

**REGD. A/D**

**ACL/EMD/F-16 /2017/**

**29.11.2017**

**The Director (s),**

Ministry of Environment & Forest (MoEF),  
Regional Office, Western Region,  
"Kendriya Paryavaran Bhavan"  
Link Road No.3, Ravi Shankar Nagar,  
Bhopal – 462016, (M.P.)

**Sub.:** Half Yearly Compliance Status Report of Environmental Clearance of Gajambuja Unit of Ambuja Cements Ltd.

**Ref.:** Environmental Clearance Order No. J-11011/29/94-I (A) - II dated 16.01.1995 & Environmental Clearance Order No.J-11013/31/2000-IA-II (I) dated 24.10.2000.

Sir,

We are pleased to submit herewith half yearly compliance status report (i.e. for the period of April'17 to September'17) of Environmental Clearance Order No. J-11011/29/94-I (A) - II & Environment Clearance Order No.J-11013/31/2000-IA-II (I) granted by MoEF to **Gajambuja unit** of Ambuja Cements Ltd., located at Ambujanagar, Taluka - Kodinar, District – Gir Somnath (Gujarat). We are also enclosing herewith a CD containing soft copy of the same.

In case of further clarification/information require, we shall be please to provide the same.

Thanking you,

Yours Faithfully,  
For **Ambuja Cements Ltd.**

**Dr Anand Rai**  
**Head-Environment**

Encl.: As above.

Copy to:

- 1) Central Pollution Control Board  
Privesh Bhavan, Atmajyoti Ashram Rd,  
Opp. VMC Ward Office No. 10, Subhanpura,  
Vadodara – 390023 (Gujarat)

- 2) Member Secretary,  
Gujarat Pollution Control Board,  
Paryavaran Bhavan, Sector-10-A, Gandhinagar-382010
  
- 3) Regional Officer  
Gujarat Pollution Control Board, Opp. Saint Anne's Church Station Road,  
Junagadh.

# MONITORING THE IMPLEMENTATION OF ENVIRONMENTAL SAFEGUARDS

Ministry of Environment & Forests  
Regional Office (W), Bhopal  
Monitoring Report  
Part-I

## DATA SHEET

Date: 29.11.2017

- 01 Project type : Cement
- 02 Name of the project : Gajambuja Cements Ltd.
- 03 Clearance letter(s) / OM no. and date : Environment Clearance Order No.  
J-11011/29/94-IA-II dated 16.01.1995 &  
  
Environment Clearance Order No.  
J-11013/31/2000-IA-II (I) dated  
24.10.2000
- 04 Location :  
a) District(s) : Gir Somnath  
  
b) State(s) : Gujarat  
  
c) Latitude : 20° 50' N  
  
d) Longitude : 70° 45' E
- 05 Address for correspondence :  
a) Address of concerned Project Chief : Shri S. Ramarao  
Engineer (with pin code & telephone / (Unit Head)  
telex / fax numbers). Ambuja Cements Ltd.  
PO Ambujanagar-362715  
Taluka : Kodinar,  
District: Gir Somnath (Gujarat).  
Tel: 02795-221137/232009/237403  
Fax: 02795-220328/232032  
  
b) Address of Executive Project : Shri R. K. Joshi (Operation Head)  
Engineer / Gajambuja Cements Ltd.  
Manager (with pin code / fax numbers). PO Ambujanagar-362715  
Taluka : Kodinar,  
District: Gir Somnath (Gujarat).  
Tel: 02795-237220/237221  
Fax: 02795-220328/232032
- 06 Salient features :  
a) of the project : Gajambuja plant has two cement kilns  
including 4 cement mills with having  
total production of 4.2 MTPA. Cement  
mill no. 4 has been installed in 2005-06  
under this unit with manufacturing  
capacity of 144000 MT/Month (1.728  
MTPA) Cement. The project cost was

less than 50 Crore then EC was not applicable.

- b) Environmental management plans : 1. All the existing stacks have been provided suitable & effective pollution control equipments to control the emission from stacks.
2. The regular monitoring of all existing stacks is being carried out by Environment management division of ACL and also external agencies as per statutory requirements.
3. For controlling emission level well below permissible limit. We have installed Continuous Emission Monitoring System (CEMS) at each raw mill & kiln stack.
4. Continual improvement in fugitive as well as source emissions through regular maintenance of existing air pollution control equipments and also implementation of ecofriendly techniques including greenbelt development in the area.

