

**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 Solaj Mines.

**Ref.:** Environmental Clearance Order No. J-11015/177/2006-IA-II (M) dated 06.03.07

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-11015/177/2006-IA-II(M) granted by MoEF to **Solaj Mines** of Ambuja Cements Ltd., located at village - Solaj, Taluka - Sutrapada, District – Gir Somnath (Gujarat). We are also enclosing here with 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 : Mining
- 02 Name of the project : Solaj Limestone Mine
- 03 Clearance letter(s) / OM no. and date : J-11015/177/2006- IA ,II (M) ,  
6<sup>th</sup> March 2007
- 04 Location
- a) District(s) : Gir Somnath
- b) State(s) : Gujarat
- c) Latitude : 20° 50' 11" - 20° 51' 30"
- d) Longitude : 70° 36'24" - 70° 38'24"
- 05 Address for correspondence :
- a) Address of concerned Project Chief Engineer (with pincode & telephone / telex / fax numbers). : Sh. Arun Kumar Sharma  
Sr. Vice President ( Mines ),  
Ambuja Cements Ltd  
PO :Ambujanagar , Taluka - Kodinar  
District : Gir Somnath (Gujarat)  
Pin. : 362715  
Tel: 02795-237011  
Fax: 02795 - 220328/232032
- b) Address of Executive Project Engineer / Manager (with pincode / fax numbers). : Sh. Mukesh Kumar  
Asst. Manager (Mines),  
Ambuja Cements Ltd  
PO :Ambujanagar , Taluka - Kodinar  
District : Gir Somnath (Gujarat)  
Pin. : 362715  
Tel: 02795-237217  
Fax: 02795 - 220328/232032
- 06 Salient features

a) of the project

: Ambuja Cements Ltd. has cement manufacturing plant at Ambujanagar in Kodinar Taluka of Gir Somnath District. Limestone & Marl are the main raw materials for the cement plants. The materials are being exploited from company's own captive mines i.e. Solaj Limestone Mine.

Solaj is located at a distance of about 12 kms in WNW direction with respect to cement plant. The rated capacity of the limestone & marl is 1.0 & 0.4 MTPA respectively.

b) of the environmental management plans

: \* Mining operations do not involve drilling and blasting for material rising. Limestone excavation is being carried out by Surface Miner, direct excavation by excavators and ripper dozer.

\* Regular monitoring of environmental parameters is being undertaken as per statutory requirements.

\* Regular preventive maintenance of HEMM is being undertaken.

\* Water sprinkling on haul roads and in working area is being carried out on regular basis for dust suppression.

\* Afforestation / Green belt development along haul road and lease periphery, mines office, mined out area etc.

\* Mined-out areas to be converted to pasture land or to be rehabilitated by afforestation or converted to water reservoirs.

\* Literacy drive and Socio-economic

improvement measures are undertaken in the project buffer zone and is in progress.

- 07 Break up of the project area.
- a) Submergence area (forest & non-forest) : Not applicable  
:
- b) Others : 200.8184 ha  
(Gauchar land)
- 08 Break up of the project affected population with enumeration of those a houses / dwelling units only agricultural land only, both dwelling units & agricultural land & landless labourers / artisan. : Rehabilitation or evacuation not involved while executing the project and the same conditions are existing.
- 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. 250 Lakhs
- b) Allocation made for environmental management plans with item wise and year wise break-up. Rs. 7.94 Crore
- c) Benefit cost ratio / Internal rate of return and the year of assessment. : No separate assessment made for this project.
- d) Whether (c) includes the cost of environmental management as shown in the above. : Not applicable.

