper Building**	**Sampled By**	**VCSPL'S Representative**
Sample Description	**Ambient Air**	**Sampling Procedure**	**IS 5182**
Sample Source	**JSW Cement**	**Sample Received on**	**05.07.2023, 08.07.2023, 12.07.2023, 19.07.2023, 19.07.2023, 22.07.2023, 24.07.2023, 29.07.2023**
Sample Condition	**Gaseous Sample Solution Refrigerated**		
Sampling Date	**04.07.2023, 07.07.2023, 11.07.2023, 18.07.2023, 18.07.2023, 21.07.2023, 23.07.2023, 28.07.2023**	**Test Completed on**	**02.08.2023**

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.07.2023	60.1	34.86	7.3	15.8	0.58
2	07.07.2023	60.2	34.92	7.5	15.3	0.56
3	11.07.2023	60.4	35.03	7.4	15.4	0.58
4	14.07.2023	60.3	34.97	7.2	15.6	0.57
5	18.07.2023	59.4	34.45	7.3	15.7	0.55
6	21.07.2023	59.6	34.57	7.2	15.5	0.56
7	23.07.2023	59.2	34.34	7.4	15.6	0.57
8	28.07.2023	59.3	34.39	7.1	15.4	0.58
Monthly Average		59.8	34.69	7.3	15.5	0.57
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		**Gravimetric IS 5182: Part 23**	**Gravimetric EPA CFR-40 (pt 50) Appendix-1**	**Improved West & Geake Method IS 5182 (Part-2) RA2006**	**Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006**	**Non Dispersive Infrared Method IS 5182 (Part-10):1999**
			Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$			
			Any unusual feature during determination:		**Nil**	

Remarks: (All the values of PM-10,PM-2.5, SO2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

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Ref: Envlab/23-24/TR-04872 **Date: 05.08.2023**

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

Sample Location & Code	**AAQ3: Near CCR Building**	**Sampled by**	**VCSPL Representative**
Sample Description	**Ambient Air**	**Sampling Procedure**	**IS 5182**
Sample Source	**JSW Cement**	**Sample Received on**	**05.07.2023, 08.07.2023, 12.07.2023, 19.07.2023, 19.07.2023, 22.07.2023, 24.07.2023, 29.07.2023**
Sample Condition	**Gaseous Sample Solution Refrigerated**		
Sampling Date	**04.07.2023, 07.07.2023, 11.07.2023, 18.07.2023, 18.07.2023, 21.07.2023, 23.07.2023, 28.07.2023**	**Test Completed on**	**02.08.2023**

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.07.2023	56.1	32.54	7.5	17.4	0.58
2	07.07.2023	55.8	32.36	7.4	17.3	0.57
3	11.07.2023	55.9	32.42	7.6	17.5	0.56
4	14.07.2023	55.4	32.13	7.5	17.6	0.58
5	18.07.2023	55.6	32.25	7.3	17.2	0.55
6	21.07.2023	55.7	32.31	7.5	17.4	0.56
7	23.07.2023	56.2	32.60	7.4	17.5	0.57
8	28.07.2023	55.8	32.36	7.3	17.6	0.58
Monthly Average		55.8	32.37	7.4	17.4	0.57
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		**Gravimetric IS 5182: Part 23**	**Gravimetric EPA CFR-40 (pt 50) Appendix-1**	**Improved West & Geake Method IS 5182 (Part-2) RA2006**	**Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006**	**Non Dispersive Infrared Method IS 5182 (Part-10):1999**
			Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$			
			Any unusual feature during determination: Nil			

Remarks: (All the values of PM-10, PM-2.5, SO2, NOx & CO presented in row no 1-8 are Time Weighted Average.)

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Ref: Envlab/23-24/TR-04873 **Date: 05.08.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Ltd, Jajpur, Odisha

Sample Location & Code	**AAQ4:Raw Material Storage Yard**	**Sampled by**	**VCSPL Representative**
Sample Description	**Ambient Air**	**Sampling Procedure**	**IS 5182**
Sample Source	**JSW Cement**	**Sample Received on**	**05.07.2023, 08.07.2023, 12.07.2023, 19.07.2023, 19.07.2023, 22.07.2023, 24.07.2023, 29.07.2023**
Sample Condition	**Gaseous Sample Solution Refrigerated**		
Analysis Date	**04.07.2023, 07.07.2023, 11.07.2023, 18.07.2023, 18.07.2023, 21.07.2023, 23.07.2023, 28.07.2023**	**Test Completed on**	**02.08.2023**

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	04.07.2023	58.2	33.76	8.5	16.6	0.55
2	07.07.2023	58.4	33.87	8.6	16.5	0.54
3	11.07.2023	58.6	33.99	8.7	16.6	0.58
4	14.07.2023	58.3	33.81	8.6	16.4	0.56
5	18.07.2023	58.5	33.93	8.8	16.5	0.55
6	21.07.2023	58.4	33.87	8.4	16.3	0.54
7	23.07.2023	58.6	33.99	8.7	16.4	0.56
8	28.07.2023	58.4	33.87	8.5	16.5	0.57
Monthly Average		58.4	33.89	8.6	16.5	0.56
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		**Gravimetric IS 5182: Part 23**	**Gravimetric EPA CFR-40 (pt 50) Appendix-1**	**Improved West & Geake Method IS 5182 (Part-2) RA2006**	**Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006**	**Non Dispersive Infrared Method IS 5182 (Part-10):1999**
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X : 9.0 $\mu g/m^3$				
		Any unusual feature during determination:			**Nil**	

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

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Ref: Envlab/23-24/TR-04874 **Date: 05.08.2023**

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	**M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	:	**ST1: Coal Mill**	**Sampling Procedure**	**IS 11255**
Date of Sampling	:	**25.07.2023**	**Material Construction of stack**	**MS Plate**
Time of Sampling	:	**12.00Hrs-12.40 Hrs**	**Shape of Stack**	**Circular**
Date of Analysis	:	**26.07.2023 to 31.07.2023**	**Height of Stack from Ground Level**	**40.0 meter**
Stack Connected To	:	**Coal Mill**	**Diameter of Stack**	**0.8 meter**
Emission Due To	:	**Burning of Coal**	**Height of Sampling Point from Ground Level**	**26.0 meter**

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^{0}K	331
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	12.58
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	---	Nm^3/hr	12056.24
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.62
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	12.44

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Ref: Envlab/23-24/TR-04875 **Date: 05.08.2023**

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	**M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	:	**ST2: Roller Press**	**Sampling Procedure**	**IS 11255**
Date of Sampling	:	**25.07.2023**	**Material Construction of stack**	**MS Plate**
Time of Sampling	:	**13.00 Hrs-13.30 Hrs**	**Shape of Stack**	**Circular**
Date of Analysis	:	**26.07.2023to 31.07.2023**	**Height of Stack from Ground Level**	**58.0 meter**
Stack Connected To	:	**Roller Press Chimney**	**Diameter of Stack**	**3.0 meter**
Emission Due To	:	**Cement Grinding**	**Height of Sampling Point from Ground Level**	**33.0 meter**

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^{0}K	357
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	6.04
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	---	Nm^3/hr	214885.26
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.58
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	18.48

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Reviewed By **Approved By**

Ref: Envlab/23-24/TR-04876 **Date: 05.08.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	**N1-N4**	**Sampled By**	**VCSPL'S Representative**
Sample Name	**Noise**	**Sampling Procedure**	**IEC 61672-1(2002-05) Class-I.**
Sample Source	**Noise Level (Core Zone)**	**Sample Received On**	**NA**
Sample Condition	**NA**	**Test Completed On**	**NA**

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	CCR Building	25.07.2023	62.1	62.8
02	Near Weigh Bridge	25.07.2023	65.2	62.4
03	Hopper Mill	25.07.2023	71.4	63.5
04	Coal Mill	25.07.2023	68.2	61.4
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			**Nil**	

Remarks:

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Reviewed By **Approved By**

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Ref: Envlab/23-24/TR-04877 **Date: 05.08.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	**N1-N4**	**Sampled By**	**VCSPL'S Representative**
Sample Name	**Noise**	**Sampling Procedure**	**IEC 61672-1(2002-05) Class-I.**
Sample Source	**Noise Level (Buffer Zone)**	**Sample Received On**	**NA**
Sample Condition	**NA**	**Test Completed On**	**NA**

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Nuagaon	25.07.2023	58.4	46.7
02	Chandia	25.07.2023	53.6	46.5
03	Mangalpur	25.07.2023	56.5	48.6
04	Dhuligarh	25.07.2023	56.4	48.4
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			**Nil**	

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5. The laboratory's responsibility under this report is limited to; proven willful negligence.

Reviewed By

Approved By

Ref: Envlab/23-24/TR-04878 **Date: 05.08.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Location & Code	**F1-F4**	**Sampled by**	**VCSPL'S Representative**
Sample Name	**Fugitive Emission(AAQ)**	**Sampling Procedure**	**IS 5182**
Sample Source	**M/s JSW Cement Ltd**	**Sample Received on**	**26.07.2023**
Sample Condition	**N.A**		
Analysis Date	**26.07.2023**	**Test Completed on**	**31.07.2023**

SL. No	Sampling Locations	Date of Sampling	Parameters	Observed Value ($\mu g/m^3$)	Test Method
1	RAW MATERIAL STORAGE YARD	25.07.2023	Suspended Particulate Matter	74	IS 5182 (Part-23)
2	NEAR JSW OFFICE MAIN GATE	25.07.2023		73	
3	CCR BUILDING	25.07.2023		81	
4	NEAR WEIGH BRIDGE	25.07.2023		80	
Standard For Crusher /Industrial Area				1200	

Remarks:

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Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-04879 **Date: 05.08.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Location & Code	**STW:1 (STP Inlet) STW:2 (STP Outlet)**	**Sampled by**	**VCSPL'S Representative**
Sample Name	**Sewage Water**	**Sampling Procedure**	**IS 1060**
Sample Source	**M/s JSW Cement Ltd**	**Sample Received on**	**26.07.2023**
Sample Condition	**Sealed Plastic & Sterilized Bottle**		
Sampling Date	**25.07.2023**	**Test Completed on**	**30.07.2023**

SL No.	Parameters	Unit	MoEF & CC Notification Dt 13.10.2017	Test methods	STW-1	STW-2
1	Total Suspended Solids	mg/l, max	<100	APHA 2540 D	48	7.6
2	pH at 25^0C	-	6.5-9.0	APHA 4500H$^+$B	7.72	7.88
3	Oil & grease	mg/l, max	10	APHA 5520-B	<1.0	<1.0
4	Biochemical Oxygen Demand (as BOD) , 3 Days at 27°C	mg/l, max	30	IS 3025(P-44): 1993 RA 1999	4.2	<2.0
5	Chemical Oxygen Demand (as COD)	mg/l, max	250	APHA 5220-B	21	<4.0

Remarks:

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Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-04880 **Date: 05.08.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Orissa.

Sample Location & Code	**DW1: CCR Office Canteen Building RO**	**Sampled by**	**VCSPL'S Representative**
Sample Description	**Drinking Water**	**Sampling Procedure**	**APHA 1060**
Sample Source	**JSW Cement**	**Sample Received on**	**26.07.2023**
Sample Condition	**Ice Preserved (Sealed plastic & Sterilized bottle)**		
Sampling Date :	**25.07.2023**	**Test Completed on**	**30.07.2023**

Sl. No	Parameters	Unit	Standard as per IS 10500: 2012 Amnd 2015 & 2018 (Acceptable Limit)	Test methods	Results
1	Color	Hazen	5	APHA 2120 B,C	<5
2	Odour	--	Agreeable	APHA 2120 B	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.46
4	Turbidity	NTU, max	1.0	APHA 2130 B	1.3
5	Total Dissolved Solids	mg/l	500	APHA 2540 C	312
6	Temperature	^{0}C	-	-	26
7	Conductivity	µS/cm	-	APHA 2510 C	654
8	Calcium (as Ca)	mg/l ,max	75	APHA 3500Ca B	54
9	Chloride (as Cl)	mg/l ,max	250	APHA 4500Cl^- B	32.8
10	Copper (as Cu)	mg/l ,max	0.05	APHA 3111B,C	<0.05
11	Fluoride (as F)	mg/l ,max	1.0	APHA 4500F^-C	0.04
12	Free Residual Chlorine	mg/l ,min	0.2	APHA 4500Cl B	ND
13	Iron (as Fe)	mg/l ,max	1	APHA 3500Fe B	0.07
14	Magnesium (as Mg)	mg/l ,max	30	APHA 3500Mg,B	10
15	Manganese (as Mn)	mg/l ,max	0.1	APHA 3500Mn B	<0.05
16	Mineral oil	mg/l ,max	0.5	APHA 5220 B	<0.02
17	Phenolic compounds	mg/l ,max	0.001	APHA 5530 B,C	<0.001
18	Selenium(as Se)	mg/l ,max	0.01	APHA 3114B	<0.001
19	Sulphate (as SO_4)	mg/l ,max	200	APHA 4500SO_4^{2-}B	40
20	Nitrate (as NO_3)	mg/l ,max	45	APHA 4500 NO3- B	11.2
21	Total Alkalinity	mg/l ,max	200	APHA 2320 B	186
22	Total Hardness	mg/l ,max	200	APHA 2340 C	176
23	Zinc(as Zn)	mg/l ,max	5.0	APHA 3111B,C	0.17
24	Cadmium (as Cd)	mg/l ,max	0.003	APHA 3111B,C	<0.003
25	Cyanide (as CN)	mg/l ,max	0.05	APHA 4500CN^-C,D	<0.01
26	Lead (as Pb)	mg/l ,max	0.01	APHA 3111B,C	<0.005
27	Mercury (as Hg)	mg/l ,max	0.001	APHA 3500 Hg	<0.0005
28	Total arsenic (as As)	mg/l ,max	0.01	APHA 3114B	<0.001
29	Pesticide	mg/l ,max	0.0005	APHA 6630 B	<0.0001
30	Total Coli forms	MPN/100ml	Shall not be detected in any 100 ml sample	APHA 9221 B	<1.8
31	Fecal Coli Form	MPN/100ml	---	APHA 9221 E	<1.8
32	E. coli	MPN/100ml	Shall not be detected in any 100 ml sample	APHA 9221 F	Absent

***** End Report *****

Remarks:

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Mineral Lab
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Microbiology Lab

Ref: Envlab/23-24/TR-07073 **Date: 05.09.2023**

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	AAQ1:Near Weigh Bridge	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	02.08.2023,05.08.2023,09.08.2023,12.08.2023, 16.08.2023,19.08.2023,23.08.2023,26.08.2023
Sample Condition	ICE Preservation		
Sampling Date	01.08.2023,04.08.2023,08.08.2023,11.08.2023, 15.08.2023,18.08.2023,22.08.2023,25.08.2023	Test Completed on	01.09.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	01.08.2023	57.6	34.6	8.2	14.3	0.61
2	04.08.2023	59.4	35.6	8.6	15.3	0.66
3	08.08.2023	60.3	36.2	9.4	15.9	0.69
4	11.08.2023	58.4	35.0	8.9	14.7	0.64
5	15.08.2023	57.4	34.4	8.2	14.5	0.62
6	18.08.2023	61.2	36.7	9.6	16.3	0.71
7	22.08.2023	57.8	34.7	8.5	14.9	0.63
8	25.08.2023	59.1	35.5	9.2	15.4	0.66
Monthly Average		**58.9**	**35.3**	**8.8**	**15.2**	**0.65**
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Remarks:

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Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-07074 **Date: 05.09.2023**

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	AAQ2:Near Hopper Building	Sampled By	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	02.08.2023,05.08.2023,09.08.2023,12.08.2023, 16.08.2023,19.08.2023,23.08.2023,26.08.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Sampling Date	01.08.2023,04.08.2023,08.08.2023,11.08.2023, 15.08.2023,18.08.2023,22.08.2023,25.08.2023	Test Completed on	01.09.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	01.08.2023	61.3	36.8	7.8	16.5	0.59
2	04.08.2023	62.5	34.9	8.2	17.2	0.63
3	08.08.2023	59.4	35.0	7.4	15.8	0.57
4	11.08.2023	58.6	35.0	7.1	15.3	0.55
5	15.08.2023	63.2	34.5	8.6	18.4	0.65
6	18.08.2023	60.4	34.6	7.7	15.6	0.58
7	22.08.2023	61.5	34.3	7.8	16.2	0.59
8	25.08.2023	64.7	34.4	8.8	18.8	0.66
Monthly Average		**61.5**	**34.9**	**7.9**	**16.7**	**0.60**
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10,PM-2.5, SO2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

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&
Microbiology Lab

Ref: Envlab/23-24/TR-07075 **Date: 05.09.2023**

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

Sample Location & Code	AAQ3: Near CCR Building	Sampled by	VCSPL Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	02.08.2023,05.08.2023,09.08.2023, 12.08.2023,16.08.2023,19.08.2023, 23.08.2023,26.08.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Sampling Date	01.08.2023,04.08.2023,08.08.2023, 11.08.2023,15.08.2023,18.08.2023, 22.08.2023,25.08.2023	Test Completed on	01.09.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	01.08.2023	54.8	32.3	7.1	16.7	0.54
2	04.08.2023	57.3	33.8	7.9	18.4	0.61
3	08.08.2023	58.7	34.6	8.5	18.9	0.63
4	11.08.2023	56.9	33.6	7.5	17.5	0.56
5	15.08.2023	57.6	34.0	7.8	18.5	0.62
6	18.08.2023	56.2	33.2	7.6	17.2	0.57
7	22.08.2023	55.8	32.9	7.3	16.9	0.55
8	25.08.2023	56.3	33.2	7.2	17.3	0.56
Monthly Average		**56.7**	**33.5**	**7.6**	**17.7**	**0.58**
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
			Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$			
			Any unusual feature during determination: Nil			

Remarks: (All the values of PM-10, PM-2.5, SO2, NOx & CO presented in row no 1-8 are Time Weighted Average.)

