



ANDHRA PRADESH POLLUTION CONTROL BOARD
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CHAIRMAN OFFICE
C. P. C. B.
No. 2058
Date 2/6/16

Lr. No. 17/APP/APP/CEPI/2016 -

Date: 17.06.2016

To-
The Chairman,
Central Pollution Control Board,
Parivesh Bhavan,
East Arjun Nagar,
Delhi - 110032.

M/S
EPC

Sir,

Sub: APPCB - Visakhapatnam - Directions issued by the CPCB under section 18 (1) (b) of the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 to undertake Environmental Quality Monitoring and for installation of Continuous Ambient Air Quality Monitoring Stations and Real-Time Water Quality Monitoring Stations in critically polluted areas - submission of Action Taken Report / Time bound Action Plan - Reg.

Ref: CPCB Chairman Letter No. B-29012/ESS(CPA)/2015-16/331, dt: 26.04.2016

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This has with reference to the subject matter mentioned above. Action Taken Report along with Time bound Action Plan pertaining to critically polluted Visakhapatnam area is herewith enclosed.

This has approval of the Chairman, APPCB.

M. B. S. Reddy
JOINT CHIEF ENVIRONMENTAL ENGINEER

UH-III

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- Copy to 1. The JCEE, UH-IV, Board Office, Hyderabad for information.
2. The JCEE, ZO, Visakhapatnam for information.

for name

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Dr. Chamy



ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL OFFICE: VISAKHAPATNAM

B.Madhusudana Rao, M.E., LL.B.,
Joint Chief Environmental Engineer

39-33-20/4/1,
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Lr. No. 9/PCB/ZO-VSP/Tech/2016-

Date:14.06.2016

To

The Joint Chief Environmental Engineer (UH-III),
A.P.Pollution Control Board,
Hyderabad

Sir,

Sub: APPCB – Zonal Office, Visakhapatnam – CPCB directions under section 18(1) (b) – Furnishing of action plan to undertake environmental quality monitoring in critically polluted area, installation of continuous ambient air quality monitoring stations and installation of continuous water quality monitoring stations – Reg.

Ref: Board office mail dt.09.06.2016

With reference to the above, an action plan complying with CPCB directions to undertake environmental quality monitoring in critically polluted area, installation of continuous ambient air quality monitoring stations and installation of continuous water quality monitoring stations is prepared which is as follows:

Part A: Environmental quality monitoring in critically polluted area (Visakhapatnam bowl area)

S.No.	Condition	Compliance
1.	That the SPCB/PCC shall undertake environmental quality monitoring in the critically polluted area falling under their jurisdiction through an outside third party agency (laboratory) recognized under Environment (Protection) Act, 1986 and accredited under NABL. The frequency of the monitoring shall be twice in a year i.e. Post-monsoon season and Pre-monsoon season).	APPCB proposed to conduct environmental quality monitoring in the Visakhapatnam bowl area (critically polluted area) in two seasons in a year ((pre-monsoon (March to May) & Post-monsoon (October to December)) by third party agency recognized by MoEF and accredited under NABL. This will start from October 2016.
2.	That the SPCB/PCC shall ensure that the existing sampling locations where monitoring was undertaken in 2013 are retained and additional monitoring locations, if any required, can be included in the monitoring programme in consultation with concerned Zonal Offices of CPCB and (or) Head Office, CPCB.	Yes. The sampling locations monitored in 2013 under NAMP (total 10 locations) are retained. In addition to these 10 locations, the APPCB installed two new CAAQM stations in Visakhapatnam city in the year 2014 towards down wind direction and an additional station will be installed in co-ordination with M/s. HPCL in next 6 months in upwind direction.
3.	That the SPCB/PCC shall ensure that the sampling stations are provided at strategic locations across the industrial clusters so as to obtain a truly representative environmental quality of the critically polluted area. Moreover, the concerned SPCBs /PCC shall ensure that there is at least	The Board is regularly monitoring ambient air quality at 10 stations manually within the bowl area of Visakhapatnam city in addition to the CAAQM stations at 2 locations (GVMC office & IE-Kancharapalem)

