



sesa goa iron ore

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

18.11.2016

Sub: 15th 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.

Sir,

With reference to the above, please find enclosed herewith:

15th six monthly compliance report to Environmental Clearance [F No.J-11011/946/2007-IA-II(I)] for the period **April 2016 to September 2016** 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.

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

Thanking you,

Yours faithfully,

For Vedanta Ltd.

K. V. Kulkarni

AGM- Safety & Environment

CBh

VEDANTA LIMITED (Formerly known as Sesa Sterlite Ltd/Sesa Goa Ltd.)
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Registered Office: Sesa Ghor, 20 EDC Complex, Patto, Panaji (Goa) - 403 001
CIN: L13209GA1965PLC000044



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Cc: Member Secretary, GSPCB, CPCB (SZO)

Enclosures:

- 15th six monthly compliance status report
- Tabulated Stack monitoring, Ambient Air Quality Monitoring, Water monitoring Reports for the period April 2016 to September 2016
- Environmental statements for the year 2015-16

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15th Compliance Report to EC No: F. No. J-11011/946/2007-IA-II(I)

(Period: April 2016 to September 2016)

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 April.16 to Sept.16			
		PM10	PM2.5	SO2	NO2
1	Amona Gate	55.46	21.77	13.44	18.88
2	Compound wall Towards Maina	50.48	19.53	13.52	17.53
3	Opposite BSNL Exchange	56.12	21.24	13.81	19.00
4	Near Dispatch Gate	56.56	20.46	13.77	18.8
5	Compound wall Towards navelim	53.59	21.26	13.22	17.29
6	Nr. Sateri Temple	50.29	18.19	13.24	16.69

12 parameters monitoring as per National AAQ report is as follows

(Average from April16 to Sept.16)

Sr.no	Parameters	Amona Gate	Opp BSNL Exchange	Near dispatch gate	Comp. wall towards Navelim	Near Sateri temple	Comp. wall towards Maina
1.	PM10	55.46	56.12	56.56	53.59	50.29	50.48
	limit =100 µg/m3						
2.	PM 2.5	21.77	21.24	20.46	21.26	18.19	19.53
	limit =60 µg/m3						
3.	SO ₂	13.44	13.81	13.77	13.22	13.24	13.52
	limit =80 µg/m3						
4.	NO ₂	18.88	19.00	18.8	17.29	16.69	17.53
	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 (NH ₃)	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
	Limit=400 µg/m3						
8.	Carbon Monoxide (mg/m3) (CO)	0.41	0.27	0.33	0.33	0.21	0.37
	Limit = 4 (detection limit 1 µg/m3)						
9.	Benzene (C ₆ H ₆)	<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	<1.0	<1.0	<1.0	<1.0	<1.0
	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, PM2.5, 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 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 dedusting 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 on an avg. 3510 m³/day (including water for cooling as well as process water) blow down water from Power Plant is around average 101 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 101 m3/day. Temperature & pH is around avg. 28°C and 7.01 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 power plant is run 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 Goa Forest Development Corporation (GFDC) as well as in-house guidance from company expert team. We have also written to Divisional Forest Officer (DFO) to certify the plantations done in the premises.

- 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 for hot metal expansion from existing Blast furnace for production enhancement of 0.45 MTPA to 0.54 MTPA. 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.

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.

The stack heights of stacks and latest data is as follows- (From April-16 to Sept-16)

Plant	Stack connected to	Height of stack	Particulate Matter in mg/Nm ³ (Avg.)	SO ₂ in mg/Nm ³ (Avg.)	NO _x in mg/Nm ³ (Avg.)
Sinter Plant	Main ESP	100m	45.75	11.42 Kg/Hr	NA
	Discharge end ESP	30m	49.54	Not Applicable as these are de-dusting stacks	
	Sinter Screening & Product bunker Bag Filter	30m	32.98		
	Proportioning bin bag filter	30m	56.67		
	Flux & Fuel Area bag filter	30m	48.74		
Blast Furnace	Cast House De-dusting	30m	34.98	Not Applicable as these are de-dusting stacks	
	Stock House De-dusting	30m	42.31		
	Hot Blast Stoves (HBS)	60m	36.69	31.13	33.76
Power Plant	Waste Heat Recovery Boiler-1	50m	47.38	82.73	107.71
	Waste Heat Recovery Boiler-2	50m	48.92	59.09	86.19

*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 other parameters are Below Detection Limits. Ozone and Ammonia are found in traces. 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, reclaimers, 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 from 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.

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 (Company employee) 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 a 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 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 0.30MTPA Ductile Iron plant in the existing Pig Iron Expansion Plant premises.
For the same TOR has been granted by MOEF.

Water Analysis data of Power Plant – Oct'2015 to March'2016

Water Analysis data of Power Plant – Oct'2015 to March'20 15				
Sr.No	Month	Parameter	CT Blowdown Discharge Pump (Before Treatment)	CT Blowdown after Treatment
1	April-16	PH	6.92	7.03
		Temperature (Deg. Cel.)	28.20	28.00
		Suspended Solid(mg/Lit)	53.00	38.00
		Oil & Grease (mg/Lit)	0.4	0.20
		Free Chlorine (mg/Lit)	3.24	NIL
		Phosphates as P (mg/Lit)	0.71	0.24
		Copper as Cu (mg/Lit)	0.26	<0.01
		Chromium as Cr (mg/Lit)	0.34	0.08
		Iron as Fe (mg/Lit)	1.54	0.32
		Zinc as Zn (mg/Lit)	0.48	0.28
2	May-16	PH	6.84	7.12
		Temperature (Deg. Cel.)	28.6	27.80
		Suspended Solid(mg/Lit)	47.00	29.00
		Oil & Grease (mg/Lit)	<1.00	<1.00
		Free Chlorine (mg/Lit)	2.82	NIL
		Phosphates as P (mg/Lit)	0.62	0.24
		Copper as Cu (mg/Lit)	0.20	<0.01
		Chromium as Cr (mg/Lit)	0.26	0.06
		Iron as Fe (mg/Lit)	1.14	0.28
		Zinc as Zn (mg/Lit)	0.36	0.16
3	June-16	PH	6.76	7.03
		Temperature (Deg. Cel.)	28.1	27.2
		Suspended Solid(mg/Lit)	39.00	23.00
		Oil & Grease (mg/Lit)	<1.00	<1.00
		Free Chlorine (mg/Lit)	2.46	NIL
		Phosphates as P (mg/Lit)	0.5	0.2
		Copper as Cu (mg/Lit)	0.18	<0.01
		Chromium as Cr (mg/Lit)	0.22	0.04
		Iron as Fe (mg/Lit)	1.04	0.22
		Zinc as Zn (mg/Lit)	0.3	0.12
4	July-16	PH	6.82	6.89
		Temperature (Deg. Cel.)	27.8	27.40
		Suspended Solid(mg/Lit)	28.00	29.00
		Oil & Grease (mg/Lit)	<1.00	<1.00
		Free Chlorine (mg/Lit)	2.14	NIL
		Phosphates as P (mg/Lit)	0.42	0.28
		Copper as Cu (mg/Lit)	0.13	<0.01
		Chromium as Cr (mg/Lit)	0.16	0.06
		Iron as Fe (mg/Lit)	0.98	0.34
		Zinc as Zn (mg/Lit)	0.24	0.25
		PH	6.78	6.97
		Temperature (Deg. Cel.)	27.40	27.8

