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ಕರ್ನಾಟಕ ರಾಜ್ಯ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ Karnataka State Pollution Control Board

“ಪರಿಸರಭವನ”, 1 ರಿಂದ 5ನೇ ಮಹಡಿಗಳು, ನಂ.49, ಚರ್ಚ್‌ಸ್ಟ್ರೀಟ್, ಬೆಂಗಳೂರು - 560 001, ಕರ್ನಾಟಕ, ಭಾರತ

"Parisara Bhavana", 1st to 5th Floor, # 49, Church Street, Bengaluru - 560 001, Karnataka, INDIA

//By RPAD//

NO.PCB/074/HPI/2014-15 / 1454

Date:

9 JAN 2015

To,

The Senior Vice President & Head of Plant,

M/s. JSW Energy Limited.

PB No. 9, Toranagallu, Sandur Taluk,

Bellary District-583 123.

Sir,

Sub: Consent for Expansion (CFEx) under the Water (Prevention & control of Pollution) Act 1974 and Air (Prevention & control of Pollution) Act 1981 for establishment of Super critical thermal Power Plant of capacity 1x660 MW in the existing complex at **M/s. JSW Energy Limited**, Sy. No. 328A, 328B1, 328B2, 328C, 329, 330, 331A, 331B, 56B2, 61, 62, 63 Toranagallu and establishment of ash pond at Sy.No. 7A/1 of Herabanahalli, Sultanpur, Toranagallu, Sandur Taluk, Bellary District.-reg.

- Ref:** 1) Environmental Clearance issued by MOEF No. J-13012/203/2010-IA.II(T) dated 18.09.2014
2) CFE application filed by the Industry received at Regional Office, Bellary on 15.11.2014
3) Inspection of the industry by R.O. Bellary on 06.11.2014 and report dated 28.11.2014.
4) Proceedings of the Consent Committee Meeting held on 19.12.2014.

M/s. JSW Energy Limited, is an existing Power Plant having power generation capacity 860MW (2x130MW and 2x300MW) using Corex gas and imported coal as fuel. The industry is having valid consent for the period up to 30.06.2015. Now, industry has made an application seeking CFE from the Board for establishment of super critical thermal power unit of capacity 1x660 MW and also to establish new ash pond on 15.11.2014. The location was inspected by the Regional Officer, Bellary and submitted report dated 28.11.2014. The subject was placed before the consent committee meeting (CCM) held on 19.12.2014. The committee after detailed deliberations recommended to issue CFE (Exp) with conditions.

The Board hereby accords consent for establishment for expansion under the Water (Prevention & Control of Pollution) Act 1974, and the Air (Prevention & Control of Pollution) Act 1981, for establishment of super critical thermal power plant of capacity 1x660 MW at their existing complex in Sy. No. 328A, 328B1, 328B2, 328C, 329, 330, 331A, 331B, 56B2, 61, 62, 63 Toranagallu village, Sandur Taluk, Bellary District and establishment of new ashpond at Sy.No. 7A/1 of Herabanahalli village, Sultanpur in an area of 26.7 acres belonging to JSW Steel Limited, Toranagallu, Sandur Taluk, Bellary District.

10.01.2015
SENIOR ENVIRONMENTAL OFFICER

AVOID USE OF PLASTICS- BE 'ECO' FRIENDLY

“ಪ್ಲಾಸ್ಟಿಕ್ ಬಳಕೆ ನಿಲ್ಲಿಸಿ, ಪರಿಸರ ವಾಸಿ ತಪ್ಪಿಸಿ”

M/s. JSW Energy Limited, CFExp. 2014-15

1. This Consent for Establishment shall be valid in co-terminus with the validity of the EC i.e. valid up to 17.09.2019.
2. The applicant shall not undertake any expansion/diversification without the prior consent of the Board.
3. The industry shall comply with all the conditions of EC issued by MoEF, GoI vide ref (1).
4. The applicant shall obtain necessary license/clearance from other relevant agencies before taking up construction. The CFEx is subject to the clearance from the standing committee of the National Board for Wild Life(NBWL).
5. The industry shall comply with all the conditions/guidelines mentioned in the CREP issued by CPCB.
6. The applicant shall adhere to all the observations/suggestions made in the REIA report and Environmental Management Plan suggested in the REIA report.
7. Sulphur and ash content in the coal to be used in project shall not exceed 0.6% and 28% respectively at any given time.
8. The CFE is issued subjected to the clearance from the standing committee of the National Board for wild life.
9. The industry shall obtain amendment to the EC on establishment of Ash pond.