07 Break up of the project area.

- a) Submergence area (forest & non-forest) : Not applicable
- b) Others : 28.8 Ha.

08 Break up of the project affected: population with enumeration of those losing houses / dwelling units only agricultural land only, dwelling units & agricultural land & landless labourers / artisan.

- a) SC, ST / Adivasis : Not applicable
- b) Others : Not applicable

09 Financial details :

- a) Project cost as originally planned and subsequent revised estimates and the year of price reference. : Rs. 300 Crore
- b) Allocation made for Environmental : Pl. refer **Annexure III**

Management Plans with item wise and year wise breakup.

- c) Benefit cost ratio / Internal rate of return and the year of assessment. : -
- d) Whether (c) includes the cost of environmental management as shown in the above. : -
- e) Actual expenditure incurred on the Project so far. : Rs. 374 Crore
- f) Actual expenditure incurred on the environmental management plans so far. : 21.84 Crore
- 10 Forest land requirement. : Not applicable
  - a) The status of approval for diversion of forest land for non-forestry use :
  - b) The status of clearing felling :
  - c) The status of compensatory afforestation, if any :
  - d) Comments on the viability & sustainability of compensatory afforestation programme in the light of actual field experience so far. :
- 11 The status of clear felling in non-forest areas (such as submergence area of reservoir, approach roads), if any with quantitative information. : Not applicable
- 12 Status of construction. :
  - a) Date of commencement (Actual and / or planned) : April 1995 & October 2000 (Expansion)
  - b) Date of completion (Actual and / or planned). : 1997
- 13 Reasons for the delay if the project is yet to start. : Not applicable
- 14 Dates of site visits :
  - a) The dates on which the project was monitored by the Regional Office on previous occasions, if any. : 12.10.10 to 13.10.10 by Dr. A. Mehrotra  
Regional Office, Bhopal

b) Date of site visit for this monitoring : 12.10.10 to 13.10.10  
report

- 15 Details of correspondence with project: Half yearly compliance status report is  
authorities for obtaining action plans / being regularly submitted and last  
information on status of compliance to submission was on 30.05.2017 vide  
safeguards other than the routine letters letter no.ACL/EMD/F-16/2016  
for logistic support for site visits).

\* \* \* \* \*

**Compliance Status of Environment Clearance issued to Gajambuja  
Plant vide MoEF Letter no. J-11011/29/94-IA-II dated 16.01.95,  
J-11013/31/2000-IA-II (I) dated 24.10.2000**

| S No.   | Conditions   | Compliance Status   |
|---------|--|---|
| 2 (i)   | The project authority must strictly adhere to the stipulations made by the State Govt. and the State Pollution Control Board and is subject to their obtaining consent to establish prior to initiating any work.  | <ul style="list-style-type: none"> <li>• Yes, we are Complying with all the Stipulation made by the State Govt. and the State Pollution Control Board.</li> <li>• Consent to establish has been obtained from GPCB. A Copy of it has already been submitted to MoEF vide our letter no.ACL/EMD/F-16/2010/55920 dated 25.12.2010.</li> </ul>   |
| 2 (ii)  | Any further expansion of the plant can be taken up only with the prior approval of this ministry.  | <ul style="list-style-type: none"> <li>• Yes, for further expansion, we shall take prior approval from MoEF.</li> <li>• Necessary approval from Ministry have been taken while plant expansion done in year 2000. A Copy of approval obtained from MoEF have already been submitted to MoEF vide our letter no.ACL/EMD/F-16/2010/55920 dated 25.12.2010.</li> </ul>   |
| 2 (iii) | The emission from various units should conform to the standards prescribed by the Central Government or State Pollution Control Board. At no time the emission level of SPM should be exceed 50 mg/Nm <sup>3</sup> In the event of failure of any pollution control system adopted by the unit, the respective unit should be put cut of operation immediately and should not be restarted until the control system are rectified to achieve the desired efficiency. | <ul style="list-style-type: none"> <li>• Regular stack monitoring is being carried out and results are regularly submitted to SPCB &amp; MoEF.</li> <li>• In order to maintain the emission level well below 50 mg/Nm<sup>3</sup>, we have installed Glass Bag House (GBH).</li> <li>• Continuous Emission Monitoring System (CEMS) are installed at main process Stacks for on line monitoring. Photograph of CEMS is enclosed as <b>Annexure I</b></li> <li>• Stack emission monitoring report for the period of April'17 to September'17 is enclosed as <b>Annexure IA</b>.</li> </ul> |
| 2 (iv)  | The project authority will not change any design of stack without the permission of the State Pollution Control Board. They will also provide closed circuit grinding unit in all the grinding section of the plant.   | <ul style="list-style-type: none"> <li>• Point noted and necessary permission will be taken if required.</li> <li>• Closed circuit grinding unit have been provided in all grinding section of the plant.</li> </ul>  |
| 2 (v)   | Adequate number of air quality monitoring stations should be set up in the downwind direction as well as where maximum ground level concentration is anticipated in consultation with the State Board. Also stack emission should be monitored regularly. The data collected should be statistically analyzed, interpreted and submitted to the State Pollution Control Board and this Ministry once in Six Months.  | <ul style="list-style-type: none"> <li>• Five Ambient Air Quality Monitoring stations have been established based on guidelines issued by CPCB &amp; reviewed by Prof. B. Padmanabhamurty, Former Prof. JNU, New Delhi and in consultation with GPCB.</li> <li>• Regular monitoring is being carried out and half yearly status is submitted.</li> <li>• Stack monitoring &amp; ambient air quality monitoring report for the period of April'17 to September'17 is enclosed as <b>Annexure IA &amp; IB</b> respectively.</li> </ul>  |