- e) Actual expenditure incurred on the project so far. : Rs. 7.47 Crores.
- f) Actual expenditure incurred on the environmental management plans so far. : Rs. 8.33 Crores.
- 10 Forest land requirement.
- a) The status of approval for diversion of forest land for non-forestry use. : The project area does not comprise of any forest land.
- b) The status of clearing felling : Not applicable.
- c) The status of compensatory afforestation, if any : Not applicable.
- d) Comments on the viability & sustainability of compensatory afforestation programme in the light of actual field experience so far. : Not applicable.
- 11 The status of clear felling in non-forest areas (such as submergence area of reservoir, approach roads), if any with quantitative information. : The project site mostly comprises of barren waste land only. It does not involve felling of trees.
- 12 Status of construction. :
- a) Date of commencement (Actual & / or planned) : 5<sup>th</sup> December 1996
- b) Date of completion (Actual and / or planned). : Continued
- 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<br>Regional Office, Bhopal  |
|    | b) Date of site visit for this monitoring report  | : 12.10.10 to 13.10.10<br>:   |
| 15 | Details of correspondence with project authorities for obtaining action plans / information on status of compliance to safeguards other than the routine letters for logistic support for site visits). | : Half yearly compliance status report is being regularly submitted and last submission was on 30.05.2017 vide letter no.ACL/EMD/F-16/2017. |

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**Compliance Status of Environment Clearance issued to Solaj Mines  
Vide MoEF Letter No: letter no. J-11015/177/2006-IA, II (M) dated 6th  
March 2007**

S No.	Condition	Compliance Status
<b>A. Specific Condition:</b>		
(i)	The environmental clearance is subject to final orders of the Hon'ble Court of Fast Track Judge & Joint District Judge, Veraval, in the matter.	<ul style="list-style-type: none"> <li>The final order has been issued on dated 14th November 2006 which has been already submitted to MoEF vide our submission dated 25.12.2010 vide letter no.ACL/EMD/F-16/2010/55925.</li> </ul>
(ii)	All the conditions stipulated by the State Pollution Control Board in their NOC should be effectively implemented.	<ul style="list-style-type: none"> <li>Point noted and being complied.</li> </ul>
(iii)	The proponent should carry out long terms studies on salinity and water levels in and around mining areas and submit report to this ministry, its Regional Office Bhopal and Central Ground Water Authority within a period of 6 months.	<ul style="list-style-type: none"> <li>Water conservation measures to augment ground water resources in the area are being done by Ambuja Cement Foundation (ACF). A report about ACF &amp; community development work done by ACF in surrounding areas is enclosed as <b>Annexure II</b>. A report on Impact of Limestone Mining and Salinity Status around ACL mines has been prepared by Ground Water &amp; Mineral Investigation Consultancy Centre Pvt. Ltd. (GWMICC), Jaipur. Report has been already submitted to MoEF vide our submission dated 25.12.2010 vide letter no.ACL/EMD/F-16/2010/55925.</li> </ul>
(iv)	Top soil should be stacked with proper slope at earmarked site(s) only with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	<ul style="list-style-type: none"> <li>Top soil generated during mining operation is being stacked at designated area and being used for mines reclamation and green belt development.</li> </ul>
(v)	Catch drains and siltation ponds of appropriate size should be constructed for the working pit to arrest flow of silt and sediment. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly. Garland drain (size, gradient and length) shall be constructed for mine pit and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine	<ul style="list-style-type: none"> <li>To collect surface run-off and arrest silt and sediment flow from the soil &amp; mineral stacks, drain along with settling pond is constructed along the toe of the stacks, ultimately drain water will be collected into mined out pits. The drains are properly maintained and collected water is utilized for watering the mine area, roads, green belt development etc.</li> </ul>



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	site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.	
(vi)	Plantation shall be raised in an area of 87.45 ha including a greenbelt around ML area , reclaimed area and around worked out pit, roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 1500 plants per ha.	<ul style="list-style-type: none"> <li>Plantation &amp; mines reclamation details are enclosed as <b>Annexure – I (A) &amp; I (B)</b>.</li> </ul>
(vii)	The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	<ul style="list-style-type: none"> <li>Water conservation measures to augment ground water resources in the area are being done by Ambuja Cement Foundation (ACF). Details of water harvesting work done by ACF in and around area are enclosed as <b>Annexure - II</b>.</li> </ul>
(viii)	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and construction new piezometers during the mining operation. The monitoring should be carried out four times in a year Pre monsoon (April, May), monsoon (August), Post monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment and Forests, its Regional Office, Bhopal, Central Ground water Authority and Central Ground Water Board.	<ul style="list-style-type: none"> <li>Regular monitoring of ground water level and quality is being carried out in and around the mine lease area by developing network of existing wells around mine lease area &amp; by constructing new piezometers. Ground water level &amp; quality monitoring report is enclosed as <b>Annexure-IV</b>.</li> </ul>
(ix)	The Project authorities should obtain prior approval of the competent authority for withdrawal of groundwater if any, required for the project.	<ul style="list-style-type: none"> <li>No withdrawal of ground water. Water requirement for drinking is being met from private purchase. Whereas water requirement for dust suppression and greenbelt development is being met from harvested rain water in mined out pit.</li> </ul>
(x)	The mineral handling plant should be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should be properly maintained and operated.	<ul style="list-style-type: none"> <li>No mineral handling plant at Mines site. Mineral extracted is transported to cement plant by trucks / tipper, which is being covered with tarpaulin for prevention of fugitive emission.</li> </ul>