I. WATER CONSUMPTION:

1. Existing water consumption by the industry is around 49877KLD (15864KLD for 2x130MW and 34013KLD for 2x300MW plant) for industrial purpose and 100 KLD for domestic purpose.
2. Additional quantity of water required for the expansion activity for establishment of 1x660MW is 38.856 m³/day and is met through JSW Steel Ltd captive reservoir and R.O. from existing plant.
3. COC of 7 shall be maintained for cooling water system.

II. WATER POLLUTION CONTROL:

1. The details of water consumption and waste water generation shall be as per water balance diagram enclosed as Annexure-I
2. The domestic effluent from the factory shall be treated in the existing sewage treatment plants. The treated sewage shall conform to the standards stipulated in **Annexure-II**.
3. The applicant shall treat the trade effluent as per Annexure III, IV and V of this order.
4. If the treatment plant does not achieve the effluent standards stipulated or if it is found to be inadequate, then the industry shall have to modify the units so as to meet the standards with prior consent of the Board.
5. The applicant shall install integrated flow measuring/recording devices on the effluent line. A record of daily effluent discharge shall be maintained.
6. The applicant shall not allow the discharge from the other premises to mix with the discharge from their premises. Storm water shall not be allowed to mix with the effluents.
7. Industry shall maintain log books for the collection, storage and disposal of effluent generated from the process. Log book has to be kept open for inspection.
8. There shall be no bypass or discharge of effluents outside the factory premises.

R. S. Lipton
SENIOR ENVIRONMENTAL OFFICER

9. The industry should provide alternate power supply to the ETP for its continuous operation.
10. The industry shall ensure that, all the treatment units are made impervious.
11. There shall not be any discharge of fly ash pond supernatant water into on land at any point of time.
12. The industry shall install sufficient number of traps to arrest oil & grease at all points including the storm water drainage system.
13. The applicant shall ensure continuous and effective operation and maintenance of pollution control systems
14. The applicant shall not allow the ash pond to dry. Always a film of water shall be allowed to stagnate over the collected ash.
15. A storage tank of sufficient capacity shall be provided to hold the untreated effluent in the event of emergency arising out of imbalance in treatment system etc., within the premises.
16. **Industry shall provide on-line monitoring system at the outlet of the Guard Pond to monitor the parameters pH level, Dissolved Oxygen and temperature of discharged water and should be operated continuously. The results shall be displayed on real time basis in company web site.**

III. WATER CESS:

The industry shall comply with the provisions of Water (Prevention and Control of Pollution) Cess Act, 1977, by installing water meters, filing water cess returns in Form-I and other provisions as contained in the said Water (Prevention and Control of Pollution) Cess Act, 1977, and 2003.

IV. AIR POLLUTION CONTROL:

1. The discharge of emission from the additional air pollution sources shall pass through the air pollution control equipment and discharged through stack/chimneys mentioned in **Annexure-VI** where from the Board shall be free to collect the samples at any time in accordance with the provisions of the Act and Rules made there under.
2. The type of emissions, rate of emissions, tolerance limits, stack heights and the Air pollution equipments shall be as specified in **Annexure-VI**.
3. The applicant shall interlock the air pollution control equipments with the process equipments so that if the control equipments trip, the process shall stop automatically
4. The stacks shall have port holes and platforms as per the guidelines specified in Annexure VII to facilitate monitoring of emissions
5. The industry shall take all necessary measures to avoid odour nuisance.
6. The industry shall upgrade/modify/replace/change the control equipments/chimney heights if they are found inadequate to meet the standards stipulated. Prior permission of the Board shall be obtained for the same.
7. The industry shall provide on-line stack monitoring facility and one CAAQM station and hook the results to the web for direct access of the Board on real time.
8. Suitable dust suppression system like water/mist sprinkling system shall be provided at the coal unloading point from the wagons.