**Compliance Status of Environment Clearance issued to Gajambuja  
Plant vide MoEF Letter no. J-11011/29/94-IA-II dated 16.01.95,  
J-11013/31/2000-IA-II (I) dated 24.10.2000**

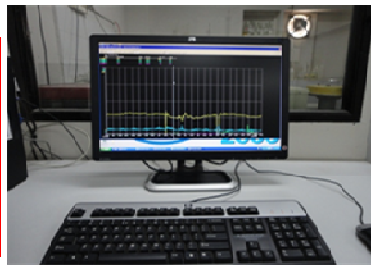
|         |  |  |
|---------|--|--|
|         |  |  |
| 2 (vi)  | Interlocking facility should be provided in the pollution control equipment such as Bag filters, ESP's etc. so that in the event of pollution control equipment not working, the main plant is shut down automatically.  | <ul style="list-style-type: none"> <li>Point noted and complied.</li> </ul>  |
| 2 (vii) | A separate environmental management cell with suitably qualified personnel to carry out various functions should be set up under the control of senior executive who will report directly to head of the organization.   | <ul style="list-style-type: none"> <li>A well established Environmental Management Division (EMD) with suitable qualified personnel is existing. Head of Environment management cell directly report to the Unit Head (Jt. President) of the organization.</li> <li>EMD organization chart is enclosed as <b>Annexure II.</b></li> </ul>   |
| 2(viii) | The project authority must set up laboratory facility for collection and analysis of samples under the supervision of competent technical personnel who will directly report to the chief executive.   | <ul style="list-style-type: none"> <li>A well established Environment laboratory with sufficient instrument is available. List of laboratory instruments available has already been submitted to MoEF vide our letter no.ACL/EMD/F-16/2010/55920 submission dated 25.12.2010. However, environment monitoring is being carried out by GPCB approved third party (M/s Royal Environment Auditing and Consultancy services, Rajkot) on regular basis.</li> </ul> |
| 2 (ix)  | The funds earmarked for environmental protection measures should not be diverted for other purpose and year-wise expenditure should be reported to this Ministry.  | <ul style="list-style-type: none"> <li>Details of capital and recurring expenditure for environmental protection measures are enclosed as <b>Annexure III.</b></li> </ul>  |
| 3       | The Ministry or any other competent authority may stipulate any further condition after reviewing the comprehensive EIA report or any other report prepared by the project authorities.  | <ul style="list-style-type: none"> <li>Point noted &amp; shall be complied as per condition stipulated by competent authority.</li> </ul>  |
| 4       | The Ministry may revoke or suspend clearance, if Implementation of the stipulated conditions is not satisfactory.  | <ul style="list-style-type: none"> <li>Point noted. This condition is related to MoEFCC</li> </ul>   |
| 5       | The above conditions will 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, and the public Liability Insurance Act 1991 along with their amendments and rules. | <ul style="list-style-type: none"> <li>Point noted.</li> </ul>   |



## Annexure I



CEMS - The MCS100E IR-Analyzer, SICK MAIHAK GmbH is used for continuous selective measurement of pollutant substances

