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CIN : L26942OR1949PLC000185

OCL INDIA LIMITED
ओसीएल इण्डिया लिमिटेड

To
The Additional Director, Government of India
Ministry of Environment, Forest & Climate Change (I.A. Division)
Indira Paryavaran Bhavan, Aliganj, Jorbagh Road
New Delhi – 110003

Sub:- Submission of six monthly compliance report (April, 2017 to September, 2017) of EC letter for expansion Project from 1.2 MTPA to 2.9 MTPA of clinker and from 2.0 MTPA to 4.00 MTPA of cement of M/s OCL INDIA LTD at Village – Rajgangpur, Tehsil Rajgangpur, District – Sundargarh, Odisha.

Ref:- Environment Clearance letter F. No. J-11011/352/2005- 1A II (I) dated 5th April 2007

Dear Sir,

With reference to above letter, we enclose herewith the six monthly compliance report (Ending September, 2017) of conditions stipulated in the Environmental Clearance for the above project.

Thanking you

Yours sincerely,
For OCL India Limited

(S. K. ROUT)
Dy. Executive Director (Mines & Env.)

Encl: As above

Copy to:

1. The Chairman,
Central Pollution Control Board
Parivesh Bhavan
CBD – cum- Office Complex
East Arjun Nagar
NEW DELHI – 110032

2. The Director (S)
Government of India
Ministry of Environment and Forest
Eastern Regional Office
A/3, Chandrasekharpur
BHUBANESWAR – 751023

3. The Chairman,
State Pollution Control Board, Orissa
Parivesh Bhavan, A/118, Nilakanthnagar, Unit – VIII
BHUBANESWAR - 751023

SIX MONTHLY COMPLIANCE REPORT
(APRIL, 2017 TO SEPTEMBER, 2017)
OF
ENVIRONMENT CLEARANCE LETTER NO.
J-11011/352/2005-1A II (I) dated 5th April 2007
FOR EXPANSION CUM MODERNISATION PROJECT
FROM 1.2 MTPA TO 2.9 MTPA OF CLINKER
AND
2.0 MTPA TO 4.0 MTPA OF CEMENT
BY
OCL INDIA LIMITED
RAJGANGPUR – 770017
DIST- SUNDARGARH
ODISHA

Date-8th December, 2017

OCL INDIA LTD, RAJGANGPUR

Sub: Submission of six monthly compliance report (April 2017 to September, 2017) of conditions stipulated in Environmental Clearance letter No. F. No. J-11011/352/2005-1A II (I) dated 5th April 2007 by MoEF for the project of OCL India Limited, Rajgangpur.

A. SPECIAL CONDITION

<table>
<tr><th>Sl. No.</th><th>Description of Conditions</th><th>Compliance Status</th></tr>
<tr><td>i</td><td>The gaseous and particulate matter emissions from various units shall confirm to the standards prescribed by the Orissa State Pollution Control Board (OSPCB). At no time the particulate emissions shall exceed OSPCB. Interlocking facility shall be provided in the pollution control equipment so that in the event of the pollution control equipment not working, the respective unit is shut down automatically.</td><td>a. Complied.
b. The compliance status of Stack emission is given below. The reading taken from different location are stipulated with respect to the standard prescribed within the norms of emission level. We have installed all the pollution control equipment in order to meet new emission standards, as revised by Gazette Notification G.S.R. 497 (E) dtd. 10th May, 2016.
Online CEMS (Continuous Emission Monitoring system) have been installed and facility for transmitting online data to OSPCB/CPCB. The gaseous and particulate matter emissions most of time are within the prescribed limits. Action plan for the compliance of notified emission norms, as per the directions under Sec. 5 of The EP Act, 1986 have been submitted for further improvement. We have been also conducted third party monitoring through an accredited agency em-paneled by OSPCB. Summary of the same is reproduced below:
<table>
<tr><th rowspan="2">Stack attached to</th><th colspan="6">Particulate matter emission in mg/Nm3</th></tr>
<tr><th>April-17</th><th>May-17</th><th>June-17</th><th>Jul-17</th><th>Aug-17</th><th>Sept-17</th></tr>
<tr><td>Kiln & VRM B/F</td><td>13.7</td><td>13.2</td><td>18.7</td><td>13.2</td><td>15.9</td><td>16.0</td></tr>
<tr><td>Coal Mill B/F</td><td>14.0</td><td>14.3</td><td>17.9</td><td>11.9</td><td>11.4</td><td>10.8</td></tr>
<tr><td>Cooler ESP</td><td>10.7</td><td>20.2</td><td>26.5</td><td>21.8</td><td>20.0</td><td>11.9</td></tr>
</table>
c. Additional measures are being taken for operating practices of pollution control equipment. Tripping in kiln ESP is minimized. Facility have been provided to control emission in the event of any tripping or kiln shut down condition.</td></tr>
<tr><td>ii</td><td>Continuous on-line monitoring system to monitor gaseous emission shall be controlled with in 50 mg/Nm3 by installing adequate air pollution control system. On-line monitoring data shall be submitted to the OSPCB and CPCB regularly.</td><td>Complied. Continuous stack monitoring system has already been installed. On-line data through CEMS and CAAQMS are being transmitted to OSPCB/CPCB. Stack monitoring and Ambient air quality monitoring reports are submitted to SPCB in every month and half yearly basis to Regional office of MoEF&CC, Bhubaneswar.</td></tr>
</table>

iii	Ambient Air Quality including ambient noise levels shall not exceed the standards stipulated under EPA or by the State authorities. Monitoring of ambient air quality and stack emission shall be carried out regularly in consultation with OSPCB and report submitted to the OSPCB quarterly and to the ministry's Regional office at Bhubaneswar half -yearly. One ambient air quality monitoring station shall be installed in downwind direction.	a. Monitoring of ambient air quality is carried out regularly in consultation with SPCB. The measured data are given here under in **Table No. A.iii.a;** are within the prescribed limit as stipulated under EPA/SPCB. Similarly data on ambient noise level are within the stipulated norm, as furnished and shown in tabular form under General condition given in B.vi. b. Monitoring of ambient air quality and stack emission is carried out regularly in consultation with OSPCB and report is being submitted to the OSPCB on monthly basis and to the Ministry's Regional Office at Bhubaneswar on be half-yearly basis. c. The monitoring report by SPCB em-paneled agency is enclosed as Annexure-I

Ambient air quality monitoring reports are as under::

Table No. A.iii.a

Location of sampling station	SO2 (ug/m3)	NOX (ug/m3)	Particulate matter (size less than 10um) or PM10 (ug/m3)	Particulate matter (size less than 2.5um) or PM2.5 (ug/m3)	Ozone (o3) (ug/m3)	Lead (Pb) (ug/m3)	CO (mg/m3)	Ammonia (nh3) (ug/m3)	Benzene (C6H6) (ug/m3)	Benzo(a) Pyrene (BaP) – particulate phase only (ug/m3)	Arsenic (AS) (ug/m3)	Nickel (Ni) (ug/m3)
STORES BUILDING	<3.0	12.0	49.0	19.0	<19.6	<0.4	<0.1	23.0	<0.1	<0.1	<1.0	<5.0
DITC BUILDING	<3.0	6.0	65.0	23.0	<19.6	<0.4	<0.1	21.0	<0.1	<0.1	<1.0	<5.0
CANTEEN BUILDING	<3.0	<6.0	60.0	23.0	<19.6	<0.4	<0.1	<20.0	<0.1	<0.1	<1.0	<5.0
LOCO GATE	<3.0	6.0	73.0	25.0	<19.6	<0.4	<0.1	20.0	<0.1	<0.1	<1.0	<5.0