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9. Coal stock pile yard in the plant shall be on a compacted impervious bottom and suitably barricaded with water sprinkling arrangement to suppress the dust.
10. Coal conveyor system shall be enclosed and all the transfer points shall be provide with bag filter to avoid fugitive emission.
11. The industry shall ensure that the ambient air quality in its premises shall conform to the National Ambient Air Quality Standards specified in Environment (Protection) Rules as mentioned in **Annexure-VIII**. The industry shall provide and maintain at its own cost a meteorological station to collect the data on wind velocity, direction, temperature, humidity, rainfall etc., and daily reading shall be recorded and the extract be sent to the Board once in a month.

V. NOISE POLLUTION CONTROL:

1. The industry shall ensure that the ambient noise levels within its premises shall not exceed the limits i.e. 75 dB (A) Leq during day time and 70 dB (A) Leq during night time as specified in the Environment (Protection) Rules.
2. The applicant shall provide acoustic measures to the D.G.Sets as per SI.No.94 in Schedule-I of Environment (Protection) Rules.

VI. SOLID WASTE (OTHER THAN HAZARDOUS WASTE) DISPOSAL:

1. The industry shall collect; treat and dispose off all solid waste generated from the process other than wastes covered under the Hazardous Waste (Management & Handling) Rules, in such manner so as not to cause environmental pollution.
2. The solid waste collected in the Factory premises as sweepings wastage packaging, empty containers, Residue, sludge including those from air pollution control equipments shall be disposed off scientifically to the satisfaction of the Board so as not to cause fugitive emissions, dust problems or water pollution problems through leaching etc..of any kind.

VII. FLY ASH MANAGEMENT

1. The applicant shall adhere to the directions contained in the fly ash utilization Notification issued by Ministry of Environment and Forest Government of India vide No.S.O.763(E), dated 14.09.1999 and No. SO 979 (E), dated 17.08.2003 & 03.11.2009.
2. The applicant shall provide with water sprinkling arrangement in ash pond area to avoid any fugitive emission due to wind.
3. The fly ash & bottom ash generated from the proposed expansion is estimated to be 350TPD and 1380TP respectively.
4. Industry shall submit action plan for overall prospective utilization of fly ash as per MoEF notification within one month time.
5. The power plant should make available dry ash to end users and provide uninterrupted access.

VIII.HAZARDOUS WASTES (MANAGEMENT, HANDLING & TRANSBOUNDARY MOVEMENT) RULES 2008:

The industry shall apply and obtain authorization under Hazardous Wastes (Management, Handling & Transboundry Movement) Rules 2008, and comply with the conditions of the authorization to handle, store and to dispose hazardous waste generated.

K. R. Gupta
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IX. Handling of Coal

The applicant shall take following measures during Coal Transportation.

- a) Modern methods shall be employed to achieve zero coal spillage during loading, unloading and transportation.
- b) Transportation of coal shall be in closed barges to achieve zero spillage.
- c) Transfer of coal using closed conveyor belts from wharf area to coal yard shall be employed.
- d) Water sprinklers at transfer points to be provided to suppress the dust
- e) Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season.

X. ENVIRONMENTAL STATEMENT:

1. The applicant shall submit the Environmental Statement every year for the period ending 31st March in Form V of Rule as per Rule 14 of Environment (Protection) Rule 1986 on or before 30th September.

XI. HEALTH & SAFETY:

1. The industry shall take all safety measures to avoid any injury to its employees and local people as per the approved Onsite and Offsite Emergency Plan.

XII. SPECIFIC CONDITION:

Industry shall comply with the Directions issued by Central Pollution Control Board under Section 18(1) (b) of the Water (Prevention & Control of Pollution) Act, 1974 and The Air (Prevention & Control of Pollution) Act, 1981 vide letter No. 29016/04/06/PCI/5401 dated: 05.02.2014.

XIII. GENERAL:

1. The industry shall transport and store the raw materials in a manner so as not to cause any damage to environment, life and property. The applicant shall be solely responsible for any damages to environment.
2. The industry shall arrange for alternate power supply to run and operate the essential units of effluent treatment plant/control equipments, in event of brake down of regular supply. The industry shall provide separate energy meters to the Water and Air pollution control systems where ever appropriate.
3. The industry shall not commission the proposed plant for trial or regular production unless necessary water pollution control equipments are installed to the satisfaction of the Board. The industry shall ensure that the treatment plant and control equipments are completed and commissioned simultaneously along with construction of the factory and erection of machineries.
4. The industry shall not change or alter (a) raw materials or manufacturing process, (b) change the products or product mix (c) the quality, quantity or rate of discharge/emissions and (d) install/replace/alter the water or air pollution control equipments without the prior approval of the Board.
5. The industry shall immediately report to the Board of any accident or unforeseen act or event resulting in release of discharge of effluents or emissions or solid wastes etc. in excess of the standards stipulated. And the industry shall immediately take appropriate corrective and preventive actions under intimation.


