

Speed Post with Acknowledgement Due

ACL/DCW/ENV/2020/38

Date: 19/09/2020

The Member Secretary
Andhra Pradesh Pollution Control Board
Head office, D.No.33-26-14D/2
Near Sunrise Hospital, Pushpa Hotel Centre,
Chalamavari Street, Kasturibaipet,
Vijayawada-520010, Andhra Pradesh

Sub: Submission of Environment statement for Cement Division of Durga Cement Works for the financial year ending 31st March 2020.

Ref: Consent Order No: APPCB/VJA/GTR/10023/HO/CFO/2019 Dt.10.04.2019, valid for the period up to Dt.30.06.2020.

Dear Sir,

With reference to the Consent to operate vide order no. APPCB/VJA/GTR/10023/HO/CFO/2019 Dated 10.04.2019 of Durga Cement Works (Cement Plant) (A Unit of Andhra Cements Limited), we hereby submit the Environment statement (Form-V) for the financial year 2019-2020.

Further, we would like to inform you that hard copy is being sent through speed post for reference, please.

This is for your kind information and request to arrange for acknowledgement, please.

Thanking You

Yours faithfully,
For **Durga Cement Works**
(A unit of Andhra Cements Limited)



N.B Singh
Advisor (Technical)

Encl: a/a
CC:

The Environmental Engineer
Regional Office, Andhra Pradesh Pollution Control Board
Door No.4-5-4/5C (EAST), Navbharatnagar, Ring Road,
Guntur-522007, Andhra Pradesh

The Director,
Ministry of Environment, Forest and Climate Change
Regional Office-South Eastern Zone 1st and 2nd Floor,
HEPC Building NO.34, Cathedral Garden Road
Nungambakkam, Chennai-600034

Scientist & Incharge
Central Pollution Control Board
1st and 2nd Nisarga Bhavan, 7th D Main Road,
Thimmaiah Rd, Shivanagar, A-Block, Bengaluru, Karnataka 56007



Regd. Office & :
Factory

ANDHRA CEMENTS LIMITED
Durga Cement Works, Durgapuram, Srinagar (P.O),
Dachepalli - 522 414, Guntur Dt. Andhra Pradesh
Ph : +91-8649-257428-29, Fax : +91-8649-257449

Environmental Statement Report

Form-V

[Financial Year 2019-2020]



Durga Cement Works A Unit of Andhra Cements Limited

Gamalapadu (V), Dachepalli (M)
Guntur District, Andhra Pradesh
Pin Code - 522414

FORM-V

See Rule-14

Environment Statement Report for the financial year ending the March 31, 2020

PART- A

i	Name and address of the owner /Occupier of Industry operation or process	Shri Naveen Kumar Singh Director Durga Cement Works (A Unit of Andhra Cements Limited) Durgapuram, Gamalapadu (V), Dachepalli (M) Dist- Guntur, AP Pin-522414
ii.	Industry Category Primary (SIC CODE) Secondary (SIC CODE)	RED, Large Primary (3241)
iii.	Production Capacity (Units)	Clinker : 2.00 MTPA Cement : 2.31 MTPA
iv.	Year of Establishment	1983
v.	Date of last Environmental Statement submitted	Letter No. ACL/DCW/ENV/2018-19/395 Dt.12/09/2019

PART- B

Water and Raw material consumption

A. Water

(i) Water consumption m³/day

Process m³/day : 205.13 (Average during 2019-20)
Domestic m³/day : 119.15 (Average during 2019-20)

(ii) Consumption per unit of production

Name of product	Process water consumption per unit of product-output (KL/MT)	
	During the previous financial year (2018-2019)	During the current financial year (2019-2020)
1.Clinker	0.0643	0.0657
2.Cement	0.0059	0.00605

B. Raw material consumption

Name of the raw material	Name of product	Consumption of raw material per unit product output (MT of Cement)	
		During the previous financial year (2018-2019)	During the current financial year (2019-2020)
Limestone	Clinker	1.408	1.395
Laterite	Clinker	0.092	0.082
Clinker	Cement	0.832	0.829
Gypsum	Cement	0.060	0.058
Fly Ash	PPC Cement	0.321	0.322

Name		Quantity		Unit
Product	Ordinary Portland cement (OPC)	Production	213340.29	MT/Year
	Portland Pozzolana cement (PPC)	Production	159340.71	MT/Year
	Clinker	consumption	309020.00	MT/Year
Raw material	Limestone	consumption	430895.85	MT/Year
	Laterite	consumption	25403.14	MT/Year
	Gypsum	Consumption	12337.00	MT/Year
	Fly Ash	Consumption	51324.00	MT/Year

PART –C

**Pollutant discharge to Environment/unit of output
(Parameter as specified in the consent issued)**

S.N	Pollutants	Quantity of pollutants discharged (Mass/day) (tone/day)	Concentrations of pollutants in discharged (mass/volume) (kg/m ³)	Percentage of variation from prescribed standard with reason
A	Water	No waste water is generated from process. Water is used for cooling purpose and it is recycled. Domestic waste water treated in STP and used for gardening & dust suppression.		
B	Air			
(a) Ambient Air monitoring				
	PM ₁₀	7.798x10 ⁻⁸	5.539x10 ⁻⁸	7.68 % less
	PM _{2.5}	3.414x10 ⁻⁸	2.867x10 ⁻⁸	28.32 % less
	SO ₂	8.930x10 ⁻⁹	6.320x10 ⁻⁹	87.36 % less
	NO ₂	1.271x10 ⁻⁸	0.901x10 ⁻⁸	74.75 % less
(B) Stack emission				
	Kiln & Raw Mill	0.270	2.482x10 ⁻⁵	42.26 % less
	Cooler ESP	0.146	3.833x10 ⁻⁵	15.93 % less
	Coal Mill	0.056	2.060x10 ⁻⁵	42.53 % less
	Cement Mill -1	0.023	1.905x10 ⁻⁵	45.26% less
	Cement Mill -2	0.011	1.967x10 ⁻⁵	43.56 % less

PART-D

HAZARDOUS WASTES

(As specified under Hazardous wastes/management & handling rule, 1989)

Hazardous waste	Total Quantity (Kg)	
	During the previous financial year 2018-2019	During the current financial year 2019-2020
(a) From process	Used oil	Used oil
	100 Litres	100 Litres
(b) From pollution control facility	Nil	Nil

PART-E

SOLID WASTE

S. N	Solid Waste	Total Quantity (Kg.)	
		During the previous financial year (2018-2019)	During the current financial year (2019-2020)
a	From Process	No solid waste is generated from the Cement manufacturing process	No solid waste is generated from the Cement manufacturing process
b	From Pollution control facility	All the collected material is recycled in process	All the collected material recycled in process
c	(i)Quantity recycled or reused	All the collected swept solid waste is reused in process.	All the collected swept solid waste is reused in process.
	(ii) solid	Nil	Nil
	(iii) Disposed	Nil	Nil

PART –F

Please specify the characterizations (in terms of composition quantity and Quantum) of hazardous as well as solid waste and indicates disposal practice adopted for both these categories of wastes.