iv	The company shall install adequate dust collection and extraction system to control fugitive dust emission at various transfer points, raw mill handling (unloading, conveying, transporting, stacking), vehicular movement, bagging and packing areas etc. ESP to Cooler and cyclone & bag filter to kiln, CVRM and bag filters shall be provided in the coal mill and cement mills to control air emissions less than 50 mg/Nm3. Jet pulse bag filters/ dust extraction system shall be provided to control fugitive emissions in raw material, coal handling and cement grinding areas. Dust suppression system at unloading hoppers, discharge gate of silos and totally closed operations for al belt conveyers and storage etc shall be used. Raw materials shall be stored in closed roof sheds and clinker in silos.	Following air pollution control measures are taken: a. Dust collection extraction system (Bag filters) have been installed and maintained at various transfer points such as loading/ unloading areas. Raw materials are transported through closed conveyor belts. b. Coal handling, cement grinding units are equipped with bag filters to control fugitive dust emissions. c. Bag house installed for CVRM & Coal mill to maintain stack emission as per standard. d. Road sweeping machines are deployed on regular cleaning of roads.Internal roads are concreted and water sprinkling on the roads are also carried out. e. Belt conveyors are thoroughly hood covered. f. Clinker is stored in clinker silo & transported by hatch adopter system. g. Raw material handling & its storing is carried out by closed shed.
v	Asphalting/concerning of roads and water spray all around the coals stockpiles shall be carried out to control fugitive emissions.	Concreting and black-topping or paving with hard solid reject Refractory bricks are completed. Road sweeping machines deployed & water spray in coal stockpiles are being done as per requirement to control the fugitive emission.
vi	Total water requirement from the Nakti nala and ground water source shall not exceed 5,788 m3/d including 785 m3/d respectively and prior permission for the drawl of ground water from the SGWB/CGWA shall be obtained. All the treated waste water shall be recycled and reused in the process, dust suppression, green belt development and other plant related activities etc. No process wastewater shall be discharged outside the factory premises and 'zero' discharge shall be adopted. Domestic effluent treated in Sewage Treatment Plant (STP) shall be used for green belt development within the plant and colony area.	1. It is ensured that the water consumption shall not exceed the quantity 5,788 m3/d including 785 m3/d from the Nakti nala and ground water source respectively. 2. The treated water of ETP is reused. There is no effluent discharged outside the factory premises and "zero" discharge is adopted. 3. Domestic sewerage is treated in STP. The treated water is used for green belt development.
vii	All the cement dust collected from pollution control devices shall be recycled and reutilized in the process. Char from sponge iron plant of M/s. OCL shall be used as raw material in manufacturing cement and mixed with feed. Hazardous waste viz. Used oil from gear boxes and automotive batteries, etc shall be properly stored in a designated area and sold to authorized recyclers/ re processors.	a.) Dust collected from pollution control devices is recycled and reutilized in the process. b.) Char is used as raw material, as per availability. c.) Used oil & batteries are stored at earmarked area and disposed off through the authorized recyclers/ re processors.

<table>
<tr><td>viii</td><td>The company must harvest the rainwater from the roof tops and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water.</td><td>Following rain water harvesting projects are existing
a. Rain water harvesting by storm water drain have been made inside plant & near CPP.
b. Roof top rain water-harvesting has been completed in colony under guidance of the Office of Hydrologist, Ground Water Survey &Investigation Division, Sambalpur.
c. Rain water harvesting projects from the roof top of raw material shed inside the plant is also being carried out.</td></tr>
<tr><td>ix</td><td>Green belt shall be developed in at least 28.0 ha out of total 91.15 ha land in consultation with the local DFO as per the CPCB guidelines.</td><td>Green belt cover has already been developed in 28.0 ha. In addition, company has also taken up plantation & distributing of saplings to nearby villagers. Total area covered under green belt is in & around is 97 ha., Statistical data is given here under:
<table>
<tr><td colspan="3">DETAILS OF YEAR WISE PLANTATION (CUMULATIVE STATUS)</td></tr>
<tr><td>YEAR</td><td>NO. TREES PLANTED</td><td>REMARKS</td></tr>
<tr><td>Up to march,2007-08</td><td>148655</td><td>Plantation & sapling distributed</td></tr>
<tr><td>2008-2009</td><td>155155</td><td>2300</td></tr>
<tr><td>2009-2010</td><td>162401</td><td>4800</td></tr>
<tr><td>2010-2011</td><td>171757</td><td>6964</td></tr>
<tr><td>2011-2012</td><td>177957</td><td>9964</td></tr>
<tr><td>2012-2013</td><td>183957</td><td>14164</td></tr>
<tr><td>2013-2014</td><td>190246</td><td>19664</td></tr>
<tr><td>2014-2015</td><td>196660</td><td>27664</td></tr>
<tr><td>2015-2016</td><td>203892</td><td>92664</td></tr>
<tr><td>2016-2017 (till Sept'17)</td><td>220900</td><td>138922</td></tr>
</table></td></tr>
<tr><td>x</td><td>The company shall undertake eco- development measures including community welfare measures in the project area.</td><td>Company has been continuously doing eco-development work in the surrounding area.</td></tr>
<tr><td>xi</td><td>All the recommendation mentioned in the Charter on the Corporate Responsibility for Environmental Protection (CREP) shall be strictly followed.</td><td>It is being complied</td></tr>
<tr><td>xii</td><td>High calorific hazardous waste shall be used as fuel in the cement kiln. Accordingly provision shall be made in the kiln.</td><td>High calorific hazardous waste is being burnt in cement kiln. We have already obtained the authorization from SPCB, Odisha; vide Lr. No. IND-IV-HW-286/12720, dtd 16.8.2016 for trial operation. Thereafter, CTE obtained for it's use, as alternative fuel in our plant.</td></tr>
<tr><td>xiii</td><td>Prior permission from the State Forest Department shall be obtained regarding likely impact of proposed expansion on the reverse forest viz. Gudiali RF (3km), Tunmura RF (6.5 km) Chudia RF (6.5 km) and Hathidhara R.F. (4 km) and recommendations/ suggestion, if any shall be implemented in a time bound manner.</td><td>The new plant is constructed over non-forest land and equipped with high standard pollution control devices. However, an application to the Forest Deptt. Already submitted at the conceptual stage of the plant.</td></tr>
</table>

B. GENERAL CONDITION

<table>
<tr><th>Sl.No.</th><th>Description of conditions</th><th>Compliance Status</th></tr>
<tr><td>i</td><td>The project authority must adhere to the stipulation made by Orissa State Pollution Control Board and State Government.</td><td>All condition laid by Orissa state pollution control board is strictly abiding to all stipulations.</td></tr>
<tr><td>ii</td><td>No expansion or modification of the plant should be carried out without prior approval of this Ministry.</td><td>No expansion or modification have been made.</td></tr>
<tr><td>iii</td><td>Adequate number of ambient air quality- monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SO2 and NOX are anticipated in consultation with the OSPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including Regional Office at Bhubaneswar and OSPCB once in six months.</td><td>a. Four numbers of ambient air quality monitoring stations are installed as per SPCB guideline, which are shown in the Table A.iii.a
b. Data on ambient air quality and stack emission is submitted to SPCB/CPCB and MoEF&CC</td></tr>
<tr><td>iv</td><td>Industrial wastewater shall be properly collected, treated so as to confirm to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. The treated waste water shall be recycled in the plant as well as utilization for plantation purposes.</td><td>a. Waste water generated in the plant is being treated in the effluent treatment plant (ETP). The last analysis report of ETP outlet is given here under.
Date of sampling:- 19.08.2017 (Copy enclosed)
<table>
<tr><th>Sl. No.</th><th>parameter</th><th>Result of ETP outlet treated water</th></tr>
<tr><td>1</td><td>PH value</td><td>7.3</td></tr>
<tr><td>2</td><td>Total suspended solids (mg/l)</td><td>5.5</td></tr>
<tr><td>3</td><td>B.O.D (mg/l)</td><td>04</td></tr>
<tr><td>4</td><td>C.O.D (mg/l)</td><td>11.4</td></tr>
<tr><td>5</td><td>Oil & Grease (mg/l)</td><td>0.1</td></tr>
</table>
b. The treated water is utilised in the plant for machineries cooling, sprinkling on road & green belt development.</td></tr>
<tr><td>v</td><td>The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous waste in accordance with the Hazardous Waste (Management and Handling) Rules, 2003. Authorization from the OSPCB must be obtained for collection, storage, treatment and disposal of hazardous wastes.</td><td>Complied.
Regular disposal of Hazardous waste, as per Rule are maintained and Form-IV is being submitted to OSPCB with required information.</td></tr>
</table>

