O/C – Acknowledgement

ACL/EMD/F22/2014/ 358 - 7382/7 **16.09.2014**

Member Secretary,
Gujarat Pollution Control Board,
Paryavaran Bhavan,
Sector-10A,
Gandhinagar – 382010

Sub.: Environmental Statement of Ambuja Cement (Unit of Ambuja Cements Ltd) for the year 2013-14.

Sir,

This has reference to Rule 14 of Environment Protection Act 1986. We are submitting herewith Environmental Statement in prescribed Form-V of Ambuja Cement (Unit of Ambuja Cements Ltd) for the financial year April 2013 to March 2014.

Kindly acknowledge receipt for the same.

Thanking You,

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

16/9/14

Dr. Anand K. Rai
HOD - Environment

26/9/14
Gujarat Pollution Control Board
Sector No. 10 A,
Gandhinagar - 382 010.

Encl.: Form V with Annexure.

Copy to: Regional Officer,
Gujarat Pollution Control Board,
Opp. Saint Anne's Church
Station Road, Junagadh

[FORM-V]
(See rule 14)

Environmental statement for the financial year ending the 31st March 2014

PART- A

(i) Name and address of the owner/occupier of the industry operation or process:
Ambuja Cement Ltd. – Unit Ambuja, PO: Ambujanagar, Taluka- Kodinar, District – Gir Somnath, Gujarat. PIN: 362715

(ii) Industry category primary-(STC code) Secondary-(SIC Code) : Red

(iii) Production capacity : Cement – 1.5 Million ton per annum (MTPA)

(iv) Year of Establishment : 1986

(v) Date of last environmental statement submitted : 25th Sep 2013

PART- B

Water and Raw Material Consumption

(i) Water consumption m^3/d

Process: --
Cooling: 222.79
Domestic: 1065.70 (Domestic consumption including Township)

Name of Products	Process water consumption per unit of product output.	
	During the previous Financial year	During the current Financial year
	(1)	(2)
(1) Cement	47.71 litre/ton *	52.83 litre/ton *

* Water consumption for plant cooling. No process water consumption in cement production.

(ii) Raw material consumption

* Name of raw Materials	Name of products	Consumption of raw material per unit of output	
		During the previous Financial year	During the current financial year
(1) Limestone	Cement	1.107	1.079
(2) Marl		0.151	0.122
(3) Silica Sand		0.046	0.033
(4) Laterite		0.002	0.017
(5) Gypsum		0.0597	0.050
(6) Fly ash (Raw Mill)		0.0003	0.0009
(7) Fly ash (Cement Mill)		0.1664	0.1703

* Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

PART- C

Pollution discharged to environment/ unit of output
(Parameter as specified in the consent issued)

(1) Pollutants	Quality of pollutants discharged (mass/day)	Concentrations of pollutants discharges (Mass/volume)	Percentage of variation from prescribed standards with reasons.
(a) Water			Permissible limit as per Consent
BOD (5 Days at 20°C)	No discharge of treated sewage water, it is being reused for plant cooling, dust suppression & horticulture.	15.0 mg/l	20 mg/l
Suspended Solids		19.1 mg/l	30 mg/l
Residual Chlorine		0.6 mg/l	Min. 0.5 mg/l
(b) Air			
Particulate matters			
Raw Mill & kiln	0.0391 ton/day	5.14 mg/Nm^3	50 mg/Nm^3
Cooler ESP	0.5910 ton/day	64.09 mg/Nm^3	150 mg/Nm^3
Coal Mill	0.0447 ton/day	45.73 mg/Nm^3	
Cement Mill 1	0.0504 ton/day	42.82 mg/Nm^3	
Cement Mill 2	0.0756 ton/day	46.36 mg/Nm^3	
Packer 1	0.0020 ton/day	36.45 mg/Nm^3	
Packer 2	0.0039 ton/day	34.55 mg/Nm^3	

