

To,
The Director,
Ministry of Environment and Forest,
Regional Office (Southern Zone) Kendriya Sadan, 4th Floor,
17th Main Road, 2nd Block, Koramangala
Bangalore.

26.05.2017

Sub: 16th Six Monthly Compliance Report to the conditions of Environmental Clearance for Vedanta Ltd. (Formerly known as Sesa Sterlite Limited/Sesa Goa Limited) - Blast Furnace (0.9 MTPA), Sinter Plant (2MTPA), Coke Plant (0.6 MTPA) and Waste Heat Recovery Power Plant (60 MW) located at village Navelim, Taluka Bicholim in, North Goa District, Goa.

Ref:

1. **F No.J-11011 /946/2007-IA-II(I)** dated June 03,2009.
2. Amendment in Environmental Clearance from MOEF vide letter dated 25/04/2012.
3. Lettered dated 5th September 2016 for Enhancement in production capacity of existing blast furnace from 0.45 MTPA to 0.54 MTPA by process optimization and efficiency improvement

Sir,

With reference to the above, please find enclosed herewith:

16th six monthly compliance report to Environmental Clearance F No.J-11011/946/2007-IA-II(I)] for the period **October 2016 to March 2017** for Vedanta Ltd (Formerly known as Sesa Sterlite Limited/Sesa Goa Limited) Blast Furnace(0.9 MTPA), Sinter Plant (2MTPA), Coke Plant (0.6 MTPA) and Waste Heat Recovery Power Plant (60 MW) located at village Navelim, Taluka Bicholim, North Goa District, Goa.

Tabulated Stack monitoring, Ambient Air Quality Monitoring, Water monitoring Reports for the said period.

Thanking you,

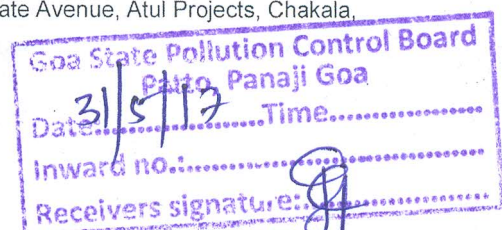
Yours faithfully,

For Vedanta Ltd. – Value Addition Business


Bala Joshi
Deputy Head (Health Safety and Environment)

Vedanta Limited (Formerly known as Sesa Sterlite Ltd.)
DLF Atria, Jacaranda Marg, DLF City - Phase-2, Gurugram – 122002, Haryana, India
T +91 124 4593000 | Website: www.vedantalimited.com

Registered Office: Vedanta Limited 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai 400093, Maharashtra, India.
CIN: L13209GA1965PLC000044





Cc: Member Secretary, GSPCB, CPCB (SZO)

Enclosures:

- 16th six monthly compliance status report
- Tabulated Stack monitoring, Ambient Air Quality Monitoring, Water monitoring Reports for the period October 2016 to March 2017.

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CIN: L13209GA1965PLC000044

16th Compliance Report to EC No: F. No. J-11011/946/2007-IA-II(I)

(Period: October 2016 to March 2017)

6 Monthly Compliance Report to Conditions Of Environmental Clearance Issued By MOEF, Govt. of India, for Blast Furnace (0.90MTPA), Sinter Plant (2MTPA), Coke Plant (0.6MTPA), Waste Heat Recovery Power Plant (60MW) by Vedanta Limited (earlier known as Sesa Sterlite Ltd./ Sesa Goa Limited) *

A. Specific Conditions

- I. Electrostatic precipitator (ESP) shall be provided to Sinter plant and WHRB based Power Plant to control gaseous emissions from all the vents/stacks within 100 mg/Nm³. Gas Cleaning Plant along with Ventury scrubber shall be provided to blast furnace. On-line stack monitoring facilities for all the stacks shall be provided to ensure particulate emissions below 100 mg/Nm³ and data submitted to the Ministry's Regional Office at Bangalore, CPCB and Goa Pollution Control Board. Efforts shall be made to reduce RSPM levels in the ambient air and a time bound action plan should be submitted.**

Electrostatic Precipitator (ESP) provided to the Sinter Plant at Head End & Tail End of Sinter Machine. Dry Gas Cleaning Plant (GCP) with a dust catcher & bag filters, provided to Blast Furnace. Online stack monitoring facilities is installed for Sinter main stack, WHRB-1 & WHRB-2. Continuous Real time data are connected to CPCB portal .Other conditions complied subject to letter dated 15 Sep 2009 addressed to MOEF, which clarifies areas of non-applicability of the conditions. Regular Stack Monitoring & Ambient Air Quality Monitoring is conducted and monthly reports are submitted to GSPCB. Also half yearly reports are submitted to CPCB & MOEF.

Detail of average reading for all six locations.

Sr.No.	Location	Average from Oct.16 to March17			
		PM10	PM2.5	SO2	NO2
1	Amona Gate	82.04	34.08	17.75	21.30
2	Compound wall Towards Maina	86.35	36.85	18.44	21.18
3	Opposite BSNL Exchange	89.94	38.48	20.67	24.19
4	Near Dispatch Gate	91.27	37.69	20.48	23.83
5	Compound wall Towards navelim	92.44	41.32	21.46	25.13
6	Nr. Sateri Temple	86.13	36.91	19.00	23.56

12 parameters monitoring as per National AAQ report is as follows

(Average from Oct.16 to March17)

Sr.no	Parameters	Amona Gate	Opp BSNL Exchange	Near dispatch gate	Comp. wall towards Navelim	Near Sateri temple	Comp. wall towards Maina
1.	PM10	82.04	89.94	91.27	92.44	86.13	86.35
		limit =100 µg/m3					
2.	PM 2.5	34.08	38.48	37.69	41.32	36.91	36.85
		limit =60 µg/m3					
3.	SO₂	17.75	20.67	20.48	21.46	19.00	14.44
		limit =80 µg/m3					
4.	NO₂	21.30	24.19	23.83	25.13	23.56	22.81
		limit =80 µg/m3					
5.	Ozone	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
		Limit =180 µg/m3					
6.	Lead (pb)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		limit =1 (detection limit 0.005 µg/m3)					
7.	Ammonia (NH₃)	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
		Limit=400 µg/m3					
8.	Carbon Monoxide (mg/m3) (CO)	0.11	0.11	0.12	0.12	0.11	0.11
		Limit = 4 (detection limit 1 µg/m3)					
9.	Benzene (C₆H₆)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		Limit= 5 (detection limit 0.5 µg/m3)					

