BY REGD. POST WITH AD

STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA]
A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012
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CONSENT ORDER

No. 6886 / IND-I-CON-6363 Dt. 31.03.2025 /

CONSENT ORDER NO. 2716.

Sub : Consent for discharge of sewage and trade effluent under Section 25/26 of Water (PCP) Act, 1974 and emission under Section 21 of Air (PCP) Act, 1981 for operation of the plant.

Ref : Your online application **ID No. 6171476, Dtd.08-02-2025, ID No. 6170975, Dtd.08-02-2025 and ID No.5649861, Dated 13-05-2024.**

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry: **M/s Ardent Steel Limited**

Name of the Occupier & Designation: **Dr. Subhasish Das, Director**

Address: **Phuljhar, Suakati, Dist: Keonjhar-758018**

This consent order is valid for the period from **01.04.2025 to 31.03.2029.**

Details of Products Manufactured:

Sl. No.	Product	Quantity
1.	Iron Ore Pellet	8,50,000 Metric Tonne /Annum
2.	Producer Gas	25,800 Nm^3/Hr
3.	Flux Grinding unit	5 Metric Tonnes/Hour
4.	Iron Ore Beneficiation	1.38 MTPA (Throughput capacity)
5.	LD Sludge as Raw Material	3,33,200 TPA

This consent order is valid for the specified outlets, discharge quantity and quality of effluents (ii) quantity of emission and its quality, specified chimney / stack (iii) quantity of solid waste and its disposal as specified below.

This consent is granted subject to the General and Special Conditions stipulated below:

A. Discharge permitted through the following outlet subject to the standard

Outlet No.	Description of outlet	Point of discharge	Quantity of discharge KLD or KL/hr	Prescribed Standard					
				pH	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	Fecal Coliform (MPN/ 100ml)	O & G (mg/l)
01.	Process effluent through settling tanks	Recycled back to process (900 KLD)	NIL	-	-	-	-	-	-
02.	Outlet of STP (100 KLD) for domestic wastewater of plant premises	To be used for gardening	100 KLD	6.5-9.0	30	-	100	1000	-

B. Emission permitted through the following stack subject to the prescribed standard

Chimney Stack No.	Description of Stack	Stack height (m)	Quantity of emission (m^3/hr)	Prescribed Standard (mg/Nm^3)		
				PM	SO_2	NO_x
1	Bag filter at proportioning system (Iron ore fines and coke bunker)	30	8,000	30	-	-
2	Bag filter at raw material transfer point of mixer (Mixture building)	30	4,000	30	-	-
3	Multi cyclone and ESP at travelling grate and rotary kiln	52	-	50	-	-
4	Bag filter at Flux grinding unit	26	6,500	30	-	-

C. Disposal of solid waste permitted in the following manner

Sl. No.	Type of Solid waste	Quantity generated (TPD)	Quantity to be reused on site (TPD)	Quantity to be reused off site (TPD)	Quantity disposed off (TPD)	Description of disposal site.
1.	Cinder from Gas Producer Plant	-	-	-	-	Used for low land filling inside plant premises
2.	Filter Cake	0.19 MTPA	NIL	NIL	0.19 MTPA	Earmarked site