	<p>one Ambient Air Quality monitoring station each in the predominant upwind and downwind directions at each of the CPA.</p>	<p>Out of 10 manual stations, 8 stations located downwind direction and 2 located at upwind direction. The 2 CAAQM stations are located down wind direction.</p>
4.	<p>That the SPCBs/PCC shall collect 3 samples with a gap of one or two days at each location during each round of monitoring in all the CPAs.</p>	<p>The Board is collecting Ambient Air Quality samples at 10 locations once in 3 days at each location on 24 hourly basis and 2 No. CAAQM stations with real time data uploading to APPCB web site.</p>
5.	<p>That at each of the CPA, 24 hourly ambient air quality monitoring shall be carried out for parameters as detailed in Annexure-2. Also, representative samples for surface water quality and ground water quality shall be collected from prominent surface and ground water bodies located in and around the CPAs. List of water quality parameters is presented in Annexure-2.</p>	<p>The facilities for monitoring other parameters as per Annexure-II such as Benzene, Benzo-Pyrene, arsenic and ozone will be acquired by December, 2016.</p> <p>2 CAAQM stations installed at two locations in the city. All the parameters listed in Annexure-II are measured except Benzo-a-pyrene and metal concentrations, lead, Arsenic, nickel.</p> <p>No specific water bodies/reservoirs exist in bowl area except one surface water drain (Meghadriggedda surplus drain) flowing through the bowl area at a stretch of 7.65 Kms before joining the sea. (Bay of Bengal) which is being monitored once in month in down stream.</p> <p>One ground water monitoring station exists under MINAR programme at Mindi area of CPA, which is at upstream.</p> <p>In addition to this station, it is proposed to identify one more location in downstream to evaluate ground water quality once in a month.</p> <p>Monitoring of all parameters as per Annexure-II is being carried out except the analysis of cyanide, surface active agents, anionic detergents, organo-chlorine pesticides, PAH, PCB and PCT, arsenic, vanadium, selenium, VOCs and pesticides.</p> <p>The APPCB will procure the monitoring equipment for cyanide, VOCs and pesticides by September, 2016 and for the balance parameters by December 2016.</p> <p>Thus then, APPCB will monitor the above parameters through a recognized lab of MOEF and accredited under NABL i.e. the laboratory of M/s. JN Pharmacy, Parawada.</p>

Part B: Installation of Continuous Ambient Air Quality Monitoring Stations

6.	<p>That the SPCB/PCC shall coordinate with the 'Association(s) or any appropriate agency of the Industries of the concerned CPAs and direct them for installation of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) at strategic locations of identified Critically Polluted Areas. For this purpose, 'Polluter Pays Principle' shall be applied and the data so acquired be displayed on the website of State Board for transparency in law-enforcement.</p>	<p>The Board has installed 2 no. of CAAQM stations in the city and displaying the real-time data and connected o APPCB web site with 12 parameters except lead, arsenic, nickel.</p> <p>17 Category/Red categories of industries in bowl area installed 10 CAAQM stations and connected to APPCB web site for the parameters SOx, NOx, PM10 and PM2.5 and all the stations are connected to APPCB web site.</p> <p>Another 2 stations are going to be installed by M/s. Visakhapatnam Port trust in bowl area by the end of June 2016.</p> <p>It is proposed to install one new CAAQM station in coordination with HPCL towards upwind directions for all the parameters mentioned in the Annexure-II , since the existing 2 CAAQM stations located towards down wind direction by 31st March 2017.</p>
7.	<p>That in those Critically Polluted Areas, where no CAAQMS is so far installed, at-least 2 CAAQMS be installed to start with, one each in the windward and leeward direction within a year;</p>	<p>The Board has already installed 2 no. of CAAQM stations in the city in the wind ward direction and another station will be installed in coordination with HPCL towards upwind directions for all the parameters mentioned in the Annexure-II by 31st March 2017.</p> <p>17 category/Red category of industries in bowl area installed 10 CAAQM stations for the parameters PM10, PM2.5, Sox and NOx and connected to APPCB web site.</p> <p>Another 2 stations are going to be installed by M/s. Visakhapatnam Port trust in bowl area by June 30th, 2016.</p>
8.	<p>That the existing network of continuous ambient air quality monitoring stations (CAAQMS) in CPAs established by 17 Category of highly polluting industries, shall be deigned if necessary, by shifting/relocating some stations to cover the entire city/area. This will reduce duplicity in monitoring and ensure optimum utilization of the available monitoring facilities and resources.</p>	<p>Existing 12 No. of CAAQM stations (2 Nos. APPCB and 10 Nos. industries) are located covering the entire city.</p> <p>Another 2 stations are going to be installed by M/s. Visakhapatnam Port trust in bowl area by June 30th, 2016.</p>
9.	<p>That the existing manual monitoring under NAMP will be continued. In case, there is no NAMP station in the area, then manual monitoring will also be conducted at least once in a month on 24 hourly basis.</p>	<p>Yes.</p> <p>Existing manual monitoring under NAMP at 6 locations in bowl area is being continued.</p> <p>Monitoring is being conducted once in 3 days on 24 hourly basis.</p>