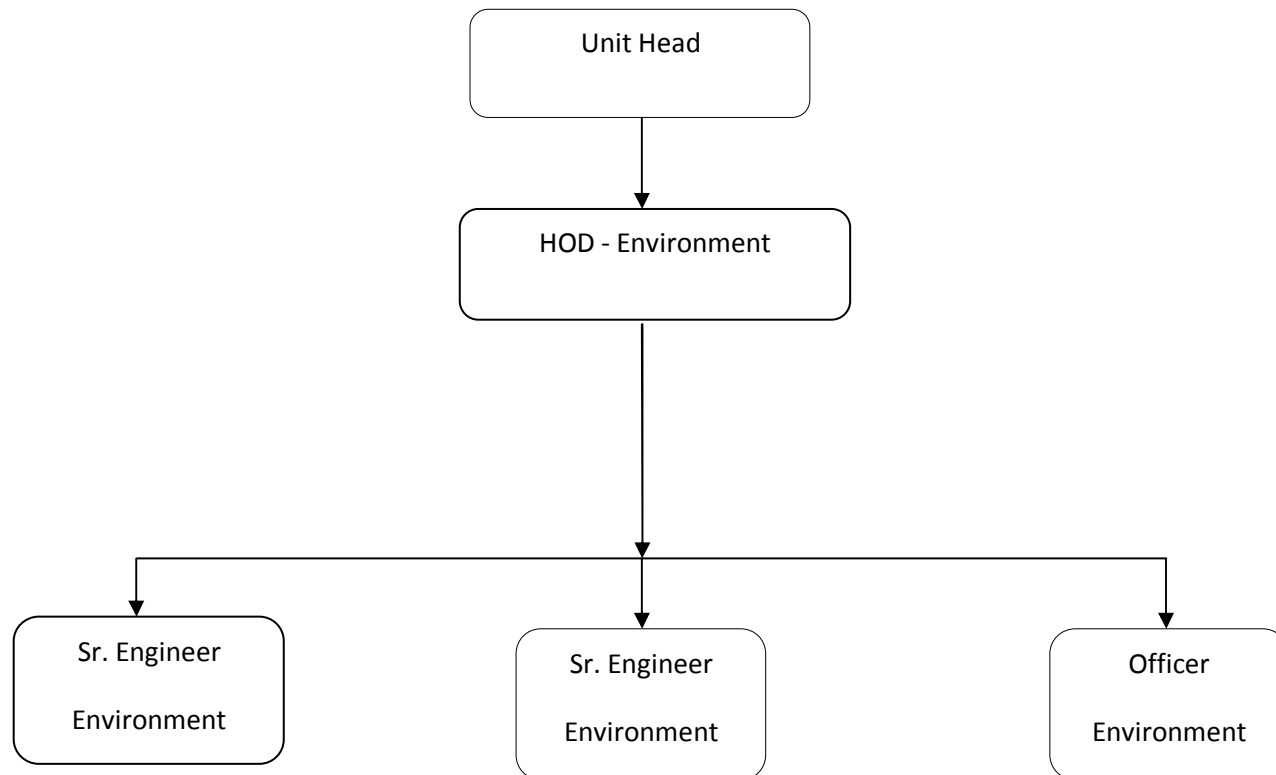


Typical components  
NH<sub>3</sub>; HCl; H<sub>2</sub>O; SO<sub>2</sub>;  
CO; NO; NO<sub>2</sub>; N<sub>2</sub>O;  
CO<sub>2</sub>; O<sub>2</sub>

### Continuous Emission Monitoring System (CEMS)

## Annexure II [ORGANISATION CHART]

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**(A) Capital Investment for Environmental Monitoring :**

|   |              |
|---|--------------|
| (1) Monitoring Equipments                 | : 37.08 Lakh |
| (2) Environmental Laboratory              | : 10.00 Lakh |
| (3) Others (Monitoring Van & DG sets)     | : 22.30 Lakh |
| (4) Continuous Emission Monitoring System | : 200.0 Lakh |
| (5) CAAQMS System                         | : 36.00 Lakh |
| (6) Opacity Meter                         | : 28.00 Lakh |
| (7) New Bag Filter in Cement Mill         | : 114 Lakh   |

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**Total : Rs. 447.38 Lakh****(B) Recurring expenditure for the period of April'17 to September'17 :**

|  |              |
|--|--------------|
| (1) Green belt development                           | : 9.68 Lakh  |
| (2) Manpower Cost*                                   | : 15.15 Lakh |
| (3) House Keeping & Dust suppression                 | : 10.45 Lakh |
| (4) Maintenance of Pollution Control Equipments      | : 38.24 Lakh |
| (5) Other Env. Protection (Environmental Monitoring) | : 12.40 Lakh |
| (6) Environment Awareness*                           | : 0.95 Lakh  |

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**Total : Rs. 86.87 Lakh**

\*Expenditures are common for all the plants & mines.