5	August-16	Suspended Solid(mg/Lit)	23.00	18.00
		Oil & Grease (mg/Lit)	<1.00	<1.00
		Free Chlorine (mg/Lit)	2.04	NIL
		Phosphates as P (mg/Lit)	0.34	0.22
		Copper as Cu (mg/Lit)	0.1	<0.01
		Chromium as Cr (mg/Lit)	0.14	0.04
		Iron as Fe (mg/Lit)	0.76	0.28
		Zinc as Zn (mg/Lit)	0.2	0.2
6	September-16	PH	6.91	6.97
		Temperature (Deg. Cel.)	27.80	27.20
		Suspended Solid(mg/Lit)	36.00	22.00
		Oil & Grease (mg/Lit)	<1.00	<1.00
		Free Chlorine (mg/Lit)	3.19	NIL
		Phosphates as P (mg/Lit)	0.45	0.17
		Copper as Cu (mg/Lit)	0.19	<0.01
		Chromium as Cr (mg/Lit)	0.23	0.04
		Iron as Fe (mg/Lit)	0.65	0.32
		Zinc as Zn (mg/Lit)	0.27	0.29

Stack Monitoring Data for Sinter plant-April 2016 to September 2016

Sr. No.	Month	Parameter	Stack Details				
			Head End ESP	Tail End ESP	Proportioning Dedusting	Screening Dedusting	Flux & Fuel Dedusting
1	April`16- June`16	Particulate Matter(Mg/Nm3)	34.67	36.92	45.96	34.63	38.74
		SO2(Kg/Hr.)	14.6	NA	NA	NA	NA
2	July`16- Sept`16	Particulate Matter(Mg/Nm3)	56.83	62.16	67.39	41.33	58.75
		SO2(Kg/Hr.)	8.38	NA	NA	NA	NA

Stack Monitoring Data for 0.45 MTPA Blast Furnace Expansion for May-16 to October-16

Sr.No	Month	Parameter	Stack Details		
			Hot Blast Stove	PCM Cast House Dedusting	Stock House Dedusting
1	May`16- July`16	Particulate Matter(Mg/Nm3)	37.52	34.24	41.57
		SO2 (Mg/Nm3)	31.62	NA	NA
		Nox(Mg/Nm3)	33.30	NA	NA
2	August`16- October`16	Particulate Matter(Mg/Nm3)	35.86	35.72	43.06
		SO2 (Mg/Nm3)	30.04	NA	NA
		Nox(Mg/Nm3)	34.23	NA	NA

AIR MONITORING REPORTS FROM APRIL-16 TO SEPTEMBER-16

<u>April '16</u>	6/4/2016	Amona Gate	66.95	28.1	18.4	22.64
		Opposite BSNL Exchange	77.55	28.33	18.31	21.84
		Near Dispatch Gate	76.75	26.12	16.23	20.11
		Compound wall Towards navelim	78.53	34.31	17.15	19.67
		Nr. Sateri Temple	52.22	20.17	17.21	19.23
		Compound wall Towards Maina	45.28	16.83	17.66	19.23
	9/4/2016	Amona Gate	48.75	25.5	16.58	21.3
		Opposite BSNL Exchange	68.91	26.37	20.14	23.66
		Near Dispatch Gate	69.32	26.64	16.55	20.45
		Compound wall Towards navelim	69.12	25.66	16.44	19.13
		Nr. Sateri Temple	60.34	21.62	16.84	18.51
		Compound wall Towards Maina	76.46	28.52	18.41	19.74
	13/4/2016	Amona Gate	59.22	26.62	16.1	20.71
		Opposite BSNL Exchange	68.24	29.62	19.72	22.15
		Near Dispatch Gate	62.83	26.33	17.2	21.64
		Compound wall Towards navelim	56.82	19.03	16.26	18.76
		Nr. Sateri Temple	51.82	18.85	16.28	18.74
		Compound wall Towards Maina	54.82	20.73	17.42	18.83
	16/4/2016	Amona Gate	64.13	22.37	15.24	19.25

		Opposite BSNL Exchange	59.17	27.43	21.3	23.27
		Near Dispatch Gate	79.74	27.63	17.82	21.83
		Compound wall Towards navelim	64.27	25.75	17.28	19.66
		Nr. Sateri Temple	72.18	32.38	17.58	19.65
		Compound wall Towards Maina	64.56	26.42	26.55	18.52
	20/4/2016	Amona Gate	59.42	31.3	17.85	19.3
		Opposite BSNL Exchange	67.48	32.3	20.62	22.03
		Near Dispatch Gate	63.58	24.31	15.43	19.12
		Compound wall Towards navelim	65.22	26.38	17.85	19.74
		Nr. Sateri Temple	56.65	16.83	17.1	19.43
		Compound wall Towards Maina	75.72	27.13	18.16	20.21
	23/4/2016	Amona Gate	66.15	30.22	17.76	19.52
		Opposite BSNL Exchange	56.16	30.82	19.74	22.82
		Near Dispatch Gate	67.92	25.57	16.11	19.94
		Compound wall Towards navelim	84.36	35.84	17.52	18.85
		Nr. Sateri Temple	60.32	21.62	17.02	19.18
		Compound wall Towards Maina	86.24	38.33	18.23	20.57
	27/4/2016	Amona Gate	62.62	27.8	18.21	20.82
		Opposite BSNL Exchange	68.61	29.76	18.93	21.95

		Near Dispatch Gate	88.33	36.4	16.62	20.27
		Compound wall Towards navelim	63.57	24.76	18.22	19.82
		Nr. Sateri Temple	60.88	18.51	16.63	18.92
		Compound wall Towards Maina	72.49	31.6	17.92	18.96
	30/4/2016	Amona Gate	16.71	30.07	18.93	22.54
		Opposite BSNL Exchange	80.72	30.88	19.37	21.63
		Near Dispatch Gate	72.85	27.2	17.84	21.95
		Compound wall Towards navelim	72.39	31.53	18.64	19.77
		Nr. Sateri Temple	62.45	22.26	17.61	19.86
		Compound wall Towards Maina	72.51	29.06	18.25	20.62
	<u>May'16</u>	Amona Gate	64.38	28.36	17.66	22.64
		Opposite BSNL Exchange	71.41	32.19	20.5	23.55
		Near Dispatch Gate	55.35	21.17	14.97	18.21
		Compound wall Towards navelim	56.28	25.7	15.28	17.66
		Nr. Sateri Temple	53.49	24.66	15.37	18.02
		Compound wall Towards Maina	42.66	22.43	15.02	18.52
	5/5/2016	Amona Gate	72.86	30.48	18.23	23.63
		Opposite BSNL Exchange	68.95	28.69	18.94	20.77
		Near Dispatch Gate	82.51	39.3	16.53	20.5

		Compound wall Towards navelim	70.43	33.27	18.34	22.12
		Nr. Sateri Temple	72.64	31.23	18.66	21.34
		Compound wall Towards Maina	68.25	27.68	18.36	21.35
	9/5/2016	Amona Gate	58.75	25.62	15.31	18.61
		Opposite BSNL Exchange	69.21	30.11	20.08	23.7
		Near Dispatch Gate	70.14	31.27	17.74	19.77
		Compound wall Towards navelim	63.86	28.48	17.16	24.75
		Nr. Sateri Temple	62.85	26.49	16.44	18.82
		Compound wall Towards Maina	72.48	32.67	20.15	22.64
	12/5/2016	Amona Gate	66.05	30.06	17.82	19.74
		Opposite BSNL Exchange	72.56	33.52	21.45	24.58
		Near Dispatch Gate	89.4	43.45	16.55	18.22
		Compound wall Towards navelim	72.56	34.72	21.33	26.65
		Nr. Sateri Temple	73.19	32.68	17.69	20.22
		Compound wall Towards Maina	62.38	26.48	16.73	18.57
	16/5/2016	Amona Gate	86.85	41.2	20.26	25.62
		Opposite BSNL Exchange	81.34	40.68	18.52	20.38
		Near Dispatch Gate	69.09	28.78	18.75	21.02
		Compound wall Towards navelim	82.13	38.63	21.58	24.73