<table>
<tr><td>vi</td><td>The overall noise levels in and around the plant area shall be kept well within the standards (85dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall confirm to the standards prescribed under EPA Rules, 1986 viz. 75 dBA (day time) and 70 dBA (night time).</td><td>a. Noise monitoring is being carried out regularly at specified locations. Following data is given herewith for four locations. Result for the last monitored value is furnished below:
<table>
<tr><td>Particulates</td><td colspan="4">Sampling Locations</td></tr>
<tr><td></td><td>WORKSHOP BUILDING</td><td>CCR BUILDING</td><td>NEAR WATER HARVESTING AREA OF CPP</td><td>DITC BUILDING</td></tr>
<tr><td>Noise level(L day) during day time</td><td>60.7</td><td>69.8</td><td>68.7</td><td>69.7</td></tr>
<tr><td>Noise level (L night) during night time</td><td>53.2</td><td>56.5</td><td>54.6</td><td>53.4</td></tr>
</table></td></tr>
<tr><td>vii</td><td>The project proponent shall comply with all the environmental protection measures and safeguards recommended in the Environmental Impact Assessment / Environmental management Plan.</td><td>Complied</td></tr>
<tr><td>viii</td><td>As proposed in EIA / EMP, Rs.31.82 Crores and Rs.2.64 Crores earmarked toward the capital cost and recurring the expenditure / annum for environmental protection measures shall be used judiciously to implement the conditions as well as Ministry of Environment and forests as well as the State Government. The funds so provided shall not be diverted for any other purposes.</td><td>Complied.</td></tr>
<tr><td>ix</td><td>The Regional Office of this Ministry at Bhubaneswar / Central Pollution Control Board / OSPCB shall monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly</td><td>Complied. Six monthly reports are being submitted regularly.</td></tr>
</table>

x	The project authorities should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the state pollution Control Board / Committee and may also be seen at Website of the Ministry of Environment and Forests at http:/envfor.nic.in This shall be advertised within seven days from the date of issues 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 shall be forwarded to the Regional office.	Complied
xi	The project Authorities shall inform the Regional Office as well as The Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Complied
xii	The Regional office of the Ministry at Bhubaneswar / Central Pollution Control Board / State Pollution Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly.	Six monthly compliance report along with monitored data is being submitted regularly.

ENVIRONMENTAL MONITORING REPORT

BASED ON DATA GENERATED

FROM

APRIL 2017 – SEPTEMBER 2017

FOR

OCL INDIA LIMITED

At/Po: RAJGANGPUR, District: SUNDARGARH, ODISHA

AT

CEMENT PLANT, LINE – 1 & LINE - 2

Prepared By:

Cleenviron Private Limited

D-124, KOELNAGAR, ROURKELA, ODISHA

Tele fax: 0661 – 2475746

Email: cleenviron@gmail.com

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1. INDRODUCTION

OCL is currently manufacturing Ordinary Portland Cement (OPC) of various grades including grade 53S specially meant for concrete sleepers for railways, Portland Slag Cement (PSC), flyash based Portland Pozzolana Cement (PPC), Sulphate Resitance Portland Cement (SRPC) and Oil well cement. The main raw materials used for manufacturing of various types of cement are Clinker, Slag, Flyash and Gypsum. Clinker is the main raw material, which is produced by sintering limestone along with other additives like clay, morrum, char, cinder etc. Coal is used as fuel for burning the limestone in kiln.

Cement Division of OCL India Limited (OCL) is currently operating a cement plant located at Rajgangpur in Sundargarh district of Odisha state. The existing plant has production capacity of 2.9 million tonnes clinker per annum and cement manufacturing capacity 4 million tonnes cement per annum.

The limestone requirement for the proposed expansion is proposed to be met by the increased production from the existing captive mines at Lanjiberna.

2. LOCATION AND ACCESSIBILITY

The proposed site is well within the existing factory premises of **OCL** at Rajgangpur and has the following coordinates (as per Survey of India toposheet no. 73 B/12, scale 1:50000):

- Latitude : 22° 12' N
- Longitude : 84° 35' E

The area covered by **OCL** comes under Rajgangpur village of Tehsil Rajgangpur, district Sundargarh. The general elevation of land is about 250 m above mean sea level. Accessibility to the site is as per details given below:

Road

The plant is located about 43 km from Rourkela on Rourkela-Sambalpur state highway (SH-10).

Rail

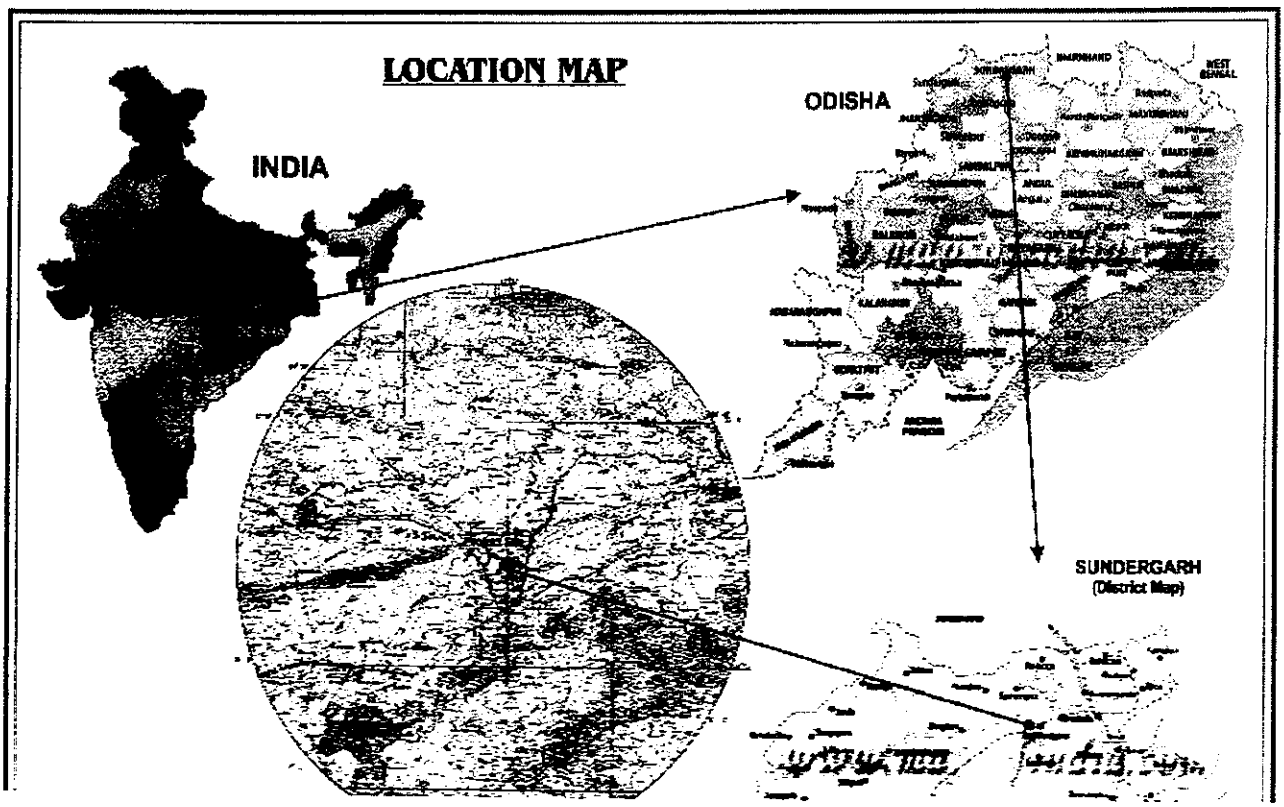
The nearest railway station is at Rajgangpur, which is about 2 km from the plant site and is located on the Howrah-Mumbai section of South Eastern Railway.

Air

The nearest airport is at Kolkatta, which is about 450 km from plant site and well connected by rail and road.

The location of the project site is depicted as in **Figure1.1**

Figure No: 1.1



OCL has affianced ***Cleenviron Private Limited (NABL accredited Laboratory),*** Rourkela, Odisha, to carry out periodical environmental monitoring and to prepare Environment monitoring report. The study has been carried out as per the guidelines of Ministry of Environment & Forests (MOEF) and State Pollution Control Board, Odisha (SPCB).