Part C: Installation of Continuous Water Quality Monitoring Stations

<p>10. That the SPCBs / PCC shall ensure installation of Real Time Water Quality Monitoring Stations at various locations of identified Critically Polluted Areas in conformity with the CPCB guidelines for water quality monitoring (MINARs/27/2007-08). The SPCBs / PCC shall adopt 'Polluter Pays Principle' for achieving these objects.</p> <p>The installation of CEMS at the upstream and downstream of the Meghadriggeda surplus drain will be taken up through the industries in bowl area by December 2016.</p> <p>The industries which are discharging their effluents into Meghadriggeda drain installed Continuous Effluent Monitoring system (CEMS) as per the parameters specified by CPCB for 17 Category of industries.</p>		10.
<p>No specific water bodies/reservoirs exist in bowl area except one surface water drain (Meghadriggeda surplus drain) flowing through the bowl area at a stretch of 7.65 Kms before joining the sea. (Bay of Bengal) which is being monitored once in month in downstream manually.</p> <p>The installation of CEMS at the upstream and downstream of the Meghadriggeda surplus drain will be taken up through the industries in bowl area by December 2016.</p> <p>The industries which are discharging their effluents into Meghadriggeda drain installed Continuous Effluent Monitoring system (CEMS) as per the parameters specified by CPCB for 17 Category of industries.</p>	<p>That in those Critically Polluted Areas, where no CWOQMS are yet installed, at-least 2 CWOQMS is installed to start with, one each in the upstream and downstream locations of the major receiving water body of the area within a year.</p>	11.
<p>Yes.</p> <p>One station exists under MINAR programme at Mindi area.</p> <p>In addition to this station, it is proposed to identify one location in downstream to evaluate ground water quality once in a month.</p> <p>Monitoring of all parameters as per Annexure-II is being carried out except the analysis of cyanide, surface active agents, amionic detergents, organo-chlorine pesticides, PAH, PCB and PCT, arsenic, vanadium, selenium, VOCs and pesticides.</p> <p>The APPCB will procure the monitoring equipment for cyanide, VOCs and pesticides by September, 2016 and for the balance parameters by December 2016.</p> <p>Till then, APPCB will monitor the above parameters through a recognized lab of</p>	<p>That the existing manual monitoring under MINAR (Monitoring of Indian National Aquatic Resources) programme will also be continued. In case, there is no MINAR station in the area, then manual monitoring will also be conducted at least once in a month. Ground Water Quality Monitoring should be carried out at existing locations (i.e. bore-wells, tube wells, deep hand pumps etc) and as per national monitoring protocol. Monitoring of heavy metals, VOCs and Pesticides should also be undertaken in addition to regular parameters of MINAR programme.</p>	12.