		Nr. Sateri Temple	80.23	38.8	20.38	23.61
		Compound wall Towards Maina	4875	22.82	15.18	18.62
	19/5/2016	Amona Gate	73.62	34.64	19.36	22.73
		Opposite BSNL Exchange	68.82	29.48	16.3	20.71
		Near Dispatch Gate	81.85	33.27	19.18	23.34
		Compound wall Towards navelim	79.65	35.84	19.55	22.84
		Nr. Sateri Temple	76.36	35.35	18.11	21.23
		Compound wall Towards Maina	70.62	34.56	18.54	20.86
	23/5/2016	Amona Gate	68.28	31.73	17.48	31.97
		Opposite BSNL Exchange	73.66	35.73	19.9	23.34
		Near Dispatch Gate	74.25	29.69	15.8	19.07
		Compound wall Towards navelim	68.44	27.61	17.3	20.81
		Nr. Sateri Temple	64.3	24.78	16.34	18.72
		Compound wall Towards Maina	73.36	35.82	21.32	23.44
	26/5/2016	Amona Gate	92.73	42.12	21.32	23.71
		Opposite BSNL Exchange	67.98	27.86	15.33	18.68
		Near Dispatch Gate	92.87	41.29	20.18	24.66
		Compound wall Towards navelim	59.22	26.45	16.01	19.76
		Nr. Sateri Temple	56.71	22.21	15.61	17.36

		Compound wall Towards Maina	65.22	28.66	17.52	19.67
	30/5/2016	Amona Gate	88.35	40.63	20.27	23.45
		Opposite BSNL Exchange	76.58	35.24	18.5	21.66
		Near Dispatch Gate	83.94	37.43	21.58	24.21
		Compound wall Towards navelim	73.66	32.23	18.48	23.17
		Nr. Sateri Temple	83.88	25.66	17.85	20.03
		Compound wall Towards Maina	52.18	25.67	15.86	18.53
<u>June'16</u>	2/6/2016	Amona Gate	46.72	15.64	8.59	10.35
		Opposite BSNL Exchange	59.05	23.87	8.56	10.55
		Near Dispatch Gate	44.38	18.34	7.66	9.64
		Compound wall Towards navelim	32.38	14.68	7.33	9.04
		Nr. Sateri Temple	42.65	13.27	12.46	14.65
		Compound wall Towards Maina	38.66	12.43	6.83	<9.00
	6/6/2016	Amona Gate	33.21	13.27	11.27	15.82
		Opposite BSNL Exchange	38.24	13.85	5.25	<9.00
		Near Dispatch Gate	52.86	20.46	10.23	13.63
		Compound wall Towards navelim	52.33	20.13	13.26	15.68
		Nr. Sateri Temple	34.72	10.1	7.2	9.38
		Compound wall Towards Maina	56.43	16.3	25.48	17.88

	9/6/2016	Amona Gate	55.56	23.33	14.35	16.23
		Opposite BSNL Exchange	53.11	22.21	11.91	13.18
		Near Dispatch Gate	38.75	15.59	5.31	<9.00
		Compound wall Towards navelim	48.15	13.6	10.47	12.22
		Nr. Sateri Temple	57.02	22.41	16.45	18.89
		Compound wall Towards Maina	45.16	13.68	10.11	12.62
	13/6/2016	Amona Gate	50.85	17.38	10.15	12.07
		Opposite BSNL Exchange	48.72	15.01	9.02	12.36
		Near Dispatch Gate	36.05	10.02	7.82	9.74
		Compound wall Towards navelim	36.05	12.39	6.73	<9.00
		Nr. Sateri Temple	50.18	20.04	14.82	17.02
		Compound wall Towards Maina	37.22	11.19	7.59	9.37
	16/6/2016	Amona Gate	37.08	12.85	5.56	<9.00
		Opposite BSNL Exchange	31.03	9.98	6.28	<9.00
		Near Dispatch Gate	48.45	14.47	10.26	12.62
		Compound wall Towards navelim	57.66	21.67	16.85	19.05
		Nr. Sateri Temple	30.03	8.69	<3.00	<9.00
		Compound wall Towards Maina	52.18	19.34	14.03	16.84
	20/6/2016	Amona Gate	52.45	20.38	12.85	15.37

		Opposite BSNL Exchange	42.47	13.51	12.2	14.52
		Near Dispatch Gate	30.33	11.23	<3.00	<9.00
		Compound wall Towards navelim	42.1	14.22	12.3	14.38
		Nr. Sateri Temple	46.78	12.1	11.57	13.66
		Compound wall Towards Maina	32.57	10.01	<3.00	<9.00
	23/6/2016	Amona Gate	33.27	10.52	7.33	9.4
		Opposite BSNL Exchange	56.88	16.72	14.76	17.43
		Near Dispatch Gate	52.74	22.46	16.3	18.33
		Compound wall Towards navelim	36.75	10.69	9.82	11.62
		Nr. Sateri Temple	38.12	9.81	6.74	<9.00
		Compound wall Towards Maina	53.2	20.75	16.3	18.66
	27/6/2016	Amona Gate	46.77	12.38	8.69	10.02
		Opposite BSNL Exchange	30.2	18.3	5.89	<9.00
		Near Dispatch Gate	40.88	13.64	12.44	15.76
		Compound wall Towards navelim	53.16	16.26	11.02	13
		Nr. Sateri Temple	54.06	17.51	13.42	15.42
		Compound wall Towards Maina	40.44	14.55	13.45	15.73
	30/6/2016	Amona Gate	27.83	9.27	4.74	<9.00
		Opposite BSNL Exchange	25.13	9.56	<3.00	<9.00

		Near Dispatch Gate	34.15	10.02	<3.00	<9.00
		Compound wall Towards navelim	40.18	12.52	8.74	10.13
		Nr. Sateri Temple	54.06	17.51	13.42	15.42
		Compound wall Towards Maina	24.68	8.73	<3.00	<9.00
<u>July'16</u>	4/7/2016	Amona Gate	42.85	13.64	8.59	10.47
		Opposite BSNL Exchange	53.24	15.22	8.73	10.48
		Near Dispatch Gate	47.62	15.22	11.02	13.44
		Compound wall Towards navelim	46.83	15.64	9.57	11.32
		Nr. Sateri Temple	39.56	14.51	10.28	12.33
		Compound wall Towards Maina	37.68	15.01	9.34	11.58
	7/7/2016	Amona Gate	37.64	11.39	5.36	<9
		Opposite BSNL Exchange	45.83	14.43	8.2	10.33
		Near Dispatch Gate	44.2	13.43	9.38	11.26
		Compound wall Towards navelim	44.57	13.68	8.86	10.34
		Nr. Sateri Temple	36.44	13.6	8.77	10.18
		Compound wall Towards Maina	33.47	14.51	7.88	9.12
	11/7/2016	Amona Gate	48.76	16.18	8.42	10.74
		Opposite BSNL Exchange	42.59	12.72	5.34	<9.00
		Near Dispatch Gate	36.85	12.06	8.64	10.38