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Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-07076 **Date: 05.09.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Ltd, Jajpur, Odisha

Sample Location & Code	AAQ4:Raw Material Storage Yard	Sampled by	VCSPL Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	02.08.2023,05.08.2023,09.08.2023,12.08.2023, 16.08.2023,19.08.2023,23.08.2023,26.08.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Analysis Date	01.08.2023,04.08.2023,08.08.2023, 11.08.2023,15.08.2023,18.08.2023, 22.08.2023,25.08.2023	Test Completed on	01.09.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	01.08.2023	57.6	33.4	8.6	17.2	0.56
2	04.08.2023	56.9	31.9	8.2	16.8	0.57
3	08.08.2023	59.8	34.7	8.9	17.9	0.60
4	11.08.2023	61.3	35.6	9.4	18.3	0.62
5	15.08.2023	62.5	36.3	9.6	18.7	0.63
6	18.08.2023	60.8	35.3	9.1	17.9	0.61
7	22.08.2023	57.8	33.5	8.7	17.5	0.56
8	25.08.2023	59.6	34.6	8.5	17.8	0.58
Monthly Average		**59.5**	**34.4**	**8.9**	**17.8**	**0.59**
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination:				Nil

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

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Reviewed By **Approved By**

Ref: Envlab/23-24/TR-07077 **Date: 05.09.2023**

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	**M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	:	ST1: Coal Mill	Sampling Procedure	IS 11255
Date of Sampling	:	17.08.2023	Material Construction of stack	MS Plate
Time of Sampling	:	12.00Hrs-12.40 Hrs	Shape of Stack	Circular
Date of Analysis	:	18.08.2023 to 23.08.2023	Height of Stack from Ground Level	40.0 meter
Stack Connected To	:	Coal Mill	Diameter of Stack	0.8 meter
Emission Due To	:	Burning of Coal	Height of Sampling Point from Ground Level	26.0 meter

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^0K	334
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	13.72
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	---	Nm^3/hr	12243.24
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.61
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	14.67

Remarks:
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5. The laboratory's responsibility under this report is limited to; proven willful negligence.

Visiontek Consultancy Services Pvt. Ltd. MANAGER

Reviewed By

Visiontek Consultancy Services Pvt. Ltd. MANAGER

Approved By

Ref: Envlab/23-24/TR-07078 **Date: 05.09.2023**

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	M/s JSW Cement Ltd, Jajpur, Odisha

SAMPLE DETAILS

Sample Location & Code	:	ST2: Roller Press	Sampling Procedure	IS 11255
Date of Sampling	:	17.08.2023	Material Construction of stack	MS Plate
Time of Sampling	:	13.00 Hrs-13.30 Hrs	Shape of Stack	Circular
Date of Analysis	:	18.08.2023 to 23.08.2023	Height of Stack from Ground Level	58.0 meter
Stack Connected To	:	Roller Press Chimney	Diameter of Stack	3.0 meter
Emission Due To	:	Cement Grinding	Height of Sampling Point from Ground Level	33.0 meter

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^0K	358
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	7.12
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	---	Nm^3/hr	216974.35
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.61
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	20.46

Remarks:
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Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed By

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved By

Ref: Envlab/23-24/TR-07079 Date: 05.09.2023

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	N1-N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IEC 61672-1(2002-05) Class-I.
Sample Source	Noise Level (Core Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	CCR Building	17.08.2023	63.5	62.3
02	Near Weigh Bridge	17.08.2023	66.4	61.8
03	Hopper Mill	17.08.2023	70.6	63.2
04	Coal Mill	17.08.2023	69.5	60.7
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			Nil	

Remarks:

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Reviewed By

Approved By

Ref: Envlab/23-24/TR-07080 **Date: 05.09.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	N1-N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IEC 61672-1(2002-05) Class-I.
Sample Source	Noise Level (Buffer Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Nuagaon	17.08.2023	59.2	45.4
02	Chandia	17.08.2023	52.6	44.1
03	Mangalpur	17.08.2023	58.3	50.2
04	Dhuligarh	17.08.2023	59.3	46.7
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			Nil	

Remarks:

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Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed By

Visiontek Consultancy Services Pvt. Ltd. BBSR

Approved By

Ref: Envlab/23-24/TR-07081 **Date: 05.09.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Location & Code	F1-F4	Sampled by	VCSPL'S Representative
Sample Name	Fugitive Emission(AAQ)	Sampling Procedure	IS 5182
Sample Source	M/s JSW Cement Ltd	Sample Received on	18.08.2023
Sample Condition	N.A		
Analysis Date	17.08.2023	Test Completed on	23.08.2023

SL. No	Sampling Locations	Date of Sampling	Parameters	Observed Value ($\mu g/m^3$)	Test Method
1	RAW MATERIAL STORAGE YARD	17.08.2023	Suspended Particulate Matter	76	IS 5182 (Part-23)
2	NEAR JSW OFFICE MAIN GATE	17.08.2023		71	
3	CCR BUILDING	17.08.2023		83	
4	NEAR WEIGH BRIDGE	17.08.2023		81	
Standard For Crusher /Industrial Area				1200	

Remarks:

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Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-07082 **Date: 05.09.2023**

TEST REPORT

Customer Name & Address : **M/s JSW Cement Limited, Jajpur, Odisha.**

SAMPLE DETAILS

Sample Location & Code	STW:1 (STP Inlet) STW:2 (STP Outlet)	Sampled by	VCSPL'S Representative
Sample Name	Sewage Water	Sampling Procedure	IS 1060
Sample Source	M/s JSW Cement Ltd	Sample Received on	18.08.2023
Sample Condition	Sealed Plastic & Sterilized Bottle		
Sampling Date	17.08.2023	Test Completed on	23.08.2023

Sl. No.	Parameters	Unit	MoEF & CC Notification Dt 13.10.2017	Test methods	STW-1	STW-2
1	Total Suspended Solids	mg/l, max	<100	APHA 2540 D	50	7.5
2	pH at 25^{0}C	-	6.5-9.0	APHA 4500H$^+$B	7.68	7.83
3	Oil & grease	mg/l, max	10	APHA 5520-B	<1.0	<1.0
4	Biochemical Oxygen Demand (as BOD), 3 Days at 27°C	mg/l, max	30	IS 3025(P-44): 1993 RA 1999	3.9	<2.0
5	Chemical Oxygen Demand (as COD)	mg/l, max	250	APHA 5220-B	19	<4.0

Remarks:

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Visiontek Consultancy Services Pvt. Ltd. BBSR

Reviewed By

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Approved By

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- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-07083 Date: 05.09.2023

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Orissa.

Sample Location & Code	DW1: CCR Office Canteen Building RO	Sampled by	VCSPL'S Representative
Sample Description	Drinking Water	Sampling Procedure	APHA 1060
Sample Source	JSW Cement	Sample Received on	18.08.2023
Sample Condition	Ice Preserved (Sealed plastic & Sterilized bottle)		
Sampling Date :	17.08.2023	Test Completed on	23.08.2023

Sl. No	Parameters	Unit	Standard as per IS 10500: 2012 Amnd 2015 & 2018 (Acceptable Limit)	Test methods	Results
1	Color	Hazen	5	APHA 2120 B,C	<5
2	Odour	--	Agreeable	APHA 2120 B	Agreeable
3	pH value	--	6.5-8.5	APHA 4500 H^+B	7.47
4	Turbidity	NTU, max	1.0	APHA 2130 B	0.9
5	Total Dissolved Solids	mg/l	500	APHA 2540 C	309
6	Temperature	^{0}C	-	-	28
7	Conductivity	µS/cm	-	APHA 2510 C	656
8	Calcium (as Ca)	mg/l ,max	75	APHA 3500Ca B	53
9	Chloride (as Cl)	mg/l ,max	250	APHA 4500Cl^-B	31.6
10	Copper (as Cu)	mg/l ,max	0.05	APHA 3111B,C	<0.05
11	Fluoride (as F)	mg/l ,max	1.0	APHA 4500F^-C	0.05
12	Free Residual Chlorine	mg/l ,min	0.2	APHA 4500Cl B	ND
13	Iron (as Fe)	mg/l ,max	1	APHA 3500Fe B	0.06
14	Magnesium (as Mg)	mg/l ,max	30	APHA 3500Mg,B	12
15	Manganese (as Mn)	mg/l ,max	0.1	APHA 3500Mn B	<0.05
16	Mineral oil	mg/l ,max	0.5	APHA 5220 B	<0.02
17	Phenolic compounds	mg/l ,max	0.001	APHA 5530 B,C	<0.001
18	Selenium(as Se)	mg/l ,max	0.01	APHA 3114B	<0.001
19	Sulphate (as SO_4)	mg/l ,max	200	APHA 4500SO_4^{2-}B	37
20	Nitrate (as NO_3)	mg/l ,max	45	APHA 4500 NO3- B	10.6
21	Total Alkalinity	mg/l ,max	200	APHA 2320 B	185
22	Total Hardness	mg/l ,max	200	APHA 2340 C	172
23	Zinc(as Zn)	mg/l ,max	5.0	APHA 3111B,C	0.15
24	Cadmium (as Cd)	mg/l ,max	0.003	APHA 3111B,C	<0.003
25	Cyanide (as CN)	mg/l ,max	0.05	APHA 4500CN^-C,D	<0.01
26	Lead (as Pb)	mg/l ,max	0.01	APHA 3111B,C	<0.005
27	Mercury (as Hg)	mg/l ,max	0.001	APHA 3500 Hg	<0.0005
28	Total arsenic (as As)	mg/l ,max	0.01	APHA 3114B	<0.001
29	Pesticide	mg/l ,max	0.0005	APHA 6630 B	<0.0001
30	Total Coli forms	MPN/100ml	Shall not be detected in any 100 ml sample	APHA 9221 B	<1.8
31	Fecal Coli Form	MPN/100ml	---	APHA 9221 E	<1.8
32	E. coli	MPN/100ml	Shall not be detected in any 100 ml sample	APHA 9221 F	Absent

*** End Report ***

Remarks:

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Reviewed By

Approved By

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Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-08116 **Date: 05.10.2023**

TEST REPORT

Customer Name & Address : **M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	AAQ1:Near Weigh Bridge	Sampled by	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	02.09.2023,06.09.2023,09.09.2023,13.09.2023, 16.09.2023,20.09.2023,23.09.2023,27.09.2023
Sample Condition	ICE Preservation		
Sampling Date	01.09.2023,05.09.2023,08.09.2023,12.09.2023, 15.09.2023,19.09.2023,22.09.2023,26.09.2023	Test Completed on	01.10.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	01.09.2023	58.7	35.2	8.7	15.1	0.64
2	05.09.2023	58.6	35.2	8.9	15.2	0.65
3	08.09.2023	58.4	35.0	9.1	15.3	0.65
4	12.09.2023	59.2	35.5	8.8	15.2	0.67
5	15.09.2023	58.9	35.3	9.3	15.2	0.66
6	19.09.2023	59.2	35.5	9.2	15.4	0.65
7	22.09.2023	59.7	35.8	8.9	15.3	0.67
8	26.09.2023	59.8	35.9	9.4	15.3	0.66
Monthly Average		**59.1**	**35.4**	**9.0**	**15.3**	**0.66**
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

Remarks:

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- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-08117 **Date: 05.10.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Ltd, Jajpur, Odisha

SAMPLE DETAILS

Sample Location & Code	AAQ2:Near Hopper Building	Sampled By	VCSPL'S Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	02.09.2023,06.09.2023,09.09.2023,13.09.2023, 16.09.2023,20.09.2023,23.09.2023,27.09.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Sampling Date	01.09.2023,05.09.2023,08.09.2023,12.09.2023, 15.09.2023,19.09.2023,22.09.2023,26.09.2023	Test Completed on	01.10.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	01.09.2023	61.6	37.0	7.8	16.7	0.60
2	05.09.2023	61.5	36.9	7.9	16.6	0.61
3	08.09.2023	61.7	37.0	7.9	16.7	0.59
4	12.09.2023	61.8	37.1	7.8	16.6	0.58
5	15.09.2023	61.6	37.0	7.7	16.6	0.59
6	19.09.2023	61.7	37.0	7.6	16.5	0.60
7	22.09.2023	61.6	37.0	7.8	16.7	0.59
8	26.09.2023	61.8	37.1	7.7	16.5	0.58
Monthly Average		**61.7**	**37.0**	**7.8**	**16.6**	**0.59**
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10,PM-2.5, SO2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

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Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-08118 **Date: 05.10.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Ltd, Jajpur, Odisha

Sample Location & Code	AAQ3: Near CCR Building	Sampled by	VCSPL Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	02.09.2023,06.09.2023,09.09.2023,13.09. 16.09.2023,20.09.2023,23.09.2023,27.09.2
Sample Condition	Gaseous Sample Solution Refrigerated		
Sampling Date	01.09.2023,05.09.2023,08.09.2023,12.09.2023, 15.09.2023,19.09.2023,22.09.2023,26.09.2023	Test Completed on	01.10.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	01.09.2023	57.4	36.7	7.6	17.8	0.57
2	05.09.2023	56.9	36.6	7.5	17.6	0.56
3	08.09.2023	56.3	36.5	7.5	17.5	0.57
4	12.09.2023	57.1	36.5	7.4	17.4	0.55
5	15.09.2023	56.8	36.4	7.5	17.5	0.61
6	19.09.2023	56.9	36.3	7.7	17.8	0.57
7	22.09.2023	56.7	36.5	7.5	17.6	0.59
8	26.09.2023	56.6	36.5	7.4	17.7	0.58
Monthly Average		**56.8**	**36.5**	**7.5**	**17.6**	**0.58**
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination: Nil				

Remarks: (All the values of PM-10, PM-2.5, SO2, NOx & CO presented in row no 1-8 are Time Weighted Average.)