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(xi)	Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.	<ul style="list-style-type: none"> <li>• Vehicular emissions are checked regularly. All the vehicles used for transportation of minerals are provided with mechanized double flap covering system.</li> <li>• Presently mining activity closed since 05.05.2014.</li> </ul>
(xii)	No drilling and blasting shall be undertaken in the project.	<ul style="list-style-type: none"> <li>• Blast free fully mechanized Surface Miner machine is used for mining.</li> </ul>
(xiii)	Digital processing of the entire lease area using remote sensing technique should be done regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment and Forests and its Regional Office, Bhopal.	<ul style="list-style-type: none"> <li>• Land use pattern report study has been conducted by Compusense Automation, Ahmadabad. Report is under preparation stage and will be submitted to MoEF&amp;CC as soon as possible.</li> </ul>
(xiv)	The void left unfilled in an area of 65.0 ha shall be converted into water body. The higher benches of excavated void/mining pit shall be terraced and plantation done to stabilize the slopes. The slopes of higher benches shall be made gentler for easy accessibility by local people to use the water, body. Peripheral fencing shall be carried out along the excavated area.	<ul style="list-style-type: none"> <li>• Excavated area will be converted in to water bodies as per approved mining plan from IBM. Total Open mine area is 107.44 Ha.</li> <li>• Higher benches will be made gentler for easy accessibility by local people to use the water body.</li> <li>• Peripheral fencing of bella stone is provided along excavated area. Total 5138 meter brick wall, 14962 meter barbed wire and 16891 meter earthen bund fencing has been done.</li> </ul>
(xv)	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered flora, endangered fauna such as leopard and endangered migratory bird species spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the state forest and wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and fund so allocated shall be included in the project cost. Copy of action plan may be submitted to the Ministry and its Regional Office within 3 months.	<ul style="list-style-type: none"> <li>• Status of Biodiversity (Flora &amp; Fauna) in core and buffer zone area of Solaj Mines has been conducted by "Gujarat Institute of Desert Ecology", Bhuj. Report with action plan for conservation of flora and fauna has been already submitted to MoEF vide our submission dated 25.12.2010 vide letter no.ACL/EMD/F-16/2010/55925.</li> </ul>

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(xvi)	Consent to operate should be obtained from SPCB before starting enhanced production from the mine.	<ul style="list-style-type: none"> <li>Pointed noted. CCA will be obtained in case of enhanced production from the mine.</li> </ul>
(xvii)	A final Mine Closure plan along with details of Corpus Fund should be submitted to Ministry of Environment & Forests in advance of final mine closure for approval.	<ul style="list-style-type: none"> <li>A final Mine Closure plan along with details of Corpus Fund shall be submitted to Ministry of Environment &amp; Forests in advance of final mine closure for approval</li> </ul>
<b>B. General Conditions:</b>		
(i)	No change in mining technology and the scope of working should be made without prior approval of the Ministry of Environment & Forests.	<ul style="list-style-type: none"> <li>We are following the same mining practices through state of art Surface Miner as proposed. In case of any change in the mining technology and scope of working, we will take prior approval from Ministry of Environment, Forest &amp; Climate Change.</li> </ul>
(ii)	No change in the calendar plan including excavation, quantum of mineral limestone and marl and waste should be made.	<ul style="list-style-type: none"> <li>Point noted</li> </ul>
(iii)	At least four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for RSPM, SPM, SO <sub>2</sub> & NO <sub>x</sub> monitoring. Location of the stations should be decided on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Data on ambient air quality (RSPM, SPM, SO <sub>2</sub> & NO <sub>x</sub> ) should be regularly submitted to the Ministry including its Regional Office at Bhopal and to the State Pollution Control Board/Central Pollution Control Board once in six months.	<ul style="list-style-type: none"> <li>Four ambient air quality monitoring stations have been established in core &amp; buffer zone. Ambient air quality monitoring results for the period April'17 to September'17 is enclosed as <b>Annexure VII</b>. The location of the monitoring stations is decided in consultation with GPCB and renowned consultant Sh. B Padmanabh Murthy, Professor of JNU and former Director of IMD Met-Dept on 5th and 6th Jan 2008.</li> </ul>
(iv)	Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	<ul style="list-style-type: none"> <li>Environment friendly Surface Miner machine is being used for mining. This has been provided with inbuilt facility of water sprinkling to suppress dust generated during mining. On all haul roads regular water sprinkling is being done by water tankers, Photographs are enclosed as <b>Annexure XI</b>. Monitoring results of Air borne dust survey is enclosed as <b>Annexure III</b>.</li> </ul>