D. GENERAL CONDITIONS FOR ALL UNITS

1. The consent is given by the Board in consideration of the particulars given in the application. Any change or alternation or deviation made in actual practice from the particulars furnished in the application will also be the ground for liable to review/variation/revocation of the consent order under section 27 of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 and to make such variations as deemed fit for the purpose of the Acts.
2. The occupier would immediately submit revised application for consent to operate to this Board in the event of any change in the quantity and quality of raw material / products / manufacturing process or quantity /quality of the effluent rate of emission / air pollution control equipment / system etc.
3. The applicant shall not change or alter either the quality or quantity or the rate of discharge or temperature or the route of discharge without the previous written permission of the Board.
4. The application shall comply with and carry out the directives/orders issued by the Board in this consent order without any negligence on his/her part. In case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order, the applicant shall be liable for legal action as per the provisions of the Law.
5. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent order.
6. The issuance of this consent does not convey any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State laws or regulation.
7. This consent does not authorize or approve the construction of any physical structure or facilities or the undertaking of any work in any natural water course.
8. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of this Board.
9. An inspection book shall be opened and made available to Board's Officers during the visit to the factory.
10. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment system / air pollution control system / stack monitoring system any other particulars as may be pertinent to preventing and controlling pollution of Water / Air.
11. The applicant shall display suitable caution board at the place where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating therein that the area into which the effluents are being discharged is not fit for the domestic use/bathing.
12. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.
13. The applicant shall maintain good house-keeping both within the factory and the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
14. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems install or used by him to achieve with the term(s) and conditions of the consent.
15. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilized as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed impervious.
16. The utilization of treated effluent on factory's own land, if any, should be completed and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or by overflow.
17. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands at any time.
18. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the occupier must adopt alternate satisfactory treatment and disposal measures.
19. The sludge from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank.
20. The effluent treatment units and disposal measures shall become operative at the time of commencement of production.
21. The applicant shall provide port holes for sampling the emissions and access platform for carrying out stack sampling

and provide electrical outlet points and other arrangements for chimneys/stacks and other sources of emissions so as to collect samples of emission by the Board or the applicant at any time in accordance with the provision of the Acts or Rules made therein.

22. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples / stack monitoring / inspection.

23. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.

24. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.

25. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner so as to meet the standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).

26. In case of episodal discharge/emissions the occupier shall take immediate action to bring down the emission within the limits prescribed by the Board and stop the operation of the plant if required. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.

27. The applicant shall keep the premises and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.

28. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and / or result in violation of the standards mentioned shall be reported to the Headquarters and Regional Office of the Board by E-mail within 2 hours of its occurrence.

29. The occupier has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the premises. This plantation is stipulated over and above the bulk plantation of trees in that area.

30. The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the shall be disposed off scientifically to the satisfaction of the Board.

31. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :
    i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.
    ii) Controlled incineration, wherever possible in case of combustible organic material.
    iii) Composting, in case of bio-degradable material.

32. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorization shall be obtained for handling and disposal of hazardous wastes.

33. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.

34. The applicant, his/heirs/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.

35. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.

36. Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.

37. The conditions imposed as above shall continue to be in force until revoked under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 A of Air (Prevention & Control of Pollution) Act, 1981.

38. The occupier shall comply to the conditions stipulated in CTE order issued by Odisha State Pollution Control Board and conditions stipulated in Environmental Clearances issued by MoEF&CC, Govt. of India.

E(1). SPECIAL CONDITIONS:

1. The proponent shall achieve the enhancement in the Pelletization Plant from 6,90,000 TPA to 8,50,000 TPA in the existing facility. Under no circumstances the unit shall install any additional plant facilities to achieve the said enhanced production capacity.
2. The industry shall comply the conditions imposed in the "No Increase in Pollution Load" certificate issued vide Boards' Letter No.13039, dtd.22.10.2020 and Consent to Establish order issued vide Boards' letter No.1164, dtd.29.01.2021.
3. The proponent shall strictly comply with the Fuel Policy of the State, promulgated by Department of Forest, Environment and Climate Change, vide Order No- FE-ENV3-ENV-0014-2017- 7485 Dt. 12-04-2021 and subsequent amendment vide 7271 Dt. 12-04-2023 for use of fuel.
4. Adequate dust suppression arrangements shall be provided at raw material handling, product handling, coal handling system and other potential dust generating points to control fugitive emission.
5. Dry Fog system shall be provided at Ground hopper, weigh feeder, vibrating screens and transfer points of the beneficiation plant. The raw material stack yard shall be provided with adequate nos. of rain guns, fixed sprinklers and fog canons to suppress wind born fugitive dust. The air pollution control measures shall be made ready before commission of the beneficiation plant.
6. The unit shall operate all the air pollution control devices effectively all the time so as to meet the prescribed standard for particulate matter emission as mentioned in Section-B of the consent order.
7. Ambient air quality shall be maintained inside the factory premise so as to conform the National Ambient Air Quality Standards prescribed under Environment (Protection) Rule,1986 as prescribed by the MoEF&CC, Govt. of India vide notification No. G.S.R 826(E), dt.16.11.2009.
8. The cinder generated from the Gas Producer Plant shall be dumped in an area earmarked for the same. Sprinkling arrangement shall be provided at the disposal site so that the ash does not become air borne during dry season.
9. The industry shall make entire internal roads black topped / concreted and permanent high pressure water spraying system shall be installed for regular spraying of water on roads and work zone to minimize fugitive emission.
10. Mechanical road sweeping machine shall be deployed for the roads and various work zone areas.
11. Mechanized wheel washing facility with wastewater recirculation system shall be installed at the exit point of the factory for the vehicles leaving the factory premises.