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Approved By

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Ref: Envlab/23-24/TR-08119 **Date: 05.10.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Ltd, Jajpur, Odisha

Sample Location & Code	AAQ4:Raw Material Storage Yard	Sampled by	VCSPL Representative
Sample Description	Ambient Air	Sampling Procedure	IS 5182
Sample Source	JSW Cement	Sample Received on	02.09.2023,06.09.2023,09.09.2023,13.09.2023, 16.09.2023,20.09.2023,23.09.2023,27.09.2023
Sample Condition	Gaseous Sample Solution Refrigerated		
Analysis Date	01.09.2023,05.09.2023,08.09.2023,12.09.2023, 15.09.2023,19.09.2023,22.09.2023,26.09.2023	Test Completed on	01.10.2023

SL. No	Sampling Date	Concentration of Pollutants				
		Particulate Matter as PM_{10} ($\mu g/m^3$)	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	Sulphur Dioxide as SO_2 ($\mu g/m^3$)	Oxides of Nitrogen as NO_X ($\mu g/m^3$)	Carbon Monoxide as CO (mg/m^3)
1	01.09.2023	59.6	35.9	8.7	17.6	0.59
2	05.09.2023	59.5	35.9	8.6	17.4	0.6
3	08.09.2023	59.6	35.8	8.7	17.7	0.58
4	12.09.2023	59.7	35.7	8.8	17.5	0.56
5	15.09.2023	59.8	35.5	8.5	17.6	0.57
6	19.09.2023	59.6	35.4	8.6	17.4	0.58
7	22.09.2023	59.7	35.7	8.8	17.7	0.56
8	26.09.2023	59.5	35.7	8.7	17.5	0.59
Monthly Average		**59.6**	**35.7**	**8.7**	**17.6**	**0.58**
CPCB, New Delhi AAQ Standard		**100**	**60**	**80**	**80**	**4**
Testing Method		Gravimetric IS 5182: Part 23	Gravimetric EPA CFR-40 (pt 50) Appendix-1	Improved West & Geake Method IS 5182 (Part-2) RA2006	Modified Jacob & Hochheiser Method IS 5182 (Part-6) RA2006	Non Dispersive Infrared Method IS 5182 (Part-10):1999
		Remarks: Detection limit for SO_2: 4.0 $\mu g/m^3$, NO_X: 9.0 $\mu g/m^3$				
		Any unusual feature during determination:				Nil

Remarks: (All the values of PM-10,PM-2.5,SO_2,NOx & CO presented in row no 1-8 are **Time Weighted Average.**)

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Reviewed By **Approved By**

Ref: Envlab/23-24/TR-08120 **Date: 05.09.2023**

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	**M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	:	**ST1: Coal Mill**	**Sampling Procedure**	**IS 11255**
Date of Sampling	:	**29.09.2023**	**Material Construction of stack**	**MS Plate**
Time of Sampling	:	**12.00Hrs-12.40 Hrs**	**Shape of Stack**	**Circular**
Date of Analysis	:	**30.09.2023 to 03.10.2023**	**Height of Stack from Ground Level**	**40.0 meter**
Stack Connected To	:	**Coal Mill**	**Diameter of Stack**	**0.8 meter**
Emission Due To	:	**Burning of Coal**	**Height of Sampling Point from Ground Level**	**26.0 meter**

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^0K	335
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	12.88
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	---	Nm^3/hr	11974.25
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.62
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	13.73

Remarks:
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Reviewed By

Approved By

Ref: Envlab/23-24/TR-08121 **Date: 05.10.2023**

TEST REPORT

CUSTOMER DETAILS

Customer Name & Address	:	**M/s JSW Cement Ltd, Jajpur, Odisha**

SAMPLE DETAILS

Sample Location & Code	:	**ST2: Roller Press**	**Sampling Procedure**	**IS 11255**
Date of Sampling	:	**29.09.2023**	**Material Construction of stack**	**MS Plate**
Time of Sampling	:	**12.00Hrs-12.40 Hrs**	**Shape of Stack**	**Circular**
Date of Analysis	:	**30.09.2023 to 03.10.2023**	**Height of Stack from Ground Level**	**58.0 meter**
Stack Connected To	:	**Roller Press Chimney**	**Diameter of Stack**	**3.0 meter**
Emission Due To	:	**Cement Grinding**	**Height of Sampling Point from Ground Level**	**33.0 meter**

SL. No.	Name of the Parameters	Testing Methods	Prescribed Standard as per CTO	Units	Result
1.	Temperature of Stack	IS 11255: 1985(Part 3)	--	^0K	357
2.	Velocity of Gas	IS 11255: 1985(Part 3)	--	m/sec	9.22
3.	Quantity of gas flow, at dry Condition	IS 11255: 1985(Part 3)	---	Nm^3/hr	227434.28
4.	Moisture	IS 11255: 1985(Part 3)	--	%	0.61
5.	Concentration of Particulate Matter (as PM)	IS 11255: 1985 (Part 1)	30 mg/Nm^3	mg/Nm^3	19.66

Remarks:
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Ref: Envlab/23-24/TR-08122 **Date: 05.10.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	N1-N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IEC 61672-1(2002-05) Class-I.
Sample Source	Noise Level (Core Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	CCR Building	29.09.2023	62.4	63.1
02	Near Weigh Bridge	29.09.2023	65.3	62.3
03	Hopper Mill	29.09.2023	69.8	62.8
04	Coal Mill	29.09.2023	70.3	61.1
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			Nil	

Remarks:

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Ref: Envlab/23-24/TR-08123 **Date: 05.10.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Code	N1-N4	Sampled By	VCSPL'S Representative
Sample Name	Noise	Sampling Procedure	IEC 61672-1(2002-05) Class-I.
Sample Source	Noise Level (Buffer Zone)	Sample Received On	NA
Sample Condition	NA	Test Completed On	NA

SL. No	Sampling Location	Date of Monitoring	Noise level dB (A) Leq, day time (6.00am to 10.00pm)	Noise level dB (A) Leq, night time (10.00pm to 06.00am)
01	Nuagaon	29.09.2023	58.6	44.6
02	Chandia	29.09.2023	51.4	43.5
03	Mangalpur	29.09.2023	58.2	50.2
04	Dhuligarh	29.09.2023	58.9	45.1
Standard as per Noise Rule 2000				
Industrial Area			75	70
Residential Area			55	45
Any feature observed during determination			Nil	

Remarks:
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Reviewed By

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Approved By

Ref: Envlab/23-24/TR-08124 **Date: 05.10.2023**

TEST REPORT

Customer Name & Address : M/s JSW Cement Limited, Jajpur, Odisha.

SAMPLE DETAILS

Sample Location & Code	**F1-F4**	**Sampled by**	**VCSPL'S Representative**
Sample Name	**Fugitive Emission(AAQ)**	**Sampling Procedure**	**IS 5182**
Sample Source	**M/s JSW Cement Ltd**	**Sample Received on**	**30.09.2023**
Sample Condition	**N.A**		
Analysis Date	**29.09.2023**	**Test Completed on**	**30.10.2023**

SL. No	Sampling Locations	Date of Sampling	Parameters	Observed Value ($\mu g/m^3$)	Test Method
1	RAW MATERIAL STORAGE YARD	29.09.2023	Suspended Particulate Matter	75	IS 5182 (Part-23)
2	NEAR JSW OFFICE MAIN GATE	29.09.2023		72	
3	CCR BUILDING	29.09.2023		82	
4	NEAR WEIGH BRIDGE	29.09.2023		84	
Standard For Crusher /Industrial Area				1200	

Remarks:

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- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/23-24/TR-08125 **Date: 05.10.2023**

TEST REPORT

Customer Name & Address : **M/s JSW Cement Limited, Jajpur, Odisha.**

SAMPLE DETAILS

Sample Location & Code	STW:1 (STP Inlet) STW:2 (STP Outlet)	Sampled by	VCSPL'S Representative
Sample Name	Sewage Water	Sampling Procedure	IS 1060
Sample Source	M/s JSW Cement Ltd	Sample Received on	30.09.2023
Sample Condition	Sealed Plastic & Sterilized Bottle		
Sampling Date	29.09.2023	Test Completed on	03.10.2023

Sl. No.	Parameters	Unit	MoEF & CC Notification Dt 13.10.2017	Test methods	STW-1	STW-2
1	Total Suspended Solids	mg/l, max	<100	APHA 2540 D	52	6.8
2	pH at 25^0C	-	6.5-9.0	APHA 4500H^+B	7.61	7.78
3	Oil & grease	mg/l, max	10	APHA 5520-B	<1.0	<1.0
4	Biochemical Oxygen Demand (as BOD), 3 Days at 27°C	mg/l, max	30	IS 3025(P-44): 1993 RA 1999	3.8	<2.0
5	Chemical Oxygen Demand (as COD)	mg/l, max	250	APHA 5220-B	16	<4.0

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Annexure 2

ISSUE RAISED BY THE PUBLIC	COMMENT OF THE APPLICANT	CURRENT STATUS
The issue raised at the public hearing meeting are mainly two fold. These are the issues concerning to pollution due to proposed expansion and its mitigation and issues relating to development of the area i.e., peripheral development. The issues concerning to control of pollution are 1. Dust Suppression and water pollution control. The issues concerning to development of the area are 2. Local Employment opportunity 3. Provision of drinking water to the Jakhapura Majhi Sahi 4. Provision of drinking water to the other nearby villages 5. Provision of new tube well and repair of old existing	Sri Manoj Rustagi, VP, Projects of M/s JSW Cement gave his comment to certain demands raised by public as follows 1. The company has proposed to install dust suppression measures at all dust generating points with new technology for control of air pollution control system. Steps will be taken for adequate water pollution control measures in compliance with norms. 2. The industry has committed towards local employment. Priority will be given to local employment and It will be continued.	**1. Several measures have been taken to control the air & water pollution:** • More the 50 No. s of Bag filters (including Bag Houses) have been installed at all material transfer points, silo vents, packing section etc. which are designed to meet the emission standard of <30 mg/Nm3. • Regular water sprinkling arrangement is being carried out through a mobile water tanker of capacity 5 KL. • Internal road of the length approximately around 3 Kms have been paved (concreted). • Tin sheds/ iron meshed wind barriers metal screen have been provided in material storage & handling section, grinding section & packing plant as a barrier for dust control. • All conveyors including transfer points are completely covered. • Plantation of 4198 trees around the project boundary have been done to reduce dust propagation to surrounding. • There is no effluent generated from the manufacturing process. Domestic effluent is treated in the STP of the capacity 20 KLD. **2. Action taken towards preference to local employment and peripheral development:** • Direct employment from the state are 22 whereas 90 local associates (indirect employment) are benefited from the industry. • An investment of 3.7 lakhs have been made for Drinking water project at Jakhapura village. • An expenditure of 4.13 lakhs have been made for installation of street lights at Jakhapura village. • A Support of Rs. 1.104 cores to RWSS, Chandikhole division for Rural Piped water supply for the village Baliapal and its habitations in Salijanga Gram Panchayat situated in Danagadi block.

Annexure - 3

CREP
Compliance

S. No.	Recommendation	Compliance Status
1	Cement Plants, which are not complying with notified standards, shall do the following to meet the standards; Augmentation of existing Air Pollution Control Devices - by July 2003. Replacement of existing Air Pollution Control Devices - by July 2004	Our Cement plant is equipped with latest air pollution control devices such as bag house, bag filters to meet the notified emission standards.
2	Cement Plants located in critically polluted or urban areas (including 5 km distance outside urban boundary) will meet 100mg/ Nm3 limit or particulate matter by December 2004 and continue working to reduce the emission of particulate matter to 50 mg/Nm3.	The unit is equipped with latest APC devices to maintain the emission level below 30 mg/Nm^3.
3	The new cement kilns to be accorded NOC/Environmental Clearance w.e.f 1.04.2003 will meet the limit of 50 mg/Nm3 for particulate matter emissions.	Not Applicable as there is no Kiln installed.
4	CPCB will evolve load based standards by December 2003.	No load based standard for cement industry particularly applicable to grinding unit has been evolved.
5	CPCB and NCBM will evolve SO2 and NOx emission standards by June 2004.	Not Applicable as there is no Kiln installed.
6	The Cement industries will control fugitive emissions from all the raw material and products storage and transfer points by December 2003. However, the feasibility for the control of fugitive emissions form limestone and coal storage areas will be decided by the National Task Force (NTF). The NTF shall submit its recommendations within three months.	All the material transfer points are equipped with Bag Filters. Raw materials are stored in covered shed with impervious platform. Paved road construction and green belt development work are being carried out in phase wise manner.
7	CPCB, NCBM, BIS and Oil refineries will jointly prepare the policy on use of petroleum cokes as fuel in cement kiln by July 2003.	Not Applicable as there is no Kiln installed.

S. No.	Recommendation	Compliance Status
8	After performance evaluation of various types of continuous monitoring equipment and feedback from the industries and equipment manufacturers, NTF will decide feasible unit operations/sections for installation of continuous monitoring equipment. The industry will install the continuous monitoring systems (CMS) by December 2003	Online Continuous Emission Monitoring System (OCEMS) has been installed for both major stacks i.e Cement Mill & Coal Mill Stack. Also, a Continuous Ambient Air Quality Monitoring Station (CAAQMS) has been installed for continuous monitoring of the ambient air quality.
9	Tripping in kiln ESP to be minimized by July 2003 as per the recommendations of NTF.	Not Applicable as there is no Kiln.
10	Industries will submit the target date to enhance the utilization of waste material by April, 2003.	All the particulate matter collected through APCEs will be automatically recycled in the respected processes. Moreover, we will be using fly ash for making Composite Cement(PCC) & slag for making Pozzolona Slag Cement which is waste of Thermal Plants& Steel plant respectively.
11	NCBM will carry out a study on hazardous waste utilization in cement kiln by December 2003.	Not Applicable as there is no Kiln installed.
12	Cement industries will carry out feasibility study and submit target dates to CPCB for co-generation of power by July 2003. * Non complying units shall give bank guarantee to respective SPCBs.	Not Applicable.

(Authorized Signatory)

Annexure-4

Category	Activity	FY 2023-24	
		Budget (Lac)	Expenditure(Lac)
Health Care	Anti -malarial Fogging and community awareness, Specialize Health Camps, Organizing Blood donation camp, Contribution towards Red-cross society.	**10.00**	**7.66**
Education	Providing facility at Higher secondary school in Tirjanga and Chandia Panchayat, Anganwadi Renovation and Development, Digi -Class for Green school, Solar electrification of school building, Vidya-volunters, Scholarship for Higher Education.	**16.00**	**5.6**
Livelihood	Tailoring Unit for alternate Livelihood Development-Trijanga & Jakhapura, Livelihood Projects (Agriculture- Paddy, second crop, Kitchen garden, commercial vegetable cultivation, animal vaccination and health camp, running custom hiring center, exposure visit for best practices in agriculture, women empowerment program training and celebration of international women's day.	**24.00**	**7.4**
Rural Development	Solar Street Lights at Jakhapura and Chandia, HAQDARSHAK Project-for social entitlement, Drinking Water Projects, Community demand specific infrastructure projects, Rain-water harvesting in Green school and Anganwadi, Impact assessment of CSR Projects, Plantation & Afforestation.	**45.00**	**11.68**
Sports	Conduct inter village sports competitions in Mangalpur Panchayat.	**3.5**	**3.5**
Miscellaneous	Need Based Activities request from Govt. administrations / Local need based support/incidental	**1.5**	**0.8**
Total		**100.00**	**36.64**

Risk Assessment & Disaster Management Plan

7.3 QUANTITATIVE RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

7.3.1 Preamble

The main objective of The Quantitative Risk Analysis (QRA) study is to identify the potential hazards, assess the effect/consequence of all probable accidental releases and risk mitigating measures to reduce hazards of the proposed facilities. The Quantitative Risk Analysis (QRA) study scheme is shown in **Figure - 7.1**.