3. ASPECTS CONSIDERED FOR ENVIRONMENTAL MONITORING

This report is based on the monitoring results generated from April 2017 to September 2017 covering post-monsoon and winter seasons of the year. Ambient Air Quality and Stack Emission monitoring was carried out on Quarterly once basis.

i. Micro-meteorological Monitoring

ii. Ambient Air Quality Monitoring
iii. Stack Emission Monitoring

Monitoring of environmental parameters for collection of data involves field work, which is described below:

3.1 Micro-meteorological Study

For collection of micro-meteorological data like Temperature, Relative Humidity, Wind Speed, Wind Direction, & Rainfall, a weather monitoring station is fixed on the Magazine Hill Top of Lanjiberna Limestone and Dolomite Mines of M/s OCL India Ltd. Hourly data is being recorded continuously by putting up windows compatible data logging facility instrument, Make: Virtual Electronics Company, Roorkee.

3.2 Ambient Air Monitoring

To assess ambient air quality, total 7 (seven) monitoring stations are fixed including 5 (five) in the Line - 1 and 2 (two) in the Line - 2. The monitoring locations are fixed according to the micro-meteorological data and in consultation with State Pollution Control Board. The monitoring was carried out for parameters like PM2.5, PM10, SO_2, NO_x, NH_3, O_3, CO, As, Ni, Pb, Benzene & Benzo(a)pyrene and monitoring was carried out once during three months from each location. For collection of samples Respirable Dust sampler with PM2.5 attachment was placed at each location, sampling and analytical techniques are followed as per the standard methods of ambient air sampling and analysis.

3.3 Stack Emission Monitoring

The essential units of the cement plant are equipped with pollution control equipments. To assess the emission level of Particulate Matter from the stacks of different units, monitoring of Stack emission levels were scheduled on quarterly once basis. Particulate Matter emission was monitored following the BIS methods for Stack monitoring.

4. SAMPLING LOCATIONS

4.1 Micro-Meteorological Study

One meteorological station was set up on the Magazine Hill Top of the Lanjiberna Limestone & Dolomite Mines to monitor wind speed, wind direction, temperature, relative humidity and rainfall on hourly basis by data logging technique. The station is at an aerial distance of around 8 kms from the project site.

4.2 Ambient Air Quality Monitoring

Five ambient air quality monitoring stations are fixed within the Line -1 and two stations are fixed in the Line – 2 area. General precautions were taken to position the Respirable Dust Samplers at all the locations. The descriptions of the Ambient Air Monitoring Stations are as follows:

A-1 Stores Building (Line – 1):

The sampling station is located within the Plant site and the station was selected to assess the present level of pollution due to the general unit operations of the Line - 1.

A-2 DITC Building Near Line - 2:
This location is nearer to the Line – 2 operational area. This was selected to assess the air quality in and around the Line – 2 unit operations.

A-3 Near Canteen Building (Line – 1):
The sampling station is located within the Plant site and the station was selected to assess the present level of pollution due to the general unit operations of the Line - 1.

A-4 Near Loco Gate (Line – 1):
The sampling station is located within the Plant site and the station was selected to assess the present level of pollution due to the general unit operations of the Line - 1.

A-5 CCR Building (Line – 1):
The sampling station is located within the Plant site and the station was selected to assess the present level of pollution due to the general unit operations of the Line - 1.

A-6 Workshop Building (Line – 1):
The sampling station is located within the Plant site and the station was selected to assess the present level of pollution due to the general unit operations of the Line - 1.

A-7 Near Water Harvesting Area of CPP (Line – 2):
This location is within the Line – 2 operational area. This was selected to assess the air quality in and around the Line – 2 unit operations.

4.3 Stack Emission Monitoring:
The stack of the different units of the Cement plant like, VRM – Line – 1, CVRM – 1, CVRM – 2, CVRM – 3, RABH Line – 2, Bolier – 1, Boiler – 2, Coal Mill Line – 1, Coal Mill Line – 2, Cooler Line – 2, were carried out for parameters like, Particulate Matter, Sulphur Dioxide and Nitrogen Oxides emission levels.

5. METHODOLOGY OF SAMPLING & ANALYTICAL PROCEDURES

5.1 Meteorological Study
For recording various meteorological parameters like, Temperature, RH, Wind Speed, Wind Direction & Rainfall, a weather monitoring station, Make: Virtual Electronics Company, Roorkee was installed at the site. The instrument is equipped with windows based data logging software to store each data on hourly basis, which can be further down loaded to a PC and data can be interpreted as per the requirement of the report.

5.2 Ambient Air Monitoring
Air quality samples were monitored for all parameters as per NAAQS. For sampling and analysis, methods prescribed by CPCB were followed and Respirable Dust Samplers (RDS) APM 460BL – 411TE, Make: Envirotech Instruments Pvt. Ltd. were used and for PM2.5 sampling AAS 190 attachment for fine particulate sampling along with RDS was used where ever necessary at the site.

5.3 Stack Monitoring
Stack monitoring were carried out once in every three months from the bag filter and ESP outlet stacks of the units mentioned and the Indian standard methods for monitoring of Stack emission was followed for collecting the sample and the concentration of Particulate Matter were calculated by following the standard methods.

For collection of sample Ecotech Instruments make Stack sampler Model: ESS -100 was used at the site.

6. DATA ANALYSIS

6.1 Micro-meteorological Study:

6.1.1 Wind Speed & Wind Direction

During the entire period from 1st April to 30th September all total 4387 no. of data are recorded by the instrument and after interpretation of the collected data it was found that Calm condition prevailed over 38.55%, while considering the 24 hourly data. 29.14% calm condition prevailed from morning 6 hrs to 14hrs for the entire study period, 41.45% calm condition prevailed from 14hrs to 22hrs and 46.26% calm condition prevailed from 22hrs to 06hrs. The predominant wind directions were from East, SE & NW with average wind speed 1.48 m/sec. The wind rose diagram for the entire study period are depicted on the **Figure No: 6.1, 6.2, 6.3 & 6.4.**

6.1.2 Temperature

The maximum & minimum temperature during the entire study period were divided in to two parts as the study period was covering summer as well as monsoon seasons. The Minimum temperature during the summer season was found to be 22.8°C and the Maximum temperature was found to be 45.3°C up to the end of 30th June.
The minimum and maximum temperature during the monsoon season i.e. from July to September was found to be 20.8°C and 36.3°C. **Table No 6.1** shows a summary of micro-meteorological data collected for the entire period.

6.1.3 Rainfall

The total rain fall from 1st April to 30th September was observed to be 679.6 mm. during the study period. A month wise rainfall data recorded at the site is depicted in **Table No 6.1.**

Table No: 6.1
A Summary of the Micro-meteorological Data

Project Site : **Lanjiberna Limestone & Dolomite Mines**
Location : **Magazine Hill Top**

Sl No	Parameters	From April – September 2017
1	Predominant Wind Direction	From East, SE & NW
2	Calm Condition %	38.55
3	Average Wind Speed m/sec	1.48
4	Temperature °C	
	Summer Season	
	Minimum	22.84
	Maximum	45.31
	Monsoon Season	
	Minimum	20.8
	Maximum	36.3
5	**Rain Fall in mm**	
	April	2.4

Sl No	Parameters	From April – September 2017
	May	18.2
	June	157.2
	July	250.6
	August	148.6
	September	102.6
	Total	**679.6**