Environment monitoring results are enclosed as **Annexure I**

PART- D

HAZARDOUS WASTES

(As specified under Hazardous Waste Management, Handling & Transboundry Movement Rules 2008)

Hazardous Wastes	Total Quantity	
	During the previous financial year	During the current financial year
(a) From process		
Used/Waste oil	16.14 MT	7.580 MT
Chemical Gypsum *	108292.9 MT	129412.58 MT
TDI tar **	871.32 MT	797.775 MT
Spent Carbon**	200 MT	553.190 MT
Plastic Waste*	29335 MT	40574.863 MT
Glass Wool	-	1.61 MT
Paint Drums/Plastic Carboy	-	1.07 MT
Expired Medicine of Torrent Pharma**	-	72.3 MT
Contaminated Rags & absorbent & Doughy Material of Gamesha**	-	124.3 MT
(c) From pollution control Facilities	Nil	Nil

** Qty reported is common for Ambuja & Gajambuja plant*

** Co-processing in Cement kiln as alternative fuel.

PART- E
Solid Wastes

Waste Generation	Total Quantity	
	During the previous financial year	During the current financial year
(a) From process	No solid waste generated from process	
(b) From pollution control Facilities	From Sewage treatment plant, sludge generated, which is being used as manure for horticulture purpose.	
(c) (1) Quantity recycled or re-utilized within unit.	Dust collected from all APCs is being continuously recycled into the process.	
(2) Sold	Not applicable	
(3) Disposed	Not applicable	

PART- F

Please specify the characterization (In terms of composition of quantum) of hazardous as well as solid waste and indicate disposal practice adopted for both these categories of wastes.

- Hazardous waste

(1) **Used Oil** – (Category - 5.1)
Main source of Used Oil generation in ACL is Plant and Mining machineries. Full-fledged storage & handling facility is available which is earmarked and stored properly in closed barrels. The storage area is provided with roofing and impervious flooring. ACL has valid authorization of GPCB for collection, storage, transportation and disposal of used/waste oil by selling to authorized recycler.

(2) **TDI tar** – (Category -1.2)
ACL is promoting cleaner production by co-processing various industrial hazardous wastes as Alternative Fuel in Cement production. In this regard, GPCB and CPCB have granted permission for using 3,650 TPA TDI–Tar wastes as Alternative Fuel. ACL have provided proper facility for storage & handling of TDI-Tar, which is thereby disposed-off by co-processing in cement kiln.

(3) **Chemical Gypsum** – (Category – 26.1)
ACL is using chemical gypsum generated from various dyes and intermediate manufacturing units; chemical industries etc. in cement manufacturing. GPCB has granted authorization for reception, collection, storage & re-using of 2,37,250 TPA Chemical Gypsum in cement manufacturing process. ACL has provided proper storage and handling facility for the same as per CPCB Guidelines.

(4) **Spent Carbon** – (Category – 28.2)
ACL is using spent carbon, generated from various pharmaceutical industries, in cement manufacturing. GPCB and CPCB have granted permission for using 3428.27 TPA spent carbon as Alternative Fuel. ACL has provided proper facility for storage, handling and disposal by co-processing in cement kiln.

(5) **Plastic Waste**
ACL has adopted Cleaner Production techniques for betterment of Environment by means of co-processing plastic waste in cement kiln.

(6) **Date Expired Medicine & Off Specification Drugs** (28.4):
After getting trial run permission from the pollution control Board, ACL has conducted fresh trial run for co-processing of "Date Expired Medicine & Off Specification Drugs of Torrent Pharma (28.4)" during 3rd to 7th March 2014.

(7) **Contaminated Rags & absorbent (5.2) & Doughy Material (23.1)**:
After getting trial run permission from the pollution control Board, ACL has conducted fresh trial run for co-processing of "Contaminated Rags & Absorbent (5.2) and Doughy Materials (23.1) of Gamesa Wind Turbines Pvt Ltd." during 24th to 28th March 2014.