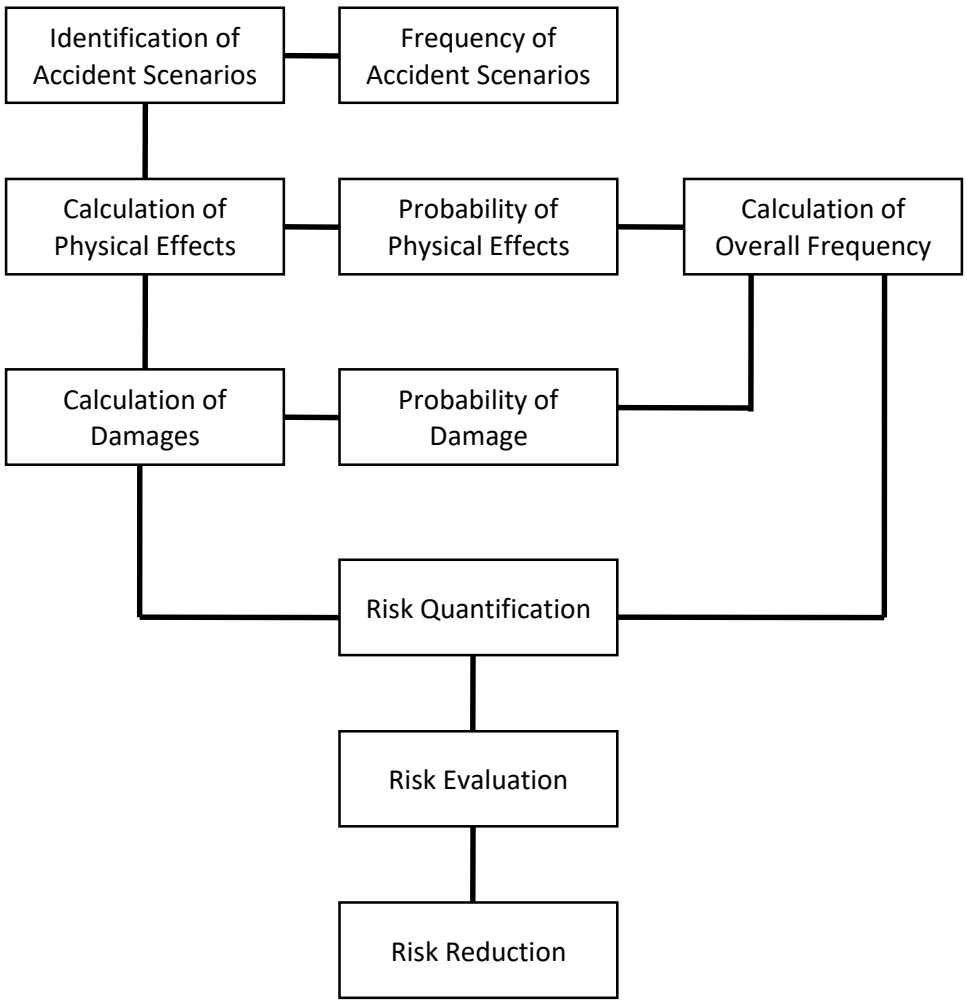


Figure - 7.1: Risk Assessment Methodology

Detailed scope of work for QRA study is given below:

- Identification of Hazards and Selection of Failure Scenarios
- Effects & Consequence Estimation
- Frequency and Risk Analysis
- Risk Mitigation Measures

The criterion of acceptance of risk is **A**s **L**ow **A**s **R**easonably **P**racticable (the ALARP principle).

7.3.2 Hazard Identification and Selection of Failure Scenarios

Hazard is defined as a chemical or physical condition having the potential for causing damage to life, property or the environment. Hazards associated plant have been identified using HAZAN techniques. For each selected release source, several scenarios may be possible depending upon the failure mode causing loss of containment.

The hazard identification includes a selection of scenarios ranging from the more likely high probability-low consequence event to the low probability-higher consequence event. The criteria used for selection of scenarios for the consequences analysis is the Maximum Credible Accidental (MAC) scenarios.

❑ Identification of Hazardous Process/Area

Broadly, there will be mainly three major types of hazards during operation of expanded plant as described below:

- Fire in flammable materials;
- Explosion in flammable and explosive materials; and
- Toxic Release of hazardous gases.

Apart from these, there will also other hazardous conditions during lifting hot metal handling by cranes and hoists, handling of industrial gases throughout the plant.

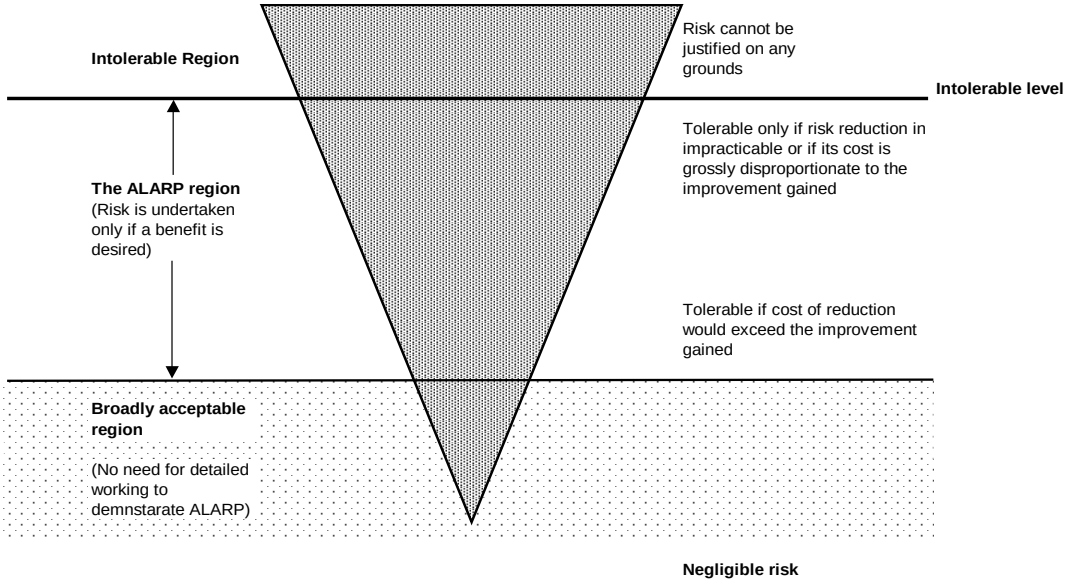
7.4 RISK ANALYSIS

Risk is defined as the unwanted consequence of a particular activity in relation to the likelihood that this may occur. Risk thus comprises of two variables: magnitude of consequences & the probability of occurrence. It thus finds application as a decision making tool in situations where judgment has to be made about the tolerability of the risk posed by an existing/proposed activity. The normal approach adopted is to relate the risk measures obtained to risk acceptance criteria. The risk criteria simply attempt to establish whether Risk is “tolerable”. Below is a list of words generally in use in risk analysis.

1. **Acceptable Risks:** No risk shall be called “acceptable”. It might be better to say that the activity may be acceptable generally, but the risks can only ever be tolerable;
2. **Tolerable Risks:** are risks so small that there is no cause for concern. Risk criteria, if they are to be workable, recognize the following:

- Level of risk that is so high that it is considered unacceptable or intolerable regardless of the benefits derived from an activity;
- Level of risk that is low enough as to be considered negligible; and
- Level of risk in between the two as mentioned above is to be considered tolerable subject to being reduced to a level i.e. “As Low As is Reasonably Practicable (ALARP)”.

The ALARP (As Low As is Reasonably Practicable) principle seeks to answer the question “What is an acceptable risk?” The definition may be found in the basis for judgment used in British law that one shall be as safe as is reasonably practicable. Reasonably practicable is defined as implying “that a computation must be made in which the quantum of risk is placed on scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time, or trouble) is placed on the other, and that, if it be shown that there is a gross disproportion between them – risk being insignificant in relation to the sacrifice – the defendants discharge the onus upon them”.



The effects-consequence and frequency analyses for the selected releases have been summarized in previous sections. In this section results of Risk summation are presented as following:

Individual Risk is the probability of death occurring as a result of accidents at a installation or a transport route expressed as a function of the distance from such activity. Such a risk actually exists only when a person is present at that spot. The unit of Individual Risk is fatality likelihood of an individual per year. Individual risk for a single accident scenario is calculated as:

***Individual Risk** = Accident frequency x Response fraction x Weather class probability x Wind direction probability*

Response fraction is the percentage of the exposed population who would be lethally injured when exposed to the calculated thermal radiations over the exposure duration. In case of a vapour cloud explosion, other probabilities such as ignition probability, probability of flash fire versus explosion also are taken into account.

The calculation of individual risk at a geographical location near a site assumes that the contributions of all incident outcome cases are to be added. Thus, the total individual risk at each point is equal to the sum of the individual risks resulting from all incident outcome cases associated with the plant.

There is no specified risk acceptance criterion in India for Individual Risk levels. A review of risk acceptance criteria in use in other countries indicates the following:

For industrial plants, Individual Risk Criteria have been developed by various countries and the review indicates that Individual Risk of fatality to the members of the public outside the installation boundaries may be adopted between 10^{-5} per year (in populated areas) for intolerable risk and lower than 10^{-6} per year for negligible risk. The region in between is the so-called ALARP region where risk is acceptable subjected to its being **A**s **L**ow **A**s **R**easonably **P**racticable (the ALARP principle).

- ❑ Findings of Risk Summation

The individual risk (10-5 /yr) for gas release is within ALARP region and tolerable. The activities at cement plant also lies in ALARP region and tolerable.

7.4.1 Risk Reduction Measures

Risk Assessment study provides a quantitative technique for assessing the significance of the impact of any facility on its external environment, a means for highlighting key areas for greater attention and a tool for comparing alternative options. Though, it cannot substitute for close attention to the fundamentals of safety throughout the design process or for design reviews.

For risk reduction, attempts shall be made to either reduce inventories that could get released in the event of loss of containment or failure likelihood's or both as feasible. Risk Assessment identifies the dominant risk contributors, which enables prioritisation of plants/section that deserve special attention in terms of inspection and maintenance in particular and over all safety management as a whole.

- Gas holders shall be provided to maintain a positive line pressure in gas network;
- Fresh oil shall be added to make up the losses due to contamination of oil;
- The safety device, such as limit switches, shut off bell along with other mechanical and electrical system shall be inspected on weekly basis jointly with gas safety and electrical and recorded.

- The fire service facilities will be equipped with:
  - Smoke and fire detection alarm system.
  - Water supply
  - Fire hydrant and nozzle installation
  - Foam system
  - Water for sprinkler system
  - Mobile firefighting equipment
  - First aid appliances
- Smoke and fire detection, fire hydrant & nozzle installation etc. and shall be included as part of all major units at the proposed project.
- Periodic maintenance of all protective and safety equipment
- Periodical training/ awareness will be given to work force at the project as refresh courses to handle any emergency situation.
- Periodic mock drills will be conducted so as to check the alertness and efficiency of the DMP and corresponding records shall be maintained.
- Signboards including emergency phone numbers and no smoking signs shall be installed at all appropriate locations.
- Plant shall have adequate communication system.
- All major units / equipment will be provided with smoke / fire detection and alarm system.
- 'No smoking zone' shall be declared at all fire prone areas.
- Fuel oil storage location will be selected at an isolated place with proper fencing and guarding.
- Dyke will be provided for Fuel oil storage tanks.
- Wind socks will be installed to check the wind direction at the time of accident and accordingly persons may be diverted towards opposite direction of wind.
- Naked flame, welding etc. will not be permitted in fuel oil storage area.
- To prevent the hazard of static electricity and recirculation, lines to the storage tanks will be discharged below the liquid level.

7.4.2 Disaster Management Plan

Preamble

The purpose of this Disaster Management Plan (DMP) is to detail organizational responsibilities, actions, reporting requirement and support resources available to ensure effective and timely management of emergencies at or affecting any of operation of proposed project. This will be achieved by;

- Describing procedures to deal with emergencies affecting personnel, equipment, third party contractors, local community and environment;
- Defining the role and responsibility of Incident Response Group (IRG) and others at plant;

- Describing the external resources available to the IRG for use in an emergency and how these resources will be coordinated; and
- This plan shall recognize that:

1. Incident Controller will be authorized to initially control and contain any and all emergency situations;
2. Site Controller will be authorized to co-ordinate strategic response to all emergencies associated to the operation;
3. EHS management Review Committee will be authorized to co-ordinate the overall strategic response to any emergency at plant;
4. It will be clubbed with DMP of existing operation; and

It shall be in compliance with legal requirement as described below:

The provisions of the Hazardous Chemicals Rules, Section 41 B(4) of the Factories Act, 1948 (as amended) requires that every occupier is to draw up an on-site emergency plan with detailed disaster control measures and to educate the workers employed. The obligation of an occupier of hazardous chemicals installation to prepare an emergency plan is also stipulated in Rule 13 of the 'Manufacture, Storage and Import of Hazardous Chemicals Rule's, 2000 and amended.
Under the 'Manufacture, Storage and Import of Hazardous Chemicals Rules preparation of 'Off-site Emergency Plan' is covered in Rule No.14. The duty of preparing and keeping up to date the 'Off-site Emergency Plan' as per this rule is placed on the District Emergency Authority. Also, occupiers are charged with the responsibility of providing the above authority with such information, relating to the industrial activity under their control, as they may require for preparing the off-site emergency plan.

Following are the main objectives of the DMP to:

- Define and assess emergencies, including hazards and risk;
- Control and contain incidents;
- Safeguard employees and people in the vicinity;
- Minimize damage to property and/ or the environment;
- Minimization of risk and impact of event accident;
- Preparation of action plan to handle disasters and to contain damage;
- Inform employees, general public and the authority about the hazards/ risk assessed, the role to be played by them in the event of an emergency and to provide safeguards;
- Be ready for 'mutual aid' if need arises to help neighboring unit;
- Inform authorities and mutual aid centers to come for help;
- Effective rescue and treatment of casualties;
- Effective rehabilitation of the affected people and prevention of damage to the property;
- Identify and listing of any fatality;

- Inform and help kith and kin;
- Secure the safe rehabilitation of affected areas and to restore normalcy;
- Provide authoritative information to media; etc

  The results of the QRA study are made direct use in preparation of DMP.

❑ Definitions

Definitions relevant to the emergency planning/ disaster management installation are given below.

- Incident: Incident may be defined as an emergency situation associated with any critical deviation in the process control or otherwise that may lead to a major accident/ potential emergency and disaster.
- Accident: An accident may be defined as "an undesirable and unplanned event with or without major damage consequence of life and/ or property".
- Major Accident: It is a sudden, unexpected, unplanned event resulting from uncontrolled developments during an industrial activity, which causes or has the potential to cause, death or hospitalization of a number of people, damage to environment, evacuation of local population or any combination of the above effects.
- Emergency: This can be defined as any situation, which presents a threat to the safety of people or/ and property. It may require outside help as well.
- Major Emergency: Major emergency occurring at a work is one that may affect several departments within and/ or may cause serious injuries, loss of life, extensive damage to property or serious disruption outside the works. It will require the use of outside resources to be handled effectively.
- Disaster: Disaster is a sudden calamitous event, resulting in great damage, loss or destruction.
- Hazards: Hazard may be defined as "the potential of an accident". Hazard exists in man and the system of materials and machines.
- Risk: Risk may be defined as the combination of consequence and probability or likelihood of an accident being caused in a given man-material-machine system.
- On-Site Emergency plan: Deals with measures to prevent and control emergencies within the factory and not affecting outside public or environment.
- Off-Site Emergency plan: Deals with measures to prevent and control emergencies affecting public and the environment outside the premises.