Hazardous waste, Used oil :	100 Litres
Solid waste :	Nil

PART –G

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

Following measures have been adopted for abatement of pollution conservation of natural resources:-

1. **Limestone Conservation:** Limestone is being used for manufacturing of Cement by proper blending of low grade Limestone and high grade limestone for preparation of proper raw mix to produce a good quality of Clinker & Cement. The Raw Mix design is being prepared in such a way that it reduces the lime saturation factor by which substantial quantity of Limestone has been conserved.
2. **Conservation of Mineral Gypsum:** Utilization of Chemical Gypsum.
We have used fertilizer industry by product which is waste in nature and its chemical properties are as good as Gypsum. The chemical Gypsum is used for cement manufacturing process; almost 12337.00 MT of Chemical Gypsum has been consumed in cement manufacturing process during the financial year of **2019-2020**.
3. **Water Conservation :** Company is adopting best possible approaches to conserve water, which can be witnessed as:

Dry Cement manufacturing process:
 - i. The process water is used for machinery cooling and it is recycled to maintain **Zero Waste Water Discharge**.

- ii. Rain water harvesting is being carried out and all the Plant and Colony drainage connected to Mine's pit which is used as water reservoir to meet water demand of the plant. (Encl. Annexure –I)
- iii. Collected rain water also recharges the ground water table of the surroundings areas.
- iv. Sewage Treatment Plant of capacity 300 KLD has been constructed for the treatment of sewage water of the colony - all the treated water is being used in dust suppression, tree plantation etc. (Encl. Annexure –I)

4. Air Pollution Control Measures:

Following measures have being taken to control of air pollution:

- a) RABH, Bag House, & ESP, Bag Filters Installed in the plant for the control of Air Pollution. (Encl. Annexure –II)

Schedule Maintenance and Monitoring of Air Pollution Control Devices:

All the Air Pollution Control Devices have been maintained in good health by following scheduled maintenance by dedicated technical team and monitoring of all these are done regularly as per APPCB Norms. (Encl. Annexure –III)

- b) All the Raw materials are being stored in cover sheds & Silo. Belt conveyors are fully covered. (Encl. Annexure-IV)
- c) Roads are concreted in factory and colony premises. (Encl. Annexure-V)
- d) Regular water sprinkling is being carried out on roads and water spray systems have been installed at Crushers & transfer points for the control of dust emission. (Encl. Annexure-V)
- e) Regular Stack Emission, Ambient Air Quality Monitoring & Noise Monitoring is being carried out to cross check the emission levels. The results show that the emissions like PM₁₀, PM_{2.5}, SO₂, and NO₂ are well within limits. (Encl. Annexure-VI)
- f) 3. Nos. of Online Real Time CAAQM system installed in the plant premises for monitoring of the surrounding Ambient Air Quality Level .CAAQM data are being continually displayed at the main gate of the factory and the same data also transmitted to APPCB & CPCB website. (Encl. Annexure-VII)

- g) 5 No's of Continuous Online Stack Emission Monitoring System (CEMS) installed at all the major stacks for the checking the emission level. (Encl. Annexure-VIII)

5. Green belt development:

As per CFO condition 33% of greenbelt has to be developed but industry has been developed 34.61%. Industry has completed of greenbelt more than condition.

Total Land area	Total Plantation in year 2019-2020	Species planted in year 2019-2020	Total Plantation area	Green belt status in DCW
141.574 (Hectares)	-	-	49.01(34.61%) (Hectares)	Encl. Annexure-IX

6. Solid Waste Management

Following strategy is being implemented to handle solid waste of all kinds.

Practicing principle of 2Rs i.e. Reduces & Reuse

- All the waste will be segregated on the basis on degradability/recyclability, than accordingly they will be disposed.
- Bio degradable waste from township & plant Area will be composted and the Manure will be used for horticulture purpose.
- All the hazarded waste will be disposed through the authorized recyclers.

7. Use of Alternative Fuel

Provision made by PET Coke as Alternate fuel in the Cement Production

8. Good House Keeping

Following measures have been taken for good housekeeping at plant.

- Regular roads sweeping is being carried out.
- All the roads of plant and colony have been concreted.
- Plantation and development of greenery.
- Development of Parks.

9. Socio-Economic Benefit

- Indirect employment to entrepreneurs
- Direct employment to local residents
- Growth of local market and development of nearby villages in terms of CSR

M/s Durga Cement Works (Cement plant) is being operated on Dry Process Technology, which is advantage of cost effective and Environmentally Clean and also fuel economy and less Water consumption.

The Particulate Matter emission from stacks is being controlled by installed adequate equipment like RABH (Reverse Air Bag House), Electrostatic Precipitator & Bag House. In addition, Pulse Jet Bag Filters have been installed at various Material Transfer Points to arrest the Fugitive Emission and sustain the clean Environment. The dust (Particulate Matter) collected in the Air Pollution Control Equipment is being recycled in process and neutralizing the cost of operation of pollution control equipments and hence no cost impact on the production cost.

PART – H

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

Environmental protection Measures /investments during the period 2013 - 2020		Amount Rs. (Crores)
(A)	Capital Cost investment in Pollution control Measure during 2013-14	50.9
(B)	Capital Cost investment in Pollution control Measure during 2014-15	1.2072
(C)	Capital Cost investment in Pollution control Measure during 2015 -16	0.0225
(D)	Capital Cost investment in Pollution control Measure during 2016 -17	0.0284
(E)	Capital Cost investment in Pollution control Measure during 2017 -18	0.01208
(F)	Capital Cost investment in Pollution control Measure during 2018 -19	0.0373

S. No.	Environmental protection Activities	Recurring Cost 2019-2020 (Rs. Lakhs)	Capital Cost 2019-2020 (Rs. Lakhs)
1	Air Pollution Control		
	APCD (Bag house/ Bag filters) maintenance	3.80	3.00
	Cost of Electricity Consumption on Air Pollution Control Devices	476.28	-
	Road Maintenance/Housekeeping for fugitive emission control	9.63	-
	Water Sprinkling arrangements for control of fugitive emission (Water Tankers & water sprinklers)	0.26	-
2	Water Pollution Control		
	Electricity consumption for STP operation	4.63	-
	STP Operation & Maintenance by Third Party	8.16	-
	Water Meter, Strainer & 2.5 hp submersible pump for STP	0.22	-
	Power Consumption on operation of Electromagnetic (Domestic, Industrial) water flow meters	0.029	-
3	Pollution Monitoring		
	Power Consumption for operation of online Pollution Monitoring CAAQMS & CEMS Stations	4.23	-
	CAAQMS (03 Nos.) & CEMS (05 Nos.) spares, maintenance ,IT & Internet & other service	5.01	12.89
	Annual Maintenance /Testing/Calibration of Manual AAQ monitoring equipment	0.35	-
	Ambient Air & Stack emission Manual Monitoring and Testing from outside laboratory	0.587	-
4	Green belt development		
	Horticulture (Gardening/Plantation/ Manpower /Vehicle Fuel/ Maintenance of gardening equipments)	5.31	-
Total Expenditure =		518.496	15.89