10.	Benzo Pyrene (BaP)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		Limit = 1 (detection limit 0.5 ng/m3)					
11.	Arsenic (As)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
		Limit= 6 (detection limit 0.5 ng/m3)					
12.	Nickel (Ni)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
		Limit= 20(detection limit 0.5 ng/m3)					

II. Pulse jet bag filters shall be provided to coal crusher, product house, raw material handling areas. Transfer point etc. Bag filters shall be provided at the crusher. Screening and transfer points. The Coke Oven gases shall be fully utilized for power generation. Water sprinkling system and dry fog system shall be provided to control fugitive emissions at the coal handling area and work zone

Pulse jet bag filters are provided for coal crusher house, coke screening towers, transfer points, raw material handling sections, etc. Also rain gun sprinklers are provided at raw material yard. Coal is stored in the closed shed. Wind screens are installed along the raw material storage yard. Bag house de-dusting system is provided for proportioning bin, sinter screening building, flux and fuel crushing and small de-dusting units for various transfer stations. Coke Oven Flue Gas (COFG) is fully utilized for Clean Power Generation.

III. Data on ambient air quality stack emission and fugitive emissions shall be uploaded on the company's website and also regularly submitted online to Ministry's Regional office at Bangalore, Goa State Pollution Control Board (GPCB) and Central Pollution Control Board as well as hard copy once in six months. Data on SPM, SO₂ and NO_x shall also be displayed prominently outside the premises at the appropriate place for the general public.

Ambient Air quality & source emission data is submitted on regular basis to GSPCB. Also six monthly data on stack emission & ambient air quality is submitted to GSPCB, CPCB, MOEF & in hard copy and through e-mail and also uploaded on company website :- <http://sesagoaironore.com/sustainability/hse/environment-reports/>

Display of PM₁₀, PM_{2.5}, and SO₂ & NO_x is done prominently outside the premises for the general public. Please refer to table in (i) of Specific Conditions. Ambient Air Quality Reports and Stack

Monitoring Reports are submitted regularly to MOEF, CPCB & GSPCB along with six monthly compliance reports. All the values are within limits.

Stack emission data is provided in (iii) of GC below.

IV. Secondary fugitive emissions from all the sources including Blast Furnace, Coke Oven and Sinter Plant shall be controlled within the latest permissible limits issued by the Ministry and regularly monitored. Guidelines/Code of Practice issued by the CPCB shall be followed.

There are no specific permissible limits, - guidelines/code of practice issued by CPCB/MOEF for Non-Recovery Coke Oven Plants. Rain guns have been installed at raw material yard. Bag filter de-dusting systems are used to control dust. Wind screen/wind shields are installed at prominent locations as per the instructions of GSPCB. The monitoring is done regularly.

V. Total water requirement shall not exceed 16632 m³/day. The effluent from generated utilities shall be treated in the effluent treatment plant and recycled and reused in the process in blast furnace, sinter plant, dust suppression. Ash moistening, firefighting and green belt development etc. No effluent shall be discharged outside the premises and 'zero' discharge shall be followed.

All Process water from Coke, Blast Furnace, and Sinter Plant is recycled and reused. After appropriate treatment Blow down from Cooling Tower of Power Plant is let out into Mondovi River after temperature & pH monitoring as per Consent conditions from Goa State Pollution Control Board (GSPCB).

The present Water Consumption is less than 16632m³/day. Blow down water from Power Plant is around average 110 m³/day.

VI. Regular monitoring of influent and effluent water shall be ensured and treated wastewater shall meet the norms prescribed by the Goa State Pollution Control Board or described under the E(P) Act whichever are more stringent and reports shall be submitted six monthly to the Ministry's Regional Office at Bangalore, GSPCB and CPCB.

Blow down from Cooling Tower of Power Plant is let out into Mandovi river after temperature & pH adjustment. Monthly monitoring is carried out as per Consent conditions. Reports are submitted to GSPCB every month and to MOEF (RO), CPCB, and every six monthly as six monthly compliance reports. Blast Furnace, Sinter Plant and Coke Oven Plant operate on zero discharge. Only non-contact type of condenser cooling water is disposed back into Mandovi river as per Consent conditions from Goa State Pollution Control Board (GSPCB) .As per CTO condition max. 3600 m³/day blow down water can be disposed, however last six month avg. was around 110 m³/day. Temperature & pH is around avg. 28°C and 6.99 respectively.

VII. All the blast furnace slag shall be granulated and provided to cement manufacturers for further utilization. All the dust from the air pollution control equipments shall be recycled and reused in the Sinter plant. All the other solid wastes shall be disposed off in the environment-friendly manner or provided to authorized recyclers/ reprocessors. Used oil shall also be provided to authorized recyclers only. An action plan for the disposal of fly ash and granulated BF & SMS slag shall be submitted to the Ministry and its Regional Office at Bangalore within 3 months.

Granulated BF slag is disposed to cement industries. Dust from air pollution control equipment is recycled & reused in Sinter Plant. Used oil is disposed off to the authorized recyclers only. Disposal of Fly Ash & SMS slag is not applicable as the facility is limited to iron making through blast furnace and there is no steel making provision and the power plant is based on waste heat hence thermal coal is not used for power generation. The non-applicability of fly ash & SMS slag is mentioned in letter to MoEF dated 15 September 2009.

VIII. All the fly ash shall be utilized as per Fly Ash Notification, 1999 and amended in 2003.

Not Applicable as thermal coal is not used. The waste heat recovery power plant runs on BF gas and Coke Oven Flue Gas.

IX. Vehicular pollution due to transportation of raw material and finished product shall be controlled. Proper arrangements shall also be made to control dust emissions during loading and unloading of the raw material and finished product.

Vehicular pollution due to transportation of raw materials and finished product is controlled. Rain Guns (Sprinkling system) have been installed in the raw material yard and water tankers are used for dust suppression. Sprinklers for dust suppression has been installed at Pig Iron Dispatch yard. Pollution under Check certificates of all vehicles entering premises is checked.

X. Green belt shall be developed in 33 % area within and around the plant premises as per the CPCB guidelines in consultation with DFO.

Green belt is developed in phases with plantation drives during the Monsoons. Total land area is 104 Ha. 21Ha is reserved for future usage and 33Ha is earmarked as greenbelt area. Plantation was carried out in consultation of in-house company expert team.

XI. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Sector shall be strictly implemented.

The Project is not an Integrated Iron & Steel Plant and hence the CREP guidelines of steel sector are not applicable however, whatever CREP conditions are applicable for blast furnace and non-recovery coke plant have been complied, proactively.