Classification of Emergencies

Emergencies can be categorized into the following three (3) broad levels on the basis of seriousness and response requirement:

a. **Level-I :** this is an emergency or an incident which

i. can be effectively and safely managed and contained within the site, location or installation by the available resources; and

ii. has no impact outside the site, location or installation;

b. **Level-II:** This is an emergency or an incident which

i. cannot be effectively and safely managed or contained at the location or installation by the available resources and additional support is alerted or required;

ii. is having or has the potential to have an effect beyond the site, location or installation and where external support of mutual aid partner may be involved; and

iii. is likely to be of danger to life, the environment or to industrial assets or reputation.

c. **Level-III:** This is an emergency or an incident with off-site impact which could be catastrophic and is likely to affect the population, property and environment inside and outside the installation; and management and control is done by the District Administration. Although Level-III emergency falls under the purview of the District Authority but until the Authority steps in, it shall be the responsibility of the concerned unit to manage the emergency.

Based on the QRA study, chances of Level-III emergency occurring are negligible.

Pre-Emergency Planning

Hazard Identification and Consequences

The common causes for emergency/ disaster situation are listed in the table below.

Man Made	**Natural Calamities**	**Extraneous**
Leakage Fire and explosion Failure of critical control system Design deficiency Unsafe acts Inadequate maintenance	Earthquake Excessive rainfall	Riots/civil disorder/mob attack Terrorism Sabotage Bomb threat War/ hit/ missiles

Hazard identification and consequences analysis for Maximum Credible Accidents (MCA) scenarios have been carried out as per details given in chapter-7. It is evident that societal risk lies well below the ALARP region and is therefore considered as negligible.

Pre Emergency Preparedness Measures

Following emergency preparedness measures shall be implemented:

Internal Safety Audits

Internal safety audits will be conducted by a team specially formed for identification of various hazards during operation of proposed project and will check the following:

- Workability of personnel protective equipment;
- Workability of various safety facilities available;
- Workability of firefighting facilities available;
- Workability of work permit system;
- Workability of maintenance system etc.

Suggestions and schemes will be made for modification or for additional requirement, so as to make the existing system more reliable and upgrade it based on latest advanced techniques or equipment available.

Third Party Survey/ Audit/ Study

The third party (i.e. external expert/ consultants) safety audit and study will be carried out, as and when required, to fulfil statutory obligations and also for the following:

- To study and re-identify various hazards associated with the premises;
- To check in-built safety systems for their adequacy;
- To suggest modifications/ additions in the system, if required; etc

Safety/Relief Valve Testing

- List of safety/ relief valves will be prepared and be readily available for reference;
- Periodical schedule for testing will be prepared & followed and records will be maintained; and
- Action plans will be made and implemented for repair and replacement of faulty or damaged materials.

Fire System Testing

- To prepare list of fire extinguishers and maintain record of the same;
- To prepare list of fire hydrants, fire system applications, fire pumps, water monitors, automatic fire alarms, smoke detectors and other available appliances and maintain a record of these;
- To draw testing schedules and record the findings;
- To replace/ modify defective equipment/ accessories;
- To periodically check fire pump capacities, delivery, pressure and auto–start/ stop systems; and
- To draw a schedule for testing the workability/ operability of the stand-by equipments, etc. used for firefighting services.

Mutual Aid Scheme

Mutual aid scheme will be available for:

- Fire fighting with fire brigade, industries and other facilities located in the surrounding area;
- Medical help with Government and private hospitals/ nursing homes; and
- External technical support for dealing with the emergency in case it is prolonged.

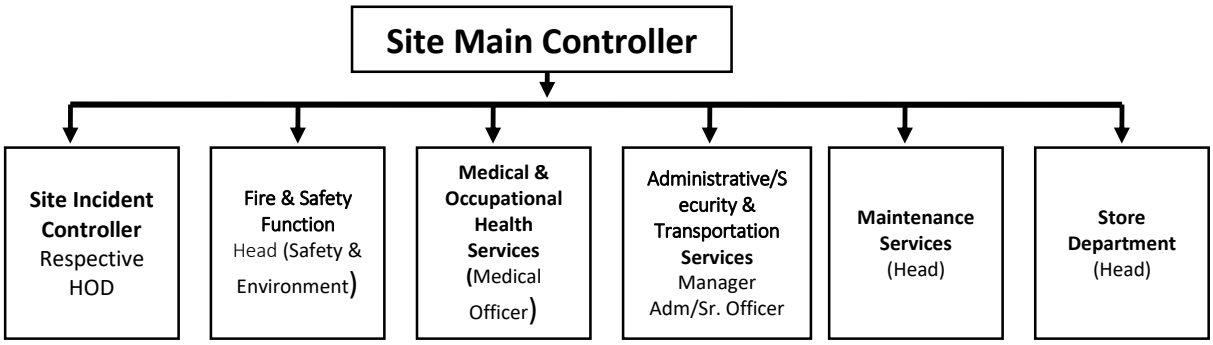


Figure 7.5 Emergency Response team

Emergency Communication System

There shall be an effective system to communicate emergency:

- within the plant premises *i.e.* to the workers including key personnel and essential workers on duty and inside during normal working hours;
- to the key personnel and essential workers not on duty and outside during normal working hours;
- to the outside emergency services and to the Government authorities; and
- to the neighbouring firms and the general public in the vicinity.

Each and every section of cement grinding plant will be connected by internal telephones. External phone at office and residence and mobile phones will also be available with key personnel and top executives of the plant. Walkie-Talkie sets and Public Address (PA) System network will also be available.

Raising Alarm

Any person noticing an emergency shall be able to raise or cause to be raised the first Floor Level Emergency Alarm (FLEA). All employees shall be trained to operate such emergency alarms. Siren is provided to indicate an emergency. The siren differs from regular sirens in use with hauling arrangement and is audible throughout the plant.

In case of emergency, Siren type alarm system as provided shall be operated for one (1) minute continuously for three (3) times within a period of 5 to 10 minutes. The type of siren to be sounded for Major and Minor emergencies are given below. This will make all the personnel who are present in the plant become aware about the occurrence.

Telephone Message

After hearing the emergency alarm and emergency declaration or even if receiving the emergency message on the phone first, the security in-charge at the plant main gate (or Information Officer) plays an important role. The security in-charge (at the plant main gate) shall be precise, sharp, attentive and quick in receiving and noting the message and then for immediate subsequent action of further communication in consultation with the Information Officer. A form to record emergency telephone calls will be made available with the security in-charge (at the plant main gate) or the person available in the Emergency Control Centre, who will record such calls during emergency.

Communication to the Outside Emergency Services and Authorities

Once the declaration is made, it is essential that the outside emergency services, if they have not already been called in, be informed in the shortest possible time. The emergency will be immediately communicated to the Government Authorities such as local Factory Inspectorate, Collectorate, Police and District Emergency Authorities. The statutory information to the abovementioned authorities shall be supplied beforehand so that the off-site emergency control (contingent) plan may be implemented, if needed. Under the statutory provisions, information is required to be provided to the following:

- Workers;
- General public and neighbouring firms;
- District Emergency Authority;
- Factory Inspectorate; and
- Odisha Pollution Control Board.

Declaring Level of Emergency

The declaration of major emergency puts all personnel/ agencies into action and the ongoing operations shall be disturbed which may be very costly at times or the consequences may be serious, therefore such declaration shall not be decided on whims or immature judgment or without proper thought. Given the scale of activity, which will be activated after the declaration of the major emergency, it is advisable to restrict the authority for declaration. However, it is not necessary to limit this authority to the Chief Incident Controller or his appointed deputy.

It may be advisable therefore, to divert the authority to declare a major emergency in a number of nominated people. They shall be selected on the basis of their knowledge and experience.

Nominated person/ persons will advise the Chief Incident Controller or the Site Controller to declare the emergency.

Joint decision to declare a major emergency may be taken but it shall be as early as possible and without wasting time.

When an emergency situation arises, it will most probably be first noticed by the operator/ technician working in the concerned area. He shall immediately get in touch with the Shift In-charge of the concerned area. The Shift In-charge shall assess the situation and apprise the CIC/SIC accordingly.

CIC will rush to the ECC room and assess the situation or will get complete information (by phone if possible) through the SIC. The Site Controller will then assess the nature of emergency as either "Major" or "Minor".

Emergency Shutdown Procedure

If necessary, full or partial shutdown of the plant shall be followed under the judgment of the Chief Incident Controller or the Site controller. On hearing the emergency siren/ message over phone, the following procedure will be followed to shut down the plant:

- The operation/ maintenance department will stop incoming vehicles and move away the tankers, if any;
- The operation/ maintenance department will declare the quantity of the oil stored, gas stored etc;
- Head (operations) will stop all the production/ maintenance activity, if necessary; and
- The individuals designated for the emergency preparedness will carry out the work as assigned to them per the checklist.

Roll Call

The employees attending duty will be known through punch cards and the records (on daily basis) of others (contractors and others) will be available at the security gate. At the time of emergency, attendance will be verified with the people assembled in the safe assembly and emergency assembly point.

Contractors shall maintain a similar list of personnel on-site. Record of the arrival and departure of visitors shall also be maintained, together with the names of those they have called to see which will prove useful in establishing their whereabouts during an emergency. Visitors shall wherever practicable, be accompanied on-site by a responsible member of the work staff.

In the immediately affected area, the Site Incident Controller shall arrange for a search to be made by the fire brigade for any casualty. Nominated work personnel shall record the names and other details of the casualties taken to the respective reception areas and the location, e.g. hospital.

At ECC, a nominated person shall be posted to collate the lists and check these against the nominal role of those believed to be missing. Where missing people could be at the affected area, the

Incident Controller shall be informed immediately and arrangement shall be made for further search.

Evacuation Procedure

Not required personnel will usually be evacuated from the incident site and also from adjacent areas. Evacuation shall be to predetermined assembly points in a safe part of the plant. Assembly points need to be clearly marked. The plan shall designate someone to record all personnel arriving at the assembly point so that the information can be passed to the ECC.

On hearing the emergency siren/ alarm, the employees of the concerned area and in other areas shall stop their work and rush to the safe assembly point.

Control of Emergency

The control of emergency mainly involves combating the fire/ explosion/toxic release, by using the various resources available for risk control and adopting the following procedures:

Release of Gas

- **Shift- In charge/ Operator**

On receipt of the message from Primary Controller, the Shift In-Charge/ Operator shall:

- Switch on the emergency siren for a few minutes (if not already switched on by the primary controller);
- Telephonically inform Incident Controller/Security In-charge and Central Control Room (CCR);
- Provide the location and brief description of leakage;
- Do not allow unauthorized personnel on scene.

- **Chief Incident Controller**

- Obtain full incident briefing and likely requirements from shift in-charge and maintain liaison;
- Instruct CCR to shut all gas supply, if required;
- Ensure that all personnel are accounted for and consider need to evacuate non-essential personal near the incident site.; and
- Notify Site Incident Controller and provide full incident briefing and likely requirements.

- **Site Incident Controller**

- Obtain full incident briefing and likely requirements from Incident Controller and maintain liaison; and
- Coordinate support activities as required.

- **Security Personnel**

- Note down the location/ details of the incident;
- Inform Senior Personnel Officer/ Security Officer;
- Stop visitors/ contractors/ customers to enter inside the plant;
- Be at the telephone for receiving any message; and
- Organize the workers to assemble at the safe assembly point.

❑ **Security Officer**

On hearing the emergency siren/ alarm or on receiving the message over phone, the Security Officer will:

- Proceed to the emergency assembly point along with sufficient security personnel;
- Act as per the instruction of CIC/ SIC;
- Cordon off the area;
- Not allow any unauthorized person within the premises;
- Prevent crowding of people around the scene of incident;
- Inform:
- Security In-charge;
- Transport In-charge;
- Head (Security)/ a security personnel placed at the plant main gate;
- Head (Electrical);
- Head (HR); etc
- Keep ambulance ready; and
- Inform nearby fire service as per instruction of Incident/Site Controller.

❑ **Head (Security)**

On hearing the emergency siren/ alarm/ message over phone, the Head (Security)/ a security personnel placed at the plant main gate shall rush to the emergency assembly point, report to the CIC and also:

- Ensure availability of fire extinguishers and continuous water supply for firefighting in anticipation of a fire;
- Depute responsible person for maintaining gas mask and continuous water flow for firefighting in case of a fire; and
- Rush to the ECC for further activities if any, as per the instruction of the Incident/ Site Controller.

❑ **Transport In-charge**

On hearing the emergency siren/ alarm or on receipt of the message, the Transport In-charge shall:

- Contact the Emergency Control Center (ECC);
- Depute a representative to ECC; and
- Plan for deployment of vehicles whenever/ wherever necessary as per the instruction of SIC/ CIC.

❑ **Head (Electrical)**

On hearing the emergency siren/ alarm/ message over phone, the Head (Electrical) will rush to the emergency assembly point and report to the CIC. The Head (Electrical) will be responsible to:

- Check the electrical connections in the affected area;

- Ensure availability of electrical supply if the main line is to be switched off; and
- Arrange for alternate supply.

❑ **Head (HR)**

Role of Head (HR) will be to:

- Be in touch with SIC/CIC for any assistance;
- To arrange refreshment for all, if emergency is prolonged;
- To provide welfare function and ensure that casualties receive adequate attention;
- To inform kith & kin of employees as per instruction of SIC/ CIC; and
- To arrange additional help (compensation, etc.), if required and inform the relatives.

In Case of Fire/ Explosion

❑ **Primary Controller (First Noticing Person)**

Immediately after noticing the fire, the Primary Controller shall:

- Identify himself and the location of the fire;
- Inform shift in-charge about the nature of the fire;
- Inform the security & time office about the location and nature of the fire;
- Hold on until the message is repeated to ensure proper communication;
- Switch off the electrical main in the nearby area;
- Inject fire extinguisher to extinguish the fire, if possible;
- Be on or near the incident site till the fire service personnel arrive to guide; and
- In case of fire in electrical equipment or installations, inform electrical shift in-charge about the nature and place of the fire.

❑ **Shift- In charge/ Operator**

- Switch on the emergency siren for a few minutes (if not already switched on by the primary controller);
- Telephonically inform Fire /Security In-charge and Central Control Room (CCR);
- Provide the location and brief description of the fire;
- Keep watch over the fire;
- Try to extinguish or prevent the fire from further spreading with available resources; and
- Do not allow unauthorized personnel on scene.

❑ **Chief Incident Controller**

- Obtain full incident briefing and likely requirements from shift in-charge and maintain liaison;
- Ensure that all personnel are accounted for and consider need to evacuate non-essential personnel from the incident site or near it.
- Notify Site Controller and provide full incident briefing and likely requirement.

❑ **Site Incident Controller**

- Obtain full incident briefing and likely requirements from Incident Controller and maintain liaison; and
- Coordinate support activities as required.

❑ **Security Personnel**

- Note down the location/ details of the incident;
- Inform Senior Personnel Officer/ Security Officer;
- Stop the visitors/ contractors/ customers to enter inside the plant;
- Be at the telephone for receiving any message; and
- Organize the workers to assemble at the safe assembly point.

❑ **Security Officer**

On hearing the emergency siren/ alarm or on receiving the message over phone, he will:

- Proceed to the emergency assembly point along with sufficient security personnel;
- Act as per the instruction of CIC/ SIC;
- Cordon off the area;
- Not allow unauthorized personnel within the premises;
- Prevent crowding of people around the scene of incident;
- Inform:
- Security In-charge;
- Head (Security)/ a security personnel placed at the plant main gate;
- Transport In-charge;
- Head (Electrical);
- Head (HR); etc
- Keep ambulance ready; and
- Inform nearby fire service as per instruction of Incident/ Site Controller.