		Compound wall Towards navelim	39.66	11.02	6.48	<9.00
		Nr. Sateri Temple	32.28	11.06	8.31	10.02
		Compound wall Towards Maina	29.25	12.64	5.34	<9.00
	14/7/2016	Amona Gate	50.12	20.29	9.23	12.08
		Opposite BSNL Exchange	55.38	17.84	9.22	11.65
		Near Dispatch Gate	38.49	12.52	9.03	11.04
		Compound wall Towards navelim	41.25	11.56	8.03	10.07
		Nr. Sateri Temple	26.82	9.69	6.45	<9.00
		Compound wall Towards Maina	24.82	12.06	3.26	<9.00
	18/7/2016	Amona Gate	32.06	9.73	<3.00	<9.00
		Opposite BSNL Exchange	32.16	8.65	3.18	<9.00
		Near Dispatch Gate	28.16	10.23	4.32	<9.00
		Compound wall Towards navelim	32.46	9.65	3.22	<9.00
		Nr. Sateri Temple	23.57	7.65	<3.00	<9.00
		Compound wall Towards Maina	18.33	9.44	<3.00	<9.00
	21/7/2016	Amona Gate	28.44	7.57	<3.00	<9.00
		Opposite BSNL Exchange	29.02	6.57	<3.00	<9.00
		Near Dispatch Gate	25.37	8.32	<3.00	<9.00
		Compound wall Towards navelim	27.55	7.19	<3.00	<9.00

		Nr. Sateri Temple	17.64	7.44	<3.00	<9.00
		Compound wall Towards Maina	16.49	7.53	<3.00	<9.00
	25/7/2016	Amona Gate	45.83	14.58	7.53	9.3
		Opposite BSNL Exchange	37.56	10.6	4.3	<9.00
		Near Dispatch Gate	30.58	11.35	<3.00	<9.00
		Compound wall Towards navelim	33.67	10.27	<3.00	<9.00
		Nr. Sateri Temple	25.92	9.02	<3.00	<9.00
		Compound wall Towards Maina	22.57	11.19	<3.00	<9.00
	28/7/2016	Amona Gate	39.2	11.85	5.84	<9.00
		Opposite BSNL Exchange	43.77	13.18	6.59	<9.00
		Near Dispatch Gate	42.33	14.18	5.19	<9.00
		Compound wall Towards navelim	40.42	12.02	4.25	<9.00
		Nr. Sateri Temple	30.18	11.35	4.05	<9.00
		Compound wall Towards Maina	32.45	13.06	4.82	<9.00
<u>August`16</u>	1/8/2016	Amona Gate	51.06	16.8	10.33	12.58
		Opposite BSNL Exchange	48.62	14.51	9.03	11.82
		Near Dispatch Gate	53.16	19.54	10.62	12.75
		Compound wall Towards navelim	50.82	19.42	9.73	12.08
		Nr. Sateri Temple	47.86	17.55	8.32	10.37

		Compound wall Towards Maina	47.86	17.63	7.64	9.32
	4/8/2016	Amona Gate	44.83	14.01	8.67	10.26
		Opposite BSNL Exchange	40.85	12.77	7.26	9.13
		Near Dispatch Gate	48.5	16.84	7.26	19.15
		Compound wall Towards navelim	45.67	17.22	7.46	9.52
		Nr. Sateri Temple	43.59	14.6	6.54	9.13
		Compound wall Towards Maina	43.59	14.26	5.83	9.08
	8/8/2016	Amona Gate	37.62	10.77	6.42	<9
		Opposite BSNL Exchange	35.64	10.65	5.4	<9
		Near Dispatch Gate	42.84	14.51	5.84	<9
		Compound wall Towards navelim	39.88	13.51	4.85	9.07
		Nr. Sateri Temple	35.72	12.06	4.77	9.06
		Compound wall Towards Maina	35.72	11.06	4.77	<9
	11/8/2016	Amona Gate	42.84	12.64	7.08	9.12
		Opposite BSNL Exchange	39.72	11.6	6.58	9.06
		Near Dispatch Gate	37.6	12.53	4.66	<9
		Compound wall Towards navelim	34.26	10.65	4.22	<9
		Nr. Sateri Temple	30.63	11.23	3.1	<9
		Compound wall Towards Maina	30.63	9.65	4.02	<9

	16/08/2016	Amona Gate	33.85	8.69	5.46	<9
		Opposite BSNL Exchange	32.66	9.19	4.1	<9
		Near Dispatch Gate	33.18	10.15	3.85	<9
		Compound wall Towards navelim	28.54	8.73	3.8	9.02
		Nr. Sateri Temple	26.99	9.36	<3	<9
		Compound wall Towards Maina	26.99	8.52	3.48	<9
	18/08/2016	Amona Gate	30.18	8.19	4.72	<9
		Opposite BSNL Exchange	28.5	8.52	<3	<9
		Near Dispatch Gate	26.92	8.73	3.24	9.03
		Compound wall Towards navelim	24.72	8.4	<3	<9
		Nr. Sateri Temple	23.47	8.73	<3	<9
		Compound wall Towards Maina	23.47	8.19	<3	<9
	22/08/2016	Amona Gate	27.66	7.9	3.6	<9
		Opposite BSNL Exchange	26.73	8.15	3.17	<9
		Near Dispatch Gate	28.56	8.32	<3	<9
		Compound wall Towards navelim	27.33	9.11	<3	<9
		Nr. Sateri Temple	28.33	8.32	3.05	9.02
		Compound wall Towards Maina	28.33	7.9	3.22	<9
	25/08/2016	Amona Gate	31.54	10.02	3.87	<9
		Opposite BSNL Exchange	33.08	9.07	<3	<9

		Near Dispatch Gate	30.48	9.44	3.05	<9
		Compound wall Towards navelim	30.25	11.35	3.02	<9
		Nr. Sateri Temple	31.54	10.58	3.08	9.1
		Compound wall Towards Maina	31.54	9.27	3.34	9.04
	29/8/2016	Amona Gate	29.1	8.73	3.15	<9
		Opposite BSNL Exchange	28.86	8.65	<3	<9
		Near Dispatch Gate	26.95	8.52	<3	<9
		Compound wall Towards navelim	25.49	10.44	<3	<9
		Nr. Sateri Temple	24.22	9.11	<3	<9
		Compound wall Towards Maina	24.22	8.11	<3	<9
	<u>September`16</u>	Amona Gate	62.85	25.41	12.5	17.52
		Opposite BSNL Exchange	78.73	16.55	10.32	13.06
		Near Dispatch Gate	63.18	15.3	12.03	15.67
		Compound wall Towards navelim	62.38	17.63	10.35	13.64
		Nr. Sateri Temple	53.67	19.34	9.53	12.45
		Compound wall Towards Maina	63.18	18.34	12.03	15.42
	5/9/2016	Amona Gate	73.16	28.69	16.02	20.33
		Opposite BSNL Exchange	69.12	22.37	14.7	17.42
		Near Dispatch Gate	72.64	18.59	16.1	19.22