**(C) Community Development expenditure by Ambuja : Rs. 718.30 Lakh  
Cement Foundation\*\***

\*\* Community development expenditure is common for all plant & mines at Ambujanagar. Programme wise Expenditure Details for the year (April'17 to September'17) is as below:

| Ambuja Cement Foundation - Ambujanagar                                       |   |               |                                    |   |                          |                                   |                |
|--|---|---------------|------------------------------------|---|--------------------------|-----------------------------------|----------------|
| Details for programme wise expenditure for the year April 2017 to Sept. 2017 |   |               |                                    |   |                          |                                   |                |
|  |   |               |                                    |   |                          |                                   | (Rs. In lakhs) |
| Sr.No  | Programme   | ACF - ACL     | *Funds received through Government | ** Funds from other Donors / Donor Agencies | ***People's Contribution | ****Direct Funding to Communities | Total Exp.     |
|  | <b>GUJARAT - Kodinar</b>                              |               |                                    |   |                          |                                   | -              |
| 1  | Water Resource Mangement & Drinking Water Projects    |               |                                    |   |                          |                                   |                |
|  | a.Water Resource Devlopment                           | 33.55         |                                    |   |                          |                                   | 33.55          |
|  | B .Drinking Water Programme                           | 6.28          | 4.17                               |   | 64.84                    | 95.76                             | 171.05         |
|  | C. Salinity Prevention (KVY III)                      | 7.47          |                                    | 34.49                                       | 32.97                    | 43.33                             | 118.26         |
| 2  | Agriculture Development( Farm Forestry &Afforesation) | 7.03          | 3.08                               |   | 31.70                    | 47.48                             | 89.29          |
| 3  | BCI   | 1.65          |                                    | 33.43                                       | 15.98                    | 27.63                             | 78.69          |
| 4  | Krishi Vigyan Kendra (KVK) - Agriculture              | 0.18          | 52.77                              |   |                          |                                   | 52.95          |
| 5  | Health & Sanitation                                   | 3.38          |                                    |   | 2.84                     | 2.76                              | 8.98           |
| 6  | Women / Youth Development                             | 3.46          |                                    |   |                          |                                   | 3.46           |
| 7  | Skill and Enterprunership Development Programme       | 31.39         | 10.40                              |   |                          |                                   | 41.79          |
| 8  | Integrated Community Development Programme            | 73.21         |                                    |   |                          |                                   | 73.21          |
| 9  | Co-ordination & Administration Expenses               | 47.07         |                                    |   |                          |                                   | 47.07          |
| 10   | Capital Expenditure                                   |               |                                    |   |                          |                                   | 0.00           |
|  | <b>TOTAL</b>  | <b>214.67</b> | <b>70.42</b>                       | <b>67.92</b>                                | <b>148.33</b>            | <b>216.96</b>                     | <b>718.30</b>  |

## Annexure - I(A)

**Stack Monitoring Results  
(April 2017 - September 2017)**

| Month             | Stack attached to                   |              |              |                    |              |              |
|-------------------|-------------------------------------|--------------|--------------|--------------------|--------------|--------------|
|                   | Raw mill & Kiln- I                  | Cooler ESP-1 | Coal Mill -1 | Raw mill & Kiln- 2 | Cooler ESP-2 | Coal Mill- 2 |
|                   | Average Particulate Matter (mg/Nm3) |              |              |                    |              |              |
| Apr-17            | 12.4                                | 46           | 35           | 6.5                | 48           | 33           |
| May-17            | 9.8                                 | 45           | 32           | 5.4                | 46           | 30           |
| Jun-17            | 8.2                                 | 47           | 30           | 4.7                | 44           | 26           |
| Jul-17            | 7.6                                 | 45           | 33           | 5.1                | 46           | 28           |
| Aug-17            | 6.9                                 | 47           | 29           | 4.7                | 48           | 31           |
| Sep-17            | 7.3                                 | 45           | 32           | 3.8                | 46           | 28           |
| Minimum           | 6.9                                 | 45           | 29           | 3.8                | 44           | 26           |
| Maximum           | 12.40                               | 47.00        | 35.00        | 6.50               | 48.00        | 33.00        |
| Average           | 8.70                                | 45.83        | 31.83        | 5.03               | 46.33        | 29.33        |
| Permissible Limit | 50.00                               | 50.00        | 50.00        | 50.00              | 50.00        | 50.00        |