❑ **Head (Security)**

On hearing the emergency siren/ alarm/ message over the phone, the Head (Security)/ a security personnel placed at the plant main gate shall rush to the emergency assembly point, report to the CIC and also:

- Ensure availability of gas masks with oxygen cylinders and fire extinguishers and continuous water supply for firefighting;
- Depute responsible person for maintaining continuous water flow for firefighting; and
- Rush to the ECC for further activities, if any, as per the instruction of the CIC/ SIC.

❑ **Transport In-Charge**

On hearing the emergency siren/ alarm or on receipt of the phone message, the Transport In-charge shall:

- Contact the ECC;

- Depute a representative to ECC;
- Plan for deployment of vehicles whenever/ wherever necessary as per the instruction of the Site/ Incident Controller;
- Move away the tankers, if any;
- Stop the incoming vehicles; and
- Give the quantity of the oil stored and gas stored etc.

❑ **Head (Electrical)**

On hearing the emergency siren/ alarm/ message over phone, the Head (Electrical) will rush to the emergency assembly point, report to the Incident Controller and will be responsible to:

- Check the electrical connections in the affected area;
- Ensure the availability of electrical supply if the lines are affected; and
- Arrange for alternate supply.

❑ **Head (HR)**

- To be in touch with Site/ Incident controller for any assistance;
- To arrange refreshment for all, if emergency is prolonged;
- To provide welfare function and ensure that casualties receive adequate attention;
- To inform kith & kin of employees as per instruction of SIC/ CIC; and
- To arrange additional help (compensation, etc.), if required and inform the relatives.

In Case of Accident

During the time of any accident or emergency condition, the Primary Controller will have to inform the Shift In-Charge immediately which will be followed by:

- Shift In-Charge will inform to responsible Department Head, Time Office and Security Personnel;
- According to the seriousness of the accident, the Department Head will arrange duty doctors, ambulance and inform the personnel department;
- Department head will also report to Incident Controller and Site Controller about the incident and actions taken/required;
- The department head will immediately report to spot and collect the cause of accident;
- The department head will make a final report;
- The cause of accident will be analyzed and rehabilitation measure will be implemented; and
- The workmen will be advised to do the work with more safety measures.

All Clear Signal

As soon as the emergency situation has been brought under control, it is necessary to bring it to the notice of all concerned. This will be done by a coded siren. The coded siren for this would be a continuous siren for five (5) minutes. This would indicate that the emergency situation has been brought under control.

Post Emergency Activities

Post emergency activities comprise of steps taken after the emergency is over so as to establish the reasons for the causation of the emergency and preventive measures. The steps involved are:

- Collection of records;
- Conducting inquiry and concluding preventive measures;
- Making insurance claims;
- Preparation of inquiry reports with recommendations;
- Rehabilitate the affected people within the plant and outside the plant, if any; and
- To restart the plant.

Off-site emergency plan

The Risk Assessment (RA) study has concluded that the off-site risk is in the negligible range. Toxic material generally will may have an off-site;

Legal Authority

Under the Environment (Protection) Act, 1986 the 'Manufacture, Storage and Import of Hazardous Chemicals Rules' were promulgated in November, 1989 & amended in 2000 and 'Rules on Emergency Planning, Preparedness and Response for Chemical Accidents' in 1996.

Under the 'Manufacture, Storage and Import of Hazardous Chemicals Rules' preparation of 'Off-site Emergency Plan' is covered in Rule No.14. The duty of preparing and keeping up to date the 'Off-site Emergency Plan' as per this rule is placed on the District Emergency Authority (DEA). Also, occupiers are charged with the responsibility of providing the information, relating to the industrial activity under their control, as DEA may require for preparing the off-site emergency plan.

In addition to information provided in the relevant sections on actions to be taken by plant personnel and exposed public during any situation, the District Authority (i.e. District Collector, Factory Inspector, etc) in conjunction with **JSWCL**, nearby industries under mutual aid scheme and relevant emergency services shall have an off-site emergency plan considering the following:

- Incidents at the site including fires and/ or explosions and toxic release that would likely cause concern among the local population. It would be necessary to advise people to stay away from the area, reassure them that they are in no danger and follow relevant actions as suggested in the DMP;
- In addition to JSWCL personnel, the following "local" external agencies may be involved in the formulation of procedures for off-site incidents and may also be involved in response to any incident;
  - ❑ Police at District Headquarter;
  - ❑ Traffic Police at District Headquarter;
  - ❑ Fire services District Headquarter;
  - ❑ Fire services available with nearby industries;
  - ❑ Civil Authority at District Headquarter;
  - ❑ Factory Inspector;

- ❑ Odisha Pollution Control Board;
- ❑ Electricity Authority at District Headquarter; etc

- Develop a continuous liaison system with the abovementioned agencies for better coordination to deal with any emergency;
- The following aspects shall be addressed in any detailed response to an off-site incident:

Role of the Management

The On-site and Off-site plans are dovetailed so that the emergency services are summoned at the appropriate time and are provided with accurate information and a correct assessment of the situation. The responsibility for this is with the CIC.

CIC will provide a copy of On-Site and Off-Site Emergency Plan to the District Authorities, the Factories Inspectorate and the Emergency Services, so that on the basis of information provided in the plan, such authorities can make their emergency preparedness plan to formulate and execute the District/ Area Off- Site Emergency Plan.

Role of External Agencies

It is expected that the following roles shall be performed by various external agencies during off site emergency:

❑ **Fire Brigade**

a) Rush fire tenders to the incident site with all necessary firefighting equipments;
b) Dispersal of vapors by water spray away from the inhabited area in case of leakage;
c) Extinguish the fire, in case of fire;
d) Allow the fire to burn under controlled conditions if isolation is not possible;
e) Save human lives and salvage material from incident:
f) Assist fire department of plant to handle the emergency;
g) Liaise with fire brigade in the adjoining town for additional help, if necessary;
h) Arrange water through municipal water tankers or any other source; etc

❑ **Police**

a) Stop traffic from both ends of the road and divert the traffic;
b) Warn the people living in the adjacent area to stop all smoking, evacuate to safer places, if necessary;
c) Contact district police headquarters for further assistance, if required;
d) Evacuate personnel from the area, if required;
e) Extend help in removal of injured personnel to the nearest first aid center/ hospital, contacting highway patrol, completing legal formalities in case of any casualty; etc

❑ **District Administration**

a) To keep a watch on the overall situation;
b) Rush ambulance to the incident site if causalities are reported;
c) Direct cranes or any other such equipment to carry out rescue operations;

d) Issue warning messages to people through public address system, if any evacuation is required;
e) Arrange emergency vehicles for evacuation;
f) Give direction to hospitals having burn injuries ward for readiness to receive patients in case of incident involving fire;
g) Provide basic amenities, e.g. water, electricity, food and shelter to the affected people as required; etc

❑ **Medical Department**

- Will provide first aid and treatment;
- Will arrange ambulance for removal of victims/ causalities;
- Will set up temporary medical camp and import first-aid to casualties;
- Will arrange for casualties to be sent to Government/ private hospitals; and
- Will secure assistance of medical and paramedical personnel from nearby hospitals/ institutions.

Security Threat Plan and Action Plan to Meet the Eventualities

On identification of doubtful packet/ bags/ others, following emergency action shall be taken in case of bomb threat:

(a) Area shall be cordoned off immediately;
(b) On receipt of first hand report, CIC shall contact District Authorities and Police immediately;
(c) Persons inside the installation shall be evacuated as soon as possible;
(d) All the vehicles on the installation premises shall be evacuated to safer places; and
(e) All piping valves shall be closed and all operations at **JSWCL** shall be stopped.

Pre-Incident Information

Provision of providing incident/ awareness details to the public shall also be a part of the responsibility of "Government Authorities" and not of JSWCL alone. Recommended information to be provided to the public are as follows (it is recognized that some of the information given below may not be divulged due to security reasons):

- Name of the site manager and address;
- Details of the person responsible for providing information;
- Common name(s) of all hazardous substance and indication of their characteristics;
- An assurance that JSWCL will be taking all reasonably practicable steps to minimize the risk of a major accident (the level of risk has been estimated through RA which shows acceptable off-site risks);
- Details of emergency warning system and the actions to be taken on receipt of warning;
- An assurance that JSWCL will make appropriate arrangements to deal with any foreseeable incidents;
- Reference to off-site emergency planning and advice to the public to cooperate with emergency services;

- Details of where and from whom further information may be obtained;
- Details of any emergency response exercise to be carried out; and
- The above information can be circulated via posters, talks, leaflets, etc which shall be in the local language. Leaflets containing do's and don'ts may also be circulated in the vicinity. Any printed information to be provided to the local community shall be in the local language.

Actions Recommended for the Public

JSWCL's personnel, in liaison with the emergency services, will provide relevant information to the public during any incident via the use of loud hailers, etc. As a precautionary measure, the actions to be taken by the general public in the event of a major accident are as follows:

- Move away from the site to safer areas and follow any instruction from JSWCL personnel;
- Take appropriate shelter and close doors, windows, curtains and blinds, if available;
- Do not smoke or light matches, until given the all clear;
- Put out fires, until given the all clear;
- Follow the instructions of JSWCL 's emergency services;
- Listen public announcement carefully;
- Do not contact the emergency services unless you are alone unaided/ injured or are in need of urgent assistance; and
- Remain indoors until you are told that it is safe to go outside. If evacuation is necessary, you will be notified by JSWCL 's emergency services;
- It is JSWCL's responsibility, in liaison with relevant local authorities, to update the local community at appropriate intervals.

List of Details to be notified:

List of telephone numbers of outside agencies as listed below shall be readily available:

- District Collector;
- Police;
- Fire Brigade;
- Ambulance;
- Hospital;
- Factory Inspectorate;
- Regional and Head office, Chhattisgarh Pollution Control Board; etc

Annexure -6

Item Wise Break up of Environment Management				
	Item	**Estimated Capital Cost in Cr.**	**Actual Capital Cost in Cr. Till 30th Sept 2023**	**Recurring Cost in Cr. FY 2023-24 Till Sept 2022**
1	Air Pollution Control	10.275	19.1	0.10
2	Water Pollution & Reclamation	1.5	0.1875	0.45
3	Occupational Health	0.09	0	0.020
4	Environment Management	0.635	1.079	0.40
5	Green Belt Management	4.00	0.6495	0.10
Total		**16.5**	**22.086**	**1.07**

JSW Cement Limited
Kalinganagar Industrial Complex,
Vill - Jakhapura, Tahasil - Danagadi,
Dist.- Jajpur, Odisha - 755026
GST - 21AABCJ6731B1Z8
Website : www.jswcement.in

JSWCL/JAJPUR/ENV/23-24/09

27th Sept 2023

To,
The Member Secretary,
Odisha State Pollution Control Board,
A/118, Nilakantha Nagar, Unit-VIII,
Bhubaneswar, Odisha-751012

Subject: Submission of Environmental Statement Report– Form V for FY 2022-2023 under Rule 14 of Environment (Protection) Rule, 1986 by JSW Cement Ltd., Jajpur (1.2 MTPA Cement Grinding unit).

Ref: Consent Order No. 5223/IND-I-6672 dated 31.03.2023 under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) or under section 21 of the Air (Prevention and Control of Pollution) Act, 1981

Dear Sir,
With reference to the above cited subject and reference, we **JSW Cement Ltd., Jajpur** is hereby submitting the **"Environmental Statement" duly filled in Form V** for the financial year **2022-23**.

We trust the information enclosed is in order.

Thanking You,
Yours faithfully,

For JSW Cement Ltd.,

JSW Cement Ltd. Jajpur

Pankaj Kumar
Operation Head

CC:

1. **Regional Officer,**
   Odisha State Pollution Control Board,
   At- Dhabalagiri, Po- F.C Project,
   Jajpur Road, Dist – Jajpur
   Odisha – 755020
2. **DR. R. K. DEY, IFS,**
   Addl. Principal Chief Conservator of Forests (C),
   Ministry of Env., Forest and Climate Change,
   Regional Office (EZ), A/3,
   Chandersekharpur, Bhubaneswar – 751023
3. **Sh. M. K Biswas (Scientist E)**
   Regional Directorate - Kolkata
   Central Pollution Control Board
   South end Conclave, Block 502, 5th and 6th Floors,
   1582, Razidanga Main Road,
   Kolkata, West Bengal 700107

CIN-U26957MH2006PLC160839

Regd. Office :
JSW Centre, Opp. MMRDA Ground
Bandra Kurla Complex, Bandra (East)
Mumbai - 400 051
Ph (Direct) : +91 - 22 - 4286 5047
Fax : +91 - 22 - 2650 2001
Website : www.jswcement.in

ENVIRONEMENTAL STATEMENT
(FORM – V)

ENVIRONMENTAL STATEMENT FOR

FY 2022-23
JSW CEMENT LIMITED
JAJPUR

Kalinganagar Industrial Complex,
Village- Jakhapura,
Dist- Jajpur, Odisha

Introduction.

JSW Cement Ltd., Jajpur is cement manufacturing grinding unit of capacity 1.2 MTPA. The industry produces cement i.e. Composite Cement, Portland Slag Cement and Portland Pozzolana Cement, Granulated blast furnace Slag (GGBS) by using various industrial waste like Slag and Fly ash as a measure to conserve natural mineral reserves.

The plant is located within the existing plant premises of JSL at- Kalinganagar Industrial Complex, in Jajpur District of Odisha. The Latitude and Longitude of the site location are 20^{o} 57' 14.41''N and 86^{o} 02' 21.68''E respectively. The total land area of the unit is 15 Acres. The nearest national highway is NH-5, and is about 20 km East from the project site. The plant is bounded by East Coast Railway's line connecting Jakhapura and Daitari stations on the east and the Jajpur- Talcher state highway on the north. The nearest railway station is Sukinda Road on Jakhapura- Bansapani branch line passes just to the east of the project site. The Jajpur Keonjhar road railway station on Howrah- Kharagpur- Bhubaneswar- Vishakhapatnam line is about 12 km towards East of the site. The nearest seaport at Paradeep is about 102 kms from the site locationand the nearest airport is Biju Patnaik International Airport, Bhubaneswar which approximately 120 kms away from the industry.

The Plant has adopted most modern Roller Press Technology with high efficiency separator which is the state of art technology in the whole process of PSC / GGBS production line. These modern high technology features ensure high quality product, high yield in energy savings, environmental protection, as well as large- scale automation. The technical performance and equipment installed here are comparable to the best cement grinding plants in existence in other parts of the world. The unit is equipped with all the modern Air Pollution Control devices like baghouses & Bag filters.

The raw materials required to produce various products are Clinker, Gypsum, Slag, Fly Ash, Coal with a fuel (coal) consumption of 40 T/day. The total power requirement of the plant is 8 MVA and is met from distribution Company (NESCO).

The unit shares a common infrastructure facility with JSL for drawl of surface water from Brahamani River. The avg daily water consumption of the unit is 245 m^3. As the manufacturing process is based on dry process so no waste water will be generated from the process. The domestic effluent generated from the industry is around 8 m^3 which is being treated in the STP of the capacity 20 KLD. Zero liquid discharge concept has been adopted.

The policy for the abatement of pollution by the government of India provides for submission of environment statement by all the industries. Environmental Statement is therefore an output of Environmental Audit.

So an effort has been made in this report to explain Environmental Statement for the financial year ended 31st March 2023 as per Government of India notification GSR 329 (E), dated 13th March 1992 and amendment to Environmental (Protection) Rules 1986 and subsequent amendment there on.