➢ **Solid Waste**

- No solid waste generated from process.
- Only dust collected from all APCEs is continuously recycled in the process.
- Garbage generated from housing colony/ Township is segregated at source, out of which bio-degradable waste is used as compost by vermicomposting, whereas non-biodegradable wastes is sold to third party.
- E-waste generated in ACL is segregated at source and sold to authorized third party.
- Sludge generated from sewage water treatment plant is being totally used for horticulture purpose.

PART- G

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

ACL is committed for conservation of key natural resources like minerals, coal, petroleum products, water & energy, wherever feasible, by adopting various innovative technologies-

- **Raw Material**:

For Raw material conservation following steps are being taken:

- ➢ Clinker factor reduction,
- ➢ Increasing usage of Fly ash in cement manufacturing,

- Using Chemical Gypsum (waste from ETP & dyes industries) used as additive along with clinker in cement manufacturing.

- **Fuel**:

For fuel conservation following measures are being taken:

- For conservation of non renewable energy sources various types of renewable energy sources is being used. List of agro waste and hazardous waste being used at ACL is given below:-

- Agro waste:-
  - Groundnut Husk
  - Cotton stalks
  - Sugarcane Dry Leaves
  - Sugarcane Bagasses

- Hazardous waste:-
  - TDI tar
  - Spent Carbon
  - Plastic Waste
  - RDF (Refused derived fuel)

PART- H

Additional measures/ Investment proposal for environmental protection including abatement of pollution, prevention of pollution.

Pl. refer **Annexure – II**

PART- I

Any other particulars for improving the quality of the environment.

ACL has well established Integrated Management System (IMS):

- **ISO 14001:2004 (Environmental Management System),**
- **ISO-9001:2008 (Quality Management Systems)**
- **BS OHSAS 18001:2007 (Occupational Health & Safety).**

Beyond that for self evaluation of environmental performance, ACL has PEP system (Plant Environmental Profile), through which we are evaluating our environmental performance on annual basis and sets new goal every year for continual improvement in all sphere of activities.

Ambuja Cements Ltd. has set milestone in the field of pollution control & environmental protection, which is reflected through the various awards won by the Ambuja Cement Ltd.

To impart the awareness among Employees, Workers, Students and community every year Ambuja Cement is Celebrating various Environment Awareness programs such as World Environment Day, Ozone Day, Water Day, Earth Hour, Earth Day, Biodiversity Day etc. Some glimpses of Celebrations are enclosed as **Annexure III**

For the socio-economic development of the surrounding areas, Ambuja Cement Foundation (ACF), a corporate social responsibility wing of Ambuja Cements Ltd. has left positive footprints by initiating and implementing various community developments works in the surrounding area. Major focus areas of ACF are Water Resource Development & Management, Integrated Agriculture Development, Women Empowerment, Community Health, Animal Husbandry etc. Some glimpses of activities of Ambuja Cement Foundation are enclosed as **Annexure IV**

Ambuja Cements Ltd. has initiated Water Positive Mission under which various projects for rain water harvesting, minimization in water consumption & water recycling are implemented due to which ACL is Water Positive which was audited and certified by an independent agency DNV (Det Norske Veritas).

(Signature of a person carrying out an Industry-operation or process)

16/9/14

Name : Dr. Anand K Rai
Designation : DGM - Environment
Address: Ambuja Cements Ltd.
Ambujanagar,
Tal:-Kodinar,
Dist: Gir Somnath. (Guj)

Annexure - I

Ambient Air Quality Monitoring Results (April 2013 - March 2014)