| Month             | Stack attached to                   |                |                 |                 |            |             |              |
|-------------------|-------------------------------------|----------------|-----------------|-----------------|------------|-------------|--------------|
|                   | Cement Mill- I                      | Cement Mill-II | Cement Mill-III | Cement Mill -IV | Packer - I | Packer - II | Packer - III |
|                   | Average Particulate Matter (mg/Nm3) |                |                 |                 |            |             |              |
| Apr-17            | 34                                  | 30             | 25              | 27              | 28         | 26          | 25           |
| May-17            | 31                                  | 28             | 22              | 25              | 26         | 24          | 22           |
| Jun-17            | 33                                  | 27             | 24              | 22              | 24         | 22          | 20           |
| Jul-17            | 31                                  | 28             | 22              | 25              | 22         | 20          | 24           |
| Aug-17            | 27                                  | 25             | 20              | 23              | 27         | 20          | 22           |
| Sep-17            | 23                                  | 20             | 25              | 27              | 25         | 22          | 19           |
| Minimum           | 23                                  | 20             | 20              | 22              | 22         | 20          | 19           |
| Maximum           | 34.00                               | 30.00          | 25.00           | 27.00           | 28.00      | 26.00       | 25.00        |
| Average           | 29.83                               | 26.33          | 23.00           | 24.83           | 25.33      | 22.33       | 22.00        |
| Permissible Limit | 50.00                               | 50.00          | 50.00           | 50.00           | 50.00      | 50.00       | 50.00        |

**Stack Monitoring Results (April 2017 - September 2017)**

| Month             | Stack attached to  |          |         |                    |          |         |                    |          |          |
|-------------------|--------------------|----------|---------|--------------------|----------|---------|--------------------|----------|----------|
|                   | DG set 4           |          |         | DG set 5           |          |         | DG set 6           |          |          |
|                   | Avg. PM*           | Avg. SO2 | Avg.NOx | Avg. PM*           | Avg. SO2 | Avg.NOx | Avg. PM*           | Avg. SO2 | Avg. NOx |
|                   | mg/Nm <sup>3</sup> | ppm      | ppm     | mg/Nm <sup>3</sup> | ppm      | ppm     | mg/Nm <sup>3</sup> | ppm      | ppm      |
| Apr-17            | Not in Operation   |          |         | Not in Operation   |          |         | Not in Operation   |          |          |
| May-17            | Not in Operation   |          |         | Not in Operation   |          |         | Not in Operation   |          |          |
| Jun-17            | 28                 | 82.6     | 33      | 21                 | 73.9     | 28.1    | 26                 | 76.2     | 31.4     |
| Jul-17            | Not in Operation   |          |         | Not in Operation   |          |         | Not in Operation   |          |          |
| Aug-17            | Not in Operation   |          |         | Not in Operation   |          |         | Not in Operation   |          |          |
| Sep-17            | Not in Operation   |          |         | Not in Operation   |          |         | Not in Operation   |          |          |
| Minimum           | 28                 | 82.6     | 33      | 21                 | 73.9     | 28.1    | 26                 | 76.2     | 31.4     |
| Maximum           | 28                 | 82.6     | 33      | 21                 | 73.9     | 28.1    | 26                 | 76.2     | 31.4     |
| Average           | 28.00              | 82.60    | 33.00   | 21.00              | 73.90    | 28.10   | 26.00              | 76.20    | 31.40    |
| Permissible Limit | 150.00             | 100.00   | 50.00   | 150.00             | 100.00   | 50.00   | 150.00             | 100.00   | 50.00    |