Figure No: 6.1 **Wind Rose Diagram for 24 Hours**

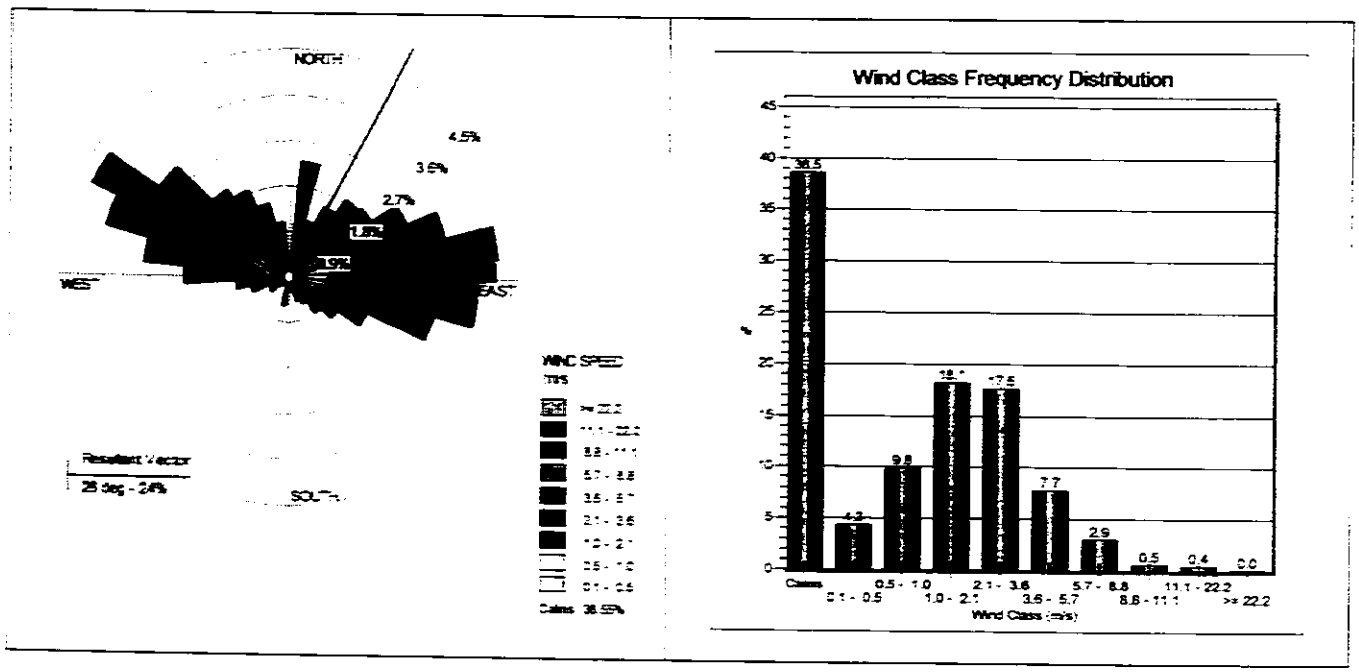


Figure No: 6.2 **Wind Rose Diagram from 06 – 14 Hours**

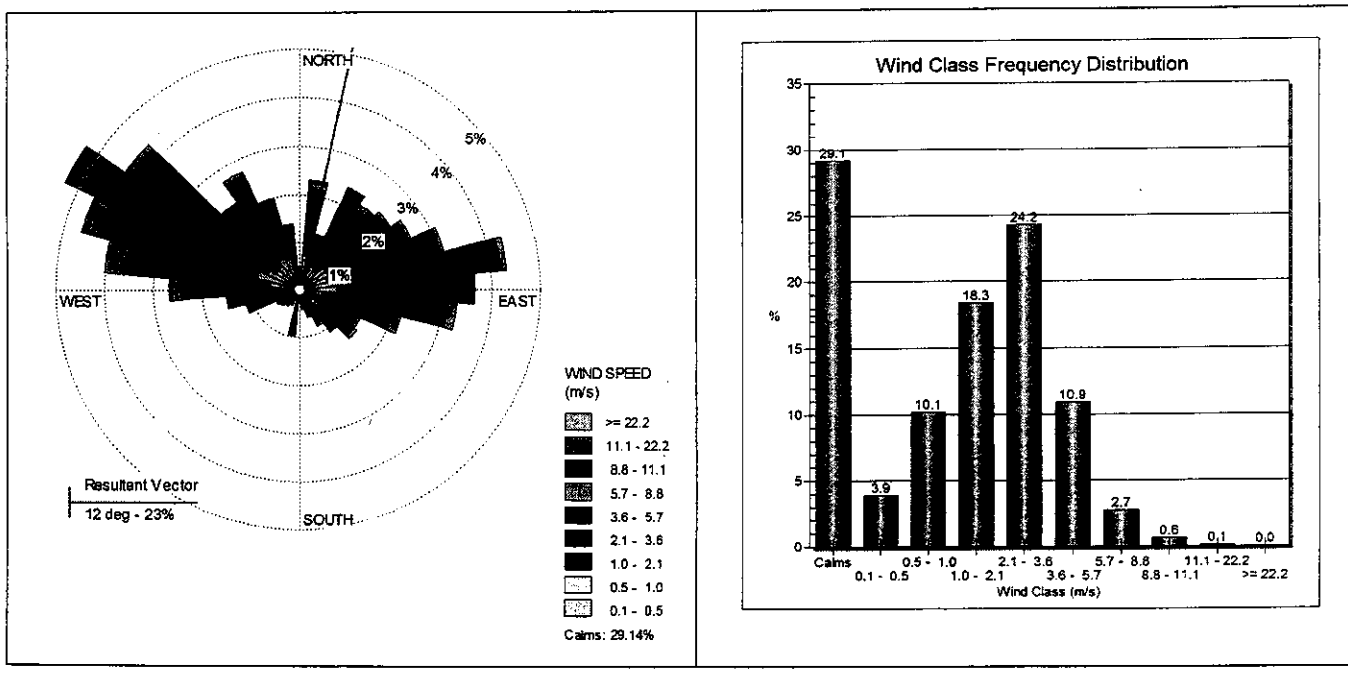


Figure No: 6.3 **Wind Rose Diagram from 14 – 22 Hours**

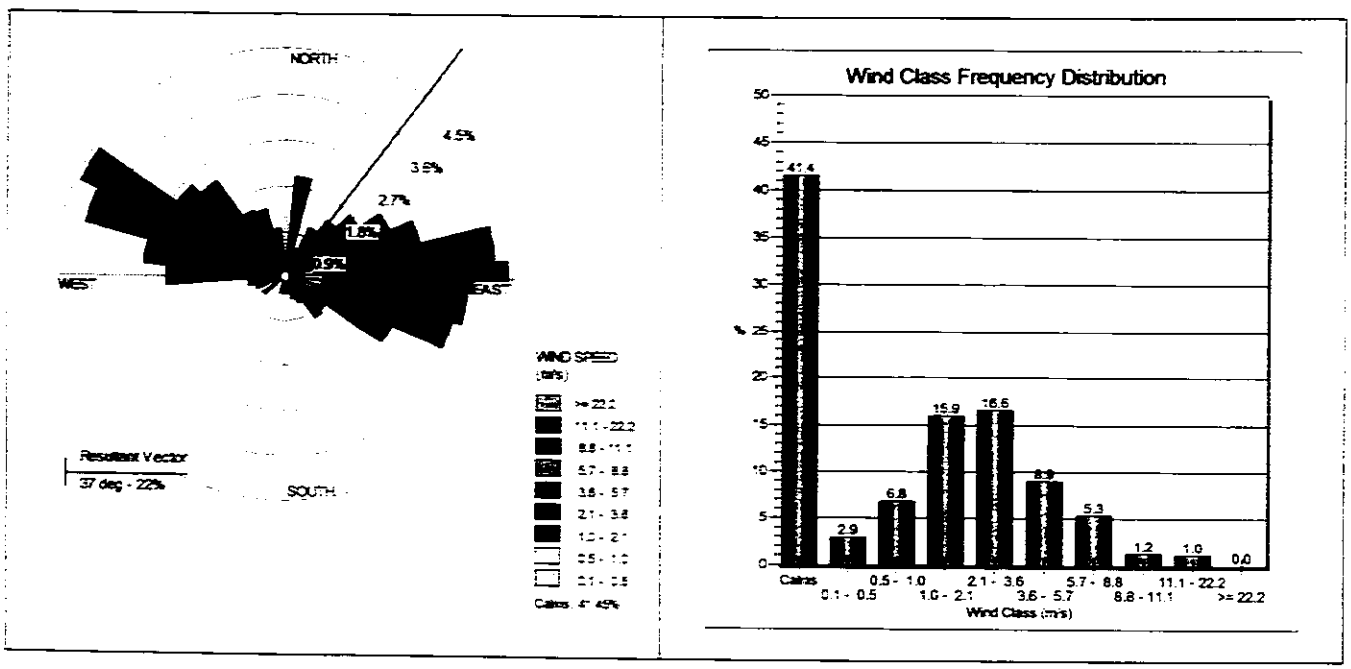


Figure No: 6.4 **Wind Rose Diagram from 22 – 06 Hours**

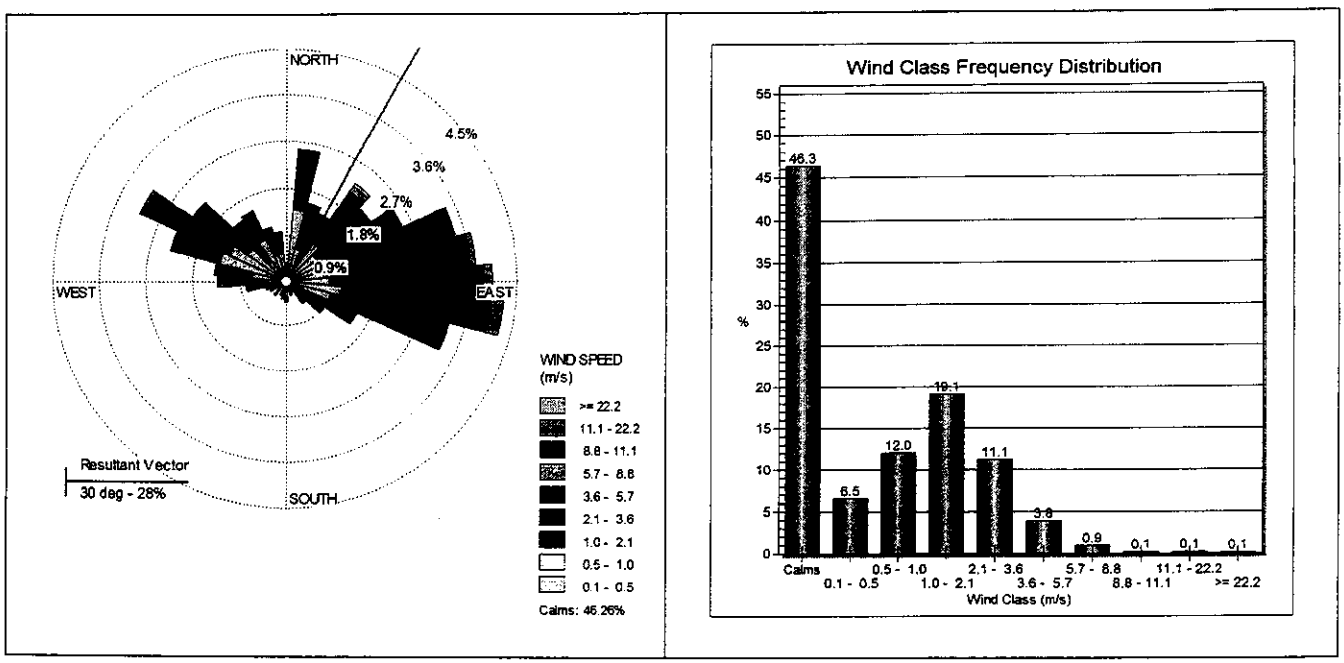


Table No: 6.2
AMBIENT AIR QUALITY DATA
From 01.04.2017 to 30.09.2017
Station: A-1 **Stores Building (Line – 1)**

Date	PM2.5	PM10	SO_2	NOx
28.06.2017	30	90	03	12
13.09.2017	19	49	< 3	12

Table No: 6.2A

Sl No	Date of Sampling	Parameters							
		NH_3	O_3	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzene (C_6H_6)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase
	Units →	µg/m³	µg/m³	µg/m³	ng/m³	ng/m³	µg/m³	mg/m³	ng/m³
	Method of Analysis →	APWA 3rd Ed. Method - 401	APWA 3rd Ed. Method – 411	APWA 3rd Ed. Method – 822	APWA 3rd Ed. Method – 804	APWA 3rd Ed. Method - 822	IS 5182 (Part – 11)	Electro-chemical Sensor	IS 5182 (Part – 12)
1.	28.06.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1
2.	13.09.2017	23	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

Table No: 6.3
AMBIENT AIR QUALITY DATA
From 01.04.2017 to 30.09.2017
Station: A-2 **DITC Building Near Line - 2**

Date	PM2.5	PM10	SO_2	NOx
30.06.2017	21	82	< 3	< 6
16.09.2017	23	65	< 3	06

Table No: 6.3A

Sl No	Date of Sampling	Parameters							
		NH_3	O_3	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzene (C_6H_6)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase
Units →		µg/m³	µg/m³	µg/m³	ng/m³	ng/m³	µg/m³	mg/m³	ng/m³
Method of Analysis →		APWA 3rd Ed. Method – 401	APWA 3rd Ed. Method – 411	APWA 3rd Ed. Method – 822	APWA 3rd Ed. Method – 804	APWA 3rd Ed. Method – 822	IS 5182 (Part – 11)	Electro-chemical Sensor	IS 5182 (Part – 12)
1.	30.06.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	0.60	< 0.1
2.	16.09.2017	21	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

Table No: 6.4
AMBIENT AIR QUALITY DATA
From 01.04.2017 to 30.09.2017
Station: A-3 **Near Canteen Building (Line – 1)**

Date	PM2.5	PM10	SO_2	NOx
28.06.2017	33	80	03	12
14.09.2017	23	60	< 3	< 6

Table No: 6.4A

Sl No	Date of Sampling	Parameters							
		NH_3	O_3	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzene (C_6H_6)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase
Units →		µg/m³	µg/m³	µg/m³	ng/m³	ng/m³	µg/m³	mg/m³	ng/m³
Method of Analysis →		APWA 3rd Ed. Method - 401	APWA 3rd Ed. Method – 411	APWA 3rd Ed. Method – 822	APWA 3rd Ed. Method – 804	APWA 3rd Ed. Method - 822	IS 5182 (Part – 11)	Electro-chemical Sensor	IS 5182 (Part – 12)