12. The project proponent shall install 24X7 Continuous Emission Monitoring System at process stack to monitor stack emission w.r.t. the standards prescribed in E(P) Rule, 1986 as amended from time to time and connected to SPCB and CPCB online server.

13. The height of the stack connected to DG sets of capacity more than 800 KW (1000 KVA) shall conform to the following:

    i) $14Q^{0.3}$, Q = Total SO_2 emission from the plant in kg/hr.

    ii) Minimum 6m. above the building where generator set is installed.

    iii) 30 m.

14. The height of the stack connected to DG set of capacity less than and upto 800 KW (1000 KVA) shall conform to the following:

    i) $H = h+0.2\sqrt{KVA}$

    ii) h= Height of the building where it is installed in meter

    iii) KVA = Capacity of DG set

    iv) H = Height of the stack in meter above ground level.

15. All DG sets installed before 1.7.2004 shall be scrapped. DG sets complying with either State-I or Stage-II emission norms shall reduce Particulate Matter Emission by 70% by installing RECD without affecting any other emission parameters as per the CPCB guidelines and Board's letter vide No.17927, dated 14.11.2023 and letter No.7146, dated 10.05.2024, in this regard.

16. Cooling tower blow down water shall be taken to storage pond and shall be used in green pellet making / dust suppression.

17. Wastewater generated during regeneration of DM plant shall be neutralized and reused for dust suppression.

18. The wastewater generated in slurry form from rotary dryer, indurating furnaces transfer points, pellet screens circuit etc. shall be treated in two nos. of thickeners and supernatant water shall be reused. Thickener underflow shall be taken to vacuum disc filter from where filter cake shall be separated and filtrate shall be collected in sump for reuse.

19. The tailing from beneficiation process and underflow from thickener shall be taken to thickener cake area and decanted water shall be reused in the process. The unit shall adopt zero discharge concept and under no circumstances wastewater shall be discharged to outside the premises.

20. The rejects generated in the form of filter cake from the filter press unit shall be properly disposed of in the earmarked area. The filter cake disposal area shall be properly lined with impervious clay liner. Tailing filter cake area pond shall be located on impervious areas with deep water table. The ground water lying must be structurally sound and able to bear the weight of impoundment.

21. The groundwater quality around the tailing/slime pond/ filter cake disposal site shall be monitored regularly.

22. The waste dump (filter cake) shall be stabilized so as to prevent generation of fugitive dust due to wind action.

23. Garland drains along with settling pit shall be provided around the iron ore fines stack yard and filter cake disposal area of beneficiation plant and raw material yard, product stockyard and reject material stacking area of pellet plant to control wash out of fines from the stack yards during rain.

24. The unit shall make effort to use the filter cake generated from Iron ore beneficiation plant as raw materials for value added products like ceramic floor tiles, wall tiles and bricks.

25. The surface runoff treatment system shall be augmented consisting of sedimentation through settling tanks / ponds in series followed by high-rate clarification through clarifloculator / tube settlers shall be installed to meet the discharge norms notified under E(P) Rule, 1986 and shall be recycled / discharged specially during monsoon period.

26. The industry shall install separate Sewage Treatment Plant (STP) of adequate capacity for treatment of domestic wastewater generated from the colony.

27. There shall not be any discharge of phenolic wastewater from the catch pit. The wastewater generated from the sealing of producer gas plant shall be recycled back to the process after separation of tar.

28. The tar so generated shall be stored off in a concrete pit under a cover shed.

29. A green belt of adequate width and density with at least 33% of the total area will be developed preferably with local species along the periphery of the unit and vacant areas of the premises shall be raised.