Month	Average Ambient Air Quality Monitoring Results (µg/m3)											
	Near Packing section				Near CSP area				Executive Hostel			
	PM2.5	PM10	SO2	NOx	PM2.5	PM10	SO2	NOx	PM2.5	PM10	SO2	NOx
April 2013	28.00	57.00	12.50	17.60	27.00	54.00	11.60	18.40	25.00	38.00	12.20	18.30
May 2013	31.00	60.00	12.20	16.50	34.00	56.00	12.70	17.90	23.00	39.00	12.60	18.70
June 2013	30.00	57.00	11.80	15.80	35.00	59.00	12.30	16.30	21.00	36.00	12.10	17.60
July 2013	26.00	51.00	11.20	15.10	32.00	50.00	11.70	14.90	20.00	33.00	12.50	16.90
Aug. 2013	38.00	59.00	12.10	16.50	49.00	76.00	13.50	15.20	13.00	29.00	12.10	15.70
Sept. 2013	35.00	61.00	10.50	17.30	46.00	79.00	11.70	16.40	16.00	34.00	10.60	18.30
Oct. 2013	31.00	57.00	11.20	16.50	42.00	75.00	12.30	18.70	18.00	38.00	11.80	17.20
Nov.2013	34.00	54.00	12.20	15.70	40.00	71.00	11.40	16.80	21.00	35.00	12.20	16.60
Dec.2013	31.00	50.00	11.60	16.20	35.00	62.00	12.30	17.80	23.00	38.00	13.40	17.30
Jan. 2014	37.00	67.00	12.70	17.20	41.00	70.00	11.30	18.20	29.00	45.00	12.80	18.10
Feb. 2014	34.00	61.00	10.20	16.40	38.00	65.00	12.60	17.50	25.00	41.00	11.50	17.70
March 2014	31.00	55.00	12.10	16.40	34.00	61.00	11.60	17.10	29.00	37.00	12.50	16.30
Minimum	**26.00**	**50.00**	**10.20**	**15.10**	**27.00**	**50.00**	**11.30**	**14.90**	**13.00**	**29.00**	**10.60**	**15.70**
Maximum	**38.00**	**67.00**	**12.70**	**17.60**	**49.00**	**79.00**	**13.50**	**18.70**	**29.00**	**45.00**	**13.40**	**18.70**
Average	**32.17**	**57.42**	**11.69**	**16.43**	**37.75**	**64.83**	**12.08**	**17.10**	**21.92**	**36.92**	**12.19**	**17.39**

Month	Average Ambient Air Quality Monitoring Results (µg/m3)							
	North Colony				Kadvasan Village			
	PM2.5	PM10	SO2	NOx	PM2.5	PM10	SO2	NOx
April 2013	24.00	35.00	12.10	19.20	22.00	41.00	11.60	17.80
May 2013	22.00	34.00	12.00	19.40	25.00	37.00	11.30	17.50
June 2013	24.00	33.00	12.60	20.20	26.00	39.00	11.70	18.90
July 2013	22.00	36.00	11.70	18.50	25.00	38.00	12.30	19.40
Aug. 2013	12.00	35.00	11.20	17.30	20.00	34.00	13.10	18.50
Sept. 2013	19.00	40.00	12.30	17.90	21.00	38.00	11.70	16.70
Oct. 2013	22.00	36.00	11.80	18.80	18.00	42.00	10.90	17.80
Nov.2013	24.00	33.00	13.80	17.70	20.00	38.00	12.10	15.60
Dec.2013	27.00	30.00	14.20	16.40	24.00	34.00	11.80	16.30
Jan. 2014	22.00	34.00	13.10	15.80	28.00	36.00	10.80	15.20
Feb. 2014	26.00	38.00	12.70	16.80	30.00	39.00	12.60	14.30
March 2014	30.00	39.00	11.30	17.20	27.00	41.00	11.90	15.60
Minimum	**12.00**	**30.00**	**11.20**	**15.80**	**18.00**	**34.00**	**10.80**	**14.30**
Maximum	**30.00**	**40.00**	**14.20**	**20.20**	**30.00**	**42.00**	**13.10**	**19.40**
Average	**22.83**	**35.25**	**12.40**	**17.93**	**23.83**	**38.08**	**11.82**	**16.97**

Annexure - I

Stack Monitoring Results (April 2013- March 2014)