Various CSR Activities are being carried out in the surrounding villages (Encl. Annexure-x)

Sl. No.	Description	Amount (Rs. in Lakhs)
1	Drinking water supply scheme for village Srinagar, & Dandivagu lift Irrigation Co.Society (Rs 60,000/-each).	1.2
2	Providing medical check ups to all students at DPS with free medical help and energy food to lower class (weekly twice)	0.4
3	Contribution to Temple/Church for Maintenance/Puja at Village Ramapuram(2000/-PM Srinagar(3000/-PM/ Gamalapadu 3000/-PM	0.48
4	340 Cement bags issued Durga Public School for Maintenance work from April to July19	1.02
5	Security Services provided for Durga Public School	1.56
6	Maintenance of School building & class room benches for student of DPS.	0.60
7	Flooring/plastering/roadwork & works of Saraswati temple inside DPS premises.	3.08
	Total Expenditure (Rs. in Lakhs)	8.34

PART -I

Any other particulars for improving the Quality of Environment

1. With compliance to the conditions of Environment Clearance obtained from MoEF Govt. of India the following monitoring is also being done on regular interval:
 - a) Checking of ground Water level every season in surrounding villages.
 - b) Checking of water quality in surrounding areas on quarterly basis.
 - c) Meteorological data collection on daily basis.
2. Top Soils conservation during excavation and utilized the soil for nursery development and Tree plantation.
3. New Bulk Loading System has installed for Cement.
4. Regular maintenance of vehicles for control of vehicular pollution.
5. Constructed Pneumatic Fly Ash handling system and Fly Ash Silo.
6. New Coal handling stacker reclaimer & Limestone stacker reclaimer are installed.
7. Acoustic enclosures are provided at noise generating area to control of noise pollution.
8. Safety Awareness: See Annexure -11 All employees are provided with personal protective Equipments(PPEs), as per the requirement, such as workers working in plant area are provided with dust masks and in noise pollution areas with Ear plugs/Ear Muff, Safety Shoes, Hand Gloves, Goggles, Welding goggles and Safety Helmet are also being provided as per the requirement.

Environment Management cell has been set up under the control of Advisor (Tech.) to carry out various Environment related activities.

JAIPRAKASH ASSOCIATES LIMITED

**Durga Cement Works: Andhra Cements Ltd.
Office Order: Environment Management Cell**

03/February/2020


DCW/OO/Environ/3

1. With immediate effect revised Environment Management Cell is set up at Durga Cement Works, for implementation and monitoring adherence to statutory norms relating to environmental protection, in DCW, and promoting environmental awareness in and around the plant.
2. The Environment Management Cell(EMC) Will comprise of :-

a)	EMC Leader (Shri)	-	N. B. Singh	Advisor (Tech.)
b)	EMC Members (Shri)	i.	K. Veera Babu	V P (Mech.)
		ii.	K. Kashinath	GM E& I
		iii.	A. K. Nema	G M (Prod. &QC)
		iv.	Y. Ravi	AGM (Elect.)
		v.	P. Suresh	AGM (Inst.)
		vi.	Deepak Shukla	Officer (Env.)

The Environment Management Cell (EMC) Will be responsible for:-

- 1) Ensuring serviceability of all environmental monitoring equipment.
- 2) Initiating and implementing eco friendly procedures and plans.
- 3) Promoting Environmental awareness in the employees of DCW, by organizing quarterly environmental awareness lectures, presentations & competitions.
- 4) Promoting environmental awareness in the children and villagers around the plant by organizing environmental awareness lectures, presentations and competitions for them in nearby schools.
- 5) Proper Record of these events to be maintained by Environment officer.


N. B. Singh
Advisor (Tech.)

Annexure – I



300 KLD Sewage Treatment Plant installed near DCW Colony



Plant & Colony: Domestic Water Meter



Glimpse of STP area



(1)



(2)

Sewage Treatment plant Inlet (1) & Outlet (2) water Meter



Plant :Industrial Water Meter

Durga Cement Works has adopting best possible approaches to conserve water

Potable Water Test Report

Durga Cement Works
(A Unit of Andhra Cements Limited)

Test Report

Nature of samples : Water
 Sample received date : 26.09.2019
 Sample analysis date : 26.09.2019
 Sample analyzed at : In-house Laboratory (Captive Power Plant)

Location:	Srinagar Village	Gamatlapadu Village	Colony	Club	Krishna River	Plant	Drinking Water	IS 10500 Drinking Water Standards Limit		
Type of Water:	Bore							Desirable Limit	Permissible limit	
S. No.	Parameter	Unit	Results							
1.	pH	-	7.7	7.5	7.6	7.5	8.3	6.8	6.5 to 8.5	
2.	Conductivity	(µs)	850	1150	1250	1470	620	152	NA	
3.	Turbidity	(NTU)	1.5	1.4	1.6	1.4	1.8	0.04	5-10	
4.	Total Hardness	(mg/l)	210	240	215	220	205	20	300	
5.	Calcium Hardness	(mg/l)	150	165	128	155	135	11	75	
6.	Magnesium Hardness	(mg/l)	60	75	87	65	70	9	30	
7.	TDS	(mg/l)	553	748	813	956	403	99	200	
8.	TSS	(mg/l)	-	-	-	-	-	-	100	
9.	Alkalinity	(mg/l)	145	153	155	162	110	22	200	
10.	Chlorides	(mg/l)	45	49	41	51	48	19	250	
11.	Fluorides	(mg/l)	0.37	0.29	0.41	0.25	0.35	0.1	0.5	
12.	Arsenic	(mg/l)	0.003	0.004	0.003	0.004	0.02	0.01	0.05	

(Signature)
Analyzed Signature
(Adesh Chaudhary)
 Sr Chemist

STP Outlet Test Report

STARTECH LABS PVT. LTD.
 2nd Floor, SMR Chambers, H.No. : 1-567,
 Opp: St. Ann's Jr. College, Madanaguda,
 Hyderabad - 500 050, Telangana, INDIA.
 Tel. : +91-40-25041900, 25041905, 40215094
 E-mail: ramababu.g@startechlabs.com
 Mobile : +91 9390868077

STARTECH LABS
 QUALITY SERVICE IS OUR STRENGTH

TEST REPORT

Name & Address of the Customer:
 M/S Durga Cement Works,
 A Unit of Andhra Cements Ltd.,
 Srinagar, Dacheppally Mandal,
 Guntur Dist., A.P.