XII. The company shall provide housing for construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed' after the completion of the project.

All temporary housing structures have been decommissioned after the project is operational.

B. GENERAL CONDITIONS

1. The project authorities must strictly adhere to the stipulations made by the Goa Pollution Control Board (GPCB) and the State Government.

Stipulations made by GSPCB are strictly adhered to. Reports are sent to Goa State Pollution Control Board (GSPCB). Regular site visits are made by GSPCB personnel to check the compliance status.

2. No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment and Forests.

No expansion or modification in the plant will be carried out without prior approval of MoEFCC. We have got Environment Clearance and Consent to operate for hot metal expansion from existing Blast furnace for production enhancement of 0.45 MTPA to 0.54 MTPA. We have applied for Environment clearance for setting up of 0.30 MTPA Ductile Iron plant in the existing Pig Iron Expansion Plant premises near existing mini blast furnace.

3. The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The state Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time, the emission level shall go beyond the prescribed standards. On-line continuous monitoring system shall be installed in stacks to monitor SPM and interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit. NOX burners shall be installed to control NOX levels.

Online stack monitoring instrument is installed for main stack of Sinter plant and both WHRB stacks of Power Plant to track TPM. Real time data are continuously going to CPCB portal. Interlock is provided for Sinter Machine, to ensure automatically stopping of the process when emission exceeds the limits. As there is no major emission of NOX, NOX burners installation was not required.

The stack heights and latest data is as follows- (From October-16 to March-17)

Plant	Stack connected to	Height of stack	Particulate Matter in mg/Nm ³ (Avg.)	S0 ₂ in mg/Nm ³ (Avg.)	NO _x in mg/Nm ³ (Avg.)
Sinter Plant	Main ESP	100m	42.85	8.92 Kg/Hr	NA
	Discharge end ESP	30m	63.27	Not Applicable as these are de-dusting stacks	
	Sinter Screening & Product bunker Bag Filter	30m	45.58		
	Proportioning bin bag filter	30m	55.59		
	Flux & Fuel Area bag filter	30m	48.78		
Blast Furnace	Cast House De-dusting	30m	41.8	Not Applicable as these are de-dusting stacks	
	Stock House De-dusting	30m	41.43		
	Hot Blast Stoves (HBS)	60m	35.74	24.48	39.28
Power Plant	Waste Heat Recovery Boiler-1	50m	47.0	91.2	90.9
	Waste Heat Recovery Boiler-2	50m	47.7	70	82.7

***98% of the time (on an avg.) stacks connected to coke oven batteries are closed from top and coke oven flue gases with temperature of 1100⁰C are diverted to waste heat recovery boiler for clean power generation. As per latest consent granted by Goa State Pollution Control, the unit should carry out emission monitoring from the stacks of Waste Heat recovery boiler chimney attached to coke oven plant once in three month.**

- 4. At least four ambient air quality-monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO₂ and NO₂ are anticipated in consultation with the GPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bangalore I GPCB I CPCB once in six months.**

AAQM locations are approved by GSPCB and the monthly reports are submitted to GSPCB. Two Continuous Ambient Air 'Quality Stations have been set up. Data on Air Quality, Stack emissions is submitted once in six months to MOEF (RO) .Monthly AAQM reports are submitted to GSPCB. All 12 parameters as per NAAQM are monitored; Table is attached in (i) above Ambient Air Quality Reports

and Stack Monitoring Reports are submitted regularly to MOEF, CPCB & GSPCB along with six monthly compliance report. All the values are within limits.

- 5. In-plant control measures for checking fugitive emissions from all the vulnerable sources like Sinter plant, Blast Furnace area etc. shall be adopted. Further, specific measures like water sprinkling shall be carried out at the stock piles of raw material, stacker, reclaimer, transfer points etc. Dust extraction system and bag filters shall be provided to the sinter plant, stock house and blast furnace. Centralized de-dusting system i.e. collection of fugitive emissions through suction hood and subsequent treatment through bag filter or any other device and finally emitted through a stack of appropriately designed shall be provided. Fugitive emissions shall be controlled, regularly monitored and records maintained.**

Individual Pulse Jet Bag Filters are provided for Cast House, Stock House of Blast Furnace and Flux & Fuel House, Proportioning House, Sinter Screening House of Sinter Plant. These Pulse jet bag filters cover various capture points such as screening, transfer stations, etc. Electrostatic precipitators (ESPs) are provided at Head & Tail end of Sinter Machine of the Sinter Plant. Rain gun sprinklers are provided & operated at the Raw material yard of the Sinter Plant & Blast Furnace. Windscreens are also installed along the raw material boundary wall. Windshields are installed at the Pig Iron dispatch yard. All the stacks are of adequate height as per the design. Fugitive emissions are controlled, monitored & records maintained. Dust suppression system installed at raw material hoppers.

- 6. Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended form time to time. The treated wastewater shall be utilized for plantation purpose.**

All Process water from Coke, Blast Furnace, and Sinter Plant is recycled and reused after appropriate treatment. Blow down from Cooling Tower of Power Plant is let out into Mandovi river after temperature & pH adjustment as per GSPCB. Cooling tower blow down is monitored every month before disposal into river as per Consent to Operate condition.

- 7. The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (night time).**

Overall noise levels in and around the plant area is on an average less than 85dB (A). Enclosures, acoustic hoods, silencers, etc. are provided wherever necessary. The ambient noise levels conforms to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime) at the boundary of the plant.

- 8. The company shall develop surface water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.**

Surface rain water harvesting and ground water recharging are in vogue as per the advise of Sr. hydro geologist from Water Resource Department (WRD) of Goa. Roof top rain water is directed to tanks and reused. Around 100000 m³ rain water (from mid-June- mid October) is collected in an excavated pit. The stored water is used for process in blast furnace, shell cooling and slag granulation. Also, water which is drawn from the Napoli (mining) pit and is used for the process is obtained by Rain Water Harvesting.

9. Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

Occupational Health Surveillance of the workers is carried out on a regular basis and records maintained as per the Factories Act. An Occupational Health Centre with an ambulance and Occupational physician and Para-medicos are available.

10. The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA / EMP report. Further, the company shall undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.

There are three villages around the units. We have done the need assessment of the area and working towards the overall development of the villages in various thrust areas like Health, Education, livelihood creation & creation of social infrastructure. There is continuous engagement with all the concerned stakeholders to understand the concerns and finding solutions through consultation process.