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(v)	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs.	<ul style="list-style-type: none"> <li>All the workers working in high noise areas are provided with ear plug/ear muffs. Ambient noise monitoring as well as HEMM noise monitoring is being done on monthly basis. HEMM noise monitoring as well as ambient noise monitoring reports are enclosed as <b>Annexure V &amp; VI.</b></li> </ul>
(vi)	Industrial wastewater (workshop and waste water from the mine) should be properly collected, treated so as to confirm the standards prescribed under GSR 422(E) dated 19th May 1993 and 31st December installed before discharge of effluents from workshop.	<ul style="list-style-type: none"> <li>A centralized workshop with necessary treatment facilities is located at cement plant for servicing and maintenance of mining machineries. Regular monitoring is being carried out by GPCB approved third party (M/s Royal Environment Auditing and Consultancy services, Rajkot). Analysis report is enclosed as <b>Annexure-IX.</b></li> </ul>
(vii)	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.	<ul style="list-style-type: none"> <li>Personnel working in mines are provided with dust masks, safety shoes, safety goggle &amp; Helmet.</li> </ul>
	Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. The same program may be extended to adjoining village also.	<ul style="list-style-type: none"> <li>Occupational health surveillance program of the workers is being undertaken periodically by our Occupational Health Centre.</li> </ul>
(viii)	A separate environmental management cell with suitable qualified personnel should be set up under the control of a senior executive, who will report directly to the Head of the organization.	<ul style="list-style-type: none"> <li>A well established Environmental Management Division (EMD) with suitable qualified personnel is in place. Head of environmental management cell directly report to the Unit Head (Jt. President) of the organization. EMD organization chart is enclosed as <b>Annexure X.</b></li> </ul>
(ix)	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purposes. Year-wise expenditure should be reported to Regional Office, Bhopal of the Ministry of Environment and Forests and to the Ministry.	<ul style="list-style-type: none"> <li>Details of capital and recurring expenditure for environmental protection measures are enclosed as <b>Annexure VIII.</b></li> </ul>

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(x)	The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The project authorities should extend full co-operation to the officer(s) of the Regional Office by furnishing requisite data/information /monitoring reports.	<ul style="list-style-type: none"> <li>Full support and co-operation is being extended during the visit of officers from Ministry of Environment &amp; Forest, CPCB as well as GPCB</li> <li>Project was monitored by Dr. A. Mehrotra (Regional Office, Bhopal) during 12.10.10 to 13.10.10.</li> </ul>
(xi)	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhopal, Central Pollution Control Board and State Pollution Control Board.	<ul style="list-style-type: none"> <li>Half yearly compliance status report is being regularly submitted, our last submission was on 30.05.2017 vide letter no.ACL/EMD/F-16/2017.</li> </ul>
(xii)	A copy of the clearance letter will be marked to the concerned panchayat/local NGO, if any, from whom suggestions/representation has been received while processing the proposal.	<ul style="list-style-type: none"> <li>A copy of clearance letter has been marked to concern.</li> </ul>
(xiii)	The project authorities should inform to the Regional Office located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	<ul style="list-style-type: none"> <li>Regular six monthly environmental clearance compliance reports are being submitted to MoEF. Last submission was on 30.05.2017 vide letter no. ACL/EMD/F-16/2017.</li> </ul>
(xiv)	State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's/Tehsildar's Office for 30 days.	<ul style="list-style-type: none"> <li>GPCB is the concern authority for the same.</li> </ul>
(xv)	The project authorities should advertised at least in two local newspapers widely circulated, one of which shall be in vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhopal.	<ul style="list-style-type: none"> <li>Advertisement was published in two local newspapers. Copy of advertisement has been submitted to MoEF on 25.12.2010 vide letter no. ACL/EMD/F16/2010/55925.</li> </ul>
3	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further	<ul style="list-style-type: none"> <li>Point noted</li> </ul>