\*PM : Particulate Matters

**Ambient Air Quality Monitoring Results**  
**( April 2017 - September 2017 )**

| Month   | Average Ambient Air Quality Monitoring Results ( $\mu\text{g}/\text{m}^3$ ) |              |              |              |                      |              |              |              |               |              |              |              |
|---------|---|--------------|--------------|--------------|----------------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|
|         | At CCR  |              |              |              | Near Packing section |              |              |              | Ambuja School |              |              |              |
|         | PM2.5   | PM10         | SO2          | NOx          | PM2.5                | PM10         | SO2          | NOx          | PM2.5         | PM10         | SO2          | NOx          |
| Apr-17  | 38.00   | 60.86        | 11.96        | 15.70        | 35.00                | 59.48        | 12.25        | 15.89        | 25.75         | 47.39        | 11.56        | 15.65        |
| May-17  | 36.20   | 57.64        | 12.05        | 15.97        | 34.10                | 57.11        | 12.18        | 15.90        | 23.90         | 46.24        | 11.62        | 15.94        |
| Jun-17  | 34.75   | 56.04        | 11.79        | 15.66        | 31.88                | 55.30        | 11.65        | 15.58        | 22.38         | 44.73        | 11.65        | 15.58        |
| Jul-17  | 33.75   | 54.63        | 11.65        | 15.86        | 30.38                | 52.13        | 11.61        | 15.50        | 20.50         | 43.65        | 11.29        | 15.75        |
| Aug-17  | 35.20   | 58.67        | 11.71        | 15.77        | 31.40                | 55.41        | 11.66        | 15.66        | 22.90         | 45.18        | 11.54        | 15.76        |
| Sep-17  | 33.75   | 55.64        | 11.78        | 15.60        | 32.25                | 58.54        | 11.64        | 15.65        | 21.38         | 44.66        | 11.31        | 15.09        |
| Minimum | <b>33.75</b>  | <b>54.63</b> | <b>11.65</b> | <b>15.60</b> | <b>30.38</b>         | <b>52.13</b> | <b>11.61</b> | <b>15.50</b> | <b>20.50</b>  | <b>43.65</b> | <b>11.29</b> | <b>15.09</b> |
| Maximum | <b>38.00</b>  | <b>60.86</b> | <b>12.05</b> | <b>15.97</b> | <b>35.00</b>         | <b>59.48</b> | <b>12.25</b> | <b>15.90</b> | <b>25.75</b>  | <b>47.39</b> | <b>11.65</b> | <b>15.94</b> |
| Average | <b>35.28</b>  | <b>57.25</b> | <b>11.82</b> | <b>15.76</b> | <b>32.50</b>         | <b>56.33</b> | <b>11.83</b> | <b>15.70</b> | <b>22.80</b>  | <b>45.31</b> | <b>11.50</b> | <b>15.63</b> |

| Month   | Average Ambient Air Quality Monitoring Results ( $\mu\text{g}/\text{m}^3$ ) |              |              |              |              |              |              |              |
|---------|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|         | West Colony   |              |              |              | South Colony |              |              |              |
|         | PM2.5   | PM10         | SO2          | NOx          | PM2.5        | PM10         | SO2          | NOx          |
| Apr-17  | 26.75   | 48.26        | 11.73        | 15.61        | 27.63        | 50.33        | 11.80        | 15.99        |
| May-17  | 24.60   | 47.46        | 11.52        | 15.65        | 25.70        | 49.02        | 11.75        | 15.64        |
| Jun-17  | 23.38   | 46.13        | 11.89        | 15.98        | 24.63        | 47.85        | 11.38        | 15.31        |
| Jul-17  | 21.63   | 44.46        | 11.63        | 15.69        | 23.63        | 46.65        | 11.44        | 15.39        |
| Aug-17  | 23.60   | 46.22        | 11.58        | 15.69        | 25.70        | 49.41        | 11.72        | 16.00        |
| Sep-17  | 25.00   | 48.06        | 11.88        | 15.73        | 26.63        | 50.75        | 11.60        | 15.70        |
| Minimum | <b>21.63</b>  | <b>44.46</b> | <b>11.52</b> | <b>15.61</b> | <b>23.63</b> | <b>46.65</b> | <b>11.38</b> | <b>15.31</b> |
| Maximum | <b>26.75</b>  | <b>48.26</b> | <b>11.89</b> | <b>15.98</b> | <b>27.63</b> | <b>50.75</b> | <b>11.80</b> | <b>16.00</b> |
| Average | <b>24.16</b>  | <b>46.77</b> | <b>11.70</b> | <b>15.72</b> | <b>25.65</b> | <b>49.00</b> | <b>11.61</b> | <b>15.67</b> |