11. The project authorities shall earmark adequate capital cost and recurring cost/annum for environment pollution control measures and utilize judiciously to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Ministry's Regional Office at Bangalore. The funds so provided shall not be diverted for any other purpose

HSE department with competent employees looks after Environmental Management with Management support. An earmarked budget has been allotted with adequate provisions for implantation, operation and maintenance of Environment Pollution Control Measures

12. The Regional Office of this Ministry at Bangalore/CPCB/GPCB will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.

6 monthly compliance report & monitored data is submitted to MoEF, CPCB & GSPCB regularly on six monthly basis. The report & data uploaded on to company website: -
<http://sesagoaironore.com/sustainability/hse/environment-reports/>

13. The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the GPCB and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional office.

The information about grant of Environmental Clearance was published in 2 local newspapers as per the condition of EC. English Daily "Navhind Times" dated 12/06/2009 & Marathi Daily "Tarun Bharat" dated 12/06/2009.

14. Project authorities shall inform the Regional Office as well as the Ministry. the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work

The first Consent to Operate was granted for following units in below mentioned years:-

Coke Plant	08/9/2011
WHRPP	22/12/2011
BF	08/06/2012
Sinter Plant	09/11/2012

Additional Recommendations on 25/4/12, when amendment in EC was granted

1. The NAAQS issued by the Ministry vide GSR No 826 (E) dated 16th November 2009 shall be followed.

12 parameters as mentioned in NAAQS are monitored at AAQ stations and reports are submitted to GSPCB.

2. **The Project Proponent shall also submit 6 monthly reports on the status of the compliance of stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to respective RO of MOEF, respective ZO of CPCB & SPCB. RO of MOEF at Bangalore/CPCB/GSPCB shall monitor the conditions.**

Complied. Six monthly compliance reports submitted to RO of MOEF at Bangalore with cc to CPCB & GSPCB. Also monitored parameters are submitted to the authorities as mentioned in above clauses.

3. **Environmental Statement for each financial year ending 31st March in Form V as is mandated to be submitted by project proponent to GSPCB as prescribed under EPR 1986 shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to respective ROs of MOEF by e-mail.**

Complied. The Environmental Statements for all units, viz, Coke Plant, Power Plant, Blast furnace and Sinter Plant for year 2015-16 are submitted in September 2016.

4. **The Company shall submit within 3 months their policy towards Corporate Environment Responsibility which should inter-alia address (i) SOP to bring into focus any Infringent/deviation/violation of EC conditions (ii) Hierarchical system or Administrative order of the company to deal with environmental issues and ensuring compliance to EC conditions (iii) System of reporting of noncompliance/violation environmental norms to Board of Directors of the company or/and stakeholders or shareholders.**

Corporate Environment Responsibility Policy Action Plan was submitted to MOEF, CPCB and GSPCB on 20/11/12 along with 7th Six Monthly EC Compliance. If any changes are incorporated in CER, same will be intimated to the authorities. Environmental issues are discussed periodically in Vedanta Sustainability Committee Meeting. This Sustainability Committee reports to the Board of Directors, which reviews performance on 6 monthly basis.

** Vedanta Limited (earlier known as Sesa Sterlite Ltd./Sesa Goa Ltd.) has implemented Blast Furnace (0.45MTPA), Sinter Plant (1MTPA), Coke Plant (0.3MTPA), Waste Heat Recovery Power Plant (30MW) vis-a-vis 50% of Environmental Clearance Capacity, as Phase I.*

With respect to Letter dated 25/4/12 from MOEF, name of Project Proponent has been changed from Sesa Industries Ltd. to Sesa Goa Ltd. also an amendment in EC has been issued by MOEF with respect to change in plant configuration with changes in stack dimensions.

- Vedanta Ltd. has got Environment Clearance and Consent To Operate for hot metal expansion from existing Blast furnace for production enhancement of 0.45 MTPA to 0.54 MTPA.
- We have got recommendation from EAC for extension of validity of EC for the period up to 2nd June, 2019.
- We have applied for amendment in Environment clearance by product diversification for setting up of 0.30 MTPA Ductile Iron plant in the existing Pig Iron Expansion Plant premises. For the same TOR has been granted by MOEF and EIA studies have been carried out and the same would soon be submitted for further action to obtain EC after process of Public Consultation.

Water Analysis data of Power Plant – Oct'2016 to March'2017

Water Analysis data of Power Plant – Oct'2016 to March'20 17				
Sr.No	Month	Parameter	CT Blowdown Discharge Pump (Before Treatment)	CT Blowdown (after Treatment)
1	Oct'16	PH	6.80	6.9
		Temperature (Deg. Cel.)	27.5	27.4
		Suspended Solid(mg/Lit)	42.00	29.00
		Oil & Grease (mg/Lit)	<1.00	<1.00
		Free Chlorine (mg/Lit)	3.55	0
		Phosphates as P (mg/Lit)	1.43	0.46
		Copper as Cu (mg/Lit)	0.35	<0.01
		Chromium as Cr (mg/Lit)	0.2	0.04
		Iron as Fe (mg/Lit)	0.89	0.25
		Zinc as Zn (mg/Lit)	0.36	0.18
2	Nov'16	PH	6.72	7.08
		Temperature (Deg. Cel.)	27.9	27.8
		Suspended Solid(mg/Lit)	56.00	36.00
		Oil & Grease (mg/Lit)	<1.00	<1.00
		Free Chlorine (mg/Lit)	3.19	0
		Phosphates as P (mg/Lit)	1.77	0.59
		Copper as Cu (mg/Lit)	0.49	<0.01
		Chromium as Cr (mg/Lit)	0.32	0.11
		Iron as Fe (mg/Lit)	1.23	0.31
		Zinc as Zn (mg/Lit)	0.88	0.23
3	Dec'16	PH	6.85	6.88
		Temperature (Deg. Cel.)	27.4	27.7
		Suspended Solid(mg/Lit)	42.00	29.00
		Oil & Grease (mg/Lit)	<1.00	<1.00
		Free Chlorine (mg/Lit)	2.66	0
		Phosphates as P (mg/Lit)	2.43	0.87
		Copper as Cu (mg/Lit)	0.68	<0.01
		Chromium as Cr (mg/Lit)	0.41	0.12
		Iron as Fe (mg/Lit)	1.56	0.25
		Zinc as Zn (mg/Lit)	1.24	0.19
4	Jan'16	PH	6.97	6.7
		Temperature (Deg. Cel.)	27.8	27.5
		Suspended Solid(mg/Lit)	36.00	25.00
		Oil & Grease (mg/Lit)	<1.00	<1.00
		Free Chlorine (mg/Lit)	3.55	0
		Phosphates as P (mg/Lit)	1.65	1.23
		Copper as Cu (mg/Lit)	0.93	<0.01
		Chromium as Cr (mg/Lit)	0.58	0.16
		Iron as Fe (mg/Lit)	1.19	0.49
		Zinc as Zn (mg/Lit)	1.34	0.27
		PH	6.92	6.73
		Temperature (Deg. Cel.)	28.3	28.1