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	condition in the interest of environment protection.	
4	Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (protection) Act, 1986.	<ul style="list-style-type: none"> <li>This Condition is not related to Project Proponent. However, all the conditions mentioned in the EC are being complied</li> </ul>
5	The above conditions will be enforced intra-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 made there under and also any other orders passed by the Hon'ble Court of fast Track Judge & Joint District Judge, Veraval in the subject matter.	<ul style="list-style-type: none"> <li>All stipulations under Water (Prevention and Control of pollution) Act, 1974, the Air (Prevention and control of Pollution) Act 1981, the Environment Protection Act, 1986, Hazardous waste Rules, 1989 are being complied.</li> <li>Hazardous waste being stored at designated place and collection and transportation is being done by state pollution control board authorized recyclers for recycling purpose</li> </ul>

## ANNEXURE I (A)

<b>SOLAJ MINES Greenbelt &amp; Plantation Details till September 2017</b>				
Total Lease Area (in ha)	Opened up Area (in Ha)	Planted Area (in Ha)	Pasture land (in Ha)	Water Body (in Ha)
200.8184	107.4428	9.8128	1.6657	0





Saplings plant in reclaimed area







Existing green belt in mines area



**Ambuja Cement Foundation - Ambujanagar**

Annexure-II

**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 (KVV 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 - III**

<b>Air Borne Dust Survey - Solaj Limestone Mines (April-2017 to September-2017)</b>								
<i>Machine : Surface Miner</i>			<i>Machine : Dozer</i>			<i>Machine : Loader</i>		
Date	Period	RSPM (mg/m3)	Date	Period	RSPM (mg/m3)	Date	Period	RSPM (mg/m3)
Apr 2017	-	NR	Apr 2017	-	NR	Apr 2017	-	NR
May 2017	-	NR	May 2017	-	NR	May 2017	-	NR
June 2017	-	NR	June 2017	-	NR	June 2017	-	NR
July 2017	-	NR	July 2017	-	NR	July 2017	-	NR
Aug 2017	-	NR	Aug 2017	-	NR	Aug 2017	-	NR
Sep 2017		NR	Sep 2017		NR	Sep 2017		NR

## Annexure - IV

Sep-17

S.N.	Ref.No.	IS 10500:2012 (S.R)		Ground Water Quality Report of Solaj Mines (Sept -2017)						Piezometer
		Desirable	Permissible							
	Source			W1	W3	W4	W6	W8	W10	PIEZO NO-1
	Village			SOLAJ	SOLAJ	SOLAJ	SOLAJ	SOLAJ	SOLAJ	SOLAJ
	Taluka			SUTRAPADA	SUTRAPADA	SUTRAPADA	SUTRAPADA	SUTRAPADA	SUTRAPADA	SUTRAPADA
	District			Gir-Somnath	Gir-Somnath	Gir-Somnath	Gir-Somnath	Gir-Somnath	Gir-Somnath	Gir-Somnath
1	Color Hazen Units	5	15	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Turbidity NTU	1	5	2.15	1.02	1.07	0.96	0.64	0.95	0.5
4	Dissolved Solids mg/l	500	2000	820	736	986	604	780	446	658
5	pH	6.5 to 8.5	No Relaxation	8.51	8.56	8.2	8.35	8.24	8.12	8.39
6	Total Hardness (as CaCO <sub>3</sub> ) mg/l	200	600	224	152	296	104	208	192	204
7	Calcium (as Ca) mg/l	75	200	45	30	59	21	43	38	42
8	Magnesium (as Mg) mg/l	30	100	27	19	36	13	24	24	24
9	Chlorides (as Cl) mg/l	250	1000	288	236	344	176	308	56	236
10	Sulphates (as SO <sub>4</sub> ) mg/l	200	400	33	25	48	17	34	31	33
11	Nitrates (as NO <sub>3</sub> ) mg/l	45	No Relaxation	109.45	121.89	103.87	36.41	53.73	116.81	44.87
12	Fluorides (as F) mg/l	1	1.5	1.63	1.14	1.29	1.44	1.19	1.26	1.24
13	Alkalinity (as CaCO <sub>3</sub> ) mg/l	200	600	216	212	188	264	184	188	128