Month	Stack attached to						
	Raw mill & Kiln	Cooler ESP	Coal Mill 1	Cement Mill- I	Cement Mill-II	Packer - I	Packer - II
	Average Particullate Matter (mg/Nm^3)						
April 2013	35	58	40	39	34	27	34
May 2013	38	60	44	37	35	32	33
June 2013	41	56	46	35	33	31	34
July 2013	17	77	44	39	53	40	31
Aug. 2013	Shut Down	Shut Down	Shut Down	Shut Down	Shut Down	Shut Down	Shut Down
Sept. 2013	23.9	75	48	43	58	35	35
Oct. 2013	25	67	52	48	54	38	31
Nov.2013	29	64	49	45	51	35	35
Dec.2013	23	57	45	42	47	37	39
Jan. 2014	26	64	48	49	52	41	35
Feb. 2014	29	61	45	46	49	45	38
March 2014	25	66	42	48	44	40	35
Minimum	17.00	56.00	40.00	35.00	33.00	27.00	31.00
Maximum	41.00	77.00	52.00	49.00	58.00	45.00	39.00
Average	**28.35**	**64.09**	**45.73**	**42.82**	**46.36**	**36.45**	**34.55**
Permissible Limit	**50.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

ANNEXURE – II

Additional measures taken for environmental protection at **Cement Plant** including abatement & prevention of pollution are as follows:

(i) **Air**

In order to improve ambient air quality & control fugitive emissions in & around plant following measures is being taken:

1) Almost all the internal roads of the plant are paved. Regular cleaning of paved roads and plant premises through road sweeping machines. Various type of sweeping machine like vacuum, mechanized and manual sweeping machine has been deployed in order to collect dust from ground level and not allow further to suspend in air.

2) Regular sprinkling of water is being done on unpaved roads & material handling areas to suppress air borne dust.

3) Monitoring of ambient air quality is being done through Continuous Ambient Air Quality monitoring System (CAAQMS). As well as regular ambient air quality monitoring is being perfom at all the identified AAQM locations by GPCB Approved third party and monitoring report is submitted to GPCB on monthly basis.

4) Every year plantation activities are being undertaken for strengthening the existing green belt. The Dense plantation around the periphery of the plant and colony enhances the aesthetic environment of the area & greenery also helps in abatement of the fugitive emissions.

5) All loading and unloading points have been provided with Bag Filters.

6) Maintenance of all pollution control equipments is being done regularly.

7) Raw material is being transported in tractors and tippers which are provided with closed cover or tarpaulin in order to minimize spillage.

8) All the conveyor belts for material handling have been provided with closed cover in order to reduce fugitive emissions.

9) Majority of raw material/fuel storage areas is provided with closed shed for control of fugitive dust emission. Dry fly is being handled through well design closed conveying system & stored in silos.

- **Control of point source emission from process stack.**

1) In order to reduce source emission through process all the equipments have been provided with well equipped air pollution control equipments.

2) Also all the stack is being regularly monitored by GPCB approved third party, results are intimated to concern department for proper smooth operation of pollution control equipments. All the stack emission is being also regularly monitored by State Pollution Control Board approved auditors and recommendation given by auditors is being implemented.

3) At main process stack continuous emission monitoring system (CEMS) has been installed for gaseous pollutants & particulate matter emission measurement. CEMS emission is being regularly accessed by control room for controlling emission well below prescribed norms.

(ii) **Water**

1) Cement plant process is based on dry process, so water only required for equipment cooling, fire fighting, refrigeration, dust suppression & green belt development purpose only.

2) Above water requirement is being fulfilled 100 % through recycled water i.e. through recycled sewage water from sewage treatment plant. For cement mill cooling & clinker cooling RO reject water from captive thermal power plant is being used.

(iii) **Hazardous Waste**

All the hazardous waste generated from the plant and ancillary industrial activities is being handled, store & disposed in accordance with hazardous Waste Management & Transboundary Movement Rules 2008.