		Compound wall Towards navelim	70.77	22.37	14.27	17.55
		Nr. Sateri Temple	60.18	23.37	14.26	17.02
		Compound wall Towards Maina	67.22	21.08	15.24	18.3
	8/9/2016	Amona Gate	81.42	32.02	19.47	23.82
		Opposite BSNL Exchange	76.44	27.36	18.22	20.53
		Near Dispatch Gate	63.22	23.54	19.46	23.05
			82.13	26.2	18.06	22.09
		Nr. Sateri Temple	68.44	20.71	17.22	20.43
		Compound wall Towards Maina	74.07	29.11	18.26	23.08
	12/9/2016	Amona Gate	63.1	27.2	17.33	16.22
		Opposite BSNL Exchange	62.19	32.14	21.64	25.41
		Near Dispatch Gate	75.59	20.63	21.54	24.26
		Compound wall Towards navelim	67.16	23.08	15.33	18.46
		Nr. Sateri Temple	75.12	25.03	20.38	23.16
		Compound wall Towards Maina	71.34	26.78	16.32	20.44
	15/9/2016	Amona Gate	82.26	30.15	22.16	25.48
		Opposite BSNL Exchange	72.67	29.73	17.83	20.77
		Near Dispatch Gate	70.44	22.87	24.73	27.08
		Compound wall Towards navelim	74.55	27.82	20.47	23.54
		Nr. Sateri Temple	72.34	22.79	19.7	22.84

		Compound wall Towards Maina	69.15	23.04	13.77	16.8
	19/9/2016	Amona Gate	94.37	32.56	25.08	28.12
		Opposite BSNL Exchange	85.3	33.52	20.09	23.52
		Near Dispatch Gate	85.03	27.07	26.55	32.12
		Compound wall Towards navelim	80.29	41.67	23.55	26.18
		Nr. Sateri Temple	67.33	18.01	15.49	18.03
		Compound wall Towards Maina	76.2	27.65	18.2	21.16
	22/9/2016	Amona Gate	87.48	27.15	20.42	24.76
		Opposite BSNL Exchange	76.62	24.87	16.54	21.33
		Near Dispatch Gate	80.23	25.75	23.18	26.88
		Compound wall Towards navelim	64.6	37.43	19.72	23.4
		Nr. Sateri Temple	62.29	16.55	13.16	15.82
		Compound wall Towards Maina	71.12	24.12	16.74	19.52
	26/9/2016	Amona Gate	90.37	31.06	24.1	27.09
		Opposite BSNL Exchange	78.31	25.78	22.13	25.84
		Near Dispatch Gate	76.94	23.04	20.56	23.15
		Compound wall Towards navelim	62.14	38.34	16.46	19.02
		Nr. Sateri Temple	64.26	27.9	16.73	20.44
		Compound wall Towards Maina	68.15	24.95	12.67	15.33
	29/9/2016	Amona Gate	96.05	33.39	26.34	30.14

		Opposite BSNL Exchange	82.54	28.19	25.1	28.13
		Near Dispatch Gate	73	20.54	18.47	20.71
		Compound wall Towards navelim	58.97	33.72	13.82	15.77
		Nr. Sateri Temple	58.81	20.79	14.02	17.58
		Compound wall Towards Maina	73.01	28.11	17.59	20.48



sesa goa iron ore

To

Date: 13/09/2016

The Member Secretary,

Goa State Pollution Control Board,

EDC, Patto Plaza,

Panjim, Goa- 403001

Sub: Submission of Environmental Statement for 2015-16 for Coke Oven Plant- Expansion

Ref:- Consent to Operate under Water Act and Air Act vide letter no. 5/4462//09-PCB/C1666 valid upto 31/08/2017.

Sir,

With reference to the Consent to operate under Water Act & Air Act, please find enclosed herewith environmental statement of Vedanta Ltd. – Coke Oven Plant Unit (Expansion) for the financial year ending 31st March 2016 for your perusal.

Hope you will find the same in order.

Thanking you

Yours faithfully

For Vedanta Ltd

M. V. Khanolkar

BM – Met Coke & Power

VEDANTA LIMITED (Formerly known as Sesa Steeltube Ltd/Sesa Goa Ltd.)
sesa goa iron ore: Sesa Ghor, 20 EDC Complex, Patto, Panjim, Goa - 403 001, India
T: +91 0832 2460600 | Website: www.vedantalimited.com

Registered Office: Sesa Ghor, 20 EDC Complex, Patto, Panaji (Goa) - 403 001
CIN: L13209GA1965PLC000044

FORM V

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING 31ST MARCH 2016

PART--- A

i	Name & address of the owner /occupier of the industry operation or process	Mr. D. D. Jalan Vedanta Ltd. – Coke Oven Plant Unit (Expansion) Sesa Ghor,20 EDC Complex Patto, Panaji, Goa – 403001.
ii	Industry category	Major
iii	Production capacity	3,00,000 TPA
iv	Year of establishment	March 2012
v	Date of last environment statement submitted	22 nd September 2015 for the financial year ending March 2015.

PART ---- B


Water and Raw Material consumption

(1) Water consumption m³/d

(a)	Process	-----
(b)	Cooling	450 m ³ / Day
(c)	Domestic	5 m ³ / Day

	Name of the product	Process water consumption per unit of product out put	
		During previous financial year 2014-2015	During current financial year 2015-2016
1	Metallurgical Coke	For Coke Quenching 0.63 m ³ / t Coke	For Coke Quenching 0.69 m ³ / t Coke

(2) Raw Material consumption

	Name of the Raw Material	Name of the Product	Consumption of Raw Material per unit
---	--------------------------	---------------------	--------------------------------------

		During previous Financial year 2014- 2015	During current Financial year 2015- 2016
Coking Coal	Metallurgical Coke	1323 Kg/T of product	1338 Kg/T of product

PART-----C

POLLUTION DISCHARGED TO ENVIRONMENT / UNIT OF OUT PUT

	Pollution	Quantity of pollutants discharged (mass/day)	Concentration of pollutants in discharge (mass/day)	Percentage of variation from prescribed standards with reasons
(a)	Water	No effluents discharged		No Variation
(b)	Air	Nil as flue gas is let out through WHRPP (waste heat recovery power plant) stack.		Not Applicable

Note:

(i) Storm water is let out after achieving proper settling in settling pond.

(ii) There are two stacks of 35m height. Each stack is connected to a battery of 36 coke ovens. A tapping from each of these stacks is connected to Waste Heat Recovery Boiler (WHRB) - 2 X 65 TPH.

During the normal operation, the coke oven stacks are closed with flap dampers and sensible heat is diverted to WHRB for clean power generation.

PART---- D

HAZARDOUS WASTES

(As specified under Hazardous Wastes (Management, Handling & Transboundary movement) Rules, 2008)

		During the previous Financial year (2014-15)	During the current Financial year (2015-16)
(a)	From process	N.A	N.A
(b)	From pollution control facilities	N.A	N.A

PART--- E

SOLID WASTES

No Solid Waste is generated in Vedanta Ltd. Non Recovery type Coke Oven Process.

PART-- F

1. Hazardous Waste:

Occupier is authorized to handle used oil/Spent oil (Category 5.1) upto 5,000 liters per annum, Oil soaked cotton rags/wastes (Category 5.2) up to 20,000 kg/year, and Used/Discarded Paint Tins (Category 33.3) up to 2,000 nos/year.

Total spent oil disposed off to authorized recycler for the financial year 2015-16 is 1720 Liters.

Oil soaked cotton waste of Coke Oven Plant unit (expansion) of about 750 Kg is disposed off by incineration in coke ovens of Coke Oven Plant unit (expansion).

Total nos. of used containers disposed for the financial year 2015-16 is 71 nos.

Form-4 is submitted to GSPCB on 17/06/2016.