Anal. Ref.No : STUEHBJ/12019/19D
Anal. Started on : 12/10/19
Anal. Comp. on : 17/10/19
Date of Report : 17/10/19

SAMPLE DETAILS

Name of Sample : STP Outlet Water **Sampling Details:** Nil
Batch No.: ---
Sample Qty: 1Ltr
Date of Registration : 12/10/19

RESULTS

S. No	Tests	Units	Methods	Results	Limits As per APPCB/CPCB Standards
1	pH @ Temperature (°C)	---	IS 3025	7.16 @ 25.7	6.0 - 9.0
2	Color	Hazen	IS 3025	1	---
3	Total Solids	mg/L	IS 3025	369	---
4	Total Dissolved Solids	mg/L	IS 3025	352	2100
5	Total Suspended Solids	mg/L	IS 3025	17	200
6	Oil & Grease	mg/L	IS 3025	Nil	10
7	Chemical Oxygen Demand	mg/L	IS 3025	28	250
8	Biological Oxygen Demand (3 days) at 27°C	mg/L	IS 3025	8.3	<10

Format No: STIEN 020-F-03-01, Effective date: 02.07.2016
 Report: Obtained results reported

Prepared by *(Signature)* Checked by *(Signature)* *(Signature)*
 1 of 1
Authorised signatory
(Name & Designation)
 G. Adil
 BNY Manager



Rain water harvesting in DCW mine pit

RABH, Bag House, & ESP installed in the plant for the Control of Air Pollution.



RABH: Kiln & Raw Mill



Bag House: Coal Mill 1 & 2



Bag House : Cement Mill – II



Electrostatic Precipitator : Cooler



Bag House : Cement Mill – I

Energy Meters for Fan



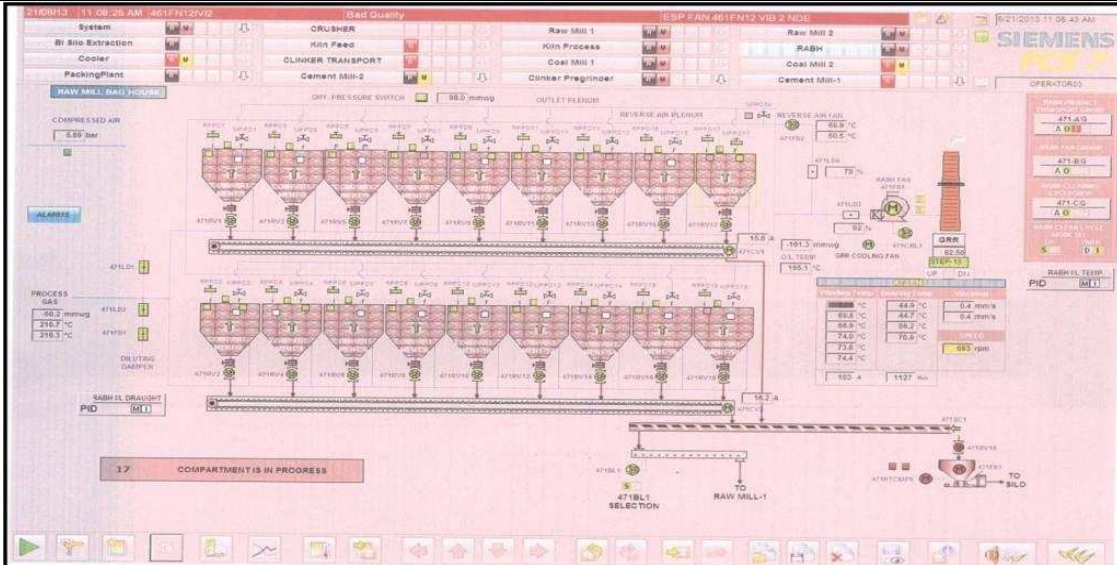
RABH (Kiln Raw Mill)(1)



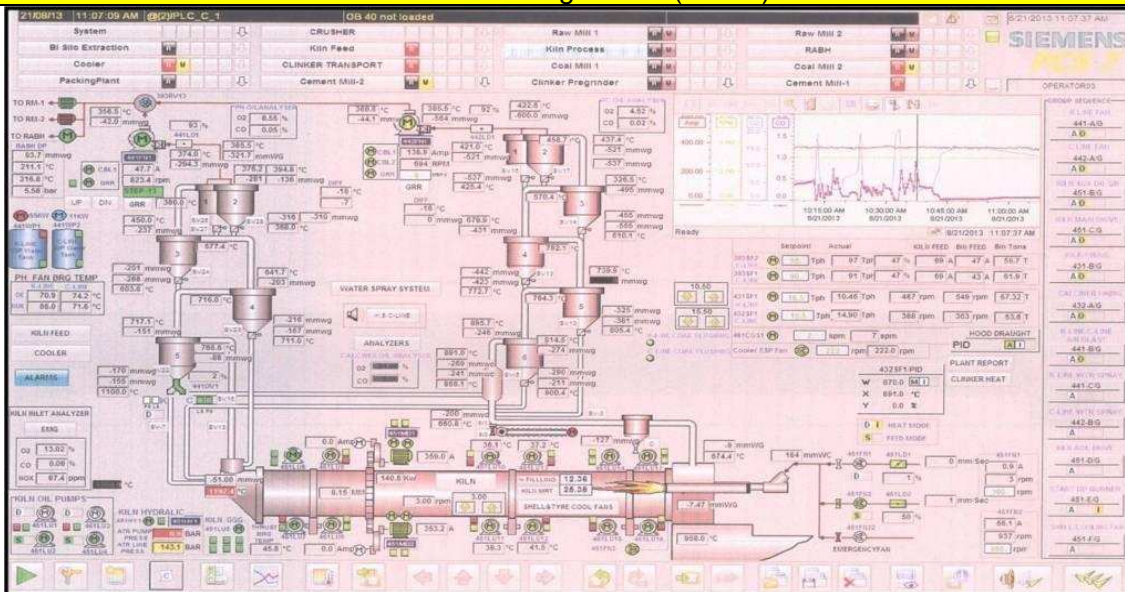
Bag filter (Coal Mill)(2)



ESP (Cooler) (3)



Reverse Air Bag House (RABH)