		MoEF and accredited under NABL, i.e. the laboratory of M/s. JN Pharmacy, Parawada.
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Part D: Application of revised CEPI version 2016

13.	That since 'Revised CEPI 2016' has been evolved, hence forth, all future CEPI score evaluations shall be made on the basis of revised formula.	The revised CEPI 2016 shall be implemented here after.
14.	That all the polluting sources identified in the area shall be notified and brought in the public domain through respective websites along with the details of their pollution control compliance status.	The Board installed 2 no. of CAAQM stations in the city and displaying the real-time data to the public domain. 17/red category industries in bowl area installed 10 CAAQM stations and connected to APPCB web site. Another 2 stations are going to install by M/s. Visakhapatnam Port trust in bowl area by 30 th June 2016. All the 17 category/red categories of industries have installed Online stack analyzers and connected to the APPCB web site for the parameters specified in the consent.
15.	That the environmental quality data including CEPI score of the industrial area as per revised concept shall also be placed in public domain through website and also to be published by the State Government periodically.	Will be updated in website and published in the media once in six months.
16.	That the concerned State Government shall notify the area on a properly scaled map and also issue public advisories that such an area will be exclusively meant for industrialization as per the State land.	Being followed
17.	That the revised CEPI shall be used by the State Governments, SPCBs and others concerned to understand the severity of pollution existing in the area and formulate appropriate action plan. Further, sufficient time shall be given for effective implementation of the action plan before imposition of moratorium. Thus, the revised concept shall be an early warning tool to ensure the successful implementation of Action Plan.	Being followed
18.	That the CEPI shall not be used by the Bankers / Money Lending Institutions for financial decisions.	---
19.	That any moratorium on expansion on setting up of new industries shall be imposed on a particular CPA only after a notice period of one year from the initial announcement of CEPI assessment. However decision on any directions already in force in a CPA shall be taken as per correct practice in vogue. High CEPI score shall also be used as early warning tool to require preparation of pollution	Being followed

	management plans to reduce pollution levels before it reaches critical levels.
20.	That for any industry in a critically polluted area, the changes which make it less polluting shall be permitted. These changes may include expansion of production capacity / change of product / change of raw materials / change of manufacturing process or a combination of these changes and shall be examined and assessed by respective SPCCB/PCC.
	Being followed

Part - E: Action Plan and Monitoring

21.	That the SPCCB/PCC shall also continue the regular exercise of water and air quality monitoring work at different locations including those stations currently in operation under NAMP and MINAR.	Being followed under NAMP & MINAR programme.
22.	That the SPCCB/ PCC shall take necessary measures to ensure regular maintenance and operation of the online systems with tamper proof mechanism including having facilities for online calibration.	Being followed
23.	That the SPCCB / PCC shall install the necessary software and hardware in their headquarter for centralized data collection, analysis and corrective action.	Being followed and placed in the public domain.
24.	That the SPCCB/PCC shall take necessary measures to connect and upload the online air quality and water quality monitoring data on the Servers of respective SPCCB/PCC and CPCCB in a time bound manner but not later by June 30, 2016.	Being followed and placed in the public domain.
25.	That the SPCCB/PCC shall upload on its websites the consent conditions of all industrial units along with their compliance status (updated half yearly) with respect to prescribed norms.	Being followed and is in the process of uploading in public domain.
26.	That the action plan categorized into short, medium and long term basis shall be brought into public domain and the progress of implementation shall be reviewed and District and State level through Monitoring Committees.	Being followed

Present status of Comprehensive Environmental Pollution Index (CEPI) in Visakhapatnam Bowl area.

During 2009, Central Pollution Control Board (CPCB) evolved a Comprehensive Environmental Pollution Index (CEPI) for 88 study areas with an objective of identifying polluted clusters or areas in order to take concrete action and to centrally monitor them at the national level to improve the current status of their environmental components such as air and water quality; ecological damage and vital environmental conditions.