PART—G

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

1. The water used for coke quenching is recycled & recirculated, after settling in the tanks.
2. Air Pollution control devices - Bag filters provided for Coke Screening Plant, Coal Crushing Plant, charging machine/ for individual coke ovens along coal cake charging side.
3. Grit arrestors provided at quench tower.
4. Coke Oven Flue Gas (COFG), having sensible heat, is utilized for generating Clean Power, using Waste Heat Recovery Boiler (WHRB).
5. Continuous Ambient Air Quality Monitoring System (CAAQMS) has been installed at Navelim side to monitor Particulate Matter (PM₁₀ & PM_{2.5})
6. Windshields have been set up along the coke yard.

PART—H

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

Nil

PART--I

Any other particulars for improving the quality of the environment.

- Total of 750 saplings were planted in the plant premises of Met Coke Division, Coke Oven Plant (Expansion) & Power Plant for the year 2015-16.
 - Stakeholder engagement is carried out, by virtue of which, various socio-economic programs on the front of education, health, infrastructure, agriculture & livelihood development for overall community development in Navelim village has been taken.
- ✓



sesa goa iron ore

To

Date: 13/09/2016

The Member Secretary,

Goa State Pollution Control Board,

EDC, Patto Plaza,

Panjim, Goa -403001

Sub: Submission of Environmental Statement for 2015-16 for Vedanta Limited – 0.45 MTPA Blast Furnace (Expansion)

Ref:- Consent to Operate under Air Act & Water Act and Authorisation under Hazardous Waste Rules – 0.45 MTPA Blast Furnace, vide letter No.5/4462/09-PCB/C2-1613 dated 13/05/2016.

Sir,

With reference to the Consent to operate under Water Act & Air Act, please find enclosed herewith environmental statement of Vedanta Ltd. – 0.45 MTPA Blast Furnace for the financial year ending 31st March 2016 for your perusal.

Hope you will find the same in order.

Thanking you

Yours faithfully

For Vedanta Ltd.

N. L. Vhatte

AVP - Pig Iron Division

VEDANTA LIMITED (Formerly known as Sesa Sterlite Ltd/Sesa Goa Ltd.)
sesa goa iron ore, Sesa Ghor, 20 EDC Complex, Patto, Panjim, Goa - 403 001, India
T : +91 0832 2460600 | Website: www.vedantalimited.com

Registered Office: Sesa Ghor, 20 EDC Complex, Patto, Panaji (Goa) - 403 001
CIN: L13209GA1965PLC006044

FORM V

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING 31ST MARCH 2016.

PART--- A

i	Name & address of the owner /occupier of the industry operation or process	Mr. D. D. Jalan The Occupier Vedanta Limited – 0.45 MTPA Blast Furnace Navelim Goa 403107
ii	Industry category	Major
iii	Production capacity	4,50,000 T / Year Pig Iron
iv	Year of establishment	2012
v	Date of last environment statement submitted	22 nd September 2015

PART ---- B

Water and Raw Material consumption

Water consumption m³/day

(a)	Process	Nil
(b)	Cooling*	1645.8 m ³ / Day
(c)	Domestic**	63.86 m ³ / Day

	Name of the product	Process water consumption per unit of product out put	
		During previous financial year 2014-15	During current financial year 2015-16
1	Pig Iron	Process Water – NA Cooling Water *- 1.42 m ³ /t of Pig Iron	Process Water – NA Cooling Water *- 1.54 m ³ /t of Pig Iron

*Cooling water is inclusive of slag granulation, pig cooling, O₂/N₂ cooling; BF stove cooling, dust suppression.

** Domestic consumption is a combined figure for 0.45 MTPA Blast Furnace and for Sinter Plant.

Note:

Around 50000 Nm³/hr BFG was used for thermal purposes such as Hot Blast Stoves, Ignition furnace of Sinter Plant, etc.

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(2) Raw Material consumption

Name of the Raw Material	Name of the Product	Consumption of Raw Material per unit	
		During previous Financial year 2014-15	During current Financial year 2015-16
a) Metallurgical Coke	Pig Iron	480.9 Kg/T of product	506.4 Kg/T of product
b) Lumpy High Grade Ore		377 Kg/T of product	408 Kg/T of product
c) Limestone		9.2 Kg/T of product	5.9 Kg/T of product
d) Dolomite		0 Kg/T of product	8.4 Kg/T of product
e) Manganese Ore		0 Kg/T of product	0 Kg/T of product
f) Siliceous ore/Quartz		16.8 Kg/T of product	59.0 Kg/T of product
g) Sinter		1316 Kg/T of product	1302 Kg/T of product
h) Pulverized coal		109.9 Kg/T of product	102.4 Kg/T of product

Note:

- 1) The raw material consumption varies depending on the grade of the ore. Sinter produced through Sinter plant is used as raw material in the production of Pig Iron. Depending on quality of Sinter, fluxes like limestone & dolomite are added accordingly.
- 2) Pulverized Coal Injection was commissioned in April 2013
- 3) The O₂N₂ plant is set up to supply oxygen for blast enrichment and Nitrogen gas for sealing and purging purpose.

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PART-----C

Pollution discharged to environment / unit of out put

	Pollution	Quantity of pollutants discharged (mass/day)	Concentration of pollutants in discharge (mass /day)	Percentage of variation from prescribed standards with reasons
(a)	Water	No effluents is discharged from 0.45 MTPA Blast Furnace		No Variation
(b)	Air	Monitoring carried out as per Consent conditions, and results submitted to GSPCB		

Note: During Monsoons, only the storm water is let out through storm water drains after achieving settling in the settling pond.

PART--- D

HAZARDOUS WASTES

(As specified under Hazardous Wastes (Management, Handling & transboundary movement) Rules, 2008.

		During the previous Financial year (2014-15)	During the current Financial year (2015-16)
(a)	From process	N.A	N.A
(b)	From pollution control facilities	N.A	N.A

PART--- E

SOLID WASTES

		During the previous Financial year (2014-15)	During the current Financial year (2015-16)
(a)	From Process :	Nil	Nil
(b)	From Pollution Control Facility		
	Flue Dust	7323.69 t	10166.07 T

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	Slurry	Nil	Nil
(c)	(1) Quantity recycled or re-utilized within the unit	Reused in Sinter Plant	Reused in Sinter Plant
	(2) Sold	NA	Nil
	Flue Dust	NA	Nil
	Slurry	NA	Nil
	(3) Disposed	NA	Nil

PART—F

1. **Hazardous Waste**: Occupier is authorized to handle used oil/Spent oil (Category 5.1) upto 15 MT /Annum; Oil soaked cotton rags/wastes (Category 5.2) up to 10 MT/year, and Used/Discarded Paint Tins (Category 33.3) up to 2 MT /year.

Total spent oil (Category 5.1) disposed for the financial year 2015-16 is 6665 Liters.

Total oil soaked cotton waste (category 5.2) disposed for the financial year 2015-16 is 355 kg.

Used/Discarded Paint Tins (Category 33.3) disposed for the financial year 2015-16 is 281 nos.

The same quantity of spent oil and used containers are disposed off to authorized recycler.

Hazardous Waste Authorization is valid up to 14/02/2018.

Annual Returns in Form 4 submitted to GSPCB on 20/06/2016.

2. **Dust from de-dusting system & dry GCP** – The dust is collected and used as raw material to produce sinter at Sinter Plant. Also the slurry obtained from PCM is dried and used in sinter

PART—G

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

- We have installed facility to use PCI of 102 kg/T hot metal which will substitute some coke. This initiative has helped to conserve scarce coking coal & consequently reduce GHG emissions. PCI was commissioned in April'13.
- Around 75-80% sinter is charged in the blast furnace, which helps in reduction of coke rate and subsequently reduction of GHG emissions. Besides iron ore fines can be utilized conserving the lumpy iron ore.