**Annexure - V**

<b>Noise Level of HEMM - Solaj Mines(April-2017 to September - 2017)</b>				
Machine				
Month	Noise Levels (dB)		Noise Levels (dB)	
	At 5m. distance	At 10m. distance	At 5m. distance	At 10m. distance
	Leq	Leq	Leq	Leq
Apr-17	NR	NR	NR	NR
May-17	NR	NR	NR	NR
Jun-17	NR	NR	NR	NR
Jul-17	NR	NR	NR	NR
Aug-17	NR	NR	NR	NR
Sep-17	NR	NR	NR	NR

**Annexure - VI**

<b>Ambient Noise Level Monitoring - Solaj Mines April-2017 to September-2017)</b>								
<b>Month</b>	<b>Noise Levels in dB(A)</b>							
	<b>Near Face</b>		<b>Haul road</b>		<b>Mines Office</b>		<b>Solaj Village</b>	
	<b>Leq (Day)</b>	<b>Leq (Night)</b>	<b>Leq (Day)</b>	<b>Leq (Night)</b>	<b>Leq (Day)</b>	<b>Leq (Night)</b>	<b>Leq (Day)</b>	<b>Leq (Night)</b>
<b>Apr-17</b>	68	62	65	61	60	56	56	52
<b>May-17</b>	69	64	67	63	61	56	58	53
<b>Jun-17</b>	67	63	66	62	63	57	55	49
<b>Jul-17</b>	69	66	67	63	62	58	54	50
<b>Aug-17</b>	65	62	63	59	58	53	51	47
<b>Sep-17</b>	63	59	62	58	59	54	52	48

## Annexure - VII

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

Month	Average Ambient Air Quality Monitoring Results																			
	Working place					Solaj Village					Khera Village					Moradiya Village				
	PM2.5	PM10	SO2	NOx	CO	PM2.5	PM10	SO2	NOx	CO	PM2.5	PM10	SO2	NOx	CO	PM2.5	PM10	SO2	NOx	CO
	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(mg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(mg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(mg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(mg/m3)
<b>April 2017</b>	26.00	34.00	11.40	15.30	BDL	22.00	30.00	10.70	14.80	BDL	24.00	32.00	11.90	15.10	BDL	19.00	35.00	10.40	14.20	BDL
	24.00	39.00	11.40	15.40	BDL	21.00	37.00	12.60	16.30	BDL	25.00	40.00	12.40	15.80	BDL	23.00	38.00	11.90	14.90	BDL
<b>May 2017</b>	28.00	37.00	10.70	16.40	BDL	20.00	34.00	11.30	15.90	BDL	22.00	36.00	12.50	16.20	BDL	17.00	39.00	11.70	15.80	BDL
	22.00	34.00	12.40	15.90	BDL	19.00	35.00	11.90	16.10	BDL	23.00	38.00	11.70	15.20	BDL	21.00	36.00	12.80	15.80	BDL
<b>June 2017</b>	26.00	30.00	11.30	15.90	BDL	18.00	32.00	10.60	14.20	BDL	20.00	34.00	11.80	16.20	BDL	19.00	37.00	10.10	14.60	BDL
	24.00	39.00	11.30	14.90	BDL	22.00	36.00	10.80	15.20	BDL	26.00	40.00	10.20	15.10	BDL	23.00	34.00	12.60	16.20	BDL
<b>July 2017</b>	24.00	33.00	10.90	14.80	BDL	20.00	29.00	11.50	15.60	BDL	18.00	32.00	12.30	15.90	BDL	17.00	35.00	11.20	15.30	BDL
	26.00	42.00	11.50	15.40	BDL	24.00	38.00	10.90	14.60	BDL	22.00	36.00	11.20	15.80	BDL	21.00	35.00	10.70	14.20	BDL
<b>Aug. 2017</b>	22.00	35.00	11.20	15.20	BDL	18.00	33.00	10.90	16.60	BDL	16.00	30.00	10.20	14.80	BDL	20.00	38.00	11.70	14.30	BDL
	24.00	40.00	12.60	15.80	BDL	22.00	36.00	11.70	16.20	BDL	20.00	34.00	12.90	16.50	BDL	19.00	32.00	11.30	15.00	BDL
<b>Sept. 2017</b>	20.00	37.00	10.90	14.80	BDL	21.00	35.00	11.30	15.20	BDL	18.00	32.00	10.60	14.60	BDL	23.00	34.00	11.80	15.30	BDL
	22.00	38.00	11.50	14.70	BDL	19.00	34.00	12.30	15.90	BDL	23.00	36.00	10.80	14.10	BDL	21.00	33.00	11.20	15.60	BDL
<b>Minimum</b>	20.00	30.00	10.70	14.70	0.00	18.00	29.00	10.60	14.20	0.00	16.00	30.00	10.20	14.10	0.00	17.00	32.00	10.10	14.20	0.00
<b>Maximum</b>	28.00	42.00	12.6	16.4	0	24.00	38.00	12.6	16.6	0	26.00	40.00	12.9	16.5	0	23.00	39.00	12.8	16.2	0
<b>Average</b>	24.00	36.50	11.43	15.38	#DIV/0!	20.50	34.08	11.38	15.55	#DIV/0!	21.42	35.00	11.54	15.44	#DIV/0!	20.25	35.50	11.45	15.10	#DIV/0!