Interlocking System installed with Air pollution Control Equipments

List of Bag Filters - Year 2018

Annexure-III

S.No	Department	Eqpt No.	Installed Status	Description	Model	Volume (m3/h)	No. of bags	No. of solenoid valves	Kw/rpm	Supplier	Remark
1	LS Crusher	211BF1	Yes	211BC-1 discharge venting	AJ-120-360	17500	120	12	37/1470	Thermax	
2	LS Crusher	211BF2	Yes	211BC-2 discharge venting (Secondary crusher Bulding top)	AJ-120-360	17500	120	12	22/1470	Thermax	12 mtr lvl
3	LS Crusher	211BF3	Yes	211BC-3 discharge venting	CE-02-030 FM X 3.6	4000	30	-		Clair	
4	Stacker & Reclimer	331BF1	Yes	331BC-1 discharge venting	CE-02-030 FM X 3.6	4000	30	-		Clair	
5	Stacker & Reclimer	331BF2	Yes	331BC-2 discharge venting	CE-02-030 FM X 3.6	4000	30	-		Clair	
6	Pregrinder, RM-1	361BF1	Yes	RM Hopper venting	AJ-144-360	22000	144	-		Thermax	
7	Pregrinder, RM-1	361BF2	Yes	361BC1 discharge venting	CE-02-120x3.6	17500	120	-		Clair	
8	Pregrinder, RM-1	361BF3	Yes	RM-1 (VRPM) venting	AJ-360-360	39600	360	30	45/1470	Thermax	11.5 mtr lvl
9	Pregrinder, RM-1	361BF4	Yes	RM-1 venting (Ball mill vent bag filter)	CE-02-330x3.6	50000	330	22	55/985	Clair	11.5 mtr lvl
10	Pregrinder, RM-1	361BF5	Yes	Pregrinder department (361BC1, 361BE3, 361BC4) venting.	AJ-120-360	17500	120	12	37/1470	Thermax	11.5 mtr lvl
11	Pregrinder, RM-1	391BF1	Yes	Raw Meal Silo & Feed Elevator Venting	CE-02-064x3.6	10000	64	8	15/1450	Clair	66.6 mtr lvl
12	Pregrinder, RM-1	391BF2	Yes	Raw Meal Silo-1 top			120	12			Flush Mounted
13	Silo extraction & kiln feed	393BF1	Yes	Raw meal Silo discharge enmass	CE-02-036x3.6	3000	36	6	5.5/2905	IKN	10.5 mtr lvl
14	Silo extraction & kiln feed	393BF2	Yes	Raw meal Silo discharge enmass	CE-02-036x3.6	3000	36	6	5.5/2905	IKN	10.5 mtr lvl
15	Silo extraction & kiln feed	393BF3	Yes	Kiln feed Bin venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	30 mtr lvl
16	Silo extraction & kiln feed	393BF4	Yes	Kiln feed Bin venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	30 mtr lvl
17	Silo extraction & kiln feed	393BF5	Yes	PH bucket elevator air slide venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	10 mtr lvl
18	Silo extraction & kiln feed	393BF6	Yes	PH bucket elevator air slide venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	10 mtr lvl
19	Silo extraction & kiln feed	393BF7	Yes	PH Top Bucket elevator venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	51.5 mtr lvl
20	Silo extraction & kiln feed	393BF8	Yes	Raw meal Recirculation venting	CE-02-100x3.6	9500	100	10	15/1450	IKN	5 mtr lvl
21	Coal Unloading & Transportation	411BF1	Yes	Screening section venting (Limestone)	AJ-144-360	22000	144	-		Thermax	
22	Coal Unloading & Transportation	411BF2	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30	-		Clair	
23	Coal Unloading & Transportation	411BF3	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30	-		Clair	
24	Coal Mill-1	421BF1	Yes	Coal Mill-1 Vent bag house	TP-336-360	34650	336	24	75/1450	Thermax	32.2 mtr lvl
25	Coal Mill-1	431BF1	Yes	Coal mill department venting bag filter	CE-02-040x 3.6	6000	40	5	5.5	Clair	32.2 mtr lvl
26	Coal Mill-2	422BF1	Yes	Coal Mill-2 VRM Vent bag house	CE-02-3x300x3.6	90000	900	60	360/780	Clair	32.2 mtr lvl
27	Coal Crusher		Yes	Coal Crusher vent bag filter		6600	132	12	9.3/1455	Clair	
28	Clinker storage & transportation	491BF1	Yes	491DP1 discharge transfer point (cooler DPC)	CE-02-030 FM X 3.6	4000	30	5	5.5/1450	Clair	18.9 mtr lvl
29	Clinker storage & transportation	491BF2	Yes	Clinker Silo	AJ-168-360	25000	168	16	30/1450	Thermax	42.5 mtr lvl
30	Clinker storage & transportation	511BF1	Yes	Clinker silo discharge DPC transfer point (511DPC3)	CE-02-030 FM X 3.6	4000	14	3	3.7/2850	Clair	
31	Clinker storage & transportation	511BF2	Yes	Clinker silo discharge belt conveyor transfer point (511BC4)	CE-02-030 FM X 3.6	4000	30	5	30/1475	Clair	
32	Clinker storage & transportation	511BF3	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30	-		Clair	
33	Clinker storage & transportation	511BF4	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30	-		Clair	
34	Clinker storage & transportation	511BF5	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30	-		Clair	
35	Clinker storage & transportation	511BF6	Yes	Cement Mill Hoppers Venting	CE-02-040X3.6	6000	40	-		Clair	
36	Clinker Pregrinder	561BF1	Yes	Transfer points	CE-02-030 FM X 3.6	4000	30			Clair	

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37	Clinker Pregrinder	561BF2	Yes	Clinker Pregrinder Venting (VRPM)	TP-588-360	59400	588	42		Thermax	19 mtr lvl
38	Clinker Pregrinder	561BF3	Yes	Clinker Pregrinder Separator Venting (VRPM)	TP-798-360	82460	798	57		Thermax	19 mtr lvl
39	Cement Mill-1	562BF1	Yes	Cement Mill-1 Mill Venting	TP-420-360	42650	420	30	75/986	Thermax	10 mtr lvl
40	Cement Mill-1	562BF2	Yes	Cement Mill-1 Separator Venting	TP-420-360	42400	420	30		Thermax	
41	Cement Mill-2	563BF1	Yes	Cement Mill-2 Mill Venting	TP-462-360	47400	462	33	75/986	Thermax	10 mtr lvl
42	Cement Mill-2	563BF2	Yes	Cement Mill-2 sepaarator venting	TP-588-360	60000	588	42		Thermax	34 mtr lvl
43	Cement Mill	591BF1	Yes	Cement Silo 1&2 feed bucket elevator boot venting.			30	5			10 mtr lvl
44	Cement Mill	592BF1	Yes	Cement mill silo-1 top (flush mounted)			148	5	5.5/1455	Clair	33.5 mtr lvl
45	Cement Mill	592BF2	Yes	Cement mill silo-2 top (flush mounted)			148	5	5.5/1455	Clair	33.5 mtr lvl
46	Packind Plant	612 BF1	Yes	Packer 1 venting			195	15	30/1475		15 mtr lvl(only 13nos solenoid valves in use)
47	Packind Plant	612 BF2	Yes	Packer 2 venting			180	15		Thermax	10 mtr lvl
48	Packind Plant	612 BF2A	Yes	Packer 2 Bucket elevator venting			180	15		Thermax	10 mtr lvl
49	Packind Plant	612BF3	Yes	Packer 3 venting	256-TA 12(6)		256	16	55/1485		10 mtr lvl
50	Packind Plant	612BF4	Yes	Packer 3 venting	121-TA 12(6)		121	11	30/1475		10 mtr lvl
51	Bulk Loading			Clinker			8				
52	Bulk Loading			Cement Mill 2 on line			8				
53	Bulk Loading			Cement			8				
54	Fly Ash Feeding			Bottom			136				
55	Fly Ash Feeding			Silo Toop			136				
56	Fly Ash Feeding			Bin			148				
57	Fly Ash Feeding			Tripler			148				
58	Coal BRU						142				
59	New Coal Crusher						128				
60	Limestone Crusher		Yes	vibrating screen	AJ-120-360	17500	120	12	37/1470	Thermax	