QUALITY, ENVIRONMENT, HEALTH & SAFETY

MANAGEMENT POLICY

We commit to:

1. Be a customer centric and socially responsible organization.
2. Continually improve the effectiveness of management systems by integrating Quality, Environment, Energy & OHS criteria at the design, planning and operational stages of our activities.
3. Ensure availability of information and necessary resources to achieve our objectives and targets.
4. Comply with all applicable legal / statutory requirements.
5. Prevent injury & ill health and provide a safe and healthy workplace for all employees, workmen, contractors and visitors
6. Eliminate hazards and reduce OHS & environmental Risks through effective implementation of Best Available Technologies, Practices and Management Systems to achieve satisfaction of our stakeholders and create a sustainable organization.
7. Protection of the environment, prevention of pollution, sustainable resource use, climate change mitigation and adaptation, and protection of biodiversity and ecosystems.
8. Consultation and participation of workers in OHS matters
9. Promote spirit of Team Work at all levels.
10. Improve employee satisfaction within the organization.

Date: 14-07-2021

Wholetime Director

ENVIRONMENTAL STATEMENTS
FORM-V
(See Rule 14)

PART-A

I.	Name and address of the owner/ occupier of the industry, operation or process	:	**Nilesh Narwekar (CEO & Director)** JSW Cement Ltd., JSW Centre, Bandra Kurla Complex, Bandra (East), Mumbai-400051
I.	a) Authorized person for the Occupier	:	**Mr. Pankaj Kumar (Operation Head)** Kalinganagar Industrial Complex, Vill- Jakhapura, Tehsil- Danagadi, Dist- Jajpur
II.	Industry Category Primary/(STC code) Secondary (STC code)	:	Red/Large (Cement Manufacturing Unit) Primary STC
III.	Production Capacity	:	1.2 MTPA
IV.	Year of Establishment	:	August 2019
V.	Date of Last Environmental /Audit Report submitted	:	23rd Sep 2022

PART-B
Water and Raw Material Consumption

I. Water consumption in m^3/d

a) Process: Nil

b) Cooling: 63.27 (Average during FY 2022-23)

c) Domestic: 18.0 (Average during FY 2022-23)

Name of the Products	**Process water* consumption per unit of products (m3/t)**	
	During the Previous FY 2021-22	**During the current FY 2022-23**
Composite Cement	0.036	0.037
PSC		

***Cooling Purpose**

II. **Raw Material Consumption:**

Name of the Raw Materials	Name of the Products	Consumption of the Raw Material per unit of output (Cement)	
		During the Previous FY 2021-22	During the current FY 2022-23
Clinker	Composite Cement	0.49	0.36
Slag		0.45	0.38
Gypsum		0.04	0.04
Fly Ash		0.26	0.22
Clinker	PSC	0.33	0.30
Slag		0.46	0.67
Gypsum		0.03	0.03

PART-C

POLLUTION DISCHARGED TO ENVIRONMENT/ UNIT OF OUTPUT (PARAMETERS AS SPECIFIED IN THE CONSENT ISSUED)

S.No.	Pollutants	Quantity of pollutants discharged (tone/day)	Concentrations of pollutants in discharged (mass/volume) (mg/Nm3)	Percentage of variation from prescribed standard with reason
a	Water	No waste water is being generated from process. Water is used for cooling purpose and it is recycled. Domestic waste water/sewage is treated in state of art technology STP of 20 KLD Capacity		
b	Air			
	Stack Emission			
I.	Slag/Cement Mill Stack	0.093	22.5	0
II.	Coal Mill_Stack	0.0058	16.4	0

PART-D

HAZARDOUS WASTES (As specified under Hazardous wastes/management, handling & Transboundary rule, 1989& its amendment 2016)

Hazardous Waste	Total Quantity (Kg)			
	During the current financial year 2021-22		During the current financial year 2022-23	
	Used Oil/Spent Oil	Wastes/residue containing oil	Used Oil/Spent Oil	Wastes/residue containing oil
a) From Process	1.60	1.09	0.13	0.24
b) From Pollution Control Facilities	Nil	Nil	Nil	Nil

PART-E

SOLID WASTE

S.No	Solid Waste	Total Quantity (Kg)	
		During the previous financial year 2021-22	During the previous financial year 2022-23
a.	From Process	No waste is generated in the manufacturing process	No waste is generated in the manufacturing process
b.	From Pollution Control Devices	Wastes (Dust collected from the pollution control devices are recycled/reutilized in the process.	Wastes (Dust collected from the pollution control devices are recycled/reutilized in the process.
c.	1.Quantity recycled/reutilize within the unit	100%	100%
	2.Sold	Nil	Nil
	3.Disposed	Nil	Nil

PART-F

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Hazardous/Solid Waste	Characteristics	Method of disposal
Used Oil	Oily	To be sold to authorized recycler
Wastes/residue containing oil	Oily	incinerated in the HAG
Solid waste	Dust	Recycled/reutilized in the process

PART –G

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

JSW Cement is continuously making efforts to look for ways to reduce the dependency on the natural raw material. In order to do so, it enhances the mix optimization with the introduction of alternative, recycled materials to replace the use of natural resources.

Following measures have been taken on the conservation of natural resources and reducing the impact of the pollution:

1. **Utilization of Industrial Waste/By-products:** We are focused towards manufacturing of the 'green cement' products: Portland Slag Cement, Composite Cement. These products are manufactured by utilizing slag which is industrial by-product of the steel industry. The utilization of these by-products like Slag, Fly ash and chemical gypsum have not only led to conservation of natural resources but has also saved the ecological risk of industrial byproduct dumping.

2. **Air Pollution Control Measures.**
   Following measures have been taken to control the air pollution:

   a. **Installation of Baghouses and Bag filters.** The plant is equipped with all the modern pollution control devices to keep the emission level below the prescribed limit of 30mg/Nm^3. There are 49 bagfilters installed at all the transfer points to control the fugitive emission and 3 main baghouses attached to the process stack.

b. **Closed conveyor belts.** Closed conveyor belts have been provided for the transfer of raw materials to control the fugitive dust.

c. **Closed shed for Raw materials.** Closed yard with impervious platform have been provided for storage of coal and gypsum of the capacity 850 MT & 1500 MT respectively. Also, a closed silo of the capacity 45,000 MT has been provided for the storage of clinker.

d. **Paved internal roads.** All the internal roads have been paved in order to control the fugitive emission due to vehicle movement.

e. **Water Sprinkling Facility.** A mobile water tanker of capacity 5000 Liters has been provided for dust suppression on the internal roads.

f. **Closed silo for the final products.** There are 4 closed silo and 1 intermediate bin for the storage of final products and intermediate product. (OPC, PSC, GGBS & Composite Cement).

Coal and Gypsum Storage Yard

Clinker Storage Silo

Main baghouse of the Roller Press

Closed conveyor belt with bag filters at all transfer points

Closed Silo installed for Final Products

Fig 1. Air Pollution Control Measures

3. **Water conservation and water pollution control measures.** The approach for conservation of the water can be witnessed as:

   a. The cement manufacturing process is a completely dry process and the water used for cooling process is 100 % recycled and reused.

   b. The company has adopted a zero liquid discharge technology. There is no effluent discharged from the industry. Waste water generated from the domestic purpose is treated in the STP of capacity 20 KLD and the treated water is utilized for gardening /dust suppression.

Fig 2. Water pollution Control Measure (STP of capacity 20 KLD)

PART –H

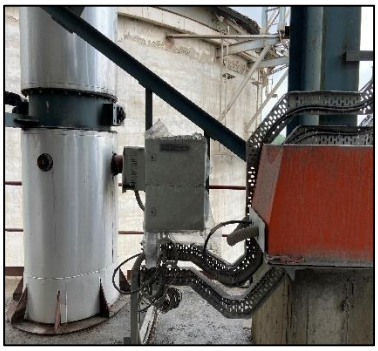
Additional Measures /investments proposed for environmental protection including abatement of pollution, prevention of pollution.

1. **Continuous monitoring of the ambient air quality.** 01 No. of CAAQMS (Continuous Ambient Air Quality Monitoring System) has been installed for monitoring of the ambient air quality. Parameters monitored through CAAQMS system are PM10, PM2.5, SO_2, NOx. Apart from this ambient air quality is being monitored through NABL accredited laboratory on monthly basis. Reports for the same has been enclosed as ***Annexure 1.***

2. **Continuous Emission Monitoring System.** 02 Nos. of continuous emission monitoring systems have been provided for both the major stacks i.e. Coal Mill and Slag/Cement Mill. The emission from the stack is monitored on continuous basis and data of the same is being transmitted to CPCB/SPCB servers.

Continuous Ambient Air Quality Monitoring System

Permanent AAQ Stations



CEMS installed for the major stacks

Fig 3. Air Quality/Emission Monitoring System

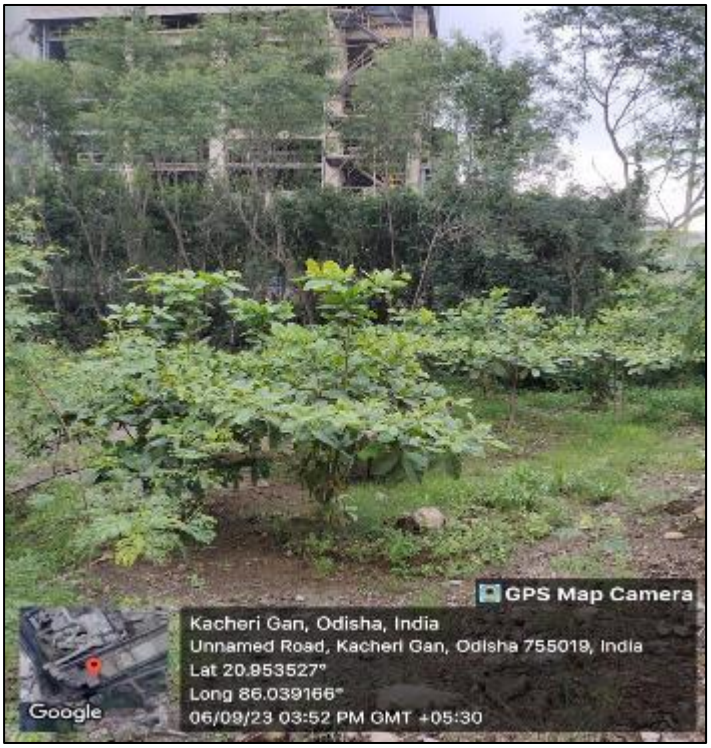
3.Green Belt Development. Green belt development is a continuous process and is being developed in a phase wise manner. A total of 33 % of the land area of the plant will be developed as green belt.

- The existing green belt as on 31st March 2023 is 4198 covering 4.36 Acres (29%) with 96% of Survival rate
- Greenbelt developed during 2023 monsoon- Total 1800 nos. of saplings planted in 1.8 Acre, which is now 6.16 acre (41%) green belt in total 15 Acre of land area.

The plantation has been carried out using the native broad leaved species in consultation with local DFO/Range officer.


GPS Map Camera
Nuagan, Odisha, India
SH 20, Nuagan, Odisha 755026, India
Lat 20.981282°
Long 86.019013°
06/09/23 04:16 PM GMT +05:30
Google


GPS Map Camera
Nuagan, Odisha, India
SH 20, Nuagan, Odisha 755026, India
Lat 20.981282°
Long 86.019013°
06/09/23 04:14 PM GMT +05:30
Google


GPS Map Camera
Kacheri Gan, Odisha, India
Unnamed Road, Kacheri Gan, Odisha 755019, India
Lat 20.953527°
Long 86.039166°
06/09/23 03:52 PM GMT +05:30
Google


GPS Map Camera
Jajpur, Odisha, India
Unnamed Road, Odisha 755019, India
Lat 20.953356°
Long 86.040343°
06/09/23 04:01 PM GMT +05:30
Google

Fig 4. Green Belt Development inside the plant premises

PART –I

Any other particulars for improving the quality of environment

1. **Significant energy saving & other measures implemented**

- Replacement of conventional lights with LED lights to save energy.
- Installation of 90 pieces of Solar street light inside the plant area that saves 10% of total plant lighting electricity consumption.
- Top soils from the project excavation work has been utilized for development of green belt.
- Acoustic enclosures have been provided at noise generating area to control noise pollution.
- Implementation of Rain Water Harvesting units which has capacity to recharge the ground water 3800M^3 per year.
- Bag house & bag filters have been installed to reduce the air pollution.
- Permanent water sprinkler has been installed to control the fugitive emission & Truck Mounted Mechanical Sweeping is engaged for sweeping of pucca road inside the plant.
- Use of personal protective Equipment: All employees are provided with personal protective Equipment (PPEs), as per the work 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.

2. **Environment Awareness and Plantation drive programme .**

- Awareness programs on protection of Environment was carried out by Environment department in the presence of Unit Head by involving all the Workmen & staff .
- Mass Plantation drive was carried out by JSW involving all the employees and workmen inside the JSW premises.

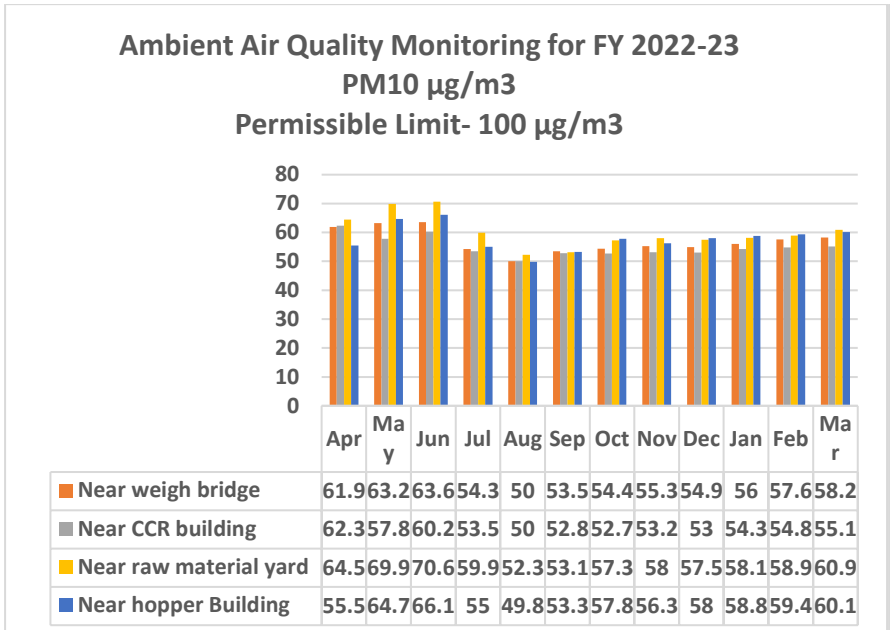
  "Van Mahotsav" was celebrated , in involving Local Communities & Dealers to create awareness on Plantation drive and its benefits to the Environment.