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

(1) Monitoring Equipments	: 37.08 Lakh
(2) Environmental Laboratory	: 10.00 Lakh
(3) Others (Monitoring Van & DG sets)	: 10.00 Lakh

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**Total : Rs. 57.08 Lakh****(B) Recurring expenditure for the period of April'17 to September'17 :**

(1) Green belt development & dust suppression	: 1.40 Lakh
(2) Manpower cost*	: 15.15 Lakh
(3) House Keeping	: 1.10 Lakh
(4) Other Env. Protection (Environmental Monitoring)	: 0.89 Lakh
(5) Environmental Awareness*	: 0.95 Lakh

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**Total : Rs. 19.49 Lakh**

\*Expenditures common for all the plants & mines.



# Annexure VIII

## EXPENDITURE INCURRED ON THE ENVIRONMENTAL MANAGEMENT PLANS

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

\*\* Community development expenditure is common for all plant & mines at Ambujanagar for the period of April'17 to September'17. Programme Wise Expenditure Details 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 Development	33.55					33.55
	B .Drinking Water Programme	6.28	4.17		64.84	95.76	171.05
	C. Salinity Prevention (KVV III)	7.47		34.49	32.97	43.33	118.26
2	Agriculture Development( Farm Forestry & Afforestation)	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>



# Royal

## Environment Auditing & Consultancy Service

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### TEST REPORT (WASTE WATER)

Test Report No : 230/08/2017-18

Date : 02/09/2017

Work Order No : 280631810

Job Card No. : AMBUJA-P/2017-18/06

Name & Address of Customer : Ambuja Cements Limited,  
P.O. Ambujanagar - 362 715.  
Taluka : Kodinar, District : Gir-Somnath.

Attention : **Mr. Anand Rai**

Date of Sample Receipt : 05/08/2017

Date & Time of Sampling : 05 / 08 / 2017 at 15.25 Hrs.

Lab ID : W/17-18/08/040

Date of Testing : 07th to 11th August 2017

Sample Type : Waste Water

Description of Sample Packing : Glass Bottle

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Treated Raw Water

Sample Collected by : Mr. Jaydeep Purohit

Sampling Method : IS 3025 : Part 1

Location of Sample : **Treated Water - Workshop**

Sr. No.	Parameters	Unit	Permissible Limits as per GPCB	Results	Test Method
01.	pH	---	---	7.62	IS 3025 : Part 11
02.	Total Dissolved Solid	mg/l	---	271	IS 3025 : Part 16
03.	Total Suspended Solids	mg/l	---	30	IS 3025 : Part 17
04.	Dissolved Oxygen	mg/l	---	5.2	IS 3025 : Part 38
05.	Oil & Grease	mg/l	---	6.5	IS 3025 : Part 39
06.	BOD (3 days at 27 c)	mg/l	---	23	IS 3025 : Part 44
07.	COD	mg/l	---	17	APHA : 5220 C
08.	Residual Chlorine	mg/l	---	---	IS 3025 : Part 26