5	Feb 2016	Suspended Solid(mg/Lit)	43.00	30.00
		Oil & Grease (mg/Lit)	<1.00	<1.00
		Free Chlorine (mg/Lit)	2.66	0
		Phosphates as P (mg/Lit)	1.2	1.00
		Copper as Cu (mg/Lit)	0.8	<0.01
		Chromium as Cr (mg/Lit)	0.47	0.14
		Iron as Fe (mg/Lit)	1.35	0.30
		Zinc as Zn (mg/Lit)	1.05	0.32
6	March 2016	PH	6.80	6.63
		Temperature (Deg. Cel.)	28.6	28.4
		Suspended Solid(mg/Lit)	35.00	27.00
		Oil & Grease (mg/Lit)	<1.00	<1.00
		Free Chlorine (mg/Lit)	1.77	0
		Phosphates as P (mg/Lit)	1.37	1.12
		Copper as Cu (mg/Lit)	0.75	<0.01
		Chromium as Cr (mg/Lit)	0.4	0.17
		Iron as Fe (mg/Lit)	1.21	0.27
Zinc as Zn (mg/Lit)	1.12	0.21		

Stack Monitoring Data for Sinter plant-October 2016 to March 2017

Sr. No.	Month	Parameter	Stack Details				
			Head End ESP	Tail End ESP	Proportioning De-dusting	Screening De-dusting	Flux & Fuel De-dusting
1	October`16 - December`16	Particulate Matter(Mg/Nm3)	54.83	61.47	68.12	43.05	57.34
		SO2(Kg/Hr.)	7.2	NA	NA	NA	NA
2	January`16 -March`17	Particulate Matter(Mg/Nm3)	30.87	65.08	43.06	48.12	40.23
		SO2(Kg/Hr.)	10.64	NA	NA	NA	NA

Stack Monitoring Data for 0.45 MTPA Blast Furnace Expansion for November-16 to April-17

Sr.No	Month	Parameter	Stack Details		
			Hot Blast Stove	PCM Cast House De-dusting	Stock House De-dusting
1	November`16- January`16	Particulate Matter(Mg/Nm3)	34.67	40.08	43.19
		SO2 (Mg/Nm3)	29.33	NA	NA
		Nox(Mg/Nm3)	32.18	NA	NA
2	February`16- April`17	Particulate Matter(Mg/Nm3)	36.80	43.5	39.67
		SO2 (Mg/Nm3)	19.64	NA	NA
		Nox(Mg/Nm3)	46.39	NA	NA

AIR MONITORING DATA FROM OCTOBER-2016 TO MARCH-2017

Month	Date	Location	PM10	PM2.5	So2	Nox
October '16	3/10/2016	Amona Gate	72.64	28.4	13.53	15.67
		Opposite BSNL Exchange	90.34	35.64	14.02	17.23
		Near Dispatch Gate	93.16	34.26	18.2	22.2
		Compound wall Towards navelim	97.13	35.22	18.33	20.45
		Nr. Sateri Temple	83.56	28.73	12.03	15.11
		Compound wall Towards Maina	80.67	26.32	10.57	12.64
	6/10/2016	Amona Gate	82.73	30.06	15.22	18.22
		Opposite BSNL Exchange	87.66	32.73	12.33	14.62
		Near Dispatch Gate	87.55	30.44	16.32	20.44
		Compound wall Towards navelim	93.58	32.85	20.42	23.6
		Nr. Sateri Temple	8.12	30.56	14.62	16.85

		Compound wall Towards Maina	83.22	32.39	12.63	15.05
	10/10/2016	Amona Gate	88.2	32.14	16.78	19.53
		Opposite BSNL Exchange	93.18	36.09	15.46	18.7
		Near Dispatch Gate	90.59	32.73	20.65	23.53
		Compound wall Towards navelim	96.22	34.1	21.06	24.15
		Nr. Sateri Temple	82.75	27.32	11.85	13.02
		Compound wall Towards Maina	81.74	31.56	11.45	13.77
		13/10/2016	Amona Gate	76.45	26.32	12.43
	Opposite BSNL Exchange		85.47	29.07	13.08	15.65
	Near Dispatch Gate		96.72	34.06	19.03	22.81
	Compound wall Towards navelim		88.76	29.57	17.84	19.58
	Nr. Sateri Temple		79.5	25.62	10.67	12.35

		Compound wall Towards Maina	78.66	25.82	9.92	12.1
	17/10/2016	Amona Gate	73.56	24.04	10.85	13.2
		Opposite BSNL Exchange	79.34	26.32	11.56	14.22
		Near Dispatch Gate	85.63	28.78	17.66	19.22
		Compound wall Towards navelim	85.92	26.78	15.67	17.55
		Nr. Sateri Temple	81.48	29.15	12.58	14.22
		Compound wall Towards Maina	75.38	24.58	10.35	12.56
		20/10/2016	Amona Gate	77.13	27.32	14
	Opposite BSNL Exchange		82.55	28.15	14.83	17.03
	Near Dispatch Gate		82.88	26.49	15.82	17.58
	Compound wall Towards navelim		89.16	30.02	19.65	22.28
	Nr. Sateri Temple		76.83	27.2	15.06	17.84

		Compound wall Towards Maina	80.12	30.36	12.06	15.42
	24/10/2016	Amona Gate	84.22	33.64	17.02	20.13
		Opposite BSNL Exchange	86.12	30.06	16.2	20.36
		Near Dispatch Gate	89.46	30.52	18.38	24.12
		Compound wall Towards navelim	92.64	33.27	21.43	24.07
		Nr. Sateri Temple	78.16	30.11	13.02	15.23
		Compound wall Towards Maina	82.64	29.15	12.23	16.3
		27/10/2016	Amona Gate	80.47	30.73	13.55
	Opposite BSNL Exchange		94.68	32.52	18.42	23.1
	Near Dispatch Gate		91.25	32.81	20.03	22.43
	Compound wall Towards navelim		95.4	35.72	23.52	26.1
	Nr. Sateri Temple		82.59	31.23	13.64	15.76