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6. The industry is liable to reinstate or restore, damaged or destroyed elements of environment at his cost, failing which, the applicant/occupier as the case may be shall be liable to pay the entire cost of remediation or restoration in advance an amount equal to the cost estimated by Competent Agency or Committee.
7. The applicant shall comply with all the Rules and guidelines issued from time to time.
8. The Applicant shall establish an environmental cell for environment management in the plant.
9. The Board reserves the right to review, impose additional condition or conditions, revoke, change or alter the terms and conditions.
10. This CFE does not give any right to the Party/Project Authority/Industry to forego any legal requirement that is necessary for setting/operation of the plant.
11. Industry shall establish, implement and maintain environmental management system in conformity with ISO 14001 standards.
12. The industry shall not commission the proposed plant for trial or regular production unless necessary water pollution control equipments are installed to the satisfaction of the Board. The industry shall ensure that the treatment plant and control equipments are completed and commissioned simultaneously along with construction of the factory and erection of machineries.
13. The industry shall furnish point wise compliance to the conditions given under this consent for establishment within 30 days.

Please note that this is only consent for establishment issued to you to proceed with the formalities for establishment of the industry and does not give any right to proceed with trial/regular production. For this purpose, separate consents of the Board for discharge of liquid effluent and the emissions to the air shall have to be obtained by the remitting prescribed consent fee. The application for consent has to be made 45 days in advance of commissioning for trial production of the plant.

The receipt of this letter may please be acknowledged.