Amun

D. Patel



Raw Meal Silo



Clinker Silo



Fly Ash Silo



Laterite Hopper



Limestone feeding Belt to Mill Hoppers



Coal Crushers

Material Storage Silos and transfer points alongwith installed nuisance bag filters



Gypsum Storage Shed



Laterite storage Shed



Coal Storage Shed



Laterite belt



Limestone Reclaimer belt



Raw Meal Silo Transfer Belt

Covered raw material storage sheds & transfer points

Annexure -V



Water Sprinkling arrangements at Factory main gate



Coal Stacker belt



Coal Hopper



Coal Storage shed



Limestone Hopper



Limestone Stacker boom belt



Limestone Transfer Belt

Water spray systems have been installed at crushers & transfer points for the control of dust emission



Coal Mill area



Cement Mill area



Dispatch Office Area



Fly ash silo area



Main gate truck stand area



Clinker Silo area

Water Sprinkling Arrangements in Plant premises



Factory Main gate area



Road adjacent to Raw Meal Silo



Road near raw material storage shed



Time Office & Dispatch gate area



Weigh bridge to Packing plant road



Limestone Mines area

Water tankers deployed for water sprinkling in Plant premises for pollution control

**Andhra Cements Limited
Durga Cement Works**

Water Sprinklers Location

Annexure -V

S. No.	Area	Location	No. of Points
1	Limestone Crusher	Limestone Dump Hopper	2
		Crusher lime stone carry Belt conveyor (211-BC2)	2
		Limestone - Stacker Belt 211-BC4	2
		Limestone - Boom belt	1
2	Clinker Silo Area	Near BC 5 Belt	1
3	Raw Mill Area	Laterite feeding belt conveyor	1
		Weigh feeders	2
		RABH side garden	8
4	Kiln	Drag Chain No.1	1
		Drag Chain No.2	2
5	Coal Ckt	Coal bulk receiving Unit - CBRU	1
		Coal feeding belt - BC	1
		Coal Stacker Belt	3
		Coal Reclaimer belt	1
		Coal yard	2
		Coal Mill	1
6	Clinker feeding	Clinker feeding - (DBC-1)	1
		Clinker feeding - (DBC-2)	1
		Clinker feeding belt conveyor BC4	1
7	Cement Mill	Shift Office	2
8	Factory Gate -2	Dispatch Office	1
9	Factory Gate -1	Temple	2
		Road Side	3
Total			42

Annexure-VI

Durga Cement Works (Cement Plant)

A Unit of Andhra Cements Limited
Gamalapadu(V), Dachepalli(M), Dist- Guntur (AP)

Ambient Air Quality Monitoring Report					
Period: April, 2019 to March, 2020					
Location -1 Near Mine Pit-1 (Cross Wind)	Parameter	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
	Maximum	58.25	9.06	9.06	9.90
	Minimum	50.34	4.26	4.26	6.70
	Average	55.14	7.02	7.02	8.14
Location -2 Near Naguleru River Pump House (Cross Wind)	Parameter	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
	Maximum	55.27	32.20	8.23	11.40
	Minimum	49.31	26.20	4.11	6.82
	Average	52.38	28.86	5.29	8.47
Location -3 Near CPP (Towards Gamalapadu Village) (Up Wind)	Parameter	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
	Maximum	62.65	33.77	9.03	11.42
	Minimum	54.56	26.25	3.95	9.36
	Average	58.63	29.97	5.84	10.45
	Parameter	58.63	29.97	5.84	10.45
Location -4 Colony Area (Towards Sri Nagar Village) (Down Wind)	Parameter	PM₁₀ (µg/m³)	PM_{2.5} (µg/m³)	SO₂ (µg/m³)	NO₂ (µg/m³)
	Maximum	58.18	29.72	9.50	11.24
	Minimum	51.95	23.71	5.86	7.47
	Average	55.40	26.36	7.16	8.92

Stack Emission Monitoring Report					
April, 2019 to March, 2020					
	(1)	(2)	(3)	(4)	(5)
Stack	RABH	Cooler ESP	Coal Mill	Cement Mill- I	Cement Mill- II
Parameter	Particulate Matter (mg/Nm³)				
Maximum	18.31	26.29	21.97	19.98	20.49
Minimum	16.45	24.18	15.44	11.44	7.67
Average	17.32	25.22	17.24	16.42	16.93

DURGA CEMENT WORKS
A Unit of Andhra Cements Limited
Gamalapadu(V), Dachepalli(M), Dist- Guntur (AP)

Ambient Noise Level Monitoring Report								
(Cement Plant)								
April, 2019 to March, 2020								
Location	1. Colony area		2. Near Time Office		3. Crusher area		4. Raw Mill area	
Time	Day	Night	Day	Night	Day	Night	Day	Night
Concentration	dB(A)Leq							
Maximum	48.0	46.1	50.8	48.6	61.7	51.4	63.6	56.6
Minimum	40.1	37.1	42.4	39.1	54.3	43.1	46.1	42.4
Average	43.4	40.3	45.2	42.1	57.9	45.7	52.6	47.8
Location	5. Kiln & Cooler area		6. Coal Mill area		7. Cement Mill area		8. Packing Plant	
Time	Day	Night	Day	Night	Day	Night	Day	Night
Concentration	dB(A)Leq							
Maximum	65.3	57.1	59.5	56.5	73.5	62.3	63.6	57.8
Minimum	50.4	43.4	51.8	45.2	51	48.1	53.3	49.3
Average	56.5	52.3	55.7	49.9	58.4	54.9	57.7	53.5