		Compound wall Towards Maina	79.22	27.82	11.75	13.44
	31/10/2016	Amona Gate	75.36	26.9	10.64	12.57
		Opposite BSNL Exchange	90.13	29.77	14.66	17.23
		Near Dispatch Gate	94.1	35.14	21.45	24.06
		Compound wall Towards navelim	91.33	32.19	20.88	22.14
		Nr. Sateri Temple	80.77	29.52	12.73	14.32
		Compound wall Towards Maina	81.65	30.06	13.02	15.28
November'16	3/11/2016	Amona Gate	83.54	35.68	16.85	18.21
		Opposite BSNL Exchange	93.24	38.67	19.55	22.06
		Near Dispatch Gate	94.12	37.05	17.55	19.32
		Compound wall Towards navelim	93.52	45.7	18.03	20.37
		Nr. Sateri Temple	82.74	34.56	16.44	18.32

		Compound wall Towards Maina	84.16	34.02	18.33	20.75
	7/11/2016	Amona Gate	88.02	39.05	19.37	24.13
		Opposite BSNL Exchange	97.06	40.54	21.77	23.68
		Near Dispatch Gate	97.5	40.88	18.6	21.05
		Compound wall Towards navelim	97.13	49.07	29.67	21.05
		Nr. Sateri Temple	88.02	36.3	17.05	19.23
		Compound wall Towards Maina	87.29	36.3	19.24	22.3
		10/11/2016	Amona Gate	80.47	35.22	16.03
	Opposite BSNL Exchange		91.07	37.13	18.63	20.55
	Near Dispatch Gate		91.03	36.72	16.43	18.5
	Compound wall Towards navelim		80.47	45.2	17.03	19.82
	Nr. Sateri Temple		80.32	31.27	15.2	17.05

		Compound wall Towards Maina	81.58	32.37	16.82	18.26
	14/11/2016	Amona Gate	77.23	31.56	14.2	16.54
		Opposite BSNL Exchange	85.72	34.81	16.04	18.67
		Near Dispatch Gate	88.02	34.14	15.04	17.33
		Compound wall Towards navelim	87.27	41.58	15.25	17.51
		Nr. Sateri Temple	74.83	29.4	12.57	34.38
		Compound wall Towards Maina	76.55	30.44	15.06	17.33
		17/11/2016	Amona Gate	70.57	28.61	12.65
	Opposite BSNL Exchange		82.34	33.06	14.52	17.03
	Near Dispatch Gate		84.65	31.48	13.28	15.4
	Compound wall Towards navelim		80.58	38.46	14.62	16.38
	Nr. Sateri Temple		71.34	27.07	10.73	12.52

		Compound wall Towards Maina	72.34	28.62	13.54	15.48
	21/11/2016	Amona Gate	79.38	33.43	15.32	17.68
		Opposite BSNL Exchange	88.61	36.18	16.28	18.82
		Near Dispatch Gate	89.16	35.18	15.73	17.88
		Compound wall Towards navelim	89.35	43.41	16.3	18.72
		Nr. Sateri Temple	77.05	30.52	13.16	15.63
		Compound wall Towards Maina	80.62	31.85	15.47	17.85
		24/11/2016	Amona Gate	83.62	35.72	17.22
	Opposite BSNL Exchange		93.55	38.51	19.74	22.15
	Near Dispatch Gate		94.24	37.09	17.86	19.45
	Compound wall Towards navelim		93.64	45.7	18.28	20.14
	Nr. Sateri Temple		82.66	33.85	15.75	17.88

		Compound wall Towards Maina	82.55	33.06	17.13	19.54
	28/11/2016	Amona Gate	85.17	37.55	19.13	22.06
		Opposite BSNL Exchange	96.12	40.09	21.2	23.46
		Near Dispatch Gate	96.23	40.34	18.2	20.13
		Compound wall Towards navelim	95.1	47.53	20.15	22.13
		Nr. Sateri Temple	84.23	35.43	17.22	19.41
		Compound wall Towards Maina	84.36	34.18	18.52	21.07
December'16	1/12/2016	Amona Gate	76.52	27.36	18.25	21.36
		Opposite BSNL Exchange	80.56	32.27	18.53	21.15
		Near Dispatch Gate	93.57	32.68	19.27	22.18
		Compound wall Towards navelim	93.5	41.54	20.14	25.27
		Nr. Sateri Temple	88.76	30.56	13.68	20.14

		Compound wall Towards Maina	79.62	32.44	19.32	24.36
	5/12/2016	Amona Gate	80.07	31.23	20.42	23.51
		Opposite BSNL Exchange	87.45	35.18	20.04	23.48
		Near Dispatch Gate	90.68	35.22	21.46	23.54
		Compound wall Towards navelim	92.47	39.71	22.37	28.56
		Nr. Sateri Temple	92.54	38.67	18.47	23.68
		Compound wall Towards Maina	83.55	35.68	20.46	27.3
	8/12/2016	Amona Gate	83.62	35.52	17.55	20.43
		Opposite BSNL Exchange	92.33	42	25.43	28.66
		Near Dispatch Gate	95.16	40.54	23.58	26.09
		Compound wall Towards navelim	88.73	35.26	19.26	26.83
		Nr. Sateri Temple	93.67	40.09	20.33	27.42

		Compound wall Towards Maina	86.12	40.13	23.05	30.28
	12/12/2016	Amona Gate	79.66	28.48	19.26	22.72
		Opposite BSNL Exchange	89.16	34.51	21.07	23.58
		Near Dispatch Gate	97.04	42.83	21.53	23.18
		Compound wall Towards navelim	94.16	39.05	21.58	25.67
		Nr. Sateri Temple	89.52	32.48	16.42	22.85
		Compound wall Towards Maina	90.47	42.66	20.77	26.35
		15/12/2016	Amona Gate	84.15	33.18	21.03
	Opposite BSNL Exchange		91.74	41.83	22.73	24.02
	Near Dispatch Gate		88.73	30.48	17.86	20.47
	Compound wall Towards navelim		95.82	43.25	23.05	30.52
	Nr. Sateri Temple		90.83	35.72	19.33	26.46