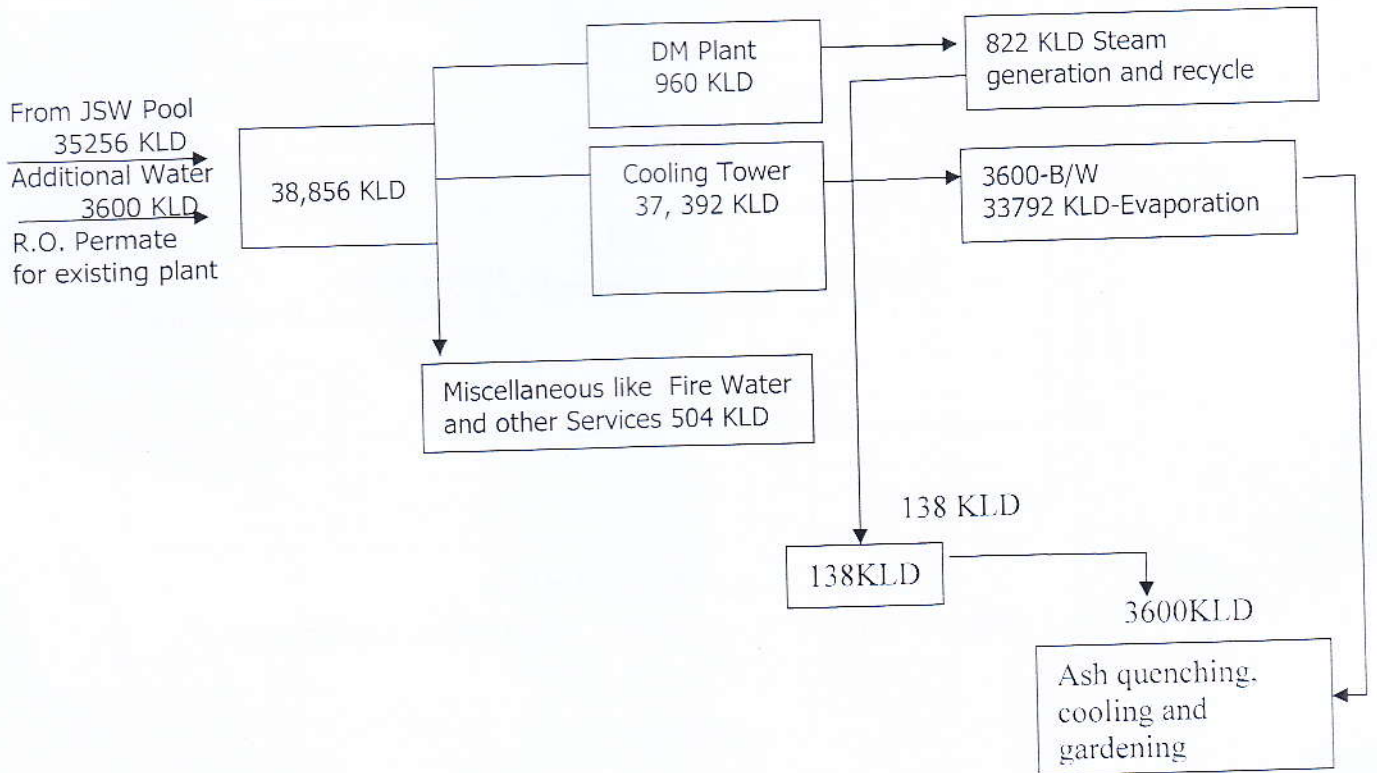
FOR AND ON BEHALF OF
KARNATAKA STATE POLLUTION CONTROL BOARD


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ANNEXURE-I
WATER BALANCE



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ANNEXURE – II

STANDARDS FOR USING THE TREATED SWEAGE EFFLUENT FOR GREEN BELT /HORTICULTURE

SL. NO.	Characteristics.	Tolerance limits. not to exceed
1	pH	6 to 9
2	Total Suspended Solids mg/l. Max.	30
3	Bio-chemical Oxygen Demand, mg/l. (3 days at 27°C) max.	20

TABLE

Hydraulic Loading Applicable for Different Soils.

Sl. No.	Soil Texture	Loading rate in M3/Ha/day
1	Sandy	225 to 280
2	Sandy Loam	170 to 225
3	Loam	110 to 170
4	Clay Loam	055 to 110
5	Clayey	035 to 055

ANNEXURE-III

COOLING TOWER BLOW DOWN DISCHARGE STANDARDS

Cooling tower blow down	Free available Chlorine mg/l. Max	0.5
	Zinc mg/l. Max	1.0
	Chromium (Total) mg/l. Max	0.2
	Phosphate mg/l. Max	5.0

ANNEXURE-IV

ASH POND OVERFLOW DISCHARGE STANDARDS

Ash Pond Effluent	pH	6.5-8.5
	Suspended Solids, mg/l. Max	100
	Oils and Grease mg/l. Max.	20

ANNEXURE-V

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS

Sl No	Parameter	Marine coastal areas
1.	Colour and odour	All efforts should be made to remove colour and unpleasant odour as far as practicable.
2.	Suspended solids mg/l. max	100
3.	pH value	5.5 to 9
4.	Oil and grease mg/l max.	20
5.	Biochemical Oxygen demand BOD (3 days at 27°C) mg/l. max.	100
6.	Chemical Oxygen Demand mg/l	250
7.	Arsenic (as As), [mg/l], max.	0.2
8.	Mercury (as Hg), mg/l. max.	0.01
9.	Lead (as Pb) mg/l. max.	2.0
10.	Hexavalent Chromium (as Cr +6), mg/l, max.	1.0
11.	Total Chromium (as Cr) mg/l, max.	2.0
12.	Phenolic compounds [as C ₆ H ₅ OH] mg/l, max.	5.0

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ANNEXURE -VI

Chimney	Chimney Attached to	Minimum Chimney Height to be Provided Above ground level	Rate of Emission m ³ /hr	Constituents to be controlled in the emission.	Tolerance limits Mg/Nm ³	Air Pollution Control equipment to be installed, in addition to Chimney height as per Col (3)	Date by which air pollution control equipments shall be provided to achieve the stipulated tolerance limits
1	2	3	4	5	6	7	8
1	Boiler-2150 TPH	275m AGL	1660806	PM SO ₂	50	ESP	Before commissioning
2	DG Set 1600 KVA	30m AGL	--	NO _x * NMHC** PM*** CO****	700 100 75 150	Acoustic Enclosure	Before commissioning

Note: a) The noise levels shall not exceed 75 dB (A) leq. And 70 dB(A) leq. During day time and night time respectively.

b) There shall be no other sources of air pollution


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ANNEXURE-VII

LOCATION OF SAMPLING PORTHOLES, THE PLATFORMS, THE ELECTRICAL OUTLET.