1.	28.06.2017	< 20	< 19.6	< 0.40	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1
2.	14.09.2017	< 20	< 19.6	< 0.40	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

Table No: 6.5
AMBIENT AIR QUALITY DATA
From 01.04.2017 to 30.09.2017

Station: A-4 **Near Loco Gate (Line – 1)**

Date	PM2.5	PM10	SO_2	NOx
28.06.2017	33	78	03	09
14.09.2017	25	73	< 3	06

Table No: 6.5A

Sl No	Date of Sampling	Parameters							
		NH_3	O_3	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzene (C_6H_6)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase
Units →		µg/m³	µg/m³	µg/m³	ng/m³	ng/m³	µg/m³	mg/m³	ng/m³
Method of Analysis →		APWA 3rd Ed. Method - 401	APWA 3rd Ed. Method – 411	APWA 3rd Ed. Method – 822	APWA 3rd Ed. Method – 804	APWA 3rd Ed. Method - 822	IS 5182 (Part – 11)	Electro-chemical Sensor	IS 5182 (Part – 12)
1.	28.06.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1
2.	14.09.2017	20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

Table No: 6.6
AMBIENT AIR QUALITY DATA
From 01.04.2017 to 30.09.2017
Station: A-5 **CCR Building (Line – 1)**

Date	PM2.5	PM10	SO_2	NOx
29.06.2017	34	79	< 3	22
15.09.2017	23	76	< 3	< 6

Table No: 6.6A

Sl No	Date of Sampling	Parameters							
		NH_3	O_3	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzene (C_6H_6)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase
Units →		µg/m³	µg/m³	µg/m³	ng/m³	ng/m³	µg/m³	mg/m³	ng/m³
Method of Analysis →		APWA 3rd Ed. Method - 401	APWA 3rd Ed. Method – 411	APWA 3rd Ed. Method – 822	APWA 3rd Ed. Method – 804	APWA 3rd Ed. Method - 822	IS 5182 (Part – 11)	Electro-chemical Sensor	IS 5182 (Part – 12)
1.	29.06.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

2.	15.09.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

Table No: 6.7
AMBIENT AIR QUALITY DATA
From 01.04.2017 to 30.09.2017
Station: A-6 **Workshop Building (Line – 1)**

Date	PM2.5	PM10	SO_2	NOx
29.06.2017	25	70	03	25
15.09.2017	22	59	< 3	08

Table No: 6.7A

Sl No	Date of Sampling	Parameters							
		NH_3	O_3	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzene (C_6H_6)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase
Units →		µg/m³	µg/m³	µg/m³	ng/m³	ng/m³	µg/m³	mg/m³	ng/m³
Method of Analysis →		APWA 3rd Ed. Method - 401	APWA 3rd Ed. Method – 411	APWA 3rd Ed. Method – 822	APWA 3rd Ed. Method – 804	APWA 3rd Ed. Method - 822	IS 5182 (Part – 11)	Electro-chemical Sensor	IS 5182 (Part – 12)
1.	29.06.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1
2.	15.09.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

Table No: 6.8
AMBIENT AIR QUALITY DATA
From 01.04.2017 to 30.09.2017
Station: A-7 **Near Water Harvesting Area of CPP (Line – 2)**