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- Hot Blast Stoves (HBS) are top fired, helping in higher blast temperature. Waste heat of flue gases is utilized in Air preheater (APH). These have accounted for reduction in coke rate and subsequent reduction in GHG emissions.
- Dry Gas Cleaning plant has helped in reducing water consumption.
- Rain guns are also installed in raw material yard to prevent the fugitive dust.
- De-dusting unit is installed at cast house and PCM area.
- De-dusting unit is installed at stock house.
- 15 KLD & 7.5 KLD Sewage Treatment Plant have been installed.
- Continuous Ambient Air Quality Monitoring System (CAAQMS) has been installed to monitor Particulate Matter (PM₁₀ & PM_{2.5}), Sulphur dioxide (SO₂), Nitrogen dioxide (NO₂), Ozone (O₃), Carbon monoxide (CO). A weather monitoring station is also provided wherein wind direction, wind speed, temperature, humidity, rainfall, etc. can be monitored
- Also, air quality is monitored inside the plant area of blast furnaces, stock house, and dispatch yard.
- Geotextiles have been laid on the slopes at plant site.
- Windshields have been set up at the dispatch yard and raw material yard, along the boundary wall.

PART—H

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

- Pig cooling water flow meter is there already & flow meters for Slag granulation will be installed.
- O₂N₂ acoustic enclosure was installed in April '16.

PART—I

Any other particulars for improving the quality of the environment.

- About 1000 trees have been planted in 2015-16, in the premises common for 0.45 MTPA Blast Furnace & Sinter Plant. Plantation area is common for 0.45 MTPA Blast furnace & Sinter Plant.

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- Some of the roads are concreted & the roads are sprayed for dust suppression regularly.
- Energy Conservation (ENCON) cell is actively engaged in creating the awareness among employees and adopting various measures for reduction in energy consumption. Some of the energy saving projects includes; Conveyor belt logic modification, optimization of low pressure water circuit, VFD for PCI angle conveyor, optimization of MAC air flow rate at O2N2 plant, power factor correction, etc.
- Stakeholder engagement is carried out, by virtue of which, various socio-economic programs on the front of education, health, infrastructure, agriculture & livelihood development for overall community development in Amona & Betki-Khandola villages have been taken.

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sesa goa iron ore

To

Date: 13/09/2016

The Member Secretary,
Goa State Pollution Control Board,
EDC, Patto Plaza,
Panjim, Goa 403001

Sub: Submission of Environmental Statement for the Financial Year 2015-16

Ref:-Consent to Operate under Water Act & Air Act and Hazardous Waste Authorization

Vide letter no. 5/4462/09-PCB/C2- 1088 valid till 31/12/2017

Sir,

With reference to the Consent to Operate under Water Act & Air Act, please find enclosed herewith Environmental Statement of **Vedanta Ltd – Power Plant-2** for the financial year ending 31st March 2016 for your perusal.

Hope you will find the same in order.

Thanking you

Yours faithfully

For Vedanta Ltd.

Saptesh Sardesai
AGM – Power.

VEDANTA LIMITED (Formerly known as Sesa Sterlite Ltd/Sesa Goa Ltd.)
Pig Iron Division/ Met Coke Division/ Power, Amona/Navelim, Tal – Bicholim, Goa – 403 107
Website: www.vedantalimited.com

Registered Office: Sesa Ghor, 20 EDC Complex, Patto, Panaji (Goa) - 403 001
CIN: L13209GA1965PLC000044

FORM V

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING 31ST MARCH 2016

PART--- A

i	Name & address of the owner /occupier of the industry operation or process	Mr. D. D. Jalan Vedanta Ltd. – Waste Heat Recovery Power Plant-2 Sesa Ghor,20 EDC Complex Patto, Panaji, Goa – 403001.
ii	Industry category	Large scale industry
iii	Production capacity	30 MW Electrical Power
iv	Year of establishment	2012
v	Date of last environment statement submitted	22 nd September 2015 for the financial year ending March 2015.

PART ---- B

Water and Raw Material consumption.

(1) Water consumption m³/d:

(a)	Boiler Feed Water	74.77 KLD
(b)	Cooling	1999.1 KLD
(c)	Domestic	2.25 KLD

	Name of the product	Process water consumption per unit of product out put	
		During previous financial year 2014-2015	During current financial year 2015-2016
1	Power from waste heat of COFG (from Coke oven plant – Expansion) & BFG (from 0.45 MTPA Blast Furnace)	3.72 m ³ water for 1 MWhr Power *	0.115 m ³ process water for 1 MWhr Power



Note:

- ✓ *For FY 2015-16, reporting we have considered boiler feed water only as process water, while in FY 2014-15, we have considered this river water sourced for cooling system(discharge back after monitoring and use) as a part of process water.
- ✓ Domestic water data calculated on per capita basis as metered reading were not available.

(2) Raw Material consumption

Name of the Raw Material	Name of the Product	Consumption of Raw Material per unit	
		During previous Financial year 2014-2015	During current Financial year 2015-2016
Waste heat of Cole Oven Flue Gas and Blast Furnace Gas.	Power	Avg. of 43708.20 MKcal of COFG & Avg. of 13590.571 MKcal of BFG	3.16 Mill Kcal for 1 MWh Generation.

Note:- For the FY 2015-16 we have considered specific heat consumption for power generation.

PART-----C

POLLUTION DISCHARGED TO ENVIRONMENT / UNIT OF OUT PUT

	Pollution	Quantity of pollutants discharged (mass/day)	Concentration of pollutants in discharge (mass/day)	Percentage of variation from prescribed standards with reasons
(a)	Water	Avg. Cooling Tower Blow down is 154.76 KLD		Well within permissible limits
(b)	Air	Particulate Matter (Avg. 30.18 mg/Nm ³)		Well within permissible limits

Note:

- (i) Blow down from cooling tower is let off back into river, after proper treatment & monitoring.
- (ii) Waste water from Boiler & DM water plant after neutralization is used in Coke Oven Plant which is a zero discharge unit




PART--- D

HAZARDOUS WASTES

(As specified under Hazardous Wastes (Management, Handling & Transboundary movement) Rules, 2008)

		During the previous Financial year (2014-15)	During the current Financial year (2015-16)
(a)	From process	N.A	N.A
(b)	From pollution control facilities	N.A	N.A

PART--- E

SOLID WASTES

No Solid Waste generated

PART-- F

1. **Hazardous Waste:** Occupier is authorized to handle used oil/Spent oil (Category 5.1) upto 25,000 liters per year, Oil soaked cotton rags/wastes (Category 5.2) up to 1000 kg/year, and Used/Discarded containers (Category 33.3) up to 1000 nos/year.

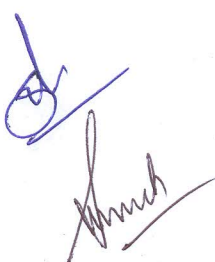
The Hazardous Waste Authorization is valid upto 31/12/2017.

- Total spent oil disposed off to authorized recycler for the financial year 2015-16 is 16625 liters.
- No Oil soaked cotton waste is disposed off for financial year 2015-16.
- No used containers are disposed for the financial year 2015-16.

Form-4 is submitted to GSPCB on 17/06/2016.

PART—G

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



- This is a Clean Technology as WHRB PP is designed to operate on waste gases of Coke Oven Plant and the Blast Furnace, to generate Power.
- The excess Power generated is evacuated to Goa Electricity Department (GED), which helps the state of Goa to meet part of the Power Requirements.