Stack Emission Monitoring during CPCB Audit



Ambient Noise Level Monitoring



AAQ Manual Monitoring Stations
Location –(1) Colony area
Location –(2) Near Mines Pit-1
Location –(3) Near CPP
Location –(4) Nagularu River Pump House



(1)Sound Level Meter (2) Spectrophotometer (3) Stack Monitoring Kit (4) Respirable Dust Sampler (PM10 & PM2.5)

Environmental Monitoring by our internal team

Annexure-VII



**CAAQM Station -1 (UP Wind)
Towards Srinagar village**



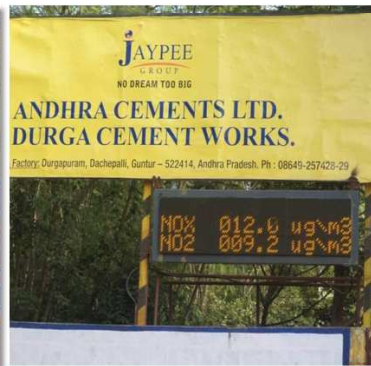
**CAAQM Station -2 (Down Wind)
Towards Gamalapadu village**



**CAAQM Station -3 (Cross Wind)
Limestone Mines area**

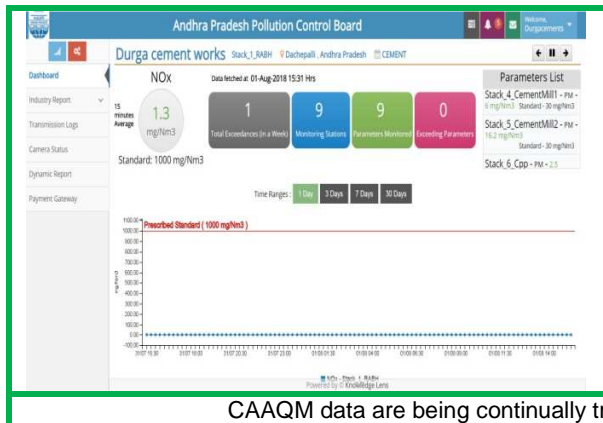


On-line CAAQM parameters data is being displayed at the main gate of factory



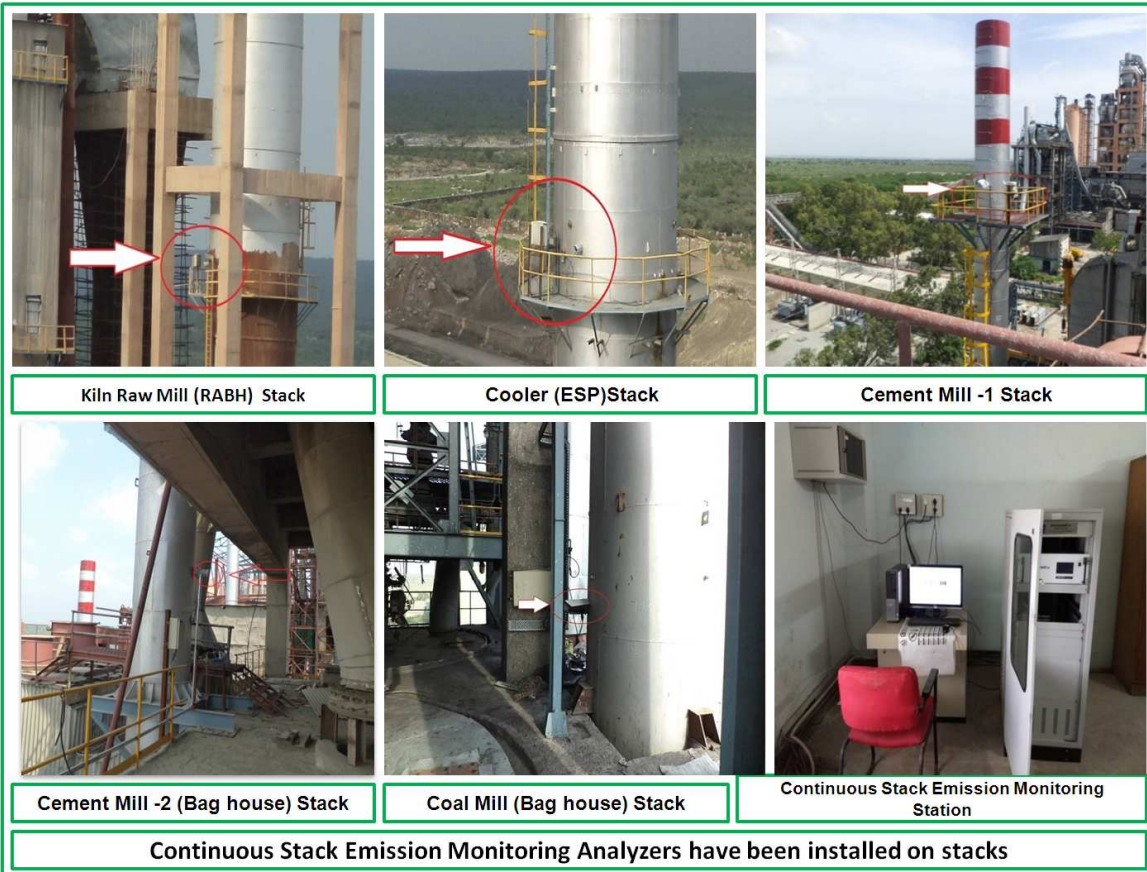
Wind direction, Speed & Rainfall Monitors

3 Nos. of On-line CAAQMS have been installed and the real time monitoring data is being transmitted to APPCB & CPCB website



Date & Time	Station	PM10	PM2.5	NOx	NO2	SO2	CO	Temperature	Humidity	Wind Speed	Wind Direction	Rainfall
21-Aug-2018 08:00:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 08:05:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 08:10:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 08:15:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 08:20:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 08:25:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 08:30:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 08:35:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 08:40:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 08:45:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 08:50:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 08:55:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0
21-Aug-2018 09:00:00	Stack_1	1000	100	1.3	0.5	0.1	0.5	28.5	65	2.5	135	0.0

CAAQM data are being continually transmitted to APPCB & CPCB website.