CEPI is calculated based on the pollutants in air, surface water, ground water and adequacy of the pollution control systems exist at all the 17-category and 70 category industries.

As per the study, the CPCCB identified **Visakhapatnam area** as critically polluted area (CPA) with a CEPI score of 70.82. Minimum score for declaration CPA is 70.

As identified as CPA, the NDRB imposed **moratorium on 13.01.2010** for consideration of projects for Environment Clearance under EIA notification, 2006 in Visakhapatnam bowl area.

Further, the MoEF Lifted the ban to the bowl area (the area between Yarada hill range in the south to Simhachalam hill range in the north and sea on the east and the present NH-5 in the west direction) vide MOEF notification on **15.03.2010**.

The Steering Committee of CPCB, New Delhi on CEPI reviewed the draft Action Plan of Visakhapatnam cluster in July, 2010 and gave certain suggestions / comments. Taking into consideration of the suggestions / comments made by the Steering committee, a revised action plan was prepared by APPCB and submitted to the CPCB.

APPCB has worked out a comprehensive action plan for taking remedial measures in the critically polluted area and submitted the final action plan for improvement of Environmental parameters in critically polluted area in Visakhapatnam bowl area during November 2010 for reducing the CEPI score **from 70.82 to normal level**.

As directed by the CPCB, the Board constituted a local committee with the following experts and stake holders for monitoring the implementation of action plan under CEPI programme on 20.12.2010.

Prof. S. Rama Krishna Rao,(Retd) Dept. Civil Engineering, Andhra University, Visakhapatnam	Dr. K.S.R.Murthy, Deputy Director (Rtd), National Institute of Oceanography (NIO), 176, LB Colony, Visakhapatnam — 530017.
Sri. B.S. Sastry, NGO, 43-9-130, T.S.N. Colony, Near Dondaparthi, Visakhapatnam	Sri. D. Rajeswara Rao, 49-27- 33/1, Madhura Nagar, Visakhapatnam — 16
Sri. A. Satyanarayana, Representative of FAPCCI, (Management Committee Member of FAPCCI),	Joint Chief Env. Engineer, Member Convener, A.P. Pollution Control Board, Zonal Office, Visakhapatnam

The committee inspected the following seven (7) bowl area industries, municipal facilities (sewage treatment plants and municipal solid waste management), bio medical waste management facility and reviewed the status of vehicular pollution control measures taken by RTA department.

- M/s. Essar Steels Ltd.,
- M/s. Rain CII India Ltd.,
- M/s. Andhra Petro Chemicals Ltd.,
- M/s. HPCL,
- M/s. Coromandel International Ltd.,
- M/s. Visakhapatnam Port Trust
- M/s.Hindustan Zinc Ltd., (Closed since February 2012)

First review meeting was convened on 17.06.2011 and reviewed the status of implementation of action plan under CEPI programme for the 7 industries identified in bowl area.

APPCB imposed the following **stringent standards** than the national standards to industries in the bowl area.

Name of the industry	Parameter	National standard	APPCB standard to other areas	APPCB (stringent) standards for Visakhapatnam
M/s. Essar Steels Ltd,	SPM	150 ₃ mg/Nm ³	115 mg/Nm ³	50 mg/Nm ³
M/s. Rain CII India Ltd,	SPM SO ₂	150 ₃ mg/Nm ³ --	115 mg/Nm ³ --	70 mg/Nm ³ 0.48 TPD

M/s. APCL	SPM	150	115 mg/Nm ³	50 mg/Nm ³
M/s. HPCL, Refinery	SPM SO ₂	150	115 mg/Nm ³	50 mg/Nm ³ 11.5 TPD
M/s. Coromandel Fertilisers	SPM Fluorine SO ₂	150 25 mg/Nm ³ --	115 mg/Nm ³ 10 mg/Nm ³ 2.0 Kg/T	50 mg/Nm ³ 5 mg/Nm ³ 0.65 Kg/T of H ₂ SO ₄
M/s. Hindustan Zinc Ltd.	SO ₂	--	4 Kg/T of H ₂ SO ₄	1.5 Kg/T of H ₂ SO ₄

The field visits were frequently carried out by the local committee from 18.08.2011 to 20.08.2011, 02.02.2012 to 04.02.2012, 24.08.2012 to 25.08.2012 & 27.11.2013 to 28.11.2013 for monitoring the implementation of Action plan under CEPI programme.