		Compound wall Towards Maina	86.02	37.8	18.54	20.58
	19/12/2016	Amona Gate	78.23	27.61	18.74	22.06
		Opposite BSNL Exchange	94.02	43.66	25.04	27.18
		Near Dispatch Gate	90.25	34.64	20.43	23.82
		Compound wall Towards navelim	92.27	41.08	22.43	29.16
		Nr. Sateri Temple	87.96	29.82	21.47	30.65
		Compound wall Towards Maina	82.59	34.18	21.62	23.77
	22/12/2016	Amona Gate	81.64	32.73	16.88	19.04
		Opposite BSNL Exchange	86.59	33.72	22.61	25.1
		Near Dispatch Gate	89.2	28.82	19.16	21.47
		Compound wall Towards navelim	90.56	37.8	18.76	23.45
		Nr. Sateri Temple	91.54	38.05	23.12	31.04

		Compound wall Towards Maina	90.12	40.34	23.08	26.9
	26/12/2016	Amona Gate	83.03	33.47	19.53	23.18
		Opposite BSNL Exchange	82.75	32.44	20.38	23.55
		Near Dispatch Gate	91.37	33.14	21.53	24.15
		Compound wall Towards navelim	93.24	40.63	20.55	22.76
		Nr. Sateri Temple	93.06	41.33	20.84	27.65
		Compound wall Towards Maina	84.56	37.05	22.15	24.84
		29/12/2016	Amona Gate	80.42	31.52	21.47
	Opposite BSNL Exchange		87.32	35.68	23.06	26.09
	Near Dispatch Gate		94.08	36.05	23.42	26.08
	Compound wall Towards navelim		91.82	42.04	21.3	25.82
	Nr. Sateri Temple		90.88	39.5	22.07	29.16

		Compound wall Towards Maina	80.74	33.1	18.76	22.65
January'17	2/1/2017	Amona Gate	82.43	35.14	18.14	23.76
		Opposite BSNL Exchange	92.67	43.04	21.42	25.89
		Near Dispatch Gate	90.46	41.33	20.42	25.84
		Compound wall Towards navelim	94.15	42.37	21.26	26.43
		Nr. Sateri Temple	90.54	42.03	17.65	21.36
		Compound wall Towards Maina	83.64	38.2	17.64	23.42
	5/1/2017	Amona Gate	77.86	30.11	15.78	19.33
		Opposite BSNL Exchange	90.88	40.54	18.66	21.53
		Near Dispatch Gate	92.73	43.27	22.19	28.6
		Compound wall Towards navelim	92.57	40.62	23.54	30.76
		Nr. Sateri Temple	92.72	44.28	20.16	25.74

		Compound wall Towards Maina	90.25	41.56	20.85	25.73
	9/1/2017	Amona Gate	81.25	34.6	17.22	20.58
		Opposite BSNL Exchange	87.54	38.17	16.94	19.8
		Near Dispatch Gate	88.69	39.12	18.64	23.19
		Compound wall Towards navelim	88.68	37.03	19.57	24.03
		Nr. Sateri Temple	89.06	38.75	19.44	23.09
		Compound wall Towards Maina	88.37	39.42	18.64	21.07
	12/1/2017	Amona Gate	80.33	32.06	13.35	16.82
		Opposite BSNL Exchange	89.12	40.34	19.21	23.66
		Near Dispatch Gate	91.32	40.53	20.72	26.33
		Compound wall Towards navelim	90.47	39.54	20.82	27.48
		Nr. Sateri Temple	84.52	36.4	21.07	26.34

		Compound wall Towards Maina	86.12	35.74	22.03	30.12
	16/01/2017	Amona Gate	75.19	28.65	16.56	19.53
		Opposite BSNL Exchange	83.63	35.76	17.38	20.35
		Near Dispatch Gate	94.07	42.18	23.39	30.05
		Compound wall Towards navelim	93.78	42.85	22.03	26.13
		Nr. Sateri Temple	88.23	37.68	18.23	22.46
		Compound wall Towards Maina	92.35	42.03	19.75	24.66
	19/1/2017	Amona Gate	78.52	30.48	19.42	24.22
		Opposite BSNL Exchange	88.12	39.01	20.65	26.48
		Near Dispatch Gate	87.63	36.55	19.83	23.27
		Compound wall Towards navelim	95.03	43.12	25.47	32.08
		Nr. Sateri Temple	91.37	40.53	19.64	24.51

		Compound wall Towards Maina	91.44	41.56	21.38	27.38
	23/1/2017	Amona Gate	83.05	40.04	20.46	26.28
		Opposite BSNL Exchange	91.47	42.75	22.89	28.03
		Near Dispatch Gate	90.48	39.26	21.04	26.31
		Compound wall Towards navelim	92.88	41.56	22.6	29.07
		Nr. Sateri Temple	93.02	42.16	22.47	30.06
		Compound wall Towards Maina	89.02	38.73	18.22	23.64
	26/1/2017	Amona Gate	81.94	34.89	18.64	22.19
		Opposite BSNL Exchange	93.2	43.83	25.03	30.44
		Near Dispatch Gate	92.66	41.05	18.26	22.85
		Compound wall Towards navelim	89.35	38.16	18.73	23.46
		Nr. Sateri Temple	90.55	41.27	20.36	27.45

		Compound wall Towards Maina	85.73	36.22	16.89	20.16
	30/1/2017	Amona Gate	82.77	37.13	19.38	24.2
		Opposite BSNL Exchange	91.74	40.67	23.72	29.15
		Near Dispatch Gate	89.52	37.2	20.42	26.92
		Compound wall Towards navelim	91.64	40.23	22.5	27.85
		Nr. Sateri Temple	92.46	41.38	21.72	25.88
		Compound wall Towards Maina	90.75	41.77	21.45	29.03
February`17	2/2/2017	Amona Gate	83.47	36.22	23.43	27.56
		Opposite BSNL Exchange	93.22	45.33	23.12	27.18
		Near Dispatch Gate	92.32	43.5	24.32	28.34
		Compound wall Towards navelim	95.32	47.24	27.21	32.71
		Nr. Sateri Temple	92.52	44.29	24.32	29.31

		Compound wall Towards Maina	87.82	41.21	21.59	26.39
	6/2/2017	Amona Gate	79.62	32.14	21.41	26.33
		Opposite BSNL Exchange	91.56	42.54	20.92	25.76
		Near Dispatch Gate	94.84	44.71	27.78	31.54
		Compound wall Towards navelim	93.11	45.66	25.35	30.85
		Nr. Sateri Temple	94.77	46.12	26.87	31.12
		Compound wall Towards Maina	94.23	46.2	26.67	32.23
	9/2/2017	Amona Gate	82.23	37.18	20.32	24.61
		Opposite BSNL Exchange	89.23	40.75	19.45	24.22
		Near Dispatch Gate	90.62	40.5	23.66	27.71
		Compound wall Towards navelim	89.76	38.51	20.63	25.87
		Nr. Sateri Temple	91.12	42.42	22.12	27.51