*Digvijay Jadeja*  
Authorized Signatory  
Digvijay Jadeja

*Jaydeep*  
Analyst

\* End of Report \*

1. This test report (FMT-TP-SRV-010) shall not be reproduced except in full, without written approval from the Royal Environment Auditing & Consultancy Service
2. The results relate only to the item tested.

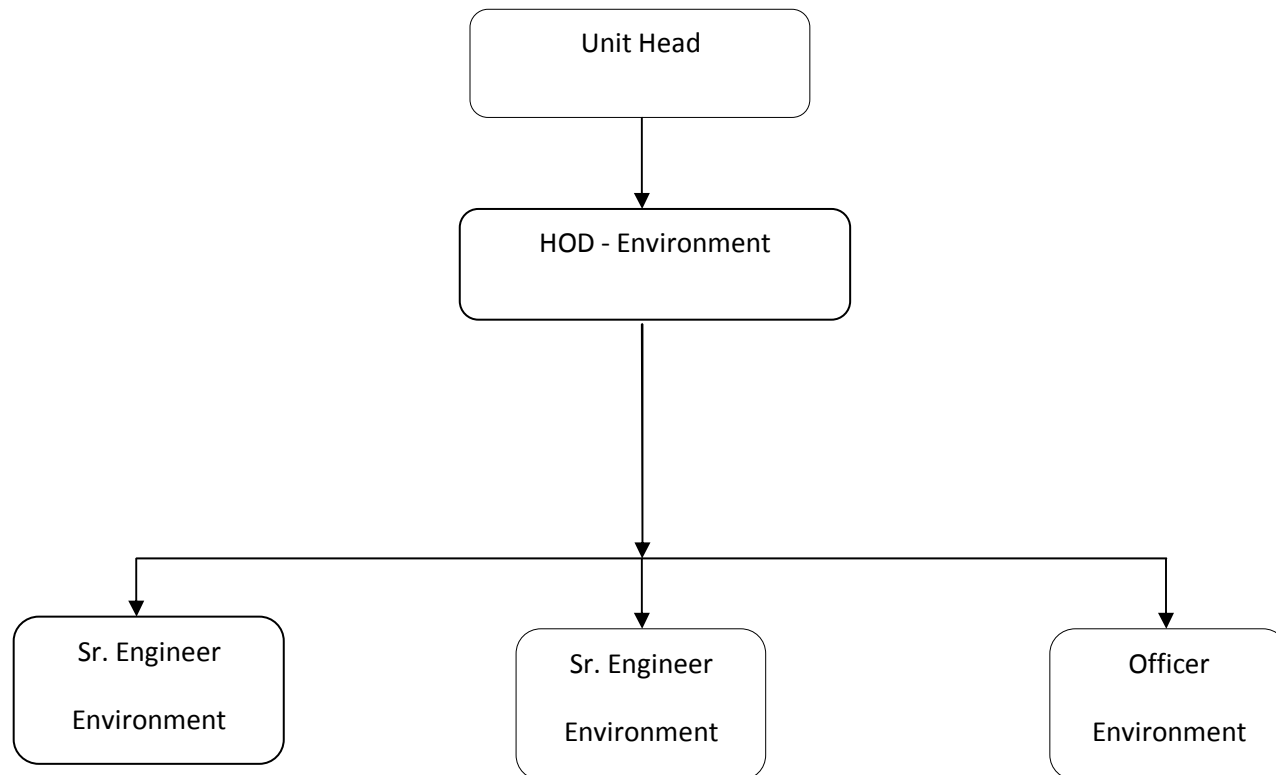
Doc. No. FMT-TP-SRV-014 / Issue No. 01 / Issue Date : 01-01-2012 / Ammd No. 03 / Ammd Date : 23 08 14

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## Annexure X [ORGANISATION CHART]

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**Regular Water Sprinkling is being done on haul road in Solaj Mines.**