30. The unit shall obtain necessary clearance from CGWA for using ground water for industrial and domestic uses.

31. The unit shall obtain authorization from the Board under the Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016.

32. Rain water harvesting shall be followed by utilizing the rain water collected from the roof of the administrative buildings for recharging of ground water within the premises as per the concept and practices prescribed by CPCB.

33. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.

34. The Board reserves the right to revoke / refuse consent to operate / to modify or stipulate additional conditions as deemed appropriate at any time during period for which consent is granted.

E(2). Additional Special conditions for utilization of LD Converter gas cleaning sludge as a supplementary resource (along with Iron ore) for manufacturing of Iron Ore Pellets:

1. Utilization of LD Converter gas cleaning sludge as supplementary resource (along with Iron Ore) in the manufacturing of Iron Ore Pellets, shall be carried out as per standard operating procedure, process flow chart and checklist of minimal requisite facilities prescribed by CPCB, Delhi, in September 2023 (SOP-93) for utilization of hazardous waste under Rule 9 of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. In case of any variation to SOP is proposed, the industry shall apply to CPCB under Rule 9 of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 for utilization of such hazardous waste.

2. The quantity of utilization of LD Converter gas cleaning sludge as supplementary resource (along with Iron ore) in the manufacturing of Iron Ore Pellets shall not exceed 3,33,200 TPA.

3. LD Converter gas cleaning sludge shall be stored in dedicated storage area with impervious floor under covered storage shed within premises. The storage sheds shall have proper slope and seepage collection pit to collect seepage and floor washing. The collected seepage / floor washing shall be utilized in the process or channelized to ETP for further treatment.

4. LD Converter gas cleaning sludge and other raw materials shall be stored separately under shed.

5. The unloading, storage, crushing, transfer and other handling of LD Converter gas cleaning sludge shall be carried out using mechanical means with minimal manual intervention in closed system.

6. The unit shall ensure control of fugitive emissions at material transfer points, mixing units and grinding units by adopting closed system, and also through dust extraction system with APCD such as bag filter.

7. Work zone emission in the work zone area shall comply with the following standards:

PM_{10} - 5 mg/m^3 TWA*(PEL)
SO_2 - 13 mg/Nm^3 TWA* (PEL)
NO_x - 9 mg/Nm^3 #

*PEL-Permissible Exposure Limit
*Time-weighted average (TWA) measured over a period of 8 hours of operation of process.
#- A ceiling limit is one that may not be exceeded for any period of time, and is applied to irritants and other materials that have immediate effects.

8. Monitoring of the above specified parameters for Source emissions and Work zone emission shall be carried out quarterly for first year followed by at least annually in the subsequent year of utilization. The monitoring shall be carried out by ISO 17025 accredited or EPA, 1986 approved laboratories and the results shall be submitted to the concerned SPCB/PCC on a quarterly basis.

9. The wastes generated during utilization of LD Converter gas cleaning sludge shall be collected and, taken back to utilization process.

10. Authorization from the Board shall be obtained under the Hazardous and Other Wastes (Management, and Transboundary Movement) Rules, 2016 for generation, storage and processing of LD Converter Gas Cleaning Sludge.

To

The Director,
M/s Ardent Steel Ltd.,
At/PO: Phuljhar, Via: Suakati,
Dist: Keonjhar, Odisha

CHIEF ENV. ENGINEER (M)
STATE POLLUTION CONTROL BOARD, ODISHA

Memo No._____/Dt._____/
Copy forwarded to :

i. Regional Officer, State Pollution Control Board, **Keonjhar**
ii. District Collector, **Keonjhar**
iii. DDM, Mines, **Joda, Keonjhar**
iv. CES, Central Laboratory, Bhubaneswar
v. ACEE, H.S.M. Cell, (Head Office)
vi. Guard File