In order to comply with the stringent standards, the industries in the bowl area made the following additional investment of Rs.1845/- Cr.

Sl. No.	Name of the industry	Investment made for treatment systems from 1999 - 2008 (in Crores)	Investment made for up-gradation of treatment systems during 2009-2013 (in Crores)
1	M/s. Essar Steels (India) Ltd.,	26.50	19.20
2	M/s. Rain CII (Vizag) Ltd.,	6.50	3.50
3	M/s. Andhra Petro Chemicals Ltd.,	6.00	4.17
4	M/s. HPCL, Refinery	175.00	178.70
5	M/s. Coromandel International Ltd.,	87.50	55.30
6	M/s. Visakhapatnam Port Trust	134.00	1569.50
7	M/s. Hindustan Zinc Ltd., (Closed since 2012)	16.00	14.66
TOTAL		Rs.451.5 Cr	Rs. 1845.03 Cr

SEWAGE FACILITIES IN THE BOWL AREA:

Population in the Bowl area is about 11,00,000. Total sewage generated in the bowl area is about 118.8 MLD. Sewage treatment facilities in the bowl area are 73.0 MLD (25 MLD STP at Appughar, 38.0 MLD STP at Old town area & 10.0 MLD STP in Port area) and 2 X 54 MLD STPs are under construction stage at Narava in which the balance 45.8 MLD is proposed to be treated.

MUNICIPAL SOLID WASTE MANAGEMENT IN BOWL AREA:

In bowl area about 550 TPD of municipal solid waste (MSW) is generated. At present the waste is being disposed at Kapulapada (V) which is not a scientific disposal site. M/s. GVMC has identified one site at Gidijala (V) measuring 106 ac for scientific disposal of municipal solid waste.

BMW FACILITIES IN BOWL AREA:

264 no. of hospitals with bed strength of 7733 are existing in the Bowl area. BMW waste generation in the Bowl area is 1.420 TPD and not having any BMW handling/disposal facilities in the Bowl area and disposing the BMW waste at Maridi Eco Industries Ltd., (CBMWTF), Kapulapada (V), Visakhapatnam for safe handling.

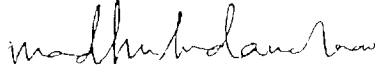
VEHICULAR POLLUTION CONTROL IN BOWL AREA:

The transport department is implementing emissions norms stipulated to the vehicles and monitoring pollution levels through testing centers for which licenses are issued by transport department under the A.P. Motor Vehicles Rules. Pollution Under Control (PUC) certificates are issued for the vehicles which passes the test and notices will be issued to the vehicles which fails to comply with the norms. The Validity of the Pollution under Control certificate is 6 months from the date of issue. There are 25 test centres existing in bowl area.

Due to implementation of the above said measures by industries, municipalities, bio medical facilities and vehicular pollution control, the situation has improved and on 17.09.2013, the MoE&F **lifted moratorium** in Visakhapatnam Bowl area as the CEPI score came down from 70.82 to 52.31.

This is for information and necessary action.

Yours faithfully,



JOINT CHIEF ENVIRONMENTAL ENGINEER

Copy submitted to Hon'ble Chairman, APPCB, Hyderabad for favour of kind information.

Copy submitted to Member Secretary, APPCB, Hyderabad for favour of kind information.

Copy to Environmental Engineer, Regional Office, A.P.Pollution Control Board, Visakhapatnam for information.