Date	PM2.5	PM10	SO_2	NOx
29.06.2017	39	82	< 3	47
15.09.2017	25	73	< 3	06

Table No: 6.8A

Sl No	Date of Sampling	Parameters							
		NH_3	O_3	Lead (Pb)	Arsenic (As)	Nickel (Ni)	Benzene (C_6H_6)	Carbon Monoxide (CO)	Benzo(a)pyrene (BaP) – Particulate Phase

Units →		µg/m³	µg/m³	µg/m³	ng/m³	ng/m³	µg/m³	mg/m³	ng/m³
Method of Analysis →		APWA 3rd Ed. Method - 401	APWA 3rd Ed. Method – 411	APWA 3rd Ed. Method – 822	APWA 3rd Ed. Method - 804	APWA 3rd Ed. Method - 822	IS 5182 (Part – 11)	Electro-chemical Sensor	IS 5182 (Part – 12)
1.	29.06.2017	32	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1
2.	15.09.2017	< 20	< 19.6	< 0.4	< 1.0	< 5.0	< 0.1	< 0.1	< 0.1

6.2 Stack Emission Monitoring

The Quarterly monitoring results of stack emission from the different units of the Cement Plant are given below:

Table No 6.9: Stack Emission Monitoring Results

Sl No	Location	Particulate Matter Concentration in mg/Nm³	
		June 2017	September 2017
1	Coal Mill, Line – 2	10	08
2	RABH Kiln, Line – 2	15	06
3	Cooler, Line – 2	23	16
4	CVRM – 2, Line – 1	17	07
5	CVRM – 3, Line – 1	25	07
6	CVRM – 1, Line – 1	16	03
7	Boiler – 2 Outlet ESP	25	07
8	Boiler – 1 Outlet ESP	21	27
9	VRM, Line – 1	28	26
10	Coal Mill, Line – 1	07	06
11	Cooler, Line – 1	13	04

7. CONCLUSION

7.1 Ambient Air Quality

It is concluded from the above study that the overall ambient air quality of the Cement Plant, both Line -1 and Line – 2 of OCL India Ltd. is good and the action taken by the plant authority were quite satisfactory.

7.2 Stack Emission Monitoring

The stack emission monitoring results of all control equipments monitored is very much effective and results are all within the prescribed standards by the State Pollution Control Board, Odisha.

Cleenviron Private Limited

OPCB Empanelled Consultant and Engineers in Environmental Pollution Control & Monitoring with Accredited Laboratory.

TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPL/FM/42

REPORT ISSUE DATE: 20.09.2017

REPORT NO: CPL/R/SE/SEPT-17/36

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer	:	**OCL INDIA LIMITED**
Address of the Customer	:	CEMENT DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA
Sample ID No	:	**CPL/SE/SEPT-17/21**
Name of Stack Monitored	:	Cooler ESP, Line – 2
Stack Connected To	:	ESP
Shape of Stack	:	Circular
Date of Sampling	:	15.09.2017
Time of Sampling	:	16.45 Hrs
Method of Sampling	:	IS 11255 (Part – 1): 1985
Sample Received on	:	15.09.2017
Date of Test	:	16.09.2017

Ambient Temperature in °C	:	34
Stack Temperature in °C	:	301
Average Stack Gas Velocity in m/sec	:	13.74
Iso-kinetic Flow Rate in LPM	:	30
Duration of Sampling in minute	:	33
Particulate Matter Concentration	:	**16 mg/Nm³**
Emission Limit Prescribed by OPCB	:	**30 mg/Nm³**

Subhangi Praharaj
Managing Director/QM

Verified By

CLEENVIRON PRIVATE LIMITED ROURKELA

Test Done By

----END OF TEST REPORT----

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TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPL/FM/42

REPORT NO: CPL/R/SE/JUL-17/4

REPORT ISSUE DATE: 05.07.2017

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer	:	**OCL INDIA LIMITED**
Address of the Customer	:	CPP DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA
Sample ID No	:	**CPL/SE/JUN-17/38**
Name of Stack Monitored	:	Boiler – 2
Stack Connected To	:	ESP
Shape of Stack	:	Square
Date of Sampling	:	29.06.2017
Time of Sampling	:	15.50 Hrs
Method of Sampling	:	IS 11255 (Part – 1) & (Part – 2) : 1985
Sample Received on	:	29.06.2017
Date of Test	:	30.06.2017

Ambient Temperature in °C	:	29
Stack Temperature in °C	:	107
Average Stack Gas Velocity in m/sec	:	11.70
Iso-kinetic Flow Rate in LPM	:	17
Duration of Sampling in minute	:	40
Particulate Matter Concentration	:	**25 mg/Nm^3**
Emission Limit Prescribed by OPCB	:	**50 mg/Nm^3**
Sulphur Dioxide as SO_2	:	**23.19 mg/Nm^3**
Nitrogen Oxides as NOx	:	**162.32mg/Nm^3**

Subhalinga Praharaj
Managing Director/CEO

Verified By

Test Done By

CLEENVIRON PRIVATE LIMITED ROURKELA

END OF TEST REPORT

Registered Office:
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TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPL/FM/42

REPORT NO: CPL/R/SE/SEPT-17/40 **REPORT ISSUE DATE: 20.09.2017**

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer	:	**OCL INDIA LIMITED**
Address of the Customer	:	CEMENT DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA
Sample ID No	:	**CPL/SE/SEPT-17/25**
Name of Stack Monitored	:	CPP, Boiler – 2
Stack Connected To	:	ESP Outlet
Shape of Stack	:	Square
Date of Sampling	:	16.09.2017
Time of Sampling	:	12.20 Hrs
Method of Sampling	:	IS 11255 (Part – 1), (Part – 2) : 1985 & (Part – 7) : 2005
Sample Received on	:	16.09.2017
Date of Test	:	18.09.2017

Ambient Temperature in °C	:	41
Stack Temperature in °C	:	135
Average Stack Gas Velocity in m/sec	:	14.72
Iso-kinetic Flow Rate in LPM	:	20
Duration of Sampling in minute	:	20

Particulate Matter Concentration	:	**07 mg/Nm³**
Emission Limit Prescribed by OPCB	:	**50 mg/Nm³**
Sulphur Dioxide as SO_2	:	**62.92 mg/Nm³**
Nitrogen Dioxide as NO_2	:	**164.8mg/Nm³**

Subhanga Praharaj
Managing Director/QM

Verified By

CLEENVIRON PRIVATE LIMITED ROURKELA

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TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPL/FM/42

REPORT ISSUE DATE: 20.09.2017

REPORT NO: CPL/R/SE/SEPT-17/38

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer	:	**OCL INDIA LIMITED**
Address of the Customer	:	CEMENT DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA
Sample ID No	:	**CPL/SE/SEPT-17/23**
Name of Stack Monitored	:	RABH, Line – 2
Stack Connected To	:	ESP
Shape of Stack	:	Circular
Date of Sampling	:	15.09.2017
Time of Sampling	:	15.08 Hrs
Method of Sampling	:	IS 11255 (Part – 1), (Part – 2) : 1985 & (Part – 7) : 2005
Sample Received on	:	15.09.2017
Date of Test	:	16.09.2017

Ambient Temperature in °C	:	35
Stack Temperature in °C	:	204
Average Stack Gas Velocity in m/sec	:	13.07
Iso-kinetic Flow Rate in LPM	:	34
Duration of Sampling in minute	:	30

Particulate Matter Concentration	:	**06 mg/Nm^3**
Emission Limit Prescribed by OPCB	:	**30 mg/Nm^3**
Sulphur Dioxide as SO_2	:	**35.55 mg/Nm^3**
Nitrogen Dioxide as NO_2	:	**133.3mg/Nm^3**

Subhangi Maharaj
Managing Director/CM

Verified By

CLEENVIRON PRIVATE LIMITED ROURKELA

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Registered Office
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TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPL/FM/42

REPORT ISSUE DATE: 05.07.2017

REPORT NO: CPL/R/SE/JUL-17/3

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer	:	**OCL INDIA LIMITED**
Address of the Customer	:	CEMENT DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA
Sample ID No	:	**CPL/SE/JUN-17/35**
Name of Stack Monitored	:	RABH, Line – 2
Stack Connected To	:	Bag Filter
Shape of Stack	:	Circular
Date of Sampling	:	29.06.2017
Time of Sampling	:	11.30 Hrs
Method of Sampling	:	IS 11255 (Part – 1) & (Part – 2): 1985
Sample Received on	:	29.06.2017
Date of Test	:	30.06.2017