1. Location of Portholes and approach Platform:

Portholes shall be provided for all chimneys, stacks and other sources of emission. These shall serve as the sampling points. The sampling point should be located at a distance equal to atleast eight times the stack or duct diameters downstream and two diameters upstream from source of low disturbance such as a Bend, Expansion, Construction Valve, Fitting or Visible Flame for rectangular stacks, the equivalent diameter can be calculated from the following equation.

$$\text{Equivalent Diameter} = \frac{2 (\text{Length} \times \text{Width})}{(\text{Length} + \text{Width})}$$

2. The diameter of the Sampling Port should not be less than 3". Arrangements should be made so that the porthole is closed firmly during the period when it is not used for sampling.
3. An easily accessible platform to accommodate 3 to 4 persons to conveniently monitor the stack emission from the portholes shall be provided. Arrangements for an Electric Outlet Point off 230 V 15 A with suitable switch control and 3 Pin Point shall be provided at the Porthole location.

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ANNEXURE-VIII
NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

Pollutant	Time Weighted Average	Concentration in Ambient Air		Method of Measurement
		Industrial, Residential, Rural & other Areas	Ecologically sensitive area (Notified by Central Government)	
Sulphur Dioxide (SO ₂)	Annual* 24 Hours**	50 µg/m ³ 80 µg/m ³	20 µg/m ³ 80 µg/m ³	- Improved West and Gacke method. - Ultraviolet fluorescence.
Nitrogen Dioxide (NO ₂)	Annual* 24 Hours**	40 µg/m ³ 80 µg/m ³	30 µg/m ³ 80 µg/m ³	- Modified Jacob & Hochheiser (Na-Arsenite) Method. - Chemiluminescence.
Particulate Matter (Size less than 10 µm) or PM ₁₀	Annual* 24 Hours**	60 µg/m ³ 100 µg/m ³	60 µg/m ³ 100 µg/m ³	- Gravimetric. - TOEM. - Beta attenuation.
Particulate Matter (Size less than 2.5 µm) or PM _{2.5}	Annual* 24 Hours**	40 µg/m ³ 60 µg/m ³	40 µg/m ³ 60 µg/m ³	- Gravimetric. - TOEM. - Beta attenuation.
Ozone (O ₃)	8 Hours** 1 Hour**	100 µg/m ³ 180 µg/m ³	100 µg/m ³ 180 µg/m ³	- UV Photometric. - Chemiluminescence. - Chemical method.
Lead (Pb)	Annual* 24 Hours**	0.5 µg/m ³ 1 µg/m ³	0.5 µg/m ³ 1 µg/m ³	- AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper. - ED – XRF using Teflon Filter.
Carbon Monoxide (CO)	8 Hours** 1 Hour**	2 mg/m ³ 4 mg/m ³	2 mg/m ³ 4 mg/m ³	- Non dispersive infrared (NDIR) spectroscopy.
Ammonia (NH ₃)	Annual* 24 Hours**	100 µg/m ³ 400 µg/m ³	100 µg/m ³ 400 µg/m ³	- Chemiluminescence. - Indophenol blue method.
Benzene (C ₆ H ₆)	Annual*	5 µg/m ³	5 µg/m ³	1. Gas Chromatography based continuous analyzer. - Adsorption & Desorption followed by GC analysis.
Benzo (a) Pyrene (BaP) – Particulate phase only.	Annual*	1 ng/m ³	1 ng/m ³	Solvent extraction followed by HPLC/GC analysis.
Arsenic (As)	Annual*	6 ng/m ³	6 ng/m ³	AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper.
Nickel (Ni)	Annual*	20 ng/m ³	20 ng/m ³	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 interval.

** 24 hourly/8 hourly/1 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they exceed the limits but not on two consecutive days of monitoring.

Note:

Whenever & wherever monitoring results on two consecutive days of monitoring exceeds the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation

K. S. Singh
SENIOR ENVIRONMENTAL OFFICER