		Compound wall Towards Maina	91.53	42.29	23.57	28.41
	13/2/2017	Amona Gate	81.42	35.22	18.56	21.67
		Opposite BSNL Exchange	91.34	43.54	21.69	28.91
		Near Dispatch Gate	92.33	43.58	24.76	28.21
		Compound wall Towards navelim	91.78	43.21	24.25	29.32
		Nr. Sateri Temple	87.56	38.88	21.98	27.42
		Compound wall Towards Maina	89.34	39.17	22.82	30.22
	16/02/2017	Amona Gate	78.47	30.48	21.67	25.42
		Opposite BSNL Exchange	85.56	37.59	18.61	22.11
		Near Dispatch Gate	94.58	45.12	27.44	32.42
		Compound wall Towards navelim	94.81	46.03	22.52	27.66
		Nr. Sateri Temple	90.32	41.83	21.23	26.41

		Compound wall Towards Maina	95.92	47.7	27.14	32.12
	20/02/2016	Amona Gate	79.13	32.31	19.88	24.22
		Opposite BSNL Exchange	89.52	40.09	22.34	27.52
		Near Dispatch Gate	88.22	38.37	20.53	24.21
		Compound wall Towards navelim	95.82	47.2	27.78	32.85
		Nr. Sateri Temple	93.11	45.28	25.87	30.23
		Compound wall Towards Maina	94.21	46.2	26.45	31.44
		23/02/2017	Amona Gate	85.82	41.13	24.87
	Opposite BSNL Exchange		93.69	45.45	24.73	29.23
	Near Dispatch Gate		90.48	40.13	22.82	26.76
	Compound wall Towards navelim		93.91	45.16	25.47	30.11
	Nr. Sateri Temple		95.32	47.41	27.61	32.18

		Compound wall Towards Maina	92.31	43.08	24.11	29.42
	26/02/2017	Amona Gate	83.83	36.8	23.71	28.39
		Opposite BSNL Exchange	94.29	45.91	25.61	30.84
		Near Dispatch Gate	93.12	45.28	26.22	30.85
		Compound wall Towards navelim	90.41	41.5	26.61	27.23
		Nr. Sateri Temple	92.56	43.75	24.44	29.61
		Compound wall Towards Maina	91.23	42.71	23.54	28.45
March`17	2/3/2017	Amona Gate	90.62	43.16	18.67	23.41
		Opposite BSNL Exchange	94.72	45.83	25.09	33.05
		Near Dispatch Gate	89.36	39.55	20.61	23.65
		Compound wall Towards navelim	93.85	45.66	21.94	24.5
		Nr. Sateri Temple	89.74	38.22	21.64	23.72

	Compound wall Towards Maina	87.8	35.26	18.54	24.69
6/3/2017	Amona Gate	93.15	45.7	16.33	19.57
	Opposite BSNL Exchange	96.12	47.24	28.14	34.67
	Near Dispatch Gate	91.25	41.63	22.13	25.17
	Compound wall Towards navelim	96.12	47.82	23.42	26.33
	Nr. Sateri Temple	91.62	41.75	23.88	27.1
	Compound wall Towards Maina	92.26	40.09	16.82	20.03
9/3/2017	Amona Gate	88.79	41.29	19.54	25.69
	Opposite BSNL Exchange	92.88	42.12	27.83	31.18
	Near Dispatch Gate	92.72	42.5	23.85	26.99
	Compound wall Towards navelim	97.03	49.23	24.16	27.04
	Nr. Sateri Temple	93.22	43	24.96	30.21

	Compound wall Towards Maina	91.72	41.5	20.85	23.99
13/3/2017	Amona Gate	91.26	43.08	17.82	22.03
	Opposite BSNL Exchange	90.76	41.21	25.04	26.55
	Near Dispatch Gate	90.33	40.25	20.79	23.18
	Compound wall Towards navelim	94.58	46.91	22.45	26.69
	Nr. Sateri Temple	90.58	39.63	22.48	25.43
	Compound wall Towards Maina	93.33	42.25	21.79	25.18
16/3/2017	Amona Gate	86.42	39.21	15.37	19.84
	Opposite BSNL Exchange	93.18	45.74	29.53	32.92
	Near Dispatch Gate	88.67	38.55	19.87	22.51
	Compound wall Towards navelim	91.88	43.62	19.53	22.85
	Nr. Sateri Temple	88.76	37.84	20.42	23.81

	Compound wall Towards Maina	92.58	39.92	23.45	27.69
20/3/2017	Amona Gate	82.99	35.84	18.12	24.28
	Opposite BSNL Exchange	89.73	40.63	23.47	25.8
	Near Dispatch Gate	90.58	40.79	21.32	24.62
	Compound wall Towards navelim	93.65	45.16	21.18	24.16
	Nr. Sateri Temple	87.35	36.51	19.33	22.69
	Compound wall Towards Maina	90.03	41.17	20.4	23.74
23/3/2017	Amona Gate	87.51	37.18	20.47	26.33
	Opposite BSNL Exchange	92.57	41.67	27.33	30.16
	Near Dispatch Gate	92.03	42.17	23.4	25.74
	Compound wall Towards navelim	95.18	47.11	22.69	25.37
	Nr. Sateri Temple	90.12	39.25	22.03	25.78

	Compound wall Towards Maina	88.64	37.32	18.52	21.58
27/3/2017	Amona Gate	90.03	41.71	17.66	20.87
	Opposite BSNL Exchange	88.39	39.13	21.36	24.57
	Near Dispatch Gate	89.64	39.34	20.52	23.58
	Compound wall Towards navelim	97.24	50.32	24.73	27.61
	Nr. Sateri Temple	92.57	43.29	24.57	29.13
	Compound wall Towards Maina	90.03	40.71	21.66	25.87
30/3/2017	Amona Gate	92.14	43.08	18.51	22.56
	Opposite BSNL Exchange	92.74	41.96	27.68	30.7
	Near Dispatch Gate	91.22	41.29	22.06	24.16
	Compound wall Towards navelim	94.55	46.28	22.15	24.72
	Nr. Sateri Temple	91.3	41.38	23.61	28.77

		Compound wall Towards Maina	93.14	42.08	19.51	23.56
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