Ambient Temperature in °C	:	30
Stack Temperature in °C	:	181
Average Stack Gas Velocity in m/sec	:	11.11
Iso-kinetic Flow Rate in LPM	:	14
Duration of Sampling in minute	:	30
Particulate Matter Concentration	:	**15 mg/Nm^3**
Emission Limit Prescribed by OPCB	:	**30 mg/Nm^3**
Sulphur Dioxide as SO_2	:	**29.87 mg/Nm^3**
Nitrogen Oxides as NOx	:	**340.72mg/Nm^3**

Subhasinga Praharaj
Managing Director/CM

Verified By

Test Done By

CLEENVIRON PRIVATE LIMITED ROURKELA

END OF TEST REPORT

Registered Office:
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TEST REPORT FOR STACK EMISSION MONITORING

FORMAT NO: CPL/FM/42

REPORT ISSUE DATE: 05.07.2017

:PORT NO: CPL/R/SE/JUL-17/8

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

ame of the Customer	:	**OCL INDIA LIMITED**
ddress of the Customer	:	CEMENT DIVISION, AT/PO: RAJGANGPUR - 770017, SUNDARGARH, ODISHA
ample ID No	:	**CPL/SE/JUN-17/37**
lame of Stack Monitored	:	Cooler, LINE - 2
tack Connected To	:	ESP
hape of Stack	:	Circular
Date of Sampling	:	29.06.2017
Time of Sampling	:	18.30 Hrs
Method of Sampling	:	IS 11255 (Part – 1): 1985
Sample Received on	:	29.06.2017
Date of Test	:	30.06.2017

Ambient Temperature in °C	:	30
Stack Temperature in °C	:	255
Average Stack Gas Velocity in m/sec	:	10.10
Iso-kinetic Flow Rate in LPM	:	24
Duration of Sampling in minute	:	24
Particulate Matter Concentration	:	**23 mg/Nm³**
Emission Limit Prescribed by OPCB	:	**30 mg/Nm³**

Subhasinga Praharaj
Managing Director/QM

Verified By

Test Done By

CLEENVIRON PRIVATE LIMITED ROURKELA

END OF TEST REPORT

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TEST REPORT FOR EFFLUENT WATER QUALITY ANALYSIS

FORMAT NO: CPL/FM/46

REPORT NO: CPL/R/EW/AUG-17/9

REPORT ISSUE DATE: 19.08.2017

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer	:	**OCL INDIA LIMITED**
Address of the Customer	:	At/Po: Rajgangpur – 770017, Dist: Sundargarh, Odisha
Sample ID No	:	**CPL/EW/AUG-17/6**
Sample Description	:	Effluent Water
Date of Sampling	:	08.08.2017
Location of Sampling	:	ETP Outlet
Sampling Method	:	APHA 22ND Edition, 1060
Sampling Deviation (if any)	:	Nil
Condition of Sample while receipt	:	Sealed
Appearance of Sample while receipt	:	Clear
Type of Container used for sampling	:	Narrow Mouth Plastic & Wide Mouth Glass Bottles
Sample Received on	:	08.08.2017
Date of Test	:	08.08.2017 – 16.08.2017

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Permissible Limit as per EPA 1986, and as amended for Effluent Discharged into Inland Surface Water
	pH Value	APHA 22nd Edition, 4500 H^+B	7.33	-	5.5 – 9.0
	Turbidity	APHA 22nd Edition, 2130 B	8.4	NTU	-
	Total Suspended Solids	APHA 22nd Edition, 2540 D	5.48	mg/l	100
	Total Dissolved Solids	APHA 22nd Edition, 2540 B	682	mg/l	-
	Oil & Grease	APHA 22nd Edition, 5520 B	0.1	mg/l	10
	BOD 5days at 20°C	APHA 22nd Edition, 5210 D	04	mg/l	30
	Chemical Oxygen Demand	APHA 22nd Edition, 5220 D	11.388	mg/l	250
	Total Chromium (as Cr)	APHA 22nd Edition, 3111 B	0.35	mg/l	2.0
	Hexavalent Chromium (as Cr^{+6})	APHA 22nd Edition, 3500 Cr B	0.1544	mg/l	0.1
	Iron (as Fe)	APHA 22nd Edition, 3500 Fe B	0.62	mg/l	3.0
	Phenolic Compounds (as C_6H_5CH)	MERCK	0.1758	mg/l	1.0
	Reactive Silica (as SiO_2)	MERCK	12.5462	mg/l	-
	Ammonical Nitrogen (as NH_4 – N)	MERCK	0.0107	mg/l	5
	Total Nitrogen (as N)	MERCK	0.0957	mg/l	10
	Fecal Coliform	RAKIRO	10^2	Nos/ml	100

Subhainga Praharaj
Managing Director/QM

Verified By

CLEENVIRON PRIVATE LIMITED ROURKELA

Test Done By

*****END OF TEST REPORT*****

Registered Office:
D/318, KOELNAGAR, ROURKELA – 769014, Dist: SUNDARGARH, ODISHA

Branch Office & Laboratory:
D/124, KOELNAGAR, ROURKELA – 769014, Dist: SUNDARGARH, ODISHA

Tele Fax: 0661 – 2475746, email: cleenviron@gmail.com, cpl_rkl@yahoo.co.in

Station Id.	Location	Station Id.	Location	Station Id.	Location
CEMS-9	Cooler ESP L2	CEMS-7	LINE-2 KILN REVERSE AIR BAG HOUSE	CEMS-1	Cooler ESP L1
CEMS-4	LINE-1 CVRM-1 BAG HOUSE	CEMS-8	LINE-2 COAL MILL BAG HOUSE		
CEMS-5	LINE-1 CVRM-2 BAG HOUSE	CEMS-2	Line-1 coal mill bag house		
CEMS-6	LINE-1 CVRM-3 BAG HOUSE	CEMS-3	Cooler ESP L1		

Day	Station Id.	NOX *(in mg/Nm³)*	PM *(in mg/Nm³)*	SOX *(in mg/Nm3)*
Apr-2017	CEMS-5	N/A	Avg: 25.951 Min: 24.880 Max: 26.750	N/A
Apr-2017	CEMS-6	N/A	Avg: 24.247 Min: 21.090 Max: 34.160	N/A
Apr-2017	CEMS-7	N/A	Avg: 10.240 Min: 10.240 Max: 10.240	N/A
May-2017	CEMS-3	N/A	Avg: 14.767 Min: 3.250 Max: 999.120	N/A
May-2017	CEMS-4	N/A	Avg: 28.492 Min: 16.690 Max: 272.500	N/A
May-2017	CEMS-5	N/A	Avg: 9.409 Min: 0.030 Max: 36.280	N/A
May-2017	CEMS-6	N/A	Avg: 25.788 Min: 18.340 Max: 42.810	N/A
May-2017	CEMS-7	Avg: 361.776 Min: 5.340 Max: 778.910	Avg: 9.320 Min: 1.500 Max: 90.350	Avg: 8.766 Min: 2.720 Max: 31.500
May-2017	CEMS-8	N/A	Avg: 45.123 Min: 3.620 Max: 476.650	N/A
Jun-2017	CEMS-1	N/A	Avg: 14.698 Min: 6.600 Max: 50.300	N/A
Jun-2017	CEMS-2	N/A	Avg: 1.510 Min: 0.100 Max: 23.400	N/A
Jul-2017	CEMS-1	N/A	Avg: 15.612 Min: 7.600 Max: 54.700	N/A
Jul-2017	CEMS-2	N/A	Avg: 1.057 Min: 0.100 Max: 7.600	N/A
Aug-2017	CEMS-1	N/A	Avg: 14.892 Min: 1.300 Max: 70.600	N/A
Aug-2017	CEMS-2	N/A	Avg: 1.379 Min: 0.100 Max: 28.550	N/A
Sep-2017	CEMS-1	N/A	Avg: 10.654 Min: 4.400 Max: 43.000	N/A
Sep-2017	CEMS-2	N/A	Avg: 1.559 Min: 0.100 Max: 7.100	N/A

ONLINE DATA TRANSMISSION TO CENTRAL POLLUTION CONTROL BOARD, NEW DELHI