Fig 5. Plantation carried out on World Environment Day by JSW employees

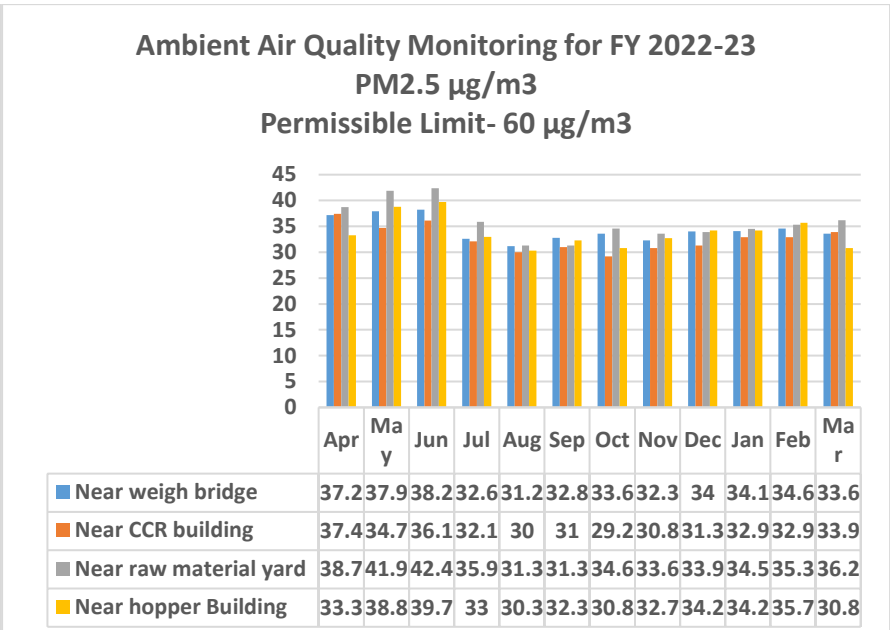
Fig 6. Mass Plantation carried out on the occasion of Van Mahotsav

Tabe-1 Ambient Air Quality Monitoring reports For the FY -2022-23													
Area	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Average**
	Ambient Air (PM10) (µg/m3)												
Near weigh bridge	61.9	63	63.6	54	50	53.5	54.4	55.3	54.9	56	57.6	58.2	56.9
Near CCR building	62.3	58	60.2	54	50	52.8	52.7	53.2	53	54.3	54.8	55.1	55.0
Near raw material yard	64.5	70	70.6	60	52.3	53.1	57.3	58	57.5	58.1	58.9	60.9	60.1
Near hopper Building	55.5	65	66.1	55	49.8	53.3	57.8	56.3	58	58.8	59.4	60.1	57.9
	Ambient Air (PM2.5)(µg/m3)												**57.5**
Near weigh bridge	37.2	38	38.2	33	31.2	32.8	33.6	32.3	34	34.1	34.6	33.6	34.34
Near CCR building	37.4	35	36.1	32	30	31	29.2	30.8	31.3	32.9	32.9	33.9	32.69
Near raw material yard	38.7	42	42.4	36	31.3	31.3	34.6	33.6	33.9	34.5	35.3	36.2	35.80
Near hopper Building	33.3	39	39.7	33	30.3	32.3	30.8	32.7	34.2	34.2	35.7	30.8	33.82
Ambient Air SO2(µg/m3)													**34.2**
Near weigh bridge	8.9	9.3	9.3	9.3	9	3.1	7.4	7.2	7.5	8.1	8.5	8.5	8.0

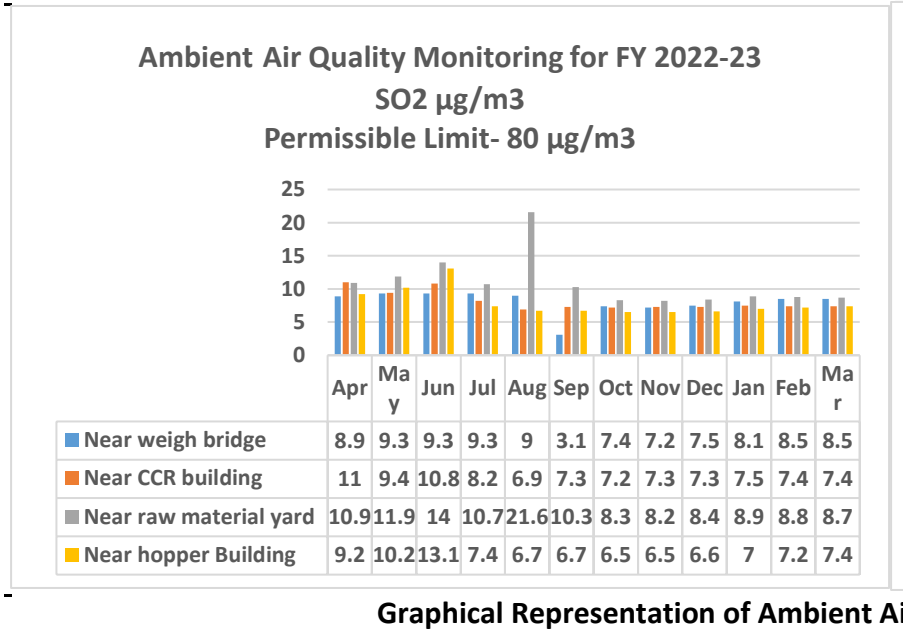
Near CCR building	11	9.4	10.8	8.2	6.9	7.3	7.2	7.3	7.3	7.5	7.4	7.4	8.1
Near raw material yard	10.9	12	14	11	21.6	10.3	8.3	8.2	8.4	8.9	8.8	8.7	10.9
Near hopper Building	9.2	10	13.1	7.4	6.7	6.7	6.5	6.5	6.6	7	7.2	7.4	7.9
Ambient Air NO2(µg/m3)													**8.7**
Near weigh bridge	15.4	15	16.5	13	12.6	12.9	13.9	13.9	14.3	14.5	14.5	14.5	14.3
Near CCR building	15.6	14	14.8	13	11.8	12.2	16.8	17	17	17.4	17.4	17.4	15.4
Near raw material yard	16.5	16	16.8	13	12.5	12.6	16.1	16	16.1	16.5	16.4	16.4	15.4
Near hopper Building	13.6	17	16.5	13	12.7	13.1	13.8	14	14.1	14.3	14.9	14.9	14.3
CO(mg/m3)													**14.8**
Near weigh bridge	0.52	0.5	0.53	0.4	0.37	0.4	0.65	0.65	0.66	0.67	0.67	0.66	0.6
Near CCR building	0.55	0.6	0.6	0.5	0.41	0.43	0.53	0.54	0.53	0.57	0.58	0.57	0.5
Near raw material yard	0.44	0.5	0.53	0.5	0.41	0.41	0.42	0.43	0.42	0.45	0.5	0.49	0.5
Near hopper Building	0.6	0.6	0.62	0.5	0.43	0.45	0.54	0.53	0.55	0.58	0.57	0.57	0.5



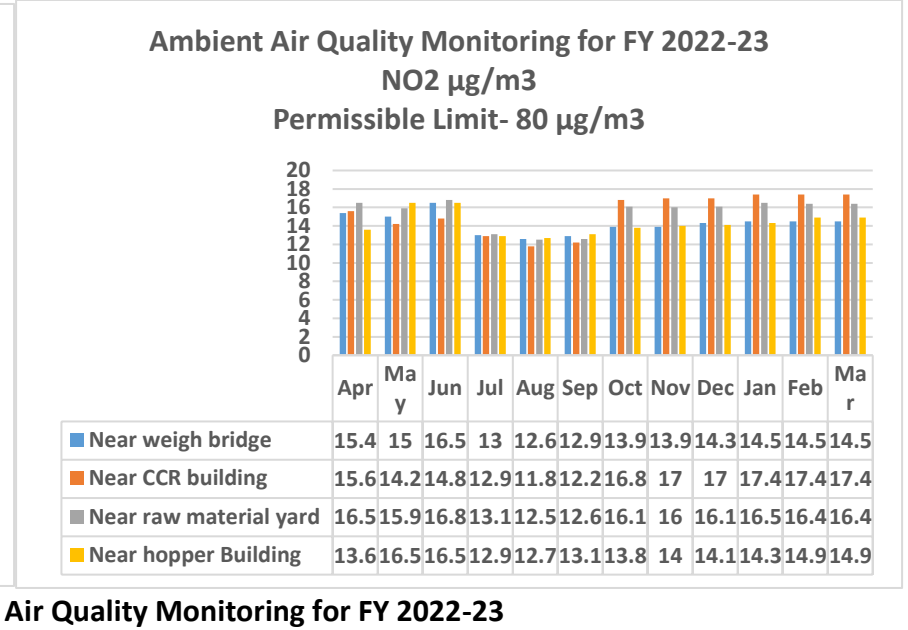
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near weigh bridge	61.9	63.2	63.6	54.3	50	53.5	54.4	55.3	54.9	56	57.6	58.2
Near CCR building	62.3	57.8	60.2	53.5	50	52.8	52.7	53.2	53	54.3	54.8	55.1
Near raw material yard	64.5	69.9	70.6	59.9	52.3	53.1	57.3	58	57.5	58.1	58.9	60.9
Near hopper Building	55.5	64.7	66.1	55	49.8	53.3	57.8	56.3	58	58.8	59.4	60.1



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near weigh bridge	37.2	37.9	38.2	32.6	31.2	32.8	33.6	32.3	34	34.1	34.6	33.6
Near CCR building	37.4	34.7	36.1	32.1	30	31	29.2	30.8	31.3	32.9	32.9	33.9
Near raw material yard	38.7	41.9	42.4	35.9	31.3	31.3	34.6	33.6	33.9	34.5	35.3	36.2
Near hopper Building	33.3	38.8	39.7	33	30.3	32.3	30.8	32.7	34.2	34.2	35.7	30.8



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near weigh bridge	8.9	9.3	9.3	9.3	9	3.1	7.4	7.2	7.5	8.1	8.5	8.5
Near CCR building	11	9.4	10.8	8.2	6.9	7.3	7.2	7.3	7.3	7.5	7.4	7.4
Near raw material yard	10.9	11.9	14	10.7	21.6	10.3	8.3	8.2	8.4	8.9	8.8	8.7
Near hopper Building	9.2	10.2	13.1	7.4	6.7	6.7	6.5	6.5	6.6	7	7.2	7.4



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near weigh bridge	15.4	15	16.5	13	12.6	12.9	13.9	13.9	14.3	14.5	14.5	14.5
Near CCR building	15.6	14.2	14.8	12.9	11.8	12.2	16.8	17	17	17.4	17.4	17.4
Near raw material yard	16.5	15.9	16.8	13.1	12.5	12.6	16.1	16	16.1	16.5	16.4	16.4
Near hopper Building	13.6	16.5	16.5	12.9	12.7	13.1	13.8	14	14.1	14.3	14.9	14.9

Graphical Representation of Ambient Air Quality Monitoring for FY 2022-23

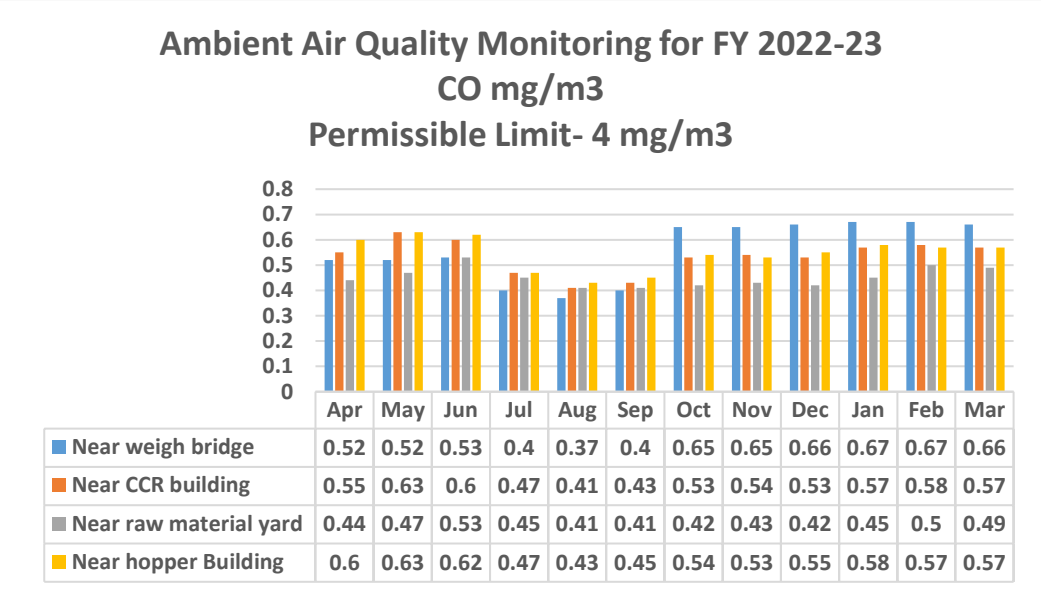
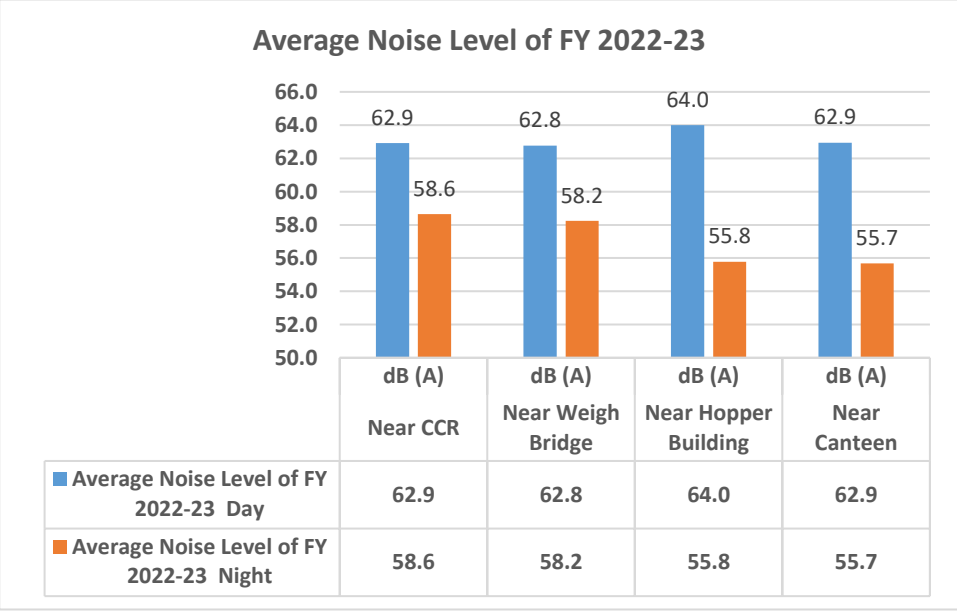


Table 2. Stack Emission Details during FY 2022-23

Stack Details	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Average
Stack Monitoring (mg/Nm3)													
Coal_Mill_Stack	16.9	17.2	17.8	16.8	16.4	17.3	15.5	16.1	16.1	16.5	14.8	15.3	16.4
Slag/Cement_Mill_Stack	25.6	27.2	24.8	21.6	21.2	21.7	21.7	22.3	21.5	22.3	21.8	18.8	22.5

Table 3. Ambient Noise Level during FY 2022-23 (Average Value)

Sampling Location	Unit	Average Noise Level	
		Day	Night
Near CCR	dB (A)	62.9	58.6
Near Weigh Bridge	dB (A)	62.8	58.2
Near Hopper Building	dB (A)	64.0	55.8
Near Canteen	dB (A)	62.9	55.7
Standard as per Noise Rule 2000	**dB (A)**	**75**	**70**



Annexure-8

News Paper Clipping of EC advertisement

THE NEW INDIAN EXPRESS BHUBANESWAR
03 BHUBANESWAR WEDNESDAY 25.10.2017

PUBLIC INFORMATION

This is to inform the Public that M/s JSW Cement Limited has been accorded Environmental Clearance by the State Level Environment Impact Assessment Authority (SEIAA) vide letter no. 3693/SEIAA dated 17.10.2017 in accordance with S.O 1533 (E) dated 14th September 2006 of the Ministry of Environment, Forest and Climate Change, GOI for their Proposed 1.2 MTPA Cement Grinding Unit at Kalinganagar Industrial Complex, Danagadi, Dist- Jajpur, Odisha.
Copies of the Clearance letter are available with State Pollution Control Board, Odisha and may also be seen at the website of the SEIAA, Odisha and also at the website of M/s JSW Cement Limited (http://www.jswcement.in).