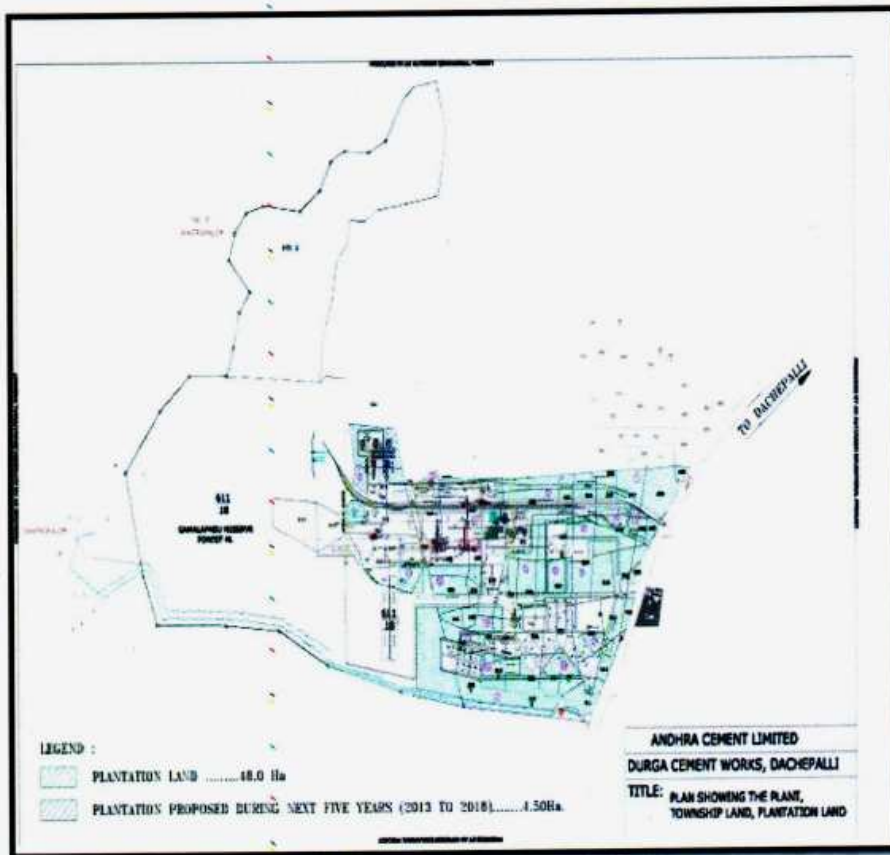
**Andhra Cements Limited
Durga Cement Works
(Cement Plant)**

Status of Existing green belt:

- a. Total Industrial area : 141.574 hectares.
- b. Total Green belt area : 49.0 hectares. (34.61% of total plant area)

Steps taken to protect plantation:

- a. Skilled team is deputed for care of plantation.
- b. Water sprinklers & water tankers are provided to skilled manpower team for watering.
- c. Barricading/fencing maintained to protect plantation form animals/trespassers.



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The species selected and planted on the basis of the following benefits.

- a. Mitigation of fugitive emission
- b. Noise pollution control
- c. Improve green Cover in the Surrounding areas improving Quality of Life with Increase in lung space and promoting healthy lifestyle.
- d. Improving the local ecosystem
- e. Arresting the soil erosion
- f. Improving the landscape area
- g. Balancing eco-environment
- h. Low Water requirement

S. No.	Identified Species Name	Area
1.	Pongamia pinnata /Kanuga (Indian Beech)	Green belt developed and maintained inside Plant boundary & premises, mines area, STP area and inside of plant colony.
2.	Cocos nucifera(Coconut)	
3.	Musa (Banana)	
4.	Phyllanthus emblica (Indian gooseberry/ Amla/ vusiri)	
5.	Syzygium cumini(Neredu/Jamun)	
6.	Annona squamosa (Sitafal)	
7.	Muntingia calabura (Panama berry/Singapore cherry)	
8.	Aegle marmelos (bilva patra tree)	
9.	Psidium guajava (Guava)	
10.	Tamarindus indica(Chinta pandu)	
11.	Moringa oleifera (Drumstick / Mulaga)	
12.	Borassus flabellifer (Palm wine)	
13.	Carica papaya (Boppayi)	
14.	Couroupita guianensis (Nagalingam/ cannonball tree)	
15.	Cassia fistula (Golden shower)	
16.	Tabebuia argentea (Yellow Tabebuia, Golden Bell)	
17.	Nerium oleander roseum	
18.	Tecoma Smiti	
19.	Mangifera indica(Mango)	
20.	Adenium obesum	
21.	Peltophorum pterocarpum (yellow poinciana)	
22.	Lawsonia inermis (henna/Mehandi /Gorinta aaku)	
23.	Delonix regia (Gulmohar/royal Poinciana)	
24.	Nyctanthes arbor-tristis (Shetalika /Parijaat /Harsingar)	
25.	Hibiscus (cannabinus / rosa-sinensis) - (Mandaar)	
26.	Azadirachta indica [Neem/Vepa]	
27.	Terminalia catappa(Indian-almond)	
28.	Sapindus mukorossi (Reetha - Soapnut)	
29.	Acacia concinna (Shikakai)	
30.	Vachellia nilotica (Babul/gum tree)	
31.	Conocarpous erectus (Dubai Tree)	
32.	Tectona grandis (Teak)	
33.	Polyalthia longifolia (False Ashoka)	
34.	Thespesia populnea(Indian Tulip / Ganga raavi)	
35.	Ficus elastic(Rubber)	
36.	Ficus benghalensis(Banyan/Fig)	
37.	Ficus religiosa (sacred fig/ ashwattha / Raavi)	
38.	Dalbergia sissoo (Indian rosewood)	
39.	Eucalyptus Saligna (Neelagiri)	
40.	Alstonia scholaris (saptaparni)	



Factory to Highway connecting road



Dispatch office to Main gate road



Main gate to Colony & canteen road



concreted road of factory & greenbelt



Factory main road with green belt



Concreted road at factory entrance gate

Greenbelt status inside factory premises



DCW Colony entrance



View of colony road



Sapling Plantation on World Environment Day 5th June 2019

Green Belt Development in Plant Premises

Various CSR Activities are undertaken by DCW



Medical Checkup



Purified RO water plant provided in Srinagar village



Street Light & Water supply pipeline provided in Srinagar Village



Durga Public School at Nadikudi Village



Safety Awareness: All employees are provided with personal protective Equipments(PPEs), as per the requirement, such as workers working in plant area are provided with dust masks and in noise pollution areas with Ear plugs/Ear muff ,safety boots ,hand gloves welding goggles, Goggles and safety Helmet are also being provided as per the requirement.



Andhra Cements Limited Durga Cement Works

Durgapuram Srinagar(PO), Dachepalli, Mandal Guntur District (AP)-522 414



Address by Director –Technical



Flag hosting By
(Director-Technical)



Safety Pledge in Hindi & Telugu



Selection of winners Safety -poster, Slogan Telugu & English.



Address by ACL Management & Safety Message by
Unit Mechanical Head Shri A.K. Kushwah Ji on Concluding Day



Address by Safety Engineer



Fire Safety Exhibition



Fire Drill Competition



Awards and Appreciation letters to winner of various competitions