ADDL CHIEF ENV. ENGINEER
STATE POLLUTION CONTROL BOARD, ODISHA

Annexure-I

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS PART – A : EFFLUENTS

Sl. No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Costal Areas
		(a)	(b)	(c)	(d)
1.	Colour & odour	Colourless/ Odourless as far as practible	--	See 6 of Annex-1	See 6 of Annex-1
2.	Suspended Solids (mg/l)	100	600	200	a. For process wastewater – 100 b. For cooling water effluent 10% above total suspended matter of influent.
3.	Particular size of SS	Shall pass 850	--	--	--
5.	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	Shall not exceed 5^0C above the receiving water temperature	--	--	Shall not exceed 5^0C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Total residual chlorine	1.0	--	--	1.0
9.	Ammonical nitrogen (as N) mg/l max.	50	50	--	50
10.	Total Kajeldahl nitrogen (as NH_3) mg/l max.	100	--	--	100
11.	Free ammonia (as NH_3) mg/l max.	5.0	--	--	5.0
12.	Biochemical Oxygen Demand (5 days at (20^0C) mg/l max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/l max.	250	--	--	250
14.	Arsenic (as As) mg/l max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg) mg/l max.	0.01	0.01	--	0.001
16.	Lead (as pb) mg/l max.	01.	1.0	--	2.0
17.	Cardmium (as Cd) mg/l	2.0	1.0	--	2.0

Sl. No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Costal Areas
		(a)	(b)	(c)	(d)
	max.				
18.	Hexavalent Chromium (as Cr + 6) mg/l max.	0.1	2.0	--	1.0
19.	Total Chromium (as Cr) mg/l max.	2.0	2.0	--	2.0
20.	Copper (as Cu) mg/l max.	3.0	3.0	--	3.0
21.	Zinc (as Zn) mg/l max.	5.0	15	--	15
22.	Selenium (as Sc) mg/l max.	0.05	0.05	--	0.05
23.	Nickel (as Nil) mg/l max.	3.0	3.0	--	5.0
24.	Cyanide (as CN) mg/l max.	0.2	2.0	0.2	0.02
25.	Fluoride (as F) mg/l max.	2.0	15	--	15
26.	Dissolved Phosphates (as P) mg/l max.	5.0	--	--	--
27.	Sulphide (as S) mg/l max.	2.0	--	--	5.0
28.	Phennolic compounds as (C_6H_5OH) mg/l max.	1.0	5.0	--	5.0
29.	Radioactive materials a. Alpha emitter micro curle/ml. b. Beta emitter micro curle/ml.	 10^{-7} 10^{-6}	 10^{-7} 10^{-6}	 10^{-8} 10^{-7}	 10^{-7} 10^{-6}
30.	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
31	Manganese (as Mn)	2 mg/l	2 mg/l	--	2 mg/l
32.	Iron (Fe)	3 mg/l	3 mg/l	--	3 mg/l
33.	Vanadium (as V)	0.2 mg/l	0.2 mg/l	--	0.2 mg/l
34.	Nitrate Nitrogen	10 mg/l	--	--	20 mg/l

Annexure-II

NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual *	50	20	-Improved west and Gaeke
		24 Hours **	80	80	- Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual *	40	30	- Modified Jacob & Hochheiser (Na-Arsenite)
		24 Hours **	80	80	- Chemiluminescence
3.	Particulate Matter (size less than 10 μ m) or $PM_{10}\mu g/m^3$	Annual *	60	60	-Gravimetric - TOEM
		24 Hours **	100	100	- Beta Attenuation
4.	Particulate Matter (size less than 2.5 μ m) or $PM_{2.5}$ $\mu g/m^3$	Annual *	40	40	-Gravimetric - TOEM
		24 Hours **	60	60	- Beta Attenuation
5.	Ozone (O_3) $\mu g/m^3$	8 Hours **	100	100	- UV Photometric - Chemiluminescence
		1 Hours **	180	180	- Chemical Method
6.	Lead (Pb) $\mu g/m^3$	Annual *	0.50	0.50	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper. - ED-XRF using Teflon filter
		24 Hours **	1.0	1.0	
7.	Carbon Monoxide (CO) mg/m^3	8 Hours **	02	02	- Non Dispersive Infra Red (NDIR)
		1 Hours **	04	04	Spectroscopy
8.	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence - Indophenol Blue Method
		24 Hours**	400	400	
9.	Benzene (C_6H_6) $\mu g/m^3$	Annul *	05	05	-Gas Chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP)-Particulate phase only, ng/m^3	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic (As), ng/m^3	Annual*	06	06	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12.	Nickel (Ni), ng/m^3	Annual*	20	20	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.