PART—H

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

Waste Heat Recovery based Power Plant is itself a Clean Process, which generates power from waste heat.

PART—I

Any other particulars for improving the quality of the environment.

- Total of 750 saplings were planted in the plant premises of Met Coke Division, Coke Oven Plant (Expansion) & Power Plant for the year 2015-16.





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sesa goa iron ore

To

Date: 13/09/2016

The Member Secretary,

Goa State Pollution Control Board,

EDC, Patto Plaza,

Panjim, Goa 403001

Sub: Submission of Environmental Statement for 2015-16 for 1 MTPA Sinter Plant.

Ref: - 1) Consent to Operate under Air (Prevention & Control of Pollution) Act, 1981 and Water (Prevention & Control of Pollution) Act, 1974 vide Letter No. 5/4462/09-PCB/C2-1613 dated 13/05/2016 granted to Vedanta Ltd. (Expansion of Unit) – 1 MTPA Sinter Plant.

Sir,

With reference to the Consent to operate under Water Act & Air Act, please find enclosed herewith environmental statement of Vedanta Ltd. (Expansion of Unit) – 1 MTPA Sinter Plant for the financial year ending 31st March 2016 for your perusal.

Hope you will find the same in order.

Thanking you

Yours faithfully

For Vedanta Ltd.

N. L. Vhatte

AVP-Pig Iron Division

VEDANTA LIMITED (Formerly known as Sesa Sterlite Ltd/Sesa Goa Ltd.)
sesa goa iron ore, Sesa Ghor, 20 EDC Complex, Patto, Panjim, Goa - 403 001, India
T: +91 0832 2460600 Website: www.vedantalimited.com

Registered Office, Sesa Ghor, 20 EDC Complex, Patto, Panaji (Goa) - 403 001
CIN: L13209GA1965PLC000044

FORM V

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING 31ST MARCH 2016.

PART--- A

i	Name & address of the owner /occupier of the industry operation or process	Mr. D. D. Jalan The Occupier Vedanta Limited – 1 MTPA Sinter Plant, Navelim Goa 403107
ii	Industry category	Major
iii	Production capacity	1 MTPA Sinter
iv	Year of establishment	November 2012
v	Date of last environment statement submitted	22 September 2015

PART ---- B

Water and Raw Material consumption

(1) Water consumption m³/d

(a)	Process	NIL
(b)	Cooling*	265.41 m ³ / Day
(c)	Domestic**	Refer note below

Note: - * This year process water has been included in cooling water.

	Name of the product	Process water consumption per unit of product out put	
		During previous financial year 2014-15	During current financial year 2015-16
1	Sinter	Process Water – 0.050m ³ /t	Process Water – NIL
		Cooling Water –0.122 m ³ /t	Cooling Water –0.131 m ³ /t

Note:

- 1) *Above cooling water is inclusive of water used for cooling purpose, dust suppression & civil work and process water.
- 2) **Domestic water consumption reported for 0.45MTPA Blast furnace is a combined figure for the units 0.45 MTPA Blast Furnace and Sinter Plant. Data not captured separately.

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(2) Raw Material consumption

Name of the Raw Material	Name of the Product	Consumption of Raw Material per unit	
		During previous Financial year 2014-15	During current Financial year 2015-16.
High Grade Low Mn Iron Ore Fines	Sinter	115.1 Kg/T of product	77 Kg/T of product
Low Grade Iron Ore Fines		754.9 Kg/T of product	848 Kg/T of product
Coke Breeze		60.3 Kg/T of product	62 Kg/T of product
Limestone		95.9 Kg/T of product	108 Kg/T of product
Dolomite		58.6 Kg/T of product	63 Kg/T of product
Limestone & Dolomite Fines		0.46 Kg/T of product	2 Kg/T of product
Pig Iron 10/-50 mm Goli & -10mm Goli		11.1 Kg/T of product	19 Kg/T of product
Quick Lime		21.3 Kg/T of product	26 Kg/T of product
Sinter Dust & Sinter Fines (-5mm)		40.2 Kg/T of product	27 kg/T of product
Flue dust from Blast Furnace		16 Kg/T of product	25 Kg/T of product

Note:

- 1) All flue dust, fines, etc generated at the Pig Iron Plant & Sinter Plant is used as a raw material in sinter Plant

PART-----C

POLLUTION DISCHARGED TO ENVIRONMENT / UNIT OF OUT PUT

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	Pollution	Quantity of pollutants discharged (mass/day)	Concentration of pollutants in discharge (mass /day)	Percentage of variation from prescribed standards with reasons
(a)	Water	No effluents is discharged from Sinter Plant		No Variation
(b)	Air	Monitoring is done as per Consent condition and reports submitted to GSPCB.		

PART---- D

HAZARDOUS WASTES

(As specified under Hazardous Wastes (Management, Handling & transboundary movement) Rules, 2008.

		During the previous Financial year (2014-15)	During the current Financial year (2015-16)
(a)	From process	N.A	N.A
(b)	From pollution control facilities	N.A	N.A

PART---- E

SOLID WASTES

		During the previous Financial year (2014-15)	During the current Financial year (2015-16)
(a)	From Process :	NA	Nil
(b)	From Pollution Control Facility		
	Flue Dust	Flue dust from APC devices is recycled & reused in Sinter making	Flue dust from APC devices is recycled & reused in Sinter making

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(c)	(1) Quantity recycled or re-utilized within the unit	Flue dust from APC devices is recycled & reused in Sinter making	Flue dust from APC devices is recycled & reused in Sinter making
	(2) Sold	NA	NA
	Flue Dust	NA	NA
	Slurry	NA	NA
	(3) Disposed	NA	Nil

PART—F

1. Hazardous Waste:

Hazardous Waste authorization. Consent to Operate under Air and Water Act obtained and valid upto 14/02/2018.

2. **Dust from de-dustings**— The dust is collected and re-used as raw material to produce sinter.

PART—G

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

- Sinter Plant in itself helps to utilize iron ore fines, conserving lumpy iron ore. Flue dust generated from Air Pollution Control (APC) devices is recycled & reused in sinter plant.
- Rain guns are also installed in raw material yard to prevent the fugitive dust.
- De-dusting unit is present for Proportioning building, Sintering building and Flux & Fuel building
- Electro-Static Precipitator (ESP) is present at the Tail-End & Head End of Sinter Machine.
- Geotextiles have been laid on the slopes at plant site.
- Windshields have been set up at the raw material yard area.
- Acoustic enclosures have been provided for Flux & fuel and proportioning ID fans.

PART—H

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

- Commissioning of dust suppression system at feeding ground hoppers is done.

PART—I

Any other particulars for improving the quality of the environment.

- About 1000 trees have been planted in 2015-16 at the expansion site, in the premises common for 0.45 MTPA Blast Furnace & Sinter Plant. Plantation area is common for 0.45 MTPA Blast furnace & Sinter Plant.
- Some of the roads are concreted & the roads are sprayed for dust suppression regularly.
- Energy Conservation (ENCON) cell is actively engaged in creating the awareness among employees and adopting various measures for reduction in energy consumption. Some of the energy saving projects include; VFD for P7 conveyor, LS2 conveyor motor starter modification, proportionate dedusting duct diversion, etc.
- Stakeholder engagement is carried out, by virtue of which, various socio-economic programs on the front of education, health, infrastructure, agriculture & livelihood development for overall community development in Amona & Betki-Khandola villages have been taken.

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